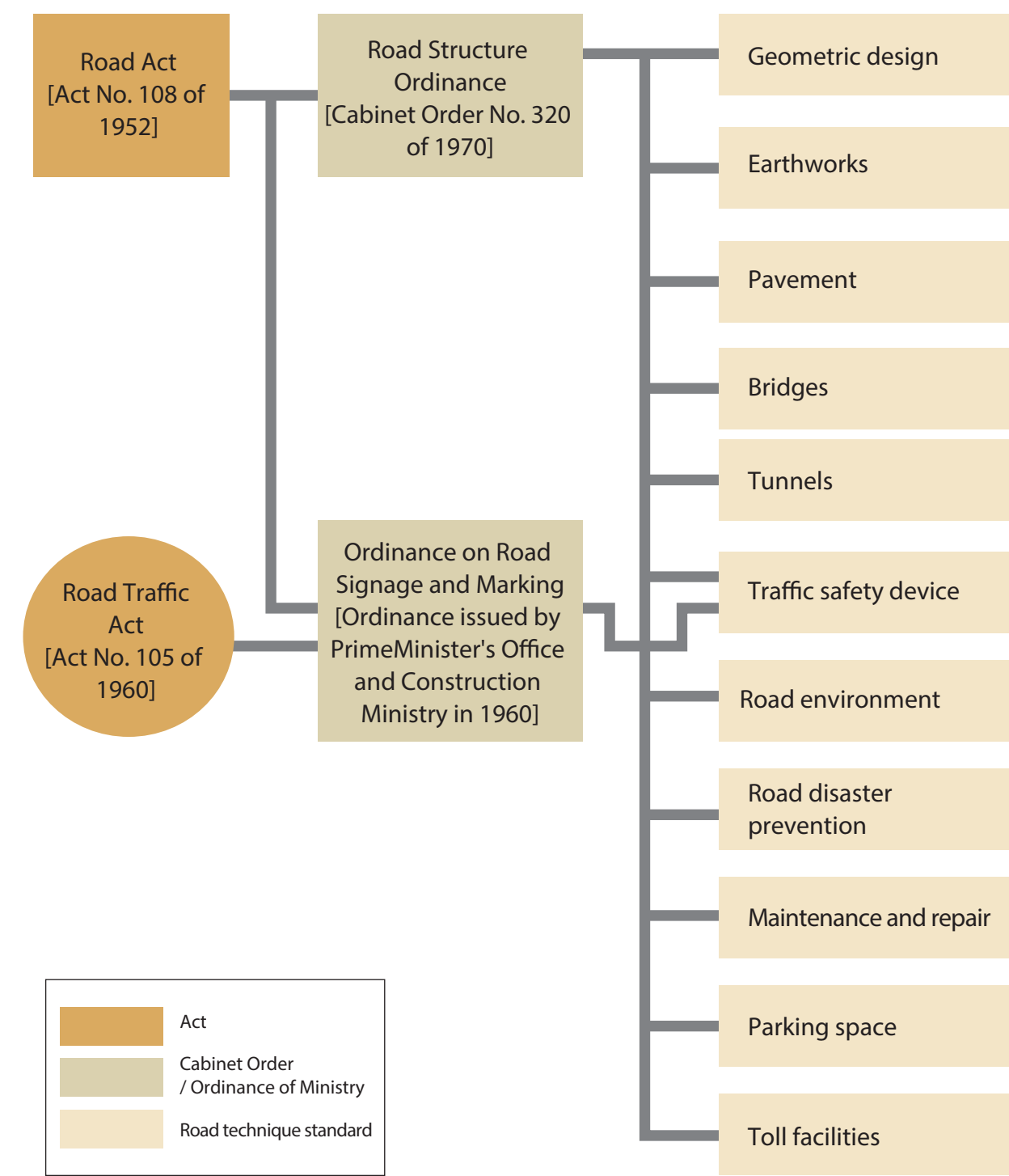


Technical Standards

(Government Ordinance No.320 of 29th October, 1970)

[Provisional translation]

Structure of Road Technical Standards



(Purpose of This Ordinance)

Article 1

This Ordinance specifies general technical standards (limited to the provisions of the Road Act (hereinafter referred to as the "Act") Article 30.1.1, 30.1.3 and 30.1.12 for general technical standards of the structure of prefectural roads and municipal roads) for the structure of national expressways and national highways when these roads will be newly constructed or reconstructed and also specifies general technical

standards that should be taken into account when technical standards (except for the provisions in Article 30.1.1, 30.1.3 and 30.1.12) for the construction of prefectural roads and municipal roads are required under the ordinances of prefectural or municipal governments, who also serve as a road administrator.

(Definition)

Article 2

The following terminology definitions shall apply to the corresponding terms in this Ordinance:

1. Sidewalk: A road section provided for dedicated pedestrian traffic, which is separated by curb lines or fences or other similar structures.
2. Bicycle track: A road section provided for dedicated bicycle traffic, which is separated by curb lines or fences or other similar structures.
3. Bicycle/pedestrian track: A road section provided for dedicated bicycle/pedestrian traffic, which is separated by curb lines or fences or other similar structures.
4. Carriageway: A road section used by dedicated vehicular traffic, except for bicycles.
5. Lane: A strip section of the carriageway (except for the service road) provided for safe and smooth traffic by directional separation of vehicles traveling in a single direction.
6. Additional overtaking lane: An additional lane (except for climbing, turning and speed change lanes) provided specifically for vehicles to overtake other vehicles.
7. Climbing lane: A lane for slower vehicles to be separated from other vehicles on uphill roads.
8. Turning lane: A lane for vehicles to turn right or left.
9. Speed change lane: A lane for vehicles to accelerate or decelerate.
10. Median: A strip road section provided to separate a lane from the traffic in the opposite direction and ensure lateral clearances.
11. Service road: A strip of carriageway provided to applicable sections, parallel to the carriageway, to ensure access of vehicles to roadsides where access is prevented by embankment and/or cut, or other means.
12. Shoulder: A strip of road section connected with carriageway sidewalks, bicycle tracks or bicycle/pedestrian tracks to protect major road structure sections and to maintain carriageway functions.
13. Marginal strip: A strip section of the median or shoulder connected with the carriageway to provide optical guidance for drivers and ensure lateral clearance.
14. Stopping lane: A strip section of the carriageway principally used to park vehicles.

15. Bicycle traffic lane: A strip section of the carriageway provided for safe and smooth passage of bicycles.
16. Track bed: A road section dedicated for use by streetcar traffic (streetcars as specified in Article 2.1.13 of the Road Traffic Act [Act No.105 of 1960]; this definition of streetcars shall apply hereinafter).
17. Island: An area facility provided at intersections, carriageway separation points, bus bays, streetcars stops, or other areas to ensure safe and smooth vehicular traffic or the safety of pedestrians crossing streets or bus and streetcar passengers boarding or alighting.
18. Planted strip: A strip of road section provided for tree planting in order to improve road traffic environment and ensure a better living environment along roadsides, which is separated by using curb lines or fences or other similar structures.
19. On-street facility: A road accessory facility on sidewalks, bicycle tracks, bicycle/pedestrian tracks, median, shoulders, bicycle paths and bicycle/pedestrian paths, except for common ducts and common cable ducts.
20. Urban area: An area forming or expected to form a city or town.
21. Rural area: Other areas than urban areas.
22. Design traffic volume: Daily vehicular traffic volume determined by planners for road construction or reconstruction planners designated by the ordinances of Ministry of Land, Infrastructure, Transport and Tourism according to requirements in the same ordinance for the basis of road design, in consideration of trends of development in the area and vehicular traffic conditions in the future.
23. Design speed: Vehicle speed that is used as a basis for road design.
24. Sight distance: The distance measured along the lane (or carriageway (except for bicycle traffic lanes) in the case of a road without a lane and the same is applied hereinafter) centerline at which an apex of a 10cm high object on the lane centerline is visible from 1.2m on the lane centerline.

(Road Classification)

Article 3

1. Roads shall be classified into Types 1 through 4 as listed in the following table.

Area where road is located National expressways and access-controlled highways or other roads.	Rural Area	Urban Area
	Type1	Type2
	Type3	Type4

2. Type 1 roads shall be classified into classes 1 through 4 as listed in Table 1, Type 2 roads shall be classified into Class 1 or 2 as listed in Table 2, Type 3 roads shall be classified into classes 1 through 5 as listed in Table 3, and Type 4 roads shall be classified into classes 1 through 4 except where topographic conditions or other

circumstances do not permit such provision. Roads can be classified into one class lower than the original class unless roads are otherwise applicable to Type 1 Class 4, Type 2 Class 3, Type 3 Class 5, or Type 4 Class 4.

Table 1 Type 1 Roads

Road type	Type of Topography	Designed traffic volume (vehicles/day)			
		More than 30,000	20,000~30,000	10,000~20,000	Less than 10,000
National Expressway	Level	Class 1	Class 2		Class 3
	Mountainous	Class 2	Class 3		Class 4
Roads other than National Expressway	Level	Class 2		Class 3	
	Mountainous	Class 3		Class 4	

Table 2 Type 2 Roads

Area where road is located Road type	Areas other than Central Business District in Large Metropolitan areas	Central Business District in Large Metropolitan areas
	Class 1	
	Class 1	Class 2

Table 3 Type 3 Roads

Road type	Type of Topography	Designed traffic volume (vehicles/day)				
		More than 20,000	4,000~20,000	1,500~4,000	500~1,500	Less than 500
National Highway	Level	Class 1	Class 2	Class 3		
	Mountainous	Class 2	Class 3	Class 4		
Prefectural Roads	Level	Class 2		Class 3		
	Mountainous	Class 3		Class 4		
Municipal Roads	Level	Class 2		Class 3	Class 4	Class 5
	Mountainous	Class 3		Class 4		Class 5

Table 4 Type 4 Roads

Designed traffic volume (vehicles/day) Road type	More than 10,000	4,000~10,000	500~4,000	Less than 500
	Class 1		Class 2	
National Highway	Class 1		Class 2	
Prefectural Roads	Class 1	Class 2	Class 3	
Municipal Roads	Class 1	Class 2	Class 3	Class 4

3. Roads shall be classified as specified in the previous paragraph 2 based on traffic conditions.
4. Type 1, 2 and 3 Class 1 through 4 roads or Type 4 Class 1 through 3 roads (limited to elevated roads and other structures from which vehicles cannot access roadsides for Type 3 Class 1 through 4 roads and Type 4 Class 1 through 3 roads) can be specified as the roads exclusively for the traffic of smaller motor vehicles (hereinafter indicating small-sized vehicles and other similar small vehicles; and pedestrians and bicycles in the case of Type 3 Class 1 through 4 and Type 4 Class 1 through 3 roads), in an unavoidable case such as for a topographical reason and due to conditions of urbanization, there shall be a neighboring detour road for other types of vehicles, other than smaller motor vehicles.
5. A lane specifically for the traffic of smaller motor vehicles can be provided, by separating other lanes on Type 1, 2 and 3 Class 1

through 4 roads or Type 4 Class 1 through 3 roads, in unavoidable cases such as for a topographical reason and due to conditions of urbanization. In the case of Type 3 Class 1 through 4 roads and Type 4 Class 1 through 3 roads, the lane specifically for the traffic of smaller motor vehicles shall be limited to elevated roads or other structures from which vehicles cannot access roadsides.

6. Roads shall be classified into smaller motor vehicle roads (hereinafter indicating the roads provided specifically for the traffic of smaller motor vehicles specified in the paragraph 4 and smaller motor vehicles and pedestrians and bicycles in Type 3 Class 1 through 4 and Type 4 Class 1 through 3 roads and vehicles specified in the previous paragraph) and regular motor vehicle roads (hereinafter indicating roads and road sections other than smaller motor vehicle roads).

(General Technical Standards for Construction of National Expressways and National Highways Structures)

Article 3-2

The next Article through Article 41 specify general technical standards for the construction of national expressways and national highways

structures, when these roads will be newly constructed or reconstructed.

(Design Vehicles)

Article 4

1. Roads shall be so designed for the safe and smooth passage of small-sized motor vehicles and semitrailers (hereinafter indicated combined body consisting of trailing motor vehicle and trailed vehicle without front axle, in which a part of the trailed vehicle rests on the motor vehicle and substantial weight of the trailed vehicle and its load are supported by the motor vehicle) on Type1, Type 2, Type 3 Class 1 or Type 4 Class 1 regular motor vehicle roads, or regular motor vehicle roads that are designated as the primary highway freight network

(hereinafter indicated the primary highway freight network as specified in Road Act Article 48.17.1; this definition of the primary highway freight network shall apply), small-sized motor vehicles and regular-sized motor vehicles on other regular motor vehicle roads or important logistics road under the article 48 of the Road Act and smaller motor vehicles on smaller motor vehicle roads).

2. Specifications for the vehicle that is a basis of road design (hereinafter referred to as “design vehicle”) by Type shall be listed below.

	Length	Width	Height	Front-edge overhang	Wheelbase	Rear-edge overhang	Minimum turning radius
Small-sized motor vehicle	4.7	1.7	2.0	0.8	2.7	1.2	6.0
Smaller motor vehicles	6.0	2.0	2.8	1.0	3.7	1.3	7.0
Regular-sized motor vehicle	12.0	2.5	3.8	1.5	6.5	4.0	12.0
Semi-trailer	16.5	2.5	3.8 (4.1 in the case of regular motor vehicle roads that are the primary highway freight network)	1.3	Front section wheelbase: 4.0 Rear section wheelbase: 9.0	2.2	12.0

For this table, the following terminology definitions shall apply to the corresponding terms.

1. Front-edge overhang: Distance from the front face of the vehicle body to the center of the front-wheel axle of a vehicle.
2. Wheelbase: Distance from the center of front-wheel axle of a vehicle to the center of the rear-wheel axle.
3. Rear-edge overhang: Distance from the rear face of the vehicle body to the center of the rear-wheel axle of a vehicle.

(Lanes)

Article 5

1. The carriageway (except for the service road, stopping lanes, bicycle traffic lanes and other sections specified by the ordinances of Ministry of Land, Infrastructure, Transport and Tourism) shall consist of the below-specified lanes, except for those classified as Type 3 Class 5.
2. The number of lanes shall be 2 (except for additional overtaking, climbing, turning and speed change lanes and the same is applied in

the following paragraph) in accordance with the road classification and on rural roads where design daily traffic volume is no more than values of standard design volume (hereinafter indicating maximum allowable traffic volume) as listed in the following table, while taking into account topographic conditions.

Classification		Type of Topography	Standard Design Volume (vehicles/day)
Type1	Class 2	Level	14,000
		Level	14,000
	Class 3	Mountainous	10,000
		Level	13,000
	Class 4	Mountainous	9,000
Type3	Class 2	Level	9,000
	Class 3	Level	8,000
		Mountainous	6,000
	Class 4	Level	8,000
		Mountainous	6,000
Type4	Class 1		12,000
	Class 2		10,000
	Class 3		9,000

As for Type 4 roads with many intersections, standard design traffic volume shall be calculated by multiplying standard design traffic volume herein by 0.8.

3. The number of lanes on roads, other than those specified in the provision above, (except for Type 2 one-way roads and Type 3 Class 5) shall be more than 4 (a multiple of 2 unless otherwise required depending on traffic conditions) on Type 2 roads and one-way roads shall be more than 2 on roads that meet the road classification and are
- located in rural areas, and shall be determined by the rate of design daily traffic volume on the road according to standard design daily traffic volume per lane as listed in the following table, taking into consideration topographic conditions.

Classification		Type of Topography	Standard Design daily Traffic Volume per Lane (vehicles/lane/day)
Type1	Class 1	Level	12,000
	Class 2	Level	12,000
		Mountainous	9,000
	Class 3	Level	11,000
		Mountainous	8,000
	Class 4	Level	11,000
		Mountainous	8,000
Type2	Class 1		18,000
	Class 2		17,000
Type3	Class 1	Level	11,000
	Class 2	Level	9,000
	Class 3	Mountainous	7,000
		Level	8,000
	Class 4	Mountainous	6,000
		Mountainous	5,000
Type4	Class 1		12,000
	Class 2		10,000
	Class 3		10,000

In the case of Type 4 roads with many intersections, standard design traffic volume per lane shall be calculated by multiplying standard design traffic volume per lane herein by 0.6.

4. Lane width (except for climbing, turning, and speed change lanes,) shall be the values as listed in the columns for lane width, in the following table, in accordance with road classification. However, the lane width on Type 1 Class 1 and 2 or Type 3 Class 2 or Type 4 Class 1 regular motor vehicle roads may add 0.25m to the values as listed in
- the columns depending on the traffic situation. Lane width on Type 1 Class 2 or 3 smaller motor vehicle roads or Type2 Class 1 roads may be reduced 0.25m from the values as listed in the columns in unavoidable cases, such as for topographical and other reasons.

Classification			Lane Width (m)
Type1	Class 1		3.5
	Class 2		
	Class 3	Regular motor vehicle roads	3.5
		Smaller motor vehicle roads	3.25
	Class 4	Regular motor vehicle roads	3.25
		Smaller motor vehicle roads	3.0
Type2	Class 1	Regular motor vehicle roads	3.5
		Smaller motor vehicle roads	3.25
	Class 2	Regular motor vehicle roads	3.25
		Smaller motor vehicle roads	3.0
Type3	Class 1	Regular motor vehicle roads	3.5
		Smaller motor vehicle roads	3.0
	Class 2	Regular motor vehicle roads	3.25
		Smaller motor vehicle roads	2.75
	Class 3	Regular motor vehicle roads	3.0
		Smaller motor vehicle roads	2.75
	Class 4		2.75
Type4	Class 1	Regular motor vehicle roads	3.25
		Smaller motor vehicle roads	2.75
	Class 2 and 3	Regular motor vehicle roads	3.0
		Smaller motor vehicle roads	2.75

5. Carriageway width on Type 3 Class 5 regular motor vehicle roads (except for bicycle traffic lanes) shall be 4m. However, the width could be reduced to 3m where design daily traffic volume is extremely low
- and topographic conditions or special reasons do not permit such provisions or where narrow pass is created on regular motor vehicle roads pursuant to the provisions of Article 31.2.

(Lane Division)

Article 6

1. The lanes (hereinafter this applies for all except one-way roads) on Type 1, Type 2 or Type 3 Class 1 roads shall be directionally divided. It is also applied to other roads with four or more lanes if necessary for safe and smooth traffic.
2. Notwithstanding the provisions of the first sentence of the preceding paragraph, Type 1 roads with three or less lanes (hereinafter, this applies for all except for climbing, turning and speed change lanes) may be left directionally undivided in unavoidable cases, such as for topographical conditions or any other reasons.
3. A center strip shall be provided, when required, for directional lane division.
4. Center strip width shall be no less than the values indicated in the left columns in the following table. However, the center strip width can be reduced to values listed in the right columns, in the same table, where tunnels longer than 100m, bridges longer than 50m, elevated roads, topographic conditions or other special conditions do not permit.
5. A marginal strip shall be provided to the center strip.
6. The width of the marginal strips shall be the values listed in the left column of the following table in accordance with road classification. However, the center strip width can be reduced to the values listed in the right columns of the same table when the center strip width of the road or road section is reduced in accordance with paragraph 4.

Classification		Width of Marginal Strip Provided to Center Strip(m)	
Type1	Class 1	0.75	0.25
	Class 2		
	Class 3	0.5	
	Class 4		
Type2		0.5	0.25
Type3	Class 1	0.25	
	Class 2		
	Class 3		
	Class 4		
Type4	Class 1	0.25	
	Class 2		
	Class 3		

Classification		Center Strip Width(m)	
Type1	Class 1	4.5	2.0
	Class 2		
	Class 3	3.0	1.5
	Class 4		
Type2	Class 1	2.25	1.5
	Class 2	1.75	1.25
Type3	Class 1	1.75	1.0
	Class 2		
	Class 3		
	Class 4		
Type4	Class 1	1.0	
	Class 2		
	Class 3		

7. Fences, or other similar structures, or curb lines connected to the marginal strip shall be provided to sections other than the marginal strip of the center strip (hereinafter referred to as the "median").
8. When on-street facilities are provided on the median, the center strip width shall be determined considering clearances as specified in Article 12.
9. If necessary, additional overtaking lanes shall be provided to the carriageway of Type 1 roads with single lanes in each direction.

(Service Roads)

Article 7

1. The service roads shall be provided to Type 3 or 4 roads with more than four lanes (except for climbing, turning and speed
- change lanes) if necessary.
2. Service road (except for bicycle traffic lanes) width shall be a standard 4m

(Shoulders)

Article 8

1. Shoulders shall be provided to roads connected to carriageways, except where a center strip or stopping lane is provided.
2. Shoulder width on the left side of the carriageway shall be, in accordance with road classification, no less than the values listed in the left column of the following table. However, road width may be reduced to the values listed in the right columns in the same table where additional overtaking lanes, climbing lanes or speed change lanes are provided, or on road sections of bridges 50m or longer or elevated roads or other road sections in unavoidable cases such as for a topographical or other special reasons.

Classification			Width of Shoulder Provided on Left of Carriageway(m)	
Type1	Class 1 and 2	Regular motor vehicle roads	2.5	1.75
		Smaller motor vehicle roads	1.25	
	Class 3 and 4	Regular motor vehicle roads	1.75	1.25
		Smaller motor vehicle roads	1.0	
Type2		Regular motor vehicle roads	1.25	
		Smaller motor vehicle roads	1.0	
Type3	Class 1	Regular motor vehicle roads	1.25	0.75
		Smaller motor vehicle roads	0.75	
	Class 2 through 4	Regular motor vehicle roads	0.75	0.5
		Smaller motor vehicle roads	0.5	
	Class 5		0.5	
Type4			0.5	

3. Notwithstanding the provisions of the preceding paragraph, shoulder width on the left side of carriageways on Type 1 roads with directionally divided lanes shall be, in accordance with road classification, no less than the values listed in the left column of the following table. However, shoulder width on the left side of the carriageway may be reduced to the values listed in the right columns in the same table where the road section is in a tunnel of no shorter than 100m, on bridges of no shorter than 50m, on elevated roads with low traffic volume of larger vehicles, or in unavoidable conditions such as for topographic or other reasons.

Classification		Width of Shoulder Provided on Left of Carriageway(m)	
Class 2 and 3	Regular motor vehicle roads	2.5	1.75
	Smaller motor vehicle roads	1.25	
Class 4	Regular motor vehicle roads	2.5	2.0
	Smaller motor vehicle roads	1.25	

4. Width of the shoulders provided on the right of carriageway shall be, in accordance with road classification, no less than the values listed in the right column of the following table.
5. Shoulder widths of the regular motor vehicle roads in tunnels (except for shoulders specified in the paragraph 3) or shoulder widths

Classification			Width of Shoulder Provided on Right of Carriageway(m)
Type 1	Class 1 and 2	Regular motor vehicle roads	1.25
		Smaller motor vehicle roads	0.75
	Class 3 and 4	Regular motor vehicle roads	0.75
		Smaller motor vehicle roads	0.5
Type 2		Regular motor vehicle roads	0.75
		Smaller motor vehicle roads	0.5
Type 3			0.5
Type 4			0.5

10. Where it is necessary to protect major road structures, the shoulder shall be provided on road ends so as to be connected to the sidewalk, bicycle track or bicycle/pedestrian track.
11. Where on-street facilities are provided on the shoulder connected to the carriageway, shoulder width shall be the values of shoulder width provided for the left side of the carriageway listed in paragraph 2 or the values of shoulder width provided for the right side of the carriageway listed in paragraph 4, plus the values required for the on-street facilities.

Classification		Width of Marginal Strip Provided to Shoulder (m)	
Type1	Class 1	0.75	0.5
	Class 2		
	Class 3	0.5	0.25
	Class 4		
Type2	Class 1	0.5	
	Class 2		

(Stopping Lanes)

Article 9

1. A stopping lane shall be provided on the left carriageway end on Type 4 roads to prevent stopping vehicles from impeding safe and smooth traffic.
2. The stopping lane width shall be 2.5m. However, the width may be reduced to 1.5m where the traffic volume of larger vehicles is low.

(Bicycle Traffic Lanes)

Article 9-2

1. Bicycle traffic lanes shall be provided on the extreme left of carriageways (for roads where a stopping lane is provided, the right side of the stopping lane; the same shall apply in the following paragraph) on Type 3 or 4 roads with higher vehicle and bicycle traffic volume (except for roads to which bicycle tracks are provided), except where topographic conditions or other special reasons do not permit such provision.
2. Bicycle traffic lanes shall be provided on the left carriageway end on Type 3 or 4 roads with higher bicycle traffic volume or Type 3 or 4 roads with higher vehicle and pedestrian traffic volume (except for

- roads to which bicycle tracks are provided and roads specified in the preceding paragraph) if separation of bicycle traffic is considered necessary for safe and smooth traffic, except where topographic conditions or other special reasons do not permit such provision.
3. Bicycle traffic lanes shall be wider than 1.5m, except where topographic conditions or other special reasons do not permit such provision, in such cases the width can be reduced to 1m.
4. Bicycle traffic lane width shall be determined in consideration of bicycle traffic conditions on roads.

(Track Bed)

Article 9-3

The track bed width shall be, in accordance with single or double track, wider than the values listed in the bottom columns of the following table.

Single or Double Track	Track Bed Width(m)
Single Track	3
Double Track	6

(Bicycle Tracks)

Article 10

1. Bicycle tracks shall be provided on both sides of roads on Type 3 (except for Class 4 and 5; the same shall apply in the following paragraph) or 4 (except for Class 3; the same shall apply in this paragraph) roads with higher vehicle and bicycle traffic volume where the design speed is 60km/h or more, except where topographic conditions or other special reasons do not permit such provision.
2. Bicycle tracks shall be provided on both sides of the roads where the design speed is 60km/h or more to ensure safe and smooth traffic on Type 3 or 4 roads with higher bicycle traffic volume or on Type 3 or 4 roads with higher vehicle and pedestrian traffic volume (except for

- roads specified in the preceding paragraph), if separation of bicycle traffic is considered necessary, except where topographic conditions or other special reasons do not permit such provision.
3. Bicycle tracks shall be wider than 2m, except where topographic conditions or other special reasons do not permit such provision, in such cases the width can be reduced to 1.5m.
4. Where on-street facilities are provided on the bicycle tracks, the road width shall be determined in consideration of clearances as specified in Article 12.
5. Bicycle track width shall be determined in consideration of bicycle traffic conditions on roads.

(Bicycle/Pedestrian Tracks)

Article 10-2

1. Bicycle/pedestrian tracks shall be provided on both sides of Type 3 or 4 roads with large traffic volume (except for roads where the bicycle tracks or bicycle traffic lanes would already be provided) except where topographic conditions or other special reasons do not permit

- such provisions.
2. Bicycle/pedestrian track width shall be wider than 4m for roads with higher pedestrian traffic volume and wider than 3m for other roads.
3. Where pedestrian bridges or pedestrian underpasses (hereinafter

referred to as “pedestrian bridges etc.”) or on-street facilities are provided, the bicycle/pedestrian track width shall be increased by 3m where pedestrian bridges etc. are to be constructed, 2m where a roofed bench is to be installed, 1.5m where a row of trees is to be planted, 1m where a bench is installed or 0.5m in other cases, respectively to the values given in the preceding paragraph.The

(Sidewalks)

Article 11

1. A sidewalk shall be provided on both sides of Type 4 roads (excluding those roads provided with bicycle/pedestrian tracks),Type 3 roads (except for Class 5 and excluding those roads provided with bicycle/pedestrian tracks) with higher pedestrian traffic volume or Type 3 roads already provided with bicycle tracks or bicycle traffic lanes, except where topographical conditions or any other reasons prevent such provision.
2. Sidewalks shall be provided on Type 3 roads (excluding those roads already provided with bicycle/pedestrian tracks and those roads stipulated in the preceding paragraph) where it is required for safe and smooth traffic, except where topographic conditions or any other reasons do not permit such provision.
3. The sidewalk width shall be wider than 3.5m for roads with higher

requirements as specified above shall be applied except for Type 3 Class 5 roads where topographic conditions or other special reasons do not permit such provisions.

4. The bicycle/pedestrian track width shall be determined in consideration of bicycle and pedestrian traffic conditions on the road.

pedestrian traffic volume and wider than 2m for other roads.

4. Where pedestrian bridges etc. or on-street facilities are provided, bicycle/pedestrian track width shall be increased by 3m where pedestrian bridges etc. are to be constructed, 2m where a roofed bench is to be installed, 1.5m where a row of trees is to be planted, 1m where a bench is installed or 0.5m in other cases, respectively to the values given in the preceding paragraph, and requirements as specified above shall be applied, except for Type 3 Class 5 roads where topographic conditions or other special reasons do not permit such provisions.
5. The sidewalk width shall be determined in consideration of pedestrian traffic conditions on the roads.

(Waiting Area for Pedestrians)

Article 11-2

Waiting space for pedestrians shall be provided on sidewalks, bicycle-and pedestrian tracks, bicycle-and pedestrian paths or exclusive pedestrian roads, in the case that it is necessary to ensure that the safe

and smooth passage of pedestrians or bicycle riders will not be impeded due to the accumulation of pedestrians at the pedestrian crossings or at bus stops.

(Center Strip Width in Snowy Areas)

Article 11-3

Center strip, shoulder, bicycle/pedestrian track and side walk width in snowy areas shall be determined in consideration of snow removal.

(Planting Strip)

Article 11-4

1. The planting strip shall be provided to Type 4 Class 1 and Class 2 roads and if necessary to other roads, except where topographic conditions or other special reasons do not permit such provisions.
2. The planting strip width standard shall be 1.5m.
3. The planting strips provided between road sections as described below shall have proper width values, exceeding values specified in the sect ion above when required for conditions in comprehensive consideration of road structure, traffic condition, and land use of adjoining areas and other measures taken to improve road traffic environment or to ensure a better living environments along

adjoining areas irrespective of the requirements above:

- 1) Sections of arterial roads and central business districts in large cities running through scenic spots.
- 2) Sections of arterial roads running through residential areas or areas that are expected to become residential.
4. For planting strips, the selection of plant species and arrangement of trees shall take into account with the ecological characteristics of the area.

(Clearances)

Article 12

Clearances on roads shall be shown in Fig.1 for carriageways and in Fig.2 for sidewalks and bicycle tracks or bicycle/pedestrian tracks

(hereinafter referred to as "bicycle tracks").

Fig.1

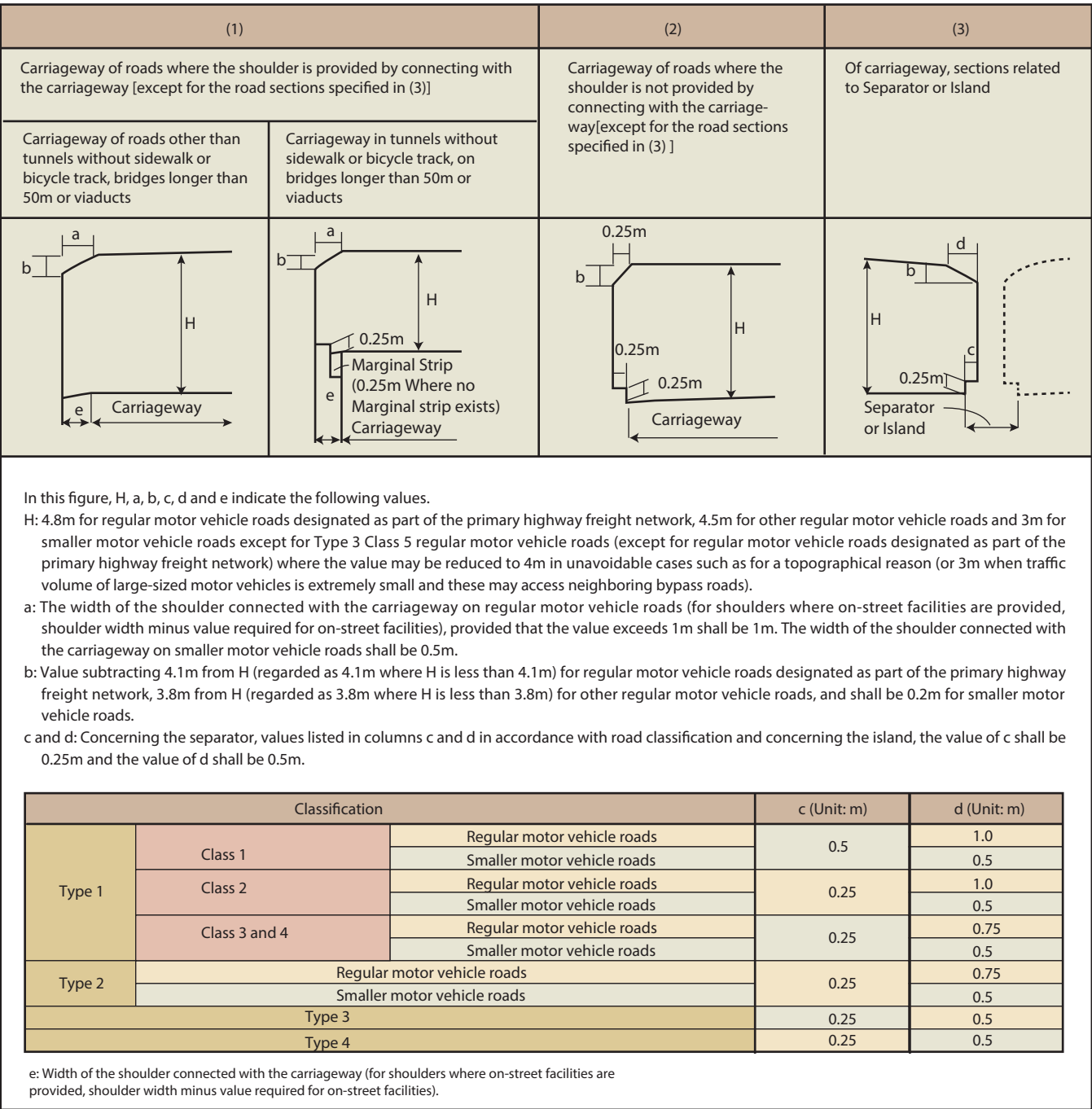
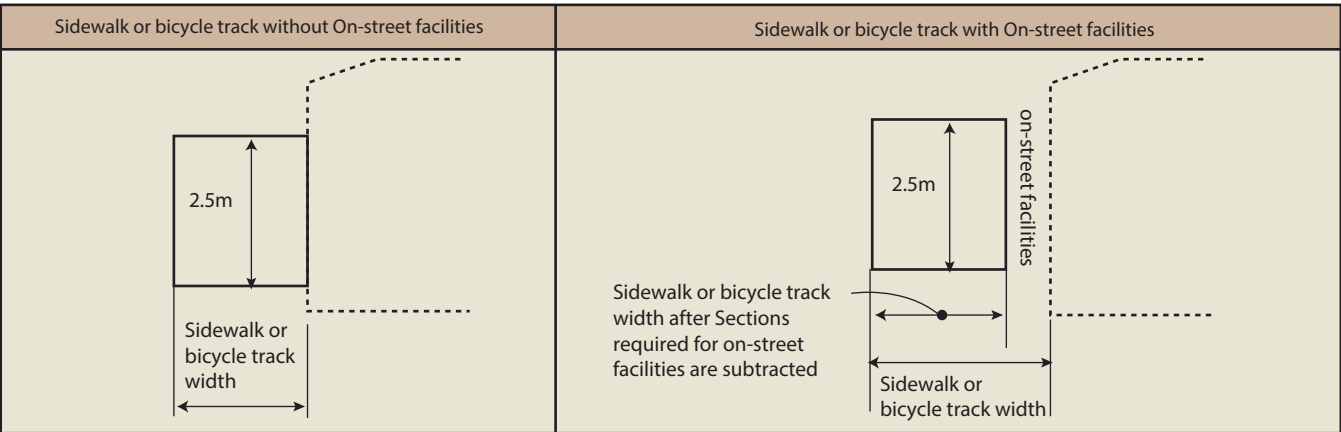


Fig. 2



(Design Speed)

Article 13

1. Design speed on roads, except for service roads, shall be the values listed in the left column of the following table, in accordance with road classification, except where topographical conditions or any other reasons do not permit such provisions. Design speed on roads may be the values listed in the right column of the same table when dealing with these exceptions, however this does not apply to Type 1 Class 4 roads that are national expressways.
2. Design speed on the service roads shall be 40km, 30km, or 20km per hour.

Classification		Design Speed (km/h)	
Type1	Class 1	120	100
	Class 2	100	80
	Class 3	80	60
	Class 4	60	50
Type2	Class 1	80	60
	Class 2	60	50 or 40
Type3	Class 1	80	60
	Class 2	60	50 or 40
	Class 3	60,50 or 40	30
	Class 4	50,40 or 30	20
	Class 5	40,30 or 20	
Type4	Class 1	60	50 or 40
	Class 2	60,50 or 40	30
	Class 3	50,40 or 30	20

(Carriageway Bend Section)

Article 14

Carriageway bend sections shall be curved in shape, except for transition sections, (hereinafter indicating certain sections, provided at the carriageway bend sections, that allow for smooth vehicle

traffic) or bend sections provided pursuant to the provision of Article 31.2.

(Radius of Curve)

Article 15

Radii of curve at the centerline of the carriageway (hereinafter referred to as "radius of curve"), except for transition sections, (hereinafter referred to as "carriageway curve section") shall not be less than the values as listed in the left column of the following table according to design speed, except when unavoidable due to, for example, topographical reasons, in which case the radii of curve may be reduced to the values as listed in the right column of the same table.

Design Speed (km/h)	Radius of Curve (m)	
120	710	570
100	460	380
80	280	230
60	150	120
50	100	80
40	60	50
30	30	
20	15	

(Superelevation at Curve Section)

Article 16

Appropriate Superelevation with no more than the values as listed in the right column of the following table (6% for Type 3 roads without bicycle track) shall be provided on curves of the carriageway, the center strip (except for divider), and the shoulder connected with the carriageway, according to road classification and degree of snow fall or cold climate in the areas where the roads are located, in consideration of design speed, radii of curve, and topographical conditions, unless the radius of the curve is too large, except for Type 4 roads which can be omitted in such unavoidable cases as topographical conditions or any other reasons.

Classification	Area Where Road is Located		Maximum Super-elevation (%)
Type 1,2 and 3	Snowy or Cold Area	Severely Snowy or Cold Area	6
		Other Areas	8
	Other Areas		10
Type4			6

(Widening Lane at Curve Section)

Article 17

The lane width on carriageway curve sections (or carriageway width in the case of roads without lanes) shall be appropriately widened

except for Type 2 and 4 roads, where topographical conditions or any other reasons do not permit such provisions.

(Transition Section)

Article 18

1. Transition sections shall be provided on carriageway bend sections for Type 4 roads where topographical conditions or any other reasons do not permit such provisions.
2. When a curved section is widened and/or provided with Superelevation, a runoff for this widening and/or Superelevation shall be completed in the transition section.
3. The transition curve length shall not be less than the right side value as listed in the following table according to design speed (or length required for runoff when length required for runoff as specified in Section above exceeds values as listed in the same column).

Design Speed (km/h)	Transition Section Length (m)
120	100
100	85
80	70
60	50
50	40
40	35
30	25
20	20

(Grades)

Article 20

Carriageway grades shall be no more than the values listed in the left grade column of the following table according to road classification and design speed, except where topographical conditions or any other

(Sight Distance)

Article 19

1. Sight distance shall not be less than the values below, as listed in the following table according to design speed.
2. For roads with two lanes (except for one-way roads), sufficient sections of oncoming highway visible to the driver shall be provided for overtaking.

Design Speed (km/h)	Transition Section Length (m)
120	210
100	160
80	110
60	75
50	55
40	40
30	30
20	20

reasons do not permit such provisions; in such cases the values of the grade may be reduced to the values listed in the right grade column of the same table.

Classification		Design Speed (km/h)	Grade (%)	
Type 1, Type 2 & Type3	Regular motor vehicle roads	120	2	5
		100	3	6
		80	4	7
		60	5	8
		50	6	9
		40	7	10
		30	8	11
		20	9	12
	Smaller motor vehicle roads	120	4	5
		100		6
		80	7	
		60	8	
		50	9	
		40	10	
		30	11	
Type 4	Regular motor vehicle roads	20	12	
		60	5	7
		50	6	8
		40	7	9
		30	8	10
	Smaller motor vehicle roads	20	9	11
		60	8	
		50	9	
		40	10	
		30	11	
		20	12	

(Climbing Lanes)

Article 21

1. A climbing lane, if necessary, shall be provided to the carriageway of the regular motor vehicle roads where grades exceed 5% (or 3% when the design speed is no less than 100km per hour on

- other regular motor vehicle roads than national expressways and national highways).
2. The climbing lane width shall be 3m.

(Vertical Curves)

Article 22

1. Vertical curves shall be provided where grades change on the carriageway.
2. Radii of vertical curves shall be more than the values listed in the radius of vertical curve column of the following table according to design speed and Types of vertical curves, except when the radii of crest vertical curves on Type 4 Class 1 roads, when design

Design Speed (km/h)	Type of Vertical Curve	Radius of Vertical Curve(m)
120	Crest	11,000
	Sag	4,000
100	Crest	65,00
	Sag	3,000
80	Crest	3,000
	Sag	2,000
60	Crest	1,400
	Sag	1,000
50	Crest	65,00
	Sag	800
40	Crest	700
	Sag	450
30	Crest	250
	Sag	250
20	Crest	100
	Sag	100

speed is 60km per hour, the radii shall be reduced to 1,000m, where topographical conditions or any other reasons do not permit such provisions.

3. Vertical curve lengths shall be more than the values listed in the below right column of the following table according to design speed.

Design Speed (km/h)	Vertical Curve Length(m)
120	100
100	85
80	70
60	50
50	40
40	35
30	25
20	20

(Pavement)

Article 23

1. Carriageways, center strips (except for divider), shoulders connected with carriageways, bicycle tracks and sidewalks shall be paved except in unavoidable cases, such as extremely small traffic volume.
2. The pavement of carriageways and marginal strips shall be constructed so that safe and smooth vehicular traffic can be ensured on the basis of the design wheel load of 49 kN, in consideration of designed daily volume, vehicle weight, subgrade conditions, and meteorological conditions and that shall meet the standards laid down in the Ordinance of Ministryof Land, Infrastructure, Transport

and Tourism, except in the case of traffic volume of small vehicles or any other unavoidable conditions.

3. Type 4 roads (except for tunnels) shall be constructed so that it shall be capable of causing storm water to permeate smoothly under the road surfaces and reducing the traffic noise level, in consideration of the land uses and vehicle traffic conditions in the area where the roads are located or along them, except where road structure, meteorological conditions or other special reasons do not permit such provisions.

(Cross Slopes)

Article 24

1. Cross slopes shall be provided to the center strip (except for divider) and shoulder connected with the carriageway according to road surface Type and the right side values as listed in the following table unless Superelevation is provided.
2. 2% of cross slope as a standard shall be provided to sidewalks and bicycle tracks.
3. The paved road of the structure specified in paragraph 3 of the previous Article may dispense with or reduce cross slope, if proper road surface drainage can be ensured in consideration of meteorological conditions.

Road Surface Type	Cross Slope (%)
Paved Road Complying with Standards Specified in Article 23.2	1.5-2
Others	3-5

(Compound Grades)

Article 25

1. Compound Grades (hereinafter indicating combination of vertical grade and Superelevation or cross slope) shall be no more than the right side values as listed in the following table according to design speed, except for roads with design speed of 30km/h or 20km/h where compound grades may be 12.5% in unavoidable cases, such as topographical conditions or any other reasons.
2. Compound grades shall be not more than 8% on those roads located in severely snowy or cold areas.

Design Speed (km/h)	Compound Grade (%)
120	10
100	
80	10.5
60	
50	11.5
40	
30	
20	

(Drainage Facility)

Article 26

Gutter, gully, or other drainage facilities shall be provided to roads if necessary.

(At-grade Intersection or Connection)

Article 27

1. An intersection shall be designed so as to contain no more than five intersecting legs, except when it is located in a special place such as in front of a station.
2. At an intersection where two or more roads join or intersect at grade, if necessary, a turning lane, speed change lane, or island shall be provided, and corners of intersection shall be cut, and unobstructed sight shall be ensured.
3. Where the turning lane or speed change lane is provided, lane width (except for the turning lane or speed change lane) of the

related section may be reduced to 3m for Type 4 Class 1 regular motor vehicle roads or to 2.75m for Type 4 Class 2 or 3 regular motor vehicle roads or to 2.5m for Type 4 smaller motor vehicle roads.

4. The standard width of turning and speed change lanes shall be 3m for regular motor vehicle roads and 2.5m for smaller motor vehicle roads.
5. Where a turning or speed change lane is provided, proper runoff shall be provided according to design speed.

(Grade Separation)

Article 28

1. When two regular motor vehicle roads having four or more lanes intersecting mutually, excluding climbing lanes, turning lanes and speed change lanes, the intersection shall be separated by grades as a rule, except when the grade separation is unsuitable due to traffic conditions or in an unavoidable case such as a topographical reason.
2. When a smaller motor vehicle road with four or more lanes (except for turning lanes and speed change lanes) crosses another smaller motor or a regular motor vehicle road, the intersection shall be separa

ted by grades.

3. Where the grade separation is provided, a road linking intersecting roads mutually (hereinafter referred to as a “ramp”) shall be provided if necessary.
4. Provisions of Articles 5 through 8, Article 12, Article 13, Article 15, Article 16, Articles 18 through 20, Articles 22 and 25 shall not be applied to the ramp.

(At-grade Intersection with Railway)

Article 29

When a road intersects at a grade with a railway or street railway newly constructed in accordance with the Street Railway Act (Act No.76 1921) (hereinafter referred to as a “railway”), the road shall be so constructed as specified below.

1. Intersection angles shall be not less than 45 degrees.
2. Sections 30m from both ends of railroad crossing and the railroad crossing section shall be straight and vertical carriageways, grades for these sections shall be less than 2.5%, except where there is extremely small vehicular traffic volume or topographical

conditions or any other reasons do not permit such provisions.

3. A visible distance, distance from the intersection point of the railway end track centerline and the carriageway centerline to the point on the track centerline visible at the height of 1.2m at point 5m on the carriageway centerline from the track, shall not be less than the values listed in the following table, except for where a crossing gate or other security facilities are provided or with smaller vehicular traffic volume and fewer passing trains.

Maximum Train Speed at Railroad Crossing (km/h)	Visible Distance (m)
Less than 50	110
50-70	160
70-80	200
80-90	230
90-100	260
100-110	300
More than 110	350

(Turnout)

Article 30

Turnout shall be provided on Type 3 Class 5 roads as specified elow, except for on roads where smooth traffic can be ensured.	turnouts.
1. Distance between two turnouts shall be within 300m.	3. The length shall be more than 20m and the total width of the carriageway (except for bicycle traffic lanes) shall be more than 5m.
2. Roads between two turnouts shall be visible from one of these	

(Traffic Safety Device)

Article 31

When it is necessary for traffic accident prevention, the pedestrian bridge, Supporting Infrastructure for automated driving, fence, lighting, safety post, emergency notification facility, and other similar facilities,	as specified by the ordinances of Ministry of Land, Infrastructure, Transport and Tourism, shall be provided.
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(Protrusion, Narrow Passes, etc.)

Article 31.2

When it is necessary for slowing down vehicles, to ensure safe pedestrian or bicycle traffic, protrusions shall be provided on the surface of the carriageway or on the shoulders connecting to the	carriageway, or narrow passes or bend sections shall be provided on the carriageway, on Type 3 Class 5 roads intended primarily for use by nearby residents.
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(Islands Provided at Bus Bays)

Article 31.3

Islands shall be provided as necessary at bus bays or streetcar stops that do not connect to bicycle tracks, bicycle/pedestrian tracks or	sidewalks.
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(Automobile Parking Lots)

Article 32

Automobile parking lots, bicycle parking lots, bus bays, emergency parking basis or other similar facilities specified by the ordinances of Ministry of Land, Infrastructure, Transport and Tourism shall be	provided, if necessary, to ensure safe and smooth traffic or to contribute to public convenience.
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(Snow Protection Facility and Other Protector)

Article 33

1. Where an avalanche, blizzard, snowfall or other meteorological events could prevent smooth traffic, snow shed, drain for snow removal, snow melting facilities or other facilities shall be provided as specified by the ordinances of Ministry of Land, Infrastructure,	Transport and Tourism.
2. Unless specified above, a fence, retaining wall, and other proper protectors shall be installed where falling stone, slope failure, billow, etc. could prevent traffic or damage road structure.	

(Tunnel)

Article 34

1. To ensure safe and smooth traffic, proper ventilation facilities shall be provided in the tunnel when required in consideration of design daily volume and tunnel length on the road.	3. When a vehicle fire or other accidents in the tunnel could cause risks to traffic, the communication facilities, warning facilities, firefighting facilities and other emergency facilities shall be provided in the tunnel if necessary.
2. When required for safe and smooth traffic, proper lighting shall be provided in the tunnel in consideration of design speed.	

(Bridge and Viaducts)

Article 35

1. Bridges, viaducts, or other similar roads shall be steel or concrete structure or the equivalent.	bridges, viaducts and other similar smaller motor vehicle roads shall secure safe traffic in view of smaller vehicular traffic conditions for these roads.
2. Design vehicle load for bridges, viaducts, and other similar regular motor vehicle roads shall be 245kN. The structures of said bridges, viaducts, and other similar regular motor vehicle roads shall secure safe traffic in view of large-sized vehicle traffic conditions for these roads.	4. In addition to the requirements in the three previous paragraphs, necessary matters regarding construction standards for bridges, viaducts, or other similar roads shall be specified by the Ordinances of the Ministry of Land, Infrastructure, Transport and Tourism.
3. Design vehicle load for bridges, viaducts, and other similar smaller motor vehicle roads shall be 30kN. The structures of said	

(Exception to Accessory Work)

Article 36

After a case is identified in which road work executed on others roads or work other than road work is executed and determined to be influencing roads, provisions from Articles 4 to 35 (except for Article 8, Article 13,	Article 14, Article 24, Article 26, Article 31 and Article 33) may be exempted from application after it is approved that the case is not subject to these requirements.
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(Exception to Change of Road Classification)

Article 37

When classification, as specified in Article 3.2, is changed by plans as to change a part of national highways to prefectural or municipal roads, classification following the change shall result in applying requirements of Article 3.4, Article 3.5, Article 4, Article 5, Article 6.1, Article 6.4, Article 6.6, Article 8.2 through 8.6, Article 8.9, Article 8.11, Article 9.1, Article 10.1, Article 10.2, Article 10-2.3, Article 11.1, Article 11.2, Article 11.4, Article 11-4.1, Article 12, Article 13.1, Article 16, Article 17, Article 18.1, Article 20, Article 22.2, Article 23.3, Article 27.3, Article 30 and Article 31-2. In this case, "Type 3 Class 5 roads" in proviso of Article 5.1, Article 5.5, proviso of Article 10.2.3, proviso of Article 11.4 and Article 12 shall be	read as "Type 3 Class 5 or Type 4 Class 4 roads". "Type 3 Class 5 roads" in Article 5.3 shall be read as "Type 3 Class 5 and Type 4 Class 4 roads". "Type 4 roads" in Article 9.1 and Article 11.1 shall be read as "Type 4 (except for Class 4)". "Class 3" in Article 10.1 shall be read as "Class 3 and 4". "Type 3" in Article 11.1 shall be read as "Type 3 or Type 4 Class 4". "Type 3" in Article 11.2 shall be read as "Type 3 or Type 4 Class 4". "Values listed in the top column" in Article 13.1 shall be read as "Values listed in the top column (for Type 4 Class 4 roads, 40km/h, 30km/h or 20km/h)". "Mainly" in Article 31-2 shall be read as "Type 4 Class 4 roads or mainly".
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(Exception to Reconstruction of Short Section)

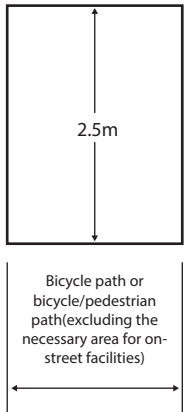
Article 38

1. When a short section on roads that severely prevents traffic is reconstructed as an emergency measure, except for reconstruction as listed in the following requirements, this section may be exempted from application of Article 5, Article 6.4 through Article 6.6, Article 7, Article 9, Article 9-2.3, Article 9-3, Article 10.3, Article 10-2.2, Article 10-2.3, Article 11.3, Article 11.4, Article 11-4.2, Article 11-4.3, Article 15 through Article 22, Article 23.3, and Article 25, if it is approved that the road structure of sections adjacent to this section do not satisfy these requirements.	2. When a short section of roads that severely impact safety is reconstructed as an emergency measure, this section shall be exempt from application of Article 5, Article 6.4 through Article 6.6, Article 7, Article 8.2, Article 9, Article 9-2.3, Article 9-3, Article 10.3, Article 10-2.2, Article 10-2.3, Article 11.3, Article 11.4, Article 11-4.2, Article 11-4.3, Article 19.1, Article 21.2, Article 23.3, Article 39.1, Article 39.2, and Article 40.1, if it is determined in consideration of road conditions that it is not proper to apply these requirements.
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(Bicycle Path and Bicycle/Pedestrian Path)

Article 39

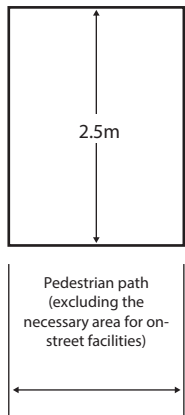
1. Bicycle path width shall be not less than 3m, while bicycle/pedestrian path width shall be no less than 4m. However, where topographical conditions or any other reasons do not permit such provisions, bicycle path width can be reduced to 2.5m.
2. Lateral clearances wider than 0.5m shall be provided to both sides of bicycle paths or bicycle/pedestrian paths as a part of the roads.
3. Where on-street facilities are provided on bicycle tracks or bicycle/pedestrian tracks, width of these tracks shall be determined in consideration of clearances as specified in the following provision.
4. Bicycle path and bicycle/pedestrian path clearances shall be in accordance with the following figure.
5. Alignment, grade, and other features of bicycle paths and bicycle/pedestrian paths shall be determined so as to ensure safe and smooth bicycle and pedestrian traffic.
6. Requirements of Article 3 through 37 and Section 1 of the preceding Article (excluding Article 1 1.2 for bicycle/pedestrian path) shall not be applied to bicycle paths and bicycle/pedestrian paths.



(Pedestrian Path)

Article 40

1. Pedestrian path width shall be not less than 2m in consideration of pedestrian traffic conditions and areas where the track is located, except where topographical conditions or other reasons do not permit such provisions, in which case the width can be reduced to 1m.
2. Where on-street facilities are provided on pedestrian paths, width shall be determined in consideration of clearances as specified in the following provision.
3. Pedestrian path clearances shall be in accordance with the following figure.
4. Alignment, grade and other features of pedestrian paths shall be determined so as to ensure safe and smooth pedestrian traffic.
5. Requirements of Articles 3 through 11, Article 11-3 through 37 and Section 1 of Article 38 shall not be applied to pedestrian paths.



(Pedestrian Convenience-Promoting Streets)

Article 41

1. Sections for pedestrian stay use shall be provided on sidewalks or bicycle/pedestrian tracks provided to Pedestrian Convenience-Promoting Streets, or bicycle/pedestrian paths that are Pedestrian Convenience-Promoting Streets.
2. Spaces shall be ensured for the sections specified in the preceding paragraph to establish pedestrian convenience-promoting facilities if guidance of appropriate and systematic establishment of pedestrian convenience-promoting facilities is considered necessary. In this case, structures, objects, or facilities that contribute to promoted

convenience for pedestrians, such as street lights and benches, shall be established in such spaces if it is considered necessary.

3. Pedestrian convenience-promoting streets (except for newly constructed special roads specified in Article 10.1 of the Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc. (Act No. 91 of 2006)) shall have a structure that complies with the standard for smooth transportation, etc. on roads specified in this paragraph.

(General technical standards for structure of prefectural and municipal roads)

Article 42

1. The provisions of Article 4, 12, 35.2, 35.3, 35.4 (limited to the matters listed in Article 30.1.12), 39.4, and 40.3 shall apply mutatis mutandis to general technical standards for the structure of prefectural or municipal roads when these roads are newly constructed or reconstructed. In this case, "Type 3 Class 5" in Article 12 shall be read as "Type 3 Class 5 or Type 4 Class 4".
2. The provisions of Article 5 through Article 11-4, Article 13 through 34, Article 35.1 and 35.4 (except for the provisions listed in Article 30.1.12), Article 36 through 38, Article 39.1 through 39.3, Article 39.5 and 39.6, Article 40.1, 40.2, 40.4, 40.5 and Article 41 shall apply mutatis mutandis to the standard specified in Article 30.3. In this case, "Type 3 Class 5 roads" in proviso of Article 5.1, Article 5.5, proviso of Article 10-2.3, and proviso of Article 11.4 shall be read as

"Type 3 Class 5 or Type 4 Class 4 roads". "Type 3 Class 5 roads" in Article 5.3 shall be read as "Type 3 Class 5 and Type 4 Class 4 roads". "Type 4 roads" in Article 9.1 and Article 11.1 shall be read as "Type 4 (except for Class 4)". "Class 3" in Article 10.1 shall be read as "Class 3 and 4" "Type 3" in Article 11.1 shall be read as "Type 3 or Type 4 Class 4". "Type 3" in Article 11.2 shall be read as "Type 3 or Type 4 Class 4". "Values listed in the left column" in Article 13.1 shall be read as "Values listed in the left column (for Type 4 Class 4 roads 40km/h, 30km/h or 20km/h)". "Primarily for use" in Article 31.2 shall be read as "Primarily for Type 4 Class 4 roads or use". In Article 37 "National highways" shall be read as "prefectural roads", "prefectural roads or municipal roads" and "other roads" shall be read as "municipal roads", "subject part" shall be read as "subject prefectural roads".