



# भारतीय राश्ट्रीय राजमार्ग प्राधिकरण

(सड़क परिवहन और राजमार्ग मंत्रालय)

## National Highways Authority of India

(Ministry of Road Transport & Highways)

G-5 & 6, Sector-10, Dwarka, New Delhi-110045

Phone : 91-11-25074100/25074200

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Extn. : 2223/2318/2468/2553

NHAI/13013/03-04/CMD-CO/78/Plaza Location

October 22nd, 2003

### CIRCULAR NO: NHAI/COMMERCIAL OPERATION /32

#### **Sub: Acquisition of land for construction of toll plaza**

Plaza locations for Delhi-Mumbai and Mumbai-Chennai section of Golden Quadrilateral have already been finalised and communicated to concerned project directors. In respect of other portion of NHDP, finalisation of the plaza locations is under consideration of concerned technical divisions at Head Office.

It has been observed that the land at one of the identified locations has been purchased recently, after our identification of the locations, by private parties for their purpose necessitating a shift in the location. As such, it is imperative that immediately on finalisation of plaza locations, the project director should initiate process of acquisition of requisite area of land based on number of lanes as per guidelines in drawing No. 02726/Toll/Gen/09 enclosed with Circular No. NHAI/11015/3/98(CM) (T-1)/480 dated 24.6.2003 on a ten years perspective.

**All further correspondence on land acquisition should be undertaken with the concerned technical division at Head Office.**

This issues with the approval of the Competent Authority.

(M M Lohia)

General Manager (CO)

To:

All PIUs/CMUs

Copy submitted for favour of information to:

All Members/CGMs/CVO/CPD

All GMs

PS to Chairman

Chief Engineer (PIC), MoRT&H



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No. NHAI/11015/3/98/(CM)(T-1)/480

Dated: 24.6.2003

**CIRCULAR**

**Sub.: Typical design of toll plazas.**

Please find enclosed herewith a set of typical approved design providing details for toll plazas to be constructed on National Highway sections.

This issues with the approval of competent authority.

**(P.K. Chakrabarty)**  
CGM(CM)

Copy to:

1. Member (Admn.)
2. Member (Fin.)
3. Member(Tech)-AKB
4. Member (Tech)- NS
5. All GGMs/CPD/GMs (CA) - Sh. S. Lognathem
6. All PIUs/CMUs
7. PS to Chairman

**Number of Lanes at Toll Plaza**

The number of lanes at the toll plaza should be derived for the forecast traffic in Design year (10 years). The forecast traffic should be converted in to peak hour peak direction (PHPD) traffic to derive the number of toll lanes.

$$\text{PHPD} = \text{Forecast traffic} \times \text{Peak hour factor} \times \text{peak direction split}$$

Forecast traffic = 10 year forecast in terms of vehicles/day for the vehicles classified under tollable category. Non-tollable vehicles need not be considered for calculation of number of toll lanes, as they would be allowed to pass through a separate lane.

Peak hour factor = Percentage of traffic travelling during peak hour in ADT. In absence of daily variation this could be taken as 6%.

Peak Direction Split = Percentage of traffic travelling in peak direction during peak hour. In case of rural highways this is generally close to 50%, however in case of urban/sub-urban sections this may be derived from the traffic counts.

The number of toll lanes should be calculated as:

$$\text{No. of toll lanes} = \text{PHPD/Service rate}$$

$$\text{PHPD} = \text{Peak hour peak direction traffic}$$

Service rate = A service rate of 180 veh/hr be used for semi-automatic toll gate with manual cash collection.

In case of fractions, the value should be rounded up to derive the number of toll lanes.

The number of lanes for the toll plaza may be derived using the table below:

**Table : No. of toll lanes in each direction**

10 year Forecast Traffic (in veh/day)	Peak Hour Factor				
	5%	6%	7%	8%	9%
<20000	3	4	4	5	5
20000	3	4	4	5	5
22500	4	4	5	5	6
25000	4	5	5	6	7
27500	4	5	6	7	7
30000	5	5	6	7	8
32500	5	6	7	8	9
35000	5	6	7	8	9
37500	6	7	8	9	10
40000	6	7	8	9	10

Note:  
 1 Assumes 50% direction split  
 2 On deriving the number of toll lanes based on traffic as above, ONE ADDITIONAL TOLL LANE SHOULD BE ADDED IN EACH DIRECTION AS A SPARE LANE FOR MAINTENANCE PURPOSES.

Revision Details		Project Title		Client	
By	Date	TYPICAL DESIGN OF TOLL PLAZAS		NATIONAL HIGHWAYS AUTHORITY OF INDIA	
Chk.	Suffix				
Drawing Title		Drawing Number		Dgn.	
NUMBER OF TOLL LANES		02726/TOLL/GEN/09		Y.Kumar	
Scale :-		Dsn		Chk.	
		OIS		R.Vijay	
Date		Date		Date	
June 2003		June 2003		June 2003	
Scott Wilson Kirkpatrick India Pvt. Ltd.		D-1019 NEW FRIENDS COLONY		NEW DELHI-110 055	
		Tel: 26317255, 26317256		Fax: (011)26820837	
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