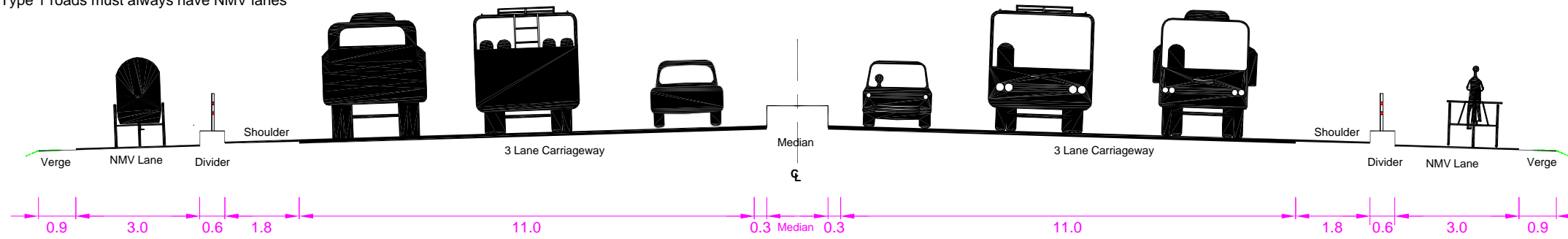


# ROADS AND HIGHWAYS DEPARTMENT STANDARD CROSS SECTIONS FOR RHD ROADS

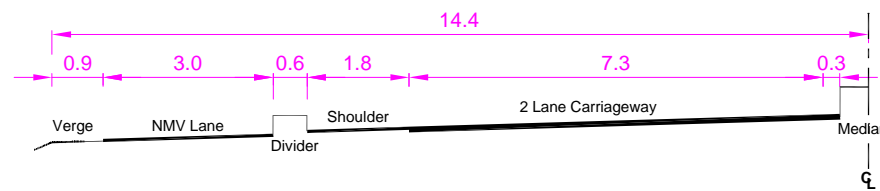
## TYPE 1: DUAL 3 LANE CARRIAGEWAY WITH NMV LANES

Type 1 roads must always have NMV lanes



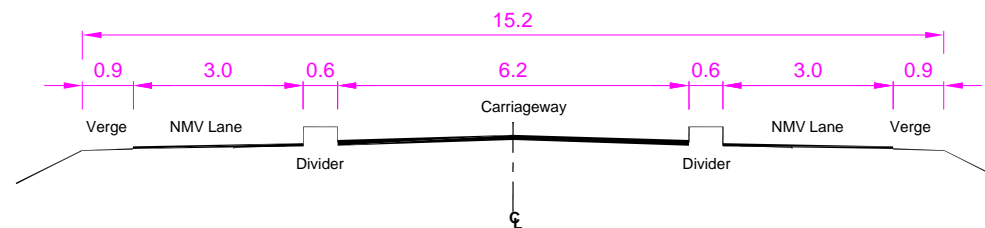
## TYPE 2a: DUAL 2 LANE CARRIAGEWAY WITH NMV LANES

For use where there are many NMVs, such as through towns and villages

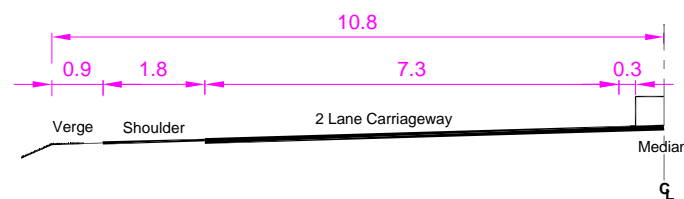


## TYPE 4a: 6.2m CARRIAGEWAY WITH NMV LANES

For use where there are many NMVs, such as through towns and villages

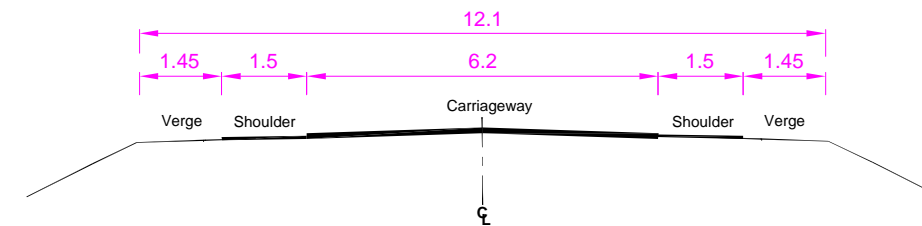


## TYPE 2: DUAL 2 LANE CARRIAGEWAY



## TYPE 4: 6.2m CARRIAGEWAY WITH 1.5m SHOULDERS

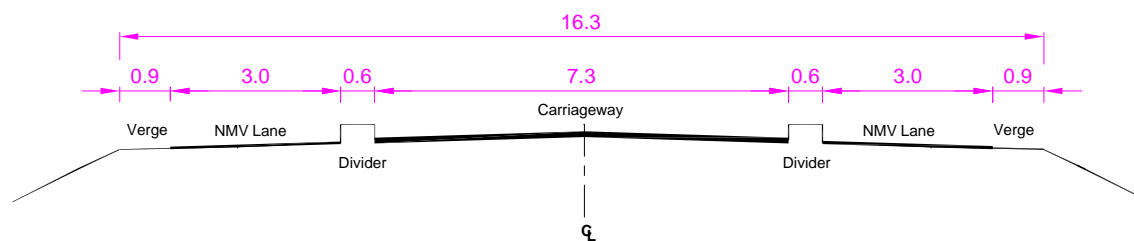
All new Type 4 roads to be provided with a crest width of 12.1m for later upgrading to Type 3



\*\* When upgrading from Type 5 a verge of 0.9 meters width is permissible

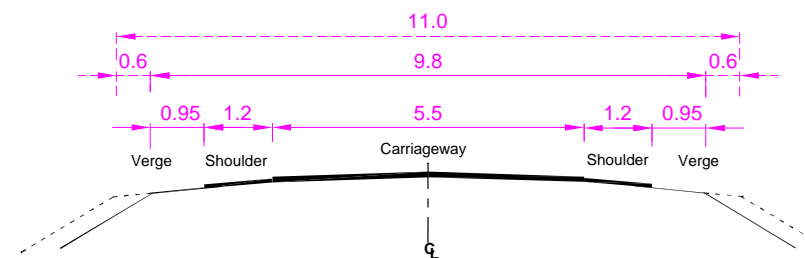
## TYPE 3a: 7.3m CARRIAGEWAY WITH NMV LANES

For use where there are many NMVs, such as through towns and villages



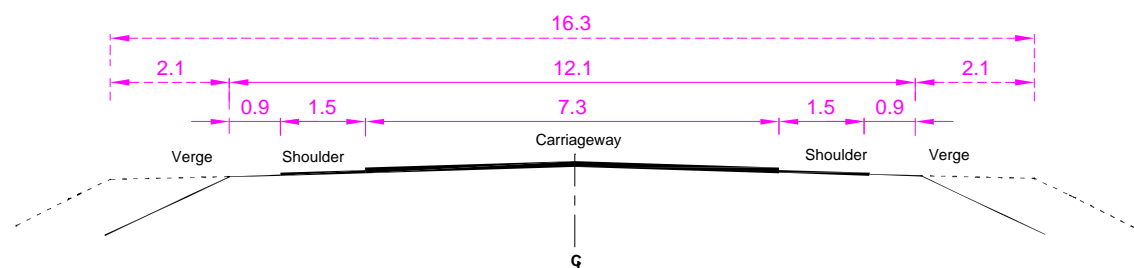
## TYPE 5: 5.5m CARRIAGEWAY

If upgrading to Type 4 is likely to be needed in future the road should be built with a crest width of 11.0m



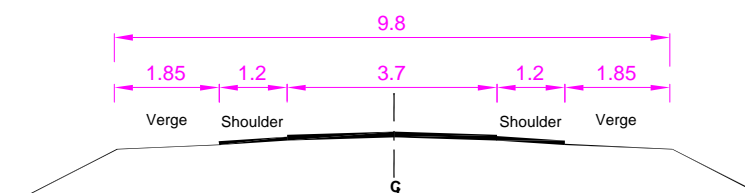
## TYPE 3: 7.3m CARRIAGEWAY

If it is likely that NMV lanes will be needed in future the road should be built with a crest width of 16.3m.



## TYPE 6: 3.7m SINGLE LANE CARRIAGEWAY

All Type 6 roads to be provided with a crest width of 9.8m for later upgrading to Type 5



## NOTES

### General:

These RHD standard cross sections are to apply to all roads. Other cross-sections are only permissible in exceptional circumstances and with the written approval of the Chief Engineer.

The cross-sections for Design Types 3 - 6 may be provided with extra-wide embankments in order to enable the road to be easily upgraded as traffic volumes grow.

Crossfall of paved carriageway and shoulder should normally be 3%. Crossfall of unpaved shoulder and verges should be 5%.

### Design Capacities:

This diagram forms part of the RHD Geometric Design Standards document. This document should be referred to for further information on Cross Sections and Geometric Designs.

Type 1:

Maximum capacity: 8500 PCU/hr  
(NMV lane to be provided in all cases)

Type 2:

Maximum capacity: 4500 PCU/hr  
(assumed NMVs are either prohibited or are less than 50 PCU/hr. If NMV PCU/hr exceeds 50 adopt the type 2a cross section).

Type 3:

Maximum capacity: 2100 PCU/hr  
(assumed NMV/MV ratio of 0.2)  
(Consider providing separate NMV lanes as in cross section 3a if the NMV PCU/hr exceeds 400)

Type 4:

Maximum capacity: 1600 PCU/hr  
(assumed NMV/MV ratio of 0.14)  
(Consider providing separate NMV lanes as in cross section 4a if the PCU/hr exceeds 400)

Type 5:

Maximum capacity: 800 PCU/hr  
(NMVs will use carriageways and the shoulder)

Type 6:

Maximum capacity: 400 PCU/hr  
(assumed NMV/MV ratio of 2.5)  
(NMVs will use carriageways and the shoulder)

### PCU Equivalent

The wide variety of vehicle types in use on Bangladesh roads make it appropriate to define traffic flow in terms of passenger car units (PCU) rather than vehicles. The PCU values are given below:

Vehicle Type	PCU Equivalent
Truck/Bus/Minibus	3.00
Car/Utility	1.00
Baby taxi/Motorcycle	0.75
Bicycle	0.50
Cycle Rickshaw	2.00
Bullock Cart	4.00

### Estimating Design Year PCU:

dy = design year

g = yearly growth of motor vehicle (in percentage)

$$PCU_{dy} = PCU_{\text{present}} \times (1+g/100)^{dy}$$

For, dy = 10 years and g = 8 %

$$PCU_{dy} = 2.16 \times PCU_{\text{present}}$$

\* PCU / hour is the peak hour PCU / hr (total of both directions) in the design year (dy)