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**Ministry of Shipping, Road
Transport & Highways
Deptt. of Road Transport &
Highways**

**ADDENDUM TO MINISTRY'S
TECHNICAL CIRCULARS AND DIRECTIVES ON
NATIONAL HIGHWAYS AND CENTRALLY
SPONSORED ROAD AND BRIDGE PROJECTS**

(JANUARY 1998 - DECEMBER 2001)

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FOREWORD

This Ministry has been issuing circulars on technical and policy matters pertaining to the National Highways and other centrally sponsored road and bridge works from time to time. The circulars issued upto 1985 were published in two volumes in July, 1986. Subsequently, four Addendums covering circulars issued upto December, 1997 were published.

In this Fifth Addendum, circulars issued by the Ministry between January, 1998 and December, 2001 are being published. The circulars, have been arranged in chronological order subjectwise as per classification adopted in earlier publications.

The Compendium of Circulars has served useful purpose in planning, design, policy formulation and implementation of highway projects in the country. Any feedback from State PWDs, NHAI, BRO and other organisations and technical officers of the Ministry for improvement in future editions of Addendum would be welcome. The circulars issued by the Ministry after December 2001 will be compiled and published in the next Addendum.

S. Prakash

(Indu Prakash)

Director General (Road Development) and
Special Secretary to Government of India
Ministry of Road Transport & Highways

New Delhi,
Date: 3rd June, 2004

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114. NATIONAL HIGHWAYS RULES AND AMENDMENTS

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
114.10	RW/NH-37011/31/97-DI dated 13.7.99	National Highways (Fees for the use of National Highway Section and Permanent Bridge – Public Funded Project) Rules, 1997	114/17

No. RW/NH-37011/31/97-D.I

Dated, the 13th July, 1999

To

The Secretaries of PWD of all States/UTs dealing with National Highways; Director General (Works), Central Public Works Department; Director General, Border Roads Organisation; Chairman, National Highways Authority of India.

Subject : National Highways (Fees for the use of National Highway Section and Permanent Bridge - Public Funded Project) Rules, 1997

I am directed to say that on a reference received from National Highways Authority of India regarding the rate of fee and the tenure applicable in respect of a bridge on National Highway-9 in Andhra Pradesh, the applicability and scope of the rules mentioned above has since been examined in consultation with the Ministry of Law & Justice (Department of Legal Affairs). A copy of their advice in this regard is enclosed herewith for information and necessary action.

[Enclosure to Ministry's Circular No. RW/NH-37011/31/97-D.I dated 13/7/1999]

Advice of Ministry of Law & Justice (Department of Legal Affairs) dated 3.6.1999 regarding the scope and applicability of National Highways (Fees for the use of National Highway Section and Permanent Bridge - Public Funded Project) Rules, 1997.

- (1) The administrative department has sought our opinion as to whether levy of fees should be continued in respect of Keesara Bridge in perpetuity as per the 1997 Rules.
- (2) The department has stated that Keesara Bridge was opened to traffic and started collection of toll w.e.f. 1.5.1994.
- (3) The department has placed on record a copy of National Highways (Fees for the use of Permanent Bridge) Rules, 1992.
- (4) Rule 8 of the said rules provides that levy of fees shall be discontinued in respect of bridges costing more than Rs. 25 lakhs and upto Rs.100 lakhs completed and open to traffic on or after 1st day of April, 1976, but before the 1st day of May, 1992, on National Highways forthwith or after the expiry of the existing contract period in cases where contracts have been entered into fee collection.
- (5) The levying of fee shall also be discontinued in respect of projects costing more than Rs. 100 lakhs completed and open to traffic on or after 1st day of April, 1976, on National Highways as soon as the full cost of bridge or group of bridges including the cost of approaches, cost of structure to be put up for the collection fees, guide bunds and protective work including interest thereon as also the maintenance and special repairs expenditure thereon, upto the date of discontinuance of the levy is recovered.
- (6) The National Highways (Fees for use of Permanent Bridge) Rules, 1992, has been superseded vide the National Highways (Fee for use of National Highways Section and Permanent Bridge - Public Funded Project) Rules, 1997, notified vide GSR 490(E) dated 27.8.1997.
- (7) Rule 11 of the said rules provides that the fee shall be collected in perpetuity by the executive agency.
- (8) Rule 1997 were notified on 27.8.1997 as such these rules came into force on 27.8.1997. We do not see any provisions in the notification dated 27.8.1997 which shows that these will also be applicable retrospectively.
- (9) Vide letter No. RW/NH-11012/2/92-DOI pt. dated 4.8.1998 the department has taken a decision in similar matter/in respect of toll collection on Jejmau-Ganga Bridge on NH-25 as under :-

"Since the new rules viz. the National Highways (Fees for the use of National Highways Section and Permanent Bridge - Public Funded Project) Rules, 1997 came into force from 27.8.1997, only bridges opened after 27.8.1997 should be charged toll in perpetuity.

This has the approval of Director General (Road Development) & Additional Secretary."

- (10) In view of the above, we are of the view that Rules, 1997, will be applicable in respect of bridges which were opened to traffic on or after 27.8.1997.
- (11) In the present matter since Keesara Bridge was opened to traffic w.e.f. 1.5.94 and fee is being collected as per the Rules, 1992, we are of the view that new Rules, 1997, will not be applicable in the present matter.
- (12) In view of the facts and circumstances mentioned above we are of the opinion that department may discontinue to collect the fee in respect of bridge which was opened to traffic w.e.f. 1.5.1994, if the fee as provided under Rule 8 of the National Highways (Fees for use of Permanent Bridge) Rules, 1992, is recovered.

**121.2 DIRECTIONS ON PROJECT PREPARATION & CO-ORDINATION BETWEEN
ROADS & BRIDGES**

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No. RW/NH/12011/1/99/W/RJ.

Dated, the 15th Jan., 2001

To

The Chief Secretaries/Secretaries (PWD/Roads) of all State Governments/UTs; Chief Engineers of States/UTs (dealing with NHs and Centrally sponsored schemes); Director General Border Roads; Chairman, National Highways Authority of India.

Subject : Standard Terms of Reference for engagement of consultants for carrying out feasibility studies and inventorisation of new NHs for their improvement to National Highway standards

A number of new National Highways have been declared recently. The newly declared National Highways are deficient in many respects, like, single-lane pavements, inadequate formation width and crust, sub-standard horizontal alignment and poor vertical geometrics, existence of causeways, weak and narrow culverts, bridges, etc. and are required to be improved to bring it to National Highway standards. A feasibility study would be required to prepare road inventory and proposal for removal of deficiencies in these newly declared National Highways, their cost and phasing.

2. The standard document on Terms for Reference for engagement of consultants is enclosed for National Highway works. This may be brought to the notice of all concerned.

[Enclosure to Ministry's Circular No RW/NH/12011/1/99/W/RJ dated, 15th Jan., 2001]

TERMS OF REFERENCE FOR ENGAGEMENT OF CONSULTANTS FOR INVENTORIZATION OF NEW NATIONAL HIGHWAYS AND FEASIBILITY STUDIES FOR THEIR UP-GRADATION

1. BACKGROUND

It is proposed to engage consultants from the list of consultants empanelled by the Ministry of Road Transport & Highways who will work/associate for providing consulting services for preparation of detailed inventories and undertaking feasibility studies of up-gradation of newly declared National Highways to National Highway standards.

2. PROJECT INFORMATION

Sections of National Highway Nos in the State/States of as per details indicated in are deficient in many respects, like, existence of submersible causeways, single-lane pavements, inadequate formation width and crust, sub-standard curves and grades, etc. and are required to be improved to National Highway Standards. The map of National Highways is enclosed at *Annexure*.

3. OBJECTIVE

The main objective of the study is to prepare a road inventory and proposal for removal of deficiencies in National Highways and to systematically prioritize the required works to be taken up for execution in a phased manner depending upon the availability of resources.

4. SCOPE OF THE CONSULTANCY SERVICES

The scope of the consultancy service is to :

- (i) Conduct preliminary surveys in accordance with para 6 of IRC:SP:19.
- (ii) Collect inventory data and to conduct condition survey of roads, bridges, culverts, etc. as per IRC:SP:19 and compile the information in the enclosed proforma and in an acceptable computerised data base format.
- (iii) Prepare strip plan showing the existing road land width, utility services (both above and below ground level), trees, electric poles, telephone poles, water pipeline, sewer line, bridges, culverts, junctions, adjoining land use, encroachment, etc. Digitise these for computer storage.

- (iv) Prepare video filming on compact disk of the present construction of highways particularly with regard to the existence of authorized/unauthorized structures on either side of the highway.
- (v) Identify homogeneous section based on traffic and road geometry.
- (vi) Conduct 7 day traffic (volume count) survey at one location in each homogeneous section. However, traffic survey shall be conducted at an interval of not more than 50 kms within a homogeneous section.
- (vii) Conduct additional traffic survey for each turning movement at major intersection, as per IRC:SP:19.
- (viii) Gather information on accidents showing type of accident, frequencies and to identify accident prone locations/sections along with main reasons for such situations.
- (ix) Digging test pits atleast 1 m below the underside of the lowest pavement layer or up to rock level, whichever is less wherever pavement condition changes or at 2 km intervals whichever is less. Conduct soil tests, e.g., gradation test (IS:2720 part IV), atterberg limits, field density, moisture content, shrinkage limit test (if required), deleterious constituents as per relevant IRC standard.
- (x) Determine composition and thickness of existing pavement.
- (xi) Identification of borrow area as per IRC:10 and carryout necessary soil tests to determine suitability of soil.
- (xii) Conduct representative CBR test on the existing sub-grade as per IRC:37 in alternative kms.
- (xiii) Carry out deflection test by Benkelman beam method (IRC:81) for 200 m length in alternative kms.
- (xiv) Trial pits (a) for culverts at an interval of 5 kms, (b) for minor bridges (length less than 60 m) at each location.
- (xv) Carry out geo-technical investigations and sub-surface exploration by digging borehole at one location for major bridges (length more than 60 m).
- (xvi) Collect information about hydrology, e.g., catchment characteristics, rainfall stream/channel characteristics and silt factor for all cross-drainage works (existing as well as new).
- (xvii) Determine the need of bypass and other re-alignments and geometric improvements and suggest suitable alignments.
- (xviii) Preliminary proposals for widening, strengthening, raising, etc.
- (xix) Identify Railway level crossing - its type which require up-gradation or construction of R.O.B. on the basis of no. of closures, period of closure and expected traffic. The details of level-crossing may be furnished.
- (xx) Identification of suitable location for lay by, truck parking places and wayside amenities.
- (xxi) Preparation of rough cost estimates based on
 - (a) typical cross-section of road
 - (b) GAD for bridge structures
 - (c) Standard typical drawing for culverts
 - (d) Widening
 - (e) Strengthening
 - (f) Any other improvement required
 - (g) Analysis of Rates based on Ministry of Road Transport & Highways data book and current rates.
- (xxii) Identification and need based Prioritization of the required works to be taken-up for execution in a phased manner.
- (xxiii) Provide a computer system and requisite original software for keeping computerised inventory and digitized maps.

5. SEQUENCING OF REPORT PREPARATION

Report preparation activities will be split into stages as brought out below.

Stage 1 : Inception Report

The consultant is required to submit his Inception Report within 15 days of award of the work. The report shall cover the following:

- (i) Project preparation
- (ii) Detailed methodology to meet the requirement of the T.O.R. including number of teams mobilized for deployment, scheduling of various activities to be carried out for completion of different stages of work within the stipulated time schedule.
- (iii) Task assignment and work schedule
- (iv) Work programme

- (v) Proforma for data collection (suggested proforma is given at *Appendix II*)
- (vi) Key personnel to be employed
- (vii) Time frame for submission of various reports

The consultant shall carry out the modification, if required in the Inception Report. The approval of Inception Report will generally be given within 30 days of its submission.

Stage 2 : Final Report

The consultant may commence the work of preparation of inventory of the existing National Highway and feasibility studies for their up-gradation as per their Inception Report in anticipation of its acceptance but shall modify their programmes and procedures in the light of comments of Ministry of Road Transport & Highways on the Inception Report, if any. They shall submit the draft report within 120 days from the approval of Inception Report. The draft report shall cover the entire scope of services required from the consultant, which inter-alia include:

- (1) Strip plans
- (2) Alignment plan showing proposals for alignment
- (3) Need/justification of bypass
- (4) Need/justifications for replacements of level crossing by R.O.B.
- (5) Siting of bridges and type of bridges
- (6) Hydraulic data for minor and major bridges
- (7) Road inventory
- (8) Bridge inventory
- (9) Typical cross-section of existing/proposed road pavement
- (10) Standard typical cross-section of culverts
- (11) GAD for bridges
- (12) Preliminary cost estimates
- (13) Phasing and prioritisation, economic analysis
- (14) Comments of Ministry of Road Transport & Highways on the draft report shall be given within 30 days of its receipt. Thereafter, the consultant shall carry out, whatever, modifications are required in the draft report and submit within 60 days the modified draft report for approval. The approval of comments on their report will generally be given within 30 days of its submission.

6. SERVICES AND FACILITIES TO BE PROVIDED BY THE GOVT.

The Govt. shall not provide any services and/or facilities to the appointed consultant during the feasibility studies. The consultants will have to arrange for all facilities/services required to carry out the assigned work on this project at their cost. The financial proposal shall include all the required costs with break-ups. However, introductory recommendation letters shall be provided to the consultants on request for obtaining desired services and facilities from concerned authorities for which the Consultants shall make payments, if any required, to the concerned authorities directly.

7. MAN MONTH REQUIREMENT

Suitable and adequate personnel shall be deployed by the consultant for the work. However, the following man month have been indicated for reference.

(A) Key Personnel	Man-month (for every 200 kms of highway)
Senior Highway Engineer-cum-Team Leader	6
Highway Engineer	1
Material-cum-Geotech/Foundation Engineer	1
Bridge Engineer	1
Senior Survey Engineer	1
	10

(B) Specialist	
Traffic Engineer	2
Hydrology-cum-Drainage Engineer	1
Estimate Surveyor (for every 400 km of highway)	1
	4
	14 man months

(C) Other Personnel (As per requirement assessed by the Consultants supported with details).

Notes :

- (1) Minimum Qualification of Key Personnel/Specialist should be as per *Appendix-I*.
- (2) Suggested proforma for data collection are given at *Appendix-II*.

8. REPORTS*

The consultants shall furnish to the client the following report and documents. All reports and documents shall be in English.

(i)	Inception Report	-	6 copies
(ii)	Draft Report	-	6 copies
(iii)	Final Report	-	6 copies

* Reports are to be furnished National Highway-wise/State-wise (in case National Highway passes through different States).

9. SCHEDULE OF SERVICES

(i)	Submission of Inception Report	-	15 days from the date of start
(ii)	Submission of Draft Report	-	120 days* from the date of approval of Inception Report
(iii)	Submission of Final Report	-	60 days from the date of approval of Draft Report

Note: * Consultant is required to make a presentation of work done after 60 days.

10. PAYMENT SCHEDULE

Payment schedule for the work will be as follows:

(i)	Submission of Inception Report	10 per cent of the total bid amount
(ii)	Approval of Draft Report	40 per cent - do
(iii)	Submission of Final Report	25 per cent - do -
(iv)	Approval of Final Report	25 per cent -do

Any under prepared, incomplete/inadequate or part submittal shall be deemed as invalid submittal. The adequacy of the submittal shall be determined at the sole discretion of the client. Client will, generally accord approval within 30 days of submission of reports.

11. PERFORMANCE SECURITY

Within 21 days of the letter of acceptance, the consultant shall deliver to the employer a performance security in the form of bank guarantee for an amount equivalent to 5 per cent of the contract price. The bank guarantee will be released at the time of final payment to the consultant.

12. RESPONSIBILITY FOR ACCURACY OF PROJECT REPORTS

The consultants shall be responsible for accuracy of all the data used in project preparation and estimates prepared by him as part of the project. He shall indemnify the client against any inaccuracies in the work. For this purpose he shall furnish bank guarantee for an amount to the extent of 20 per cent of the total consultancy fees to be received by him. The bank guarantee shall be valid for a period of 2 years from the date of submission of the final DPR. The final instalment of 25 per cent of the fees shall be released only on receipt of this bank guarantee.

MINIMUM QUALIFICATION OF KEY PERSONNEL**1. SENIOR HIGHWAY ENGINEER-CUM-TEAM LEADER**

This is the senior most position and the expert engaged will function as Team Leader and will be responsible for the entire project preparation activities including timely completion. The expert will undertake frequent project site visits and shall guide, supervise, co-ordinate and monitor the work of other experts. The candidate should have a proven record of supervising, organising and managing of project preparation and construction of Highway projects. This position requires a senior Highway Engineer who shall be at least a graduate in Civil Engineering with at least 20 years of professional highway engineering experience.

2. HIGHWAY ENGINEER

The Engineer will be a graduate in Civil Engineering with at least 15 years of professional highway engineering experience of handling project preparation and construction of Highway projects (preferably National Highway projects) in India or similar developing countries including project preparation/construction of major Highway/Bridge projects.

3. HYDROLOGIST-CUM-DRAINAGE ENGINEER

The candidate should have relevant Masters degree or equivalent with minimum 15 years experience of which at least 10 years should be on hydrological studies. Experience of 2 years in highway and bridge projects is essential. The person should be fully familiar with the acceptable study methods, 'best practices' and must have experience of successfully using various methods in different situations.

4. BRIDGE ENGINEER

The position requires an engineer, preferably with a Masters degree or equivalent in structural/bridge engineering, with minimum 15 years experience. The candidate must have capability to design bridges with various alternative materials and structural arrangements. He should have designed independently at least two major bridges (200 m length). Experience in designing and implementing bridge rehabilitation is required. The candidate must have the experience of planning and monitoring geo-technical and hydraulic investigations for the bridges and interpreting the findings thereof.

5. TRAFFIC ENGINEER

The position requires a graduate civil engineer preferably with higher qualifications in Traffic Engineering with at least 15 years of professional experience including at least 5 years on projects of similar nature in developed/developing countries. The candidate must have wide experience of Junction design and road safety.

6. MATERIAL ENGINEER-CUM-GEOTECHNICAL ENGINEER

This position requires an Engineer who should be graduate in civil engineering or science with at least 15 years professional engineering experience including 5 years in supervising sub-soil investigations for roads and bridges and testing and evaluation of highway construction materials used in modern highway construction techniques. The candidate must be thoroughly familiar with all the standard laboratory testing procedures adopted in case of highway projects. Better qualification and experience on above lines will be considered for higher rating in evaluation.

7. SENIOR SURVEY EXPERT

This position is of specialist nature and the expert is expected to have thorough understanding of modern computer based methods of surveying, like, total stations, use of satellite imagery, digital terrain model, etc. as being practiced in project preparation of modern highway construction. The candidate is expected to contribute significantly by guiding/supervising the surveyors in improving the quality of survey works for achieving maximum possible accuracy without any gap in survey based details. The candidate should at least be a qualified Surveyor. He

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should have minimum 15 years professional experience including at least 5 years in highway related projects. He should have experience of training other Surveyors.

8. ESTIMATE SURVEYOR

He should be graduate in Civil Engineering/Quality Surveying from a recognized University/Institution. Diploma in Civil Engineering with at least 20 years work experience at responsible position will also be acceptable. He should have expertise in quality surveying and tender documentation. He should be conversant with the use of computer software for computing unit rates, quantities and costs.

INVENTORY & CONDITION SURVEY FOR BRIDGES

Road Name : _____												Sheet No. _____							
Section : _____												Road No. : _____							
Date of Survey : _____																			
St. No.	Location (km)	Name of River and Type of Crossing	Length of Bridge/Span Arrangement (m)	Average Vertical Clearance (m)	Type of Bridge			Year of Construction	Details of Superstructure			HFL (m)	Formation Level	Thickness of Girder/Slab (m)	Type of work and Cond.	Carriageway width	Total width	Loading	
					Super-structure	Sub-structure	Foundation		Features	Type	Condition (VG/G/F/P/VP)								

Note :

VG = Very Good

G = Good

P = Poor

VP = Very Poor

Surveyed by : _____

Section :

Date of Survey :

[illegible]

Note :

G = Good

G = Good
NA = Not Available

P = Fair

P = Poor

VP = Very Poor

Surveyed by :

PAVEMENT CONDITION SURVEY

Road Name :	Road No.
Section (FROM) :	Date of Survey :
District (FROM) :	To
Challage	Weather :

From (km)	To (km)	Pavement Completion		Shoulder		Riding Quality		Pavement Condition				Pavement Edge drop (mm)	Embankment Condition (Good/Fair/Poor)	Road side Drain (NE/PF/F)***	Remarks
		Composition	Type*	Thickness (mm)	Composition	Condition (Fair/Poor/Failed)	Speed (km/hr)	Quality (G/F/P/V/F)	Cracking (%)	Ravelling (%)	Potholing (No. and % 100m)**	Rut (None/Moderate/Severe)	Patching (No. and % 100m)**		
		Surface													
		Binder													
		Base													
		Sub-base													
		Subgrade													
		Surface													
		Binder													
		Base													
		Sub-base													

Note : * BUSG = Built-up Spray Grout ; AC = Asphaltic Concrete; SDC = Semi-Dense Concrete; PC = Premix Carpet; MS = Mix Seal Surfacing.
 WBM = Water Bound Macadam; DBM = Dense Bituminous Macadam; BM = Bituminous Macadam; BS = Brick Soiling; SS = Stone Soiling
 ** No. and %/100 m = Total no. of Potholing/Patching and %age area of Potholing/Patching per 100 m of length of road
 *** NE = Non Existing; PF = Partially Functional; F = Functional

Surveyed by : _____

DETAILS OF RAILWAY LEVEL CROSSING

Name of the level crossing	Location	Angle of Crossing (Right Angle or Skewed)	No. of Closures	Duration of closure	No. of Traffic Passing Through NHs	Type of level Crossing a) manned b) unmanned	Type of Track		Remarks
							Electrified/ Unelectrified	Single Track/ Double Track	
1	2	3	4	5	6	7	8	9	10

DETAILS OF JUNCTION

Link	Location	Type NH/SH/MDR/ODR/VR/MG/BG/NG	Clause Right/Left/Cross

Appendix-II g

Data Base 1, NH BANK: This data base contains kilometre-wise details in respect of the following parameters:

S.No.	Field	Description
(1)	Town	Nearest town/village
(2)	KMP	Km from
(3)	KMTO	Km to
(4)	Rise fall	Rise in m/km
(5)	TR	Terrain
(6)	CW	Carriageway width
(7)	FW	Formation width
(8)	RG	Roughness in mm/km
(9)	LU	Land use (rural/urban, etc.)
(10)	PW	Pavement width
(11)	ST	Surface type (cement/bituminous etc.)
(12)	RQ	Riding quality (very good, good, fair, poor)
(13)	ST2	Surface type PC, SD, AC, MSS etc.
(14)	RW	Right-of-way width
(15)	FT	Formation type (cutting/filling)
(16)	SHT	Shoulder type
(17)	SW	Shoulder width
(18)	Height	Embankment height

Data Base 2, CURVE: The database stores details of horizontal curves under the following five fields:

S.No.	Field	Description
(1)	Link	Link number
(2)	ST KM	Starting chainage of curve
(3)	TO KM	End chainage of curve
(4)	Radius	Radius of curve
(5)	Turn	Curve turning left or right

Data Base 3, JUNCTION : Junction database contains the following information about intersections:

S.No.	Field	Description
(1)	Link	Link number
(2)	Location	Location of intersection
(3)	Type	Intersection with NH/SH/MDR/ODR/VR/BG/MG/NG
(4)	Class	Right/left/cross/level crossing/ROB

Data Base 4, CD WORKS : The database has seventeen fields for each record describing one CD work:

S.No.	Field	Description
(1)	S.N.	Serial Number
(2)	Location	Location of structure
(3)	Length	Length of structure
(4)	Type	Type of structure (Slab culvert, RCC bridge, submersible bridge etc.)
(5)	Span	Span arrangement
(6)	C width	Carriage width
(7)	T width	Total width
(8)	T protection	Type of protection
(9)	C protection	Condition of protection work
(10)	C headwall	Condition of head wall
(11)	C slab	Condition of slab/pipe/box
(12)	C return	Condition of return wall
(13)	C parapet	Condition of parapet wall
(14)	C Wing wall	Condition of wing wall
(15)	Scour	Presence of scour height
(16)	HFL	HFL
(17)	FL	Formation levels

Data Base 5, TRAFFIC: This data base will contain data on traffic:

S.No.	Field	Description
(1)	S.N.	Count station number
(2)	State-Code	State code
(3)	Month	Month of survey
(4)	Year	Year of survey
(5)	Ocar	Old tech cars
(6)	Near	New tech car
(7)	Bus	Buses
(8)	LCV	Light commercial vehicle
(9)	HCV	Heavy commercial vehicle
(10)	Multi axle	Multi axle vehicle
(11)	MC	Two-wheelers
(12)	Cycle	Cycles
(13)	Animal	Animal driven vehicle
(14)	Other	Other vehicles

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114. NATIONAL HIGHWAYS RULES AND AMENDMENTS

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
114.10	RW/NH-37011/31/97-D.I dated 13.7.99	National Highways (Fees for the use of National Highway Section and Permanent Bridge – Public Funded Project) Rules, 1997	114/17

No. RW/NH-37011/31/97-D.I

Dated, the 13th July, 1999

To

The Secretaries of PWD of all States/UTs dealing with National Highways; Director General (Works), Central Public Works Department; Director General, Border Roads Organisation; Chairman, National Highways Authority of India.

Subject : National Highways (Fees for the use of National Highway Section and Permanent Bridge - Public Funded Project) Rules, 1997

I am directed to say that on a reference received from National Highways Authority of India regarding the rate of fee and the tenure applicable in respect of a bridge on National Highway-9 in Andhra Pradesh, the applicability and scope of the rules mentioned above has since been examined in consultation with the Ministry of Law & Justice (Department of Legal Affairs). A copy of their advice in this regard is enclosed herewith for information and necessary action.

[Enclosure to Ministry's Circular No. RW/NH-37011/31/97-D.I dated 13/7/1999]

Advice of Ministry of Law & Justice (Department of Legal Affairs) dated 3.6.1999 regarding the scope and applicability of National Highways (Fees for the use of National Highway Section and Permanent Bridge - Public Funded Project) Rules, 1997.

- (1) The administrative department has sought our opinion as to whether levy of fees should be continued in respect of Keesara Bridge in perpetuity as per the 1997 Rules.
- (2) The department has stated that Keesara Bridge was opened to traffic and started collection of toll w.e.f. 1.5.1994.
- (3) The department has placed on record a copy of National Highways (Fees for the use of Permanent Bridge) Rules, 1992.
- (4) Rule 8 of the said rules provides that levy of fees shall be discontinued in respect of bridges costing more than Rs. 25 lakhs and upto Rs.100 lakhs completed and open to traffic on or after 1st day of April, 1976, but before the 1st day of May, 1992, on National Highways forthwith or after the expiry of the existing contract period in cases where contracts have been entered into fee collection.
- (5) The levying of fee shall also be discontinued in respect of projects costing more than Rs. 100 lakhs completed and open to traffic on or after 1st day of April, 1976, on National Highways as soon as the full cost of bridge or group of bridges including the cost of approaches, cost of structure to be put up for the collection fees, guide bunds and protective work including interest thereon as also the maintenance and special repairs expenditure thereon, upto the date of discontinuance of the levy is recovered.
- (6) The National Highways (Fees for use of Permanent Bridge) Rules, 1992, has been superseded vide the National Highways (Fee for use of National Highways Section and Permanent Bridge - Public Funded Project) Rules, 1997, notified vide GSR 490(E) dated 27.8.1997.
- (7) Rule 11 of the said rules provides that the fee shall be collected in perpetuity by the executive agency.
- (8) Rule 1997 were notified on 27.8.1997 as such these rules came into force on 27.8.1997. We do not see any provisions in the notification dated 27.8.1997 which shows that these will also be applicable retrospectively.
- (9) Vide letter No. RW/NH-11012/2/92-DOI pt. dated 4.8.1998 the department has taken a decision in similar matter/in respect of toll collection on Jejmau-Ganga Bridge on NH-25 as under :-

"Since the new rules viz. the National Highways (Fees for the use of National Highways Section and Permanent Bridge - Public Funded Project) Rules, 1997 came into force from 27.8.1997, only bridges opened after 27.8.1997 should be charged toll in perpetuity.

This has the approval of Director General (Road Development) & Additional Secretary."
- (10) In view of the above, we are of the view that Rules, 1997, will be applicable in respect of bridges which were opened to traffic on or after 27.8.1997.
- (11) In the present matter since Keesara Bridge was opened to traffic w.e.f. 1.5.94 and fee is being collected as per the Rules, 1992, we are of the view that new Rules, 1997, will not be applicable in the present matter.
- (12) In view of the facts and circumstances mentioned above we are of the opinion that department may discontinue to collect the fee in respect of bridge which was opened to traffic w.e.f. 1.5.1994, if the fee as provided under Rule 8 of the National Highways (Fees for use of Permanent Bridge) Rules, 1992, is recovered.

No. RW/NH-37011/31/97-D.I

Dated, the 13th July, 1999

To

The Secretaries of PWD of all States/UTs dealing with National Highways; Director General (Works), Central Public Works Department; Director General, Border Roads Organisation; Chairman, National Highways Authority of India.

Subject : National Highways (Fees for the use of National Highway Section and Permanent Bridge - Public Funded Project) Rules, 1997

I am directed to say that on a reference received from National Highways Authority of India regarding the rate of fee and the tenure applicable in respect of a bridge on National Highway-9 in Andhra Pradesh, the applicability and scope of the rules mentioned above has since been examined in consultation with the Ministry of Law & Justice (Department of Legal Affairs). A copy of their advice in this regard is enclosed herewith for information and necessary action.

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- (4) Rule 8 of the said rules provides that levy of fees shall be discontinued in respect of bridges costing more than Rs. 25 lakhs and upto Rs.100 lakhs completed and open to traffic on or after 1st day of April, 1976, but before the 1st day of May, 1992, on National Highways forthwith or after the expiry of the existing contract period in cases where contracts have been entered into fee collection.
- (5) The levying of fee shall also be discontinued in respect of projects costing more than Rs. 100 lakhs completed and open to traffic on or after 1st day of April, 1976, on National Highways as soon as the full cost of bridge or group of bridges including the cost of approaches, cost of structure to be put up for the collection fees, guide bunds and protective work including interest thereon as also the maintenance and special repairs expenditure thereon, upto the date of discontinuance of the levy is recovered.
- (6) The National Highways (Fees for use of Permanent Bridge) Rules, 1992, has been superseded vide the National Highways (Fee for use of National Highways Section and Permanent Bridge - Public Funded Project) Rules, 1997 notified vide GSR 490(E) dated 27.8.1997.
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- (12) In view of the facts and circumstances mentioned above we are of the opinion that department may discontinue to collect the fee in respect of bridge which was opened to traffic w.e.f. 1.5.1994, if the fee as provided under Rule 8 of the National Highways (Fees for use of Permanent Bridge) Rules, 1992, is recovered.

Data Base 6, ROB: This database will contain information on ROB:

S.No.	Field	Description
(1)	SN	Serial number
(2)	Name	Name of level crossing
(3)	Location	Location
(4)	Angle	Angle of crossing
(5)	Closure	Number of closure
(6)	Duration	Duration of closure
(7)	Traffic	Traffic in PCU
(8)	Type	Type of Crossing
(9)	Track 1	Type of track electrified/non-electrified
(10)	Track 2	Single/double

Data Base 7, BRIDGES: The database will store information on bridges:

S.No.	Field	Description
(1)	River	Name of the river
(2)	Location	Location of structure
(3)	Name	Name of the river
(4)	Length	Length of bridge
(5)	T Super	Type of superstructure
(6)	T sub	Type of substructure
(7)	T foun	Type of foundation
(8)	Year	Year of construction
(9)	HFL	HFL
(10)	FL	Formation level
(11)	Loading	Design loading
(12)	C Width	Carriage width
(13)	T width	Total width
(14)	Span	Span arrangement
(15)	C deck	Condition of deck slab
(16)	T deck	Type of deck slab
(17)	C car	Condition of carriageway
(18)	T car	Type of carriageway
(19)	C foot	Condition of footpath
(20)	T foot	Type of footpath
(21)	C rail	Condition of railing
(22)	T rail	Type of railing
(23)	T protection	Type of protection
(24)	C protection	Condition or protection works

No. RW/NH/11065/15/2001-P&M

Dated, the 15th November, 2001

To

All Secretaries of States/Union Territories, PWDs dealing with National Highways.

Subject: Guidelines on utilization of 1 per cent provision allowed in the NH work estimates for quality control

Ministry of Road Transport & Highways has been allowing 1 per cent of the cost of the NH work in work estimates to meet the expenses on the quality control staff employed for field work, cost of equipment, implements/instruments and consumable, etc. This Ministry has issued instructions and also detailed guidelines regarding conduct of tests and expected quality standards, etc. from time to time. The Indian Roads Congress has also published the Handbook of Quality Control for Construction of Road and Runways (IRC Special Publication No. 11).

2. However, it was being observed that some of the items of expenditure being charged to the quality provision had no relevance to the quality control. In order to exercise proper control in this regard and to utilise the funds meant for quality control appropriately, the Ministry has, therefore, issued the guidelines vide letter No:RW/NH-III/P/20/83 dated 18th December, 1984 indicating the items of expenditure, which can be charged to the provision of 1 per cent for quality control provided in National Highway work estimates. However, in the present era of 'Information Technology', use of computers has become inevitable during various phases of National Highway works, i.e., planning, construction and effective monitoring, etc. The Ministry has, therefore, decided that purchase of computers can also be charged to the provision of 1 per cent for quality control provided in the sanctioned estimate of National Highways under Major Head '5054'. The comprehensive list of items to be covered under quality control would be as follows:

- (i) **Staff:** The main supervisory staff shall be from the organisation set-up. The quality control field staff specifically recruited/hired/transferred/shared for the specific job of the project for assisting in collection/preparation of samples, conduct of tests, movement of materials/implements/equipments, etc. depending upon the size and magnitude of the work, can be charged to this provision.
- (ii) **Field Laboratory:** Cost of the new equipment/implements or the book value if transferred from other work(s) or hire charges and maintenance charges including the cost of setting up the field laboratory.
- (iii) **Consumables:** Cost of the consumables like oil, chemicals, reagents, filter papers and others used for testing the samples and running the laboratory.
- (iv) **Testing Charges:** The specialised testing which cannot be done by field laboratory as far as possible, shall be got done through the State, Central or other authorized and approved laboratories. The actual pavements made in this regard can be charged.
- (v) **Transportation:** Transportation and movement charges for the samples, equipments, staff, etc. in respect of the quality control of the work/project.
- (vi) **Credit for the Salvage/Book Value of the Equipment, Materials/Implements etc.:** The credit for the residual value of the usable equipments, implements, materials, etc. which were originally charged to a particular work, determined as per prevailing practice shall be given to the work estimates on completion of the work.
- (vii) **Expenditure Incurred on Training of Field Level Staff:** The objective of the training being:
 - (a) Familiarisation with the specifications
 - (b) Knowledge of correct sampling procedure
 - (c) Learning testing methodology
- (viii) **Expenditure on experiment work for effective location specific improvements in materials and techniques.**
- (ix) **Purchase of Computers:** The expenditure on purchase of computers upto a limit, not exceeding 20 per cent of the amount provided for quality control under a project can be allowed. However, this amount would be subject to ceiling of Rs. 5 lacs. This provision has been allowed only for one year from the date of issue of these guidelines.

3. **Accounting:** The details of the account under this account head shall be maintained separately as is being done in case of the main work, contingencies and work charged establishment and the expenditure shall be debitable on actual basis.

4. These guidelines supersede the earlier guidelines on the subject and have been framed in consultation with the Integrated Finance Wing.

No.RW/NH-11060/1/98-D-I**Dated, the 5th November, 1998**

To

The Secretaries of all States/Union Territories, Public Works Department (dealing with National Highways); Director General Border Roads; Chairman, National Highways Authority of India; Director General, Central Public Works Department.

Subject : Expeditionary award and completion of National Highway Projects

I am directed to invite your kind attention to the instructions issued vide this Ministry's letter No.RW/NH-11060/87-DO I dated 28th August, 1992 on the subject mentioned above. It has been observed that the aforementioned instructions are not being followed in a number of cases and a large number of works irrespective of their size and cost are continuing to linger for quite some time beyond their reasonably expected date of completion. The State Govts. are also taking unduly long time for award of contracts for NH Projects. This has resulted in overall increase in completion cost of the Projects, which is being viewed very seriously at the highest level.

2. It has also been decided that there is need to further reduce the period of completion of projects in tune with the advancement of technology and international best practices. The existing guidelines have accordingly been reviewed and it has been decided that henceforth completion programme of all sanctions in respect of National Highway works will follow the following time schedule :

(a) Award of contract for work:	
(i) Projects costing less than Rs.100 lakhs	Maximum within six months from the date of sanction
(ii) Projects costing Rs.100 lakhs and more	Maximum one year from the date of sanction.
(b) Completion of work:	
(i) Projects costing less than Rs.100 lakhs	A maximum of two years from the date of award of contract
(ii) Projects costing between Rs.100 lakhs to Rs.10 crores	A maximum of two and half years from the date of award of work
(iii) Projects costing more than Rs. 10 crores	A maximum of 3 years from the date of award of work. Wherever sophisticated construction machineries are likely to be available the period of construction for this category of the project may be further reduced suitably in the sanction letter.

In case it is absolutely necessary for continuing execution of works beyond the above prescribed time schedule, the proposal for extension of time with proper justification shall be forwarded to the Ministry well in advance and not later than one year before the target date of completion for consideration. While forwarding such proposals the State Chief Engineer should invariably furnish reasons for delay and fix responsibility for the same.

3. It is reiterated that sanction of projects which are not awarded will automatically lapse after one year and these works shall be deleted from the list of ongoing/sanctioned schemes by the Monitoring Zone of this Ministry unless specifically agreed to in writing by the Ministry due to any extenuating circumstances. Before submitting another fresh estimate for sanction to the Ministry, the State PWD shall have to fix up the responsibility and action taken against the erring official on account of whom the award of work was delayed and Ministry will sanction the fresh estimate only after satisfying itself about the fixation of responsibility.

4. Henceforth, no work estimate shall be projected to the Ministry for sanction unless land acquisition and pre-construction activities, like, shifting of utilities, resettlement and rehabilitation, if any required, are completed in advance and a certificate to this effect is recorded in the project proposal by an officer not below the rank of Executive Engineer under intimation to all concerned authorities.

5. It has been the practice by some of the State Governments to incur some nominal expenditure on the sanctioned work or booking the cost of construction materials for the work for the sake of enlisting the sanctioned jobs as on-going works. This is being viewed seriously. Henceforth, State Government shall not incur any expenditure whatsoever or book cost of any construction materials before the actual award of work. Further, it has been decided that even if some minor expenditure is incurred prior to award of work and the work is required to be desanctioned for reasons of non award within the stipulated period, such expenditure may be written off to facilitate desanction. The Pay & Accounts Officer is being directed accordingly.

6. The State Governments were requested vide this Ministry's letter No. RW/NH-11028/1/93-DO I dated 1st December, 1993 to intimate the award of contract/commencement of works to the Ministry with a copy to the concerned Regional Officer/Engineer Liaison Officer of this Ministry. However, the information regarding commencement of the works by the State PWD is not forthcoming in several cases. It is once again requested that the State PWD shall intimate the date of commencement of National Highway works to this Ministry, concerned ROs, ELOs and also PAOs for effective monitoring of work.

7. It is requested that the contents of this letter may be brought to the notice of all the officers in the PWD dealing with National Highways for strict compliance.

121.4.34

No.RW/NH-11029/1/97-D.1

Dated, the 4th January, 1999

Subject : Guidelines in respect of EFC/PIB procedures and delegation of financial powers to Ministry of Surface Transport for NH Projects - regarding

In partial modification of the guidelines issued vide this Ministry's O.M. of even number dated 12.11.1997 on the subject mentioned above (copy enclosed), it has been decided to substitute paras 1.1 (a) (b), (c) and (d) as under:

Cost of plan scheme	Competent Authority to approve the Scheme
(a) Upto Rs.15 crores	Ministry of Surface Transport (RW) in normal course
(b) Beyond Rs.15 crores and less than Rs.200 crores	Expenditure Finance Committee of the Ministry of Surface Transport under the Chairmanship of Secretary(SFT), with representatives of Planning Commission, Ministry of Finance and any other related Ministry. In these cases the approval of the recommendations of the EFC would be accorded by the Minister (SFT).
(c) Rs.200 crores and beyond but less than Rs.500 crores	Expenditure Finance Committee chaired by Secretary (Expenditure). In these cases the approval of the recommendations of the EFC would be accorded by the Finance Minister.
(d) Beyond Rs.500 crores	Expenditure Finance Committee/PIB chaired by Secretary (Expenditure) and should be submitted for approval of Cabinet/appropriate Cabinet Committee.

2. This is issued under Cabinet decision dated 30th July, 1997, on the subject relating to Development of National Highways - Policy Issues.

[Enclosure to Ministry's Circular No. RW/NH-11029/1/97-D.1 Dated 4th January, 1999]

Copy of O.M. No.RW/NH-11029/1/97-DO-I dated 12th November, 1997 regarding Guidelines in respect of EFC/ PIB procedures and delegation of financial powers to Ministry of Surface Transport for N.H. Projects.

Consequent upon the Cabinet Committee on Infrastructure having approved delegated powers to the Ministry of Surface Transport upto Rs.200 crores, and in the light of the Ministry of Finance (Department of Expenditure) O.M.No. 1 (5)PF-II/96 dated 6th August, 1997, regarding additional guidelines in respect of EFC/PIB

procedures applicable to the Ministry of Surface Transport for National Highway projects shall be as under:

1.1. ENHANCED DELEGATION OF FINANCIAL POWERS

	Cost of Plan Scheme	Competent Authority to approve the scheme
(a)	Upto Rs.100 crores	Ministry of Surface Transport (RW) in normal course
(b)	Beyond Rs.100 crores and less than Rs.200 crores	Expenditure Finance Committee of the Ministry of Surface Transport under the chairmanship of Secretary (Surface Transport) with representative of Planning Commission, Ministry of Finance and any other related Ministry.
(c)	Rs.200 crores and beyond but less than Rs.500 crores	Expenditure Finance Committee chaired by Secretary, (Expenditure).
(d)	Rs.500 crores and beyond	Projects/Schemes where financial returns are not quantifiable will be considered by the EFC chaired by Secretary(Expenditure). Projects/Schemes where returns are quantifiable will be considered by the PIB. In these cases the approval of the recommendations of the EFC would be accorded by the Minister of Surface Transport and also the Finance Minister and CCEA's approval would be necessary.

1.2. Investment proposals involving outlays of Rs.500 crores and above would be required to be posed to the Public Investment Board but all proposals costing Rs.200 crores and above would be posed to the CCEA.

1.3. The above powers will be exercised only where necessary/requisite funds are available in the Annual Plan and the five Year Plan Outlay as per phasing of the project/scheme. The powers will further continue to be governed by procedural and other instructions issued by Government from time-to-time, like general economy instructions. Ministry of Finance (Department of Expenditure) O.M. No.F. 1 (12)-E.II(A)/92 dated 6th November,1992 has been superceded vide their O.M. dated 6.8.1997 mentioned in para 1.1 above. These orders will not supercede any specific relaxation granted to a Ministry/Department by the Cabinet/CCEA.

2. COSTING OF THE PROJECT

2.1. At present, the costing of the project is done at constant prices. It has now been decided to make it obligatory for the Department to compute the project cost both on fixed cost and completion cost basis so that IRR/ERR can be calculated for both scenarios.

2.2. The completion cost may be worked out by taking into account the average rate of inflation in the following manners:

- (i) Labour component of the project cost may be updated using the average (of 12 months) of consumer price index for industrial workers.
- (ii) For all other components of cost, except labour, the average (of 12 months) of Wholesale Price Index for all the commodities may be used. [Ministry of Finance, (Department of Expenditure) O.M.No.1(5) PF-II dated 6.8.1997]

3. REVISED COST ESTIMATES (RCEs)

3.1. As far as RCEs are concerned, increase in cost will be approved by Secretary (Surface Transport) if the increase is within 25 per cent of updated cost of the project.

3.2. Where the revised/firmed up cost estimates of scheme/project exceeds the limit of competent authority who approved the original cost of all the scheme, the approval of higher competent authority will be obtained [Ministry of Finance (Department of Expenditure) O.M.No. 1(5) PF-II dated 6.8.1997].

4. COMMITTEE OF PIB

4.1. Powers for preparation of Feasibility Report is being delegated to the Ministry of Surface Transport except where the cost of the project is Rs.500 crore or more and cost of the preparation of DPR is Rs.20 crore or more.

4.2. To avoid delays in implementation of project it has been decided to allow initiation of procedure for land acquisition at the Committee of PIB stage. The initiation of land acquisition will be examined by the

Committee on a case-to-case basis. It is, however, to be noted that normally any payment towards compensation, etc. will be made only after CCEA approves the project. The Committee of PIB Memo should clearly indicate (i) the area of land required for acquisition and the estimated cost of land are indicated by District/State authorities (ii) the urgency for initiating land acquisition may be indicated [Ministry of Finance (Department of Expenditure) O.M.No.I(5) PF-II dated 6.8.1997].

5. **PROJECT VIABILITY**

In the case of projects, in which institutional financing is contemplated, the appraisal report of the financial institution should also be submitted along with the PIB proposals so that it is available before the PIB at the time of the consideration of the proposal. In addition to calculating IRR/ERR on firm cost, the IRR/ERR may also be calculated on the likely completion cost of the project [Ministry of Finance (Department of Expenditure) O.M.No.I(5) PF-II dated 6.8.1997].

6. **PROJECT IMPLEMENTATION SCHEME**

Every proposal should indicate in detail the Project Implementation Schedule (PIS) giving all important milestones following the approval as various clearances, preparation of DPR, calling and approval of tenders, major construction works, procurement and installation of plant and machinery, etc. It should be certified that the PIS is consistent with the projected phasing of expenditure. The PIS programme would be part of the PIB approval [Ministry of Finance (Department of Expenditure) D.M.No.I(5) PF-II dated 6.8.1997].

7. **PROJECT IMPLEMENTATION TEAM**

For all major projects, a project implementation team should be established and it should be held fully responsible for project execution within the approved time and cost. The team should not have any concurrent responsibility and its continuity during the project implementation period must be ensured. The PIB Memo should bring this out clearly. No project would be considered without such arrangements being clearly established [Ministry of Finance (Department of Expenditure) G.M.No.I(5) PF-II dated 6.8.1997].

8. **RESETTLEMENT COST**

If the project involves dislocation of human settlements, the resettlement costs should be included fully in the project cost. The resettlement Plan should also be indicated in the Project Implementation Schedule. The resettlement cost may be worked out on the following basis:

- (i) The cost of land required to resettlement would be as indicated by the District/State authorities.
- (ii) The compensation to be paid to the displaced persons. This compensation cost is dependent on the rates indicated by District/State authorities. Thus, the total compensation cost may be worked out on the basis of these rates. [Ministry of Finance (Department of Expenditure) O.M.No.I(5) PF-II dated 6.8.1997].

9. **PIB MEETING**

To ensure that the PIB considers projects in a time bound manner, the project may be considered after providing a period of 4 weeks after receipt of PIB Memo. It is reiterated that all the time limits specified in the Ministry of Finance (Department of Expenditure) O.M.No.I(2) PF-II/94 dated 25.4.1994 may be strictly adhered to. The Planning Commission is requested to ensure that the project appraisal is completed in a time-bound manner. [Ministry of Finance (Department of Expenditure) O.M.No.I(5) PF-II dated 6.8.1997].

10. These orders will be effective from the date of issue.

11. This has the approval of the AS&FA and Secretary (SFT).

*No. RW/NH-31019/4/94 (D.O.II)**Dated, the 7th September, 1999***OFFICE MEMORANDUM**

Subject : Revised Estimates

It has been observed that several revised estimates, received from the State PWDs, etc. are not being dealt with promptly and with due care in project zones resulting in delay, in sanction and consequent time and cost overrun in projects. In several cases Finance Wing refer back the RCEs with detailed observations which are to be attended to by the Project Chief Engineers. This invariably leads to delay in sanction and reimbursement of expenditure affecting the progress of work and consequent cost overrun.

2. In order to speed up the process of sanction/disposal of revised estimates, the following time frame has now been fixed, which may be strictly adhered to :-

- (i) Regional Officers shall send their comments on the RCE within one month from the date of its receipt from the State PWD.
- (ii) Project Chief Engineers shall get the RCEs scrutinized and seek clarification/return the RCEs with comprehensive observations if found deficient, within two months from the date of receipt. In case RO's comments are not received within the stipulated period of one month, as mentioned in (i) above, the Project CE's will take action on the RCEs without waiting for R.O's comments.
- (iii) The revised estimates, if found to be generally in proper shape, shall be processed by the Project CE's and referred to Finance Wing with draft EFC memos if required for their concurrence within 3 months from the date of receipt of RCE in the Ministry (including the period of one month for R.O.'s comments). Where clarification/resubmission of RCEs are involved, this period of 3 months shall be reckoned from the date of receipt of clarifications/resubmission of modified RCEs from the State PWD. However, the project Chief Engineer shall maintain in their computers a list of RCEs/modified RCEs awaited from the State PWD and regularly pursue such cases in meetings/on telephone with the PWD officers to ensure their receipt within a period of one month.
- (iv) Finance Wing will clear the RCE and draft EFC memo or intimate their observations in one go preferably within one month from the date of receipt from the Roads Wing.
- (v) Replies to the observations of the Finance Wing shall be sent by the Project CE's within two months (including the time required for obtaining the information from State PWDs) from the date of receipt of the observations.
- (vi) Sanction letters in respect of projects cleared by Finance Wing/EFC shall be issued within 15 days after receipt of approval by the competent authority.

This is being issued with the concurrence of AS&FA and approval of Secretary (SFT).

*No. RW/NH-31019/4/94/D.O.-II**Dated The 7th September, 1999*

To The Secretaries of all State PWD; All Chief Engineers Dealing with NH's and other Centrally sponsored schemes; Chairman, National Highways Authority of India; Secretary (BRDB); Director General Border Roads

Subject : Sanction of revised estimates for National Highway works

It has been observed that Revised Estimates are generally not being submitted by the State PWD to the Ministry in time. As per the existing guidelines, review of the likely completion cost for each project is required to be done by the State PWD as soon as 50 per cent or more progress is achieved on the work and revised estimate, if found necessary should be submitted to the Ministry immediately thereafter. In any case the revised estimate is required to be submitted as soon as the anticipated completion cost exceeds the original sanctioned amount beyond the permissible limit. However, in practice, submission of the revised estimates is generally delayed by the State PWDs who often come up with the RCEs only when the expenditure has exceeded the permissible limit. As a result the liabilities of these works beyond the original sanction get accumulated affecting the Bank of Sanction of projects. Besides, delay in submission of RCEs and corresponding delay in making payments to the contractors for want of sanction of the RCE often result in avoidable time and cost over run.

2. With a view to improving the position regarding sanction of RCEs and thereby improving financial discipline and ensuring timely reimbursement of expenditure, it has now been decided that the revised estimate for any work shall be submitted by the State PWD within one month of the date a revision of its cost is found necessary based on tender or within three months of the date a revision is found necessary during the periodic critical review meetings being held in the Ministry.

3. It is also reiterated that the revised estimates should be submitted in complete shape along with all the essential documents to facilitate prompt scrutiny of the same in the Ministry and to avoid delay in correspondences for seeking various details/clarifications from time-to-time. The Ministry has already prescribed a check list for ensuring this, which is required to be appended to each revised estimate. A copy of the same is again enclosed for reference.

4. In case of requirement of clarifications on the RCEs the same shall be done by the State PWD within one month of receipt of the Ministry's observations. However, in the event of requirement of resubmission of RCEs, the same shall be done in two months.

5. In case the revised estimates in complete shape along with the check list are not submitted within the specified time frame as mentioned in para 2 above and if clarifications are not submitted within one month, the same will be considered for sanction only after deleting any agency charges on the additional cost beyond original earlier revised sanction. The State PWD themselves will be fully responsible for the consequent financial loss to the State Government.

It is requested that the contents of this letter may be communicated to all concerned officers of the State PWD with specific instructions to strictly adhere to the above time frame for submission of the RCEs.

[Enclosure to Ministry's Circular No. RW/NH-31019/4/94/D.O.-II dated 7.9.1999]

Finance Wing

TF-II

Revised Cost Estimate

Name of the Work:

(a)	Whether the main file where the original estimate was sanctioned linked.	Yes/No/NA
(b)	Reasons for cost over-run and time over-run given.	Yes/No/NA
(c)	History of events of the case given.	Yes/No/NA
(d)	Whether any excess expenditure has been incurred over the permissible limits. If yes, then source from which this was met may be indicated.	Yes/No/NA
(e)	In case of completed works whether the liability to be cleared has been indicated.	Yes/No/NA
(f)	Whether completion report in respect of completed work has been received.	Yes/No/NA
(g)	Whether the work is included in the list of ongoing works costing less than Rs. 5 crores with adequate provision. If no, then source from which this was met may be indicated.	Yes/No/NA
(h)	Whether the sub total of provision kept for each individual on-going work tallies with the collective budget provision kept in the Demand for grants	Yes/No/NA
(i)	Whether the list of proposed works and ongoing works been prioritised by RW.	Yes/No/NA
(j)	Whether the proposal is on tender bases. If Yes, then how much % of excess over the original sanctioned estimate.	Yes/No/NA
(k)	Whether Technical Note/Sanctioned Letter/Note for Finance placed on file.	Yes/No/NA

- (l) In case the work costs more than Rs. 5 crores whether it has been given in the same format as per EFC. Yes/No/NA
 If yes, whether the relevant details attached:
 IRR:
 Need for additional staff.
 Break-up of cost overrun per cent wise over original sanctioned cost and RCEs:
- (m) Already approved physical and financial progress of work:
 Year Physical (Com.) Financial (Cum) (Rs. in lakhs)
- (n) Revised physical & financial progress of work:
 Year Physical (Com.) Financial (Cum.) (Rs. in lakhs)
- (o) Additional effect on BOS due to the RCE Rs. lakhs.
- (p) If the time overrun delay is due to the State PWD: Yes/No/NA
 (i) Whether responsibility has been fixed. Yes/No/NA
 (ii) Whether agency charges has been deducted Yes/No/NA

CHECK LIST : NATIONAL HIGHWAYS (ROAD WORKS) REVISED ESTIMATES

I. ESTIMATE REPORT

1. Does the report explain the need of revising the estimate and give detailed reasons for change in scope, specifications, rates, etc. and furnish information on the alternatives considered?
2. Does the report quote the letters of the Roads Wing approving changes in scope, in horizontal and vertical profiles, in dimensions, in specifications, etc., and approving higher rates through tenders? (In case any tender rate higher than the estimated rate has been accepted by the State authorities, the delegated powers under which the same has been done may please be quoted and where a higher tender rate has been accepted beyond the delegated power, the reasons for not taking approval of the Centre may please be given.)
3. For provisions of restoring damage by rains, floods, etc. does the report quote the letters intimating the damages on occurrence and explain as to why restoration of the damages could not be a responsibility of the contractor?
4. Does for the completed works, the report give reasons for not submitting the revised estimate in time?
5. Does the report narrate briefly the audit objections of significance on the work pending clearance? (It may be clearly understood that the Roads Wing reserves the right of reviewing a provision in case due to lack or inadequacy of information, etc. from the State Authorities, the provision, even though under objection by the State Accountant General, gets accepted in the revised estimate.)
6. Does the report give the date of start the target date or completion, etc?

II. CERTIFICATES

1. Does the revised estimate contain the following certificates:
 - (i) That the estimate has been checked cent percent arithmetically by a responsible officer of the State Government.
 - (ii) That the land acquisition rates are as ascertained from the competent land acquisition authority.
 - (iii) That the estimate does not provide for the cost of land belonging to the State Government and that this land will be available free of cost for the National Highway.
 - (iv) That the compensation rates for land acquisition do not include agency charges and as such agency charges have been provided separately.

III. COMPLIANCE WITH TECHNICAL AND INSPECTION NOTES

Does the estimate contain reports of compliance with the technical and inspection notes of the Roads Wing issued to-date.

IV. STATEMENT COMPARING THE ORIGINAL AND REVISED PROVISIONS GIVING EXCESSES AND SAVING AND THE REASONS THEREON

Does the estimate contain a comparative statement in the form enclosed and given in detail the reasons for excesses and savings?

V. ABSTRACT COST

1. Has it been seen that the estimate provides for the following wherever needed :

- Erosion control measures
- Rolling where emankment is high
- Rumps for intercepted State Roads

2. Has it been seen that there is no major lump provision?

3. Has it been indicated as to which rates are based on actuals, on tender, and on the current schedule and on the analysis?

4. Does the abstract of cost account for as credit the salvage value of the dismantled material, empty bitumen drums, and usable hard stone obtained from rock-cutting?

5. Does the abstract give apportionment of cost wherever applicable between the concerned Authorities, i.e., between the Road and Rail authorities for approaches to over/under bridges in replacement of level crossings: between Road and Irrigation Authorities where a road needing improvements requires diversion or raising because of coming of an irrigation project between the Centre and the State for lengths of byepasses through municipal limits where, as per the recent policy on National Highway links. Land for parallel service roads has to be acquired at the State's cost along with the lane for the bypass and later on parallel service roads also to be provided by the State at their cost before urbanization is authroized.

6. Is the provision for agency charges at 7.5 per cent for work done upto 30th September, 1975, and at 9 per cent for the balance work?

7. Is the provision for work-charged establishment as per the following?

(a) For works upto Rs. 25 lakhs	2 per cent
(b) For works above Rs. 25 lakhs and upto Rs. 50 lakhs	1.25 per cent
(c) For works above Rs. 50 lakhs	1.5 per cent

VI. DETAILS OF MEASUREMENTS

1. Does the estimate give clearly the details of measurements of all the items figuring in the abstract of cost including levelling course? Is the quantity of the levelling course provided in the revised estimate on 'L' and cross sections as spelled out in this Ministry's Specification No. 106.3 "Measurement of pavement thickness" and not on percentage?

2. Do the measurements give separately the details of the work found necessary consequent to heavy erosion by rain, floods, etc.

VII. ANALYSIS OF RATES

1. Does the estimate give analysis of all the rates which are neither covered by tenders nor by the schedule of rate?

2. Are there quarry or borrow area charts in support of the leads adopted in the rate analysis?

3. Have reasons and supporting data been furnished for changes in quarries of stone aggregate and borrow areas of earth?

VIII. DESIGNS

Does the estimate give designs and other details of new items as well as old items where there is change, covering

- (i) Cross Sections of embankment
- (ii) Crust thickness and composition
- (iii) Design of sub-base, base and surfacing
- (iv) Retaining walls etc

IX. DRAWINGS

1. Does the estimate contain all the drawings viz., key map, index map, site plan, alignment plan, longitudinal sections, cross-sections, land acquisition plans and schedules, culverts, rest houses and inspection bungalows?
2. Do these drawings clearly show both the original and revised proposals and original and revised topography in case there be any difference?
3. Do the longitudinal and cross-sections indicate wherever relevant the highest water-table and highest flood level obtaining?

NATIONAL HIGHWAY (ROAD WORKS)

STATE

STATEMENT SHOWING EXCESS SAVINGS AND DEVIATIONS IN COST & QUANTITIES AS COMPARED WITH THE ORIGINAL ESTIMATE IN RESPECT OF THE WORK OF

Sl. No.	Items of work	Original sanctioned estimate		Revised Estimate			Savings Excess due to variation in quantity				
		Qty.	Rate	Amt.	Qty.	Rate	Amt.	Qty. Cols. (6-3) (-) or (+)	Rate same as Col. 4 (+)	Savings (-) Cols. (9x10) Amount Rs.	Excess (-) Cols. (9x10) Amount Rs.
1	2	3	4	5	6	7	8	9	10	11	12
(I)	As provided in the original sanctioned estimate										
(II)	New and/or deviated items	(Note: The work done/to be done by different executing agencies should be shown separately).									
(III)	Centage charges										
	(a) Contingencies										
	(b) W/C establishment										
	(c) Quality control on admissible items										
	(d) Agency charges										

Total

Savings/Excess due to variation in Rates				Total Savings/Excess		Remarks and justifications for deviations from the sanctioned estimates
Qty same as Col. 6	Rate Cols. (7-4) (-) or (+)	Savings (-) Cols. (13x14) Amount Rs	Excess (+) Cols. (13x14) Amount Rs	Savings (-) Cols. (11+15) Amount Rs	Excess (+) Cols. (12+16) Amount Rs	
13	14	15	16	17	18	19

CHECK LIST: NATIONAL HIGHWAYS (BRIDGE WORKS) REVISED ESTIMATES

I. ESTIMATE REPORT ACCOMPANYING THE REVISED ESTIMATE

1.
 - (a) Does the report explain the need of revising the estimate and give detailed reasons for change in scope, specifications, rate etc.?
 - (b) Detailed note on each of the items where huge excess has been incurred as compared to the sanctioned estimate.
2. Does the report quote the letters of the Roads Wing approving changes in scope, in dimensions, in specifications, etc. and approving tenders?
3. Does the report indicate the present stage of work (in progress or already completed)?
4. If the work is already completed, does it give reasons for not submitting the Revised Estimate in time? Further, is it accompanied with completion drawings?
5. For provision of restoring damages by rains, floods etc. does the report quote the letters intimating the damages on occurrence and explain as to why restoration of the damages could not be a responsibility of the contractor?

II. CERTIFICATES

1. Does the revised estimate contain the following certificates :
 - 1.1. That the estimate has been checked cent per cent arithmetically by a responsible officer of the State Government
 - 1.2. Land acquisition, if required
 - That the land acquisition rates are as ascertained from the competent land acquisition authority.
 - That the estimate does not provide for the cost of land belonging to the State Govt. and that this will be available free of cost for the National Highway bridges and appurtenant works
 - That the compensation rates for and acquisition do not include agency charges and as such agency charges have been provided separately.
 - 1.3. That the estimate is based on actuals in case of completed works.

III. COMPLIANCE WITH TECHNICAL AND INSPECTION NOTES

- Does the estimate contain reports of compliance with the technical and inspection notes of the Roads Wing issued to-date?

IV. STATEMENT COMPARING THE ORIGINAL AND REVISED PROVISIONS, GIVING EXCESSES AND SAVING AND THE REASONS THEREOF

- Does the estimate contain the requisite comparative statement (copy of proforma enclosed) and give in detail the reasons for excesses and savings?

V. ABSTRACT OF COST

1. Has it been seen that the estimate provides for the following wherever needed?

Dismantling of diversion bridge after construction of new bridge.

2. SUB-ESTIMATES FOR L.S. ITEMS

Are the Lumpsum provisions made either in the original sanctioned estimate or the revised estimate supported by the detailed sub-estimates with proper justification for exceeding the sanctioned provisions, if any or for including any new items not covered by the sanctioned estimate?

3. Has it been indicated as to which rates are based on actuals, on tender, and on the current schedule and on the analysis?

4. Does the abstract of cost account for as credit the salvage value of dismantled materials of the existing structure, if any?

5. Does the abstract give apportionment of cost wherever applicable between the concerned Authorities i.e. between the Road and Rail Authorities for approaches to over/under bridges in replacement of level crossings between Road and Irrigation Authorities where a road requires diversion or raising because of coming of an irrigation project between the Centre and the State for lengths of bypasses through municipal limits where, as per the extent policy on National Highway links, land for parallel service roads has to be acquired at the State's cost along with the land for the bypass and later on parallel service roads are to be provided by the State at their cost before urbanization is authorized.

6. Is the provision for agency charges of 7.5 per cent for work done upto 30th September, 1975, and at 9% for the balance work?

7. Is the provision for work-charged establishment as per the following?

(a)	For works upto Rs. 25 lakhs	2 per cent
(b)	For works above Rs. 25 lakhs and upto 50 lakhs	1.5 per cent
(c)	For works above Rs. 50 lakhs	1 per cent

Note: Provision for centage charges in case of completed works, should be as per actuals limited to the permissible percentages.

VI. DETAILS OF MEASUREMENTS

1. Does the estimate give clearly the details of measurements of all the items figuring in the abstract of cost?

2. Do the measurements give separately the details of the work found necessary consequent to heavy erosion by rain, floods etc.?

VII. CONTRACT DOCUMENTS

- Is the R.E. accompanied with a copy of the contract agreement in full (not piecemeal)?
- In case of items where extra due to any clause in the contract like escalation clause is incurred copies of necessary letters etc. justifying in detail for the extra amount on this account.

VIII. ANALYSIS OF RATES

1. Does the estimate give analysis of all the rates which are neither covered by tenders nor by the schedules of rates?

Note: Analysis for supplementary tender rates have to be given?

2. Are there quarry or borrow area charts in support of the leads adopted in the rate analysis?

3. Fluctuation in rates of materials like steel and cement

- Does the R.E. contain the full details regarding the extra amount spent for steel and cement etc. including sources and quality of materials, rates of procurement and the need for paying higher rates?
- Have reasons and supporting data been furnished for changes in quarries of stone aggregate and borrow areas?

IX. DESIGNS

1. Whether the bridge is guide bund is being/has been constructed at the site approved by Roads Wing?

2. Whether the changes, if any, in design from those provided in the sanctioned estimate like charges in span arrangement, change in linear waterway, type and depth of foundations, etc. have been got approved from Roads Wing?

3. Whether design assumptions made in the sanctioned estimate have been realised at site.

4. Whether approval of the Ministry or its regional office has been contained wherever specified in the technical notes accompanying the sanction letters?

1. Does the estimate contain all the drawings viz. index map, site plan, general arrangement drawing of the bridge guide bund and supporting drawings or reference to any type of drawings being used along with justification for departure, if any?
2. Does these drawings clearly show both the original and revised proposals in case there be any difference?
3. Whether the drawings have been got approved from the regional office, as suggested in the technical notes?

Are there any audit objections pending clearance on this work? If so, brief report may be furnished.

If there are any claims pending settlement on this work a brief report thereof may be furnished.

If any or all the items of the work have been executed departmentally at rates different from sanctioned rates, the rate analysis of all such items may be furnished.

STATE:

NATIONAL HIGHWAY (BRIDGE WORKS)

**STATEMENT SHOWING EXCESS/SAVINGS AND DEVIATIONS IN COST & QUANTITIES AS
COMPARED WITH THE ORIGINAL ESTIMATE IN RESPECT OF CONSTRUCTION OF BRIDGE**

In Km. N.H. No. Job No.

[illegible]

Savings/Excess due to variation in Rates				Total Savings/Excess		Remarks and justification for deviations from the sanctioned estimates
Qty. same as col. 6	Rate col. (7-4) (-) or (+)	Savings -cols. (13x14) Amount Rs.	Excess - cols. (13x14) Amount Rs.	Savings (-) cols. (11+15) Amount Rs.	Excess (+) cols. (12+16) Amount Rs.	
13	14	15	16	17	18	19

121.5.27

No. RW/NH-11026/1/99-US(D.I)

Dated, the 9th November, 1999

IMPORTANT

To

The Secretaries/Chief Engineers, Public Works Department of all States/Union Territories (dealing with National Highways); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Submission of Revised Estimates for National Highways Works

I am directed to refer to this Ministry's letter of even number dated 27th August, 1999 on the subject mentioned above wherein the need for timely submission of the Revised Estimates was emphasized. It has now been decided that the cases of Revised Estimates, where works have already been completed, shall be considered for sanction only if the revised estimate was received from the State Govt. before completion of the work.

121.5.28

No. NH-11026/2/99-US(D.I)

Dated, the 29th October, 2001

To

The Secretaries, PWD of all States and Union Territories (Dealing with National Highways)

Subject : Permissible excess of expenditure over estimates sanctioned (original works) after 13th January, 2000

I am directed to state that the instructions issued by Ministry's Circular No.PL-30(193)/71 dated 18.10.1976 and RW/NH-11026/2/99-US(D.I) dated 13.1.2000 regarding permissible excess of expenditure over sanctioned estimate have been reviewed keeping in view the feedback received from the State PWDs seeking clarifications in this regard. In supersession of the instructions contained in the afore mentioned Ministry's circulars or other existing circulars on this subject, the following revised guidelines are hereby issued:

- 1.1. In respect of the works sanctioned before 13.1.2000, separate instruction will follow.
- 1.2. In respect of the works sanctioned after 13.1.2000, the permissible excess of the expenditure over the sanctioned cost will be 5 per cent. It would be ensured while accepting the tenders that the overall cost at tender rates including contingencies, work charge establishment and agency charges does not exceed by more than 5 per cent of the sanctioned cost.
- 1.3. While allowing the permissible excess of expenditure as per para 1.2 above, it would be ensured that the excess of the expenditure is caused only by routine factors, such as, increase in the cost of labour or materials.

121.5/29

1.4. However, excess due to revision of scope or enlargement/reduction of work or the specifications as already approved in the sanctioned estimate would require prior approval of the Ministry.

1.5. It is further clarified that in case where the excess of expenditure is less than 5 per cent, it is not necessary to obtain technical approval and financial sanction of the Central Govt. for the revised estimate provided that the condition stipulated in para 1.3 above has been complied with. However, in all other cases, sanction of the Central Govt. for the revised estimate where the cost exceeds 5 per cent of the sanctioned cost would continue to be obtained.

2. The orders have been issued in consultation with Finance Wing of this Ministry.

121.5.29

No. PAO/NH/DPP/2001-02/1677-83

Dated, the 30th October, 2001

To

The RPAO (NH)

Subject : Regularisation of cases wherein expenditure has exceeded sanctioned cost but is within 15 per cent of the sanctioned cost or Rs. 1 crore whichever is less - Reg.

I am directed to state that the matter regarding regularisation of cases wherein the expenditure on National Highways works has exceeded the sanctioned cost was under the consideration of the Govt. of India, M/o Road Transport & Highways and the Ministry has now clarified that in the past cases, viz., Projects sanctioned before 13.1.2000, of NH works under M.H.-5054 wherein the sanction it was mentioned that excess expenditure upto permissible limit may be allowed, "excess expenditure upto 15 per cent of the original sanctioned cost or Rs. 1 crore whichever is less may be allowed" subject to the following conditions :

- (i) There is no change in scope of work
- (ii) There is no extension of time having financial implications and
- (iii) Entire work has been executed as per sanctioned estimate and no portion of work has been left out.

(It is clarified that total expenditure should not exceed 15 per cent of the original sanctioned cost or Rs. 1 crore, whichever is less. If the total expenditure is beyond these limits of the sanctioned cost, fresh approval on Revised Cost Estimate may be taken from M/o RT&H).

2. All such past cases which were withheld may be cleared in the light of the above clarifications, provided, tendering and its acceptance has been done in accordance with Ministry's order issued vide letter No. PL-30(62)-76 dated 26-6-1976 (copy enclosed).

3. In respect of projects sanctioned after 13.1.2000, separate orders have been issued vide letter No. NH-11026/2/99-US(D.I) dated 29-10-2001, issued by US(P&M), M/o RT&H (copy enclosed).

4. This issues with the approval of AS&FA, M/o RT&H.

Government of India
Ministry of Transport & Highways
Transport Bhavan, 1, Parliament Street
New Delhi-110001

No. NH-11026/2/99-US(D-1)

Dated, the 29th October, 2001

To

The Secretaries (Dealing with National Highways), PWD of all States and Union Territories

Subject : Permissible Excess of Expenditure over Estimates Sanctioned (original works) after 13th January, 2000

I am directed to state that the instructions issued by Ministry's Circular No.PL-30(193)/71 dated 18.10.1976 and RW/NH-11026/2/99-US (D-1) Dated 13.1.2000 regarding permissible excess of expenditure over

sanctioned estimate have been reviewed keeping in view the feedback received from the State PWDs seeking clarifications in this regard. In supersession of the instructions contained in the afore-mentioned Ministry's Circulars or other existing Circulars on this subject, the following revised guidelines are hereby issued:

- 1.1. In respect of the works sanctioned before 13.1.2000, separate instruction will follow.
- 1.2. In respect of the works sanctioned after 13.1.2000, the permissible excess of the expenditure over the sanctioned cost will be 5%. It would be ensured while accepting the tenders that the overall cost at tender rates including contingencies, work charge establishment and agency charges does not exceed by more than 5% of the sanctioned cost.
- 1.3. While allowing the per excess of expenditure as per para 1.2 above, it would be ensured that the excess of the expenditure is caused only by routine factors, such as, increase in the cost of labour or materials.
- 1.4. However, excess due to revision of scope or enlargement/reduction of work or the specifications as already approved in the sanctioned estimate would require prior approval of the Ministry.
- 1.5. It is further clarified that in case where the excess of expenditure is less than 5%, it is not necessary to obtain technical approval and financial sanction of the Central Govt. for the revised estimate provided that the condition stipulated in para 1.3 above has been complied with. However, in all other cases, sanction of the Central Govt. for the revised estimate where the cost exceeds 5% of the sanctioned cost would continue to be obtained.
2. The orders have been issued in consultation with Finance Wing of this Ministry.

No. PL-30 (62)/76

Dated the 26th June, 1976

To

All State Govts. and Union Territories except Arunachal Pradesh, Mizoram, Dadra Nagar Haveli
(Departments dealing with National Highways).

Subject : Tenders for Road and Bridge works on NHs.

I am directed to invite a reference to this Ministry's letter No. PL-30(110)/74 dated 25.9.74 wherein the Accountant General or the Comptroller concerned was empowered to pass, without the requirement of the State Govt. obtaining Central Govt's approval to a revised estimate for a National Highway work, excess subject to certain conditions, upto 15% of sanctioned estimate or Rs 1.00 crore whichever is less. Earlier, in their letter No. NH III-33(108)/72 dated 28.3.73, this Ministry had laid down detailed procedure for handling tenders. According to that procedure where the cost of a work based on acceptable tenders exceeds or was likely to exceed its original sanctioned estimate beyond the permissible limit of excess, prior approval of the Govt. of India was to be obtained before acceptance of such tenders. The State Govts. have, however, been pointing out that considerable time elapses between the sanction of an estimate and the actual commencement of the work and, as a result, by the time a work actually goes on the ground, the tender cost is generally quite in excess of the sanctioned estimate even beyond the aforesaid permissible limit and tenders are, therefore, required to be submitted to the Govt. of India for their approval. In order to expedite the disposal of tenders, suggestions have been made to this Ministry by the State CEs from time to time for making a provision for escalation of cost in the estimate. This matter also came up for discussions at the last meeting of the CEs held at Hyderabad on 6.1.76 when some of the State CEs pointed out that in their States, for state road works, tenders were being examined and settled with reference to the current schedule of rates instead of sanctioned estimate and they suggested that if such a procedure were followed for National Highways also, references about tenders in many cases to the Roads Wing might not be necessary and those could be settled at the State level itself.

2. This matter has been examined, further and in the circumstances explained above, it has been decided that, hereafter the State Govt. may, themselves, accept tenders, if the excess over sanctioned estimate does not go beyond the value determined on the basis of current schedule of rates by 15% subject to the following conditions and also duly complying with the technical requirements specified in paras I(ii) (last sentence), I(iii) 2 & 3 of this

Ministry's letter No. NH III-33(108)/72 dated 28.3.73 (copy enclosed for ready reference).

- (i) These powers are to be exercised by the State Govt. themselves, who if they so desired, may also delegate these powers to officers not below the rank of the Chief Engineer under intimation to this Ministry.
- (ii) Tenders are called properly after due wide publicity providing for a healthy competition among the contractors and rates are considered duly competitive, reasonable and justified and;
- (iii) After the tenders have been accepted by the State Govt., the revised estimates should be sent to the Govt of India for their sanction within one month of the acceptance of the tenders, this time limit being extended upto 2 months in unavoidable cases, but in any case not beyond that. A copy of the approved current schedule of rates should accompany the revised estimates, invariably.

In this connection, it has to be realised that the State Accountant General will be able to admit expenditure beyond the permissible limit of excess over the sanctioned estimate as so far earlier prescribed only after the sanction for the revised estimate for the job is accorded by this Ministry and also conveyed to the State Accountant General.

Therefore, in the interest of smooth permit of execution of the works, forwarding of Revised Estimate and getting it sanctioned by the Ministry is of paramount Importance and is strongly emphasised.

3. I am to add that simultaneously, with the exercising of the power referred to in the preceding para, the State will kindly in each case, send an intimation to this Ministry, with copy to the Regional Officer concerned of this Ministry duly stating particulars of tenders accepted and certifying that the conditions stipulated at (i) and (ii) above had been satisfied. Further the State will kindly also devote attention to see that the contracting industry in the State is in a healthy condition and if this is not so, steps would be taken by the State Govt. to strengthen the contracting industry and also, as an alternative measure to set up Departmental Construction Units/Corporations, as necessary.

4. I am further to add that if the tender rates in any case exceed the current schedule of rates beyond the permissible limit of 15% the tenders should be submitted to Govt of India for their prior approval.

5. I am to request that this may be brought to the notice of all concerned for necessary action, with the clear instructions that all concerned should ensure that the revised estimate are submitted within one month of the acceptance of tenders, this time limit being extended in totally unavoidable cases, upto two months, but in no case, beyond that.

No.RW/G-23012/9/99-WA**Dated, the 23rd December, 1999**

To

The Secretary to the Govt. of all States

Subject : Revised payment procedure for Special Maintenance Programme of National Highways sanctioned during 1999-2000

I am directed to convey that in view of the difficulty arising due to tight financial position of several State Governments, which results in delay in payment to contractors, etc. inspite of adequate allotment of funds by this Ministry, it has been decided that all payments including agency charges Special Repair Programme of National Highways will be made directly by the Regional Pay & Accounts Officer, MOST, to the eligible payees, such as, contracts, State Govts. w.e.f. 27.12.1999.

2. The procedure to be followed shall be as under :

- (a) Supervising Engineer, i.e., the concerned Executive Engineer or the PWD will submit certified bills of contractors to Regional Officer of M/o Surface Transport. He will verify the payment and give all necessary approval as per PWD procedure.
- (b) The bill submitted by the Supervising Engineer will include separately, agency charges payable.
- (c) Regional Officers of MOST will be the drawing and disbursement officer(DDO) and will present the bill to the concerned Regional Pay & Accounts Officer for payment.
- (d) Regional Officer of MOST acting as DDO will maintain all necessary records before making the payment to Supervising Engineer.
- (e) RPAO will draw the cheques as per payment instructions of RO in favour of the parties and pass them to RO who in turn will pass them to the Supervising Engineer after making necessary entries in his records.
- (f) The Supervising Engineer will disburse the amount to concerned parties.
- (g) As far as agency charges are concerned they will be paid by RPAO to the State Accountant General.
- (h) Office of the Supervising Engineer will maintain all the records of payments/disbursements and send a monthly demand of disbursements to RO, RPAO, CCA and DG (RD) & AS.
- (i) RPAO will send details of payments of agency charges to the State Accountant General every month.
- (j) State Govt. will be responsible for physical and financial progress of the project.

3. At present, vouchers are checked by State AG and sent to RPAO. RPAO exercises only a few checks as prescribed by CGA (in consultation with C&AG). Therefore, pre-check is not done exhaustibly by the RPAO. In the prescribed revised procedure pre-check has to be done at voucher level, hence RPAO will ensure that all the vouchers are checked thoroughly.

4. The concerned officers responsible for the implementation of the project may please be instructed accordingly.

5. This issues in consultation with the Chief Controller of Accounts vide letter No.PAO/NH/New Proc./Dir.Payment/99-2000/1935 dated 15.12.1999 and C&AG's U.O.No.725-AC.I/SP.II/16-98 dated 15.12.99.

No. RW/G-20011/2/2000-WA**Dated, the 12th October, 2000**

To

The Secretary, Public Works Department, Govts. of Delhi, Goa, Gujarat, Kerala, Orissa, Tamil Nadu, Uttar Pradesh, West Bengal and U.T. of Pondicherry and Chandigarh

Subject : Introduction of Direct Payment Procedure for the execution of National Highway Works

At present, the accounting procedure for maintenance of expenditure and capital work on National Highways is as per procedure formulated in 1977 by MOST in consultation with Comptroller and Auditor, General and Department of Expenditure. As per the said procedure, the expenditure is initially incurred by the State PWD

and on receipt of the monthly compiled accounts from the Divisions, the A.G sends to RPAO (NH) the monthly statement of receipts, if any, and expenditure on National Highways with all schedules, vouchers, supporting documents, etc. for claiming reimbursement.

2. It has been observed that in some of the States, timely LOC have not been provided thereby the State PWDs have not been able to spend the funds allocated to them resulting in surrendering of funds. It is also the experience that preferring the claims to RPAO through the Accountant General concerned delays the process of reimbursement of payment significantly. With a view to obviating these problems, direct system of payment was introduced last year when the special repairs programme was taken up in several States. Similar direct system of payment is now proposed to be introduced in several States and there is also a proposal to cover the entire country on the similar pattern. Under this procedure, the Regional Officer of the Ministry shall be declared as the Drawing and Disbursing Officer and he shall arrange payment to State PWDs for incurring expenditure on National Highways.

3. A copy of the detailed procedures containing the salient features on the direct payment procedure is enclosed.

4. It is requested that in the interest of uniformity and promptness in getting payment and executing the work, State Govt. may please communicate its concurrence to the proposed direct payment procedure. This concurrence may please be communicated immediately and in any case by 31st October, 2000.

[Enclosure to Ministry's Circular No. RW/G-20011/2/2000-WA dated 12th Oct. 2000]

PROPOSAL FOR DIRECT PAYMENT FOR EXECUTION OF NATIONAL HIGHWAY WORKS

1. BACKGROUND

Construction and maintenance of National Highways is done by State Government/Union Territory Government on behalf of Govt. of India M/o Surface Transport. At present, expenditure on National Highway is initially incurred by Executive Engineer of the State PWD from State Balances. Accounts are, thus, maintained by State AG, who books the expenditure under 'suspense'. Subsequently, State Govt./Union Territory Government raises reimbursement claims for the work done on the agency basis. Claim for reimbursement is raised to Regional Pay and Accounts Officer, O/o Chief Controller of Accounts, M/o Surface Transport, who makes the payment to State AG. There is a well laid procedure for making payment with respect to National Highway which is being followed by Regional Pay and Accounts Officer. State AG receives the payment for the admissible amount and clears the suspense operated by him. This procedure takes more than 3 months, thus, State remains out of cash to the tune of amount raised for reimbursement for such a long period. States are finding it extremely difficult to manage their a depleted cash and at times they utilised the money reimbursed for National Highway works for other purposes. Thus, this circle of incurring expenditure - getting reimbursement and incurring fresh expenditure is broken.

State Governments are time and again representing their problems relating to delay in getting the reimbursement claims through the existing procedure. Mainly, in the case of a big project where financial implications are large, the State Governments are, sometime, not in a position to issue the Letter of Credit with required amount in time. As a result of this, State PWD is unable to make payment for the project. In the absence of the payment, State Government can not raise its claim with the Central Government and this brings a vicious circle of cash flow problem with the State Government. On the other hand, despite money being available with the Central Government such projects suffer very badly along with adverse financial consequences, due to inordinate delay in payment.

2. PRESENT PROCEDURE

At present, the accounting procedure for maintenance of expenditure on National Highways is as per the accounting procedure formulated in 1977 by M/o Shipping & Transport in consultation with C&AG and Department of Expenditure. As per the said procedure, the expenditure is initially incurred by the State PWD and on receipt of the monthly compiled account from the Divisions the AGs sends to PAO(NH), the monthly statement of

receipts (if any) and expenditure on National Highways with all schedules, vouchers, supporting documents, etc. for claiming reimbursement. The PAO, thereafter reimburses the AG by Cheque/Demand Draft after exercising the prescribed checks.

It may be stated that during the last financial year when Special Repair Programme was introduced to take up the crash programme of special repair within short/limited time, it was thought proper that simultaneously Direct Payment Procedure may be introduced. This was agreed to by the concerned Authorities and the system was implemented for the period from 1.1.2000 to 31.3.2000.

The Direct Payment Procedure was approved for externally Aided Schemes in the Punjab States and Special Repairs of National Highways by C&AG vide letter No. 725AC.I/SP.II/16-98 dated 15.12.99.

3. PROPOSED PROCEDURE

The present proposal is for changing the procedure for payment on the lines of that approved for externally aided project for Punjab and Special Repair Programme vide PAO/NH/New Procedure/Dir. Payment/99-2000/1935 dated 15.12.1999. The procedure to be followed shall be as under :

- (a) Supervising Engineer, i.e., the concerned Executive Engineer or the PWD will submit certified bills of contractors to Regional Officer of M/o Surface Transport. He will verify the payment and give all necessary approval as per PWD procedure.
 - (b) The bill submitted by the Supervising Engineer will include separately, agency charges payable.
 - (c) Regional Officers of MOST will be the drawing and disbursing officer (DDO) and will present the bill to the concerned Regional Pay & Accounts Officer for payment.
 - (d) 8658-PAO Suspense which was being operated by Accountant General in the old procedure would not be operated in this system. There is no change in the existing accounting heads to be operated by Govt. of India in the proposed "Direct Payment System" yet these heads of A/cs. are reproduced below :
1. **MH 3054-Roads & Bridges 01 National Highways**
 - (i) 01.052 Machinery and Equipment
00.00.52 Machinery and Equipment (Non-Plan)
 - (ii) U1.337 Roads Works
0.1 Maintenance by Road Wing
01.00.27 Minor Works (Non-Plan)
 - (iii) 01.00.27 Minor Works (Plan) [SPECIAL REPAIRS]
 - (iv) All other activities covered under the existing Reimbursement Procedure
 2. **MH 5054-Capital Outlay on Roads & Bridges**
 - (i) 01 National Highways
01.052 Machinery & Equipment
02 Machinery & Equipment
02.00.52 Machinery & Equipment (Plan)
 - (ii) 01.101 Permanent Bridges
02 Work Financed from Permanent Bridge Fee fund.
02.00.53 Major Works (Plan)
 - (iii) 01 Works under Road Wing
01.01 Externally Aided Schemes
01.01.53 Major Works
 - (iv) 01.02 Other Schemes
01.02.53 Major Works (Plan)
01.02.53 Other Schemes (charged) C. Code 023/182
 - (v) 01.04 Counter-part fund for externally Aided schemes of Road Wing
01.04.53 Major Works (Plan)
 - (vi) All other activities covered under the existing Reimbursement Procedure

- (e) Regional Officer of MOST acting as DDO will maintain all necessary records before making the payment to Supervising Engineer.
- (f) RPAO will draw the cheques as per payment instructions of RO in favour of the parties and pass them to RO who in turn will pass them to the Supervising Engineer after making necessary entries in his records.
- (g) The Supervising Engineer will disburse the amount to the concerned parties.
- (h) As far as agency charges are concerned the same will be paid by the RPAO to the State A.G. for crediting to the A/cs. of State Govt. (P.W. Deptt.) as the State P.W. Deptt. is executing work on behalf of the Central Govt. on agency basis and these agency charges are to be accounted for by the State A.G. (A&E) as receipt in the State Accounts. This receipt may not be mixed up with the re-imbursement procedure already adopted for the reasons that in the later case the cheques are issued by the RPAO to liquidate the balances under "8658-Suspense A/c.-PAO Suspense-Amount adjustable by RPAO (MOST)" in the books of State AG. against the claims raised for National Highways.
- (i) The payment of PAO for the year 2000-2001 released to these 14 states are to be adjusted/recovered as under :
 - (i) The amount will be adjusted to the maximum extent out of the claims upto August 2000 preferred by the State Govt. through the State A.G.
 - (ii) The balance of PAO, if any, will be adjusted against the agency charges payable to the States for the ensuing period of the current financial year.
 - (iii) In case the amount of PAO, if any, still remains to be adjusted, the State Govt. will be asked to refund the amount in cash by issue of cheque/DD in favour of the RPAO concerned.
- (j) All receipts (Miscellaneous) inclusive of receipts from DOT, Electricity Board & PHED pertaining to NH would be deposited by means of cheque/DD. The P.W. Divisions would send the cheque/DD to the Regional Officer (DDO) who in turn would pass on to the RPAO for crediting in their accredited bank. On clearance of such cheques/DD the amount will be accounted for by the RPAO under the relevant Major Head of A/c., i.e., "MH 1054-other receipts". Such receipts will not be taken as reduction of expenditure as normally done by the State PWD.
- (k) Vouchers in r/o claims relating to departmental works which are disallowed by the RPAO as inadmissible for one or the other reasons would be returned immediately to the R.O. (DDO) for onward transmission to the State P.W. Deptt. for accounting them against head of A/c. relevant to the State Govt. In no case such inadmissible claims are to be accommodated under "MH 8658-suspense, A/c. Suspense".
- (l) Office of the Supervising Engineer will maintain all the records of payments/disbursements and send a monthly demand of disbursements to RO, RPAO, CCA and DG (RD) & AS.
- (m) RPAO will send details of payments of agency charges to the State Accountant General every month.
- (n) State Govt. will be responsible for physical and financial progress of the project.
- (o) The collection of toll fees, other toll related charges, permanent bridge fee fund, etc. which are governed by National Highways Act and National Highways Rules will not be affected by the proposed Direct Payment procedure. These will continue to be deposited by the divisions/agencies through the demand drafts with PAO (NH) New Delhi as it was being done in the past.

In order to overcome the difficulty arising due to tight financial position of State PWD it would be appropriate to make the proposed scheme effective at the earliest. If approved, payments and accounting through this revised procedure may be followed in the States of Assam, Mizoram, Nagaland, Manipur, Meghalaya, Punjab, Rajasthan, Madhya Pradesh, Maharashtra, Andhra Pradesh, Karnataka, Bihar, Haryana, Himachal Pradesh w.e.f. 15th September, 2000 for all development and maintenance works [as indicated in (d) above].

MANUAL OF DIRECT PAYMENT PROCEDURE FOR EXECUTION OF NATIONAL HIGHWAY WORKS

1. MANUAL OF DIRECT PAYMENT PROCEDURE

1.1. The system of Direct Payment for maintenance work of National Highways and Payment Procedure for World Bank assisted project in Punjab was approved by C&AG vide his U.O. No.725-ACI/SPII/16-98, dated 15.12.99. The consent, of C&AG for the said procedure was for the year 1999-2000. This system was introduced in eight states. Under this procedure Regional Officer (NH) was declared as Drawing and Disbursing Officer. All the Supervising Engineers were asked to submit the bills of contractors to the RO of MOST. He was required to verify the payments and accord necessary approval as per PWD procedure. Thereafter, these were to be processed by RPAO(NH) and issue of cheques by him in favour of contractors as asked by RO and make necessary entries in his records. The payments were to be restricted as per allocations made by MOST for this purpose. Cheques for agency charges were sent to State Accountant General for credit to the State Account.

1.2. Now Ministry has decided to introduce the Direct Payment Procedure in 14 States for all works under the MH 3054, and MH 5054 : C&AG has accorded his approval for introduction of this procedure in 14 States-w.e.f.

1.10.2000 vide his U.O. No.547-ACI/SP-11 dated 28.9.2000. It has been subsequently approved by CGA vide U.O. No. 9(9)/91/TA/pt./617 dated 29.9.2000.

2. **PRESENT PROCEDURE**

2.1. At present, the accounting procedure for maintenance of expenditure and capital work on National Highways is as per procedure formulated in 1977 by MOST in consultation with C&AG and Deptt. of Expenditure. As per the said procedure, the expenditure is initially incurred by the State PWD and on receipt of the monthly compiled accounts from the Divisions, the A.G. sends to RPAO(NH) the monthly statement of receipts, if any, and expenditure on National Highways with all schedules, vouchers, supporting documents, etc. for claiming reimbursement. The RPAO, thereafter reimburses the claimed amount to AG by cheque/Demand Draft after exercising the prescribed checks.

3. **DIRECT PAYMENT PROCEDURE**

3.1. Under this procedure, the Regional Officer (National Highways) has been declared as the Drawing & Disbursing Officer and arrange payments to State PWDs for incurring expenditure on National Highways.

3.2. All Supervising officers/Executive Engineers/Project Directors of State P.W.D. will submit the claims of contractors/department to the Regional Officer, (NH) M/o Surface Transport in the prescribed forms for seeking payment from RPAO (*Annexure I*). In case bills are of different type forms prescribed by CPWD may be used.

3.3. The roles of the Regional Officer and Regional Pay & Accounts Officer (National Highways) in the procedure have been defined separately.

4. **RESPONSIBILITY OF R.O.**

4.1. In the revised procedure of Direct Payment the Regional Officers will execute and exercise the duties of DDO as prescribed in Receipts & Payment Rules/GFR and CAM. He will receive the Bills in duplicate, from the Divisions for arranging payments to contractors/divisions. After applying the prescribed checks as detailed below then he will sign the Bill in the capacity of DDO and send it to RPAO. RO should maintain a Bill Register in the proforma detailed in *Annexure II*.

4.2. R.O. should enter the bill in the above Bill Register and enter the Bill No. and Date on right corner on the first page of the Bill. He will also record the classification on the Bill.

4.3. Before sending the bill to PAO, RO should make entry of the Bill in Job Register/Expenditure Control Register in prescribed proforma, *Annexure II*.

4.4. R.O. should also countersign the certificates received with the Bill from PWD Divisions as per *Annexure III*.

4.5. On receipt of the cheques/DD from the PAO office, R.O. should enter the number of cheque/DD in the Bill Register and simultaneously will enter these cheques/DDs in the cheque delivered register to be maintained in the format as detailed in *Annexure IV*.

4.6. R.O. should also watch the proper acknowledgement from the party and ensure to get the stamped receipt from the payee.

4.7. It will be the responsibility of the R.O. to issue proper TDS certificates to the concerned parties as well as to concerned Govt. agencies.

4.8. R.O. will also be responsible to get the compliance to the bills returned by the RPAO(NH).

4.9. R.O. will ensure that all bills are in prescribed formats and the Supervising Engineer has exercised all checks as required under rules and recorded relevant certificates required of him.

4.10. R.O. will also ensure that Division conducts the reconciliation of expenditure with the figures/records being maintained in his office and RPAO (NH) and discrepancy, if any, settled on month-to-month basis. R.O. will depute an official and reconcile the figures with RPAO on a monthly basis.

4.11. Checks to be applied by the R.O. while examining the bills received from PWD (NH) Division.

- (1) That the expenditure relates to National Highway work.
- (2) That the bill is in prescribed printed form and supported with all necessary documents (as shown in *Annexure I*).
- (3) That the expenditure is for a sanctioned job.
- (4) That the expenditure is covered with proper financial sanction/ technical and Administration approval of the MOST, New Delhi.
- (5) That all the recoveries have been made as per rule.
- (6) That the necessary entries have been made in the M.B.
- (7) The rates are as per agreement.
- (8) That the necessary certificates prescribed by the D.G. Roads MOST, New Delhi are attached with the bill.
- (9) That the expenditure is within the budget allotment.

5. **RESPONSIBILITY OF PAO's IN THE DIRECT PAYMENT PROCEDURE**

5.1. On receipt of bills from divisions duly verified and certified by the Regional Officer (NH), the Regional Pay & Accounts Officer will process all the bills with reference to the sanctioned estimates, sanctioned Revised Estimates Budget allocations and other financial sanctions. He will see that bills are duly supported by vouchers, invoices, schedules and these are in prescribed format. The bill is complete in all respect. He will also see that all statements are attached with the bill, wherever necessary and as prescribed in different codes (CPWD-Manual, CPWA Code).

5.2. After prescribing all checks as required under GFRs, Receipts & Payments Rules, CTRs, CPWD Manual Vol II, CPWD Account Code, Delegation of Financial Powers and Civil Accounts Manual, etc., he will pass the bill, make the necessary entries of expenditure in relevant registers (as detailed below) and then he will prepare a cheque and pass it on to R.O. for onward transmission to Divisions.

5.3. Thereafter, RPAO (NH) will compile the accounts of these payments and book the expenditure against the relevant Head of Account and send consolidated Accounts to Hqrs. He will also ensure that expenditure has not exceeded budget grant, approved estimates and expenditure relates to National Highways.

5.4. RPAO (NH) will also account for all receipts received from Divisions on account of sales of lender forms, sale of forests, sale of empty drums and bags, road cutting charges and DOT charges etc. All receipts will be accounted for against relevant receipt Head.

5.5. RPAO (NH) will return all such claims which are deficient of supporting documents, sanction, sanctioned estimate, not in prescribed format to R.O. for getting the compliance done from the State P.W. Division. He will also assist the Supervising Engineer in reconciliation of expenditure figures with that being maintained in his office.

5.6. RPAO will maintain the following registers for payments and accounts:

- (1) Jobwise/Expenditure Control Register (*Annexure-II*)
- (2) Payment Register - Form CAM 9
- (3) Compilation Register - Form CAM 33
- (4) Cheque Delivered Register (*Annexure V*)

5.7. RPAO (NH) will also maintain all other registers as being maintained now in the reimbursement procedure, namely :

- A Sanctions to Contracts
- B Register of orders of special recoveries.

6. **RESPONSIBILITY OF STATE P.W. DIVISIONS IN THE DIRECT PAYMENT PROCEDURE**

6.1. State PW Divisions will continue to execute the various schemes of Central Government on National Highways as entrusted to them and passing through their respective states. They will continue to be treated as agent to Central Government.

6.2. In the new procedure of Direct Payment System, the Regional Officer (National Highways) MOST will be the Drawing and Disbursing Officer for all payments and receipts relating to National Highways. The Supervising

Engineer (Ex. Engr. Or A. Ex. Engr.) will seek reimbursement from RPAO(NH) through the Regional Officer (NH). They (Supervising Engineer) will submit claims of contractors or of their own department (if some work has been undertaken departmentally) duly verified and certified to the Regional Officer (National Highways) for reimbursement instead of going through State Treasury and State Accountant General. The Regional Officer (NH) in turn, after exercising necessary checks as prescribed in the foregoing pages, pass on the bills to the Regional Pay & Accounts Officer (National Highways) for process and issue of cheques in favour of contractors as desired by the Supervising Engineer. The RPAO(NH) will then process the claims and pass them for payment and issue cheques. If some claims are deficient in some respect, the same will be returned to the Supervising Engineer through the R.O. for doing the needful. On compliance of the observations raised by RPAO(NH) the Supervising Engineer will re-submit the claim for reimbursement.

6.3. On receipt of the cheques from RPAO (NH), the same will be entered in the cheque delivered Register by the Division. Supervisor will ensure proper acknowledgement of payment released to the contractors/parties/ individuals.

6.4. The State PW Divisions will continue to maintain the same records for submission of bills to RPAO(NH) as is being done in the reimbursement procedure. (As prescribed in CPWD Manual Vol. II, CPWD Account Code, Receipts and Payment Rules, GFRs, Civil Accounts Manual etc.). They will continue to submit the claims of the contractors in the prescribed format as it was being done in the previous system. Some of the forms have been detailed in *Annexure I*.

6.5. In the Direct Payment System, all receipts pertaining to National Highways will be deposited with the Regional Pay & Accounts Officer (National Highways) by means of Cheque/Demand Draft. A receipt for this purpose will be issued by RPAO(NH). The following items will form part of National Highways Receipts:

- (1) Sale proceeds of Tender Documents
- (2) Sale proceeds of empty Bitumen Drums and Cement Bags
- (3) Road cutting charges
- (4) Sale of forest products
- (5) Receipts from Telecommunication Department
- (6) Misc. receipts

6.6. **AGENCY CHARGES**

The cheque for agency charges for executing the work of National Highways will be sent direct to the State Accountant General for credit to the accounts of the State.

6.7. The Supervising Engineer will send a monthly statement of Bills and Payments to the State A.G. so as to enable him to calculate the amount of the Agency Charges due to the State.

6.8. The Supervising Engineer will be required to reconcile the details of expenditure being booked in his office with that in the R.O. on month-to-month basis. This reconciliation work cannot be postponed. If there is any discrepancy between the two sets of figures, Division will depute an official reconcile the same and it will be sorted out in consultation with the RPAO(NH).

6.9. The Supervising Engineer will ensure that all claims are supported with proper sanction of MOST and there exists approved and sanctioned estimates of the project for which bills are being submitted to RPAO(NH) for payment that budget allocations for the financial year are available. The charge is rightly debitable to the National Highways. He will exercise all checks as prescribed in this system and as required of him under CPWD Manual II, CPWD Account Code, GFRs, delegation of financial powers, Receipts & Payment Rules, CTRs and Civil Accounts Manual etc. He will also append all certificates with the bill as prescribed in this system. He will be responsible for factually correct submission of bills to RPAO(NH) through the Regional Officer. He will be accountable to the Drawing & Disbursing Officer for all payments and receipts.

Annexure-I

TYPES OF BILLS AND RELATED FORMS TO BE PRESENTED TO RPAO (NH)

S.No.	Name of Bill	Form No.	Authority
(1)	First & Final Bill	CPWA 24	Para 10.2.12 of CPWA/Code
(2)	Running Account Bill	CPWA 26	Para 10.2.12 of CPWA/Code
(3)	Running Account Bill for Lump Sum Contract	CPWA 27 A	Para 11.3.2 of CPWA/Code
(4)	Final Bill for Lump Sum Contract	CPWA 27 B	Para 11.3.3 of CPWA/Code
(5)	Secured Advance for Lump Sum Contract	CPWA 26 A & 31	Para 10.2.20 of CPWA/Code
(6)	Supply of Materials Issued to Contractors	CPWA 35 A	Para 10.3.4 & 10.3.8 of CPWA/Code
(7)	Work Charge Pay Bills	CPWA 29	Para 10.2.26 of CPWA/Code
(8)	Master Roll Bill	CPWA 21	Para 10.2.3 of CPWA/Code
(9)	Hand Receipts	CPWA 28	Para 10.2.12 of CPWA/Code

FROM MOST-I

Annexure-II

PROFORMA FOR BILL/JOB/EXPENDITURE CONTROL REGISTER

S.No. & Date	Name of division	Name of work	Name of contractor	Amount of bill	Initials of DDO	Dated initial of receipt in PAO office	No. & date of cheque/DD received from PAO
1	2	3	4	5	6	7	8

FORM MOST-2**Annexure-III**

Certificates to be furnished with the Bill by the Executive Engineer of PWD (NH) Div. & to be countersigned by R.O.

Certified that :

1. The bill has been prepared in prescribed form.
2. The 5% Bank guarantee has been deposited by the contractor vide no. ____ for Rs. ____ of ____ Bank valid upto ____.
3. Entries of this bill has been made in the Measurement Book at page no. ____ to ____
4. All the deductions/recoveries have been made as per rates applicable.
5. Recoveries of Income Tax and Sales Tax and surcharge thereon have been deducted as per rule.
6. Works has been executed as per MOST's specifications.
7. All the recoveries have been realised and credited to proper head of A/c.
8. It is certified that the full rates have been allowed as the quality of work is as per MOST's specification.
9. All statements such as deviation statement, extra items statements and substituted items statement duly approved by the competent authority (if any) are attached with the bill.
10. Certified that the bill (measurements) has/have been compared with the previous bill.
11. Certified that the unconsumed material has been returned by the contractor/firm and taken in the Material AT SITE accounts.
12. Posting of this bill has been made in the contractor ledger.
13. Certified that the Approved Lower Rates/Approved Higher Rates items requiring sanction have been sanctioned by the competent authority and attached with the bill.
14. The secured advance/mobilisation advance to the contractor is covered by non-revokable bank guarantee furnished by the contractor.
15. Certified that the measurement have been accepted by the contractor in full as recorded in measurement book.
16. Contractor/firm has submitted the labour reports every fortnightly.
17. Details of each months payments are being sent to A.G.
18. Certified that as per para 33.12.3 of section 33 of CPWD Manual Vol-II, qualified engineer has been employed by the firm/contractor.
19. Arithmetic checks of all measurement has been checked fully.
20. MBs are attached with the bill.
21. Sanction/approval for extension of time of competent authority (MOST) is attached with the bill.
22. Theoretical consumption statement of material such as cement, bitumen, steel etc. have been attached with the bill.

23. Secured advance and mobilisation advances have been released in accordance with the instructions by MOST or as per CPWD Manual Vol.II and their recovery is also as per instructions issued by MOST.

S.E. (C) MOST

Annexure-IV

(to be maintained by R.O.)

S.No. & Date	Bill No. & date	Amount	Cheque No. & date	Signature of payee	Signature of DDO
1	2	3	4	5	6

No.NH-20011/2/2001-WA. (Pt)

Dated, the 23rd July, 2001

To

The Regional Officer, Ministry of Road Transport & Highways, Chandigarh

Subject : Introduction of Direct Payment Procedure for execution of National Highways Works

Please refer to your letter No. RW/CH/PB/works (2)/2001 dated 6.6.2001 and 29.6.2001 raising certain issues concerning change in specifications/scope of work, procurement of material, splitting of works etc. needing clarifications of the Ministry before allowing the payment under Direct Payment Procedure (DPP). These issues have been examined and following clarifications are offered:

1.1. TACK COAT

For works sanctioned prior to enforcement of DPP, change in specifications from emulsion to bitumen if approved by the State PWD Chief Engineer may be accepted.

1.2. USE OF SAVINGS

Use of savings in the sanctioned job for additional items which are not originally provided for without specific approval of Ministry, is not to be allowed. The cost of such additional items may be withheld and the PWD be asked to obtain the approval before releasing the same.

1.3. PROCUREMENT OF MATERIALS

The payment for procurement of materials to be issued by department as provided for in the contracts accepted prior to enforcement of DPP can be allowed in the name of refinery/firm from whom invoices are to be produced by PWD. It would, however, be the responsibility of the PWD to advise you about the required consumption of materials and accounting of their difference in cost of Procurement rate and issue rate including storage charges. This would apply to both future procurement as well as materials already procured. However in case of materials already procured, payment is to be released to concerned A.G.

1.4. FINAL BILL AMOUNT MORE THAN TENDER AMOUNT

Any variations as per tender conditions or approved by competent authority are payable. You may, however, call for details and reasons for such an excess.

1.5. SPLITTING OF WORK

No splitting of works without Ministry's specific permission is allowed. However you may accept such splitting for old works after calling for justification and satisfying yourself.

1.6. RATES ARE NOT AS PER AGREEMENT BUT ON LOWER SIDE

Such payment based on the explanation and justification given by State PWD may be allowed.

1.7. In case of disputed items payment may be withheld and State PWD asked to obtain Ministry's approval before payment is made.

No.RW/G-20011/2/2001-WA. (Pt.)**Dated, the 5th December, 2001**

To

All Secretaries of States/Union Territories, PWDs dealing with National Highways

Subject : Introduction of Direct Payment Procedure (DPP)-Clarifications thereof

The Direct Payment Procedure (DPP) introduced in some of the States is in vogue for quite sometime. However while following the guidelines of DPP as circulated vide Ministry's letter of even number dated 12th April 2001, some of the States as well as Ministry's Regional Officers have raised certain issues for decision/clarifications. Some of these issues concerning the limit of excess expenditure over sanctioned cost of works have already been taken care of by issue of circular vide Ministry's letter No.NH-11026/2/99-US(D.I) dated 29th Oct. 2001 and CCA's letter No.PAO/NH/DPP/2001-2002/1677-83 dated 30.10.2001. Many of other issues concerning changeable items to contingencies, work charge establishment and agency charges would be taken care of in the comprehensive circular proposed to be issued separately. Circular on items chargeable to quality control which includes purchase of computers has also been issued vide Ministry's letter No.RW/NH-11065/15/2001-P&M dated 15.11.2001. The clarifications to following issues which still remain unresolved, are as under:

1.1. ROAD CUTTING CHARGES

The State PWD may utilize the road cutting charges received from other departments for making good the damages and deposit the balance amount, if any, in the Central Government's account. The estimate for making good the road cutting damages will, however, require the approval of Ministry's Regional Officer.

1.2. ARBITRATOR'S FEE OR OTHER CHARGES ARBITRATION/COURT AWARDS

Such cases are to be referred to Ministry for deciding the 'Head' of payment and issue of sanction. Thereafter Regional Office can be authorized to make the payments.

1.3. PAYMENT FOR MUSTER ROLL, ADVANCE PAYMENT FOR PURCHASE OF BITUMEN ETC.

Position with reference to specific cases of employment on Muster Roll may be brought out for consideration of Ministry. As regards advance payment of bitumen is concerned, a copy of letter of even No. dated 23rd July, 2001 addressed to R.O., Chandigarh giving such a clarifications and decision on some other issues which may also be of concern to you, is enclosed (see circular Code No. 121.6.21) herewith for your information.

1.4. PAYMENT FOR NIT BILLS

As per Ministry's existing guidelines issued vide letter No.RW/NH-III/P/3/84 dated 11th July, 1984, the cost of printing of tender forms including cost of paper, printing and publicity etc. is to be met by the concerned State Govt. and the sale proceeds of tender forms may be appropriated by the State Govt. However, in case of mismatch between the sale proceeds and expenditure on NIT including publicity, the State Govts. are free to increase the sale price of tender forms to bridge this gap.

1.5. TRANSPORTATION FOR SUPERVISORY STAFF AND EXPENDITURE ON TELEPHONE, FAX, COMPUTER STATIONERY AND PHOTOSTAT

Uttar Pradesh Govt. has represented that since the provision of 9 per cent agency charges is not enough to meet the expenses on salary and office of the PWD establishments engaged on NH works, the expenditure on their transportation from office to site of work, telephone, fax, computer stationery and photostat may be allowed to be met from contingencies and quality control provisions of the projects. This has been examined by the Ministry and since no such problem has been projected by any other state, the suggestion of Uttar Pradesh Govt. can not be agreed to. The State Govt. may review the deployment of PWD establishment, engaged on NH works in order to bring in rationality as per norms.

1.6. FORM MOST 3, ANNEXURE-IV TO DPP SL.NO. 22 EXTENSION OF TIME

The word "MOST" may be deleted.

122.1 RESOLUTION GOVERNING CENTRAL ROAD FUND (CRF)

Code No.	Circular No. & Date	Brief Subject	Page No.
122.1.3	NH-28030/10/98-OR dated 22.1.1999	Review and streamlining the sanctioning of the schemes and allocation funds under Central Road Fund (CRF)	122.1/4 to 7
122.2	PROCEDURE		
122.2.6	RW/NH-28030/40/2000-OR dated 13.10.2000	Formulation of State Sector Road Development Programme for the year 2000-2001 to be financed from the Central Road Fund	122.2/11 to 13
122.2.7	RW/NH-28030/40/2000-OR/ P&M dated 13.12.2000	Formulation of State Sector Road Development Programme for the year 2000-2001 to be financed from the Central Road Fund	122.2/14
122.2.8	RW/NH-28030/1/2001-P&M dated 13.7.2001	Formulation of State Sector Road Development Programme to be financed from the Central Road Fund	122.2/14 to 18

No. NH-28030/10/98-OR

Dated, the 22nd January, 1999

To

The Secretary, PWD (all States/UTs)

Subject : Review and streamlining the sanctioning of the schemes and allocation funds under Central Road Fund (CRF)

I am directed to say that the matter relating to streamlining the sanctioning of schemes and the allocation of funds under CRF which is presently governed by the 1977 resolution (copy enclosed as *Annexure-I* for ready reference) passed by the Parliament has been under consideration of the Government for quite some time past. After a detailed review, following decisions have been taken and will be effective from 1.4.1999 :

- (i) Schemes will be sanctioned in the ratio of 80:20 of the likely accruals for State and Centre as provided in the resolution.
- (ii) Only those schemes will be sanctioned which satisfy the criteria/purposes mentioned in para 6 (a) to (d) of the resolution. For this purpose, State Govts. /UTs will have to specifically certify about the purposes/objects mentioned in the above para.
- (iii) Schemes would be sanctioned in single stage now. As such a brief note incorporating the purpose of the scheme and the benefits that would accrue by implementing same should be sent for each scheme. Schemes should be sent for consideration for sanction only after the technical sanction has been accorded and details should be furnished in the proforma at *Annexure-II*. It should also give brief technical details but no detailed estimates etc. are necessary.
- (iv) Schemes should be routed through the Secretary, PWD and not sent directly by the Chief Engineers of the State.
- (v) In the event of the estimated cost of the scheme being more than the entitlement/free balance which will be communicated from time to time and any additional requirement over and above that would have to be met by the concerned State/UT from their own resources. For this purpose, a certificate from Secretary, PWD, or an authorised officer of his Sectt. should be given.
- (vi) Whenever more than one schemes are sent by the State Govt./UTs these should be sent in order of priority to enable the Ministry to take a view having regard to the available free balance.
- (vii) State Govts./UTs should furnish their requirement of CRF having regard to the amount already allocated, amount spent out of same and the likely requirements. For this purpose, it is requested that requirement for the year 1999-2000 should be sent by 30.6.1999. In case, no demand is received by this date, it will be presumed that State Govt./UTs do not need any fund for the year 1999-2000.
For subsequent years also the date for projecting the demand would be 30th June.
- (viii) Full details of the progress of schemes sanctioned so far should be sent in the proforma as in *Annexure-III* to the Monitoring Zone of the Ministry. Later on this may be sent on thrice in a year for the period ending 31st March, 30th Sept. and 31st Dec. each year in the same proforma. In this proforma all the columns should be filled in detail.
- (ix) It may be specifically noted that no proposal for revised cost estimate would be entertained and any cost over run would have to be met by the State Govt./UTs from their own resources.

For the sake of information, it may be stated that the revised resolution as passed by the two Houses of Parliament on 13.5.1988 providing for earmarking of an amount not less than 5 per cent of the basic price of petrol and diesel out of custom and excise duties levied on same has not yet been implemented. This matter is under consideration and as and when a decision is taken to finally implement it, the enhanced accrual would be intimated.

Above position/decisions may kindly be noted so as to enable this Ministry to sanction the scheme timely, and allocate the funds.

[Enclosure to Ministry's Circular No. NH-28030/10/98-OR dated 22.1.1999]

MINISTRY OF SHIPPING & TRANSPORT

RESOLUTION GOVERNING THE CENTRAL ROAD FUND AS PASSED BY THE RAJYA SABHA ON THE 1ST APRIL, 1976 AND ADOPTED BY THE LOK SABHA ON THE 18TH JUNE, 1977

"In supersession of the Resolution on Road Development adopted by the Constituent Assembly of India (Legislative) on the 19th November, 1947 and as subsequently amended by that Assembly on the 8th December, 1949 and by the Parliament of India on the 14th April, 1950, this House hereby resolves that :

1. There shall continue to be set apart an amount not less than 3.5 paise per litre out of the duty of customs and of excise levied on motor spirit and the proceeds thereof shall be applied for the purposes of road development.
2.
 - (1) The proceeds of such an amount so set apart in any financial year, reduced by duty attributable to taxed motor spirit used in aviation during the same period, shall be credited as a block grant to a separate Road Fund to be maintained in the Public Account of India.
 - (2) For the purpose of this Resolution taxed motor spirit shall mean motor spirit upon which the duty of customs or excise duty shall have been paid and in respect of which no rebate of such duty shall have been given.
3.
 - (1) The Road Fund shall be allocated as follows :
 - (a) A portion equal to twenty per cent shall be retained by the Central Government as a Central Reserve, this percentage being applicable with effect from the allocation due for the financial year 1948-49.
 - (b) Out of the remainder there shall be allocated by the Central Government a portion for expenditure in each State and Union Territory specified in the First Schedule to the Constitution as near as may be in the ratio which the consumption of taxed motor spirit other than motor spirit used in aviation, in each area for which an allocation is to be made shall bear to the total consumption in the territory of India of taxed motor spirit, other than motor spirit used in aviation during the financial year concerned.
 - (2) The portions allocated for expenditure in the various States and Union Territories shall be retained by the Central Government until they are actually required for expenditure in the manner hereinafter specified.
 - (3) If in the opinion of the Central Government, the Government/Administration of any State/Union Territory has at any time.
 - (a) failed to take such steps as the Central Government may recommend for the regulation and control of motor vehicles within the State or Union Territory; or
 - (b) delayed without reasonable cause the application of any portion of the Road Fund allocated or re-allocated, as the case may be, for expenditure within the State or Union Territory, the Central Government may resume the whole or part of any sums which it may at that time held for expenditure in that State or Union Territory.
 - (4) All sums resumed by the Central Government from the account of any State Government/Union Territory Administration as aforesaid shall be re-allocated between the credit accounts of State Government/Union Territory Administration and the reserve with the Central Government in the ratio of the main allocation for the financial year preceeding the year in which the re-allocation is made.

Provided that the sums so calculated as the share of the State/Union Territory from whose account the resumption has been made shall be credited to the reserve with the Central Government.
 - (5) Special additions to Road Fund for financing particular projects may be accepted from source other than mentioned in para 2(1) which shall be kept in a special Reserve and utilised for such projects.
4. The balance to the credit of the Road Fund or of any allocation thereof shall not lapse at the end of the financial year.
5. No expenditure shall be incurred from any portion of the Road Fund save as hereinafter provided.
6. The Central Reserve with the Central Government shall be applied first to defraying the cost of the administering the Road Fund and thereafter the balance of Central Reserve and Central Road Fund (Allocation) shall be utilised for financing such of the schemes connected with roads as the Central Government may approve and the sums allocated for expenditure in the States/Union Territories from these sources may, subject to the previous approval of the Government of India to each proposal made,

be expended upon any of the following objects, namely:

- (a) Road Research and Intelligence Schemes;
- (b) Traffic Studies and Economic Surveys;
- (c) Training arrangements for young Engineers;
- (d) Schemes of all-India importance such as those leading to the removal of regional imbalance such as helping in the development of tribal areas, backward regions, promoting inter-State communication facilities, helping in combating anti-social and criminal elements etc., promotion of tourism, agricultural marketing areas links etc., part contribution to programme for setting up drivers, 'conductor's and cleaners' road side resting places and passengers, wayside facilities on State roads etc., road/bridge works required for National Projects like Atomic Power Stations, Industrial Under-takings etc. likely to be lost sight of by the road authorities concerned in the midst of other activities.

Provided that the amounts in the Special Reserve shall be applied only to the purposes for which they are earmarked.

- (7) No expenditure shall be approved by the Government of India to be incurred from the Central Road Fund without the prior approval of the Union Minister of Shipping and Transport.

Annexure-II

STATEMENT SHOWING THE PARTICULARS OF TECHNICALLY SANCTIONED ESTIMATES IN RESPECT OF WORK FINANCED BY CENTRAL ROAD FUND (CRF)

- (1) Name of the work as technically sanctioned by the competent authority.
- (2) Total estimated cost as technically sanctioned.
- (3) No. date and designation of the authority according technical sanction to the estimate.
- (4) Remarks.

Signature

Designation

STATUS OF SANCTIONED/ON-GOING CRF ROAD WORKS

FOR THE PERIOD ENDING
AMOUNT IN RS. LAKHS PROGRESS IN %

[illegible]

No.RW/NH-28030/40/2000-OR

Dated, the 13th October, 2000

To

The Chief Secretary, (All State Governments/UTs)

Subject : Formulation of State Sector Road Development Programme for the year 2000-2001 to be financed from the Central Road Fund

I am directed to inform you about the decision of the Government to revamp the Central Road Fund by crediting into the cess of Re. 1/- per litre on petrol and diesel. It has also been decided to utilise 15 per cent of the cess on diesel and 30 per cent of the cess on petrol for development and maintenance of State Highways and Major District Roads. Out of this amount, 10 per cent is proposed to be earmarked for development of roads under this Ministry's scheme for improvement of roads of inter state and economic importance. For the works on State roads to be financed from the CRF, following guidelines, in supersession of all previous guidelines, are to be followed.

2. For utilisation of funds priority may be assigned to already sanctioned projects under earlier CRF scheme. Thereafter the accruals shall be utilised in the following manner :

- (i) Development of State Highways (SH) and Major District Roads (MDR) carrying heavy traffic with emphasis on construction of missing bridges, cross drainage works and rehabilitation of bridges, widening to two/four lanes, strengthening of weak pavement sections, construction of bypasses, construction of parallel service roads of bypasses constructed on National Highways (at least 70 per cent).
- (ii) Improvement of Riding Quality/Periodic Renewal of selected stretches of SH/MDR (at least 15 per cent).
- (iii) Engineering aspects of road safety works covering improvement of traffic junction, road marking, signalling, construction of subways and over bridges, construction of parking laybys, bus sheds, Highway Patrolling Scheme, etc. (at least 5 per cent).
- (iv) Research and Development and development of data base
- (v) Training of Highway Engineers and contribution to professional organisations like Indian Roads Congress, Indian National Group of IABSE and NITHE etc.

3. Actual assessment of accruals is likely to take some time. However, according to the preliminary assessment, a sum of Rs. _____ (Rupees _____) is likely to accrue to your State Government/Union Territory administration (State/UT) in your Central Road Fund upto 31.03.2000. Accordingly, I am to request that the proposal for development of roads from the CRF may please be prepared and forwarded to this Ministry urgently. In preparing the proposals, the following points may be kept in view:

- (i) The programme of works should be balanced and should conform to the guidelines indicated herein.
- (ii) Various works under each category should be arranged in order of priority.
- (iii) The proposal shall include only the works where land without any encumbrance is available with the State / UT so that there is no delay in start of works for the acquisition of land and removal of encroachments etc.
- (iv) The cost of each work should be based on actual requirements and realistic cost estimates.
- (v) Each proposal shall include broad features of the project and shall include the following:
 - (a) an index map
 - (b) scope of the proposal
 - (c) the existing position and the improvements desired, specification proposed, extent of preliminary survey and investigations conducted, traffic projects etc.
 - (d) preliminary cost estimate
 - (e) the basis of the rates of works considered in preparation of the estimate
 - (f) a comprehensive report of the utility of the scheme
 - (g) a certificate about availability of entire land needed for the proposed improvements.

4. I am also to draw your particular attention to the following:

- (i) Administrative Approvals of individual proposals will be accorded by this Ministry. Technical and Financial Sanction of the approved proposals are to be accorded by the State/UT concerned themselves.
- (ii) No agency charges will be payable for the execution of works included in the programme;
- (iii) Future routine maintenance and upkeep of the projects after completion will be responsibility of the State/UT concerned;

- (iv) State/UT will have to ensure that individual project(s) are technically approved and financially sanctioned within a period of one year from the date of administrative approval of the work, failing which the work will deem to be deleted from the programme, unless revised administrative approval of Government of India is obtained.
- (v) Audit will admit expenditure on receipt of audit authorization by this Ministry which will be based on the particulars of technically sanctioned estimates to be sent by the respective State/UT at proforma enclosed in "Annexure-I".
- (vi) The excess of cost in the technically sanctioned estimate shall be within the 10 per cent of the amount administratively approved for that proposal. State/UT will have to submit revised proposal for fresh administrative approval of the proposal for such excess beyond 10 per cent. Audit is authorised to accept an excess over the estimated cost of a proposal as approved by the government of India upto a limit of 10 per cent of approved amount.

5. Inordinate delay in execution of works results in revision of costs from time to time. The State/UT will appreciate that both the delay in the completion of the works and the undue increase in the costs are matters for serious consideration and concern. On the one hand, the provision of the required facility to the public is abnormally delayed and on the other, the increase in costs over the estimated costs unnecessarily limits the scope of taking up many new works with the available funds.

6. The State/UT has to submit quarterly progress reports of all the works sanctioned from the CRF for the quarters ending June, September, December and March every year as per the proforma enclosed (Annexure-II). The progress report should reach this Ministry not later than one month from the date of ending of each quarter.

7. The State/UT has to send completion report/certificate duly verified by the audit as soon as the works are completed.

8. This procedure will, however, not apply to works with which more than one State are concerned. The detailed estimates for such works under E&I Scheme will continue to be submitted to the Government of India for their prior approval. The existing procedure and guidelines in respect of roads under the programme of economic importance and inter-state roads are to be followed for sanction of these works.

9. At the end of each year, the State/UT has to furnish a certificate regarding utilisation of the amount allocated from Central Road Fund for the works under the scheme. This certificate is to be sent by 30th April every year. The allotment of funds for the next year will be linked to the amount utilised from the Central Road Fund of the previous year. These details may thus be furnished invariably in time.

Annexure-I

[Enclosure to Ministry's Circular No.RW/NH-28030/40/2000 dated 13.10.2000]

**STATEMENT SHOWING THE PARTICULARS OF TECHNICALLY SANCTIONED ESTIMATE IN
RESPECT OF WORKS FINANCED FROM THE CENTRAL ROAD FUND**

(1)	Name of work
(2)	No. and date of Govt. of India's letter in which work was approved
(3)	Job No./Approval No. allotted to the work by the Govt. of India
(4)	Total estimated cost of the work as approved by the Govt. of India
(5)	Total estimated cost as technically sanctioned by the competent authority
(6)	No., date and designation of the authority according technical sanction to the estimate
(7)	No., date and designation of the authority according financial sanction to the estimate
(8)	Remarks

Signature _____

Designation _____

PROGRESS REPORT OF WORKS EXECUTED FROM CENTRAL ROAD FUND

STATE

REPORT FOR THE QUARTER ENDING

Sl.No	Name of the work	Length (km)/M (for bridges)	Amount of AA (Rs. in lakh)	AA No. & Date	Amount of Tech. Sanction	Date of Sanction	Physical Progress in %			Financial progress (Rs. lakh)			Bottlenecks, if any	Remarks
							Upto the end of previous year	During the year	Total progress upto the end of the quarter	Upto the end of previous year	During the year	Total progress upto the end of the year of the quarter		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

No.RW/NH-28030/40/2000-OR/P&M**Dated, the 13th December, 2000**

To

The Chief Secretary (All State Governments/UTs)

Subject : Formulation of State Sector Road Development Programme for the year 2000-2001 to be Financed from the Central Road Fund

I am directed to refer to the Ministry's letter of even number dated 13.10.2000 on the subject mentioned above and to say that following para which was inadvertently omitted from the Ministry's letter as above may be included between para 3 (iv) and 3 (vi).

XXXXXX

XXXXXX

XXXXXX

"3.(v) The total cost of schemes to be approved shall be limited to ensure that bank of sanctions at any point of time does not exceed about three times the annual accruals for the State/UT on the assumption that sanctioned work will be completed within two to three years time."

XXXXXX

XXXXXX

XXXXXX

2. In addition to above following are also to be kept in view for preparation of the Detailed Project Report and the implementation of the Project:

- (i) The design of the road/bridge projects are to be carried out as per the relevant IRC/MOST codes/guidelines.
- (ii) Transparent procedures are to be followed for award of works. The Ministry's guidelines for pre-qualification of contractors and Standard Bidding Documents may be used for invitation of bids and for Contract Documents.
- (iii) Ministry's specification are to be followed for implementation of project and the contract documents are to be prepared accordingly.
- (iv) For quality control of the works, IRC special publication IRC:SP:11: Handbook of Quality Control for Construction of Roads and Runways (latest edition) and the procedures prescribed in the Ministry's Specification for Road and Bridge Works are to be followed.
- (v) Project monitoring are to be done at regular interval in a scientific and methodical manner to avoid time and cost over-run.

The respective Government/PWDs of the States/UTs may ensure that the above mentioned procedure/guidelines are followed for preparation of the Detailed Project Report and implementation of the project.

The contents of this letter and the letter of even number dated 13.10.2000 may be brought to the notice of all the officers of your Department dealing with such schemes.

No.RW/NH-28030/1/2001-P&M**Dated, the 13th July, 2001**

To

The Chief Secretary (All State Governments/UTs)

Subject : Formulation of State Sector Road Development Programme to be Financed from the Central Road Fund

I am directed to state that guidelines for formulation of above mentioned Road Development Programme were earlier circulated vide Ministry's letter No.RW/NH/28030/40/2000-OR dated 13th October and 13th December, 2000. The matter has been reviewed and it has been decided to further simplify procedure for approval to the works out of this fund. Thus in supersession of earlier guidelines, the following procedure/instructions may be followed:

2. For utilisation of funds priority may be assigned to already sanctioned projects under earlier CRF scheme. Thereafter, the accruals shall be utilized for new works to be sanctioned in the following manner.

3. All State roads including State Highways, Major District roads and other roads of importance can be taken up under this programme. The State Government can also consider urban roads for inclusion in the programme. It may, however, be noted that roads which are classified as rural roads are not to be included in this programme. For Rural Roads the funds are being provided under the Pradhan Mantri Gramin Sadak Yojana (PMGSY).

4. Types of works to be considered in this programme shall comprise of the following:

- Construction of missing bridges, cross-drainage works, rehabilitation of bridges, widening to 2-lanes, strengthening of weak pavement sections.
- Improvement of Riding Quality/Periodic Renewal of selected stretches of SH/MDR.
- Engineering aspects of road safety works covering improvement of traffic junction, road marking, signalling, construction of subways and over bridges, construction of parking lay-byes, bus sheds, Highway Patrolling Scheme etc.
- Research and Development and development of data base
- Training of Highway Engineers and contribution of professional organisations like Indian Roads Congress, Indian National Group of IABSE and NITHE etc.
- Construction of bypasses, parallel service roads along National Highways/State Highways in built-up areas may be considered in exceptional cases.

However, the estimates for land acquisition will not be considered under CRF.

5. Proposals should cover sufficient length of road and should generally be covering at least 10 km length, unless the requirement for connecting two places is less than 10 km. Proposals shall include only those works where land is available without any encumbrance. This is to ensure that there is no delay in starting the works. Cost of each work should be based on actual requirements and realistic cost estimates based on the current Schedule of Rates.

6. The State Government should send a list of projects to be taken up. The proposals should be shown on the state map indicating district boundaries and various types of roads i.e. NH, SH, MDR & ODR in different colours. The projects should be identified with a view to have a balanced development of the road network in the entire State. Particulars to be furnished for each project shall include:

- (a) Name of the work.
- (b) An index map showing, the area and the proposed road/bridge/improvement works.
- (c) Scope of the work including specification to be adopted in brief.
- (d) Category of the Road proposed to be improved; whether State Highway or Major District Road etc.
- (e) Length.
- (f) Estimated Cost of the project based on the current Schedule of Rates
- (g) Probable starting date.
- (h) Target date of completion.
- (i) A certificate regarding availability of the entire land needed for the project.

7. The standards, design and specification of the works to be proposed are to follow the relevant IRC/MOST Guidelines, Codes, Specification and the period of the completion of projects is not to exceed 24 months including period for tendering.

8. This Ministry will accord its administrative approval for the proposals. Technical approval and financial sanction of the proposals are to be accorded by the State/UT concerned.

9. No excess in cost beyond 10 per cent of the amount administratively approved for that proposal will be permissible. Any excess over 10 per cent will have to be arranged by States from their own resources. No revised estimate will be considered in this scheme.

10. No agency charges will be payable for the execution of works included in the programme.

11. Future routine maintenance and upkeep of the projects after completion will be responsibility of the State/UT concerned.

12. State/UT will have to ensure that individual project(s) are technically approved, financially sanctioned and awarded within a period of four months from the date of administrative approval of work, failing which the work will be deemed to have been deleted from the programme. In any case, time schedule as given in para 7 is to be strictly complied with.
13. Audit shall admit expenditure on the basis of technically approved and financially sanctioned estimate by the competent State/UT authority.
14. The State/UT has to submit quarterly yearly progress reports of all the works sanctioned from the CRF for the quarter ending June, September, December and March every year as per proforma enclosed (*Annexure-1*). The progress report should reach this Ministry not later than one month from the date of ending of each quarter.
15. The State Government will be required to furnish utilisation certificate as per *Annexure-II* along with the quarterly progress report. Further instalment of funds will be released to the extent of expenditure incurred as per utilisation certificate.
16. The total cost of Schemes to be approved shall be limited to ensure that the bank of sanction at any point of time does not exceed two times the annual accrual for the State/UT.

[Enclosure to letter No. RW/NH-28030/1/2000/P&M dated 13.7.2001]

PROGRESS REPORT OF WORKS EXECUTED FROM CENTRAL ROAD FUND

REPORT FOR THE QUARTER ENDING

SLNo	Name of the work	Length (km)/M (for bridges)	Amount of AA (Rs. in lakh)	AA No. & Date	Amount of Tech. Sanction	Date of Sanction	Physical Progress in per cent			Financial progress (Rs. lakh)			Target date of completion	Bottle-necks, if any and remedial measures	Remarks
							Upto the end of previous year	During the year	Total progress upto the end of the quarter	Upto the end of previous year	During the year	Total progress upto the end of the quarter			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

UTILISATION CERTIFICATE

It is to certify that out of an amount of Rs..... crores released by the Ministry vide letter No..... dated..... an amount of Rs..... crores has been spent on works sanctioned under Central Road Fund. It is further certified that expenditure has been incurred on sanctioned works only and has not exceeded the sanctioned cost of individual works.

Secretary/Deputy Secretary/Under Secretary

Government of

123. *ROADS OF INTER-STATE OR ECONOMIC IMPORTANCE*

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
123.6	NH-17014/2/96-KNT/OR dated 7.10.1999	Information in respect of works sanctioned on State roads under E&I Schemes where stretches have subsequently been declared as National Highways	123/8
123.7	NH-17012/9/97-PL dated 14.3.2001	Centrally Sponsored Schemes of State Roads of Inter-State and Economic Importance	123/9 to 13

No.NH-17014/2/96-KNT/OR

Dated, the 7th October, 1999

To,

All State Secretaries, P.W.D., All State Chief Engineers (NH), P.W.D.

Subject : Information in respect of works sanctioned on State roads under E&I Schemes where stretches have subsequently been declared as National Highways

I am directed to refer on the subject mentioned above and to say that in respect of the six cases listed in the enclosure and also all such cases that may come to notice, the State Govts. are requested to indicate their preferences on the following:

- (1) "The State Governments may go ahead with the completion of works under E&I scheme as per the approved details and hand over the relevant reach of the newly declared National Highway only on completion of such works and the expiry of the defect liability period".

OR

- (2) "The State Government may after due consideration decide to close the works on "as is where is" basis terminating the contract taking responsibility for any compensation that may become payable to the contractors on account of this and then transfer the newly declared National Highway stretches to the National Highway Wings without any contractual liabilities".
- (3) "In any case expenditure against NH(O) can be booked only after detailed estimates for works are taken up/sanctioned by the Ministry depending on inter-se priority and availability of funds."

An intimation in this regard may be furnished to this Ministry immediately. This may be accorded utmost priority.

[Enclosure to Ministry's Circular No. NH-17014/2/96-KNT/OR dated 7th Oct. 1999]

LIST OF E&I SANCTIONED WORKS

KARNATAKA

- (1) Construction of link road connecting Dobbespeth (NH-4) with Devanahally on (NH-7) via Doddaballapura at an estimated cost of Rs. 11.60 crores with central loan assistance of Rs. 5.80 crore vide Job.No.E&I/KNT/875/96.
- (2) Construction of link road connecting Attibele NH-7 (Bangalore-House) Section with Devanahally on NH-7 (Hyderabad-Bangalore Section) via Hoskote on NH-4 (Madras-Bangalore Section) at an estimated cost of Rs.14.40 crores with Central loan assistance of Rs. 7.20 crores vide Job.No.E&I/KNT/876/96.
- (3) Improvement of selected reach of inter-state Highway connecting Nanjangud in Karnataka with Coimbatore in Tamil Nadu at an estimated cost of Rs. 250.00 lakhs with Central Share of Rs. 239.63 lakhs vide Job.No. IS/KNT/97/880.

TAMIL NADU

- (4) Construction of R.O.B. in lieu of the existing level crossing at Km.668 of Pondicherry-Krishnagiri road including construction of an interchange at the Junction of Km.123/2 of NH.45 in Tamil Nadu at an estimated cost of Rs.1989.00 lakhs as follow :

Railway share	701.72 lakhs
Ministry share	643.64 lakhs
State share	643.64 lakhs
	1989.00 lakhs

Job.No.E&I/TN/878/96

MIZORAM

(5) Construction of Sairang-Langpur Road (Length 11.50 km) at an estimated cost of Rs. 891.95 lakhs with Central loan assistance of Rs. 710.91 lakhs vide Job. No. IS/MZ/98/891.

MADHYA PRADESH

(6) W/S from km 83/4 to 108 and km 1 to 16/8 of State Highway No. 6 in M.P. at an estimated cost of Rs. 1324.60 lakhs with Central loan assistance of Rs. 662.30 lakhs vide Job. No. EC/MP/692/98.

123.7

No. NH-17012/9/97-PL

Dated, the 14th March, 2001

To

All State/UT PWD Secretaries

Subject : Centrally Sponsored Schemes of State Roads of Inter-State and Economic Importance

Government of India while revamping the Central Road Fund by levying cess on diesel and petrol, have decided that 10 per cent of the share of CRF for State roads be earmarked for development of roads under Ministry's Scheme for improvement of State roads of Inter-State and Economic Importance. As per existing guidelines this centrally sponsored scheme is on loan basis i.e. 100 per cent loan assistance is provided to States in case of Inter-State projects and 50 per cent loan assistance in case of projects of economic importance. With the revamped Central Road Fund coming into force, it has been decided that the road/bridge projects of Inter-State Importance will be fully funded and projects of Economic Importance funded to the extent of 50 per cent out of the earmarked 10 per cent portion of CRF for this purpose. Broadly the following categories of road/bridge projects will be eligible for consideration:

- (i) Inter-State roads/bridges necessary for ensuring through communication.
- (ii) Roads/Bridges connecting National Highways.
- (iii) Roads/Bridges required for opening up new areas for economic growth where railway facilities cannot be provided in near future.
- (iv) Roads/Bridges which would contribute materially to rapid development e.g. in hilly areas and areas having rich mineral resources for exploitation.

2. At the beginning of the year i.e. by 30th April every year, the state govt. may sponsor limited number of road-bridge projects of both categories of Inter-State Importance and Economic Importance in order of priority and with relevant details to justify the same. However, the state Govt. will not sponsor any proposals involving land acquisition and shifting of utilities. The proposals thus received will be examined in the Ministry and the State Governments will be informed of the projects identified for sanction under the E&I Scheme. The State Govts. Will thereafter prepare and forward detailed estimates for sanction by the Ministry.

3. PROCEDURE

3.1. Since all the road/bridge projects of either Inter-State Importance (fully financed) or Economic Importance (50 per cent financed) are to be sanctioned by the Ministry, the existing procedure and guidelines regarding framing and processing of the estimates in respect of National Highway Projects will be followed.

3.2. The State Govt. will render a certificate that land is available and is in possession of the PWD and shifting of utilities, if any, has been completed.

3.3. All the proposals will be routed through the respective State Govt./U.T. Administration.

3.4. Whereas limit of excess expenditure beyond sanctioned cost on projects fully financed i.e. projects of Inter-State Importance would be same as applicable to National Highway projects, no excess over Central's share of 50 per cent sanctioned cost for partially financed projects i.e. roads of Economic Importance would be accepted. Any excess of cost for partially financed projects will be borne by the State Govt./UT Administration from their own resources.

3.5. Whereas estimates for fully financed projects may be accepted for revision if the cost is likely to exceed beyond the permissible limits on the sanctioned cost, no revision of estimate for partially financed projects would be entertained. However no expenditure beyond permissible limits even for fully financed projects will be committed without approval of the Ministry.

3.6. The existing instructions/guidelines in respect of tenders (pre-qualification and acceptance) and revised estimates as applicable to National Highway Projects would be applicable to fully financed projects of roads of Inter-State Importance. The State Govts may follow their own procedure/guidelines in respect of partially financed projects of Economic Importance.

3.7. No agency charges will be payable for execution of works sanctioned under E&I Scheme.

3.8. Future upkeep and maintenance of the roads/bridges after completion will be the responsibility of the State Govt./U.T. Admn. concerned.

4. **FUNDS**

4.1. The funds would be released in two instalments, first in April/May and second in September/October.

4.2. While the first instalment would be released on the basis of requirement to be communicated by the State Govt./U.T. Admn., the 2nd instalment would be released on the basis of progress of the work and actual expenditure in the preceding half year and anticipated for the next half year. The release of funds for 50 per cent financed works will be commensurate with the expenditure proposed to be incurred from State's own resources.

4.3. In all these cases, the overall availability of budget provisions will be the primary determining factor for allocations and the half yearly payments would be regulated accordingly. The expenditure by the State Govts./UTs concerned would, therefore, have to be confined to the allocation made for the work.

5. **PROGRESS REPORTS AND REVIEW**

5.1. The following progress reports will be required to be submitted to the Ministry with copies endorsed to the concerned Regional Office of the Ministry by the State Govt./UT Chief Engineer for all projects:

- (i) Quarterly Progress Report in prescribed form (copy enclosed *Annexures I & II*) and
- (ii) Monthly Expenditure- Report in the prescribed form (copy enclosed - *Annexure III*).

5.2. The physical progress as well as expenditure would be reviewed and discussed with State Govt./UT Chief Engineer on quarterly basis in the Ministry which may also be attended by Ministry's Regional Officer.

6. The above guidelines supersede all the previous instructions on the subject.

[Enclosure to Ministry's Circular No.NH-17012/9/97-PL dated 14.3.2001]

Annexure-I

**Road Development (E&I Scheme)
(Road Works)**

Progress Report for the Quarter ending State

PWD Circle

PWD Division

Name of work:

Highway No. Date of sanction of estimate

Job. No. Amount Rs.

Section Length Km. Date of commencement

Place From To..... Target dt. of completion

Mileage/Milometerage From To Contractor

PHYSICAL PROGRESS

S. No.	Item of work	Total quantity as per detailed estimate	Progress at the end of the previous quarter		Cumulative progress upto the end of the quarter under report		Expected date of completion	Remarks
			Target %	Actual %	Target %	Actual %		
1	2	3	4	5	6	7	8	9
(1)	Earth work (Lac. cum)							
(2)	Sub-base (Lac. Cum)							
(3)	Soling							
	(a) Collection (Lac. cum)							
	(b) Laying (Lac. cum)							
(4)	Metalling							
	(a) Collection (Lac. cum)							
	(b) Laying (Lac. cum)							
(5)	Bitumen Macadam/DBM							
	(a) Collection							
	(i) Stone Aggr. (Lac. cum)							
	(ii) Bitumen (M.T.)							
	(b) Laying (Lac. cum)							
(6)	Bitumen Macadam/DBM							
	(b) Collection							
	(i) Stone Aggr. (Lac. cum)							
	(ii) Bitumen (M.T.)							
	(b) Laying (Lac. cum)							
(7)	Culverts (RM)							
(8)	Retaining walls (RM)							
(9)	Overall progress %							
(10)	Expenditure (in Rs. lakhs)							

(11) Additional information:

(a) Bottlenecks, if any, and action taken towards overcoming them

(b) General brief description and remarks:

(i) Progress is generally satisfactory/fair/poor

(ii) Plan and machinery are adequate/inadequate, there being a need for additional

(iii) Labour is adequate/inadequate - the reason being

(iv) Resources (Stores) are adequate/inadequate, there being a shortage of because of

(c) Liabilities incurred and not otherwise shown in this form (money value to be shown)

Note : With the first quarterly report a statement showing sub-headwise quarterly percentage targets of progress for the entire expected period of completion shall also be submitted, which shall serve for reference in case of subsequent returns.

Signature of Executive Engineer

Dated

Division

To

The Director General (Road Development),
Ministry of Road Transport and Highways
Transport Bhavan, No. 1, Parliament Street,
New Delhi

Annexure-II

**E&I Scheme
(Bridge works)
PROGRESS REPORT FOR THE QUARTER ENDING**

- (1) State
- (2) Name of Bridge
- (3) Location of Bridge
- (4) Length of Bridge
- (5) Job No.
- (6) Cost as per sanctioned estimate
- (7) Date of commencement
- (8) Target date of completion of the bridge
- (9) Name of Contractor
- (10) Item-wise progress

S.No.	Item of work	Total to be done with unit	Quarterly target	Progress upto last quarter	Progress during the quarter	Progress upto end of the quarter	Progress of total
(1)	FOUNDATIONS (A) Well Foundations (a) Curbs (b) Sinking (c) Well cap (B) Open Foundations (C) Pile Foundations						
(2)	SUB-STRUCTURE (a) Piers (b) Abutments (c) Return walls						
(3)	SUPERSTRUCTURE (a) Casting girders (b) Launching of girders (c) Bearing (d) Decking (e) Wearing course and finishing						
(4)	PROTECTIVE WORKS (a) Left bank (b) Right bank						

(11) Overall physical progress (as percentage of the whole work)

(12) Expenditure:

- (a) Upto last quarter
- (b) During the quarter
- (c) Total upto end of the quarter

Signature of Executive Engineer

Dated

Division

To

The Director General (Road Development),
Ministry of Road Transport and Highways
Transport Bhavan, No. 1, Parliament Street,
New Delhi

Annexure-III

STATEMENT OF EXPENDITURE ON ECONOMIC AND INTER-STATE IMPORTANCE SCHEME WORKS

State:

Month:

Head of Account to which the expenditure is debitable

[illegible]

130. TENDERS, CONTRACTS AND ARBITRATIONS

Code No.	Circular No. & Date	Brief Subject	Page No.
130.64	RW/NH-11026/1/97-DO.I dated 21.4.1997	Need for expeditious award of National Highway works after sanction-suggested procedural changes	130/94
130.65	RW/NH-37011/9/98-DO.I dated 10.6.1998	Prequalification of Contractors for National Highway works and Centrally Sponsored Schemes	130/94 to 113
130.66	RW/NH-11052/1/98-DO.I dated 17.6.1998	Bonus clause for early completion of Externally Aided Road Projects (EAPs) – Additional clause – reg.	130/114 to 117
130.67	RW/NH-15015/5/99-PL dated 5.3.1999	Policy on Prequalification of Contractors for Implementation of NH Projects	130/117
130.68	RW/NH-11026/2/99-US(D.I) dated 13.1.2000	Expeditious acceptance of tenders for works on National Highways	130/118
130.69	RW/NH-11024/3/99-US(D.I) dated 9.3.2000	Invitation of tenders for the execution of works on National Highways and other Centrally financed Schemes – Need for adoption of uniform policy by the State PWDs relating to advertisements in the newspapers/journals	130/118
130.70	NH-11011/3/99-PL dated 3.4.2000	Signing/Authentication of contracts documents, plaints and affidavits by Chief Engineers and Regional Officers in the Ministry of Surface Transport	130/119
130.71	RW/NH-24020/2/99-PIC dated 4.9.2000	Standard Bidding Document for Works Costing more than Rs. 5.00 Crore	130/119 to 123
130.72	RW/NH-24020/2/99-PIC dated 4.10.2000	Standard Bidding Document for Works Costing more than Rs. 5.00 Crore	130/123
130.73	RW/NH-24020/2/99-PIC dated 21.12.2000	Standard Bidding Document (SBD) for Works Costing more than Rs. 5.00 Crore Technical Evaluation – reg.	130/124
130.74	NH-24035/23/97-PL (Vol.III) dated 12.1.2001	Prequalification criteria for Bidders for Small BOT Projects of cost upto Rs. 100 Crore	130/124 to 129
130.75	NH-15015/29/2001-PL dated 5.7.2001	Guidelines for expeditious acceptance of tenders and award of work	130/129 & 130

No. RW/NH-11026/1/97-DOI**Dated, the 21st April, 1997****To**

The Secretaries of States/UTs, PWDs (dealing with National Highways)

Subject : Need for expeditious award of National Highway works after sanction-suggested procedural changes

As per the existing instructions of the Ministry, a National Highway work should commence within one year of its sanction/administrative approval, failing which the sanction/administrative approval would lapse. It has come to notice that the aforesaid time limit is not being strictly adhered to and in many cases requests are received from the State PWDs for relaxing the above time limit. Invariably, in such cases, the revised cost estimates, based on tenders, are higher than the updated cost of work by more than 15 per cent and hence require Ministry's sanction before award of work resulting in delays in the start of the work. The matter has been reviewed in the Ministry, and it has been decided that following procedure shall be adopted so as to ensure commencement of work within the stipulated period of one year from sanction.

- (i) All project costs shall be based on the updated schedule of rates, using the analysis given in the Ministry's Standard Data Book. For this purpose, the States are advised to prepare their schedule of rates on a computer format so that the same can be updated every year keeping in view the basic rates of labour, material etc.
- (ii) For a project costing less than Rs. 50 lakhs administrative approval would be accorded only after receiving the certificate from the Chief Engineer of the State PWD that the detailed estimate is ready and abstract of cost submitted is based on such detailed estimate. Further, the technical approval and financial sanction must be accorded by the State Chief Engineer within three months of issue of administrative approval.
- (iii) For works where prequalification is required, the prequalification procedure should be taken up concurrently with the submission of detailed estimate to the Ministry. After accord of sanction to the estimate by the Ministry, Tender procedure shall be started within a month to enable a decision being taken latest by six months or so, leading to timely award of the work, i.e., within one year of accord of sanction. Relaxation of the time limit will no longer be accepted.
- (iv) The State Governments should delegate to the Chief Engineers (National Highways) of the State PWDs, powers for accepting tenders within 15 per cent of the updated cost of the project.
- (v) It has been noted that in a number of cases, the State Governments are carrying out negotiation with the tenderers to bring down the cost. This is contrary to the principle of sanctity of tendering process. It is, therefore, suggested that tender documents of all National Highway works must contain a clause stating that the award of work will be made to the lowest responsive bidder.

2. Your are requested to take necessary action in accordance with the above suggestions and ensure that all works are got started during one year of accord of sanction.

No. RW/NH-37011/9/98-DOI**Dated, the 10th June, 1998****To**

All Chief Engineers of State PWDs (dealing with National Highways and Centrally Sponsored Schemes); Chairman, National Highways Authority of India; Director General, Central Public Works Department; Director General Border Roads; Secretary, Indian Roads Congress.

Subject : Prequalification of Contractors for National Highway Works and Centrally Sponsored Schemes

Please find enclosed herewith a copy of document for prequalification of contractors for adoption in respect of National Highway works and Centrally Sponsored Schemes under local competitive bidding. This document supersedes all other documents for prequalification of contractors issued by the Ministry earlier.

2. Guidelines regarding procedure to be adopted for prequalification of contractors as contained in the Ministry's letter No. RW/NH-11024/1/94-DOI dated 15th June, 1994 will remain unchanged.

3. It is requested that the contents of this letter may be brought to the notice of all concerned for compliance.

[Enclosure to Ministry's Circular No. RW/NH-37011/9/98-DO.I dated the 10th June, 1998]

STANDARD PREQUALIFICATION DOCUMENTS

DRAFT ADVERTISEMENT FOR ROAD PROJECT NATIONAL HIGHWAY/CENTRALLY SPONSORED PROJECT

STATE OF _____

CONTRACTOR PREQUALIFICATION

Bids for contractor prequalification are invited for a project which includes within the State of _____, the construction/reconstruction/rehabilitation of about _____ km of road work on _____ in the State of _____. The project contracts include the following principal work items:

Earth-work:	_____ Cu.m.
Pavement Structure Sub-base	_____ Cu.m. of _____
Base Course	_____ Cu.m. of _____
Binder Course	_____ tonnes of _____
Surface	_____ tonnes of _____
Cross Drainage Works:	
RC Pipe	_____ Lin. m. _____
RC Slab Culvert	_____ Lin. m. _____
Structure etc.	_____ Lin. m. _____
Time for completion	_____ Months. _____

Contractors registered with the State Public Works Department/Central Government Departments who have experience in the construction of similar works and consider themselves capable of constructing the project works should obtain prequalification documents from the address given below on any working day between the hours of ____ & _____ on payment of Rs. _____ /-* (Rupees _____ only) in cash or Demand Draft. The Demand Draft is to be made in favour of _____. No Document will be issued after _____. The completed prequalification document and questionnaire should be returned to the employer/engineers at the address given below, on or before close of business on _____. The employer/engineer reserves the right to deny prequalification to any applicant without assigning any reason. Only firms/joint ventures prequalified under this procedure will be invited to bid for project contracts.

Name

Designation

Address _____

* May be fixed as Rs.2000/- to Rs.4000/- depending on size of work.

DRAFT ADVERTISEMENT FOR ROAD PROJECT NATIONAL HIGHWAY/CENTRALLY SPONSORED PROJECT

STATE OF _____

CONTRACTOR PREQUALIFICATION

Bids for contractor prequalification are invited for a project which includes within the State of _____, the construction/reconstruction/rehabilitation of about _____ metres of bridge work on _____ in the State of _____.

The project contracts include the following principal work items:

Length of Bridges	_____ (meter)
Type of superstructure	_____
Type of substructure	_____
Type of foundations	_____
Depth of foundation	_____ (meter)
Time for completion	_____ (months)

Contractors registered with the State Public Works Departments/Central Government Departments who have experience in the construction of similar works and consider themselves capable of constructing the project works should obtain prequalification documents from the address given below on any working day between the hours of __ & _____ on payment of Rs. _____/-* (Rupees _____ only) in cash or Demand Draft. The Demand Draft is to be made in favour of _____. No Document will be issued after _____. The completed prequalification document and questionnaire should be returned to the employer/engineers at the address given below, on or before close of business on _____. The employer/engineer reserves the right to deny prequalification to any applicant without assigning any reason. Only firms/joint ventures prequalified under this procedure will be invited to bid for project contracts.

Name

Designation

Address _____

* May be fixed as Rs.2000/- to Rs.4000/- depending on size of work.

INVITATION FOR PREQUALIFICATION

NAME OF WORK:

NH No./NAME OF ROAD:

STATE:

1.1. INTRODUCTION

Bids for contract of prequalification are invited for a project which includes within the State of _____, the Construction/Reconstruction/Rehabilitation of about _____ km of Road work _____ meter of bridge work of National Highway No. _____

The Highway Development Scheme have been sub-divided into contract sub-sections each one of which will form a single contract. The details of contract sub-section together with their estimated costs are given in Section 4 hereunder. General contractors backed up by specialist sub-contractors or alternatively, Joint Ventures or Consortia, who wish to bid for one or more of these contracts should apply for Pre-qualification in the manner set out in this document. The Tender Documents will be issued subsequently only to those parties selected by the Employer/Engineer as having necessary qualification/suitability to perform the contract(s) satisfactorily.

1.2. EMPLOYER

Name

(Head of Department)

(Department)

(State)

Address:

Telex:

Telephone:

1.3. ENGINEER

Name:
Address:
Telex:
Telephone:

(Entrusted with execution of work)

1.4. NAME OF WORK

(here all the contract sub-section with their nomenclature of improvement may be issued)

Contract No.	Description*	Approx. length (km)	Estimated Cost (Rs. million)
Contract-I	Widening to 4-lanes in Section _____ to _____ (Km. _____ to Km. _____) of National Highway No. _____.		
Contract-II	Strengthening existing 2-lanes pavement in Section _____ to _____ (Km. _____ to Km. _____) of National Highway No. _____		
Contract-III	Construction of major/minor bridge across river _____ with its approaches on National Highway No. _____ etc.		

2. INSTRUCTIONS TO APPLICANTS

- 2.1. The Employer intends to prequalify contractors for the following (works) (contracts) under the project: _____ [general description of the Project]. (Applications may be made to prequalify for one or more of the above contracts). It is expected that Invitations to Bid will be made in _____ [month & year].

NAME OF WORK: (here all the contract sub-section with their nomenclature of improvement may be listed)

Contract No.	Description*	Approx. length (km)	Estd. Cost (Rs million)
Contract I	Widening to 4 lanes in Section _____ to _____ (km. _____ to km. _____) of National Highway No. _____		
Contract II	Strengthening existing 2 lane pavement in Section _____ to _____ (km _____ to km _____) of National Highway No. _____		
Contract III	Construction of major/minor bridge across river _____ with its approaches on National Highway No. _____ etc.		

- 2.2. Prequalification is open to Indian firms and voluntarily formed joint ventures of Indian firms.

- 2.3. General information on the climate, hydrology; topography, access to site, transportation and communications facilities, medical facilities, project layout, expected construction period, facilities, and services provided by the Employer, and _____ [other relevant data] is attached on a separate sheet. The contract will be a (unit price) (lump sum) (turnkey) contract.

2.4. SALIENT INFORMATION OF CONDITIONS OF CONTRACTS UNDER LOCAL COMPETITIVE BIDDING

2.4.1. The general conditions of contract will be as per standard document being followed for similar works on National Highways or centrally sponsored roads by the Employer/Engineer and duly modified as needed for local conditions.

2.4.2. Earnest money of approximately 2 per cent of the estimated cost will be required to be furnished by each bidder at the time of submission of bids and in the case of successful bidders, a performance security of 10 per cent of the bid price will be required to be furnished.

2.4.3. An interest free mobilisation advance amounting to 10 per cent of the Contract Price may be paid for procurement of equipment against Bank Guarantee. The executing agency may also prescribe special requirements of essential equipment. Running payment to the Contractor will be made monthly against, (i) the permanent works executed and/or (ii) 75 per cent of the value of the non-perishable construction material brought to the site to a reasonable extent for incorporation in the permanent works, subject to attaining the specified qualifying amount.

2.4.4. Contractor shall not sublet any part of the work without prior written consent of the Employer/Engineer. In no case, contractor will be permitted to sublet more than 50 per cent (fifty per cent) of the value of works, including those to specialised subcontractors.

2.4.5. The contract will allow for price variation of labour, material and POL.

2.4.6. The bids will be in prescribed form for item rate/lumpsum contract. The contractor will be/will not be required to prepare detailed design. The contractors will be/will not be permitted to quote on the basis of their alternative design.

2.4.7. All designs and works shall conform to the specifications, standards and codes of Indian Roads Congress, Specifications of Ministry of Surface Transport (Roads Wing), and other relevant Indian Standards or equivalent standards mentioned in the contract documents or approved by the Engineer.

2.5. SUBMISSION OF APPLICATIONS

2.5.1. Submission of applications for prequalification must be received in sealed envelopes, which must be either delivered by hand or by registered mail, at _____ [address] not later than _____ hours on _____ [date] and be clearly marked "Application to Prequalify for _____ [names of the Project and contract(s), any applicable number(s)]".

2.5.2. Name & mailing address of the Applicant shall be clearly marked on the envelope

2.5.3. All the information requested for prequalification shall be answered in the ENGLISH language. Where information is provided in another language this shall be accompanied by a translation of its pertinent parts, into ENGLISH. This translation will govern and be used for interpreting the information. Submission of firms applying on their own may be written in local language.

2.5.4. Failure to provide information which is essential to evaluate the Applicant's qualifications, or to provide timely clarification or substantiation of the information supplied may result in disqualification of the Applicant.

2.5.5. Prospective applicants may request clarification of the project requirements and the criteria for qualification. Any clarification given by the Employer will be forwarded to all those who have purchased the prequalification documents. No request for clarification will be considered after _____ [given date 2 weeks before the closing date for receiving prequalification bids].

The following paragraph should only be used if a clarification meeting is planned. Such meetings should normally be called only for very large and/or complex contracts.

2.5.6. A clarification meeting will be held at _____ [time, date and place] at which prospective applicants may request clarification of the Project requirements and the criteria for qualification.

Annexure-1**Minimum key personnel for the project**

Sl. No.	Personnel	Qualification	LOT size			
			Upto Rs. 50 Million	Rs. 51-200 Million	Rs. 201-500 Million	Rs. 501-1000 Million & above
1.	Project Manager	B.E. Civil + 10 Years Exp.	1	1 No.	1 No.	1 No.
2.	Site Engineer	B.E. Civil + 3 Years Exp.	1	2 No.	4 Nos.	6 Nos.
3.	Plant Engineer	B.E. Mech. + 3 Years Exp. Or Dip. Mech. + 7 Years Exp.	1	1 No.	1 No.	2 Nos.
4.	Quantity Surveyor	B.E. Civil + 7 Years Exp. Or Dip. Civil + 7 Years Exp.	1	1 No.	1 No.	2 Nos.
5.	Soil & Material Engineer	B.E. Civil + 7 Years Exp. Or Dip. Civil + 7 Years Exp.	1	1 No.	1 No.	1 No.
	Total		5 Nos.	6 Nos.	8 Nos.	12 Nos.

Annexure-II**List of Plant & Equipment to be Deployed on Contract Work**

Sl. No.	Type of Equipment	Maximum Age as on	Upto Rs. 50 million	Rs. 51-200 Million	Rs. 201-500 Million	Rs. 501-1000 Million & above
1.	Tipper Trucks	5-7	6	10	15	20
2.	Motor Grader	5	2	2	3	4
3.	Dozer	5	1	1	1	2
4.	Front end Loader	5	2	2	2	4
5.	Smooth Wheeled Roller	5	2	2	3	4
6.	Vibratory Roller	5	2	2	2	3
7.	Hot Mix Plant with Electronic Controls (Minimum 8200 TPH Capacity)	5	1	1	1	2
8.	Paver Finisher with Electronic Sensor	5	1	1	1	2
9.	Water Tanker	5	3	3	4	5
10.	Bitumen Sprayer	5-7	1	1	1	2
11.	Tandem Roller	5	1	1	1	1
12.	Concrete Mixers with Integral Weigh Batching facility	5	2	2	1	2
13.	Concrete Batching and Mixing Plant (Minimum Capacity - 15 m ³ /hour)	5	-	-	1	1
14.	Concrete paver capable of paving 7.5m width in one single pass including all accessories. Such as automatic dowel bar insertor, integral vibratory system and electronic sensors ancillary equipment for applying curing compound, joint cutting etc.	5	-	-	-	1
15.	Concrete Batching and Mixing plant with automatic control (minimum 100 cum/hour)	5	-	-	-	1
	Total		24	28	36	54

2.6. QUALIFICATION CRITERIA

2.6.1. Prequalification will be based on meeting all the following minimum pass/fail criteria regarding the Applicant's general and particular experience, personnel and equipment capabilities, and financial position, as demonstrated by the Applicant's responses in the forms attached to the Letter of Application (specified requirements for joint ventures are given under paras 2.7.1 and 2.7.2 below). Subcontractors' experience and resources shall not be taken into account in determining the Applicant's compliance with the qualifying criteria.

To qualify for more than one contract, the applicant must demonstrate having experience and resources sufficient to meet the aggregate of the qualification criteria for each contract given in paragraphs 2.6.3 and 2.6.4 below.

2.6.2. ESCALATION

Following enhancement factors will be used for the costs of works executed and the financial figures to a common base value for works completed in India.

Year before	Multiplying factor
One	1.10
Two	1.21
Three	1.33
Four	1.46
Five	1.61

In case the financial figures and value of completed works are in foreign currency, current market exchange rate will be applied for the purpose of conversion of foreign currency into Indian rupees. (for the purpose of this prequalification, 1 US\$ = Indian Rs. ____ *).

2.6.3. General Experience

The Applicant shall meet the following minimum criteria:

- (a) average annual turnover (defined as billing for works in progress and completed) over the last five years of 40 per cent of the value of contract/contracts applied for.
- (b) successful experience as prime contractor in completing at least one contract of highway (road and/or bridge works)/ airport contract of at least 40 per cent of the value of proposed contract within the last six years; this experience should also include the following minimum quantities of work executed in any one year:
 - * Earthwork in both excavation & embankment (combined quantities) - Cu.m.
 - * Bituminous work (DBM/AC/BC) - Cu.m.
 - * Bridge works:
 - Prestressed/RCC - Cu.m.
 - Well/Pile Foundation - m.

(The list is suggestive and may be modified/augmented on the basis of individual project requirement).

2.6.4. Personnel Capabilities

The Applicant must have suitably qualified personnel to fill the following positions. The applicant will supply information on a prime candidate and an alternate for each position, both of whom should meet the experience requirements specified below:

Position	Total experience (Years)	In similar works (Years)	As manager of similar works (Years) ³
Project manager			
Other positions			

(Suggested lists is given in *Annexure-I*)

*To be filled in by Employer before issue of the document.

Application will indicate actual figures of costs and amounts in the Schedule without accounting for the above mentioned factors.

2.6.5. The Applicant should own or should have assured ownership to the following key items of equipment, in full working order, and must demonstrate that, based on known commitments, they will be available for use in the proposed contract.

S.No	Equipment type and characteristics	Minimum number required
(1)		
(2)		
(3)		

(Suggested list given in *Annexure-II*)

2.6.6. Financial Position

The Applicant should demonstrate that he has access to, or has available, liquid assets (working capital cash in hand and bank guarantees) and/or credit facilities of not less than 10 per cent of the contract/contracts applied for, construction cash-flow may be taken as 10 per cent of the estimated value of contract/contracts.

2.6.7. The audited balance sheets for the last five years should be submitted, which must demonstrate the soundness of the Applicant's financial position, showing long-term profitability including an estimated financial projection for the next two years). Where necessary, the Employer will make inquiries with the applicant's bankers.

2.6.8. Litigation History

The Applicant should provide accurate information on any litigation or arbitration resulting from contracts completed or under execution by him over the last five years. A consistent history of awards against the Applicant or any partner of a joint venture may result in failure of the applicant.

2.6.9. Applicants who meet the minimum qualification criteria will be qualified only if their available bid capacity at the expected time of bidding is more than the total estimated cost of the works. The available bid capacity will be calculated as under:

Assessed Available Bid Capacity = $(A \times N \times 2 - B)$, where

A = Maximum value of works executed in any one year during the last five years (updated to the current price level) rate of inflation may be taken as 10 per cent per year which will take into account the completed as well as works in progress;

B = Value at current price level of the existing commitments and ongoing works to be completed during the next ____ years (period of completion of works for which bids are invited); and

N = Number of years prescribed for completion of the works for which the bids are invited.

Note: In case of a Joint Venture, the available bid capacity will be applied for each partner to the extent of his proposed participation in the execution of the works.

2.6.10. Even though the Applicants meet the above criteria, they are subject to be disqualified if they have:

- made misleading or false representation in the form, statements and attachments submitted; and/or
- Records of poor performance such as abandoning the work, rescinding of contract for which the reasons are attributable to the non-performance of the contractor; consistent history of litigation awarded against the applicant or financial failure due to bankruptcy. The rescinding of contract of a joint venture on account of reasons other than non-performance, such as Most Experienced partner of joint venture pulling out, court directions leading to breaking up of a joint venture before the start of work, which are not attributable to the poor performance of the contractor will, however, not affect the prequalification of the individual partners.

2.7. JOINT VENTURES

2.7.1. Joint ventures must comply with the following requirements:

(a) Following are the minimum qualification requirements;

- (i) The lead partner shall meet not less than 40 per cent of all the qualifying criteria given in paras 2.6.3. and 2.6.6. above.
- (ii) Each of the partner shall meet not less than 30 per cent of all the qualifying criteria given in paras 2.6.3. and 2.6.6. above.

- (iii) The joint venture must satisfy collectively the criteria of paras 2.6.4, 2.6.5 & 2.6.6 for which purpose the relevant figures for each of the partners shall be added together to arrive at the joint venture's total capacity. Individual members must each satisfy the requirements of paras 2.6.7 & 2.6.8 above.
- (b) The formation of a joint venture after prequalification, and any change in a prequalified joint venture, will be subject to the written approval of the Employer prior to the deadline for submission of bids. Such approval shall be denied if (i) partners withdraw from a joint venture and the remaining partners do not meet the qualifying requirements; (ii) the new partners to a joint venture are not qualified, individually or as another joint venture; or (iii) in the opinion of the Employer, a substantial reduction in competition may result.
- (c) Any bid shall be signed so as to legally bind all partners, jointly and severally, and any bid shall be submitted with a copy of the joint venture agreement providing the joint and several liability with respect to the contract.

2.7.2. The prequalification of a joint venture does not necessarily prequalify any of its partners individually or as a partner in any other joint venture or association. In case of dissolution of a joint venture, each one of the constituent firms may prequalify if they meet all the prequalification requirements, subject to the written approval of the Employer.

2.8. PUBLIC SECTOR COMPANIES

2.8.1. Majority publicly-owned enterprises may be eligible to qualify if, in addition to meeting all the above requirements, they are also:

- (a) Commercially-oriented legal-entities distinct from the Employer,
- (b) Financially autonomous, as demonstrated by requirements in their constitutions to provide separate audited accounts and return on capital, powers to raise loans and obtain revenues through the sale of goods or services; and
- (c) Managerially autonomous.

2.9. CONFLICT OF INTEREST

2.9.1. The Applicant (including all members of a joint venture) must not be associated, nor have been associated in the past, with the consultant (M/s. _____) or any other entity that has prepared the design, specifications, and other prequalification and bidding documents for the Project, or that was proposed as Engineer for the Contract, over the last five years. Any such association may result in the disqualification of the Applicant.

2.10. UPDATING PREQUALIFICATION INFORMATION

2.10.1. Bidders shall be required to update the financial information used for prequalification at the time of submitting their bids, to confirm their continued compliance with the qualification criteria and verification of the information provided. A bid shall be rejected if the Applicant's qualification thresholds are no longer met at the time of bidding.

2.11. GENERAL

2.11.1. Only firms and joint ventures that have been prequalified under this procedure will be invited to bid. A qualified firm or a member of a qualified joint venture may participate in only one bid for the contract. If a firm submits more than one bid, singly or in joint venture, all bids including that party will be rejected. This rule will not apply in respect of bids which include specialist subcontractors who are used by more than one bidder.

2.11.2. Bidders will be required to provide bid security in the form of a bond, banker's guarantee, or other security acceptable to the Employer about 2 per cent of the estimated cost, and the successful bidder will be required to provide performance security. Examples of acceptable forms will be supplied with the bidding documents.

2.11.3. The Employer reserves the right to:

- (a) amend the scope and value of any contract(s) to bid, in which event the contract(s) will only be bid among those prequalified bidders who meet the requirements of the contract(s) as amended;
- (b) reject or accept any application; and
- (c) cancel the prequalification process and reject all applications.

The Employer shall neither be liable for any such actions nor be under any obligation to inform the Applicant of the grounds for them.

2.11.4. Applicants will be advised in writing by fax or telex, within 90 days of the date for submission of applications (para 2.5.1 above), of the result of their application, and the names of the prequalified applicants, without assigning any reason for the Employer's decision.

LETTER OF APPLICATION

[letterhead paper of the Applicant, or partner responsible for a joint venture, including full postal address, telephone no., fax no., telex no., and cable address]

Date: _____

To

[Name & Address of the Employer]

Sir

Being duly authorised to represent and act on behalf of _____ (hereinafter "the Applicant"), and having reviewed and fully understood all the prequalification information provided, the undersigned hereby apply to be prequalified by yourselves as a bidder for the following contract(s) under the _____ [name of the Project] project :

S.No.	Contract number	Contract name
(1)		
(2)		
(3)		
(4)		

Note: The Applicant is to delete, in ink, any contract for which he does not wish to prequalify, and sign and date the deletion.

2. Attach to this letter are copies of original documents defining.^(A)

- (a) the Applicant's legal status;
- (b) the principal place of business; and
- (c) the place of incorporation (for applicants who are corporations); or the place of registration and the nationality of the owners (for applicants who are partnerships or individually-owned firms).
- (d) authority letter(s) for signatory(ies)

^(A) For applications by joint ventures, all the information requested in the prequalification documents is to be provided for the joint venture, if it already exists, and for each party to the joint venture separately. The lead partner should be clearly identified. Each partner in the joint venture shall sign the letter.

3. Your Agency and its authorized representatives are hereby authorized to conduct any inquiries or investigations to verify the statements, documents, and information submitted in connection with this application, and to seek clarification from our bankers and client regarding any financial and technical aspects. This Letter of Application will also serve as authorization to any individual or authorized representative of any institution referred to in the supporting information, to provide such information deemed necessary and requested by yourselves to verify statements and information provided in this application, or with regard to the resources, experience, and competence of the Applicant.

4. Your Agency and its authorized representatives may contact the following persons for further information: ^(B)

General and managerial inquiries	
Contact 1	Telephone 1
Contact 2	Telephone 2
Personnel inquiries	
Contact 1	Telephone 1
Contact 2	Telephone 2
Technical inquiries	
Contact 1	Telephone 1
Contact 2	Telephone 2
Financial inquiries	
Contact 1	Telephone 1
Contact 2	Telephone 2

(B) Applications by joint ventures should provide on a separate sheet equivalent information for each party to the application.

5. This application is made in the full understanding that.
- (a) bids by prequalified applicants will be subject to verification of all information submitted for prequalification at the time of bidding.
 - (b) your Agency reserves the right to:
 - amend the scope and value of any contracts/bid under this project; in such event, bids will only be called from prequalified bidders who meet the revised requirements; and
 - reject or accept any application, cancel the prequalification process, and reject all applications; and
 - (c) your Agency shall not be liable for any such actions and shall be under no obligation to inform the Applicant of the grounds for them.

6. Appended to this application, we give details of the participation of each party, including capital contribution and profit/loss agreements, to the joint venture or association. We also specify the financial commitment in terms of the percentage of the value of the (each) contract, and the responsibilities for execution of the (each) contract.

7. We confirm that in the event that we bid, that bid as well as any resulting contract will be:

- (a) signed so as to legally bind all partners, jointly and severally; and
- (b) submitted with a joint venture agreement providing the joint and several liability of all partners in the event the contract is awarded to us.

8. The undersigned declare that the statements made and the information provided in the duly completed application are complete, true and correct in every detail.

Signed	Signed
Name	Name
For and on behalf of (name of Applicant of a joint venture)	For and on behalf of (name of partner)

Signed	Signed
Name	Name
For and on behalf of (name of partner)	For and on behalf of (name of partner)

Signed	Signed
Name	Name
For and on behalf of (name of partner)	For and on behalf of (name of partner)

APPLICATION FORM (1)**General Information**

All individual firms and each partner of a joint venture applying for prequalification are requested to complete the information in this form. Nationality information to be provided for all owners or applicants who are partnerships or individually-owned firms.

Where the Applicant proposes to use named subcontractors for critical components of the works, or for work, contents in excess of 10 per cent of the value of the whole works, the following information should also be supplied for the specialist subcontractor(s).

(1)	Name of firm	
(2)	Head office address	
(3)	Telephone	Contact
(4)	Fax	Telex
(5)	Place of incorporation/registration	Year of incorporation/Registration

APPLICATION FORM (1A)**STRUCTURE AND ORGANISATION**

- (1) The applicant is _____
- (a) an individual
 - (b) a proprietary firm
 - (c) a firm in partnership
 - (d) a Limited Company or Corporation
 - (e) a group of firms/joint venture
(If yes, give complete information in respect of each partner)
- (2) Attach the Organisation Chart showing the structure of organisation, including the names of the Director and position of officers. _____
- (3) Number of years of experience:
- (a) as a Prime contractor (contractor shouldering major responsibility)
 - (i) in own country _____
 - (ii) other countries (specify country) _____

- (b) in a Joint Venture
- (i) in own country _____
- (ii) other countries (specify country) _____
- (c) as sub-contractor in
- (specify main contractor)
- (i) in own country _____
- (ii) other countries (specify country) _____
- (4) For how many years has your organisation been in business of similar work under its present name? What were your fields when your organisation was established? Whether any new fields were added in your organisation? And if so, when? _____
- (5) Were you ever required to suspend construction for a period of more than six months continuously after you started? If so, give name of project & give reasons thereof. _____
- (6) Have you ever left the work awarded to you incomplete? (If so, give name of project & reasons for not completing work). _____
- (7) In which fields of civil engineering construction do you claim specialization and interest _____
- (8) Give details of your experience in using heavy earthmoving equipment & quality control in compaction of soils. _____
- (9) Give details of your soil and material testing laboratory, if any. _____
- (10) Give details of your experience in mechanized granular pavement construction. _____
- (11) Give details of your experience in construction of asphaltic overlays. _____
- (12) Give details of your experience in construction of bridge works in reinforced cement concrete. _____
- (13) Give details of your experience in construction of bridge works in well foundations of a depth not less than 12 m. _____
- (14) Give details of your experience in construction of bridge works in pile foundation of a depth not less than 12 m. _____
- C. These are sample illustrations to be modified as appropriate. _____

APPLICATION FORM (2)**General Experience Record**

Name of Applicant or partner of a Joint Venture

All individual firms and all partners of a joint venture are requested to complete the information in this form. The information supplied should be the annual turnover of the Applicant (or each member of a joint venture) in terms of the amounts billed to clients for each year for work in progress or completed.

Use a separate sheet for each partner of a joint venture.

Annual turnover data (construction works only)

S.No.	Year	Turnover	Indian Rupees
(1)			
(2)			
(3)			
(4)			
(5)			

APPLICATION FORM (2A)**Joint Venture Summary**

S.No.	Name of all Partners of a Joint Venture
(1)	Lead Partner
(2)	Partner
(3)	Partner

Total value of annual construction turnover, in terms of work billed to clients, in Indian Rupees, converted at the rate of exchange at the end of the period reported:

Annual turnover data (construction works only: US\$ equivalent)

Sl. No.	Partner	Form 2 Page no.	Year 1	Year 2	Year 3	Year 4	Year 5
(1)	Lead Partner						
(2)	Partner						
(3)	Partner						
	TOTAL						

Indicate responsibility in respect of planning, finance construction equipment, key personnel and execution of the work of the lead firm of the joint venture and of each of the Joint Venture partners:

Details regarding financial responsibility and participation (percentage share in the total) of each firm in the Joint Venture. Attach a Memorandum of Understanding for the Proposed Agreement of Joint Venture which should lay down responsibility regarding work and financial arrangements in respect of each of the firms in the Joint Venture (Refer para 2.7).

APPLICATION FORM (3)**Particular Experience Record**

Name of Applicant of a joint venture

APPLICATION FORM (3A)**Details of Contracts of Similar Nature [Highways and Airfields]**

Name of Applicant or partner of a joint venture

Use a separate sheet for each contract.

(1)	Number of contract	
	Name of Contract	
	Country	
(2)	Name of Employer	
(3)	Employer's Address	
(4)	Nature of works and special features relevant to the contract for which the Applicant wishes to prequalify	
(5)	Contract role (check one)	
	*Sole contractor	*Sub-contractor *Partner in a joint venture (Percentage participation)
(6)	Value of the total contract *(at completion or at date of award for current contracts).	
(7)	Date of award	
(8)	Date of completion	
(9)	Contract duration (years and months)	
	Years	Months
(10)	Specified requirements (as in)	
(11)	Name and professional qualifications of applicant's Engineer-in-Charge of the work	
(12)	Were there any penalties/fines/stop-notice/compensation/equidated damages imposed? (Yes or No). If yes, give amount and explanation.	

Insert any specific criteria required for particular operations, such as annual volume of earthmoving, underground excavation, or placing concrete, as applicable.

- * In case of contracts in foreign currency, the value of the contract in that currency should be stated.
A certificate of completion from the Employer/Engineer must be enclosed.

APPLICATION FORM (4)**Summary Sheet: Current Contract Commitments/Works in Progress**

Name of Applicant or partner of a joint venture

Applicants and each partner to an application should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Sl. No.	Name of Contract	Name of Client	Contract Value	Stipulated Date of Completion	Value of outstanding work	Estimated Completion
(1)						
(2)						
(3)						
(4)						
(5)						
(6)						

APPLICATION FORM (5)**Personnel Capabilities**

Name of Applicant

For specific positions essential to contract implementation, applicants should provide the names of at least two candidates qualified to meet the specified requirements stated for each position. The data on their experience should be supplied in separate sheets using one Form(5A) for each candidate.

(1)	Title of position
	Name of prime candidate
	Name of alternate candidate
(2)	Title of position
	Name of prime candidate
	Name of alternate candidate
(3)	Title of position
	Name of prime candidate
	Name of alternate candidate
(4)	Title of position
	Name of prime candidate
	Name of alternate candidate

APPLICATION FORM (5A)

Candidate Summary

Name of Applicant

Position		Candidate *Prime *Alternate
Candidate information	(1) Name of Candidate	(2) Date of Birth
	(3) Professional Qualifications	
Present Employment	(4) Name of employer	
	Address of employer	
	Telephone	Contact (Manager/Personnel Officer)
	Fax	Telex
	Job title of Candidate	Years with present employer

Summarize professional experience over the last 20 years, in reverse chronological order. Indicate particular technical and managerial experience relevant to the Project.

[illegible]

APPLICATION FORM (6)**Equipment Capabilities**

Name of Applicant

The Applicant shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for each and all items of equipment listed in the Instructions to Applicants. A separate Form (6) shall be prepared for each item of equipment listed in para 2.6.5 of the Instructions to Applicants, or for alternative equipments proposed by the Applicant.

Item of equipment

Equipment	(1) Name of manufacturer	(2) Model and power rating
	(3) Capacity	(4) Year of manufacture
Current status	(5) Current location	
	(6) Details of current commitments	
Source	(7) Indicate source of the equipment	
	☐ Owned ☐ Rented ☐ Leased ☐ Specially manufactured	

Omit the following information for equipment owned by the Applicant or partner.

Owner	(8) Name of owner	
	(9) Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental/lease/manufacture agreements specific to the Project	

APPLICATION FORM (7)**Financial Capability**

Name of Applicant or partner of a joint venture

Applicants, including each partner of a joint venture, should provide financial information to demonstrate that they meet the requirements stated in the Instructions to Applicants. Each applicant or partner of a joint venture must fill in this form. If necessary, use separate sheets to provide complete banker information. A copy of the audited balance sheets should be attached.

Banker	Name of Banker	
	Address of Banker	
	Telephone	Contact name and title
	Fax	Telex

Summarize actual assets and liabilities in Indian Rupees (IRs.) (at the exchange current at the end of each year) for the previous five years. Based upon known commitments, summarize projected assets and liabilities in IRs. equivalent for the next two years.

APPLICATION FORM 7 (Contd.)

Financial information in Indian Rupees	Actual: Previous five years					Projected: Next two years	
	1.	2.	3.	4.	5.	6.	7.
(1) Total assets							
(2) Current assets							
(3) Total liabilities							
(4) Current liabilities							
(5) Profit before taxes							
(6) Profit after taxes							

Specify proposed sources of financing to meet the cash flow demands of the Project, net of current commitments (Instructions to Applicants, para 3.5).

S.No.	Source of financing	Amount in Indian Rupees
(1)		
(2)		
(3)		
(4)		

Attach audited financial statements for the last five years (for the individual applicant or each partner of a joint venture).

Firms owned by individuals, and partnerships, may submit their balance sheets certified by a registered accountant, and supported by copies of tax returns, if audits are not required.

APPLICATION FORM (8)

Litigation History

Name of Applicant or partner of a joint venture

Applicants, including each of the partners of a joint venture, should provide information on any history of litigation or arbitration resulting from contracts executed in the last five years or currently under execution (Instructions to Applicants, para 2.6.8). A separate sheet should be used for each partner of a joint venture.

Year	Award for or against applicants	Name of client, cause of litigation, and matter in dispute	Disputed amount (current value in Indian Rs.)	Actual awarded amount in Indian Rs.

APPLICATION FORM (9)**INFORMATION REGARDING CURRENT LITIGATION, DEBARRING/EXPELLING OF TENDERER OR ABANDONMENT OF WORK BY TENDERER**

- (1) (a) Has the Applicant or its constituent partners ... YES/NO
consistent history of litigation awarded against him?
(b) If yes, give details.
- (2) (a) Has the Applicant or any of its constituent partners ...YES/NO
been debarred/expelled by any Agency in India during
the last 5 years excepting on account of reasons other
than non-performance, such as rescinding of joint
venture due to most experienced partner of joint venture
pulling out, court directions leading to breaking up of a
joint venture before start of work?
(b) If yes, give details.
- (3) (a) Has the Applicant or any of its constituent partners ... YES/NO
abandoned any contract work in India, during the
last 5 years?
(b) If yes, give details.
- (4) (a) Has the Applicant or any of its constituent partners YES/NO
been declared bankrupt during the last 5 years?
(b) If yes, give details, including present status.

Note : If any information in this schedule is found to be incorrect or concealed, prequalification application will be summarily rejected.

APPLICATION FORM (10)**AFFIDAVIT**

(To be given separately by each partner of Joint Venture)

- (1) I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.
- (2) The undersigned also hereby certifies that neither our firm M/s _____ nor any of its constituent partners have abandoned any work on National Highways in India nor any contract awarded to us for such works have been rescinded, during last five years prior to the date of this bid.
- (3) The undersigned hereby authorise(s) and request(s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding my (our) competence and general reputation.
- (4) The undersigned understand and agrees that further qualifying information may be requested and agrees to furnish any such information at the request of the Department/Project implementing agency.

(Signed by an Authorised Officer of the Firm)

Title of Officer

Name of Firm

Date

No. RW/NH-11052/1/98-DO.I.

Dated, the 17th June, 1998

To

The Secretaries of States/Union Territories; Director General Border Road; Director General (Works)
Central Public Works Department; Chairman, National Highways Authority of India

Subject : Bonus clause for early completion of Externally Aided Road Projects (EAPs) - Additional clause-reg.

I am directed to say that the question of giving suitable incentives to the contractors for early completion of externally aided National Highway Projects was under consideration of the Government for some time. It has now been decided that contract agreements for externally aided National Highway Projects should provide for the payment of bonus for early completion in addition to the existing provisions for liquidated damages for delay in completion of projects (Clause Nos. 47.1 and 47.2). Accordingly an additional Clause No. 47.3 "Bonus for early completion" of the existing FIDIC conditions of contract has been finalised and is given for adoption.

2. EXISTING PROVISIONS (Pertaining to liquidated damages for delays)

Liquidated Damages for Delay 47.1. If the contractor fails to comply with the Time for Completion in accordance with Clause 48, for the whole of the Works or, if applicable, any Section within the relevant time prescribed by Clause 43, then the Contractor shall pay to the Employer the relevant sum stated in the Appendix to Tender as liquidated damages for such default and not as a penalty (which sum shall be the only monies due from the Contractor for such default) for every day or part of a day which shall elapse between the relevant Time for Completion and the date stated in a Taking-Over Certificate of the whole of the Works or the relevant Section, subject to the applicable limit stated in the Appendix to Tender. The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any monies due or to become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works, or from any other of his obligations and liabilities under the Contract.

Reduction of Liquidated Damages 47.2. If, before the Time for Completion of the whole of the Works or, if applicable, Damages any Section, a Taking-Over Certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that Section shall, for any period of delay after the date stated in such Taking-Over Certificate, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the, whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

2.2. The rate of amount and maximum limit of liquidated damages for delay in completion of Work which are included in the Appendix to Tender as under:-

"Amount of liquidated damages for delay in completion of works	Cl.No.47.1.	Rs._____ per day

Maximum limit of liquidated damages for delay in completion of works	Cl.No.47.1.	Rs._____

2.3. The figures against the above two entries are filled keeping in mind that the amount against the first entry is equivalent to 1/20 of 1 per cent of the estimated value of whole of the Works or, if applicable, any Section rounded off to the nearest Rupees thousand and that the amount filled against the entry No.2 is 10 per cent of the contract amount.

3. ADDITIONAL CLAUSE

3.1. If the contractor achieves completion of the whole of the works prior to the time completion prescribed in Clause 43, the Employer shall pay to the contractor a sum stated in Appendix to Tender as bonus for every completed month which shall elapse between the date of completion of all items of works as stipulated in the contract, including variations ordered by the Engineer and the time prescribed in Clause 43.

For the purpose of calculating bonus payments, the time given in the Tender for completion of the whole of the Works is fixed and unless otherwise agreed, no adjustments of the time by reason of granting an extension of time pursuant to Clause 44 or any other clause of these conditions will be allowed. Any period falling short of a complete month shall be ignored for the purpose of computing the period relevant for the payment of bonus.

3.2. The rate of amount and maximum limit of bonus for early completion of work shall also be included in the Appendix to Tender as under:

"Amount of bonus for early completion of works	Cl.NO.47.3.	Rs. _____ per month (any part of the month to be excluded)
Maximum limit of Bonus for early completion of works	Cl.No.47.3.	Rs. _____

3.3. The figures against the two entries mentioned in para 3.2 above may be filled-up on the basis of the estimated value of the whole of the Works keeping in mind that the amount against the first entry should be equivalent to 1 per cent of the estimated value of whole of Works rounded off to the nearest Rupees thousand and that the amount to be filled against the entry No.2 should be six times the amount filled against the entry No.1.

4. Clause Nos. mentioned in paras 2&3 above refer to corresponding clauses of the conditions of contract for works of Civil Engineering Construction. - Part I General condition-Federation International e-des-Ingenieurs Counseils (FIDIC)-Fourth Edition reprinted 1988 with editorial amendments. These have been reproduced in *Annexure-I* for ready reference and guidance.

5. It is requested that suitable instructions may please be issued to all concerned in this regard.

6. The receipt of this letter may please be acknowledged.

Annexure-I

[Enclosure to Ministry's Circular No. RW/NH-11052/1/98-DOI dated the 17th June, 1998 (Ref. Para 4)]

Time for Completion	43.1.	The whole of the Works and, if applicable, any Section required to be completed within a particular time as stated in the Appendix to Tender, shall be completed, in accordance with the provisions of Clause 48, within the time stated in the Appendix to Tender for the whole of the Works or the Section (as the case may be), calculated from the Commencement Date, or such extended time as may be allowed under Clause 44.
Extension of Time for Completion	44.1.	In the event of (a) the amount or nature of extra or additional work, or (b) any cause of delay referred to in these Conditions, or (c) exceptionally adverse climatic conditions, or (d) any delay, impediment or prevention by the Employer, or (e) other special circumstances which may occur, other than through a default of or breach of contract by the Contractor or for which he is responsible,

being such as fairly to entitle the Contractor to an extension of the Time for Completion of the Works, or any Section or part thereof, the Engineer shall, after due consultation with the Employer and the Contractor, determine, the amount of such extension and shall notify the Contractor accordingly, with a copy to the Employer.

Contractor to
Provide Notification
and Detailed
Particulars

44.2.

Provided that the Engineer is not bound to make any determination unless the Contractor has

- (a) within 28 days after such event has first arisen notified the Engineer with a copy to the Employer, and
- (b) within 28 days, or such other reasonable time as may be agreed by the Engineer, after such notification submitted to the Engineer detailed particulars of any extension of time to which he may consider submission may be investigated at the time.

Interim
Determination
of Extension

44.3.

Provided also that where an event has a continuing effect such that it is not practicable for the Contractor to submit detailed particulars within the period of 28 days referred to in Sub-Clause 44.2(b), he shall nevertheless be entitled to an extension of time provided that, he has submitted to the Engineer interim particulars at intervals of not more than 28 days and final particulars within 28 of the end of the effects resulting from the event. On receipt of such interim particulars, the Engineer shall, without undue delay, make an interim determination of extension of time and, on receipt of the final particulars, the Engineer shall review all the circumstances and shall determine an over all extension of time in regard to the event. In both such cases the Engineer shall make his determination after due consultation with the Employer and the Contractor and shall notify the Contractor of the determination, with a copy to the Employer. No final review shall result in a decrease of any extension of time already determined by the Engineer.

Taking-Over
Certificate

48.1.

When the whole of the Works have been substantially completed and have satisfactorily passed any Tests on Completion prescribed by the Contract, the Contractor may give a notice to that effect to the Engineer, with a copy to the Employer, accompanied by a written undertaking to finish with due expedition any outstanding work during the Defects Liability Period. Such notice and undertaking shall be deemed to be a request by the Contractor for the Engineer to issue a Taking-Over Certificate in respect of the Works. The Engineer shall, within 21 days of the date of delivery of such notice, either issue to the Contractor, with a copy to the Employer, a Taking-Over Certificate/ stating the date on which, in his opinion, the Works were substantially completed in accordance with the Contract, or give instruction in writing to the Contractor specifying all the work which, in the Engineer's opinion, is required to be done by the Contractor before the issue of such Certificate. The Engineer shall also notify the Contractor of any defects in the Works affecting substantial completion that may appear after such instructions and before completion of the Works specified therein. The Contractor shall be entitled to receive such Taking-Over Certificate within 21 day of completion, to the satisfaction of the Engineer, of the Works so specified and remedying any defects so notified.

Taking-Over of
Sections or Parts

48.2.

Similarly, in accordance with the procedure set out in Sub-Clause 48.1, the Contractor may request and the Engineer shall issue a Taking-Over Certificate in respect of:

- (a) any Section in respect of which a separate Time for Completion is provided in the Appendix to Tender, or
- (b) any substantial part of the Permanent Works which has been both completed to the satisfaction of the Engineer and, otherwise than as provided for in the Contract, occupied or used by the Employer, or
- (c) any part of the Permanent Works which the Employer has elected to occupy or use prior to completion (where such prior occupation or use is not provided for in the Contract or has not been agreed by the Contractor as a temporary measure).

Substantial Completion of Parts	48.3.	If any part of the Permanent Works has been substantially completed and has satisfactorily passed any Tests on Completion prescribed by the Contract, the Engineer may issue a Taking-Over Certificate in respect of that part of the Permanent Works before completion of the whole of the Works and, upon the issue of such Certificate, the Contractor shall be deemed to have undertaken to complete with due expedition any outstanding work in that part of the Permanent Works during the Defects Liability Period.
Surfaces Requiring Reinstatement	48.4.	Provided that a Taking-Over Certificate given in respect of any Section or part of the Permanent Works before completion of the whole of the Works shall not be deemed to certify completion of any ground or surfaces requiring reinstatement, unless such Taking-Over Certificate shall expressly so state.

130.67

No. RW/NH-15015/5/99-PL

Dated, the 5th March, 1999

To,

The Chairman, National Highways Authority of India; All State Chief Engineers dealing with National Highway Projects; Regional Officers.

Subject : Policy on prequalification of contractors for implementation of NH Projects

A number of NH Projects are being implemented by various State Governments as well as by the National Highways Authority of India from different sources of fund, viz., Government Budgetary support, Multi — lateral Borrowings and Funds from private sector under Build, Operate and Transfer (BOT) Scheme. It has been brought to the notice of this Ministry that there appears to be some confusion regarding type of contracting firms to be invited for the implementation of various types of projects. This has been considered in the Ministry and it has been decided that the following policy shall be followed in this regard.

2. BOT PROJECTS

Participation by all entrepreneurs; domestic or foreign, single or joint venture found eligible in terms of specific requirement of the projects is to be permitted.

3. GOVERNMENT FUNDED PROJECTS

3.1. For projects assisted by Multi - lateral funding agencies (externally aided); contractors including joint ventures from eligible source countries of respective lending agencies are to be permitted in terms of specific requirement of the projects.

3.2. Domestically Funded Projects

- (a) For projects costing Rs. 100 crore and above, eligible contractors and joint ventures from any country, willing to be paid in Indian currency, may be permitted to participate.
- (b) For projects costing less than Rs. 100 crore eligible contractors from any country (excluding joint ventures) willing to be paid in Indian currency, may be permitted to participate.

These instructions are issued with the approval of Secretary (SFT) and may please be adhered to while prequalifying contractors for future NH Projects.

No. RW/NH-11026/2/99-US(D.I)**Dated, the 13th January, 2000**

To

The Secretaries (dealing with National Highways), PWD of all States and Union Territories; Secretary, Border Road Development Board; and National Highways Authority of India

Subject : Expeditionary acceptance of tenders for works on National Highways

I am directed to state that the detailed instructions on the above subject were issued by this Ministry vide letter No. RW/NH-11026/1/89-DO.I(Pt.) dated the 6th September, 1990. In supersession of these instructions the following revised instructions are hereby issued.

- (i) Where the acceptable tender is such that the excess over the sanctioned estimate does not go beyond 5 per cent, the State PWD should ensure that the tenders are settled before the expiry of the validity date of the tenders.
- (ii) Where the cost of tender is more than 5 per cent of the sanctioned estimated cost the work should be got desanctioned and fresh estimate be got sanctioned from the Ministry.
- (iii) In order to ensure that the above procedure does not cause undue delay in execution of sanctioned works, in future all the estimates should be framed and got sanctioned by the Ministry based on the current schedule of rates.

No. RW/NH-11024/3/99-US/(D.I)**Dated, the 9th March, 2000**

To

The Secretaries, PWDs of all States and Union Territories dealing with National Highways and other Centrally financed schemes; Director General (Works), Central Public Works Department; Director General Border Roads; Chairman, National Highways Authority of India

Subject : Invitation of tenders for the execution of works on National Highways and other Centrally financed schemes - Need for adoption of uniform policy by the State PWDs relating to advertisements in the newspapers/journals

I am directed to refer to the guidelines relating to advertisements in newspapers/journals for invitation of tenders for the execution of works of National Highways and under other Centrally financed schemes issued by the Ministry vide letter No.NH-11024/1/86-DO. I dated 23.5.1989 and to say that these have been reviewed in the light of general price escalation during this period and certain modifications have been considered necessary.

2. The modified advertisement norms will be as under:

SL.No.	Cost of Work	Norms for advertisement
(1)	Upto Rs. 5.00 lakhs	No advertisement in Press but a copy of NIT should be sent to Contractors' Association(s), all divisions of PWD within the District, concerned SEs office.
(2)	Above Rs.5.00 lakhs and upto Rs.1.5 crores	3 Regional papers, one each in Hindi, English and the Local language. If local language happens to be English/ Hindi, it would suffice if the advertisements for such works are issued in two regional papers, one in Hindi and the other in English.
(3)	Above Rs.1.5 crores and upto Rs.5.00 crores	Advertisement in local editions (within the State) of 2 national newspapers (one in Hindi and the other in English) and 2 Regional newspapers (one in Hindi and the other in local language). In regions, where there is no Hindi newspaper, the advertisement may be published in 2 Regional papers, (one in English and the other in local language).
(4)	More than Rs.5.00 crores	Advertisement in all editions of 4 national newspapers in English and 2 regional paper (one in Hindi and the other in local language) and the Indian Trade Journal and the Indian Highways.

2.1. In all cases a copy of the Notice Inviting Tenders should invariably be sent to the contractor's association(s), all divisions of the PWD within the district, concerned Superintending Engineers' Office, concerned Chief Engineers' Office, Local Municipalities and Collector's Office.

2.2. All advertisements as mentioned above, shall be issued only once. The costs for works mentioned above are total sanctioned costs including various centages.

3. It is requested that the above mentioned guidelines may be brought to the notice of Director, Public Relations (DPR) or other concerned officers of the State Government for adoption in respect of works on National Highways and under other centrally financed schemes. It may also be ensured that copies of the advertisements/NITs are suitably displayed in the offices of Assistant Engineers, S.D.Es./Executive Engineers/Superintending Engineers and Chief Engineers of the State PWD for wide publicity.

4. It may be noted that the above mentioned guidelines will not apply to works for which International Competitive Bidding has to be resorted to. For such cases, specific instructions will be issued depending upon the requirements.

130.70

No. NH-11011/3/99-PL

Dated, the 3rd April, 2000

To

The Chief Secretaries of State Govts./Chief Engineers of all State PWDs (dealing with NH Projects)

Subject : Signing/Authentication of contracts documents, complaints and affidavits by Chief Engineers and Regional Officers in the Ministry of Surface Transport

I am directed to inform that Govt. of India has made necessary amendments in the Notification of Govt. of India in the Ministry of Law, Justice & Company Affairs, Deptt. of Legal Affairs number GSR 167 dated 14th February, 1990 authorising the Regional Officers at the level of Superintending Engineer/Executive Engineer, to sign/authenticate the complaints and written statements in suits in any Court of civil jurisdiction on the behalf of Central Govt.

2. Necessary amendments have also been carried out in another notification of the Govt. of India in the then Ministry of Law (Deptt. of Legal Affairs), number G.S.R 585 dated 1st February 1966, also authorising the Chief Engineers in the Roads Wing of the Ministry of Surface Transport, Deptt. of Roads Transport and Highways to sign the contracts and other instruments relating to National Highways projects.

Above is brought for your information please.

130.71

No. RW/NH-24020/2/99-PIC

Dated, the 4th September, 2000

To

The Chief Secretaries of all State Governments; Secretaries of Works Departments dealing with National Highways; Chief Engineers of all State/UT PWDs dealing with NH and other centrally sponsored works; Secretary, Border Road Development Board; Director General Border Roads; Chairman, National Highways Authority of India

Subject : Standard Bidding Document for works costing more than Rs.5.00 crore

The need, for standardization of bidding procedures and documents for National Highway projects has been felt for long as various State organizations have been following their own procedures, usually applicable to their own State works, and as a result uniformity at national level was lacking. During the last few years, efforts have been undertaken to evolve a document and a set of uniform procedures which are in tune with modern contracting systems. A number of agencies, such as, World Bank, Ministry of Finance and representatives of various Government departments including this Ministry participated in the efforts and came out with a document which

was further refined and fine-tuned through internal consultations in the Ministry as well as between Ministry and State Govt. officials of Works Departments. These efforts have now culminated into finalization of a Standard Bidding Document (SBD) for procurement of civil works for National Highways.

Indian Roads Congress have published the document, which are now available for sale from their office at Jamnagar House, New Delhi. The document is in two parts, one containing the complete document and the other containing various forms, and is provided in two sets of each part. The bid inviting authorities should procure documents from IRC in adequate number for issue to bidders. Each bidder will be issued the original document and he is required to fill-in the information on the original forms only. Wherever information has to be provided to the bidder by the authority inviting the bid, these will also be provided on the original forms only. In no case copies or typed copies should be acceptable except in the case of the Form of Agreement which would have to be on stamp paper of appropriate denomination and for any supplementary information to be furnished by the bidder in response to the bid conditions.

3. MAIN FEATURES OF SBD

3.1. SBD attempts to incorporate all essential features of a model document, such as, a fair and transparent set of procedures and contract conditions, acceptable methods of dispute resolution, incentives for early completion and damages for delays, etc. The document has been made applicable, initially to works costing Rs.5.00 crore and above.

3.2. The limits of pre-qualification specified by Ministry, which is Rs.20 crore and above remains unchanged. Wherever post-qualification has to be done (i.e. for works costing between Rs.5 and 20 crore), the qualification information required to be furnished by the bidder as per Section 2 shall be one of the important conditions for checking responsiveness of the bidder. Wherever pre-qualification has to be done (i.e. for works costing more than Rs.20 crores), separate pre-qualification document shall be issued at appropriate time in advance. In the intervening period, the basis for pre-qualification will be decided by the authority calling the bid in accordance with qualification information as per Section 2 appropriately adjusted for cost of works.

4. TWO STAGE EVALUATION

4.1. Bidding has to be a two stage process, viz. technical bid and financial bids. These two bids have to be received simultaneously but in separate sealed envelopes. Financial bids of only those bidders will be opened, whose technical bids have been found substantially responsive to the bid conditions, i.e., the bidder accepts the bid conditions without reservation or material deviation. If a bid does not contain the right amount of bid security which is to be furnished with the technical bid, his entire bid will be summarily rejected. It has often been observed that bidders omit some important information or give some information on wrong pretext or inadequate understanding of the bid conditions. Eventhough the process of a Pre-bid Meeting has been provided in the document, during which a bidder can seek and get clarification for their questions, it has been decided to give them a second opportunity to rectify their mistakes. This will be immediately after evaluation of their technical bid. The bidders will be asked to correct the rectifiable mistakes within seven days. Where such corrections have a financial bearing the bidders will be permitted to submit a revised financial bid by a specified date before opening of financial bids.

4.2. Financial bids will remain sealed, and in the safe custody of the authority inviting the bid until the scheduled time of opening of the bid. Arithmetical correction of the bid, their acceptance by the bidders, unrealistically low priced items in the bid and additional performance security are some of the important aspects which need to be considered in financial evaluation of the bids.

5. TIME SCHEDULE FOR BIDDING ACTIVITIES

5.1. It has been decided that a strict time schedule be followed for evaluation of bids and award of contracts. Time for accomplishing various activities have been given in the *Appendix*. The entire process from the date of receipt of bid to award of contract shall be completed within 40 days. In order to accomplish this task the State Govts. are advised to take the following steps immediately.

- (a) Form Evaluation Committees headed by officer with adequate powers and jurisdiction. (For example, if the bid is invited by Chief Engineer, he should head the Committee). In no case the Evaluation Committee should be headed by an officer below the rank of Superintending Engineer in case of State Govt/General Manager in case of NHAI. The Committee

must include the SE/EE or GM/Dy. GM/Manager of the concerned Grade and Division. It would be preferable to include an officer from Finance Discipline.

- (b) Financial powers should be delegated to Chief Engineers/Engineer-in-Chief of the zones/Members in case of NHAI to decide tenders of appropriate value, say not less than Rs. 20 crore. The powers of acceptance of tenders above the estimated cost, however, shall continue to be regulated by the existing instructions of the Ministry.
- (c) Where State Governments desire to exercise financial control over the officers responsible for invitation and acceptance of tenders within their powers, they should formulate a separate review mechanism but should cut down the levels of approval.

6. MISCELLANEOUS

6.1. Sealing, marking, opening instructions need to be carefully studied and followed so that the bids are not inadvertently opened.

6.2. Bill of Quantities should be stored in electronic format in some spread sheet program and the price as quoted by various bidders should be filled therein in the presence of the bidders who choose to attend for arithmetical checking. The result of arithmetic checking and authentication and acceptance thereof should be done on the same day.

6.3. Bidders should be encouraged to participate in the bid opening. A bid opening report should be prepared in their presence and got initiated from them.

6.4. Pre-bid Meeting should be seriously taken and officers holding this meeting should be able to furnish clarifications required from them.

7. The SBD will become applicable to all National Highway works except externally aided and privately financed projects costing more than Rs. 5 crore with effect from

8. The contents of the circular should be brought to the notice of all concerned for strict compliance.

Appendix

[Enclosure to Ministry's Circular No. RW/NH-24020/2/99-PIC dated, the 4th September, 2000]

NEW PROCEDURE FOR AWARD OF CIVIL WORK CONTRACT TO BE EFFECTIVE FROM 04.07.2000 (LCB)

S.No.	Steps	Information to be included, documents to be examined and other details	Time Frame (Time reckoned from receipt of bid) for completion of step
(1)	(2)	(3)	(4)
(1)	Invitation of applications for pre-qualification of contractors	(As per existing procedure)	
(2)	Sale of PQ Document	(-do-)	
(3)	Receipt of PQ applications	(-do-)	
(4)	Evaluation of PQ applications	(-do-)	
(5)	Clarification from applicants	(-do-)	
(6)	Intimation of PQ results	The estimated cost(s) to be awarded shall be within pre-qualification limit of the contractor Current Bid Capacity should be more than the estimated cost of the package	
(7)	Finalisation of bid document	Changes in 'Instructions to Bidder' to be incorporated, to be in conformity with suggested changes.	
(8)	Invitation of bids	(As per existing procedure)	
(9)	Sale of bid Documents	(-do-)	

(1)	(2)	(3)	(4)
(10)	Bid Evaluation Committee	(-do-)	
(11)	Receipt of Bids	To be received upto the date and time specified. Bids received late not to be accepted and to be returned unopened. Bids shall be sealed (original + copy) at the time of receipt. Bid security and technical bid including equipment, personnel, programme, etc., each in separate sealed envelope and both inside another sealed envelope. Financial bid containing original bill of quantities (BOQ) and copy of BOQ, to be furnished in another sealed envelope. All to be put in an outer sealed envelope.	
(12)	Opening of Bids	- Opening of envelope containing 'bid security and technical bid' - Check form, amount validity period and bank of bid security. If it does not conform to the Bid Document, the envelopes containing remaining 'Technical Bid' and 'Financial Bid' to be returned unopened. The sealed envelope containing 'Financial Bid' to be signed by the bid opening committee members and representatives of bidders. - Opening of envelope containing 'Original BOQ' of only those bidders whose technical bid is qualified.	Day 0
(13)	Evaluation of Technical Bids	(i) Evaluation of Technical Bids by the Evaluation Committee - Write to Banks for confirmation of Bid Security to get response within 7 days. - Check eligibility. The estimated cost of the package to be awarded is within the pre-qualification limit or the balance of pre-qualification limit. - Checking of updation of pre-qualification information: (a) Debarring, expulsion and termination of contracts - Any such affirmative information will disqualify. (b) Identity and composition of firm - no change from pre-qualification to be permitted. (c) Information for current bid capability. - Check that the current bid capacity is higher than the estimated cost. - Checking of the bids - Checking of Power of Attorney submitted - Checking of confirmation of bid security from issuing bank - Affidavit furnished. - JV Agreement (if any) submitted - Availability of Credit Line - Work Programme - Key personnel - Key equipment - Prepare list of queries to be asked from bidders, and issue of letter to the bidders i/c. intimation of date of opening of financial bid on Day 21 - Bidders response to the letter seeking clarification - Meeting of evaluation committee to examine submitted response and finalise list of responsive bidders	Day 1 Day 7 Day 10 Day 17 Day 20

No. RW/NH-24020/2/99-PIC

Dated, the 4th October, 2000

The Chief Secretaries of all State Governments; Secretaries of Works Departments dealing with National Highways; Chief Engineers of all State/UT, PWDs dealing with NH and other centrally sponsored works; Secretary, Border Roads Development Board; Director General Border Roads; Chairman, National Highways Authority of India

Please refer to this Ministry's Circular letter of even No. dated the 4th September, 2000 (copy enclosed@ for ready reference). This is to inform that the Standard Bidding (SBD) will become applicable to all National Highway works costing more than Rs.5.00 crore w.e.f. 1st November, 2000. Para 7 of the circular referred to above, therefore, stands amended to that extent.

3. Please acknowledge receipt of this letter. The implementation of the standard bidding procedure may also please be intimated by 30th November, 2000.

*only for Chief Engineers dealing with National Highway works, Chairman, NHAI and Director General Border Roads.

No. RW/NH-24020/2/99-PIC**Dated, the 21st December, 2000**

To

The Chief Secretaries of all State Governments; Secretaries of Works Department dealing with National Highways; Chief Engineers of all State/UT PWDs dealing with NH and other centrally Sponsored works; Secretary, Border Roads Development Board; Director General Border Roads; Chairman, National Highways Authority of India

Subject : Standard Bidding Document (SBD) for works costing more than Rs.5 crore – Technical Evaluation - reg.

Please refer to this Ministry's letters of even No. Dated 4th September and 4th October, 2000 forwarding therewith Standard Bidding Document for procurement of civil works costing more than Rs.5 crore. A point has been raised about the composition of Technical Evaluation Committee and whether the Committee should be headed by Chief Engineer of the State or Chief Engineer (MORT&H). It is clarified : that Technical Evaluation Committee headed by Chief Engineer (NH) may process and approve the technical bids for works costing between Rs.5 crore and Rs. 15 crore. The Regional Officer stationed at headquarters of CE(NH) may be included in the Technical Evaluation Committee. For the works costing Rs. 15 crore and above the Technical Evaluation Committee headed by CE of the State shall undertake all the activities between Day 1 and day 17 as per procedure annexed to the circular and send the recommendations of the Committee to Ministry of Road Transport and Highways. After that, the recommendations of the Technical Evaluation Committee will be examined by the Screening Committee headed by Chief Engineer (MORT&H) as approved vide this Ministry's circular No RW/NH-11024/1/94-D.O.I dated 15th June, 1994. The final approval of the bid will be accorded by the combined Technical Evaluation and Screening Committee between Day 17 and 20. Paragraph 5 of the circular dated 4th September, 2000 and the new procedure for award of civil work contract annexed thereto may, therefore, be interpreted accordingly.

2. The content of this letter shall be brought to the notice of all concerned for compliance.

No. NH-24035/23/97-PL (Vol. III)**Dated, the 12th January, 2001**

To

The Secretaries (PWD/Roads) and Chief Engineers of all State Governments/UTs (dealing with National Highways and other Centrally Sponsored Schemes); Director General Border Roads; Chairman, National Highways Authority of India

Subject : Pre-qualification criteria for Bidders for Small BOT Projects of cost upto Rs. 100 crore

The fast growing Indian Economy has increased the demand for road infrastructure. Since, it is not possible to meet the entire requirement of upgradation of National Highways from public funds alone, the Government had taken a policy decision to involve private sector for development of National Highways on Build-Operate-Transfer (BOT) basis. The endeavour has been to have the largest number of bidders, so as to have competitive bidding and achieving least cost to the users. To achieve this standardisation of procedures and documents has been undertaken. Model Concession Agreements (MCA) were, therefore, finalised for large projects costing over Rs. 100 crore and for smaller projects of cost upto Rs. 100 crore.

2. Continuing the process of standardisation, pre-qualification criteria for bidders for small BOT projects have been finalised, and is enclosed at *Annexure-I*. The criteria has been drawn up in such a way so that more number of bidders become eligible, to enable competitive bidding, yet to ensure that the non-serious bidders are kept out. It may be noted that the cost of smaller BOT projects will range from Rs. 10 to 100 crore. The wide range from 10 to 100 crore requires that the pre-qualification criteria for smaller projects be flexible.

3. The pre-qualification is based on the pass/fail criteria. An Explanatory Note on the criteria is enclosed at *Annexure-II*. A list of documents that is required for evaluating the bid is enclosed at *Annexure-III*. It may be noted that the list is not exhaustive.

4. Bidders for all BOT projects of cost upto Rs. 100 crore will henceforth be pre-qualified based on this pre-qualification criteria. The selection of the successful bidder, from amongst the pre-qualified bidders, will be based on least cost to public. Feedback regarding the Pre-qualification criteria, if any, may please be sent to the Ministry.

Annexure-I

(Enclosure to Ministry's Circular No. NH-24035/23/97-PL (Vol. III) dated 12.01.2001)

Evaluation Criteria for bidders for BOT Projects of cost upto Rs. 100 crore

Sl. No.	Criteria	Evaluation		Remarks
(1)	(2)	(3)	(4)	(5)
(I) Organisation and Management				
(1)	Corporate Structure of Bidder (in JV the Lead company to be considered)	Limited company Private Limited Company Partnership Sole Proprietorship	Pass Pass Fail Fail	Memorandum of association/articles of association/partnership agreement, etc. to be enclosed showing that the entity is allowed to participate in BOT Projects on Highways
(2)	Background of the bidder (in JV any company in JV to be considered)	BOT Operator on Highways Highway/Bridge Construction Contractor BOT Operator in other Infrastructure areas Financing related to Construction Financing related to Infrastructure Other	Pass Pass Pass Pass Fail	If bidder is in more than one area the area in which it get passed will be considered as background
(3)	Structure of Proposed Concessionnaire	As a part of the company As a subsidiary of bidder (or a JV company) As an SPV Other	Pass Pass Pass Fail	
II. Financial Status				
(1)	Weighted Net Cash Accrual for the last 5 years	$\geq 0.3 \times$ Estimated Project Cost for single bidder $< 0.3 \times$ Estimated Project Cost for single bidder $\geq 0.45 \times$ Estimated Project Cost for combined JV $< 0.45 \times$ Estimated Project Cost for combined JV	Pass Fail Pass Fail	(1) Audited Results for last 5 years to be used. (2) Weights are to be given as : for last year - 1.00 for 1 year before - 1.10 for 2 years before - 1.21 for 3 years before - 1.33 for 4 years before - 1.46

(1)	(2)	(3)	(4)	(5)
				If company did not exist for the last 5 years, corresponding figure is to be taken as zero. (3) Year is accounting year of the firm. If change in accounting year, results to be annualized.
(2)	Net Worth	$\geq 0.6 \times \text{Estimated Project Cost for single bidder}$ $< 0.6 = \times \text{Estimated Project Cost for single bidder}$ $\geq 0.9 \times \text{Estimated Project Cost for combined JV}$ $\leq 0.9 \times \text{Estimated Project Cost for combined JV}$	Pass Fail Pass Fail	As per last audited results
(3)	Gearing	Debt: Equity ratio for bidder (in JV Lead Company) $\leq 1.5:1$ Debt: Equity ratio for bidder (in JV Lead Company) $\geq 1.5:1$	Pass Fail	
(III) Experience of bidder (in case of JV, total for combined JV may be taken)			Pass in atleast 1 category	
(1)	BOT in Highway/ Bridge	≥ 1 projects Otherwise	Pass Fail	
(2)	Construction of Highway/Bridges	≥ 1 project of cost more than $0.5 \times \text{Estimated Project Cost}$ Otherwise	Pass Fail	
(3)	BOT in other infrastructure areas	≥ 1 projects of cost more than $2 \times \text{Estimated Project Cost}$ Otherwise	Pass Fail	

Annexure-II

(Enclosure to Ministry's Circular No. NH-24035/23/97-PL (Vol. III) dated 12-01-2001)

NOTE ON PRE-QUALIFICATION CRITERIA FOR BOT PROJECTS OF COST UPTO RS. 100 CRORE

The evaluation chart for the qualification of bidders for BOT projects of cost upto Rs. 100 crore has been drawn based on the past experience of the Ministry in evaluating BOT projects. This is based on pass/fail in a select set of criteria.

The following groups of criteria have been taken:

- (1) Organisation and Management
- (2) Financial Status
- (3) Experience of the bidder

The criteria lays more stress on organisational structure, financial strength and experience of the bidder, rather than on technical capabilities of the bidder as the Model Concession Agreement (MCA) allows the concessionaire to appoint Contractors/Consultants. It may, however, be ensured that the consultants are selected from the list of the empanelled consultants of this ministry for the appropriate works and the selected contractor is duly qualified. The set of criteria has been made in such a way so as to encourage the formation of Joint Ventures of bidders, contractors and consultants. Such a Joint Venture will be able to deliver better quality work, within the time frame.

The following describes in brief the reasons behind the criteria used in drawing up the evaluation chart:

I. ORGANISATION AND MANAGEMENT

1. Corporate Structure of Bidder (in JV the Lead company to be considered)

It is felt that limited companies will have better access to financial and managerial resources than sole proprietorships. Also, the chance of default is very high for both sole proprietorship and partnerships due to deaths/quarrels, etc. This is not the case with a limited or private limited company. Therefore, we need to encourage entrepreneurs to set-up limited/private limited companies for bidding.

(Memorandum of association/articles of association/partnership agreement, etc. to be enclosed showing that the entity is allowed to participate in BOT Projects on Highways)

2. BACKGROUND OF THE BIDDER (in JV any Company satisfying criteria to be considered)

A BOT Operator on Highways is to be preferred, but since there are very few BOT Operators, therefore we may consider bidders from related areas, like, Highway/Bridge construction, BOT Operator in other infrastructure areas, etc. This criteria will encourage new players, who may not have any experience in these areas, but have the capability to raise funds, to form JVs with experienced contractors, BOT operators, etc. This will contribute to a great extent in the successful completion of the project.

3. STRUCTURE OF PROPOSED CONCESSIONAIRE

A concessionaire that is part of the company is likely to have better and cheaper access to funds. Other forms of concessionaires are likely to be subsidiaries of bidders and SPVs. Any other form of concessionaire should be discouraged.

II. FINANCIAL STATUS

The following broad guidelines are to be used for evaluating financial data:

- (1) Audited results for last 5 years to be used.
- (2) Weights are to be given at the rate of 10 per cent per year as used in other BOT projects already underway. This translates in the following weights:

for last year - 1.00
 for 1 year before -1.10
 for 2 years before - 1.21
 for 3 years before - 1.33
 for 4 years before - 1.46

If company did not exist for the last 5 years, corresponding figure for the year is to be taken as zero.

- (3) Year is to be the accounting year of the firm, as per the annual results. If the firm has a change in accounting policies, the corresponding figure needs to be annualized.

1. **WEIGHTED NET CASH ACCRUAL FOR THE LAST 5 YEARS**

The cash accruals reflect the ability of the bidder to bring in the necessary equity funds for the project. Assuming, a debt: equity ratio of 70:30, we can take the desirable Weighted Net Cash Accrual at least be equal to 30 per cent of estimated project cost. For a JV we can increase the requirement to 1.5 times for the combined weighted net cash accrual.

2. **NET WORTH**

The net worth reflects the financial capability of the bidder to implement the project. Considering the high risk nature of the equity to be invested the net worth of the bidder should be twice the requirement of the project, i.e., considering a 70:30 debt equity ratio, the desirable net worth is 0.6 times Estimated Project Cost for single bidder. For a JV we can increase the requirement to 1.5 times.

3. **GEARING (OR LEVERAGE OR DEBT: EQUITY RATIO)**

Annexure-III

(Enclosure to Ministry's Circular No. NH-24035/23/97-PL (Vol. III) dated 12th January, 2001)

LIST OF DOCUMENTS REQUIRED FOR PRE-QUALIFICATION OF BIDDERS FOR SMALL BOT PROJECTS

The following is a list of documents that are required for pre-qualification of bidders for small BOT projects, of cost upto Rs.100 crore. The list is not exhaustive and more documents can be called for if the situation so warrants.

- (1) Memorandum of Association/ Articles of Association as filed before the Registrar of Companies.
- (2) Documents in support of the background of the bidder.
- (3) Documents regarding proposed concessionaire.
- (4) Audited financial results for the past five financial years, including balance sheets, profit and loss accounts, and cash flow statement. The results should be annualized and accounting practices should follow Indian guidelines in force. Explanation for changes in accounting practices should be enclosed.
- (5) Summary statement of net cash accruals for past five financial years, net worth and gearing level of the company (debt: equity ratio), certified by a Chartered Accountant.
- (6) Documents in support of experience of bidder.
- (7) In case of Joint Venture, a copy of the Joint Venture agreement. For consideration as a valid Joint venture, the agreement should include:
 - (a) The joint venture partners should be "Jointly and severally liable"
 - (b) The agreement must specifically state that it is valid for project (or class of projects) for which bidding is done.
 - (c) The agreement should specify the lead company.
- (8) In case of Joint Venture, separate documents for each of the Joint Venture partners should be called for. A Summary statement of net cash accruals for past five financial years and net worth of the Joint venture (debt:equity ratio), certified by a Chartered Accountant, should also be asked for.

A company with high debt: equity ratio will have difficulty in raising funds and will have more expensive funds. Since it is expected that the concession is to be funded by further borrowings, we may take a debt: equity ratio of 1.5:1 (60:40) as preferable. This will leave some leeway for further borrowing by the firm for the EBT project for the project to have a debt: equity ratio of 70:30.

III. EXPERIENCE OF BIDDER (in case of JV, total for combined JV may be taken)

In this case we can consider the experience of the bidder. Under this head we may qualify the bidder if they satisfy any of the following criteria:

- (1) **BOT in Highway/Bridge**
Experience on at least 1 BOT Project in Highway/Bridge of value of 50 per cent of the estimated Project Cost.
- (2) **Construction of Highways/Bridges**
Experience of construction of at least one project of cost more than 50 per cent of Estimated Project Cost. This provision has been kept to encourage construction companies to bid on their own or in Joint Ventures. This will ensure quality in construction.
- (3) **BOT in other Infrastructure areas**
Since there are only a few BOT operators in Highway/Bridges and it is desirable to widen the field, the BOT operators in other infrastructure areas may also be considered. Here, experience on a BOT Project of cost twice the estimated Project cost is taken.

130.75

No.NH-15015/29/2001-PL

Dated, the 5th July, 2001

To

All PWD Secretaries of State/UT Administrations

Subject : Guidelines for expeditious acceptance of tenders and award of work

It has been observed that in quite many cases, the State PWDs are taking unduly long time in calling tenders and award of work after the estimates are sanctioned by the Ministry. The delay invariably results in time and cost overruns and it has been viewed seriously. There is, therefore, a need to streamline the procedure with a view to ensure that the sanctioned works are put to tender expeditiously and awarded within a time bound frame.

2. Based on the experience gained in award of works on various National Highways, the following time limit has been decided for award of different categories of works from their date of sanction.

2.1.	Works costing less than Rs.5 crore - which do not require pre-qualification of contractors	- Five months
2.2.	Works costing more than Rs. 5 crore - and upto 20 crore - to cover bidding system	- Six months
2.3.	Works costing more than Rs. 20 crore - requiring pre-qualification of contractors by the Ministry	- Six months. The pre-qualification process will be started immediately after circulation of Annual Plan/Technical approval to the proposal so that Pre-qualification documents are received from contractors by PWD before sanction of works.
2.4.	Improvement in Ridding Quality (IRQP) and Periodical Renewal (PR) works	- The State PWD can take advance action for tendering in consultation with concerned zonal Chief Engineer of the Ministry after the National Highway stretches have been identified by Regional Officers of the Ministry in the month of December of the previous year. The pre-award action should be completed preferably by month of March and works are awarded as soon as these works are sanctioned in the months of April/May.

3. The above time frame should be strictly followed in letter and spirit and field organizations given instructions to implement the same. If the work is not awarded within the stipulated time, it may lead to de-sanction of the work unless Ministry's prior approval to extension of the time limit is obtained. Any lapses would be viewed seriously and the cost over-runs due to delays/negligence on the part of State PWDs in not adhering to the prescribed time frame could entail either :-

- (i) deduction from agency charges
- or
- (ii) reduction of the Annual Budgetary Allocation

(4) If required the State PWDs may amend their existing procedure, for tenders and award of work to follow the above time frame.

(5) This supersedes earlier instructions issued on the subject.

141. LAND ACQUISITION

Code No.	Circular No. & Date	Brief Subject	Page No.
141.10	RW/NH-11029/2/2000-US(D.I) dated 8.2.2000	Revision of Land Acquisition estimate	141/6
141.11	RW/NH-11029/2/2000-US(D.I) dated 1.5.2000	Revision of Land Acquisition estimate	141/6
142.	<i>NH PROPERTY – INSPECTION BUNGALOWS, LICENSING STATUS, ACCESS CONTROL</i>		
142.19	RW/NH-33023/19/99-DO III dated 27.7.1999	Need for systems improvement for installation of Petrol/ Diesel – Retail outlets along National Highways	142/17 to 19
142.20	RW/NH-11021/1/99-US(D.I) dated 6.8.1999	Licensing of NH Land for the construction of approach road to private property abutting on National Highways	142/19
142.21	RW/NH-33023/19/99-DO.III dated 31.8.2000	Systems improvement for installation of Petrol/Diesel/Gas – Retail outlets and service stations as well as access to private properties along National Highways	142/20 to 31
143.2	<i>BYPASSES AND PARALLEL SERVICE ROADS</i>		
143.2.11	RW/NH-24035/22/94-Pl.Vol.V dated 20.6.2000	Construction of Bypasses on National Highways	143.2/6
144.	<i>RIBBON DEVELOPMENT, ENCROACHMENTS AND EVICTION</i>		
144.16	RW/NH-11014/1/96-PL dated 27.10.1998	Demarcation of Building Lines and Control Lines on the land adjacent to the National Highways	144/34
144.17	RW/NH-11014/1/96-PL dated 16.8.2000	Demarcation of Building Lines and Control Lines on the land adjacent to the National Highways – Enactment of Legislation and Enforcement	144/34 & 35
145.	<i>UTILITY SERVICES AND CANAL CROSSINGS</i>		
145.16	RW/NH-34066/2/95-S&R dated 25.10.1999	Bridges on National Highways and other Centrally Sponsored Schemes – Provision of various types of utility services on Bridges and Design of Footpath Slab	145/19 & 20

No. RW/NH-11029/2/2000-US(D.I)

Dated, the 8th February, 2000

To

The Secretaries (dealing with National Highways), PWD of all States and Union Territories; Secretary, Border Road Development Board; Chairman, National Highways Authority of India

Subject : Revision of land acquisition estimate

I am directed to say that it has come to the notice of the Ministry that though land acquisition estimates are sanctioned based on existing market rate projected by State PWDs, these estimates are often revised due to Court decrees for revised compensation. In such revision of estimates extra agency charges are also paid to the State Governments, though they are not doing any extra work on account of these revision.

2. It has, therefore, been decided that in future no revision of land acquisition estimates would be entertained in the Ministry on account of rates, etc. and in case of Court order for additional payment, the same would be reimbursed to the State Governments from charged expenditure and State Governments would not be paid any extra agency charges.

3. The above instructions may please be brought to the notice of all concerned in your Department for guidance and necessary action.

No. RW/NH-11029/2/2000-US(D.I)

Dated, the 1st May, 2000

To

The Secretaries (dealing with National Highways), PWDs of all States and Union Territories; Secretary, Border Road Development Board; Chairman, National Highways Authority of India

Subject : Revision of Land Acquisition Estimates

In continuation of this Ministry's letter of even number dated 8.2.2000 on the subject mentioned above, I am directed to say that it has been decided that the revised estimates on account of upward revision of compensation by the revenue authorities themselves will have to be sanctioned. However, while doing so, the following will have to be ensured:

- (i) Convincing reasons for initial low estimates should be ascertained as part of justification for higher actual compensation.
- (ii) No additional agency charges on increased cost should be accepted.

The above instructions may also be brought to the notice of all concerned in your Department for guidance and necessary action.

No. RW/NH-33023/19/99-DO.III

Dated, the 27th July, 1999

To

The Chief Secretaries/Secretaries/Chief Engineers (PWD/Roads) of all State Governments/UTs (dealing with National Highways & Centrally Sponsored Schemes); Director General Border Roads; Chairman, National Highways Authority of India

Subject : Need for systems improvement for installation of Petrol/Diesel - Retail outlets along National Highways

This Ministry had issued detailed instructions on licensing of National Highway land for construction of approach roads to private properties abutting National Highways vide its letter No RW/NH-III/P/17/75 dated 30th October, 1980 and RW/NH-III/P/72/76-Vol-II dated 19th February, 1987.

2. It has, however, been observed by this Ministry that a number of petrol/diesel pumps have come up along National Highways, which do not conform to the prescribed IRC norms. Inquiries in some cases revealed that the approval from the concerned Road Authorities had not been obtained and the Oil Companies had energised the pumps after obtaining No Objection Certificate only from district Licensing Authorities. The procedures in this regard are thus needed to be streamlined so that cases of violation of IRC norms in siting the layout of petrol/diesel pumps do not recur in future.

3. General requirements governing the location and lay out of petrol/diesel pumps along Highways have been specified in IRC: 12-1983 "Recommended Practice for Location and Layout of Roadside Motor Fuel Filling and Motor-Fuel Filling-cum Service Stations". The basic consideration governing these requirements is to minimise, as much as possible, interference to normal flow of traffic on the road by vehicles using the amenity and also to ensure safety. This publication also stipulates that the sanctioning authority should obtain clearance from the appropriate Road Authority for the site and layout before according the sanction.

4. **STIPULATED NORMS REGARDING LOCATION, LAYOUT AND OTHER FEATURES OF PETROL/DIESEL OUTLETS**

IRC:12-1983 specifies the following norms in regard to siting and location of petrol outlets:

(a) **Locational aspects**

- (i) Clearance distance between two adjacent fuel filling stations should not be less than 300 m.
- (ii) Clustering of fuel filling stations along the highway should be avoided. If for some reason, two or more fuel filling stations are sited in close proximity, these should be grouped together and a parallel service road provided by way of common access to the Highway.
- (iii) Fuel filling stations should be well distributed on both sides of road so that vehicles do not have to cut across the traffic to reach a fuel filling station. The fuel filling station on opposite sides of the road should be staggered.
- (iv) Fuel filling stations near existing check barriers should be at least 1 km away from the barrier.
- (v) Location of fuel filling stations, should not interfere with future improvement to road and nearby junction.
- (vi) Distance of fuel filling station from a junction should not be less than 300 m in case of expressways and dual carriageway roads, and 100 m in case of other roads.
- (vii) As far as possible, in plain and rolling terrain, the fuel filling station should be located where the highway is practically level.

(b) **Frontage**

The frontage should be as wide as possible, the minimum being 30 m.

(c) **Buffer Strip**

- (i) A buffer strip of at least 12 m long and 3 m wide should be provided.
- (ii) The outer edge of buffer strip should be along the outer edge of road land boundary for rural sections and that of footpath or service road, if any, for urban sections.
- (iii) The distance from the outer edge of buffer strip to the centre line of the carriageway should not be less than 7m where no cycle tracks are required and not less than 12 m where cycle tracks exist or may be required in future.

(d) **Layout of Entrance and Exit**

The entrance and exit should be at least 9 m wide, the ruling radius of the curve being 30 m with the absolute minimum as 13 m.

(e) **Distance of the Fuel Pump from the Carriageway**

Fuel pump should be outside the road land, subject to the provision that the distance from the outer edge or buffer strip to edge of the strip having fuel pump should not be less than 7 m.

(f) **Drainage**

There should be adequate drainage arrangements in fuel filling stations so that surface water does not flow over the highway, but is collected in suitable drains and led away to a natural course. Culverts should be provided at the approaches to facilitate drainage.

5. **TYPES/EXTENT OF VIOLATIONS AND INFRINGEMENTS IN PETROL/DIESEL OUTLET INSTALLATION**

A perusal of case studies of some of the petrol/diesel pumps located along National Highways (in Bihar, Haryana, Uttar Pradesh, etc.) has revealed the following deficiencies and infringements in location, layout, etc.

- (i) Retail outlet owners having done the development work for the petrol pump and the Oil Companies having energised the pump without the pump owners having obtained the prior approval of the Road Authority and signing of the Licence Deed with Government of India;
- (ii) Close proximity of petrol pumps to each other,
- (iii) Inadequate distance of pump installation from centre line of National Highway;
- (iv) Location of petrol pump very near to an intersection;
- (v) Paving of whole petrol pump area and in continuation of NH land upto the carriageway, which tantamounts to encroachment on the NH land;
- (vi) Level of pump area being higher to that of NH pavement resulting in flow of rain water on to carriageway.
- (vii) Lack of proper surface water drainage and cross drainage system; and
- (viii) Lack of separate entry and exist due to paving of the full frontage and not leaving a buffer strip.
- (ix) Non-standard shapes and size of butter strips.

6. **PRESENT PROCEDURE**

6.1. It is the prime responsibility of the Oil Companies to follow the prescribed standards and procedures in setting-up of petrol pump stations. The IRC guidelines in this regard are required to be scrupulously followed. It is understood that the petrol pump drawings are prepared by Oil Companies (and not by petrol pump owners) which should normally take into account the requirement of the prescribed standards of the Road Authority. These drawings are sent by the Oil Companies to District Magistrate/Authorities/Licensing Authority for issue of 'No Objection Certificate'. Normally, the District Magistrate / other Authorities are expected to consult the concerned PWD/Road Authority before issuing the 'No Objection Certificate'.

6.2. The State PWD or Local Road Authority examines the drawings to ascertain whether the location and layout conforms to IRC:12-1983 and, if so, approves the proposal and permits the licensee to construct approaches, culverts, etc. after he has executed the Licence Deed for licensing of NH land for the construction of approach road to petrol pump abutting the National Highway.

6.3. In cases, where the standard, conditions are not satisfied, the proposals are not approved but the parties concerned are asked to make necessary modifications so as to conform to these conditions.

6.4. Proposals, where it is not practicable to fulfill standard conditions, but the State Chief Engineer recommends certain relaxation, are referred to the Government of India in Ministry of Surface Transport (Roads Wing) together with reasons for relaxation for final decision.

6.5. The problem mainly arises when the District Magistrate/Licensing Authorities do not consult the Road Authority and give 'No Objection Certificate' after satisfying themselves only regarding safety in storage of explosive material, fire safety, etc. The Licensing authorities in some State are understood to be granting 'No Objection Certificate' only as per provisions of Indian Petroleum Act. These are solely from the angle of regulation regarding explosives and do not imply other approvals which are necessary before the retail outlet can be installed.

6.6. Since the NH land vests with the Government of India, approach to the NH from the petrol pump cannot be constructed until the concerned party has complied with the stipulated requirements in this regard and signed the prescribed Licence Deed Agreement with the Government of India.

7. **NEEDED MODIFICATION IN SEQUENCE OF OPERATIONS/PERMISSIONS**

- (i) At the time of making a reference to the District Magistrate/Licensing Authority for a 'No Objection Certificate', the Oil Companies should also simultaneously make a reference to the concerned State PWD/Road Authorities and obtain approval to the location and layout and permission for construction of approach road from the NH to the petrol pump. For facilitating proper interaction and control on installation of petrol/diesel pumps, copies of such references should be endorsed to the remaining concerned Authorities.
- (ii) As a matter of abundant precaution, the issue of 'No Objection Certificate' by the District Magistrate/Licensing Authority should be made conditional subject to the Oil Company having obtained necessary approval/permission from the concerned Road Authority and signed the Licence Deed before going ahead with actual installation of the pump, and a copy of the same endorsed to the Road Authority. Stipulations to this effect should be clearly made in the N.O.C. A similar reciprocal procedure should be followed by the Road Authority while according its approval.
- (iii) The pump should be energised by the Oil Companies only after the Licence Deed for use of NH land for construction of approach road has been signed between the concerned private party and the Government of India, and the 'No Objection Certificate' issued by District Authorities.

8. **CORRECTIVE ACTION FOR EXISTING PETROL/DIESEL PUMPS**

Licence Deed for use of NH land for approach road to the petrol pump has a validity of three years, and the same is required to be renewed thereafter. While considering the case for renewal of the licence deed for the existing petrol pumps, any deficiencies in terms of location, layout, signage, drainage, etc. and any infringements from the stipulated IRC norms should be carefully identified and got rectified from the Oil Company/Outlet Owner by the concerned Road Authority before the licence deed is renewed by the Ministry of Surface Transport. This requirement needs to be meticulously enforced by the concerned Road Authority.

9. It is, therefore, requested that deficiencies of the existing petrol/diesel outlets may be identified and action initiated to get these rectified at the time of renewal of licence deeds. Further, the permission for new petrol/diesel outlets should be strictly regulated as per the norms and suggestions brought out above.

10. The Ministry of Petroleum & Natural Gas and the Oil Companies are separately being advised to insist on approval of the Road Authorities before energising Petrol/Diesel retail outlets in future and also at the time of renewal of existing licences.

142.20

No. RW/NH-11021/99-US(D.I)

Dated, the 6th August, 1999

Subject : Licensing of NH Land for the construction of approach road to private property abutting on National Highways

Consolidated instructions regarding licensing of National Highway land for the construction of approach roads to private property abutting on National Highways were issued to State Governments vide this Ministry's letter No.NH-III/P/17/75 dated 30th October, 1980. According to these instructions, powers have been delegated to the State Chief Engineers for approving such proposals provided that these conform to the standards mentioned in the letter. The licensee can be permitted to construct the approaches after he has executed the licence deed prescribed for the purpose. The State Chief Engineers are required to forward a certificate to the effect that all standard conditions have been satisfied together with the certified copy of the lay out plan along with the licence deed to the Ministry for signature for and on behalf of the President of India. Thus, the responsibility for the correctness of the proposal vests with the State Chief Engineer once he has issued the necessary certificate.

2. It has now been decided that the licence deed for such case may be signed by the Under Secretary concerned, on behalf of the President of India, after the project Chief Engineers have broadly examined the technical aspects to ensure their conformity with the prescribed standards.

3. The above instructions may please be strictly adhered to, in future, for all such cases.

No. RW/NH-33023/19/99-DO.III

Dated, the 31st August, 2000

To

All Chief Secretaries/Secretaries/Chief Engineers PWD/Roads of all State Governments/UTs (dealing with National Highways & Centrally Sponsored Schemes); Director General Border Roads; Chairman, National Highways Authority of India

Subject : Systems Improvement for Installation of Petrol/Diesel/Gas-Retail outlets and service-stations as well as access to private properties along National Highways

This Ministry had issued detailed instructions on licensing of National Highways land for construction of approach roads to private properties including Petrol/Diesel Retail Outlets and service stations abutting National Highways vide letter No.RW/NH-III/P/17/75 dated 30.10.1980 and RW/NH-III/P/72/76-Vol.II dated 19.2.1987. The need for system improvement for installation of Petrol/Diesel - Retail Outlets along National Highways was laid down by Ministry's circular No.RW/NH-33023/19/99-DO-III dated 27.7.1999.

2. However, it has been reported that there is still some lacunae in the present system of installation of Retail Outlets/Service Stations and private properties, leading to damage to National Highways, reducing safety and considerable time lag in the process. Therefore, it has been decided to streamline the procedure for installation of Petrol/diesel/gas Retail Outlets/ Service Stations and private properties along National Highways.

3. The general requirements governing the location and layout of petrol/diesel retail outlets and service stations have been specified in IRC:12-1983, "Recommended Practice for Location and Layout of Roadside Motor Fuel Filling and Motor-fuel Filling-cum-Service Stations". Considering the nature of changing traffic on National Highways and experience in the field, it has been decided to amend some of the requirements as applicable to National Highways. Stipulated Norms regarding location, layout and other features of petrol/diesel rates are given in Check List and *Annexure-I* enclosed with this circular. Regarding each road to private properties, provisions made in para 4 of Ministry's circular No-RW/NH-III-P/17/75 dated 30.10.1980 (Licensing of NH land for construction of approach road to private property abutting National Highways) and para 7.4 of IRC:62-1976 (Guidelines for Control of Access on Highways) have been amalgamated with slight modification and reproduced in para 13 of *Annexure-I*. Approach road to private properties may be regulated as per paras 7, 8 & 13 of *Annexure-I* and Check List enclosed with this circular. Modified procedure for installation of retail outlets/private properties, etc. are given in para 4 below.

4. **PROCEDURE FOR INSTALLATION FOR NEW RETAIL OUTLETS (PETROL/DIESEL/GAS) AND ACCESS TO PRIVATE PROPERTIES**

4.1. The present procedure was outlined in para 6 of the Ministry's circular No. No.RW/NH-33023/19-99.DO-III dated 27.7.1999. To streamline the present system, the procedure may be modified as follows.

4.2. It is the prime responsibility of the oil companies/ private parties to follow the IRC guidelines and the norms in this circular while preparing the drawing for the retail outlet/ private properties. At the time of making reference to the District Magistrate/Authorities/Licensing Authority for issue of "No Objection Certificate", the oil companies/ private parties should simultaneously make a reference to the concerned Highway Authority. The issue of "No Objection Certificate" by Licensing Authority should be made conditional to the oil company/private parties having obtained necessary approval/permission from Highway Authority and executed the License Deed before going ahead with the actual installation of the pump, and a copy should be endorsed to the Highway Authority. The Divisional/Executive Engineers (or equivalent) of Highway authority may inform the concerned Licensing Authority about this requirement. It is reiterated that any "No Objection Certificate" granted by any Licensing Authority is not binding on Highway Authority as such.

4.3. The Highway Authority at the level of Superintending Engineer in the case of State Public Works Department/Border Roads Organisation (BRO) and General Manager in the case of National Highways Authority of India (NHAI) shall examine the drawings and document to see if the location and layout of retail outlets conforms to norms given in Check List and *Annexure-I* of this circular and if so, forward the documents and

drawings as per *Annexure-II* to the Ministry through Regional Officer of Ministry for approval and signing of licence deed. Construction should be permitted only after approval and signing of licence deed in the Ministry. The Highway Authorities of the State Governments/BRO/NHAI should not give any approval to oil companies/ retail outlet owners/private parties before signing of licence deed by the concerned Chief Engineer in the Ministry.

4.4. In cases, where the standard conditions are not satisfied, the parties concerned may be asked to modify the proposals. If in the rare case, it is not practicable to fulfill the standard conditions, the Highway Authorities at the level of Superintending Engineer in the case of State Public Works Department/BRO and General Manager in the case of NHAI may forward the proposal to the Ministry through Regional Officer of Ministry along with detailed reason for granting the relaxation and signing of licence deed by the concerned Chief Engineer in the Ministry. In the absence of a detailed explanation, the proposal would not be entertained.

5. PROCEDURE FOR EXISTING PETROL/DIESEL/GAS PUMPS/PRIVATE PROPERTIES ON EXISTING NATIONAL HIGHWAYS

5.1. The licence deed for use of National Highway land for approach road to the retail outlets/private properties has a validity of three years and the same is required to be renewed thereafter. While considering the case for renewal of the licence deed for existing retail outlets/private properties, any deficiencies in terms of location, layout, signage, drainage, etc. and any infringements from the stipulated norms given in Check List and Annexure-I of this circular should be carefully identified and got rectified by Highway authority before licence deed is sent for renewal. This should be done at least four months before the existing licence deed lapses.

5.2. The Divisional/Executive Engineer (or equivalent) of the Highway Authority will keep a register of record of Retail Outlets/private properties (which have been permitted access to the National Highway under his jurisdiction) in the format enclosed with this circular. A copy of the record should be sent to the Circle Office as well as to the Regional Officer of the Ministry. The record should be periodically checked by inspecting officials.

5.3. Four months before the lapse of the licence deed, a reminder should be sent to the owner of the retail outlet/private property asking him to submit the documents for renewal of licence deed. Failure to comply by the date of lapsing of licence deed should be treated as violation of licence conditions and the access should be disconnected.

6. PROCEDURE FOR EXISTING RETAIL OUTLETS ON NEWLY DECLARED NATIONAL HIGHWAYS

6.1. Existing Retail Outlets/private properties on newly declared National Highways will have to execute a licence deed when they are taken over. The Divisional/Executive Engineer (or equivalent) of the Highway Authority will take steps to complete a record as per para 5.2 and suitable reminders should be sent to each outlet owner. Necessary modifications should be got made to the retail outlet/private property to adhere to the standard norms given in Check List and *Annexure-1* of this circular within six months of taking over of the newly declared National Highways by the concerned Highway Authority. If the owner of the retail outlet/private property does not respond and get the required rectification done within the stipulated time of six months, the access should be disconnected.

6.2. When a National Highway is transferred from one organisation to another, among other records, records of retail outlets will also be transferred.

7. PROCEDURE IN CASE OF WIDENING OF ROAD

7.1. As per Clause 4 (4) of the licence agreement issued under Ministry's letter No NHIII/P/17/75 dated 30th Oct., 1980, the licensee has to remove the approach road within six-month of a notice given to him by the Highway Authority. This provision may be used to shift the private property/retail outlet's access roads, if required for widening.

7.2. In case service roads are constructed, the access shall be from service roads and not from main carriageway. No compensation is to be given to retail outlet/private property owner, as per Clause 4(15) of licence agreement.

8. Any retail outlet/private property owner, who violates any of the conditions of licence deed or

constructs/modifies retail outlet in violations of the stipulated norms for the retail outlets, should be given one month notice to rectify the violations. If the necessary rectifications are not done within the time given in the notice, access to the private properties/retail outlets should be disconnected.

Annexure-I

[Enclosure to Ministry's Circular No. RW/NH-33023/19/99-DOIII dated 31st Aug. 2000]

STIPULATED NORMS FOR LOCATION AND LAYOUT OF PETROL/DIESEL RETAIL OUTLET AND SERVICE STATIONS ALONG NATIONAL HIGHWAYS

1. These norms have been finalised after substantially modifying IRC:12-1983 "Recommended Practice for Location and Layout of Roadside Motor Fuel Filling and Motor Fuel Filling-cum-Service Station". These norms are applicable for National Highways.
2. Petrol/Diesel Retail outlets and service station etc. are hereinafter referred to as "Retail Outlets".
3. **GENERAL CONDITIONS OF SITING**
 - 3.1. As a general rule, the clear distance between two adjacent Retail outlet should not be less than 300 m.
 - 3.2. Clustering of Retail Outlets along highway should be avoided and successive Retail Outlets should be located sufficiently apart, as indicated in paragraph 3.1. If for some reason two or more fuel filling stations are sited in close proximity these should be grouped together and a parallel service road provided by way of common access. The service road should be of adequate width and at least two-lane wide (7.0 m).
 - 3.3. Retail Outlets should be well distributed on both sides of the road, so that vehicles do not have to cut across the traffic to reach the Retail Outlet. The fuel filling station on opposite sides shall be staggered.
 - 3.4. A Retail Outlet should be at least 1 km away from the check barrier.
 - 3.5. It is desirable that Retail Outlets should be made a part of a rest area complex offering various amenities. For new roads or upgraded roads, this point may be incorporated in the plans.
 - 3.6. It should be ensured that location of Retail Outlet does not interfere with future improvements to the road and nearby junctions.
 - 3.7. The distance between the tangent points of the curves of the side road and that of Retail Outlet measured in a direction parallel to the centre line of the National Highway should not be less than 300 m and the Retail Outlet should be located only in the out bound direction as shown in Fig. 1.
 - 3.8. As far as possible in plain and rolling terrain, the Retail Outlet should be located where the highway is practically level. However, in hilly terrain the Retail Outlet should be sited only along such highway sections which are having gradient not steeper than 5 per cent.

In all these cases, it should be ensured that retail outlet premises/ service area has a minimum slope 2 per cent for adequate drainage towards the drain where the surface runoff is designed to be taken out.

4. FRONTAGE

For easy flow of vehicles into and out of the fuel filling stations, the site should permit construction of sufficiently wide entrance and exit with easy curves. Therefore, the minimum frontage should be 30 m.

5. BUFFER STRIP

- 5.1. A buffer strip of at least 12 m long and 3 m wide should be provided.
- 5.2. No structure or hoarding, except approved standard identification sign on poles providing a clearance of at least 3 m above ground level, should be erected on the buffer strip.

5.3. Kerbs of at least 225 mm high should be constructed on the periphery of the buffer strip to prevent vehicles from crossing it.

5.4. The outer edge of buffer strip should be along the outer edge of the road land boundary for National, Highways. Due space, for provision of roadside drain should be made. The future widening of the road should be kept in mind, so that there is no obstruction to the improvement to the road. In all such cases, the distance from the outer edge of the buffer strip to the centre line of the carriageway should not be less than 7 m. In case of National Highways, where cycle tracks or service road are required now or in the near future, this distance should not be less than 12 m. In case of divided carriageway, the distance shall be measured from the centreline of the nearest half of the carriageway.

5.5. The space between the outer edge of the buffer strip and the roadway edge shall not be paved (but turfed and raised from the approach road level with the provision of 225 mm high kerbs in order to prevent the space being used for parking purposes) except for entrance and exit, as shown in Fig. 1.

6. VISIBILITY

6.1. Vehicles entering or leaving the fuel filling station should be fully visible to the traffic using the main road. This is best done by selecting a site where there are no obstructions to the view between the fuel pump and the road.

6.2. No hedges or plants more than 600 mm high should be grown on or around the buffer Strip.

7. LAYOUT OF ENTRANCE AND EXIT

7.1. The entrance and exit should be at least 9 m wide. To prevent vehicles from entering or exiting too fast and preventing the approach road being used for parking purposes, the width of entrance or exit should not be more than 12 m.

7.2. The ruling radius of the turning curve should be 30 m and absolute, minimum should be 13 m. The radius of the non-turning curves should be from 1.5 to 3 m. This is illustrated in Fig. 1.

8. DRAINAGE

8.1. There should be adequate drainage arrangement in the fuel filling station/private property so that neither the surface water flows over the highway nor there is water logging on the National Highway. For this a downward minimum slope of 2 per cent towards the retail outlet private property should be given to the access roads so that the elevation of roadway at the edge of buffer strip is at least 15 cm below the edge of the road and is in no place above any part of the carriageway. Surface water from the filling station/private property/access road should be collected in suitable drains and led away to natural course through the culvert to be provided at the edge of road land boundary as illustrated in Fig. 2. Preferably, slab type culvert with iron gratings of adequate strength as slab may be constructed in the approaches so that the surface water is drained through the holes in the grating. If pipe culvert is used, then it should be ensured that the inner diameter of the pipe is not less than 1 m for proper cleaning and necessary shallow drains are constructed along the access road and at the edge of the private premises/retail outlet so that the surface water is led to the open drain in front the buffer strip. If the open drain in front of the buffer strip is to be covered for aesthetic reason, it should be covered with iron gratings pipes so that the surface water is led to the culvert through the holes in iron gratings. In brief it is to emphasise that there should be adequate drainage arrangement either by the method mentioned above or otherwise as per the satisfaction of the Highway Authorities/Ministry.

8.2. Adequate slope to the paved surface in the service area should be provided to ensure proper drainage of water.

8.3. The culvert and road side drain should be designed to carry discharge calculated according to any method described in IRC:SP-13 "Guidelines for the Design of Small Bridges and Culverts."

9. KIOSK, LUBRITORIUM AND OTHER BUILDINGS

The Kiosk, lubritorium and other appurtenances thereto comprising a small office, store and compressor room should be located not less than 4 metres away from the fuel pump kerbing.

10. **DISTANCE OF THE FUEL PUMP FROM THE CARRIAGEWAY**

The fuel pump shall be outside the road land, subject to the provision that the distance from the inner edge of the buffer strip to the edge of the strip having the fuel pump should not be less than 4 metres.

11. **SPACE INSIDE THE FUEL PUMP**

There should be sufficient standing space and sufficient number of fuel pumps to cater to vehicles requiring fueling, so that they do not spill over to the National Highway. It is desirable to have oil, air, etc installed at some distance from the fuel filling pump so that vehicles which have been refuelled can immediately be driven away from the fuel pump.

12. **SIGN BOARDS**

Suitable entry and exit retro-reflective sign boards, as per-section 801 of Ministry of Surface Transport Specification for Road and Bridge Works as updated from time-to-time, shall be installed for guidance for motorist. They may be lit up, if necessary, in such a manner so that it does not distract the attention of drivers.

13. **INSTRUCTIONS REGARDING REGULATION OF ACCESS POINTS/APPROACH ROAD TO PRIVATE PROPERTY**

13.1. In urban areas, the spacing of access to National Highways should wherever possible be restricted to 500 m interval. If the National Highway is likely to be developed as Expressway/Motorway, the spacing should be 1000 m.

13.2. In rural areas, the spacings of connections from parallel service roads and of intersections should not be closer than 750 m. Individual driveways to private properties should not be spaced closer than 300 m from each other or from an intersection. On highways with dual carriageway (4 lane with median), median openings should generally be limited to intersection with public roads and should not be permitted for individual business needs. Where intersections are far apart, median openings may be provided at intervals of 2 km for permitting U-turn and diversion of traffic to one of the carriageways at times of emergency or major repairs. As far as possible, a number of property owners along the highway should be grouped together and parallel service roads (i.e. frontage roads) constructed to give access at selected points. The geometrics of the driveways should conform to requisite standards conducive to smooth traffic flow as given in paras 7 & 8 above.

Annexure-II

[Enclosure to Ministry's Circular No. RW/NH-33023/19/99-DOIII dated 31st August, 2000]

List of documents to be submitted for renewal of licence deed for allowing approach road to retail outlets/private property etc. along National Highways.

- (1) Signed copy of licence deed as per *Annexure-2* of Ministry's circular No.NH-III/P/17/75 dated 30.10.1980
- (2) Inspection report of Divisional/Executive Engineer (or equivalent) or his representative.
- (3) Certificate that no modifications have been made in the retail outlet/private property from original proposal for which licence deed had been signed.
- (4) Certified copy of drawings showing any modifications (if done) with approval letter from competent authority.
- (5) Sectional view/drainage plan of retail outlet area/private property and culverts in approaches.
- (6) Undertaking from the private party oil company that the private party/oil company would pay necessary rent for the use of the National Highway land whenever the rents are asked by the highway authorities in future.

Annexure-II

[Enclosure to Ministry's Circular No RW/NH-33023/19/99-DOIII dated 31st Aug. 2000]

List of documents to be submitted for getting approval for installation of new Retail Outlets/Private property along National Highways

- (1) Signed copy of licence deed (*Annexure-I* of Ministry's Circular No.NHIII/P/17/75 dated 30.10.1980).
- (2) Certified copy of location plan of the retail outlet/private property along the National Highway showing details of right of way of National Highway, access roads to private properties, existing public roads and other developments falling within a radius of 1.5 km in each side of the retail outlet.
- (3) Certified copy of plan of the proposed retail outlet/private property showing details of Access road, buffer strip, fuel pump, kiosk, lubritorium, air and water supply, drainage details etc.
- (4) Certified copy of sectional view showing elevation of retail outlet/private property with respect to National Highway and slopes to be provided for adequate drainage and preventing water logging on National Highway.
- (5) Drainage plan of the retail outlet/private property area.
- (6) Details of material to be provided for paving the retail outlet/private property.
- (7) Inspection report of the officer inspecting the site of proposed retail outlet/ private property.
- (8) Certificate that all standard conditions have been-specified.
- (9) Detailed explanation for reasons for granting of exemption from guidelines/stipulated norms (If required).
- (10) Undertaking from the private party/ oil company that the private party/oil company would pay necessary rent for the use of the National Highway land whenever the rents are asked by the highway authorities in future.

[Enclosure to Ministry's Circular No. RW/NH-33023/11/99-DO III dated 31st Aug. 2000]

Check list for getting approval for installation of new Retail Outlets/renewal of licence deed for existing Retail Outlets/access to private property along National Highways

1. GENERAL INFORMATION

1.1.	National Highway Number	:	_____
1.2.	State	:	_____
1.3.	Location	:	_____
1.3.1.	(Chainage in km)	:	_____
1.3.2.	[Side of NH (Left or right side of NH towards increasing chainage/km direction)]	:	_____
1.4.	Name of Highway Authority (NHAI/PWD/BRO)	:	_____
1.5.	Executive Engineer (or Equivalent) address	:	_____

1.6. Name of Oil Company : _____
(as applicable)

1.7. Name and address of Owner of Retail Outlet/ : _____
Private Property

2. STIPULATED NORMS FOR RETAIL OUTLETS

Sl. No.	Item	Measurement at site	Para No.*	MOST Norms Norms	Whether complying with MOST Norms*
(1)	(2)	(3)	(4)	(5)	(6)
1.	Distance from nearest retail Outlet		3.1	Minimum 300 m	Yes/No
2.	Provision of 7.0 m wide service road		3.2	Necessary where clustering of Retail outlets is present	Yes/No
3.	Distance from check barrier		3.4	Minimum 1 km	Yes/No
4.	Is it a part of rest area complex?		3.5		Yes/No
5.	Distance from tangent point of curve from side roads and that of retail outlet		3.7	Minimum 300 m	Yes/No
6.	Gradient of highway section (in hilly terrain)		3.8	Maximum 5 per cent	Yes/No
7.	Slope of retail outlet premises/ service area for drainage purpose		3.8	Minimum 2 per cent	Yes/No
8.	Width of frontage		4	Minimum 30 m	Yes/No
9.	Length of buffer strip		5.1	Minimum 12m	Yes/No
10.	Width of buffer strip		5.1	Minimum 3 m	Yes/No
11.	Is the only one structure of approved standard identification sign on pole with 3 m clearance from ground existing on buffer strip?		5.2	No structure or hoarding except approved standard identification sign on pole is allowed on buffer strip.	Yes/No
12.	Height of kerb on periphery of buffer strip		5.3	Minimum 225 mm	Yes/No
13.	Distance of outer edge of buffer strip from centerline of carriage way		5.4	Minimum 7 m Minimum 12 m (divided carriage way)	Yes/No
14.	Is the space from outer edge of buffer strip to the edge of road turfed and raised with provision of 225mm kerbs, with no other structure?		5.5	No structure or hoarding or parking space is allowed in the space in front of buffer strip	Yes/No

(1)	(2)	(3)	(4)	(5)	(6)
15.	Is there no hedges or plants 600 mm high on or around buffer strip?		6.2	—	Yes/No
16.	Width of entrance/exit		7.1	Minimum 9 m Maximum 12 m	Yes/No
17.	Radius of turning curve		7.2	Minimum 13 m Ruling 30 m	Yes/No
18.	Radius of non-turning curve		7.2	Minimum 1.5 m Maximum 3 m	Yes/No
19.	Minimum downward slope of access roads towards the retail outlet		8.1	Minimum 2 per cent	Yes/No
20.	Difference in elevation from edge of road and edge of buffer strip		8.1	Minimum 15 cm	Yes/No
21.	Provision of culvert, designed for drainage according to IRC:SP-13		8.1/8.3	Minimum 1m dia (pipe culvert) Minimum 1m span (slab culvert)	Yes/No
22.	Distance of kiosks, etc. from the Fuel Pump		9.0	Minimum 4 m	Yes/No
23.	Provision of proper drainage arrangement for retail outlet premises		8	Drawing showing drainage arrangement as per satisfaction of highway authorities to be submitted.	Yes/No
24.	Provision of suitable retroreflective signboards		12	—	Yes/No

Check list for getting approval for installation of new Retail Outlets/renewal of licence deed for existing Retail Outlets/access to private property along National Highways

[Enclosure to Ministry's Circular No RW/NH-33023/19/99-DOIII dated 31st Aug., 2000]

Existing Retail Outlets/access to private property along National Highways

3. STIPULATED NORMS FOR ACCESS TO PRIVATE PROPERTY

Sl. No.	Item	Value	MOST Norms		Whether complying with MOST Norms**
			Para No.*	Norms	
1.	Distance from nearest access/intersection		13.1/ 13.2	URBAN: Minimum 500 m (NH) Minimum 1000 m (for NH likely to be made Expressway) RURAL: Minimum 750 m (for service roads) Minimum 300 m (individual property)	Yes/No
2.	Provision of 7.0 m wide service road		13.2	Necessary where clustering of properties is present	Yes/No
3.	Width of entrance/exit		7.1	Minimum 9 m Maximum 12 m	Yes/No
4.	Radius of turning curve		7.2	Minimum 13 m Ruling 30 m	Yes/No
5.	Radius of non-turning curve		7.2	Minimum 1.5 m Maximum 3 m	Yes/No
6.	Minimum downward slope of access roads		8.1	Minimum 2 per cent	Yes/No
7.	Difference in elevation from edge of road and edge of property		8.1	Minimum 15 cm	Yes/No
8.	Provision of proper drainage arrangement for runoff from private premises		8	Drawing showing drainage arrangement as per satisfaction of highway authorities to be submitted.	Yes/No
9.	Provision of culvert designed for drainage in accordance with IRC SP-13		8.1/8.3	Minimum 1m dia (pipe culvert) Minimum 1m span (slab culvert)	Yes/No

* Annexure I to MOST Circular No. RW/NH-33023/19/99-DO. III dated 31st Aug. 2000

** If Norms are not satisfied, detailed explanation needs to be given, otherwise the application will not be considered. In all cases supporting documents as per Annexure II have to be submitted, otherwise, the case will be summarily rejected.

Format for Maintaining Records of Retail Outlet/Access to Private Property

(to be maintained separately for every NH and State, every PWD Division or equivalent)

1. Name of State : _____
2. Name of Agency (PWD/BRO/NHAI) : _____
3. Name of PWD Division or Equivalent : _____
4. NH No. : _____

Sl. No.	Location (chainage in km)	Left or right side of NH (towards increasing chainage/km direction)	Retail Outlet/ Access to Private Property	Name of Owner and address	Name of Oil Company and contact address (if applicable)	Date of signing of licence deed	Date of validity of licence deed	Date of sending reminder to the owner of retail outlet/private property (4 month before the date of lapse of licence deed)	Date of last inspection of site	Any deviation from MOST standard norms	Remarks

(Enclosure to Ministry's Circular No. RW/NH-33023/19/99-D.O.III dated 31/08/2000 [142.21])

LOCATION AND LAYOUT OF MOTOR-FUEL FILLING AND MOTOR-FUEL FILLING- CUM-SERVICE STATIONS ALONG NATIONAL HIGHWAYS

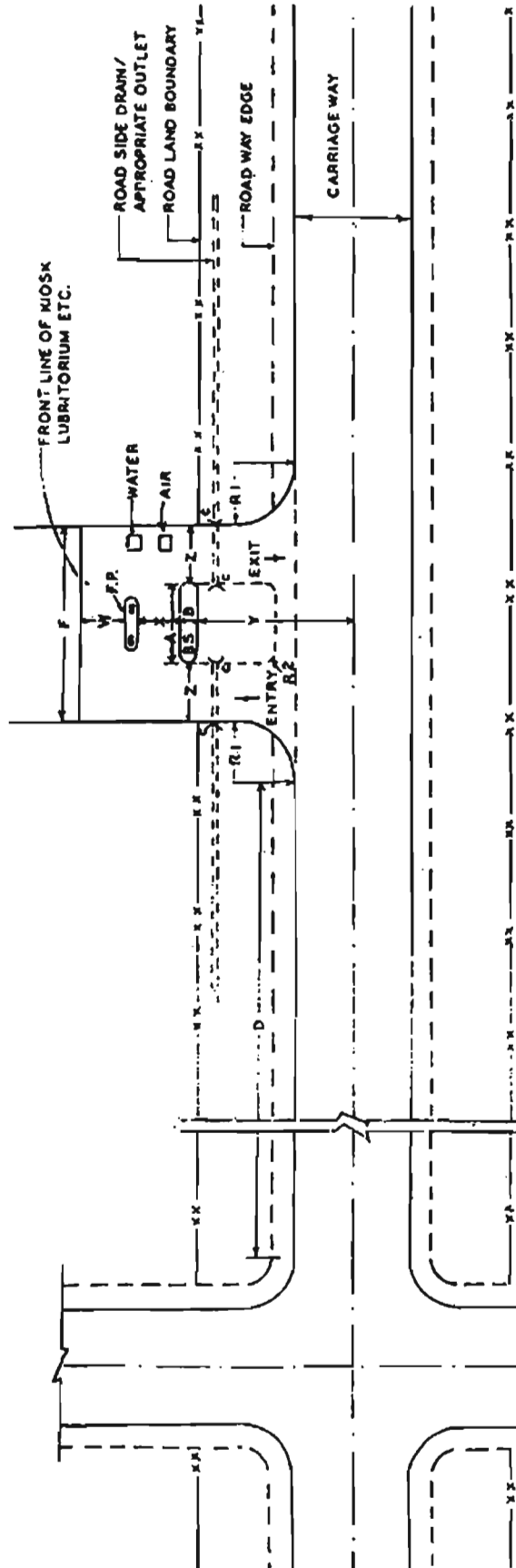


FIG. 1

BS - Buffer strip

A - Minimum 12 m (See Para 5.1)

B - Minimum 3 m (See Para 5.1)

F - Minimum 30 m (See Para 4)

Z - Minimum 9 m, Maximum 12 m (See Para 7.1)

X - Minimum 4 m (See Para 10)

W - Minimum 4 m (See Para 9)

Y - Half the width of road land subject to provision that it is not less than 7 m, where no cycle tracks are required now or in future, and not less than 12 m where cycle tracks/service road exist or may be required in future. In the case of dual/divided carriageway, these distances should be measured from the centreline of the nearest two-lanes of the, carriageway, (See Para 5.4)

D - Minimum 300 m (See Para 3.1, 3.2, 3.4, 3.7)

R1 - Minimum 13 m ruling 30 m (See Para 7.2)

R2 - Minimum 1.5 m - 3 m (See Para 7.2)

CC - Culvert - Culverts to be provided both at entry & exit

142.21

(Enclosure to Ministry's Circular No. RW/NH-33023/19/99-D.O.III dated 31/08/2000)

TYPICAL X-SECTIONAL ELEVATION OF A RETAIL OUTLET

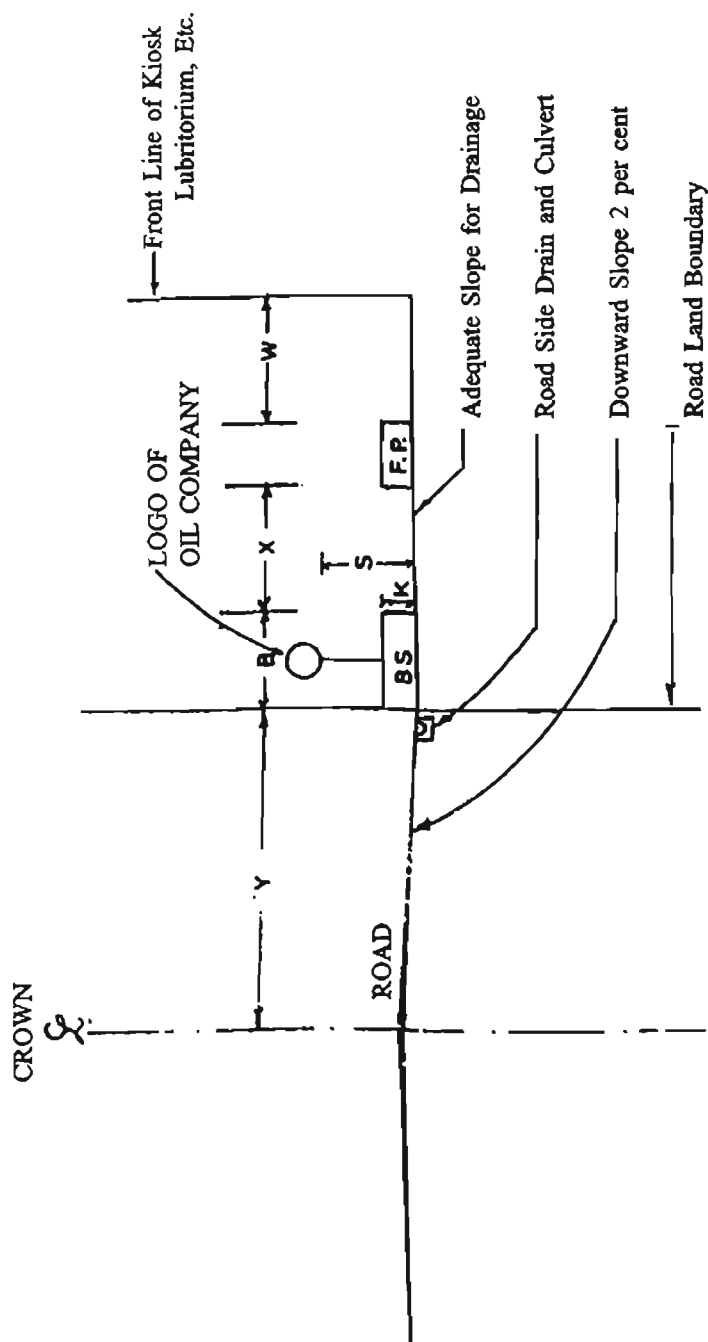


FIG. 2

- H - Minimum 150 mm (See Para 8.1)
 K - Minimum 150 mm (See Para 5.2)
 S - Minimum Clearance 3 m (See Para 3.2)
 Y - Minimum 7 m with cycle track or service road minimum 12 m for divided carriageway the distance shall be measured from centreline of nearest carriageway (See Para 8.1)
 B - Minimum 3 m (See Para 5.1)
 BS - Buffer Strip
 FP - Fuel Pump
 X - Minimum 4 m (See Para 10)
 W - Minimum 4 m (See Para 9)

No.RW/NH-24035/22/94-PI.VoLV***Dated, the 20th June, 2000*****To**

The Chief Engineers of the States/Union Territories (dealing with NHs and other centrally sponsored schemes); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Construction of Bypasses on National Highways

Please refer to this Ministry's letter of even number dated 26.2.1999 requesting you to identify suitable projects for construction of bypasses on National Highways on BOT basis. It may be appreciated that the purpose of the bypasses is to ensure free and smooth flow of through traffic, avoiding the congested and accident-prone sections through habitations. In the past it has been observed that, once constructed, these bypasses attract growth of the town along their alignment, soon leading to the ribbon development and obstructions from cross traffic thereby causing deterioration in the desired level-of-service and reduction in safety. In order to mitigate these impediments and to ensure full benefits to the users for the user fee paid in case of BOT projects as well as to ensure long life to such investments, it would be necessary to keep in mind the following measures while planning, designing and constructing the bypasses:-

- 1.1. Provision of parallel service roads having controlled access and necessary fencing on either side of main highway.
- 1.2. Restricting the entry of cross roads only at selected and pre-determined locations.
- 1.3. All road intersections and rail crossing are to be provided with grade separators.
- 1.4. Wherever the bypasses length is either more than 10 km or it bypasses any important town/city, develop wayside amenities as integral part of the bypass project.
- 1.5. Enforce planning measures, such as, "building lines" and "control lines" rigidly.
- 1.6. Acquire adequate land width to provide for an ultimate six-lane facility to cater for next 10 to 15 years traffic growth along with service roads even though the present requirement may be only of two-lane/four-lane facility.

2 You are requested to give wide publicity to the above guidelines and issue necessary instructions to the officers concerned with planning and implementation of the highway works.

No. RW/NH-11014/1/96-PL***Dated, the 27th October, 1998***

To

The Secretaries/Chief Engineers of all States /UTs (dealing with National Highways & Centrally Sponsored Schemes); Director General Works, Central Public Works Department; Director General Border Roads; Chairman, National Highways Authority of India

Subject : Demarcation of Building lines and Control lines on the land adjacent to the National Highways

Unregulated use and development of land directly abutting the National Highways is affecting the free flow of traffic and making further development works, like, widening difficult, costly and even redundant from operational point of view. A primary reason for this is that the Highway Authorities are unable to demarcate building lines and control lines on the private lands beyond the right-of-way of National Highways since they do not have necessary powers to enforce the above lines. Further, the local people also are generally not aware about these control lines beyond which they should construct their buildings.

2. Standards for building lines and control lines were circulated to all States vide this Ministry's letter No NH III/P/72/76 dated 13th January, 1977, wherein it was mentioned that the State Governments should strictly enforce the building lines and control lines while approving the scheme of developments and specifying the land use. The State Governments were also requested to enact necessary legislation to enforce this where required. Since, there was no progress in enacting the required legislation and control of the building activities along the National Highways by most of the State Governments. Ministry had vide letter of even number dated 6th February, 1997 proposed enactment of two legislations, out of which the second legislation regarding control of development activities on the land adjacent to the National Highways out-side the right-of-way was to be enacted by the States since regulation of land outside the National Highways right-of-way vested with the State Governments. Some State Governments, like, Assam and Rajasthan have already enacted the required legislation. Copies of Assam Highways Act 1989 and Rajasthan Highways Act 1995 were circulated to all the State PWDs vide Ministry's letter of even number dated 17th Oct., 1997 for enacting a suitable legislation. The action in this respect needs to be expedited by the State Governments.

3. Till the required legislation as mentioned above is enacted by the State Governments, it is suggested that the State Governments may prepare plans showing building lines and control lines along the National Highways and keep these in the office of the Executive Engineer, National Highways Division for perusal by architects and other persons planning building activities in the area. Necessary publicity to the effect that such plans are available for perusal by public also needs to be given.

No. RW/NH-11014/1/96-PL***Dated, the 16th August, 2000***

To

The Chief Secretaries/Secretaries/Chief Engineers of all States /UTs (dealing with National Highways & Centrally Sponsored Schemes)

Subject : Demarcation of Building Lines and Control Lines on the land adjacent to the National Highways - Enactment of Legislation and Enforcement

Please refer to this Ministry's letters of even no dated 17th October, 1997, 16th June, 1998 and 27th October, 1998 requesting the State Governments to enact legislation for control of development activities on the land adjacent to the National Highways outside their right-of-way (since the regulation of land outside the National Highways right-of-way vests with the State Governments) on the following broad framework of the proposed legislation.

- (i) Acquisition of powers by Government to fix building and control lines adjacent to National Highways, apart from control on construction and restriction of building activities.
- (ii) Powers of Government to levy, fix and recover betterment charges on land alongside the National Highways, if desired to recover cost of providing better services and improved accessibility to the people;
- (iii) Provision for creation of an organisation to delineate Highway boundaries, Building Lines and Control Lines along the National Highways with powers to enforce provisions of the Acts.
- (iv) Powers to prevent obstructions of view of users of National Highways especially at any bend, curve or corner of National Highways in order to remove or alter the height or character of any existing wall, fence, hedge, tree, advertisement banner, etc.

2. Copies of Assam Highways Act 1989 and Rajasthan Highway Act 1995 were also enclosed with the above mentioned letter of even No. dated 17th Oct., 1998 for reference while preparing the draft legislation.

3. Item on "Demarcation and enforcement of Building Lines and Control Lines on the land adjacent to the National Highways" was discussed during the 2nd State PWD Ministers' Conference held on 12th June, 2000 at New Delhi, wherein the States supported it. It was also reported during the conference that some States have already enacted suitable legislation on the above mentioned subject. It is, therefore, requested that the States, who have enacted such a legislation may demarcate and enforce building lines and control lines on the private lands beyond the right-of-way of National Highways after preparing plans showing these lines along the National Highways and send a copy of the act to this Ministry for reference and record. The States who have not yet enacted the suitable legislation may take necessary action for enactment of the legislation and intimate this Ministry regarding action taken by them. If any help is required from this Ministry, necessary reference may be made to Ministry without any hesitation.

No.RW/NH-34066/2/95-S&R

Dated, the 25th October, 1999

To

The Chief Engineers of all State Govts/UTs (dealing with National Highways); Director General Border Roads; Chairman, National Highways Authority of India

Subject : Bridges on National Highways and other Centrally Sponsored Schemes-Provision of various types of utility services on bridges and Design of Footpath slab

Your attention is invited to this Ministry's circular No. RW/NH-11037/1/86-DO.I(ii) dated July 28, 1993 on the above subject, wherein it was directed that permission for carrying of water-mains and sewage pipes over the bridges may be allowed only under exceptional circumstances. It was also mentioned that such pipes may be carried out only on extended portion of the substructure and should comply with certain conditions mentioned in the above circular. Following further guidelines may please be noted in this connection.

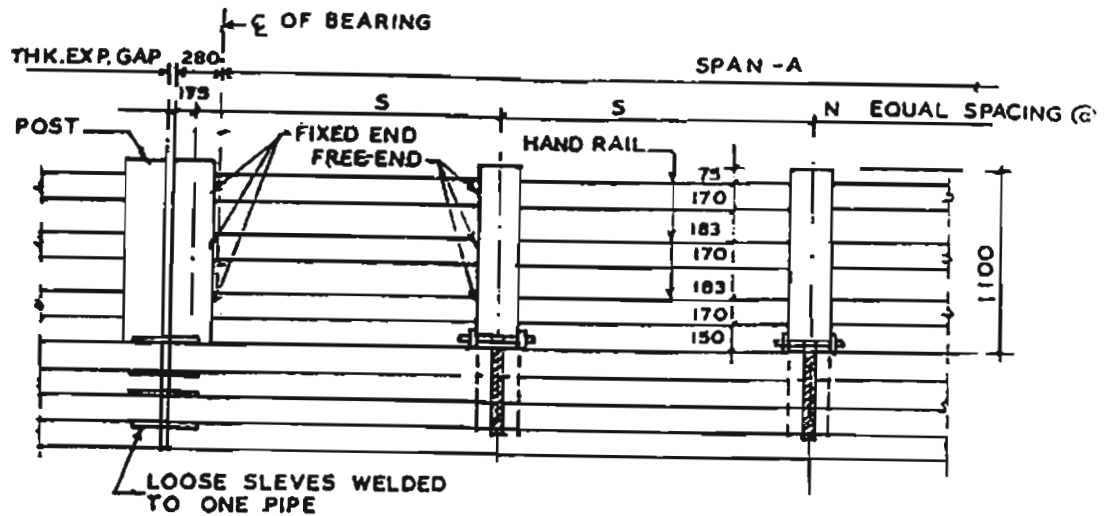
- (i) Carrying of sewage/gas pipelines on highway bridges shall not be permitted as fumes/gases from these pipes can accelerate the process of corrosion or may cause explosions, thus, being much more injurious than leakage of water.
- (ii) Carrying of water pipe lines on bridges shall also be discouraged. However, if the water supply authorities seem to have no other viable alternative and approach the highway authority well in time before the design of the bridge is finalised, they may be permitted to carry the pipeline on independent superstructure, supported on extended portions of piers and abutments in such a manner that in the final arrangement enough free space around the superstructure of the bridge remains available for inspection and repairs, etc
- (iii) Cost of required extension of the substructure as well as that of the supporting superstructure shall be borne by the agency-in-charge of the utilities.

2. So far it has been the practice to carry lighter utilities, like electric cables, telephone cables and optical fibre cables, etc. below the precast footpath slabs or ducts provided under the footpath in the superstructure. Ministry's standard drawings also made such provisions. However, it has been noticed that in many cases, after laying the services or carrying out repairs to the services, the footpath slabs/manhole covers are not properly placed back in position causing serious hazard to pedestrian safety. In certain cases the pedestrians have even fallen into the river below through such openings. In view of the above problems, the present practices in this regard have been reviewed and it has been decided to regulate the grant of permission for carrying of services over the National Highway bridges as indicated below :

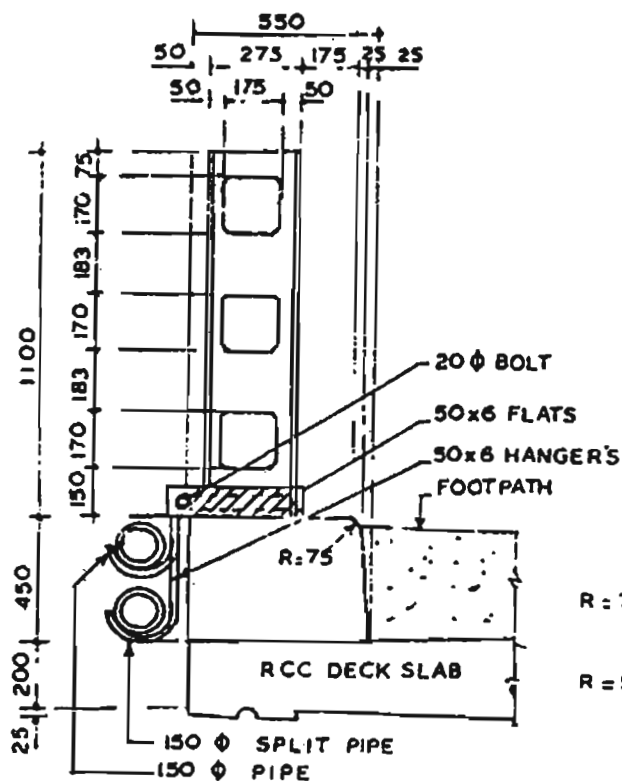
- (i) Footpath slabs shall, henceforth, be cast monolithic with Deck Slabs without any provision of ducts lighter services, like, telephone cables, optical fibre cables, electric cables, etc should be carried over hangers fixed on the outer side of the railing kerb or below the Deck Slab without affecting the aesthetics of the bridge. Two possible arrangements are shown in the enclosed sketch (*Annexure*) which may be followed for adoption. Cost of providing this arrangement shall be borne by concerned agency.
- (ii) On approaches, the water mains/cables shall be carried along a line as close to the edge of the right-of-way as possible up-to a distance of 30 m from the bridge and subject to all other stipulations contained in this Ministry's guidelines issued with letter No.NH-III/P/66/76 dated 19.11.1976.

3. It is requested that contents of the circular may be brought to the notice of all officers in your department concerned with National Highways and other centrally sponsored schemes.

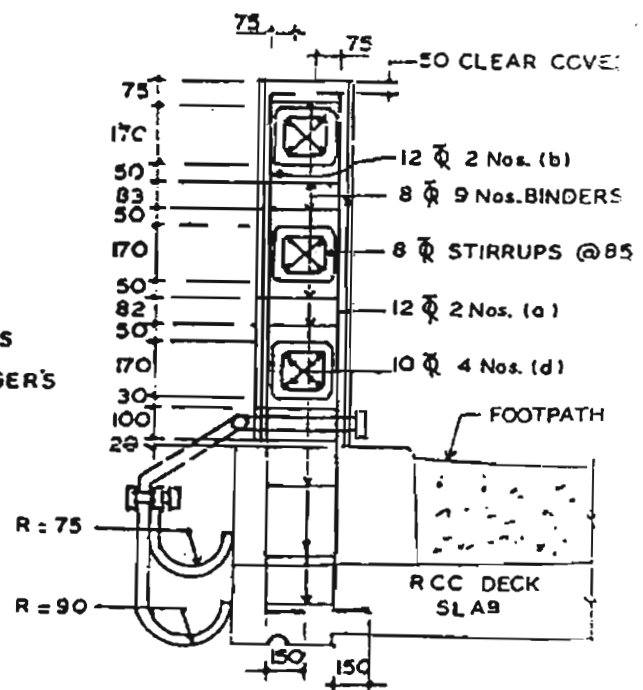
[Enclosure to Ministry's Circular No RW/NH-34066/2/95/S&R dated 25th Oct., 1999]



ELEVATION



SECTION THROUGH POST



SECTION THROUGH POST

160. *LEVY OF FEES AND TOLLS*

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
160.17	NH-24035/23/94-PL-Vol.III dated 22.6.1997	Toll Structures for 4-lane National Highways and other related issues	160/11
160.18	NH/24035/23/94-PL dated 21.10.1997	Revised guidelines for private investment in National Highway Projects	160/12 to 29
160.19	RW/NH.33044/6/2001/S&R® dated 9.2.2001	Erection of Tax Collection Barriers on National Highways	160/29
160.20	NH-11065/27/2001-P&M dated 21.11.2001	Arrangements for Toll Collection (Departmentally) in case where delay is visualized in conducting auction	160/30

No. NH-24035/23/94-PL-Vol.III**Dated, the 22nd June, 1997**

To

The Secretaries of PWD of all States/Union Territories (dealing with National Highways); Director General (Works), Central Public Works Department; Director General, Border Roads Organisation; Chairman, National Highways Authority of India

Subject : Toll Structures for 4-lane National Highways and other related issues

Certain measures pertaining to toll structures for 4-lane National Highways and other related issues have recently been taken to attract more investments in the Highway Sector. These are detailed for your information in the following paras.

2. Toll rates on completed 4-lane National Highways annually indexed to Wholesale Price Index (WPI) shall be levied on case-to-case basis which may vary from area-to-area keeping in view the cost of project, financial viability and acceptability criteria, subject to the upper limit as given in the Table below with effect from 1.7.1997.

Upper limit of toll structure for 4-lane National Highways

S.No.	Type of Vehicle	Toll rate Rupees per km
(1)	Car/jeep/van	0.4
(2)	Light commercial vehicle (LCV)	0.7
(3)	Truck and buses	1.4
(4)	Heavy construction machinery and earthmoving equipment	3.0

These rates shall be reviewed periodically by Government of India after every 3 years. Ministry of Surface Transport is authorised to levy higher rates of toll on expressways, major bridges, new bypasses, tunnels and in some exceptional cases (after obtaining approval of High Powered Committee) where so justified by level of traffic after competitive bidding process.

3. National Highways Authority of India/Govt.of India has been authorised to provide capital grants for BOT projects on National Highways not exceeding 40 per cent of the total cost of project.

The final decision regarding the quantum of such grants would be taken by the High Powered Committee set-up by Cabinet comprising representatives of Ministry of Finance, Ministry of Law, Planning Commission under the Chairmanship of Secretary, Ministry of Surface Transport, Government of India.

4. Further tax concession as detailed below have now been approved :

- (i) The period for availing tax holiday/tax reduction for road infrastructure projects is being increased from 12 years to 20 years.
- (ii) The profits from Housing and other development activities which are an integrated part of BOT road projects would be treated as income from 'infrastructure' projects for the purposes of tax exemptions/concessions provided, these profits are ploughed back to the development of roads (including repayment of long term debt for the project) on BOT basis within a period of 3 years.
- (iii) Exemptions from import duty on identified high quality construction plants and equipments used in the highway projects has been approved.

The steps for amending the relevant acts/notifications to give effect to the above are being taken separately by Ministry of Finance, Government of India.

5. The land required for Housing and other development activities which are an integral part of Highway projects would be considered as land required for Highway development and such acquisition would be treated as land required for "Public Purpose". Steps for amending the National Highways Act to this effect are being taken separately.

No. NH/24035/23/94-PL

Dated, the 21st October, 1997

To

The Secretaries/Chief Engineers of States/Union Territories, Public Works Department (dealing with National Highways and other Centrally Sponsored Schemes); Director General (Works), Central Public Works Department; Director General Border Roads; Chairman, National Highways Authority of India

Subject : Revised guidelines for private investment in National Highway Projects

As you are aware, as part of the emphasis placed by the Government on Infrastructure Development, further policy initiatives have been taken recently for attracting more private investment in development of National Highways. In view of this, the guidelines circulated earlier for private investment in National Highway projects have further been updated/augmented. A copy of the revised guidelines as above is enclosed as *Appendix I* for your reference and guidance.

2. It is suggested that above mentioned guidelines on BOT projects may be circulated to all concerned at your end for taking up more and more projects depending upon their feasibility and viability.

Appendix-I

[Enclosure to Ministry's Circular No. NH/24035/23/94-PL dated, the 21st October, 1997]

(FIRST REVISION, SEPT. 1997)

GUIDELINES FOR PRIVATE INVESTMENT IN NATIONAL HIGHWAY PROJECTS

1. BACKGROUND

India has a vast network of National Highways (NHs) totalling to 34,608 km connecting important towns, cities, ports and industrial centres of the country.

Industrialisation of the country has induced a traffic growth of 8 to 12 per cent per year on many sections of National Highways and this growth trend is expected to continue. While the traffic on National Highways has been growing at a rapid pace, it has not been possible for the Government to provide matching funds, due to competing demands from other priority sectors. This has led to a large number of deficiencies in the network. Many sections of the NHs are in need of capacity augmentation by way of widening, grade separation, construction of bypasses, bridges and expressways, etc. Many bridges are in need of replacement. The traffic movement on NHs is also hindered due to a large number of Rail-Road crossings where road traffic has to per force stop due to the frequent gate closures. The overall scenario on the highways has led to economic losses by way of longer turn around time for the vehicle fleet, rising vehicle operating costs and dissipation of human energy in the driving. This calls for urgent remedial measures.

To motivate the inflow of resources for the development, maintenance and management of NHs and to improve their efficiency, productivity and quality of service and to bring in competitiveness in providing highway services to road users, the Government of India, in consonance with its general policy of liberalisation/globalisation of country's economy, welcomes private investment in National Highways, and hopes that this measure would help in improvement of the existing highways and bring in the latest technology and improved management techniques. The users are already accustomed to pay fee for use of bridges on National Highways for the last two decades by way of fees on bridges.

Other highway projects have also been awarded to private sector recently and the experience gained in the process has been utilised in framing these guidelines.

2. DEMAND SCENARIO

(A) Existing Network

The deficiencies in the existing National Highway network (as on 1.4.1996) and estimated cost of their removal are as given below. These works are required to be completed within a period of 10 to 15 years.

S.No.	Category of Work	Length/No.	Rupess Estimated cost (1.4.96 prices)
(1)	Widening of single-lane to two-lanes, including strengthening of pavement	5200 km	5,200 cr.
(2)	Widening of 2-lane roads to 4-lane or wider	14,000 km	42,000 cr.
(3)	Widening of pavement (2-lane equivalent) and construction of paved shoulders	15,000 km	9,000 cr.
(4)	Construction of bypasses	40 Nos.	2,000 cr.
(5)	Construction of bridges	470 Nos.	1,000 cr.
(6)	Miscellaneous and road safety works	L.S.	5,000 cr.
	Total		64,200 cr.
(B)	Expressways		
	Construction of Expressways on new alignments	2000 km	16,000 Cr.
	Total (A) + (B)		80,200 Cr.
		Say	80,000 Cr.

3. AREAS OF PRIVATE INVESTMENT

Categories of projects identified for private investment are given in the following Table:-

S.No.	Category of projects	Indicated Quantum
Existing Network		
(1)	Widening from 2-lanes to 4-lanes	4000 km
(2)	Major bridges	50 Nos.
(3)	Railway over bridges	50 Nos.
(4)	Elevate sections through urban areas	To be identified
(5)	Interchanges	To be identified
(6)	Bypasses	30 Nos.
New Network		
(7)	Expressways	1000 km

4. LEGAL FRAMEWORK

4.1. The functions relating to development, maintenance and management of National Highways are carried out by the Central Government under the Provision of National Highways Act, 1956. The Act has been amended in June, 1995 to permit private sector participation, relevant extracts which are reproduced below:

Section 8(A)

(1) Notwithstanding anything contained in the Act, the Central Government may enter into an agreement with any person in relation to the development and maintenance of the whole or any part of National Highway.

(2) Notwithstanding anything contained in the Section 7, the person referred to in sub-section (1) is entitled to collect and retain the fees at such rates, for services or benefits rendered by him as the Central Government may, by notification in the Official Gazette, specify having regard to the expenditure involved in building, maintenance, management and operation of the whole or part of such National Highway, interest on the capital invested, reasonable returns, the volume of traffic and the period of such agreement.

(3) A person referred to in sub-section(1) shall have powers to regulate and control the traffic in accordance with the provisions contained in Chapter VIII of the Motor Vehicles Act, 1988 on the National Highway forming subject matter of such agreement, for proper management thereof.

(4) Whoever commits mischief by doing any act which renders or which he knows to be likely to render any National Highway referred to in sub-section (1) of Section 8A impassable or less safe for travelling or conveying property shall be punished with imprisonment of either description for a term which may extend to five years or with a fine or with both.

4.2. Rules have been framed under the amended NH Act laying down the procedure for collection of fee by any person or Government on sections of NHs including permanent bridges developed by the entrepreneur or the Government respectively. The copies of these Rules are appended at *Annexure-I* and *Annexure-II*. The enterprise would be allowed to collect the fees as per the agreement in accordance with these Rules.

5. POLICY MAKING BODY

All policy matters relating to National Highways are decided by the Ministry of Surface Transport, reference to Government in these guidelines shall generally mean the Central Government in the Ministry of Surface Transport (MOST).

6. IMPLEMENTING AGENCY

The Central Government has decided that the policy of privatisation of the National Highways will be implemented by the National Highways Authority of India (NHAI). In exceptional cases, the Central Government may also assign the functions of Implementing Agency (IA) to the States. Therefore, reference to IA in these guidelines will generally mean NHAI, and the State Public Works Department, in exceptional cases.

7. ENTERPRISE

A reference to Enterprise in these guidelines will mean the successful bidder with whom the Government and the Implementing Agency have entered into an agreement for developing, maintaining and operating any NH project.

8. IDENTIFICATION OF PROJECTS FOR PRIVATE INVESTMENT

The following principles will generally be observed in identification of NH projects for private investment:-

- (1) Project is one of the approved projects of MOST.
- (2) Project is capable of yielding adequate Economic Internal Rate of Return (EIRR) and Financial Internal Rate of Return (FIRR). The Government Investment on the items mentioned in Guideline 9 will be treated as zero cost investment, in the calculations for FIRR.

9. GOVERNMENT SUPPORT

9.1. The Government will carry out all preparatory works as detailed below for the projects identified for private investment and meet the cost of following items:

- (1) Detailed Feasibility Study
- (2) Land for Right-of-way and enroute facilities
- (3) Clearance of the Right-of-Way land: Relocation of utility services, cutting of trees, resettlement and rehabilitation of the affected establishments, removal of all encroachments.
- (4) Environmental Clearances.
- (5) In case of ROB's clearance from Railways to allow private enterprise to build the ROB under Railways' supervision and fixing of GAD and charges payable to Railways.
- (6) Where design is left to the enterprise, giving details of standards and bore-hole logs at bridge sites, etc.

9.2. Depending upon the financial viability of a project, the Government may recoup its investment on the above items from the project.

10. OTHER FACILITATING MEASURES

- (a) Import of Bitumen is now permitted under Open General Licence (OGL)
- (b) Import duty has been exempted on identified high quality construction plants and equipments.
- (c) In case of projects which are on the verge of financial viability, suitable traffic support/guarantees could be considered on case-to-case basis.

11. TAX/FISCAL CONCESSIONS/OTHER CONCESSIONS

11.1. Concession Available for Enterprise Undertaking any Project

In the case of an enterprise (the enterprise is owned by a company registered in India or by a consortium of such companies) carrying on the business of developing, maintaining and operating any infrastructure facility, hundred per cent of the profits and gains derived from such business for the initial 5 assessment years and thereafter, thirty per cent of such profits and gains are exempted from Corporate Tax. This tax concession may be availed of by the enterprise in any ten consecutive assessment years falling within a period of twenty assessment years beginning with the assessment year in which the enterprise begins operating and maintaining infrastructure facility. The meaning of infrastructure is given in Section 80-IA (12) (ca) of the Income Tax Act, 1961 and includes a road, highway and bridge.

11.2. Concessions Available for Lenders/Investors

- (1) As an incentive to financial institutions to provide finance for the infrastructure projects, deduction upto 40 per cent of their income derived from financing of these investments is available provided the amount is kept in a special reserve.
- (2) Exemption for Infrastructure Funds from Income Tax on the incomes from dividends, interest on long term capital gains of such funds or companies from investments in the form of shares or long term finance in any enterprise set-up to develop, maintain and operate an infrastructure facility.
- (3) Subscription to equity shares or debentures issued by a public company formed and registered in India and the issue is wholly and exclusively for the purpose of developing, maintaining and operating an infrastructure facility, will be eligible for deductions under Section 88 of the Income Tax Act, 1961, which permits deduction equal to 20 per cent of the amount subscribed, from the amount of tax payable by the subscriber. In case of such investment, the limit of Rs.60,000/- per year under Section 88 has been raised to Rs.70,000.

11.3. Other Concessions

11.3.1. Housing and other developmental activities can be made integral part of BOT highway projects to enhance the viability of projects on case-to-case basis. Profits from such activities made integral part of BOT highway projects, would be treated as income from infrastructure projects. for the purpose of tax exemption/ concession provided these are ploughed back to the development of Roads on BOT basis (including repayment of long term debt from the projects) within a period of three years.

11.3.2. Real estate development would constitute an important source of revenue for the Enterprise and would, therefore, be an important input in price determination. As such, it would be firmed up and included as a part of Bid Documents in case such development is envisaged for a particular BOT project.

11.3.3. The layout of such development shall be finalised by the enterprise with the approval of the IA in accordance with the parameters stated in the bidding documents. The enterprise may be required to obtain necessary clearances from appropriate authorities, based on pre-determined criteria.

11.3.4. In some cases, Implementing Agency may opt to undertake such real estate development as a part of the project. In such a situation, the bidding documents would exclude real estate development and leave it to the Implementing Agency. In appropriate case, Implementing Agency may project accrual of income from such real estate development and use it for subsidising toll charges that may otherwise seem unsustainable. Alternatively, Implementing Agency may assign real estate development to a third agency on the basis of competitive bidding. Depending upon the circumstances of each case, detailed bid conditions would be evolved in consultation with the concerned Ministries and agencies and the same would be included in the bid documents.

11.3.5. NHAI/Govt. of India can provide Capital grants upto 40 per cent of project cost to enhance viability of the projects on case-to-case basis.

11.3.6. NHAI can participate in equity upto 30 per cent.

12. FOREIGN INVESTMENT

12.1. Government has recently decided to permit automatically Foreign Direct Investments upto 74 per cent equity for road and bridge construction as a part of infrastructure. Foreign Direct Investment (FDI) proposals beyond that would be considered by the Foreign Investment Promotion Board, on case-to-case basis.

12.2. External commercial borrowing is permitted upto 35 per cent of project cost for Rupee expenditure.

13. CONCESSION PERIOD

The concession period comprises (i) the construction period which will be project specific and (ii) the period during which the enterprise is permitted to levy fee and is liable for maintaining the facility which will be determined on competitive bidding basis and may be upto a maximum of 30 years. The concession period may be extended suitably, to cover any Force Majeure Conditions. In the event the enterprise completes construction of project before expiry of the period specified in (i) it will be entitled to collect user fee from traffic during the balance period available from construction period, at the rates applicable for the year of opening the facility for traffic. In case the enterprise delays completion of the project beyond the period specified for construction, its fee collection period will get reduced correspondingly.

14. FEE

14.1. The maximum fee rates leviable on completed 4-lane sections and approved by the Cabinet have already been circulated (copy enclosed at *Annexure-III*). However, different fee rates for other projects, like, bypasses, bridges, ROBs, etc., can be levied depending upon the project cost and the traffic levels.

14.2. The revision of the fee may be allowed every year following commissioning of the facility linked to the Wholesale Price Index (WPI).

15. PROJECT CONSTRUCTION

The enterprise is to complete the project within the period specified for construction, conforming to the standards and specifications prescribed in the agreement and to the satisfaction of Implementing Agency. Any delay in completion of the project will be to the account of the enterprise unless such delay can be directly attributed to the Government and/or Implementing Agency. Delays occurring on account of Government/Implementing Agency would entitle the Enterprise to an appropriate extension in the construction period and/or to such other compensation as the Bidding conditions may specify. Time and Cost overruns are the responsibility of the enterprise and no price escalation shall be allowed on this account.

16. HANDING OVER LAND TO ENTERPRISE

The land meant for highway construction and enroute highway related facilities would be given to the enterprise on a lease or other suitable form for the concession period. However, mortgaging or subleasing or securitisation of this land for raising finances would not be allowed. The enterprise is free to licence the enroute highway related facilities to any one for the period(s) limited to the concession period. Any expenditure on stamp duty documentation, etc. for this purpose shall be borne by the enterprise. The ownership of the land continues to be vested in the Government. It is, however, preferable to offer the land to the enterprise on appropriate licence on suitable terms to meet the above requirements.

17. BID SECURITY

Bids for the project will be accompanied by a bid security bond which will be of an amount equal to 1 per cent of the project cost.

18. PERFORMANCE SECURITY

18.1. The successful enterprise will be required to furnish a performance security bond of an amount equal to 3 per cent of the cost of project. Such bond would be discharged after 25 per cent of the works have been completed.

18.2. The enterprise would have to furnish a maintenance performance bond amounting to 1 per cent of the project cost within one month of opening of the facility. The maintenance bond shall be made valid till two years after the end of the concession period.

18.3. The enterprise have to deposit the supervision charges @ 4 per cent of project cost to the implementing agency. Further, in case of works to be implemented under the control of other departments, like, Railways, pre-agreed departmental/supervision charges will have to be paid by the enterprise to the concerned Department.

19. TERMINATION OF CONCESSION

19.1. In the event of termination of a Concession Agreement for any reason attributable to the Government/Implementing Agency, the enterprise will be compensated for all the costs incurred by it on the project plus interest thereon at the rates indicated in the bidding documents. In addition, the bidding conditions may also include payment of suitable liquidated damages to be calculated on the basis of predetermined principles. The objective of such damages would be to provide comfort and assurance to the Enterprise that the Concession Agreement would not be terminated in an arbitrary manner.

19.2. If the Concession agreement has to be terminated due to inability of the enterprise to fulfill its obligations, the Government's liability towards the enterprise will be restricted to an amount not greater than 95 per cent of the debt secured to project assets that would stand transferred to the Government/Implementing Agency upon such termination. Where necessary, the bidding conditions may stipulate other forms of termination payment as may be required in accordance with international norms and practices.

20. PROJECT COMPONENTS

(1) Highway construction, as per the scope which may be finalised by the Implementing Agency based on a detailed feasibility study.

(2) Highway related facilities, enroute, as may be identified by Implementing Agency in the bidding documents:

- Restaurants
- Motels
- Rest/Parking Areas
- Loading/unloading terminals for cargo.
- Warehouses/godowns
- Vehicle repair facilities
- Shops for vehicle components

- Restaurants
- Hotels/Motels
- Insurance and medical facilities
- Commercial and residential complexes

For the above facilities will normally be acquired by the Implementing Agency. The enterprise will be free to license out such establishments to any one for the period(s) limited to the concession period, and enjoy revenue from them during the concession period.

(3) The enterprise would be permitted to allow displaying of advertisements/hoardings within the right-of-way and outside, in accordance with the extant policy of the Government on the subject matter, and enjoy revenue from such activities during the concession period. The bid conditions would specify the details of permissible advertisements/hoardings so as to enable the bidders to quantify the likely revenue stream.

21. IMPLEMENTATION STEPS

21.1. Broad Stages

- (1) Completion of the preparatory works as outlined in guideline 9.1 for the identified projects
- (2) Finalisation of Bidding Documents
- (3) Invitation of Bids
- (4) Pre-bid Conference
- (5) Evaluation of Bids
- (6) Award of Concession
- (7) Signing of the Agreement

As far as possible the bidding documents should give the concession agreement format and leave very little for negotiations before signing of agreement.

21.2. The Implementing Agency shall preliminarily identify the projects to be considered for taking-up under BOT scheme mainly based on traffic levels. After obtaining approval in principle for taking-up the project under BOT Scheme, a detailed feasibility study shall be conducted by the Implementing Agency which shall encompass different aspects, like, financial viability of the project, firming up of detailed scope, integrating commercial development activities with the project depending upon the need. In case of smaller projects (costing upto Rs. 100 crore) in case the Implementing Agency considers that separate feasibility study is not required, detailed scope of the project shall be got approved from the Government. Thereafter, steps 2 to 7 of para 21.1 shall be followed taking approval of the Government at various stages.

22. FEASIBILITY STUDIES

The Implementing Agency, in the first instance will have a feasibility study carried out for the project identified for private investment. The feasibility study will establish the scope of the project, lay down standards and specification for its construction, finalise alignment and determine requirement of land, prepare plan for the re-location/shifting of utility services, cutting of trees, prepare social assessment of the project, identify Rehabilitation and Resettlement issues, Carryout traffic forecast, identify the requirement of highway-related facilities including their locations, Carryout economic and financial viability of the project after assessing the benefits to the users and determining the user fee structures, for different funding options, and various related aspects. The feasibility study will also address the risks of project appropriately. The study may indicate the possibilities/opportunities of real estate development. The Implementing Agency will make available the feasibility study to any interested bidder and may charge appropriate fee for the same.

23. BIDDING DOCUMENTS

The bidding documents will, inter-alia include the terms and conditions of the agreement, rights and responsibilities of the parties, remedies, scope of project and its description, standards and specifications, implementation schedule, operation and maintenance standards, during or the end of the concession period, as the case may be. Consequences of closure of the project by the enterprise and termination of the agreement by Government. The preparation of bidding documents shall address various risks of the project appropriately, by properly allocating them between the parties. The documents shall be got prepared by the Implementing Agency and

given to the interested bidders atleast one month before the closing date for submission of the bids, after due approval of the documents by the Government.

24. INVITATION OF BIDS

24.1. The projects will be classified into the following categories:

Category-I: Railway Over-Bridges, Bypasses, Bridges and Interchanges, each project costing less than or equal to Rs. 100 crores as per the feasibility study.

Category-II: All projects relating to 4-laning and Expressways and the projects relating to Bypasses and Bridges each, costing more than Rs. 100 crores.

24.2. For the Category-I, projects costing upto Rs.100 crores, bids will be received in two covers one cover containing the 'technical bid' and the other containing the 'financial bid'. The financial bid of only those bidders which meet the minimum technical standards (to be made known in advance) will be considered for further evaluation. The evaluation criteria will be stated clearly in the Bid documents.

24.3. For the Category-II, projects as well as Category-I projects costing above Rs.100 crore, two stage bidding process will be followed. In the first stage, proposals will be invited from bidders for short listing. Financial Bids in the second stage, will be invited only from the short-listed bidders. While inviting proposals for short-listing of the bidders, the criteria for short-listing would be made known and the bidding documents would clearly stipulate the criteria for evaluation of the financial bids.

24.4. The technical bids for Category-I projects, or the proposals for short-listing of the bidders for Category-II projects will be evaluated keeping in view inter-alia:

- (a) Experience of the enterprise
- (b) Experience of the contractors/consultants
- (c) Capacity of the enterprise to raise funds from the market
- (d) Financial strength of the enterprise
- (e) Quality and adequacy of the organisational and institutional arrangements proposed for implementation

24.5. The technical bid in respect of Category-I projects and the proposal for short-listing of the bidders for the Category-II projects will be evaluated and finalised by the Committee by the Implementing Agency. Such evaluations will be based on the criteria indicated to the bidders while inviting their offers.

The period of validity of the bid will be as laid down in the bidding documents for specific project. The advertisement for inviting the bids for the Category-I projects will be issued in at least two national English daily newspapers, two national Hindi newspapers, and at least one paper in regional language. For Category-II projects, the advertisement will be issued in the newspapers applicable for category-I projects. In addition, the advertisement will also be issued in India/Abroad. The bids will be invited from domestic as well as international bidders.

25. EVALUATION OF FINANCIAL BIDS

Evaluation of financial bids will be carried out on the principle of least cost to the user.

26. AWARD OF THE CONCESSION

After evaluation of the bids and approval of the award by the Government, a letter of acceptance of the bid will be issued by the Implementing Agency in favour of the successful bidder. The letter of acceptance will, inter-alia, specify the formalities to be completed by the successful bidder for signing of the agreement. If the successful bidder is required to furnish performance security, or any other guarantee, etc. prior to the signing of the concession agreement, it shall be so stated in the letter of acceptance.

27. BANKABILITY OF THE AGREEMENT

27.1. In case the bidder floats a separate company to implement the project, after the same has been awarded to the bidder, the bidder has to undertake full responsibility for all the Acts, commissions and omissions of the

company so floated as the entrepreneur. In such cases the agreement has to be signed both by the bidder as well as the enterprise.

27.2. Efforts have to be made to make the agreement bankable. In this connection, it needs to be specified that in case of termination of the agreement due to force majeure or otherwise, the payments due and payable to the entrepreneur would be paid by the Government in the first instance directly to the lenders to the entrepreneur. The lenders would also have the option of taking over the rights and responsibilities of the entrepreneur on terms mutually agreed with the Government. Further, it shall be specified that the enterprise authorises the Government irrevocably to make the payment directly to the lenders which would be deemed to be the payments made to the enterprise.

27.3. It shall be specified that the enterprise shall open an escrow account and credit all the revenues from the project and the funds raised for the project to the same before drawing funds from it. This account would be open to inspection to the lenders as well as Government so as to be transparent and lend comfort to the lenders.

28. **SIGNING OF AGREEMENT**

The draft of the concession agreement would have been provided to the bidders prior to the bidding, which shall, inter-alia, include the form of agreement. The concession agreement shall be signed by the successful bidder and the Implementing Agency and the Central Government.

29. **EXCEPTIONAL CIRCUMSTANCES AND FORCE MAJEURE**

29.1. The circumstances, such as, wars, invasion, armed conflict, or act of a foreign enemy, riot, insurrections, acts of terrorism, sabotage criminal, damage or threat of such act, nuclear explosion, radioactive or chemical contamination, any effect of the natural elements, including geological conditions which it was not possible to foresee and to resist, strike of exceptional importance, etc. are beyond the control of either party to the agreement and may cause genuine failure or delay in complying with any obligations under the agreement between the parties. In such events, the Government may suitably extend the concession period sufficiently to compensate the enterprise to offset its losses caused due to any exceptional circumstances. The Enterprise may be required to take out an insurance covering its assets against the risks of damage and providing protection against loss of revenue as a result of occurrence of any exceptional circumstances.

29.2. In case of BOT projects, the financial liability of the Government would be limited, except in cases where the continued collection of tolls by the developer is frustrated by a change in policy of the Govt or force majeure, such as, a law and order situation. In such cases, the concession agreement, which is tripartite agreement between, the developer, the implementing agency and the Central Government would have to provide for a suitable compensation consistent with international norms and practices. As the developer cannot sell the National Highway and recover his assets in the event tolling is suspended, there cannot be any private investment in the road sector unless such compensation is agreed to. Details of the force majeure clauses, that would be incorporated in the concession agreement would be in due course finalised and standardised in consultation with Ministry of Finance, and with the help of experts/consultants. In principle, such clauses would be based on a few and balanced allocation of risks among the participants, reflecting the proposition that risks would be allocated to the entities that are best placed to manage them. It would also be necessary to strike a balance between the need to minimise Government's contingent liability on the one hand and providing acceptable levels of security and comfort to investors and tenders on the other hand.

30. **MANAGEMENT OF THE HIGHWAY STRETCH**

For the purpose of proper management of the highway stretch built through private investment, the enterprise will have powers to regulate and control the traffic on the highway stretch forming part of the agreement between the Government and the enterprise. In order to reduce interference from other authorities, no sales tax and octroi barriers will be established on the highway stretch, but properly designed unified check barriers may be allowed at the inter-state borders, located outside the right-of-way with proper entry/exit layouts.

31. REGULATORY FRAMEWORK

31.1. The Implementation Agency will carry out the Regulatory functions, the upper limit of the user fee applicable for the initial year will be stipulated in the agreement, together with the fee revision formula applicable for the subsequent years and appropriate upper limit of fees shall be notified by the Government from time to time. The enterprise will be free to charge less than such notified fee. The Implementing Agency will ensure that the highway facility is available to all the users on equal terms and no user is charged more than the notified fee, or harassed in any manner or subject to any unfair or restrictive practices. The implementing agency will also ensure that the highway stretch is maintained to the proper standards. The Implementing Agency may carry out surprise and periodic checks, and for any default of the enterprise, suitable penalties on the defaulting enterprise may be imposed by the Implementing Agency in accordance with the concession agreement. Cost of testing, quality assurance, etc., is to be met by the entrepreneur and suitable programme for the same shall be made in this regard.

31.2. The enterprise will be obliged to protect the national interests, like, national security whenever necessary and required. They will abide by various statutory requirements relating to protection of environment, safety, etc., and also abide by the directives issued by the Government/Implementing Agency in this regard from time-to-time, in accordance with the provisions of the Concession Agreement or the Laws in force.

32. TRANSFER OF THE PROJECT TO THE GOVERNMENT

For the purposes of transfer, the project will consist of the assets built within the right-of-way and the junction/inter-section areas (guidelines 20(1)) and the enroute highway related facilities (guideline 20(2)). At the end of the concession agreement, the project in sound condition shall be transferred by the enterprise to the Government free of any cost. The standards to which the project will conform to at the time of its transfer to the Government will be laid down in the concession agreement. Even after the transfer of the project to the Government, the Implementing Agency will continue to exercise control on the highway related developments at the entry/exit points (guideline 20(3) and the advertisements.

33. DISPUTE RESOLUTION

Day-to-day decision on the implementation of the agreements will be made by the Steering group. Any dispute between the Implementing Agency, the Government and the enterprise will be settled under the provisions of Indian Arbitration and Conciliation Act, 1996.

Annexure-I

MINISTRY OF SURFACE TRANSPORT

(Roads Wing)

NOTIFICATION

New Delhi, the 6th February, 1997

GSR. 62(E).—In exercise of the powers conferred by section 9 read with section 8A of the National Highways Act, 1956 (48 of 1956), the Central Government hereby makes the following rules for collection of fees by any person for the use of section, of any National Highway/permanent bridges/temporary bridges on National Highways, namely:—

1. Short title:—(i) These rules may be called the National Highways (Collection of Fees by any person for the use of section of National Highways/permanent bridge/temporary bridge on National Highway) Rules, 1997.

(ii) They shall come into force on the date of their publication in the Official Gazette.

2. Definition:— In these rules, unless the context otherwise require—

(a) 'mechanical vehicle' means any laden or unladen vehicle designed to be driven under its own power, including a motor vehicle, as defined in clause (28) of section 2 of the Motor Vehicles Act of 1988 (59 of 1988).

- (b) 'section of National Highway/permanent bridge/temporary bridge' means that length of National Highway/permanent bridge/temporary bridge on National Highway notified by the Central Government in Official Gazette for the development/maintenance of which an agreement has been entered into between the Central Government and any person.

3. Agreement and rate of fee:—(1) The Central Government may enter into an agreement with any person in relation to the development and maintenance of the whole or any part of a National Highway/permanent bridge/temporary bridge on National Highway as it may decide, whereby the person may be permitted to invest his own funds for the development/maintenance of a section of National Highway/permanent bridge/temporary bridge and to collect and retain the fees at agreed rates from different categories of mechanical vehicles for an agreed period for the use of the facilities thus created, subject to the terms and conditions of the agreement and these Rules.

(2) The rates of fees and the period of collection shall be decided and shall be specified by notification in the Official Gazette by the Central Government having regard to the expenditure involved in building, maintenance, management and operation of the whole or part of such section, interest on the capital invested, reasonable return, the volume of traffic and the period of such agreement

(3) On completion of the period of collection of fees by the person, as per the agreement, all rights pertaining to the section/permanent bridge/temporary bridge on National Highway shall be deemed to have been taken over by the Central Government and that Government shall continue with the collection of fees as notified from time-to-time.

4. Modalities of fee collection. — (1) The mode of fee collection shall be decided by the person referred to in sub-rule (1) of rule 3.

(2) A Table of fees authorised to be collected on any section of National Highway/permanent bridge/temporary bridge on National Highway shall put up by such person in a conspicuous place near a fee collection booth legibly written or printed in English, Hindi and the regional language of the area in which the National Highway is situated.

5. Incharge of fee collection:—(1) The person authorised to collect and retain the fee under these rules shall nominate an official as incharge of fee collection who shall be responsible to ensure that fees are collected at not more than the agreed rates, and the fee collection is smooth without causing undue hardship to the road users and all other matters connected with the fee collection on section of National Highway/permanent bridge/temporary bridge.

(2) The name, address and telephone number, if any, of the incharge of fee collection shall be displayed at suitable and conspicuous locations.

6. Verification of fee collection:—(1) It shall be the responsibility of the person referred to in sub-rule (1) of rule 3 to strictly ensure that all fees leviable are levied, fully collected and correctly maintained. The person shall submit certified and audited copies of the statements of fee collection at specified intervals as required under the notification for fee collection under sub-rule (2) of rule 3. The auditor shall be appointed by the Government.

(2) Central Government shall have the right to check the fee collection at any or all times through their designated officers.

7. Person to have rights to regulate traffic:—The person referred to in sub-rule (1) of rule 3 shall have powers to regulate and control the traffic, on such section of National Highway/permanent bridge/temporary bridge on National Highway relating to which he is authorised to collect fees under these rules, in accordance with the provisions contained in Chapter VIII of the Motor Vehicles Act, 1988 for proper management thereof.

[F.No. RW/NH-11012/1/95-DO-I]

A.D. NARAIN, Director General
(Road Development) & Addl. Secy.

Government of India
Ministry of Surface Transport (Roads Wing)
New Delhi, the 27th August, 1997

G.S.R(E)- In exercise of the powers conferred by section 9 of the National Highways Act, 1956 (48 of 1956) and in supersession of the National Highways (fees for use of permanent bridges) Rules, 1992 except as respects things done or omitted to be done before such supersession, the Central Government hereby makes the following rules to levy the fees for the use of sections of any National Highway or Bridges or both.

1. Short title extent and commencements

- (i) These rules may be called the National Highways (Fees for the use of National Highway Section and permanent Bridge-Public Funded Projects) Rules, 1997
- (ii) They shall come into force on the date of their publication in the Official Gazette

2. Definition

In these rules, unless the context otherwise requires-

- (a) 'Act' means the National Highways Act 1956 (48 of 1956)
- (b) "executing agency" means,
 - (i) In the case of those National Highways administratively placed under the charge of Border Roads Organisation, the Border Roads Development Board (hereinafter referred to as 'BRDB');
 - (ii) In the case of those National Highways or part thereof entrusted to National Highways Authority of India (hereinafter referred to as NHAI), the National Highways Authority of India;
 - (iii) In other cases the State Governments or Union Territory, the Administration to which such functions are delegated under section 5 of the Act;
- (c) "Mechanical Vehicle" means any laden or unladen vehicle designed to be driven under its own power including a motor vehicle as defined in clause (28) of Section 2 of Motor Vehicles Act, 1988 (59 of 1988);
- (d) "Franchisee" means a firm or a company or a person to whom the franchise to collect and retain the fee has been awarded through auction.
- (e) "Fee Inspector" means a person authorised by the executing agency concerned to collect fee in respect of any mechanical vehicle crossing a permanent bridge or using the National Highway Section and includes every Government employee posted on such bridge or National Highway Section in connection with the collection of fees.
- (f) "Form 'A'" means Form 'A' appended to these rules;
- (g) "Form 'B'" means Form 'B' appended to these rules;
- (h) "Form 'C'" means Form 'C' appended to these rules;
- (i) "Pay and Accounts Officer" means Pay and Accounts Officer (National Highway), Ministry of Surface Transport, New Delhi;
- (j) "permanent bridge" means a bridge with permanent structure the cost of which includes, the cost of bridge proper, approach roads, guide bunds and protective works, excluding the cost of toll booths which is more than Rs. 25 lakhs and upto Rs. 100 lakh for each, completed and opened to traffic on or after first day of April, 1976 but before the first day of May, 1992 and thereafter all the bridges costing more than Rs.100 lakhs on National Highway, which shall be notified separately for levy of fee collection, and
- (k) "National Highway Section" means continuous length of any National Highway or Bypass which shall be notified for separately levy of fee collection.
- (l) "Section Officer"/"Junior Engineer" means the officer of the State Public Works Department, (Roads and Building) or any other department dealing with National Highway having that designation or equivalent and being incharge of a particular road or permanent bridge located on a National Highway.

3. Rate of fee and its payment- These shall be levied and paid to the executing agency, on behalf of the Government of India, fee on mechanical vehicles for the use of National Highway Section or permanent bridge or both at the rates notified by the Central Government, in Official Gazette in respect of such National Highway Section or permanent bridge or both.

4. **Displaying of rates of fees** - A Table displaying rates of fees, rates authorised to be levied at any National Highway Section or permanent bridge or both shall be put up in a conspicuous place near the fee collection booths legibly written or printed, in English, Hindi, and the regional language of the area in which National Highway Section or permanent bridge or both are situated.

5. **Procedure for collection** - All fees levied under these rules shall be collected by the executing agency concerned department or through private contractors on the basis of competitive bidding on behalf of the Central Government.

6. **Collection of fees departmentally** - (1) The executing agency concerned shall make necessary arrangement for putting up adequate number of collection booths, operated manually or by automatic arrangement or by combination of both as may be considered suitable by the executing agency.

(2) There shall be posted a Fee Inspector, with necessary police guard to assist at either end of the National Highway section for permanent bridge who shall, be authorised to collect fee in respect of any mechanical, vehicle using the National Highway Section or permanent bridge or both, at the rates notified by the Central Government separately.

(3) There shall be provided at either end of the National Highway Section or permanent bridge or both together, a cross bar for securing the stoppage of mechanical vehicles.

(4) The Fee Inspector shall ensure at the cross bar that passage is not allowed to mechanical vehicles unless the fee leviable in respect thereof has been paid.

7. **Mode of collection of fee in case of departmental fee collection**

- (1) Every driver owner or person incharge of a mechanical vehicle shall, before crossing the National Highway Section or permanent bridge or having crossed it, stop his vehicle at the cross bar and pay the fee leviable in respect of the vehicles at the fee collection booths. The Fee Inspector shall in return, prepare a receipt in duplicate in Form 'A' and hand over one copy of the receipt to the driver or owner or person incharge of the mechanical vehicle.
- (2) Toll collection shall be done only at one place within a distance of 80 km from a point at the beginning of first National Highway Section or approach of entry of the first permanent bridge to be crossed under the jurisdiction of the same executing agency, regardless of number of projects falling within the length in order to facilitate free and unhindered movement of traffic. Where it is not feasible to do so, the number of collection points shall, be kept minimum and shall be decided with the approval of Central Government. The fee may be collected from the driver, owner or person incharge of a vehicle on the first National Highway Section or permanent bridge which is intended to be crossed by such vehicle. The driver, owner or person-in-charge of the vehicle holding the receipt of such payment shall be allowed to pass through other Sections and bridges of such Highway unhindered after showing the receipt to the Fee Inspector posted on other sections or bridges. Details of such Sections and bridges shall be displayed at a conspicuous place near the fee collection booths of the Sections or bridges covered under this sub-rule legibly written or printed in English, Hindi and the regional language of the area in which such Sections or bridges are situated.
- (3) The Fee Inspector shall on receipt of the fee notified by the Central Government fill up a receipt in duplicate in Form 'A' and deliver one copy thereof to the driver, owner or the person-in-charge of the vehicle in respect of which the fee has been paid and return the second copy for record.
- (4) When the same vehicle has to cross the National Highway Section or bridge more than once in a day, the user shall have the option to pay one and a half times of rate notified by the Government while crossing such sections or bridge in the first trip itself, or if the vehicle has to use the section or bridge frequently the vehicle owner can have a monthly pass on the payment of charges equal to 30 single rates.

8. **Remittance of fee collection in case of departmental fee collection**

- (1) The Fee Inspector on duty shall be responsible for the collection and safe custody of the amounts collected during his duty period. The Fee Inspector shall not leave the collection booth till his reliever takes over from him.
- (2) The Fee Inspector shall maintain a cash register as prescribed in Form 'B' and keep it posted up-to-date.
- (3) The Fee Inspector shall at the end of the period of his duty hand over the amount collected by him to his reliever after obtaining the signature of the latter in the relevant column of the cash register.
- (4) Every day between 16.00 hours and 17.00 hours the Fee Inspector on duty shall hand over the entire amount of the fee collected during the preceding 24 hours, to the Sectional Officer/Junior Engineer-in-Charge of National Highway Section or permanent bridge after obtaining his signature in the relevant column of the cash register.
- (5) The Sectional Officer/Junior Engineer-in-Charge shall keep the amounts of collection received from the Fee Inspector in the chest provided for the purpose at his office.

- (6) The Sectional Officer/Junior Engineer-in-Charge shall on every Saturday or if it happens to be a holiday, on the next working day, remit the amount received by him in respect of the week preceding the Saturday by a demand draft to the Pay and Accounts Officer. The Pay and Accounts Officer shall account the amounts so received in the relevant receipt head in his books.
- (7) The Sectional Officer/Junior Engineer-in-Charge shall maintain a register as prescribed in Form 'C' showing the remittance made to the Pay and Accounts officer and shall keep the register posted- up-to-date.
- (8) The Sectional Officer/Junior Engineer-in-Charge shall exercise supervision and control over the staff posted at the National Highway Section or permanent bridge in connection with the collection of the fees and maintain the proper accounts and records,
- (9) The Sub-Divisional Officer, in-charge of the National Highway Section or the permanent bridge shall pay surprise visits at least twice a month at the Offices of the Fee Inspector or the Sectional Officer/Junior Engineer-in-Charge to check that the collection and remittance of fees by the staff is being done in accordance with the provisions of these rules. He shall countersign the cash register and the other record maintained by the staff in token of such visit. Such visit, atleast once in three months shall also be made by the Executive Engineer of the State Public Works Department (Roads and Building) or by the officer of equivalent rank in any other department.

9. Fee collection through franchisee

- (1) In case the fee collection is to be done through the franchisee, the collection of fee and retaining such fee shall be auctioned under the instructions for specific periods as the Central Government may issue and the money shall be collected by the executing agency or his authorised representative as per the terms and conditions of the agreement executed for such purposes.
- (2) The mode of fee collection shall be decided by the franchisee referred to in sub-rule(1) with the approval of the Central Government.
- (3) A table of fees authorised to be collected on any National Highway Section or permanent bridge shall be put up by such franchisee in a conspicuous place near a fee collection booths legibly written or printed in English, Hindi and the Regional language of the area in which the National Highway is situated.
- (4) The franchisee authorised to collect and retain the fee under these rules shall nominate an official as in charge of fee collection who shall be responsible to ensure that fees are collected at not more than the notified rates and the fee collection is smooth without causing hardship to the road users and for all other matters connected with the fee collection on National Highway Section or permanent bridge.
- (5) The name, address and telephone number, if any, of such official incharge of fee collection shall to displayed at suitable and conspicuous locations.
- (6) The executing agency shall remit the auction money so collected from the franchisee by a demand draft to the Pay and Accounts Officer (National Highway), Ministry of Surface Transport, New Delhi. The Pay and Accounts Officer shall account for the amount so received in the relevant receipt head in his books.

10. Special conditions when sections or bridges built by Government are used for developing adjacent Build, Operate & Transfer Projects of private parties

To improve the financial viability of a Build, Operate & Transfer project as decided by the Competent Authority, the concessionaire may be allowed to collect and retain the fees so collected for the full concession period as agreed to in the specific agreement in respect of the facility offered to him under National Highways (collection of fee by any person for the use of section of National Highways/permanent bridges/temporary bridges on National Highways) Rule, 1997 and the facility shall revert back to the Government at the end of concession period and the collection of fee thereafter shall be governed by these rules.

(6) National Highways Section/permanent bridges built under public funding programme and offered for developing further contiguous sections of such National Highway as decided by the Competent Authority shall revert back to the Government at the end of the concession period and the collection of fee thereafter shall be governed by these rules.

11. Tenure of Fee Collection - The fee shall be collected in perpetuity by the executing agency.

12. Submission of returns

- (1) The executing agency concerned in case of departmental fee collection shall furnish returns in the first week of July, October, January and April of every year to the Pay and Accounts Officer containing.
 - (a) Monthwise consolidated statement showing the amount collected and remitted on account of fees proceeds in respect of each National Highway Section or permanent bridge alongwith the details of number and date of demand draft by which the amount has been remitted, and

- (b) Monthwise break-up of the expenditure incurred on each National Highway Section or permanent bridge by the executing agency required to be reimbursed on account of collection of the fees on the basis of actual expenditure incurred.
- (2) The Executing Agency concerned in case of fee collection through franchisee shall furnish to the Pay and Accounts Officer, National Highways, Government of India, Ministry of Surface Transport, New Delhi or any other officer so authorised, the details, regarding the franchise, the amount and the period for which the franchise has been awarded, immediately after the auction for fee collection through such franchisee.

13. **Furnishing of security in case of departmental fees collection** - Every Fee Inspector or the Sectional Officer/Junior Engineer-in-charge shall deposit a cash security of not less than Rs. 1000 by executing a security bond in the prescribed form as laid down in the Treasury Rules with the concerned Executive Engineer or the concerned officer of equivalent rank in any other department.

Form 'A'

[See Rule 7(1)]

R.No.

Receipt for payment of fee

Name of Section/Permanent Bridge

- (1) Description of mechanical vehicle with Registration number
- (2) Whether laden or unladen or with or without passengers
- (3) Time and date of outward journey
- (4) Name of driver and/or owner
- (5) Amount of fee paid

Signature of Fee Inspector

FORM 'B'

[See Rule 8(2)]

Cash Register

Serial No.	Date	Vehicle Number	Name of person paying the fee	Number of receipt by which fee paid	Amount of fee paid	Progressive figures of fee paid	Signatures of fee inspector	Signatures of successive inspector	Signatures of sanctional officer in-charge	Remarks
1	2	3	4	5	6	7	8	9	10	11

GOVERNMENT OF INDIA

MINISTRY OF SURFACE TRANSPORT (ROADS WING)

No. NH-24035/23/94-PL-Vol. III

Dated, the 22nd June, 1997

To

The Secretaries of PWD of all States/Union Territories (dealing with National Highways); Director General (Works), Central Public Works Department, Director General, Border Roads Organisation; Chairman, National Highways Authority of India

Subject : Toll Structures for 4-lane National Highways and other related issues.

Certain measures pertaining to toll structures for 4-lane National Highways and other related issues have recently been taken to attract more investments in the Highway Sector. These are detailed for your information in the following paras.

2. Toll rates on completed 4-lane National Highways annually indexed to Wholesale Price Index (WPI) shall be levied on case-to-case basis which may vary from area-to-area keeping in view the cost of project, financial viability and acceptability criteria, subject to the upper limit as given in the table below with effect from 1.7.1997.

Upper limit of toll structure for 4-lane National Highways

S.No.	Type of Vehicle	Toll rate (in Rupees per km)
1.	Car/jeep/van	0.4
2.	Light commercial vehicle (LCV)	0.7
3.	Truck and buses	1.4
4.	Heavy construction machinery and earth moving equipment	3.0

These rates shall be reviewed periodically by Government of India after every 3 years. Ministry of Surface Transport is authorised to levy higher rates of toll on expressways, major bridges, new bypasses, tunnels and in some exceptional cases (after obtaining approval of High Powered Committee) where so justified by level of traffic after competitive bidding process.

3. National Highways Authority of India/Govt. of India has been authorised to provide capital grants for BOT projects on National Highways not exceeding 40 per cent of the total cost of project.

4. The final decision regarding the quantum of such grants would be taken by the High Powered Committee set-up by Cabinet comprising representatives of Ministry of Finance, Ministry of Law, Planning Commission under the Chairmanship of Secretary, Ministry of Surface Transport, Government of India.

4. Further tax concession as detailed below have now been approved:-

- (i) The period for availing tax holiday/tax reduction for road infrastructure projects is being increased from 12 years to 20 years.
- (ii) The profits from Housing and other development activities which are an integrated part of BOT road projects would be treated as income from "infrastructure" projects for the purposes of tax exemptions/concessions provided, these profits are ploughed back to the development of roads (including repayment of long term debt for the project) on BOT basis within a period of 3 years.
- (iii) Exemptions from import duty on identified high quality construction plants and equipments used in the highway projects has been approved.

The steps for amending the relevant acts/notifications to give effect to the above are being taken separately by Ministry of Finance, Government of India.

5. The land required for Housing and other development activities which are an integral part of Highway projects would be considered as land required for Highway development and such acquisition would be treated as land required for "Public Purpose". Steps for amending the National Highways Act to this effect are being taken separately.

160.19

No. RW/NH-33044/6/2001/S&R(R)

Dated, the 9th February, 2001

To

The Secretaries/Engineer-in-Chiefs/Chief Engineers, PWDs of all State Govts/U.Ts (dealing with National Highways); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Erection of Tax Collection Barriers on National Highways

It has been noticed that tax collection barriers are being put-up on the National Highways by authorities, like, civil supplies department, police, and excise department, forest department, Nagar Palikas and Panchayats, etc. without obtaining prior approval of this Ministry. These barriers are hindrance to the through traffic on National Highways. National Highways are designed as a high speed facilities and erection of barriers hinders free flow of traffic.

2. The policy of this Ministry is not to permit erection of check barriers on National Highways except where Ministry's prior approval is obtained. Check barriers, on National Highways can be provided only in the following two situations:

- (i) Where permission of the Ministry has been obtained for erection of such barriers.
- (ii) Temporary barriers erected in emergent situations like maintenance of law and order or natural calamities, like, floods, earthquake, etc.

3. In case where revenue is to be raised by local authorities, like, municipal corporations or Nagarpalikas, separate laybyes should be provided outside National Highway Right-of-Way for parking of vehicles required to pay toll/tax. Collection of Toll/Tax should not be a hindrance to the through traffic.

4. Parking laybyes as mentioned in para 3 above should be constructed by the authority responsible for the maintenance of the National Highway as deposit work at the cost of the agency requiring it. The laybyes should conform to the standard drawings approved by the Ministry. If these laybyes are to be constructed on National Highway land prior permission of the Ministry should be obtained.

5. In case any barriers have already been set-up in contravention of these requirements laid down in the foregoing paras, these should be removed immediately.

6. This Circular supercedes all the earlier circulars issued for installation of check barriers.

No. NH-11065/27/2001-P&M

Dated, the 21st November, 2001

To

The Chief Secretaries (All State/Union Territories Governments)

Subject : Arrangements for toll collection (Departmentally) in case where delay is visualized in conducting auction.

I am directed to say that National Highways (Fees for the use of National Highways Section and Permanent Bridge-Public funded project) Rules, 1997 notified by the Central Govt. on 27.8.1997 require levy and collection of a fee in perpetuity either departmentally or through private contractors, on all mechanical vehicles for the use of a notified National Highways section/Permanent bridge notified for the purpose.

2. It has come to notice of the Ministry that the State Governments take undue long time in conducting auction and in the meantime do not make any arrangement for toll collection departmentally. As a result, the collection of tolls on National Highways sections/bridges has to be foregone mainly due to avoidable delays at various level in initiating and finalizing the contract for toll collection. These avoidable administrative delays in making arrangement for toll collection by State Chief Engineers result in loss of potential revenue.

3. In view of the above, it is impressed upon all State PWD CE's to initiate advance action in such cases and to make immediate arrangements for departmental collection as an interim measure in case any delay is visualized in conducting auction for collection of toll.

206. CONSULTANTS FOR NH WORKS

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
206.9	RW/NH-34041/62/89-DO II dated 28.8.1998	Guidelines for Selection of Consultants for Highway/ Bridge Projects on National Highways	206/34

No. RW/NH-34041/62/89-DO II

Dated, the 28th August, 1998

To

The Chief Engineers of States/Union Territories (dealing with National Highways); Chairman, National Highways Authority of India; Director General Border Roads; Director General, Central Public Works Department

Subject : Guidelines for selection of Consultants for Highway/Bridge Project on National Highways

The interim guidelines for selection of Consultants for Highway/Bridge Projects on National Highways were circulated vide Ministry's letter of even number dated 12th January, 1990. The provisions in the circular have been reviewed in the Ministry and the following modifications are being communicated for addition :

- (i) Existing guidelines does not provide for any earnest money deposit at the time of submission of proposals in response to letter of invitation from the pre-qualified consultants approved by the Ministry from time-to-time on basis of their technical capability and financial resourcefulness. It has, however, come to the notice of the Ministry that some State Governments are charging EMD at the time of submission itself from pre-qualified consultant. After careful consideration of all related aspects it has been now decided that the earnest money deposit @ 2 per cent of the estimated value of consultancy will be charged for the work more than Rs. 1.0 crore.
- (ii) It is reiterated that the successful bidder shall furnish bank guarantee for an amount of 20 per cent of the total consultancy fees to be received by him for owning responsibility for accuracy of the project as provided in para 7 of the Terms of Reference (TOR) circulated vide Ministry's letter referred to above and other provisions in the same para should be strictly followed
- (iii) The period of validity of the consultancy proposal including the quoted price mentioned in para 10.4 of the guidelines circular referred to above should be modified to 120 days from the stipulated last date for receipt of the proposals.

2. It is requested that contents of this circular may be brought to the notice of all concerned for compliance.

301. SURVEY AND INVESTIGATION

Code No.	Circular No. & Date	Brief Subject	Page No.
301.14	RW/NH-34045/1/95-S&R dated 15.4.1999	Soil/Sub-surface investigation for road and bridge works on NH and other centrally sponsored schemes	301/8
302.	GEOMETRIC DESIGN		
302.16	RW/NH-33044/11/97-S&R dated 28.7.1999	Passing places on Hill Roads	302/16
302.17	RW/NH-33044/11/97-S&R dated 17.11.1999	Passing places on Hill Roads	302/16
303.	PAVEMENT DESIGN		
303.9	RW/NH-33054/20/88-S&R dated 13.7.1998	Provision of paved shoulders along 4-lane carriageway on National Highways Guidelines – regarding	303/16
303.10	RW/NH-33044/8/98-S&R dated 13.11.1998	Use of Blast Furnace Slag for Road Construction	303/16
303.11	RW/NH-33044/14/99/S&R dated 19.11.1999	Need for Road Safety Audit of NHs in respect of existing roads and improvement plans – check list regarding	303/17 to 22

No. RW/NH-34045/1/95-S&R

Dated, the 15th April, 1999

To

The Chief Engineers of States/UTs, PWDs, (dealing with National Highways and other Centrally Financed Schemes); Director General (Works), Central Public Works Deptt.; Director General Border Roads; Chairman, National Highways Authority of India; Engineer-in-Chief, Municipal Corporation of Delhi; The Empanelled Consultants.

Subject : Soil/Sub-surface investigation for road and bridge works on NH and other centrally sponsored schemes

Instances where there has been considerable variation between the subsoil profile as per the subsoil investigation report submitted by the consultants or by the Department and the soil profile actually encountered during execution have come to this Ministry's notice. Recently, one such instance where it resulted in considerable time and cost overrun of the project had become the subject matter of an audit observation. The matter has been viewed seriously and the need for issuing necessary policy circular to all agencies executing this Ministry's projects has been highlighted.

In this context please refer to this office letter of even number dated March 18, 1999 forwarding the list of consultants who have been prequalified and empanelled for subsoil investigations for i) Major Bridges and ii) High embankments and minor bridges. A proforma was enclosed with this letter for submitting the annual performance report of the consultants. It was requested that the performance report of the consultants who had provided subsoil investigation services to your organisation may please be forwarded by the Chief Engineers alongwith their comments.

In this connection, it is further suggested that during investigation stage a responsible officer of the department should be associated and inspections carried out from time-to-time to ensure proper investigation by the consultants. It is also suggested that in case glaring variations in the actual soil profile from that of the report of the consultants are noticed during execution leading to cost and time overrun for the project, in addition to taking action against the consultant as per terms of the contract, the matter may also please be specifically brought to the notice of the Ministry so that this Ministry can consider disqualification of the consultant and/or other suitable actions

[Enclosures to Ministry's Circular No.RW/NH-34045/1/95-S&R dated 15.4.1999]

PERFORMANCE REPORT*

Name of Consultant :

Year :

S. No.	Name of project	Amount of consultancy fee	Date of award	Target date of completion	Actual date of completion	Remarks including reasons for delay, if any.

* Certificate from clients to be enclosed.

No. RW/NH-33044/11/97-S&R

Dated, the 28th July, 1999

To

The Chief Secretaries/Secretaries (PWD/Roads) of all State Governments/UTs/Chief Engineers of States/UTs (dealing with National Highways & Centrally Sponsored Schemes); Director General Border Roads; Chairman, National Highways Authority of India

Subject : Passing Places on Hill Roads

Passing Places are required on single-lane hill roads to facilitate crossing of vehicles approaching from opposite direction and overtaking of slow moving vehicles. These could also be used to tow aside disabled vehicles so that they do not obstruct traffic. The guidelines for provision of Passing Places are already included in the Indian Roads Congress Publications IRC:52-1981 "Recommendations about the Alignment Survey and Geometric Design of Hill Roads" and IRC:SP 48-1998 "Hill Road Manual". According to these guidelines, passing places should be provided in general at the rate of 2-3 per km. The normal size of a passing place is 3.75 m wide, 30 m long on the inside edge (i.e. carriageway side) and 20 m long on the farther side. The exact location needs to be judiciously determined taking into consideration the available extra width and visibility. All the road construction agencies including the Border Roads Organisation are required to follow these guidelines for provision of passing places.

It has, however, been observed that passing places have not been provided at a number of hill roads as per the requirements mentioned in IRC guidelines. It is, therefore, requested that necessary action may be initiated to provide passing places as per IRC guidelines at the required locations on single-lane hill roads as early as possible. Further, in respect of National Highways, estimates for providing such passing places may be forwarded to the Ministry for sanction, wherever found necessary.

No. RW/NH-33044/11/97-S&R

Dated, the 17th November, 1999

To

The Chief Secretaries/Secretaries (PWD/Roads) of all State Governments/UTs/Chief Engineers of States/UTs (dealing with National Highways & Centrally Sponsored Schemes); Director General Border Roads; Chairman, National Highways Authority of India

Subject : Passing Places on Hill Roads

I am directed to refer to this Ministry's Circular No. 302.16 of even number dated 28.07.1999 on the above captioned subject and to say that communication on action taken on para 2 of reference is still awaited in the Ministry. You are, therefore, requested to expedite the same. This may be treated as urgent.

No. RW/NH-33054/20/88-S&R**Dated, the 13th July, 1998****To**

The Chief Engineers of States/Union Territories (dealing with National Highways); Chairman, NHAI; Director General Border Roads; Director General, Central Public Works Department

Subject : Provision of paved shoulders along 4-lane carriageway on National Highway- Guidelines regarding

It has been policy of the Ministry to construct 1.5 m wide paved shoulders in conjunction with the 4-laning of National Highways being undertaken either from the budgetary resources or from the external aids. The matter relating to provision of composition of paved shoulders has been under consideration in the Ministry in view of feed-back received from different quarters in profession.

2. After taking into account the various technical factors and practical consideration, it has been decided that in case of construction of 4-lane divided carriageway, the composition and specification for 1.5 m wide paved shoulders henceforth should be the same as that of main carriageway. This would also help in construction of future traffic lane to be added at a later stage.

3. Even though the paved shoulder in case of 4-lane carriageway would be of same thickness and composition as that of main carriageway, the carriageway edge line shall be marked and adequately maintained in the form of a single continuous white line of 150 mm wide for demarcation of paved shoulder from the main carriageway as a message of caution to the road users. The markings shall be reflectorised. The materials for marking shall conform to clause 5 of IRC : 35-1997-Code of Practice for Road Markings (First Revision).

4. In case of existing 2-lane sections where paved shoulders are being provided, the guidelines circulated vide Ministry's letter of even number dated 10th May, 1989 will continue to govern. However, the surfacing of the shoulder should as far as possible be the same as that of the main carriageway.

5. It is requested that the contents of this circular may please be brought to the notice of all concerned for compliance. Feed-back on the experience with the present guidelines of paved shoulders will be welcome.

No. RW/NH-33044/8/98-S&R**Dated, the 13th November, 1998****To**

The Secretaries/Chief Engineers/UTs of States/Union Territories, Public Works Departments (dealing with National Highways and other centrally sponsored schemes); Chairman, National Highways Authority of India; Director General Border Roads; Director General, Central Public Works Department

Subject : Use of blast furnace slag for road construction

This Ministry has received references from M/o. Environment & Forests and Steel Authority of India Ltd. that steel plants in the country generate large amount of slag but most of this remains unutilized.

2. In this connection it may please be noted that this Ministry's Specifications for Road & Bridge Works (Third Revision) - Clause 401 for granular sub-base, 403 for cement treated sub-base/base and 404 for WBM sub-base/base permit the use of crushed slag for road construction.

3. It is, therefore, requested to consider the utilization of this material for construction of National Highways, State Highways and other category of State Roads provided that the same satisfies the physical requirements/gradings, etc. stipulated in the relevant clauses and also cost-effective. This will be an environment friendly measure and would also lessen the burden of procuring natural aggregates. Feedback on its utilization may please be reported to the Ministry from time-to-time.

4. This may please be brought to the notice of all concerned officers in your organization/department.

No. RW/NH-33044/14/99/S&R

Dated, the 19th November, 1999

To

The Secretaries/Chief Engineers of States/UTs of States/Union Territories, PWDs (dealing with NHs and centrally sponsored schemes); Secretary, BRDB; Chairman, National Highways Authority of India; Director General Border Roads

Subject : Need for Road Safety Audit of NHs in respect of existing roads and improvement plans - checklist regarding

The increasing problem of road accidents and the losses due to the same in terms of injuries, impairments and fatalities have become an issue needing utmost consideration in the country in the context of continuous increase in the length of road network and the rise in the vehicle population.

2. While the current trends of road accidents on the NHs in the country give enough cause for concern the limited resources position compels us to ensure that the available allocations are used most effectively so that the most appropriate safety measures are introduced for maximum benefit. In India, at present there is no model or mechanism developed to evaluate the degree of safety of road sections on a road network. The 'Manual for Safety in Road Design' published by the MOST highlights appropriate design principles for promoting safety conscious road design and should be used as a guide by the highway engineers and planners to make our roads more safe. Chapter 6 of the Manual highlighting the procedures and code of good practice for safety audit, contains a checklist to serve as a guide to ensure that important safety aspects do not get overlooked.

3. A copy of the above checklist is enclosed for ready reference. As may be seen the checklist provides guidelines on the principal issues that need to be examined at various stages viz;

- (i) during feasibility study;
- (ii) completion of preliminary design;
- (iii) completion of detailed design;
- (iv) completion of construction; and
- (v) existing roads

4. It is requested that all out efforts may be made to ensure that the checklists are appropriately used at the various stages as mentioned above and duly filled checklist should invariably be enclosed with every proposal for development of NHs in future.

5. Any difficulty in the use of the checklist as observed at your end may be reported to the Ministry for clarifications/guidance. It is requested that a report in this regard be furnished to the Ministry to serve as a feedback for further refinement of the checklists.

[Enclosure to Ministry's Circular No. RW/NH-33044/14/99/S&R dated 19th Nov., 1999]

6.4. Checklists

The use of checklist is highly recommended as they provide a useful "aide memoire" for the audit team to check that no important safety aspects are being overlooked. They also give to the project manager and the design engineer a sense of understanding of the place of safety audit in the design process. The following lists have been drawn up based on the experience of undertaking systematic safety audit procedures overseas. This experience indicates that extensive lists of technical details has encouraged their use as "tick" sheets without sufficient thought being given to the processes behind the actions. Accordingly, the checklists provide guidelines on the principle issues that need to be examined during the course of the safety audits.

Table 6.4.1. Stage F - During Feasibility Study

1. The audit team should review the proposed design from a road safety perspective and check the following aspects.	
CONTENTS	ITEMS
Aspects to be checked	A. Safety and operational implications of proposed alignment and junction strategy with particular references to expected road users and vehicle types likely to use the road. B. Width options considered for various sections. C. Departures from standards and action taken. D. Provision for pedestrians, cyclists and intermediate transport. E. Safety implications of the scheme beyond its physical limits, i.e., how the scheme fits into its environs and road hierarchy.
A1 : General	➤ Departures from standards ➤ Cross-sectional variation ➤ Drainage ➤ Climatic conditions ➤ Landscaping ➤ Services apparatus ➤ Lay-byes ➤ Footpaths ➤ Pedestrian crossings ➤ Access (minimise number of private accesses) ➤ Emergency vehicles ➤ Public Transport ➤ Future widening ➤ Staging of contracts ➤ Adjacent development
A2 : Local Alignment	➤ Visibility ➤ New/existing road interface ➤ Safety aids on steep hills
A3 : Junctions	➤ Minimise potential conflicts ➤ Layout ➤ Visibility
A4 : Non-motorised Road Users Provision	➤ Adjacent land ➤ Pedestrians ➤ Cyclists ➤ Non-motorised vehicles
A5 : Signs and Lighting	➤ Lighting ➤ Signs/Markings
A6 : Construction and Operation	➤ Buildability ➤ Operational ➤ Network management

Table 6.4.2. Stage 1 - Completion of Preliminary Design

1. The audit team should review the proposed design from a road safety perspective and check the following aspects.	
CONTENTS	ITEMS
Aspects to be checked	A. Safety and operational implications of proposed alignment and junction strategy with particular references to expected road users and vehicle types likely to use the road. B. Width options considered for various sections. C. Departures from standards and action taken. D. Provision for pedestrians, cyclists and intermediate transport. E. Safety implications of the scheme beyond its physical limits, i.e., how the scheme fits into its environs and road hierarchy.
B1 : General	➤ Departures from standards ➤ Cross-sectional variation ➤ Drainage ➤ Climatic conditions ➤ Landscaping ➤ Services apparatus ➤ Lay-byes ➤ Footpaths ➤ Pedestrian crossings ➤ Access (minimise number of private accesses) ➤ Emergency vehicles ➤ Public Transport ➤ Future widening ➤ Staging of contracts ➤ Adjacent development
B2 : Local Alignment	➤ Visibility ➤ New/existing road interface ➤ Safety aids on steep hills
B3 : Junctions	➤ Minimise potential conflicts ➤ Layout ➤ Visibility
B4 : Non-motorised road users Provision	➤ Adjacent land ➤ Pedestrians ➤ Cyclists ➤ Non-motorised vehicles
B5 : Signs and Lighting	➤ Lighting ➤ Signs/Markings
B6 : Construction and Operation	➤ Buildability ➤ Operational ➤ Network management

Table 6.4.3. Stage 2 - Completion of Detailed Design

1. The audit team should satisfy itself that all issues raised at Stage I have been resolved. Items may require further consideration where significant design changes have occurred. 2. If a scheme has not been subject to a Stage I audit, the items listed in Checklists B1 to B6 should be considered together with the items listed below:-	
CONTENTS	ITEMS
Aspects to be checked	A. Any design changes since Stage 1. B. The detailed design from a road safety viewpoint, including the road safety implications of future maintenance (speed limits; road signs and markings; visibility; maintenance of street lighting and central reserves).
C1 : General	➤ Departures from standards ➤ Drainage ➤ Climatic conditions ➤ Landscaping ➤ Services apparatus ➤ Lay-byes ➤ Access ➤ Skid-resistance ➤ Agriculture ➤ Safety fences ➤ Adjacent development
C2 : Local Alignment	➤ Visibility ➤ New/Existing road interface
C3 : Junctions	➤ Layout ➤ Visibility ➤ Signing ➤ Lighting ➤ Road markings ➤ T.X. Y- junctions ➤ All roundabouts ➤ Mini roundabouts ➤ Traffic signals
C4 : Non-motorised road users Provision	➤ Adjacent land ➤ Pedestrians ➤ Cyclists ➤ Non-motorised vehicles
C5 : Signs and Lighting	➤ Advanced direction signs ➤ Local traffic signs ➤ Variable message signs ➤ Other traffic signs ➤ Lighting
C6 : Construction and Operation	➤ Buildability ➤ Operational ➤ Network management

Table 6.4.4. Stage 3 - Completion of Construction (prior to opening)

1. The audit team should check that the design drawings have been accurately translated into the scheme as constructed and that no inherent safety defect has been incorporated into the works. 2. Particular attention should be paid to design changes which have occurred during construction.	
CONTENTS	ITEMS
Aspects to be checked	A. That previously agreed recommendations have been incorporated. B. That there are no previously unidentified problems, so far as is possible (signs obscuring visibility, misleading information conveyed to motorists/pedestrians, etc.) C. Check to be carried out in daylight and at night.
D1 : General	➤ Departures from standards ➤ Drainage ➤ Climatic conditions ➤ Services apparatus ➤ Access ➤ Skid-resistance ➤ Safety fences ➤ Adjacent development ➤ Bridge parapets
D2 : Local Alignment	➤ Visibility ➤ New/existing road interface
D3 : Junctions	➤ Visibility ➤ Road markings ➤ Mini roundabouts ➤ Traffic signals
D4 : Non-motorised road users Provision	➤ Adjacent land ➤ Pedestrians ➤ Cyclists ➤ Non-motorised vehicles
D5 : Signs and Lighting	➤ Signs ➤ Variable message signs
D6 : Operation	➤ Maintenance ➤ Network management

Table 6.4.5. Existing Roads

1. The audit team should check the existing road from a road safety perspective and check the following aspects.	
CONTENTS	ITEMS
Aspects to be checked	A. Safety and operational implications of alignment and junctions, with particular reference to road users and vehicle types currently using road B. Departures from current standards C. Provision for pedestrians, cyclists and intermediate transport D. Road safety implications on maintenance E. Check to be carried out in daylight and at night
E1 : General	➤ Departures from standards ➤ Drainage ➤ Climatic conditions ➤ Landscaping (maturity) ➤ Services apparatus ➤ Access ➤ Skid resistance ➤ Safety fences ➤ Adjacent development ➤ Bridge parapets
E2 : Local Alignment	➤ Visibility ➤ New/existing road interface ➤ Safety aids on steep hills
E3 : Junctions	➤ Layout ➤ Visibility ➤ Road signs markings ➤ T, X, Y-junctions ➤ All roundabouts ➤ Mini roundabouts ➤ Traffic signals
E4 : Non-motorised road users Provision	➤ Adjacent land ➤ Pedestrians ➤ Cyclists ➤ Non-motorised vehicles
E5 : Signs and Lighting	➤ Lighting ➤ Signs ➤ Variable message signs
E6 : Operation	➤ Maintenance ➤ Network management

402. MATERIALS

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
4023	RW/NH-33044/30/2001 – S&R dated 29.11.2001	Use of Flyash in Road Construction	402/3

No. RW/NH-33044/30/2001-S&R(R)

Dated, the 29th November, 2001

To

The Secretaries, Public Works Departments/Chief Engineers of States/Union Territories (dealing with National Highways); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Use of Flyash in road construction.

You may please be aware that the flyash is available in plenty as industrial by-products at thermal power plants in the country. Studies reveal that flyash has potential for use as road construction material. Flyash has been successfully used in approaches to bridges and flyovers with requisite quality control. Maximum possible utilization of the flyash would lessen the burden of procurement of soil and other fill materials for embankment construction besides being an environmental friendly measure. Flyash has also use in soil- stabilization and concrete works in pavement sub base and course construction.

The Indian Roads Congress has recently published Special Publication No. 58 "Guidelines for Use of Flyash in Road Embankments". Guidelines for use of flyash in sub-base and base construction are available in IRC codes, viz., IRC:74 and IRC:88.

The Ministry of Environment and Forests in their notification dated 14.9.1999 has prescribed the use of flyash construction of road, embankments or any other construction activity. This notification inter-alia provides fly ash to be available at source without any payment for at least ten years from the date of notification.

It is, therefore, requested that use of flyash should be included in specifications of road construction especially in the areas where flyash is available in plenty within economical leads. The feedback on its utilization may please be reported to the Ministry from time-to-time.

404. BITUMINOUS CONSTRUCTION

Code No.	Circular No. & Date	Brief Subject	Page No.
404.17	RW/NH-33029/1/97-S&R dated 8.8.1997	Specification of Aggregates in Bituminous Work – Use of Anti-stripping Agents	404/33
404.18	RW/NH-34041/86/90 S&R (Vol.II) dated 21.4.1999	Use of Rubber and Polymer modified Bitumen in Road Works	404/33 to 40
404.19	RW/NH-33044/3/98-S&R dated 22.10.1999	Guidelines on Selection of Grade of Bitumen	404/41
404.20	RW/NH-34041/36/90-S&R (Vol.II) dated 10.11.1999	Use of Rubber and Polymer modified Bitumen in Road Works	404/41 & 42
404.21	RW/NH-34041/36/90-S&R (Vol. II) dated 11/17.1.2000	Use of Polymer and Rubber modified Bitumen in Road Works on National Highways and other Centrally Sponsored Schemes	404/42
404.22	RW/NH-34041/36/90-S&R (Vol. II) dated 5.6.2000	Use of Rubber and Polymer modified Bitumen in Road Works	404/42 & 43
404.23	RW/NH-33044/3/99-S&R dated 12.6.2000	Use of Bitumen Emulsion in Road Works – Clause 503.3.2. of MOST Specifications.	404/43
404.24	RW/NH-34041/36/90-S&R (Vol. III) dated 21.8.2000	Use of Rubber and Polymer modified Bitumen in Road Works	404/44 to 46
404.25	RW/NH-34041/36/90-S&R (Vol.III) dated 5.10.2000	Use of Rubber and Polymer modified Bitumen in Road Works	404/46
404.26	RW/NH-35074/7/2002-S&R ® dated 3.4.2001	Ensuring the use of paving grade bitumen in Road Works having a minimum softening point of 45°C.	404/47
404.27	RW/NH-33044/10/2000-S&R ® dated 23.4.2001	Quantum of profile corrective course for works on National Highways	404/47
404.28	RW/NH-35072/1/2001-S&R ® dated 21.6.2001	Use of Rubber and Polymer modified Bitumen in Road Works	404/48

No. RW/NH-33029/1/97-S&R

Dated, the 8th August, 1997

To

The Chief Engineers of States/Union Territories/Public Works Departments (dealing with National Highways & Other Centrally Sponsored Schemes); Director General (Works), Central Public Works Department; Director General Border Roads; Chairman, National Highways Authority of India

Subject : Specification of Aggregates in Bituminous Work - Use of Anti-stripping Agents

As you are aware, separation of bituminous binder from aggregate in presence of water is cause of disintegration of surfacing of pavement and development of potholes. To reduce stripping effect of water in the Third Revision of Ministry's Specifications for Road & Bridge Works published in 1995, maximum stripping value of aggregate has been reduced from 25 per cent to 5 per cent and maximum water absorption from 22 per cent to 2 per cent as compared to earlier specification. In Table 500-3 and Table 500-8 of the present specification, the retained coating of aggregate has been prescribed as 95 per cent minimum and water absorption as 2 per cent maximum.

2. In Clause 504.2.2.1 and 507.2.2 of Ministry's Specifications, it has been indicated that the aggregate shall be preferably hydrophobic and of low porosity and in cases where hydrophilic aggregates are to be used, the bitumen shall be treated with anti-stripping agents of approved quality.

3. In cases where aggregates do not meet the specifications given in para 1 above, the actual dose of anti-stripping compound to be used in bitumen shall be determined as per tests indicated in Appendix-5 of Ministry's Specification, such that there is no stripping of aggregate. The dose shall, however, neither be less than the values indicated in Appendix-5 nor more than 1 per cent. If the dose for no stripping is more than 1 per cent, the anti-stripping compound is not as per Ministry's Specification (Table A5-1 - Appendix-5).

4. To minimize damages to roads due to removal of binders particularly during the rains, it is requested that above specification may be followed in all NH works.

No. RW/NH-34041/86/90-S&R/Vol. II)

Dated, the 21st April, 1999

To

The Secretaries/Chief Engineers of States/Union Territories, Public Works Departments, (dealing with National Highways and Other Centrally Sponsored Schemes); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Use of rubber and polymer modified bitumen in road works

It has been a general experience that flexible pavements with bituminous surfacing develop pre-mature distress inter-alia due to factors, like, traffic intensity, overloading, climatic conditions, etc. The accelerated deterioration of flexible pavement burdens the scarce maintenance budget which in turn affects the available resources for new corridors. This situation has led to development of improved pavement materials and techniques in road construction.

2. The technology for use of modified bitumen in construction and maintenance of road is now a fairly established practice. The technology has been trial tested under Ministry's sponsored research scheme (R-54) by CRRl and also through R&D works undertaken by other research institutions of the country.

3. Considering its improved performance, it is suggested that use of rubber/polymer modified bitumen may be introduced in surfacing course of Pre-mix Carpet, M.S.S., Semi-Dense Bituminous Carpet and Bituminous

Concrete, as the case may be on the heavily trafficked section of National Highway and performance of the same compared with that of work with conventional bitumen. A report on the feedback may please be sent to the Ministry six monthly for the complete life cycle of the renewal for that specific km. In order to have a proper comparison, a continuous stretch of at least 5 km be considered for renewal with modified bitumen. It has been decided that the State Chief Engineers shall use it in at least 10 per cent length of periodical renewal programme starting from 1999-2000 in each State. The additional cost towards use of modified bitumen (about 15 to 25 per cent of overall cost for each km) may be met from funds for periodical renewal placed with the State Government by suitably adjusting the overall length of renewal programme. In case of original works the additional cost may be included in project estimates of Annual Plan. The stretches where the treatment is to be adopted during the current year may be identified in consultation with the Regional Officer.

4. Guidelines on use of rubber and polymer modified bitumen in road works are separately under finalization by Flexible Pavement Committee of Indian Roads Congress. However, based on interim report received from CRRI on study, guidelines on rubber and polymer modified bitumen in surface course during the current year have been prepared by the Ministry. A copy of the same is enclosed for adoption during execution.

5. This may please be brought to the notice of all concerned officers in your organization/department.

[Enclosure to Ministry's Circular No.RW/NH-34041/86/90-S&R (Vol. II) dated 21st April, 1999]

GUIDELINES FOR THE USE OF RUBBER AND POLYMER MODIFIED BITUMEN IN ROAD WORKS

1. INTRODUCTION

Flexible pavements with bituminous surfacings are widely used in India. The high traffic intensity in terms of commercial vehicles and the serious overloading of trucks have been responsible for early development of distress symptoms, like, undulations, rutting, cracking, deformations and pot-holing of pavements. A factor which causes further concern in India is the high range of temperature in most parts of the country. Under these conditions, pavements tend to become soft in summer and brittle in winter. Investigations in countries abroad have revealed that the properties of bitumen and bituminous mixtures can be modified by incorporation of certain additives. These additives are known as modifiers and the bitumen treated with modifiers is known as modified bitumen. The use of modified bitumen is now a fairly established practice in some countries abroad. In India also, limited studies have been encouraging. The technology has been trial tested by C.R.R.I., HRS, Chennai, GERI under research schemes sponsored by the Ministry and R&D works undertaken by other Research Institutions of the country. The guidelines contained here are based on international and available Indian experience. These guidelines are tentative and if required, the same shall be modified on the basis of feedback received from the users.

2. ADVANTAGES OF BITUMEN MODIFIERS

With a careful selection of modifiers, it is expected that the properties of bitumen and bituminous mixtures will get considerably improved. Life of the periodical maintenance and overlays gets enhanced by about 1.5 times resulting in reduced frequency of maintenance renewals. The choice will, thus, ultimately be based on the life-cycle-costing of the construction using conventional bitumen and modified bitumen.

The advantages of modified bitumen are :

- Lower susceptibility to temperature variations
- Higher resistance to deformations/wear and tear
- Better adhesion between aggregates and binder
- Increase in fatigue life
- Resistance in reflective cracking

3. TYPES OF ADDITIVES FOR BITUMEN MODIFICATION

A variety of additives are used for modification of bitumen. The degree of modification depends on type of polymer and rubber, its dose and nature of the bitumen. The classification of modifiers and their optimum dose level is indicated in Table 1.

Table 1. Types of Bitumen Modification

Type of modifiers	Example	Dose level. % by –wt. of bitumen
1. Plastics • Thermoplastics • Thermosets	Polyethylene (PE) Ethylene Vinyl acetate (EVA)	2-4 3-5
2. Elastomers • Natural rubber • Synthetic elastomers	Dry rubber content Styrene butadiene copolymer (SBR) Styrene butadiene Styrene block copolymer (SBS)	2-4 3-5
3. Reclaimed rubbers	Tyre Crumb Powder	10-12
4. Fibres	Polyester, Polypropylene	2-5

4. APPLICATIONS OF MODIFIED BITUMEN IN CONSTRUCTION AND MAINTENANCE OF PAVEMENTS

The use of modified bitumen needs to be encouraged for special applications. The suggested area of applications are:

- (i) stress absorbing membranes (SAM) for sealing of cracks.
- (ii) stress absorbing membranes interlayer (SAMI) for delaying reflection cracks
- (iii) surface dressing for roads high traffic
- (iv) surfacing, such as, PC, SDBC, BC at National Highways and Expressways

5. REQUIREMENT OF ADDITIVES FOR BITUMEN MODIFICATION

When used as bitumen modifier, selected polymer/rubber alone or blend of polymers should :

- be compatible with bitumen
- be blended with bitumen so that it disperses thoroughly with bitumen prior to use
- improve the temperature susceptibility of bitumen
- resist degradation at bitumen mixing temperature
- be capable of being processed by conventional mixing plants and laying machinery
- produce coating viscosity at application temperature
- maintain premium properties during storage, application and in service
- be cost-effective considering life cycle cost

6. PROPERTIES AND TEST METHOD FOR MODIFIED BITUMEN

The properties of materials and modified binder shall be as indicated in Tables 2, 3, 4 and 5

Table 2. Requirement of Crumb Rubber Modified Bitumen

S. No.	Characteristic	Grade % Requirement of CRMB			Method of Test
		CRMB 50	CRMB 55	CRMB 60	
1.	Penetration at 25 °C 0.1 mm	70-90	50-70	30-50	IS:1203 –I 978
2.	Softening Point °C	45-55	50-60	55-65	IS : 1205-1978
3.	Elastic recovery % at 15°C	Min. 40	Min. 35	Min. 30	ASTMD : 5840-96
4.	Penetration of residue after TFOT, %	Min. 60	Min. 60	Min. 60	IS : 1203-1978
5.	Increase in softening point of residue after TFOT, °C	Max. 5	Max. 5	Max. 5	IS : 1205-1978
6.	Elastic recovery of residue after TFOT, %	Max. 25	Max. 20	Max. 15	ASTMD: 5840-96

Table 3. Requirement of Crumb Rubber Powder

Sl. No.	Characteristics	Requirement
	Particle Size	0.15 mm to 0.60 mm
1.	Quantity	9.12 per cent
2	Ash content	Max. 5 per cent
3	Initial decomposition temperature	Above 200°C

Table 4. Requirements of Elastomer (SBS or Natural Rubber Modified Binders)

Sl. No.	Characteristic	Grade and Requirements		Method of Test
		PMB 70	PMB 40	
1.	Penetration, 20°C, 0.1 mm	50-90	30-50	IS : 1203 - 1978
2.	Penetration, 4°C 0.1 mm	30-40	20-35	IS : 1203 - 1978
3.	Softening point (R&B), °C	45-65	66-90	IS : 1205 - 1978
4.	Viscosity, 135°C, Poise	Max. 2000	Max. 2000	IS : 1206 - 1978
5.	Ductility at 27°C, cm	+ 50	+ 40	IS : 1208-1978
6.	Flush Point, COC, °C	220 Min.	220 Min.	IS : 1209 - 1978
7.	Elastic recovery, % at 15°C	+ 60	+ 60	ASTM D-5840-96 Summary at Appendix -I
8.	Tests on residue after thin film oven test at 163°C, 5 hours			IS : 9392-1982
	★ Weight loss %	Max. 1.0	Max. 1.0	IS : 9382-1982
	★ Penetration at 25°C, %	Min. 60	Min. 60	IS : 1203-1978
	★ Increase in softening point, °C	Max. 6	Max. 7	IS : 1205 - 1978
	★ Elastic recovery, % at 15°C	Min. 40	Min. 40	ASTM D-5840-96
9.	Penetration ratio, %	Min. 35	Min. 40	IS : 1203-1978
10.	Fraass Breaking point, °C	Max. -16	Max. 14	IS : 9381-1978
11.	Separation, difference in softening point, °C	Max.3.0	Max. 3.0	ASTM D 5976-96 Summary at Appendix -II

Table 5. Requirements of Polymer Thermoplastics Based Modified Binders :

Sl No.	Characteristic	Grande and Requirements		Method of Test
		PMB 70	PMB 40	
1.	Penetration, 25°C, 0.1 mm	50-90	30-50	IS : 1203 - 1978
2.	Penetration, 4°C 0.1 mm	30-40	20-35	IS : 1203 - 1978
3.	Softening point (R&B), °C	48 to 58	59 to 68	IS : 1205 - 1978
4.	Frass breaking point, °C	Max. -12	Max. -12	IS : 9381 - 1978
5.	Ductility at 27°C, cm	Min. 40	Min. 40	IS : 1208-1978
6.	Flush Point, COC, °C	Min. 220	Min. 220	IS : 1209 - 1978
7.	Elastic recovery, of half thread ductilometer at 15°C %	Min. 40	Min. 40	ASTM D-5976-96
8.	Viscosity at 150°C, poise	5-10	6-15	IS : 1206-1978
9.	Separation, Difference in softening point, °C	Max. 3	Max. 3	ASTM 5976-96
10.	After thin film oven test at 163°C, for 315 minutes, loss in weight,%	Max. 1.0	Max. 1.0	IS : 9382-1982
	• Increase in softening point °C	Max. 6	Max. 5	IS : 1205-1978
	• Reduction in penetration %	Max. 35	Max. 30	IS : 9382-1982
	• Elastic recovery of half thread in ductilometer at 15°C	Min. 35	Min. 35	ASTMD 5976-96

7. SELECTION CRITERIA FOR MODIFIED BINDERS FOR DIFFERENT APPLICATION

CRMB 50 and PMB 70 for cold climate Zone.

CRMB 55, CRMB 60 and PMB 40 for high temperature Zone.

8. REQUIREMENTS OF POLYMER AND RUBBER MODIFIED MIXES

Extensive laboratory and field studies have established better resistance of rubber/polymer modified mixes to deformation, fatigue cracking, stripping and ageing. Mixes can be designed by Marshall method of mix design. The suggested design criteria are given in Table 6

Table 6. Requirements of PMB Mixes

Description	DBM	SBC	BC
Marshall stability at 60°C, kg	820 (min.)	1050 (min.)	1200 (min.)
Marshall flow, mm	2.4 to 3.6	2.5 to 4.0	3.0 to 4.5
Marshall quotient, kg/mm	300	400	400
Air voids in mix	3-5	3-5	3-5
Binder content by weight of mix, %	4.5 (min.)	4.5 (min.)	5.0 (min.)
Loss of stability of mix after immersion in water 60°C, 24 hours % Retained Stability.	75 (min.)	80 (min.)	85 (min.)

9. HANDLING OF MODIFIED BINDERS AND MIXES AT SITE

During laying of various test stretches the experience has shown that a good circulation system is needed to ensure that modified bitumen retains its premium properties. Temperature of mixing and rolling should be slightly higher than conventional bituminous mixes. Requirement of temperature at different stages is given in Table 7.

Table 7. Requirement of Temperature

Stage	Temperature, °C
Binder at mixing	170 - 180
Mix at plant	145 - 155
Mix at site	120 - 140
Rolling at site	110 - 135

The hot mix construction using modified bitumen should be done when atmospheric temperature is above 15°C.

10. BLENDING OF MODIFIER WITH BITUMEN

Modifiers, like, EVA, PE and crumb rubber based products can be easily blended with the molten bitumen at 140°C to 160°C using a suitable mechanical stirrer at site. The blending time is 20 to 40 minutes, as recommended by the manufacturers.

Natural rubber can be blended with bitumen at 140°C to 160°C in a boiler equipped with paddle or shear type stirrer. Blending is usually continued for a period of 2 hours.

SBS type modifiers are blended with shear type agitators. Bitumen is heated to a temperature of 160°C when the modifier is added and the stirring is continued for 90 to 120 minutes. The blending can be done in a central plant or in the refinery.

11. SPECIFICATIONS AND CONSTRUCTION METHODOLOGY

The specifications and construction methodology for various items of work using modified bitumen are generally the same as those with ordinary bitumen, except for any special considerations which the manufacturer may indicate.

12. COST BENEFIT ANALYSIS

Life cycle costing is an economic evaluation technique in which all significant cost for construction and maintenance of roads are considered in terms of discounted cost over the period of time that the facility is required. Considering 1.5 times increase in life of overlay as proved by field trials, frequency of overlaying can be minimised. Comparing cost of 60/70 bitumen with modified bitumen, the latter would be about 50 per cent expensive at an independent blending unit and about 30 per cent expensive at refinery. Since, other component of the cost of construction would be same, the overall increase in cost of overlaying will be about 15 to 25 per cent higher. For design life of 12 years, three renewals of 60/70 bitumen mix would be required while using modified bitumen, only two renewals are sufficient for periodic maintenance. Incorporating cost of construction and 2 per cent escalation per year, the computation of routine maintenance expenditure would be as per typical calculation given in Table 6. It is evident from data given in Table 8 that routine maintenance cost can be reduced to about 22 to 30 per cent. If cost of interest, safety and road user is taken in account, the saving may be substantial.

Table 8. Cost Benefit Analysis of Using Modified Bitumen (Unit 1000 m²)

Traffic intensity	No. of overlays required		Cost of (Rs.) 1 st Overlay		Cost of (Rs.) 2 nd Overlay		Cost of (Rs.) 3 rd Overlay		Total (Rs.)	
	60/70	SBS Mod	60/70	SBS Mod	60/70	SBS Mod	60/70	SBS Mod	60/70	SBS Mod
> 4500 (40 mm 8°C)	3	2	93487	112560	103217	126760	110642	-	307346	239320
1500-4500 (25 mm SDBC)	3	2	58316	69550	64386	78324	69693	-	192395	147874
>1500 (20 mm OGPC)	3	2	43946	52455	48520	59061	52519	-	144985	111516

Appendix-I

Summary of Elastic Recovery Test

2.1. *Scope* : The elastic recovery of a polymer-modified bitumen is evaluated by the percentage of recoverable strain measured after elongation. Unless otherwise specified, the test shall be made at a temperature of 25 ± 0.50 C (77 ± 0.90 °F) and with a speed of 5 cm/min $\pm$ 5 per cent.

2.2. *Referenced Documents*-Test Method IS:1208 and Specification E-1.

2.3. *Apparatus*

2.2.3.1. *Mould*, similar in design to that described for use in the ductility test, Test Method IS:1208, Fig. 1, except that the sides of the mould assembly, parts a and a', shall have straight sides producing test specimen with a cross-sectional area of 1cm².

2.2.3.2. *Water Bath*, maintained at the specified test temperature, varying not more than 0.1°C (0.18°F) from this temperature. The volume of water shall not be less than : 10 litres and the specimen shall be immersed to a depth of not less than 10 cm and shall be supported on a perforated shelf not less than 5 cm from the bottom of the bath.

2.2.3.3. *Testing Machine*, for pulling the briquet of bituminous material apart. Any apparatus may be used that is so constructed that the specimens will be immersed completely in the water as specified while the two clips are pulled at par at a uniform speed without undue vibration.

2.2.3.4. *Thermometer*-An ASTM or 63°C or 63°F thermometer shall be used.

2.2.3.5. *Scissors*-Any type of conventional scissors capable of cutting polymer-modified asphalt at the test temperature.

2.2.4. *Procedure*

2.2.4.1. Prepare the test specimens and conditions as prescribed in Test Method IS:1208.

2.2.4.2. Elongate the test specimen at the specified rate to a deformation of 20 ± 0.25 cm.

2.2.4.3. Immediately, cut the test specimen into two halves at the midpoint using the scissors. Keep the test specimen in the water bath in an undisturbed condition for 1 h.

2.2.4.4. After the 1 h time period, move the elongated half of the test specimen back into position near the fixed half of the test specimen so the two pieces of polymer-modified bitumen just touch. Record the length of the recombined specimen as X.

- 2.2.5. *Report*- Calculate the percent recovery by the following procedure :

$$\text{recovery, \%} = \frac{10 - X}{10} \times 100$$

- 2.2.6. *Precision and Bias* - The precision and bias of the elastic recovery test has not been determined ASTM subcommittee D 4.44 is developing a test method.

Appendix-II

Summary of Separation Test

- 3.1. *Scope* - The separation of polymer and asphalt during hot storage is evaluated by comparing the ring by ball softening point of the top and bottom portions from a conditioned, sealed tube of polymer - modified asphalt. The conditioning consists of placing a sealed tube polymer - modified asphalt in a vertical position at $163 \pm 5^\circ\text{C}$ ($325 \pm 10^\circ\text{F}$) in an oven for a 48 - h period.
- 3.2. *Referenced Documents* - Test Method D 36 at Specification E II.
- 3.3. *Apparatus*
- 3.3.1. *Aluminium Tubes*⁶ : 25.4-mm (1 in.) diameter by 139.7 mm (5.5 in.) length blind aluminium tubes used to hold the test sample during the conditioning.
- 3.3.2. *Oven*: capable of maintaining $163 \pm 5^\circ\text{C}$ ($325 \pm 10^\circ\text{F}$).
- 3.3.3. *Freezer*: capable of maintaining $-6.7 \pm 5^\circ\text{C}$ ($20 \pm 10^\circ\text{F}$).
- 3.3.4. *Rack*: capable of supporting the aluminium tubes in a vertical position in the oven and freezer.
- 3.3.5. *Spatula and Hammer*: The spatula must be rigid and sharp to allow cutting of the tube containing the sample when at a low temperature.
- 3.4. *Procedure*
- 3.4.1. Place the empty tube with the sealed end down in the rack
- 3.4.2. Carefully heat the sample until sufficiently fluid to pour. Care should be taken to avoid localized overheating. Strain the melted sample through a No. 50 sieve conforming to Specification E-II. After thorough stirring, pour 50.0 g into the vertically held tube. Fold the excess tube over two times and crimp and seal.
- 3.4.3. Place the rack containing the sealed tubes in a $163 \pm 5^\circ\text{C}$ ($325 \pm 10^\circ\text{F}$) oven. Allow the tubes to stand undisturbed in the oven for a period of $48 \pm 1\text{R}$. At the end of the heating period, remove the rack from the oven, immediately place in the freezer at $-6.7 \pm 5^\circ\text{C}$ ($20 \pm 10^\circ\text{F}$), taking care to keep the tubes in a vertical position at all times. Leave the tubes in the freezer for a minimum of 4 h to solidify the sample completely.
- 3.4.4. Upon removing the tube from the freezer, place the tube on a flat surface. Cut the tube into three equal length portions with the spatula and hammer. Discard the center portion and place the top and bottom portion of the tube into separate beakers. Place the beakers in a $163 \pm 5^\circ\text{C}$ ($325 \pm 10^\circ\text{F}$) oven until sufficiently fluid to remove the pieces of aluminium tube.
- 3.4.5. After a thorough stirring, pour the top and bottom samples into appropriately marked rings for the ring and ball softening point test. Prepare the rings and apparatus as described in Test Method D 36.
- 3.4.6. The top and bottom samples from the same tube should be tested at the same time in the softening point test.

Report: Report the difference in $^\circ\text{C}$ or $^\circ\text{F}$ of the softening point between the top and bottom portions.

No.RW /NH/33044/3/98-(S&R)**Dated, the 22nd October, 1999**

To

The Secretaries of States/Union Territories, Public Works Departments; Chief Engineers of States/UTs (dealing with National Highways and other Centrally Sponsored Schemes); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Guidelines on selection of Grade of Bitumen

Instance have come to the notice of the Ministry that the grade of bitumen is not being selected appropriately for use on National Highway works and sometimes a single grade is being used in the entire State irrespective of traffic and climatic variations in work sections. Suitable guidelines on selection of the grade of bitumen for road works are contained in Appendix-4 of the Ministry's Specifications for Road and Bridge Works (Third Revision).

2. It may be mentioned that all the grades of bitumen, i.e., Grade 30/40, 50/60, 60/70 and 80/100 are learnt to be available with the Oil Refineries. However, it may be necessary to assess the requirement of different grades of bitumen for your State and place orders with refineries well in advance to plan their production at refinery end to meet the requirement as projected by the concerned State.

3. The grade bitumen may be suitably selected appropriate to the region, traffic, rainfall and other environmental conditions. Based upon contents of Appendix-4 of MOST specifications, broad features of the selection criteria for the grade of bitumen are given in the Table below for adoption

Climate	Traffic (CVD)	Bituminous Course	Grade of Bitumen to be used
Hot	Any	BM, BPM, BUGS	60/70
Moderate/Cold	Any	BM, BPM, BUSG	80/100
Any	Heavy loads, Expressways, Urban Roads	DBM, SDBC, BC	60/70
Hot /Moderate	Any	Premix Carpet	50/60 or 60/70
Cold	Any	Premix Carpet	80/100
Any	Any	Mastic Asphalt	30/40

4. It is requested that the contents of this letter may be brought to the notice of all field officers at Circle/ Division/Sub-Divisional level in your State to ensure that appropriate grade of bitumen is used for roadworks.

No. RW/NH-34041/36/90-S&R (Vol.II)**Dated, the 10th November, 1999**

To

The Chief Engineers of States/Union Territories, P.W.D. (dealing with National Highways and other Centrally Sponsored Schemes); Chairman National Highways Authority of India; Director General Border Roads

Subject : Use of rubber and polymer modified bitumen in road works

Kind reference is invited to Ministry's letter of even number dated 21st April, 1999 on the subject cited above, wherein instructions have been issued for use of modified bitumen in at least 10 per cent length of periodical

renewal programme starting from 1999-2000 in each State as well as in project estimates of Annual Plan. The tentative guidelines for use of modified bitumen in road works have also been circulated alongwith the letter under reference. This has also a reference to discussion at Chief Engineers' meeting held during the IRC Council meeting at Jaipur on 7.8.1999

2. It is hoped that the Ministry's instructions outlined in the circular letter referred to above are being followed for implementation in the field and the stretches have been identified in consultation with the Regional Officers. The steps taken by the State Chief Engineers for use of modified bitumen in road works may please be intimated to the Ministry at the earliest. The feedback on the performance may also be forwarded in due course.

404.21

No. RW/NH-34041/36/90-S&R (Vol.II)

Dated, the 11th/17th January, 2000

To

The Chief Engineers of all State Governments/Union Territories (dealing with National Highways);
Director General Border Roads; Chairman, National Highways Authority of India

Subject : Use of Polymer and Rubber Modified Bitumen in road works on National Highways and other Centrally Sponsored Schemes

The Ministry with its letter of even number dated 21.4.1999 had circulated guidelines for use of rubber and polymer modified bitumen in road construction based on interim report received from Central Road Research Institute, New Delhi on research study sponsored by the Ministry.

2. The Indian Roads Congress has recently brought out a publication No.IRC:SP:53-1999 "Guidelines on Use of Polymer and Rubber Modified Bitumen in Road Construction" Copy of the guidelines can be obtained from IRC, Jamnagar House, Shahjahan Road, New Delhi.

3. It has now been decided that in supersession of earlier guidelines circulated by the Ministry, the IRC guidelines on modified bitumen should be adopted for all works National Highways and other Centrally Sponsored Schemes. The State Governments are also advised to follow the IRC guidelines for road works in State Sector.

4. It is requested that compliance of these guidelines for road works on National Highways may be ensured with immediate effect. The feedback on use of the guidelines may please be reported from time-to-time to the Ministry

5. The content of this circular may please be brought to the notice of all concerned in your Organisation/ Department.

404.22

No. RW/NH-34041/36/90-S&R(Vol.II)

Dated, the 5th June, 2000

To

The Engineer-in-Chief and Chief Engineers of State PWDs and U.Ts.; (dealing with N.Hs); Chairman,
National Highways Authority of India; Director General Border Roads

Subject : Use of rubber and polymer modified bitumen in Road Works

Reference is invited to Ministry's letter of even No. dated 21.4. 99 on the subject with instructions to all States for introduction of the new technology of modified bitumen in at least 10 per cent length of periodical renewal and also in project works on NHs. Subsequently, the Ministry in letter of even no. dated 11.1.2000 have requested all the States to follow the guidelines of IRC:SP:53-1999 on use of modified bitumen in road works with request to report the performance feedback. It is, however, noted that the use of this new technology has not been tried so far in the field as desired.

2. It is reiterated that the adoption of this new technology has to be promoted in road works in view of its various advantages and improved performance over conventional bitumen. Some agencies have expressed concern over the quality of modifiers commercially available for modification and its mixing process in improving the quality of the end product. In this connection the following may be noted :-

- (i) The mixing of rubber/polymer at refinery or at the plants of approved and well equipped blending units would be more appropriate. However, modifiers, like, crumb rubber can be mixed at hot mix site using appropriate mixing devices.
- (ii) The Ministry have taken-up with the Ministry of Petroleum and Natural Gas for production of modified bitumen at refinery, like, conventional bitumen. Recently, M/s Cochin Refineries Limited have started commercial production of natural rubber modified bitumen. It is also learnt that M/s. Madras Refineries Ltd. and Bharat Petroleum Corporation are also likely to take-up commercial production of modified bitumen.
- (iii) The Central Road Research Institute have issued license (with process know-how) for commercial manufacture of polymer modified bitumen (PMB) to some industrial units (List at *Annexure-I*). These Units are capable to supply PMB in compliance with IRC:SP:53-1999 in tankers or packed drums.

3. For success in introduction of the new technology, all care and precautions shall be taken for necessary quality control of work with modified bitumen. Requirements of modifier, design mix and other aspects of modified bitumen shall be governed by provisions of IRC:SP:53-1999. The quality of the work shall be supervised by the field staff in association with the supplier/manufacturers, as required. The base bitumen modified bitumen and mix shall be tested in department laboratories or from reputed Central and State level laboratories including academic institutions having adequate facilities of testing. The names of few such institutions are suggested (*Annexure-II*). In order to ensure these requirements, suitable clause should be inserted in the NIT. It will, however, be the overall responsibility of the field to ensure quality of the work with modified bitumen.

4. The road section laid with modified bitumen should be kept under observation by the Central and State Research Institutions/Quality Control Wings in the States and report on the performance sent to the Ministry and CRRI, New Delhi. It would be advisable to use more than one type of modifiers (Table 2 read with Table 5 of IRC:SP:53-1999) for comparison purposes initially providing additional cost of modifier as per market rate in the work estimate. The feedback related to economics of using different modifiers compared to conventional bitumen and their comparative field performance may be reported to the Ministry.

5. It is requested that necessary instructions to follow the above directives may be issued to the field officers dealing with National Highways under intimation to the Ministry. The State Govt. may also consider to follow above instructions for the State Sector roads subject to such modifications as they may like to make.

404.23

No.RW/NH-33044/3/99-S&R

Dated, the 12th June, 2000

To

The Secretaries of State PWDs/Chief Engineers of States (NH Wing); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Use of Bitumen Emulsion in road works-Clause 503.3.2. of MOST Specification

The Ministry is in the process of revising the Specifications with respect to bituminous works. As regard to Clause 503.3.2 of Ministry's Specifications (3rd Revision), 1995 reservations have been raised by certain quarters with respect to use of emulsion when the ambient temperature is below 20 degree centigrade. The properties of emulsion should conform to the provision of Indian Standards (IS:8887-1995).

2. In view of the above, it is requested that the specific details/experience with respect to the following may kindly be forwarded to the Ministry latest by 5th July, 2000:-

- (i) Whether any heating is required for emulsion before its use for spraying? If so, the temperature range required under different climatic conditions may be indicated.
- (ii) Whether any difficulty is observed for uses of emulsion without heating? If so, kindly give details.
- (iii) Is the emulsion used conforms to the provision of Bureau of Indian Standards.
- (iv) Any suggestions for modifying the provisions of Clause 503.3.2 of MOST Specification with respect to use of emulsion in the works.

No.RW/NH-34041/36/90-S&R(Vol.III)

Dated, the 21st August, 2000

To

The Engineer-in-Chief and Chief Engineers of State PWDs and U.Ts; Chief Engineer of States and U.Ts. (dealing with National Highways); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Use of rubber and polymer modified bitumen in Road Works

Ministry's letter of even number dated 5.6.2000 on the subject inter-alia includes a list of suppliers of rubber/polymer modified bitumen. In supersession of the earlier list; an updated list of manufacturers/suppliers of modifiers and modified bitumen is appended herewith for information and guidance of the user agencies (*Annexure-I*). All other terms and conditions of the circular dated 5.6.2000 remain unchanged. The circulation of the list of suppliers/manufacturers should not be taken as endorsement of the product by the Ministry. Henceforth, no such list of suppliers will be circulated. The suppliers at their cost shall get the materials tested by reputed Central and State Level Research Institutions or academic institutions having adequate facilities of testing. A list of such Institutions is enclosed at *Annexure-II*. It shall be the responsibility of the user agencies to get themselves satisfied about the quality of modified bitumen before procurement from suppliers and use in work to conform strictly to provisions in IRC:SP:53-1999.

The content of the circular may please be brought to the notice of all concerned.

[Enclosure to Ministry's Circular No. RW/NH-34041/36/90-S&R(Vol. III) dated 21.8.2000]

Annexure-I

**LIST OF FIRMS PRODUCING PMB OR SUPPLYING POLYMER
FOR MODIFICATION ALONG WITH INDICATION OF THE TYPE
OF POLYMER USED/SUPPLIED BY THEM**

Sl.No.	Name of supplier/manufacturer	Type of modifier
1.	M/s. M.K. Petro Products (P) Ltd., LG-5, Thapar Chamber-II, 6 B Opp. Kalindi Colony, Ring Road, New Delhi-110014	Plastomer (EVA) Modified Bitumen
2.	M/s. Osnar Chemicals (P) Ltd. T. Industries Estate, Sewree, Mumbai-400015	Plastomer (EVA) Modified Bitumen
3.	M/s. Yegnan & Co., 101, Agarwal Chamber-IX, Plot No. 102, Sector-19, APMC Complex, Vashi, Navi Mumbai-400705	Plastomer (EVA) Modified Bitumen
4.	M/s. Solid Asphalt Industries, Plot No. 42, Sector, Sion-Panvel Highway Neral, Navi Mumbai-400705	Plastomer (EVA) Modified Bitumen
5.	M/s. Tiki Tar Industries, 8th Floor, Neptune Tower, Productivity Road, Vadodra-390005	Elastomer (SBS) Modified Bitumen

6.	M/s. Cochin Refineries Ltd, Post Bag No.2, Aambalamugal 682302Distt. Ernakulam (Kerala)	Natural Rubber Modified Bitumen
7.	M/s. Chennai Petroleum Corporation Limited (Formerly:Madras Refineries Ltd) Menali, Chennai-600068	Crumb Rubber Modified Bitumen
8.	M/s. Tinna Overseas Limited, A- 151, Mayapuri Industrial Area, Phase-II, New Delhi-110064	Chemically Treated Crumb Rubber Modified Bitumen
9.	M/s. E.I. Du Pont India Ltd., 701-724 Bonanza, 7th Floor, B-Wing Sahar Plaza Complex, Andheri-Kurla Road, Andheri (East), Mumbai-400059	Plastomer (Ethylene Terpolymer) Modified Bitumen
10.	M/s. Usha Lubes (P) Ltd., 6 A&B, Poonam, 6th Floor, 5/2 Russel Street, Calcutta-700071	Plastomer (Low Density) Polyethylene) Modified Bitumen
11.	M/s. Gurusons International (P) Ltd., 108, South Extension-II, New Delhi-110049	Rubber (SBR) Modified Bitumen
12.	M/s. ATV Projects India (P) Ltd., D-8-MIDC Street-16, Mahul, Andheri (East), Mumbai-400093	(SBS)
13.	M/s. National Organi Chemicals Industries Ltd., Thane-Belapur Road, P.O. Ghasoli, Navi Mumbai-400701	(EVA)
14.	M/s. Shell India (P) Ltd., S-3 International Trade Tower, Nehru Place, New Delhi-110019	(SBS)
15.	M/s. India Petrochemical Corporation Ltd., P.O.Petrochemicals, Vadodara-391346	(LDPE)
16.	M/s. Elf Atochem, Gandhi Mansion, 20 Altamount Road, Mumbai-400026	(EVA)
17.	M/s. Apcotex Lattices Limited, 49-53, Mahavir Centre, Plot No. 17, Sector-17, Vashi, Navi Mumbai-400073	(SBR)

No.RW/NH-34041/36/90-S&R(Vol.III)

Dated, the 21st August, 2000

To

The Engineer-in-Chief and Chief Engineers of State PWDs and U.Ts; Chief Engineer of States and U.Ts. (dealing with National Highways); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Use of rubber and polymer modified bitumen in Road Works

Ministry's letter of even number dated 5.6.2000 on the subject inter-alia includes a list of suppliers of rubber/polymer modified bitumen. In supersession of the earlier list; an updated list of manufacturers/suppliers of modifiers and modified bitumen is appended herewith for information and guidance of the user agencies (*Annexure-I*). All other terms and conditions of the circular dated 5.6.2000 remain unchanged. The circulation of the list of suppliers/manufacturers should not be taken as endorsement of the product by the Ministry. Henceforth, no such list of suppliers will be circulated. The suppliers at their cost shall get the materials tested by reputed Central and State Level Research Institutions or academic institutions having adequate facilities of testing. A list of such Institutions is enclosed at *Annexure-II*. It shall be the responsibility of the user agencies to get themselves satisfied about the quality of modified bitumen before procurement from suppliers and use in work to conform strictly to provisions in IRC:SP:53-1999.

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[Enclosure to Ministry's Circular No. RW/NH-34041/36/90-S&R(Vol. III) dated 21.8.2000]

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16.	M/s. Elf Atochem, Gandhi Mansion, 20 Altamount Road, Mumbai-400026	(EVA)
17.	M/s. Apcotex Lattices Limited, 49-53, Mahavir Centre, Plot No. 17, Sector-17, Vashi, Navi Mumbai-400073	(SBR)

[Enclosure to Ministry's Circular No.RW/NH-34041/36/90-S&R(Vol-III) dated 21.8.2000]

Annexure-II

LIST OF INSTITUTIONS FOR TESTING POLYMER MODIFIED BITUMEN

1. Central Road Research Institute (CRRJ)
Delhi-Mathura Road, P.O. CRRJ,
New Delhi-110020
2. Department of Civil Engineering,
Indian Institute of Technology,
Kharagpur, West Bengal
3. Bitumen Laboratories,
Indian Institute of Petroleum (CSIR)
Haridwar Road, Dehradun (U.P.)
4. Highways Research Station,
Guindy, Chennai (Tamil Nadu).
5. Department of Civil Engineering,
Bangalore University, Bangalore.
(Karnataka)
6. Gujarat Engineering Research Institute,
Vadodara (Gujarat)
7. Department of Civil Engineering.
University of Roorkee,
Roorkee (U.P.)
8. Indian Oil Corporation,
R&D Centre, Sector-30,
Faridabad

404.25

No.RW/NH-34041/36/90 S&R (Vol.III)

Dated, the 5th October, 2000

To

The Engineer-in-Chief and Chief Engineers of State PWDs and U.Ts; Chief Engineers of States and U.Ts. (dealing with NHs); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Use of rubber and polymer modified bitumen in road works

It has been brought to the notice of the Ministry that Executing Agencies/State PWDs are specifying only one type of polymer modified bitumen while issuing the tenders for National Highways work. In this connection kind attention is drawn to Para 4 of Ministry's letter No. RW/NH-34041/36/90-S&R(Vol-II) dated 5th June, 2000, wherein it was advised to use more than one type of modifiers for comparison purposes and feedback related to economics of using different modifiers compared to conventional bitumen and their comparative field performances may be reported to the Ministry.

As suitability/superiority and economics of one modifier over the other could not be established so far on any research back up, it is again advised that to establish the comparative economics as well as suitability of different modifiers under different environment/traffic conditions, the tender documents should not specify any particular type of bitumen modifier and the instructions of the Ministry outlined in Para 1 may be followed. This may please be brought to the notice of all concerned in your Department.

No.RW/NH-35074/7/2002-S&R (R)***Dated, the 3rd April, 2001***

To

The Secretaries of all States/UTs; Engineer-in-Chief and Chief Engineers of State PWDs and UTs. (dealing with National Highways); Director General Border Roads; Chairman, National Highways Authority of India

Subject : Ensuring the use of paving grade bitumen in Road Works having a minimum softening point of 45°C

The properties of bitumen play a crucial role in durability of flexible pavements. As the maximum atmospheric temperature in many parts of the country is more than 45°C the softening point of bitumen is of great significance in ensuring the maintenance of riding surface profile of the flexible pavements. Keeping the above in considerations and also to preserve the investment made in road sector, it has been decided that henceforth, no bitumen should be used in road works, which is having a softening point of less than 45°C. It may please be ensured that proper testing of the bitumen may be carried out before its use and a record of the same may be maintained in the field offices for reference.

It is requested that these instructions may be brought to the notice of all the field officers for immediate adoption.

No.RW/NH-33044/10/2000-S&R(R)***Dated, the 23rd April, 2001***

To

The Chief Engineers of States/Union Territories (dealing with National Highways)

Subject : Quantum of profile corrective course for works on National Highways

It has been observed that in respect to some works quantum of profile corrective course has increased substantially during execution of works resulting in additional cost mainly because initial assessment has not been made correctly. In order to obviate this situation it has now been decided that the profile corrective course shall be realistically assessed at the time of framing original estimate on the basis of field survey and for this purpose, Regional Officer concerned may be associated right at the initial stage. It shall be ensured that the quantity of profile corrective course during execution shall not increase over the sanctioned provisions. If there is any requirement under exceptional circumstances to increase the quantum of profile corrective course over the sanctioned provision, the same shall be got approved from the Ministry before execution with proper justification supported by cross-section, etc.

The content of the circular may please be brought to the notice of all concerned officers in your organisation for strict compliance. This supercedes earlier instructions issued in this regard.

No. RW/NH-35072/1/2001-S&R(R)

Dated, the 21st June, 2001

To

The Secretaries/Chief Engineers/UTs. of States/Union Territories, Public Works Departments (dealing with National Highways); Chairman, National Highways Authority of India; Director General Border Roads

Subject: Use of rubber and polymer modified bitumen in road works

Reference is invited to Ministry's letter No. RW/NH-34041/36/90-S&R(Vol.II) dated 21st April, 1999 and 5th June, 2000 on the subject with instructions for use of modified bitumen in road works and reporting performance feedback. However, it has been observed that the use of modified bitumen has not picked up as desired inspite of best persuasion of the Ministry. The issue has also been taken up at Chief Engineers' meeting in the past to promote use of new materials. The initiatives and efforts made towards introducing new techniques and materials in road construction were reviewed in the Ministry and it has been decided that-

- (i) The use of modified bitumen in wearing course should be encouraged and the adoption of this new technology has to be promoted in road works in view of its various advantages and improved performance over conventional bitumen.
- (ii) The modified bitumen should strictly conform to the specifications laid down in the IRC:SP:53-1999 and Ministry's upgraded specifications under Section 500 published by Indian Roads Congress.
- (iii) Some industrial units and refineries have started commercial manufacture of modified bitumen. The use of manufactured products should be promoted to eliminate the problem of site mixing and also to ensure quality of works.
- (iv) It is noted that even though some of the States have adopted new technology of using modified bitumen, the feedback on using the same is not forthcoming. Your experience on use of modified bitumen will be useful for evaluating relative performance and suitability of different kinds of rubber and polymer modifiers and reviewing of the tentative guidelines given in IRC:SP:53-1999.

It is, therefore, requested that feedback on performance, along with relevant details and action taken in the matter may please be reported to the Ministry.

405. CONCRETE CONSTRUCTION

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
405.2	RW/NH-33034/8/95-S&R dated 29.12.1998	Option for Cement Concrete Pavement for Construction of Highways	405/2

No.RW/NH-33034/8/95-S&R

Dated, the 29th December, 1998

To

The Secretaries/Chief Engineers of States/Union Territories, Public Works Departments, (dealing with National Highway and Centrally Sponsored Schemes); Chairman, National Highways Authority of India; Director General Border Roads; Director General, Central Public Works Department; Director, NITHE

Subject : Option for cement concrete pavement for construction of Highways

This Ministry in letter No.RW/RMP-20(5)/85 datd 26th June 1985 and No.RW/NH-VI-67(12)/85 dated 11th August, 1986 have earlier requested the State PWDs to consider concrete pavement for construction of roads. There are many long term advantages associated with concrete roads, such as, long life cycle, low maintenance cost, etc. The technology of concrete pavement has improved considerably in the recent past with introduction of new machineries for rapid construction with control on quality of the work. Adoption of concrete pavement is in any case a better option in situations, like, weak soil with low bearing capacity, high rain-fall areas, built-up areas with inadequate drainage facilities high traffic volume with heavy axle load, etc. The Union Government is also concerned about the demand recession of cement and wants to encourage the use of cement in construction of all arterial roads.

2. In view of the above, it has been decided to give preference to cement concrete pavements, wherever feasible. While formulating proposals for four-laning/Expressways, new bypasses/ROB approaches, etc. including forthcoming BOT project, the option for concrete roads should be given due weightage.

3. The contents of this letter may please be brought to the notice of all concerned in your organisation/department.

406. MISCELLANEOUS GUIDELINES

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
406.16	RW/NH-33044/8/2001-S&R® dated 31.1.2001	Facilities for persons with disabilities	406/47

No.RW/NH-33044/8/2001-S&R(R)

Dated, the 31st January, 2001

To

The Secretaries, PWDs of States/UTs; Engineer-in-Chief/Chief Engineers of all States Govt/U.Ts (dealing with National Highways); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Facilities for persons with disabilities

Section 45 of "The Persons with Disabilities (Equal Opportunities Protection of Rights and Full Participation) Act 1995" reads as follows:

"The appropriate Governments and the local authorities shall, within the limits of their economic capacity and development, provide for :

- (a) installation of auditory signals at red lights in the public roads for the benefit of persons with visually handicap;
- (b) causing curb cuts and slopes to be made in pavements for the easy access of wheel chair users;
- (c) engraving on the surface of the zebra crossing for the blind or for persons with low vision;
- (d) engraving on the edges of railway platforms for the blind or for persons with low vision;
- (e) devising appropriate symbols of disability;
- (f) Warning signals at appropriate places.

It is requested that provisions for the facilities mentioned at sub-paras (a), (b), (c) and (f) above may be made at all the vulnerable points falling on National Highways under your jurisdiction. These facilities should be included in the design of National Highways where justified.

**407. SPECIFICATIONS – SEE MINISTRY OF SURFACE TRANSPORT (ROADS WING)
SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (THIRD REVISION) 1995**

Code No.	Circular No. & Date	Brief Subject	Page No.
407.16	RW/NH-35068/1/96-S&R dated 1.3.1999	Utilisation of emerging road construction materials	407/31
407.17	RW/NH-33044/3/99-S&R dated 22.4.1999	Amendment to the Specifications for Road and Bridge Works	407/31 & 32
407.18	RW/NH-33044/3/98-S&R (Pt.) dated 31.7.2000	Amendment in Section 700 entitled “Geosynthetics” of the Ministry’s Specifications for Road and Bridge Works (Third Revision) 1995 Edition	407/32
407.19	RW/NH-33044/10/2000-S&R dated 25.10.2000	Guidelines for selection of National Highway stretches for Improvement to Riding Quality Programme (IRQP) and Periodic Renewal (PR)	407/32 & 33
407.20	RW/NH-33044/10/2000-S&R® dated 30.4.2001	Ministry’s Specifications for Road and Bridge Works (Third Revision, 1995) – Upgradation thereof.	407/34
407.21	RW/NH-33044/10/2000-S&R ® dated 11.6.2001	Adherence of Ministry’s norms for construction/repair on National Highways	407/34
407.22	RW/NH-33044/10/2000-S&R ® dated 21.6.2001	Preparation of Schedule of Rate based on Ministry’s Standard Data Book for Rate Analysis (1994)	407/35
407.23	RW/NH-33044/30/2001-S&R ® dated 2.11.2001	Ministry’s Specification for Road and Bridge Works – Fourth Revision	407/35

No.RW/NH-35068/1/96-S&R***Dated, the 1st March, 1999***

To

The Secretaries of States/Union Territories, Public Works Departments; All Chief Engineers of States/ Union Territories (dealing with National Highways and other Centrally Sponsored Schemes); Chairman, National Highways Authority of India; Director General Border Roads; Director General, Central Public Works Department

Subject : Utilization of emerging road construction materials

The policy on requests from manufacturer's suppliers of emerging road construction materials has been engaging the attention of this Ministry. The matter has been discussed in the Science & Technology Advisory Committee for Road and Road Transport for formulating guidelines for use of the new technology materials in highway construction.

2. It has been decided that the manufacturers/suppliers of emerging road construction materials shall in the first instance contact this Ministry with laboratory and field performance reports of the product along with relevant information on its availability, constructibility, equipment requirement, economics, etc. After evaluation in the Ministry, the manufacturers/suppliers shall tie up with the contractors engaged in highway construction for field trial of their product during the construction of on going projects in consultation with the implementing agencies and under intimation to the Ministry. The manufacturer/supplier shall bear all extra costs involved for use of their product on a trial basis, actively associate themselves during construction and also bear the cost of performance evaluation through reputed Research Institute. The feedback on performance of the test sections shall be intimated to the Ministry from time-to-time.

3. Guidelines on use of rubber and polymer modified bitumen in road works are separately under finalization by Flexible Pavement Committee of Indian Roads Congress. However, based on interim report received from CRRI on research study, guidelines on rubber and polymer modified bitumen in surface course during the current year have been prepared by the Ministry. A copy of the same is enclosed for adoption during execution.

4. This may please be brought to the notice of all concerned officers in your organization/department.

No.RW/NH-33044/3/99-S&R***Dated, the 22nd April, 1999***

To

The Secretaries/Chief Engineers of States/Union Territories, Public Works Departments (dealing with National Highways and other Centrally Sponsored Schemes); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Amendment to the Specifications for Road and Bridge Works

The Specifications for geotextiles in subsurface drainage, appearing under clause 702.2.3 of the Ministry's Specifications for Road and Bridge Works, page 258 of the Third Revision, may be amended as follows:

Existing subpara (b) may be deleted and substituted by the following:

(b) The apparent opening size* @shall satisfy the following:

Test Method	Units	Requirements per cent in-situ soil passing 0.075 mm		
		<15	15 to 50	>50
ASTM D 4751	mm	0.43	0.25	0.22**

* These default filtration property values are based on the predominant particle size of in-situ soil. In addition to the default permeability value, the Engineer may require geotextile permeability and/or performance testing based on engineering design for drainage systems in problematic soil environments.

@ Site Specific geotextile design should be performed especially if one or more of the following problematic soil environments are encountered; unstable or highly erodible soils, such as, non-cohesive silts; gap graded soils; alternating sand/silt laminated soils; dispersive clays; and/or rock flour.

** For cohesive soils with a plasticity index greater than 7, geotextile maximum average roll values for apparent opening size is 0.30 mm.

407.18

No.RW/NH-33044/3/98-S&R(Pl.)

Dated, the 31st July, 2000

To

The Chief Engineers of all State/UT PWDs (dealing with NH and other centrally sponsored works);
Director General Border Roads; Chairman, National Highways Authority of India

Subject : Amendment in Section 700 entitled "Geosynthetics" of the Ministry's Specifications for Road and Bridge Works (Third Revision), 1995 Edition.

On the basis of the recommendations of Highways Specifications and Standard Committee of IRC in its meeting held on 21st December, 1999 in Transport Bhawan, New Delhi, following amendments are made in Section 700.

For

Read

Section 700: Geosynthetics

Geosynthetics and Reinforced Earth

407.19

No.RW/NH-33044/10/2000-S&R

Dated, the 25th October, 2000

To

The Secretaries of all States/UTs (in-charge of PWD); Engineer-in-Chief Engineers of State PWDs and U.Ts (dealing with National Highways); Director General Border Roads, Chairman, National Highways Authority of India

Subject : Guidelines for selection of National Highways stretches for improvement to Riding Quality Programme (IRQP) and Periodic Renewal (PR)

As you are aware, the Ministry launched an intensive Programme of Improving Riding Quality (IRQP) under plan funds and Special Repair Programme (SRP) under maintenance and repair funds during 1999-2000 with a view to create perceptible impact on the road users. These programmes have yielded good results in the form of

improvement of riding comfort and consequent appreciation from the NH users. Encouraged by the results of last year's experience, Ministry has continued with the IRQP both under Plan and Non-plan heads and it is envisaged to cover about 5200 km under this programme. However, based on the past experience, there is need to fine-tune the programme to obtain the best results by undertaking IRQP under Plan funds and periodic renewals under Non-plan funds. With this in view, the following guidelines are suggested for identifying the National Highway stretches for improvement of riding quality and periodic renewal.

2. Selection of stretches for IRQP :

- (i) Stretches of NHs having adequate crust thickness for providing bituminous macadam courses but having uneven and cracked surface requiring profile correction.
- (ii) Two-lane roads carrying about 2500 CVD or more.
- (iii) Single lane sections having proper geometrics and carrying traffic more than 1000 CVD.
- (iv) Stretches strengthened more than 5 years ago but have not received renewal treatment and showing signs of distress due to growing traffic.
- (v) Length of stretch should generally be more than 10 km and preferably 15 km and be in continuation of stretches included in earlier IRQP/strengthened reach.
- (vi) The specifications for IRQP may be 50/70 mm BM with 25 mm SDBC based on pavement condition and traffic requirements. Use of DBM/BC may be considered based on the road condition and the existing specifications.

3. Selection of stretches for periodical renewal:

- (i) Road sections carrying light traffic (450 to 1500 CVD) and having minor distress and warranting resurfacing only.
- (ii) Road sections having adequate crust thickness/strengthened under earlier programme where the surface condition is in reasonably fair condition but requires surface renewal.
- (iii) Newly declared National Highways carrying light traffic and requiring improvement of riding quality.
- (iv) The reaches where renewal is expected to last for normal life cycle of 4 to 5 years but in no case not less than 3 years.
- (v) As far as possible, the stretches for periodic renewal should also be for a continuous length of about 5 to 10 km or aggregated to about 10 km for the purpose of estimate and tender and in continuation of reaches improved/renewed earlier.
- (vi) The specifications for renewal may be :
 - (a) 20 mm MSS/20 mm PC with seal coat for low traffic roads (<1500 CVD).
 - (b) 25 mm SDBC/25 mm BC for high traffic roads (>1500 CVD).
 - (c) Extra quantity for patching/rectification of potholes/undulation may be provided where required as per site conditions in consultation with Regional Officer.

4. The reaches under IRQP and PR programme may be identified in consultation with R.O. of this Ministry during the month of October/November and estimates for the same got approved by the Ministry before December every year. The work should be awarded expeditiously so as to ensure commencement by April of next year and funds utilised during the financial year.

5. The proposal for IRQP as well as periodical renewal shall be accompanied by a bar chart showing the IRQP/strengthening/renewal carried out during last 5 years.

6. The present traffic volume in some reaches of the existing NH network may need paved shoulders for capacity of augmentation. It is suggested that wherever such need is felt, the same may concurrently be taken up with IRQP. However, the provision of paved shoulders may be considered where the existing traffic is to the tune of 20,000 PCUs and above. For construction of paved shoulders, the Ministry's guidelines circulated under letter No. RW/NH-33054/20/88-D.II dated 10.5.1989 may please be followed.

7. The proposal of IRQP and periodical renewal should be comprehensive to include road marking, traffic signs, shoulders, drainage, etc. and shall be awarded as a composite work job-wise and shall not be split. The estimates for both IRQP and periodical renewal should be got approved from the Ministry.

No.RW/NH-33044/10/2000-S&R(R)***Dated, the 30th April, 2001***

To

The Secretaries all State Governments and Union Territories; Chief Engineers of all States/Union Territories (dealing with National Highways and other centrally sponsored works); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Ministry's Specifications for Road & Bridge Works (Third Revision, 1995) - Upgradation thereof

The Ministry in letter No. RW/NH-33035/2/93/S&R dated 9th August, 1995 has issued instructions for adoption of Ministry's Specifications for Road & Bridge Works (Third Revision, 1995). The specifications for bituminous base and surface courses in Section 500 of Third Revision, 1995 and its related aspects in Sections 900 and 3000 have been upgraded so as to cater to the changes in technology and improvement in construction procedures as well as quality control expectations. Indian Roads Congress has recently published the upgraded section as an addendum to third revision which is now available on sale from IRC.

The Specifications in the addendum shall henceforth be followed in all future projects and estimates pertaining to National Highways and other centrally sponsored projects.

It is brought to your notice that five new specifications on bituminous viz. Fog Spray, Bituminous Cold Mix, Sand Asphalt Base Course, Modified binder and Crack Prevention Courses have been included in the addendum. These specifications may please be adopted in the field and feed back on their performance reported to the Ministry.

No.RW/NH-33044/10/2000-S&R (R)***Dated, the 11th June, 2001***

To

The Secretaries of all States/UTs (In-charge of PWD); Engineer-in-Chief and Chief Engineers of State PWDs and UTs (dealing with National Highways); Director General Border Roads; Chairman, National Highways Authority of India

Subject : Adherence of Ministry's norms for construction/repair on National Highways

It has come to the notice of the Ministry that Ministry's norms and specifications are not being scrupulously followed while preparing estimates for improvement/widening and repairs of National Highways. Also the rate analysis is not worked out as per Ministry's Standard Data Book for rate analysis. Particular instances of provision of sub standard diameter of pipe culverts, inappropriate rate analysis for WBM including prime coat, tack coat/surfacings, etc. have come across. These deficiencies have led to variations during execution of work resulting in cost over-run.

It is, therefore, requested to ensure that the provisions in the project/repair estimates are made in strict conformity with Ministry's Specifications for Road and Bridge Works (3rd revision) read with upgraded version of Section 500 and related clauses of Section 900 and Section 3000 and various circulars and amendments on Specifications issued from time to time and the rate analysis are worked out in accordance with Ministry's Standard Data Book for Rate Analysis to avoid cost over-run. This supercedes the earlier circular of even No. dated 21st May, 2001.

No. RW/NH-33044/10/2000-S&R (R)

Dated, the 21st June, 2001

To

The Secretaries of all States/UTs (In-charge of PWD); Engineer-in-Chief and Chief Engineer of State PWDs and UTs (dealing with National Highways)

Subject : Preparation of Schedule of Rate based on Ministry's Standard Data Book for Rate Analysis (1994)

Please refer to Ministry letter No. RW/NH-33045/4/92 - S&R dated 23rd May, 1994 wherein State PWDs were requested to prepare Schedule of Rates (SOR) for National Highways and other Central Sector Works on the basis of Ministry's Standard Data Book for Rate Analysis. It was also requested, that the Schedule of Rates would be periodically updated for preparation of the detailed estimates to arrive at a realistic cost of work. In this regard the D.O. letter No. RW/NH-33049/6/98-S&R dated 15th April, 1999, from DG (RD) & AS addressed to all the Chief Engineers of States/Union Territory, may also please be referred to wherein it was categorically mentioned that in future no estimate will be accorded approval by the Ministry, unless the estimate is in accordance to the Schedule of Rate based on Ministry's Standard Data Book for Rate Analysis.

2. However, inspite of Ministry's constant pursuit it is noted with concern that a number of State have not even prepared the Schedule of Rate for National Highways and other Central Sector Works, leading to unrealistic cost estimate which is largely responsible for revised cost estimates in most of the projects. This has been viewed seriously in the Ministry at the highest level, and it has been decided that all such States, which had not yet framed SOR for NHs work, should prepare SOR based on Ministry's Standard Data Book for Rate Analysis latest by 30th September, 2001. The States, Which have already prepared SOR as per Ministry's Standard Data Book, may please confirm that the same has been updated to the current prices.

No. RW/NH-33044/30/2001-S&R (R)

Dated, the 2nd November, 2001

To

The Secretaries of all State Governments and Union Territories; Chief Engineers of all States/Union Territories (dealing with National Highways and other centrally sponsored works); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Ministry's Specification for Road & Bridge Works - Fourth Revision

Please refer to Ministry's letter No. RW/NH-33044/10/2000 - S&R (R) dated 30th April 2001, wherein instructions have been issued to adopt Ministry's Specification for Road & Bridge Works (Third Revision, 1995), along with the upgraded Section 500 and its related aspects in Sections 900 and 3000 as brought out in the Addendum to the Third Revision published by the IRC.

The Fourth Revision of Specifications of Ministry of Road Transport & Highways incorporating the upgraded Section 500 and other amendments issued subsequent to publication of Third Revision, 1995 is now published by the IRC and is available on sale. The Fourth Revision shall henceforth be followed in all future projects and estimates pertaining to National Highways and other centrally sponsored projects.

601. TRAFFIC CENSUS

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
601.4	NH-26011/1/99-PL dated 31.12.99	Traffic Census Data on National Highways	601/5 to 13

No. NH-26011/1/99-PL

Dated, the 31st December, 1999

To

The Chief Secretaries/Secretaries (PWD/Roads) of all State Governments/Union Territories; Chief Engineers of States/Union Territories (dealing with National Highways and other Centrally Sponsored Schemes); Director General Border Roads; Chairman, National Highways Authority of India

Subject : Traffic Census Data on National Highways

Periodic traffic census is a valuable source of basic data for planning for the development of highways. The Ministry has computerised the handling of data from around 1100 count stations all over the country. The data is being received in the format given in Ministry's Circular No. RW/33023/2/88 DOII dated 16.11.1988.

2. It has been seen that data is not received from many states in time. Some states like Bihar have not sent data since 1986, whereas Delhi has not sent data since 1981. This defeats the very purpose of collection of traffic census data and National Highways in defaulting states do not get proper development and maintenance funds, as warranted by the requirements of actual traffic. Also, without updated traffic census data, it becomes difficult to privatise the development and maintenance of National Highways.

3. In the meantime, the length of National Highways has increased but count stations have not been fixed for many of the newly declared National Highways. The concerned organisations were requested vide this Ministry's letter of even number dated 22.02.1999 to fix the count stations on newly declared National Highways and send the traffic census data regularly. However, very few organisations have responded.

4. Keeping in view the changes in traffic pattern and requirement of additional data, it has been decided to change the format for sending traffic census data (Proforma T-3, along with instructions for filling the proforma enclosed). Therefore, data form traffic census conducted after 31.03.2000 may be sent in the new format (Proforma T-3 mentioned above). It may be ensured that the format is strictly followed in order to avoid problem in feeding the data to the computer.

5. To update the data base of count stations, it is requested that the following information may also be sent for all National Highways (including new National Highways) under your organisation by 31.01.2000 as per the enclosed format (*Annexure-I*):

- (i) Kilometrage of National Highways at State/Union Territory boundaries. (In this connection Ministry's circular letter no. NH/14012/2/97-PL (Pt. I)-Vol II dated 14.12.1999 may also be referred to).
- (ii) Kilometrage of National Highways at intersection of Municipal Limits of towns having a Municipality, Municipal Corporation or the like (National Highway-wise).
- (iii) Starting and terminating points of each National Highway if falling within a State/Union Territory (indicating location of starting point or terminating point)
- (iv) Details of Count Stations, National Highway-wise, like name of location, PIN-CODE of the place where count Station is located, location of kilometrage 0.00, name of the nearest town and distance along the National Highway from the count station and the terrain where the count station is falling.

An index map showing the above details may also be attached. In future if new National Highways are declared or transferred to your organisation, this information may be sent to the Ministry.

6. For fixing of traffic count stations on newly declared National Highways, guidelines in IRC:9-1972 "Traffic Census on Non-Urban Roads" may be followed. Briefly, census points should be fixed well away from all urbanized developments, and in particular, sites within the zone and influence of towns where there may be a regular flow of commuter traffic, must be avoided. Plates I, II and III of IRC:9-1972 have been modified for collecting traffic data in the field and for preparing daily and weekly traffic summaries (*Modified Plates I to III* enclosed). As such, in future these modified plates may be used instead of plates given in IRC:9-1972.

7. To prevent delays, it may be ensured that the traffic census data in the enclosed format is sent by the reporting officer in the field formation, like Executive Engineer, directly to the Ministry, with intimation to the head office of the concerned organisation and the concerned Regional Officer of the Ministry.

[Enclosure to Ministry's Circular No.NH-26011/1/99-PL dated 31.12.1999]

Format for sending information about Count Stations

1. Name of State:
2. Kilometerage of National Highway (NH) at State Boundaries (also refer to letter No. NH/14012/2/97-PL (Pt. I) Vol. II dated 14.12.1999)

Sl. No.	NH No.	Starting Point on State Boundary*		Ending Point on State Boundary*	
		Kilometerage	Name of point	Kilometerage	Name of point

*Not applicable if starting point or ending point of the NH is within the state.

3. Kilometerage of NHs at intersection of Municipal Limits of towns having a Municipality, Municipal Corporation or the like (NH - wise)

Sl. No.	NH No.	Name of town	Kilometerage of starting point of intersection with town	Kilometerage of ending point of intersection with town

4. Starting and terminating points of each NH if falling within a State/Union Territory (If no NH starts or terminates in a state this may be indicated)

(a) Starting points

Sl. No.	NH No.	Name of place of starting of NH

(b) Terminating points

Sl. No.	NH No.	Name of place of termination of NH

5. Details of Count Stations (CS), NH-wise, like name of location, PIN-CODE of the place where count station is located, location of kilometerage, 0.00, name of the nearest town and distance along the NH from the count station and the terrain where the count station is falling.

(For each NH, this may be repeated)

NH No. :

Name of place of kilometerage 0.00 of NH :

Name of State where kilometerage 0.00 of NH is located :

Sl. No.	Name of place of CS	PIN-CODE of CS*	Kilometerage of CS	Name of Nearest Town	Distance of Nearest Town from CS (km)	Terrain** (plain/rolling/mountainous/steep)

* Check carefully with postal authorities

** If cross slope of country around CS is up to 10 per cent, write plain terrain, if cross - slope is more than 10 per cent and up to 25 per cent write rolling terrain, if cross-slope is more than 25 per cent and up to 60 per cent write mountainous terrain, if cross - slope greater than 60 per cent, write steep terrain.

Ministry of Surface Transport, Department of Road Transport and Highways, Government of India
Traffic and Transportation Zone
Proforma T-3, Traffic Census Data

Proforma T-3
Traffic Census Data

(1) Name of State:

(2) National Highway No.

(3) Count Station Particulars (C.S.)

(a) Name of Count Station

(b) PINCODE of count Station

(c) Kilometrage of C.S.

(d) Kilometrage 0.00 at place

(e) State where kilometrage 0.00 is situated

(f) Name of nearest town

(g) Distance of nearest town from C.S.

(h) Nature of area (Please ✓ one in each row)

(i) ☐ Services (e.g. Office Areas) ☐ Industrial ☐ Agricultural

(ii) ☐ Urban ☐ Semi-urban ☐ Rural

(i) Terrain (Please ✓) (Depends on cross-slope S of the country around C.S.)

☐ Plain ($0\% \leq S \leq 10\%$) ☐ Rolling ($10\% < S \leq 25\%$)

☐ Mountainous ($25\% < S \leq 60\%$) ☐ Steep ($S > 60\%$)

(4) Time of Census Month Year

(5) Duration of Census Days

(6) **Average daily Traffic** (in number of vehicles)

A. Fast/Power Driven vehicles :

(a) Car/Jeep/Taxis/Van/Three Wheeler (Auto Rickshaws)

(b) Two Wheeler (Motor cycle/scooter)

(c) LCV (Light commercial vehicles e.g. mini trucks)

(d) Bus

(e) Two Axle Truck/Tanker

(f) Multi Axle Truck/Truck Trailer/Tanker

(g) Agricultural tractor/with Trailer

B. Slow Vehicles :

(a) Cycle/Cycle Rickshaw Other Human Powered Vehicles

(b) Bullock cart/Horse driven cart/Other Animal Drawn Vehicles

C. Other Vehicles (if any)

(Please Specify)

(7) **Highest Peak hour traffic for the week in (in number of vehicles)**

A. Highest Peak Hour **HRS to** **HRS**

B. Fast/Power Driven vehicles :

Day of Highest Peak Hours

(a) Car/Jeep/Taxis/Van/Three Wheeler (Auto Rickshaws)

(b) Two Wheeler (Motor Cycle/Scooter)

(c) LCV (Light commercial vehicles e.g. mini trucks)

(d) Bus

(e) Two Axle Truck/Tanker

(f) Multi Axle Truck/Truck Trailer/Tanker

(g) Agricultural tractor/with Trailer

C. Slow Vehicles :

(a) Cycle/Cycle Rickshaw/Other Human Powered Vehicles

(b) Bullock cart/Horse driven cart/Other Animal Drawn Vehicles

D. Other Vehicles (if any)

(Please Specify _____)

(8) (a) Any factor which may have cause sudden change in traffic from last count (Please ✓ one or more as applicable)

☐ Construction of alternate road☐ Closure of alternate road☐ New railway/inland waterway/coastal waterway being operational☐ Construction of new facility on road☐ Deterioration of level of service on road☐ Any other (please specify)

(b) Date (data last reported)

Month

Year

(9) (a) Reporting Organisation

(b) Reporting Officer's designation _____

(c) Reporting Officer's Address _____

District _____ Pin Code _____

Phone No. (with STD code) (_____) _____

Fax No. (If any) (_____) _____

Email (If any) _____

(d) Signature of Reporting Officer _____

Traffic and Transportation Zone

Instructions of filling up Proforma T-3, Traffic Census Data

The proforma is designed to be used friendly and self-explanatory. The instructions are printed in italics.

1. **Name of State :** *Fill in the name of the state. If necessary, abbreviate to fit into the boxes: Leave one box blank between different words, eg. Jammu and Kashmir is*

J	A	M	M	U		A	N	D		K	A	S	H	M	I	R		

2. **National Highway No. :** *Write the National Highway Number on which the count station is situated e.g. NH-1A is.*

0	0	1	A

3. **Count Station Particulars (CS)**

- (a) **Name of Count Station :** *Write name of the place of the Count Station, e.g., if the count station is situated in village Subhash Nagar it is to be entered as*

S	U	B	H	A	S	H		N	A	G	A	R			

Leave one box blank between different words. Abbreviate if necessary.

- (b) **PINCODE of Count Station :** *Write the Postal Pin-Code of the place where the Count Station is situated, one*

number in a box, e.g. 781012 is

7	8	1	0	1	2

In case of any doubt, please verify it from the Post Office, under which the Count Station is situated. Ensure that this does not vary from previously reported data. If any variation is there, indicate it in a covering letter accompanying the traffic census.

- (c) **Kilometerage of CS :** *Write the kilometerage of the place where Count Station is situated e.g. km 100.15 is written as*

0	1	0	0		1	5	0

- (d) **Kilometerage 0.00 at place :** *Write the name of the place, where km 0.000 is located, i.e., the place where the kilometerage is reckoned/measured from. This should be consistent with all the records of the reporting organisation. Use instructions in 3(a) for filling blank spaces.*

- (e) **State where kilometerage 0.00 is situated :** *Write the name of the state where kilometerage 0.00 of the NH lies. This is linked to 3 (d) and instructions for filling item 1 should be used.*

- (f) **Name of nearest town :** *Write the name of the town on the Highway, nearest to the point of the Count Station. A town is one having a Municipality, Municipal Corporation or the like. Use instructions in 3 (a) for filling blank spaces.*

- (g) **Distance of nearest town from CS (in km) :** *Write the distance of the town given in 3(f) from the count station point as measured along the highway e.g. distance of 31.25 km is written as*

0	3	1		2	5	0

- (h) **Nature of area :** (i) *Tick the nature of the area at which the count station is situated. In the first row, if there are bank offices, shops, etc. in the locality of the count station, tick the box for services. Similarly for industrial area or farm land, tick the appropriate box.*

- (ii) *In the second row, tick whether the locality is Urban, Semi-urban or Rural*

- (i) **Terrain:** Tick the appropriate terrain of the country-side in which the count station is situated. If cross slope of country around C.S. is up to 10 per cent, tick plain terrain, if cross-slope is more than 10 per cent and up to 25 per cent then tick rolling terrain, if cross-slope is more than 25 per cent and up to 60 per cent tick mountainous terrain, if cross-slope is greater than 60 per cent, tick steep terrain.

- (4) **Time of Census:** Enter the Month and Year of Census. If the traffic Census is held on days falling over two months and/or years, enter the later month and/or year, e.g. if census is held from 29th December, 2000 to 4th January, 2001, it is to be entered as Month

0	1

 Year

2	0	0	1

- (5) **Duration of census:** Write the duration of census. Usually, the census is held over 7 days for which enter

0	7

 Days

- (6) **Average daily traffic in number of vehicles:** Enter the average number of vehicles of the appropriate category, per day. Do not leave a box blank, e.g. for 235 buses write

0	0	0	2	3	5

For vehicles in other category, write the name of vehicles along with the average number of vehicles per day.

- (7) **Highest peak hour traffic for week (in number of vehicles):** *Highest Peak Hour* is the Hour in which the total number of vehicles was highest over the census period. P.M. hours should be recorded after adding 12 to the actual P.M. Enter the peak hour in A, e.g., if it is 5:00 P.M. to 6:00 P.M. enter.

A. *Highest Peak Hour*

1	7	0	0

 HRS to

1	8	0	0

 HRS

Enter the day when the above Highest Peak Hour was recorded.

For the rest follow instructions in 7.

- (8) (a) **Any factor which may have caused sudden change in traffic from last count:** Tick the factor(s) which may have caused sudden change in the traffic, i.e., change other than normal growth. For this check the past records of the organisation.

- (b) **Data (data last reported):** Enter the month and year when data was last reported. Use instruction in 5 for filling up spaces.

- (9) (a) **Reporting Organisation:** Enter name of Reporting Organisation e.g. PWD as

P	W	D			

,
NHAI as

N	H	A	I		

, BRO as

B	R	O			

- (b) to (d) Enter addresses etc. of the reporting officer. The Reporting Officer is the officer of the organisation (e.g. Executive Engineer in state PWDs), who is responsible for the stretch of Highway in which the Count Station lies.

**TRAFFIC CENSUS FIELD
DATA SHEETS**

PLATE I

GOVT. OF INDIA
DEPTT. OF ROAD TRANSPORT & HIGHWAYS
TRAFFIC AND TRANSPORTATION ZONE

NATIONAL HIGHWAY NO.
KILOMETERAGE OF COUNT STATION
PLACE OF COUNT STATION:
DISTRICT: STATE:

DATE:/...../.....
DAY:
DIRECTION OF TRAFFIC UP/DOWN
FROM (Place): To (Place):
PIN-CODE OF COUNT STATION:

HOUR OF COUNT	FAST / POWER DRIVEN VEHICLES								SLOW VEHICLES			OTHERS (Specify)	Remarks (Including weather conditions e.g. sunny/rainy/cloudy)	
	CARS/ JEeps/ TAXIES/VAN/ (auto rickshaw)	TWO WHEELER (motorcycle/ scooters etc.)	LCV (Light Commercial Vehicles e.g. Mini Truck)	BUS	TWO AXLE TRUCK/TANKER	MULTI AXLE TRUCK/ TRUCK TRAILER/TANKER	AGRICULTURAL TRACTOR/ WITH TRAILER	CYCLE/CYCLE RICKSHAW/OTHER HUMAN POWERED	BULLOCK CART/HORSE CART/OTHER ANIMAL DRAWN					
FROM HRS TO HRS														
TOTAL														
FROM HRS TO HRS														
TOTAL														
Name and Signature of Enumerator with Date Name and Signature of Supervisor with Date														

Note 1. Record Number of Vehicles in the Appropriate column by making tallies in the form of vertical strokes for the first four vehicles and drawing an oblique stroke for every fifth vehicle e.g. IIII.

Note 2. The hour of count should be entered in 24 hour system e.g. 9 A.M. should be entered as 0900 hrs and 3 P.M. should be entered as 1500 HRS i.e., P.M. hours should be recorded After adding 12 to the Actual P.M. Hour.

Note 3. use More Rows for one hour count if required, but it should be recorded

GOVT. OF INDIA

TRAFFIC CENSUS
DAILY TRAFFIC SUMMARY

DEPTT. OF ROAD TRANSPORT & HIGHWAYS
TRAFFIC AND TRANSPORTATION ZONE

MODIFIED PLATE II OF IRC:9-1972

DATE: / / DAY :
NATIONAL HIGHWAY NO.:
DIRECTION OF TRAFFIC
KILOMETERAGE OF COUNT STATION
UP From (Place): To (Place):
PLACE OF COUNT STATION:
DOWN From (Place): To (Place):
DISTRICT: STATE:
COUNT HOURS : FROM HRS TO HRS

COUNT HOUR	FAST / POWER DRIVEN VEHICLES												SLOW VEHICLES						OTHERS (Specify)		Total for all vehicles for Hour (See Note 2)	Remarks
	CARS/ JEEPS/ TAXIES/VAN/ (auto rickshaw)	TWO WHEELER (motorcycle/ scooters etc.)		LCV (Light Commercial Vehicles e.g. Mini Truck)		BUS		TWO AXLE TRUCK/TANKER		MULTI AXLE TRUCK/TRUCK TRAILER/TANKER		AGRICULTURAL TRACTOR/WITH TRAILER		CYCLE/CYCLE RICKSHAW/OTHER		BULLOCK CAR/HORSE CART/OTHER ANIMAL POWERED						
0000-0100	U	D		U	D		U	D		U	D		U	D		U	D					
0100-0200																						
0200-0300																						
0300-0400																						
0400-0500																						
0500-0600																						
0600-0700																						
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1700-1800																						
1800-1900																						
1900-2000																						
2000-2100																						
2100-2200																						
2200-2300																						
2300-2400																						
TOTAL FOR																						

Note : U: Up Traffic, D: Down Traffic

TRAFFIC CENSUS WEEKLY TRAFFIC SUMMARY

GOVT. OF INDIA
DEPTT. OF ROAD TRANSPORT & HIGHWAYS
TRAFFIC AND TRANSPORTATION ZONE

DEPT. OF ROAD TRANSPORT & HIGHWAYS
TRAFFIC AND TRANSPORTATION ZONE

Date : From/...../..... to : ;...../...../.....

PINCODE of Count Station :

National Highway No. :

Kilometrage of Count Station :

Place of count station:

District : State:

[illegible]

602. ROAD SIGNS AND MARKINGS

Code No.	Circular No. & Date	Brief Subject	Page No.
602.32	RW/NH-11047/1/87-DO.I Vol.II dated 30.6.1999	Thermoplastic Road Marking Material.	602/45
602.33	RW/NH-33023/20/99-DO.III dated 27.4.2000	Road Signs on National Highways using Retro-reflective sheeting – Forged Circular reg.	602/45 & 46
602.34	RW/NH-33044/15/2000-S&R dated 3.8.2000	Road Signs on NHs using Retroreflective Sheeting – reg.	602/46
602.35	RW/NH-33044/17/2000-S&R dated 29.9.2000	Laying of Optical Fibre Cables in National Highway Land for establishing telecom infrastructure by private licensees - regarding	602/46 to 52
602.36	RW/NH-33044/10/2000-S&R® dated 17.7.2001	Display of boards on development activities on National Highways	602/53
602.37	RW/NH-33044/10/2000-S&R ® dated 25.9.2001	Display of boards on development activities on National Highways - Corrigendum	602/54

No.RW/NH-11047/1/87-DO.I Vol.II**Dated, the 30th June, 1999**

To

Secretaries (PWD/Roads) of all State Government/Union Territories; Chief Engineers of State/Union Territories (dealing with National Highways and other Centrally Sponsored Schemes); Director General Border Roads; Chairman National Highways Authority of India

Subject : Thermoplastic Road Marking Material

As per the information available in this Ministry, Thermoplastic Road Marking Paints being used on various road work sites for road markings are generally imported. It has also come to notice that in some cases, even though the paints were meeting specifications as per BS:3262, these were not meeting specifications as per Clause 803 of Ministry of Surface Transport (Roads Wing) Specifications for Road and Bridge Works, 1995. Recently a domestic firm named M/s S.N. Industries having its Head Office at 2682, Gali No. 2, Beadon Pura, Ajmal Khan Road Market, Karol Bagh, New Delhi-110 005, Telephone No. (011) 5725156, (011) 5743879, Fax (011) 5761279 has approached this Ministry that they are producing Thermoplastic Road Marking materials indigenously. The firm claims that the paint is conforming to clause 803 of Ministry of Surface Transport (Roads Wing) Specifications for Road and Bridge Works, 1995 and have furnished test reports from some reputed organisations. The firm has also given an undertaking to the Ministry that they will warrant the paint for any manufacturing defect for a period of two years from the date of application of paint on the road surface.

2. In order to encourage indigenous production of such type of materials, it is suggested that the Thermoplastic Road Marking Paint being manufactured by the above mentioned firm may be tried for use on the National Highways after ensuring the required quality as per clause 803 of Ministry of Surface Transport (Roads Wing) Specifications for Road and Bridge Works, 1995 and necessary feed back regarding the performance of this paint furnished to the Ministry.

3. The contents of this Circular may please be brought to the notice of all concerned.

No.RW/NH-33023/20/99-DO.III**Dated, the 27th April, 2000**

To

Chief Secretaries/Secretaries (PWD/Roads) of all State Government/Union Territories; Chief Engineers of State/Union Territories (dealing with National Highways and other Centrally Sponsored Schemes); Director General Border Roads; Chairman National Highways Authority of India

Subject : Road Signs on National Highways using Retro-reflective sheeting-Forged Circular reg.

It has been brought to the attention of this Ministry, that a Circular no. RW/NH-33020/20/99DO-III dated 24th Jan, 2000, purporting to be issued by the Ministry of Surface Transport (Roads Wing), containing the names of manufacturers of Retro-reflective sheeting to be used for Road Signs on National Highways is being circulated to various authorities. This is to inform that NO SUCH CIRCULAR HAS BEEN ISSUED by this Ministry.

2. The last circular no. RW/NH-11047/1/87-DOI dated 11-03-1993 issued on this subject had names of three manufacturers, viz.

- (a) M/s KIWA Chemical Industries Co. Ltd., Japan
- (b) M/s 3M SCOTHLITE Sheeting, USA
- (c) M/s SEIBULITE, JAPAN

This circular has not yet been modified and it still stands. The name of M/s LG Chem, Korea that has been added to this list in the forged circular has not been approved by this Ministry so far and therefore no cognizance of the forged circular may be taken. If any body submits the forged circular, the matter may be reported to the Ministry and local law enforcing authorities.

3. The contents of this circular may be brought to the attention of all concerned in your organisation.

602.34

No.RW/NH-33044/15/2000-S&R

Dated, the 3rd August, 2000

To

Chief Secretaries/Secretaries (PWD/Roads) of all State Government/Union Territories; Chief Engineers of State/Union Territories (dealing with National Highways and other Centrally Sponsored Schemes); Director General Border Roads; Chairman, National Highways Authority of India

Subject : Road Signs on NHs using Retroreflective sheeting-regarding

Please refer to Ministry's circulars Nos. (i) RW/NH-11047/1/87-Do I dated 11.03.93 and (ii) RW/NH-33023/20/98 - Do III dated 27.04. 2000 on the above subject wherein the name of three manufacturers of retro-reflective sheeting to be used on NHs have been mentioned.

2. In view of the various requests from manufacturers for inclusion of name, change in brand name etc. it has been considered necessary by the Ministry that hereinafter mentioning specifically of certain few brand names is not advisable to be quoted. Hence it is requested that the three names of manufacturers appearing in the circulars mentioned at ref. (i) & (ii) may be treated as withdrawn. It may however, be invariably ensured that the products of the manufacturers fulfill the requirements of Clause 801.3 of the MOST Specification for Roads & Bridges Works (1995) and the Ministry's circulars RW/NH-33023/31/98 - Do III dated 02.05.1994 and RW/NH-33023/31/88 - Do III dated 04.12.1995 issued on the subject. Regarding procurement of reflective sheeting, the procedure laid down in circulars dated 11.03.1993 shall be followed.

3. The contents of this circular may be brought to the notice of the attention of all concerned in your organisation.

602.35

No.RW/NH-33044/17/2000-S&R

Dated, the 29th September, 2000

To

Secretaries, PWD of all States/UTs; Chief Engineers of all States/UTs, PWD (dealing with National Highways and other Centrally Sponsored Schemes); Director General Border Roads; Chairman, National Highways Authority of India

Subject : Laying of Optical Fibre Cables in National Highway land for establishing telecom infrastructure by private licensees-regarding.

This Ministry in circular No.RW/NH-12037/826/98 - KNT dated 17.08.1999 issued guidelines allowing existing private telecom licensees to lay optical fibre cables for cellular mobile/basic telephone services at par with the DOT. As regards future licensees it was indicated therein that separate guidelines would follow in due course. The model guidelines including the agreement format having operational details that may be uniformly pursued for granting right-of-way permissions to licensed telecom operators and registered infrastructure providers for laying telecom cables/ducts on NH land have since been finalised and enclosed at *Annexure-I*. These guidelines are issued in supersession of the circular dated 17.08.1999.

2. The guidelines provides for the facility of right of way to be extended for laying underground telecom cables, to all licensees (irrespective of existing or future) and registered/licensed infrastructure providers, without discrimination and without payment of any compensatory charges/levy/lease rentals/license fee/free bandwidth/

revenue share/cashless equity etc. subject to the condition that this right of way facility shall be available to the extent of provisions contained in their license agreements. Restoration charges may, however, be levied on/borne by licensees to ensure proper restoration and compaction of the dug portions of the trenches.

3. The guideline make it clear that any authorized licensee of Department of Telecom/Registered Infrastructure Provider is eligible to seek/avail right of way facility/permission. The right of way permission shall be granted by the State Chief Engineer (National Highways) with the concurrence of Regional Officer of the Ministry of Surface Transport in respect of the NHs held by the State PWD. The permission in respect of the NH routes held by the NHAI and BRDB shall be granted by the designated officers of NHAI and BRDB respectively. However, enforceability of the permission so granted shall be restricted to the extent of provisions/scope of service contained/defined in the licence agreement of that licensee & for the purpose for which it is granted (para 1 of guidelines). The cable shall ordinarily be laid at the edge of the Right of Way or at a minimum distance of 15 m from the centre line of the of the nearest carriageway where the road land is wider. In case of restricted width of ROW, which may be adequate only to accommodate the carriageways, central verge, shoulders, slopes of embankment and drains, the cables shall be laid beyond the toe line of the embankments and clear of the drain. In cases where no land strip can be conveniently earmarked for laying of cables, the permission may be refused. The restoration charges are to be borne by the licensee (para 4 of guidelines). As far as possible cutting of the road for crossing is to be avoided and instead may be done by drilling a hole beneath the pavement. If the road needs to be cut, necessary restoration cost shall be deposited with the designated representative of the owner and the same credited to the Central Govt. head of account 'Major Head 1054 - Roads and Bridges - Other Receipts'. In case any damage is caused to the road pavement the same shall be restored to the original condition at the licensees cost (Clause 11 of agreement). The State PWDs/NHAI/BRDB may examine the option of laying ducts/conduits along the alignment of all NHs being constructed/upgraded by them to enable future commercial exploitation of this facility (para 8 of guidelines). The agreement shall be signed by the State Chief Engineers/NHAI/BRDB or his designated representatives on behalf of the owner. For any relaxation on the provisions of the guidelines and/or agreement, prior approval from the Ministry shall be obtained.

4. Before recommending for such permission, the State PWDs are required to keep in view the requirement of 4/6 laning of the NHs especially in case of NHs proposed to be widened under North-South and East-West corridors and Golden quadrilateral linking Delhi-Calcutta-Mumbai and Chennai.

5. The Divisional/Executive Engineer (or equivalent) of the Highway Authority will keep a register of record of right of way permissions to the licensees who have been permitted access to the National Highway under his jurisdiction in the format enclosed (*Annexure-II*) with this circular. A copy of the record should be sent to the Circle Office as well as to the Regional Officer of the Ministry. The record should be periodically checked by inspecting officials.

[Enclosure to Ministry's Circular No. RW/NH-33044/171/2000 S&R dated 29th Sept., 2000]

Annexure-I

MODEL GUIDELINES FOR STREAMLINING THE PROVISION OF RIGHT OF WAY TO TELECOM SERVICE LICENSEES/INFRASTRUCTURE PROVIDERS

Government has realized the need for creating a robust telecommunication infrastructure with adequate bandwidth at affordable rates in order to promote development and proliferation of Information Technology, Electronic Governance, E-Commerce, convergence of Information, Communication and Entertainment sectors so as to improve the state of economy, enhance the quality of life of the citizens and to ensure development of urban and rural areas with equity throughout the country.

Keeping the above objectives in view, the Group of Telecom and Information Technology Convergence, Govt. of India has recommended the following broad guidelines under which Right of Way permissions may be granted to licensed telecom operators and registered infrastructure providers for laying telecom cables/ducts under, over, along, across, in or upon a property vested in or under the control or management of a local, authority or of any other person including public authority, public corporation, autonomous body, State Govt. or Central Govt. in their respective licensed service area during the currency of their licence:

- (1) Any authorized licensee of Deptt. of Telecom/Registered Infrastructure Provider is eligible to seek/avail Right of Way

facility/permission. However, enforceability of the permission so granted shall be restricted to the extent of provisions/ scope of service contained/defined in the license agreement of that licensee and for the purpose for which it is granted.

- (2) Either by content or by intent, the purpose of extending Right of Way facility is not to enhance the scope of license of a licensee and such Right of Way permissions are only enabling/facilitating in nature.
- (3) The cable shall ordinarily be laid at the edge of the Right of Way or at a minimum distance of 15 m from the centre line of the nearest carriageway where the road land is wider. In case of restricted width of ROW, which may be adequate only to accommodate the carriageways, central verge, shoulders, slopes of embankment and drains, the cables shall be laid beyond the toe line of the embankments and clear of the drain. In cases where no land strip can be conveniently earmarked for laying of cables, the permission may be refused.
- (4) The facility of right of way for laying underground telecom cables, shall be available to all licensees (irrespective of existing or future) and registered/licensed infrastructure providers, without discrimination and without payment of any compensatory charges/levy/lease rentals/license fee/free bandwidth/revenue share/cashless equity etc. subject to the condition that this right of way facility shall be available to licensees to the extent of provision contained in their license agreements and the reinstatement charges shall be borne by such licensees.
- (5) A performance bank guarantee @ Rs. 25 per route metre with a validity of one year initially (extendable if required till satisfactory completion of work) shall have to be furnished by each licensee as a security against improper filling/unsatisfactory compaction/restoration and damages caused to other underground installations/utility services & interference, interruption, disruption or failure caused thereof to any services. The above charge of Rs. 25/m is liable to be reviewed every 5 years. Notwithstanding this, licensee shall be liable to pay full compensation to the aggrieved owners for any damage sustained by them by reason of the exercise of right of way facility. However, in case of NH land, instead of furnishing the said bank guarantee, the payment of restoration charges would have to be made in advance by the licensee to the owner i.e. MOST or its designated agency before permission is granted. The restoration charges may be credited to the Central Govt. head of account 'Major head 1054 - Roads & Bridge - other receipt'.
- (6) In order to expedite right of way clearances to the licensees in a time-bound manner through an appropriate and effective approval mechanism, a committee under the chairmanship of Chief Secretary to the respective State Govts. may act as single window to coordinate all activities in this regard. Each State Govt. may select a Nodal Point/Secretary of a deptt. to function as Secretary to this Single Window Clearance Committee. However, in case of NH land, licensees would be required to take permission from the Regional Officers of MOST stationed at different States for laying of cables. As regards NH routes executed by the State PWD, the concerned State Chief Engineer (NH) may act as nodal point/single window to coordinate the activities whereas in respect of the NH routes held by NHAI and BRDB, the designated officers of NHAI and BRDB may be assigned this task.
- (7) The Right of Way permissions may be granted by the said nodal office to a licensee within a period of two weeks subject to the licensee's application being complete with route details (including authority/ownership of concerned sections of the route) and compliance to eligibility requirement, payment of reinstatement charges, furnishing of requisite bank guarantee and execution of an agreement having operational details. The above stated Single Window Clearance Committee may be responsible to coordinate in case of any dispute for ownership of property and to expedite grant of Right of Way clearance thereof so as to adhere to the stipulated time-frame.
- (8) In case any shifting or alteration in the position of the laid telephone cables is required due to widening of highways and constructing of flyovers or bridges, the licensee shall do the same at his own cost at a later date within specified period indicated by the respective agency.
- (9) In order to avoid repeated digging on the same routes, if possible, the first incumbent is free to lay voluntarily extra ducts/conduits with extra capacity so as to take care of future needs. The capacity/excess capacity can be commercialized by the incumbent with suitable mutual agreements with the respective State Government/utility agencies. However, the creation of excess capacity by the first incumbent shall not be a precondition for giving Right of Way clearances. The Central/State roadways authorities may consider laying ducts/conduits at the time of construction of roads to facilitate laying telephone cables for which suitable charges could be imposed.
- (10) Licensee shall ensure safety and security of all underground installations/utilities/facilities and shall be solely responsible for compensation/indemnification of concerned authority for damage caused/claims or replacements sought for at the cost and risk of licensee.
- (11) Licensee shall be liable to give a notice of 15 days with route details prior to trenching for fresh or maintenance/repair works. A separate performance bank guarantee for maintenance/repair works shall be furnished by licensee.
- (12) The period of validity of Right of Way permission shall be co-terminus with the validity of licence.

**AGREEMENT REGARDING RIGHT OF WAY
FOR LAYING TELECOM CABLES/DUCTS**

Agreement to lay Telecom Cables/ducts from _____ to _____ km of _____ land.

This Agreement made this _____ day of _____ (month) of _____ (year) between _____ acting in his executive capacity through _____, (hereinafter referred to as Owner which expression shall unless excluded by or repugnant to the context, include his successors in office and assigns) on the one part, and M/s. _____, a Company registered under the Companies Act, 1956, and having its Registered Office at _____ (hereinafter called the Licensee) which expression shall unless excluded by or repugnant to the context, include his successors/administrator assignees on the second part.

Whereas the Owner is responsible, inter-alia, for development and maintenance of roads in _____

Whereas the Licensee proposes to lay Telecom cables/ducts in _____

Whereas the Licensee has applied to the Owner for permission to lay Telecom cables/ducts from km _____ to km _____ of road/route upto _____ and from km to km _____ of road/route upto _____.

And whereas the Owner has agreed to grant such permission on the terms and conditions hereinafter mentioned.

Now this agreement witnesseth that in consideration of the conditions hereinafter contained and on the part of the Licensee to be observed and performed, the Owner hereby grants to the Licensee permission to lay Telecom Cables/ducts as per the approved drawing attached hereto subject to the following conditions, namely.

- (1) The cable shall ordinarily be laid at the edge of the Right of Way or at a minimum distance of 15 m from the centre line of the nearest carriageway where the road land is wider. In case of restricted width of ROW, which may be adequate only to accommodate the carriageways, central verge, shoulders, slopes of embankment and drains, the cables shall be laid beyond the toe line of the embankments and clear of the drain. In cases where no land strip can be conveniently earmarked for laying of cables, the permission may be refused;
- (2) The top of the casing/conduit pipe containing the cables shall be at least 1.2 m below the surface of the road subject to being at least 0.3 m below the drain inverts;
- (3) The Licensee shall ensure making good the excavated trench for laying cables by proper filling and compaction, so as to restore the land in to the same condition as it was before digging the trench, clearing debris/loose earth produced due to execution of trenching atleast 50 m away from the edge of the right of way;
- (4) The licensee shall furnish a Bank Guarantee for an amount calculated @ Rs. 25 (Rupees Twenty five only) per route metre to the Owner, for a period of one year initially (extendable if required till satisfactory completion of work) as a security for ensuring/making good the excavated trench for laying the cables/ducts by proper filling and compaction, clearing debris/loose earth produced due to execution of trenching atleast 50 m away from the edge of the right of way. The above charge of Rs.25/m is liable to be reviewed every 5 years. No payment shall be payable by the Owner to the licensee for clearing debris/loose earth. In case the work contemplated herein is not completed to the satisfaction of the Owner, which has granted the permission, within a period of 11 months from the date of issue of the Bank Guarantee, the Licensee shall either furnish a fresh guarantee or extend the guarantee for a further period of one year. In case of the Licensee failing to discharge the obligation of making good of the excavated trench, the Owner shall have a right to make good the damages caused by excavation, at the cost of the Licensee and recover the amount by forfeiture of Bank Guarantee. However, in case of NH land, instead of furnishing the said bank guarantee, the payment of restoration charges would have to be made in advance by the licensee to the Owner i.e. MOST or its designated agency before permission is granted;
- (5) The Licensee shall make his own arrangement for crossing of cross-drainage structure, rivers, etc., below the bed. In case, this is not feasible, the cables/ducts may be carried outside the railings/parapets and supported on brackets fixed to the outside of the bridge superstructure. The fixing and supporting arrangement with all details shall be got approved in advance from the concerned Owner which has granted such permission. Additional cost on account of fixing and supporting arrangement as assessed by the Owner shall be payable by the Licensee.
- (6) The Licensee shall shift the cables/ducts within 90 days (or as specified by the respective agency/Owner) from the date of issue of the notice by the concerned Owner to shift/relocate the cables/ducts, in case it is so required for the purpose

of improvement/widening of the road/route/highway or construction of flyover/bridge and restore the road/land to its original condition at his own cost and risk.

- (7) The Licensee shall be responsible to ascertain from the respective agency in coordination with Owner, regarding the location of other cables, underground installations/utilities/facilities etc. The Licensee shall ensure the safety and security of already existing cables/underground installations/utilities/facilities etc. before commencement of the excavation.
- (8) The Licensee shall be solely responsible/liable for full compensation/indemnification of concerned agency/aggrieved owners for any direct, indirect or consequential damage caused to them/claims or replacements sought for, at the cost and risk of the Licensee. The concerned agency in co-ordination with Owner shall also have a right to make good such damages/recover the claims by forfeiture of the Bank Guarantee.
- (9) If the Licensee fails to comply with the condition [6] and [7] above to the satisfaction of the Owner, the same shall be got executed by the Owner at the cost and risk of the Licensee.
- (10) The Licensee shall procure insurance from reputed insurance company against damages to already existing cables/underground installations/utilities/facilities etc. during trenching.
- (11) As far as possible, the Licensee should avoid cutting of the road for crossing Highways, and other Roads and try to carry out the work by drilling a hole beneath the road pavement. In case any damage is caused to the road pavement in this process, the Licensee will be required to restore the road to the original condition at his cost. If due to unavoidable reasons the road needs to be cut for crossing or laying a cable, the Licensee shall deposit the restoration cost/reinstatement charges as assessed by the Owner in co-ordination with the concerned agency.
- (12) The Licensee shall inform/give a notice to the concerned agency designated by Owner at least 15 days in advance with route details prior to digging trenches, for fresh or maintenance/repair works. A separate performance bank guarantee for maintenance/repair works shall have to be furnished by the Licensee.
- (13) Each day, the extent of digging the trenches should be strictly regulated so that cables are laid and trenches filled-up before the close of the work that day. Filling should be completed to the satisfaction of the concerned agency designated by the Owner.
- (14) The Licensee shall indemnify the concerned agency in co-ordination with Owner, against all damages and claims, if any, due to the digging of trenches for laying cables/ducts.
- (15) This permission shall be co-terminus with the validity of licence awarded by the Department of Telecommunications. The permission granted under this Agreement will automatically cease in case of premature termination of the licence granted to by the Department of Telecommunications. The Owner also has right to terminate the permission or to extend the period or Agreement. In case the Licensee wants shifting, repairs or alteration to telecom cable/ducts, he will have to furnish a separate Bank Guarantee.
- (16) That the Licensee shall not without prior permission in writing of the concerned agency in co-ordination with Owner undertake any work of shifting, repairs or alterations to the said Telecom Cables/ducts.
- (17) In order to avoid repeated digging, on the same routes, if possible, the Licensee is free to lay voluntarily extra ducts/conduits with extra capacity so as to take care of future needs. The capacity/excess capacity can be commercialized by the Licensee with suitable mutual agreements with the Owner or his designated agency. However, the creation of excess capacity by the Licensee is not a precondition for Right of Way permission granted herein.
- (18) The permission granted shall not in any way be deemed to convey to the Licensee any ownership right or any interest in route/road/highway land/property, other than what is herein expressly granted.
- (19) During the subsistence of this Agreement, the telecom cables/ducts located in Highway land/property shall be deemed to have been constructed and continued only by the consent and permission of the Owner so that the right of the Licensee to the use thereof shall not become absolute and indefeasible by lapses of time.
- (20) The Licensee shall bear the stamp duty charged on this agreement.
- (21) The Telecom Cables shall not be brought into use by the Licensee unless a completion certificate to the effect that the Telecom cables/ducts has been laid in accordance with the approved specifications and drawings and the trenches have been filled-up to the satisfaction of the concerned agency in co-ordination with the Owner, has been obtained.
- (22) Notwithstanding anything contained herein this Agreement may be cancelled at any time by the Owner for breach of any condition of the same and the Licensee shall neither be entitled to any compensation for any loss caused to it by such cancellation nor shall it be absolved from any liability already incurred.
- (23) The Licensee shall have to provide barricading, danger lighting and other necessary caution boards while executing the work.
- (24) If any traffic diversion works are found necessary during the working period such diversion shall be provided at the cost of Licensee.

- (25) After the termination/expiry of the agreement, the Licensee shall remove the cables/ducts within 90 days and the site shall be brought back to the original condition failing which the Licensee will lose the right to remove the cables/ducts. However, before taking up the work of removal of cables the Licensee shall furnish a Bank Guarantee to the Owner for a period of one year for an amount assessed by the Owner for making good the excavated trench by proper filling and compaction, clearing debris, loose earth produced due to excavation of trenching at least 50 m away from the edge of the right-of-way.
- (26) The enforceability of the Right-of-Way permission granted herein shall be restricted to the extent of provisions/scope of service contained/defined in the licence agreement of the Licensee with Department of Telecommunications and for the purpose for which it is granted. Either by content or by intent, the purpose of extending this Right-of-Way facility is not to enhance the scope of Licence of the Licensee with the Department of Telecommunications.
- (27) Any disputes in interpretation of the terms and conditions of this Agreement or their implementation shall be referred to the High Level Committee comprising the designated representatives of the Owner, Licensee and the concerned agencies and the decision of the committee shall be final and binding on all.

This Agreement has been made in duplicate, each on a Stamp Paper. Each party to this Agreement has retained one stamped copy each.

IN WITNESS WHEREOF THE PARTIES HERETO HAVE CAUSED THIS AGREEMENT TO BE EXECUTED THROUGH THEIR RESPECTIVE AUTHORISED REPRESENTATIVES THE DAY AND THE YEAR FIRST ABOVE WRITTEN.

SIGNED SEALED AND DELIVERED FOR AND ON BEHALF OF OWNER.

BY SHRI _____

(signature, name & address with stamp)

SIGNED ON BEHALF OF M/S _____ (Licensee)

BY SHRI _____

(signature, name & address with stamp)

HOLDER OF GENERAL POWER OF ATTORNEY DATED _____ EXECUTED IN ACCORDANCE
WITH THE RESOLUTION NO. _____ DATED _____ PASSED BY THE BOARD OF
DIRECTORS IN THE MEETING HELD ON _____

IN THE PRESENCE OF (WITNESSES):

[Enclosure to Ministry's Circular No. RW/NH-33044/17/2000-S&R dated 29th Sept., 2000]

Format for Maintaining Records of Right-of-Way permission granted for laying OFC

(to be maintained separately for every NH and State, every PWD Division or equivalent)

1. Name of State : _____
2. Name of Agency (PWD/BRO/NHAD) : _____
3. Name of PWD Division of Equivalent : _____
4. NH Number : _____

[illegible]

Dated, the 17th July, 2001

Secretaries of States/Union Territories, Public Works Departments; All Chief Engineers of State/Union Territories (dealing with National Highways); Chairman, National Highways Authority of India; Director General Border Roads

As you are aware, number of development works is in progress on different National Highways. To make an awareness amongst the public about the projects taken up on National Highways, it has been decided that henceforth boards will be fixed on either end of the project sections giving brief details of the works :

- (i) The board will have the following details (sample enclosed)
 - Govt. of India, Ministry of Road Transport & Highways
 - N.H. No.
 - Name of work
 - Sanctioned amount
 - Date of start
 - Date of completion
 - NH Division Tel. No.
- (ii) The board will be of size 1.5 m x 1 m. The background of the board will be in yellow colour with lettering in black of proper size.
- (iii) The board will be displayed for all NH works of original nature amounting Rs.2 crores and above including the works of Improvement of Riding Quality.
- (iv) The boards will be fixed at either end of the work section; at one end in English and on the other end in Hindi/local language. The display boards have to be maintained properly even after the work is completed. The cost of the board may be charged to the contingency of the work.

2. This may please be brought to the notice of the concerned field officers of your department for necessary action.

[Enclosure to Ministry's Circular No.RW/NH-33044/10/2000-S&R (R) dated 17th July, 2001]

GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT & HIGHWAYS

N.H. DIVISION :

TELEPHONE NO. :

No.RW/NH-33044/10/2000-S&R(R)

Dated, the 25th September, 2001

To

Secretary of all State/Union Territories, Chief Engineers of States/Union Territories (dealing with National Highways); Chairman, National Highways Authority of India; Director General Border Roads

Subject: Display of boards on development activities on National Highways - Corrigendum

In partial modification to Ministry's Circular of even No. dated 17th July, 2001 on above cited subject (copy enclosed), the para 1 (ii) may be replaced by the following :

"The board will be of size 1.5 m x 1 m. The background of the board will be as per Indian Standard colour No. 368 'Traffic Yellow' of IS:5-1978 with lettering in black of proper size.

604. HIGHWAY SAFETY RAILS, BARRIERS, SPEED BREAKERS

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
604.19	RW/NH-33022/4/96-DO.III dated 4.2.1997	Need for taking up specific Road Safety works in 9 th Five Year Plan	604/34
604.20	RW/NH-11064/1/91-DOI dated 13.5.1998	Removal of Speed Breakers: Policy regarding	604/34 & 35
604.21	RW/NH-33044/11/97 S&R dated 4.9.2000	Installation of Traffic Safety Barriers-Wire Rope Safety Fencing System-Regarding	604/35
604.22	RW/NH-11064/1/2000-US(D.I) dated 24.8.2000	Removal of Speed Breakers from National Highways	604/35 & 36
604.23	RW/NH-33044/11/97-S&R dated 13.9.2000	Installation of Traffic Safety Barriers – Wire Rope Safety Fencing System - regarding	604/36

No.RW/NH-33022/4/96 DO.III***Dated, the 4th February, 1997***

To

Chief Engineers of States and Union Territories (dealing with National Highways and the Centrally financed schemes); Director General (Works), Central Public Works Department; Director General Border Roads

Subject : Need for taking up specific Road Safety works in 9th Five Year Plan.

Road accident scenario in the country has been a matter of concern. Despite low rate of vehicle ownership in India has a very high accident rate. About 60,600 lives were lost and 2,88,600 persons injured in 2,86,000 accidents on Indian roads, in 1993. Even though Driver's error is observed to be the cause in many accidents, the behaviour of driver is also influenced to a large extent by the condition of the roads and environment. Thus many low cost improvements in the roads can have very profound effect in improving the road safety.

2. There is need to include road safety related works in the annual plans of the 9th Five Year Plan Works of the following nature could be considered under this category :

- (a) Geometric improvement of accident prone sections
- (b) Improvement of At-Grade Intersections and provision of Grade Separators
- (c) Provision of Guard rails/delineators at approaches to bridges/high embankments
- (d) Augmentation of traffic control devices such as signages, road markings etc.
- (e) Provision of Wayside Amenities and Truck Parking Laybys.

This matter was also highlighted by the Director General (Road Development) during the meeting of State Chief Engineers held at Nagpur on 16th January, 1997. It is requested that this requirement may kindly be kept in view while formulating proposals for works to be taken up under different Annual Plans of the 9th Five Year Plan.

No.RW/NH-11064/1/91-DO I***Dated, the 13th May, 1998***

To

Secretaries of all States/Union Territories, Public Works Department (dealing with National Highways); Director General Border Roads; Director General (Works), Central Public Works Department; Chairman, National Highways Authority of India

Subject: Removal of Speed Breakers : Policy regarding

Please refer to this Ministry's circular of even No. dated 28.06.1996 to reiterating the Ministry's policy that speed breakers should not be constructed on National Highways as these defeat the basic objective of providing an obstruction-free high speed facility, apart from being a safety hazard. The circular recommended provision of properly designed rumble stripe at places like approaches to sharp curves or level crossings, congested or accident prone sections etc. where control of speed on National Highways is unavoidable.

2. It has come to the notice of the Ministry that speed breakers continue to be provided on National Highways despite contrary advice from the engineers and planners. These speed-breakers mostly of improper design being provided on National Highways have become a safety hazard.

3. The locations where speed breakers have been constructed should be reviewed and other safety measures such a removal of encroachments, provision of speed limit signs, construction of parallel service roads etc. may please be considered. The existing policy of providing only rumble strips at places where speed control is

unavoidable may be continued. However, proper care should be exercised to ensure that these strips conform to the design recommended by the Ministry.

4. It is requested that appropriate instructions may please be issued to the concerned field officers including Distt. Magistrates for immediate removal of speed breakers from the National Highways. This task should be completed by 31st July, 1998 and position reported to the Ministry immediately thereafter.

604.21

D.O.No. RW/NH-33044/11/97-S&R

Dated, the 4th Sept., 2000

To

Chief Engineers of States/Union Territories (dealing with National Highways and other Centrally Sponsored Schemes); Director General (Border Roads); Chairman, National Highways Authority of India

Subject : Installation of Traffic Safety Barriers - Wire Rope Safety Fencing System - regarding

Guidelines for installation of Safety Barriers along the Indian road network were issued by this Ministry vide letter no. RW/NH/33022/1/94 - DO III dated 24.06.94. These guidelines dealt with steel barriers and concrete safety barriers. The guidelines bring out the major factor to be considered for the selection of a particular barrier system viz. matching dynamic lateral deflection characteristics of the system to the space available at site so as to mitigate the severity of impact. They also indicate that enhancement of vehicular safety should be given weightage.

2. It has since been reported that at certain locations in our country in situations like high embankment reaches in approaches to bridges and fly-overs, sharp curves where ponds and canals are in close proximity to highways etc. the wire rope safety fencing has been tried and the performance found encouraging. The system has proved to be a very good anti-crash barrier when a vehicle strikes it in high speed. Owing to the capacity of the system to absorb the energy of impact there has been hardly any damages to the hitting vehicle and its occupants. Thus, it is expected that the major requirements of lateral deflection characteristics enhancement of vehicular safety and aesthetic are fulfilled by the system in addition to the other safety and structural requirements which can be evaluated only after the system has been tried on more locations.

3. The application areas of such wire rope fencing could be vulnerable locations involving high risk of traffic safety as stated in para 2 above and recurring accident spots especially in hilly terrain. As per information available, the approximate cost for supply and installation may work out to Rs.45 lakhs to 55 lakhs per km.

4. It is, therefore, suggested that necessary action may please be initiated to identify a few accident prone locations on NHs and to install the wire rope fencing system meeting the cost from plan provisions. Their performance may be kept under observation and this Ministry may be informed of the same alongwith details like cost, efficacy, durability and maintenance requirements and problems etc. in due course.

604.22

D.O.No. RW/NH-11064/1/2000-US(D.I)

Dated, the 24th August, 2000

Subject : Removal of Speed Breakers from National Highways

As you know, Govt. of India is making sizeable investments on the National Highways to ensure unhindered movement of vehicles at reasonably good speed for satisfying the objectives or reduced vehicle operation costs and savings in fuel consumption as well as ensuring safety to traffic. However, due to unregulated development along National Highways, there is an increase in the number of accidents leading to construction of several unauthorized speed breakers by the local people on the National Highways. These speed breakers hinder the

smooth flow of traffic on National Highways and cause inconvenience. They are also a serious safety hazard for the motor vehicles. As per the Ministry's policy, speed breakers are not permitted on National Highways. The Ministry has issued a number of instructions to the State Govts. for immediate removal of speed breakers from the National Highways. However, speed breakers still continue to be constructed on the National Highways. This aspect was also discussed during the second State PWD Ministers' Conference held on 12th June, 2000 at New Delhi wherein States supported replacement of speed breakers by rumble strips with proper signages and markings.

In view of the above, please look into the matter and issue appropriate instructions to the concerned field officers including District Magistrates for accomplishing the task of removal of all speed breakers from the National Highways by 30th Nov., 2000. I would request you to keep me informed about the action taken in the matter.

With kind regards,

To

Chief Secretaries of all States

604.23

No.RW/NH-33044/11/97-S&R

Dated, the 13th September, 2000

To

Chief Engineers of States/Union Territories (dealing with National Highways and other Centrally sponsored schemes); Director General Border Roads; Chairman, National Highways Authority of India

Subject : Installation of Traffic Safety Barriers - Wire Rope Safety Fencing System - regarding

This Ministry's Circular No.RW/NH-33044/11/97-S&R dated the 04.09.2000 on the above subject may please be treated as withdrawn.

606. ACCIDENTS

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
606.3	RW/NH-35081/1/99-S&R dated 18.8.1999	Information regarding accident prone locations/ stretches on National Highways	606/3 to 5

No.RW/NH-35081/1/99/S&R

Dated, the 18th August, 1999

To

The Secretaries of States/Union Territories PWDs/Chief Engineers of States/Union Territories (dealing with NHs and centrally sponsored scheme); Secretary, Border Roads Development Board; Chairman, National Highways Authority of India; Director General Border Roads

Subject : Information regarding accident prone locations/stretches on National Highways

The problem of increasing accidents on NHs is a matter of concern and has been engaging the attention of the Ministry for quite some time. There have been many requests from the VIPs and representations of public etc. for improving the safety on NHs in various part of the country. While all possible engineering measures to improve road safety are being considered subject to constraints of resources, it has been decided to analyse all the traffic and accident data on a continuing basis enabling identification of the vulnerable accident prone spots and for taking quick remedial measures. The need for such analysis has become paramount at the present stage.

2. It is, therefore, requested that all the agencies such as State PWDs/PWD of UTs, NHAI, Border Roads dealing with NHs should immediately furnish details of accident prone locations stretches of NHs under their jurisdiction in the enclosed proforma (*Annexure I*). The information may be collected from the field formations, compiled and be sent to the Ministry by 31.10.1999.

3. It is further requested that all the agencies should send to Ministry on a quarterly basis details of fatal accidents including location, time of accident, weather condition at the time, vehicles involved, fatalities probable cause of accidents etc. The report should particularly bring out if there were any element of deficiencies on NH with regard to geometrics, visibility, road signage, markings, riding quality etc. The report may be furnished in the proforma attached at *Annexure II* by the end of the month following the quarter under report. Report for the quarter ending 30.09.1999 be sent by 31.10.1999.

4. The above information will be analysed in the Ministry for taking remedial measures and will go a long way in improving traffic safety on National Highways.

[Enclosure to Ministry's Circular No. RW/NH-35081/1/99/S&R dated 18th August, 1999]

Annexure-I

STATE _____

DETAILS OF A ACCIDENT PRONE LOCATIONS/STRETCHES IN NATIONAL HIGHWAYS

NH No.	Location km _____	Stretch from km _____ to km _____	Indicate briefly deficiencies in terms of geometrics/ riding quality/road signages/markings/drainage/any other reason.

ROAD ACCIDENT REPORT FORM

Write relevant code in adjacent box

1. STATE _____ 2. DISTRICT _____ NH _____ Km. _____

3. ACCIDENT DATE DAY _____ MONTH _____ YEAR _____

4. TIME (24 hrs.) _____

5. SEVERITY

1. Fatal
2. Serious injury
3. Minor injury
4. Damage only

☐

6. NO. OF VEHICLES INVOLVED

7. NO. OF DRIVER CASUALTIES

8. NO. OF PASSENGER CASUALTIES

9. NO. OF PEDESTRIAN CASUALTIES

10. COLLISION TYPE

1. Overturn - no collision
2. Head-on
3. Rear-end
4. Side impact
5. Side swipe
6. Hit parked vehicle
7. Hit fixed object
8. Hit pedestrian
9. Hit pedal cyclist
10. Other

☐

11. ACCIDENT SPOT

1. Not at junction
2. T-junction
3. Y-junction
4. Cross Roads
5. Offset
6. Circle
7. Railway crossing
8. Bridge
9. Other

☐

12. JUNCTION CONTROL

1. Not at junction
2. Uncontrolled
3. Police/manual controlled
4. Signals (working)
5. Signals (not working)
6. Stop sign
7. Give Way sign
8. Other

☐

13. TRAFFIC REGULATORS

1. One-way street
2. Entry of heavy vehicles prohibited
3. Entry of slow moving vehicles prohibited
4. Speed restrictions
5. Parking prohibited
6. Any other (specify)

☐

14. ROAD CHARACTER

1. Straight & flat
2. Curve
3. Incline
4. Curve & incline
5. Crest of hill
6. Other

☐

15. ROAD FEATURES-CARRIAGEWAY

1. Single lane
2. Two lanes
3. Three lanes or more without central divider (median)
4. Four lanes or more with central divider

☐

16. ROAD FEATURE FACILITIES

1. Cycle track provided
2. Foot path provided
3. Pucca shoulder provided

☐

17. ROAD WIDTH

18. SHOULDER WIDTH

19. SURFACE CONDITION

1. Dry
2. Wet
3. Muddy
4. Flooded
5. Other

☐

20. SURFACE TYPE

1. Concrete
2. Bitumen (Tar)
3. Gravel
4. Kutcha
5. Other

☐

21. ROAD CONDITION

1. No influence on accident
2. Pot-holed
3. Drainage Ditch
4. Construction work/material
5. Other

☐

22. WEATHER

1. Clear
2. Rain
3. Fog/Mist
4. Wind
5. Other

☐

23. LOCATION TYPE

1. City/Town
2. Village/settlement
3. Rural area

☐

24. MAIN CAUSE

1. Vehicle defect
2. Road/environment defect
3. Human error

☐

25. ACCIDENT LOCATION MAP

Draw single line road map showing accident spot in relation to prominent landmarks such as bridges or km posts. Mark distances to landmarks.

701. *WAYSIDE AMENITIES*

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
701.11	RW/NH-34032/4/91-DO.III dated 3.4.1998	Passenger oriented Wayside Amenities along National Highways	701/24 & 25
701.12	RW/NH-34032/5/88-DO.III dated 13.5.1998	Provision of Parking Laybys along National Highways	701/25 & 26
701.13	RW/NH-34032/4/91-DO.III dated 9.7.1998	Passenger Oriented Wayside Amenities along National Highways	701/26
702. <i>LANDSCAPING AND TREE PLANTATION</i>			
702.17	RW/NH-11044/1/98-DO.I dated 25.9.1998	Plantation of trees on National Highways	702/7 to 13
702.18	RW/NH-11052/3/97-DO.I dated 21.1.1999	Plantation of trees in the campuses, office complexes of the organizations dealing with roads	702/13
702.19	RW/NH-11052/3/97-DO.I dated 21.1.1999	Plantation and maintenance of shrubs and flowering plants in the medians of Highways	702/14
703. <i>ENVIRONMENTAL PROTECTION AND SOIL CONSERVATION</i>			
703.4	CD-14020/2/2001-Coord.DAI dated 20.3.2001	Control of Parthenium weed – regarding	703/4

No.R.W./NH-34032/4/91-DO III**Dated, the 3rd April, 1998**

To

Chief Engineers of State/UTs (dealing with National Highways & Centrally Sponsored Schemes)

Subject : Passenger oriented Wayside Amenities along National Highways

Provision of passenger oriented wayside amenities along National Highway is essential since both the passengers and drivers need certain minimum wayside facilities to make their travel safe, comfortable and convenient in order to reduce fatigue in a long distance journey. For this purpose, the Ministry had launched schemes for provision of basic wayside facilities both by Government Sector financing and private sector financing in the past. Some complexes under this Scheme have already become operational and a few more are in various stages of progress.

2. Considering our vast road network, concerted efforts are required to develop such road side facilities along the National Highways. All the State PWDs have already been requested vide this Ministry's letter No. RW/NH-11052/3/97-DOI dated 31st December, 1997 that henceforth in all National Highway projects being funded through the aid from the multilateral agencies i.e. World Bank, ADB, OECF etc. or being developed through the private sector, provision must be made for passenger oriented wayside amenities at every 50 km of National Highways.

3. It has now been decided to extend this Scheme to all the National Highways where development is being done through normal budget. Under the Scheme, the following facilities are to be provided :

- Parking lots
- Snack bar/Restaurant
- Toilets
- Rest rooms for short stay
- First aid
- Telephone booths
- Petrol pump/minor repair shop (optional)
- Kiosks for sale of miscellaneous/sundry items
- Landscaping

4. Suitable sites for setting up of such wayside facilities are now required to be identified as per broad guidelines for selection of sites are enclosed in the *Annexure*. Thereafter action would require to be initiated for acquiring the necessary land for which necessary provision is being made in the Annual Plan 1998-99. This land thereafter would be offered on lease to the entrepreneurs who agree to provide the stipulated wayside amenities as per the drawings to be approved by the Ministry. The entrepreneurs would be required to enter into an agreement with the Government and sign the lease on agreed terms and conditions. The entrepreneur offering to pay highest amount of lease to the Government per annum subject to a minimum of 10 per cent of the land cost, could be given the land to develop wayside amenities. Details in this regard would be advertised in leading Newspapers in due course.

5. It is, therefore, requested that suitable sites for setting up of wayside amenities along National Highways in your State may be identified in association with this Ministry's Regional Officer and the State Tourism Department and detail sent to this Ministry by 31st May, 1998. The inter-se priority for development of these wayside amenities may also please be suggested.

[Enclosure to Ministry's Circular No.R.W./NH-34032/4/91 dated 3rd April, 1998]

Annexure

**BROAD GUIDELINES FOR SELECTION OF SITES
FOR PASSENGER ORIENTED WAYSIDE AMENITIES**

- (i) Such facilities are to be provided along high traffic density corridors of National Highways where these do not exist at present or are lacking.
- (ii) Easy availability of the required land for infrastructure development should be kept in view. Approximate area required may be in the neighbourhood of 15,000 to 20,000 m².
- (iii) Site should be away from urban influence and any other similar wayside complexes.
- (iv) Feasibility of locating the facility close to scenic/historic/tourist spots should be kept in view.
- (v) The intended location should have good potential for usage by road travellers/tourists.
- (vi) Desirably the site should be 200 to 250 metres away from a road junction.
- (vii) Preferably the location should be along a straight reach of the National Highway or on a gentle horizontal curve with adequate sight distance and good visibility. In no case must the facility be located on a sharp curve. Also it should be possible to widen the carriageway of the National Highway near the selected site to 4-lanes if so warranted from traffic considerations.
- (viii) The road alignment should preferably have easy gradients in the vicinity of the complex.
- (ix) Availability of infrastructural facilities like drinking water, electricity and drainage etc. near the site should be duly considered.
- (x) From environmental considerations, the facility should create minimum disturbance to the surroundings.
- (xi) Availability of any existing petrol/repair/spare parts facilities near the proposed location should also be kept in view.
- (xii) The type of facility should be commensurate with the expected passenger category e.g. at locations frequented by general category travellers, a self service snack bar/fast food stall may be better suited, while restaurant type facility might be preferable for passengers of personalised cars/delux buses.
- (xiii) The wayside amenity should be so planned as to allow phased development, subject to the minimum stipulated scale of facilities being provided in the first instance.

701.12

No.RW/NH-34032/5/88-DO III

Dated, the 13th May, 1998

To

Secretaries of all States/Union Territories, Public Works Department (dealing with National Highways); Director General Border Roads; Director General (Works), Central Public Works Departments; Chairman, National Highways Authority of India

Subject : Provision of parking laybys along National Highways

It has been observed that large number of trucks continue to be parked in front of dhabas and petrol pumps as also on the road itself. This interferes with the through movement of traffic. At inter-state borders at many places, check-posts have been installed by various Departments for checking of vehicles, collection of taxes etc. but no provision for proper parking of vehicles has been made.

2. In this connection it may be pointed out that Ministry had vide letter No. RW/34032/5/88-DOII dated 22nd August, 1988 forwarded a Scheme for provision of parking laybys along National Highways. These laybys are intended as need based facilities and are meant to be provided at locations which have already significant parking demand e.g. where a cluster of wayside eating places/dhabas and other establishments already exist. Basically the Scheme will involve construction of parallel lay byes with proper entry/exit from the National Highway together with basis public convenience such as drinking water, toilet and bathroom besides general landscaping. The Ministry will finance construction/maintenance of required infrastructural facilities including acquisition of additional land; parking laybys, footpath, railing etc. Provision/extension of other facilities such as dhabas/eating places/vehicle repair shop etc. will be left to private parties.

3. It is requested that the problem of parking of trucks on National Highways in your State may please be looked into and action initiated for provision of proper parking lay byes wherever these are felt necessary so as to avoid congestion at check barriers and illegitimate parking etc. on the NH. Priority in this regard may be given to problem of parking of trucks at inter-state borders. Proposal in this regard may be included in the Annual Plan 1998-99 and subsequent plans and got sanctioned from the Ministry.

701.13

No.RW/NH-34032/4/91-DO III

Dated, the 9th July, 1998

To

Chief Engineers of States/UTs (dealing with National Highways & Centrally Sponsored Schemes)

Subject : Passenger Oriented Wayside Amenities along National Highways

Kindly refer to this Ministry's letter of even number dated 3rd April, 1998 requesting for identification of suitable sites for setting up of wayside facilities along the National Highways. It is proposed to acquire land at such sites and thereafter lease the land to the entrepreneurs who agree to provide the stipulated wayside facilities as per the drawings approved by this Ministry. The entrepreneurs would be required to enter into an agreement with the Ministry and sign the lease on agreed terms and conditions. All the State PWDs had been requested to identify the site and send the details to Ministry by 31st May, 1998. These are, however, still awaited. It is, therefore, requested that urgent action be initiated in this regard and requisite detail sent to this Ministry so that further action could be taken for sanction of L.A. estimates.

No.RW/NH-11044/1/98-DO-I

Dated, the 25th September, 1998

To

Secretaries of PWD of all States/UTs (dealing with National Highways); Director General Border Roads; Director General (Works), Central Public Works Department; Chairman, National Highways Authority of India

Subject : Plantation of trees on National Highways

I am directed to refer to this Ministry's letter No.NH-III/P/15/75 dated 20th May, 1976 (copy enclosed) and No.NH-III/P/15/75 dated 2nd March, 1979 (copy enclosed) wherein the State Governments etc. were requested to undertake plantation of trees on the National Highways on a large scale.

2. It may be stated that there is an urgent need to improve the "Green Cover" through plantation of trees in the country to save our environment. It has been the policy of the Central Government to plant trees along National Highways etc. In this connection Ministry's letter No. RW/NH-11052/5/95-DO. I dated 26.11.1996 also refers, wherein it has also been decided to permit Public Sector Corporation/reputed private companies/voluntary organisations to develop and maintain gardens/tree plantation/landscaping in vacant National Highway land on either side of the road/central verges/rotaries for beautification and prevention of encroachments.

3. In the light of the above, it is once again requested that State Governments should take up plantation along the National Highways on a large scale so as to increase the "Green Cover" to save our environment.

4. Plantation of trees of State Highways may also be undertaken as in the case of National Highways.

[Enclosure to Ministry's Circular No.RW/NH-11044/1/98 D.O.I dated 25-9-1998]

Copy of Ministry of Surface Transport (Roads Wing) letter No. NH III/P/15/75 dated 20th May, 1976 addressed to all State and Union Territory Governments (Departments dealing with National Highways).

Subject: Plantation maintenance and cutting of Trees on National Highway.

In supersession of all instructions issued vide circulars referred in the *Appendix I*, am directed to issue the following instructions on the subject mentioned above.

2. **Plantation of Trees along National Highways**

2.1. **Location of trees**

Trees should be placed at a minimum distance of 10-12 metres from the centre line of the extreme traffic lane to provide recovery area for the vehicle that runs off the road. A second row of tree 6 m further away will also be desirable and planted wherever possible. Preferably the first row of trees should consist of species with thick shade and other rows of vertical type providing thin shade. However, further road expansion programme should be kept in view while locating the trees.

2.2. **Removal and plantation of trees**

Existing trees should generally be preserved as far as possible and no indiscriminate felling of trees should be resorted while upgrading/widening and improving the highway. Trees located on roadway or embankment slopes have proved to be potential traffic hazard to vehicles going off the carriageway and hitting against them. Therefore, wherever the trees on National Highways are either on the roadway itself or too close to it constituting safety hazard, these shall be replaced systematically by alternative plantation. The existing trees by the side of the roadway, which in the opinion of Engineer-in-Chief are serious threat to safety should be removed immediately, after obtaining the approval of competent authority (refer para 3). Other trees within 10 m of the centre line of extreme traffic lane should be removed gradually after planting alternative trees.

2.3. Wherever there is a possibility of (i) trees dying due to old age; (ii) removal for widening and improvement; (iii) removal for traffic safety, alternatives trees must be planted to replace them well in advance. While planting new trees, care should be taken to maintain lateral clearance mentioned in para 2.1.

2.4. **Temporary trees and shrubs**

Since permanent trees will take time to grow as an immediate measure quick-growing temporary trees may be planted in between the space for permanent trees which may be removed after the permanent ones have grown up.

2.5. **Selection of species of trees**

The spacing and type of permanent and temporary trees to be planted in any locality will depend on local conditions such as rainfall, climate type of soil etc. Selection of tree-species should, therefore, be carefully done with the advice of officers from horticulture or forest department. Age and the time at which the tree is transplanted from nurseries should be decided in consultation with horticulturist as small sapling generally have a high rate of fatality and their planting the flowering sub-trees and shrubs on the sides of road embankments in tune with an overall landscaping scheme prepared by landscape or horticulture experts.

2.6. **Typical arrangement**

A general scheme of roadside plantation as suggested above is illustrated in the enclosed figure. The arrangement should be regarded as merely indicative and not definitive. These recommendations are meant to be applied not only to two-lane highways but also multi-lane highways. In the case of a 4-lane divided highway, the distances for alternative rows of trees given in para 2.1 should be reckoned from the nearest unidirectional carriageway. No indiscriminate felling of trees is resorted to at the time of upgrading a 2-lane road to 4-lane divided standards. As far as possible, the existing trees should be preserved by suitably locating the second carriageway within the available right-of-way by adopting a wide enough central verge.

2.7. **Set-back of trees on curves**

Experience has been that growth of thick vegetation close to the formation on inside of horizontal curve leads to serious reduction of sight distance and causes avoidable accidents with cattle/children suddenly emerging from the side. Uncontrolled trees/vegetation, may also affect visibility of traffic control devices and road signs. Therefore, in plain terrain a stopping sight distance of 170 m corresponding to the design speed of 100 km per hour may be ensured on all curved sections of national highways along the innermost lane. However where there are site restrictions this requirement may be as a special case, reduced to 120 m corresponding the design speed of 80 km per hour. The existing trees and vegetation on the sides have to be suitably thinned/trimmed, or even removed if necessary and a regular programme of pruning of the offending trees should be instilled as part of the maintenance operations.

2.8. **Landscaping of bridge approaches**

Bridges constitute an important part of the National Highway and as such landscaping scheme should incorporate them also. Shrubs and flowers should be planted around such structure to beautify the place and side slopes of approaches landscaped with some grassing/flowering trees/bushes. In this connection, the requirement of drainage, stability of slopes and traffic safety should be kept in view and given over-riding consideration.

2.9. **Landscaping and gardening of traffic rotaries**

The traffic rotaries and/or road margins of National Highways should always be kept tidy and pleasing by the department dealing with the National Highways. Under no circumstances the firms or individuals (private bodies) should be granted permission to develop and maintain the rotaries and/or road margins on National Highways.

3. **Maintenance and cutting of trees**

3.1. **Permission to cut trees**

Trees on National Highways are a natural asset paid for from National Highway Funds. These should not be cut or their branches lopped off indiscriminately without the prior approval of the competent authority.

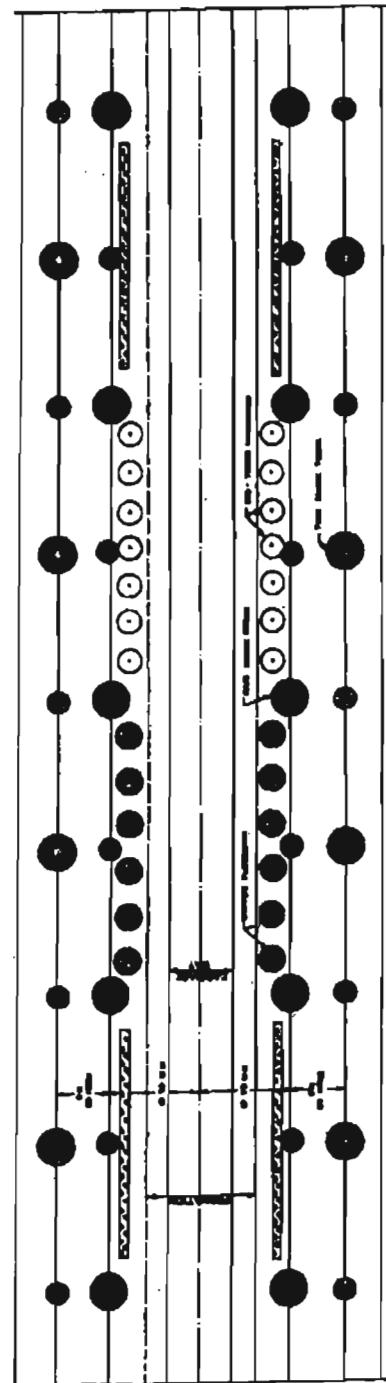
CROSS SECTION

PLANT

Labels in the diagram include: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

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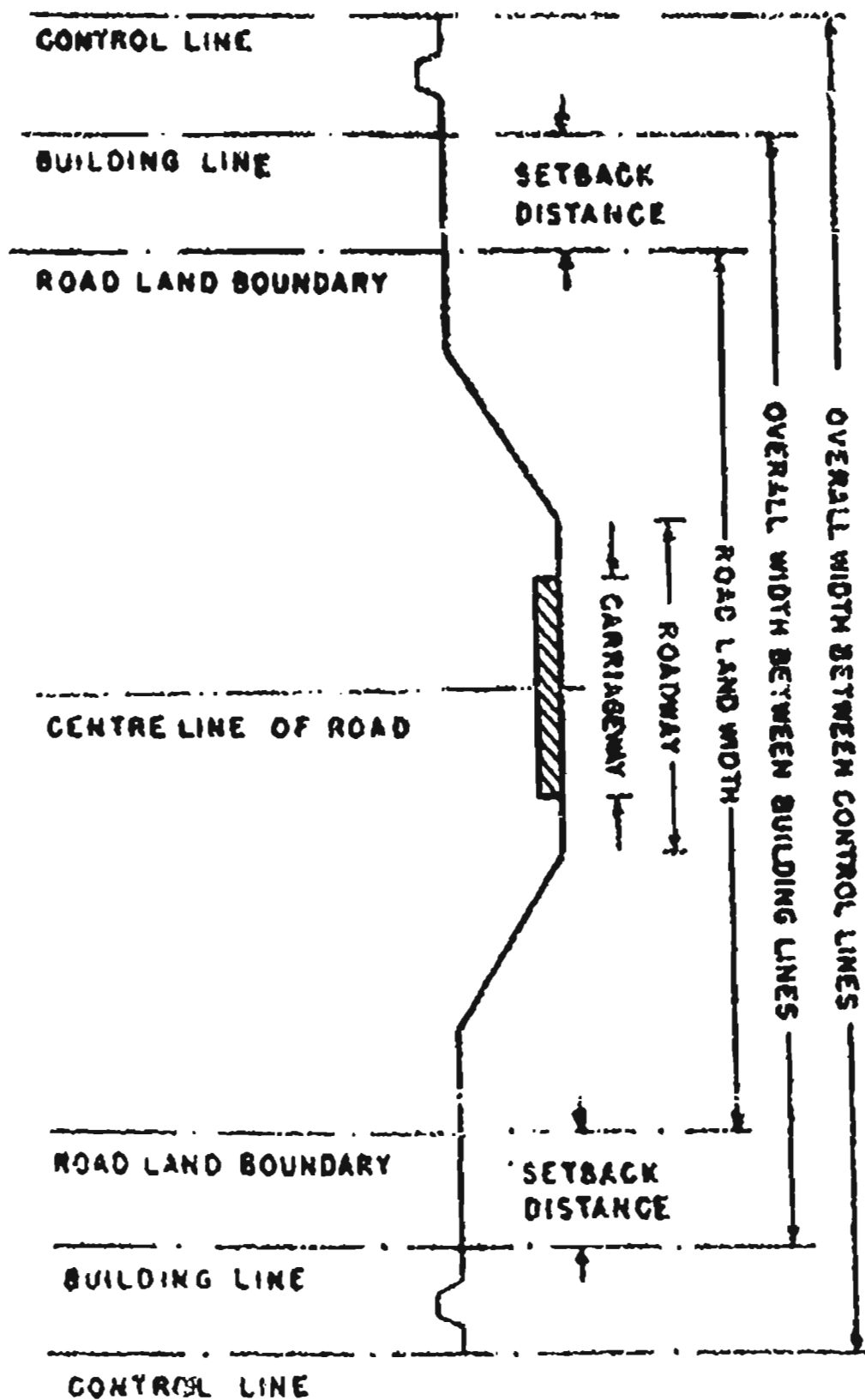
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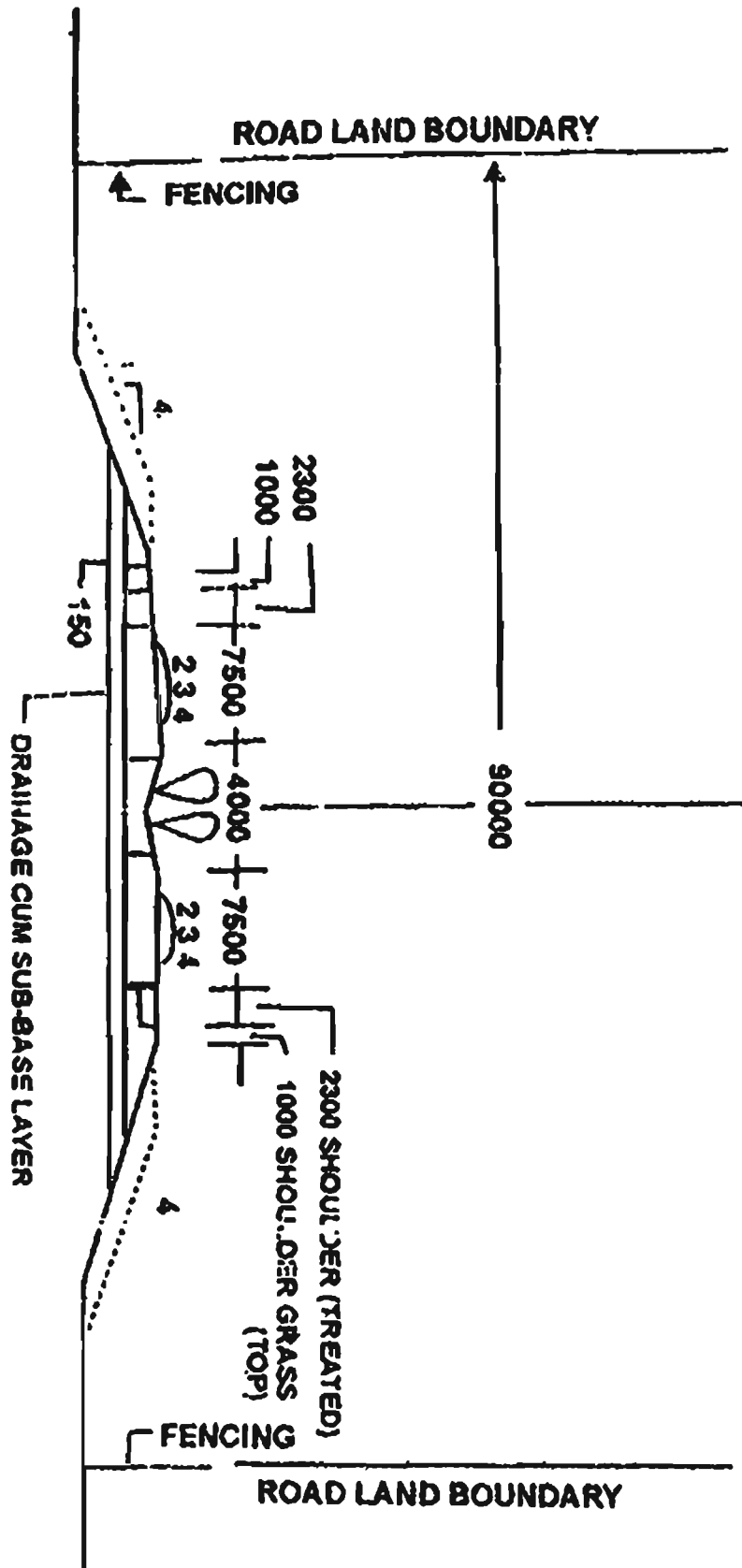
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INTERIOR OF CHURCH OF MILITARY

INDICATIVE ARRANGEMENT
FOR THE PLANTATION OF
TREES ON NATIONAL
HIGHWAYS

Mr. [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]

Road land boundary, building lines and control lines





Typical cross section of expressway

Notes: 1. All dimensions are in mm. 2. Dotted lines indicate future extension

However, prior permission will not be necessary in certain special cases like when dry or dead trees are required to be removed for the safety of traffic or pruning of trees being done as a regular feature of maintenance programme. The work of cutting of trees should be carried out only by the authorised department. Competent authority for these purposes is the Director General (Road Development), Government of India, Ministry of Shipping and Transport (Roads Wing) or persons authorised by him on his behalf. The officers authorised by Director General (Road Dev.) to accord permission for specific cases of felling trees are mentioned as under:-

- (i) The Regional Officer of the Ministry, for the felling of trees (including cutting of branches) on the National Highways and the land appurtenant thereto, after satisfying himself that the need for such cutting/felling actually exists and arrangement has been made to plant new trees. Regional Officers shall submit a report of felling authorised by him to the Ministry soon after doing so.
- (ii) State Chief Engineer dealing with National Highway in cases can grant permission where cutting of only a few trees is involved and is considered inevitable e.g. where a power line crosses a National Highways at right angle or a single tree is to be cut because of its dangerous condition or its coming in the widened formation of the road. Chief Engineer shall also furnish to the Director General (Road Development) particulars of cuttings authorised by him immediately after he has issued the necessary authorisation to cut. These powers cannot be delegated by the Chief Engineer to lower formations. Where a whole line of trees has to be cut i.e. when an electric line has to travel parallel to an existing highway for a long distance, the case should continue to be referred to Director (General (Road Development) or the Regional Officer of the Ministry for approval.

3.3. When the plantation and maintenance of road side trees on National Highways has been handed over by the State Public Works Department to state Forest Department, the Chief Engineer concerned shall delegate his powers to the Chief Conservator of Forests who shall act as the competent authority for permitting felling of trees etc. The Chief Engineer in such cases shall communicate the contents of this letter to Forest Department for compliance and keep associated with them with regard to planning and implementation of proper road side plantation programme through periodical review (quarterly or half yearly) and intimate the progress in case of original works in the quarterly reports being furnished to this Ministry. The planning and implementation of landscaping work, however, shall remain with the State Public Works Department.

4. Maintenance of trees and plantation of new ones on existing roads should be done from funds allotted for maintenance and repairs of National Highways. In special cases original work sanctions could be considered for planting new trees on existing roads provided there is justification. These sanctions will be on the basis of detailed estimate. For bypasses and new constructions the project-estimates should provide for plantation and/or landscaping.

5. Revenues from Trees

Under Section 4 of the National Highways Act, 1956, the property of all land appurtenant to a National Highway and such structures, fences, trees, etc. mentioned in that section fall within that land, vests in the Central Government. As such, the receipt and revenues from avenue trees etc. should be credited to the appropriate central head of account.

6. It is requested that the circular may be brought to the notice of all concerned officers in the Public Works Department dealing with National Highways with instructions to comply with it.

Appendix

Copy of Ministry of Surface Transport (Roads Wing's) letter No. NH-III/P/15/75 dated 2nd March, 1979 addressed to all State and Union Territory Governments (Departments dealing with National Highways).

Subject : Plantation of Trees on National Highways

This Ministry's circular No. NH-III-P/15/75 dated 20th May 1976, had spelt out the policy regarding the plantation, maintenance and cutting of trees along National Highways and had stressed the need for further augmenting the roadside avenue trees. Subsequently in June 1978, the Hon'ble Minister for Shipping & Transport had also personally written to the P.W.D. Ministers stressing the need for landscaping along NHs and suggested plantation of fruit-bearing trees. Recently the Ministry of Agriculture and Irrigation, alarmed at the dwindling forest

resources in the country and resultant soil-erosion, has proposed the undertaking of an intensive programme of tree plantation along highways with the help of the State Forest Departments under State schemes of extensive forestry and economic plantations, as well as centrally sponsored social forestry programme. The proposal briefly is as under:-

- (i) The Public Works Departments may make roadside land available to the concerned Forest Department, for taking up suitable plantation programmes and management of the afforested lands including their fencing etc.
- (ii) State Forests Departments will declare the afforested areas as "Protected Areas" under Section 29 of Indian Forest Act, so that they have legal status to protect the plantations.
- (iii) Forest Departments will be responsible for raising the nurseries, plantations, and after care of the plants.

2. In the Ministry's circular dated 20th May, 1976 referred to above, it was mentioned that where the plantation and maintenance of roadside trees on National Highways had been handed over to the State Forest Department, the Chief Engineer should communicate the contents of our circular to the Forest Department for compliance and maintain contact with them with regard to the planning and implementation of a proper roadside plantation programme through periodical reviews. Some State P.W.Ds. have already entrusted the plantation of roadside trees to Forests Departments and their experience has been quite happy. The Forest Departments are well versed in this task and they also have powers for protection of such plantation. It may, therefore, be advantageous to have a cooperative arrangement with them and get benefit of their expertise in raising of nurseries and plantation technology. An additional advantage would be that the Forest Departments will meet most of the extra cost involved from their own budgetary resources. No doubt there would be some difficulties of coordination and an agreed policy about the spacing, etc. of trees with respect to the road needs. With a view therefore to take a policy decision at the national level, I am to request you to kindly furnish the following information urgently to this Ministry:

- (i) How is the roadside plantation programme being managed in your State? Is it under the control of P.W.D. itself and whether they have a separate staff set-up for this purpose?
- (ii) If the plantation responsibility has been handed over to the Forest Department, how are the plantations being financed and whether the revenue from avenue trees is being credited to appropriate central head of account or not? Is the system working satisfactorily?
- (iii) Have any difficulties been encountered about the execution of road improvements involving afforested areas under the charge of Forest Departments? (For instance borrowing of earth, digging of roadside drains, cutting of trees to improve visibility etc).
- (iv) Has the P.W.D. been required to pay any compensation to the Forest Department for removal of trees in the NH land necessitated by road improvement work?
- (v) What are the views of the State P.W.D. about handing over the roadside land to the Forest Department for afforestation?

3. An immediate reply is requested as the matter is proposed to be discussed in detail at the next meeting of the Chief Engineers.

MINISTRY OF SURFACE TRANSPORT (ROADS WING)

NOTIFICATION

New Delhi, the 5th June, 1998

S.O. 490(E).-Whereas the Central Government has entrusted the stretch of NH-8 from km. 162.5 to km. 248 (kotputli- Jaipur Section) under Section 11 of the National Highways Authority of India Act, 1988 (68 of 1988) to the National Highways Authority of India, vide notification No. S.O. 638 (E) dated 4th September, 1997.

Now, therefore, in exercise of the powers conferred by Section 7 of the National Highways Act, 1956 (48 of 1956) read with rules 3 and 9 of the National Highways (Fees for the use of National Highway Section and permanent Bridge-Public Funded Projects) Rules, 1997 and sub-rule (1) of rule 3 of the National Highways (rate of fee Rules, 1997), the Central Government hereby notifies that there shall be levied fees and collected by the National Highways Authority of India through franchisee, on mechanical vehicles for the use of the said stretch of National Highway No. 8 at the rates specified in the schedule annexed hereto, namely:-

SCHEDULE

Rates of fee to be recovered from the users of stretch between km. 162.5 to km. 248 (Kotputli-Jaipur Section of NH-8)

Sl No.	Type of vehicle	Fee rate of vehicle for one way trip (Rs.)	
		upto 14-03-1999	for the period 15-3-1999 to 14-3-2000
1.	Car/Jeep/Van	35	40
2.	Light Commercial Vehicle	60	65
3.	Truck/Buses	100	110
4.	Heavy Construction Machinery & Earth Moving Equipment	260	280

Provided that any category of vehicle specified in this Schedule shall not include any vehicle on duty of Defence Department, Police Department, Fire-Fighting Department, Post and Telegraph Department, Central Government, State Government or Local Bodies and ambulances or funeral van.

[F.No. RW/NH-37011/7/97-DO]

A.D. NARAIN, Director General (Road Development) & Addl. Secy.

702.18

No. RW/NH-11052/3/97-DO-1

Dated, the 21st January, 1999

To

The Chief Secretaries/Secretaries (PWD/Roads) of all State Govts./UTs (dealing with Roads); Chief Engineers of States/UTs (dealing with National Highways and other Centrally Sponsored Schemes); Director General (Works) Central Public Works Department; Director General Border Roads; Chairman, National Highways Authority of India.

Subject: Plantation of trees in the campuses, office complexes of the organisations dealing with roads

The national objective for tree cover in the country is about one-third of land mass. The recorded forest area in the country being a little over one-fifth, the desired level of green cover can only be achieved if sustained efforts are made to take up and maintain large scale plantation on non-forest lands. In this connection, Central Ministry of Environment and Forest have recently requested this Ministry to take up massive plantation of trees in the campuses, office complexes and other lands under the control of this Ministry to enhance the green cover in the country.

It is, therefore, requested that suitable instructions may be issued to all concerned officers plantation of trees in the campuses and office complexes under their control to enhance the green cover in the country. The progress achieved in this regard may please be reported to this Ministry at the end of each financial year so that the actual physical achievements could be determined and Ministry of Environment & Forests informed. The first such report may please be furnished in April, 1999.

No. RW/NH-11052/3/97-DO.I

Dated, the 21st January, 1999

To

The Chief Secretaries/Secretaries (PWD/Roads) of all State Govts/U.Ts (dealing with Roads); Chief Engineers of States/U.Ts (dealing with National Highways and other Centrally Sponsored Schemes); Director General (Works) Central Public Works Department; Director General Border Roads; Chairman, National Highways Authority of India

Subject: Plantation and Maintenance of Shrubs and Flowering Plants in the Medians of Highways

It has been observed that adequate attention is not being paid to plantation on medians of Highways. The essential purpose of planting in medians is to cut off headlight glare from traffic in the opposite direction. Flowering plants and shrubs are eminently suited for the purpose. These could be planted in a variety of ways, but a very effective method is in the form of baffles (shrubs planted across the median at an angle at 15 m interval as shown in Fig. 5. of IRC:SP:21-1979 "Manual on Landscaping of Roads"). This method ensures a penetration of view for the drivers. However, if the median width is less than about 3 m, baffle plantation will not be effective and a continuous line of shrubs should instead be thought of. Shrubs in the medians should not exceed 1-1.5 m in height, otherwise visibility will be affected. Further, in the vicinity of road intersection and median opening, no plantation should be done for a length of 10 to 15 m to ensure adequate visibility. Also, no plantation should be done where the median is tapered to provide for a turning lane.

2. All the State Governments and other concerned agencies have already been requested vide this Ministry's letter of even number dated 31.12.1997 that henceforth in all National Highway projects being funded through multi-lateral agencies, like, World Bank, ADB, OECF, etc. or taken up through private sector financing, provision must be made for plantation in the medians of Highways.

3. It has now been decided to extend this requirement to all the Highways where four/six-laning is done through normal budget. The plantation on medians could also be arranged through the voluntary bodies/public sector undertakings/reputed private companies through Ministry's policy of Greening of Highways circulated vide letter No. RW/NH-11052/5/95-DO I dated the 26th November, 1996.

4. It is requested that the contents of this Circular may be brought to the notice of all concerned officers in your department for implementation.

No. CD-14020/2/2001-Coord.DAI

Dated, the 20th March, 2001

To

The Secretaries, PWDs of all State Govts/U.Ts; Engineer-in-Chief/Chief Engineer of all State Govts/U.Ts (dealing with National Highways); Chairman, National Highways Authority of India; Director General Border Roads

Subject: Control of Parthenium Weed - regarding

A copy of DO letter No.20-26/2000.PP.I dated 17th August, 2000 from Shri P.D. Sudhakar, Joint Secretary, Ministry of Agriculture, Department of Agriculture and Co-operation, which is self-explanatory is enclosed herewith. It is requested that necessary action for the control of this weed from National Highway land may please be taken at your end.

The action taken in this regard may please be intimated to this Ministry.

[Enclosure to Ministry's Circular No. CD-14020/2/2001-Coord. DAI dated 20th March, 2000 from the Jt. Secy. M/o Agriculture, Deptt. of Agriculture & Cooperation, New Delhi-110001]

D.O. No.20-26/2000.PP.I

Dated, the 17th August, 2000

Parthenium, a kind of toxic weed not of agricultural significance, is becoming problem in many parts of the country. The weed causes many health problems, like, bronchitis and asthma, skin irritation and contact dermatitis to the people allergic to it, thus, posing a great threat to the human health. It grows in the barren/vacant lands, railway tracks, around runways aircrafts, irrigation canals, grazing/uncultivable lands, etc.

2. The Project Dte. of Biological Control(PDBC), ICAR, Bangalore has informed that an exotic chrysomalid beetle, *Zygogramma biocolorata* is effective in biological suppression of parthenium. The beetles become active after the initiation of rains and defoliate the parthenium stands. The beetles once established keep reducing the parthenium population year after year.

3. Keeping in view the toxic nature of the said weed, its control is essential. I shall, therefore, request to initiate necessary action in consultation with PDBC, for the control of the weed.

1100. PROJECT PREPARATION

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
1100.29	RW/NH-33044/2/88-S&R dated 9.5.2000	Width of Bridges on National Highways	1100/35 to 42
1100.30	NH-15015/121/97-PL dated 16.12.1999	Construction of Road Over/Under Bridges on Build, Operate and Transfer Basis (BOT) – reg.	1100/43 to 51

No. RW/NH/33044/2/88/S&R

Dated, the 9th May, 2000

To

The Chief Secretaries/Secretaries (PWD/Roads) of all State Governments/Union Territories; Chief Engineers of all State Governments/Union Territories (dealing with National Highways & Centrally Sponsored Schemes); Director General Border Roads; Chairman, National Highways Authority of India.

Subject : Width of Bridges on National Highways

Instructions were issued vide this Ministry's letter of even number dated 21.9.1990 regarding width of bridges to be provided on National Highways. The matter has been reconsidered in the light of revised IRC Codal provisions with due consideration for enhanced safety of vehicles/pedestrians using the bridges. The following revised guidelines are now issued in supersession of the earlier instructions referred to above. These guidelines are applicable essentially to future cases. For situations not explicitly covered by these guidelines, the Ministry will take the decision on a case-to-case basis.

2. GENERAL

The basic approach is that the overall width of all bridges irrespective of their lengths or location (rural, urban, plain or hills) shall be compatible with that of the road adjacent to it. As such all bridges should have width between the outermost faces of the railing kerbs equal to the roadway width of the approaches.

3. BRIDGES ON TWO-LANE NATIONAL HIGHWAYS

3.1. New bridges and those being reconstructed on two-lane National Highways

3.1.1. Overall width between outermost faces of the railing kerbs shall be equal to the full roadway width of the approaches subject to a minimum of 10 m for hill roads and 12 m for other cases, as shown in the sketch at *Annexure-I* for bridge without footpaths and *Annexure-II* for bridge with footpaths.

3.1.2. These bridges will have a two-directional camber. However, when widening to 4-lanes is carried out in future, suitable transitions may be provided in the approaches for the change in two-directional camber on the bridge to unidirectional camber on the road.

3.2. Existing bridges on two-lane National Highways

On two-lane National Highways being improved by way of provision of 1.5 m paved shoulders on either side, widening of the existing bridges wherever feasible should, as far as possible, be done simultaneously so that the cross-sections on the bridge and approaches match each other. If widening is not feasible, the existing bridge deck may be replaced where the bridge deck is very old, weak and narrow, causing traffic bottleneck. In any case, replacement of the existing bridge deck shall not be done on a routine basis and shall be decided on case-to-case basis. In some cases, an entirely new bridge may have to be constructed for which decision shall also be taken on a case to case basis.

4. BRIDGES ON FOUR-LANE NATIONAL HIGHWAYS

4.1. New bridges on four-lane National Highways

4.1.1. On four-lane National Highways, the overall width of the bridge deck shall be equal to roadway width of the approaches with distance between the inner kerb lines in the median portion equal to the median width of the approaches. Normally, the total width shall be 24 m (9.75 + 4.5 + 9.75) between the outer faces of railing kerbs vide sketch at *Annexure-III* for bridge without footpaths and *Annexure-IV* for bridge with footpaths.

4.1.2. Where median width is more than 4.5m or where the two carriageways are at different levels due to site constraint, two independent bridges shall be provided, i.e., one bridge for each direction of travel. When the

median width is less than 4.5 m, it is still preferable to provide two separate bridges for the two carriageways. In such cases, crash barriers shall also be provided at the location of the median side kerbs of each carriageway with due consideration for safety. The width of each independent bridge shall be such that the outer edge of the railing kerb on the left hand side shall be in line with the outer edge of the roadway of approach road. Normally, this would be equal to 9.75 m between inner-face of median/ right railing kerb and the outer face of the left railing kerb.

4.1.3. Each carriageway shall have unidirectional cross slope/camber.

4.2. **Bridges on four-lane National Highways where an additional two-lane bridge is being constructed parallel to the existing two-lane bridge**

4.2.1. For the additional two-lane bridge, total width shall be 9.75 m between inner face of median / right railing kerb and the outer face of the left railing kerb with unidirectional cross slope/camber.

4.2.2. If feasible, the existing two-lane bridge shall also be widened to 9.75 m. However, it is not necessary to replace an existing bridge of sound condition merely to provide 9.75 m width. In case the existing bridge is left without widening to 9.75 m width, proper transition may be provided over approaches to ensure smooth flow of traffic as per this office Circular No. RW/NH-33022/1/94-DO-III dated 24.6.94.

5. **MULTI-LANE BRIDGES WITH SIX-LANES; EIGHT-LANES, ETC**

5.1. The overall width between the outermost faces of the railing kerbs of the bridge shall, as far as possible, be the same as the full roadway width of the approaches. The width of the median in the bridge portion shall be kept same as that in the approaches unless it is not possible to do so due to site constraints.

5.2. The general procedure to be adopted in the case of new bridges and widening the existing bridge shall be the same as given in para 4 above, except for the width of the carriageways which will be equal to the number of lanes $\times 0.5 \text{ m} + 0.5 \text{ m}$ conforming to Clause 112.1 of IRC:5-1998.

6. **MEDIAN**

6.1. The width of median in the bridge portion shall, as far as possible, be kept same as that in the approaches. In case width of median is different from that of approach section due to site constraint, proper transition and safety measures may be provided over approaches as per this Office Circular No. RW/NH-33022/1/94-DO-III dated 24.6.1994.

6.2. Where two separate bridges have been provided for each carriageway as per para 4.1.2. above, suitably designed transition guard rails with buried ends or a New Jersey type barrier shall be provided on the immediate approaches conforming to this Office Circular referred in para 6.1 above.

7. **FOOTPATHS**

7.1. In urban areas, footpath of minimum width of 1.5 m may be provided. In rural areas also bridges should preferably be provided with footpaths keeping in view the likely growth of vehicular as well as pedestrian traffic in future particularly when such a facility cannot be added to at a later date.

7.2. In case of divided carriageways, footpath shall be provided only on left side of the carriageway for each direction of traffic.

7.3. Wherever footpath is not provided, safety kerb has to be provided as per Clause 111.3 of IRC:5-1998.

7.4. Provision of footpath for bridges in rural areas particularly for very long bridges shall be considered on case-to-case basis.

7.5. In case of very high volume of pedestrian traffic, the provision of footpaths more than 1.5 m width or a separate pedestrian bridge may be considered depending on site condition.

7.6. Where footpaths are provided, pedestrian railings may be provided at the riverside edge for the protection of the pedestrians.

8. **CRASH BARRIERS**

8.1. Crash barriers shall be provided for all bridges on National Highway to safeguard against errant vehicles.

8.2. Where footpath is provided, the crash barrier shall be so located as to separate main carriageway from footpath for the safety of pedestrians.

8.3. The type design for the crash barrier may be adopted as per IRC:5-1998. Alternatively, suitable design may be evolved and got approved from competent authority before application. However, steel crash barriers shall be provided between footpath and carriageway in the case of bridges on 2-lane highways.

8.4. Suitable transition may be provided near approaches wherever required for guiding vehicular traffic as per this Office Circular No. RW/NH-33022/1/94-DO-II dated 24.6.1994.

9. **EXTRA WIDTH ON CURVES**

Extra width on curves shall be provided for the bridge as per IRC codal provisions applicable for road section, if the bridge is located on curves.

10. **ROAD OVER BRIDGES**

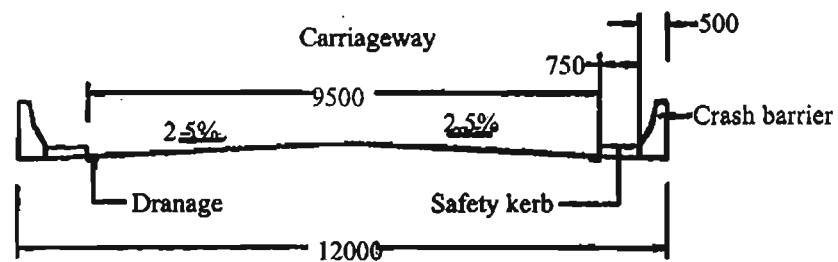
The above provisions shall also generally apply to all road over bridges except where any deviations have to be made due to specific site constraints.

11. **BRIDGES ON HILL ROADS**

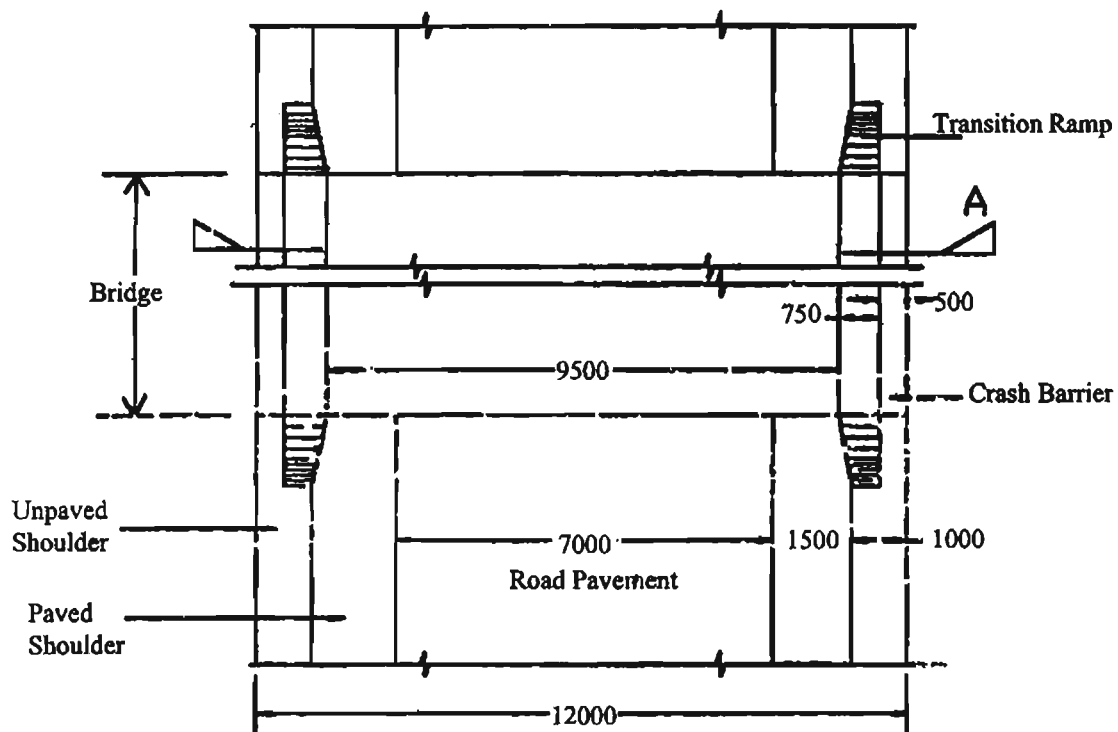
Cross-section of bridges on hill roads should also be decided on similar lines.

12. It is requested that the contents of this circular be brought to the notice of all officers in your department concerned with National Highways and other centrally sponsored schemes.

(Enclosure to Ministry's Circular No.RW/NH/33044/2/88/S&R dated 9th May, 2000)

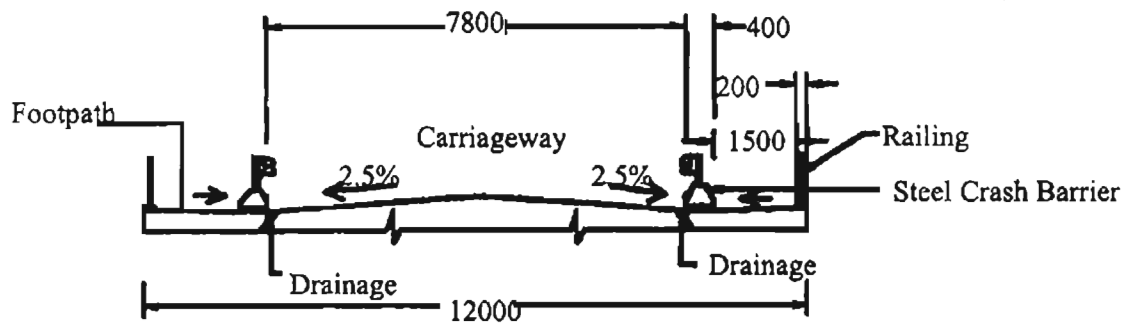
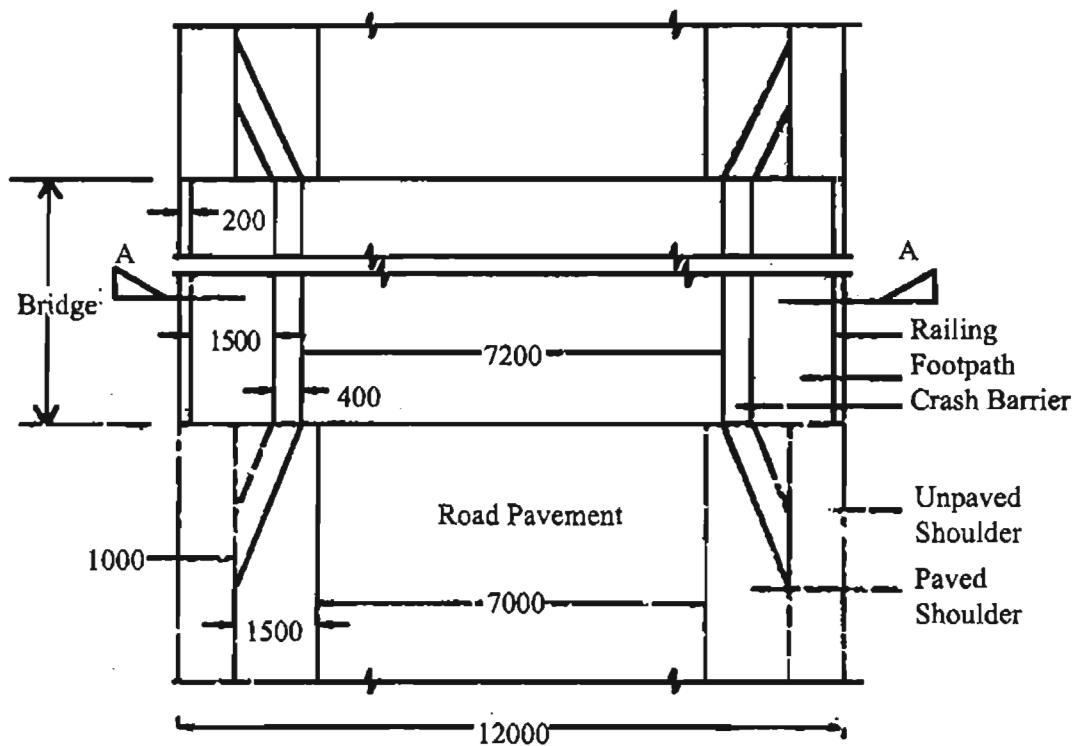


SECTION-AA

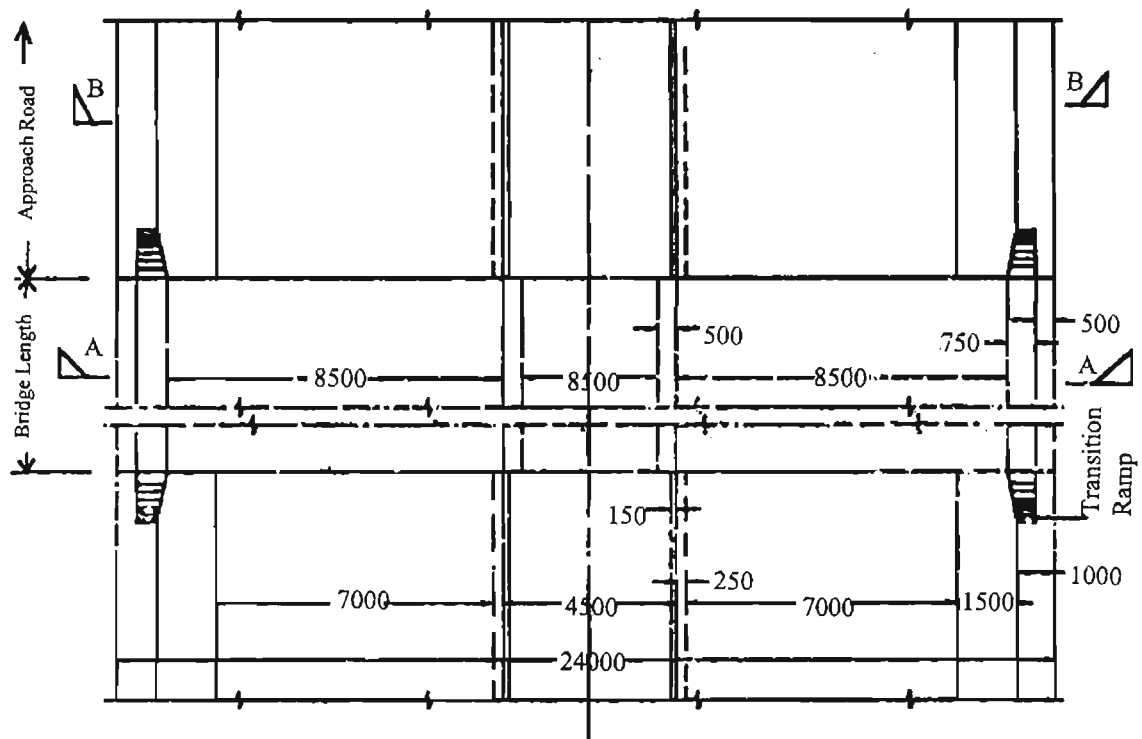
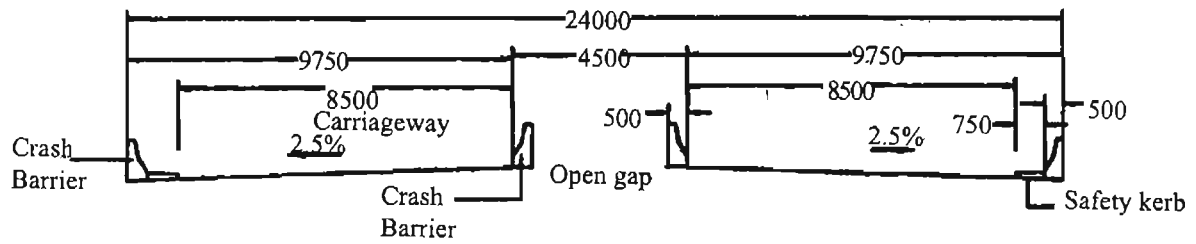


PLAN

Two-lane highway & bridge without footpaths having crash barrier at edges

Annexure-II**SECTION-AA****PLAN**

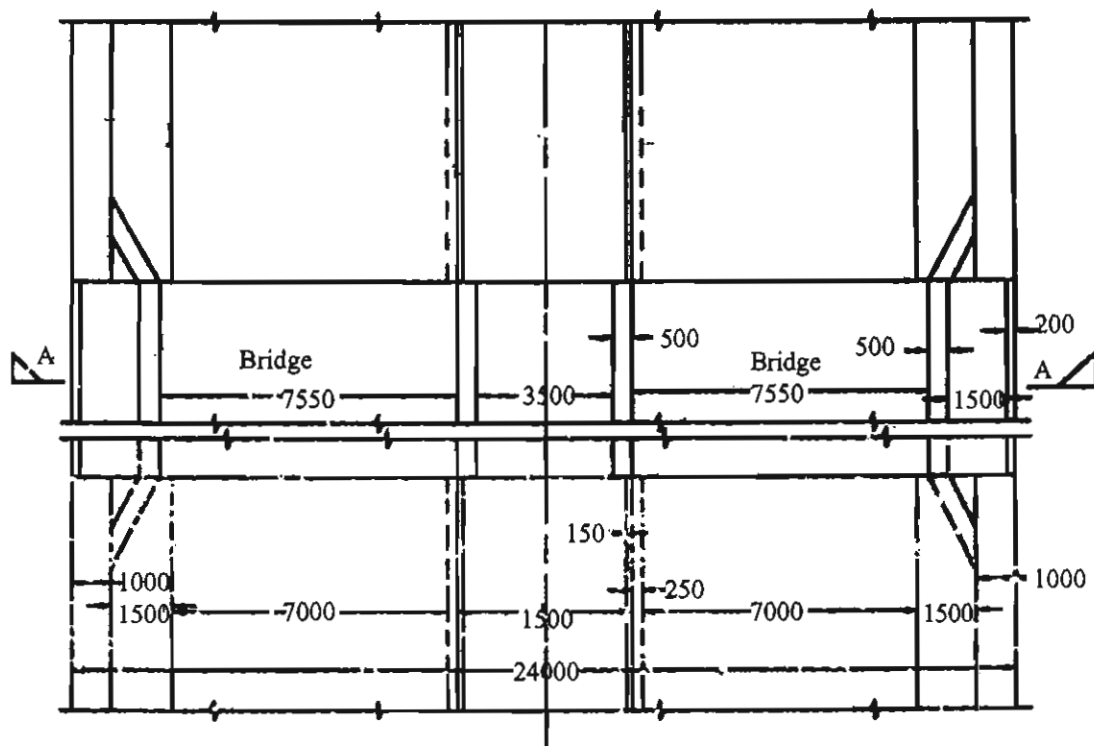
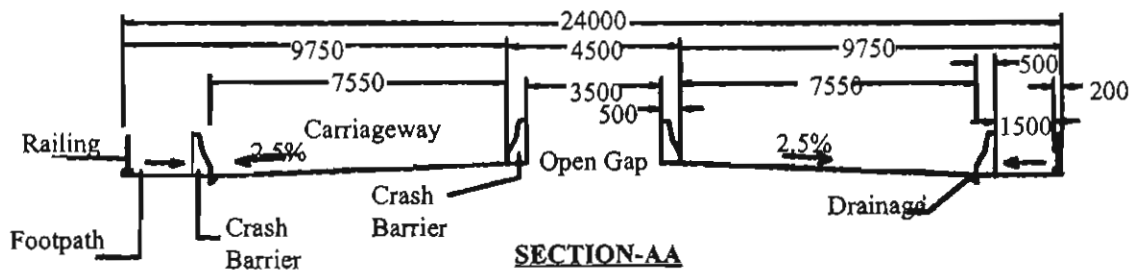
Two-lane highway & bridge [with footpaths] having crash barrier between footpath & carriageway



Typical sketch plan & cross-section of a four-lane divided highway & bridge



Typical Cross-Section of a Four-lane Divided Highway (Approach Road)



Typical Sketch Plan & Cross-Section of A Four-Lane Divided Highway with Footpaths having Crash Barrier between Footpath & Carriageway

No.NH-15015/121/97-PL

Dated, the 16th February, 1999

To

The Chairman, National Highways Authority of India, All States Chief Engineers (dealing with Roads),
All Chief Engineers in MOST

Subject: Construction of Road Over/Under Bridges on Build, Operate & Transfer basis (BOT) - Reg.

I am directed to forward herewith a copy of Ministry of Railways (Railway Board) letter No.98/CE-I/Misc./14(BRO) dated 30th December, 1998, including enclosures, on the above mentioned subject for information/guidance.

[Enclosure to Ministry's Circular No. NH-15015/121/97-PL dated 16-2-1999]

Copy of letter No.98/CE-I/Misc./14(BRO) dated the 30th December, 1998 issued by the Executive Director Civil Engg. (B&S), M/O Railways (Railway Board), New Delhi to all Chief Engineers, Indian Railways all Chief Administrative Officers(Con.), Indian Railways

Subject : Construction of Road Over/Under Bridges on Build, Operate & Transfer basis (BOT)-Reg.

To have uniformity in regard to terms and conditions pertaining to agreement to be entered into with the State Governments/National Highways Authority of India for construction of Road Over/Under Bridges on Build, Operate and Transfer basis (BOT), a standard agreement format has been approved by the Board separately to be executed with the State Governments/National Highways Authority of India as the case may be. Standard Agreement **Format-I** is required to be used for entering into agreement with the State Government for those works which are fully under the control of the State Governments. Standard Agreement **Format-II** is required to be used for executing agreement with the National Highways Authority of India as second party and State Government(s) as the third party for those works which are executed by the National Highways Authority of India, but for closing of the Level Crossing, consent of the State Government is required. It is further made clear that these standard agreement formats/terms and conditions are applicable only to those Road Over/Under Bridges which are being constructed in lieu of Level Crossings, i.e., it is a pre-requisite that Level Crossing is closed on commissioning of the Road Over/Under Bridges.

In case of the other Road Over/Under Bridges which are being taken up by the State Governments/National Highways Authority of India on Build, Operate and Transfer basis (BOT), but not involving closing of the Level Crossing, the case may be dealt as per the existing rules on the subject.

Railways are further requested that copies of these standard agreement formats may be made available to the State Governments/National Highways Authority of India so that they are fully aware of the Railway's policy on the subject and delays in clearing of the proposals are eliminated.

Please acknowledge receipt of this letter.

FORMAT-I

STANDARD AGREEMENT FORMAT FOR EXECUTION WITH STATE GOVT.

Construction of Road Over Bridges/Under Bridges on B.O.T. basis (Build, Operate & Transfer) in lieu of existing level crossing No. _____ on _____ section

This agreement entered on.....day of(month) Ninety-nine between the President of India acting through the General Manager.....Railways, on the first part and the Governor of..... acting through the Secretary," Public Works Department on the second part.

Whereas, there exist various level crossings permitting vehicles and pedestrians to cross the Railway tracks within the State of

Whereas, many of these level crossings are unmanned resulting in serious hazards to the persons and vehicles crossing the Railway track.

Whereas, even in the case of manned level crossings, the closure of the crossings to enable the railways to pass through the track causes disruption to the road traffic and inconvenience to the public.

Whereas, the Ministry of Surface Transport have decided to grant concession to the private Entrepreneurs to construct the Road Over Bridges/Under Bridges in lieu of the existing level crossings on BOT basis, to facilitate road traffic.

AND Whereas, the Railway Administration has agreed to provide all possible assistance for construction of such Road Over Bridges/Under Bridges.

It has now been agreed between parties as follows:

(A) The party in the first part shall

(1) on payment of the amounts mentioned hereunder provide all facilities and assistance for early completion of the project involving construction of Road Over Bridges/Under Bridges and their completion within the period stipulated under the Agreement.

(2) provide all assistance to the Entrepreneur for maintenance and management of the Road Over Bridges/Under Bridges during concession period and facilitate realisation of fees as agreed in the Concession Agreement.

(B) The party in the second part agree

(1) To give an undertaking to Railways before commencement of the work that the level crossing shall be closed permanently on commissioning of the Road Over/Under Bridge. Railway will not permit commissioning of the Road Over/Under Bridge unless the level crossing is closed.

(2) To execute a regular agreement and to pay the charges for preparation thereof on an established reciprocal basis or Rs.10/-, whichever is more, and stamping charges subject to recovery being as per Stamp Act, as may be in force at the time of execution.

(3) To submit drawings/designs and specifications, including temporary arrangements, if any, by State Govt for approval or the Railway Administration prior to inclusion in the bid document for entrepreneur appointed for execution. No addition/alteration/modification in the approved plans/drawings, etc. shall be made without prior approval of Railway Administration.

(4) To supervision/construction by Railway of all construction work of bridge proper across existing/future Railway tracks and payment of plan and estimate charges, supervision charges as per the codal provision to the Railway in advance so that necessary work charged organisation can be created in time for supervision of actual construction.

(4-a) The plan and estimate charges shall be 2 per cent and D&G (Direction & General) charges shall be 6.25 per cent of the estimated cost of the bridge proper, if the bridge is constructed by State Govt./Private Entrepreneur.

(4-b) If the bridge is constructed by the Railways on behalf of the State Govt/Private Entrepreneur, the charges shall be 2 per cent plan and estimate charges and 12.5 per cent D&G charges (Direction & General charges) of the estimated cost of the bridge.

(4-c) Cost of bridge as estimated by Railway itself or as approved by Railway if estimated by State Govt./Private Entrepreneur shall not be a matter of dispute. The D&G charges shall be subsequently applicable on final cost of construction of bridge proper. A suitable clause for the purpose of depositing of D&G charges, plan & estimate charges, with Railway shall be included in the Agreement to be executed between the State Govt. and the Entrepreneur.

(4-d) No work shall be allowed to be started in Railway land unless the necessary payments, as indicated above, are deposited with Railways.

- (5) To ensure advance payment of the entire cost for preliminary and incidental works that may require to be executed by Railway for the purpose of clearing the site for construction of ROB/RUB. These may include shifting of signalling and electrical installations or P-way or any other structures which the Railway may consider necessary either in the beginning or subsequently during the construction of ROB/RUB. The charges would include cost of works, the freight charges, D&G charges, etc. as per codal provision. D&G charges shall be payable at the rates indicated in para 3 above, i.e., 12.5 per cent of the estimated cost of the bridge if the work is done by the Railway.
- (6) To award work on Road Over/Under Bridges to only such contractors, as are technically capable of carrying out bridge works under train running conditions. In case, where the contractor has not carried out the bridge work under train running conditions, he will be asked to employ an engineer having adequate experience to supervise the bridge work under such conditions.
- (7) To carry out the work under train running conditions with or without speed restrictions/traffic blocks. Railway will make efforts to arrange speed restrictions/traffic blocks as per requirements subject to the availability of engineering time allowance for that route* and also prevailing traffic conditions. However, in case of delay on this account due to some exigencies/traffic conditions prevailing, Railway will not be responsible for any loss whatsoever to the State Govt/Private Entrepreneur. No claims shall be entertained by the Railways on this account. Decision of the Railway regarding requirement of speed restrictions/traffic blocks will be final.
- (8) To ensure compliance, during the construction of ROB/RUB, of all safety norms that may be specified by Railway from time-to-time for safe running of trains.
- (9) To pay on demand the cost of all such works including D&G charges at the rate of 12.5 per cent of the estimated cost of the work, in case the work need to be executed by Railway from safety consideration.
- (10) That Lease/license period shall be — years and will not be changed by State Govt. without prior consultation with and the approval of the ——— Railway.
- (11) That during the lease/licence period, bridge proper (over/under the track) shall be maintained by the State Govt./Private Entrepreneur at their cost under the supervision and inspection of the Railways. The State Govt./Private Entrepreneur shall pay to the Railways 6.25 per cent of the maintenance cost as supervision and inspection charges per annum. For the purpose of levy of these charges, the maintenance cost shall be taken as not less than 3 per cent of the completion cost of the bridge proper which may be revised by Railways as per laid down norms. These charges shall be deposited by the State Govt./Private Entrepreneur every year in advance. In case State Govt. wants Railways to carry out the maintenance during lease period, they shall pay 3 per cent of the completion cost as maintenance charges and 12.5 per cent of the maintenance cost as supervision and inspection charges. By maintenance it will be understood that it involves ordinary day-to-day maintenance. However, in case any major repairs are required, the cost of the same and the supervision charges, shall be borne by the State Govt./Private Entrepreneur. Decision of the Railways regarding maintenance works required shall be final and will not be a matter of dispute.
- (12) That Rly's liability for maintenance of bridge proper, after lease/licence period is over, will be limited to 2-lane wide ROB/RUB only. The entire bridge proper will be maintained by Railways and State Govt. will pay to the Railways maintenance charge attributable to additional width. These charges shall be 3 per cent per annum (increased by 12.5 per cent) of the completed cost of additional width of ROB/RUB, liable to be revised without further notice. Railway may demand payment of these charges on capitalised basis as per rules.
- (12-a) To ensure maintenance of bridge proper, road surface, including sanitation, lighting, drainage, dewatering during lease/licence period by the State Govt./Entrepreneur to the satisfaction of the Railway Administration.
- (13) To indemnify the Railway against all claims for compensation under the Workman's Compensation Act, 1983 and any statutory modifications thereto during construction, maintenance, repairs, renewals, etc.
- (14) To follow Railways specifications, Indian Roads Congress (IRC) Codes, MOST specifications and other Railway instructions, etc., for preparation of drawings and designs of the bridge proper as well as for temporary works. These designs shall be prepared and checked by reputed Consultant/Engg. Institution before the same are submitted to Railway for approval. Railway's decision regarding modifications to the designs/drawings.

etc., shall be final and binding on the State Govt./Private Entrepreneur/Consultant and shall not be a matter of dispute.

(15) To indemnify and hold the Railway Administration harmless against all damages, losses, costs and charges suffered or incurred by the Railway Administration on account of any injury to the person or property of any person using the road over bridge, however occasioned, unless it is solely due to negligence and misconduct of Railway or its servants.

(16) To pay interest at the rate of 10 per cent per annum on all sums payable to the Railway Administration under any of the terms & conditions or these present, if not paid within a month from the date of demand in writing by the Railway Administration.

(17) That in metropolitan/urban areas/or other locations, where land is scarce and costly, bridge approaches shall be normally on stilts in Railway land. All other areas where land is not a problem, Railway may consider solid earthfill approaches in Railway land. Decision will be taken by the Railways on case-to-case basis as per the prevailing site conditions and requirement of the Railways and shall be binding upon the State Govt./Private Entrepreneur.

(18) To obtain approval from Railway for any addition or alteration and modification during execution. Certain special works, viz., shifting of cables, signalling posts, OHE structures including catenary/contact wires in electrified section, shifting of gate lodges, gate, closure of level crossing gate for temporary diversion, if any, pipeline or any other structure/installation within Railway boundary shall be done normally by Railway themselves. Entrepreneur shall deposit in advance expenditure to be incurred for such work together with D&G charges at the rate of 12.5 per cent with the Railways.

(19) That Railway shall have the absolute authority to stop the work if at any point of time it is noticed or considered that execution of work is not progressing as per approved scheme(plan) or as per directives issued from time-to-time. The decision to permit commencement of the work again after rectification will rest with Railways.

(20) To ensure that entrepreneur shall carry out and complete the maintenance shortfalls as pointed out by Railway during schedule inspection as well as special inspection of bridge carried out from time-to-time, failing which Railway shall carry out such work at the cost of State Govt./Entrepreneur.

(21) To have way leave facilities as an acknowledgement of the ownership of the - Railway of the land on which the road over/under bridge proper is constructed. The entrepreneur shall pay a total of Rs. 5000/- per year up to two-lane road crossing two tracks and Rs. 10000/- per year in case the bridge is wider than two-lane and/or crossing more than two tracks. Railway may demand payment of these charges on capitalised basis taking interest @10 per cent per annum.

(22) That after the lease/licence period/Agreement period is over, structures/facilities created for commercial exploitation of the space below approaches, if any, falling in the Railway land together with bridge proper, will revert back to the Railways free of the cost and all future earnings will accrue to the Railways and Railways reserve the right to commercially exploit or use for any other purpose, the space/structures below approaches falling in Railway land and State Governments will have no claims on it.

(23) To ensure that only that type of traffic, for which the bridge has been designed, would be permitted to move on the bridge. No unilateral change shall be carried out by the entrepreneur, such as, increase in the thickness of the road surface. Any such change should have the prior approval of the - Railway.

(24) To pay to ——— Railway the cost of making good any damage or loss to Railway track or property due to improper drainage, use or for any other reasons attributed to the presence of the road Over/Under Bridge. All necessary precautions would be taken promptly by the entrepreneur as directed by the Railway Administration from time-to-time in order to prevent such occurrences.

(25) That it would be ensured by the entrepreneur that the structures are in sound and well maintained condition at the time of handing over to ——— Railway.

(26) To ensure that entrepreneur shall carry out the work close to overhead equipments in electrified

section, only during permitted/restricted period granted by Railways on nominated days and stipulated time. Granting of such shut down periods of power/traffic blocks will solely depend upon train traffic and entrepreneur shall not have any right or claim for such shut down period.

(27) To ensure that the entrepreneur shall carry out and maintain all relevant record including test record required for quality control carried out in the laboratories of I.I.T. or Engineering College at his own cost and such record shall be made available for inspection whenever demanded by Railways.

(28) To ensure that entrepreneur shall carry out load test or PSC girder/girder in Railway portion at his own cost and under Railway's supervision.

(29) To pay or ensure payment to — Railway on demand, all the outstanding dues as stipulated in this agreement, payable by the Entrepreneur/State Govt. within 15 days of receiving the intimation in each case. The Government of _____ also agrees to fulfill, on behalf of the entrepreneur, all those liabilities towards _____ Railway which remain uncomplied by the entrepreneur.

(30) That in case of doubt or difference or disputes that may arise between the State Government and the — Railway Administration as to the true intent or meaning of these presents or any Article. Clause or thing herein mentioned, every such dispute, doubt or difference shall be referred to the Railway Board (Ministry of Railways) and their decision thereon shall be final and conclusive and binding on both parties.

(31) That the term — Railway shall also include any successor Railway as may be decided by the Ministry of Railways, Railway Board, Government of India.

(32) To incorporate in their agreement with the entrepreneur all those conditions/stipulations concerning entrepreneur as brought in this agreement.

(33) Subject as otherwise provided in this agreement, all notices to be given/taken on behalf of the President of Union of India, and Railway Administration and all other actions to be taken on its behalf may be given or taken by the Chief Engineer or Chief Administrative Officer (Construction) or Divisional Railway Manager or any other officer nominated by these officers.

(34) Subject as otherwise provided in this agreement all notices to be given/taken on behalf of the State Government of — and all other actions to be taken will be given or taken by — on behalf of this State Government.

Signed by

_____ Railway

For and on behalf of the President, Union of India.

Signed in presence of

(1)

(2)

Signed by

For and on behalf of

Governor of _____

Signed in presence of

(1)

(2)

FORMAT-II

STANDARD AGREEMENT FORMAT FOR EXECUTION WITH N.H.A.I.

Construction of Road Over Bridges/Under Bridges on B.O.T. basis (Build, Operate & Transfer) in lieu of existing level crossing No. _____ on _____ section

This agreement entered on.....day of(month) Ninety-nine between the President of India acting through the General Manager.....Railways, on the first part and, National Highways Authority of India (N.H.A.I.), a statutory Corporation acting through on the second part and, Governor of acting through the Secretary, Public Works Department on the third part.

Whereas there exist various level crossings permitting vehicles and pedestrians to cross the Railway tracks within the State of

Whereas many of these Level crossings are unmanned resulting in serious hazards to the persons and vehicles crossing the Railway track.

Whereas even in the case of manned level crossing, the closure of the crossings to enable the railways to pass through the track causes disruption to the road traffic and inconvenience to the public.

Whereas the Ministry of Surface Transport/Party in the third part have decided to grant concession to the private Entrepreneurs to construct the Road Over Bridges/Under bridges in lieu of the existing level crossings on BOT basis, to facilitate road traffic.

AND Whereas the Railway Administration has agreed to provide all possible assistance for construction of such Road Over Bridges/Under Bridges.

It has now been agreed between parties as follows,

(A) The party in the first part shall

(1) on payment of the amounts mentioned here under provide all facilities and assistance for early completion of the project involving construction of Road Over Bridges/Under bridges and their completion within the period stipulated under the Agreement.

(2) provide all assistance to the Entrepreneur for maintenance and management of the Road over bridges/Under bridges during concession period and facilitate realisation of fees as agreed in the Concession Agreement.

(B) The parties in the second and third part agree to give an undertaking to Railways before commencement of the work that the level crossing shall be closed permanently on commissioning of the Road Over/Under Bridge. Railway will not permit commissioning of the Road Over/Under Bridge unless the level crossing is closed.

(C). The party in the second part agree :-

(1) To execute a regular agreement and to pay the charges for preparation thereof on an established reciprocal basis or Rs.10/-, whichever is more, and stamping charges subject to recovery being as per Stamp Act, as may be in force at the time of execution.

(2) To submit drawings/designs and specifications, including temporary arrangements, if any, by State Govt. for approval of the Railway Administration prior to inclusion in the bid document for entrepreneur appointed for execution. No addition/alteration/modification in the approved plans/drawings, etc. shall be made without prior approval of Railway Administration.

(3) To supervision/construction by Railway of all construction work of bridge proper across existing/future Railway tracks and payment of plan and estimate charges, supervision charges as per the codal provision to the Railway in advance so that necessary work charges organisation can be created in time for supervision of actual construction.

(3a) The plan and estimate charges shall be 2% and D&G (Direction & General) charges shall be 6.25% of the estimated cost of the bridges proper, if the bridge is constructed by N.H.A.I./Private Entrepreneur.

(3b) If the bridge is constructed by the Railways on behalf of the N.H.A.I./Private Entrepreneur, the charges shall be 2% plan and estimate charges and 12.5% D&G charges (Direction & General charges) of the estimated cost of the bridge.

(3b) If the bridge is constructed by the Railways on behalf of the N.H.A.I./Private Entrepreneur, the charges shall be 2% plan and estimate charges and 12.5% D&G charges (Direction & General charges) of the estimated cost of the bridge.

(3c) Cost of bridge as estimated by Railway itself or as approved by Railway if estimated by N.H.A.I./Private Entrepreneur shall not be a matter of dispute. The D&G charges shall be subsequently applicable on final

cost of construction of bridge proper. A suitable clause for the purpose of depositing of D&G charges, plan & estimate charges, with Railway shall be included in the Agreement to be executed between the State Govt. and the Entrepreneur.

(3d) No work shall be allowed to be started in Railway land unless the necessary payments, as indicated above, are deposited with Railways.

(4) To ensure advance payment of the entire cost for preliminary and incidental works that may require to be executed by Railway for the purpose of clearing the site for construction of ROB/RUB. These may include shifting of signalling and electrical installations or P.way or any other structures which the Railway may consider necessary either in the beginning or subsequently during the construction of ROB/RUB. The charges would include cost of such works, the freight charges, D&G charges, etc. as per codal provision. The D&G charges shall be payable of the rates indicated in para 3 above, i.e. 12.5% of the estimated cost of the bridge if the work is done by the Railway.

(5) To award work of road over/under bridges to only such contractors, as are technically capable of carrying out bridge works under train running conditions. In case, where the contractor has not carried out the bridge work under train running conditions, he will be asked to employ an engineer having adequate experience to supervise the bridge work under such conditions.

(6) To carry out the work under train running conditions with or without speed restrictions/traffic blocks. Railway will make efforts to arrange speed restrictions; traffic blocks as per requirements subject to the availability of engineering time allowance for that route and also prevailing traffic conditions. However, in case of delay on this account due to some exigencies/traffic conditions prevailing, Railway will not be responsible for any loss whatsoever to the N.H.A.I./Private Entrepreneur. No claims shall be entertained by the Railways on this account. Decision of the Railway regarding requirement of speed restrictions/traffic blocks will be final.

(7) To ensure compliance, during the construction of ROB/RUB, of all safety norms that may be specified by Railway from time to time for safe running of trains.

(8) To pay on demand the cost of all such works including D&G charges at the rate of 12.5% of the estimated cost of the work, in case the work need to be executed by Railway from safety consideration.

(9) That Lease/license period shall be - years and will not be changed by N.H.A.I. without prior consultation with and the approval of the - Railway.

(10) That during the lease/licence period, bridge proper (over/under the track) shall be maintained by the N.H.A.I./Private Entrepreneur at their cost under the supervision and inspection of the Railways. The N.H.A.I./Private Entrepreneur shall pay to the Railways 6.25% of the maintenance cost as supervision and inspection charges per annum. For the purpose of levy of these charges, the maintenance cost shall be taken as not less than 3% of the completion cost of the bridge proper which may be taken as not less than 3% of the completion cost of the bridge proper which may be revised by Railways as per laid down norms. These charges shall be deposited by the N.H.A.I./Private Entrepreneur every year in advance. In case N.H.A.I. wants Railways to carry out the maintenance during lease period, they shall pay 3% of the completion cost as maintenance charges and 12.5% of the maintenance cost as supervision and inspection charges. By maintenance it will be understood that it involves ordinary day-to-day maintenance. However in case any major repairs are required, the cost of the same, and the supervision charges, shall be borne by the N.H.A.I./Private Entrepreneur. Decision of the Railways regarding maintenance works required shall be final and will not be a matter of dispute.

(11) That Rly's liability for maintenance of bridge proper, after lease/licence period is over, will be limited to 2-lane wide ROB/RUB only. The entire bridge proper will be maintained by Railways and N.H.A.I. will pay to the Railways maintenance charge attributable to additional width. These charges shall be 3% per annum (increased by 12.5%) of the completed cost of additional width of ROB/RUB, liable to be revised without further notice. Railway may demand payment of these charges on capitalised basis as per rules.

(11a) To ensure maintenance of bridge proper, road surface, including sanitation, lighting, drainage, dewatering during lease/licence period by the N.H.A.I./Entrepreneur to the satisfaction of the Railway Administration.

- (12) To indemnify the Railway against all claims for compensation under the Workman's Compensation Act, 1983 and any statutory modifications thereto during construction, maintenance, repairs, renewals, etc.
- (13) To follow Railways specifications, Indian Roads Congress (IRC) Codes, MOST specifications and other Railway instructions, etc., for preparation of drawings and designs of the bridge proper as well as for temporary works. These designs shall be prepared and checked by reputed Consultant/Engg. Institution before the same are submitted to Railway for approval. Railway's decision regarding modifications to the designs/drawings, etc., shall be final and binding on the N.H.A.I./Private Entrepreneur/Consultant and shall not be a matter of dispute.
- (14) To indemnify and hold the Railway Administration harmless against all damages, losses, costs and charges suffered or incurred by the Railway Administration on account of any injury to the person or property of any person using the road over/under bridge, however occasioned, unless it is solely due to negligence and misconduct of Railway or its servants.
- (15) To pay interest of at the rate of 10% per annum on all sums payable to the Railway Administration under any of the terms & conditions of these present, if not paid within a month from the date of demand in writing by the Railway Administration.
- (16) That in metropolitan/urban areas/or other locations, where land is scarce and costly, bridge approaches shall be normally on stilts in railway land. All other areas where land is not a problem, Railway may consider solid earthfill approaches in Railway land. Decision will be taken by the Railways on case basis as per the prevailing site conditions and requirement of the Railways and shall be binding upon the N.H.A.I./Private Entrepreneur.
- (17) To obtain approval from Railway for any addition or alteration and modification during execution. Certain special works, viz., shifting of cables, signalling posts, OHE structures including catenary/contact wires in electrified section, sifting of gate loadges, gate, closure of level crossing gate for temporary diversion if any, pipeline or any other structure/installation within Railway boundary shall be done normally by Railway themselves. Entrepreneur shall deposit in advance expenditure to be incurred for such work together with D&G charges at the rate of 12.5% with the Railways.
- (18) That Railway shall have the absolute authority to stop the work if at any point of time it is noticed or considered that execution of work is not progressing as per approved scheme (plan) or as per directives issued from time to time. The decision to permit commencement of the work again after rectification will rest with Railways.
- (19) To ensure that Entrepreneur shall carry out and complete the maintenance shortfalls as pointed out by Railway during schedule inspection as well as special inspection of bridge carried out from time to time, failing which Railway shall carry out such work at the cost of N.H.A.I./Entrepreneur.
- (20) To have way leave facilities as an acknowledgement of the ownership of the --- Railway of the land on which the road over/under bridge proper is constructed. The entrepreneur shall pay a total of Rs.5000/- per year up to two lane road crossing two tracks and Rs.10000/- per year in case the bridge is wider than two lane and/or crossing more than two tracks Railway may demand payment of these charges on capitalised basis taking interest @10% per annum.
- (21) That after the lease/licence period/Agreement period is over structures/facilities created for commercial exploitation of the space below approaches, if any, falling in the Railway land together with bridge proper, will revert back to the Railways free of the Cost and all future earnings will accrue to the Railways and Railways reserve the right to commercially exploit or use for any other purpose, the space structures below approaches falling in Railway land and State Governments will have no claims on it.
- (22) To ensure that only that type of traffic, for which the bridge has been designed, would be permitted to move on the bridge. No unilateral change shall be carried out by the entrepreneur such as increase in the thickness of the road surface. Any such change should have the prior approval of the --- Railway.
- (23) To pay to - Railway the cost of making good any damage or loss to Railway track or property due to improper drainage, use or for any other reasons attributed to the presence of the road over/under bridge. All necessary precautions would be taken promptly by the Entrepreneur as directed by the Railway Administration from time to time in order to prevent such occurrences.

- (24) That it would be ensured by the Entrepreneur that the structures are in sound and well maintained condition at the time of handing over to Railway.
- (25) To ensure that Entrepreneur shall carry out the work close to overhead equipments in Electrified section, only during permitted/restricted period granted by Railways on nominated days and stipulated time. Granting of such shut down periods of power/traffic blocks will solely depend upon train traffic and Entrepreneur shall not have any right or claim for such shut down period.
- (26) To ensure that the Entrepreneur shall carry out and maintain all relevant record including test record required for quality control carried out in the laboratories of I.I.T. or Engineering College at his own cost and such record shall be made available for inspection whenever demanded by Railways.
- (27) To ensure that Entrepreneur shall carry out load test of PSC girder/girder in Railway portion at his own cost and under Railway's supervision.
- (28) To pay or ensure payment to -- Railway on demand, all the outstanding dues as stipulated in this agreement, payable by the Entrepreneur/N.H.A.I. within 15 days of receiving the intimation in each case. The Government of -- also agree to fulfill, on behalf of the Entrepreneur, all those liabilities towards -- Railway which remain uncomplied by the Entrepreneur.
- (29) In case of doubt or difference or disputes that may arise between the N.H.A.I. and the -- Railway Administration as to the true intent or meaning of these presents or any Article, Clause or thing here in mentioned, every such dispute, doubt or difference shall be referred to the Railway Board (Ministry of Railways) and their decision thereon shall be final and conclusive and binding on both parties.
- (30) The term --- Railway shall also include any successor Railway as may be decided by the Ministry of Railways, Railway Board, Government of India.
- (31) To incorporate in their agreement with the Entrepreneur all those conditions/stipulations concerning Entrepreneur as brought in this agreement.
- (32) Subject as otherwise provided in this agreement, all notices to be given/taken on behalf of the President of Union of India and Railway Administration and all other actions to be taken on its behalf may be given or taken by the Chief Engineer or Chief Administrative Officer (Construction) or Divisional Railway Manager or any other officer nominated by these officers. --
- (33) Subject as otherwise provided in this agreement all notices to be given/taken on behalf of the N.H.A.I. -- and all other actions to be taken will be given or taken by -- on behalf of this N.H.A.I.

Signed by

--- Railway

For and on behalf of the

President, Union of India.

Signed in presence of

1)

2)

Signed by

For and on behalf of

N.H.A.I.....

Signed in Presence of

1)

2)

1320. STEEL

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
1320.1	RW/NH-34054/11/97-S&R dated 12.11.1997	Use of Thermo Mechanically Treated (TMT) reinforcement steel in construction of bridge projects on National Highways and under other centrally sponsored schemes.	1320/1

No. RW/NH-34154/1/97-S&R

Dated: the 12th November, 1997

To,

All State Govts./U.Ts.; Chief Engineers of States/U.T. (dealing with National Highways & Other Centrally Sponsored Schemes); Director General (Works), Central Public Works Department; Chairman, National Highways, Authority of India; Director General Border Roads

Subject : Use of Thermo-Mechanically Treated (TMT) reinforcement steel in construction of bridge projects on National Highways and under other centrally sponsored schemes

It has been brought to the notice of this Ministry that the steel manufacturers in India have started producing as a new type of steel using a different process of production. These new type of steel reinforcement bars, commonly known as TMT bars are available in different grades of strength and different diameters. The Ministry has also been informed that the TMT re-inforcement bars have better performance characteristics compared to HYSD bars. These grades of TMT steel have been included in the latest revision of IS:1786 which also supersedes IS:1139.

2. This Ministry's Standard Specification and Code of Practice for Road Bridges, (Section III), i.e. IRC:21 permits use of high strength deformed bars hot rolled conforming to IS:1139 and cold worked conforming to IS:1786. In view of revision of IS:1786 it has now been decided that TMT bars of grade Fe 415 can be used for construction of bridges on National Highways and under other centrally sponsored schemes as a substitute for the HYSD bars of the same grade as mentioned in IRC:21. The permissible stresses and other design parameters in case of TMT grade Fe 415 shall remain same as contained in IRC:21.

3. It is requested that the above may please be brought to the notice of all concerned officers in your organisation/Deptt.

4. Receipt of the circular may please be acknowledged.

1620. *BEARINGS*

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
1620.7	RW/NH-34057(1)/95-S&R dated 2.11.2000	Prequalification of manufacturers of Bearings for Bridges on National Highways and under other centrally sponsored schemes	1620/11 to 15

No. RW/NH-34057(1)/95-S&R

Dated, the 2nd November, 2000

To

The Chief Engineers of all State PWDs/Union Territory (dealing with the National Highways and other centrally sponsored schemes); Chairman, National Highways Authority of India; Director General Border Roads

Subject: Pre-qualification of manufacturers of Bearings for Bridges on National Highways and under other centrally sponsored schemes

The Ministry had earlier pre-qualified some manufacturers of elastomeric bearings in August, 1997 which was valid upto 31.3.1999. The validity period was subsequently extended upto 31st March, 2000. Meanwhile, a Committee for empanelment of manufacturers/suppliers for all types of bridge bearings was constituted by the Ministry in December, 1999. Since the process of inviting applications for fresh empanelment, scrutinizing the same, carrying out inspection of factories and finally evaluation of the data obtained by the Committee was expected to involve sometime, the validity period of the existing pre-qualification for elastomeric bearings was further extended in stages upto 30th June, 2000 and finally upto 31st December, 2000.

2. With a view to making a fresh pre-qualification of manufacturers/suppliers of elastomeric bearings, POT-cum-PTFE bearings, Steel Roller/Rocker bearings, Spherical and Pin bearings, the Ministry on the recommendation of the Committee, had invited applications for empanelment from the interested manufacturers/suppliers of these types of bearings through an open advertisement put in the leading newspapers in January, 2000.

3. The applications for pre-qualification/empanelment of the manufacturers/suppliers of the various types of bridge bearings, received from the different firms, have been examined by the Committee in the light of report/recommendations of the various inspection teams constituted for this purpose. Based on the recommendations of the Committee the eligible applicant firms have been approved for empanelment under the following three categories:

(i)	Elastomeric bearings(12 Firms)	As per list at Annexure-I
(ii)	POT-cum-PTFE bearings (10 Firms)	-do- Annexure-II
(iii)	Steel Rocker and Roller/Pin bearings (8 Firms)	-do- Annexure-III

4. The above empanelment shall be subject to the following conditions:

4.1. General

4.1.1. The pre-qualified manufacturers of bearings are required to be in possession of all documents regarding procurement of raw material, i.e., steel, cast/forged steel, PTFE and neoprene.

4.1.2. The manufacturers of bearings are required to have in-house capacity for designing the bearings based on the data supplied by the clients regarding the forces, movements, rotation, etc.

4.1.3. The personnel of the agencies (viz. States/UT PWDs, NHAI, BRO, etc.) who are concerned with the acceptance of the bearings shall ensure that all acceptance tests for materials and finished bearings selected randomly as per prescribed procedure are carried out in their presence in an independent reputed testing laboratory.

4.1.4. It is essential that strict enforcement of codal stipulations for process and acceptance control tests as per IRC:83-(Part-I & Part-II) and Ministry's Specifications for Road and Bridge Works is exercised while accepting the supply of bearings. To achieve this objective, the agencies shall get the personnel concerned with acceptance of bearings adequately trained for making them fully conversant with the relevant IRC codes and specifications.

4.2. Neoprene Bearings

4.2.1. Neoprene WRT, Bayprene 110, Skyprene B-5 and Denka S-40 V grade may be used as raw elastomer for the manufacture of elastomeric bearings. No other chloroprene should be accepted as equivalent of Neoprene WRT until further orders.

4.2.2. The pre-qualified manufacturers of elastomeric bearings shall be in possession of the required documents to establish that they are direct importers of chloroprene or purchasers from authorized representatives of the foreign

firms and they should be in a position to produce these documents and also records showing total year-wise import as well as the details regarding the bearings produced year-wise on demand to the clients or any of the inspecting authorities. All the representatives of States/Union Territory PWDs concerned with the acceptance of elastomeric bearings shall ask for the above documents from the pre-qualified manufacturers so as to ensure that imported chloroprene has been used as raw elastomer in the production of elastomeric bearings, by the pre-qualified manufacturers.

4.2.3. It shall be clearly specified in the contract documents that the suppliers of elastomeric bearings shall provide with their quotations, the details of break-up of quoted rates including the prevailing price of imported raw elastomer used by them in the manufacture of elastomeric bearings to arrive at the quoted rate of the finished bearings per cubic centimeter.

4.2.4. Notwithstanding, the provision of Clause 918.3.2 of IRC:83-(Part-II), it is specified that for smaller lots (i.e. less than 24 nos.) of bearings, an extra bearing shall be manufactured. Out of the lot, one bearing is to be selected at random for carrying out material tests. This bearing shall be excluded from the lot accepted.

4.2.5. It is necessary that all the manufacturers of all elastomeric bearings shall have in house facilities for identification of polymer of the neoprene including testing facilities for carrying out infrared spectro-photometry as per ASTM D-3677. This may be verified before placement of order.

4.2.6. The periodical test for ozone resistance of the elastomer shall be got done by the supplier in accordance with the Clause 915.2.3 of the code IRC:83(Part-II). A record of test results for bearings (for both in house and that of outside agencies) shall be systematically maintained in the manufacturing unit and shall be produced to the accepting authority on demand.

4.2.7. The following undertaking shall be taken from all the intending suppliers for any job:-

- (a) "We undertake to use _____ (Name of chloroprene) in the manufacturing of the bearings and that the same shall be imported by us directly from _____ (Name of manufacturer)/ purchased from _____ (Name of agent) who is the authorized Indian Agent of M/s _____ (Name of manufacturer)
- (b) "We hereby guarantee against defective materials manufacture, workmanship as well as certify quality assurance at every step of manufacturer of _____ (Nos). Elastomeric bearings that may be supplied by us as per this office and which shall be installed at the _____ (name of the bridge) for a period of 15 years, under normal loading, normal traffic and routine maintenance. We also stand guarantee for the free repair and replacement (including the cost of placing the new bearings in position) in part or full, if any defect is found in the bearings or part thereof within the period of 36 months from the date of supply or 24 months from the date of installation, whichever is earlier, except for defects arising out of theft, pilferage, flood, earthquake or any other natural calamity etc., over which we have no control".
- (c) "We also give an undertaking that the entire manufacturing and testing process shall be open to inspection by the agents of the State/UT PWDs/NHAI or their authorized representatives and that all possible help shall be extended in conducting the relevant tests required as per IRC:83 (Part-II)-1987 and other instructions issued by the Ministry of Surface Transport from time-to-time".

Note:- This clause is applicable for elastomeric bearings and Pot-cum-PTFE bearings only.

4.3. **Pot-cum-PTFE Bearing**

The pot being the most important component of the Pot-cum-PTFE bearing, the client should ensure themselves, the proper quality of casting of the pot in the firm's respective casting unit. This pre-qualification of the bearing manufacturers does not include their associates for casting of the pot and supplying these to the pre-qualified firms.

5. The proposed pre-qualification of the firms for manufacture/supply of various types of bridge bearings shall be valid upto 31st December, 2002.

6. A report on the performance of bearings supplied, (particularly with reference to any adverse behaviour, like, bulging, flattening, splitting, etc. for the neoprene bearings) may be maintained and sent to the Ministry on a yearly basis by 30th April every year.

7. The contents of this letter may be brought to the notice of officers of your Department dealing with works on National Highways and other Centrally Sponsored Schemes.

Enclosure to Ministries letter No. RW/NH-34057(1)/95-S&R
Dated : the 2nd November, 2000

Annex-I

List of prequalified manufacturers of elastomeric bearings for supply to bridges on National Highways and other centrally sponsored schemes

Sl. No.	Name of the Firm
1.	Elastomet Bearing Pvt. Ltd. 42-B, Motilal Basak Gardens, Calcutta (India)-700 054
2.	Exjornet & Allied Products Pvt. Ltd. 42-B, Motilal Basak Gardens, Calcutta (India)-700 054
3.	Atur Rubber Products, Atur Chambers, 2-A, Moledina Road, Pune-411 001
4.	Construction Equipment Company, C-6, Shastri Nagar, Meerut - U.P.
5.	J.K. Steel & Polymer (India), 506, Model Town, Yamuna Nagar - 135 001, Haryana
6.	Hevea Rubber Technologies Pvt. Ltd., 21, Development Plot, Y.M.A. Road, Poovanthuruthu P.O. Kottayam-686012, Kerala
7.	The Freyssinet Prestressed Concrete Co. Ltd., 2nd Floor, Alankar Cinema Building, Lajpat Nagar-III, New Delhi-110 024
8.	J. Sons Engineering Corporation Ltd. E-341, Mayur Vihar Phase-II, Delhi-110 091
9.	Steel Auto Industries, 506, Model Town, Yamuna Nagar, Haryana-135001
10.	Kanta Rubbers Pvt. Ltd. 5-5-156, Lala Temple Street, Ranigunji, Secunderabad-500003(AP)
11.	Sanfield (India) Ltd. 62, Zone-II, M.P. Nagar, Bhopal-462011 (India), M.P.
12.	Killick Nixon Limited, Killick House, Killick Estate, Baji Pasalkar Marg, Chandivli, Bombay-400072

**Enclosure to Ministries letter No. RW/NH-34057(1)/95-S&R
Dated : the 2nd November, 2000**

Annex-II

**List of prequalified manufacturers of Pot-cum-PTEE Bearings for supply to bridges on
National Highways and other centrally sponsored schemes**

Sl. No.	Name of the Firm
1.	Metco Group Engineers Pvt. Ltd. 42-B, Motilal Basak Gardens, Calcutta (India)-700 054
2.	Steelmet Bridge Bearing Pvt. Ltd. 42-B, Motilal Basak Gardens, Calcutta (India)-700 054
3.	Metal Engineering & Treatment Co. Ltd. 42-B, Motilal Basak Gardens, Calcutta (India)-700 054
4.	Atur Rubber Products, Atur Chambers, 2-A, Moledina Road, Pune-411 001
5.	J. Sons Engineering Corporation Ltd. E-341, Mayur Vihar Phase-II, Delhi-110 091
6.	J. Sons Engineering Corporation (India) J. Sons House, Garth Road, Meerut-250002 (UP)
7.	Steel Auto Industries, 506, Model Town, Yamuna Nagar, Haryana-135001
8.	Sanfield (India) Ltd. 62, Zone-II, M.P. Nagar, Bhopal-462011 (India), M.P.
9.	Tefcon Bearing Pvt. Ltd. 24, Padma Darshan Society, Behind Rawat Show Room, Satara Road, Pune-411 009
10.	Killick Nixon Limited, Killick House, Killick Estate, Baji Pasalkar Marg, Chandivli, Bombay-400072

**Enclosure to Ministries letter No. RW/NH-34057(1)/95-S&R
Dated : the 2nd November 2000**

Annex-III

**List of prequalified manufacturers of Steel Rocker & Roller/Pin Bearing for supply to bridges on
National Highways and other centrally sponsored schemes**

Sl. No.	Name of the Firm
1.	Metco Group Engineers Pvt. Ltd. 42-B, Motilal Basak Gardens, Calcutta (India)-700 054
2.	Metal Engineering & Treatment Co. Ltd. 42-B, Motilal Basak Gardens, Calcutta (India)-700 054
3.	Steelmet Bridge Bearing Pvt. Ltd. 42-B, Motilal Basak Gardens, Calcutta (India)-700 054
4.	Yantrique Construction Pvt. Ltd. 23-A, Netaji Subhas Road, 6th Floor, Room No. 18, Calcutta-700001
5.	J. Sons Engineering Corporation Ltd. E-341, Mayur Vihar Phase-II, Delhi-110 091
6.	J K Heavy Engineers 506, Model Town, Yamuna Nagar, Haryana-135001
7.	J. Sons Engineering Corporation (India) J. Sons House, Garth Road, Meerut-250002 (UP)
8.	Steel Auto Industries, 506, Model Town, Yamuna Nagar, Haryana-135001

1720. EXPANSION JOINTS

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
1720.6	RW/NH-34059/1/96-S&R dated 17.7.1997	Modified Interim Specifications for Expansion Joints – Addendum thereto.	1720/27 to 29
1720.7	RW/NH-34059/1/96-S&R dated 30.11.2000	Revised Interim Specifications for Expansion Joints	1720/30 to 43
1720.8	RW/NH-34059/1/96-S&R dated 25.1.2001	Revised Interim Specifications for Expansion Joints – Corrigendum	1720/44

NO. RW/NH-34059/1/96-S&R

Dated, the 17th July, 1997

To,

The Chief Engineers of States/UT PWDs, (Dealing with National Highways and other Centrally Financed Schemes); Director General (Works), Central Public Works Department; Director General Border Roads; Chairman, National Highways Authority of India; Engineer-in-Chief, Municipal Corporation of Delhi.

Subject: Modified Interim Specifications for Expansion Joints - Addendum thereto

Please refer to Ministry's letter of even no. dated 31.3.97 forwarding therewith the Modified Interim Specifications for Expansion Joints. Following amendments in the above mentioned specifications may please be noted.

1.1. **Section III - Compression Seal Joint**

- (i) In para 2.4.2 (a), line 3, read 'Table 2 - Strip Seal Element Specifications' in place of 'Table 1'
- (ii) In Table 1, item (v), read '0.8Mpa' in place of '0.9Mpa'
- (iii) In para 4.8, line 2, read '+5' in place of '+50'

1.2. **Section IV - Strip Seal Expansion Joint**

- (i) Read the heading of Table on page 9 as 'Table 2 - Strip Seal Element Specifications' instead of 'Table 1 - Strip Seal Element Specifications'

1.3. **Section V - Modular Strip/Box Seal Joint**

- (i) Para 3.2 last line, read 'Table 2 - Strip Seal Element Specifications' in place of 'Table 1'

1.4. **Annexure-II**

- (i) Change the address of M/s. Sanfield (India) Pvt. Ltd. at S.No.3 as under:
M-62, Zone II, Maharana Pratap Nagar, Bhopal-462011
- (ii) Change the address of M/s. Z-Tech. Inc., at S.No.5 as under:
370, Lajeunesse West, St-Jerome (Quebec), Canada J7Y4E5
- (iii) Sl.No. 5 - Delete the following under 'Remarks' column.
 - (a) 'suitable for max. movement of 50 mm only'
 - (b) 'Max. opening of each module should be limited to 50 mm'
- (iv) Add below Sl. No.5 the following as Sl. No.6:

Sl. No.	Name and address of supplier	Name of Manufacturer/ Foreign Collaborator	Type of Expansion Joints	Details of Item to be imported from foreign Collaborator	Remarks
6.	Archana Structural Engineering (India) Pvt Ltd., 5, Zone-II, Maharana Pratap Nagar, Bhopal-462 011	The D.S.Brown Co., P.O.Box No.158 300E, Cherry Street North Baltimore, Seal Ohio-45872-0158 U.S.A	(a) Strip Seal (b) Modular Strip (c) Compression Seal (Chloroprene Seal) (d) Asphaltic Plug	Edge Beam & Stop Seal All items Joint Seal & Adhesive-cum-Lubricant Binder	The joints will be installed under the supervision of principals. The D.S. Brown Co. USA, until it is certified by the Principals that M/s Archana Structural Engineering (India) Pvt. Ltd., has obtained requisite expertise in the installation of the joints.

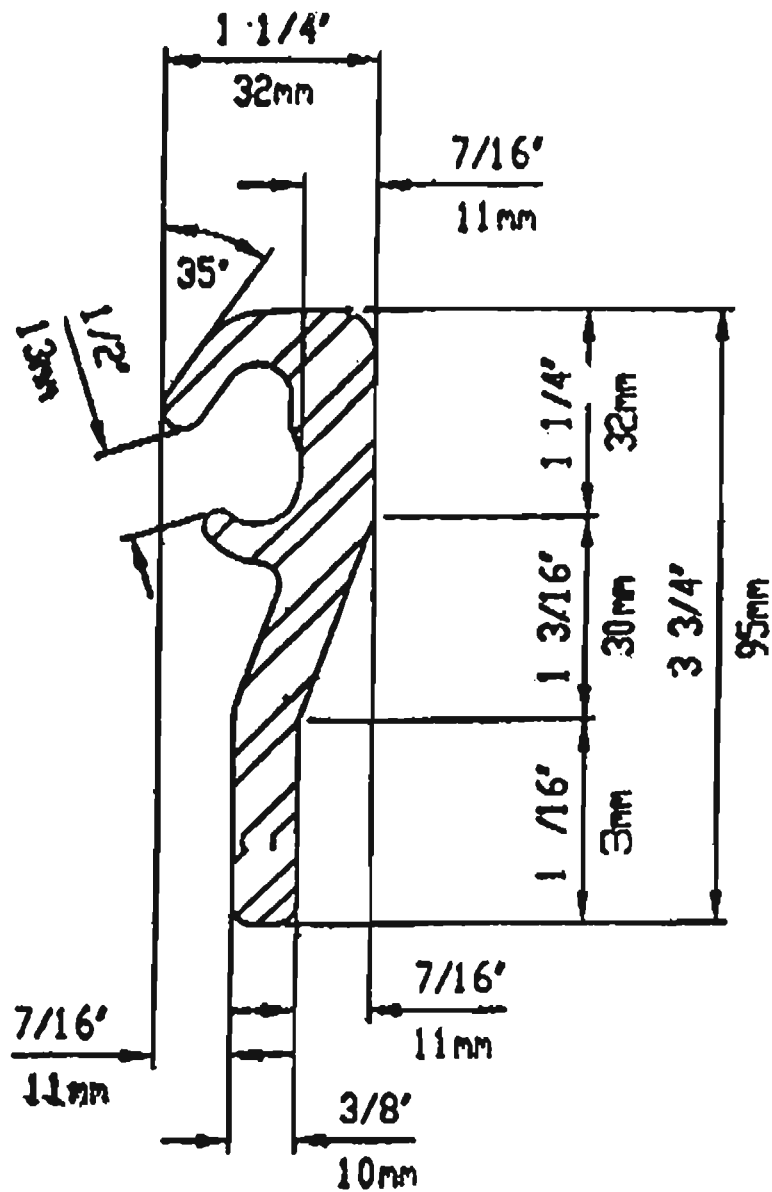
1.5. **Annexure- III**

- (i) Sheet No. 4 of 6 - make the following changes in the dimensions of edge beam.
 - (a) Read the length and thickness of horizontal leg as 100 and 12 in place of 90 and 11 respectively.
 - (b) Read the dimensions of vertical leg as 95±2 and 75 in place of 110±2 and 90 respectively.
- (ii) 2 sheets numbering 7 of 8 and 8 of 8 enclosed with this letter are added at the end of Annexure-III and the serial nos. of sheets 1 of 6 to 6 of 6 are changed as 1 of 8 to 6 of 8 respectively.

2. All other stipulations in this Ministry's Circular of even no. dated 31.3.1997 remain unchanged.

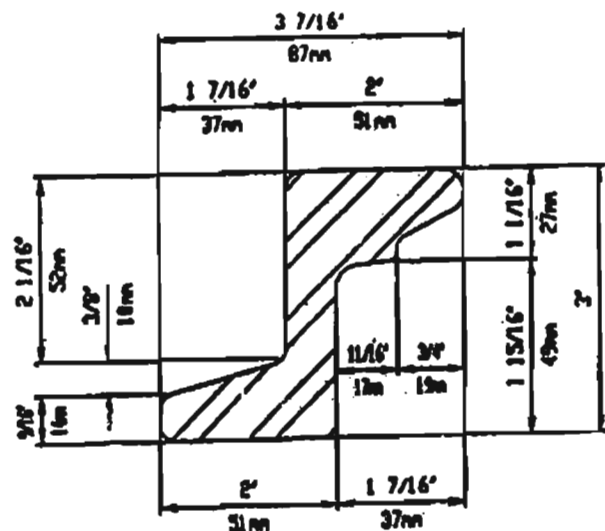
3. It is requested that the contents of this circular be brought to the notice of all officers in your department concerned with National Highways and other Centrally Sponsored Schemes.

[Enclosure to Ministry's Circular No.RW/NH-34059/1/96-S&R dated 17th July, 1997] (7 of 8)



Edge beam for strip seal joint

FOR MODULAR JOINT



EDGE BEAM



No.RW/NH-34059/I/96-S&R**Dated, the 30th November, 2000**

To

The Chief Engineers of States/UT PWDs (Dealing with National Highways and other Centrally Financed Schemes); Director General Border Roads; Chairman, National Highways Authority of India; Engineer-in-Chief, Municipal Corporation of Delhi

Subject: Revised Interim Specifications for Expansion Joints

In supersession of this Ministry's Circular letters of even number dated March 31, and July 21, 1997 on the above subject; please find enclosed herewith revised interim specifications for expansion joints for adoption on all National Highway and other Centrally sponsored bridge projects. Salient points of revised interim specifications are mentioned below:

1.1. **Criteria for Adoption**

1.1.1. Suitability criteria for adoption of different types of expansion joints is given in *Annexure-I*.

It may be noted that some provisions pertaining to single strip seal and modular joints have since been revised in the modified interim specification placed below for further adoption.

1.1.2. Special type of modular expansion joint should be provided for bridges having wide deck and large span length involving complex movements/rotations in different directions/planes, with prior approval of the Ministry.

1.1.3. Dynamic/fatigue testing under simulated conditions shall be done for modular joints to be installed on bridges located in Seismic Zones IV & V.

1.1.4. Specification for strip seal joints contained in Clause 2607 of this Ministry's "Specifications for Roads & Bridge Works" stands substituted by those given herein.

2. While arranging supply of expansion joints, a warranty of trouble-free performance for at least ten years and free rectification of defects/replacement, if any, during this period may be insisted upon from the contractor/suppliers for all types of joints except for buried joints, filler joints and asphaltic plug joint.

3. The performance of the expansion joints shall be observed regularly by the client particularly during the warranty period. The joints showing any defect during this period shall be got repaired/replaced by the respective firms at their own cost failing which the particular supplier may be debarred from supplying their expansion joint system for National Highway works and other Centrally sponsored schemes.

4. It is requested that the contents of this circular be brought to the notice of all officers in your department concerned with National Highways and other Centrally sponsored schemes.

5. It may be noted that a Committee of IRC is already working on a draft code for expansion joints. These interim specifications will be in force till the code is finalised by the Committee and made applicable by the Ministry.

6. You are also requested to send your comments/suggestions, if any, for further improvement of the interim specifications.

7. Please acknowledge receipt of this letter.

[Enclosure to Ministry's Circular No.RW/NH-34059/1/96-S&R dated 30th Nov. 2000]

GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS

REVISED
INTERIM SPECIFICATIONS
FOR
EXPANSION JOINTS

I. BURRIED JOINT

Clause 2604 of MOST's Specification for Road & Bridge Works (Third Revision) may be deemed modified as under:

1. This joint shall consist of continuously laid bituminous/asphaltic surfacing over the joint gap bridged by a steel plate resting freely over the top surface of the deck concrete.
2. The width of the joint gap shall be kept as 20 mm.
3. The steel plate shall conform to weldable structural steel as per IS:2062. The plate shall be 12 mm thick and 200 mm wide. The plate shall be made of minimum number of pieces (not exceeding two pieces per traffic lane width) welded together to form the required length.
4. 2 mm dia, 100 mm long nails, spaced at 300 mm centres along the centre line of the plate shall be welded to the bottom surface of the steel plate to protrude vertically into the joint gap in order to prevent dislodging of the plate.
5. The plate and the nails shall be protected against corrosion by galvanising or any other approved anti-corrosive coating with a minimum thickness of 100 micron. These shall be completely free of oil, rust, loose paint or other similar material before application of anti-corrosive coating.
6. The concrete surface shall be free from any loose material and cleared of any grease, oil, paint, etc. and the surface shall be sand blasted, clean of all laitance and level true, prior to placement of the steel plate.
7. The plate shall be placed symmetrical to the centre line of the joint and it shall be ensured that the plate does not get displaced from its position while laying the wearing course.

II. ASPHALTIC PLUG JOINT

1. Asphaltic plug joint shall consist of a polymer modified bitumen binder, carefully selected single size aggregate, closure/bridging metallic plate and heat resistant foam caulking /backer rod.

2. GENERAL REQUIREMENTS

- 2.1. The joint shall extend to the full depth of the wearing course down to structural concrete. Where needed, a recess may be cut into the deck slab concrete to accommodate the minimum required depth of the joints.
- 2.2. The joint shall be provided in the entire width of the structure including kerb and/or footpath. A recess in the kerb and/or footpath shall be made to allow the joint to pass beneath them. The expansion gap in the adjoining kerbs and/or footpaths shall be sealed with a suitable sealant, such as, polysulphide sealant
- 2.3. Expansion joint shall cater for a horizontal movement of 25 mm and vertical movement of 2 mm. This shall be certified by the manufacturer/supplier of the joint.

- 2.4. The minimum width (in traffic direction) of the joint shall be 500 mm and maximum width shall be 750 mm.
- 2.5. Minimum depth of joint shall be 75 mm and maximum depth shall not exceed 100 mm.
- 2.6. The joint shall be capable of performing satisfactorily, within the temperature (ambient) range of -5 to +50 degree C.

3. MATERIAL

3.1. **Binder:** The polymer modified bitumen binder shall have the capacity to fill the gaps and voids between single size aggregate and to impart flexibility to accommodate various design movements. It shall be a patented blend of bitumen, synthetic polymer, fillers and surface active agent and shall be so formulated as to combine necessary fluidity for the installation process, low temperature flexibility and flow resistance at high ambient temperatures. The binder shall satisfy following requirement:

Softening point	100 deg. C minimum
Core penetration at 25 deg. C. 0.1 mm (BS:2499)	: 100 mm max.
Flow resistance at 70 deg.C, 5 hours (BS:2499)	: 3 mm max.
Extension Test	: 5 cycle of extension to
(blocks prepared to ASTM D 1190	: 50 per cent at a rate of
and tested to limits BS2499)	: 3.2 mm/hour at 25 deg.C
Safe heating temperature	: 210 deg.C.

3.2. **Aggregates:** The aggregate shall be single size aggregate chosen from basalt granite, grit stone or gabbro group. The nominal size of aggregate shall be 12.5 mm for depths of joints upto 75 mm and 20 mm for joints of more depths of joint. The aggregate shall not be flaky and the Flakiness Index shall not be more than 25 per cent. The aggregate shall satisfy following grading requirements:

IS Sieve Designation	Nominal size of aggregate	
	20 mm	12.5 mm
	percentage by weight passing the sieve	
26.5 mm	100	—
19.9 mm	85-100	100
13.2 mm	0-35	85-100
09.5 mm	0-7	0-35
06.3 mm	—	0-7
02.3 mm	0-2	—2
600 micron	—	—
75 micron	0-1	0-1

The aggregate should have good (i) Polished Stone Value (PSV), (ii) Aggregate Abrasion Value (AAV), (iii) Aggregate Impact Value (AIV) and (iv) Aggregate Crush Value (ACV). In addition surface characteristics should promote proper adhesion. The following are the required values:

PSV>60
AAV<05
AIV<18
ACV=10-25

3.3. **Closure Plate:** The closure plate shall be weldable structural steel conforming to IS:2062. The minimum thickness of steel plate shall be 6mm and the width shall not be less than 200 mm. Closure plate shall be provided with as large length as possible and welded together to form the required length. The number of pieces shall not be more than two per traffic lane width. It shall be provided with equidistant holes at a maximum spacing of 300 mm centres for anchorage to the caulking/backer rod along the longitudinal centre line of the plate. The plate shall be protected against corrosion by galvanising or any other approved anti-corrosive coating paint with a minimum thickness of 100 micron.

3.4. **Foam caulking/Backer Rod:** A closed-cell polyolefine or open cell polyurethane foam cylindrical caulking or backer rod having diameter equal to 150 per cent of the joint opening shall be provided. It shall be heat resistant and possess good flexibility and recovery characteristics with density of 25 to 30 kg/cu.m.

4. **INSTALLATION**

4.1. The expansion joint shall be installed by the manufacturer/supplier.

4.2. The block out for the joint shall be marked and constructed to the dimensions as indicated in the drawing or recommended by manufacturer/supplier.

4.3. The recess for the block out shall be thoroughly cleaned of any loose or foreign material by wire brushing and air blowing and dried with hot compressed air.

4.4. The recess in the deck slab, if required shall be repaired with epoxy mortar and cleaned and dried again.

4.5. The foam caulking/backing rod shall be placed about 25 mm down into the joint opening.

4.6. The aggregate shall be washed, cleaned and heated to a temperature between 120-180 deg. C. prior to placement

4.7. The binder shall be preheated to temperature of 170-190 deg. C before application.

4.8. While sealing the joint opening with preheated binder, care shall be taken that the binder does not spill on to the joint surface of the deck.

4.9. The joint shall not be installed when the ambient temperature goes below +5°C. or above +35°C. or while it is raining/snowing (Planning for installation must take into account the weather condition).

4.10. When element weather resumes, the joint installation may be continued after the upper layer and/or exposed surface of the partially completed joint has been re-prepared by heating and/or coating with binder as necessary.

5. **HANDLING AND STORAGE**

All the aggregates and binder shall be pre-bagged and clearly marked. All the material shall be stored on concrete platform at 150 mm above the ground in covered enclosures to avoid contamination.

6. **TESTS AND STANDARD OF ACCEPTANCE**

The material shall be tested in accordance with these specifications and shall meet prescribed criteria. The manufacturer/supplier shall furnish the requisite certificate from the recognised testing laboratory of India or abroad.

The work shall conform to these specifications and shall meet the prescribed standards of acceptance.

III. **COMPRESSION SEAL JOINT**

1. Compression seal joint shall consist of steel armoured nosing at two edges of the joint gap suitably anchored to the deck concrete and a preformed chloroprene elastomer or closed cell foam joint sealer compressed and fixed into the joint gap with special adhesive binder.

2. MATERIAL

2.1. **Steel Nosing:** The steel nosing shall be of angle section ISA 100x100 conforming to weldable structural steel as per IS:2062. The thickness of legs shall not be less than 12 mm. The top face of the angle shall be provided with bleeder holes of 12 mm diameter spaced at maximum 100 mm centres so as to ensure that there are no voids in the concrete beneath the angle.

2.2. **Anchorage:** The anchorage steel shall conform to IS:2062 or equivalent.

The steel nosing shall be anchored to the deck by reinforcing bars or anchor plates cast in concrete or a combination of anchor plates and reinforcing bars. Anchor bars shall engage the main structural reinforcement of the deck and in case of anchor plates and anchor loops, this shall be achieved by passing transverse bars through the loops or plates.

The minimum thickness of anchor plates shall be 12 mm. Total cross sectional area of bars on each side of the joint shall not be less than 1600 sq. mm per m length of the joint and the centre-to-centre spacing shall not exceed 250 mm. The ultimate resistance of each anchorage shall not be less than 600 KN/m in any direction.

2.3. **Corrosion protection:** All steel section shall be protected against corrosion by hot dip galvanising or any other approved anti-corrosive coating with a minimum thickness of 100 microns.

2.4. Joint Seal

2.4.1. The sealing element shall be a preformed continuous chloroprene or closed cell foam seal with high tear strength, insensitive to soil, gasoline and ozone. It shall have high resistance to ageing and ensure water tightness. The seal should be vulcanised in a single operation for the full length of the joint required for carriageway, kerbs and footpaths, if any. The seal shall cater for a horizontal movement upto 40 mm and vertical movement of 3 mm.

2.4.2. The physical properties of chloroprene/closed cell foam sealing element shall conform to the following:

(a) Chloroprene seal:

Shall be preformed extruded multi-web cellular section of chloroprene of such a shape as to promote self removal of foreign material during normal service operations. Chloroprene of joint seal shall conform to Clause 915.1 of IRC:83(Part II) and satisfy the properties stipulated in Table 2- strip seal element specifications of these specifications except in respect of the working movement range of the sealing element which shall be as specified in Clause 2.4.1 above.

(b) Closed Cell Foam Seal:

Shall be of preformed non-extruded non-cellular section made from low density closed cell, cross linked ethylene vinyl acetate, polyethylene copolymer that is physically blown using nitrogen. The material shall possess properties as indicated in the Table I.

TABLE-1

	Property	Special Value.
(i)	Density	41.7-51.3 kg/cu.m.
(ii)	Compression Set on 25 mm	50 per cent compression samples (ASTMD 3575) for 22 hours at 23 degree Celcius, 2 hour recovery; 13 per cent set
(iii)	Working temperature	-70 to+70 deg. C.
(iv)	Water absorption (total immersion for 3 months) (ASTM 3575)	0.09766 kg/sq.m
(v)	Tensile strength	0.8 Mpa.
(vi)	Elongation at break (ASTMD 3575)	195+/- 20 per cent

2.5. **Lubricant-cum-Adhesive:** The type and application of material used in bending the preformed joint seal to the steel nosing and concrete shall be as recommended by the manufacturer/supplier of the seal system.

3. **HANDLING AND STORAGE**

- (i) The expansion joint materials shall be handled with care and stored undercover.
- (ii) All joint material and assemblies shall be protected from damage and assemblies shall be supported to maintain true shape and alignment during transportation and storage.

4. **INSTALLATION**

4.1. The expansion joint shall be installed by the manufacturer/supplier or their authorised representative, who will ensure compliance of installation procedure and instructions.

4.2. The dimension of the joint recess and the width of the gap shall conform to the approved drawing.

4.3. Anchoring steel shall be welded to the main reinforcement in the deck maintaining the level and alignment of the joint.

4.4. Concreting of pocket/recess shall be done with great care using proper mix conforming to same grade as that of the deck concrete but no less than M30 grade in any case. The water-cement ratio shall not be more than 0.40. If needed, suitable admixtures may be used to achieve the workability. The width of pocket shall not be less than 300 mm on either side of the joint. Care shall also be taken to ensure efficient bonding between already cast/existing deck concrete and the concrete in the joint recess.

4.5. At the time of installation, joint shall be clean and dry and free from spalls and irregularities which might impair a proper joint seal.

4.6. Concrete or metal surfaces shall be clean, free of rust, laitance, oils, dirt, dust or other deleterious materials.

4.7. The lubricant-cum-adhesive shall be applied to both faces of the joint and joint seal prior to installation in accordance with the manufacturer's instructions.

4.8. The joint seal shall be compressed to the specified thickness for the rated joint opening and ambient temperature at the time of installation which shall be between +05 to +35°C.

4.9. The joint seal shall be installed without damage to the seal. Loose fitting or open joints shall not be permitted.

5. **ACCEPTANCE CRITERIA**

5.1. All steel elements shall be furnished with corrosion protection system.

5.2. For the joint seal the acceptance test shall conform to the requirements stipulated in para 2.4 above. The manufacturer/supplier of this type of joint shall produce a test certificate to this effect conducted in a recognised laboratory in India or abroad.

5.3. Prior to acceptance 25 per cent of the completed and installed joints, subject to a minimum of one joint, shall be subjected to water tightness test. Water shall be continuously ponded along the entire length for a minimum period of 4 hours for a depth of 25 mm above the highest point of deck. The width of ponding shall be at least 50 mm beyond the anchorage block of the joint on either side. The depth of water shall not fall below 25 mm anytime during the test. A close inspection of the underside of the joint shall not reveal any leakage.

6. **TESTS AND STANDARDS OF ACCEPTANCE**

The materials shall be tested in accordance with these specifications and shall meet the prescribed criteria. The manufacturer/supplier shall furnish the requisite certificates from the recognised testing laboratory of India or abroad.

The work shall conform to these specifications and shall meet the prescribed standards of acceptance.

IV. STRIP/BOX SEAL EXPANSION JOINT

1. COMPONENTS

Strip seal expansion joint shall comprise the following items:

(a) **Edge Beam**

This shall be either extruded or hot rolled steel section or cold rolled cellular steel section with suitable profile to mechanically lock the sealing element in place throughout the normal movement cycle. Further, the configuration shall be such that the section has a minimum thickness of 10 mm all along its cross-section (flange & web). Thickness of lips holding the seal shall not be less than 6 mm. The minimum height of the edge beam section shall be 80 mm. The minimum cross-sectional area of the edge beam shall be 1500 mm².

(b) **Anchorage**

Edge beams shall be anchored to the deck by reinforcing bars, or anchor plates cast in concrete or a combination of anchor plate and reinforcing bars. Anchor bars, shall engage the main structural reinforcement of the deck and in case of anchor plates or loops, this shall be achieved by passing transverse bars through the loops or plates.

The minimum thickness of anchor plate shall be 12 mm. Total cross-sectional area of bar on each side of the Joint shall not be less than 1600 mm sq. per metre length of the joint and the centre-to-centre spacing shall not exceed 250mm. The ultimate resistance of each anchorage shall not be less than 600 kN/m in any direction.

2. MATERIAL

(a) The steel for edge beams shall conform to any of the steel grade corresponding to RST 37-2 OR 37-3 (DIN), ASTM A36 or A588, CAN/CSA Standard G40.21 Grade 300 W or equivalent.

(b) Anchorage steel shall conform to IS:2062 or equivalent

(c) All steel sections shall be protected against corrosion by hot dip galvanising or any other approved anti-corrosive coating with a minimum thickness of 100 micron.

(d) Chloroprene of strip seal element shall conform to Clause 915.1 of IRC:83 (Part II). The properties of chloroprene shall be as specified in Table-2 : strip seal element specifications.

3. FABRICATION (Pre-Installation)

(a) The strip seal joint system and all its component parts including anchorages shall be supplied by the manufacturer/ system supplier.

(b) The width of the gap to cater for movement due to thermal effect, prestress, shrinkage and creep, superstructure deformations (if any) and sub-structure deformations (if any) shall be determined and intimated to the manufacturer. Depending upon the temperature at which the joint is to be installed, the gap dimension shall be preset.

TABLE 2. STRIP SEAL ELEMENT SPECIFICATION

PROPERTY	SPECIFIED VALUE
Hardness*	63±5 Shore A
DIN 53505	55 ± 5 Shore A
ASTM D 2240(Modified)	
Tensile strength*	Min. 11 Mpa
DIN 53504	Min. 13.8 Mpa
ASTM D412	
Elongation at fracture*	Min. 350 per cent
DIN 53504	Min. 250 per cent
ASTM D412	
Tear Propagation Strength	Min. 10 N/mm
Longitudinal	Min. 10N/mm
Transverse	Min. 25 per cent
Shock Elasticity	Min. 220 cu.mm.
Abrasion	

Residual Compressive Strain (22 h/70°C/30 per cent strain) Ageing in hot air (14 days/70°C)	Max. 28 per cent
Change in hardness	Max. +7 Shore A
Change in tensile strength	Max. -20 per cent
Change in elongation at fracture	Max. -20 per cent
Ageing in ozone (24 h/50 pphm/25°C/20 per cent elongation)	No cracks
Swelling behaviour in Oil (168h/25°C) ASTM oil No. 1 Volume Change Change in hardness	Max. + 5 per cent Max. -10 Shore A
ASTM Oil No.3	
Volume change	Max. + 25 per cent
Change in hardness	Max. -20 Shore A
Cold Hardening Point	Max. -35°C

*Only one set of specifications, viz, ASTM or DIN shall be followed depending on the source of supply.

- (c) Each strip seal expansion joint system shall be fabricated as a single entity unless stage construction or excessive length prohibits monolithic fabrication. It shall fit the full width of the structure as indicated on the approved drawing. The system shall be preset by the manufacturer prior to transportation. Presetting shall be done in accordance with the Joint opening indicated on the drawing.
- (d) The finally assembled joint shall then be clamped and transported to the work site.

4. HANDLING AND STORAGE

- (a) For transportation and storage, auxiliary brackets shall be provided to hold the joint assembly together.
- (b) The manufacturer/supplier shall supply either directly to the Engineer or to the Bridge Contractor all the materials of strip seal joints including sealants and all other accessories for the effective installation of the joints.
- (c) Expansion joint material shall be handled with care. It shall be stored under cover on suitable lumber padding.

5. INSTALLATION

5.1. The joint shall be installed by the manufacturer/supplier or their authorised representative who will ensure compliance to the manufacturer's instructions for installation.

5.2. Taking the width of gap for movement of the joint into account the dimensions of the recess in the decking shall be established in accordance with the drawings or design data of the manufacturer. The surfaces of the recess shall be thoroughly cleaned and all dirt and debris removed. The exposed reinforcement shall be suitably adjusted to permit unobstructed lowering of the joint into the recess.

5.3. The recess shall be shuttered in such a way that dimensions in the joint drawing are maintained. The formwork shall be rigid and firm.

5.4. Immediately, prior to placing the joint, the presetting shall be inspected. Should the actual temperature of the structure be different from the temperature provided for presetting correction of the presetting shall be done. After adjustment, the brackets shall be tightened again.

5.5. The joint shall be lowered in a pre-determined position. Following placement of the joint in the prepared recess, the joint shall be levelled and finally aligned and the anchorage steel on one side of the joint welded to the exposed reinforcement bars of the structure. Upon completion, the same procedure shall be followed for the other side of the joint. With the expansion joint finally held at both sides, the auxiliary brackets shall be released, allowing the joint to take up the movement of the structure.

5.6. High quality concrete shall then be filled into the recess. The packing concrete must feature low shrinkage and have the same strength as that of the superstructure, but in any case not less than M 35 grade. Good compaction and careful curing of concrete is particularly important. After the concrete has cured, the movable installation brackets and shuttering still in place shall be removed.

5.7. The neoprene seal shall be filled installed in continuous length spanning the entire roadway width. To ensure proper fit of the seal and enhance the ease of installation, dirt, spatter or standing water shall be removed from the steel cavity using a brush, scraper or compressed air. The seal shall be installed without any damage to the seal by suitable hand method or machine tools.

5.8. As soon as the concrete in the recess has become initially set, a sturdy ramp shall be placed over the joint to protect the exposed steel beams and neoprene seals from the site traffic. Expansion joint shall not be exposed to traffic before the carriageway surfacing is placed.

5.9. The carriageway surfacing shall be finished flush with the top of the steel sections. The actual junction of the surfacing/wearing coat with the steel edge section shall be formed by a wedge shaped joint with a sealing compound. The horizontal leg of the edge beam shall be cleaned beforehand. It is particularly important to ensure thorough and careful compaction of the surfacing in order to prevent any premature depression forming in it.

6. ACCEPTANCE CRITERIA

- (i) All steel elements shall be finished with corrosion protection system.
- (ii) For neoprene seal, the acceptance test shall conform to the requirements in Table 1. The manufacturer/supplier shall produce a test certificate accordingly, conducted in a recognised independent laboratory, in India or abroad.
- (iii) The manufacturer shall produce test certificates indicating that anchorage system had been tested in a recognised laboratory to determine optimum configuration of anchorage assembly under dynamic loading.
- (iv) Prior to acceptance 25 per cent of the completed and installed joints, subject to a minimum of one joint, shall be subjected to water tightness test. Water shall be continuously ponded along the entire length for a minimum period of 4 hours for a depth of 25 mm above the highest point of deck. The width of ponding shall be atleast 50 mm beyond the anchorage block of the joint on either side. The depth of water shall not fall below 25 mm anytime during the test. A close inspection of the underside of the joint shall not reveal any leakage.
- (v) Investigation of fatigue strength of the edge beam section with anchorages to withstand 2×10^6 load change cycles of 85 kN vertical load and 10 kN of horizontal load without showing sign of distress shall be required. The supplier shall produce a test certificate in this regard conducted in a recognized laboratory, in India or abroad.
- (vi) As strip seal type of joint is specialised in nature, generally of the proprietary type, the manufacturer shall be required to produce evidence of satisfactory performance of this type of joint.

7. TESTS STANDARDS OF ACCEPTANCE

The materials shall be tested in accordance with these specifications and shall meet the prescribed criteria. The manufacturer/supplier shall furnish the requisite certificates from the recognised testing laboratory of India or abroad.

V. MODULAR STRIP/BOX SEAL JOINT

1. A modular expansion joint shall consist of two or more modules/cells to cater to a horizontal movement in excess of 70 mm. It shall allow movements in all 3 directions and rotation about all 3 axes as per the design requirements. It shall ensure that during all movements cycles of the joint, opening and closing (gaps) of all modules are equal.

2. COMPONENT

2.1. The structural system consisting of two edge beams, one or more central/separation beams or lamellas

and cross support bars supporting individuals or multiple central beams to transfer the loads to the bridge deck through the anchorage system.

2.2. Resilient or shock absorption support system for central beams as well as support bars to dampen dynamic loading, thus, reducing the forces transmitted to the substructure and anchorages as also to accommodate vertical and transverse movements apart from longitudinal movement.

2.3. Sliding or control system which allows closing and opening of the joint and also ensures that all modules open and close equally.

2.4. Mechanically locked sealing system of chloroprene which provides watertight, noiseless and easy replacement system.

3. MATERIALS

3.1. **Edge and Central Beams:** These shall be either extruded or hot rolled steel sections or cold rolled cellular steel sections including continuously shop welded sections for central beams with suitable profile to mechanically lock the sealing element in place throughout the normal movement cycle. Further, the configuration shall be such that the section has a minimum thickness of 10 mm all along the cross-section (Flange and Web). The thickness of lips holding the seal shall not be less than 6 mm. The cold rolled cellular sections shall be relieved of any locked in stresses through annealing process. These shall be closed at both ends and be air tight after installation of seal to prevent ingress of moisture in the hollow portion. The minimum height of edge beams and central beam sections shall be 80 mm. Minimum cross-sectional area of edge beam shall be 1500 sq.mm. The material shall conform to any of the steel grade corresponding to RST 37-2 or 37-3 or 52-3(DIN), ASTM A558, CAN/CSA standard G-40.21 Grade 300W or equivalent. The material for support bars may be same as that of edge/central beams or as per manufacturer's recommendations.

3.2. **Chloroprene Seal:** This shall be a preformed extruded single strip or cellular section of chloroprene of such a shape as to promote self removal of foreign material during normal joint operation. The seal shall possess high tear strength and be insensitive to oil, gasoline and ozone. It shall have high resistance to ageing and ensure water tightness.

Chloroprene seal shall conform to Clause 915.1 of IRC:83(Part II). The properties of chloroprene shall conform to Table 2-strip seal element specification of these specifications.

3.3. **Anchorage:** The anchorage steel shall conform to IS:2062 or equivalent.

3.3.1. Edge beams shall be anchored to the deck by anchor plates cast in concrete or a combination of anchor plate and reinforcing bars. Anchor plates or loops shall be anchored by passing transverse bars through the loops or plates.

3.3.2. The minimum thickness of anchor plate shall be 12 mm. Anchor bars on each side of the joint shall not be less than 1600 mm sq.per metre length of the joint and the centre anchor bars to centre spacing shall not exceed 250 mm. The ultimate resistance of each anchorage shall not be less than 600 kN/m in any direction. The anchor loop at the edge profiles should be at a right angle to the joint. Planned deviations of this direction are allowable only for the range of 90° +/- 20°. (The anchoring reinforcement of the construction must lie parallel to the anchor loops).

3.4. **Support and Control System:** The overall system and components of the resilient/shock absorption system and sliding/control system shall conform to the specifications recommended by the manufacturer. The centre-to-centre spacing of transverse support bar shall not exceed 1.75 m.

3.5. **Corrosion Protection:** All steel sections shall be protected against corrosion by hot dip galvanising or any other approved anti-corrosive coating with a minimum thickness of 100 micron.

4. FABRICATION (pre-installation)

4.1. The modular expansion joint system and all its component parts including anchorages shall be supplied by the manufacturer.

4.2. The width of the gap to cater for movement due to thermal effect, prestress, shrinkage and creep, superstructure deformations (if any) and sub-structure deformations (if any) shall be determined and intimated to the manufacturer. Depending upon the range of temperature at which the joint is likely to be installed, the gap dimension shall be present.

4.3. Each modular expansion joint system shall be fabricated as a single entity free from any joint in the longitudinal direction unless stage construction or excessive length prohibits monolithic system shall be preset by the manufacturer prior to transportation. Pre-setting shall be done in accordance with the joint opening indicated on the drawing.

4.4. The finally assembled joint shall then be clamped and transported to the work site.

5. HANDLING AND STORAGE

5.1. For transportation and storage, auxiliary brackets shall be provided to hold the joint assembly together.

5.2. The manufacturer/supplier shall supply either directly to the Engineer or to the Bridge Contractor entire assembly of Modular Strip/Box Seal joints including sealants and all other accessories for the effective installation of the joints.

5.3. Expansion joint material shall be handled with care. It shall be stored under cover on suitable lumber padding.

6. INSTALLATION

6.1. The joint shall be installed by the manufacturer/supplier only.

6.2. Taking the width of gap for movement of the joint into account, the dimensions of the recess in the decking shall be established in accordance with the drawings or design data of the manufacturer. The surface of the recess shall be thoroughly cleaned and all dirt and debris removed. The exposed reinforcement shall be suitably adjusted to permit unobstructed lowering of the joint into the recess.

6.3. The recess shall be shuttered in such a way that dimensions in the drawing are maintained. The formwork shall be rigid and firm.

6.4. Immediately prior to placing the joint, the presetting shall be inspected. Should the actual temperature of the structure be different from the temperature provided for presetting, correction of the presetting shall be done. After adjustment, the brackets shall be tightened again.

6.5. The joint shall be lowered in a pre-determined position. Following placement of the joint in the prepared recess, the joint shall be levelled and finally aligned and the anchorage steel on one side of the joint welded to the exposed reinforcement bars of the structure. Upon completion, the same procedure shall be followed for the other side of the joint. With the expansion joint finally held at both sides, the auxiliary brackets shall be released, allowing the joint to take up the movement of the structure.

6.6. Controlled concrete having strength not less than that in superstructure subject to the minimum of M35 shall be filled into the recess. The packing concrete must feature low shrinkage. Good compaction and careful curing of concrete is particularly important. After the concrete has cured; the movable installation brackets and shuttering still in place shall be removed.

6.7. The chloroprene seal shall be field installed in continuous lengths spanning the entire roadway-width. To ensure proper fit of the seal and increase the ease of installation, dirt, spatter or standing water shall be removed from the steel cavity using a brush, scraper or compressed air. The seal shall be installed without damage to the seal by suitable hand method or machine tools.

6.8. As soon as the concrete in the recess has become initially set, a sturdy ramp shall be placed over the joint to protect the exposed steel beams and neoprene seals from site traffic. Expansion joint shall not be exposed to traffic loading before the carriageway surfacing is placed.

6.9. The carriageway surfacing shall be finished flush with the top of the steel sections. The actual junction of the surfacing/wearing coat with the steel edge section shall be cleaned beforehand. It is particularly important to ensure thorough and careful compaction of the surfacing in order to prevent any premature depression forming in it.

7. ACCEPTANCE CRITERIA

7.1. All steel elements shall be finished with corrosion protection system.

7.2. For chloroprene seal, the acceptance test shall conform to the requirements stipulated in para 2(d) under strip/ box seal expansion joints.

7.3. The manufacturer/supplier shall produce a test certificate accordingly, conducted in a recognised laboratory, in India or abroad.

7.4. Fatigue strength of internal beams and support connections shall be investigated to withstand 2 million cycles of vertical load of 85 kN and a horizontal load of 10 kN without showing signs of distress. The supplier shall have to produce a test certificate in this regard conducted by a recognised laboratory from India or abroad.

7.5. The manufacturer/supplier shall produce test certificates indicating that anchorage system had been tested in a recognised laboratory to determine optimum configuration of anchorage assembly under dynamic loading.

7.6. Prior to acceptance 25 per cent of the completed and installed joints, subject to a minimum of one joint, shall be subjected to water tightness test. Water shall be continuously ponded along the entire length for a minimum period of 4 hours for a depth of 25 mm above the highest point of deck. The width of ponding shall be at least 50 mm beyond the anchorage block of the joint on either side. The depth of water shall just fall below 25 mm anytime during the test. A close inspection of the underside of the joint shall not reveal any leakage.

7.7. As modular strip/box seal type of joint is specialised in nature, generally of the proprietary type, the manufacturer shall be required to produce evidence of satisfactory performance of his product.

8. TESTS AND STANDARDS OF ACCEPTANCE

The materials shall be tested in accordance with these specifications and shall meet the prescribed criteria. The manufacturer/supplier shall furnish the requisite certificates from the recognised testing laboratory in India or abroad. The work shall conform to these specifications and shall meet the prescribed acceptance.

VI. CRITERIA FOR PERMITTING FOR LOCAL MANUFACTURING OF EXPANSION JOINTS BY INDIAN FIRMS/JOINT VENTURES

1. Manufacturing of expansion joint system by Indian firms/joint venture shall be allowed under appropriate license of and with technical collaboration of the foreign principal manufacturer of repute under the following conditions:-

- (i) The materials and the finished products for unitary/modular strip seal expansion joints shall be of the similar specification and quality as of those used for the expansion joints being manufactured by the principal company abroad.
- (ii) The foreign principal shall have direct participation in the quality assurance system both in regard to manufacture and testing of the joints in India through their engineers who shall make periodic visits to India for imparting training and expertise in the manufacture and testing as well as to supervise the quality control and testing procedure of the joints to be manufactured by the Indian firm to ensure full technology transfer to the Indian firms. The manufacturing process, facilities available for manufacture and testing of the joints with the Indian firm and the testing procedure are required to be certified by the foreign principal before the joints are manufactured on regular basis in India.
- (iii) The foreign principal manufacturer along with the Indian firm shall furnish a joint guarantee against the defective materials used in manufacture, workmanship as well as a guarantee for quality assurance at various stages of manufacture of the strip seal/modular seal expansion joints in India. This guarantee shall remain valid for a period of 10 years from the date of supply of the joints to the client except for the defects arising out of the force majeure situations.
- (iv) The firm shall arrange for all testing of the joints to be carried out in India at their establishment or at an independent laboratory. Tests such as dynamic testing which cannot be performed for want of facilities in India at present shall be got done through the foreign principal who shall furnish the necessary certificate for acceptance.
- (v) There should be clear stipulation in the technical collaboration agreement that the foreign manufacture will have "buy back" arrangement of the Indian product manufactured in India under their license for marketing in other countries. This will ensure that the foreign collaborator accepts the Indian product as equivalent to their original product in use abroad.

- (vi) An original sample of the foreign manufacturer's joints shall be kept at the Indian manufacturer's works factory for comparing the quality, dimensions, finish, etc. of the Indian products while inspecting these products by the client against specific orders for supply.

2. The firm seeking permission to manufacture the joints in India shall submit the relevant supporting documents to ensure compliance to the stipulations contained in paras (i) to (vi) above and to prove that the joints shall be manufactured by them as per the Revised Interim Specifications.

Annexure-1

**SUITABILITY CRITERIA
FOR
ADOPTION OF DIFFERENT TYPES OF EXPANSION JOINTS**

Sl. No.	Type of Expansion joints	Suitability for adoption of joint	Expected Service life	Special Consideration
(1)	(2)	(3)	(4)	(5)
1.	Buried Joint	Simply supported spans upto 10 m	10 years	Only for decks with bituminous/asphaltic wearing coat. Steel plate may need replacement if found corroded or distorted at the time of relaying/renewal of wearing coat
2.	Filler Joint	Fixed end of simply supported spans with insignificant movement of simply supported spans not exceeding 10 m.	10 years	The sealant and joint filler would need replacement if found damaged.
3.	Asphaltic Plug Joint	Simply supported spans for right or skew (upto 20 degree) moderately curved or wide deck with maximum horizontal movement not exceeding 25 mm. Ambient temperature should be in the range of 5 degree to 50 degree celcius.	10 years	Only for decks with bituminous/asphaltic wearing coat. Not suitable for bridge with longitudinal gradient more than 2 per cent and cross camber/super-elevation exceeding 3 per cent. Not suitable for curved spans and spans resting on yielding supports.
4.	Compression Seal Joint* (Chloroprene/ Seal & Closed Cell Foam Seal)	Simply supported or continuous spans right or skew (upto 30 degree), moderately curved with maximum horizontal movement not exceeding 40 mm)	10 years	Chloroprene/Closed Foam Seal may need replacement during service.
5.	Elastomeric Slab Seal Joint*	Simply supported or continuous spans. Right or skew (less than 20 degree), moderately curved with maximum horizontal movement upto 50 mm	10 years	Liable to excessive wear and tear under high traffic intensity. Not suitable for bridges located in heavy rainfall area and spans resting on yielding supports.

(1)	(2)	(3)	(4)	(5)
6.	Single Strip Seal joint*	Moderate to large simply supported cantilever/ continuous construction having right skew or curved deck with maximum horizontal movement upto 70 mm	25 years	Elastomeric seal may need replacement during service.
7.	Modular Strip/ Box Seal Joint*	Large to very large continuous/ cantilever construction with right deck having maximum horizontal movement in excess of 70 mm	25 years	Elastomeric seals may need replacement during service.
8.	Special* joints for special conditions	For bridges having wide deck and large span length involving complex movements/rotations in different directions/planes, provision of special type of modular expansion joints, such as, Swivel Joists joints may be made	25 years	Elastomeric seal may need replacement during service. Provision of these joints may be made with prior approval of the Ministry.

*These are proprietary items for which 10 years warranty shall be insisted upon

No.RW/NH-34059/1/96-S&R

Dated, the 25th January 2001

To

The Chief Engineers of States/UT PWDs (Dealing with National Highways and other Centrally Financed Schemes); Director General Border Roads; Chairman, National Highways Authority of India; Engineer-in-Chief, Municipal Corporation of Delhi

Subject : Revised interim specifications for Expansion Joints - Corrigendum

Please refer to this Ministry's circular letter of even number dated 30th November, 2000 enclosing therewith the Revised Interim Specifications for Expansion Joints for adoption on all National Highways and other centrally sponsored bridge projects. In order to remove certain anomalies and keeping in view the proprietary nature of the expansion joints products being manufactured by the various firms, the following corrections in some clauses of the Revised Interim Specifications (circulated earlier on 30.11.2000) may be noted for guidance and compliance:-

(i) **Page 8 - IV: Strip/Box Seal Expansion Joint**

Para: 2(a) Edge Beam

The first sentence of this para shall be read as under:

"This shall be either extruded or hot rolled steel section or cold rolled cellular steel section, including continuously shop welded section with suitable profile to mechanically lock the sealing element in place throughout the normal movement cycle".

(ii) **Para 2 (a);**

This para shall be read as under:

"The steel for edge beams shall conform to any of the steel grade corresponding to RST 37-2 or 37-3 or 52-3 (DIN), ASTM A36 or A588, CAN/CSA Standard G40.21 Grade 300 W or equivalent".

(iii) **Page 13 - V : Modular Strip / Box Seal Joint**

Para 3.1

The last but one sentence of this para shall be read as under.

"The material shall conform to any of the steel grade corresponding to RST 37-2 or 37-3 or 52-3 (DIN), ASTM A36 or A588, CAN/CSA Standard G-40.21 Grade 300 W or equivalent".

2. Please acknowledge receipt of this letter.

1960. ELECTRIFICATION OF BRIDGES

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
1960.3	RW/NH-11052/11/93-DO.I dated 24.12.1999	Electrification for lighting of bridges on National Highways and National Highway Section on which toll is to be collected in perpetuity.	1960/3

No: RW/NH-11052/11/93 - DO.I

Dated, the 24th December, 1999

To

The Secretary, PWDs of all States/UTs (Departments dealing with National Highways); Director General Border Roads; Chairman, National Highways Authority of India

Subject: Electrification for lighting of bridges on National Highways and National Highway section on which toll is to be collected in perpetuity

Policy guidelines on electrification for lighting of bridges on National Highways were circulated vide this Ministry's letter No. NH/III/P/1/75 dated 24.11.75 and the same policy was reiterated vide Ministry's letter no. RW/NH/11052/11/93 - DO.I dated 31.3.93. The matter has been reviewed in the light of the Governments' policy of collection of toll in perpetuity on certain bridges, bypasses and four-laned sections and private sector participation in the development of National Highways and the following revised guidelines are issued in supersession of all the earlier guidelines on the subject.

1. Bridges and four-lane sections of National Highways located in urban areas or in area of commercial/tourist importance and intersections of bypasses constructed with Government funds and on which toll is to be collected in perpetuity.

These shall be provided with electrification for lighting. The cost of electrification and maintenance thereof may be provided for and met under various situations as follows:-

1.1. In all such cases provision of initial cost of electrification, which includes cost of structural elements like, light posts, cable ducts, wiring of lamps, etc. shall be made in the estimates for the works.

1.2. Cost of maintenance, powers and other consumable shall be managed as follows.

(i) When collection of toll is through Contractor -

In such cases the maintenance of electrification, which includes cost of consumable items, like, lamps etc. and electrical charges may be borne by the contractor collecting the toll. Necessary modification in the contract agreement to be executed with the Contractor may be carried out to this effect henceforth so that in future the bidders, while making bids, shall accommodate the maintenance expenditure on this also in their bids.

(ii) For bridges where toll is being collected Departmentally by State PWDs

The maintenance of electrification, such as, cost of consumable items and power charges may be met out of 12 per cent collection charges payable to the State Governments out of the total toll collection.

2. For bridges, four-laned sections of National Highways and junctions of bypasses/on intersection of major roads to be constructed/operated on BOT basis.

2.1. In such cases the initial cost of electrification and also maintenance of electrification including cost of consumable and electricity charges shall be borne by the private entrepreneur during the concession period.

2.2. After expiry of concession period when the facility reverts back to the Central Government, the maintenance of electrification of the bridge shall be carried out in accordance with para 1.2 above.

3. For bridges, which are not governed by the above criteria, the guidelines issued vide Ministry's letter No. RW/NH/11052/11/93/DO:I dated 31.3.1993 will continue to be applicable.

4. The contents of this circular may be brought to the notice of all officers of your Department dealing with National Highways for compliance.

1980. CORROSION

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
1980.7	RW/NH-34041/44/91-S&R dated 29.5.1998	Use of Fusion Bonded Epoxy Coated Reinforcement in Bridges on National Highways and other Centrally-sponsored bridge projects to be constructed in marine environment susceptible to severe corrosion	1980/25
1980.8	RW/NH-34041/44/91-S&R dated 14./21.3.2000	Use of Fusion Bonded Epoxy Coated Reinforcement in Bridges on National Highways and other Centrally-sponsored bridge projects to be constructed in marine environment susceptible to severe corrosion	1980/26 to 28

No.RW/NH-34041/44/91-S&R**Dated, the 29th May, 1998****To**

The Chief Engineers (dealing with NHs); Chairman, National Highways Authority of India; Director General Border Roads, Director General, Central Public Works Department

Subject: Use of Fusion Bonded Epoxy Coated Reinforcement in bridges on National Highways and other centrally sponsored bridge projects to be constructed in marine environment susceptible to severe corrosion

Attention is invited to this Ministry's circular letter No.RW/NH-34041/18/93-S&R dated 15.3.1994 on the above subject (copy enclosed).

2. The durability concerns for reinforced concrete members of bridges were recently discussed in a meeting with senior officers of the Ministry, PWDs, Consultants and Contractors. The meeting took note of the fact that good quality dense concrete was the foremost requirement in construction of bridges for which all works shall conform to prescribed specifications and requisite quality assurance plan. In addition, it was felt that for structures located in marine environment susceptible to severe corrosion, it will be desirable to provide for an assured system of protective coating to reinforcing bars particularly for the members exposed to alternate wetting and drying, salt spray, etc. Selection of this type of protective coatings should be based on the following criteria:

- (i) Successful past experience, supported by accepted tests endorsed by an independent research organisation;
- (ii) consistency in the quality of coating through mechanised application;
- (iii) matching international standards and specifications;
- (iv) long shelf life; and
- (v) amenability to fabrication after coating, practicability of using at site.

There was unanimity of view that earlier circular prescribing anti-corrosion treatment to reinforcing bars needed to be reviewed in the light of past experience and accepted tests endorsed by independent research/testing organisations. Further, the quality of coatings must be consistent for which processes with controlled mechanised application need only be accepted. The data from bridges with indigenous coating developed by Research Institutions are scanty and not supported with long term test records of independent Research Organisations. Further, these specifications also do not conform to equivalent international standards/specifications. Keeping in view the above facts and the need for having long shelf life of such coatings and their ability to facilitate fabrication, as also the practicability of using at site, it was felt that only Fusion Bonded Epoxy Coated Reinforcement meets the requirement.

3. It was further noted that IS:13620-1993 for fusion bonded epoxy coatings is deficient in respect of many provisions and does not conform to updated International Code of Practices. It has been accordingly decided that fusion bonded epoxy coating used shall only conform to the latest ASTM specifications, till such time IS Code is updated. To this extent the provisions mentioned in para 5 of the Ministry's Circular letter dated 15.3.1994 would be duly modified.

4. It is requested that the contents of this letter may be brought to the notice of all concerned in your organisations for compliance and appropriate action.

No. RW/NH/34041/44/91-S&R

Dated, the 14th March, 2000

To

The Chief Engineers of State PWD/UTs, (dealing with National Highways and other centrally sponsored projects); Director General Border Roads; Chairman, National Highways Authority of India

Subject : Use of Fusion Bonded Epoxy Coated Reinforcement in Bridges on National Highways and other centrally sponsored Bridges Projects to be Constructed in Marine Environment Susceptible to Severe Corrosion.

A large number of bridges involving Reinforced Concrete Components are located in marine environment on National Highways running parallel and close to the sea shores in the country. Keeping in view the huge investment required for constructing these bridges as well as the difficulties and high cost involved in their subsequent rehabilitation due to corrosion related distresses, there is an urgent need to prevent or minimize the possibility of corrosion of the steel reinforcement by taking suitable measures at the construction stage itself of such bridges. Considering that the use of Fusion Bonded Epoxy Coated Reinforcement (FBECR) as per international standards could be the best available option among protective coatings, detailed guidelines were issued on the above subject vide Ministry's Circulars Nos. RW/NH-34041/18/93-S&R dated 15.3.1994 and RW/NH-34041/44/91-S&R dated 29.5.1998. The instructions given below are now issued in supersession of the above circulars in the light of further experience and knowledge gained in this regard.

2. The following requirements need to be complied with for the use of FBECR for bridges located in marine environment susceptible to severe corrosion:

- (a) The FBEC reinforcement shall only be used for all reinforced concrete components of bridges located in marine environment where the rate of corrosion is greater than 0.25 mm per year or where severity of corrosion is confirmed from the inspection of nearby structures (bridges/buildings). In locations where it is difficult to ascertain the rate of corrosion, a zone within fifteen km from the sea or creek shall be considered as severe. However, it may be ensured that a Fusion Bonded Epoxy Coating plant shall be available within a distance of 300 km from the bridge site.
- (b) For bridges located beyond 300 km from the coating plant, considering the problems of handling/transportation of the reinforcement and the extra cost involved thereof, effort will be made to avoid adoption of R.C.C. structures to the extent possible by adopting prestressed concrete or steel components. However, if unavoidable, the proposal to adopt FBECR, in such cases may be sent with full justification to the Ministry for obtaining prior approval before submission of the estimate. Such cases will be considered on merit in the Ministry on a case-to-case basis.
- (c) Fusion bonded epoxy coated reinforcement shall conform to the latest ASTM Specifications (A 775/A775 M-97) till such time the relevant BIS code (No. IS:13620-1993) is updated.
- (d) The FBE Coating shall be got done by an authorized firm approved by the Department. The contractor, shall produce certificate from the coating firm that quality of powder epoxy material and other components of fusion bonded epoxy coating conform to the relevant ASTM specifications (till such time IS Codes are updated) and such certificate shall accompany each consignment of delivery while leaving the plant. The coating firm shall furnish at the time of shipment, a certificate that the finalised product, viz, coated reinforcement bars also meet the requirements of the latest ASTM Specifications. Apart from these certificates from the coating firm, the department should also carry out independent tests on materials/components as well as finished product (i.e. coated bars) as listed in at para 3 below at the plant site for sample cross-checking. The contractor's agreement with the coating firm shall include the provision for such independent checking by the Department and that if the coating quality is not approved by the Department, the decision of the Department to reject or repair the coating shall be final and binding on all the parties.
- (e) Reinforcement to be coated shall be HYSD bars strictly conforming to IS:1786 and it shall be out of billets and not out of scrap steel if the same is used in re-rolling mills. There shall be no compromise in the requirements of quality of concrete, such as, clear cover, minimum cement content, use of appropriate cement, etc. as per relevant IRC and BIS codal provisions. The department shall make proper arrangement for supervision to ensure this.
- (f) The job-site precautions to be observed in respect of the use of FBECR are brought out in the Annexure-I enclosed herewith and the same shall be incorporated in the project specifications.

3. It is to be emphasized that the quality assurance plan may be strictly enforced as per latest ASTM Specifications for the Construction with FBEC Reinforcement. In this connection, some important provisions of the latest ASTM Specifications (A775/A775M - 97) are reiterated below:

- (a) The following requirements for the coated bars given below shall be met at the manufacturer's plant prior to the shipment:-

- (i) **Coating Thickness** : For acceptance purpose, at least 90 per cent of all recorded thickness measurements of the coating after curing shall be 175 to 300 μm . Any thickness measurements below 125 μm shall be considered adequate cause for rejection. The upper thickness limit does not apply to repaired areas of damaging coating.
- (ii) **Coating Continuity** : There shall not be on average more than holidays per metre on the coated steel reinforcing bars. The average applies to the full production length of the bar.
- (iii) **Coating Flexibility** : This shall be evaluated by a bend test as prescribed in the ASTM Specifications. No cracking or disbonding of the coating shall be visible to the unaided normal eye on the outside radius of the bent bar. Evidence of cracking or disbonding of the coating shall be considered cause for rejection of the coated bars represented by the bend test sample.
- (iv) **Coating Adhesion** : Coating adhesion shall be evaluated by testing production coated steel reinforcing bars according to the cathodic disbondment procedure described in ASTM Specifications. Data from testing pertaining to the material being furnished shall be made available to the purchaser upon request.
- (b) **Number of Tests** : The sampling and test schedule for the number and frequency of tests for coating thickness, coating continuity and coating flexibility shall be as specified in the ASTM code. Coating adhesion as measured by cathodic disbondment testing shall be conducted on at least one bar every eight-production hour.
- (c) All coating damage due to fabrication or handling (to the point of shipment) shall be repaired with patching material. The maximum amount of repaired damage shall not exceed 1 per cent of the total surface area in each 0.3 metre (linear foot) of the bar. This limit on repaired damage does not include sheared or cut ends that are coated with patching material. Repaired areas shall have a minimum coating thickness of 175 μm (7 mils).

4. For bridges located at a distance beyond fifteen km from the sea shore, the reinforcement shall be sand blasted and used with the good quality concrete. This would be normally considered adequate and hence no coating need to be provided for rebars used in these bridges. However, in cases of some of these bridges with moderate exposure and where corrosion is expected to affect durability, other protection measures, such as, use of corrosion resistant steel bars, polymer or polyurethane based coatings to reinforcement, etc. may also be considered for adoption. The estimate for bridges with such protection measures may be submitted to Ministry with adequate justification and a decision to adopt a particular method of protection will be taken in the Ministry on the basis of the details furnished.

5. It is requested that the contents of the circular may be brought to the notice of all concerned in your organisation for compliance and appropriate action.

Annexure-I

[Enclosure to Ministry's Circular No.RW/NH-34041/44/91-S&R dated 14th/21st March, 2000]

JOB-SITE PRECAUTIONS TO BE OBSERVED IN THE USE OF FUSION BONDED EPOXY COATED REINFORCEMENT (FBECR) IN BRIDGES ON NATIONAL HIGHWAYS AND OTHER CENTRALLY - SPONSORED BRIDGE PROJECTS TO BE CONSTRUCTED IN MARINE ENVIRONMENT SUSCEPTIBLE TO SEVERE CORROSION

It is of utmost importance that strict control on job-site handling of the FBECR is exercised to avoid damage to the coating during transport, handling and erection till incorporation in the concrete. The following requirements and job site precautions need to be fulfilled in this regard:-

- (i) The project specifications should prescribe requirements for the coated steel reinforcing bars from the point of shipment to the job-site and subsequent practices at the job-site. The guidelines given at Appendix to ASTM Designation A 775/ A775M - 97 at "XI Guidelines for Job-site Practices" may be adopted for this purpose. Some of these practices have also been reiterated below:
- (ii) Training shall be imparted to field staff regarding use of FBE coated bars so that due care is exercised to ensure that the coating is not damaged till concreted.
- (iii) The bars shall be cut and bent under factory controlled conditions. For bending the bars, teflon covered pins shall be used at the bar bending bench. It is preferable to insist on the use of bar bending machine by incorporating suitable stipulation in the tender specifications.
- (iv) Bars shall be stacked on wooden battens separated from each other to protect them from rubbing. Dragging the bars shall be avoided to prevent damage to the coating.

- (v) When handling bars, care should be taken to avoid bundle-to-bundle or bar-to-bar abrasion. This may require lifting equipment with a spreader beam to sling from multiple pick-up points. All lifting equipment should use either nylon or padded slings. As far as possible rehandling at site should be minimised.
- (vi) Coated bars should be off-loaded as close as possible to the end users location to minimize rehandling. The bars should be stored off the ground on timber cribs and not directly on the ground. Coated and uncoated bars should be stored separately. Long term storage should be minimized and supply should be phased to suit construction progress. It is recommended that the storage should not exceed one month.
- (vii) The cut ends of the bars shall be touched up with special touch up materials as prescribed by the coating firm satisfying latest ASTM specifications. The patching material shall be supplied by the coating firm and the patching at site shall be done under the supervision of the coating firms' representative. The coated steel shall not be directly exposed to sun and rains and shall be protected with opaque polyethylene sheets for such other approved materials.
- (viii) After fixing in position, all the coated bars should be inspected for coating damage prior to placing concrete. Where damages are noted they should be repaired with patching materials. All chairs, spacers and binding wires in contact with the coated bars should be coated with epoxy or plastic coating materials compatible with concrete. After fixing the reinforcement, walking on coated steel reinforcement bars should be avoided. Placement of mobile equipment, concrete vibrators, etc. should be planned to avoid damage to coating bars. All internal vibrators used to consolidate concrete around epoxy coated bars, should be equipped with rubber/non-metallic vibrator heads.
- (ix) When the extent of coating damage exceeds 2 per cent of the surface area of the coated steel reinforcement bar in any 0.3 m length, the coated bar should be rejected.

2200. HIRE CHARGES

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
2200.18	RW/NH-33034/2/95-S&R dated 8.3.1999	Ministry's Research Scheme R-66 – Automation of Benkelman Beam	2200/32 to 35
2200.19	RW/G-25012/1/98-RMP dated 4.3.1999	Rates of Usage charges of new machinery procured during 1996-98 - regarding	2200/35 & 36
2200.20	RW-25012/1/98-RMP dated 25.1.2000	Usage charges of Plant and Machinery to be used on National Highways	2200/37 & 38

No.RW/NH-33034/2/95-S&R

Dated, the 8th March, 1999

To

The All Chief Engineers, Public Work Departments of all States/Union Territories (dealing with National Highways); Chairman, National Highways Authority of India

Subject: Ministry's Research Scheme R-66-Automation of Benkelman Beam

Under Ministry's above Research Scheme, CRRI has conducted the research study. The findings of the research study are enclosed for your information and guidance.

2. This new device is being patented by CRRI, who will sell the technology for its commercial production in private sector. CRRI may please be contacted for further information in this regard.

Findings of the Study

1. **Title of the Research Scheme (R-66)**

Automation of benkelman Beam

2. **Implementing Agency**

(a) Central Road Research Institute, New Delhi

(b) MOST

3. **Objective and Scope**

Development of U.P. based Benkelman Beam for pavement evaluation/overlay design. Automation of Benkelman beam leads to storage and display of measured deflection, corrected deflection and overlay thickness. Using a printer, a hard copy (data sheet) can also be obtained which provides road details, deflection data, characteristic deflection and overlay thickness.

4. **Methodology**

Benkelman beam deflections under standard axle load and standard tyre pressure provide structural condition of the road. Deflections are used for evaluating the road and are further used for overlay design.

Dial gauge used for deflection measurement conventional beam has been replaced by a transducer (LVDT, Linear Variable Differential Transformer) which provides electrical signal proportional to the vertical displacement of the tip of the beam. Output from the transducer is fed to the up based system which has been developed under the project. Deflections are measured and are stored by the system. These are averaged by the system after temperature corrections are made by it. Overlay thickness is then computed by the system taking weather condition (pre-monsoon/monsoon/post-monsoon) and soil type into consideration. Mean deflection, characteristic deflection and overlay thickness are displayed by the system just after the testing is completed in the field. The computations are done as per IRC Standard (IRC:81-1981).

Automated Benkelman Beam

Automated Benkelman beam consists of three parts namely Benkelman beam, deflection measuring system and μ P based system. (Fig. 1).

Benkelman beam: It is a standard equipment easily available in the market.

Displacement Measuring System : In the developed system the dial gauge has been replaced by a spring loaded LVDT. Output of the LVDT is fed into a calibrated meter which indicates exact displacement in mm.

μ P based system : μ P based system has been designed using 8085 μ P. A menu driven software has been used in the system Display is 16x2 line alpha-numeric LCD. The major functions of the system are:

(a) Receiving inputs regarding site of testing, such as:

Test No.	-	Single digit
Road Code No.	-	Two digits
Section Length	-	Four digits
Traffic Counts	-	Four digits
No. of lanes	-	Single digit
Climatic condition	-	Pre-monsoon/Monsoon/Post-monsoon
Temperature	-	Yes/No
Correction		
Weather correction	-	Yes/No
Clay subgrade	-	Yes/No
Calibration Factor	-	Value to be fed

(b) At each testing point, the following inputs are also made

S.No.	-	Two digits
Location of test point	-	Four digits
Pavement Temp	-	Two digits
LVDT readings	-	Initial, intermediate and final readings in a sequence

After receiving such inputs the system computes deflection, $d(\text{mm})$. Temperature correction is then applied by the system to each of the above computed deflection, d . A set of readings are thus obtained on a test section at points at an interval of 50M. After tests are completed, the system computes mean deflection (D), standard deflection (σ) and characteristic deflection (D_t). These parameters are displayed by the system in a sequence as enter key is pressed.

Based on the information fed into the system at the start of the testing, weather correction for seasonal variations is applied to the characteristic deflection, D_t to get corrected characteristic deflection, D_o . The system finally computes and displays overlay thickness, $h(\text{mm})$, using the inputs fed into the system in the beginning of the testing.

The data and the computed values stay in the memory of the system. Output data sheet (hard copy) can be obtained using a printer.

Working of the system: The system works on $230 \pm 10\%$ v. 50 Hz AC or on 12 v DC battery. The operation of the equipment is user friendly. The key board comprises 7 keys having the following functions.

1.	PROG	-	To program test parameters
2.	MEAS	-	To measure input signal
3.	ENTER	-	To enter parameters
4.	INR	-	To increase the display count

5.	DEC	-	To decrease the display count
6.	PRINT	-	To display and print results
7.	STORE	-	To store data.

Before starting the test at a road site, road parameters, as described before, are entered into the system. Also, entered are climatic condition and subgrade type. These are stored in RAM which is powered from rechargeable Ni-Cd battery and remain in the memory even if the power goes off.

Tests are performed on the road surface at an interval of 50m. For each test point, location of test point and pavement temperature are entered into the system through keys. Initial, intermediate and final LVDT readings are measured by it, as described in the IRC standard, and are stored. Deflection(d) and temperature in the IRC standard, and are stored, Deflection(d) and temperature corrected deflection(D) are computed and displayed. This sequence is repeated at each test point. After all the points are tested, the system displays mean deflection (D), Std. deviation (σ), characteristic deflection (Dt), corrected characteristic deflection (Do) after applying correction due to climatic condition and subgrade type and finally overlay thickness in mm is displayed. If a printer is connected to the system, a data sheet for permanent record can be obtained.

Voltage and Temperature effect on LVDT readings :

- AC voltage : AC voltage should be kept between 220 and 240V as far as possible.
- DC Voltage : DC Battery voltage from battery should be between 11.5 and 12.5 V.
- Temperature Effect : Temp. effect on LVDT reading is negligible.

Field Trials:

Two sites were selected for field trials (Photo 1) with the developed system vis-a-vis conventional beam. These were on NH-2 (in front of CRRI) and on Sarita Vihar Road (connecting NH-2 to NOIDA) respectively. A comparison of results using the two beams is given below:

S.No.	Site	Mean Def (mm) in case of		Char. Def. (mm) in case of		Overlay thickness (mm) for 4000 CV/D	
		Auto.beam	con. beam	Auto beam	Con. beam	Auto Beam	Con. Beam
1.	NH-2	0.44	0.45	0.44	0.56	0.00	0.00
2.	Sarita Vihar	0.43	0.50	0.43	0.64	0.00	0.00

The two systems gave identical mean deflections and overlay thicknesses, etc.

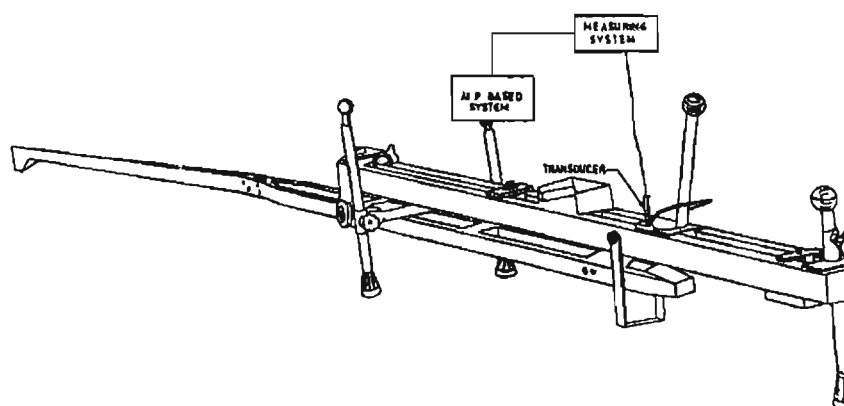


Fig. 1. Automated Benkelman Beam

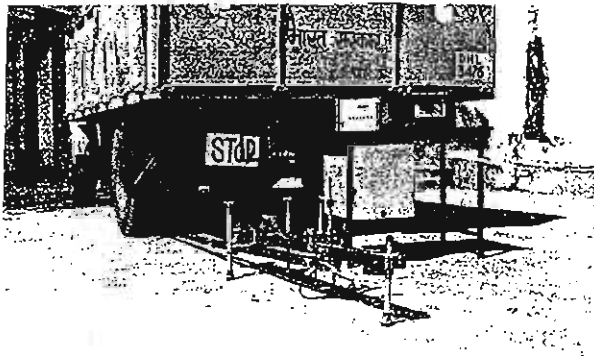


Photo 1. Field testing with automated benkelman beam



Photo 2. Field testing with conventional benkelman beam

2200.19

No.RW-G-25012/1/98-RMP

Dated, the 4th March, 1999

To

The Secretaries of the State Govt. (dealing with National Highways)

Subject : Rates of Usage charges of new machinery procured during 1996-98-regarding

The rates of hire charges of Central machinery procured during the year 1986-1992 were communicated vide Ministry's letter No.RW-25012/1/87-RMP dated 31.3.1993. Thereafter, Ministry have procured some more machines during the year 1996-98. The rates of hire charges of these new machinery procured have been calculated and are enclosed at *Appendix 'A'* for adoption with immediate effect. The rates calculated include ownership charges, operational charges and over-head charges per hour. The running charges have not been included since these vary from State-to-State due to different pay scales of staff and prevailing rates of fuels and lubricants. The running charges may, therefore, be worked out by state P.W.Ds. themselves as per the Guidelines communicated vide Ministry's letter No.RW/RMP-21(3)/75 dated 4.6.1976 and included while calculating the total usage charges for being incorporated in NIT and works estimates, wherever applicable.

2. Recovery, accounting and adjustment of hire charges for central machines may be carried out following Ministry's guidelines contained in letter No. RW/RMP-26(3)/80 dated 15.2.1988.

3. Hire charges components, i.e., ownership charges, operational charges, and overhead charges of central machines when used either by the Department or by the Contractor are to be credited to the Major Head 1054-Roads and Bridges, Minor Head -800-other Receipts, sub-head - hire charges of machinery and equipment.

4. The above instructions may kindly be brought to the notice of all concerned in their department under intimation to this Ministry.

5. The receipt of the letter may kindly be acknowledged.

[Enclosure to Ministry's Circular No. RW-G-25012/1/98-RMP Dated, the 4th March, 1999]

Hire Charges of Central Machinery

Sl. No	Description of machinery	When used by the Department			When used by the Contractor		
		Ownership Charges/hr. (Rs)	Operational charges/hr. (Rs)	Overhead charges/hr. (Rs)	Ownership charges/hr. (Rs)	Operational charges/hr. (Rs)	Overhead charges/hr. (Rs)
				Total usage charges excl. running charges/hr (Rs)			Total usage charges excl. running charges/hr. (Rs)
1.	Leyland Tipping trucks 6.4 cum	2.28	3.38	0.28	4.19	3.38	0.38
2.	Air Compressor 170 cfm	29.00	43.00	4.00	53.00	43.00	5.00
3.	Loader (1.00 cum) cum Excavator (0.24 cum)	151.00	224.00	19.00	309.00	224.00	27.00
4.	BEML (D-50 Bull Dozer)	274.00	407.00	34.00	562.00	407.00	48.00
5.	Pothole Repairing machine (Emulsion type)	255.00	380.00	32.00	460.00	380.00	42.00
6.	L&T Vibratory Road Roller 10 T	197.00	292.00	24.00	368.00	292.00	33.00
7.	Road Roller (8-10 T)	48.00	71.00	6.00	145.00	71.00	11.00
8.	Slurry Seal Machine	755.00	1121.00	94.00	1415.00	1121.00	127.00
							8.00 per km (Rounded off to the next higher rupee) 101.00
							560.00
							1017.00
							882.00
							694.00
							227.00
							2663.00

No. RW-25012/1/98-RMP

Dated, the 25th January, 2000

To

The Secretaries of the State, Govts. (dealing with National Highways)

Subject : Usage charges of plant and Machinery to be used on National Highways

The usage charges of Plant and Machinery were incorporated in the Chapter 10 of Standard Data Book of the Ministry of Surface Transport published by IRC in 1994, the revision of which was under consideration in the Ministry due to increase in cost of machines and plant, wages of staff, POL charges, etc. These have now been finalised, as shown in *Appendix*. It has been decided that the usage charges of plant and machinery shown in *Appendix* may be adopted for inclusion in works estimate, in future.

2. The calculations have been made following Ministry's guidelines contained in letter No. RW21(3)/75 dated 4th June, 1976, RW24011/1/88-RMP dated 5th May, 1988 and RW-24011/5/93-RMP dated 30th December, 1998.

3. These usage charges of plant and Machinery includes hire charges, operational, servicing and running charges component, and are applicable to Department and Contractor separately.

4. In case Department machines are available with the State Govt., the operational rates should be incorporated in works estimate and ensured that Ministry's machines are fully utilised. It may also be ensured that similar type of machine, for which provisions have been made in the works estimate are deployed on that specific job.

5. It has got the approval of Director General (Road Development) & Addl. Secretary.

[Enclosure to Ministry's Circular No. RW-25012/1/98-RMP dated 25th January, 2000]

Appendix

USAGE CHARGES FOR PLANT AND MACHINERY

Description of machine	Capacity/ output of machine	Unit of measure- ment	Unit Rate (Rs)		Remarks
			for the department	for the contractor	
(1)	(2)	(3)	(4)	(5)	(6)
Drum Mix Plant 40/60 TPH	60 TPH	per hour	6004	6169	Rates
Hot Mix Plant 30/45 TPH	40 TPH	-do-	6062	6328	include
Hot Mix Plant 20/30 TPH	25 TPH	-do-	3914	4082	hire
Hot Mix Plant 6/10 TPH	8 TPH	-do-	1238	1268	charges of
Paver Finisher hydraulic with Sensor	75 TPH	-do-	1014	1165	machines,
Paver Finisher Mechanical self propelled	75 TPH	-do-	473	519	POL wages
i) Bitumen Pressure Distributor (with bitumen)	4 T	-do-	618	659	of staff
ii) Bitumen Pressure Distributor (with emulsion)	4T	-do-	450	491	and
Generating set 125 KVA	100 KVA	-do-	393	424	routine
Loader 1 cum	1 cum	-do-	446	495	maintenance
Tipper, 10 T	10 T	per km	14.06	14.85	
Tandem Road Roller	8.5 T	per hour	581	668	

(1)	(2)	(3)	(4)	(5)	(6)
Pneumatic Tyre Roller	8 T	-do-	637	740	
Road Roller	8/10 T	-do-	251	275	
J.C.B. Excavator	0.24/1 cum	-do-	521	582	
Wheeled Dozer D-50 BEML		-do-	986	1124	
Motor Grader BEML		-do-	990	1128	
Vibratory Roller	10 T	-do-	656	754	
Tractor	50 HP	-do-	205	223	
Air Compressor	170 cfm	-do-	184	196	
Bitumen Boiler	2.5 T	-do-	117	120	
Wet Mix Plant	60 T	-do-	638	721	

2600. MODERNISATION OF ROAD CONSTRUCTION

Code No.	Circular No. & Date	Brief Subject	Page No.
2600.9	RW-24011/3/2000-RMP (Pt.) dated 4.12.2000	Use of Hot Mix Plants and Allied Machinery on National Highway Works Inspection – reg.	2600/17 & 18
2600.10	RW-24013/3/2000-RMP(Pt.) dated 19.12.2000	Rolling with drive wheel forward in the direction of paving	2600/19

No. RW-24011/3/2000-RMP(Pt.)

Dated, the 4th December 2000

To

The Secretaries of all States/UTs (in charge of PWD); Engineer-in-Chief and Chief Engineers of State PWDs and U.Ts (dealing with National Highways); Director General Border Roads; Director General (Works), Central Public Works Department

Subject: Use of Hot Mix Plants and allied machinery on National Highway works inspection-reg.

Ministry had issued instructions from time-to-time for inspection of Hot Mix Plants and allied machinery being used on NHs, by technical officers of the Ministry and the concerned State Govt. Such inspection is required to assure the contractors compliance with the contract and applicable specifications and do not relieve him of his responsibility to produce uniform mixtures in compliance with the contract, Ministry, vide their Circular letter No. RW/24011/3/2000 dated 2.11.2000 addressed to CE(NH) of PWDs of States/UTs, made it a mandatory provision that fitness of HMPs and allied machinery should be verified by a Technical Team before commencement of work.

Above issue was discussed during the Chief Engineers meeting held at Calcutta on 7.11.2000 during the 61st IRC Session. During the meeting it was learnt that in some case there was delay on the part of Inspecting Team in carrying out the inspection. As such, the matter was reviewed again in the Ministry and the following instructions are being issued on the subject in supersession of Ministry's earlier letter dated 2.11.2000.

- (1) The Inspecting Team should consist of RO(Mech), RO(Civil) of the Ministry, SE (Civil) and SE(Mech) (if available) of State PWD/NH.
- (2) Readiness of plant for load testing should be intimated to the Technical Team at least a week prior to the date of inspection.
- (3) If there be more than 2 weeks delay in inspection of the plant and allied machinery by the Technical Team, same may be put to work pending inspection. However, this would not absolve the contractor from using plant and machinery meeting the criteria for fitness and the State Govt. may take suitable action, under the terms of the contract, against the contractor if the plant and allied machinery are not found to be suitable by the Technical Team.

Since majority of the plants now working on NHs are of Drum Mix type, the existing check-list for inspection of Drum type Hot Mix Plants have been updated and is enclosed for adoption. Similar check-list for inspection of Paver Finisher is also enclosed.

[Enclosure to Ministry's Circular No.RW/24011/3/2000-RMP(Pt.) dated 4th December, 2000]

ASPHALT PAVER FINISHER - Check list for

A. GENERAL

1. State & NH Division concerned :
2. Date of Inspection :
3. Plant Inspected :
4. Plant Location :
5. Work specification & reference :
6. Mix one-way lead :
7. Contractor and owner of plant :

B. TECHNICAL FEATURES

Asphalt Paver should be of reputed make and proven design. All components that are in contact with the mix during the laying processes should be made of high grade material of thick cross-section.

1. Capacity/Output (max) of

Paver _____ TPH (max)

HMP _____ TPH at 2 per cent to 6 per cent moisture content

Tipper _____ No. _____ Capacity _____

2. Prime Mover

Make _____

Power _____ HP/KW at _____ RPM

3. Power transmission : Hydrostatic or otherwise

4. Controls : Hydraulic or otherwise

5. Range of paving speeds : Infinitely variable or otherwise

6. Paving width : _____ Max. _____ Min.

7. Paving thickness : _____ Max. _____ Min.

8. Screed extension : Hydraulic/manual

(Hydraulically extendable telescopic screed desirable)

9. Material distribution

9.1. Hopper Capacity _____

9.2. Two Nos. bar feeders/Draw-slat conveyors

Yes/No

9.3. Independent speed control of each bar feeder

Yes/No

9.4. Auger diameter _____

9.5. Proportional speed control of each auger halves

Yes/No

10. Compaction mechanism

10.1. Tamping device

Yes/No

10.2. Screed vibratory unit

Yes/No

11. Screed heating device

Gas/Oil/Electric

12. "Paver should be equipped with control mechanism so as to ensure that the finished surface is free from blemishes".

For this purpose Paver should be provided with electronic sensor control devices for :

12.1. Maintaining constant head of material in front of the screed Yes/No

12.2. Maintaining constant travel speed Yes/No

12.3. Maintaining proper grade and transverse slope Yes/No

13. Any other remarks

(Signature of Inspecting Officers)

No. RW/24013/3/2000-RMP(Pl.)

Dated, the 19th December, 2000

To,

The Engineer-in Chief and Chief Engineers of State PWDs and U.Ts (dealing with National Highways);
 Director General Border Roads; Director General (Works), Central Public Works Department; Chairman,
 National Highways Authority of India

Subject : Rolling with drive wheel forward in the direction of paving

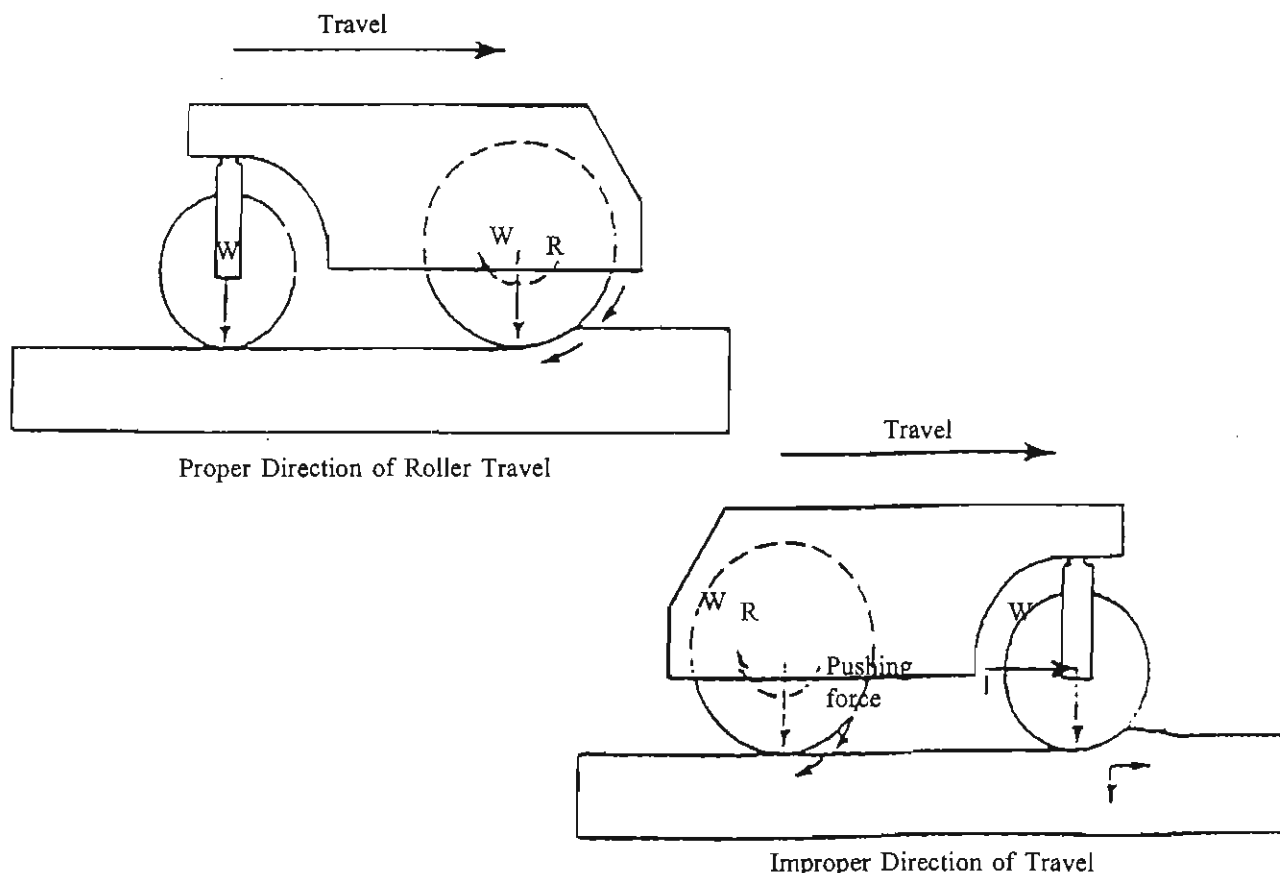
You are aware that with steel wheel rollers compaction should always be done with the drive wheel forward in the direction of paving. This is especially important during break-down rolling. This requirement is also mentioned in the relevant MOST specifications for bituminous work except for the B.M. work. It is, however, clarified that this requirement is important for the B.M. work also.

It is observed often that contrary to above, sometimes break-down passes by three-wheeled roller is carried out with front roll (driven roll) forward in the direction of paving. Front roll being the free roll, commencing break-down rolling with it will lead to shoving of the asphalt mat. Same results in loss of compaction effect and development of short transverse cracks on the asphalt mat.

To get rid of the above said problems and to ensure better compaction it is requested that particularly during break-down rolling by three-wheeled rollers, rolling should commence with rear rolls forward in the direction of paving as indicated in the enclosed diagram. This should be brought to the notice of all concerned.

[Enclosure to Ministry's Circular No.RW/24013/3/2000-RMP(Pl.) dated 19th December, 2000]

BREAKDOWN ROLLING BY THREE-WHEEL ROLLER PROPER DIRECTION OF TRAVEL



3200. BRIDGES

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
3200.8.	RW/NH-34066/5/99-S&R dated 24.12.1999	Guidelines on quality systems for bridges on National Highways and other centrally sponsored schemes	3200/21

No.RW/NH-34066/5/99-S&R

Dated, the 24th December, 1999

To

The Chief Engineers of all State Govts/UTs (dealing with National Highways); Director General Border Roads; Chairman, National Highways Authority of India

Subject: Guidelines on quality systems for bridges on National Highways and other centrally sponsored schemes.

The Indian Roads Congress has brought out a Special Publication No.IRC:SP:47-1998, "Guidelines on Quality Systems for Road Bridges" to facilitate adoption of appropriate quality systems for concrete bridges. Use and application of these guidelines will inculcate in all those involved in bridge activity, an ability to provide the product and services expected of them consistently, thereby assuring the users and instilling confidence in the users. Guidelines cover quality systems for activities of bridge construction using concrete elements including project preparation, design and drawings, construction and supervision, contract management, quality of materials and equipment used in construction and workmanship. Besides, the above guidelines also cover the organisational requirement for adoption of quality systems by suppliers, purchasers, owners, approving authorities and consultants.

2. It has been decided that guidelines on quality systems should be adopted for all concrete bridges including flyovers, and all such structures carrying road traffic on National Highways and other centrally sponsored schemes. Copy of the guidelines can be obtained from IRC, Jamnagar House, Shahjahan Road, New Delhi.

3. It is requested that compliance of these guidelines may be ensured with immediate effect. The contents of this circular may be brought to the notice of all concerned.

4310. MAINTENNANCE PROCEDURE AND OPERATION

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
4310.24	RW/NH-33044/10/2000-S&R dated 1.6.2000	Maintenance of wearing coat on bridges and culverts vis-à-vis strengthening of approaches thereof.	4310/11 & 12

No. RW/NH-33044/10/2000-S&R

Dated, the 1st June, 2000

To

The Chief Engineers of all States/Union Territories (dealing with National Highways and other centrally sponsored schemes); Chairman, National Highways Authority of India; Director General Border Roads

Subject: Maintenance of wearing coat on bridges and culverts vis-a-vis strengthening of approaches thereof

It has come to the notice of this Ministry that quite often the periodical renewal courses and overlay during strengthening of approaches are being continued over the bridges and culverts on National Highways. The above practice creates adverse effect on bridges by way of overstressing of the structural members due to increase in dead load besides encroaching on the height of the kerbs endangering traffic safety and impairing drainage. In Ministry's 'Circular' Letter No.LR-16(15)/166 dated 8.3.72 on maintenance of asphaltic wearing coat on bridges and culverts, it has been stressed that the total thickness of asphaltic wearing coat on bridges, after repair/renewals, must not exceed the thickness originally provided and allowed for in the design. It is, however, observed that this aspect has often been overlooked at site.

2. To avoid the above situation and also to ensure safety of the bridges, the following steps shall be taken by the field staff-in-charge of highway construction and maintenance.

2.1. Wherever the existing wearing coat on the bridges has been damaged beyond repairs, and require reconstruction, the same shall be fully dismantled taking due care not to damage the deck slab and replaced by new course of the same thickness as originally provided, thus avoiding any increase in dead load.

2.2. Regular/timely maintenance and repairs should be carried out to ensure that pot-hole and corrugation do not develop in the wearing-course of the bridges so as to reduce the chances of excessive impact due to live load.

2.3. The periodical renewal course of the approach road shall not be continued over the bridge. The longitudinal profile of immediate approaches should be suitably adjusted to merge with the road level of the bridge. This would also apply in case of improvement to riding quality programme being executed with margin: strengthening. The use of rich specification, like, DBM and BC, can be considered near the bridge, if found suitable. An illustrative sketch showing adjustment in approach profile is enclosed.

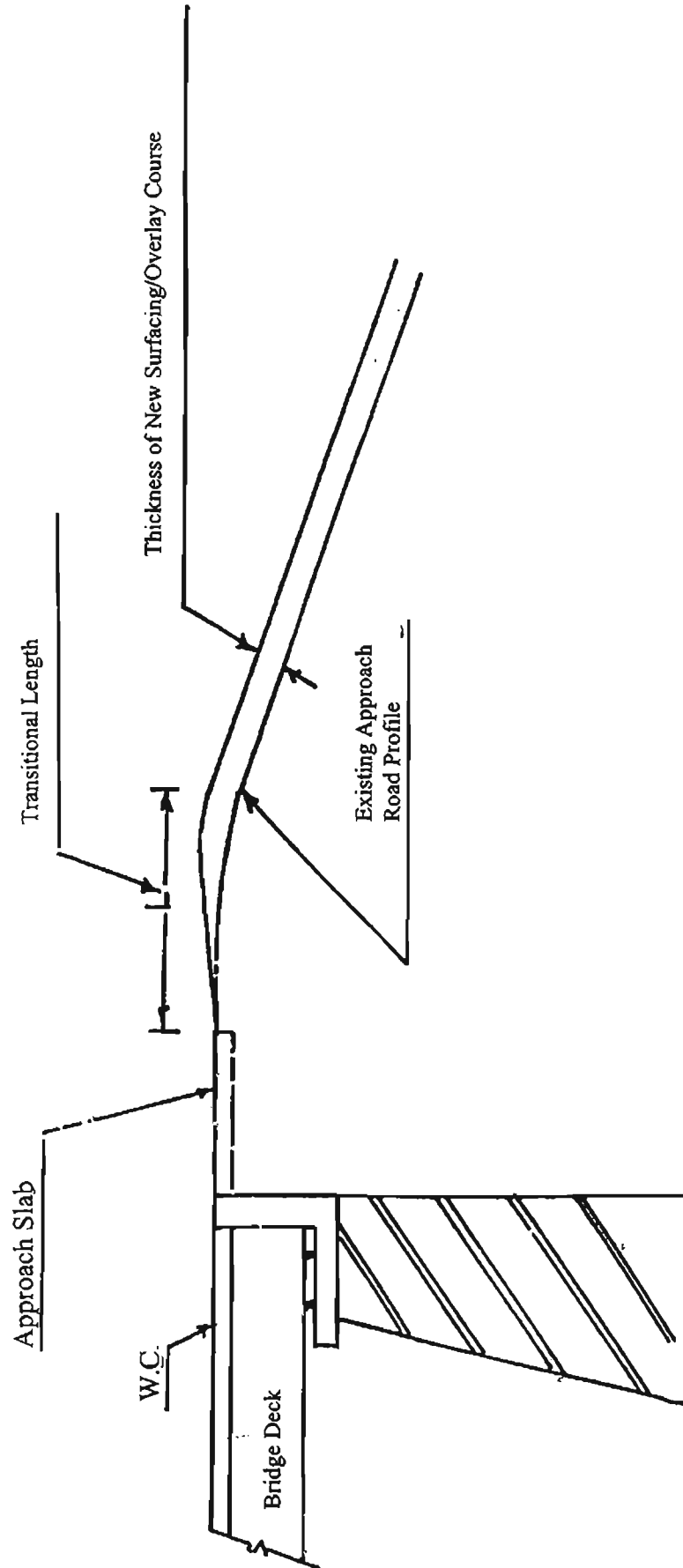
2.4. Where strengthening of immediate approaches to existing bridges becomes absolutely necessary considering designed overlay requirement for strengthening of road on either side and the pavement in approach can not be left deficient on functional consideration, the work should be carried out by excavating the existing pavement in suitable length (to be determined in relation to existing vertical profile of approach) and then build up the new pavement as per design requirement so as to match with the existing profile of the bridge. This option should be adopted sparingly as the same would require work to be carried out in half width at a time with adequate traffic management.

2.5. In case of a new bridge, the pavement thickness in the immediate approaches for about 100 m on either side should be designed twice the normal design period for approach road which at initial stage of construction itself would accommodate requirement of strengthening at least for the first time after new construction during in-service period. This would obviate the necessity for reconstruction of pavement in immediate approaches time and again.

3. It may be appreciated that the requirements outlined above cannot be generalised in respect of vertical profile of road matching with bridge, design period, thickness, length, etc. All relevant aspects are to be carefully considered at design, estimate and execution stage and should be well planned for case-to-case in consultation with the Ministry.

4. The State Chief Engineers are requested to issue necessary instructions in this regard to the officials concerned with planning and implementation of highway works under intimation to the Ministry.

(Enclosure to Ministry's Circular No. RW/NH-33044/10/2000 S&R Dated 1.6.2000)



Sketch showing adjustment in approach road profile of a bridge for new thickness of Overlay/Surfacing (Ref. Para 2.3)

**5100. *PROGRESS REPORTS AND MONITORING OF ROAD CONSTRUCTION AND
MAINTENANCE***

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
5100.9	RW/NH-31016/1/99-DO.II dated 19.8.1999	Submission of monthly Status report for the works costing more than Rs. 5.00 Crores (Rupees Five Crores)	5100/57 & 58
5100.10	RW/NH-33044/10/2000-S&R dated 22.5.2000	Use of roughness measurements as an aid to more effective monitoring of road construction and maintenance operation	5100/59

No. RW/NH-31016/1/99/DO-II

Dated, the 19th August, 1999

To

The Chief Engineer (NH) of all States/UTs; Chairman, National Highways Authority of India; Director General Border Roads; Secretary (BRDB)

Subject : Submission of Monthly Status Report for the works costing more than Rs. 5.00 crores (Rupees five crores).

As you are aware, major National Highway works are being closely monitored in this Ministry and at various other higher levels in the Government of India. For this purpose a regular updation of information of such works is essentially required. It has, therefore, been felt necessary to call Monthly Status Report for the works costing Rs. 5.00 crores or more, in the proforma enclosed herewith at *Annexure-I* directly from the concerned field officers, i.e., Executive Engineer in case of State PWD's, BRDB and G.M./Dy. G.M. (PIU) in case of NHAI. The report in respect of a particular month should reach positively by 20th of the following month.

2. It is, therefore, requested that you may direct your field officers to submit the Monthly Report in the prescribed proforma enclosed herewith to the Chief Engineer (Monitoring) in the Ministry preferably by FAX. Wherever possible this report can also be sent by E-MAIL. E-MAIL address of Chief Engineer (Mon) is Stid@hub.Nic.in.

3. Your kind attention is also invited to this Ministry's letter no. RW/NH.111/COORD/5/84 dated 28.3.1984 enclosing therewith detailed information and formats for reporting quarterly progress and expenditure related information to the Ministry by the specified dates. These are as below :

Subject		Date of submission
Land Acquisition	MIS-1	20th following month
Position of Land Acquisition	MIS-1 A	20th following month
Tender Position	MIS-2	-do-
TA & FS for work costing up to 50 lakh	MIS-3	25th following month
QPR for road works including project approaches	MIS-4	20th following month
QPR for bridge works	MIS-5	-do-
Bottlenecks report for LA and road and bridge works	MIS-6	-do-
Consolidated expenditure report	MIS-7	15th following month
Progressive expenditure report for other NH's	MIS-8	-do-
Progressive expenditure report	MIS-9	30th following month

It has been observed that the requisite informations are not being received in the Ministry in these MIS formats regularly. The matter has, however, been reviewed in the Ministry and it has now been decided that a report in respect of MIS-6 i.e. 'Bottlenecks' report for LA and road and bridge works' and MIS-9, i.e., "Progressive Expenditure Report" (performa enclosed herewith) only be submitted by the Chief Engineer (NH) to the Ministry every quarter. Reports in respect of other MIS formats, i.e., MIS-1, MIS-1A, MIS-2, MIS-3, MIS-4, MIS-5, MIS 7 & MIS-8 be sent to Ministry's concerned Regional Officer, wherever it was intended to be sent MIS-3, MIS-4 to the Ministry Headquarters. Copies of the formats MIS-1 to MIS-9 are enclosed for necessary action.

Monthly Status Report for the month of August may be submitted by 20th September, 1999.

5100/58

Annexure-I

[Enclosure to Ministry's Circular No.RW/NH-31016/1/99/DO-II dated 10th August, 1999]

Monthly Progress Report for NH works costing more than Rs. 5 crores

Month

Division

State

Name of Project

No. :

No. :

Length in km for Road and in - For bridges

Sanctioned cost

Revised cost

Likely cost of completion

Date of original sanction

Date of revised sanction

Date of award :

Target date of completion :

Expenditure upto close of last :
financial year (3/-)

Expenditure upto month under report :

Physical progress upto month under report :

Position of Revised estimate :

Bottlenecks, if any :

N.B. 1) The reason for time and cost over-run may be elaborated in "bottleneck, if any".

2) A bar chart/pictorial chart showing the progress must be enclosed.

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Officer-in-charge

No. RW/NH-33044/10/2000-S&R

Dated, the 22nd May, 20

To

The Chief Engineers of all States/Union Territories (dealing with National Highways); Chairman, National Highways Authority of India; Director General Border Roads

Subject : Use of roughness measurements as an aid to more effective monitoring of road construction and maintenance operation

Kind attention is invited to Ministry's letter Nos. RW/NH-III/P/10/84 dated 3rd April, 1984, 19th May 1984, 25th July, 1984 and 14th January, 1985 on the subject cited above wherein instructions regarding the use of roughometer (also known as bump integrator) have been issued for achieving effective monitoring and greater accountability in road construction and maintenance National Highway system. As you are aware, considerable lengths of National Highways are being improved in various States under different programmes, such as, periodic renewals, improvement of riding quality programme and strengthening of existing carriageway as well as construction of new carriageway under 4-laning programmes. It may be appreciated that the periodical measurements of the roughness of the road after completion of any improvement work would be an important indicator of the quality of the works being executed and also for prioritising of the renewal/strengthening programmes to be taken-up in future. The roughness values for roads in mm/km for different surface types circulated in letter dated 25th July, 1984 are reproduced below for guidance.

RECOMMENDED ROUGHNESS VALUES FOR ROADS IN INDIA

(IN MM/KM)

(Towed Fifth Wheel Bump Integrator)

Road condition

Surface type	Good	Average	Poor	Very poor
Bituminous concrete/SDBC	2000-2500	2500-3500	3500-4000	Over 4000
Premix bituminous carpet/MSS	2500-4500	4500-5500	5500-6500	Over 6500
Surface dressing	4000-5000	5000-6500	6500-7500	Over 7500

It is, therefore, requested that arrangement for regular measurement roughness on National Highway network in your charge may kindly be put in place immediately. The roughness measurements shall be an input for considering any improvement proposal for approval in the Ministry. Henceforth, roughness measurement shall be taken immediately after completion of each of improvement/periodical renewal work preferably within a month time and on entire National Highway network in your State twice a year (in June and December). The report of roughness may be sent regularly to Ministry's Project Chief Engineers and ROs/ELOs. A format for reporting suggested below :

NH No.	Section	Reach	Roughness Value (mm/km)	Period of measurement	Remarks (with job No.)

3. It is requested that prompt measures may be taken to follow the relevant guidelines with necessary instructions issued to all field officers dealing with National Highways.

7200. DELEGATED POWERS

<i>Code No.</i>	<i>Circular No. & Date</i>	<i>Brief Subject</i>	<i>Page No.</i>
7200.12	RW/NH-11048/1/99-US(D-I) dated 16.5.2000	Delegation of Powers to Technical Officers	7200/10
7200.13	RW/NH-11048/1/99-US(D-I) dated 16.6.2000	Delegation of Powers to Technical Officers/ Level Jumping	7200/10 to 12

No. RW/NH-11048/1/99-US(D-1)**Dated, the 16th May, 2000**

To

All Technical Officers in RW

Subject: Delegation of Powers to Technical Officers

In supersession of the Office Memoranda No. NH-11048/2/87-DO. I dated 4.9.1989 and no. RW/NH/11048/1/99-US D.I dated 23.12.1999 regarding delegation of powers to the technical officers posted at Headquarters to accord technical approval in the name of the Director General (Road Development) & Addl. Secretary to the detailed estimates in respect of N.H. original works and S.R./FDR road and bridge works, the delegation of powers shall henceforth be as under:

Sl. No.	Technical Officers	Original Works	S.R./FDR works under maintenance	Routine maintenance and periodical renewals etc.
1.	Superintending Engineer	Upto Rs.500 lakhs	Nil	Nil
2.	Chief Engineer	More than Rs.500 lakhs upto Rs. 1500 lakhs	Upto Rs.500 lakhs	Full powers irrespective of the cost.
3.	Additional Director General	More than Rs. 1500 lakhs upto Rs.5000 lakhs	More than Rs.500 lakhs	-
4.	Director General (Road Development)	More than Rs.5000 lakhs	-	-

2. In the absence of Superintending Engineers in a zone; his powers would be exercised by the next senior officers.

No. RW/NH-11048/1/99-US(D-1)**Dated, the 16th June, 2000**

Subject : Delegation of Powers to Technical Officers/Level jumping

It has been brought to the notice of Director General (Road Dev.) & Addl. Secretary that this Ministry's order of even number dated 16.5.2000 regarding enhanced delegation of powers to the Technical Officers posted at Headquarters to accord technical approval in the name of D.G.(RD) & A.S. to the detailed estimates in respect of NH original works and SR/FDR Road and Bridge work has created some confusion amongst Officers at the level of Executive Engineer and below regarding their duties. The duties of technical officers in respect of the technical work in Project Zones have, therefore, been detailed in the enclosed statement for guidance.

It is once again clarified that technical officers working in zone will be required to carry out any work assigned to them by the zonal head, i.e., Chief Engineer though the same may not be covered by the enclosed detailed duties. More specifically, if an Executive Engineer is not in position then the concerned AEE will be expected to discharge the functions indicated in addition to his own duties. Similarly, if a Superintending Engineer is not in position, the concerned Executive Engineer will handle the duties mentioned in these circulars in respect of S.Es. in addition to his own duties but the approving authority in the absence of S.Es. in a zone will be the next higher officer.

In general, in the absence of competent approving authority as per enclosure; the proposal shall be got approved by next higher officer.

(Enclosure to Ministry's Circular no. Nh-11048/1/99-us(d.i) dated 16.6.2000)
Procedure for delegation of powers and level jumping

Sl. No.	Estimated cost (Rs. In lacs.)	Level of Processing/sanction
I. ORIGINAL WORKS		
	Up to Rs. 50 lacs	E.E. will verify whether work is included in Annual Plan for sanction; broadly examine the technical soundness of the proposal and reasonableness of cost and forward the case through the SE to DS/US for according Administrative Approval.
2.	More than Rs.50 lacs. and upto Rs.200 Lacs.	i) A.E.E. will process Technical Proposal and put up to SE for approval. ii) A.E.E. will process Cost Estimates based on approved Technical Proposal and obtain S.E.'s approval. iii) SE will handle all queries from Finance Wing. iv) A.E.E. will handle all references from State PWDs regarding interpretations of specifications; contract conditions and progress monitoring and put up to SE for approval.
3.	More than Rs.200 Lacs and up to Rs.500 Lacs.	i) E.E. will process technical proposal and cost estimates based on approved technical proposal and obtain S.E.s approval ii) S.E. will handle all queries from Finance Wing. iii) E.E. will handle all references from State PWD. regarding interpretation of specifications, contract condition & progress monitoring and put up to SE for approval
4.	More than Rs. 500 Lacs and upto Rs.1500 Lacs.	i) E.E. will process the technical proposal and put up to CE for approval. ii) E.E. will process Cost Estimates based on approved technical proposals and refer the case to Finance Wing through Chief Engineer. iii) E.E. will handle all references from State PWD regarding interpretation of specifications, contract condition and progress monitoring and put up to C.E.'s approval. iv) C.E. will handle al quaries from the Finance Wing.
5.	Above Rs.1500 lacs and upto Rs. 5000 Lacs.	i) E.E. will process technical proposal and put up to ADG through SE and C.E. for approval. ii) E.E. will process Cost Estimates based on approved technical proposal and obtain technical approval of ADG through SE and CE and then refer the case to Finance Wing. iii) C.E. will handle all queries from Finance Wing. iv) C.E. will prepare the memo for Standing Committee/EFC and put up to ADG for approval.

6. Above Rs.5000 lacs.
- v) S.E. will handle all references from State regarding interpretation of specifications, contract condition and progress monitoring and put up to CE for approval.
 - i) S.E. will process technical proposal and put up for approval of DG(RD)&AS through CE and ADG.
 - ii) SE will process Cost Estimates based on approved technical proposal and obtain technical approval of DG(RD)&AS through CE and ADG. And refer the case to Finance Wing.
 - iii) CE will handle all queries from Finance wing.
 - iv) CE will prepare Memo for EFC approval and put up to DG (RD) & AS through ADG for approval.
 - v) CE will handle all references from State regarding interpretation of specifications, contract condition and progress monitoring.

II. APPROVAL OF DESIGNS

1. More than Rs.50 Lacs upto Rs.200 Lacs.	A.E.E. will examine detailed design calculations and plans received from State PWD and obtain S.E's approval.
2. More than Rs.200 Lacs upto Rs.500 Lacs.	E.E. will examine detailed designs calculations and plans received from State PWD and obtain SE's approval.
3. More than Rs.500 Lacs upto Rs.1500 Lacs.	E.E. will examine detailed design calculations and plan received from State PWD and obtain CE's approval.
4. More than Rs.1500 Lacs.	E.E. will examine detailed design calculations and plans received from the State PWD and obtain CE's approval through SE.
5. Cases involving deviation from codal stipulations and specifications.	In all such cases approval of DG(RD) shall be sought.

III. SUBSTITUTION OF WORKS

1. For works costing upto Rs.1500 Lacs	C.E. will process and refer to Planning Zone for obtaining ADG's approval.
2. For works costing more than Rs.1500 Lacs.	C.E. will process and refer the case of Planning Zone through ADG for obtaining DG(RD)&AS approval.

IV. SR/FDR ESTIMATES

- (i) The statewide and zonewise ceiling of allotments and sanctions will be processed by CE(P&M) and put up to ADG for approval and project CEs informed about it.
- (ii) Estimates upto Rs.500 Lacs will be processed by EE and put up to CE through SE for sanction.
- (iii) Estimates more than Rs.500 Lacs will be processed by SE and put up to ADG through CE for approval.