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

TECHNICAL CIRCULARS AND DIRECTIVES ON NATIONAL HIGHWAYS AND CENTRALLY SPONSORED ROAD AND BRIDGE PROJECTS ADDENDUM NO.6 (JANUARY 2002 - DECEMBER 2004)

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FOREWORD

Ministry's technical circulars, guidelines and directives on National Highways and Centrally sponsored road and bridge works issued up to 1985 were published in two volumes in July, 1986. Subsequently, five Addendums covering circulars issued up to December, 2001 have been published.

Between January 2002 and December 2004, a large number of circulars and guidelines have been issued. These have now been compiled and are being published as Sixth Addendum. The circulars have been arranged in chronological order and subjectwise as per classification adopted in earlier publications.

The Compendium of technical circulars has proved to be very useful in planning, designing, policy formulation and implementation of highway projects in the country. It is expected that with the updation of the Compendium of technical circulars, the planners, designers and various executing agencies will be benefitted by keeping themselves abreast with the policy changes since the issue of the last Addendum.

Any feedback from all concerned would be most welcome for making improvements in the future editions of the Addendum.

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Director General (Road Development)
Government of India
Ministry of Shipping, Road Transport & Highways
Department of Road Transport & Highways

New Delhi,
Dated: 17th August 2005

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No. RW/G-20011/8/98-WA (R) *Dated the 16th August, 2002*

To

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

Subject: Project Contingencies, Quality Control, W.C. Establishment, and Agency Charges-Admissible Expenditure

This Ministry has been receiving representation from many State Governments seeking clarifications on items admissible for payment under Contingencies, Quality Control, W.C. Establishment provisions made in the sanctioned estimates. Some of the States have also been raising bills for payment/reimbursement for expenditure on items which should legitimately be charged to 9% Agency Charges being paid to them. After examining all the issues and the views/comments of the State Governments and other concerned the Ministry in consultation with the Integrated Finance Wing has decided to issue the following guidelines in superession of all previous guidelines in respect of above mentioned a charges:

1.1 Contigencies

The contingencies provided for in the estimates are meant to cover unanticipated items related to the work but not provided for in the Bill of Quantities of the sanctioned estimate/accepted contract. Though it may not be possible to identify these unaccounted items as the same would vary from site to site and project-to-project some of the identified/other items relating to relevant job are as follows:

1.1.1 Printing of tender forms including cost of papers & stationery and publicity by advertisement in the newspapers subject to the condition that sale proceeds of tender forms are credited to the Central Government Account.

1.1.2 Construction and maintenance of diversion roads

1.1.3 Removal of unsuitable soil/tree trunks etc.

1.1.4 Provision of traffic regulatory/caution signboards

1.1.5 Road safety and traffic regulatory measures in the nature of force majeure in emergent situations, if not provided for in contract.

1.1.6 Documentation charges including photographs and video filming of the construction activities (no asset will be created).

1.1.7 Establishment of temporary site office, store shed, watchman shed and parking places for vehicles including lighting, if required upto 15% of contigencies

1.1.8 Any other item with the approval of the Ministry.

The estimates for carrying out, the above activities will be approved by the Ministry's Regional Officer on assurance/certificate by PWD that the amount provided against contingencies is available and has not been indirectly utilized by accepting higher tender rates. The State PWD will also certify that approval of estimates by RO to be charged to contigencies will not cause revision of the sanctioned estimate.

1.2 Quality Control:

1.2.1 The list of items covered under quality control are as under-

(i) Staff:

The main supervisory staff shall be from the organization 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 works(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 payments made in this regard can be charged.

(v) **Transportation:**

Transporation and movement charges for the samples, equipments, staff etc in respect of the quality control of the work project.

Credit for the salvage/book value of the equipment, materials/implement etc.:

The credit for the residual value of the usable equipments, implements, materials, etc. which were originally charged to a particular book, 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) Familiarization with the specifications.

(b) Knowledge of correct sampling procedure

(c) Learning testing methodology.

(viii) **Expenditure on experiment work**

For effective location specific improvement in materials and techniques

(ix) **Purchase of computers:**

The expenditure on purchase of computers up to a limit, not exceeding 20% 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.

1.2.2 **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.

1.3 **Work Charged Establishment**

This provision is meant to cover expenditure on non-supervisory staff (whether regular on casual) employed specifically for execution of work such as personnel engaged on traffic regulation, road diversion, maintenance, watch & ward of stores and field office, collection and handling of samples of materials and survey work etc.

1.4 **Agency Charges**

The agency charges are meant to cover the following items broadly.

1.4.1 Pay and allowances of supervisory staff engaged in construction including TA/DA

1.4.2 Office expenses of the PWD establishment including cost of stationery, Photostat, telephone bills electric bills rentals and fax charges etc.

1.4.4 Purchase of petrol/diesel/gas, oils and lubricants for cars/jeeps and other transport/inspection vehicles for supervisory staff.

1.4.5 Expenditure on *regular staff* required for *Preliminary Investigator* work viz. subsoil/bearing capacity investigation and topographic/hydraulic survey etc. in preparation of project designs/estimates.

2. The above guidelines may be brought to the notice of all concerned and they be asked to follow the same in letter and spirit. In order to have efficient supervision and monitoring of projects under execution, the field establishments may be provided with sufficient and adequate funds from Agency Charges to run their offices, and to meet expenses of petrol/diesel to run their cars/jeeps for project related works.

3. This issues with the concurrence of the Integrated Finance wing.

121.5.30

No. RW/NH-33044/10/2002/S&R(R.) *Dated the 9th September, 2002*

To

The Secretaries dealing with Roads of all States & U.Ts., Chief Engineer dealing with National Highways of all the States & U.Ts., Director General (Border Roads), Chairman, National Highway Authority of India.

Subject: Changes in scope, specifications and designs of sanctioned project on National Highways-prior approval of Ministry

Reference is invited to Ministry's letter No. RW/NH-III/COORD/32/84 dated 19th May, 1984 on the subject mentioned above requesting all concerned that prior approval of the Ministry may be obtained, wherever there is change in the scope of a project, specification or design in the sanctioned estimates. However, instances have come to the notice of the Ministry where State Chief Engineers had effected changes in the scope/specifications or design of the sanctioned estimate causing thereby increase in the cost of the sanctioned project and such changes brought to the notice of the Ministry as faitaccompli at the time of obtaining revised sanction of the project.

2. It is, therefore, reiterated that prior approval of this Ministry shall be obtained whenever there is change in scope or specifications or design from provisions made in the sanctioned estimates, failing which the increase in the cost due to such changes in the scope of work shall be excluded from the revised cost estimates. The State Govt. shall be responsible for any such substandard work.

3. This should be brought to the notice of all concerned for strict compliance.

142.22

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

Dated the 25th September, 2003
Dated the 17th October, 2003

To

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

Subject: Norms for the Access for Fuel Stations, Service Stations and Rest Areas along National Highways

Ministry had issued guidelines on "System Improvement of Installation of Petrol/Diesel/Gas-Retail outlets and Service Stations as well as access to Private Properties along National Highways" through its Circular No. RW/NH-33023/19/99-DO-III dated 31st August 2000. Improvement in the highway network show that there is greater need for road safety for its users, Stricter enforcement is also necessary.

2. Therefore the Ministry has now evolved the norms for access to fuel stations along the National Highways. This is modification of the earlier circulars/publication of the Ministry/IRC. These norms cover the most common situations. Any complex situation would have to be dealt with through traffic expert for an appropriate solution.

3. Generally speaking, the fuel stations should be a part of the Rest Area complex. Rest areas should have various other amenities for users e.g. place for parking, toilets, restaurant, rest rooms, kiosk for selling sundry items etc. This aspect should be incorporated while planning for improvement and up gradation of the National Highway Sections and /or planning for new fuel stations along National Highways. The rest area complex be planned subject to the commercial viability.

4. In case of service roads having been constructed, the access to the fuel station shall be from services roads and not from the main carriageway. This aspect has to be kept into consideration while planning for location of new fuel stations.

5. The Norms are enclosed at Appendix-I which shall be followed for seeking and granting permission for the access to the new fuel stations. It shall be the responsibility of the Oil Company/Owner to ensure that the proposed location and other features of fuel stations are in conformity with these Norms. Otherwise, the proposal would be rejected.

6. The cases for granting permission for access to new fuel stations, service stations and rest areas along National Highways shall, henceforth be dealt with in accordance with the Norms prescribed in Appendix-I to this circular. The main features of the Norms are listed below.

6.1 For the siting of fuel stations along National Highways, its minimum distance from an intersection would be:

6.1.1 Non-Urban (Rural) Stretches.

1. Plain and Rolling Terrain

(i)	Intersection with NHs/SHs/MDRs	1000m
(ii)	Intersection with Rural Roads with carriageway width of 3.5m or more	300m
(iii)	Intersection with Rural Roads and all other earth track with carriageway width less than 3.5m.	100m

2. Hilly / Mountainous Terrain

(i)	Intersection with NHs/SHs/MDRs	300m

(ii)	Intersection with all other roads and tracks	100m

6.1.2 Urban Stretches

1. Plain and Rolling terrain

(a)	Urban Area with population of more than 20,000 and less than one lakh	
(i)	Intersection with any category of roads of carriageway width of 3.5m	300m
(ii)	Intersection with roads of carriageway width of less than 3.5m	100m
(b)	Urban Area with population of one lakh and above	
(i)	Intersection with any category of road (irrespective of carriageway width)	100m

2. Hilly and Mountainous terrian

(i)	Intersection with any category of road (irrespective of carriageway width)	100m

6.2 The minimum distance between two fuel stations along the National Highway would be as given below:

6.2.1 Plain and Rolling Terrain in Non-urban (Rural) Areas

(i)	Undivided carriageway (for both sides of carriageway)	300m (including deceleration and acceleration lanes)
(ii)	Divided carriageway (with no gap in median at this location and stretch)	1000m (including deceleration and acceleration lanes)

6.2.2 Hilly/Mountainous Terrain and Urban Stretches.

(i)	Undivided carriageway (for both sides of carriageway)	300m (clear)
(ii)	Divided carriageway (with no gap in median at this location and stretch)	300m (clear)

6.3 The distance from check barrier/toll plaza would be at least 1 km and no check barrier/toll plaza would be installed within 1 km of fuel station/rest area.

6.4 Minimum plot size of fuel station shall be:

(i)	On undivided carriageway in plain/rolling terrain	35m x 35m
(ii)	On divided carriageway in plain/rolling terrain	35m (frontage) x 45m
(iii)	In hills	20m x 20m
(iv)	In urban areas	20m x 20m

6.5 The entry to fuel station shall be through deceleration lane of minimum length of 70m and width of 5.5m, the exit through acceleration lane of minimum length of 100m and width of 5.5m.

6.6 The pavement composition of these acceleration/deceleration lanes and service road (if provided) would comprise Granular Sub Base (GSB) with minimum thickness of 150mm, three layers of Water Bound Macadam (WBM) of 75mm thick each, Bituminous Macadam (BM) of 50mm thickness and Semi Dense Bituminous Concrete (SDBC) of 25mm thickness.

6.7 The access lanes, service road and separator island in the layout would be accommodated within the available ROW of the highway but fuel pumps would be located beyond Building Line. The fuel station office building etc. shall be located at the safe distance as prescribed by the Fire Department or other authorities.

6.8 The acceleration, deceleration lane, service roads, drainage system, signs and markings shall be constructed and maintained by the Oil Company / owner of the fuel station at his cost and responsibility during the period of license deed.

6.9 Permission would be granted within 30 days of the receipt of the receipt of the application in the field office, if it meets all the requirements of the norms contained in the circular.

6.10 The Oil Company/owner shall have to enter into an Agreement for the license deed with the Government (Ministry of Road Transport and Highways–MORTH), for the use of NH land. There would be one time fee of Rs. 1 lakh in consideration of this Agreement. The validity of the Agreement would be for a period of 15 years.

6.11 The default or nonconformity of these norms for the fuel station, approaches, drainage, traffic control devices etc. would be identified and determined through joint inspection by the representatives of the concerned Oil Company and the field officer incharge of the NH section. If the deficiencies are not rectified within the specified time frame, the Oil Company would be asked to de-energize the fuel station and re-energizing would be done only on complete rectification and on the authorization by the field officer incharge of the NH section.

7. These norms will be applicable to all new fuel stations from the date of the issue of this circular. Its content may be brought to the notice of all the concerned officers of your Departments/Organizations.

(Enclosure to Ministry of Road Transport and Highways letter No. RW/NH-33023/19/99-DOIII dated 25.9.2003).

APPENDIX-*I*

NORMS FOR LOCATION, LAYOUT AND ACCESS TO FUEL STATIONS ALONG NATIONAL HIGHWAYS

1. These norms have been finalized in substantial modification of IRC: 12.1983, 'Recommended Practice for Location and Layout of Road Side Motor, Fuel, Filling-cum-Service Station' and the Ministry's Circular No. RW/NH-33023/19/99-DOIII dated 31st August 2000 on 'Systems Improvement for Installation of Petrol/Diesel/Gas-Retail outlets and Service Stations as well as access to Private Properties along National Highways'. These norms shall be applicable to all new fuel station with effect from the date of issue of the circular.

2. Petrol/Diesel retail outlets and service stations with or without Rest Area Amenities etc. are hereinafter referred to as Fuel Stations.

3. These norms are applicable to all Fuel Stations with or without other user facilities of rest areas, along undivided carriageway and divided carriageway sections of National Highways in plain, rolling and hilly terrain and passing through urban stretches. For this purpose hilly or mountainous terrain would be, when the cross slope of the country is more than 25%. The urban stretches would be, where National Highway passes through a town of population of 20,000 and more (Census 2001 will apply).

4. General Conditions of Siting

4.1 The fuel stations would be located where the highway alignment and profile are favourable i.e. where the grounds are practically level, there are no sharp curves (having radius of less than 230m in plains and 60m in hilly terrain) or steep grades (more than 5%) and where the sight distances would be adequate for safe traffic operations. The location would not interfere with placement and proper functioning of highway signs, signals, lighting or other devices that affect traffic operation.

4.2 While considering the proposal for new fuel stations, it would be ensured that the fuel stations on a corridor are well distributed on both sides of the highways so that vehicles normally do not have to cut across the traffic to reach them. The fuel stations would be serving only the traffic moving on the adjacent lane. For the vehicles traveling in the lanes in opposite direction, separate fuel stations need

to be planned for which permission would be considered keeping also in view of its location and distance norms.

4.3 In order to provide safe length for weaving of traffic, fuel station along National Highways shall be located at the minimum distance from an intersection (gap in the central median be treated as intersection), as given below. For single carriageway section, these minimum distances would be applicable for both sides.

4.3.1 Non-Urban (Rural) Stretches.

1. Plain and Rolling Terrain

(i)	Intersection with NHs/SHs/MDRs	1000m
(ii)	Intersection with Rural Roads with carriageway width of 3.5m or more	300m
(iii)	Intersection with Rural Roads and all other earth tracks with carriageway width less than 3.5m	100m

2. Hilly / Mountainous Terrain

(i)	Intersection with NHs/SHs/MDRs	300m
(ii)	Intersection with all other road and tracks	100m

4.3.2 Urban Stretches

1. Plain and Rolling Terrain

(a) Urban Area with population of more than 20,000 and less than one lakh

(i)	Intersection with any category of roads of carriageway width of 3.5m and above	300m
(ii)	Intersection with roads of carriageway width of less than 3.5m	100m

(b) Urban Area with population of one lakh and above

(i)	Intersection with any category of road (irrespective of carriageway width)	100m

2. Hilly and Mountainous Terrain

(i)	Intersection with any category of road (irrespective of carriageway width)	100m

4.4 The minimum distance between two fuel stations along the National Highway would be as given below:

4.4.1 Plain and Rolling Terrain on Non-urban (Rural) Areas

(i)	Undivided carriageway (for both sides of carriageway)	300m (including deceleration and acceleration lanes)
(ii)	Divided carriageway (with no gap in median at this location and stretch)	1000m (including deceleration and acceleration lanes)

4.4.2 Hilly Mountainous Terrain and Urban Stretches

(i)	Undivided carriageway (for both sides of carriageway)	300m (clear)
(ii)	Divided carriageway (with no gap in median at this location and stretch)	300m (clear)

4.4.3 If two or more fuel stations are to be sited in close proximity for some reasons, these would be grouped together to have a common access through a service road of 7.0m width and connected to the highway through acceleration, deceleration lanes. From these considerations, the permission for the new fuel stations would be considered only if it is either in proximity to the existing one so that the common access can be provided or the new one located at the distance of more than 1000m.

4.4.4 For installation of new fuel station within the 1000m distance of existing fuel station in plain/rolling terrain and 300m in hilly/mountains terrain and urban stretch, new entrant would be responsible for construction and maintenance of the common service road, deceleration & acceleration lanes, drainge and traffic control devices. In case of hilly/mountainous terrain, common service roads at all such locations may not be possible as per the site conditions and therefore common access through service roads would not be a pre-condition.

4.5 The fuel station would not be located within the distance of 1000m from any barrier including that of toll plaza. No check barrier/toll plaza should be located within 1000m of a fuel station.

5. Plot size for Fuel Station

5.1 The size and shape of the plot for the fuel station would need to be such that it suitably accommodates fuel pumps, offices, stores, compressor room, air pump and kiosks without causing any hindrance to the movement of vehicles of expected maximum dimensions, within fuel stations and in the access area. Sufficient space would need to be available to accommodate the number of fuel pumps to cater to the expected number of vehicles in peak time at this location so that the vehicles do not spill on to the access area. The air pump and kiosks for pollution control measurements be installed at some distance from the pumps so that the vehicles requiring these services do not cause hindrance to the free movement of vehicles entering or exiting for refueling.

5.2 From these considerations, the minimum size of the plot for fuel station along National Highways shall be as follows:

(i) On undivided carriageway in plain and rolling terrain	35m x 35m
(ii) On divided carriageway in plain/rolling terrain	35m (frontage) x 45m
(iii) In hilly and mountainous terrain	20m x 20m
(iv) In urban stretches	20m x 20m

5.3 For fuel station being part of the rest area complex, the area required for other facilities such as parking, restaurant, rest rooms, toilets and shops etc. would be extra but there would be a single access.

6. Access Layout

6.1 *Access for New Fuel Stations along Un-divided Carriageway Sections*

6.1.1 The access to the fuel stations along un-divided carriageway sections of National Highway shall be through deceleration and acceleration lanes.

6.1.2 The deceleration lane would take off from the edge of the paved shoulder and taken up to the edge of the Right of Way (ROW) of National Highway, beyond which, the boundary of fuel station shall start. Its minimum length would be 70m measured along the traveled direction of highway. Its width would be minimum 5.5m. The shoulder of 2.25m would be provided for this deceleration lane.

6.1.3 The acceleration lane would take off from the edge of the fuel station on exit side having minimum length of 100m with parallel type layout. Its starting stretch of 70m length would be with a curvature of minimum radius of 650m and the remaining 30m length would be tapered so as to facilitate vehicles coming out of fuel station, merging with fast moving through traffic on main carriageway in a safe and efficient manner.

6.1.4 A separator island would be provided in front of the fuel station so that no right turning takes place. The length of this separator island would be determined on the basis of the intersecting points of the edge line of the separator island with the line drawn along the edge of chevron

markings as indicated in Figures 1 and 2 of these norms. Its shape for isolated fuel station would be as shown in Figure 1, and that for the cluster of fuel stations with common service roads, as shown in Figure 2. It would have minimum width of 3m. The width of approaches connecting deceleration and acceleration lanes, along the separator island should be 5.5m.

6.1.5 There would be buffer strip from the edge of the ROW and would extend minimum 3m inside the fuel station plot. Its minimum length would be 12m. No structure or hoarding except the approved standard identification sign on pole would be permitted, which may be provided outside the ROW. The buffer strip as well as the separator island would be provided with kerb of minimum 275mm height to prevent vehicles from crossing it or using it for parking purposes.

The buffer strip in the approach zone should be suitably shaped to cover extra area in the approach zone after provision of acceleration, deceleration lane and connecting approaches and should be properly turned for aesthetic landscaping.

6.1.6 The radius for turning curve would be 13m and that for non-turning curve be from 1.5 to 3m so as to check over speeding while entering or exiting the fuel station.

6.1.7 The pavement of the access roads including deceleration, acceleration lanes and connecting approaches would have sufficient designed strength for the expected traffic. It would have minimum pavement composition of 150 mm thick Granular Sub Base (GSB) overlaid by three layers of Water Bound Macadam (WBM), each of 75 mm thickness topped by 50 mm thick Bituminous Macadam (BM) and 25 mm thick Semi Dense Bituminous Carpet (SDBC).

6.1.8 A typical access layout for the new fuel station with relevant details for deceleration and acceleration lanes, connecting approaches, separator island, buffer strip, drainage, signs and markings on un-divided carriageway section of National Highway would be as shown in Fig.1 of these Norms.

6.1.9 The typical access layout for cluster of fuel stations, with details for deceleration lane, service road and acceleration lane etc. would be as shown in Fig.2. of these Norms.

6.2 *Access for New Fuel Stations on Divided Carriageway Sections*

6.2.1 The access to the fuel station on divided carriageway sections of National Highways shall be through deceleration and acceleration lanes.

6.2.2 The deceleration lane would take off from the edge of the paved shoulder and taken upto the edge of ROW, where from the boundary of fuel station would start. Its length would be 70m, measured along the travel direction on the highway. The acceleration lane would be of 100m length. Its starting stretch of 70m length would be with a curvature of minimum radius of 650m and the remaining 30m tapered so as to facilitate vehicles coming out of fuel stations, merging with fast moving through traffic on main carriageway in a safe manner. The width of deceleration and acceleration lane shall be 5.5m with shoulders of 2.25m.

6.2.3 A separator island would be provided in front of the fuel station. The length of this separator island would be determined on the basis of the intersecting points of the edge line of the separator island with the line drawn along the edge of chevron markings as indicated in Figures 3 and 4. Its shape for isolated fuel station would be as shown in Figure 3, and that for the cluster of fuel stations with common service roads, as shown in Figure 4. It would have minimum width of 3m. The width of approaches connecting deceleration and acceleration lanes along separator island should be 5.5m.

6.2.4 There would be buffer strip from the edge of the ROW and would extend minimum 3m inside the fuel station plot. Its minimum length would be 12m. No structure or hoarding except the approved standard identification sign on pole, would be permitted which may be provided outside the ROW. The buffer strip as well as the separator island should be provided with kerb of minimum 275mm height to prevent vehicles from crossing it or using it for parking purposes.

The buffer strip in the approach zone should be suitably shaped to cover extra area in the approach zone after provisions of acceleration, deceleration lane and connecting approaches and should be properly turned for aesthetic landscaping.

6.2.5 The radius for turning curves should be 13m and that for non-turning curves should be from 1.5 to 3m, so as to check over speeding while entering or exiting that fuel station.

6.2.6 The pavement of the access roads including deceleration, acceleration lanes and connecting approaches would have sufficient designed strength for the expected traffic. It would have minimum pavement composition of 150mm thick GSB overlaid by three layers of WBM, each of 75 mm thickness, topped by 50mm thick BM and 25mm thick SDBC.

6.2.7 The typical access layout for the new fuel station with relevant details for deceleration/ acceleration lanes connecting approaches, separator island buffer strip, drainage, signs and marking on divided carriageway sections of National Highway would be as shown in Fig.3 of these Norms.

6.2.8 The access for cluster of Fuel Station situated in close proximity shall be through deceleration lane, service road and acceleration lane as shown in Fig.4 of these norms.

6.3 The typical layout for fuel station and signs & marking along National Highways in hilly/mountains terrain and in urban stretches is given in Fig.5.

7. Drainage

There shall be adequate drainage system on the access to the fuel station and inside its areas so as to ensure that surface water does not flow over the highway or any water logging takes place. For this purpose, the fuel station and access area would be at least 150mm below the level at the edge of the highway. The surface water from fuel station and access road would need to be collected in a suitable underground drainage system and led away to a natural course through culvert. Preferably slab culvert with iron grating of adequate strength may be constructed in the approaches so that surface water is drained through the holes in the grating. If pipe culvert is used, then it would be ensured that the inner diameter of the pipe is not less than 1m for proper cleaning and necessary shallow drains are constructed along the access road and at the edge of the fuel station so that the surface water is led to the open drain. The drainage arrangement would be either by the method mentioned above or as per the satisfaction of the Highway Authorities/Ministry.

8. Enforcement of Right of Way and Building Line

The widths of Right of Way (ROW) has been prescribed as 40m to 60m, whereas that for Building Lines as 80m in plain and rolling terrain, in IRC:73-1980, 'Geometric Design Standards for Rural (Non-Urban) Highways'. In hilly / mountainous terrain and urban stretches, the width of Building Line has been prescribed as 70m. While planning the layout for various facilities inside the fuel stations, it has to be ensured that fuel pumps are located beyond Building Lines and Fuel Station office building etc. at a safe distance as prescribed by Fire Department or other authorities. The buffer strip would extend minimum 3m inside the Fuel Station plot, beyond ROW.

9. System for Signs and Markings

9.1 An adequate system for signs and markings would be provided at the locations of fuel stations for the guidance of the highway users. The pavement markings would be in form of chevron at entry and exit locations, give way for the exit from the Fuel Station. Informatory sign for fuel station would be provided at 1km ahead, 500m ahead and at the entry point.

9.2 On undivided carriageway, additional signs for the regulation of entry and exit of the vehicular traffic should be provided on the separator island. Also, an informatory sign should be installed showing the distance of the nearest Fuel Station located in the direction of travel in order to avoid any need for right turning for accessing the Fuel Station located on the opposite side. This sign should be installed at the location of about 200m ahead of the opposite side Fuel Station.

9.3 The pavement marking would conform to IRC:35-1997, 'Code of Practice for Road Markings', and road signs to IRC:67-2001, 'Code of Practice for Road Signs' and IRC:SP:55-2001, 'Guidelines on Safety in Road Construction Zones'.

9.4 These should be as per Section 801 and 803 of Ministry's Specifications for Road and Bridge Works, 2001 as updated from time to time.

9.5 The system for signs and markings with their type and locations would be as shown in Figures 1,2,3 and 4 for the chosen access layout.

10. Implementation Procedure

10.1 Ministry of Petroleum & Natural Gas/Oil Companies while entertaining any application for the installation of Fuel Station, would supply a copy of these norms to the applicant so that he may asses his position to fulfill the requirements of these norms. Ministry of Petroleum & Natural Gas/Oil Companies would ensure that the plot identified by the applicant conforms to the requirement of these norms in terms of its location, access layout and signs and markings. It shall also be the responsibility of the applicant/owner of Fuel Station to provide the prescribed layout for access as given in Figs. 1/2/3/4/5, as the case may be, while preparing the layout.

10.2 For the Fuel Stations along the National Highways vested with NHAI, the field units of NHAI would examine the drawings and documents to ensure that the location and layout conform to these norms. Thereafter these would be forwarded to the Headquarter of NHAI who in turn would forward the case to concerned Chief Engineer of the Ministry with definite recommendations and the documents as per Annex 1 and the Checklist at Annex II of this Circular.

10.3 For Fuel Stations along the National Highways other than those with the NHAI, the concerned Executive Engineer of State PWD/BRO would examine the drawings and documents to ensure that the location and layout conform to these norms. Thereafter the documents as listed in Annex I and the Checklist at Annex II of this Circular would be forwarded, through Chief Engineer of the State PWD/BRO, to the Regional Office (RO) of Ministry of Road Transport and Highways. The RO after ensuring the fulfillment of the requirements of this circular and norms would then forward the proposal along with prescribed documents and checklist to the Ministry and approval given by the Project Chief Engineer (dealing with the State), on the merit of the case.

10.4 A License Deed would be required to be signed between the Oil Company wanting to install the Fuel station (Licensee), and Government of India through their designated officers. The specimen copy of the licence deed is enclosed at Annex-III.

10.5 The licence deed would be drawn on a non-judicial stamp paper and all expenses this regard be borne by the licensee. A one time fee of Rs.1,00,000/- (Rupees one lakh only) would be payable by the licensee to the Government in consideration of this Agreement for the land for which the license is issued. The license deed is not required to be registered. This fee amount would be paid through a Demand Draft in favour of the concerned Pay & Accounts Officer of the Ministry of Road Transport and Highways and would be debitable to the Major Head 1054 (Revenue Receipt Head).

10.6 The 'No Objection Certificate' by the Licensing Authority, through their field units, would be issued and construction permitted only after the necessary approval has been given by Ministry and license deed duly signed and delivered.

10.7 The approval for setting up of fuel stations would be given within 30 days from the date of receipt of the application if it conforms to all the stipulations of the norms. In case of any query, the date when the resubmitted application is received would be treated as the date of receipt. All the queries would be raised at one time only. The construction would commence only on the receipt of the approval.

10.8 The Licence Deed shall also be signed, within 30 days of the submission of the application in the field office if it fulfils all the requirements as mentioned above, between MORTH and Oil Company only, irrespective of the dealership type.

10.9 Oil Companies/owner shall be responsible for the construction and maintenance of deceleration/ acceleration lanes, service roads, chancelleries, drainage arrangement, signs and markings in accordance with the approved layout and specifications conforming to these norms, at his own cost. On completion of the construction in accordance with checklist and conforming to the approvals, a Completion Certificate would be issued by the field unit of NHAI/PWD/BRO/ or any other agency (as the case may be). The concerned Oil Company would be allowed to energize the fuel station only after the issue of such a certificate.

10.10 The validity of the Licence Deed for the use of National Highway land for access to fuel station would be for a period of fifteen years after which the same would be required to be renewed which could be for a similar period. During this validity period, the owner shall maintain in good condition the deceleration / acceleration lanes, service roads (free from any potholes/patches), drainage arrangement (clean conditions to allow full discharge of storm water), signs and markings (existing at identified locations with clear required visibility).

10.11 Non conformity or any default in respect of the norms and as indicated in Para 1 to 9, Para 10.9 and Para 10.10 above would make the fuel station liable to be de-energized. In case of clustered fuel stations, responsibility for default or nonconformity to attract such penalty would be determined through a joint inspection. In such cases the procedure prescribed in Para 10.12 below would be adopted.

10.12 In cases of default(s) found by Highway Authority, joint inspection by the representative of the concerned Oil Company and the Field Officer Incharge of that NH section would be undertaken to identify each deficiency and time frame for its rectification which in no case should exceed 60 days from the date of joint inspection. The failure to rectify the identified deficiencies within the prescribed time would lead to de-energizing the petrol pump by the concerned Oil Company. The re-energizing would be done only on complete rectification and on the authorization by Field Officer, incharge of NH section.

ANNEX-I

(Enclosure to Ministry of Road Transport and Highways letter No. RW/NH-33023/19/99-DO-III dated 25.09.2003)

List of documents to be submitted for getting approval for Installation of new Fuel Station along National Highways

1. Signed copy of license deed. The draft is at Annex III.
2. Certified copy of location plan of the Fuel Station along the National Highway showing details of Right of Way (ROW) of National Highway, access roads to private properties, existing public roads and other developments falling within a reach of 1.5 km in each side of the Fuel Station and carriageway.
3. Certified copy of plan of the proposed Fuel Station showing details of deceleration, acceleration lanes, service road (if provided), buffer strip, fuel pump, office, kiosk, lubritorium, air and water supply, drainage details, signs and markings conforming to applicable figures enclosed with these Norms.
4. Certified copy of sectional view showing elevation of Fuel Station 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 Fuel Station.
6. Details of the material for pavement composition for deceleration lane, service road and acceleration lane.
7. Inspection report of the officer inspecting the site of proposed Fuel Station and certificate that all standard conditions have been specified.
8. Details explanation for reasons for recommending the exemption from stipulated norms (if required).
9. Undertaking from the oil company/owner that the oil company/owner would pay necessary fee for the use of the National Highway land whenever the fee is asked by the Highway Authorities in future.
10. Undertaking from Oil Company that necessary alteration including complete removal/shifting of the approach roads at its own cost if so required by Ministry, for the development of National Highway or in the interest of safety in this section.
11. Undertaking from Oil Company that they shall take all the action as prescribed in Appendix-I to ensure conformity of these Norms.

(Enclosure to Ministry of Road Transport and Highways letter No. RW/NH-33023/19/99-DO-III dated 25.09.2003).

ANNEX-II

CHECKLIST

Check list for getting approval for installation of new Fuel Stations 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 Fuel station : _____

_____

2. Stipulated Norms for Fuel Outlets

Sl. No.	Item	Measure-ment at site	MORTH Norms	Whether complying with MORTH Norms**
1.	Distance from intersection			
	1.1 Non-Urban (Rural) Stretch			
	1.1.1 Plain and Rolling Terrain			
	(i) Intersection with NHs/SHs/MDRs		1000m	Yes/No
	(ii) Intersection with Rural Roads with carriageway width of 3.5m or more		300m	Yes/No
	(iii) Intersection with Rural Road and other earth tracks with carriageway width less than 3.5m		100m	Yes/No
	1.1.2 Hilly/Mountainous Terrain			
	(i) Intersection with NHs/SHs/MDRs		300m	Yes/No

	(ii) Intersection with all other roads and tracks	100m	Yes/No
	1.2 Urban Stretches		
	1.2.1 Plain and Rolling Terrain		
	(a) Urban Area with population of more than 20,000 and less than one lakh		
	(i) Intersection with any category of roads of carriageway width of 3.5m and above	300m	Yes/No
	(ii) Intersection with roads of carriageway width of less than 3.5m	100m	Yes/No
	(b) Urban Area with population of one lakh and above		
	(i) Intersection with any category of road (irrespective of carriageway width).	100m	Yes/No
	1.2.2 Hilly and Mountainous Terrain		
	(i) Intersection with any category of road (irrespective of carriageway width)	100m	Yes/No
2	Is it a part of Rest Area complex?		Yes/No
3	Distance from nearest Fuel Station		
	(a) Plain and rolling terrain in non-urban areas		
	(i) Undivided carriageway	Minimum 300m	Yes/No
	(ii) Divided carriageway	Minimum 1000m	Yes/No
	(b) Hilly terrain and urban stretches	Minimum 300m	Yes/No
4	Distance from Check barrier/Toll Plaza	Minimum 1000m	Yes/No
5	Provision of 7.0m/5.5 m wide service/ connecting road	Necessary at clustering of Fuel Station	Yes/No
6	Gradient of Highway section	Maximum 5%	Yes/No
7	Slope of Fuel Station Premises/Services Area for drainage purpose	Minimum 2%	Yes/No
8	Width of Frontage	Minimum 35m/20m	Yes/No
9	Length of Buffer Strip	Minimum 12m	Yes/No
10	Width of Buffer Strip extending inside ROW	Minimum 3m	Yes/No
11	Is there only one structure of approved standard identification sign on pole with existing on buffer strip?	No structure or hoarding except approved standard identification sign	Yes/No

			on pole is allowed on buffer strip.	
12	Height of kerb for buffer strip		Minimum 275mm	Yes/No
13	Is the space from outer edge of buffer strip to the edge of road turfed and raised with provision of 275 mm kerbs, with no other structure?		No structure or hoarding or parking space is allowed in the space in front of buffer strip.	Yes/No
14	Radius of Turning Curve		Minimum 13 m	Yes/No
15	Radius of Non-turning curve		Minimum 1.5m Maximum 3 m	Yes/No
16	Minimum downward slope of access roads towards the fuel station		Minimum 2%	Yes/No
17	Difference in elevation from edge of road and edge of buffer strip		Minimum 15 cm	Yes/No
18	Provision of Culvert, designed for drainage according to IRC:SP-13		Minimum 1m dia (pipe culvert) Minimum 1m span (slab culvert)	Yes/No
19	Provision of proper drainage arrangement for fuel station premises		Drawing showing drainage arrange-ment as per satisfaction of highway authorities to be submitted	Yes/No
20	Provision of adequate signs and markings as per the drawings		Minimum requirement as shown in the drawing.	Yes/No

** 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 Annex-I have to be submitted, otherwise the case will be summarily rejected.

(Enclosure to Ministry of Road Transport and Highways Letter No. RW/NH-33023/19/99-DO-III dated 25-9-2003)

ANNEX-III

LICENSE FOR THE USE OF NATIONAL HIGHWAY LAND

AGREEMENT TO construct an approach/access road with necessary provision for drainage, signage and markings, to_____
abutting on the_____
boundary of _____in Kilometer_____
in survey no._____ of the village _____
in the Taluka of_____of the_____
District.

AN AGREEMENT made this _____ day of _____ Year Two thousand _____ between the President of India (hereinafter called the Government which expression shall, unless excluded by or repugnant to the context, include his successors in Office and assigns) of the one part and (name and address of Oil Company) hereinafter called "the Licensee"/"the Licensees" (which expression shall, unless excluded by or repugnant to the context, include the said licensee's successor/Licensees successors, heirs, executors, administrators and assigns) of the other part.

2. WHEREAS THE Licensee has/licensees have applied to the Government for permission to construct on the Government land an approach road with necessary provision for drainage, signs and markings to his/their property abutting on the boundary of _____ in Kilometer _____ in the _____ Taluka of the_____ District more particularly described in the Schedule annexed hereto and shown in the drawing attached hereto (hereinafter referred to as "the said premises").

3. AND WHEREAS THE GOVERNMENT have agreed to grant such permission on the terms and conditions hereinafter mentioned.

4. Now, this Agreement witness that, in consideration of the terms and conditions hereinafter contained and on the part of the licensee/licensees to be observed and performed, the Government hereby grants to be licensee/licenses permission to construct an access/approach road with necessary drainage works, signs and markings to the said premises as per approved drawings attached subject to the following terms and conditions, namely:-

i That the licensee/licensees shall within three months from date of receipt of the permission, but without interfering in anyway with the highway traffic, complete the construction of the approach road (including deceleration/acceleration lanes) and shall make provisions for drainage, signs and markings, at his own cost and to the full satisfaction of the Executive Engineer/ Divisional Engineer in-charge/Project Director in-charge of the National Highway according to the approved drawings and specifications. The said approach road shall not be brought into use after its completion until the Executive Engineers/Divisional Engineer/Project Director, Government/NHAI gives a completion certificate after satisfying himself that it has been completed as per the sanctioned drawings and specifications. The Fuel Station would be energized by the concerned oil company only after completion certificate has been issued by the Highway Authority.

ii That on the completion of the said work, that part of the approach road, which lies within the limits of Government road land together with any culvert or drain therein constructed shall become the absolute property of the Government subject to the rights of the licensee/licensees to use the same for ingress and egress.

iii The licensee/licensees shall at his/their own cost keep the said approach road, and any culvert or drain therein, in proper repair and condition to the satisfaction of the Executive 'Engineer/Divisional Engineer, Government/Project Director, NHAI. The approach roads would be considered in proper conditions when they are free from potholes and patches. The culverts and drains would be kept in clean conditions to allow full discharge of the storm water, signs and markings to be kept at their respective locations and in clean condition for visibility at all times.

iv That within six months of a notice duly given to the licensee/licensees in this behalf, the licensee/licensees shall at his/their own cost remove the said approach road or any drainage work constructed in connection therewith and restore the land to its original condition when required to do so by the Government or by any person duly authorised on its behalf. The Licensee/licensees shall not be entitled to any compensation on account of such removal and restoration.

v That the approach road shall not be used for any purpose other than that of access to and egress from the premises of the licensee/licensees on to the Government road.

vi That the licensee/licensees shall not, without the prior permission in writing of the Executive Engineer/Divisional Engineer, (Government) / Project Director (NHAI) in any way extend or alter the said approach road or any culvert or drainage therein.

vii That the licensee/licensees shall at all times permit any duly authorized officer or servant of the Government/NHAI to inspect the said approach road including any culvert or drainage therein. He shall keep the said approach road clear and shall not be entitled to close any right of way over or in respect of the same against Government, or any member of the public.

viii That the licensee/licensees shall be liable for any loss or damage caused to the Government by drain obstruction or any other like cause due to the said approach road or the drainage work.

ix That the permission granted by this license shall not in any way be deemed to convey to the licensee/licensees any right into or over, or any interest in Government land other than that herein expressly granted.

x That in case the said approach road is destroyed, this license shall determine and the license/licensees shall not be entitled to claim any right to construct another approach road in lieu of that so destroyed.

xi That during the subsistence of this license, the said approach road including the road drainage shall be deemed to have been constructed only by the consent and permission of the Government so that the right of the licensee/licensees to use the same shall not become absolute and indefeasible by lapse of time.

xii That, if the licensee fails/licensees fail to execute any work which he has/they have agreed under this agreement to the full satisfaction of the Executive Engineer/Divisional Engineer, Government/Project Director, NHAI, the work shall be executed by the Executive Engineer/Divisional Engineer/GM/DGM at the cost of licensee/licensees; and the expenditure incurred shall be recoverable from the licensee as an area of land revenue without prejudice to any other remedies which may be open to Government in this behalf.

xiii That the licensee/licensees shall not sell, transfer or otherwise dispose of the premises without obtaining from the transferee a duly executed agreement with the Government embodying the terms and conditions herein before.

xiv A one time fee of Rs.1,00,000/- (Rupees one lakh only) shall be payable to execute this Agreement for the land for which the license is issued.

xv That if and when parallel service roads are constructed the access to fuel station shall be from the service road alone as determined by the Executive Engineer/Divisional Engineer/GM/DGM and no claim/compensation shall be entertained on that account.

xvi That this Agreement shall remain in force for fifteen years from the date of execution in the first instance and terminable by a notice of 6 months and the permission may or may not be renewed after expiry of the said period.

xvii That the licence hereby granted shall not be transferable.

xviii That the licensee/licensees shall bear the cost of Stamp and attestation of this Agreement.

5. Situation given below would be treated as violations of the license deed agreement and the Government would be within its right to ask the concerned Oil Company to de-energize the Fuel Station;

i Non-maintenance of deceleration lane, acceleration lane service road, drainage system, chancellories, markings, signs and other traffic control devices in good operating conditions (as specified in Para 4 (iii), during the period of license deed and not rectifying the short coming within the specified period as pointed out by Executive Engineer/Divisional Engineer/PD, NHAI, incharge of the National Highway Section.

ii Non-compliance for revising the layout of access as directed by Executive Engineer/Divisional Engineer incharge/Field Unit (NHAI) of the National Highway Section in writing within specified period.

6. Not-withstanding anything contained in clause 4, this licence can be cancelled at any time by the licensor through the Executive Engineer/Divisional Engineer for breach of any of the terms and conditions of license and the licensee/licensees shall not be entitled to any compensation for loss caused to him/them by such cancellation nor shall be absolved from any liability already incured by him/them under this Agreement. The licensee/licensees shall at his/their own cost remove approach road lying within the boundary of the Government land and restore the Government land to its original condition. In the event of licensee/licensees refusing to do so, the restoration of the Government to its original condition shall be done by the Executive Engineer/Divisional Engineer, at the cost of licensee/ licensees and the expenditure incurred shall be recoverable from the licensee/licensees as an arrear without prejudice to any other remedies which may be fixed by Government in this behalf.

7. This Agreement may be executed in two counterparts, each of which when executed and delivered shall constitute an original of this Agreement.

IN WITNESS WHERE OF this agreement is executed in two parts by the parties hereto on the date first above mentioned.

Signed by Shri (Name in full) the license/ licensees	Signed by Shri (Name in Full) for and on behalf of the President of India

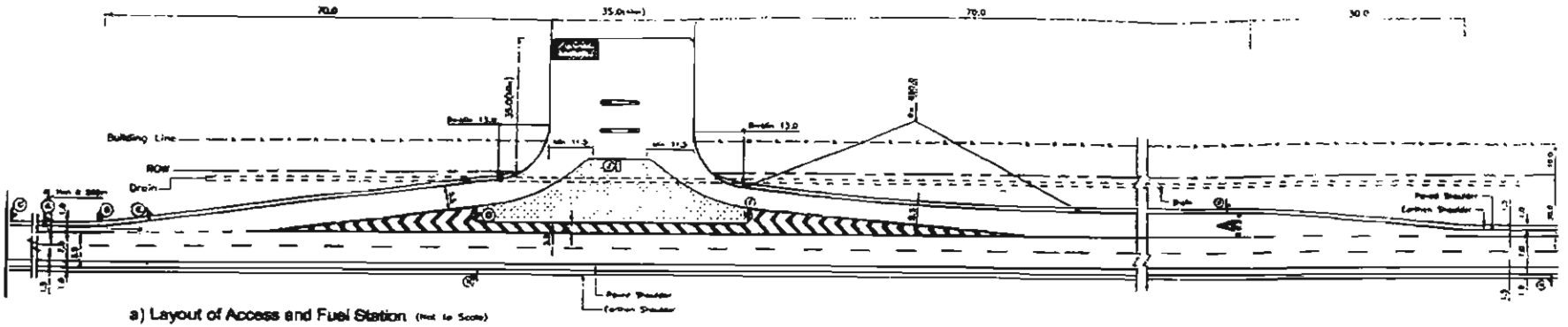
In the presence of

1. Name in full (signature) with designation	1. Name in full (signature) with designation
2. Name in full (signature) with designation	2. Name in full (signature) with

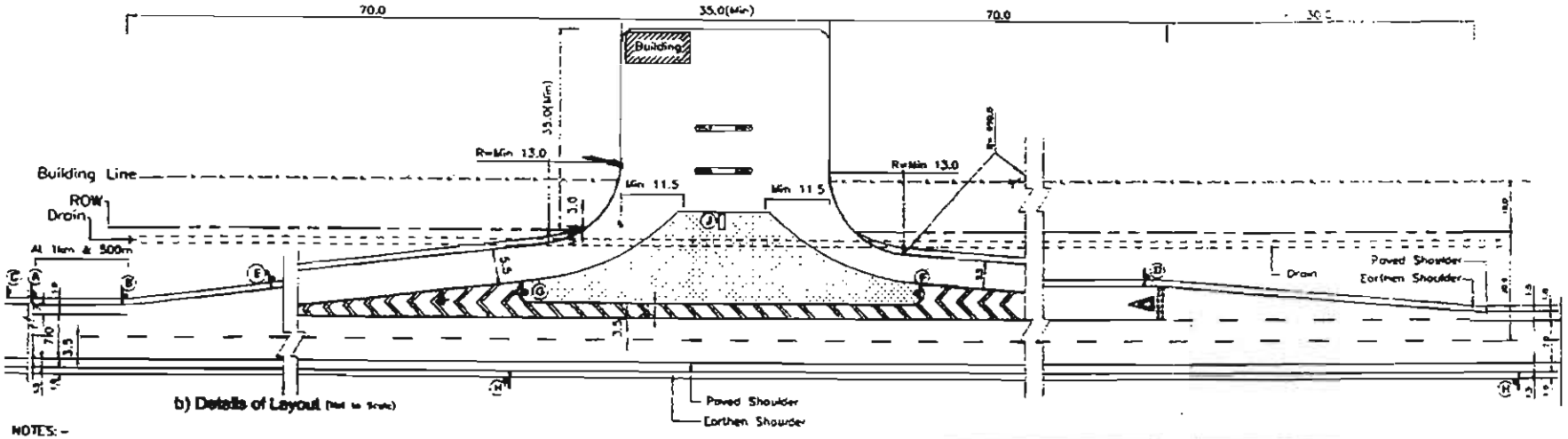
N.B. Wherever, alternatives such as his/their Licensee/Licensees has/have etc. are given, only applicable portion should be typed in the fair license deed.

SCHEDULE

(here type the schedule referred to in clause 2)



a) Layout of Access and Fuel Station (Not to Scale)



b) Details of Layout (Not to Scale)

NOTES: –

1. ACCESS ROADS SHOULD HAVE MIN. PAVEMENT COMPOSITION OF 150MM GSB, WBM OR L.E.M OF 75MM EACH, 30MM BM AND 25MM SDC.
2. ALL PAVEMENT MARKINGS SHOULD BE AS PER IRC:35-1997.
3. ALL TRAFFIC SIGNS SHOULD BE AS PER IRC:67-2001 AND IRC:SP-55-2001. IN CASE OF A FUEL STATION LOCATED ON THE OTHER SIDE OF TRAVEL DIRECTION, THE USER SHOULD BE INFORMED OF THE LOCATION OF THE FUEL STATION IN HIS/HER DIRECTION OF TRAVEL THROUGH INFORMATION SIGN AS AT (C) OF THE TABLE OF THIS DRAWING.
4. THE LENGTH OF SEPARATOR ISLAND SHOULD BE DETERMINED AS PER SITE CONDITION ITS MINIMUM WIDTH SHOULD BE 3M.
5. THE SEPARATOR ISLAND AND BUFFER STRIP SHALL BE TURFED WITH PROVISION OF 275MM HIGH KERBS.
6. CULVERTS TO BE PROVIDED IN THE LINE OF STORM WATER DRAIN ON ENTRY AND EXIT APPROACHES, TO CATER TO THE DIRECTED DISCHARGE.
7. ALL DIMENSIONS ARE IN METRE UNLESS OTHERWISE SPECIFIED.

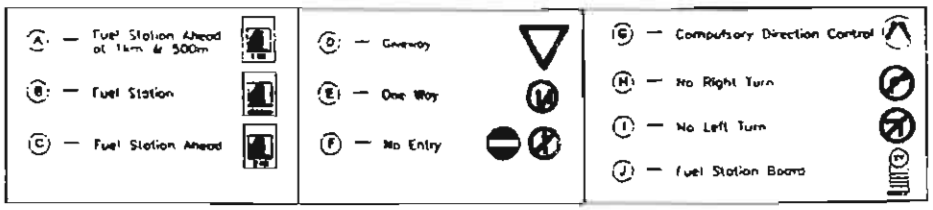


Fig. 1 ACCESS TO FUEL STATION ON UNDIVIDED CARRIAGEWAY SECTION OF NATIONAL HIGHWAY

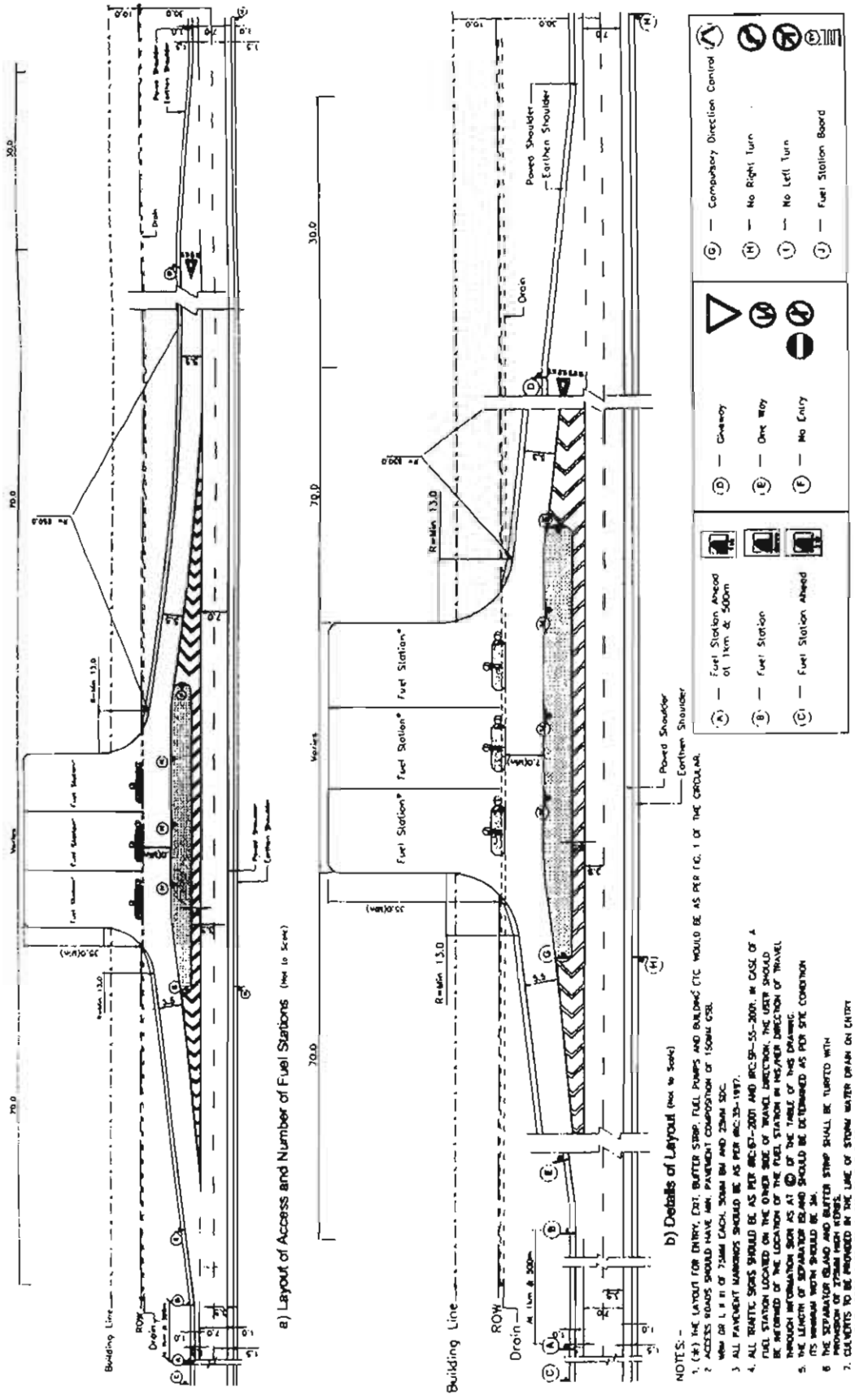
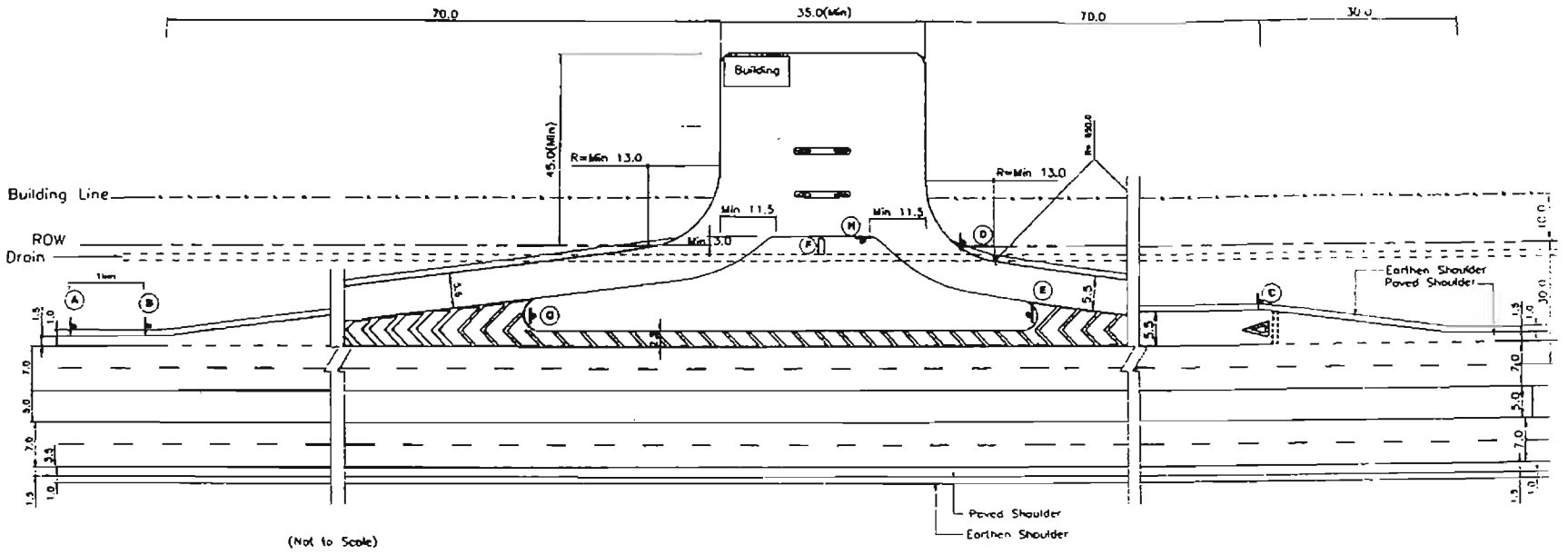


Fig. 2 ACCESS TO NUMBER OF FUEL STATIONS ON UNDIVIDED CARRIAGEWAY SECTION OF NATIONAL HIGHWAY



NOTES:-

1. ACCESS ROADS SHOULD HAVE MIN. PAVEMENT COMPOSITION OF 150MM GSB, WBM OR L.B.M OF 75MM EACH, 50MM BM AND 25MM SDC.
2. ALL PAVEMENT MARKINGS SHOULD BE AS PER IRC:35-1997.
3. ALL TRAFFIC SIGNS SHOULD BE AS PER IRC:67-2001 AND IRC:SP-55-2001
4. THE LENGTH OF SEPARATOR ISLAND SHOULD BE DETERMINED AS PER SITE CONDITION ITS MINIMUM WIDTH SHOULD BE 3M.
5. THE SEPARATOR ISLAND AND BUFFER STRIP SHALL BE TURFED WITH PROVISION OF 275MM HIGH KERBS.
6. CULVERTS TO BE PROVIDED IN THE LINE OF STORM WATER DRAIN ON ENTRY AND EXIT APPROACHES, TO CATER TO THE EXPECTED DISCHARGE.
7. ALL DIMENSIONS ARE IN METRE UNLESS OTHERWISE SPECIFIED.

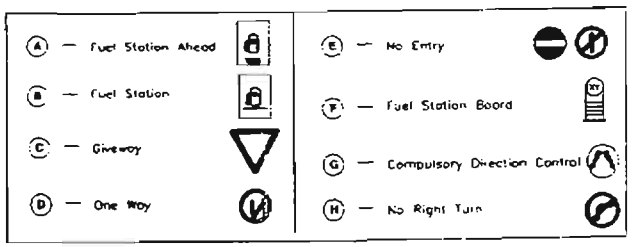
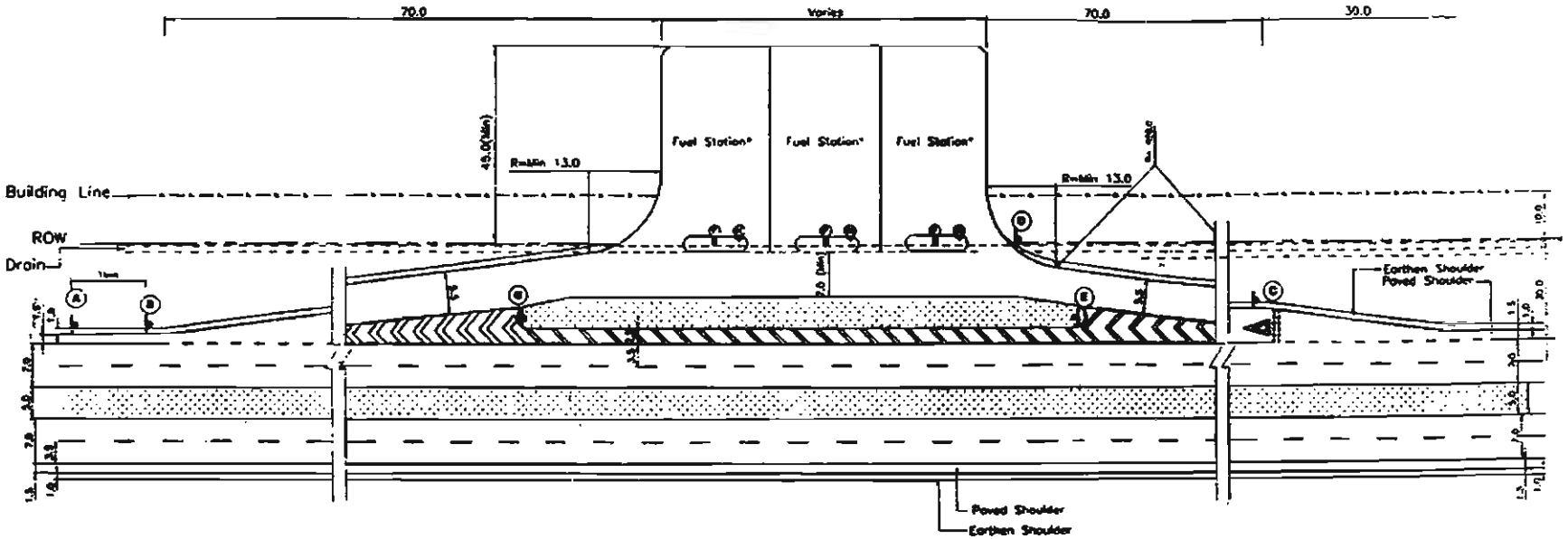


Fig. 3 ACCESS TO FUEL STATION ON DIVIDED CARRIAGEWAY SECTION OF NATIONAL HIGHWAY



(Not to Scale)

NOTES: –

1. (*) THE LAYOUT FOR ENTRY, EXIT, BARRIER STRIP, FUEL PUMPS AND BUILDING ETC. WOULD BE AS PER FIG 3 OF THE CIRCULAR
2. ACCESS ROADS SHOULD HAVE MIN. PAVEMENT COMPOSITION OF 150MM GSB, WBM GR I, II & III OF 75MM EACH, 50MM BM AND 25MM SDC.
3. ALL PAVEMENT MARKINGS SHOULD BE AS PER IRC:35-1997.
4. ALL TRAFFIC SIGNS SHOULD BE AS PER IRC:67-2001 AND IRC:SP-55-2001.
5. THE LENGTH OF SEPARATOR ISLAND SHOULD BE DETERMINED AS PER SITE CONDITION, ITS MINIMUM WIDTH SHOULD BE 2M.
6. THE SEPARATOR ISLAND AND BARRIER STRIP SHALL BE TURFED WITH PROVISION OF 270MM HIGH HEDGE.
7. CULVERTS TO BE PROVIDED IN THE LINE OF STORM WATER DRAIN ON ENTRY AND EXIT APPROACHES, TO CATER TO THE EXPECTED DISCHARGE.
8. ALL DIMENSIONS ARE IN METRE UNLESS OTHERWISE SPECIFIED.

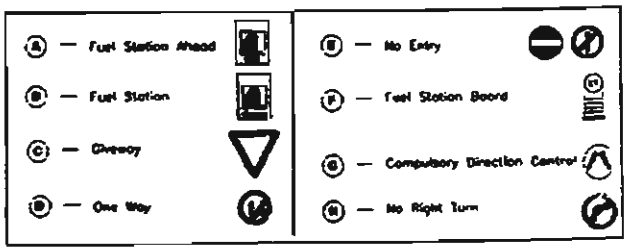
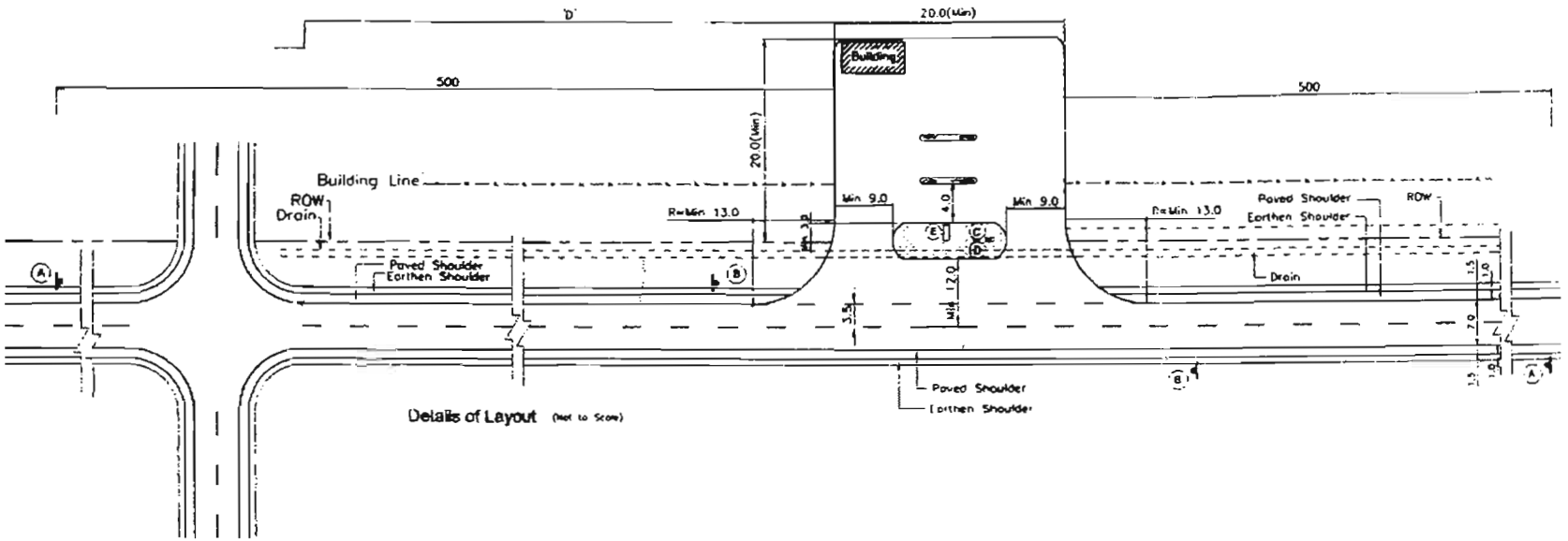
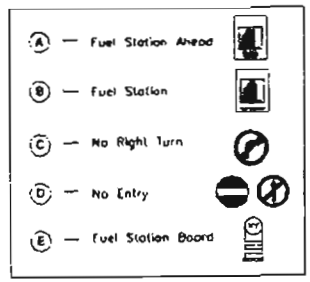


Fig. 4 ACCESS TO FUEL STATION ON DIVIDED CARRIAGEWAY SECTION OF NATIONAL HIGHWAY





NOTES: –

1. 'D' IS MINIMUM 300m WHEN INTERSECTING ROAD IS NH/SH/MDR AND IS MINIMUM 100m FOR OTHER ROADS.
2. APPROACHES SHOULD HAVE MIN. PAVEMENT COMPOSITION OF 150MM GSB, WBM OR W.M.M OF 75MM EACH, 50MM BM AND 25MM SDC.
3. ALL PAVEMENT MARKINGS SHOULD BE AS PER IRC:35–1997
4. ALL TRAFFIC SIGNS SHOULD BE AS PER IRC:67–2001 AND IRC:SP–55–2001.
5. THE LENGTH OF SEPARATOR ISLAND SHOULD BE DETERMINED AS PER SITE CONDITION. ITS MINIMUM WIDTH SHOULD BE 3M.
6. THE BUFFER STRIP SHALL BE TURFED WITH PROVISION OF 275MM HIGH KERBS.
7. CULVERTS TO BE PROVIDED IN THE LINE OF STORM WATER DRAIN ON ENTRY AND EXIT APPROACHES, TO CATER TO THE EXPECTED DISCHARGE.
8. ALL DIMENSIONS ARE IN METRE UNLESS OTHERWISE SPECIFIED.

Fig. 5 ACCESS TO FUEL STATION ON NATIONAL HIGHWAY IN MOUNTAINOUS TERRAIN AND URBAN STRETCHES

144.18

No. RW/NH-33044/35/2001/S&R(R.) *Dated the 16th May, 2002*

To

All the Regional Officers/Engineer Liaison Officers

Subject: Removal of Advertisement hoardings on National Highways within the Right of Way

As per Ministry's extant policy, no advertisement hoardings are permitted on National Highways within the Right of Way except informatory signs of public interest such as hospitals, bus stations etc. or advertisement of temporary nature announcing local events such as Mela, Flower Show etc. However, as per the policy guidelines of the Ministry issued vide letter No. RW/NH-33023/31/88-DO-III dated 9th February, 1998, private participation/sponsorship for road signs have been offered and the private entrepreneurs are allowed to depict the name/logo of their company in a sign of specified dimension.

2. Despite the policy guidelines of the Ministry not to allow road side advertisement hoardings on National highways which cause distraction and are also one of the causes of accidents on NHs, advertisement hoardings have generally been noticed along the National Highways. In fact there is an increasing trend observed in display of advertisement hoardings.

3. State Governments have been emphasized to take necessary action for dismantling/removal of the existing advertisement hoardings on NHs in the ROW vide DO No. MOS-IC (RT&H)/VIP/1684/2001 dated 3rd October, 2001 from Hon'ble MOS-IC (RT&H) to Hon'ble Chief Ministers of all the States and vide DO of even number dated 21-09-2001 in subsequent DO reminders dated 04-01-2002 and 31-01-2002 from Secretary (RT&H) to Chief Secretaries of all the States. The compliance reports on action taken from the State Governments are not much encouraging.

4. It has therefore been decided that the Regional Officers/Engineer Liaison Officers within their jurisdiction shall inspect the NHs by prioritising heavily trafficked NHs first and other NHs in stages and submit inspection reports to the Ministry for further necessary action. First report of all the ROs/ELOs in respect of heavily traffic corridors shall invariably reach the Ministry by 14th June, 2002 and subsequently along with their monthly reports.

This shall be accorded for priority.

160.21

No. RW/NH-33044/10/2002-S&R (R) *Dated the 14th February, 2002*

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.

Subject: Toll on 4 lane NH sections: Construction of Toll Plazas therein

It has been observed that the four laying of many NH sections is either already completed or is in advance stage of completion without the provision of construction of toll plazas. As per the extant policy guidelines, toll is to be charged for all the 4-lane National Higwhay Sections. It is, therefore, reiterated that the construction of toll plazas should invariably be completed by the time four laning of NH section is completed so as to ensure start of the collection of toll from the day of opening the road to the traffic.

2. The contents of this circular may be brought to the notice of all concerned.

160.22

No. NH-11065/12/2003-P&M *Dated the 15th September, 2004*

To

The Secretary (PWD), All States/Union Territories, The Chairman, National Highways Authority of India.

Subject: Exemption of Defence vehicles from payment of user's fee for use of section of National Highway/ permanent bridge/temporary bridge on National Highways

The Ministry of Defence has brought to the notice of the Ministry that Defence personnel, their personal vehicles and Civil Hire Transport employed in the service of defence forces are facing difficulties at Toll Collection Centre on National Highways as they are not being allowed exemptions of fees permissible under the Indian Tolls (Army and Air Force) Act, 1901 in different parts of the country. The matter has been examined in consultation with the Ministry of Law and Justice (Deptt. of Legal Affairs) and it has been clarified by that Ministry that the provisions of the Indian Tolls (Army and Air Force) are applicable to collections of tolls on National Highways.

2. Extracts from the Indian Tolls (Army and Air Force) Act, 1901 are enclosed *(Annex-I)*. This Ministry has notified National Highways (collection of Fee by any person for use of section on National Highways, permanent bridge/temporary bridge on National Highways) amendment rules 2003 vide GSR No.834 (E) dated 27th October, 2003. According to these rules certain categories vehicles including defence vehicles, are exempted from payment of users fee given in the notification. The details of all such defence vehicles/ persons exempted from payment of users fees are enclosed *(Annex-II)*. These exemptions have also been made applicable for public funded projects.

3. It is requested that necessary instructions may be issued to all concerned who are responsible for fees collection, that in additional to the exemptions allowed by the Ministry under various notifications the exemption as permissible under Indian Tolls (Army and Air Force) Act, 1901 are also applicable on National Highways.

ANNEX-I

As per Section 3 of Indian Tolls (Army and Air Force) Act, 2001, the following defence persons and property are exempted from payment of users fee:

(a) All officers, soldiers and airmen of:–

(i) the regular forces
(ii) any irregular Corps

(b) All members of the territorial army of the National Cadet Corps when on duty or when proceeding to or returning from duty.

(c) All officers, soliders and airmen of the Indian reserve forces when proceeding from their place or their residence on being called out for service, training or muster of when proceeding back to their place of resident after such service, training or muster.

(d) All authorized followers of:-

(i) the regular forces
(ii) the territorial army or the National Cadet Corps
(iii) any irregular Corps

(e) All members of the family of officers, soliders air men unauthorized followers of:

(i) the regular forces
(ii) or any irregular Corps when accompanying any body of troops, or any officer, soliders, airmen or authorized followers their of on duty or on the march.

(f) All prisoner under military or air force escort.

(g) The carriages, horse and baggage, and the persons (if any employed in driving the carriage, the baggage, of any persons exempted under any of the foregoing clauses, when such carriages, horses, baggage, or persons accompanying the persons so exempted under the circumstances mentioned in those clauses respectively.

(h) All carriages and horses belonging to government or employed (in the Indian) military (or air force) service and all persons in charge of or accompanying the same, when conveying any such persons as herein before in this section mentioned or when conveying baggage or stores, or when returning, unladen from conveying such persona, baggage or stores.

(i) All carriages and horses when moving under the orders of military (or air force) authority for the purpose of being employed (in the Indian) military (or air force) service.

(j) All animals accompanying any body of troops which are intended to be slaughtered for food or kept for any purpose connected with the provisioning of such troops and

(k) All persons in charge of any carriage horse or animal exempted under any of the foregoing clauses when accompanying the same under the circumstances mentioned in those clauses respectively.

Otherwise demandable by virtue of any Act, Ordinance, Regulation, order or direction of any legislature or other public authority in India;

Explanation– the persons or property exempted under clauses (d), (e), (g) and (i) shall be deemed to accompany the Forces; troops, persons or property concerned, when the move of the former is the direct result of, or is connected with the move of the later, irrespective of the interval of space and time between the two moves.

ANNEX-II

NOTFICATIONS
New Delhi, the 27th October, 2003

G.S.R. 843(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 further to amend the National Highways (Collection of Fees by any person for the use of Section of National Highway/ permanent bridge/temporary bridge on National Highway) Rules, 1997, namely:-

1. (1) 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) Amendment Rules, 2003.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. In 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, in rule 5, in sub-rule (1), in the provision for clause(i), the following clause shall be substituted, namely:-

(I) vehicles-

(A) having "VIP" symbols; or officially belonging to -

(a) President of India ;

(b) Vice-President of India;

(c) Governor of a State or Lt. Governor of a Union Territory;

(d) a Foreign Dignitary on State visit to India;

(e) a Foreign diplomat stationed in India using cars with "CD"/"CC" number plates;

(f) Chairman of Rajya Sabha or Speaker of Lok Sabha or Chairman of a State Legislative Council or Speaker or a State Legislative Assembly or a Minister for the Union or State, or Leaders of Opposition in Lok Sabha or Rajya Sabha or State Legislatures having the status of Opposition in Lok Sabha or Rajya Sabha or State Legislatures having the status of Cabinet Minister, if he is sitting in the vehicle; or

(g) a Member of Parliament, in the entire country, or a Member of Legislative Assembly of a State or a Member of Legislative Council of a State, in the respective State, if he produces his identity card issued by the Parliament or concerned Legislature of a State, as the case may be;

(B) belonging to winner of Gallantry awards such as Param Vir Chakra, Ashok Chakra, Maha Vir Chakra, Kirti Chakra, Vir Chakra and Shaurya Chakra, if such awardee produces his photo identity card duly authenticated by the Competent Authority for such award.

Footnote: The principal notification was published in the Gazette of India vide G.S.R. No. 62(E), dated 5.2.1997 and amended vide Notification G.S.R. No. 336(E) dated 13.4.2000.

191.6

No. RW/NH-33044/10/2003-S&R(R) *Dated the 13th May, 2003*

To

All Secretaries dealing with Roads of all States and UTs, Engineer-in-Chief/Chief Engineers dealing with National Highways and other Centrally sponsored Road & Bridges Scheme of all States & UTs, Director General (Border Roads), Chairman, National Highways Authority of India.

Subject: Inauguration / Bhoomi Pujan/Foundation Stone Laying/Any other ceremony in respect of National Highway works

Please refer to this Ministry's letter No. RW/NH-11043/1/87-DO I dated 20.04.1990 on the subject of opening/foundation stone laying ceremonies and naming of bridges for works on National Highways. The instructions have been reviewed to streamline the procedure in respect of National Highway works and accordingly, following consolidated instructions in supersession of earlier circular on the subject are issued.

2. Inauguration / Bhoomi Pujan / Foundation Stone Laying / any other Ceremony for National Highways works:

As the National Highways vest in the Central Government, all ceremonial functions like Inauguration / Bhoomi Pujan / Foundation Stone Laying etc. relating to National Highways will be done by the Hon'ble Minister, MoRT&H or a Minister from the Central Government, as decided by the MoRT&H. It is, therefore, incumbent on the part of the executing agencies to intimate the Government of India three months in advance about the likely start/completion of any work for holding Bhoomi Poojan / Inauguration/Foundation Stone Laying/any other ceremony for National Highway Works. For this purpose following procedure shall be followed:

(a) When the Bhoomi Poojan / Inauguration / Foundation Stone Laying/any other ceremony for any National Highway work is to be held, the State Chief Engineer (NH) will make a report well in advance (copy of the request should be endorsed to Regional Officer / Engineer Liaison Officer) about it to this Ministry, who will take a decision about the day of the ceremony as well as dignitary who would perform the function.

(b) The Chief Engineer of this Ministry, dealing with the concerned project, will be the 'nodal officer' for finalization of invitation card, programme, plaque and advertisement by the Ministry. He will also coordinate with the State Government/Chief Engineer regarding the function.

(c) Detailed programme of this function and the advertisement to be issued on such occasion shall be made by the concerned Chief Engineer of the Ministry.

(d) Invitation cards shall be issued on behalf of the Government of India, Ministry of Road Transport & Highways. Formates for invitation card and plaque are enclosed. No other type of invitation card or plaque shall be permitted.

(e) Expenditure on such a ceremony should be kept to a minimum level and should not exceed Rs. two lakh. It will include expenditure of a contingent nature like printing of Invitations, Plaque, provision of shamianas, refreshments, garlands and photographs etc. Advertisements shall be published through DAVP as per rules. In case of important functions which are attended by the President/Vice-President /Prime Minister of India and/or Minister for Road Transport & Highways, the expenditure ceiling will be decided by this Ministry on case to case basis. In order to exercise economy in expenditure, such function should, however, be restricted only to important works, such as, widening/strengthening, four-laning/expressways, major bridges and bypasses, and the number of invitees should be kept within a reasonable limit.

191/16

(f) Due courtesy in order of protocol shall be ensured in extending the invitations to the dignitaries in the following order:

(i) Member of Parliament (Lok Sabha) representing the spot where function is being held.

(ii) Member of Legislative Assembly representing the spot where function is being held.

(iii) Member of Parliament (Rajya Sabha) representing the district where function is being held.

(iv) Other invitees may be decided by MoRT&H.

3. This may please be brought to the notice of all concerned for strict compliance.

(Enclosure of Ministry's circular No. RW/NH-33044/10/2003-S&R(R) dated the 13th May, 2003)

Invitation Card

On the occasion of the Inauguration / Bhoomi Pujan / Foundation Stone Laying of (Name of the project) on NH _____ in (Name of the State)

By

Hon'ble _____

_____

Ministry of Road Transport and Highways

Government of India

Request the pleasure of your company

On

(Day), the (Date)

Hon'ble _____

_____

will preside

Guests of Honour

Hon'ble _____

_____

Venue & Time

RSVP

Ministry of Road Transport and Highways
Government of India

Public Works Department
State Government of _____

Inauguration / Bhoomi Pujan / Foundation Stone Laying of

(Name of the project)_____

held on (Day), the (Date)

By

Hon'ble _____

_____

In the presence of

Hon'ble _____

_____

Guest of Honour

Hon'ble _____

_____

191.7

No. RW/NH-33044/10/2003-S&R(R) *Dated the 13th May, 2003*

To

The Secretaries dealing with Roads of all States and UTs, Chief Engineers dealing with State Roads other than NHs

Subject: Inauguration/Bhoomi Pujan/Foundation Stone Laying/any other ceremony in respect of Centrally Sponsored Schemes under Inter-State connectivity and Economic importance

Central Government has been providing grants for improvement of State Roads under Centrally sponsored schemes of Inter-State connectivity and Economic Importance. All ceremonial functions like Inauguration/Bhoomi Pujan/Foundation Stone Laying etc. relating to these centrally sponsored schemes will be done by the Hon'ble Minister, MoRT&H, or a Minister from the Central Government, as decided by the MoRT&H. It is, therefore, incumbent on the part of the executing agencies to intimate the Government of India three months in advance about the likely start/completion of any work for holding functions like Inauguration/Bhoomi Pujan/Foundation Stone Laying/any other ceremony for any work under Centrally Sponsored Schemes of Inter-State connectivity and Economic Importance. For this purpose following procedure shall be followed:

(a) When the Inauguration/Bhoomi Pujan/Foundation Stone Laying/any other ceremony for any work pertaining to Centrally Sponsored Schemes is to be held, the State Chief Engineer is required to make a report well in advance (copy of the request should be endorsed to Regional Officer/Engineer Liaison Officer) about it to the Ministry, who will take a decision about the day of the ceremony as well as dignitary who would perform the function.

(b) The Chief Engineer of this Ministry, dealing with the concerned project, will be the 'nodal officer' for finalization of invitation card, programme, plaque and advertisement by the Ministry. He will also coordinate with the State Government/Chief Engineer regarding the function.

(c) Detailed programme of this function and the advertisement to be issued on such occasion shall be furnished by the State Chief Engineer and got approved from the Ministry.

(d) Invitation cards shall be issued on behalf of the Government of India, Ministry of Road Transport & Highways and State Government. Formats for invitation cards and plaque are enclosed. No other type of invitation card or plaque shall be permitted.

(e) Expenditure on such a ceremony should be kept to a minimum level and should not exceed Rs. two lakh. It will include expenditure of a contingent nature like printing of Invitations, Plaque, provision of shamianas, refreshments, garlands and photographs etc. Advertisements shall be got published through DAVP as per rules. In case of important functions which are attended by the President/Vice-President/Prime Minister of India and/or Minister for Road Transport & Highways, the expenditure ceiling will be decided by the Ministry on case to case basis. In order to exercise economy in expenditure, such function should, however, be restricted only to important works, such as, widening/strengthening, four-laning/expressways, major bridges and bypasses, and the number of invitees should be kept within a reasonable limit.

(f) Due courtesy in order of protocol shall be ensured in extending the invitations to the dignitaries in the following order:

(i) Member of Parliament (Lok Sabha) representing the spot where function is being held.
(ii) Member of Legislative Assembly representing the spot where function is being held.
(iii) Member of Parliament (Rajya Sabha) representating the district where function is being held.
(iv) Other invitees may be decided by MoRT&H.

2. This may please be brought to the notice of all concerned for strict compliance.

206.10

No. RW/NH-34054/1/2002-S&R(B) *Dated the 24th January, 2002*

To

All the Chief Engineers of all State Governments/Union Territories (dealing with National Highways and Centrally sponsored schemes), Director General (Border Roads), Kashmir House, New Delhi, The Chairman, National Highways Authority of India, Secretary Indian Roads Congress, Jamnagar House, New Delhi.

Subject: Empanlement of consultants for highway and bridge projects

In continuation of Ministry's letter No. RW/NH-34054/3/2000-S&R dated 28th November 2001, the correct details of M/s. Gherzi Eastern Limited, M.C. Consulting Engineers (P) Limited, Pell Frischmann Ltd. and Dorsch Consul, are given below for your reference and record:

Sl. No.	Name of the company	Category & Sl. No.	Address	Phone No.	Fax No	E-mail	Contact person
1.	Gherzi Eastern Limited	IA-09 IIA-19 III-10	AB-7, 2nd Floor Community Centre, Safdarjung Enclave, New Delhi-110029	011- 6198935 6198936 6198937	011-6192473	gherzidel @vsnl.com.	Mr. N. Dasgupta General Manager
2.	MC Consulting Engineers (P) Ltd.	IB-13 IIA-26	8-3-945/A/6 1st Floor, Ameerpet, Hyderabad	040-3471137 6577355, 6528101	040-3733855	mcindial @satyam. net.in	M. Chandrasekhar Principal Consultant Executive Director
3.	Pell Frischmann Ltd. UK in JV with Frischmann Prabhu (I) Pvt. Ltd.	IA-24 IIA-35 III-24	Mr. Tushar Prabhu 315, Balgovindwadi, New Prabhadevi Road, Prabhadevi, Mumbai	022-4603901	022-4603902	pfmumbai @fpindia.com	Mr. Tushar Prabhu
4.	Detsch Consult (India Liaison Office)	IA-6 III-8	236 Oshiwara Industrial Central, Opp. Goregaon Bus Dept. off new link Road, Goregaon (West), Mumbai	8779012 8789116	022-8778548	dcindia@ vsnl.com	Mr. Shashank A Patil

** Categories for which consultant has qualified and the Sl. No. in the list for the particular category as per the original letter dt. November 28, 2001.

206.11

No. RW/NH-34054/1/2002-S&R *Dated the 31st January, 2003*

To

All the Chief Engineers of States/UT, PWDs (dealing with National Highways and other Centrally Financed Schemes), Director General (Border Roads), The Chairman, National Highways Authoriy of India, Secretary, Indian Roads Congress

Subject: Empanelment of Consultants for Highway & Bridge Projects. (1st Supplementary Panel).

In continuation of Ministry's circular No. RW/NH/34054/3/2000/S&R dated 28.11.2001, please find enclosed herewith the first supplementary panel of empanelled consultants (Annexure 1 to VI). This panel shall come in force from date of issue of this letter and shall remain valid upto 31.12.2003.

2. All other terms and conditions stipulated in the Ministry's circular No. RW/NH/34054/3/2000/S&R dated 28.11.2001 shall be applicable.

3. The contents of this circular may please be brought to the notice of all concerned officers in your organization/department.

ANNEX-I

Category IA : List of Consultants Approved For Undertaking All Types of Highway Projects

Sl. No.	Name of the Company	Address	Phone No.	Fax No.	E-mail	Contact Person
1	DAR Consultants (India) Pvt. Ltd.	50, Beach Road, Kalakshetra Colony, Besant Nagar, Madras-600090	044-4916655	044-4916655	darindia@giasmd01.vsnlnet.in	Mr. E. Kumaran
2**	Archtech Consultants Pvt. Ltd.	11, Sakespeare Sarani Kolkata-71	27255 2827263 2827969-72	2825377	acplcal@cal3.vsnl.net.in	S Ghosal, MD
3	Consummate Engineering Services Pvt. Ltd.	3/179, Vivek Khand Gomtinagar, Lucknow-226010	0522-392590 395487	0522-280000	ces@indiatimes.com.	Piyush Srivastava, Director
4	Theme Engineering Pvt. Ltd.	203, Dadu Marg, Barkat Nagar, Tonk Phatak, Jaipur, Raj-302015	0141-592201	0141-594395	themeespl @ tantramail.com	Tarun Rawat
5**	Arch Consultancy Services (P) Ltd.	202, Balaji Plaza, Sector-8, Rohini, Delhi-110085	7943660 7943851	7948609	arch@del2.vsnl.net.in	Rajiv Ahuja
6	Babtie Consultants (India) Pvt. Ltd.	83, New York, Tower-A, Thaltej Cross Roads, Thaltej Ahmedabad-380054	6855636 6852429	6843527	babtie@vsnl.com	Suren Vakil, MD
7**	India International Infrastructure Engineers Ltd.	119, 1st floor, Ramanashree Arcade, M G Road Bangalore-560001	080-5583188		iiieltd@bgl.vsnl.net.in	S.R. Swami, Vice-President
Total 7 Nos.						

** Archtech Consultants Pvt. Ltd. , Arch Consultancy services (P) Ltd. and India International Infrastructure Engineers Ltd. were empanelled for Cat IB vide Ministry letter No. 34054/3/2000/S&R dated 28.11.2001. Now these firms have been empanelled for Cat. IA. Hence their name will stand deleted from Annexure II of the letter mentioned above.

ANNEX-II

Category IB : List of Consultants Approved For Undertaking Smaller Highway Projects

Sl. No.	Name of the Company	Address	Phone No.	Fax No.	E-mail	Contact Person
1	RAPP AG Engineers+ Planners in JV with MC sharma Associates	K-1, Keshav Path, Ahinsa Circle, C-scheme, Jaipur-302001	0141-412921 413911	0141-380147	mcsharma @ tantramail.com	P C Bhargava
2	CV KAND Consultants	E-2/136 Mahavir Nagar, Bhopal-462016	464102(R) 464654(O)	0755-465186		C V Kand
3	EMAY International Engineering Consultanting and Trade Co. Ltd.	C/o Erinco India India Pvt. Ltd. B4/45, Safdarjung, Enclave New Delhi-29	6176970 6712043	6165143	erincodelhi @vsnl.net	Biswajit Das
4	Stanley Consultants Inc.	Stanley Building, 225 lowa Avenue Muscatine lowa-52761 USA	563-264-6557	563-264 6558	hollatzjames @stanleygroup. com	James A Hollatz
5	Techsoft Engineering Services (India) Pvt. Ltd.	Jayshree Apartment, 179, Bangur Avenue Block-A, Calcutta-55	033-5746314 011-6291830	011-6225425	techsoft@ consultant.com	S Goswami
6	Data Technogys	FF-III, Asha Apartments-1, 19 Ram Mohan Rai, Marg, Lucknow	206775 2088493		dt_chopra@ hotmail.com	G. Chopra
7	Haq Consultant Pvt. Ltd.	Baitul Fazal, 2527 Agra Road, Jaipur-302003	0141-600518 600588	601102		Inamul Haq
8	Distinct Planning and Design Consult (P) Ltd.	E-860, Chittaranjan Park, New Delhi-19	26276803 26123893	26273306		R B Singh
Total 8 Nos.						

ANNEX-III

Category IIA : List of Consultants Approved For Undertaking All Type of Bridge Projects

Sl. No.	Name of the Company	Address	Phone No.	Fax No.	E-mail	Contact Person
1	CV KAND Consultants	E-2/136 Mahavir Nagar, Bhopal-462016	464102 464654	0755-465186		C V Kand
2	Madhucon Engineers Limited	6-3-347/2, 1st floor, Dwarakapuri Colony, Punjagutta, Hyderabad	040-3325708	3325708		PVN Reddy
3	DAR Consultants (India) Pvt. Ltd.	50, Beach Road, Kalakshetra Colony, Besant Nagar, Madras	044-4916655	044-4916655	darindia@gias md01.vsnl.net.in	Mr. E. Kumaran
4	EMAY International Engineering Consultanting and T d Co. Ltd.	C/o Erinco India India Pvt. Ltd. B4/45 Safdarjung Enclave, New Delhi-29	6176970 6712043	6165143	erincodelhi@ vsnl.net	Biswajit Das
5	Aranteer Consultants Pvt. Ltd.	Sakespeare Sarani Kolkata-71	2827255 2827263 2827969-72	2825377	acplcal@cal3. vsnl.net.in	S Ghosal, MD
6	Stanley Consultants Inc.	Stanley Building, 225 lowa Avenue, Muscatine lowa	563-264-6557	563-264-6558	hollatzjames@ stanleygroup.com	James A Hollatz
7	Consummate Engineering Services Pvt. Ltd.	3/179, Vivek Khand Gomtinagar, Lucknow-226010	0522-392590 395487	0522-280000	ces@indiatimes. com	Piyush Srivastava, Director
8	Bridge & Structural Engineering Consultants	315, Vishal Chambers, Chambers, Sector-18, Noida, U.P.-201301	4516578 4514618	4516578 4514618	alok@del3.vsnl. net.in	Alok Bhomick
9	District Planning and Design Consult (P) Ltd.	E-860, Chittaranjan Park, New Delhi-19	26276803 26123890	26273306		R B Singh
Total 9 Nos.						

ANNEX-IV

Category IIB : List of Consultants Approved For Undertaking Bridge Inspection & Rehabilitation Projects

Sl. No.	Name of the Company	Address	Phone No.	Fax No.	E-mail	Contact Person
1	CV KAND Consultants	E-2/136 Mahavir Nagar, Bhopal-462016	464102(R) 464654(O)	0755-465186		C V Kand
2	XCC Engineers & planners	B-102, Govind Nandanvan, S.V. Road, Dahisar (E) Mumbai-400068	022-8945601	022-28900725	xccep@vsnl.net	Kishore Saxena
3	High Point Rendel	E-14/13, Vasant Vihar New Delhi-110057	6154896 6154897	6154899	hprindia@vsnl. net	B Saragwi, Director
4	S J Group	196, Jawahar Nagar, Goregaon (W), Mumbai-400 062	8732517 8759709	8759710	sjgroup@vsnl. com	Dilip Apte
Total 4 Nos.						

ANNEX-V

Category III : List of Consultants Approved For Undertaking Traffic & Transportation Studies

Sl. No.	Name of the Company	Address	Phone No.	Fax No.	E-mail	Contact Person
1	DAR Consultants (India) Pvt. Ltd.	50, Beach Road, Kalakshetra Colony, Besant Nagar Madras-600090	044-4916655	044-4916655	darindia@giasmd01.vsnl.net.in	Mr. E. Kumaran
2	Arch Consultancy Services (P) Ltd.	202, Balaji Plaza, Sector-8, Rohini Delhi-110085	7943660 7943851	7948609	archc@del2vsnl.net.in	Rajiv Ahuja
Total 2 Nos.						

ANNEX-VI

Category IV : List of Consultants Approved For Undertaking Geo-Technical Investigation

Sl. No.	Name of the Company	Address	Phone No.	Fax No.	E-mail	Contact Person
1	STUP Consultants Ltd. New Delhi	1112, Vishal Tower, Janakpuri District Center, New Delhi-58	5536108 5536109 5536110	5507017	Stupdel@nda.vsnl.net.in	S Y Rawoot
2	GEO-XEROX Soil and Foundation Engineers	5/1, Mohinath Porel lane, Salkia, Howrah-711106	033-6553821 6556624	6551122		B K De
3	S K Mitra & Associates	FE-10, Salt lake, Kolkata-700106	3586377	3586378	skma@vsnl.net	R Saha, Executive
4	Geotreat	83/46 Dum-Dum Road Calcutta-700074	033-5480788	033-5485308		A Chattarjee
5	Nagadi Consultants Pvt. Ltd.	106/1D, Kishanga Vasant Kunj, New Delhi-110070	6891980	6897403		N Santosh Rao
6	F S Engineers Pvt. Ltd.	109, Velachery Road, Guindy, Chennai-032	2351862	2353279		Dr. A Verghese Chaumar
7	The Senior Consultants and Advisor Group	N-2/95, Nayapalli, Bhubaneshwar-751015	0674-570825	0674-572191	scagmail@vsnl.net	S N Mishra
8	Arch Consultancy Services (P) Ltd.	202, Balaji Plaza, Sector-8, Rohini, Delhi-110085	7943660 7943851	7948609	archc@del2.vsnl.net.in	Rajiv Ahuja
9	Arun Soil Lab	E-11, First Floor, Lekhraj Market-I, Indira Nagar, Lucknow-226016	0522-382161 341943	0522-381047	arunsoillab2@satyam.net.in	Arun Kumar Singh
10	NKPC	Boring House, Prahlad Road, Rajkot-360001	226511(O) 235904(L) 225980(R)	0281-234205	nkpc@rediffmail.com	Dr. Ashoke N Patel
Total 10 Nos.						

402.4

No. RW/NH-33044/30/2001-S&R(R) *Dated the 30th June, 2003*

To

The Secretaries of State/Union Territories, Public Works Department (Dealing with National Highways, All Chief Engineers of States/Union Territories (Dealing with National Highways), The Chairman, National Highways Authority of India, The Director General (Border Roads) .

Subject: Use of Flyash in road construction: Feedback thereof

Ministry vide letter of even no. dated 29.11.2001 (copy enclosed) has requested to use flyash in road embankment construction especially in the areas where flaysh is available in plenty following guidelines of IRC:SP-58-2001 and feedback on its utilisation reported to the Ministry. No feed back has been received so far from your State inspite of the reminder of even no dated 18th April, 2002.

The High Level Committee of Secretaries under the Chairmanship of Cabinet Secretary, in its meeting held on 31.10.2001 on the Flyash Mission has decided to use flyash compulsorily in construction of roads within 100 km of Ash dumps. The matter has become the subject of a Public Interest Litigation in the Hon'ble High Court of Delhi which has expressed its concern about the slow progress in the matter.

It is, therefore, requested that Action Taken Report and feed back on its utilisation may please be intimated preferably by Fax latest by 15th July, 2003 positively to the Ministry addressed to the undersigned, Room No. 328, Transport Bhawan, Parliament Street, New Delhi-110 001 for further necessary action.

Priority is solicited.

(Enclosure to Ministry's Circular No. RW/NH-33044/30/2001-S&R (R) dated the 30th June, 2003)

Copies of letter No. RW/NH-33044/30/2001-S&R(R) Dated the 29.11.2001 addressed to The Secretaries of States/Union Territories, Public Works Departments (Dealing with National Highways), All Chief Engineers of States/Union Territories (dealing with National Highways), The Chairman, National Highways Authority of India, The 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 base 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 14.9.999 has prescribed the use of flyash for construction of road, embankments or any other construction activity. This notification inter alia provides flyash 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 specification of road construction especially in the areas where flyash is available in plenty within economical leads. The feed back on its utilisation may please be reported to the Ministry from time to time.

402.5

No. RW/NH-33044/30/2001-S&R(R) *Dated the 30th July, 2003*

To

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

Subject: Use of Flyash in road/flyover embankment construction-Amendment to Clause 305 of the Ministry's Specifications for Road and Bridge Works Fourth Revision) 2001.

Ministry vide letter of even no dated 29.11.2001 has requested to use the flyash in road/flyover embankment construction especially in the areas where flaysh is available in plenty following guidelines of IRC: SP:58-2001 "Guidelines for Use of Flyash in Road Embankments".

2. In view of the Government decision taken at the high level Committee of the Secretaries under the Chairmanship of Cabinet Secretary on the Flyash Mission that use of flyash compulsorily in road/flyover embankment construction the para 1 of the sub-Clause 305.2.1.1 of the Ministry's Specifications for Road and Bridge Works (Fourth Revision) 2001 stands amended as below.

"The Materials used in embankments, sub-grades, earthen shoulders and miscellaneous backfills shall be soil, moorum, gravel, fly/pond ash, a mixture of these or any other material approved by the Engineer. Such materials shall be free of logs, stumps, roots, rubbish or any other ingredient likely to deteriorate or affect the stability of the embankment/subgrade. The use of fly/pond ash as fill material shall be mandatory in road/flyover embankment construction in the areas where fly/pond ash is available in adequate quantities within economically viable lead strictly following the guidelines of IRC: SP-58-2001 unless on technical reasons duly approved by the Chief Engineer/Engineer-in-Chief".

3. In para 1 of the sub-clause 305.2.2.2 of the Ministry's specifications, following may be added in compliance to the environmental requirements.

"If borrowing of soil is unavoidable, care shall be taken not to create any low lying area; if any borrow pit is created, the same shall be filled up with pond/fly-ash covered with 0.5m thick soil layer wherever technically feasible. This shall be an integral part of the project."

4. Further, para 1 of the sub-clause 305.4.7 shall stands modified as below.

"In the case of high embankments, the contractor shall normally use fly/pond ash in conformity with para 305.2.1.1 above or the material from the specified borrow area".

5. All other provisions of Clause 305 of the Ministry's Specifications 2001 shall remain unaltered.

6. A List of Thermal Power Plants (TPPs) generating fly pond ash along with the India Map depicting the location of TPPs in different States is enclosed for ready reference.

7. In view of the above necessary modifications to the tender document are requested to be carried out wherever warranted.

8. The contents of this circular may please be brought to the notice of all concerned in your Organisation/ Department for strict compliance.

9. It is requested that quarterly 'Action Taken Report' on use of fly/pond ash in road/flyover embankment construction on NH/other centrally sponsored works in your State/Organisation may please be reported to the Ministry addressed to Shri S.S. Nahar, SE(R) (S&R), Room No. 340, Transport Bhavan, 1, Parliament Street, New Delhi-110 001.

(Enclosure to Ministry's letter No. RW/NH-33044/30/2001-S&R(R) dated the 30th July, 2003)

LIST OF THERMAL POWER STATIONS AND QUANTITY OF ASH AVAILABLE

S.No.	State	Station	Quantity of Fly-ash available in ash pond as on 31.03.2003 (Million tonne)
1.	Andhra Pradesh	Vijayawada	20.16
		Rayalaseema	6.915047
		Kothagudem	33.72
		Kothagudem V	5.83
		Ramagundem 'B'	n.a.
		Nellore	n.a.
		Ramagundem (NTPC)	46.5
		Simhadri (Vishakapatnam)	1.27
		Manuguru (HWP)	2.8
		Vishakapatnam (RINL)	5.84
2.	Assam	Nagaon	0
		Cachar	0
3.	Bihar	Kahalgaon	11.14
		Barauni	0.03
		Muzafarpur	0.5
4.	Chhattisgarh	Korba (NTPC)	3.73
		Korba (Eest)	11.1
		Korba (Wast)	20.151
		Korba (Balco)	4.5
		Bhilai (Sail)	n.a.
		Bhilai (BESCL)	n.a.
		Jindal	n.a.
5.	Gujarat	Gandhinagar	6.8
		Ukai	6.505125
		Wanakbori	2
		Sikka	2.253617
		Kachhch	2
		Sabarmati (AEC)	0.84
		Surat (GIPC)	0.5962
6.	Haryana	Panipat	116
		Faridabad	4.7
7.	Jharkhand	Tenughat	0.6
		Patrratu	2
		Bokaro (B)	n.a.
		Chandrapura	1.665
		Jojabera	0.1
		Bokaro (BPSCL)	n.a.
8	Karnataka	Raichur	15

9.	Madhya Pradesh	Amarkantak	4.2
		Satpura	n.a.
		Sanjay Gandhi	6.25
		Vindyachal	13.78
10.	Maharashtra	Chandrapur	47
		Koradi	13.62
		Khaperkheda	15
		Bhusawal	15.058
		Nashik	1.079008
		Parli	10
		Paras	2.2
		Dahanu	26.85
		Trombay	0
11.	Orissa	IB Thermal	6.870913
		Kaniha (NTPC)	8.5
		Talcher (NTPC)	4.9
		Rourkela (SAIL)	n.a.
		Rourkela (NSPCL)	0.151
		Talcher (Nalco)	16.19
		Damanjodi	2.8
		Hirakud (India I)	n.a.
12.	Punjab	Ropar	24
		Bhatinda	16.26
		Lehra Mohabat	3.072
13.	Rajasthan	Suratgarh	3.358
		Kota	11.34
14.	Tamilnadu	Tuticorin	152
		Mettur	20.81
		North Chennai	n.a.
		Ennore	0.8
		Neyveli I	0.56946
		Neyveli II	9.2
15.	Uttar Pradesh	Dadri	1.083
		Rihand (NTPC)	n.a.
		Tanda (NTPC)	4.15
		Unchahar	7.4
		Singrauli	34.6
		Panki	4
		Harduaganj	
		Parichha	4
		Obra	23.65
		Anpara	n.a.
		Hindalco	n.a.
		Phulpur	1.25

16.	West Bengal	Budge Budge	
		Titagarh	
		Southern	
		Durgapur (DPL)	1.52
		Durgapur (NSPCL)	0
		Durgapur (DVC)	
		Mejia (DVC)	2.809
		Kolaghat	0.18
		Bakreswar	n.a.
		Bandel	1.1856
		Santaldih	n.a.
		Chinakuri	
		Farakka	18.8
17.	Delhi	Rajghat	0.483
		Indraprastha	0.5
		Badarpur	20

No. RW/NH-33044/30/2001-S&R(R) *Dated the 4th December, 2003*

To

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

Subject: Use of Flyash in road/flyover embankment construction-Amendment to Clause 305 of the Ministry's Specifications for Road and Bridge Works (Fourth Revision) 2001

In continuation to the Ministry's letter of even no. dated 30th July, 2003 forwarding thereby the amendments to the Clause 305 "Embankment Construction" of the Ministry's specifications for Road and Bridge Works (Fourth Revision), 2001 alongwith a list of Thermal Power Plants generating Fly/Pond Ash in different States, it is stated that Ministry of Environment & Forests, Government of India vide notification No. S.O. 979(E) dated 27th August, 2003 published in the Gazette of India, Part-II, Section 3-Sub-section (ii) (copy enclosed) has made use of Fly/Pond ash compulsory in road embankment construction. Sub. paragraph(g) of paragraph 2 of the notification at page 10 makes the following amendments:

'No agency, person or organization shall, within a radius of 100 kilometres of a thermal power plant undertake construction or approve design for construction of roads or flyover embankments in contravention of the guidelines/specifications issued by the Indian Roads Congress (IRC) as contained in IRC specification No. SP:58 of 2001. Any deviation from this direction can only be agreed to on technical reasons if the same is approved by Chief Engineer (Design) or Engineer-in-Chief of the concerned agency or organization or on production of a certificate of "Pond ash not available" from the thermal power plant(s) (TPPs) located within 100 kilometres of the site of construction. This certificate shall be provided by the TPP within two working days from the date of making a request for ash'.

2. Further vide Sub paragraph(2B) of paragraph 5 at page 13 of the notification, all agencies undertaking construction of roads or fly over bridges including Ministry of Road Transport & Highways (MoRT&H), National Highways Authority of India (NHAI), Central Public Works Department(CPWD), State Public Works Departments and other State Government Agencies, shall within three months from the 1st day of September, 2003.

(a.) make provisions in their tender documents, schedules of approved materials and rates as well as technical documents, including those relating to soil borrow area or pit as per sub-paragraph(7) of paragraph 1; and

(b.) make necessary specifications/guidelines for road or fly over embankments that are not covered by the specifications laid down by the Indian Roads Congress(IRC).

3. In compliance to above, in second part of Para 2 of the Ministry's letter of even number dated 30th July, 2003 referred above, the words 'economically viable lead' stand substituted as 'a radius of one hundred kilometres of a thermal power plant'.

4. It is, therefore, requested that the requisite amendments may please be carried out at the appropriate places and complied strictly.

5. It is requested that quarterly 'Action Taken Report' on use of fly/pond ash in road/flyover embankment construction on NH/other centrally sponsored works in your State/Organisation may please be forwarded to the Ministry addressed to Shri S.S. Nahar, SE(R) S&R. Room No. 340, Transport Bhavan, 1, Parliament Street, New Delhi-110 001.

402/13

(Enclosure of Ministry's letter No. RW/NH-33044/30/2001-S&R(R) dated the 4th December, 2003)

MINISTRY OF ENVIRONMENT AND FORESTS

NOTIFICATION

New Delhi, the 27th August, 2003

S.O. 979(E) – Whereas a draft of certain amendments to the Government of India in the Ministry of Environment and Forests notification number S.O. 763 (E) dated 14th September, 1999 (hereinafter referred to as the said notification) which the Central Government proposes to make under sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, were published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii) dated the 6th November, 2002 vide S.O. 1164 (E), dated the 5th November, 2002 inviting objections and suggestions from all persons likely to be affected thereby before the expiry of sixty days from the date on which copies of the Gazette containing the said draft amendments were made available to the public.

And, whereas copies of the said Gazette were made available to the public on 27th November 2002;

And, whereas all the objections and suggestions received from all persons likely to be affected thereby in respect of the said draft notification have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following amendments to the said notification, namely:-

AMENDMENTS

1. In the said notification, in the preamble, for the words "fifty kilometers", the words "one hundred kilometres" shall be substituted.

2. In the said notification, in paragraph 1,-

(a) in sub-paragraph (1), for the words "fifty kilometers", the words "one hundred kilometres" shall be substituted;

(b) After sub-paragraph (1), the following sub-paragraphs shall be inserted, namely:-

"(1A) Every construction agency engaged in the construction of buildings within a radius of fifty to one hundred kilometres from a coal or lignite based thermal power plant shall use fly ash bricks or blocks or tiles or clay fly ash bricks or cement fly ash bricks or blocks or similar products or a combination or aggregate of them in such construction as per the following minimum percentage (by volume) of the total bricks, blocks and tiles, as the case may be, used in each construction projects, namely:-

(i) 25 per cent by 31st August 2004;

(ii) 50 per cent by 31st August 2005;

(iii) 75 per cent by 31st August, 2006; and

(iv) 100 per cent by 31st August 2007

In respect of construction of buildings within a radius of 50 kilometres from a coal or lignite based thermal power plant the following minimum percentage (by volume) of use of bricks, blocks and tiles shall apply:-

(i) 50 per cent by 31st August 2004;

(ii) 100 per cent by 31st August 2005.

(1B) The provisions of sub-paragraph (1A) shall be applicable to all construction agencies such as Housing Boards and those in the private sector builders of apartments, hotels, resorts and cottages and the like. It shall be the responsibility of the constructions agencies either undertaking the construction or approving the design or both to ensure compliance of the provisions of sub-paragraph (1A) and to submit such returns as may be called for and compliance reports to the State Government or Union Territory Administration.

(c) for sub-paragraph (2), the following sub-paragraphs shall be substituted, namely:-

"(2) The authority for ensuring the use of specified quantity of ash as per sub-paragraph (1) shall be the concerned Regional Officer of the State Pollution Control Board or the Pollution Control Committee, as the case may be

(2A) The concerned State Government shall be the enforcing and monitoring authority for ensuring compliance of the provisions of sub-paragraph (1A)."

(d) in sub-paragraph (3), for the words, brackets and figure "under para (1)" the words] brackets and figure "under sub-paragraph (1)" shall be substituted;

(e) after sub-paragraph (3), the following sub-paragraphs shall be inserted, namely:-

"(3 A) A decision on the application for manufacture of fly ash bricks, block, and tiles and similar other fly ash based products shall be taken within thirty days from the date of receipt of the application by the competent authority. A decision on consent to establish the brick kiln shall be taken by the Pollution Control Board or the Pollution Control Committee, as the case may be within a period of thirty days from the date of receipt of application by it.

(3 B) In case of non-compliance of the provisions of sub-paragraph (1) of paragraph 1, the competent authority, in addition to cancellation of consent order issued to establish the brick kiln, shall move the district administration for cancellation of the mining lease.

(3 C) All authorities sanctioning or renewing any land, soil or lay mining lease shall not grant such lease or extension of lease or renewal to clay brick block for tile manufacturing unit within a radius of one hundred kilometres of the coal or lignite based thermal power plant in cases where the manufacturer does not mix a minimum of 25 per cent by weight of fly ash or pond ash in the manufacturer of bricks or blocks or tiles. The cancellation of mining lease shall be decided by the district administration after giving the holder of such lease an opportunity of being heard. To enable the competent authority to verify the actual use of ash the thermal power plant shall maintain month-wise records of ash made available to each brick kiln.

(3 D) It shall be sufficient compliance of this notification if within twelve months from the date of issue of this notification, manufacturers of clay bricks blocks and tiles located within a radius of 50 to 100 kilometres of a coal or lignite based thermal power plant comply with the provisions of sub-paragraphs (1) and (2) in sub-paragraph (4), after brackets and letters "(AIBTMF)", the words "or a representative of coal brick kiln owners association, federation, group" shall be inserted;

after sub-paragraph (4), the following sub-paragraphs shall be inserted, namely:-

(5) No agency, person or organization shall, within a radius of 100 kilometres of a thermal power plan undertake construction or approve design for construction of roads or flyover, embankments in contravention of the guidelines specifications issued by the Indian Roads Congress (IRC) as contained in IRC specification No. SP: 58 of 2001. Any deviation from this direction can only be agreed to on technical reasons if the same is approved by Chief Engineer (Design) or Engineer-in-Chief of the concerned agency or organisation or on production of a certificate of "Pond ash not available" from the thermal power plant(s) (TPPs) located within 100 kilometres

of the site of construction. This certificate shall be provided by the TPP within two working days from the date of making a request for ash.

(6) Soil required for top or side covers of embankments of roads or flyovers shall be excavated from the embankment site and if it is not possible to do so, only the minimum quantity of soil required for the purpose shall be excavated from soil borrow area. In either case, the topsoil should be kept or stored separately. Voids created due to soil borrow area shall be filled up with ash with proper compaction and covered with topsoil kept separately as above. This would be done as an integral part of embankment project within the time schedule of the project.

(7) No agency, person or organization shall within a radius of 100 kilometres of a coal or lignite based thermal power plant allow reclamation and compaction of low-lying areas with soil. Only pond ash shall be used for compaction. They shall also ensure that such reclamation and compaction is done in accordance with the bye-laws, regulations and specifications laid down by the authorities mentioned in sub-paragraph (3) of paragraph 3.

In the said notification in paragraph 2,

for the marginal heading "Utilisation of ash by Thermal Power Plants" the marginal heading "Responsibilities of Thermal Power Plants" shall be substituted:.

(b) for the opening words, "All coal or lignite based thermal power plants so utilise the ash generated in the power plants as follows:-" "Every coal or lignite based thermal power plant shall take the following steps to ensure the utilisation of ash generated by it, namely:"

(c) in sub-paragraph (1)-

(i) after the words "products such as cement, concrete blocks, bricks, panels", the words "or a combination thereof" shall be inserted:

(ii) the following shall be added at the end, namely:-

"The thermal power plants have to ensure availability of fair quantity of ash to each user including brick kilns".

4. In the said notification, after paragraph 2, the following paragraph shall be inserted namely:-

2A. Utilization of fly ash for reclamation of sea

"Subject to the rules made under the Environment (Protection) Act, 1986, (29 of 1986) reclamation of sea shall be a permissible method of utilization of flyash".

In the said notification, in paragraph 3, the following sub-paragraphs shall be inserted namely:-

(2A) All agencies including the Central Public Works Department and State Government agencies concerned with utilization of fly ash for construction purposes shall within three months from the 1st day of September, 2003 make provisions for the use of fly ash and fly ash based bricks, blocks or tiles or aggregates of them in the schedule of approved materials and rates.

(2B) All agencies undertaking construction of roads of fly over bridges including Ministry of Road Transport and Highways (MORTH), National Highways Authority of India (NHAI), Central Public Works Department (CPWD), State Public Works Departments and other State Government Agencies shall, within three months from the 1st day of September, 2003-

a. make provisions in their tender documents, schedules of approved materials, and rates as well as technical documents, including those relating to soil borrow area or pit as per sub-paragraph (7) of paragraph 1; and
b. make necessary specifications/guidelines for road of fly over embankments that are not covered by the specifications laid down by the Indian Road Congress (IRC).

Footnote: The principal notification was published in the Gazette of India Pt. II, Section III, sub section (ii) vide s.o. 763(E) dated 14.9.1999

402/16

402.7

No. RW/NH-33044/30/2001-S&R(R) *Dated the 28th September, 2004*

To

Secretaries of States/Union Territories, Public Works Department (Dealing with National Highways), All 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/flyover embankment construction

Ministry vide circular of even number dated 4th December, 2003, in compliance to the Ministry of Environment & Forests, Government of India Notification No. S.O. 979(E) dated 27th August, 2003, had issued instructions to all executing agencies undertaking construction of National Highways and other centrally sponsored road and bridge works including State/Union Territory Public Works Departments, National Highways Authority of India and Border Roads Organisation for use of flyash compulsorily in road/flyover embankment constructions in the areas where flyash is available within a radius of 100 kms of a thermal power plant, Copies of the Ministry's circular and Ministry of Environment & Forests notification are enclosed.

2. Recently, an advertisement in the print media has already been brought out by the Ministry emphasizing use of fly/pond ash within a radius of 100 km of a TPP as stated above. A copy of the advertisement as published in the Times of India dated 16th September, 2004 is enclosed for ready reference. This advertisement had also appeared in a number of other national and regional newspapers.

3. It is once again requested that the provision made in the above notification of Ministry of Environment & Forests and Ministry's circular may be strictly complied with and 'Action Taken Report' on use of fly/ pond ash in road/flyover embankment construction on NH/other centrally sponsored works in your State/ Organisation may please be forwarded to the Ministry.

402/17

(Enclosure to Ministry's letter No. RW/NH-33044/30/2001-S&R(R) dated the 28th September, 2004)

Government of India
Ministry of Shipping, Road Transport & Highways
Department of Road Transport & Highways

Use of Fly Ash in Road and Flyover Construction

- Vide Gazette Notification Number S.O.979(E) dated the 27th August, 2003 of the Government of India, Ministry of Environment & Forests, use of Fly/Pond Ash has been made mandatory in construction of Road/Flyover Embankments and in refilling of soil borrow areas within radius of 100 km. of a Thermal Power Plant.
- Fly/Pond Ash is available at Thermal Power Plant without any payment.
- The guidelines for use of Fly/Pond Ash in Road Emmbankments are available in IRC:SP-58-2001.
- The Ministry of Road Transport & Highways vide Circular No.RW/NH-33044/30/2001-S&R(R) dated the 4th December, 2003 has also made use of Fly/Pond Ash mandatory in construction of Road/Flyover Embankments on National Highways and other centrally sponsored works and in refilling of soil borrow areas within radius of 100 km. of a Thermal Power Plant.
- Attention of all Toad Construction Agencies is invited to above Notification of the Ministry of Environment & Forests, Government of India for compliance.

404.29

No. RW/NH-33041/3/2001-S&R *Dated the 13th June, 2002*

To

The Secretaries of States/Union Territories, Public Works Departments, All Chief Engineers of States/ Union Territories (dealing with National Highways), The Chairman, National Highways Authority of India, The Director General (Border Roads), All Regional Officers, Ministry of Road Transport & Highways.

Subject: Use of rubber polymer/rubber modified bitumen in road works on National Highways and other Centrally Sponsored Schemes

Reference is invited to Ministry's letter No. RW/NH-34041/86/90-S&R (Vol.II) dated the 21st April, 1999 on the subject mentioned above with instructions to all States for use of polymer/rubber modified bitumen in surfacing coats of Pre-mix carpet, MSS, Semi-Dense bituminous carpet and bitumnious concrete as the case may be on heavily trafficked sections of National Highways in at least 10 per cent length of periodical renewal programme starting from 1999-2000 in accordance with interim guidelines. Subsequently, in the Ministry's letter No. RW/NH-34041/36/90/S&R (Vol.II) dated 11.1.2000 it was decided that IRC Guidelines for use of Polymer/Rubber Modified bitumen should be adopted for all works on National Highways and other Centrally Sponsored Schemes and also advised the use of polymer/rubber modified bitumen for road works in State sector.

2. Some agencies have expressed that polymer/rubber modified bitumen to the extent of 10 per cent only can be allowed in surfacing of IRQP works which has restricted its use considerably. It is clarified that Ministry's letter dated 21.4.99 on the subject specified only the minimum percentage length for use of polymer/rubber modified bitumen and the user agency could adopt polymer/rubber modified bitumen as per requirement. It has now been decided that keeping in view its advantages, polymer/rubber modified bitumen may be adopted in surfacing for whole length, subject to its availability. It is reiterated that IRC guidelines shall be strictly followed for the provision of polymer/rubber modified bitumen.

3. It is requested that suitable display boards indicating types of polymer/rubber modified bitumen used and date of laying may be placed at the beginning and end of each such stretch. Performance report on the stretch where polymer/rubber modified bitumen has been used may please be furnished to the Ministry every six months.

404.30

No. RW/NH-33044/3/2001/S&R(R) *Dated the 9th December, 2002*

To

The Secretary of all States/UTs (in charge of PWD), The Engineer-in-Charge and Chief Engineers of State PWDs and UTs (dealing with National Highways), The Director General (Border Roads), The Chairman, National Highways Authority of India.

Subject: Use of Rubber Polymer Modified Bitumen in Road Works

Reference is invited to Ministry's letter No.RW/NH-34041/36/90/S&R (Vol. III) dated 21st August, 2000 (copy enclosed) on the subject mentioned above vide which a list of manufacturers/suppliers of modifier and modified bitumen appended was for information and guidance of the user agency and it was clarified that the list of manufacturers/suppliers of modifier and modified bitumen appended was for information and guidance of the user agency/agencies. Circulation of the list should not be taken as this Ministry's endorsement of the product. It was also informed that no further list of suppliers would be circulated and the suppliers

were required to get the material tested at their cost by reputed Central/State Research Organisations/ Institutions appended with the above letter.

2. Some manufacturers of modifier/modified bitumen have brought to the notice of the Ministry that user agencies are not procuring their product as these are not included in the above said list although their products have been tested by reputed Central/State level institutions or academic institutions having adequate facility of testing of modified bitumen. It is reiterated that circulation of the list of manufacturers/suppliers with Ministry's letter dated 21.8.2000 is neither an endorsement of their product nor the list has any approval whatsoever and this was circulated merely for information and guidance of the user. Accordingly it is advised that henceforth all suppliers/manufacturers of modifier/modified bitumen including those included in the list circulated with Ministry's letter dated 21.8.2000 may be asked if not already done to get their product tested by any institution given in Annexure II of Ministry's letter No. RW/NH-34041/36/90-S&R dated 21.8.2000. It is clarified that all suppliers/manufacturers of modifier/modified bitumen whether included in the list circulated with Ministry's letter dated 21.8.2000 or not must be considered at par for the purpose of procurement of modifier/modified bitumen for use on National Highways or Centrally Sponsored Schemes.

3. It shall be the responsibility of the contractor as well as the user Organisation to get themselves satisfied about the quality of modified bitumen before procurement from suppliers and use in work to ensure that the same conforms strictly to provisions of 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-33044/3/2001/S&R(R) dated the 9th December, 2002)

Copy of Ministry of Road Transport & Highway letter No. RW/NH-33041/36/90/S&R(Vol. III) dated the 21st August, 2000 addressed to the Engineer-in-Chief and Chief Engineers of State PWDs and UTs, The Chief Engineers of States and UTs (dealing with NHs), The Chairman, National Highways Authority of India, D.G. (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 material 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 letter 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-40001.	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-I, 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-682302 Distt. 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

ANNEXURE-II

LIST OF INSTITUTIONS FOR TESTING POLYMER MODIFIED BITUMEN

1.	Central Road Research Institute (CRRI) Delhi-Mathura Road, P.O. CRRI, 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 (Uttaranchal)	
4.	Highway Research Station, Gaindy, 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, (Uttaranchal).	
8.	Indian Oil Corporation, R&D Centre, Sector-30, Faridabad.	
9.	M/s. E.I. Du Pont India Ltd. 701-724 Bonanza, 7th Floor, B-Wing, Andheri (East), Mumbai-400059.	Plastomer (Ethylene Terpolymer)
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, Southex Plaza-I, 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 Indian 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-33041/3/2001-S&R(R) *Dated the 10th February, 2003*

To

All Chief Engineer of States/Union Territory PWDs dealing with National Highways and Centrally Sponsored Scheme, Director General (Border Roads), Chairman National Highways Authority of India.

Subject: Use of rubber/polymer modified bitumen on NHs and other centrally sponsored schemes.

The Ministry vide circular No. RW/NH-34041/36/90-S&R dated 21.04.1999 introduced the use of rubber/polymer modified bitumen and stipulated that at least 10% length of surfacing on NHs should be done with modified bitumen. Based upon performance reports of modified bitumen surfacing, the Ministry vide circular No. RW/NH-33041/3/2001-S&R(R) dated 13.6.2002 had further stipulated that modified bitumen may be adopted in surfacing for whole length, subject to its availability. The Ministry had requested performance reports on the use of modified bitumen may be furnished to the Ministry every six months. However, no performance reports are being received in this Ministry in this regard.

2. It may be added that the Ministry receives a number of Parliament Questions on the use of modified bitumen and it becomes difficult to reply them in the absence of feedback from the State PWDs/NHAI/ BRO.

3. In view of the above, it is requested that feedback on performance alongwith the relevant details may be submitted to the Ministry by name to the undersigned by 24th February, 2003 positively in the Proforma given below:

Proforma for reporting use of rubber/polymer modified bitumen on NH/Centrally sponsored schemes (Statewise and Yearwise)

Sl. No.	Year	Kilometres approved (length)	Kilometres completed (length)	Type of modifier used	Performance evaluation on pavement condition	Additional remarks if any
	1999-2000					
	2000-2001					
	2001-2002					
	2002-2003					

404.32

No. RW/NH-33041/3/2001-S&R(R) *Dated the 31st July, 2003*

To

All Chief Engineer of States/Union Territories PWDs dealing with National Highways and Centrally Sponsored Schemes, Director General (Border Roads), Chairman, National Highway Authority of India.

Subject: Use of rubber/polymer modified bitumen on NHs and other centrally sponsored schemes

The Ministry's vide circular of even no. dated 13.06.2002 has decided that modified bitumen may be adopted in surfacing for whole length, subject to its availability. The performance reports on the use of modified bitumen requested vide letter of even no. dated 10th February, 2003 in the prescribed proforma is awaited from most of the States.

2. It may be added that the Ministry receives a number of Parliament Questions on the use of modified bitumen and it becomes difficult to reply them in the absence of feedback from the State PWDs/NHAI/ BRO.

3. In view of the above, it is reiterated that feedback on performance alongwith the relevant details may be submitted to the Ministry by 21st August, 2003 positively in the Proforma given below by name to the undersigned, Room No. 340, Transport Bhavan, 1, Parliament Street, New Delhi.

Proforma for reporting use of rubber/polymer modified bitumen on NH/Centrally sponsored schemes (Statewise and Yearwise).

Year	Type of work (Strengthening/ IRQP/PR)	Kilometres approved (length)	Kilometres completed (length)	Type of modifier used	Performance evaluation on pavement condition	Additional remarks if any
1999-2000						
2000-2001						
2001-2002						
2002-2003						
2003-2004						

404.33

No. RW/NH-33041/3/2001-S&R(R) *Dated the 7th August, 2003*

To

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

Subject: Use of rubber/polymer modified bitumen on National Highways / Centrally Sponsored Works-clarification thereof

It has been brought out to the notice of the Ministry that the modified bitumen being manufactured by M/s Hindustan Colas Limited (HCL), a joint venture company between Hindustan Petroleum Corporation Limited in collaboration with M/s Hindustan Colas SA, France, one of the world leaders, in value added bituminous products are being discriminated against by some agencies in the procurement of modified bitumen. While it has been specified under clause 7.7 of IRC SP-53-2002 that "Modified bitumen from refinery sources or blended at approved central plant or made by appropriate mobile blending plant with site blending facility shall be used for road works" and that "blending at site by simple stirrers is not permitted", it has been brought to the notice of the Ministry that some of the agencies are specifying the use of refinery modified bitumen only. This restrictive interpretation of clause 7.7 of IRC-SP-53-2002 amounts restricting competition and this needs to be avoided scrupulously.

The products of HINCOL have been tested by reputed research institutes and have been certified to conform to IRC-SP-53-2002 for modified bitumen. Further the products of HINCOL, are being manufactured at central plants using equipments and technologies imported from COLAS.

In view of the above, modified bitumen being manufactured by HINCOL be treated at par with refinery modified bitumen.

404.34

No. RW/NH-33041/3/2001-S&R(R) *Dated the 29th August, 2003*

To

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

Subject: Use of rubber/polymer modified bitumen on National Highways/Centrally Sponsored Works-clarification thereof

The circular of even number on the above subject issued by this Ministry on August 7, 2003 may please be kept in abeyance till approved plants are finalized by this Ministry. The inconvenience caused is regretted.

406.17

No. RW/NH-33044/8/2001-S&R(R) *Dated the 7th April, 2003*

To

Secretary, PWDs of all State/U.Ts (dealing with National Highways), Engineer-in-Chief/Chief Engineers of all State Govts./U.Ts (dealing with National Highways), Chairman, National Highways Authority of India, Director General (Border Roads).

Subject: Facilities for Persons with Disabilities

As per Section 45 of "The Persons with Disabilities (Equal Opportunities Protection of Rights and Full Participation) Act 1995", 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 for disability;
(f) warning signals at appropriate places.

2. Ministry vide letter of even no. dated 31.01.2001 had requested that provisions for the facilities mentioned at Para 1(a), (b) (c) and (f) may be made at all the vulnerable points falling on National Highways under your jurisdiction by incorporating these facilities in the design of National Highways wherever justified.

3. "Action Taken Report" on the implementation of the aforesaid provisions is still awaited from your end. Ministry has to appraise the factual position to the Ministry of Social Justice and Empowerment. You are, therefore, requested that "Action Taken Report" may please be forwarded to the Ministry by name to the undersigned, Room No. 328, Transport Bhavan, 1, Parliament Street, New Delhi-110 001 latest by 28th April, 2003.

407.24

No. RW/NH-34066/9/2000-(B) S&R *Dated the 30th July, 2002*

To

The Chief Engineer (All State PWDs dealing with NHs and other centrally sponsored schemes)

Subject: Review of Ministry's Specifications for Road and Bridge Works-4th Revision

Reference: The Ministry's letter of even number dated 10th April, 2002

As you may be aware, the Fourth revision of this Ministry's Specifications for Road and Bridge Works was brought out during August 2001. It has been observed that the above revision needs further changes in respect of some items in line with recent revisions in the various codal stipulations. Suggestions from the Chief Engineers of all State PWDs in this regard were invited in this Ministry's letter under reference. However, no feedback from you has been received so far. You are again requested to intimate this Ministry your comments and problems, if any, being faced in adopting Ministry's Specifications (4th revision) and suggest modifications to the Specifications so as to bring it in conformity with latest codal provisions.

As an action plan is required to be drawn up urgently for revising Ministry's Specifications, your comments/suggestions may please be given within one month positively.

407.25

No. RW/NH-33044/10/2002/S&R *Dated the 26th September, 2002*

To

The Secretary of all States/UTs (in charge of PWD), Engineer-in-Charge and Chief Engineers of State PWDs and UTs (dealing with National Highways), Director General (Border Roads), Chairman, National Highways Authority of India

Subject: Revised Guidelines for selection of National Highway stretches for Improvement to Riding Quality (IRQP) and Periodic Renewal (PR)

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, reduction & vehicle operations Cost (VOC) and consequent appreciation from the users of N.H's. Ministry has continued with the IRQP both under Plan and Non-Plan heads and presently a length of about 33,000 Kms. have good riding surface. It is programmed that balance length of about 12,000 kms. for Non-NHDP portion of National Highway would have good riding surface by March, 2004.

2. Detailed guidelines were issued for selection of stretches of National Highways and specification to be adopted under IRQP and Periodical Renewal Programme vide Ministry's letter of even number dated 25th October, 2000. Based on the feedback and experience gained during the execution of RIQP, need to review the existing guidelines to ensure better performance of stretches to be undertaken under IRQP in future has been felt. Accordingly, in supersession of all previous guidelines/instructions by the Ministry in respect of IRQP/Periodical Renewal, following revised guidelines are suggested for identifying National Highways stretches for improvement of riding quality and periodical renewal.

3. Improvement of Riding Quality Programme

3.1 Criteria for selection of stretches

(i) Stretches of NHs where existing crust has not failed or disintegrated but have uneven and cracked surface requiring profile correction; or

(ii) Two lane roads carrying about 1500 CVD or more and roughness value more than 3500 mm per km; or

(iii) Single lane sections having proper geometrics and carrying traffic more than 1000 CVD and roughness value more than 3500 mm/km; or

(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 not less than 10 kms. unless such stretches are in continuation of stretches included in earlier IRQP/strengthened reach.

3.2 Specifications

(a) **For existing pavement thickness less than 200 mm.**

3x75mm WBM/WMM+20mm PC & Seal Coat or MSS.

(b) **For existing pavement thickness between 200mm and 250mm.**

2x75mm WBM/WMM+20mm Premix Carpet & Seal Coat or MSS.

(c) **For existing pavement thickness between 250mm and 300mm**

75mm BUSG+20mm PC and Seal Coat or MSS.

(d) **For existing pavement thickness of 300mm or more**

(i) 50mm BM+25mm SDBC if undulations/cracks in the existing surface are less than 10% of the surface area

(ii) 75mm BM+25mm SDBC if undulation cracks in the existing surface are between 10-20%.

3.3 Binder in case of SDBC/BC as surfacing shall be polymer/rubber modified bitumen as per IRC:SP-53 2002 "Guidelines on use of Polymer and Rubber Modified Bitumen in Road Construction"

3.4 The above treatment proposed in para 3.2(a), (b) and (c) for existing pavement thickness upto 300mm may be taken as stage construction as designed pavement thickness may be much higher and would be taken up in subsequent stages along with provision of 50mm BM and 25mm SDBC after a period of 2-3 years of completion when WBM/WMM/BUSG layers have settled effectively.

4. Periodical Renewal

4.1 Criteria for selection of stretches:

(i) Road sections carrying traffic (450 to 1500 CVD) and having minor distress and warranting resurfacing only.

(ii) Road sections having been strengthened under earlier programme and the surface condition is in reasonably fair condition and renewal is warranted to preserve the surface and provide better riding quality and the proposed renewal is expected to last at least for a period of 3 years.

(iii) As far as possible, the stretches for periodic renewal should be for a continuous length of about 10 kms. or aggregated to about 10 km for the purpose of estimate and tender and in continuation of reaches improved under IRQP or renewed earlier.

(iv) Specifications for renewal

(a) 20mm MSS/20 mm PC with seal coat for low traffic roads (<1500 CVD)

(b) 25mm SDBC/BC for high traffic roads (>1500 CVD). BC shall be laid only where the existing surface has BC as wearing course.

(c) Binder in case of SDBC/BC as surfacing shall be polymer/rubber modified bitumen as per IRC: SP-53 2002 "Guidelines on use of Polymer and Rubber Modified Bitumen in Road Construction"

(d) Extra quantity for patching/rectification of potholes/undulation may be provided where required as per site conditions in consultation with Regional Officer.

5. Preparation of Existing Surface

Prior to laying bitumen overlays under IRQP/renewal programme, any existing pot holes and cracks shall be scaled in accordance with clauses 3004.2 and 3004.3 respectively of Ministry's Specifications for Roads and Bridge works. Sealing or filling of surface cracks of the existing pavement may be carried out by using any of the following specifications depending upon site requirements:

(i) Fog Spray
(ii) Filling cracks with a binder or a combination of crusher dust and a binder.
(iii) Slurry Seal
(iv) Crack prevention courses
(v) Geosynthetics for filling/sealing of cracks

Note: 1. Crack prevention courses and Geosynthetics shall be used on the existing surface only under IRQP.

2. Profile corrective course for correcting the existing pavement profile, if required, shall be based on estimation of its quantity by taking cross-sections of the existing road at appropriate intervals and provided as per clause 501.8.2 of Ministry's Specifications.

3. For specifications, reference may be made to relevant clause of Ministry's "Specifications for Road and Bridge Works' Fourth Revision-2001.

6. Tendering

The splitting of longer stretches into shorter stretches not less than 5.0 km. each is permissible if warranted from site consideration or to facilitate expenditious completion. However, the State PWD shall project as single estimate for the whole identified stretch with separate package for each split section while sending the estimates. It shall be mandatory to commence and complete each package simultaneously within a period not exceeding 12 months from sanction.

7. Quality Assurance

7.1 Exercise of quality control during execution shall be the responsibility of the contracting agency executing the work who shall establish requisite field testing laboratory for carrying out all necessary tests on various items of work as per clause 903 of Ministry's 'Specifications for Road and bridge Works'. If necessary, suitable provisions for this may be incorporated in the NIT/tender documents.

7.2 Since polymer/rubber modified bitumen shall be used in surfacing like SDBC/BC it is mandatory that contracting agency shall carry out independently necessary tests as per Clause 903, Table 900-4 of Ministry's 'Specifications for Road and Bridge Works' to ensure that modified bitumen used meets requirement laid down in IRC:SP:53-2002.

7.3 Three levels of supervision and quality assurance to be established by the PWD shall be mandatory as mentioned below:

Level I The concerned Engineer-in-charge of the PWD shall also independently carry out all necessary tests as per clause 903 of Ministry's 'Specifications for Road and Bridge Works'. The number and frequency of tests shall strictly be as laid down in the Ministry's Specification.

Level II 10% of all tests shall be conducted in the presence of the concerned Executive Engineer and their test results are countersigned by him.

Level III During execution of work concerned Superintending Engineer shall make a visit at least once in three months and record his detailed inspection results about the quality and progress of work.

7.4 The results of the tests carried out by the contractor as well as the concerned Engineer-in-Charge of the PWD shall be properly documented and kept at site and made available to inspecting officers.

7.5 The expenditure for exercising quality control by the concerned Engineer-in-Charge of PWD and monitoring shall be met out of the provisions of 1% for quality control made in the estimate.

8. Monitoring

8.1 The contract must provide for furnishing of a programme of work in the form of bar chart by the Contractor. This will be monitored by the Engineer-in-Charge/Executive Engineer and the Superintending Engineer in detail and action for removal of any bottleneck, slippages etc. shall be taken. A consolidated

statement will be sent to Regional Officer by respective SE, of PWD's.

8.2 Since polymer/rubber modified bitumen shall be used in surfacing like SDBC/BC, it is suggested that suitable display boards indicating types of polymer/rubber modified bitumen used and date of laying etc. shall be placed at the beginning and end of each such section. Performance of such stretches shall be closely monitored by making observations/tests every six months (i.e. June and December) for a minimum period of 5 years and six monthly performance reports sent to the Ministry.

9. 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 same got approved by the Ministry before December every year. The pre-tender activities should be taken up immediately along with forwarding the estimate to the Ministry so that the work can commence with 30 days of sanction of work and funds allocated are effectively utilized during the financial year.

10. 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 and should be comprehensive to include road marking, traffic signs shoulders drainage and safety measures etc. The estimates for both IRQP and periodical renewal should be got approved from the Ministry.

11. The above instructions may please be intimated to all concerned for immediate compliance.

407.26

No. RW/NH-33044/10/2002-S&R(R) *Dated the 17th February, 2003*

To

All Regional Officers & ELOs of Ministry of Road Transport & Highways.

Subject: Measures of ensure Quality Control on National Highway works and Centrally Sponsored Schemes.

Please refer to Ministry's Circular No. NH-11042/1/87-NH-III/I dated 18th April, 1988 (Code No. 406.13) furnishing detailed guidelines for adopting Quality Assurance System for works on National Highways and under Centrally Sponsored Schemes. Further guidelines for Quality Assurance on Improvement of Riding Quality Programme (IRQP) and Periodic Renewal (PR) works have been issued vide Ministry's letter No. RW/NH-33044/10/2000-S&R dated 26.9.2002. It may be mentioned that Quality Control charges @ 1% of the estimated cost of project is being allowed for ensuring quality of work on such projects. However, it has been observed that proper attention is not being given by some of the Executive Agencies which results in sub-standard construction. It has further been noted that defect appear within one year of the completion of IRQP and PR works. This is inspite of the fact that specific amounts are being earmarked in the estimates for Quality Control.

2. The above issue has been viewed seriously by the Ministry. The main reason for sub-standard work on National Highways and Centrally Sponsored Schemes is negligence, slackness and non-compliance with the Ministry's Specifications and Guidelines. It has, therefore, been decided to involve Ministry's Regional Offices for enforcement of Ministry's Specifications and Guidelines to ensure Quality Control.

3. Accordingly, all Regional Officers may earmark the National Highways under their jurisdiction to the Officers of the Regional Office. These Officers shall regularly inspect the works allocated to them and send a certificate to the Ministry's concerned Project zone confirming that all the requisite Quality Control tests as per Ministry's Specifications/Guidelines have been conducted by the respective Officers of the State PWD. It may further be ensured that each work is inspected and the requisite certificate issued at least once in every two months, positively.

500.21

No. RW/NH-33044/26/2000-S&R(R) *Dated the 14th August, 2002*

To

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

Subject: Specifications for Pipe Culverts in Road Works

The Ministry's 'Specification for Road & Bridge Works' (Fourth Revision) 2001 as per clause 1013 specifies NP 4 Reinforced Concrete Pipes for highway structure conforming to the requirements of IS:458. The use of pre-stressed concrete pipes for drainage, sewerage and culverts are permitted as per IS:784-2001. Accordingly, pre-stressed concrete pipes (NP 4 class) conforming to IS:784-2001 can also be used for highway structures keeping in view site requirements, durability and relative economy.

601.5

No. RW/NH-33044/39/2000/S&R(R.) *Dated the 10th July, 2002*

To

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

Subject: Traffic Census Data on National Highways-Non-Receipt of

Please refer to Ministry's letter of even number dated 12th January, 2001 on the subject mentioned above wherein the need for carrying out timely and regularly traffic census data on National Highways passing through your State and sending the requisite traffic data in proforma T-3 was emphasized. It has been observed that the traffic census data in respect of your State is not being received for all designated traffic count stations on National Highways timely and regularly. Statement showing Status of receipt of traffic data (as on 8.7.2002) for various States for the year 2001 and first half of year 2002 is enclosed.

2. You will kindly appreciate that traffic census data is the basic traffic input required in connection with improvement/development of National Highways. Non-availability of this basic input data is an impediment in formulation of accurate and proper development projects for National Highways in your State. Availability of accurate and periodic traffic census data for a sufficient period of time is also very much necessary for decision taking for privatization of development projects on National Highways in your State.

3. It is, therefore, requested to kindly ensure that traffic census is carried out for all designated traffic count stations for all National Highways timely and regularly twice in a year and requisite data sent to the Ministry regularly.

4. Traffic census data for the first half of the current year (i.e. 2002) on prescribed proforma (T-3) for all designated traffic count stations for National Highways in your State may please be sent to the Ministry latest by 31st July, 2002.

(Enclosure of Ministry's letter No. RW/NH-33044/39/2000/S&R(R) dated the 10th July, 2002)

STATUS REGARDING RECEIPT OF TRAFFIC DATA (AS ON 08.07.02)

Sl. No.	State	State code	Total Nos. of Count Stations	Nos. of count station from Data Received during the last two years				Remark
				2001		2002		
				I	II	I	II	
1	Andhra Pradesh	01	83	87	18	17	-	
2	Assam	02	81	7	27	13	-	
3	Bihar	03	18	-	-	-	-	
4	Gujarat	04	80	54	39	20	-	
5	Haryana	05	21	-	37	-	-	
6	Himachal Pradesh	06	33	14	10	-	-	
7	J&K	07	11	3	1	-	-	
8	Karnataka	08	142	43	38	-	-	

9	Kerela	09	58	6	21	-	-	
10	M.P.	10	85	6	8	5	-	
11	Maharashtra	11	215	35	27	-	-	
12	Manipur	12	13	-	-	-	-	
13	Meghalaya	13	18	3	8	-	-	
14	Nagaland	14	6	1	-	-	-	
15	Orissa	15	50	5	28	-	-	
16	Punjab	16	40	29	27	-	-	
17	Rajasthan	17	17	-	-	-	-	
18	Sikkim	18	1	-	-	-	-	
19	Tamil Nadu	19	132	81	74	2	-	
20	Tripura	20	7	3	-	1	-	
21	Uttar Pradesh	21	48	20	-	-	-	
22	West Bengal	22	20	2	2	-	-	
23	Arunachal Pradesh	24	11	4	1	1	-	
24	Chandigarh	25	1	-	-	-	-	
25	Delhi	27	-	-	-	-	-	
26	Goa	28	17	12	5	-	-	
27	Mizoram	30	23	-	4	-	-	
28	Pondichery	31	2	-	-	-	-	
		Total	**1293**	**415**	**375**	**59**	**-**	

601.6

No. RW/NH-33044/39/2000-S&R(R) ***Dated the 31st January, 2003***

To

All Chief Engineers of States/UTs (dealing with National Highways), The Chairman, National Highways Authority of India, The Director General (Border Roads).

Subject: Traffic Census Data on National Highways – Non-receipt of

Please refer to Ministry's letter of even number dated 10th July, 2002 on the subject mentioned above wherein the need of carrying out timely and regularly traffic census data on National Highways through your State and sending the requisite traffic data in prescribed proforma T-3 circulated vide Ministry's letter No. NH-26011/1/99-PL dated 31st December, 1999 was emphasized. It has been observed that the traffic census data in respect of your State is not being received for all designated traffic count stations on National Highways regularly and in time. Statement showing Status upto December, 2002 for various States are enclosed.

2. You will kindly appreciate that traffic census data is the basic traffic input required in connection with improvement/development of National Highways. Non-availability of this basic input data is an impediment in formulation of accurate and proper development projects for National Highways in your State. Availability of accurate and periodic traffic census data for a sufficient period of time is also very

much necessary for decision taking for privatization of development projects on National Highways in your State.

3. It is, therefore, requested to kindly ensure that traffic census is carried out for all designated traffic count stations for all National Highways timely and regularly twice in a year and requisite data sent to the Ministry regularly.

4. Traffic census data for the second half of the current year (i.e. 2002) on prescribed proforma (T-3) for all designated traffic count stations for National Highways in your State may please be sent to the Ministry latest by 31st March, 2003.

(Enclosure of Ministry's Circular No. RW/NH-33044/39/2000-S&R(R) dated the 31st January, 2003)

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. Kilometerage of C.S. ☐☐☐☐☐☐☐

d. Kilometerage 0.000 at place ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

e. State where kilometerage 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. Officer Areas) ☐ Industrial ☐ Agricultural

(ii) ☐ Urban ☐ Semi-Urban ☐ Rural

i. Terrian (Please ✓) (Depends on cross-slope S of the country around C.S.)

☐ Plain *($0\% \leq S \leq 10\%$)* ☐ Rolling *($10\% \leq S \leq 25\%$)*

☐ Mountainous *($25\% \leq S \leq 60\%$)* ☐ Steep *($\leq S \leq 60\%$)*

5. Time of Census Month ☐☐ Year ☐☐☐☐

6. Duration of Census ☐☐ Days

7. **Average daily traffic** (in number of vehicles)

A. Fast/Power Driven vehicles

a. Car/jeep/taxies/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 ☐☐☐☐☐☐

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) ☐☐☐☐☐☐

8. **Highest Peak hour traffic for the week** (in number of vehicles)

A. Highest Peak Hour ☐☐☐☐ HRS to ☐☐☐☐ HRS

Day of Highest Peak Hour ☐☐☐☐☐☐☐☐☐☐☐☐

B. Fast/Power Driven vehicles

a. Car/jeep/taxies/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:

h. Cycle/Cycle rickshaw/ Other Human Powered Vehicles ☐☐☐☐☐☐

i. Bullock cart/Horse driven cart/ Other Animal Drawn Vehicles ☐☐☐☐☐☐

D. Other Vehicles (if any) (Please Specify) ☐☐☐☐☐☐

9. a. Any factor which may have caused 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
- ☐ Railway/inland waterway/coastal waterway being closed.
- ☐ Construction of new facility on road
- ☐ Deterioration of level of service on road
- ☐ Any other (Please specify)

b. Date (data last reported) Month ☐☐ Year ☐☐☐☐

10. 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 _____

Sl. No.	State	State Code	Total No. of Count Station	Nos of Count station from which data has been received										Remark
				1998		1999		2000		2001		2002		
				I	II	I	II	I	II	I	II	I	II	
1	Andhra Pradesh	01	83	35	57	46		15	75	93	67	64	22	
2	Assam	02	81	19	26	19	16	7	9	7	28	23	7	
3	Bihar	03	18					2	7	-	-	-	-	
4	Gujarat	04	80	33	15				61	54	39	25	1	
5	Haryana	05	21	18		19	21			43	37	33		
6	Himachal Pradesh	06	33	9	9	13	5	14	10	14	10	8	-	
7	J&K	07	11		3			3	1	3	1	5	-	
8	Karnataka	08	142	105	56	30	103	75	44	47	42	91	128	
9	Kerala	09	58					5	5	6	21	2	13	
10	M.P.	10	85	22	31		16	33	16	61	41	5	-	
11	Maharashtra	11	215	27	20	23	24	45	20	39	27	59	-	
12	Manipur	12	13			4		2		-	-	-	1	
13	Meghalaya	13	18	4	3	9	10		2	3	14	7	-	
14	Nagaland	14	6		4	4				1	-	-	-	
15	Orissa	15	50		45		21	38	21	35	50	19	-	
16	Punjab	16	40	36	17	40	33	4	26	33	44	28	6	
17	Rajasthan	17	77					17	11	-	-	-	1	
18	Sikkim	18	1							-	1	1	-	
19	Tamilnadu	19	132				1		26	81	101	107	43	
20	Tripura	20	7			6	6	7		3	1	2	-	
21	Uttar Pradesh	21	48	1					1	20	3	18	12	
22	West Bengal	22	20	12		11		2		7	2	1		
23	Arunachal	24	11	3	9	6		2	2	4	1	1		

	Pradesh													
24	Chandigarh	25	1											
25	Delhi	27	-				4							
26	Goa	28	17	10	10	10	10	5	13	13	5	12	-	
27	Mizoram	30	23		8		8	13	21	4	5	4	-	
28	Pondichery	31	2					2	2	4	2	5	1	
29	Chhattisgarb*									15	6	17	5	
30	Jharkhand*													
31	Uttaranchal*									1	-	3	-	
Total (excluding*)			1293	334	313	240	278	291	373	591	576	560	171	
% Reporting				26%	24%	19%	22%	23%	29%	46%	45%	41%	10%	

601.7

No. RW/NH-35072/1/2003-S&R (R) ***Dated the 22nd November, 2004***

To

Chief Secretaries/Secretaries (PWD/Roads) of all State Government/UTs dealing with National Highways and Centrally Sponsored Schemes, Chief Engineers of States/UTs dealing with National Highways and Centrally Sponsored Schemes, Director General (Border Roads), Chairman, National Highways Authority of India.

Subject: Guidelines for Installation of Weigh-In-Motion (WIM) System and Automatic Traffic Count-cum-Classifiers (ATCCs) on National Highways

Ministry had constituted a Committee of Chief Engineers to suggest the remedial measures to the problem of overloading of vehicles on NHs. The Committee has recommended the installation of the Weigh-in-Motion (WIM) and Automatic Traffic Counter cum Classifier (ATCC) system in combination of High-Speed (HS) & Low-Speed(LS) Weigh-in-Motion system on the selected locations along NHs.

2. In the High Speed WIM System two peizo sensors 3m apart and one induction loop situated symmetrically between the two sensors are installed in the Highway per lane. The sensors and loop are placed at a depth of 20mm and 60mm respectively in the pavement. The peizo sensors measure axle weight, axle speeds and inter-axle spacings. The induction loop detects vehicle presence and measure the vehicle length. The system incorporating the automated verification of operating credentials thus can operate on the main line and have the ability to track the suspected violators and alarm will be triggered for vehicles failing to follow the automated control signals. Technical Specifications and General Requirements for High Speed WIM & ATCCs System is enclosed at Annexure-I.

3. In the Slow Speed WIM System, a steel weighbeam of size (approximately) 3.0m x 0.75m permanently installed into a concrete weighlane. The weighbeam is supported in each corner by 4 load cells. The load cells are hermetically sealed to prevent the ingress of dust and moisture. The vehicle can pass over the weighbeam upto a speed of 5 km per hour with being accurately weighed. Technical Specifications and General Requirements for Slow Speed WIM System is enclosed at Annexure-II.

4. A combination of High Speed WIM and Slow Speed WIM system as described in the enclosed figure may be installed at the selected locations.

5. The priority locations for installation of the system shall be as follows:

i. The stretches having more concentration of heavily loaded commercial vehicles for example approaches to ports, mines, stone

quarries, steel/cement/chemical industries, sugar/cotton/rice/oil mills, oil refineries, centres of agricultural produces etc.
ii. Inter-State borders
iii. Toll plazas

6. It is requested that suitable locations for installation of WIM/ATCC system along National Highways within your jurisdiction may be identified in association with this Ministry's Regional Officer and requirement sent to this Ministry by 31st December, 2004 in the year 2004-05 and by 31st May in subsequent years.

(Enclosure at Ministry's Letter No. RW/NH-35072/1/2003-S&R) (R) dated 22-11-2004)

Annexure-I

Technical Specifications and General Requirements for High Speed WIM & ATCCs System

1.1.1 Type of Vehicle

The Indicative classification of common vehicles based on wheel base is given below.

Type of Vehicle	Probable Range of Wheel Base (in mm)
a) Four Wheelers (cars, jeep, vans)	1801-2675
b) LCV's	2690-3400
c) Trucks/Buses	3401-5600
d) Multiple axle vehicles	Varying number of axles and inter-axle spacings

1.1.2 Functional Requirements

The WIM system shall have capacity to obtain the data of the weight inter-axle spacing, speed and classification based on length of vehicle and number of axles etc. with least possible disruption to the flow of traffic. The system shall be capable to accommodate multiple installations of detectors/sensors. The WIM system shall be capable to collect the axle weight of continuous traffic with vehicle information system in a compressed format complete with date and time, so that information can be down loaded using WIM software. The system shall be capable of working with main electric power of 220 volts AC backed with detachable and rechargeable 12 VDC battery system and automatic on/off facility. The WIM system should be well equipped with a digital camera.

1.1.3 Technical Specifications

The WIM system shall consists of a peizo-loop-peizo configuration in a traffic lane, 3 m apart with a square or rectangle loop to ensure the proper coverage of the lane width systematically placed between the peizo sensors.

1.1.4 Level of Accuracy

Minimum : 90 percent.

1.1.5 Operational Speed:

Range : 5 to 160 kmp

1.1.6 Capabilities:

The system should be capable of conducting and recording the following information.

- Determination of axle loads

- Weight comparison on daily and peak hourly with stored limit tables
- Control traffic signals & diversion signs
- Classification of vehicles (minimum 95%)
- Graphic and tabular presentation of data, classification and overload on daily and peak hourly basis

1.1.7 Components:

The System should consist the following components

- Remote Site Electronic Unit equipped with CC TV and Cabinet
- Lane control system
- Peizoelectric Sensors
- Inductive loops
- Conduits and junction boxes
- Electronics control unit
- Computer with its pheripehral and software
- Uninterruptable power supply backed with battery power input of 12 VDC

1.1.8 Climatic Conditions

The system shall be capable to function in all climatic conditions with ambient temperature range of -5°C to +60°C and under 100% humidity.

1.1.9 System Acceptance:

The system shall be accepted on undertaking given by the seller with following conditions.

- System review-Supplier will demonstrate the entire working system of the instrument as per tender requirement
- Documentation–Technical literature of the system and the software will be supplied by the supplier
- Acceptance Test–The working of the system will be demonstrated to the satisfaction of the purchaser with respect to the instrument & software etc.
- Training–A minimum of five days training of operation and documentation will be imparted by the supplier

1.1.10 Material:

It shall be responsibility of the seller for the quality product and to ensure that all the materials and components used in the system are suitable for the intended purpose and to the satisfaction of the purchaser.

1.1.11 Operational Language:

English

1.1.12 Abstract of Cost:

- Cost of equipment (FOB) including duties and taxes
- Freight & Insurance charges of country of origin
- Installation and commissioning
- Custom duty and other levies
- Cost of spares and consumables for two years

Annexure-II

Technical Specifications and General Requirements for Slow Speed WIM System

1.2.1 Type of Vehicle:

The Indicative classification of common vehicles based on wheel base is given below.

Type of Vehicle	Probable Range of Wheel Base (in mm)
a) LCV's	2690-3400
b) Trucks	3401-5600
c) Multiple axle vehicles	Varying number of axles and inter-axle spacing

1.2.2 Functional Requirement:

The WIM system shall have capacity to obtain the date of the axle weight and accommodate multiple

installations of detectors/sensors. The information system shall be in a compressed format complete with date and time, so that the information can be down loaded using WIM software. The system shall be capable of working with main electric power of 220 volts AC backed with detachable and rechargeable 12 VDC battery system and automatic on/off facility.

1.2.3 Technical Specifications:

The system shall have weighbeam and load cells combination well protected against dust and moisture.

1.2.4 Level of Accuracy:

Speed	Accuracy
Static-0 kmph Gross wt Dynamic	+/-0.5% of applied load
0-5 kmph Gross wt	+/-1.0% of applied load
6-10 kmph Gross wt	+/-1.5% of applied load
10-20 kmph Gross wt	+/2.0% of applied load

The above accuracy specifications shall be based on a minimum of 5 runs of a standard test vehicle, in repeat run over the system.

1.2.5 Operational Speed:

Range : 0-5 kmph

1.2.6 Capacity:

The weighing platform must be capable of weighing the following loads Minimum Designed Structural strength : 70 tonnes
Load limit more than : 40 tonnes

1.2.7 Capabilities:

The system shall be capable for static as well as dynamic vehicle moving at very slow speed of less than 5 kmph, weighing and recording following information.

- Determination of axle loads
- Static weighing accuracy
- Gross weight calculations
- Traffic Signal Control

1.2.8 Components:

The slow speed weigh-in-motion system shall consist the following:

- Weighbeam
- Load cells
- The weigh site electronics
- Barrier
- Monitor
- Printer (receipt and reports)
- Remote weight display and computer connection
- Lightening Protection devices

1.2.9 Climatic Conditions:

The system shall be capable to function in all climatic conditions with ambient temperature range of -5°C to +60C and under 100% humidity.

1.2.10 System Acceptance:

The system shall be accepted on undertaking given by the seller with following conditions

- System review–Supplier will demonstrate the entire working system of the instrument as per tender requirement

- Documentation–Technical literature of the system and the software will be supplied by the supplier
- Acceptance Test–The working of the system will be demonstrated to the satisfaction of the purchaser with respect to the instrument & software etc.
- Training–A minimum of five days training of operation and documentation will be imparted by the supplier.

1.2.11 Material:

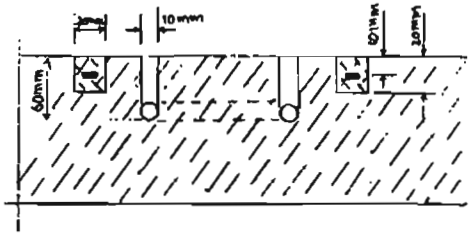
It shall be responsibility of the seller for the quality product and to ensure that all the materials and components used in the system are suitable for the intended purpose and to the satisfaction of the purchaser.

1.2.12 Operational Language:

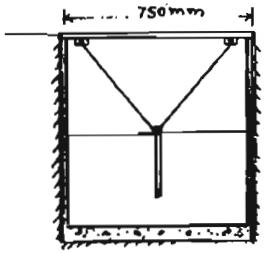
English

1.2.13 Abstract of Cost:

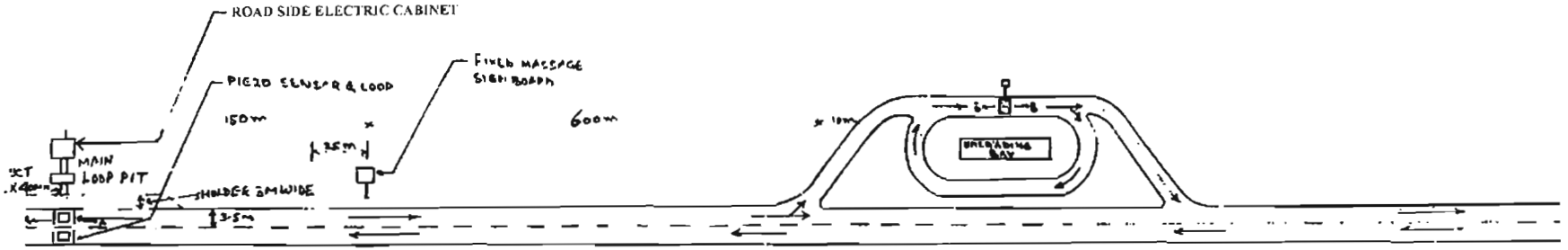
- Cost of equipment (FOB) including duties and taxes
- Freight & Insurance charges of country of origin
- Installation and commissioning
- Custom duty and other levies
- Cost of spares and consumables for two years



DETAILS OF SECTION A-A



DETAILS OF SECTION B-B



HIGH SPEED WEIGH-IN-MOTION - PLAN

SLOW SPEED WEIGH-IN-MOTION - PLAN

NOTE:
1. LOOP PIT IS REQUIRED IF CABINET IS MORE THAN 6 METRES AWAY FROM SHOULDER, CLOSE
2. LAYOUT IS INDICATIVE ONLY

GENERAL LAY OUT OF HIGH AND SLOW SPEED WEIGH-IN MOTION SYSTEM (NOT TO SCALE)

ALL DIMENSIONS ARE APPROXIMATES & indicative

601/24

602.38

No. RW/NH-33044/10/2002-S&R (R) *Dated the 14th February, 2002*

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.

Subject: Road markings on National Highway sections treated with Periodical Renewal (PR) Works

Please refer to Ministry's letter no.RW/NH-33044/10/2000-S&R dt. 25.10.2000 forwarding thereby the guidelines for selection of IRQP (Improvement of Riding Quality Programme) and PR reaches on National Highways. Para 7 of the guidelines envisages that the proposal of IRQP and PR should be comprehensive to include road marking, traffic signs, shoulders, drainage etc.

2. Further, Ministry's letter no.RW/NH-11038/2/97-DO I dt. 4th May, 2001 may be referred to, vide which "Updated Norms for Maintenance of Roads'' have been circulated. The norms are effective from 1st April, 2001. Chapter 6 deals with Recommended Norms for Maintenance. Para 6.2.1(b) is quite specific towards "the Provision for Centreline and Shoulder Markings with Thermoplastic Paints'', the provision of which has been included in the cost analysis of periodical renewals (Ref. Annex XXV - A to H).

3. Road marking increases safety by making it easier for the drivers to discern the run of the road and to position themselves correctly thereon. Markings are particularly valuable during the hours of darkness when the possibility of accidents to occur is the most. For achieving better reflectivity during night, the road marking with thermoplastic paints has been recommended in reaches treated with PR works.

4. It is, therefore, reiterated that the road markings on PR works may invariably be done with thermoplastic paints only on completion of PR works immediately so as to enhance the road safety.

5. It is requested that the contents of this circular may be brought to the notice of all field officers handing NH works for strict compliance.

602.39

No. RW/NH-23030/1/2001-P&M *Dated the 22nd April, 2002*

To

The Secretaries of States/UTs, PWD

Subject: Display of boards on development activities on State roads taken up under Central Road Fund

As you are aware numbers of projects are in progress on different State roads under Central Road Fund. To make awareness amongst the public about the projects taken up on State roads under Central Road Fund, 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
- Central Sector Project (Central Road Fund)
- Name of road and number
- Name of work
- Sanctioned amount
- Date of start
- Date of completion

- PWD Division

Telephone No.

(ii) The boards 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 boards will be displayed for all works undertaken under Central Road Fund.

(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 in States where the local language is other than Hindi/English. Boards may also be fixed in local language. The display boards have to be maintained properly even after the work is completed. The cost of the boards may be charged to the work.

This may please be brought to the notice of the concerned field officers for necessary action.

(Enclosure to Ministry's Circular No. RW/NH-23030/1/2001-P&M dated the 22nd April, 2002)

Government of India
Central Sector Project (Central Road Fund)

Name of road and number

Name of work

Sanctioned amount

Date of completion

PWD Division Telephone No.

602.40

No. RE/NH-33044/10/2002-S&R(R) ***Dated the 14th June, 2002***

To

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

Subject: Upkeep of Road Signs and Kilometre Stones on National Highways

The instances have come to the notice that at several locations, Road Sign Boards installed along National Highways are defaced, damaged, pilfered or not conforming to Ministry's guidelines issued vide letter No. NH-11047/1/87-DOI dated 8th Sept., 1988 (copy enclosed). This causes inconvenience to the road user as the intended information is not available and the very purpose of installation of such Road Signs is defeated. Similarly, Kilometres Stones at several locations are either missing, damaged or not conforming to Ministry's instructions and guidelines. The script and its sequence of the languages on Road Signs/Kilometres Stones installed in many sections of National Highways also do not conform to the Ministry's instructions issued vide letter No. NHIII/24/76 dated 16.06.1981 (Copy enclosed).

2. It is essential to remove the deficiencies like defacing, damages, pilferage etc. of existing Road Signs and Kilometre Stones so that these are maintained in good shape and form to avoid the inconvenience to road users. Periodic cleaning of defaced Road Signs and repainting wherever required should be undertaken as a part of routine maintenance. In "the Updated Norms for Maintenance of Roads'' circulated vide Ministry's letter No.RW/NH-11038/2/97-DOI dated 4th May, 2001, scope of ordinary repair includes proper upkeep/

painting of Sign Boards and Kilometre Stones vide Para 6.2.1(a) of Chapter-VI. It is, therefore, requested that concerned Field Officers may be instructed to carry out inspections of stretches of National Highways in their jurisdiction and all deficiencies noted in existing Road Signs/Kilometre Stones are removed latest by 31.10.2002 and compliance report sent to the Ministry latest by 15.11.2002.

3. The contents of this letter may be brought to the notice of all concerned officers in your Department for strict compliance within the time frame.

(Enclsoure of Ministry's Circular No. RE/NH-33044/10/2002-S&R(R) dated the 14th June, 2002)

Copy of Ministry's letter No. NHIII dated the 16th June, 1981 addressed to All States Governments & Union Territories (Departments dealing with Roads), Director General (Works) CPWD, Director General (Border Roads).

Subject: Kilometres stones and informatory signs on National Highways Script of information and form of numerals policy– regarding.

In supersession of this Ministry's circular letters indicated below, I am directed to forward herewith consolidated instructions on the subject mentioned above for your information and compliance.

1. No. SP-77 (27)/60 Pt. dt. 6.3.70
2. PL-30 (53)/74 dt. 15.7.76

1. Kilometre Stones

(i) According to the revised standard on the subject which is currently under print, the place names should be inscribed on these stones in different scripts in the following sequence, only one script being used on any one kilometer stone. The sequence given below is different from the one being followed in the country up till now.

Km.No.	Script for place names	Place to be shown
0	Roman	Terminal/starting station and next important town
1.	Hindi (Devnagri script)	Next important town
2.	Local Language	Next important town
3.	Hindi (Devnagri script)	Terminal Station
4.	Local Language	Terminal Station
5.	Roman	Terminal/starting station and next important town
6.	Hindi (Devnagri script)	Next important town and so on, repeated in the same order.

(i) Where local script happens to be same as Devnagri, kilometre to the next important town and the terminal station on ordinary kilometer stones could be shown alternately instead of the order given above. The numerals on kilometre stones shall in all cases to be written in international form of Indian numerals i.e. 1,2,3 etc.

(ii) In the interest of travellers convenience, States are requested to follow the same policy in respect of kilometre stones on State Highways.

(iii) Advance information signs at approaches to junctions.

(iv) As regards advance information signs at approaches junctions the following procedure and guidelines may be followed:

(a) All boards should invariably be inscribed in Roman and Devnagri scripts.

(b) In States where the script of the State language is not Devnagri the inscription should be made in the script of the State language also.

(c) In a bilingual area on the borders of two States the inscription should also be in the scripts of both the States languages if these are not Devnagri.

The State Govt. are requested to adopt the above policy for general information signs on State Highways also to avoid inconvenience to road users and tourists.

2. The State Govt. are requested to check up the position on all National Highways and ensure that Km stones and informatory signs are installed in accordance with the above procedure. Deficiencies if any, should be removed immediately as desired by the Parliamentary Committee on Official Language for promotion of use of Hindi.

3. Expenditure on removal of the above deficiencies may be met from the maintenance and repairs grants released to the States from time to time.

(Enclosure of Ministry's Circular No. RE/NH-33044/10/2002-S&R(R) dated the 14th June, 2002)

Copy of Ministry's letter No. NH-11047/1/87-DOI dated the 8th September, 1988 addressed to the Chief Engineers of all States/U.Ts dealing with National Highways.

Sub.: Augmentation of Distance Informatory/Destination Signs on National Highways under a time-bound programme.

At present travellers are getting information about the distance to various destination places mainly through km. stones. To a certain extent they also get guidance about this through other informatory signs like the Advance Direction Signs put up at major intersections. General feeling however is that not enough Destination Signs are being provided along the National Highways at present and as a result the travelling public is often put to inconvenience. There is thus a need for increasing the frequency of distance informatory signs.

2. With the objective of augmenting the informatory signs on the National Highways, it has been decided accordingly that:

(a) Additional Destination Signs will be put up at intervals of 25-50 kms in both directions. Detailed Guidelines for this are enclosed

(b) Simultaneously deficiencies of Advance Destination Signs at intersections and Direction Signs for small towns/villages etc. will be removed vide recommendations contained in IRC Code of Practice for Road Signs.

3. The above task is to be completed as per the following time-bound action programme so as to achieve installation of the requisite additional signs latest by the end of June 1989:

	Activity	Target
(i)	Assessment of the need for such signs by State PWDs and furnishing of estimates by them to the Ministry.	30.10.88
(ii)	Sanction of estimates by the Ministry	31.12.88
(iii)	Installation of signs.	30.6.89

4. The Destination Signs referred to above will generally be of maximum size 1.8 m (width) x 1.2 m (height). Preferably, these should be of refectories type. As per the Ministry's policy, such signs would need to be provided in English, Hindi and the local language where the same is not Hindi. Manner of achieving this is spelt out in detail in the guidelines enclosed.

5. The Minister of State for Surface Transport has desired that the matter be given top priority. It is requested as such that assessment of the requirements of such signs on National Highways in your State may please be made urgently, and necessary estimates for augmenting signs system furnished to this Ministry positively by 30th October, 1988.

(Enclosure to Ministry's Circular No. RW/NH-11047/1/87-DO-I, dt. 8.9.1988)

GUIDELINES FOR INSTALLATION OF DISTANCE INFORMATORY/DESTINATION SIGNS ALONG THE NATIONAL HIGHWAYS

General

1. Informatory signs are used to guide road users about the route ahead, impart information to them about the direction and distance to different destinations and provide other general information that will make the road travel easier, safe and pleasant. Detailed guidelines about application of such signs are available in IRC:67-1977 "Code of Practice for Road Signs''.

2. Present range of informatory signs vide IRC:67-1977 is shown in Figs. 1 to 5 (see Annexure I). These include Advance Direction Signs put up at major intersections (Figs. 1 and 2) showing information about place names as well as the distance. The sign exclusively used for providing information about the distance is Re-assurance Sign shown in Fig. 3, which could also be termed as Destination Sign or Distance Informatory Sign. Other signs in this category are the Direction Signs (Fig. 4) and Place Identification Sign (Fig. 5).

Existing Practice

3. At present travellers are getting information about the distance to various destination places mainly through km. stones. To a certain extent they also get guidance about this through Advance Direction Signs at junctions. However, the current system is proving inadequate since distance informatory signs corresponding to Fig. 3 are not being put up in sufficient number:

Augmentation of Destination Signs

4. In order to achieve to an adequate informatory sign system it is necessary to increase the frequency of destination Signs corresponding to Fig. 3. It has been decided accordingly that such Distance Signs should be provided at intervals of about 25-50 kms along the entire length of National Highways Simultaneously deficiencies of Advance Direction Signs at intersections as well as, Direction Signs for small towns/villages etc, should be removed under a time bound action programme so as to achieve installation of the requisite additional signs by the end of June 1989.

Size and Shape

5. Destination Signs shall be in the form of horizontal rectangles. The size of the sign will depend on the extent of message and height of letters. Generally the size should be limited to maximum 1.8 m (width) x 1.2 m (height). Occasionally the width may have to be increased if the place names are too long. Both width and height can be reduced if less space will suffice.

Application of Destination Signs

6. Destination Signs have to be erected on both sides of the National Highways, separately for each direction to travel. As such, planning of signs for each direction should be done independently. To avoid a cluttering effect, it will be desirable to stagger the signs for the two directions.

7. Destination Signs required at 25-50 km. intervals should be fixed well away from major junctions. In addition, these might be put up 5-10 km beyond major towns in order to re-assure drivers about the route being taken by them.

Colour Scheme and Language of Inscription

8. The signs shall have white background black letters and numerals, and black border. Inscription shall be in English and others language(s) as necessary.

9. As per the Ministry's policy information to the travellers through sign boards is required to be provided in Hindi, English, and also the local language if the same is not Hindi. Thus in States where Hindi is the official language, two destinations could be shown in one board of reasonable size in both English and

Hindi. The nearer destination is shown at the top and the one further at the bottom (See Fig. 6. Annexure II). As an alternative upto 3 or 4 destinations could be shown in one language (as depicted in Fig. 7, Annexure III) and the sign repeated in the second language within 1-2 kms. (as shown in Fig. 9, Annexure V). In State where signs are required in three languages this could be done by having one sign in English and Hindi (as in Fig. 6) and repeating the same sign in local language within about 1-2 kms. (vide Fig.8, Annexure IV). In no case signs in different languages should be fixed too close to one another, otherwise these will become difficult to read.

Size of Letters/Border

10. The size and shape of letters and numerals used for Destination Signs should correspond to IRC: 30-1968 "Standard Letters and Numerals of Different Heights for use on Highway Signs".

11. Preferably letters of 15 cm height should be used for inscription of place names. However, where the message is too long and it is not possible to accommodate the same in a sign board of reasonable size (i.e. 1.8 m x 1.2 m) the size of the letters may be reduced to 12 cm. Letters of still smaller height are not recommended. On expressways bigger letters will be needed.

12. The width of black border should be between 18 and 22 mm and it should be set in about 12 mm from the edge of the signboard. Borders should be rounded at corners. If possible sign panels should be similarly rounded to fit the border.

Word Spacing

13. Spacing between words or a word and numeral in a line should be approximately one to one and a half (1 to 1½) times the letter height used in that line.

14. Inter-line spacing may vary from one-third to one time (1/3 to 1) the letter height.

15. Spacing to the top and bottom borders and lateral spacing to the vertical border, should be approximately equal to the letter height siting of signs.

16. Normally the Destination Signs shall be placed on left hand side of the road at right angles to line of travel of the approaching traffic. Exceptionally these might be fixed on other side of the carriageway if local conditions are such that the signs will not be properly visible, for instance on bill roads.

17. The signs should be so installed that extreme edge of the sign panel is clear of the road formation and there is no possibility of any part of the sign coming in the way of vehicular traffic.

18. Sign installation should be so planned that bottom edge of the sign board is not less than 1.50 metre above the crown of the National Highway pavement.

19. To ensure good visibility, Destination Signs should be fixed on straight reaches of the National Highways as far as possible.

Materials Fabrication of Signs

20. Preferably, Destination Signs shall be of reflectorised type, particularly on sections of National Highways having traffic intensity of about 10,000 PCUs per day or more. Such signs will be made of retro-reflective sheeting of encapsulated type satisfying Clause 801 of the Ministry's Specifications for Road and Bridge Works (1988 Edition). The background will consist of white sheeting with the legend painted over in black.

21. To ensure right quality of sheeting the fabricator of signs should be required to furnish guarantee/ certificate from manufacturer of the sheeting about its performance characteristics as stipulated in Clause 801.3.3 of Ministry's Specification. Fabrication and installation of the signs should be done as provided in Clause 801.

22. In other situation, for instance National Highways carrying low intensity of traffic, the Destination Signs may be made of luminous or ordinary paints though preference should be given to reflectorised signs.

23. The signs should be erected at site with properly designed mountings and foundation. To ensure a sturdy sign assembly, it will be desirable that manufacture and erection of the signs at site should be awarded to the same party on a turnkey basis.

602.41

No. RW/NH-33044/10/2002/S&R(R.) ***Dated the 12th August, 2002***

To

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

Subject: Display Boards on Projects on National Highways

Please refer to Ministry's letter of even number dated the 17th July, 2001 forwarding therewith the guidelines for display boards on all ongoing projects on National Highways. These have since been reviewed and modified guidelines are given hereunder:

2. **Display Boards**

i. These will be displayed at either end of the project. The board shall be fixed in the shoulder portion, on the left traffic direction and facing the traffic.

ii. Format of 'Display Board' is enclosed herewith.
It shows display of information in three languages-regional language, Hindi and English (in that order) and the sizes of letters. In the States, where local language is Hindi, the display board information will be only in two languages i.e. Hindi and English. In that case, the sizes of letters may be proportionately increased.

iii. The Board will be of size 1.80 m (vertical) x 1.6 m (horizontal). The background of the Board will be in traffic yellow colour with lettering in Black colour.

iv. The Boards will be displayed for all works undertaken on National Highways.

v. The display boards shall be maintained properly even after the work is completed.

3. This may please be brought to the notice of all concerned field officers for immediate compliance.

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

602/62 *(Enclosure to Ministry's Circular No. RW/NH-33044/10/2002/S&R (R) dated the 12th August, 2002)*

भारत सरकार

GOVERNMENT OF INDIA

राष्ट्रीय राजमार्ग परियोजना

NATIONAL HIGHWAYS PROJECT

लागत

COST

स्वीकृति

YEAR OF SANCTION

लम्बाई

LENGTH

Note:- The box marked [ ] is for regional language. In the States where the local language is Hindi, this line indicated by box should be omitted.

No. RW/NH-33044/10/2002/S&R(R.) *Dated the 4th February, 2003*

To

All ROs/ELOs of the Ministry (By name)

Subject: Inclusion of Important Issues like Display Boards, Check Barriers, Speed Breakers and Advertisement Hoardings in ROs Monthly Progress Report

The following important issues related to National Highways are being regularly monitored by the Hon'ble Minister of Road Transport & Highways.

(i) **Display Boards:**

Ministry has decided to provide Display Boards on all on-going National Highway (NH) and Central Road Fund (CRF) projects in accordance with modified guidelines issued vide Ministry's letter of even number dated 12th August, 2002. All the State Chief Engineers have also been requested vide D.O. letter of even No. dated 10.12.2002 from DG(RD)&SS to confirm by 31.12.2002 that display boards have been provided.

(ii) **Removal of Check Barriers, Speed Breakers and Advertisement Hoardings:**

National Highways are designed as a high speed facility. It is, therefore, essential that there is no hindrance to the through traffic on National Highways. Erection of Check Barriers hinders free flow of traffic on National Highways. Also, Speed Breakers cause obstruction to traffic apart from being a traffic hazard. Similarly, Advertisement Hoardings along National Highways cause distraction to drivers and have been one of the causes of accidents on National Highways. Since safety of traffic is Ministry's prime concern, a number of circulars, letters and D.O. letters at various levels have been issued by the Ministry to the concerned State authorities for removal of Check Barriers, Speed Breakers and Advertisement Hoardings from National Highways by 31.12.2002. But, it is noted that the confirmation/progress have not been received from many States.

2. In view of the above circumstances and the fact that Ministry receives a number of Parliament Questions on the above issues, the Secretary (RT&H) has directed that the issues of Provisions of Display Boards, Removal of Check Barriers, Speed Breakers and Advertisement Hoardings be included by all the Regional Officers in their Monthly Progress Reports being sent to the Ministry.

3. Accordingly it is requested that the progress on the above issues may please be included in your Monthly Progress Report as per Proforma given below and send one copy of the same to the undersigned directly so that Hon'ble Minister can be appraised accordingly:

(A) Proforma for reporting the removal of advertisement hoardings/check-barriers/speed breakers (Statewise separately for each item)

Sl. No.	Total No. of existing hoardings check-barriers/ speed breakers from NHs in State	No. of hoardings/ check-barriers/ speed breakers already removed from NHs in State	No. of balance hoardings/ check-barriers/ speed breakers to be removed from NHs in State	Firm Target for complete removal in consultation with CE (NH)	Remarks, if any

(B) Proforma for reporting the status of Display Boards on all on-going National Highway and Central Road Fund (CRF) projects (Statewise separate details for NH and CRF works)

Total No. of sanctioned NH & CRF works in progress in State	No. of works on which boards already displayed in State	No. of balance works on which boards are yet to be displayed in State	Firm Target to complete erection of display boards in consultation with State PWD	Remarks, if any

4. It is requested that the above important issues may please be included in the monthly progress reports for the month of February, 2003 onwards, positively.

602.43

No. RW/NH-33044/10/2002-S&R(R) *Dated the 26th May, 2003*

To

All Secretaries dealing with Roads of all States and UTs, Engineer-in-Chief/Chief Engineers dealing with National Highways and other Centrally sponsored Road & Bridges Scheme of all States & UTs, Director General (Border Roads), Chairman, National Highways Authority of India.

Subject: Display of Boards on all works undertaken on NHs/on State Roads under CRF

This has reference to the D.O. of even no. dated 10.12.2002 from DG (RD) & SS to all the State E-in-Cs/Chief Engineers requesting for installation of display of boards on all works undertaken on NHs/on State Roads under CRF. Confirmation report were to be received by December 31, 2002. Except for Border Roads Organisation, Chattishgarh, Nasik and Aurangabad regions of Maharashtra and part report from Tamil Nadu, feed back is yet to be received from the States.

2. During the recent review taken by the Hon'ble Minister (RT&H), the complaints regarding non-compliance of the Ministry's new guidelines issued vide letter of even number dt. 12.8.02 for installation of display boards were received from a number of Hon'ble Members of Parliament and these have been viewed seriously. Ministry has therefore taken the decision that unless confirmation reports regarding installation of display boards on all development activities on National Highways/CRF works are received, the CRF proposal(s) received from the States shall not be entertained in the Ministry.

3. It is therefore, requested that a monthly confirmation reports as per proforma enclosed at Annexure-I may please be forwarded to the Ministry. Report for the month ending May, 2003 should reach the Ministry latest by 15th June, 2003. The report may be sent to the undersigned by name, room No. 328, Transport Bhawan, 1, Parliament Street, New Delhi-110 001 so that Hon'ble Minister can be appraised accordingly.

(Enclosure to Ministry's letter No. RW/NH-33044/10/2002-S&R (R) dated the 26th May, 2005)

ANNEXURE-I

Proforma for reporting the status of all on-going National Highway and Central Road Fund (CRF) projects (Statewise seprate details for NH and CRF Works).

Total No. of sanctioned NH & CRF works in progress in State	No. of works on which boards already displayed in state	No. of balance works on which boards are yet to be displayed in State	Firm Target to complete erection of display boards	Remarks, if any

602.44

No. RW/NH-33044/10/2002-S&R(R) *Dated the 12th June, 2003*

To

All ROs/ELOs of Ministry (By name)

Subject: Inclusion of Important Issues like Display Boards, Check Barriers, Speed Brakers and Advertisement Hoardings in RO's Monthly Progress Report

Please refer to Ministry's letter of even number dated 4.2.2003, forwarding thereby the proformas for reporting monthly progress on the issues mentioned in the subject above. In compliance to the instructions from Secretary (RT&H) these reports are to be included by all the ROs in their Monthly Progress Reports being forwarded to the Ministry.

2. It is observed that inspite of the reminder of even number dated 11.03.2003, the reports are yet to be received at the end of the most of the Regional Officers. It has been viewed seriously in the Ministry, the Hon'ble Minister has to be apprised periodically.

3. It is retierated that the report on the above mentioned issues for the month of May 2003, may kindly be forwarded preferably by Speed Post by name to Shri S.S. Nahar, Superintending Engineer (R) S&R, Room No. 328, Parivahan Bhawan, so as to reach latest by 25th June, 2003 for kind appraisal of the Hon'ble Minister.

602.45

No. RW/NH-33044/17/2002-S&R *Dated the 23rd July, 2003*

To

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

Subject: Laying of Optical Fibre Cables/Telecom ducts on National Highway Land

Ministry has issued the policy guidelines vide letter of even no dated 29.9.2000, for establishing telecom infrastructure on National Highway Land by the authorized licensee in telecom infrastructure and registered infrasturecture providers for laying OFC/telecom ducts. The NH Right of Way permission is to be granted by CE(NH) with the concurrence of Ministry's RO in respect of the NHs under jurisdiction of the State PWD. The permission in respect of NHs held by the NHAI and BRO is to be granted by the designated officer of NHAI and BRO respectively. It was further requested that the Divisional/Executive Engineer (or equivalent) incharge of NHs would keep a register of record of the permission accorded in the prescribed proforma (Annexure) with a copy to the Ministry's RO.

The policy guidelines for laying of OFC/Telecom ducts on NH land are under review at the highest level in the Ministry. The "Action Taken Report" in the prescribed proforma for laying of OFC/Telecom ducts on NH land permitted so far in your State/Jurisdiction may please be forwarded to the Ministry preferably by speed post latest by 14th August, 2003 positively to the Ministry addressed to the undersigned, Room No. 340, Transport Bhavan, Parliament Street, New Delhi-110 001 for further necessary action.

(Enclosure to MORT & H letter No. RW/NH-33044/17/2000-S&R dated 29.09.2000)

602/66

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/NHAI) : _____
3. Name of PWD Division or Equivalent : _____
4. NH Number : _____

Sl. No.	Location (chainage in km)	Left or right side of NH (towards increasing chainage/ km direction)	Section and reach	Kind of service	Name of licensee and contact address	Date of signing of agreement	Date of validity of agreement	Date of last inspection of site	Any deviation from MORT & H standard norms	Remarks

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602.46

No. RW/NH-33044/10/2002-S&R(R) ***Dated the 21st August, 2003***

To

All ROs/ELOs of Ministry (By name) (Except RO Bhubaneshwar, Kolkata, Guwahati, Tiruvananthapuram, Patna, Chennai, Bangalore, Mumbai & Chandigarh).

Subject: Inclusion of Important issues like Display Boards, Check Barriers, Speed Breakers and Advertisement Hoardings in RO's Monthly Progress Report.

Please refer to Ministry's letter of even number dated 04.02.2003, forwarding thereby the proformas for reporting monthly progress on the issues mentioned in the subject above. In compliance to the instructions from Secretary (RT&H), these reports are to be included by all the ROs in their Monthly Progress Reports being forwarded to the Ministry.

2. It is reiterated that inspite of the reminders of even number dated 11.03.03 and 12.06.2003, the requisite report is yet to be received at your end in the Ministry. It has been viewed seriously in the Ministry, the Hon'ble Minister has to be apprised periodically.

3. It is therefore requested that the report on the above mentioned issues for the month of August 2003 may kindly be forwarded preferably by Speed Post by name to Shri S.S. Nahar, Superintending Engineer (R) S&R, Room No. 340, Parivahan Bhawan, so as to reach latest by 5th September 2003 for kind appraisal of the Hon'ble Minister.

602.47

No. RW/NH-33044/10/2002-S&R(R) *Dated the 22nd December, 2003*

To

The Secretaries of States/Union Territories, Public Works Department (Dealing with National Highways), All Chief Engineers of States/Union Territories (Dealing with National Highways), Chairman, National Highway Authority of India, The Director General (Border Roads).

Subject: Display of Boards on all Works undertaken on NHs/State Roads under CRF

The Ministry has been carrying out the number of development works on National Highways and different State Roads under CRF. To make awareness amongst the public about the projects taken up, display boards have to be installed on all ongoing/completed works on NHs and different State Roads under CRF with traffic yellow background and black letter of appropriate size in compliance to the policy guidelines issued vide circular of even no. dated 12.08.2002.

2. The instances have come to notice during inspections that the boards have been displayed on selective basis on the works done nicely and leaving the works done badly without display boards.

3. It is, therefore, reiterated that installation of display boards shall be done without fail on all ongoing/ completed works on NHs/State Roads under CRF strictly in compliance to the Ministry's guidelines issued vide circular of even no. dated 12.08.02. No deviation to these policy guidelines shall be allowed without prior consent of the Ministry.

602.48

No. RW/NH-33044/10/2002-S&R(R) *Dated the 31st December, 2003*

OFFICE MEMORANDUM

Subject: Display of boards on all works undertaken on NHs/State Roads under CRF

This is in continuation to the Ministry's circular of even no dated 26th May 2003 (copy enclosed) on the subject cited above. It has been brought out that many of the States have not been complying with the instructions regarding installation of display boards on all development activities on NHs/States Roads under CRF.

In compliance to the directives from the Secretary (RT&H), the following instructions shall be made part of each sanction and release of funds henceforth.

"The strict compliance of instructions regarding installation of display boards on all development activities on NHs/State Roads under CRF shall be made part of each sanction. The release of funds shall be subject to the confirmation in this regard".

All Project Chief Engineers and Chief Engineer (Planning) are hereby requested to comply with the above instructions strictly.

603.11

No. RW/NH-33044/10/2002-S&R(R) *Dated the 11th February, 2003*

To

Secretaries of States/Union Territories (Incharge of PWD) dealing with National Highways, All Chief Engineers of States/Union Territories PWDs dealing with National Highways and Centrally Sponsored Schemes, Director General (Border Roads), Chairman, National Highways Authority of India.

Subject: Procedure for Numbering of Kilometre Stones and provision of Distance Information Boards on National Highways

It has been observed that some National Highways have been divided into various sections for the purpose of providing kilometre stones. Thus these National Highways have more than one starting/termination station. This causes inconvenience for the road users. Earlier, the Ministry has issued guidelines on the above subject, but they are not being observed. It has, therefore, been decided to streamline the procedure for numbering of Kilometer Stones and provision of Distance Information Boards on the National Highways. Accordingly, in supersession of all earlier circulars on this subject, the following instructions are issued:

(i) The location of kilometer 0 (zero) should be from where a National Highway starts and last kilometer should be where it terminates. The starting and terminating points of National Highways shall be as per the schedule annexed to NH Act, 1956 and subsequent notifications.

(ii) The kilometer stones shall be numbered in a continuous manner and there will only be one starting point (km 0) and only one terminating point (last km) for each National Highway. The change in the road length consequent upon the construction of by-pass/ realignment/geometric improvement etc. (including such construction in advanced stage of progress) shall be incorporated in numbering of kilometer stones in a continuous manner to assimilate with the relocated kilometer stones.

(iii) Every 5th kilometer stone shall show the name and distance of the starting/terminal station in addition to the next important town/ station.

(iv) The Distance Information Boards shall also show distance to the starting/terminal stations of National Highway in addition to other relevant information for users guidance.

2. Some of the National Highways pass through more than one State. It will therefore, be necessary to co-ordinate continuous numbering of National Highways passing through these States. The following procedure shall be followed for this purpose:

(i) In case of National Highways entrusted to the National Highways Authority of India (NHAI), the continuous numbering of National Highway shall be ensured by NHAI subject to para 1(i) above.

(ii) For other National Highways, Project Chief Engineers at Headquarters of the Ministry shall decide the location of km 0 (zero) stone as per para 1(i) above and advice the concerned State Government to start installing km stones from km 0 (zero) onwards. A limit of three months shall be given to the State for numbering of all km stones in the State. The number of last km stone falling in the State will be informed to the next State Government/Project Chief Engineer so that the next State can start numbering of km stones in their State. This exercise will be done by all the States upto the termination point of the National Highway.

3. The expenditure on the above work may be met out from the M&R grants released to the States from time to time.

4. The contents of the letter may be brought to the notice of all concerned officers in your Department for strict compliance within the time frame.

603.12

No. RW/NH-33044/10/2002-S&R(R) *Dated the 20th May, 2003*

To

The Secretaries dealing with Roads of all States and UTs, Engineer-in-Chief/Chief Engineers dealing with National Highways and other Centrally Sponsored Road & Bridges Scheme of all States & UTs, Chairman, National Highways Authority of India.

603/12

Subject: Use of Language on Kilometre Stones and Signboards on National Highways

Please refer to Ministry's circular No. NH-III/P/24/76 dated the 16th June, 1981 wherein Ministry's policy guidelines on the language to be used in inscribing the kilometre stones and signboards on National Highways have been enunciated.

2. All the executing agencies are requested to review the position and deficiency if any, may be rectified in time bound manner to ensure that three language formulate (i.e. English, Hindi and Language of the State concerned) is being followed strictly in inscribing kilometre stones and signboards on National Highways in accordance to the Ministry's guidelines issued vide circular dated the 16th June, 1981.

3. It is, requested that the 'Action Taken Report' on the above may be forwarded to the Ministry latest by 30th June, 2003.

4. The contents of the circular may please be brought to the notice of the all concerned for strict compliance.

603.13

No. RW/NH-33044/27/2004-S&R(R) ***Dated the 24th December, 2004***

To

Chief Secretaries/Secretaries (PWD/Roads) of all States Governments/UTs dealing with National Highways and Centrally Sponsored Schemes, Engineer-in-chief/Chief Engineers of States/UTs dealing with National Highways and Centrally Sponsored Schemes, Director General (Border Roads), Chairman, National Highways Authority of India.

Subject: Use of Language on Kilometre Stones and Sign boards on National Highways

In supersession of the Ministry's circular No. NH/III/P/24/76 dated 16.6.1981 following are the consolidated instructions on the language to be used inscribing the kilometer stones and sign boards on National Highways for strict compliance.

(I) Kilometre stones

(i) According to the revised standard on the subject, the place names should be inscribed on these stones in different scripts in the following sequence:

Km No.	Script/Language for place names	Place to be shown
0	Local and Roman (English)	Terminal/starting station on top in Local language followed by kilometerage and then the name of terminal/starting station will be followed in Roman (English) and below this, the next important town in local language followed by kilometerage in symmetrical manner.
1	Hindi (Devnagri Script) and Local	Next important town in Hindi on top and in local language on bottom and in between kilometerage in symmetrical manner.
2	Local language	Next important town followed by kilometerage
3	Hindi (Devnagri Script) and Local	Terminal Station in Hindi on top and in local language on bottom and in between kilometerage in symmetrical manner.
4	Local language	Terminal Station followed by kilometerage

5	Local and Roman	Terminal station on top in local language followed by kilometerage and then the name of terminal station will be followed in Roman (English) and below this, the next important town in local laugage followed by kilometerage in symmetrical manner.
6	Hindi (Devnagri Script) and local	Next important town in Hindi on top and in local language on bottom and in between kilometerage in symmetrical manner and so on, repeated in the same order

(ii) Where local script happens to be same as Devnagri:

(a) On ordinary kilometer stones, kilometer to the next important town and terminal station could be shown alternately in Devnagri (Hindi) and Roman (English) instead of the order given above. In such case, the size of letters, numerals and spacing etc. shall be followed as prescribed in the IRC:8:-1980.

(b) On Zero and every fifth kilometer stones of bigger size, the local language shall be replaced by Devnagri (Hindi).

(c) The numerals on kilometer stones shall in all cases to be written in international form of Indian numerals i.e. 1,2,3 etc.

(iii) The size of ordinary kilometer stones and bigger kilometer stones shall be followed as prescribed vide Plate Numbers 1 and 2 of IRC:8-1980 respectively.

(iv) On ordinary kilometer stones of small size, the size of letter and numerals shall be as given below:

(a)	Height of letters for Place Name each in both the languages	:	75mm
(b)	Height of numerals for kilometerage	:	100mm
(c)	Height of numerals for Route Numbers	:	100mm
(d)	Top clearance	:	30mm
(e)	Bottom clearance	:	70mm
(f)	Spacing between lines	:	17.5mm

(v) On zero and every fifth kilometer stones of bigger size, the size of letters and numerals shall be as given below:

(a)	Height of letters for Place Name each in both the languages	:	75mm
(b)	Height of numerals for kilometerage	:	100mm
(c)	Height of numerals for Route Numbers	:	100mm
(d)	Top clearance	:	30mm
(e)	Bottom clearance	:	70mm
(f)	Spacing between lines	:	42.5mm

(vi) All other dimensions shall be followed as per IRC:8-1980 guidelines.

(II) Advance information signs at approaches to junctions

(i) As regards advance information signs at approaches junctions, the following procedure and guidelines may be followed:

(a) All boards should invariably be inscribed in local language, Devnagri (Hindi) and Roman (English) scripts. Where local script happens to be same as Devnagri (Hindi), only Devnagri and Roman script may be inscribed on the information sign boards.

(b) In a billingual area on the border of two States, the inscription should also be in the scripts of both the States languages if these are not Devnagri.

(III) The State Govt. are requested to adopt the above policy for Km Stones and general information signs on State Highways also to avoid inconvenience to local road users and domestic tourists.

2. It is requested that concerned Field Officers may be instructed to draw the action plan and all the existing kilometer stones and road signs are to be re-inscribed latest by 31.03.2005 and compliance report sent to the Ministry latest by 21.04.2005.

3. The expenditure on rewriting the Km stones and sign boards may be met out from the M&R grants released from time to time.

4. The contents of this letter may be brought to the notice of all concerned officers in your Department for strict compliance within the time frame.

604.24

No. RW/NH-33037/9/2001/S&R(R) *Dated the 11th December, 2002*

To

The Secretaries of States / Union Territories, Public Works Department (dealing with National Highways), All Chief Engineer of States / Union Territories (dealing with National Highways), The Chairman, National Highways Authority of India, The Director General (Border Roads), All Regional Officers, Ministry of Road Transport & Highways.

Subject: Removal of Speed Breakers-Policy regarding

Please refer to this Ministry's Circular of even number dated 28th June, 1996 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 strips at places like approaches to sharp curves on level crossings, congested or accident prone sections, etc. where control of speed on National Highways is unavoidable. The Ministry's policy has further been reiterated vide Circular dated 13th May, 1998 and in the D.O. letter dated 24th August, 2000 from the Secretary (RT&H).

2. It has been noted that such rumble strips are being provided indiscriminately. It has, therefore, been decided that the location of such rumble strips shall be approved by Chief Engineer (National Highway) who will satisfy himself of the requirement. A copy of such approval letters shall be enclosed to respective Regional Officer of the Ministry.

3. It is requested that position of removal of speed breakers and approval of location of rumble strips on National Highways should be intimated to the Ministry by 31st December 2002.

4. Receipt of the letter may please be acknowledged.

606.4

No. RW/NH-33044/5/2003-S&R(R) *Dated the 13th August, 2003*

To

The Secretaries of States/Union Territories, Public Works Department (dealing with National Highways), All Engineer-in-Chief/Chief Engineers of States/Union Territories (dealing with National Highways), Chairman, National Highways Authority of India, The Director General (Border Roads).

Subject: Identification of High Risk Locations/Spots in respect of National Highways needing Safety Barriers

While reviewing the Road safety scenario at highest level in the Ministry, it has been decided to take corrective measures to improve the road safety in a fixed time frame. Ministry is considering for installation of traffic safety barriers like crash barrier/wire rope fencing etc. at high risk situations like recurring accident spots in hilly terrain, high embankment reaches in approaches to bridges/flyovers, sharp curves, where ponds and canals are in close proximity to highways etc.

2. It is, therefore, requested that the high risk spots in respect of National Highways needing safety barriers may be got identified and forwarded to the Ministry in the enclosed proforma (Annexure) with a copy to RO. In case traffic safety devices like crash barriers, wire rope fencing etc. have already been tried in your State/organisation, the feedback on its performance alongwith relevant information on its availability, constructability, equipment requirement and economics etc. may please also be intimated to the Ministry.

3. The requisite information may please be forwarded to the Ministry preferably by speed post latest by 8th September, 2003 positively addressed to the undersigned Room No. 340, Transport Bhavan, 1, Parliament Street, New Delhi-110 001 for further necessary action.

(Enclosure to Ministry's letter No. RW/NH-33044/5/2003-S&R(R) dated 13th August, 2003)

ANNEXURE

STATE/NHAI/BRO_____

Identification of High Risk Locations/Spots in respect of National Highways needing safety barriers

NH No.	Location (kilometerage) and length in mts.	Indicate briefly the area of application in terms of black or recurring accident spot in hilly terrain/high embankment approach to bridge or flyover/sharp curve/blind spot/proximity with waterway

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703.5

No. RW/NH-35072/4/2001-S&R *Dated the 4th October, 2002*

To

All Secretaries and Chief Engineers of the State Governments/Union Territories dealing with roads

Subject: Planning of roads around National Parks and Sanctuaries

Pursuant to National Wild Life Action Plan (2002-2016), it has been decided that roads should be planned in such a manner that all national parks and sanctuaries are bypassed and integrity of protected area is maintained. Wildlife corridors also need to be avoided or mitigative measures (such as restricting night traffic) need to be employed.

2. These instructions may please be communicated to all concerned in your organization.

1220.1

No. RW/NH-35082/1/2003-S&R(B) *Dated the 1st May, 2003*

To

The Chief Engineers, National Highways, Maharashtra, The Chief Engineer, National Highways, Karnataka, The Chief Engineer, National Highways, Andhra Pradesh.

Subject: Unit Hydrograph Method for estimation of peak discharge for small catchments for the design of bridges in Krishna & Pennar Sub Zone 3(h).

Based on the studies, the Flood Estimation, Planning and Coordination Committee (FEPCC) comprising of the representatives from the Ministry of Railways, Ministry of Road Transport & Highways, Central Water Commission and Indian Meteorological Department has finalized the revised report pertaining to the Krishna & Pennar Sub Zone 3(h). The report has been printed by the Central Water Commission and is enclosed herewith.

It is requested that the above report may kindly be made applicable for calculating the maximum discharge for the design of bridges whose catchments fall in this sub-zone. In this connection, map of the sub-zone contained in the report may please by referred to. In order to create an awareness of the rational method of computation of the maximum discharge among the professional engineers serving within your Department, a wide publicity may please be given. Additional copies if required, may be obtained from the office of the Director, Hydrology (RS) Dte, Central Water Commission, Sewa Bhavan, R.K. Puram, New Delhi-110066 directly.

It is requested that the action taken regarding utilization of this report together with the feedback on the use of the report may kindly be forwarded to this Ministry.

1310.7

No. RW/NH-33044/26/2000-S&R(R) *Dated the 23rd September, 2002*

To

The Secretaries of States/Union Territories, Public Works Departments (dealing with National Highways and other Centrally sponsored schemes), All Chief Engineers of States/Union Territories (dealing with National Highways and other Centrally sponsored schemes), Chairman, National Highways Authority of India, The Director General (Border Roads).

Subject: Use of Portland Blast Furnace Slag Cement for Bridge Works

Ministry's Specification for Road & Bridge Works (Fourth Revision)-clause 1006 stipulates the types of cements to be used for structures. So far, Blast Furnace Slag Cement (BFSC) (conforming to IS: 455) was not being permitted to be used in RCC works. However, use of BFSC (conforming to IS: 455) in RCC has, now, been permitted by IRC 21-2000. Accordingly, after due consideration, this Ministry has also decided to permit the use of BFSC in Reinforced Cement Concrete works, and clause 1006 of Ministry's Specifications for Road and Bridge Works (Fourth Revision) may be amended to include BFSC (conforming to IS: 455) also among the cements permitted for being used in Plain and Reinforced Cement Concrete works.

2. The contents of this circular may, please, be brought to the notice of all concerned Officers in your Organization/department.

1620.8

No. RW/NH-34057/1/2002-S&R(B) *Dated the 23rd July, 2002*

Subject: Pre-Qualification of manufacturers of bearings for bridges on National Highways and other centrally sponsored schemes

Applications are invited from experienced and competent manufacturers of Elastomeric/Pot-cum-PTFE/Steel Rocker & Roller bearings for pre-qualification as suppliers of bearings for bridge works on National Highways and other centrally sponsored schemes. The validity of the existing list of pre-qualified suppliers expires on 31.12.02. Applications have also been invited by the Ministry through advertisements in leading newspapers during the third week of June, 2002. The requirement of supply of such bearings shall be notified to you from time to time by the various agencies responsible for execution of bridges on NHs and other centrally sponsored schemes.

2. Interested firms including those who already stand pre-qualified by the Ministry till 31.02.02 should submit the requisite information in duplicate in the prescribed format (copy enclosed) along with the application for pre-qualification to the Superintending Engineer, Bridges (Standards and Research), Ministry of Road Transport & Highways, Parivahan Bhawan, No.1, Parliament Street, New Delhi-110 001 so as to reach him latest by 16.08.02. The format is also available on this Ministry's website morth.nic.in.

3. Ministry, if it so decides, can go in for separate pre-qualification for specific jobs.

(Enclosure to Ministry's letter No. RW/NH/34057/1/2002-S&R (B) dated the 23rd July, 2002)

APPLICATION FORMAT FOR PRE-QUALIFICATIONOF MANUFACTURING FIRMS AUTHORIZED SUPPLIERS FOR SUPPLY OF BRIDGE BEARINGS FOR BRIDGES ON ZONAL HIGHWAYS & OTHER CENTRALLY SPONSORED SCHEMES

FORM I : ELASTOMERIC BEARING

Details of firm :

1.1 Name and address of firm :
1.2 Name of the authorized contact person
1.3 Phone No. (office & works)
1.4 Fax No. :
1.5 E-mail address :

2. Financial status (Attach relevant audited/authenticated documents to support the statements made here)

2.1 Annual turn over during last five years (year-wise)
2.2 Liquid assets :
2.3 Bank loan facility :

3. Whether the firm has got its own manufacturing unit or is having collaboration with any other manufacturing company (attach relevant documentary evidence of ownership or collaboration as the case may be)

3.1 Address & telephone No. (in case of collaboration with other firm) of the other firm (Full details of the collaborating firm as per this format to be furnished)

4. The year from which the firm is in business of manufacturing of elastomeric bearings

5. Source of procurement of raw materials

(i) Chloroprene, viz. neoprene WRT or Bayprene 110 or Skyprene B-5 or Denka S-40V
(ii) Steel Plates

(Note: An undertaking to the effect that the firm shall be using only the prescribed type elastomer as mentioned above and the elastomer shall be imported directly from the manufacturer or purchased from their authorized representative in India may please by furnished).

6. Manufacturing -

6.1 Method of manufacturing:

6.2 Equipments available with the firm:

SL. NO.	EQIPMENT	WHETHER AVAILABLE OR NOT
i	Mixing mill	
ii	Hydraulic press	
iii	Moulding press	
iv	Shot blasting machine	
v vi	Shearing machine Cutting machine	
vii	Surface grinder	
viii	Kneader	
ix	Vulcaniser	
x	Mechanical power press	
xi	Others, if any	

7. Following information relating to the last five years or since the date of start of business by the firm whichever is less, may please be furnished on yearly basis.

7.1 Quantity, rate and type of elastomer materials procured (in kg) for manufacturing elastomeric bearings (copies of original documents of procurement of elastomer to be attached)

(i) Elastomer
(ii) Steel plates

7.2 Consumption of elastomer (in kg) in production of elastomeric bearings

7.3 Details of bearing manufactured from the raw material procured, viz., nos. of each size of bearings specifying the size.

7.4 Details of supply of elastomeric bearings indicating the name of project, address of the client, nos., size and capacity of the bearings, ex-factory rate of supply (in Rs. per cubic cm) (for both completed/on-going projects) (copies of original vouchers in support of rates, quantity and size to be attached).

7.5 Details of elastomer and finished bearings in stock as on.....(the date of forwarding the application by the firm).

7.6 Performance certificates from clients regarding bearings supplied (copies of original vouchers in support of rates by the client, quantity and size to be attached).

7.7 Test results of finished bearings, if any, carried out during last year from independent reputed laboratory (copies of original test certificates indicating the size of bearings and the relevant project where supplied).

8. Position regarding availability of the services of a full time-

8.1 Qualified chemist for manufacture and conducting tests for chemical composition of elastomer (details viz, name, qualification and experience are to be furnished).

8.2 Design Engineer (details viz., name, qualification and experience are to be furnished) for design, manufacture and testing of finished bearings.

9. It may please be confirmed that periodical tests for ozone resistance of the elastomer are being done by the firm in accordance with cl 915.2.3 of IRC: 83 (part II) 1987 and that the record of the test results are being systematically maintained in the manufacturing unit (copies of original test certificates for the ozone resistance tests carried out during the last 5 years, along with the details indicating the agency through which these tests have been carried out and the periodicity of these tests, needs to be furnished).

ANNEX TO FORM I : ELASTOMERIC BEARINGS

Name of test	Relevant clause of IRC:83-Part-II: 1987	Testing facility in accordance with relevant provisions of the standard	Whether test facility available in-house	Agency from where the tests are got done in case testing facilities are not available in house	Details of equipments available with the firm for carrying out the test	
1	2	3	4	5	6	7
1 Raw materials						
1.1 *Identification of polymer	915.1.5	ASTM D-3677				
1.2 Ash content test (to determine the percentage)	915.1.3	IS: 3400 (Pt. XXII)				
1.3 Specific gravity test		ASTM D-297				
1.4 Polychloroprene content test	915.1.3	ASTM D-297				
* In case of any dispute for estalishing whether any other type of rubber has been mixed with chloroprene in the manufacture of elastomeric bearings, the Deptt. may carry out tests as per ASTM D-3452- 78 (chromatography test) at the manufacturers' cost in a recognised test house.						
2 Physical properties of elastomer						
2.1 Hardness (in IRHD)	915.2	IS:3400 (Pt-II)				
2.2 Minimum tensile strength (in Mpa)	915.2	IS:3400 (Pt-I)				
2.3 Elongation at break (%)	915.2	IS:3400 (Pt-I)				
2.4 Maximum compression set (%)	915.2	IS:3400 (Pt-X)				
2.5 Accelerated ageing	915.2	IS:3400 (Pt-IV)				
2.6 Determination of shear modulus of the elastomer bearings	915.2.1					
2.7 Determination of adhesion strength of elastomer to steel plates	915.2.2	IS:3400 (Pt-XIV Method A)				
2.8 Ozone resistance of elastomer	915.2.3	IS:3400 (Pt-XX)				
3. Test on completed bearings						
3.1 Determination of shear modulus	918.4.1.3					
3.2 Determination of elastic modulus (short term loading)	918.4.1.3					
3.3 Determination of adhesion strength	918.4.1.3					
3.4 Determination of ultimate compressive strength	918.4.1.3					
3.5 Facility for cutting the sides of the test bearings selected at random to 45° for carrying out the adhesion test on finished bearings in accordance with clause 918.4.1.3						

FORM II : POT & POT-CUM-PTEE BEARINGS

Details of firm :

Name and address of firm
Name of the authorized contact person
Phone No. (office & works)
Fax No. :
E-mail address :

Financial status (Attach relevant audited/authenticated documents to support the statements made here)

1. Annual turn over during last five years (year-wise)
2. Liquid assets :
3. Bank loan facility :

Whether the firm has got its own manufacturing unit or is having collaboration with any other manufacturing company (attach relevant documentary evidence of ownership or collaboration as the case may be).

4. Address & telephone No. (in case of collaboration with other firm) of the other firm. (Full details of the collaborating firm as per this format to be furnished).

The year from which the firm is in business of manufacturing of POT/POT-cum-PTFE bearings.

5. Source of procurement of raw materials, viz. Steel, cast steel, PTFE and elastomer etc.

(Note: An undertaking to the effect that the firm shall be using only the prescribed type of elastomer as mentioned above and the elastomer shall be imported directly from the manufacturer or purchased from their authorized representative in India may please be furnished).

6. **Specifications:** Please state whether the firm is experienced and capable to produce bearings conforming to the following specifications:

6.1 **Steel**

6.1.1 Mild steel to be used for the components of bearings shall generally comply with grade B of IS:2062. However, grade C of IS:2062 shall be used for sub zero condition.

6.1.2 High tensile steel used for the components of the bearings shall comply with IS:8500.

6.1.3 Caste steel shall comply with grade 280-520 W or grade 340-570 W of IS:1030.

6.1.4 Steel for forgins used for components of bearings shall comply with class 3, 3A or 4 of IS:1875 and steel forgings shall comply with class 3, 3A or 4 of IS:2004.

6.1.5 Stainless steel shall conform to AISI:316L or $O_2Cr_{17}Ni_{12}Mo_2$ of IS:6911.

6.2 **PTFE:** The raw material for PTFE shall be pure polytetrafluoroethylene free sintered without regenerated materials or fillers. The mechanical and physical properties of unfilled PTFE shall comply with grade A of BS:3784 or equivalent. PTFE shall either be in the form of solid rectangular modular or dimpled large sheet. Use of PTFE sheet with dimples made by machining or drilling from a selected PTFE sheet is not permitted. Clause 925.2 of IRC:83 (Part III)-2002 should be followed.

6.3 **Composite Materials:** For guide of Pot bearings composite material complying with the specifications given in clause 925.3 of IRC:83 (Part III)-2002 may be used.

6.4 **Elastomer:** The elastomer to be used for components of bearings shall comply with clause 925.4 of IRC:83 (Part III)-2002.

6.5 **Internal seal:** For Pot bearings, the internal seal preventing the extrusion of elastomer through the piston cylinder interface under load shall conform to Clause 925.5 of IRC:83 (Part III)-2002.

6.6 **External seal:** For Pot bearings the external seal for preventing ingress of moisture and debris through the gap between the piston and cylinder shall be of suitable profile made of elastomer.

6.7 **Wiper seal:** Wiper seal to be provided for retaining the lubrication and preventing contamination of the sliding surfaces shall be of suitable profile made of elastomer.

6.8 **Fasteners:** Bolts, screws, nuts and lock nuts shall generally conform to IS:1363, IS:1364, IS:1365, IS:2269, IS:3138, IS:6761 as appropriate with mechanical properties conforming to IS:1367. Threads shall generally conform to IS:428. Washers shall conform to IS:2016, IS:6610 as appropriate.

7. **Design:** Design of the Pot and Pt cum PTFE bearings shall conform to clause 926 of IRC:83 (Part III)-2002. The firm should have the services of a design engineer available for this purpose.

8. **General:** All relevant clause of IRC:83 (Part III)-2002 must be followed.

8.1 Manufacturing method and finishing of the bearings should conform to clause 927.2 and 927.3 of IRC:83 (Part III)-2002 respectively.

8.2 Manufacturing tolerances must be as per specifications given in clause 927.1 of IRC:83 (Part III)-2002.

8.3 Inspection and testing of the bearings should conform to clause 928.4 and 928.6 of IRC:83 (Part III)-2002 respectively.

9 **Equipments:** whether available or not with the firm:

Manufacturing equipments	Testing equipments
1. Lathe	1. Loading testing machine for elastomer
2. Milling machine	2. Load testing press
3. Slotting machine	3. Durometer
4. Drilling machine	4. Ageing oven
5. Hydraulic press	5. Dye penetration testing
6. Air compressor	6. Universal tensile testing machine
7. Buffing machine	7. Hardness testing machine for steel
8. Cylindrical grinding machine	8. Tensile testing machine for elastomer
9. Planer machine	9. Cutting press for disc moulding
10. Shaper machine	10. Specific gravity balance
11. Rubber mixing mill	11. Muffle furnace for ash content
12. Kneader	12. Compression set apparatus
13. Shot blasting machine	13. Ultrasonic testing machine
14. Cutting machine for PTFE sheets	14. Equipment for friction test of finished bearing
15. Metrology Equipments (Dimensional control)	15. Equipment for rotation test on finished bearing
16. Others, if any	16. Equipment for surface roughness test for stainless steel sheets.
	17. Others, if any

10 Following information relating to the last five years or since the date of start of business by the firm whichever is less may please be furnished on yearly basis:

10.1 Quantity, rate and type of constituent materials procured (in kg) for manufacturing Pot/Pot-cum-PTFE bearings (copies of original documents of procurement of PTFE/elastomer to be attached).

10.2 Consumption of elatomer (in kg) in production of Pot/Pot-cum-PTFE bearings.

10.3 Details of bearings manufactured from the raw material procured, viz., nos. of each size of bearings specifying the size.

10.4 Details of supply of Pot/Pot-cum-PTFE bearings indicating the name of project, address of the client, nos., size and capacity of the bearings, ex-factory rate of supply (for both completed/on-going projects) (copies of original vouchers in support of rates, quantity and size to be attached).

10.5 Details of elastomer and finished bearings in stock as on.....(the date of forwarding the application by the firm).

10.6 Performance certificates from clients regarding bearings supplied (copies of original vouchers in support of rates by the client, quantity and size to be attached).

10.7 Test results of finished bearings, if any, carried out during last year from independent reputed laboratory (copies of original test certificates indicating the size of bearings and the relevant project where supplied).

11. Position regarding availability of the services of a full time-

11.1 Qualified chemist for manufacture and conducting tests for chemical composition of elastomer (details viz., name, qualification and experience are to be furnished).

11.2 Design Engineer (details viz, name, qualification and experience are to be furnished) for design, manufacture and testing of finished bearings.

FORM III : STEEL ROCKER & ROLLER/SPHERICAL/PIN BEARING

1. Details of firm :

1.1 Name and address of firm :
1.2 Name of the authorized contact person
1.3 Phone No (office & works)
1.4 Fax No. :
1.5 E-mail address :

2. Financial status (Attach relevant audited/authenticated documents to support the statement made here).

2.1 Annual turn over during last five years (year-wise)
2.2 Liquid assets :
2.3 Bank loan facility :

3. Whether the firm has got its own manufacturing unit or is having collaboration with another manufacturing company (attach relevant documentary evidence of ownership collaboration as the case may be).

3.1 Address & telephone No. (in case of collaboration with other firm) of the other firm. (Full details of the collaborating firm as per this format to be furnished).

4. The year from which the firm is in business of manufacturing of bridge bearings under consideration:

5. Source of procurement of raw materials for manufacturing steel/roller-cum-rocker bearing, spherical, pin bearings:

6. **Specifications:** Please state whether the firm is experienced and capable to produce bearings conforming to the following specifications:

6.1 **Steel roller & rocker bearings**

6.1.1 The material to be used in the bearing shall conform to MORT&H Specifications for Road & Bridge Works Clause 2003.1 & Clause 904 IRC:83 (Part-I)-1999.

6.1.2 Design considerations clause 907 IRC:83 (Part-I)- 1999 must be followed.

6.1.3 Testing: Clause 909 IRC:83 (Part-I) - 1999 & clause 2003.5.4 of MORT&H Specifications for Road & Bridge Works must be followed.

6.2 **Spherical bearings:** In general, the spherical bearings must conform to BS:5400 parts 9.1 and 9.2, clause 2004 of MORT &H Specifications for Road & Bridge Works.

6.2.1 **Material specification:** all materials shall be original, unused or non-recycled conforming to relevant specifications as given in clause 2004.4 of MORT&H specifications.

6.2.2 **Acceptance test spherical bearings:** Clause 2004.6 MORT&H Specifications for Roads & Bridge works must be followed.

6.3 **Pin bearings:**

6.3.1 In general, pin bearing shall conform to BS:5400 parts 9.1 & 9.2 and all the relevant clauses of MORT&H Specifications for Road & Bridge Works.

6.3.2 All materials shall be original, unused or non-recycled conforming to relevant specifications as given in Clause 2004.4 or MORT&H specifications:

- Anchor bolts shall be as per relevant IS Specifications;
- The material of pin bearing including rocker plates shall be high tensile steel conforming to IS:8500.

6.3.3 The steel for forging to be used for the components of the bearings shall comply with class 3, 3A or 4 of IS:1875 and steel forgins shall comply with class 3, 3A or 4 of IS:2004.

7. Manufacturing -

7.1 Method of manufacturing:

7.2 Manufacturing tolerances: They should be as per design and approved specifications.

8. **Equipments** – whether available with the firm or not:

Manufacturing equipments	Testing equipments
1. Lathe	1. Brinall Hardness testing machine of 3000 Kgf (hydraulic type)
2. Slotting machine	2. Ultrasonic testing machine
3. Drilling machine	3. Universal testing machine of minimum 40 MT capacity
4. Hydraulic press	4. Surface finish testing machine to check surface finish S.S. sheet
5. Milling machine	5. Chemical test laboratory to find out carbon, sulphur, phosphorus, manganese, silica and other elements
6. Compressor	6. Equipment for friction test on finished bearing.
7. Buffing machine	7. Metalography for checking of micro structure of different materials.
8. Cylindrical grinder	8. Load testing machine of required capacity having facilities of rotation and lateral loading.
9. Planer machine	9. Others, if any.
10. Shaper machine	
11. Shot blasting machine	
12. Welding machine	
13. Metrology equipment	
14. Others, if any	

9. Following information relating to the last five years or since the date of start of business by the firm whichever is less, may please be furnished on yearly basis. For each type of bearings, viz. steel roller-cum-rocker, pin, spherical bearings, following table must be filled.

9.1 Quantity, rate and type of raw materials procured (in kg) for manufacturing particular type of bearings (copies of original documents of procurement to be attached).

9.2 Consumption of raw material in production of particular type of bearing.

9.3 Details of bearings manufactured from the raw material procured, viz., nos. of each size of bearings

specifying the size.

9.4 Details of supply of particular type of bearing indicating the name of project, address of the client, nos., size and capacity of the bearings, ex-factory rate of supply (for both completed/on-going projects) (copies of original vouchers in support of rates, quantity and size to be attached).

9.5 Details of raw material and finished bearings in stock as on.....(the date of forwarding the application by the firm).

9.6 Performance certificates from clients regarding bearings supplied (copies of original vouchers in support of rates by the client, quantity and size to be attached).

9.7 Test results of finished bearings, if any, carried out during last year from independent reputed laboratory (copies of original test certificates indicating the size of bearings and the relevant project where supplied).

10. Position regarding availability of the services of a full time-

10.1 Qualified chemist for manufacture, quality control and conducting chemical and physical testing of bearings (detail viz., name, qualification and experience are to be furnished).

10.2 Design Engineer (details viz, name, qualification and experience are to be furnished) for design, manufacture and testing of finished bearings.

1620.9

No. RW/NH-34057/1/2002-S&R(B) ***Dated the 26th December, 2002***

To

All 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, Secretary, Indian Roads Congress.

Subject: Prequalifications of manufacturers of different types of bearings for bridges on National Highways and other Centrally sponsored schemes

Please refer to this Ministry's letter No. RW/NH/34057/1/95-S&R dated 2.11.2000 and letter No. RW/NH/34057/1/2001-S&R(B) dt. 11.09.01 & 19.09.01 enclosing lists of firms who were pre-qualified for supply of various types of bearings for bridges on National Highways and other Centrally sponsored schemes. Validity date of the aforesaid lists of suppliers has been extended upto 30th June 2003.

1620-10

No. RW/NH-34057/1/2002-S&R(B) ***Dated the 30th June, 2003***

To

All 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, , Secretary, Indian Roads Congress.

Subject: Prequalification of manufacturers of different types of bearings for bridges on National Highways and other Centrally sponsored schemes

Please refer to this Ministry's letter No. RW/NH/34057/1/95-S&R dated 2.11.2000, and letter No. RW/NH/34057/1/2001-S&R(B) dated 11.09.2001 & 19.09.2001 enclosing lists of firms who were pre-qualified for supply of various types of bearings for bridges on National Highways and other Centrally sponsored schemes. It has been decided to extend the validity of the aforesaid lists of suppliers upto December 31st, 2003.

1620.11

No. RW/NH-34057/1/2002-S&R(B) *Dated the 28th December, 2004*

All Chief Engineers of States/Union Territories/PWDs (dealing with National Highways and other Centrally sponsored schemes), The Director General (Border Roads), Chairman, National Highways Authority of India, The Secretary, Indian Roads Congress, The Director, National Institute of Training for Highway Engineers.

Subject: Pre-qualification of manufacturers of different type of bearings for bridges on National Highways and other centrally sponsored schemes – Regarding extension of validity thereof

Please refer to the Ministry's letter No. RW/NH-34057/1/95-S&R dated 02.11.2000, and letter No. RW/NH-34057/1/2001-S&R(B) dated 11.09.2001 & 19.09.2001 enclosing therewith the list of firms who were pre-qualified for supply of various types of bearings for bridges on National Highways and other centrally sponsored schemes. Further to this Ministry's letter of even no. dated 28.09.2004, it has been decided to extend the validity of the aforesaid lists of suppliers up to 30th June, 2005.

1720.9

No. RW/NH-34059/2/2001-S&R(B) ***Dated the 3rd February, 2003***

To

All Chief Engineers of States / UTs / PWDs (dealing with National Highways and other Centrally financed schemes), The Director General (Border Roads), The Chairman, National Highways Authority of India, The Engineer-in-Chief, Municipal Corporation of Delhi.

Subject: Empanelment of suppliers for expansion joints – approval of local manufacturing of edge beam of single strip seal expansion joint;

Ref.: (i) This Ministry's letter No. RW/NH/34059/1/96-S&R dated 30.11.2000 & dated 25.01.2001

(ii) This Ministry's letter No. RW/NH/34059/1/96-S&R dated 20.02.2001

Provision for allowing local manufacturing of expansion joints was incorporated in chapter VI of Revised Interim Specifications (RIS) issued by this Ministry vide letter referred (i) above and all Indian suppliers of expansion joints were informed accordingly. In response M/s Sanfield (India) Ltd., Bhopal-462023 applied for local manufacturing of edge beam of single gap strip-seal expansion joint in India under licence from their foreign principal M/s Watson Bowman Acme, USA. The application of M/s Sanfield (India) Ltd. has been examined as per the provision of RIS and found acceptable. Hence, the application of M/s Sanfield (India) Ltd. for manufacturing of edge beam of single strip seal expansion joint under license of their foreign principal M/s Watson Bowman Acme, USA is being approved subject to the following conditions:

1.1 Sectional profile of the edge beam of single strip seal joint shall be as indicated in page 4-7 of Annex-I of Ministry's letter No. RW/NH/34059/1/96/S&R dated 20.2.2001 and the finished joint including anchorage shall conform to the stipulations in the RIS.

1720.10

No. RW/NH-34059/2/2001-S&R(B) ***Dated the 3rd February, 2003***

To

All Chief Engineers of States/UTs/PWDs (dealing with National Highways and other Centrally financed schemes), The Director General (Border Roads), The Chairman, National Highways Authority of India, The Engineer-in-Chief, Municipal Corporation of Delhi.

Subject: Empanelment of Suppliers for Expansion Joints.

Ref.: Ministry's letter Nos. RW/NH-34059/1/96-S&R dated 30.11.2000, 25.01.2001 & 20.02.2001 & RW/NH-34059/2/2001/S&R(B) dated 14.12.01

In continuation of the Ministry's letters cited above on the above subject, the application of the following vendors for supply of the expansion joints have also been approved in addition to the firms already empanelled.

Sl. No.	Name and address of Indian Supplier	Name of foreign manufacturer/ collaborators	Type of expansion joint	Details of items to be imported from foreign manufacturer /collaborator	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
1	Choksey Chemicals Pvt. Ltd. 111, Industrial Area, Sion, Mumbai-400 022	D.S. Brown Company 300 E, Cherry Street, North Baltimore, Ohio 45872 USA	Compression Seal	Delastic Seal	
2	Archana Structural Engineering (India) Pvt. Ltd., E-2/145, Arera Colony, Bhopal-462 016	PROCEQ SA Riesbachstrasse 57, Postfach 936 CH-8034, Zurich/Switzerland	Compression seal	Tensa Acme profile of compression seal	Width of pocket shall be at least 300 mm on either side of the joint instead of 250 mm proposed by the firm.

2. All other specifications/conditions as brought out in the Ministry's letter No. RW/NH-34059/1/96-S&R dated 30.11.2000, 25.01.2001, 20.02.2001 & RW/NH-34059/2/2001/S&R(B) dated 14.12.2001 will remain the same.

3. It is requested that the contents of this circular be brought to the notice of all officers in your department concerned with bridges on National Highways and other Centrally sponsored schemes.

1720-11

No. RW/NH-34066/9/2000-S&R(B) ***Dated the 21st July, 2003***

To

All the Chief Engineers of States/UT, PWDs, (dealing with National Highway and other Centrally Financed Schemes), Director General (Border Roads), The Chairman, National Highways Authority of India, Secretary, Indian Roads Congress.

Subject: Specification for Expansion Joints

Ref.: (i) This Ministry's letter No. RW/NH-34059/1/96-S&R dt. 30.11.2000

(ii) Clause 2600 of Ministry's specification for Road & Bridge works (4th revision).

Please refer to letters under reference above. The provisions contained in the Revised Interim Specification for expansion joint issued vide this Ministry's letter under reference (i) above, shall prevail over the provisions contained in Section 2600 of the specification for Road & Bridge works (4th revision), in case of any disparity in the specifications of the expansion joints.

2. It is requested that content of this circular may be brought to the notice of all officers in your Department concerned with National Highways and other centrally sponsored schemes.

No. RW/NH-34059(1)/1/2003-S&R(B) *Dated the 28th June, 2004*

To

All Chief Engineers of States/UTs/PWDs (dealing with National Highways and other Centrally financed schemes), The Director General (Border Roads), The Chairman, National Highway Authority of India, The Engineer-in-Chief, Municipal Corporation of Delhi.

Subject: Empanelment of suppliers for expansion joints – Reg. approval for local manufacturing of edge beams of single strip seal expansion joints thereof.

Ref.: (i) This Ministry's letter No. RW/NH/34059/1/96-S&R dt. 30.11.2000 & dt. 25.01.01

(ii) This Ministry's letter No. RW/NH/34059/1/96-S&R dated 20.02.01 and letter No. RW/NH-34059/2/2001-S&R(B) dated 14.12.2001.

Provision for allowing local manufacturing of expansion joints has been incorporated in chapter VI of Revised Interim Specifications (RIS) issued by this Ministry vide letter referred (i) above. The empanelled suppliers namely, M/s Z-Tech India Pvt. Ltd., New Delhi and M/s METCO, Kolkata applied for approval and renewal respectively for local manufacturing of edge beams of single gap strip-seal expansion joints in India under licenses from their foreign principal M/s Z. Tech Inc. Canada and M/s Mageba Sa, Switzerland. The applications of M/s Z-Tech India Pvt. Ltd. and M/s METCO have been considered and approved as per the provision of RIS subject to the following conditions:

1.1 The sectional profile of the edge beam of single strip seal joints manufactured by M/s Z-Tech India Pvt. Ltd. and M/s METCO shall be as indicated in page 1/5 of Ministry's letter No. RW/NH-34059/2/2001-S&R(B) dated 14.12.2001 and page 3/7 of Annex-I of Ministry's letter No. RW/NH/34059/1/96/S&R dt. 20.2.2001 respectively (copies enclosed). The finished joints including anchorage shall conform to the specifications given in the RIS.

1.2 The joints shall conform to the specifications given in the Ministry's RIS on expansion joints dated 30.11.2000 and 25.01.2001 mentioned at ref. (i) above.

1.3 The neoprene sealing element shall continue to be imported from the respective principal and proper record of procurement and supply shall be maintained by the firms and shall be produced for verification by client.

1.4 The client shall ensure that all necessary tests to ensure quality are carried out by the firms as specified in the RIS. The following additional tests shall be carried out before accepting the joints.

(a) Debris expulsion test

(b) Dye powder penetration test for all critical welds.

(c) Random checking of paint film thickness by elachometer

(d) Dimensional checks of the finished joints as per approved drawing.

1.5 Standard procedures of sampling shall be adopted for all the above tests.

1.6 The firms licensed for local manufacturing shall maintain records of all expansion joints supplied by them and shall submit the installation and performance reports of the same to the Ministry annually.

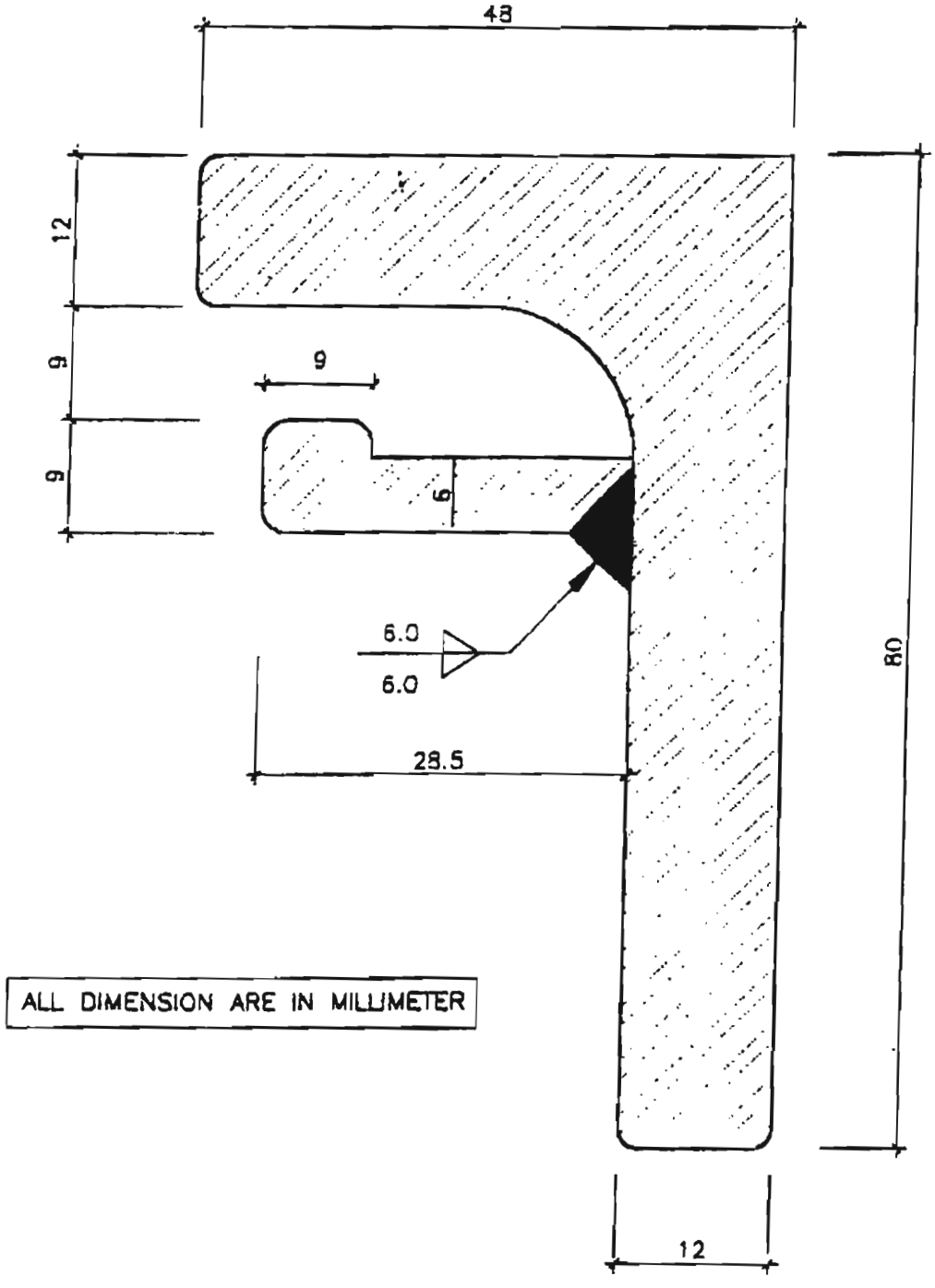
2. The above approval shall be valid for a period of 2 years from the date of issue i.e. up to 28.06.2006. For its renewal a certificate that material being used in the edge beam satisfies requirements as per Ministry's/ IRC specifications shall be furnished from a CSIR laboratory or a laboratory having accreditation from National Accreditation Board for Testing and Calibration Laboratories (NABL) along with performance report referred in para 1.6 above, within three months from the date of expiry of renewal.

3. The contents of this circular may please be brought to the notice of all officers in your department concerned with bridges on National Highways and other Centrally sponsored schemes.

Enclosure to Ministry's letter No. RW/NH-34059/2/2001-S&R(B) dated 14.12.2001

Z-TECH/TECHSTAR STRIP SEAL BRIDGE EXPANSION JOINTS

ANNEXURE
PAGE 1/5



LTD.

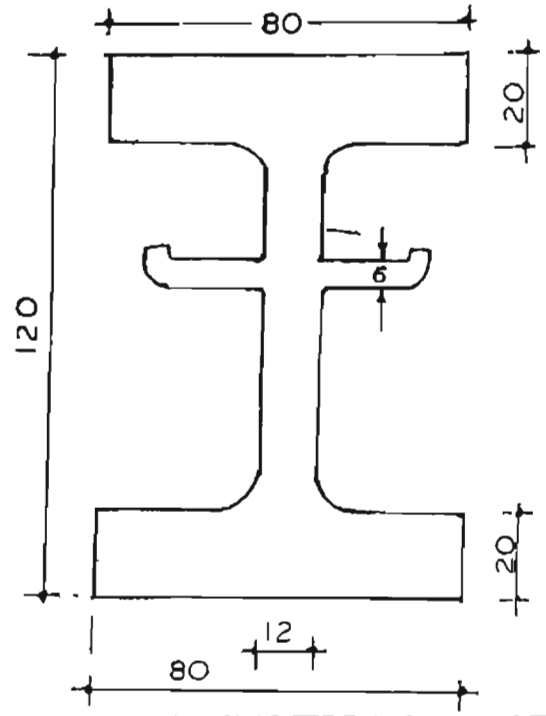
EDGE BEAM (A 3.500) FOR SINGLE STRIP SEAL JOINT

Material quality:
Steel Grade: ASTM A-36 or A-588
Area: 1607 Sq. mm.

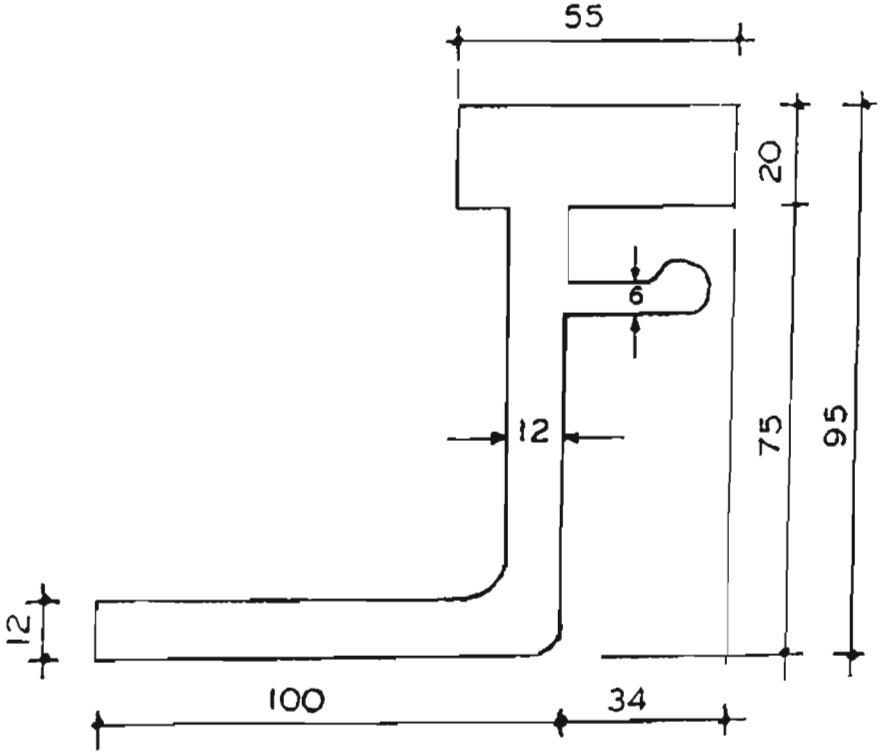
Name of supplier:
Z-TECH (INDIA) PVT. LTD.

Enclosure to Ministry's letter No. RW/NH-34059/1/96-S&R(B) dated 20.2.2001

MAGEBA SA
EDGE BEAMS & CENTRAL BEAMS
FOR EXPANSION JOINTS



CENTRE BEAM/LAMELLA OF MAGEBA
MODULAR EXPANSION JOINT



EDGE BEAM OF MAGEBA STRIP SEAL
(UNITARY & MODULAR JOINT)

Name of Supplier:
METCO PVT. LTD.

1730.5

No. RW/NH-34049/7/2003-S&R(BD) ***Dated the 11th September, 2003***

To

All Chief Engineers of States/UTs/PWDs (dealing with National Highways and other Centrally financed schemes).

Subject: Performance of Bituminous wearing coats laid over bridge deck

Ref.: Minutes of the meeting of the 169th Council Meeting of the IRC held at Pondichery on 15.6.2003.

Kindly refer to the Ministry's letter No. RW/NH/34049/2/2000-S&R (B), dated 14.2.2002 & reminder dated 4.4.2002 vide which all the executing agencies were requested to furnish the following details about Performance of Bituminous wearing coats laid over bridge deck on National Highways.

(a) Name of bridge, NH No. & length of bridge
(b) Specification of bituminous wearing coats adopted in case of deviation from Ministry's Specification, reason/justification thereof;
(c) Year of laying of wearing coats
(d) Status report regarding performance and
(f) Remarks if any

You are also requested to refer the item No.9 of agenda note of the 169th Council. Meeting of the IRC held at pondichery on 15.6.2003, wherein the CEBD has asked to furnish your valuable suggestions in the matter. However, the details of the same from your State has not been received so far in the Ministry. You are therefore requested to expedite the same.

In case of no bituminous wearing coats is laid over bridge deck as per the clause No. 2702.1.1&2 of the MOST specification the NIL report shall be furnished.

1730.6

No. RW/NH-34049/7/2003/-S&R(BD) ***Dated the 15th December, 2003***

To

The Chief Engineer dealing with National Highways & Centrally Financed Schemes (Andhra Pradesh, Assam, Bihar, Goa, Gujarat, Haryana, Himachal Pradesh, J&K, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Manipur, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Uttar Pradesh, Uttaranchal, West Bengal, Dadra & Nagar Haveli, Andaman & Nicobar).

Subject: Performance of Bituminous wearing coats laid over bridge deck

Ref.: Minutes of the meeting of the 169th Council Meeting of the IRC held at Pondichery on 15.6.2003.

Kindly refer to the Ministry's letter No. dated 11.09.2003 vide which it was requested to furnish the details about the Performance of Bituminous wearing coat laid over bridge deck on National Highways.

However, it is noticed that the desired information has not been received, so far from your State. It is therefore, requested to expedite the same.

1920.5

No. RW/NH-34066/7/2003-S&R(B) *Dated the 17th September, 2003*

To

All the Chief Engineers, MORT&H, All ROS/ELOS

Subject: Bridges on National Highways and other Centrally sponsored Schemes:-
Provision of various types of utilities services on Bridges and Design of footpath slab

The guidelines for accommodation of utility services like cables and pipelines for water/gas/petroleum products on National Highway Bridges have been issued by the Ministry on several occasions and the latest circular on the subject being the one issued vide letter No. RW/NH-34066/2/95-S&R dated 25th Oct. 1999 (Copies enclosed). It is clearly mentioned in these circular that as far as possible provisions of utilities on the main bridge structures should be avoided. Instructions to be followed in case carrying of the utilities on bridges becomes inescapable, have also been issued. These guidelines need to be strictly followed for the following reasons:

(i) To avoid the possibility of any damage to the bridge and its approaches and

(ii) To ensure that the location of these utilities on the Structure/substructures does not in any way hinder the inspection, maintenance and repair of the super structure, bearings and the substructure of bridges.

Instances have been reported where cable ducts (continuous G.I. Pipes) have been erected on bridges or along the parapet of the bridges. These continuous pipes are provided without any provisions for expansion/ contraction and are cause for serious concern. They resist free movement of expansion joints. The structural members of bridges are thereby subjected to stress for which they are not designed. It is also reported that in one of the bridges, inspection could not be carried out by the Mobile Bridge Inspection Unit due to these cable ducts.

All project Chief Engineers and Regional Officers are requested that they may please ensure in consultation with the respective State Chief Engineers dealing with National Highways that services are not being allowed indiscriminately on the parapet/any part of the bridges. Safety of the bridges has to be kept in view while permitting various services along bridge. Approvals are to be accorded in this regard with the concurrence of this Ministry's Project Chief Engineers only.

1920/5

(Enclsoure to Ministry's Circular No. RW/NH-34066/7/2003-S&R(B) dated 17.9.2003)

Copy of letter No. RW/NH-34066/2/95-S&R dated the 25th October, 1999 addressed to All the Chief Engineers of States/UTs, PWDs (dealing with National Highways), The Director General (Border Roads), The Chairman, NHAI.

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 circular No. 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 substrucutre 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 pipelines 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:

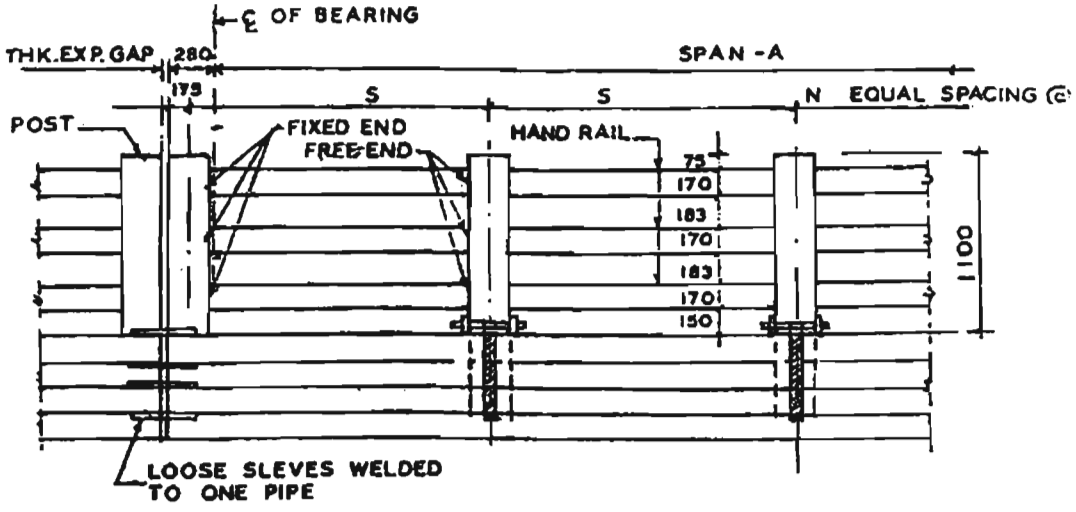
(i) Foothpath slabs shall, henceforth, be cast monolithic with Deck Slabs without any provision of ducts lighter services, like, telephone cables, optical fibre cables, electric cables, etc. should be carried over hangers fixed on the outer side of the railing kerb or below the Deck Slab without affecting 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.

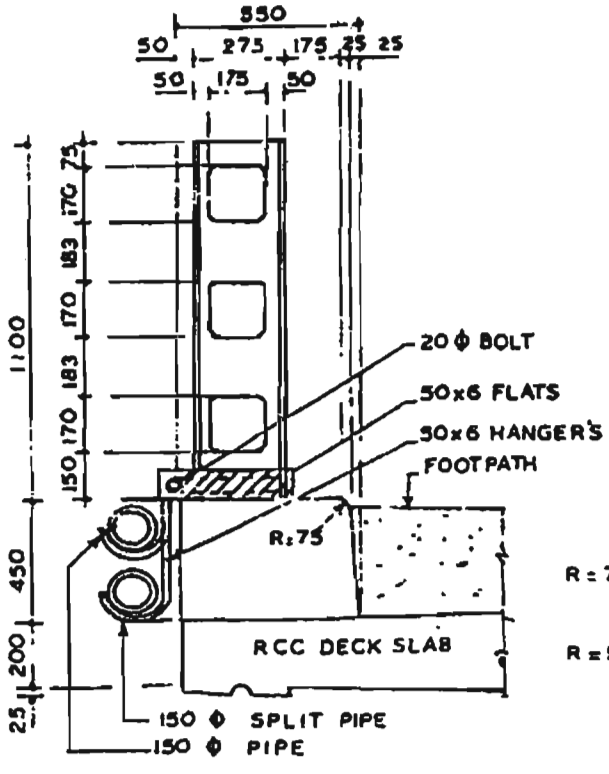
3. It is requested that contents of the circular may be brought to the notice of all officers in your department concerned with National Highways and other centrally sponsored schemes.

Annexure

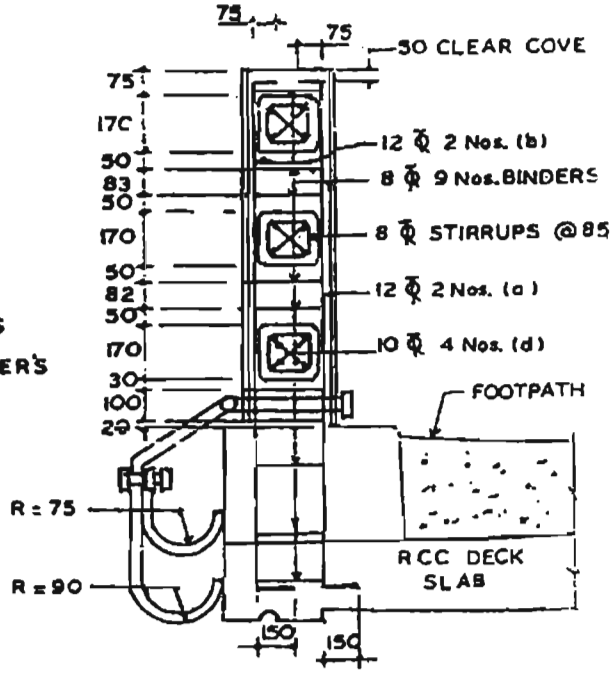
[Enclosure to Ministry's Circular No RW/NH-34066/2/95/S&R dated 25th Oct., 1999]



ELEVATION



SECTION THROUGH POST



SECTION THROUGH POST

4210.11

No. RW-33044/10/2000-S&R(R) ***Dated the 12th June, 2002***

To

The Secretaries of States/Union Territories, Public Works Departments (dealing with National Highways). All Chief Engineers of States/Union Territories (dealing with National Highways). The Chairman, National Highways Authority of India, The Director General (Border Roads), All Regional Officers of the Ministry and All Chief Engineers of Ministry of Road Transport & Highways.

Subject: Floods preparedness - steps to be taken for maintenance of road communications on National Highways.

Reference is invited to Ministry's letter No.PL-67(29)/76-NH-VI dated 28th June, 1979 and letter No. NHIII/P/13/79 dated 4th August, 1991 emphasising the need for keeping the National Highways which form the life lines of road transport in the country, open to traffic at all times. It has been the general experience that the rains and floods affect traffic operation and performance of the road pavements and in certain cases are causes of severe damages. Adverse effects of this kind can, however, be mitigated to a great extent by timely action based on inspection and close monitoring of the road conditions.

2. For safeguarding the National Highways from damages during rains and to ensure effective road communications during the rainy season, following advance action prior to rains may please be taken.

(i) Road side drains, catch water drains, catch pits etc. should be cleaned of all debris;

(ii) Any blockage in the waterways of culverts should be cleared.

(iii) Protection works such as slope pitching on embankments, bed flooring and other erosion control provisions at culverts should be inspected and kept in good order.

(iv) Scoured areas in the vicinity of abutments piers of culverts, which are likely to endanger the safety of the structure, should be appropriately filled with stones/boulders.

(v) Road construction material should be stored in areas not likely to be effected by floods.

(vi) Any potholes, cracks, pitting in the pavement surface should be properly repaired and filled up.

(vii) Berms should be dressed and made good in profile so that water does not stagnate but flows off during rains.

A compliance report regarding advance action taken may please be sent to the Ministry latest by 30th June, 2002.

4210.12

No. NH-18014/7/2000-Pl *Dated the 5th July, 2002*

To

All Chief Engineers of State/Union Territories, PWDs dealing with National Highways and Centrally Aided Projects, The Director General (Border Roads).

Subject: Measures to be taken in the event of disruption of traffic on account of damages to roads, bridges and approaches due to floods.

A copy of the Ministry's Circular No. NH/20017/7/90-PL dated 18.6.1992 listing the emergent action to be taken in the event of disruption of traffic on account of damages to roads, bridges and approaches due to floods which is self explanatory is enclosed herewith for information and necessary action.

2. In order to keep proper liaison with the Ministry in reporting the damages and taking timely remedial actions by the PWDs, a nodal officer of the rank of Superintending Engineer may please be nominated and informated to the Ministry with his complete address and the contact telephone numbers. The State PWD should be ready with their contingent plan to handle the emergent situations and ensure that as far as possible no disruption of traffic during the ensuing monsoons takes place.

3. In some adverse situation whenever a road breach takes place of a bridge/culvert is washed away, there may be a necessity of launching of a Baily Bridge if diversion of traffic through an alternative route is not possible. You are, therefore, requested to intimate the position of availability of Baily Bridges both with the State Govenment and those purchased through the Ministry. The detailed information should include number, length, loading capacity and location of such Baily Bridges. This information should be sent to Ministry immediately by fax latest by 12th July, 2002.

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

4210.13

No. RW/NH-33044/10/2002/S&R(R) *Dated the 22nd January, 2003*

To

Secretaries of all States/Union Territories (Incharge of PWD), All Chief Engineer of States/Union Territories PWDs dealing with National Highways and Centrally Sponsored Schemes, Director General (Border Roads).

Subject: Measures to be taken in the event of disruption of traffic on account of damages to roads and bridges due to Natural Disasters-Nomination of 'Nodal Officer' and information regarding availability of Bailey bridges.

Please refer to Ministry's letter No. NH-18014/7/2000-PL dated 05.07.2002 (copy enclosed) requesting for nomination of 'Nodal Officer' for carrying the Emergency Support Functions in case of a Natural Disaster, The Nodal Officer will keep proper liaison with the Ministry in reporting the damages and taking timely remedial actions by the State PWD.

2. It was also requested in aforesaid Ministry's letter to furnish details of Bailey bridges available with the State.

3. The above details are still awaited. It is, therefore, requested that the following information/details may please be sent to the Ministry immediately latest by 07.02.2003.

(i) Nodal Officer of the rank of Superintending Engineer may please be nominated for Natural Disaster Management and his name, address and telephone/fax numbers intimated to the Ministry.
(ii) The details of Bailey bridges available with the State Government.

4. This may please be treated as most urgent since the matter regarding Natural Disaster Management is being monitored at the highest level in the Ministry.

No. RW/NH-33044/10/2002-S&R(R) *Dated the 31st January, 2003*

To

Secretaries of all States/Union Territories (Incharge of PWD) dealing with roads, All Chief Engineer of States/Union Territories PWDs dealing with National Highways and Centrally Sponsored Schemes, Director General (Border Roads), Chairman, National Highways Authority of India.

Subject: Emergency Support Function concerning Disaster Management Programme

The Government of India has decided to accord highest priority to Disaster Management Programme in order to reduce the impact of disasters on the common man. The primary objective of the Disaster Management Programme is restoration of traffic in case of arranges caused due to disaster in minimum possible time. In case of disruption of traffic due to a natural disaster it will be necessary to clear the debris on roads, plug the breaches on roads and replace the collapsed bridges with temporary briding equipment. For this purpose the Nodal Officer nominated by your office for carrying out Emergency Support Functions shall keep proper liaison with the Ministry in reporting the damages and taking timely remedial action by the State PWD. The Ministry has been emphasizing the emergent measures to be taken for mitigation of adverse effect of natural disasters e.g. floods, earthquakes, landslides and cyclones. Certain amount of advance preparedness is essential before floods/cyclones to face any emergent situation. Adverse effects, however, could be mitigated to a great extent by taking timely action based upon monitoring of vulnerable road stretches and bridges, which would be well known to the field officers. In this connection, the following advance actions are considered necessary.

(i) Identification of vulnerable bridges and stretches of roads likely to be washed away/breached/blocked due to Natural Disaster.

(ii) Special inspection of the vulnerable locations to be carried out before floods/cyclones.

(iii) Identification of relief equipment and material required for immediate restoration of traffic in case of damages due to Natural Disaster.

(iv) Identification of available equipment and material in the area by the concerned field officers and intimating the same to the Nodal Officer.

(v) Occurrence of Natural Disaster should be intimated to the Administration and to the Nodal Officer who will inform the Ministry.

(vi) Nodal Officer should have up-to-date an idea about the works in progress and where equipment/machinery can be obtained in least possible time.

(vii) Nodal Officer should have direct liaison with Meteorological Department of Government of India for immediate advance warning of natural calamities.

2. A list of emergent actions in respect of National Highways to be taken by the field officers in close co-operation with the Nodal Officer of the State is attached at Annex. The list is not exhaustive and depending upon special situations obtaining in each region, the State Authorities may add more essential items of action in the list as needed. For taking emergent action, the field staff may be given extraordinary powers so that they are able to mobilize the machinery and material and execute the works.

3. Similar instructions may be issued for Disaster Management of State Roads, which are primarily the responsibility of respective State Governments.

4. The contents of this letter may be brought to the notice of all field officers for strict compliance.

(Enclosure of Ministry's letter No. RW/NH-33044/10/2002-S&R(R) dated the 31st January, 2003)

Annexure

A list of emergent actions to be taken by the Officer-in-charge of a road section when the same is seriously affected by Natural Disaster leading to partial or total disruption of traffic

1. Intimation about damage:

1.1 In the event of disruption of traffic due to extensive damages or a breach in a NH or washing away of a bridge or its approaches, the first immediate step is to send a message to all higher officers including the district authorities and the 'Nodal Officer' through telegram/telex and also to the Director General (Roads Development), Ministry of Road Transport & Highways, New Delhi informing about the same.

1.2 In addition, in the case of traffic dislocation anticipated for a period of 24 hours or more, the EE/AE in-charge of the section shall ensure that the concerned officer in the Ministry of Road Transport & Highways is also informed of the situation on telephone. If the telephone services are dislocated the field officers may obtain the help of district authorities to use wireless facility for establishing contact with the State CE's, who in turn shall immediately inform the Ministry over telephone.

1.3 In some cases, particularly of major dislocations on important NHs, when all other possible communication channel have failed, the services of a special messenger may be utilized to somehow reach the State HQs who in turn may inform the Ministry about the position.

1.4 This shall be followed by a summary report indicating the particulars of the damage and causes of the same, the period over which the affected reaches are likely to be closed to traffic, the restoration measures already undertaken and further proposed to be taken the alternative arrangement made for diversion of traffic as also the approximate amount of likely liability. A copy of this report shall also be sent to the concerned Audit Officers.

1.5 Thereafter, the Ministry shall be given message at regular intervals indicating the latest situation on the progress of restoration till normal traffic is restored.

2. Measures to be adopted in case of a breach in road section.

2.1 Sections of National Highways which are vulnerable to flood attacks with possibility of breaches shall be identified before hand and the road section shall be kept under special watch during the monsoon to prevent such breaches.

2.2 For this purpose, advance collection of sand bags, boulders, empty bitumen drums, hume pipes, salballah piles, etc. shall be made at a suitable sites so that these could be easily transported to the point of breach and used quickly.

2.3 The general preparedness for floods shall also cover a critical inspection of all longitudinal and cross drainage works prior to the onset of monsoon to see the general condition of maintenance and repair of protection works and to prevent choking and clogging of drains during floods. Roadside ditches and borrowpits shall be continuously connected for quick drainage of water to suitable outfalls. High embankment-pitching, towels etc. shall also be inspected for requirement of repairs.

2.4 The officer-in-charge of a flood-prone section of NH shall also keep close liaison with State Flood Control Authorities and inform them about the vulnerable section in canal or tank bundhs so that they can take advance preventive action to avoid breaches in the same which may otherwise lead to flooding of the NH.

2.5 Diversion roads required in the event of breaches shall be identified in advance so that traffic may be diverted at short notice, if necessary. Suitable direction boards shall be kept ready for this purpose. When such diversion route is in a State road, appropriate coordination shall be kept with the State authorities so that this road remains in a condition fit for carrying NH traffic temporarily in time of emergency.

2.6 In addition to signboards put on roads, whenever a road is closed to traffic, wide publicity shall be given to the news through the common news media and also through TV and radio depending upon the importance of road section and the gravity and duration of the flood.

2.7 During the actual onslaught of floods a constant vigil shall be maintained all along the vulnerable sections of the road to keep a close watch on the trend or rise in water level, on signs or weakness in embankment and mark out locations where flood water rises fast to danger level. Section showing inadequacy of clearance in height of structure and embankment and CD structures showing inadequacy of discharge capacity may be noted for preparation of permanent remedial measures proposal afterwards.

2.8 Restoration work for the breaches shall commence immediately after the floods subside. This shall be carried out with the highest priority and the procedure for award of such emergency works should be streamlined in advance.

3. Special measures to be adopted in the event of disruption of traffic due to damage to bridges or bridge approaches:

3.1 In order to avoid washing away of bridges/approach attention to the following actions are necessary:

i) To take soundings before, during and after each flood at all foundation locations for all bridges built across major rivers with alluvial beds particularly where the rivers show a tendency to meander and give rise to concentrated flows and to maintain a permanent record of the same.

ii) To observe high flood level, discharge, velocity of flow, obliquity of flow, erosion of banks, functioning of the bridge waterway and changes in flow pattern.

iii) In case where such records reveal that scour as observed has a tendency to exceed the earlier anticipated design scour depth, appropriate steps like dumping of boulders around the foundation locations or extending to full fledged garlanding of foundations laid at suitable levels which will not cause adverse or deteriorating flow condition of the river around piers may be restored to after obtaining the approval of competent authority.

iv) In some cases it may be found necessary to train the river and guide the flow more uniformly through the various opening by means of proper training works such as guide bund spurs etc.

v) Suitable concrete blocks/wooden packing may be provided under the beams near the bearing to ensure that in the event the superstructure being dislodged from bearings it would ultimately rest on such concrete/wooden blocks avoiding the risk of total collapse.

3.2 Advance collection of sand bags, boulders and G.I. wire (for making of crates) at suitable sites may be made so that the same could be easily used for protective works in case of emergency.

3.3 As permanent restoration measure may take some time, temporary restoration measures may be carried out immediately to keep the communications through by provision of Bailey bridges, SPT Bridge or diversion roads etc.

3.4 In case of necessity of a Bailey bridge, effort should be made to arrange the same from the State itself, if available, otherwise local Army Authorities may be contacted.

3.5 Permanent restoration measure, may be taken up immediately after the completion of temporary restoration work, procedure for execution of such work should be streamlined.

4310.25

D.O. No.RW/NH-34059/2/2001-S&R(B) *Dated the 31st January, 2003*

To

The Chairman, National Highways Authority of India, Director General (Border Roads) and all Chief Engineers at PWD dealing with National Highways.

Subject: Normal maintenance of Bridges on National Highways

It has been noted that normal maintenance of bridges on National Highways are generally neglected, which often results into distress situations at a later date. I would like to mention some of the simple activities which should be taken up as part of routine maintenance of bridges, but often neglected.

(i) **Cleaning of expansion joints**

Expansion joint gaps are often filled with dirt and bituminous material during bituminous overlay work/periodical renewal of adjacent section. This is not correct. Expansion joint gaps should be cleared of all debris and filled up material.

(ii) **Repair of wearing coat on the deck**

Bituminous overlay work periodical renewal is often continued on the bridge deck. This is not correct as it result in overloading of the bridge not accounted for in the design. It is, therefore, emphasized that while calculating quantities for bituminous overlay PR the area covered by the bridge decks must be excluded.

(iii) Cleaning of drainage spouts

(iv) Repair of broken railings/guard posts/paraper walls.

(v) Clearing debris and vegetation in the waterway and in bridge structure.

2. I, therefore, request you to issue suitable instructions to all Field Officers for immediate compliance.

4310.26

No. RW/NH-34066/11/2004-S&R(B) *Dated the 12th April, 2004*

To

The Secretaries of States/Union Territories, Public Works Departments (dealing with National Highways and other Centrally Sponsored Schemes), All Chief Engineers of States/Union Territories (dealing with National Highways and other Centrally Sponsored Schemes), The Director General (Border Roads).

Subject: Four-Laning & Strengthening of the existing Two Lane stretches on NH-6 from KM 17.600 to Km 136.00 in the State of West Bengal (Contract Packages WB-I, WB-II & WB-III)-Regarding collapse of one span of ROB at Km 23.851 in the Dankuni – Kolaghat Section of NH-6 (WB-1).

Please find enclosed herewith a copy of the warning letter No. NHAI/12014/GQ/2003/SC/Tech/ CPD/151 dated 24/25.02.2004 issued to the supervision consultants M/s ICT & SNC Lavalin (JV) by NHAI on the subject above. The content of said letter is self explanatory.

(Enclosure of Ministry's letter No. RW/NH-34066/11/2004-S&R(B) dated the 12th April, 2004)

Issued by NHAI to M/s I.C.T. Pvt. Ltd. and M/s SNC Lavalin International Inc. M/s ICT SNC Lavalin (JV) were appointed as Supervision Consultant for the above project on Donkuni-Kharagpur Section of NH-6 which inter alia included the construction of a ROB at km 23.851 in WB-I package.

During exceution of work of ROB at km 23.851 on Dankuni-Kharagpur Section, one span of super structure (A-1 to P-1) the first span from the Kolkata side which was cast on 20.1.2003 collapsed on 29.1.2003 at 3.30 PM. This also resulted in the death of one person. After detailed scrutiny of the matter it was found that there had been laxity on your part in supervision of the work.

This incident has resulted in loss of reputation and public trust of the Naitonal Highways Authority of India and has been viewed very scriously by the Compotent Authority. In view thereof, vide letter dt. 7.11.2003, you were called upon to Show-Cause explaining the reasons and giving justificaiton if any, as to why you should not be debarred from participating in any Bidding Process or award of works/contracts of the National Highways Authority of India for a period of one year.

You were also heard in person through your representative by the Committee and after personal hearing and examining the matter and considering the material on record, the compotent Authority has found that there has been laxity on your part in supervision of the work which caused the collapse of the span of ROB.

You are, therefore, warned to be careful so that such an ocurrance is not repeated in future. Failure to do so will entail severe action. Intimation about this warming will also be circulated to all the State Governments/Government Departments.

The Competent Authority has also decided that your firm will be liable to the National Highways Authority of India for additional cost incurred due to delay and for rehabilitation of span of ROB, to the extent provided in the contract including invocation of the professional liability Insurance to claim the maximum compensation.

This is without prejudice to the right/s of the National Highways Authirity of India to recover damages for additional cost incurred due to delay and for rehabilitation of span of ROB and any other right/s under the subject contract or any law for the time being in force.

4320.6

D.O. No. RW/NH-34059/2/2001-S&R(B) *Dated the 31st January, 2003*

To

All Secretaries of State Governments dealing with roads

Subject: Inspection & Maintenance of Bridges on State Roads

Bridges are vital links on highways and are national assets created over years with high capital investments. In order that they remain in optimum serviceable condition at all times, regular inspection and maintenance of bridges and timely remedial actions are essential. Indian Roads Congress has published Special Publication No. 35 'Guidelines on Inspection and Maintenance of Bridges' and all road bridges are required to be inspected and maintained accordingly. It is often seen that these aspects are neglected.

2. You may like to issue suitable instructions to all departments dealing with roads and highways in your State to ensure regular inspection and maintenance of bridges.

4320.7

D.O. No. RW/NH-34059/2/2001-S&R(B) *Dated the 31st January, 2003*

To

The Chairman, National Highways Authority of India, Director General (Border Roads) and all Chief Engineers at PWD dealing with National Highways.

Subject: Inspection of Bridges on National Highways

As you are aware, bridges are vital elements of National Highway network and nonfunctioning of any of the bridges would cause immense public inconvenience. It is, therefore, necessary to keep a watch on the adequacy and serviceability of its components through regular inspections so that remedial measures are taken up in a timely manner. Detailed instructions regarding inspection of bridges have been issued by the Ministry from time to time. This is often neglected. I would, therefore, request that you may please issue suitable instructions to field officers to ensure that the bridges are inspected regularly in accordance with the IRC Special Publication No. 33 "Guidelines on Inspection and Maintenance of Bridges" including the Ministry's relevant circulars and results of inspection furnished to the Ministry promptly.

2. I shall be grateful if a you could inform the Ministry about the planning and methodology adopted for regular inspection of bridges on National Highways by 28th Feb. 2003 positively.

5200.4

No. RW/NH-34049/4/99-S&R (BD) *Dated the 4th October, 2002*

To

All the Chief Engineer of States/Union Territories (dealing with National Highways, Chairman, National Highways Authority of India, Director General (Border Roads).

The Director General and Special Secretary, Ministry of Road Transport & Highways has desired to compile information on existing bridges on all National Highways. In this connection, it is requested that data on (i) Total No. of bridge on NH Stretches (ii) No. of bridges in distressed condition requiring repairs & rehabilitation and (iii) No. of bridges requiring reconstruction falling on National Highway stretches under your jurisdiction may be compiled in the enclosed format and sent to this Ministry positively by 31st October, 2002.

2. This may be given top priority and compiled information may be sent urgently by due date.

5200.5

No. RW/NH-34049/4/99-S&R *Dated the 22nd January, 2003*

The Chief Engineer National Highways (Arunachal Pradesh, Assam, Bihar, Chattisgarh, Delhi, Gujarat, Jammu & Kashmir, Jharkhand, Kerala, Manipur, Mizoram, Nagaland, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh and (Uttaranchal).

Subject: Submission of condition survey of bridges on National Highways

In compliance to this Ministry's letter of even number dated 30.12.99 wherein it was decided to carry out the condition survey of all the bridges on National Highway stretches in the States by the year 2000 and it was desired that a copy of condition survey report be submitted to the Ministry.

It is noticed that no such condition survey report has been received so far in the Ministry from your state. You are, therefore, requested to expedite the same.

5200.6

No. RW/NH-34049/18/2001/-S&R(BD) *Dated the 12th May, 2003*

To

The Chief Engineer, PWD of all State Governments/Undertakings dealing with National Highways, Chairman, National Highways Authority of India, Director General Border Roads.

Subject: Documentation of major bridges in India

Kindly refer to the minutes of the meeting of the 62nd Annual Session of IRC held at Kochi, Kerala on 11.1.2002. The minutes of the meeting were issued to all the condemned. In the Agenda note under Item No. 5, the issue of documentation of bridges was discussed and it was decided to compile all the details of special types of bridges like (a) all pre-stressed bridges irrespective of their span or length (b) RCC bridges with total span length of more than 500m with individual span length of 45m and (c) all innovative types of bridges having innovative features like substructure and superstructure.

2. In this respect your attention is hereby invited that the detailed documentation of bridges as per Para 1 above may be done and forwarded to the Ministry and one copy of the same be sent of RO/ELO office of the concerned State retaining one copy in the Divisional office of P.W.D.

5200.7

No. RW/NH-34049/18/2001/-S&R(BD) *Dated the 4th July, 2003*

To

The Chief Engineer (NH) of PWD of all State Governments/U.Ts dealing National Highways, The Chairman, National Highways Authority of India, The Director General, Border Roads.

Subject: Documentation of Major Bridges on NHs in India

Ref.: Minutes of the meeting of the 62nd Annual Session of the IRC held at Kochi, Kerala on 11.1.2002

Kindly refer to the Ministry's letter of even No. dated 12.5.2003, vide which it was requested to furnish one copy of the details of the special type of bridges, on National Highways, but the same is not received. You are requested to expedite the same.

5200.8

No. RW/NH-34049/4/99/-S&R(BD) *Dated the 23th December, 2003*

To

The Chief Engineer National Highways (Arunachal Pradesh, Assam, Chhattisgarh, Gujarat, Jammu & Kashmir, Manipur, Mizoram, Nagaland, Sikkim, Tripura and Uttaranchal).

Subject: Submission of condition survey of bridges on National Highways

Kindly refer to this Ministry's D.O. letter of even number dated 07/04/2003 addressed to the Secretary PWD and the reminder of even No. dated 23.06.2003 wherein it was requested to furnish the copy of the condition survey of all the bridges on National Highway, carried out by the States in the year 2000.

It is noticed that no such condition survey report has been received so far in the Ministry from your State. You are, therefore, requested to expedite the same.

5200.9

No. RW/NH-34049/18/2001/-S&R(BD) *Dated the 22nd April, 2004*

To

The Chief Engineer National Highways of All State Governments/U.Ts. dealing National Highways, The Chairman, National Highways Authority of India, The Director General Border Roads.

Subject: Documentation of Major Bridges on NHs in India

Ref.: Minutes of the meeting of the 62nd Annual Session of the IRC held at Kochi, Kerala on 11.1.2002.

Kindly refer to the Ministry's letter of even No. dated 12.5.2003, & the reminder of even no. dated 04/07/2003 & 19.12.2003 on above subject vide which it was requested to furnish one copy of the details of documentation of the special type of bridges on National Highways, but the same is not received so far from your State. You are requested to expedite the same.

5200.10

No. RW/NH-34049/4/1999-S&R(BD) *Dated the 15th December, 2004*

To

All The Chief Engineers of States/Union Territories (dealing with National Highways), Chairman, National Highways Authority of India, Director General (Border Roads).

Subject: Inventory of Bridges on National Highways

Ministry of Shipping, Road Transport & Highways, (Department of Road Transport & Highways) has decided to compile and up-to-date information on existing bridges on all National Highways. In this connection, it is requested that data on total number of bridges on National Highways under your jurisdiction may be compiled in the enclosed format (alongwith computer CD in MS Excel and hard copy) and sent to this Ministry positively by 31st January, 2005.

2. There may be some of the bridges in dilapidated condition where traffic may be restricted, the bridge may be in use with temporary arrangements, or the traffic may be plying on diversion. The details of such bridges, if any, may also be submitted.

3. This may be given TOP PRIORITY and compiled information may be sent to this Ministry by due date.