

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN |  |  |
|  | SIGNS IN METERS |  |  |
|  | $A$ | $B$ | C |
| Urban and Rural $\leq 50 \mathrm{~km} / \mathrm{h}[\leq 30 \mathrm{MPH}]$ | 30 | 30 | 30 |
| Urban and Rural $60-80 \mathrm{~km} / \mathrm{h}[35-50 \mathrm{MPH}]$ | 100 | 100 | 100 |
| Rural greater than $80 \mathrm{~km} / \mathrm{h}[50 \mathrm{MPH}]$ | 150 | 150 | 150 |
| Expressway / Freeway | 300 | 450 | 800 |



NOTE:

1. Erect all project advance warning signs before starting construction work.
2. Not all details shown on the temporary traffic control sheets may be applicable to this project The Contractor may add or deleta this traffic control plan as necessar
3. Where advance warning signs, placed as shown, interfere with permanent signs, locate the warning signs to fit field conditions as approved by the CO. Vary messages as required.
4. Install advisory speed plates under the W2O series warning signs as needed to indicate a maximum recommended speed through the construction area.
5. Ensure all sign supports exposed to impact by traffic meet the requirements of
6. Maintain two-way traffic during all non-work hours except as approved by the CO.
7. Do not store traffic control devices along the roadway when not in use Cover post-mounted signs when not applicable.
. If $\mathrm{W} 20-1$ is placed on a roadway other than that on which the actual construction work occurs, include a supplementary plaque indicating the name of the road on which the construction does occur (applies to major roads only).
8. The message on the W2O-1 signs may be ROAD WORK AHEAD or may specify the distance to the work area in feet or in miles. Install an additional W2O-1 sign when approach speeds exceed $80 \mathrm{~km} / \mathrm{h}$ [50 MPH]. When used, place the
wo W20-1 signs "B" meters apart according to the Sign Spacing Table.
9. For work zones that are greater than 3 km in length, install G20-1 signs at each end of the project. Show the distance on the G20-1 sign to the neares whole mile.
10. If signing on a roadway under a jurisdiction other than the client agency, verify that an encroachment permit has been obtained.
11. State standards may be used as an alternative if approved by the CO .
12. Refer to Section 635 of the Special Contract Requirements for allowable retroreflective sheeting types.
S. DEPARTMENT OF TRASSPORTATION
FEDRAL HIGHWAY AMMINITTRATION OFFICE OF FEDERAL LANDS HIGHWA

TEMPORARY TRAFFIC CONTROL
ADVANCE SIGNING


## NOTE:

1. To substitute raised pavement markers for lines, use the following patterns:
0.6 m broken line: two pavement markers spaced 0.6 m apart allowed by the gap shown based on curvature.

Single solid line: pavement markers spaced on 3 m centers.
Double solid line: two pavement markers, side by side, spaced on 3 m centers
2. On two- or three-lane roads, signs may be used instead of temporary pavement markings as shown on Standard M635-3.

DETAIL A1
Passing zone both directions
wo-way traffic


DETAIL A2
No passing zone one direction wo-way traffic


DETAIL A3
No passing zone both directions Two-way traffic

DETAIL A
curves < 150 m Radius


DETAIL B1
Passing zone both directions
wo-way traffic

-100 mm Broken yellow and solid yellow centerline

## DETAIL B2

DE Passing zone one direction
Two-way traffic


DETAIL B3
No Passing zone both directions
Two-way traffic

DETAIL B
Tangents or Curves $\geq 150 \mathrm{~m}$ Radius

| STANDARD APPROVED FOR USE $6 / 2005$ | STANDARD |
| :--- | :--- |
| REVISED: $7 / 2022$ | M635-2 |




| LENGTH AND SPACING TABLE |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| APPROACH SPEED* | BUFFER SPACE LENGTH | CHANNELIZING DEVICE |  |  |
|  |  | TAPER AREA | BUFFER | WORK SPACE |
| MPH | FEET | SPACING IN FEET |  |  |
| 20 | 115 | 20 | 40 | 40 |
| 25 | 155 | 20-25 | 50 | 50 |
| 30 | 200 | 20-30 | 60 | 60 |
| 35 | 250 | 20-35 | 70 | 70 |
| 40 | 305 | 20-40 | 80 | 80 |
| 45 | 360 | 20-45 | 90 | 90 |
| 50 | 425 | 20-50 | 100 | 100 |
| 55 | 495 | 20-55 | 110 | 110 |
| 60 | 570 | 20-60 | 120 | 120 |
| 65 | 645 | 20-65 | 130 | 130 |
| 70 | 730 | 20-70 | 140 | 140 |

* Approach speed based on the regulatory posted speed,
not the advisory speed.

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN <br> SIGNS IN FEET |  |  |
|  | A | B |  |
|  | 100 | 100 | 100 |
| Urban and Rural 35 MPH to 50 MPH | 350 | 350 | 350 |
| Rural greater than 50 MPH | 500 | 500 | 500 |
| Expressway / Freeway | 1000 | 1500 | 2640 |

NOTE:

1. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of trave.
2. If the area approaching diversion is not already signed and marked as a no If the area approaching diversion is not already signed and marked as a no
passing zone, add signing and/or marking as appropriate. Remove conflicting pavement markings.
3. If the tangent distance along the temporary diversion is more than 600, use an appropriate Reverse Curve sign (W1-4) instead of the Double Reverse Curve sign (W24-1). Install a second, appropriate Reverse Curve sign (W1-4) in advance of the second reverse curve back to the original alignment. Use
Reverse Turn signs (W1-3) instead when the diversion has sharp curves with recommended speeds of 30 mph or less.
4. If the diversion is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK (G2O-2) signs.
5. Place channelizing devices outside temporary roadway.
6. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.


| LENGTH AND SPACING TABLE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| APPROACH <br> SPEED* | BUFFER <br> SPACE <br> LENGTH | $\|c\|$ <br> CHAPER <br> AREA | BUFFFER <br> SPACE | WORK <br> SPACE |  |
| MPH | $\mathrm{km} / \mathrm{h}$ | METER | SPACING IN METERS |  |  |
| 20 | 30 | 35 | 6 | 12 | 12 |
| 25 | 40 | 45 | $6-7.5$ | 15 | 15 |
| 30 | 50 | 60 | $6-9$ | 18 | 18 |
| 35 | 55 | 75 | $6-10.5$ | 21 | 21 |
| 40 | 65 | 95 | $6-12$ | 24 | 24 |
| 45 | 70 | 110 | $6-13.5$ | 27 | 27 |
| 50 | 80 | 130 | $6-15$ | 30 | 30 |
| 55 | 90 | 150 | $6-16.5$ | 34 | 34 |
| 60 | 95 | 175 | $6-18$ | 37 | 37 |
| 65 | 105 | 195 | $6-19.5$ | 40 | 40 |
| 70 | 115 | 225 | $6-21$ | 43 | 43 |

not the advisory speed.

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN <br>  <br>  <br> $\|A\| G N S$ |  |  |
|  | 30 | 30 | 30 |
|  | 100 | 100 | 100 |
| Rural greater than $80 \mathrm{~km} / \mathrm{h}[50 \mathrm{MPH}]$ | 150 | 150 | 150 |
| Expressway / Freeway | 300 | 450 | 800 |

NOTE

1. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
2. If the area approaching diversion is not already signed and marked as a no passing zone, add signing and/or marking as appropriate. Remove conflicting pavement markings.
3. If the tangent distance along the temporary diversion is more than 180 m , us an appropriate Reverse Curve sign (W1-4) instead of the Double Reverse Curve sign (W24-1). Install a second, appropriate Reverse Curve sign (W1-4)
in advance of the second reverse curve back to the original alignment Use in advance of the second reverse curve back to the original alignment. Use
Reverse Turn signs (W1-3) instead when the diversion has sharp curves with recommended speeds of $48 \mathrm{~km} / \mathrm{h}$ [ 30 mph ] or less.
4. If the diversion is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK (G20-2) signs.
5. Place channelizing devices outside temporary roadway.
6. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.


| LENGTH AND SPACING TABLE |  |
| :---: | :---: |
| APPROACH <br> SPEED* | BUFFER SPACE <br> LENGTH |
| MPH | FEET |
| 20 | 115 |
| 25 | 155 |
| 30 | 200 |
| 35 | 250 |
| 40 | 305 |
| 45 | 360 |
| 50 | 425 |
| 55 | 495 |
| 60 | 570 |
| 65 | 645 |
| 70 | 730 |

Approach speed based on the regulatory posted speed, not the advisory speed.

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN <br> SIGNS IN FEET |  |  |
|  | $A$ | A |  |
|  | 100 | 100 | 100 |
| Urban and Rural 35 MPH to 50 MPH | 350 | 350 | 350 |
| Rural greater than 50 MPH | 500 | 500 | 500 |
| Expressway / Freeway | 1000 | 1500 | 2640 |

## NOTE:

1. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
2. Final location and spacing of devices may be changed to fit field conditions as approved by the CO
3. For pilot car operation, mount the PILOT CAR FOLLOW ME (G2O-4) sign at a conspicuous location on the rear of vehicle. Prominently display the met
4. If closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W20-1) and END ROAD WORK (G20-2) signs.
5. For night time flagging operation, provide floodlighting at flagger stations
6. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



| LENGTH AND SPACING TABLE |  |  |
| :---: | :---: | :---: |
| APPROACH <br> SPEED* | BUFFER SPACE <br> LENGTH |  |
| MPH | $\mathrm{km} / \mathrm{h}$ | METER |
| 20 | 30 | 35 |
| 25 | 40 | 45 |
| 30 | 50 | 60 |
| 35 | 55 | 75 |
| 40 | 65 | 95 |
| 45 | 70 | 110 |
| 50 | 80 | 130 |
| 55 | 90 | 150 |
| 60 | 95 | 175 |
| 65 | 105 | 195 |
| 70 | 115 | 225 |

speed based on the regulatory posted speed, not the advisory speed.

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN <br> SIGNS IN METERS |  |  |
|  | $A$ | $B$ | $C$ |
|  | 30 | 30 | 30 |
| Urban and Rural $60-80 \mathrm{~km} / \mathrm{h}[35-50 \mathrm{MPH}]$ | 100 | 100 | 100 |
| Rural greater than $80 \mathrm{~km} / \mathrm{h}[50 \mathrm{MPH}]$ | 150 | 150 | 150 |
| Expressway / Freeway | 300 | 450 | 800 |

## NOTE:

1. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
2. Final location and spacing of devices may be changed to fit field conditions as approved by the CO.
3. For pilot car operation, mount the PILOT CAR FOLLOW ME (G2O-4) sign at a conspicuous location on the rear of vehicle. Prominently display the
4. If closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK (G20-2) signs.
5. For night time flagging operation, provide floodlighting at flagger stations.
6. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.

BUFFER SPACE
$-\frac{\text { (optional) }}{\text { (See Length and }}$
Spacing Table)

-Traffic flow

Traffic flow $\longrightarrow$

. ADVANCE WARNING AREA (See Sign Spacing Table) Spacing Table)
S. DEPARTMENT OF TRANSPORTATTIO


| LENGTH AND SPACING TABLE |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| APPROACH <br> SPEED* | BUFFER <br> SPACE <br> LENGH | CAPANNELIZING DEVICE <br> AREA | BUFFER <br> SPACE | WORK <br> SPACE |
|  | FEET | SPACING IN FEET |  |  |
| 20 | 115 | 20 | 40 | 40 |
| 25 | 155 | 20 | 50 | 50 |
| 30 | 200 | 20 | 60 | 60 |
| 35 | 250 | 20 | 70 | 70 |
| 40 | 305 | 20 | 80 | 80 |
| 45 | 360 | 20 | 90 | 90 |
| 50 | 425 | 20 | 100 | 100 |
| 55 | 495 | 20 | 110 | 110 |
| 60 | 570 | 20 | 120 | 120 |
| 65 | 645 | 20 | 130 | 130 |
| 70 | 730 | 20 | 140 | 140 | * Approach speed based on the regulatory posted speed,

Approach speed based on the regulatory posted speed,
not the advisory speed.

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN <br> SIGNS IN FEET |  |  |
|  | A | B |  |
|  | 100 | 100 | 100 |
| Urban and Rural 35 MPH to 50 MPH | 350 | 350 | 350 |
| Rural greater than 50 MPH | 500 | 500 | 500 |
| Expressway / Freeway | 1000 | 1500 | 2640 |

Expressway / Freeway $\qquad$

## NOTE:

1. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
2. Final location and spacing of devices may be changed to fit field conditions as approved by the CO
3. For pilot car operation, mount the PILOT CAR FOLLOW ME (G20-4) sign at a conspicuous location on the rear of vehicle. Prominently display the me of the Contractor on the pilot car
4. If closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK (G2O-2) signs.
5. For night time flagging operation, provide floodlighting at flagger stations.
6. For project specific minimum width, refer to the Special Contract Requirements, Section 156
7. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.


| END |
| :---: | :---: |
| GOAD WORK |
| G2O-2 |
| See Note 4 |


| LENGTH AND SPACING TABLE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| APPROACH <br> SPEED* | BUFFER <br> SPACE <br> LENGTH | $\|c\|$ | CHAPANNELIZING DEVICE <br> AREA | BUFFFER <br> SPACE | WORK <br> SPACE |
| MPH | $\mathrm{km} / \mathrm{h}$ | METER | SPACING IN METERS |  |  |
| 20 | 30 | 35 | 6 | 12 | 12 |
| 25 | 40 | 45 | 6 | 15 | 15 |
| 30 | 50 | 60 | 6 | 18 | 18 |
| 35 | 55 | 75 | 6 | 21 | 21 |
| 40 | 65 | 95 | 6 | 24 | 24 |
| 45 | 70 | 110 | 6 | 27 | 27 |
| 50 | 80 | 130 | 6 | 30 | 30 |
| 55 | 90 | 150 | 6 | 34 | 34 |
| 60 | 95 | 175 | 6 | 37 | 37 |
| 65 | 105 | 195 | 6 | 40 | 40 |
| 70 | 115 | 225 | 6 | 43 | 43 |

* Approach speed based on the regulatory posted speed,
not the advisory speed.

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN <br> SIGNS IN METERS |  |  |
|  | $A$ | $B$ | $C$ |
|  | 30 | 30 | 30 |
| Urban and Rural $60-80 \mathrm{~km} / \mathrm{h}[35-50 \mathrm{MPH}]$ | 100 | 100 | 100 |
| Rural greater than $80 \mathrm{~km} / \mathrm{h}[50 \mathrm{MPH}]$ | 150 | 150 | 150 |
| Expressway / Freeway | 300 | 450 | 800 |

## NOTE:

. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
2. Final location and spacing of devices may be changed to fit field conditions as approved by the CO.
3. For pilot car operation, mount the PILOT CAR FOLLOW ME (G2O-4) sign at a conspicuous location on the rear of vehicle. Prominently display the
4. If closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK (G20-2) signs.
5. For night time flagging operation, provide floodlighting at flagger stations.
6. For project specific minimum width, refer to the Special Contract Requirements, Section 156
7. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



W2O-1
See Note
L.5. DEPARTMENT OF TRANSPORTATIO
FEDERAL HIGHWMY ADMIIISTRATION

OFFICE OF FEDERALLANDS HIGHWA
TEMPORARY TRAFFIC CONTROI
SINGLE LANE CLOSURE LAYOUT (WITH FLAGGERS)




| LENGTH AND SPACING TABLE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| APPROACH <br> SPEED* | BUFFER <br> SPACE <br> LENGTH | $\|c\|$ | CHAPANNELIZING DEVICE <br> AREA | BUFFFER <br> SPACE | WORK <br> SPACE |
| MPH | $\mathrm{km} / \mathrm{h}$ | METER | SPACING IN METERS |  |  |
| 20 | 30 | 35 | 6 | 12 | 12 |
| 25 | 40 | 45 | 6 | 15 | 15 |
| 30 | 50 | 60 | 6 | 18 | 18 |
| 35 | 55 | 75 | 6 | 21 | 21 |
| 40 | 65 | 95 | 6 | 24 | 24 |
| 45 | 70 | 110 | 6 | 27 | 27 |
| 50 | 80 | 130 | 6 | 30 | 30 |
| 55 | 90 | 150 | 6 | 34 | 34 |
| 60 | 95 | 175 | 6 | 37 | 37 |
| 65 | 105 | 195 | 6 | 40 | 40 |
| 70 | 115 | 225 | 6 | 43 | 43 |

Approach speed based on the regulatory posted speed, not the advisory speed.

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN <br> SIGNS IN METERS |  |  |
|  | $A$ | $B$ | $C$ |
|  | 30 | 30 | 30 |
| Urban and Rural $60-80 \mathrm{~km} / \mathrm{h}[35-50 \mathrm{MPH}]$ | 100 | 100 | 100 |
| Rural greater than $80 \mathrm{~km} / \mathrm{h}[50 \mathrm{MPH}]$ | 150 | 150 | 150 |
| Expressway / Freeway | 300 | 450 | 800 |



## NOTE:

1. Use this layout only if road users from both directions are able to see approaching vehicular traffic through and beyond the work site and have sufficient visibility of approaching vehicles.
2. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
3. Final location and spacing of devices may be changed to fit field conditions as approved by the Co.
4. If closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK (G2O-2) signs.
5. For project specific minimum width, refer to Special Contract Requirements, Section 156
6. If the roadway surface is paved, install stop lines that comply with Section $3 B .16$ of the MUTCD.
7. Use the STOP AHEAD (W3-1) sign when approach speeds exceed $80 \mathrm{~km} / \mathrm{h}[50 \mathrm{MPH}$ ]
8. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.
9. Dimensions without units are millimeters.
(optional)


$$
\frac{\text { TAPER AREA }}{15-30 \mathrm{~m}}
$$

adVance warning area (See Sign Spacing Table) $\square$

$$
15-30 \mathrm{~m}
$$

. (See Length and Spacing Table)
VARIABLE


W20-1
U.S. DEPARTMENT OF TRANSPORTATII
FEDERALHIGHWAY ADMINISTRATIO FICE OF FEDERAL LANDS HIGHWMY
TEMPORARY TRAFFIC CONTROL
TEMPORARY TRAFFIC CONTROL
SINGLE LANE CLOSURE LAYOUT (WITH STOP SIGNS)

| LENGTH AND SPACING TABLE |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| APPROACH <br> SPEED* | BUFFER <br> SPACE <br> LENGTH | TAPER <br> AREA | BHFFFER <br> SPACE | WORKK <br> SPACE |
|  | FEET | SPACING IN FEET |  |  |
| 20 | 115 | 20 | 40 | 40 |
| 25 | 155 | 20 | 50 | 50 |
| 30 | 200 | 20 | 60 | 60 |
| 35 | 250 | 20 | 70 | 70 |
| 40 | 305 | 20 | 80 | 80 |
| 45 | 360 | 20 | 90 | 90 |
| 50 | 425 | 20 | 100 | 100 |
| 55 | 495 | 20 | 110 | 110 |
| 60 | 570 | 20 | 120 | 120 |
| 65 | 645 | 20 | 130 | 130 |
| 70 | 730 | 20 | 140 | 140 | | * Approach speed based on the regulatory posted speed, |
| :--- |

not the advisory speed.

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN <br> SIGNS IN FEET |  |  |
|  | $A$ | A |  |
|  | 100 | 100 | 100 |
| Urban and Rural 35 MPH to 50 MPH | 350 | 350 | 350 |
| Rural greater than 50 MPH | 500 | 500 | 500 |
| Expressway / Freeway | 1000 | 1500 | 2640 |

## NOTE:

. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
2. A single signal installation is acceptable, on the right-hand side of the road, if it has two signal faces that are at least 8 feet apart and meets the other requirements of Part 4 of the MUTCD.
3. Install and operate temporary traffic control signals in accordance with the requirements of Part 4 of the MUTCD. Establish signal timing using a qualified engineer. When the signal is changed to the flashing mode either manually or automatically, ensure red signal indications are flashed to both approaches.
4. Final location and spacing of devices may be changed to fit field conditions as approved by the CO. If signals are moved, determine revised signal timing using a qualified engineer
5. For paved roadway surfaces, install stop lines complying with MUTCD Section 3B.16. Remove existing conflicting pavement markings and raised markers between the work space and the stop line. Add no-passing lines in advance of the stop line that comply with MUTCD Section 3B.02.
Removeable pavement markings may be used for stop lines and no-passing pavement markings.
6. If closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK (G20-2) signs.
7. For project specific minimum width, refer to Special Contract Requirements,
8. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.

```
END
```

See Note 6


U.S. DEPARTMENT OF TRANSPORTATIIO
FEDERAL HIGHWAY ADMINISTRATIO OFFICE OF FEDERALLL LANDS HIGH

## TEMPORARY TRAFFIC CONTROL

| LENGTH AND SPACING TABLE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| APPROACH <br> SPEED* | BUFFER <br> SPACE <br> LENGTH | $\|c\|$ | CHAPANNELIZING DEVICE <br> AREA | BUFFFER <br> SPACE | WORK <br> SPACE |
| MPH | $\mathrm{km} / \mathrm{h}$ | METER | SPACING IN METERS |  |  |
| 20 | 30 | 35 | 6 | 12 | 12 |
| 25 | 40 | 45 | 6 | 15 | 15 |
| 30 | 50 | 60 | 6 | 18 | 18 |
| 35 | 55 | 75 | 6 | 21 | 21 |
| 40 | 65 | 95 | 6 | 24 | 24 |
| 45 | 70 | 110 | 6 | 27 | 27 |
| 50 | 80 | 130 | 6 | 30 | 30 |
| 55 | 90 | 150 | 6 | 34 | 34 |
| 60 | 95 | 175 | 6 | 37 | 37 |
| 65 | 105 | 195 | 6 | 40 | 40 |
| 70 | 115 | 225 | 6 | 43 | 43 |

Approach speed based on the regulatory posted speed,
not the advisory speed.

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN <br> SIGNS IN METERS |  |  |
|  | $A$ | $B$ | $C$ |
|  | 30 | 30 | 30 |
| Urban and Rural $60-80 \mathrm{~km} / \mathrm{h}[35-50 \mathrm{MPH}]$ | 100 | 100 | 100 |
| Rural greater than $80 \mathrm{~km} / \mathrm{h}[50 \mathrm{MPH}]$ | 150 | 150 | 150 |
| Expressway / Freeway | 300 | 450 | 800 |

## NOTE:

1. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
2. A single signal installation is acceptable, on the right-hand side of the road, it it has two signal faces that are at least 2.4 m apart and meets the other requirements of Part 4 of the MUTCD.
3. Install and operate temporary traffic control signals in accordance with the requirements of Part 4 of the MUTCD. Establish signal timing using a qualified engineer. When the signal is changed to the flashing mode either manually or anto
4. Final location and spacing of devices may be changed to fit field conditions as approved by the CO. If signals are moved, determine revised signal timing using a qualified engineer
5. For paved roadway surfaces, install stop lines complying with MUTCD Section 3B.16. Remove existing conflicting pavement markings and raised markers between the work space and the stop line. Add no-passing lines in advance of the stop line that comply with MUTCD Section 3B.02.
Removeable pavement markings may be used for stop lines and no-passing
pavement markings. pavement markings.
6. If closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK (G2O-2) signs
7. For project specific minimum width, refer to Special Contract Requirements, Section 156
8. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.
```
END
```

See Note 6

warning
light
P




TEMPORARY TRAFFIC CONTROL
SINGLE LANE CLOSURE LAYOUT (WITH SIGNALS)

| LENGTH AND SPACING TABLE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| APPROACH SPEED* | MINIMUM TAPER LENGTH** | BUFFER SPACE LENGTH | CHANNELIZING DEVICE |  |  |
|  |  |  | $\begin{aligned} & \text { TAPER } \\ & \text { AREA } \end{aligned}$ | $\begin{array}{\|c\|c\|} \hline \text { BUFFACER } \\ \text { SPACE } \end{array}$ | WORK SPACE |
| MPH | FEET | FEET | SPAC | CING IN | FEET |
| 20 | Shoulder taper formula: | 115 | 20 | 40 | 40 |
| 25 | WS ${ }^{2}$ | 155 | 25 | 50 | 50 |
| 30 | 180 | 200 | 30 | 60 | 60 |
| 35 | WS | 250 | 35 | 70 | 70 |
| 40 | $L=3$ for | 305 | 40 | 80 | 80 |
| 45 | Where: | 360 | 45 | 90 | 90 |
| 50 | $L=$ Minimum length of taper | 425 | 50 | 100 | 100 |
| 55 | Width of offset in feet | 495 | 55 | 110 | 110 |
| 60 | erical value of posted speed | 570 | 60 | 120 | 120 |
| 65 | limit or 85 percentile speed prior | 645 | 65 | 130 | 130 |
| 70 | to work in miles per hour | 730 | 70 | 140 | 140 |

* Approach speed based on the regulatory posted speed, not the advisory speed.
*Lengthen taper as needed to provide minimum of three channelizing devices in taper at required spacing.

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN <br> SIGNS IN FEET |  |  |
|  | A | C |  |
|  | 100 | 100 | 100 |
| Urban and Rural 35 MPH to 50 MPH | 350 | 350 | 350 |
| Rural greater than 50 MPH | 500 | 500 | 500 |
| Expressway / Freeway | 1000 | 1500 | 2640 |

NOTE:

1. Final location and spacing of devices may be changed to fit field conditions as approved by the CO.
2. For project specific minimum width, refer to Special Contract Requirements, Section 156 .
3. If shoulder closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK (G2O-2) signs.
4. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.


| LENGTH AND SPACING TABLE |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| APPROACH SPEED* |  | MINIMUM TAPER LENGTH** | $\begin{aligned} & \text { BUFFER } \\ & \text { SPACE } \\ & \text { LENGTH } \end{aligned}$ | CHANNELIZING DEVICE |  |  |
|  |  | TAPER |  | BUFFER <br> SPACE | WORK SPACE |
| MPH | km/h |  | METER | METER | SPACING IN METERS |  |  |
| 20 | 30 | Shoulder taper formula: $\begin{array}{ll} L=\frac{W S^{2}}{465} & \text { for } S \leq 70 \mathrm{~km} / \mathrm{h} \\ L=\frac{W S}{4.8} & \text { for } S \geq 70 \mathrm{~km} / \mathrm{h} \end{array}$ <br> Where: <br> $L=$ Minimum length of taper <br> W = Width of offset in meters <br> $S=$ Metric equivalent of posted speed limit or 85 percentile speed prior to work in kilometers per hour | 35 | 6 | 12 | 12 |
| 25 | 40 |  | 45 | 8 | 15 | 15 |
| 30 | 50 |  | 60 | 9 | 18 | 18 |
| 35 | 55 |  | 75 | 11 | 21 | 21 |
| 40 | 65 |  | 95 | 12 | 24 | 24 |
| 45 | 70 |  | 110 | 14 | 27 | 27 |
| 50 | 80 |  | 130 | 15 | 30 | 30 |
| 55 | 90 |  | 150 | 17 | 34 | 34 |
| 60 | 95 |  | 175 | 18 | 37 | 37 |
| 65 | 105 |  | 195 | 20 | 40 | 40 |
| 70 | 115 |  | 225 | 21 | 43 | 43 |

* Approach speed based on the regulatory posted speed, not the advisory speed. **Lengthen taper as needed to provide minimum of three channelizing devices in taper at required spacing.

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN <br>  <br>  <br>  <br>  <br> SIGNS IN METERS |  |  |
|  | 30 | 30 | 30 |
|  | 100 | 100 | 100 |
| Rural greater than $80 \mathrm{~km} / \mathrm{h}[50 \mathrm{MPH}]$ | 150 | 150 | 150 |
| Expressway / Freeway | 300 | 450 | 800 |

NOTE:

1. Final location and spacing of devices may be changed to fit field conditions as approved by the CO
2. For project specific minimum width, refer to Special 2. For project specific minimum width, re
3. If shoulder closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK (G2O-2) signs.
4. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.

G20-2
See Note 3


Device spacing (See Length and
Spacing Table)

$\bullet$


| LENGTH AND SPACING TABLE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| APPROACHSPEED* | MINIMUM TAPER LENGTH | BUFFER SPACE LENGTH | CHANNELIZING DEVICE |  |  |
|  |  |  | TAPER AREA | BUFFER SPACE | WORK SPACE |
| MPH | FEET | FEET | SPACING IN FEET |  |  |
| 20 | Shifting taper formula: $\begin{array}{ll} L=\frac{W S^{2}}{120} & \text { for } S \leq 40 \mathrm{MPH} \\ L=\frac{W S}{2} & \text { for } S \geq 45 \mathrm{MPH} \end{array}$ <br> Where: <br> $L=$ Minimum length of taper <br> W = Width of offset in feet <br> $S=$ Numerical value of posted speed limit or 85 percentile speed prior to work in miles per hour | 115 | 20 | 40 | 40 |
| 25 |  | 155 | 25 | 50 | 50 |
| 30 |  | 200 | 30 | 60 | 60 |
| 35 |  | 250 | 35 | 70 | 70 |
| 40 |  | 305 | 40 | 80 | 80 |
| 45 |  | 360 | 45 | 90 | 90 |
| 50 |  | 425 | 50 | 100 | 100 |
| 55 |  | 495 | 55 | 110 | 110 |
| 60 |  | 570 | 60 | 120 | 120 |
| 65 |  | 645 | 65 | 130 | 130 |
| 70 |  | 730 | 70 | 140 | 140 |

* Approach speed based on the regulatory posted speed, not the advisory speed.

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN <br> SIGNS IN FEET |  |  |
|  | A | C |  |
|  | 100 | 100 | 100 |
| Urban and Rural 35 MPH to 50 MPH | 350 | 350 | 350 |
| Rural greater than 50 MPH | 500 | 500 | 500 |
| Expressway / Freeway | 1000 | 1500 | 2640 |

NOTE

1. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
2. Final location and spacing of devices may be changed to fit
3. For project specific minimum width, refer to Special Contract Requirements, Section 156.
4. If the roadway surface is paved, install temporary pavement markings. If nearest no-passing zone is within 400' extend markings to connect zones.
5. If closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK (G20-2) signs.
6. Install PASS WITH CARE sign (R4-2) at ends of no-passing zone if directed by the CO.
7. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.


| LENGTH AND SPACING TABLE |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| APPROACHSPEED* |  | MINIMUM TAPER LENGTH | BUFFER <br> SPACE <br> LENGTH | CHANNELIZING DEVICE |  |  |
|  |  | TAPER |  | $\begin{array}{\|c} \hline \text { BUFFER } \\ \text { SPACE } \end{array}$ | WORK SPACE |
| MPH | km/h |  | METER | METER | SPACING IN METERS |  |  |
| 20 | 30 | Shifting taper formula: $\begin{array}{ll} L=\frac{W S^{2}}{310} & \text { for } S \leq 70 \mathrm{~km} / \mathrm{h} \\ L=\frac{W S}{3.2} & \text { for } S \geq 70 \mathrm{~km} / \mathrm{h} \end{array}$ <br> Where: <br> $L=$ Minimum length of taper <br> $W=$ Width of offset in meters <br> $S=$ Metric equivalent of posted speed limit or 85 percentile speed prior to work in kilometers per hour | 35 | 6 | 12 | 12 |
| 25 | 40 |  | 45 | 8 | 15 | 15 |
| 30 | 50 |  | 60 | 9 | 18 | 18 |
| 35 | 55 |  | 75 | 11 | 21 | 21 |
| 40 | 65 |  | 95 | 12 | 24 | 24 |
| 45 | 70 |  | 110 | 14 | 27 | 27 |
| 50 | 80 |  | 130 | 15 | 30 | 30 |
| 55 | 90 |  | 150 | 17 | 34 | 34 |
| 60 | 95 |  | 175 | 18 | 37 | 37 |
| 65 | 105 |  | 195 | 20 | 40 | 40 |
| 70 | 115 |  | 225 | 21 | 43 | 43 |

* Approach speed based on the regulatory posted speed, not the advisory speed.

| SIGN SPACING TABLE |  |  |  |
| :---: | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN SIGNS IN METERS |  |  |
|  | A | B | C |
| Urban and Rural $\leq 50 \mathrm{~km} / \mathrm{h}$ [ $\leq 30 \mathrm{MPH}$ ] | 30 | 30 | 30 |
| Urban and Rural $60-80 \mathrm{~km} / \mathrm{h}$ [35-50 MPH] | 100 | 100 | 100 |
| Rural greater than $80 \mathrm{~km} / \mathrm{h}$ [50 MPH] | 150 | 150 | 150 |
| Expressway / Freeway | 300 | 450 | 800 | Expressway / Freeway $\qquad$ 300

NOTE:

1. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
2. Final location and spacing of devices may be changed to fit field conditions as approved by the CO
3. For project specific minimum width, refer to Special Contract Requirements, Section 156.
4. If the roadway surface is paved, install temporary pavement markings. If nearest no-passing zone is within 120 m extend markings to connect zones.
5. If closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK (G20-2) signs.
6. Install PASS WITH CARE sign (R4-2) at ends of no-passing zone if directed by the CO.
7. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



| LENGTH AND SPACING TABLE |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| APPROACHSPEED* | MINIMUM TAPER LENGTH | BUFFER SPACE LENGTH | CHANNELIZING DEVICE |  |  | WORK ZONE CLEAR ZONE WIDTH |
|  |  |  | $\begin{aligned} & \text { TAPER } \\ & \text { AREA } \\ & \hline \end{aligned}$ | BUFFER SPACE | WORK SPACE |  |
| MPH | FEET | FEET | SPACING IN FEET |  |  | FEET |
| 20 | Shifting taper formula: | 115 | 20 | 40 | 40 | 10 |
| 25 | WS ${ }^{2}$ | 155 | 25 | 50 | 50 | 10 |
| 30 | 120 for $S \leq 40 \mathrm{MPH}$ | 200 | 30 | 60 | 60 | 10 |
| 35 | ws | 250 | 35 | 70 | 70 | 10 |
| 40 | 2 | 305 | 40 | 80 | 80 | 15 |
| 45 | Where: | 360 | 45 | 90 | 90 | 20 |
| 50 | $L=$ Minimum length of taper | 425 | 50 | 100 | 100 | 20 |
| 55 | $w=$ Width of offset in feet | 495 | 55 | 110 | 110 | 20 |
| 60 | $S=$ Numerical value of posted speed | 570 | 60 | 120 | 120 | 30 |
| 65 | limit or 85 percentile speed prior | 645 | 65 | 130 | 130 | 30 |
| 70 | to work in miles per hour | 730 | 70 | 140 | 140 | 30 |

* Approach speed based on the regulatory posted speed, not the advisory speed.

| SIGN SPACING TABLE |  |  |  |
| :--- | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN |  |  |
|  | SIGNS IN FEET |  |  |
|  | $A$ | $C$ |  |
| Urban and Rural 30 MPH and less | 100 | 100 | 100 |
| Urban and Rural 35 MPH to 50 MPH | 350 | 350 | 350 |
| Rural greater than 50 MPH | 500 | 500 | 500 |
| Expressway / Freeway | 1000 | 1500 | 2640 |

## NOTE:

1. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
2. Final location and spacing of devices may be changed to fit field conditions as approved by the CO.
3. For project specific minimum width, refer to Special Contract Requirements, Section 156
4. If the roadway surface is paved, install temporary pavement markings. If nearest no-passing zone is within 400', extend markings to connect zones.
5. If closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK ( $620-2$ ) signs.
6. Install PASS WITH CARE sign (R4-2) at ends of no-passing zone if directed by the CO.
7. Place the barrier according to the AASHTO Roadside Design Guide. Terminate barrier ends outside the work zone clear Guide. Terminate barrier ends outside the work zone Include reflectors on barrier at $25^{\prime}$ intervals.
8. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.


| LENGTH AND SPACING TABLE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| APPROACHSPEED* |  | MINIMUM TAPER LENGTH | $\begin{array}{\|c} \hline \text { BUFFER } \\ \text { SPACE } \\ \text { LENGTH } \\ \hline \end{array}$ | CHANNELIZING DEVICE |  |  | WORK ZONECLEAR ZONE WIDTH |
|  |  | TAPER AREA |  | BUFFER SPACE | WORK SPACE |  |
| MPH | km/h |  |  | METER | SPACING IN METERS |  |  | METER |
| 20 | 30 | Shifting taper formula: $\begin{array}{ll} L=\frac{W S^{2}}{310} & \text { for } S \leq 70 \mathrm{~km} / \mathrm{h} \\ L=\frac{W S}{3.2} & \text { for } S \geq 70 \mathrm{~km} / \mathrm{h} \end{array}$ <br> Where: <br> $L=$ Minimum length of taper <br> $W=$ Width of offset in meters <br> $S=$ Metric equivalent of posted speed limit or 85 percentile speed prior to work in kilometers per hour | 35 | 6 | 12 | 12 | 3.0 |
| 25 | 40 |  | 45 | 8 | 15 | 15 | 3.0 |
| 30 | 50 |  | 60 | 9 | 18 | 18 | 3.0 |
| 35 | 55 |  | 75 | 11 | 21 | 21 | 3.0 |
| 40 | 65 |  | 95 | 12 | 24 | 24 | 4.6 |
| 45 | 70 |  | 110 | 14 | 27 | 27 | 6.1 |
| 50 | 80 |  | 130 | 15 | 30 | 30 | 6.1 |
| 55 | 90 |  | 150 | 17 | 34 | 34 | 6.1 |
| 60 | 95 |  | 175 | 18 | 37 | 37 | 9.0 |
| 65 | 105 |  | 195 | 20 | 40 | 40 | 9.0 |
| 70 | 115 |  | 225 | 21 | 43 | 43 | 9.0 |

* Approach speed based on the regulatory posted speed, not the advisory speed.

| SIGN SPACING TABLE |  |  |  |
| :---: | :---: | :---: | :---: |
| ROAD TYPE | DISTANCE BETWEEN SIGNS IN METERS |  |  |
|  | A | B | C |
| Urban and Rural $\leq 50 \mathrm{~km} / \mathrm{h}$ [ $\leq 30 \mathrm{MPH}$ ] | 30 | 30 | 30 |
| Urban and Rural $60-80 \mathrm{~km} / \mathrm{h}$ [ $35-50 \mathrm{MPH}$ ] | 100 | 100 | 100 |
| Rural greater than $80 \mathrm{~km} / \mathrm{h}$ [ 50 MPH ] | 150 | 150 | 150 |
| Expressway / Freeway | 300 | 450 | 800 |

## NOTE:

1. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
2. Final location and spacing of devices may be changed to fit field conditions as approved by the CO,
3. For project specific minimum width, refer to Special Contract Requirements, Section 156
4. If the roadway surface is paved, install temporary pavement markings. If nearest no-passing zone is within 120 m extend markings to connect zones.
5. If closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W2O-1) and END ROAD WORK (G20-2) signs.
6. Install PASS WITH CARE sign (R4-2) at ends of no-passing zone if directed by the CO.
7. Place the barrier according to the AASHTO Roadside Design Guide. Terminate barrier ends outside the work zone clear Guide. Terminate barrier ends outside the work zone Include reflectors on barrier at 7.6 m intervals.
8. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.


| LENGTH AND SPACING TABLE |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| APPROACHSPEED* | BUFFER SPACE LENGTH | CHANNELIZING DEVICE |  |  | CONCRETE BARRIER FLARE RATE | WORK ZONE CLEAR ZONE WIDTH |
|  |  | TAPER AREA | BUFFER SPACE | $\begin{array}{\|l\|l\|} \hline \text { WORK } \\ \text { SDACE } \end{array}$ |  |  |
| MPH | FEET | SPAC | CING IN F | FEET |  | FEET |
| 20 | 115 | 20 | 40 | 40 | 1:8 | 10 |
| 25 | 155 | 20 | 50 | 50 | 1:8 | 10 |
| 30 | 200 | 20 | 60 | 60 | 1:8 | 10 |
| 35 | 250 | 20 | 70 | 70 | 1:9 | 10 |
| 40 | 305 | 20 | 80 | 80 | 1:10 | 15 |
| 45 | 360 | 20 | 90 | 90 | 1:12 | 20 |
| 50 | 425 | 20 | 100 | 100 | 1:14 | 20 |
| 55 | 495 | 20 | 110 | 110 | 1:16 | 20 |
| 60 | 570 | 20 | 120 | 120 | 1:16 | 30 |
| 65 | 645 | 20 | 130 | 130 | 1:16 | 30 |
| 70 | 730 | 20 | 140 | 140 | 1:16 | 30 |

## NOTE:

1. Install signs and other devices for single lane closure according to Standard 635-6, 7, 8, or 9 . Final location and spacing of devices may be changed to fit field conditions as approved by the CO.
2. Place barrier according to the AASHTO Roadside Design Guide. Terminate barrier ends outside the work zone clear zone or protect he barrier ends
t $25^{\prime}$ intervals.
3. For project specific minimum width, refer to Special Contract Requirements, Section 156
4. Place channelizing devices at downstream taper during non-work hours or when access is not needed.
5. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.
6. Reduce or eliminate drums and barrier in downstream taper if necessary to provide access to work space.


| LENGTH AND SPACING TABLE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| APPROACHSPEED* |  | BUFFER SPACE LENGTH | CHANNELIZING DEVICE |  |  | CONCRETE BARRIER FLARE RATE | $\begin{gathered} \text { WORK ZONE } \\ \text { CLEAR ZONE } \\ \text { WIDTH } \end{gathered}$ |
|  |  | TAPER | BUFFER | WORK |  |  |
| MPH | km/h |  | METER | SPAC | ING IN ME |  | ETERS | METER |
| 20 | 30 | 35 | 6 | 12 | 12 | 1:8 | 3.0 |
| 25 | 40 | 45 | 6 | 15 | 15 | 1:8 | 3.0 |
| 30 | 50 | 60 | 6 | 18 | 18 | 1:8 | 3.0 |
| 35 | 55 | 75 | 6 | 21 | 21 | 1:9 | 3.0 |
| 40 | 65 | 95 | 6 | 24 | 24 | 1:10 | 4.6 |
| 45 | 70 | 110 | 6 | 27 | 27 | 1:12 | 6.1 |
| 50 | 80 | 130 | 6 | 30 | 30 | 1:14 | 6.1 |
| 55 | 90 | 150 | 6 | 34 | 34 | 1:16 | 6.1 |
| 60 | 95 | 175 | 6 | 37 | 37 | 1:16 | 9.0 |
| 65 | 105 | 195 | 6 | 40 | 40 | 1:16 | 9.0 |
| 70 | 115 | 225 | 6 | 43 | 43 | 1:16 | 9.0 |

* Approach speed based on the regulatory posted speed, not the advisory speed.


## NOTE:

1. Install signs and other devices for single lane closure according to Standard M635-6, 7, 8, or 9. Final location and spacing of device may be changed to fit field conditions as approved by the CO.
2. Place barrier according to the AASHTO Roadside Design Guide. Terminate barrier ends outside the work zone clear zone or protect the barrier ends $\mathbf{w}$ t. 7.6 m intervals.
3. For project specific minimum width, refer to Special Contract Requirements, Section 156
4. Place channelizing devices at downstream taper during non-work hours or when access is not needed
5. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.
6. Reduce or eliminate drums and barrier in downstream taper if necessary to provide access to work space.

 NOTE
7. Attach sign panels with a minimum of $2-1 / 4 "$ dia. bolts per post.
8. H 1 and $\mathrm{H}_{2}=$ Overall post length Select post lengths to fit field conditions.
9. $D=$ Post embedment depth for average soil conditions. 4. In areas where lateral distance is limited, a minimum
lateral offset of 2 ' may be used. In areas with curbs, a minimum lateral distance of 1 ' behind the face of the curb may be used.
10. In pedestrian locations, or in areas with obstructed views, use 7' minimum mounting height for main sign and 6' minimum mounting height for secondary sign.
11. Use 7 ' minimum spacing between posts for sign posts $6^{\prime \prime} \times 6^{\prime \prime}$ or larger.
12. State standards may be used as an alternative if approved by the CO.

SINGLE POST SIGN
TWO POST SIGN


SIGN INSTALLATION ANGLE


TWO POST SIGN

NOTE:

1. Attach sign panels with a minimum of 2-6.25 mm $\varnothing$ bolts per post.
2. H 1 and $\mathrm{H}_{2}=$ Overall post length.

Select post lengths to fit field conditions.
3. $D=$ Post embedment depth for average soil conditions.
4. In areas where lateral distance is limited, a minimum lateral offset of 600 mm may be used. In areas with curbs, a minimum lateral distance of 300 mm behind the face of the curb may be used.
5. In pedestrian locations, or in areas with obstructed views, use 2.1 m minimum mounting height for main sign
and 1.8 m minimum mounting height for secondary sign.
6. Use 2.1 m minimum spacing between posts for sign posts $150 \mathrm{~mm} \times 150 \mathrm{~mm}$ or larger
7. State standards may be used as an alternative if approved by the CO.
8. Dimensions without units are millimeters.

| WOOD POST SELECTION TABLE |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| WIDTH <br> " $X^{\prime \prime}$ | AREA <br> $(\mathrm{m2})$ | NUMBER <br> OFPOSTS | POST SIIEE <br> $(\mathrm{mm})$ | D <br> $(\mathrm{mm})$ | HOLE SIZE <br> $(\mathrm{mm})$ |  |
| Diamond $\leq 915 \mathrm{~mm}$ <br> Other Shapes $\leq 1220 \mathrm{~mm}$ | $<0.9$ | 1 | $100 \times 100$ | 900 | 0 |  |
| Diamond $\leq 1220 \mathrm{~mm}$ | $0.9-1.9$ | 1 | $100 \times 150$ | 1200 | 40 |  |
| Diamond $\leq 1220$ <br> Other Shapes $\leq 3.7 \mathrm{~m}$ | $0.9-1.9$ | 2 | $150 \times 150$ | 1200 | 50 |  |
| $>4 \mathrm{~m}$ | $1.9-4.6$ | 2 | $100 \times 100$ | 900 | 0 |  |
| $3.7 \mathrm{~m}-4.9 \mathrm{~m}$ | $4.6-6.0$ | 2 | $150 \times 150$ | 1200 | 40 |  |
| $>5 \mathrm{~m}$ | $4.6-6.0$ | 3 | $100 \times 150$ | 1200 | 50 |  |
| $>9 \mathrm{~m}$ | $6.0-8.9$ | 4 | $100 \times 150$ | 1200 | 40 |  |
| 7200 | 40 |  |  |  |  |  |



POST DETAIL
$\checkmark$


SIGN INSTALLATION ANGLE

