



MINISTRY OF DEVELOPMENT  
NEGARA BRUNEI DARUSSALAM

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GUIDANCE DOCUMENT

# GEOMETRIC DESIGN GUIDELINES FOR ROADS

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## **FOREWORD**

In the spectrum of “Asean Harmonization of Road, Motor Vehicle Road Worthiness and Traffic Safety Standards, the Geometric Design Standards for Brunei Darussalam Road were prepared to achieve :-

1. Implementation of “Negara Brunei Darussalam Master Plan” Transport Strategies and Proposals.
2. Adoption of consistent, efficient, safe, and unified geometric design standards for Brunei Darussalam local environment.
3. Review and compare the geometric design standards currently in use with the up-to-date international standards.

The Geometric Design Guidelines for Roads in Brunei Darussalam were compared, evaluated and prepared according to the following state of art international standards:-

1. “A Policy on Geometric Design of Highways and Streets”, AASHTO 1984, (American Association of State Highway and Transportation Officials).
2. Arahan Teknik (Jalan) 8/86, J.K.R. Malaysia, “A Guide on Geometric Design of Roads”.
3. T.R.R.L (UK), Report 94, “A Review of Geometric Design and Standards for Rural Roads in Developing Countries”, 1988, Overseas Unit.
4. “Geometric Design Guide for Canadian Roads (1994 Revision)”, Roads and Transportation Association of Canada.
5. Latest research papers on Geometric Design Standards and Safety.

The geometric design guidelines draft were reviewed, discussed and enhanced thoroughly by expert road engineers from Ministry of Development and P.W.D Brunei Darussalam in addition to road engineers from local consulting companies through TECO (Road) committee meetings.

These geometric design guidelines were prepared in a brief, simplified, and precise form to enable the road engineers in Brunei Darussalam for the design of safe, consistent, and efficient roads.

## COMMITTEE REPRESENTATION

The Technical Committee on Geometric Design was entrusted by the Ministry of Development for the preparation of this Brunei Darussalam Guidance Document. The members of the Technical Committee are as follows:-

1. Mr. Yong Teck Chin (Chairman) - Department of Road,  
Public Works Department.
2. Hj Suhaimi Hj Abd Gafar/Mr. Yee Kok On - Department of Road,  
Public Works Department.
3. Mr. Lim Lam Keong/Zahari Hj Abd Karim - All Construction Planning and  
Research Unit,  
Ministry of Development.
4. Mr. Lou Chi Tong/Dr. S.A.Sultan  
/Mr. Wee Hong Joo - Associated Consultants Sdn  
Bhd.
5. Mr. Khor Wei Chee - Petar Perunding Sdn Bhd.
6. Mr. S. Pandithan/Mr. Gaston Ovellette - Bolton Hennessey.
7. Mr. Arunachal Ray/Anil Ramachandren - Baharuddin And Associates.
8. Mr. Tsang Chee Wah/ Mr. Adam Assaad - Jurutera Tempatan.

## GEOMETRIC DESIGN GUIDELINES FOR ROADS

### **1.0 INTRODUCTION**

It was recognized that there is an increasing demand to adopt uniform and unified standards for the geometric design of roads in Brunei Darussalam.

The geometric design standards currently in use are published by foreign road authorities such as BSI, AASHTO, or Malaysian JKR.

The objective of standardization has been devoted to translate the development Master Plan strategies into physical forms and to consider the very nature of the travel as well as local environmental characteristics of this country. The standardization of roads geometric design is necessary to provide consistent, efficient, safe and reliable roads system.

### **2.0 ROAD ADMINISTRATION**

All the road classes within Negara Brunei Darussalam are under the authority of the Roads Department (JKR) / Ministry of Development. All the road classes maintenance is the responsibility of the Government and is done through the Roads Department JKR / Ministry of Development.

### **3.0 CATEGORIES OF ROADS**

Roads in Brunei Darussalam are classified into four categories as follows (See Figure 3-1 to 3-3):

#### **a - PRIMARY ROADS**

They serve major centers of activity in urbanised areas, highest traffic volume corridors, and longest trip desires in addition to carry high proportion of the urban area travel. Smooth traffic is provided with partial access control. High to medium speed is required to maintain high level of serviceability.

#### **b - SECONDARY ROADS**

They form the link between the primary roads network and the residential, industrial, and business areas. Limited number of junctions and bus bays should be provided. No direct access to developments neither parking are allowed on these roads. Partial control of access and smooth traffic flow are necessary to accommodate their relatively high traffic volume.

#### **c - DISTRIBUTOR ROADS**

They are forming roads that penetrate into environmental areas as well as serving specified neighborhood, commercial, and industrial areas. They should be designed to discourage through traffic and to provide access only for traffic from and to the specified environmental areas. Partial or no control of access should be considered.

#### **d - LOCAL ACCESS ROADS**

They are forming the basic road network within environmental areas to offer direct access to developments and properties. They have limited capacity and frequent junctions with local distributor roads. Control of access is not limited.