

No. RW/NH-12014/1425/2019/HR/Zone-II
Government of India
Ministry of Road Transport & Highways
(Zone-II)
Transport Bhawan, 1, Parliament Street, New Delhi-110001

Dated 30th March, 2020

To

The Secretary
Government of Haryana
Public Works Department, Chandigarh.

Subject: Cost estimate for the work of Sohna Realignment of Rewari Sohna Palwal road NH-919 (Old NH no. 71B) from km 47.100 to 49.350 in Sohna Hilly Portion on EPC mode in the State of Haryana.

Ref: State PWD letter No. 174-NH-2010/197831 dated 15.11.2019

(Job No. NH-919-HR-2019-20/410)

Sir,

I am directed to convey the technical approval, administrative approval and financial sanction of the President of India to the estimate for the work mentioned in the subject above as per the following details:-

		(Rs. in crore.)
I.	Amount as indicated in the estimate & sent by the State PWD	Rs. 41.11
II.	Amount modified in the Ministry	Rs. 36.66
III.	Amount of technical approval (Inclusive of agency charges @3%)	Rs. 36.66
IV.	Amount of financial sanction	Rs. 36.66

(Rupees Thirty Six Crores and Sixty Six Lacs only)

2. The approval is subject to the following conditions:-

(i) The work should be completed as per the target indicated in the enclosed technical note. As such there shall not be any cost over-run due to time over-run. Stipulations made in the technical note shall be strictly adhered to.

(ii) On completion of 50% work, if 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 necessity for incurring expenditure beyond permissible limits arises and;

(iii) The guidelines relating to norms of advertisements in newspapers/journals for invitation of tenders for the execution of works of National Highways and under other Centrally Financed Schemes issued vide this Ministry's letter No. RW/NH-11024/3/99-US (D.I), dated 9/3/2000 shall be followed strictly.

(iv) The bids for the work should be invited through e-tendering system as per the instructions issued vide Ministry's letter No. RW/NH/33044/2/2010-S&RI dated 17/06/2011 and dated 17/11/2011 respectively. The advertisement to this effect shall be made as per guidelines issued by this Ministry vide letter No. RW/NH-11024/3/99-US-(D)-10 dated 09/03/2000.

(v) The guidelines for expeditious acceptance of tenders and award of work circulated vide Ministry's letter No.RW/NH-15015/29/2001-PL, dated 05/07/2001 shall be followed strictly.

(vi) The expenditure during the current financial year on this work as also on the other sanctioned work should not exceed the allotment placed at the disposal of the State Government during the year;

vii. In accordance with the order contained in this Ministry's Circular letter No.RW/NH-11026/2/99-US (D-I), dated 29.10.2001, it would be ensured while accepting the tenders that the overall cost at tender rates including contingencies, work charged establishment and agency charges does not exceed by more than 5% of the sanctioned cost. Sanction of the Ministry for the revised estimate shall be obtained where the cost exceeds 5% of the sanctioned cost.

3. The expenditure on the above work is debitable to Major Head 5054 Capital Outlay on Roads & Bridges 01-National Highways (Sub Major Head), 01.337 Roads Works (Minor Head), 03- National highway Original Works, 03.01- Works Financed from Central Road and Infrastructure Fund, 03.01.53 Minor Works for which the corresponding Demand for the current financial year 2019-20 is "83" Ministry of Road Transport and Highways.

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

5. The following cumulative physical and financial target shall be strictly adhered to subject to the availability of funds:-

Year	Cumulative progress				
	Milestone	Financial (Rs. in Cr.)			
		Physical	Construction	Maintenance	Total
2019-20	Preliminary	10%	3.60	0.000	3.60
2020-21	Milestone	90%	32.42	0.000	36.02
2021-22	Maintenance	100%	0.000	0.06	36.08
2022-23	Maintenance	100%	0.000	0.06	36.15
2023-24	Maintenance	100%	0.000	0.13	36.28
2024-25	Maintenance	100%	0.000	0.13	36.40
2025-26	Maintenance	100%	0.000	0.26	36.66

4. This sanction issues with the concurrence of the Finance Wing vide their e-office Note#42 dated 17.03.2020.

Yours faithfully,


(Anil Sharma)

Under Secretary to the Government of India

Encl: As above

Copy with a copy of Technical Note forwarded to:

1. The Account General, Govt. of Haryana.
2. The Pay & Accounts officer, Ministry of Road Transport & Highways, IDA Building Jamnagar House, New Delhi.
3. The Regional Pay & Accounts officer, Ministry of Road Transport & Highways, 6th Floor, Kendriya Sadan, Sector 9A, Chandigarh
4. Principal Director of Audit, Economic & Services Ministries, AGCR Building, IP Estate, New Delhi.
5. Regional Office, Ministry of Road Transport & Highways, 6th Floor, Kendriya Sadan, Sector 9A, Chandigarh
6. The Engineer in Chief, PWD, Haryana.

Copy also to:

CE (Z-II) / SE (Z-II) / AEE (Z-II)/ W&A Section /TF-II Section/ Guard Folder.

Christopher Jate
Section Officer (Zone-II)

Government of India
Ministry of Road Transport & Highways
(Zone II)

Transport Bhawan, 1, Parliament Street, New Delhi - 110001

No. RW/NH-12014/1425/2019/HR/Zone-II

Dated: 30/03/2020

TECHNICAL NOTE

1	Name of work	Cost estimate for the work of Sohna Realignment of Rewari Sohna Palwal road NH-919 (Old NH no. 71B) from km 47.100 to 49.350 in Sohna Hilly Portion on EPC mode in the State of Haryana.	
2	NH No.	NH-919	
3	State and Division	ADB Project Division No.1, PWD B&R Branch Rewari, Haryana.	
4	Estimated cost (Rs. in Crores)	As submitted by State PWD 41.11	As modified in the Ministry 36.66
5	Length in km	2.18	2.18
6	Cost / km (Amount in Rs. crore)	18.86	16.82
7	Reference	Letter from Engineer-in-Chief, Haryana dated: 15.11.2019.	

COMMENTS

1. **Scope of work:**

Construction of Sohna Realignment of Rewari Sohna Palwal road NH-919 (Old NH no. 71B) from km 47.100 to 49.350 in Sohna Hilly Portion on EPC mode in the State of Haryana.

2. **Following provisions have been allowed:** Broadly the scope of work is defined as under:

2.1 Construction of 4 lane Sohna Realignment of Rewari Sohna Palwal road NH-919 (Old NH no. 71B) from km 47.100 to 49.350 in Sohna Hilly Portion.

2.2 Construction of a VUP at chainage of 0.250 km of the proposed alignment.

2.3 Construction of four box type culverts at chainages 0.525 km, 0.625 km, 1.020 km and 1.540 km.

A. **Main carriageway-**

i. **Crust Composition (Flexible Pavement Length=2.18 km)**

The composition of flexible pavement has been designed as per guidelines given in IRC:37:2019, considering effective CBR as 8%, & 170 msa traffic (Design Life-20 years).

a. BC - 50 mm thick



- b. DBM - 120 mm thick
- c. WMM - 200 mm thick
- d. CTSB - 250 mm thick

In this regard, the crust composition for flexible pavement designed by EPC contractor shall not be lesser than the minimum crust composition corresponding to traffic of 20 MSA & CBR 7% as per IRC 37-2018. State PWD shall specify in the schedule D that FRL mentioned in plan & profile of DPR shall be minimum FRL of proposed Project.

ii. Length of main carriageway is 2.18 km and is a new alignment.

iii. The proposed work of Sohna Realignment is having typical sections as follows:

- 4 lane carriageway for new construction -2.18 km

S. No.	Scheme of widening	Length (in km)	Cross sections
(i)	4 lane carriageway for new construction	0.56	TCS-A3
(ii)	4 lane carriageway for new construction in hill road	1.24	TCS-A3-4
(iii)	4 lane carriageway for new construction	0.38	TCS-A3

B. Slip Road on Side of Grade Separated structures Crust - Nil

C. Junction Improvements: State PWD has proposed improvement at 2 major junction. The details are as follows:

- Major Junctions - 02

Sl. No.	Design Chainage	Type of Intersection
1	Km 0.00 of the realignment at NH-248A	T
2	Km 32.200 of NH-919 from Palwal	T

- Minor Junction - Nil

(D) Culverts - Total 4 nos Box type culvert

S No	Chainage	Proposed span arrangement	Proposal
1	0.525 km	2X3 m box type culvert	New construction
2	0.625 km	2X3 m box type culvert	New construction
3	1.020 km	2X3 m box type culvert	New construction
4	1.540 km	2X3 m box type culvert	New construction


D. Bridges - Nil

E. Vehicular Underpass: One at km 0.250 km

F. ROB/RUB - Nil

G. Toll Plaza - Nil

H. Traffic Control Devices, Road Safety Work and Road Furniture: - As per IRC 67-2012 have also been taken.



I. Project Facilities-

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

- i. Road Boundary, Kilometer stone and Hectometer stones
- ii. Street lighting at structure approaches
- iii. Median Plantation and Landscaping.

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 & other pre-construction activities:** - A provision of Rs. 5.40 lacs is considered in estimate. Implementing agency should ensure that the utility shifting estimates do not include provisions for augmentation of existing facility, and the administrative charges payable to the Utility entities shall be restricted to 2.5%. The cost of utility shifting shall only include replacement and shifting of existing utility lines. No augmentation of existing utility lines shall be taken up at MoRTH cost. Cost of any other augmentation shall be borne by the State Government utility. The utility lines should be shifted to extreme edge of the RoW. The cost being paid for shifting of utilities shall be considered as a one-time, expenditure. Any further shifting of utilities if required for widening of the road on a future date shall be at the cost of the State Government Utility. The State Government shall take expeditious action for approval of estimates for shifting of utilities and consequent shifting.

State PWD shall get approved the sub-estimate received from concerned department for all pre-construction activities from CE-RO, Chandigarh as per Ministry's extant guidelines.

L. **Land Acquisition:-** Proposed Sohna Realignment is of 4-lane configuration and has been proposed on fresh land and Rs. 26.33 crore has already been awarded.

3. The cost estimate is as below:-

SUMMARY OF COST					
Cost Estimate of Sohna Realignment Project					
Bill No.	Description	Item Price (Rupees) as submitted by State PWD	Item Price (Rupees) as modified in the Ministry	Item Price (Cr.)	Percentage of the item (%)
	Civil Cost				
1	Site Clearance & Dismantling	571,622.00	571,622.00	0.06	0.22%
2	Earthworks	70,749,549.00	70,749,549.00	7.07	27.67%
3	Wet Mix Macadam (WMM)	17,701,682.00	14,326,960.00	1.43	5.60%
4	Cement Treated Sub-base	13,615,368.00	22,013,640.00	2.20	8.61%
6	Bituminous courses	51,334,773.95	45,568,104.00	4.56	17.82%
7	Rigid Pavement	-	-	-	0.00%
8	Culverts	13,652,305.00	13,652,305.00	1.37	5.34%
9	Major Bridges	-	-	-	0.00%
10	Minor Bridges (VUP)	45,929,718.00	45,929,718.00	4.59	17.97%
12	Bus bay & Truck lay by	-	-	-	0.00%
13	Drainage and Protection Works	30,832,158.00	30,832,158.00	3.08	12.06%
14	Traffic Signs, Markings &	11,436,768.00	11,436,768.00	1.14	4.47%



15	Road Appurtenances				
	Misc (Blinker, Utility duct, Shrubs etc)	574,583.00	574,583.00	0.06	0.22%
TOTAL OF CONSTRUCTION COST (A)		256,398,526.95	255,655,407.00	25.57	100.00%
	COST PER KM (IN CRORE) =	117,614,003.19	117,273,122.48	11.73	
	CONTINGENCIES @ 2.8% ON A	7,179,158.75	7,158,351.40	0.72	
	GST @12% ON A	30,767,823.23	30,678,648.84	3.07	
	ADMINISTRATIVE CHARGES/ AGENCY CHARGES @3% ON A	7,691,955.81	7,669,662.21	0.77	
	COST OF QUALITY CONTROL @0.25% ON C = (E)	-	-	-	
	ROAD SAFETY CELL AUDIT CHARGES @0.25% ON C (F)	-	-	-	
	SUPERVISION CHARGES @3% ON A	7,691,955.81	7,669,662.21	0.77	
	ESCALATION CHARGES @ 2.5% PER YEAR ON A	12,819,926.35	6,391,385.18	0.64	
	POST CONSTRUCTION MAINTENANCE CHARGES @2.5% ON A	6,409,963.17	6,391,385.18	0.64	
	TOTAL =	328,959,310.08	321,614,502.01	32.16	
	TOTAL ESTIMATED COST =	328,959,310.08	321,614,502.01	32.16	
	Say	328,959,310.00	321,614,502.00	32.16	
	COST PER KM (in Crores)	150,898,766.06	147,529,588.07	14.75	
2	Pre-Construction Activities Costs				
	Cost of Utility shifting	540,000.00	540,000.00	0.05	
	Environmental Mitigation & Monitoring Cost	2,991,750.00	2,991,750.00	0.30	
	Social & Rehabilitation Cost	2,700,000.00	-	-	
	Forest Clearance (Deforestation & Afforestation)	60,000,000.00	41,419,134.00	4.14	
	Total Pre-Construction activities costs	66,231,750.00	44,950,884.00	4.50	
	Total Project Cost	395,191,060.00	366,565,386.00	36.66	
	COST PER KM (in Crores)	181,280,302.75	168,149,259.63	16.81	

4. Modifications:-


4.1 The total traffic has been considered as 22265 PCU with total Commercial Vehicle Plying Per Day (CVPD) as 2951. The design of pavement has been modified as per IRC 37 - 2018 using IIT PAVE software. As per latest IRC-37-2018, Cement treated Sub-base has been used in place of GSB. Arithmetic correction has been done in the estimate.

4.2 Assumption has been made that all commercial vehicle (i.e. 2951 CVPD) of one wing of the intersection (location id 6465 {which is on NH-248A} of IHMCL traffic survey) will be using the proposed alignment. Accordingly 170 msa has been calculated for a design period of 20 years.

4.3 A provision of Rs. 29.91 lacs towards Environmental mitigation & Monitoring Cost has been made. However, the provision for Social & Rehabilitation Cost has been deleted.

5. Design specifications including deviations, if any:-

All material, design and construction operations for the project are proposed conforming to the IRC: SP: 84-2019, Manual of Specifications and Standards for Four-laning of Highways and Ministry standard specification Revision-V 2013 and IRC:SP:48, 1998 Hill Road Manual.

6. Specifications:-

6.1 **Traffic management during construction:-**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 'Manual for construction and supervision of bituminous work.'.

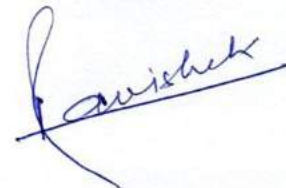
6.2 The nomenclature and clause numbers of the items shall be specified as per MORT&H specification for Road and Bridge work 2013 (5th revision) and all the works shall be executed strictly as per Ministry's specifications/ Ministry's circular/ guidelines issued from time to time.

7. Contract Documents:

7.1 Single stage two-cover bidding is to be adopted as per instructions conveyed vide Model EPC Document approved by the Ministry as per the circular No. RW/NH-37010/4/2010-EAP (Printing) Vol. - IV dated 05.03.2019 and other amendment issued till date.

7.2 RFP and draft contract documents may be adopted as per the draft Model RFP and EPC documents \ approved by the Ministry after making project specific changes as well as amendments circulated by Ministry vide circular RW/NH-37010/4/2010-EAP(Printing)-Vol-IV dated 05.03.2019. All schedules required for EPC mode of execution of work shall be in line with approved estimate and technical note and need to be approved from CE-RO, Chandigarh.

7.3 Construction period for this work shall not be more than 18 months including the rainy period. Defects liability period and maintenance period shall be 5 years as specified in the amendments to Model EPC Document



issued vide Ministry's letter no. RW/NH-37010/4/2010-EAP(Printing)-Vol-IV dated 05.03.2019.

8. Invitation of tenders and award of works:

8.1 The cost of work is more than Rs. 5.00 Crore, hence, as per Ministry's circular No. RW/NH-24035/4/2008-P&M/PIC Vol.II dated 23.02.2018 the work shall be executed on EPC Mode as per the latest RFP and Model EPC document, circulated by Ministry vide letter No. RW/NH-37010/4/2010-EAP(Printing)vol.-IV dated 05.03.2019 and subsequent amendments made thereon.

8.2 The tender notice for invitation of tenders shall be done as per modified guidelines circulated to State PWDs vide Ministry's letter No.RW-NH-34066/14/2018-S&R (P&B) dated 25.06.2018. Further, as regards authority for invitation of tender and evaluation of tenders, Ministry's circular no.RW/NH-24035/4/2008-P&M/PIC Vol-II dated 23.02.2018 shall be followed.

8.3 The work is to be awarded within six months from the date of issue of sanction. In this connection, Ministry's Circular No. RW/NH-24035/4/2008-P&M/PIC Vol. II dated 23.02.2018 is to be referred.

8.4 CE (NH), State PWD will intimate this Ministry about award of contract/commencement of work immediately as per instructions contained in this Ministry's letter no. RW/NH-11060/1/98-(DO-I) dated 05.11.1998.

8.5 E-procurement must be adhered to while inviting tender for the work.

8.6 In accordance with the instructions contained in the Ministry's letter No. RW/NH-24035/4/2008-P&M/PIC Vol.II dated 23.02.2018, it would be ensured while accepting tenders that the overall cost of work at tender rates including centages and agency charges do not exceed by more than 5% of the sanctioned cost.

8.7 Excess in tender cost is caused only by routine factors such as increase in cost of labour or material.

8.8 Excess due to change of scope or enlargement/reduction of work or specifications as already approved in the sanctioned estimate would require prior approval of Ministry.

9. General

9.1 The provisions of the contingencies may be utilized as per Ministry's guidelines issued vide letter no.RW/NH-24035/4/2008-P&M/PIC Vol-II dated 23.02.2018. The estimates for carrying out activities under the provision of contingencies shall be approved by the RO/Ministry.

9.2 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.

9.3 No work beyond the scope of the sanctioned estimate leading either to increase in the scope of work or change in specifications should be undertaken without obtaining prior written approval of the Ministry. In this connection, this Ministry's letter No. RW/NHIII/Coord/32/84 dated 19.05.84 and RW/NH-33044/10/2002/S&R (R) dated 09.09.2002 may be referred.

9.4 In order to ensure that there is no slippage in achieving the targets, the progress may be closely monitored by the State PWD and quarterly progress report may be furnished to the Ministry in the prescribed format.

9.5 During the course of execution, the traffic should be managed as per section 112 of Ministry's Specifications for Road and Bridge works, 5th Revision, 2013 and in accordance with IRC:SP:55-2001 "guidelines on safety in construction zone". Contractor shall provide traffic diversion, road signage, bollards, boards, gunny bags, sheets etc. for safety of traffic during construction period, which will be incidental to work.

9.6 Guidelines for Road Safety vide Ministry's letter No. RW/ NH-33072/04/2004-S86R(R) dated 27.04.2012 shall be followed wherever applicable.

9.7 Neither the work nor any item of work shall be split into small parts for awarding the work to a number of contractors. In this regard, instructions issued in this Ministry's letter No. NH-III/P/25/84 dated 4/8/1984 may be referred.


9.8 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.

9.9 The schedule and EPC documents shall be got approved from CE-RO, MoRTH, Chandigarh as per extant guidelines before inviting tenders. CE-RO, MoRTH, Chandigarh shall ensure that all the provisions of the estimate and the requirements of the project have been duly incorporated in the respective schedule.

9.10 The state PWD will intimate this Ministry and Ministry's CE-RO, MoRTH, Chandigarh about award of contract/commencement of work immediately as per instructions contained in this Ministry letter No RW/NH-11060/1/98-(DO-I) dated 5.11.1998.

9.11 State PWD may ensure that work is physically completed as per proposed scope of work and monitored timely to avoid cost and time overrun.

9.12 Circular no. 24028/14/2018-H dated 27.08.2018 said that in construction of embankment, fly ash will be used if any thermal and lignite based power plant is available in the periphery and the cost of transportation of ash for road construction projects or for manufacturing of ash based products or use as soil conditioner in agriculture activity within a



radius of hundred kilometers from a coal or lignite based thermal power plant shall be borne by such coal or lignite based thermal power plant.

10. Cost of work:

10.1 The estimate is based on latest rates, Chandigarh, Public works Department, Haryana. It is presumed that CE (NH), of State PWD 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 In view of the above comments, the cost of the estimate amounts to **Rs. 36.66 Crore** including 3% agency charges.

11. Targets:-

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

Year	Milestone	Cumulative progress			
		Physical	Financial (Rs. in Cr.)		
			Construction	Maintenance	Total
2019-20	Preliminary	10%	3.60	0.000	3.602
2020-21	Milestone	90%	32.42	0.000	36.020
2021-22	Maintenance	100%	0.000	0.06	36.084
2022-23	Maintenance	100%	0.000	0.06	36.148
2023-24	Maintenance	100%	0.000	0.13	36.276
2024-25	Maintenance	100%	0.000	0.13	36.404
2025-26	Maintenance	100%	0.000	0.26	36.659

Ravishek
30/03/2020

(RAVISHEK)

Assistant Executive Engineer
For Director General (Road Development) & SS