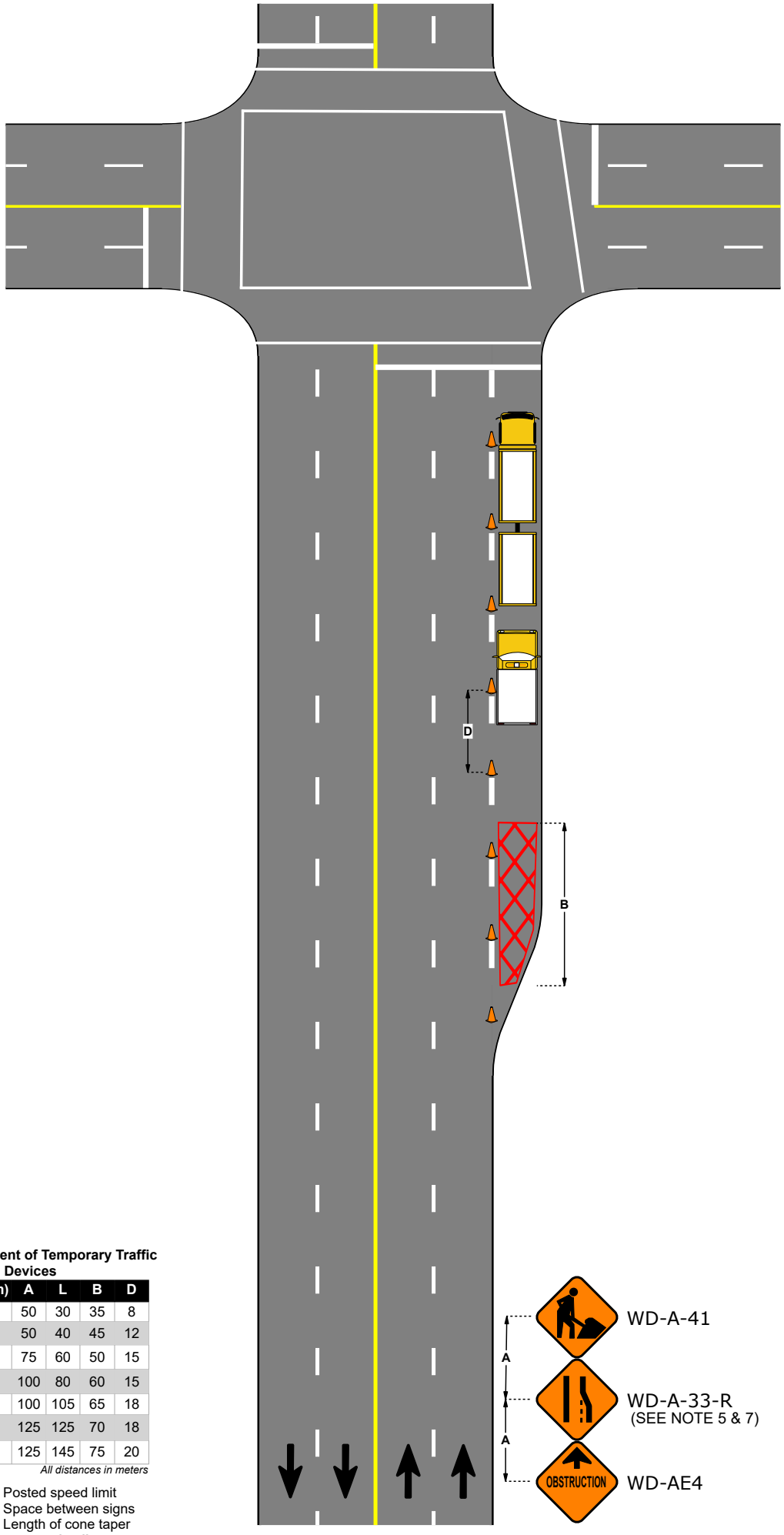


Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D27
Date	March 2024
Location	Within a turn lane

Drawing Name

SHORT DURATION - VEHICLE AND EQUIPMENT STORAGE

General Use

To be used when the loading and unloading activities have been completed, for the storage of vehicles and equipment.

Traffic Condition

High volume locations, Arterial roads

Notes

1. Consideration must be given to traffic volume, sight distances, sign spacing, duration of work, intersections, driveways, and other factors to ensure traffic control devices are adequate in each instance

2. Traffic cones will typically be 18" in height where the posted speed is ≤60km/h, or have a height of 28" where the posted speed is >60km/h or where required.

3. No work activities shall take place in a buffer zone.

4. Refer to Drawing G1 for detailed taper distance requirements.

5. A Lane Ending sign (WD-A-33-R) is required when an arrow board is not in use. A barricade may be used in place of an arrow board, typically when the posted speed is ≤60km/h.

6. One lane shall be closed next to the loading or unloading activities to create a buffer zone. The lane is to be closed with a taper prior to the unloading area.

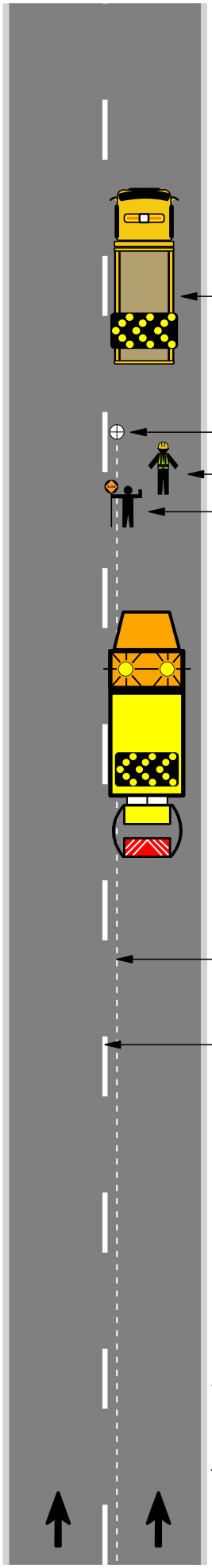
7. This drawing can be used in a left turn lane where there is a concrete island. A WD-A-33-L should be used in this case.

8. All trailer ramps are to be placed in the upright position when not in use.

9. Drawing is not to scale.

Legend

Buffer Zone



Additional Pilot Truck (Optional)
Creates a buffer area and stops vehicles from cutting in front of the operation too closely

Robot Premarker
Operates at 8km/h

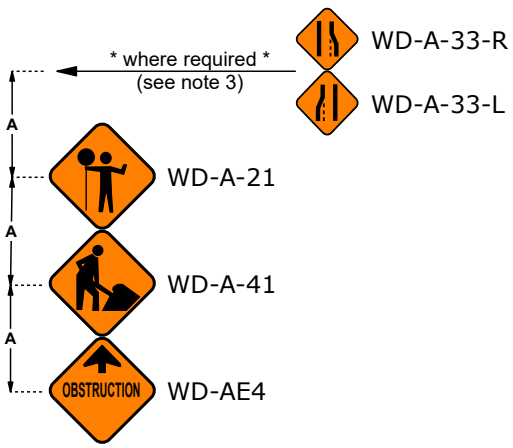
Robot Operator

Flagperson

Crash Attenuator Truck
This truck can straddle the premark line in order to create a buffer area

Premark line that the robot paints

Future Lane Line
To be installed at another time



Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:
V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D28
Date	March 2024
Location	N/A

Drawing Name

ROBOT PREMARKING - MOBILE OPERATION - HIGH SPEED ROAD

General Use

Premarking with the robot

Traffic Condition

Urban or Rural Highways, High volume, Speed limit above 70 km/h

Notes

1. Consideration must be given to traffic volume, sight distances, sign spacing, duration of work, intersections, driveways, and other factors to ensure traffic control devices are adequate in each instance

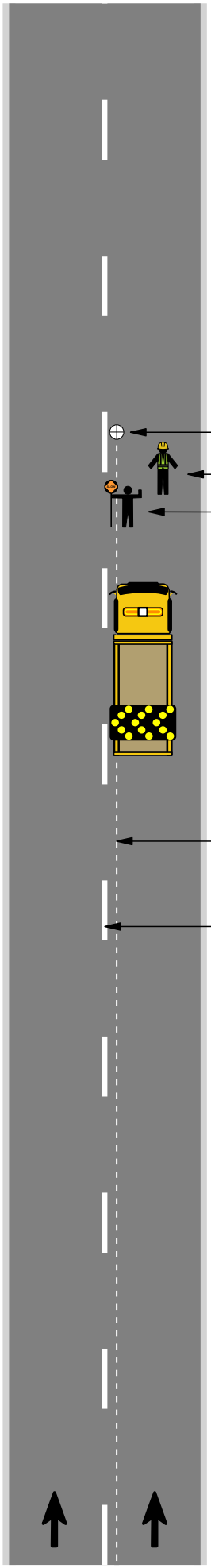
2. A Construction Ahead sign (WD-101) shall be used in place of Obstruction Ahead (WD-AE4) where required.

3. This drawing can be used in a left lane or right lane configuration. A left lane ending sign (WD-A-33-L) or right lane ending sign (WD-A-33-R) shall be used when required by the project.

4. Speed reduction signs should be considered based on posted speed limits

5. Drawing is not to scale.

Legend



Robot Premarker
Operates at 8km/h

Robot Operator

Flagperson

Pilot Truck
This truck can straddle the premark line in order to create a buffer area

Premark line that the robot paints

Future Lane Line
To be installed at another time

* where required *
(see note 3)

WD-A-33-R

WD-A-33-L

A

WD-A-21

A

WD-A-41

A

OBSTRUCTION

WD-AE4

Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D29
Date	March 2024
Location	N/A

Drawing Name

ROBOT PREMARKING - MOBILE OPERATION - LOW SPEED ROAD

General Use

Premarking with the robot

Traffic Condition

Urban or Rural Highways, Low to medium volume, Speed Limit 70km/h or lower

Notes

1. Consideration must be given to traffic volume, sight distances, sign spacing, duration of work, intersections, driveways, and other factors to ensure traffic control devices are adequate in each instance

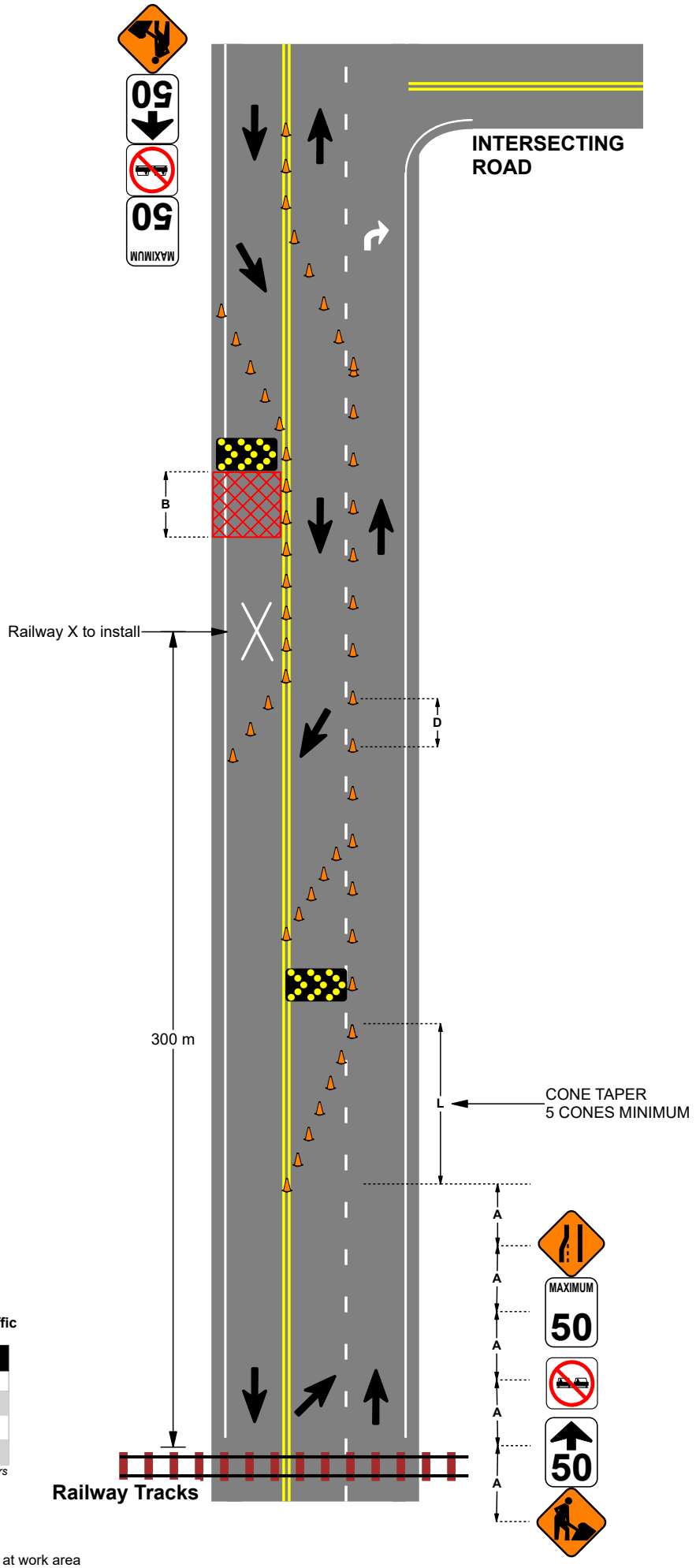
2. A Construction Ahead sign (WD-101) shall be used in place of Obstruction Ahead (WD-AE4) where required.

3. This drawing can be used in a left lane or right lane configuration. A left lane ending sign (WD-A-33-L) or right lane ending sign (WD-A-33-R) shall be used when required by the project.

4. Speed reduction signs should be considered based on posted speed limits

5. Drawing is not to scale.

Legend



Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D30
Date	March 2024
Location	Railway Crossings

Drawing Name

RAILWAY X INSTALLATION - 3 LANE ROAD

General Use

Installing railway markings where there are 3 lanes, without using flag persons

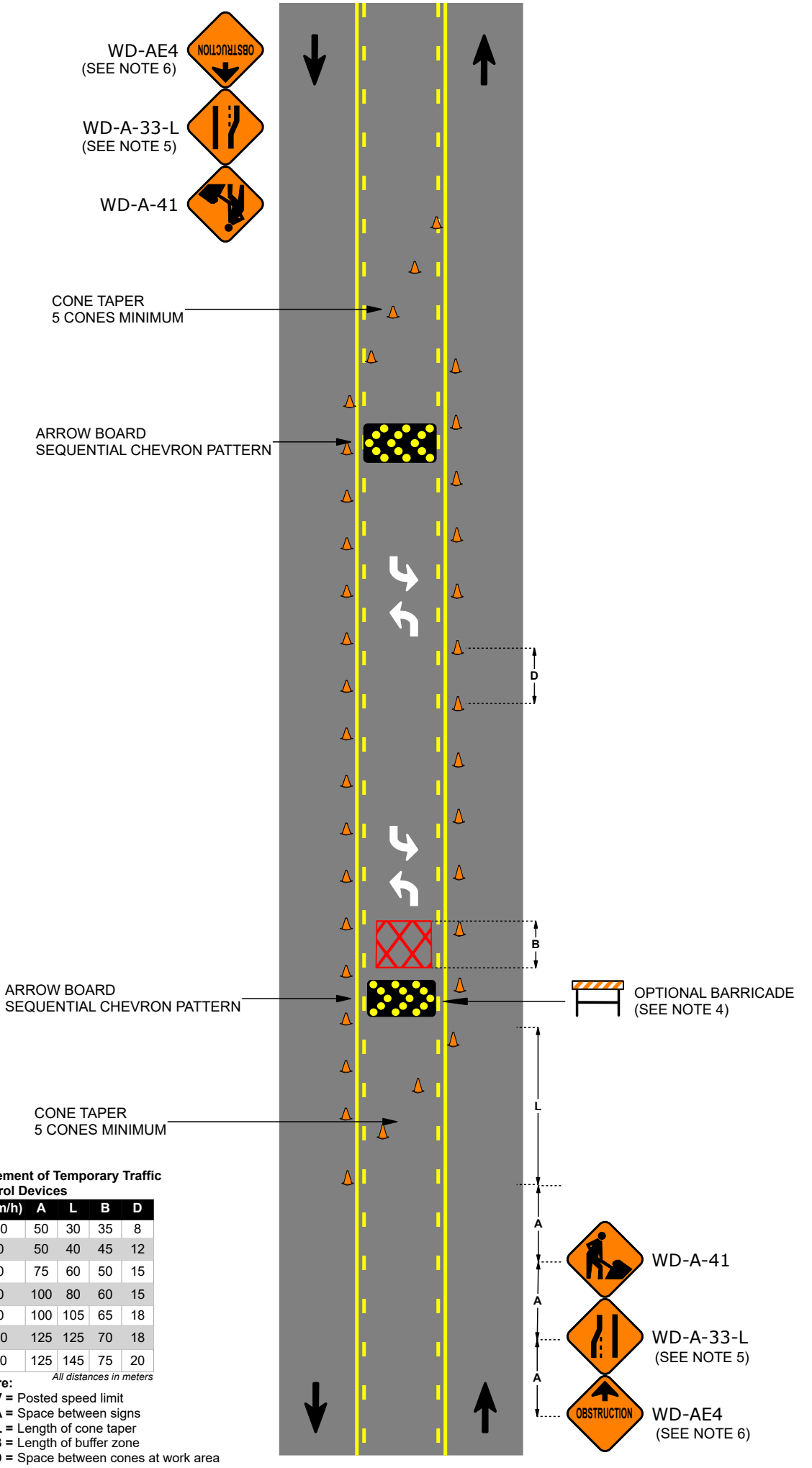
Traffic Condition

Urban or Rural Highways, Low to medium volume, Speed Limit 80km/h or lower

Notes

Legend

Buffer Zone Cone



Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D32
Date	March 2024
Location	Suicide Lane

Drawing Name

SHORT DURATION - SUICIDE LANE INSTALLATION - 3 LANE URBAN ENVIRONMENT

General Use

Installing the yellow longitudinal lines and arrows

Traffic Condition

Low to High volume locations, Local to Arterial roads

Notes

1. Consideration must be given to traffic volume, sight distances, sign spacing, duration of work, intersections, driveways, and other factors to ensure traffic control devices are adequate in each instance

2. Traffic cones will typically be 18" in height where the posted speed is ≤60km/h, or have a height of 28" where the posted speed is >60km/h or where required.

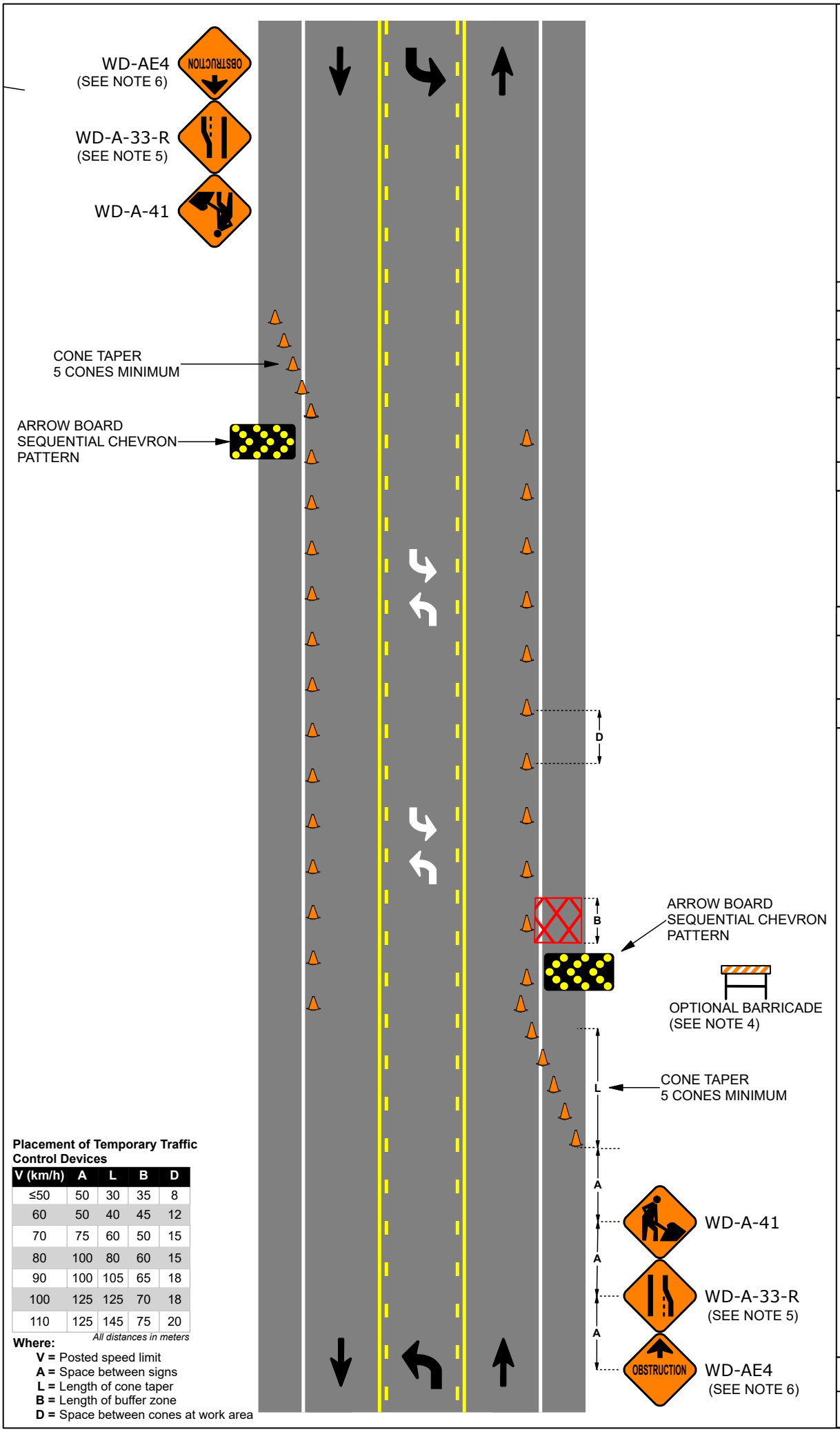
3. No work activities shall take place in a buffer zone.

4. A Lane Ending sign (WD-A-33-L) is required when an arrow board is not in use. A barricade may be used in place of an arrow board, typically when the posted speed is ≤60km/h.

5. Drawing is not to scale.

Legend

Buffer Zone Cone



Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D33
Date	March 2024
Location	Suicide Lane

Drawing Name

SHORT DURATION - SUICIDE LANE INSTALLATION - 3 LANE URBAN ENVIRONMENT

General Use

Installing the white longitudinal lines (shoulder line) where the paved shoulder is greater than 2.4m wide

Traffic Condition

Low to High volume locations, Local to Arterial roads

Notes

1. Consideration must be given to traffic volume, sight distances, sign spacing, duration of work, intersections, driveways, and other factors to ensure traffic control devices are adequate in each instance

2. Traffic cones will typically be 18" in height where the posted speed is ≤60km/h, or have a height of 28" where the posted speed is >60km/h or where required.

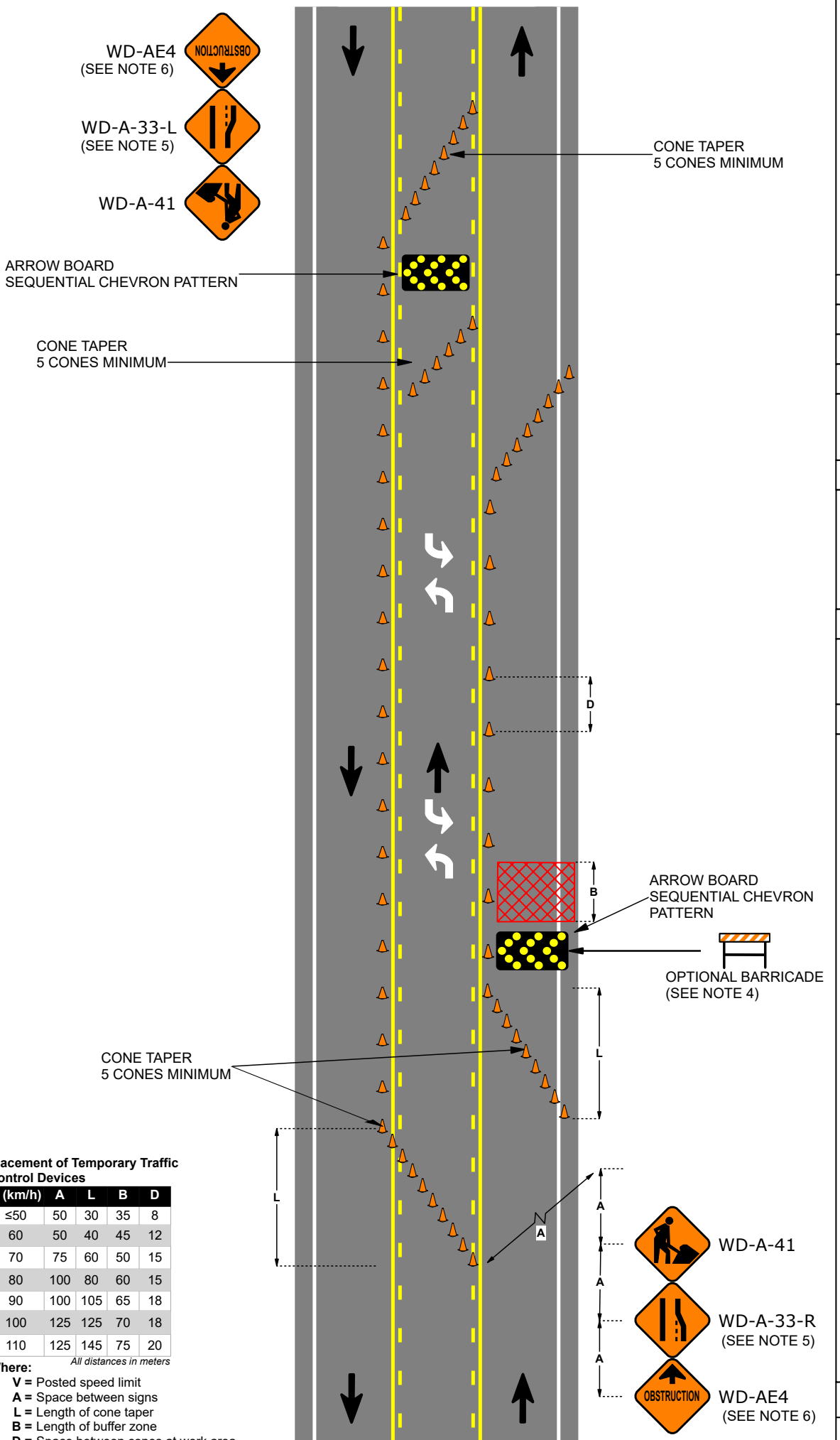
3. No work activities shall take place in a buffer zone.

4. A Lane Ending sign (WD-A-33-R) is required when an arrow board is not in use. A barricade may be used in place of an arrow board, typically when the posted speed is ≤60km/h.

5. Drawing is not to scale.

Legend

Buffer Zone Cone



Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D34
Date	March 2024
Location	Suicide Lane

Drawing Name

SHORT DURATION - SUICIDE LANE INSTALLATION - 3 LANE URBAN ENVIRONMENT

General Use

Installing the white longitudinal lines (shoulder line) where the paved shoulder is less than 2.4m wide

Traffic Condition

Low to High volume locations, Local to Arterial roads

Notes

1. Consideration must be given to traffic volume, sight distances, sign spacing, duration of work, intersections, driveways, and other factors to ensure traffic control devices are adequate in each instance

2. Traffic cones will typically be 18" in height where the posted speed is ≤60km/h, or have a height of 28" where the posted speed is >60km/h or where required.

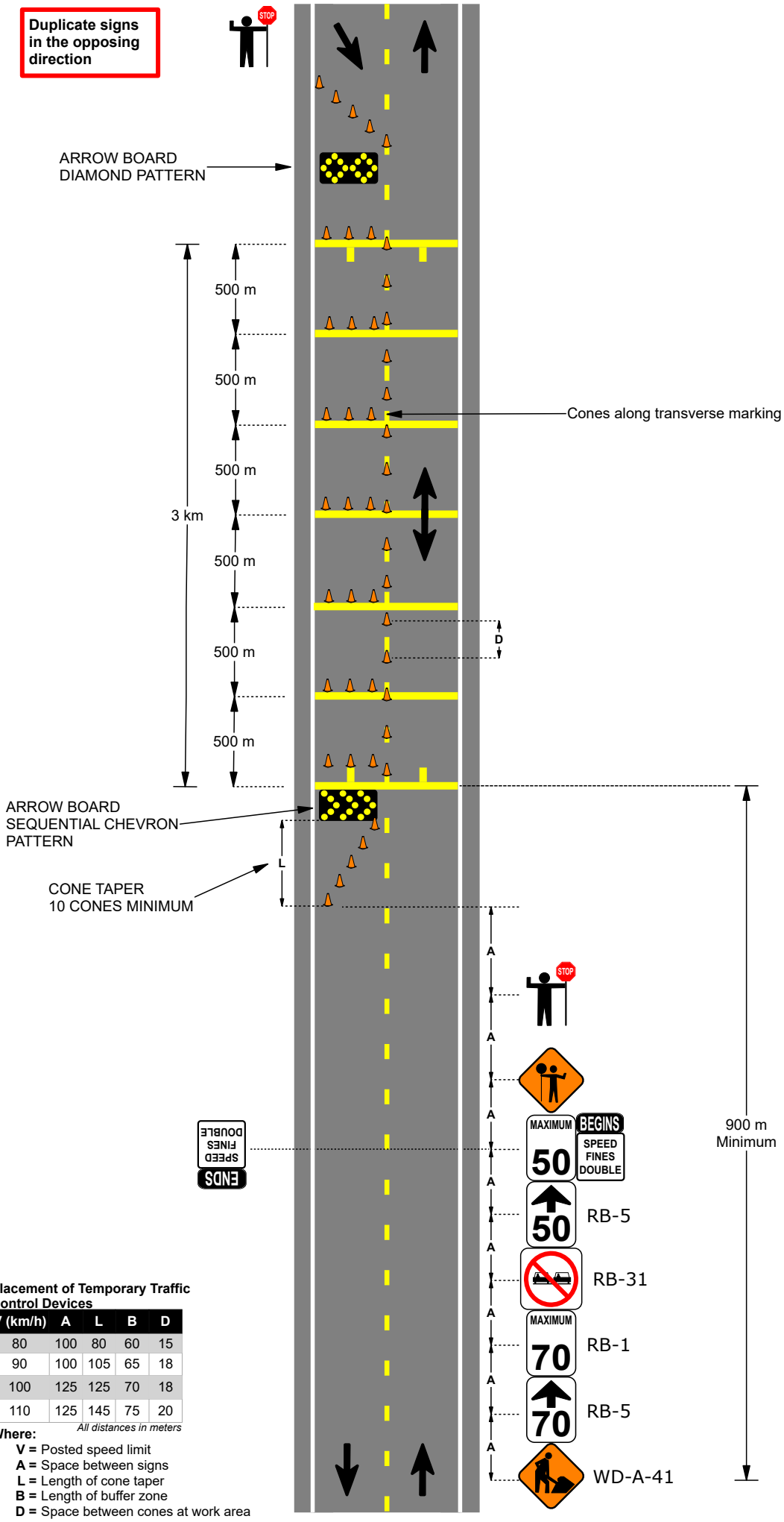
3. No work activities shall take place in a buffer zone.

4. Lane Ending signs are required when an arrow boards are not in use. A barricade may be used in place of an arrow board, typically when the posted speed is ≤60km/h.

5. Drawing is not to scale.

Legend

Buffer Zone



Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D35
Date	March 2024
Location	Rural Highways

Drawing Name

AIRCRAFT PATROL ZONE MARKINGS

General Use

Installing aircraft patrol zone markings in a highway setting

Traffic Condition

Rural Highways, Any Volume, High Speed

Notes

1. Consideration must be given to traffic volume, sight distances, sign spacing, duration of work, intersections, driveways, and other factors to ensure traffic control devices are adequate in each instance

2. Traffic cones will typically be 18" in height where the posted speed is ≤60km/h, or have a height of 28" where the posted speed is >60km/h or where required.

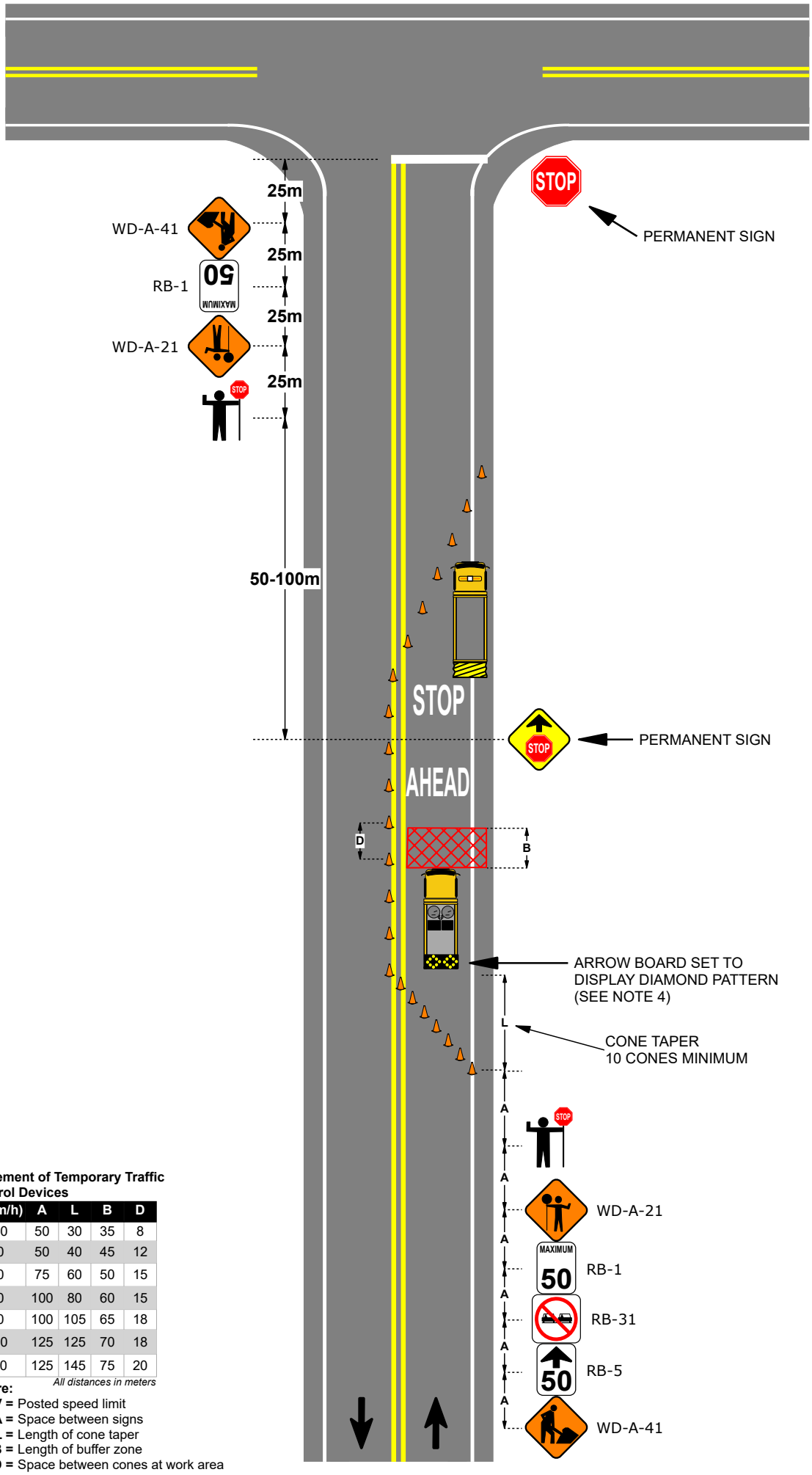
3. No work activities shall take place in a buffer zone.

4. Radio communication or a pilot vehicle must be used to ensure safe travel

5. Based on AT Drawings TCS-B-4.6A and TCS-B-4.4

6. Drawing is not to scale.

Legend



Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D36
Date	March 2024
Location	Rural Messages

Drawing Name

SHORT DURATION - 2 LANE HIGHWAY APPROACHING STOP - MESSAGE MARKING USING TCP

General Use

To be used when installing messages on a 2 lane highway near an intersection where speeds will typically be slow due to an upcoming intersection

Traffic Condition

Any volume, rural roads

Notes

1. Consideration must be given to traffic volume, sight distances, sign spacing, duration of work, intersections, driveways, and other factors to ensure traffic control devices are adequate in each instance

2. Traffic cones will typically be 18" in height where the posted speed is ≤60km/h, or have a height of 28" where the posted speed is >60km/h or where required.

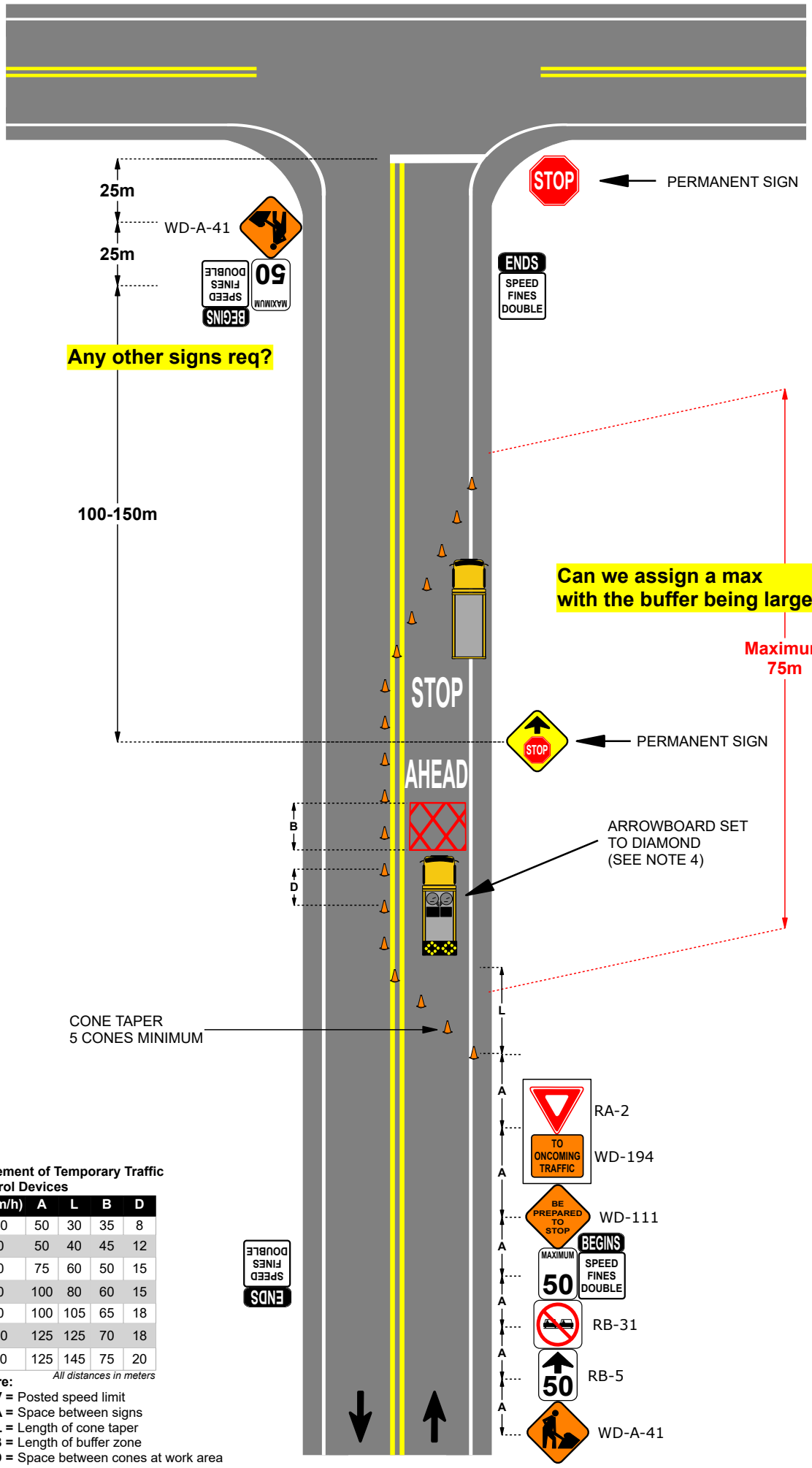
3. No work activities shall take place in a buffer zone.

4. The truck mounted arrowboard shall show Caution - Diamonds to alert approaching vehicles.

5. Drawing is not to scale.

Legend

Buffer Zone



Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D37
Date	March 2024
Location	Rural Messages

Drawing Name

SHORT DURATION - 2 LANE HIGHWAY APPROACHING STOP CONDITION - MESSAGE MARKING WITHOUT TCP

General Use

To be used when installing STOP AHEAD messages on a 2 lane highway near an intersection where speeds will typically be slow due to an upcoming intersection

Traffic Condition

Light volume, rural roads

Notes

1. Consideration must be given to traffic volume, sight distances, sign spacing, duration of work, intersections, driveways, and other factors to ensure traffic control devices are adequate in each instance

2. Traffic cones will typically be 18" in height where the posted speed is ≤60km/h, or have a height of 28" where the posted speed is >60km/h or where required.

3. No work activities shall take place in a buffer zone.

4. The truck mounted arrowboard shall show Caution - Diamonds to alert approaching vehicles.

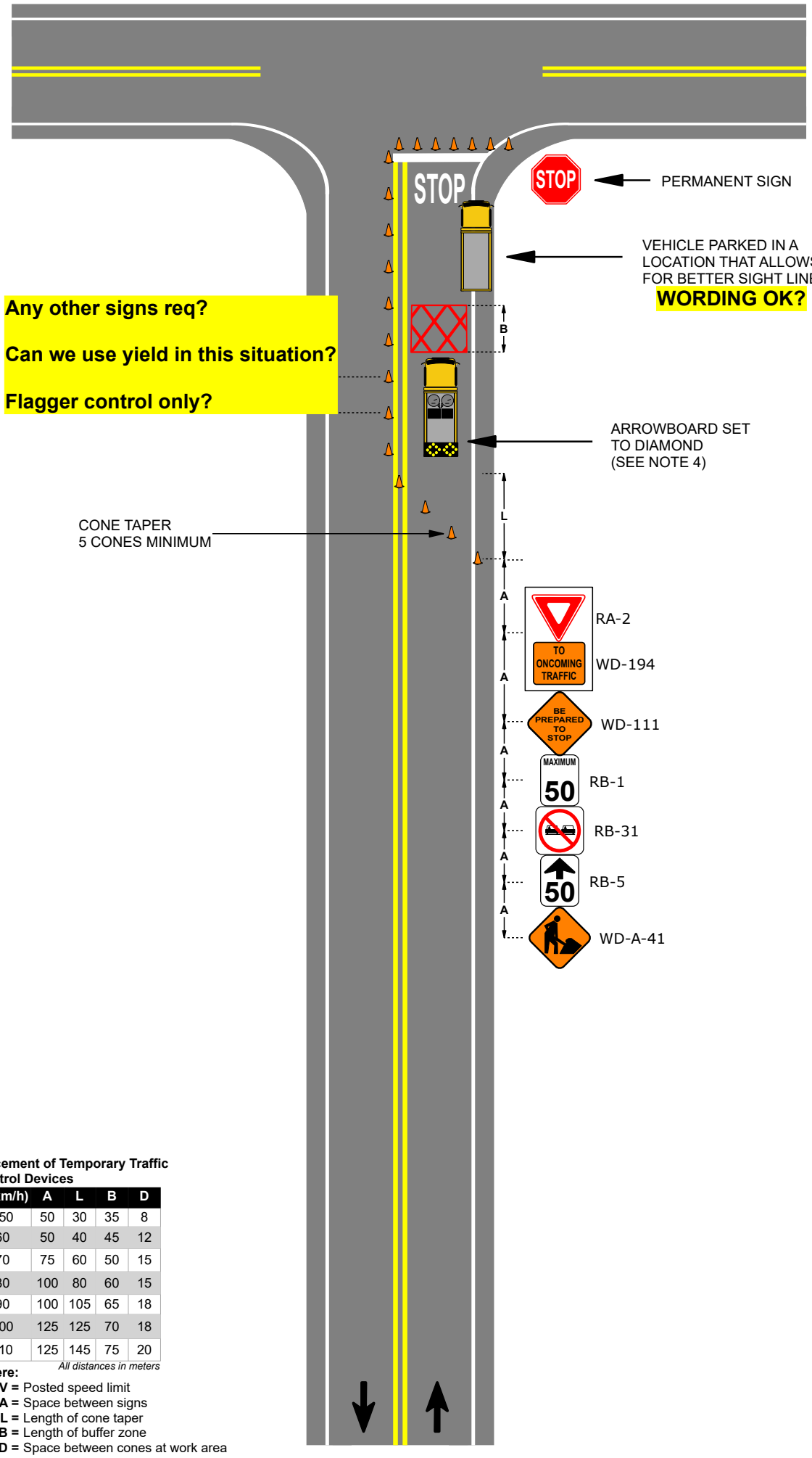
5. Sight distance through work area must be unobstructed

6. Based on AT drawing TCS-B-7.1A

7. Drawing is not to scale.

Legend

Buffer Zone



Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D38
Date	March 2024
Location	Rural Messages

Drawing Name

SHORT DURATION - 2 LANE HIGHWAY APPROACHING STOP - MESSAGE MARKING

General Use

To be used when installing STOP and Stop Bar messages on a 2 lane highway at an intersection where speeds will typically be slow due to an upcoming intersection

Traffic Condition

Any volume, rural roads

Notes

1. Consideration must be given to traffic volume, sight distances, sign spacing, duration of work, intersections, driveways, and other factors to ensure traffic control devices are adequate in each instance

2. Traffic cones will typically be 18" in height where the posted speed is ≤60km/h, or have a height of 28" where the posted speed is >60km/h or where required.

3. No work activities shall take place in a buffer zone.

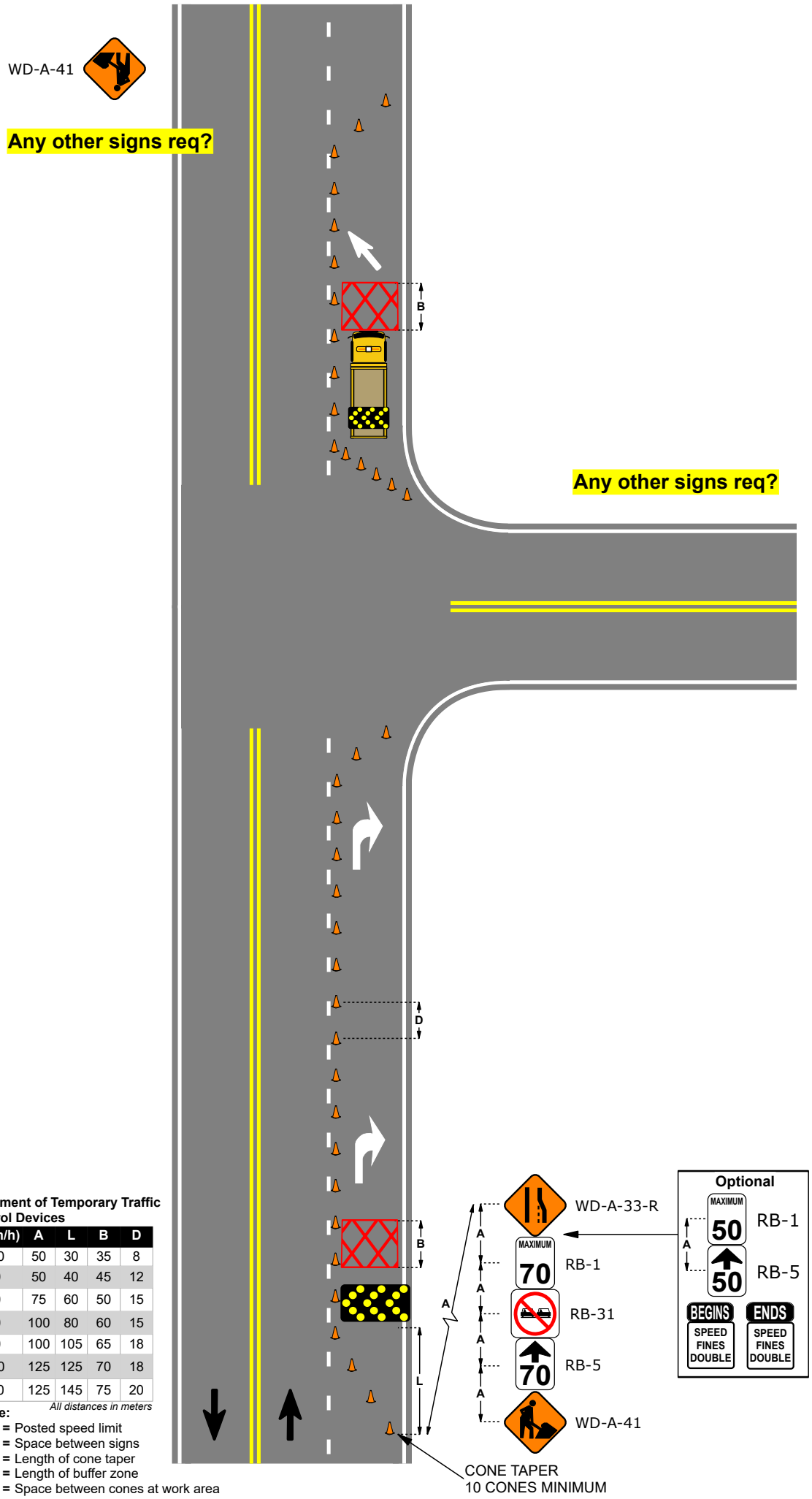
4. The truck mounted arrowboard shall show Caution - Diamonds to alert approaching vehicles.

5. Sight distance through work area must be unobstructed

6. Drawing is not to scale.

Legend

Buffer Zone



Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D39
Date	March 2024
Location	Rural Messages

Drawing Name

SHORT DURATION - HIGHWAY INTERSECTION - ARROW MESSAGE MARKING

General Use

Traffic Condition

Any volume, rural roads

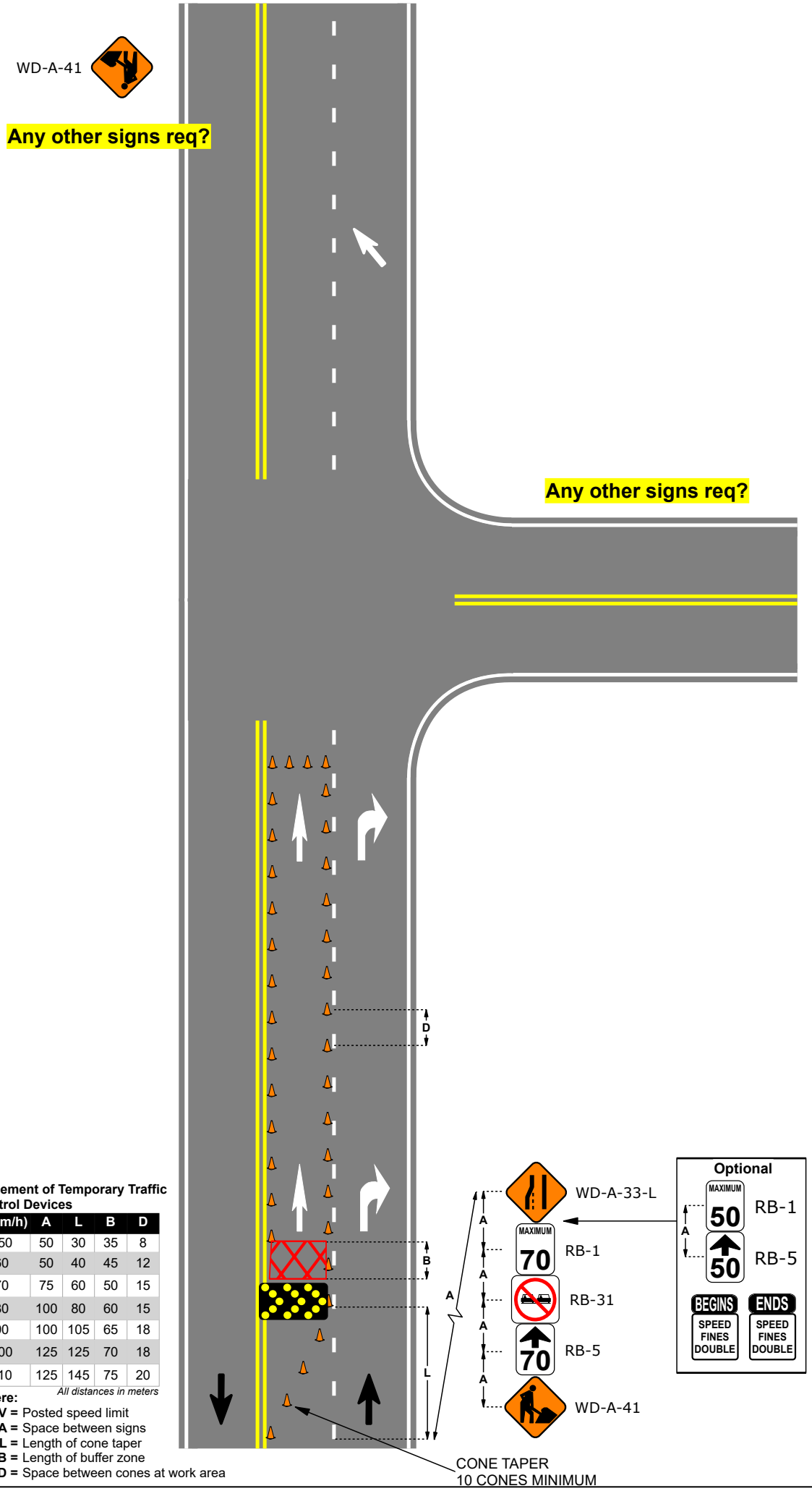
Notes

A NOTE ON OPTIONAL 50KM/H

note on SFD sign being beside lowest speed limit

Legend

Buffer Zone



Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D40
Date	March 2024
Location	Rural Messages

Drawing Name

SHORT DURATION - HIGHWAY INTERSECTION - ARROW MESSAGE MARKING

General Use

Traffic Condition

Any volume, rural roads

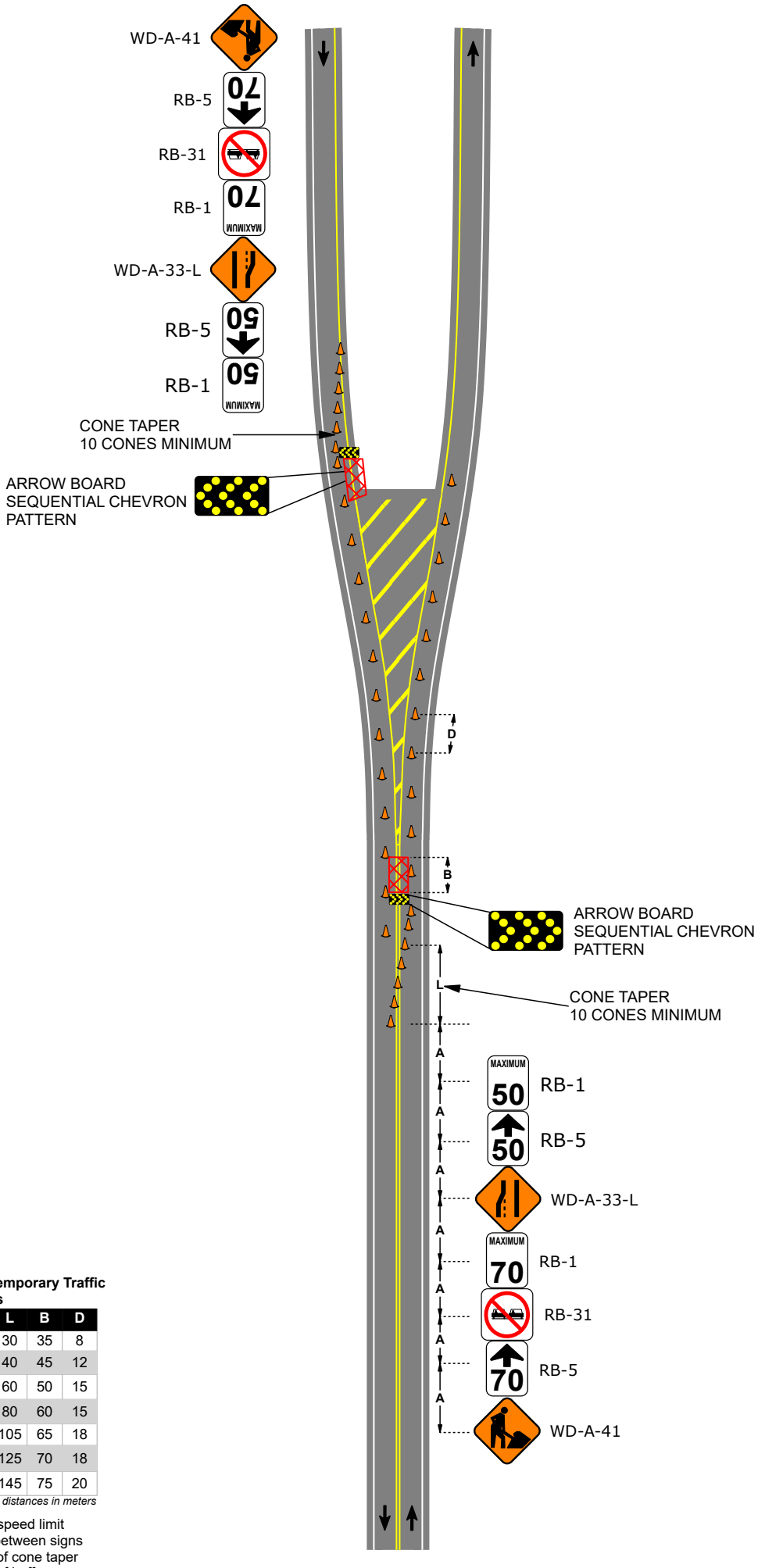
Notes

A NOTE ON OPTIONAL 50KM/H

note on SFD sign being beside lowest speed limit

Legend

Buffer Zone



Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D41
Date	March 2024
Location	Rural Messages

Drawing Name

SHORT DURATION - DIVERGING HIGHWAY - GORE MESSAGE MARKING

General Use

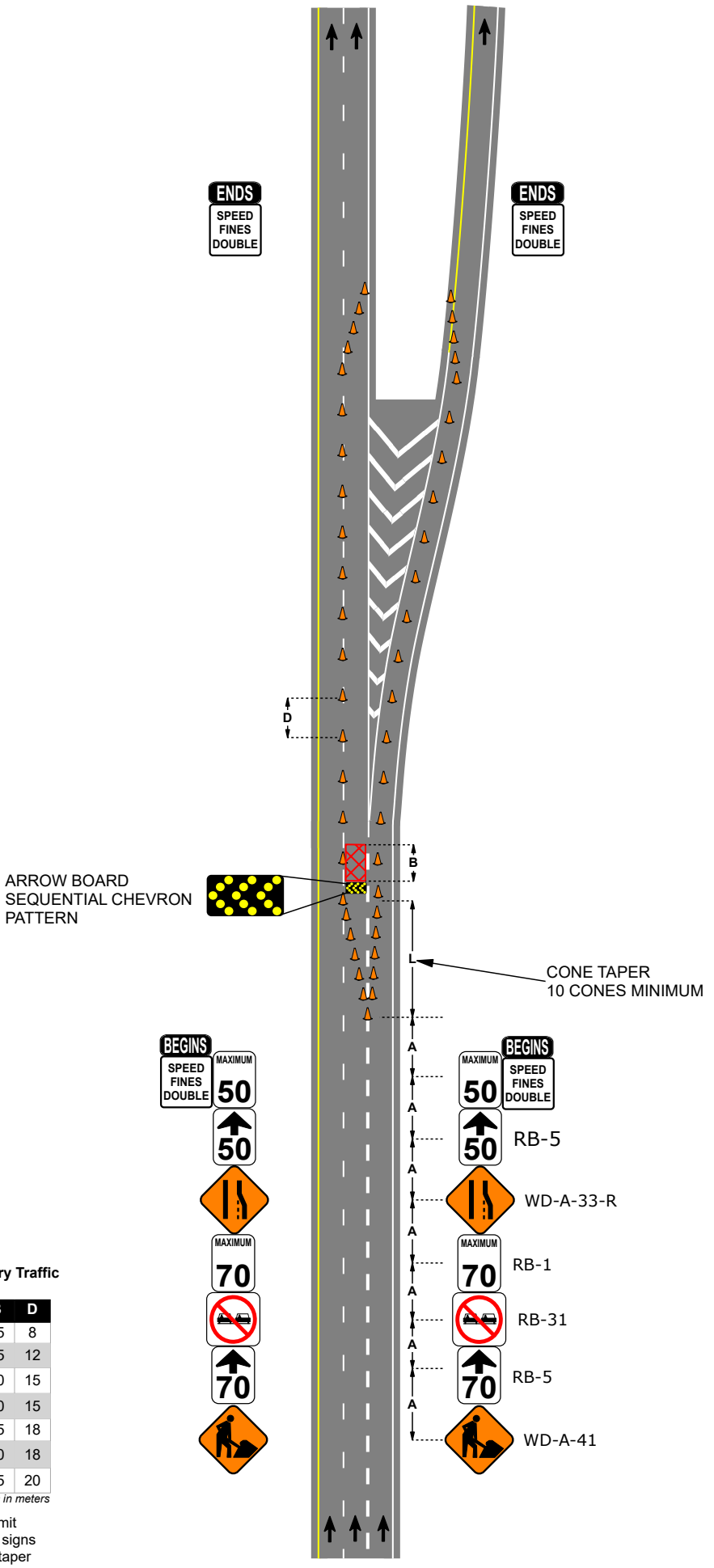
Traffic Condition

Any volume, rural roads

Notes

Legend

Buffer Zone



Placement of Temporary Traffic Control Devices

V (km/h)	A	L	B	D
≤50	50	30	35	8
60	50	40	45	12
70	75	60	50	15
80	100	80	60	15
90	100	105	65	18
100	125	125	70	18
110	125	145	75	20

All distances in meters

Where:

V = Posted speed limit
A = Space between signs
L = Length of cone taper
B = Length of buffer zone
D = Space between cones at work area

LAFRENTZ
A COLAS COMPANY

Drawing #	D42
Date	March 2024
Location	Rural Messages

Drawing Name

SHORT DURATION - EXIT LANE - GORE MESSAGE MARKING

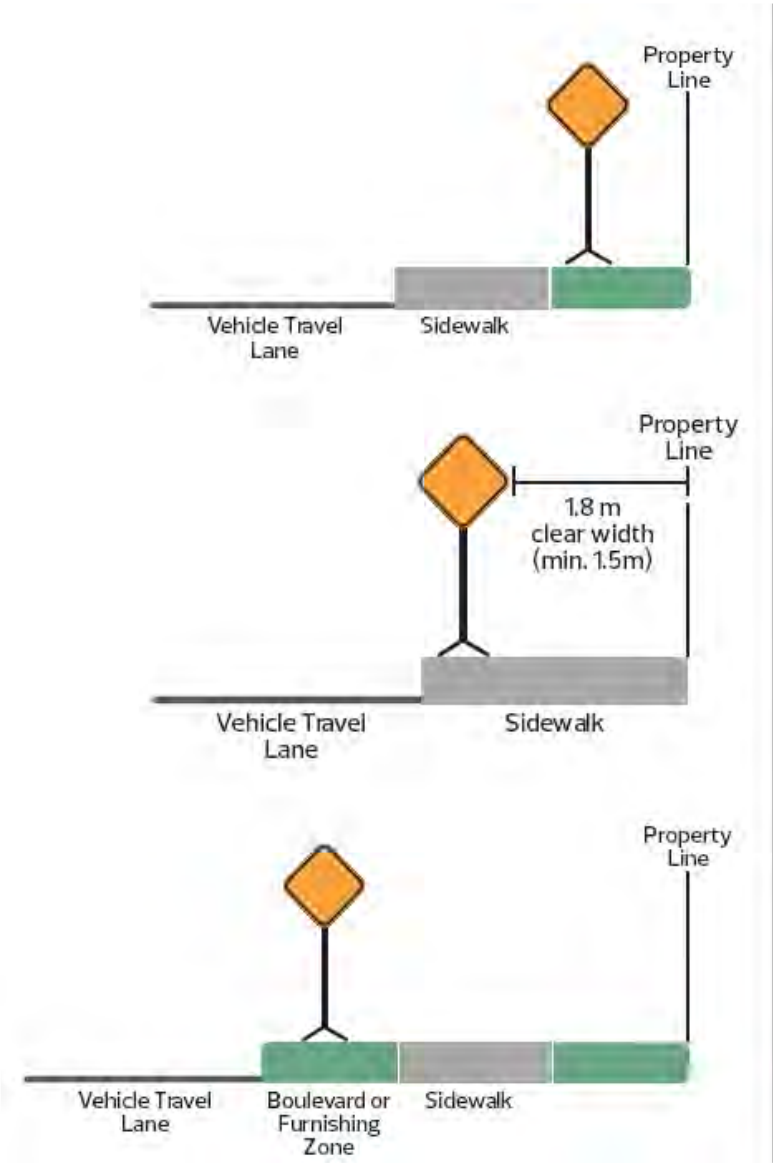
General Use

Traffic Condition

Notes

Legend

Buffer Zone



LAFRENTZ
A COLAS COMPANY

Drawing #	G2
Date	January 2024
Location	N/A

Drawing Name

URBAN SIGN PLACEMENT

General Use

Traffic Condition

Notes

need a note about signs on road
a note about signs behind parked cars

Legend

Buffer Zone