

Government of India
Ministry of Road Transport & Highways
(Project – 5)

(San) - 1 sent.

Transport Bhawan, 1, Parliament Street
New Delhi - 110001

No. RW/NH- 12014/54/2015/MP/(P-5)

Dated the 2 January, 2017

To

The Principal Secretary,
Public Works Department,
Govt. of Madhya Pradesh
BHOPAL.

Subject: Estimate for widening of road to two-lane with paved shoulder i/c construction of bridges & culvert in km 54/4 to 73/2 (design length 18.59 km.) on NH-26 (Sagar- Bina road) in the state of Madhya Pradesh on Item Rate basis.

(Job no. 26-MP-2016-17- 82)

Sir,

I am directed to refer to Chief Engineer (NH), Madhya Pradesh letter no. 2090/NH-26A/R/Annual Plan.-2016-17/2016/1427 dated 23.11.2016 forwarding an estimate amounting to Rs. 6827.51 lakh for the above noted work and to say that the estimate has been examined in the Ministry and approved for Rs. 68.275 crore in the light of comments contained in the enclosed Technical Note.

2. I am to convey the technical, administrative and financial sanction of the President of India to the estimate amounting to **Rs. 68.275 crore (Rupees Sixty eight crore twenty seven lakh & fifty thousand only)**.

3. The work has been assigned **Job no. 26A-MP-2016-17- 82**. This Job No. may be quoted in all future correspondence regarding this work.

4. The expenditure is debitable to Major Head '5054' Capital Outlay on Roads & Bridges, 01-National Highways (Sub Major Head), 01.337 Road Works (Minor Head), 03 (NH Original Works), 03.01 Works financed from Central Road Fund 03.01.53 Major Works under demand No. '74'- Ministry of Road Transport & Highways NH (O) for the year 2016-17.

5. In accordance with the orders contained in this Ministry's Circular letter No. RW/NH-11026/2/99-US(D.I) dated 29/10/2001 addressed to the State Public Works Department, if the cost of tender exceeds 5% of sanctioned estimated cost, the revised estimate be got sanctioned from the Ministry. Further, the tenders for the work shall be invited by adopting e-procurement/e-tendering procedure as per Ministry's Circular No. RW/NH-24035/4/2008-P&M/PIC dated 21.05.2011, in addition to guidelines issued by this Ministry's Circular letter No. RW/NH-11024/3/99/US(D-I) dated 09.03.2000, No. RW/NH-24035/4/2008-P&M dated 21.05.2010 and No. NH-12037/67/2010LWE dated 02.08.2010. The work shall be awarded as per guidelines issued by the Ministry vide letter No. NH-15015/29/2001-PL dated 05.07.2001.

M. S.

6. It is requested that arrangements may be made for the submission of quarterly progress report in respect of this work by the Executive Engineer concerned to the Director General (Road Development) Government of India.

7. On completion of 50% work if the appraisal of the project shows that it will necessitate revision of the estimate based upon the physical completion of the project vis-à-vis financial expenditure immediate action should be taken to submit the revised estimate so as to ensure that the sanctioned revised estimate is available before necessary for incurring expenditure beyond permissible limits arises.

8. The Regional Officer, Madhya Pradesh is authorized to draw and disburse the sanctioned amount.

9. The Technical approval and financial sanction may lapse after 6 months from the date of its issue in case the work is not awarded within that period.

10. The following physical and financial target shall be strictly adhered to. Phasing of expenditure shall be as given below-

Year	Cumulative progress		
	Milestone	Physical	Financial (Rs. in Cr.)
2016-17	Preliminary	Preliminary	0.10
2017-18	Milestone- I	100%	68.275

11. This sanction issues with the concurrence of the Finance Wing vide their U.O.no.3419 /TF-II/16 dated 14.12.2016.

Yours faithfully,



(Shivakant Kumar)

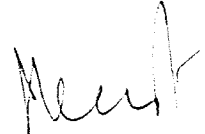
Under Secretary to the Government of India

Encl: As above

Copy with a copy of the technical note forwarded to:

1. Accountant General, Madhya Pradesh, Bhopal.
2. The Pay and Accounts Officer, Ministry of Road Transport & Highways, IDA Building, Jamnagar House, Shahjahan Road, New Delhi.

3. The Regional Pay and Accounts Officer (NH), Ministry of Road Transport & Highways, Satpura Bhavan, Bhopal.
4. The Principal Director of Audit Economics and Service Ministries IP Estate, New Delhi.



(Shivakant Kumar)

Under Secretary to the Government of India

Copy to:

1. The Chief Engineer (NH), Public Works Department, Bhopal
2. The Superintending Engineer (Civil), Ministry of Road Transport & Highways, M.P. PWD, Bhopal - 462004. (One copy of modified estimate is enclosed).
3. CE (P-5)/ SE (P-5)/ EE (P-5)/ W&A Section/ Fin. Wing/ M.M. Cell/ Guard file

GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS
(Project Zone-6)

RW/NH/12014/54/2016-MP(P-6)

Dated: 26 December, 2016

TECHNICAL NOTE

1.	Name of work	:	Estimate for widening of road to 2-lane with paved shoulder i/c Construction of Bridges & Culvert in Km 54/4 to 73/2 (design length 18.59 Km) on NH 26A (SAGAR-BINA ROAD) in the State of Madhya Pradesh on Item Rate Basis	
2.	NH No	:	26-A	
3.	State and Division	:	Madhya Pradesh & National Highway Division, Sagar.	
4.	Estimated cost (Rs. in Lakhs)		<u>As submitted by State PWD</u> 6827.51	<u>As modified in the Ministry</u> 6827.51
5.	Length in km	:	18.59	18.59
6.	Cost / km (Amount in Rs. Lakhs)	:	367.28	367.28
7.	Reference	:	Letter No. 2090/NH-26A/R/Annual Plan/2016-17/2016/1427 dated: 23.11.2016 from CE (NH), PWD, Bhopal, Government of Madhya Pradesh.	

COMMENTS

1. Scope of work:

Widening of road to 2-lane with paved shoulder i/c Construction of Bridges & Culvert in Km 54/4 to 73/2 (length 18.59 Km) on NH 26A (SAGAR-BINA ROAD) in the State of Madhya Pradesh on EPC mode.

A. Following provisions have been allowed:

(i) Crust Composition (Flexible Pavement widening and realignment in open Area)

Length: 13.989 km

Design Life - 15 years

Existing c/w width - 7.0 m

Proposed c/w width - 10.0 m

a. GSB - 200 mm

b. WMM - 250 mm

c. Dense Graded Bituminous Macadam - 85 mm

d. Bituminous Concrete - 40 mm



(ii) Crust Composition (Flexible Pavement widening in Built-Up Area)

Length: 4.3 km

Design Life - 15 years

Existing c/w width - 7.0 m

Proposed c/w width - 12.0 m + RCC Drain

- a. GSB - 200 mm
- b. WMM - 250 mm
- c. Dense Graded Bituminous Macadam - 85 mm
- d. Bituminous Concrete - 40 mm

(iii) Crust Composition (Rigid Pavement widening and overlay)

Length - 0.300 km

Design Life - 30 years

Existing c/w width - 7.0 m

Proposed c/w width - 12.0 m + RCC Drain

- a. PQC - 300 mm - in Full Carriage way
- b. DLC - 150 mm- widening portion
- c. GSB - 150 mm- widening portion

(iii) Overlay on existing pavement (As per Overlay requirement)

- a. DBM - 50 mm
- b. BC - 40 mm

(iv) Length of main carriageway is 18.59 km of comprising of

- Concentric Widening - 15.547 Km
 - Eccentric widening - 0.00 Km
 - Realigned Section - 3.043 Km
- Total - 18.59 kms**

(b) Junction Improvements

- **Major Junctions - 1 Nos**
 - Major X junction @ Km 72.089
- **Minor Junction - 10 Nos**

(D) Culverts -

- Pipe culverts - 5 Nos(Existing)
 - Retained with repair - 04 Nos
 - Widened - 01 Nos
- Slab/Box Culvert - 9 Nos (Existing)
 - Reconstruction - 9 (Slab Converted to Box)

E) Bridges -

- Major Bridges - 0 Nos (Existing)
- Minor Bridges - **5 Nos** (Existing)
 - Reconstruction - **1 Nos**
 - Design Ch. Km 63.360



New Construction at Adjacent to old Structure- **04 Nos**

- o Design Ch. Km 53.730
- o Design Ch. Km 60.717
- o Design Ch. Km 64.537
- o Design Ch. Km 67.683

(F) Toll Plaza – Nil

(G) Traffic Control Devices, Road Safety Work and Road Furniture as per provision of manual have also been taken.

(H) Miscellaneous Work-

The provision of slope and shoulder protection, high embankment protection, utility ducts, RCC cover drains in built up section have also been taken.

(I) Project Facilities-

The provision of project facilities in accordance to requirement of manual such as

- (i) Road Boundary, Km and 200 m stones
- (ii) Lighting at Major Junctions & Bus Bays.
- (iii) Bus Bay & Bus Shelters 2 x 2
- (iv) Bus Shelters 5 x 2

(J) Safety and Traffic Management during Construction-

The provision of traffic management as per clause 112 of Ministry specification during construction shall be maintained by the EPC contractor.

(K) Utility Shifting:

As there is Electricity poles are at some places and water supply line at few point found in between ROW, a provision of Rs. 139.91 lakh is considered in estimate for shifting of these utilities.

(L) Land Acquisition:

CE (NH), PWD has confirmed that 95.78% of land is available and the balance land will get available as per tender condition.

Accordingly, State PWD has proposed provision of **3.38 crore** for LA. The details of Land available and required to be acquired are as under:

- Total Land required = 54.33 Ha,
Total Land available = 52.04 Ha
Total Land to be acquired= 2.28 Ha,
a) Private Land= 2.28 Ha.
b) Forest Land= Nil

CE (NH), PWD may ensure that remaining land should available by the time the work is awarded. Accordingly, provision of 3.38 crore has been included for LA work in the cost estimate.



2. The cost estimate is as below:

S. No.	Description	Amount in Crores	% Cost
a	Site-Clearance	0.127	0.23%
b	Earthwork	4.042	7.33%
c	Sub-base, Base Courses	6.316	11.45%
d	Bituminous Pavement	17.949	32.54%
e	Cost of CC Pavement	0.343	0.62%
1	Cost of Road Works	28.778	
2	Cost of Cross-Drainage structures		
	Major Bridges	0.000	0.00%
	Minor Bridges	7.012	12.71%
	Pipe Culverts, Slab Culverts & Box Culverts	3.409	6.18%
3	Cost of Truck & Bus Lay Bye	2.301	4.17%
4	Cost of RCC drain	7.747	14.05%
5	Traffic Signs, Marking and Road Appurtenances	1.363	2.47%
6	Cost of Metal beam crash barrier	0.757	1.37%
7	Junction improvement	3.025	5.49%
8	Extra widening on curves	0.529	0.96%
9	Miscellaneous Items	0.232	0.42%
10	Cost of Civil Works (Sub Total A)	55.152	100.00%
	Per km cost of civil works	2.967	
11	Provision for Contingencies @ 2.8% of A	1.544	
12	Sub Total B	56.697	
13	Agency Charges 9%	5.103	
14	Quality Control 1%	0.567	
15	WC Charges 1.5%	0.850	
	Centages	6.520	
	Total Project Cost	63.217	
16	EMP Cost	0.279	
17	Cost of Electrical & Utility Shifting Works	1.399	
18	Cost of LA Works	3.380	
	Grand Total	68.275	
	Cost per km	3.673	

3. Modifications:

3.1 Nil

4. Design specifications including deviations, if any:

- 4.1 The provision made in this estimate includes Providing Traffic Safety items as the stretch is newly declared NH road and it is necessary to provide road furniture and safety measures as per NH standard
- 4.2 Providing and fixing 5 km, 1 km RCC stone & 200 m stone as per NH standard, W metal beam Crash barrier, Road safety Cautionary & Warning & informatory sign boards. The measurement proposed in the proposal is approved only for estimate purpose. The actual location of Board and crash barrier shall be finalized by RO Mumbai in consultation with CE(NH), PWD Maharashtra.
- 4.3 Necessary provisions for Rain Water Harvesting shall be provided at appropriate locations as per guidelines given in Ministry's letter no. RW/NH-33044/14/2003-S&R (R) (Pt II) dt 5-9-2013.
- 4.4 All material, design and construction operations for the project are proposed conforming to the IRC: SP: 73-2015, Manual of Specifications and Standards for Two-laning of Highways, IRC-37-2012 and Ministry standard specification Revision-V 2013

5. Traffic management during construction:

- 5.1 Traffic management should be done as per clause 112 of Ministry's specification, during the construction period it may be insured that the traffic is regulated in conformity to ministry's guidelines stipulated in clause no.8.2.3 of 'Manual for construction and supervision of bituminous work.' It may also be ensured that BM& DBM layer should not be exposed to traffic & weathering as stipulated in Ministry's guidelines.
- 5.2 The nomenclature and clause numbers of the items shall be specified as per MORTH specification for Road and Bridge works 2013 (5th revision) and all the works shall be executed strictly as per Ministry's specifications/Ministry's circulars/guide lines issued from time to time.
- 5.3 The provision for road sign boards, Road studs, Informatory sign boards, and Hazard markers, if any, has been allowed for estimate purpose. The exact location, and type of sign boards to be provided shall be got approved by RO, Mumbai before execution of work.
- 5.4 As per ministry circular RW/NH-33044/14/2003-S&R(R) Pt.II dt. 5-9-2013 necessary provision for rain water harvesting should be provided and the cost may be met out from contingencies



6. Invitation of Tenders:

- 6.1** E-procurement must be adhered to while inviting tender for the work.
- 6.2** The tenders for the work shall be invited as per guidelines issued by this Ministry vide circular letter No.RW/NH.-12024/3/99-US(D-I) dated 9.3.2000 relating to advertisement in News Papers/ Journals. The guidelines issued vide letter No.RW/NH-24020/2/99-PIC dated 21.12.2000 regarding procedure to be adopted for pre-qualification of contractors as amended by Ministry's letter No. RW/NH-24035/4/2008-P&M/PIC dated 27.11.09 and subsequent modification dated 21.05.2010 and 15.03.2011 regarding invitation of tenders may also be followed. Also, for the cost incurred under contingencies with the approval of Ministry RO as per para 1.1of Ministry circular no. RW/G-20011/8/98-WA dated 16.08.02 may be followed.
- 6.3** The work shall be awarded within the time limit stipulated in the guidelines issued by the Ministry vide letter No. NH-15015/29/2001-PL dated 05-07-2001.
- 6.4** In accordance with the instructions contained in the Ministry's circular letter No RW/NH-11026/2/99-US (D-I) dated 29.10.2001, it would be ensured while accepting tenders that the overall cost at tender rates including contingencies, quality control, work charge establishments and agency charges does not exceed by more than 5% of the sanctioned cost.

7. Splitting of work:

Neither the work nor any item of work shall be split into small parts for awarding the work to a number of contractors. In case any splitting is essential due to specific prevailing condition, it should be done only after prior approval of this Ministry. In this regard, instructions issued in this Ministry's letter No. NH -III/25/84 dated 04.08.1994 refers.

8. Monitoring of the work:

In order to ensure that there is no slippage in achieving the targets, the progress may be closely monitored by CE(NH) and quarterly status report furnished to the Ministry in the prescribed proforma.

9. General Observations:

- 9.1** Defects liability period, shall be in line with Ministry's circular no. NH-11065/4/2012-P&M (Pt-II) dt.12.04.2012.
- 9.2** Camber or cross falls of 2% for CC surface, 2.5% for bituminous surface and 3.5% for earth work may be provided as per clause 8.2 of IRC: 52-1981 considering the high rainfall in the area.



- 9.3 Collection of material on the roadside should be so planned that it should commensurate with the physical progress of work and the collected material should not cause any hindrance to the traffic. It must be ensured that the contractor arranges for separate land for storage of road construction material and machinery and these shall not be allowed to be stacked on roadside.
- 9.4 Bitumen used for the work, if any, shall be heated in boilers only and not in drums on open fire. Spraying of bitumen wherever necessary should be done only with the mechanical sprayers and premixing of bitumen and stone aggregates should be done only in the proper mechanical mixer/hot mix plant.
- 9.5 It may be noted that the scope of work with respect to limits/specifications will not be changed during execution without the prior approval of the Ministry. In this connection this Ministry's letter No. RW/NHIII/Coor/32/84 dated 19-05-1984 refers.
- 9.6 During the course of execution, the traffic may be regulated in accordance with guidelines laid down vide Ministry's letter No. NHIII-33 (126)/72 dated 20.03.1973. Smooth flow of the traffic may be ensured by providing adequate traffic control devices in accordance with stipulation of IRC: SP: 55:2001.
- 9.7 The display boards on development activities of the work shall be made as per guidelines issued vide Ministry's letter No. RW/NH-33044/10/2002-S&R I dated 26.5.2003. The cost of the same will be met out of the contingencies of the estimate.
- 9.8 The provision of road marking shall be executed as per clause 803.4 of MOST specification (5th Revision-2013). Details of marking shall be governed by IRC-35-1997.
- 9.9 All the items of work included in the scope of work will be executed as per Ministry's Specifications for Road and Bridge Works (5th Revision-2013) and Circulars/ Guidelines issued by the Ministry from time to time..
- 9.10 Provisions for quality control @ 1% have been allowed. The material supplied and all bituminous works (including mix design and construction) is to be carried out strictly in accordance with stipulations of relevant sections of **Ministry's Specifications for Road & Bridge works (5th Revision-2013)** and **IRC:111-2009**, after observing strict quality controls at all stages, as specified therein. Instructions contained in Ministry's letter No. NH-III/P/I/83 dated 19-04-1984 shall be followed and permanent records shall be maintained thereof. CE (NH) shall ensure strict quality control during actual execution of work and shall ensure that suitable instructions are issued to all field officers in this regard.



- 9.11 During construction, the control tests in numbers and frequency should be carried out by State PWD as per **Ministry's specifications for Road & Bridge works (5th Revision-2013)** and **IRC:111-2009** and the quality of work done in the past as well as in present/future may be ensured by State PWD. If there are instances of premature failures, necessary action should be taken by State PWD for identifying the reasons for these failures and may fix the responsibilities for such lapses.
- 9.12 The independent quality control tests of all items from any of the accredited laboratories as per IRC: SP:94-2011 shall be carried out from the Quality Control provision in estimate to ensure the quality of work.
- 9.13 Stipulations made in the Manual for Construction and Supervision of Bituminous works shall be strictly followed during execution of the work.
- 9.14 The proposed treatment will not be applied to bridges/cross drainage works with RCC slab super structure. In this regard Ministry's circular No. RW/NH-33044/10/2000-S&R dated 01.06.2000 on "Maintenance of wearing coat on bridges and culverts vis-a-vis strengthening of approaches thereof" will be refer.
- 9.15 It shall be ensured that the roughness index of the treated reach is brought to 2000 mm per Km. Accordingly, a note indicating the same should be incorporated in the tender document.
- 9.16 Photo / video record of the work before / during & after construction shall be made available in digital form.
- 9.17 The transverse bars markings or road ramblers may be provided at junctions where the need for alerting drivers/reduction in speed desired as per Ministry circular no. RW/NH-33044/13/2012/S&RI dated 04.05.2013. The expenses may be met out from contingencies
- 9.18 The work is to be carried out in accordance with the "Hand Book of Quality Control for construction of Roads and Runways (Second Revision) – IRC SP: 11-1988", observing strict quality control instructions contained in Ministry's letter No. NHIII/P/I/83 dated 19.4.84 and permanent records maintained thereof. The quality control testing should be done through NABL (National Accreditation Board for Testing and calibration Laboratories) accredited laboratories only. CE(NH) State PWD shall ensure strict quality control during actual execution of work and shall ensure that suitable instructions are issued to all Field Officers in this regard.
- 9.19 It must be ensured that the contractor arranges for separate land for storage of road construction material and machinery and these shall not be allowed to be stacked on roadside.



9.20 Adequate tests shall be done by State PWD as per Ministry's specifications and the quality of work done in the past as well as in present/future may be ensured by State PWD. If there are instances of premature failures, necessary action should be taken by State PWD for identifying the reasons for these failures and may fix the responsibilities for such lapses.

9.21 The proposed provisions of BC have been allowed with hydrostatic paver finisher with sensor control. The usage of aforesaid paver may be ensured during execution.

9.22 The provision of road furniture/signages if any, has been allowed as proposed for estimate purpose only. However, the actual numbers and locations thereof shall be finalised in consultation with concern RO, MoRTH before execution of work.

10. Cost of work:

10.1 CE(NH), Madhya Pradesh has reported that the estimate is based on current SCHEDULE OF RATES for ROAD & BRIDGE WORKS (in force from 06-06-2016). It is presumed that CE (NH), Madhya Pradesh while forwarding the proposal has satisfied himself about the adequacy and workability of the rates of various items of work and that rates adopted in the estimate are latest and no revision of the rates has occurred till date.

10.2 The lead for the carriage of different materials as proposed in the estimate has been allowed for estimate purpose only. However, while calling tenders the sources may not be indicated. The contractor shall be responsible to procure the material conforming to specification of the work. No provision of extra lead during execution of the work shall be allowed.

10.3 The contractor shall be responsible to procure the material conforming to specification of the work. No provision of extra lead during execution of the work may be allowed.

10.4 In view of the above comments, the cost of the estimate amounts to Rs. **6827.51 lakhs** including centages.



11. Targets:

Following physical and financial targets shall be strictly adhered to subject to the availability of funds:

Year	Cumulative progress		
	Milestone	Financial (Rs. in Crores)	
		Physical	Financial (Rs. In crore)
2016-17	Preliminary	Preliminary	0.10
2017-18	Milestone I	100%	68.275



(S.K.Arya)

Executive Engineer (P-6)

For Director General (RD) & Special Secretary