



F.No. RW/BHP/MP/APP/2021-22/
GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT & HIGHWAYS
Transport Bhawan 1, Parliament Street, New Delhi-110 001
New Delhi, the 14.03.2022

To,

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

Subject: Upgradation and reconstruction of Shahpura-Dindori Section of NH 45 from Km 103.700 (Design) to Km 164.580 (Design) including 3 bypasses (Total length 60.88km) to Two lane with paved shoulder configuration along with One time improvement in 03 nos of bypassed built-up areas in a total length of 12.341 km in the State of Madhya Pradesh on EPC mode.

[Job No. 45-MP-2021-22-27]

Sir,

I am directed to refer to CE (NH), MPPWD, Bhopal letter No. 2950/NH Zone/Shahpura to Dindori/NH 45/EPC/2021-22, Bhopal dated 07.02.2022 forwarding therewith an estimate amounting to Rs. 241.23Cr for the above noted work and to say that the estimate has been examined in this office and approved for Rs. 241.23 Cr in the light of comments contained in the enclosed Technical Note dated 11.03.2022.

2. I am to convey the technical, administrative and financial sanction of the President of India to the modified estimate amounting to Rs. 241.23 Cr (Rupees Two Hundred and Forty One Crore and Twenty Three Lakh only).

3. The work has been assigned (Job No. 45-MP-2021-22-27). This Job number may be quoted in all future correspondence regarding the work.

4. The expenditure is debitable to Major Head '5054' Capital Outlay on Roads & Bridges (Major Head), 01-National Highways (Sub Major Head), 01.337 Road Works (Minor Head), 03 -NH Original Works, 03.01 Works financed from Central Road and Infrastructure Fund 03.01.53 Major Works for which the corresponding Demand for the current financial year 2021-22 is '85'-Ministry of Road Transport & Highways.

5. In accordance with the orders contained in this Ministry's Circular letter No. RW/NH-11026/2/99-US(D.I) dt. 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 dt. 21.05.2011, in addition to guidelines issued by this Ministry's Circular letter No. RW/NH-11024/3/99/US(D.I) dt. 09.03.2000, No. RW/NH-24035/4/2008-P&M dt. 21.05.2010 and No. NH-12037/67/2010 LWE dt. 02.08.2010. The work shall be awarded as per guidelines issued by the Ministry vide letter No. NH-15015/29/2001-PL dt. 05.07.2001.

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-a-vis financial expenditure immediate action should be taken to submit the revised

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estimate so as to ensure that the sanctioned revised estimate is available before necessary for incurring expenditure beyond permissible limits arises.

8. 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 time period.

9. The Chief Engineer - Regional Officer, MoRTH, Bhopal is authorized to draw and disburse the sanctioned amount.

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

Year	Physical	Cumulative progress			
		Construction	Financial (Rs. in cr.)		
			Pre-construction activities	Maintenance	Total
2021-22	5%	11.23	6.48		17.71
2022-23	35%	78.61	11.48		90.09
2023-24	80%	179.68	11.48		191.16
2024-25	100%	224.60	11.48		236.08
2025-26	100%+ maintenance	224.60	11.48		236.08
2026-27	100%+ maintenance	224.60	11.48	1.03	237.11
2027-28	100%+ maintenance	224.60	11.48	2.06	238.14
2028-29	100%+ maintenance	224.60	11.48	3.09	239.17
2029-30	100%+ maintenance	224.60	11.48	5.15	241.23

11. This sanction issues with the concurrence of the Finance Wing vide their Note #12 Dated 14.02.2022.

Yours faithfully,

Encl: As above

(Kamal Parkash)

Under Secretary to the Government of India (Road Wing)

Copy with a copy of Technical Note forwarded to:-

- I. The Chief Secretary to the Govt. of Madhya Pradesh, Bhopal.
- II. The Principal Director of Audit, Economics & Services Ministries, IP Estate, New Delhi.
- III. The Chief Engineer-Regional Officer, MoRT&H, Bhopal, Madhya Pradesh.
- IV. The Engineer-in-Chief, Public Works Department, Bhopal, Madhya Pradesh.
- V. The Regional Pay and Accounts Officer, MoRT&H, Raipur
- VI. The Pay and Accounts Office, MoRT&H, IDA Building, Jamnagar House, New Delhi.
- VII. Accountant General, Government of Madhya Pradesh, Bhopal.
- VIII. PF-I Division, Ministry of Finance, North Block, New Delhi.
- IX. The Chief Engineer (NH), MPPWD, Bhopal, Madhya Pradesh.

Yours faithfully,

(Kamal Parkash)

Under Secretary to the Government of India (Road Wing)

Copy to:

1. Sr. PPS to DG(RD)&SS, MoRT&H, New Delhi.
2. CE(Zone-IV), MoRT&H, Transport Bhawan, New Delhi

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3. W&A Section, TF-II Finance Wing

Signed by Kamal Parkash
Date: 14-03-2022 17:00:20
Reason: Approved

F.No. RW/BHP/MP/APP/2021-22/
GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT & HIGHWAYS
Transport Bhawan 1, Parliament Street, New Delhi-110 001
New Delhi, the 14.03.2022

To,

The Regional Pay & Accounts Officer,
Ministry of Road Transport & Highways,
NH Campus, Pension Bada,
Raipur (C.G.)

Sub: Financial sanction of Rs. 241.23 Cr (Rupees Two Hundred and Forty One Crore and Twenty Three Lakh only) for the work Upgradation and reconstruction of Shahpura-Dindori Section of NH 45 from Km 103.700 (Design) to Km 164.580 (Design) including 3 bypasses (Total length 60.88km) to Two lane with paved shoulder configuration along with One time improvement in 03 nos of bypassed built-up areas in a total length of 12.341 km in the State of Madhya Pradesh on EPC mode" (Job No. 45-MP-2021-22-27) for F.Y. 2021-22 to F. Y. 2029-30 - Reg.

I am directed to convey the financial sanction of the President for the above mentioned work having Job No. 45-MP-2021-22-27 amounting to Rs. 241.23Cr. including agency charges and other centages.

2. The expenditure shall be allowed to be incurred as per the year wise phasing details for the total sanction amount as mentioned below in accordance with the terms and conditions of the work sanction letter and technical note:-

Year	Physical	Cumulative progress			
		Constructio n	Financial (Rs. in cr.)		
			Pre- constructio n activities	Maintenanc e	Total
2021-22	5%	11.23	6.48		17.71
2022-23	35%	78.61	11.48		90.09
2023-24	80%	179.68	11.48		191.16
2024-25	100%	224.60	11.48		236.08
2025-26	100%+ maintenance	224.60	11.48		236.08
2026-27	100%+ maintenance	224.60	11.48	1.03	237.11
2027-28	100%+ maintenance	224.60	11.48	2.06	238.14
2028-29	100%+ maintenance	224.60	11.48	3.09	239.17
2029-30	100%+ maintenance	224.60	11.48	5.15	241.23

3. The expenditure on the work is debitable to NH (O) under Major Head '5054' Capital outlays on Roads and Bridges (Major Head), 01-National Highways (Sub Major Head), 01.337 Road Works (Minor Head), 03-National Highways original works, 03.01- works financed from central road Infrastructure Fund, 03.01.53 Major Works for

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which the corresponding Demand for the current financial year 2021-22 is "85" Ministry of Road Transport and Highways.

4. The accounts of PWD shall be open to inspection by the sanctioning authority and audit, both by the C & AG and internal audit by the Office of Principal Chief Controller of Accounts.

5. The issue with the concurrence of IFD vide Note #12 dated 14.02.2022.

Yours faithfully

(Kamal Parkash)

Under Secretary to the Government of India (Road Wing)

Copy with a copy of Technical Note forwarded to:-

- I. The CE (Zone-IV), MoRT&H, Transport Bhawan, New Delhi.
- II. The Chief Engineer-Regional Officer, MoRT&H, Bhopal, Madhya Pradesh.
- III. The Engineer-in-Chief, Public Works Department, Bhopal, Madhya Pradesh.
- IV. The Chief Engineer (NH), MPPWD, Bhopal, Madhya Pradesh.
- V. AFA, MoRT&H, Transport Bhawan, New Delhi.

Yours faithfully,

(Kamal Parkash)

Under Secretary to the Government of India (Road Wing)

Copy to:

1. Sr. PPS to Secretary (RT&H), MoRT&H, New Delhi.
2. Sr. PPS to DG (RD) & SS, MoRT&H, New Delhi.
3. Sr. PPS to AS & FA, MoRT&H, New Delhi.
4. Sr. PPS to Pr. CCA, MoRT&H, New Delhi.

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Signed by Kamal Parkash

Date: 14-03-2022 17:02:10

Reason: Approved



GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT & HIGHWAYS
Office of Chief Engineer-RO, MoRT&H,
2nd Floor, Nirman Bhawan, Arera Hills, Bhopal

TECHNICAL NOTE

F.No. RW/BHP/MP/APP/2021-22/3437

Dated: 11.03.2022

1.	Name of work	:	Upgradation and reconstruction of Shahpura-Dindori Section of NH 45 from Km 103.700 (Design) to Km 164.580 (Design) including 3 bypasses (Total length 60.88km) to Two lane with paved shoulder configuration along with One time improvement in 03 nos of bypassed built-up areas in a total length of 12.341 km in the State of Madhya Pradesh on EPC mode	
2.	Name of State	:	Madhya Pradesh	
3.	NH No.	:	45	
4.	Estimated cost (Rs. in Crores)	:	As furnished by the MPPWD NH	As modified/approved by Ministry
			241.23	241.23
5.	Length	:	60.88 Km	60.88 Km
6.	Rate / Km. (Rs. Crores)	:	Rs. 3.96 Crore/ Km (including pre-construction activities & centages)	Rs. 3.96 Crore/ Km (including pre-construction activities & centages)
7.	Reference	:	Letter No. 2950/NH Zone/Shahpura-Dindori Bypass/EPC/2022, Bhopal, Dated 07.02.2022 from CE (NH), MPPWD, Bhopal	

COMMENTS

1. Scope of work: Upgradation and reconstruction of Shahpura-Dindori Section of NH 45 from Km 103.700 (Design) to Km 164.580 (Design) including 3 bypasses (Total length 60.88km) to Two lane with paved shoulder configuration along with One time improvement in 03 nos of bypassed built-up areas in a total length of 12.341 km in the State of Madhya Pradesh on EPC mode.
2. Provisions allowed in the estimate:
 - 2.1 Reconstruction & Widening of existing intermediate carriageway to two lane with paved shoulder (2L+PS) flexible pavement in 20.83 km length (7 + 2x1.5m).

[Signature]

- 2.2 Realignment & upgradation of existing intermediate carriageway to two lane with paved shoulder (2L+PS) flexible pavement in 22.77 km length (7 + 2x1.5m).
- 2.3 Construction of 03 nos. of bypasses (Shahpura, Shahpur Mal and Dindori) to 2L+PS flexible pavement in 15.68 km length (7 + 2x1.5m).
- 2.4 Reconstruction & widening of existing intermediate carriageway to 2L+PS rigid pavement in 1.60 km length (7 + 2x2.5m) along with paver block & drain on both sides in 03 nos of built-up areas (i.e. Amera, Vikrampur, Jogi Tikariya Mal).
- 2.5 Improvement under One time investment policy of existing stretch in 03 nos of bypassed built-up sections in total 12.341 km length with White-topping overlay (200 mm) along with construction of drain and paver blocks in 5.741 km and bituminous overlay (50 mm DBM & 30 mm BC) in 6.60 km length
- 2.6 Brief details of the work is as under:

Sr. No.	Description of item	Provisions proposed
1.	Name of the Project	Upgradation and reconstruction of Shahpura-Dindori Section of NH 45 from Km 103.700 (Design) to Km 164.580 (Design) including 3 bypasses (Total length 60.88km) to Two lane with paved shoulder configuration along with One time improvement in 03 nos of bypassed built-up areas in a total length of 12.341 km in the State of Madhya Pradesh on EPC mode
2.	Project road length	Existing length = 59.700 km Design length = 60.880 km
3.	Existing Pavement type and carriageway width	Flexible pavement with 5.5m width
4.	Proposed carriageway & formation width	2L+PS with flexible pavement in total 59.28 km road length (with 7 m carriageway + 2x1.5mtr. paved shoulder = 10 m and 1 m either side earthen shoulders.) 2L+PS with Rigid Pavement in total 1.60 km (with 7 m + 2x2.5 m = 12 m). One time improvement in total 12.341 km length (Whitetopping-5.741km + BT overlay-6.60 km) in 3 nos. bypassed sections.
5.	Last original work and DLP	Nil as reported by CE (NH), Bhopal
6.	Design traffic & CBR (%)	PCU- 4119, CVPD- 645, MSA - 20, CBR-8%
7.	Metal Beam Crash Barrier (in length)	7900m (3950mx2)
8.	Junction Improvement	Major Junction: 01 Minor Junction: 39
9.	Bypass	03 bypasses (15.68 km)

10.	Realignment	25 locations (22.77 km)
11.	Major Bridge	Reconstruction-1, New Construction-3, Widening-0, Retain-0 (Total-04)
12.	Minor Bridge	Reconstruction-3, New Construction-2, Widening-0, Retain-0 (Total-05)
13.	CD Structures (Culverts)	Reconstruction-21, New Construction-102, Widening-21, Retain- 2 (Total-146)
14.	Passenger Underpass	Nil
15.	VUP/PUP	01 VUP at Ch.- 160+035 with vertical clearance of 5.5 m
16.	Toll Plaza	01 at Km 122.000 with 8-lanes

- 2.7 **Realignments and Bypasses:** 03 nos. of Bypasses in total length of 15.68 km. Realignment in a total length of 22.77 km (25 locations). Details are as under:-

Bypasses

Sr. No.	Design Chainage in Km		Length in km	Remarks
	From	To		
1	103+700	108+000	4300	Shahpura Bypass
2	145+450	148+150	2700	Shahpur Mal Bypass
3	155+900	164+580	8680	Dindori Bypass
	Total Length in Km		15.680 km	

Realignment

Sr. No.	Design Chainage		Length(m)	Remarks
	From (Km)	To (Km)		
1	111+600	112+600	1000	Realignment
2	112+900	113+900	1000	Realignment
3	114+200	114+450	250	Curve Improvement
4	115+200	115+650	450	Realignment
5	116+100	117+300	1200	Realignment
6	117+800	118+000	200	Realignment
7	118+530	119+200	670	Realignment
8	119+700	122+400	2700	Realignment
9	123+300	124+140	840	Realignment
10	124+450	125+380	930	Realignment
11	125+380	127+000	1620	Realignment
12	127+000	128+500	1500	Realignment
13	128+500	129+000	500	Realignment
14	129+500	131+200	1700	Realignment
15	132+800	133+650	850	Realignment
16	134+650	135+300	650	Realignment
17	135+800	136+380	580	Realignment
18	136+880	138+300	1420	Realignment
19	138+850	139+330	480	Realignment

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20	140+130	140+900	770	Realignment
21	141+150	141+800	650	Realignment
22	143+400	144+050	650	Realignment
23	152+200	152+550	350	Curve Improvement
24	152+750	153+750	1000	Realignment
25	154700	155510	810	Realignment
Total Length in Km			22.770	

2.8 Details of Bridges:Major Bridges - 4 No's

Sl. No.	Nos. of Bridges	Design Chainage	Existing details	Proposed details
Reconstruction-1 no.				
1.	1 Nos.	130+140	MNB 7x6	MJB 3x25 (Width: 13m)
New Construction-3nos				
2.	3 Nos.	112+400	-	MJB- 4X30,L-120m (Width: 16m)
		140+500		MJB- 4X30,L-120m (Width: 13m)
		155+100		MJB- 7X30,L-210m (Width: 13m)
Total	04 Nos.			

Minor Bridges - 5 No's

Sl. No.	Nos. of Bridges	Design Chainage	Existing details	Proposed details
Reconstruction-3nos				
1.	3 Nos.	115+780 126+570 150+070	Minor Bridge 3x5.5 Slab 1X5 Box 1x2x1.8x2	Minor Bridge 2x20, L- 40m (Width: 13m) Minor Bridge 1X10, L- 10m (Width: 13m) Minor Bridge 1X15, L- 15m (Width: 13m)
New Construction-2nos				
2	2 Nos.	141+420 147+300	-	Minor Bridge 1X25, L- 25m (Width: 13m) Minor Bridge 2X25, L- 50 m (Width: 16m)
Total	05 Nos.			



2.9 Details of culverts

Sl. No.	Nos. of culverts	Existing details	Proposed details
Reconstruction- 21			
1.	04 Nos.	Slab Culvert	Slab Culvert
2.	15 Nos.	Hume Pipe Culvert	Hume Pipe Culvert
3.	02 Nos.	Box Culvert	Box Culvert
Widening-21			
1.	00 Nos.	Slab Culvert	Slab Culvert
2.	00 Nos.	Box Culvert	Box Culvert
3.	21 Nos.	Hume Pipe Culvert	Hume Pipe Culvert
Retain/Retain with Repair-2			
4.	Nil	Slab Culvert	Slab Culvert
5.	Nil	Box Culverts	Box Culverts
6.	02 Nos.	Hume Pipe Culvert	Hume Pipe Culvert
New Construction-102			
7.	Nil	-	Box Culvert
8.	04 Nos.	-	Slab Culvert
8.	98 Nos.	-	Hume Pipe Culvert
Total	146 Nos.		

2.10 **Roadside Drainage:** Construction of RCC Covered drain along built up areas in a length of 3200m (2x1600), RCC covered drain along built-up areas where bypass is proposed in length of 2 x 5741m = 11482m and unlined Drains (59280m).

2.11 **Bus Lay Bys & Truck Lay Bys:** Construction of (5x2) 10 Nos. of Bus Lay Bys along with Bus Shelters and (1x2) 2 Nos. of Truck Lay Bys have been proposed in the estimated cost.

2.12 VUP at km 160+035 with a span of 1x30m with a vertical clearance of 5.5m.

2.13 Retaining wall in a length of 1800m.

2.14 **Other provisions:**

- Protection work is provided along the project stretch at required locations according to IRC SP 73:2018.
- Pitching at required locations according to IRC SP 73:2018.
- For construction of bridges a 1000m diversion road is considered for estimate purpose.
- Construction of embankment with materials deposited from roadway cutting and from materials obtained from borrow pits, construction of sub grade and earthen shoulder.
- Bituminous concrete with polymer modified bitumen and use of waste plastic (10% of total length) in accordance with IRC:SP-98-2013 has been proposed in the estimate in accordance with Ministry's guidelines for use of new technology.

- Provision of road Marking, Traffic sign Boards, Other road Side Furniture, Road safety Works, W Beam Crash Barrier (3700m), Delineators etc.
- Providing cautionary, mandatory & informatory signboards and place & identification sign boards, Overhead Sign boards at required locations.
- Painting lines, dashes, arrows, providing road marking, providing Km stones, 5th Km stones, hectometre stones, road delineators, road studs, RCC M15 grade boundary pillars.
- Cable ducts, gantry sign boards.
- Street lighting in built up areas (both sides @ 30mc-c), near bus lay byes, truck lay byes, toll plazas.
- Rain water harvesting pits-61 Nos

2.15 Toll plaza: Construction of 01 no. of Toll plaza of 8 Lanes at km 122.000 along with ETC arrangement in all the 08 lanes as per Ministry's Guidelines & Specifications.

2.16 Proposed Crust thickness and composition:

Pavement Design:

A. Crust thickness and composition for the proposed work shall be as under:

Sr. No	Type of pavement		Proposed Carriageway Width	Design Traffic	CB R	Composition
(I)	Flexible Pavement (As per IRC 37:2018) (59.28 km)		7m carriageway + 2 x 1.5m paved shoulders + 2 x 1m earthen shoulder	20 MSA (Adopted)	8%	200mm GSB +250mm WMM + 90mm DBM + 30 mm BC
(II)	Rigid Pavement (As per IRC 58:2015) (1.6 km)		7m carriageway + 2 x 2.5m paved shoulders + paver blocks + RCC drain	520 CVPD	8%	225mm GSB +150mm DLC +300mmPQC
(III)	One time improvement in total 12.341 km length of 03 nos. of bypassed sections (As per IRC SP 76:2015)	White topping in 5.741 km				200 mm thickness on Existing Road.
		BT overlay in 6.60 km				50mm DBM & 30mm BC overlay

B. MPPWD shall ensure that EPC Contractor shall design the pavement as per design requirement subject to minimum pavement thickness and design requirements as indicated above. This shall be incorporated in Schedule "B" of the Draft Contract Agreement to be issued along with the RFP.



- C. Provision of bituminous concrete with polymer modified bitumen and DBM with VG-40 has been made in the estimate.
- 2.17 Bituminous concrete with polymer modified bitumen and use of waste plastic (10% of total length) in accordance with IRC:SP-98-2013 has been proposed in the estimate in accordance with Ministry's guidelines for use of new technology.
- 2.18 Shifting of Electrical Utility, water utility and tree cutting as per site requirement. Provision for shifting of utilities has been made in the estimate based on the estimate provided by Utility owning department as stated by MPPWD.
3. **Modifications by RO in the proposal:**
- Arithmetical errors corrected.
4. **Design specifications:** Manual Of Specifications and Standards for Two Laning of Highways with Paved Shoulder IRC: SP: 73-2018 have been followed for the work. Chief Engineer (NH), MPPWD, shall ensure that all material, design and construction operations for the project are proposed conforming to the IRC:37-2018, IRC:58-2015, IRC-73:2018- Manual of specifications and standards for two-laning of Highways with paved shoulders & all other relevant IRC code
5. **Pre-construction activities:**
- 5.1 **Land Acquisition:**
- Total area required for the project is reported to be 111.512 Ha (13.305 Ha. Govt. + 98.205 Ha. Private). A length of 52.225 km is affected due to LA.
- State PWD has reported that 3(D) notification is published in Gazette on 01.12.2021 for 48.230 Ha affecting in a length of 42.025 km.
- And for the remaining 49.977 Ha, 3(A) is published for 16.439 Ha & 3(A) for 33.538 Ha is likely to be submitted to the Ministry by 28.02.2022.
- State PWD shall ensure that 100% LA including 3(G) is completed before award of work.
- Land Acquisition is being acquired mainly for Bypasses, Geometric improvement and Toll plaza. Cost of LA is Rs. 8.41 crore.
- 5.2 **Forest clearance:**
- Diversion of forest land for 5.856 ha is required affecting in a length of 2.53 km. Stage-I permission applied. State PWD shall ensure that Stage-II clearance is obtained before award of work. Cost towards forest clearance is Rs. 0.95 crore.



5.3 Environmental clearance:

Environmental clearance is not required as per latest MoEF notification Dated 23.08.2013.

5.4 Utility Shifting:

Electrical Utility Shifting	Rs. 1.12 Cr.
Water Utility Shifting	Rs. 0.90 Cr.
EMP Cost (Tree Cutting)	Rs. 0.10 Cr.

5.5 Out of the total 60.88 km, project reach is affected in 52.225 km for Land Acquisition and project reach is affected in 2.53 km for diversion of forest land. Considering published 3(D) as available length, at present 48.15 km length is available i.e. 79.09% land is available in terms of linear length. MPPWD stated that 100% land shall be available before award of the work.

6. Standing Finance Committee (SFC) conditions/comments:

Award of work shall only be made after declaration of 90% of 3(G) of LA, R&R etc. compensation amount and receipt of all forest clearances.

7. Specifications & Standards:

7.1. The design, construction and specifications of materials to be used for the construction of the project road shall be as per specifications and standards stipulated in Schedule-D of the EPC contract agreement issued vide Ministry's circular No. RW/NH-37010/4/2010-EAP (Printing) Vol. IV dated 05.03.2019 and subsequent amendments made thereon till appointed date of the contract.

7.2. The work shall be executed on EPC mode. All the relevant schedules shall be finalized by Chief Engineer (NH), MPPWD, Bhopal and got approved from the Chief Engineer - Regional Officer, MoRTH, Bhopal before tendering. CE (NH), MPPWD, M.P shall ensure that all the provisions of the approved estimate and the requirements of the project highway have been duly incorporated in the respective technical schedules.

7.3. CE (NH), MPPWD, M.P. shall ensure that the quality of works conforms to the provisions stipulated in the contract agreement in accordance with the IRC:SP:112-2017 "Manual for Quality Control in Roads & Bridge works". The quality of certain percentage of the executed works may preferably be got checked by the State MPPWD through the NABL approved laboratories.

7.4. Bitumen to be used for the road works shall be as per Ministry's circular No. RW/NH-35072/05/2018-S&R(P&B) dated 24.08.2018. Also, anti-



stripping agent shall be used as per Ministry guideline circulated vide letter NO.RW/NH-33044/127/2016-S&R(P&B) dated 06.08.2018.

8. Invitation of tender and award of work:

- 8.1 The bids for the work shall be invited through e-procurement system as per guidelines issued vide this Ministry's circular letter No.RW/NH-24035/4/2008-P & M/PIC Vol. II dated 23.02.2018. Further, the procedure for tendering, evaluation of bids, acceptance of bids and award of the work including the timeline for award of the work shall also be as per guidelines issued vide this Ministry's circular letter No.RW/NH-24035/4/2008-P & M/PIC Vol. II dated 23.02.2018.
- 8.2 For invitation of bids, the RFP document including procedure for submission of bids shall be as per Ministry's circular no. RW/NH-37010/4/2010-EAP (Printing) Vol. IV dated 05.03.2019. Further, the standard EPC contract document issued vide Ministry's circular no. RW/NH-37010/4/2010-EAP (Printing) Vol. IV dated 05.03.2019 shall be adopted.
- 8.3 In accordance with the instructions contained in 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.
- 8.4 The advertisement for invitation of tenders shall be done as per Ministry's letter No. RW/NH-34066/14/2018-S&R(R&B) dated 25.06.2018. The work is to be awarded within six months from the date of issue of sanction. In this connection, guidelines issued vide Ministry's Circular No. RW/NH-24035/4/2008-P&M/PIC Vol.II dated 23.02.2018 shall be referred to. If the work is not awarded within the stipulated time, it may lead to de-sanction of the work unless Ministry's prior approval to extension of the time limit is obtained.
- 8.5 The state PWD will intimate this Ministry and Ministry's Regional officer at Bhopal 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.
- 8.6 CVC guidelines in tendering may also be followed.
- 8.7 The appointed date of the project shall be given only after getting all necessary clearances in no less than 90% of the required ROW of the construction zone of the total length of the project highway as specified in the contract agreement.



8.8 Single stage two-cover bidding on EPC mode is to be adopted as per issued vide letter no. RW/NH-37010/4/2010-EAP (printing) vol/-IV dated 05-03-2019

8.9 Construction period for this work shall not be more than 24 months including the rainy period. Defects liability period and maintenance period shall be 5 years as specified in the letter no. RW/NH-37010/4/2010-EAP (printing) vol/-IV dated 05-03-2019.

8.10 RFP will be received, opened and evaluated by the Evaluation Committee in the Ministry with following composition:

Chief Engineer - RO	Chairman
Chief Engineer (NH), MPPWD	Member
Superintending Engineer (NH), MPPWD	Member
Representative of Finance Wing (MoRT&H)	Member
Executive Engineer (NH), MPPWD	Member

8.11 The LOA shall be issued by the appropriate Authority not below the rank of Chief Engineer (NH) in the State PWD. Thereafter, the Contract Agreement shall be signed by the appropriate Authority in the State PWD, but not below the rank of Superintending Engineer within the prescribed period mentioned in the RFP.

9. General observations:

9.1 No work beyond the scope of the sanctioned estimate leading to increase in the scope of the work or change in specification should be undertaken without obtaining prior written approval of the Ministry. In case, the estimate needs revision due to change in scope of work or change in specification for any reasons, the revised estimate shall be submitted immediately for Ministry's approval along with recommendations of the Authority Engineer and in accordance with the provisions of the EPC Contract Agreement. In this connection, this Ministry's letter no. NH-24035/4/2008-P&M dated 23.02.2018 and G-20016/23/2017-TF-II dated 01.10.2020 may be referred.

9.2 The provision of contingencies should be utilized as per Ministry's circular letter no. No. RW/NH-24035/4/2008-P&M/PIC Vol.II dated 23.02.2018. For any other item which is not covered in the above circular, necessary approval of Ministry (in-principle) with the recommendation of Concerned RO shall be taken before execution. However, sub estimate for the same shall be got approved from Concerned RO, before execution.

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 CE(NH), MPPWD shall ensure that the quality of works conforms to the provisions stipulated in the contract agreement. The quality of certain percentage of the executed works shall be got checked by the State PWD through the NABL approved laboratories in accordance with the IRC:SP:112-2017 "Manual for Quality Control in Roads & Bridge works".

9.5 Bitumen to be used for the road works shall be as per Ministry's circular no. RW/NH-35072/05/2018-S&R(P&B) dated 24.08.2018. Also, anti-stripping agent shall be used as per Ministry guideline circulated vide letter No. RW/NH-33044/127/2016-S&R(P&B) dated 06.08.2018.

9.6 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.

9.7 The contractor should possess all requisite machineries such as Batch mix plant, sensor paver, roller etc. required for execution of the work as per requirement of the contract agreement.

9.8 For maintenance of proper record of the execution of the work Photography/videography shall be taken by state PWD before, during and after execution of work and a digital copy of the same may be forwarded to Ministry/RO for record. Cost of the same shall be considered accidental to the work and no extra cost shall be paid to the contractor.

9.9 In order to ensure that there is no slippage in achieving the project milestone/completion date to avoid cost and time overrun, the progress shall be closely monitored by CE(NH), MPPWD and RO, Bhopal and quarterly status report furnished to the Ministry in the prescribed Performa.

9.10 Traffic management during construction of the work shall be done in accordance with stipulations of IRC:SP:55-2014 to ensure proper regulation of traffic and causing least inconvenience to road users. Further, guidelines for Road Safety measures on NHs issued vide Ministry's circular No. RW/NH-29011/01/2015-P&M(RSCE) dated 20.09.2019 shall be strictly followed. Cost of the same shall be considered accidental to the work and no extra cost shall be paid to the contractor.

9.11 It is observed that simultaneous working at large number of work fronts in long stretches is causing severe inconvenience to traffic during construction. Therefore, it is suggested that fronts may not be operated in more than 3 km length simultaneously, without completing the bituminous surfacing in the



stretches where excavation/granular layers are carried out. Suitable provisions in the contract shall be incorporated for proper traffic management.

9.12 All the items of work included in the scope of work will be executed as per specifications and standards stipulated in Schedule-D of the contract agreement and circulars/guidelines issued by the Ministry from time to time

9.13 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 (R) dated 26th May, 2003. The cost of the same will be met out of the provision of contingencies allowed in the estimate.

9.14 The transverse bars marking may be provided by the contractor at identified accident prone spots and at junctions where the need for alerting drivers/reduction in speed desired as per Ministry circular no. RW/NH/33044/13/2012-S&R (R) dated 04.05.2013. Cost of the same shall be considered accidental to the work and no extra cost shall be paid to the contractor

9.15 Waste plastic shall be utilized in wearing course in projects near urban area and other feasible stretches in accordance to Ministry's circular no. RW-NH-33044/24/2015-S&R (R) dated 09.11.2015 and 27.12.2016. Also, instruction issued vide Ministry's circular no. RW/NH-33044/24/2015-S&R (R) dated 27.08.2019 regarding "collection and re-use of waste plastic" may also be complied with.

9.16 As per Ministry's circular no. RW/NH-33044/32/2019-S&R(P&B) dated 13.11.2019, project highway shall necessarily be surveyed with Network Survey Vehicle and road safety audit shall be carried.

10. RATES

The estimate is based on the latest Schedule of Rates, August, 2017 & Addendum No. 4 Dated 01/08/2018 applicable for Public Work Department for Road and Bridge Works in the State of Madhya Pradesh. MPWD SOR is inclusive of taxes prior to GST regime and therefore SOR rates has been reduced by 6% for the implication of taxes prior to GST regime and thereafter 12% GST has been included in the estimate. CE (NH), MPPWD has intimated that rates for all the Non-SOR items has been approved by competent authority in MPPWD.

11. Centages: Centages have been proposed as per Ministry's guidelines issued from time to time as under:

11.1. Contingency @1%, Supervision @3% and Agency Charges @3% as per Ministry's circular no. No. RW-NH-33044/10/2019-S&R(P&B) dated 07.03.2019.

11.2. Price Escalation @ 5% of total estimated civil construction cost as per the phasing of the project execution only for the period beyond one year of Bid



Submission date. Accordingly Price Escalation @ 5% for project phasing of 2nd year (i.e. 60% of project cost) is considered.

11.3. Maintenance charges 2.5% in accordance with Ministry's Standard EPC documents issued vide letter no. RW/NH-37010/4/2010-EAP (printing) vol/-IV dated 05-03-2019.

12. Estimated Cost: The estimate is based on the Ministry's Standard Data Book and latest State Schedules of Rates. The leads for the collection of various materials as adopted in the estimate have been allowed for estimate purpose only. However, while calling tenders, the source may not be indicated. The contractor shall be responsible to procure the material conforming to the specifications of the work. No provision of extra lead during execution of the work shall be allowed. The estimated cost works out to Rs. 241.23 Cr. In the light of the above observations and comments as per details given below:

Sr. No.	DESCRIPTION	TOTAL AMOUNT (Rs.)	TOTAL AMOUNT (Crores)
a.	Site-Clearance	67,36,022	0.67
b.	Earthwork	16,22,25,792	16.22
c.	Sub-base	14,24,30,008	14.24
d.	White Topping with Drain & Paver Block and Overlay on Existing road (Bypass location)	10,55,85,032	10.56
e.	Base Course & Bituminous Work	67,47,95,322	67.48
f.	CC Pavement	7,67,03,475	7.67
1	Cost of Road Works	1,16,84,75,650	116.85
2	Cost of Cross-Drainage structures		
3	Major Bridges	191291171	19.13
4	Minor Bridges	67246635	6.72
4	Vehicular Under Pass	49372539	4.94
5	Pipe Culverts, Slab Culverts & Box Culverts	96682686	9.67
6	Toll Plaza	6,65,24,803	6.65
7	Bus Bays & Bus Shelter	1,68,19,433	1.68
8	Truck Lay Bay	46,93,547	0.47
9	CC Drain	2,68,19,312	2.68
10	CC Paver Block	34,46,038	0.34
11	Traffic Signs	83,98,885	0.84
12	Road Marking	1,33,41,521	1.33
13	Road Appurtenances	1,26,89,716	1.27
14	Metal beam crash barrier (Type - B, "THRIE")	3,60,56,792	3.61
15	Junction improvement	6,60,00,631	6.60
16	Avenue Tree Plantation	65,47,472	0.65
17	Rain Water Harvesting	30,44,000	0.30

18	Protection Work (Retaining wall, etc.)	5,11,42,904	5.11
19	Street Lighting (Builtup Sections)	17,34,198	0.17
20	Incident Management Services (IMS)	0	0.00
i	Total Civil Cost (A)	1,84,09,55,396	184.10
	Per km Cost of Civil Works	3,02,39,083	3.02
ii	GST @12% of (A)	22,09,14,647	22.09
iii	Contingencies @ 1%	1,84,09,554	1.84
iv	Agency charges @ 3 % of (A)	5,52,28,662	5.52
v	Supervision Consultancy Charges @ 3% of (A)	5,52,28,662	5.52
vi	Price Escalation (5% on 60% work) of (A)	5,52,28,662	5.52
vii	Post Construction Maintenance Charges 2.5% of (A)	5,15,46,751	5.15
	Centages	45,65,56,938	45.66
viii	Total Project Cost	2,29,75,12,334	229.75
	Per km Cost	3,77,38,376	3.77
ix	a. Electrical works	1,12,01,031	1.12
x	b. Water supply works	89,88,420	0.90
xi	c. EMP Cost(Plantation of 2 times of Tree Cutting)	9,84,057	0.10
xii	d. Forest diversion cost	95,08,723	0.95
xiii	e. Land acquisition cost	8,41,40,618	8.41
	LA, Utility Shifting EW & EMP Charges	11,48,22,849	11.48
xiv	TOTAL CAPITAL COST OF THE PROJECT	2,41,23,35,183	241.23
	Cost per km	3,96,24,428	3.96

13. Phasing of expenditure: Following cumulative physical targets and financial phasing targets and financial phasing of expenditure shall be adhered to subject to overall availability of funds:

Year	Physical	Cumulative progress			
		Construction	Financial (Rs. in cr.)		
			Pre-construction activities	Maintenance	Total
2021-22	5%	11.23	6.48		17.71
2022-23	35%	78.61	11.48		90.09
2023-24	80%	179.68	11.48		191.16
2024-25	100%	224.60	11.48		236.08
2025-26	100%+ maintenance	224.60	11.48		236.08
2026-27	100%+ maintenance	224.60	11.48	1.03	237.11
2027-28	100%+ maintenance	224.60	11.48	2.06	238.14
2028-29	100%+ maintenance	224.60	11.48	3.09	239.17
2029-30	100%+ maintenance	224.60	11.48	5.15	241.23

14. This issues with the approval of Competent Authority.



(M K Chowdary)

Executive Engineer (NFSG)
For CE-RO, MoRTH, Bhopal

F.No. CE-RO-BPL/10010/173/Kundam-Shahpura /2021-22/

GOVERNMENT OF INDIA

MINISTRY OF ROAD TRANSPORT & HIGHWAYS

Transport Bhawan 1, Parliament Street, New Delhi-110 001

New Delhi, the 11.01.2022

To,

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

Subject: Rehabilitation & Upgradation of Kundam to Shahpura section of NH-45 from design km 68.100 to 103.700 (Total Length- 35.600km) to Two lane with paved shoulder configuration in the State of Madhya Pradesh on EPC Mode

[Job No. 45-MP-2021-22-09]

Sir,

I am directed to refer to CE (NH), MPPWD, Bhopal letter No. 2745/NH Zone/Kundam to Shahpura/NH 45/EPC/2021-22, Bhopal dated 06.12.2021 forwarding therewith an estimate amounting to Rs. 147.35 Cr for the above noted work and to say that the estimate has been examined in this office and approved for Rs. 146.44 Cr in the light of comments contained in the enclosed Technical Note dated 10.01.2022.

2. I am to convey the technical, administrative and financial sanction of the President of India to the modified estimate amounting to Rs. 146.44 Cr (Rupees One Hundred and Forty Six Crore and Forty Four Lakh only).

3. The work has been assigned (Job No. 45-MP-2021-22-09). This Job number may be quoted in all future correspondence regarding the work.

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4. The expenditure is debit to Major Head '5054' Capital Outlay on Roads & Bridges (Major Head), 01-National Highways (Sub Major Head), 01.337 Road Works (Minor Head), 03 -NH Original Works, 03.01 Works financed from Central Road and Infrastructure Fund 03.01.53 Major Works for which the corresponding Demand for the current financial year 2021-22 is '85'-Ministry of Road Transport & Highways.
5. In accordance with the orders contained in this Ministry's Circular letter No. RW/NH-11026/2/99-US(D.I) dt. 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 dt. 21.05.2011, in addition to guidelines issued by this Ministry's Circular letter No. RW/NH-11024/3/99/US(D.I) dt. 09.03.2000, No. RW/NH-24035/4/2008-P&M dt. 21.05.2010 and No. NH-12037/67/2010 LW dt. 02.08.2010. The work shall be awarded as per guidelines issued by the Ministry vide letter No. NH-15015/29/2001-PL dt. 05.07.2001.
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-a-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 technical approval and financial sanction may lapse after six months from the date of its issue in case the work is not awarded within time period.
9. The Chief Engineer - Regional Officer, MoRTH, Bhopal is authorized to draw and disburse the sanctioned amount.
10. The following physical and financial target shall be strictly adhered to. Phasing of expenditure shall be as given below

Year	Cumulative progress	

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I/4010785/2022

	Physical	Financial (Rs. in cr.)			
		Construction	Pre-construction activities	Maintenance	Total
2021-22	5%	6.67	2.09		8.76
2022-23	60%	80.03	5.23		85.27
2023-24	100%	133.39	5.23		138.62
2024-25	100%+ maintenance	133.39	5.23	0.93	139.55
2025-26		133.39	5.23	2.49	141.11
2026-27		133.39	5.23	4.06	142.68
2027-28		133.39	5.23	5.62	144.24
2028-29		133.39	5.23	7.82	146.44

11. This sanction issues with the concurrence of the Finance Wing vide their Note #16 Dated 15.12.2021.

Encl: As above

Yours faithfully,

(Kamal Parkash)

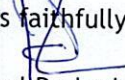
Under Secretary to the Government of India (Road Wing)

Copy with a copy of Technical Note forwarded to:-

- I. The Chief Secretary to the Govt. of Madhya Pradesh, Bhopal.
- II. The Principal Director of Audit, Economics & Services Ministries, IP Estate, New Delhi.
- III. The Chief Engineer-Regional Officer, MoRT&H, Bhopal, Madhya Pradesh.
- IV. The Engineer-in-Chief, Public Works Department, Bhopal, Madhya Pradesh.
- V. The Regional Pay and Accounts Officer, MoRT&H, Raipur
- VI. The Pay and Accounts Office, MoRT&H, IDA Building, Jamnagar House, New Delhi.
- VII. Accountant General, Government of Madhya Pradesh, Bhopal.

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VIII.PF-I Division, Ministry of Finance, North Block, New Delhi.
IX.The Chief Engieer (NH), MPPWD, Bhopal, Madhya Pradesh.

Yours faithfully,

(Kamal Parkash)

Under Secretary to the Government of India (Road Wing)

Copy to:

1. Sr. PPS to DG(RD)&SS, MoRT&H, New Delhi.
2. CE(Zone-IV), MoRT&H, Transport Bhawan, New Delhi
3. W&A Section, TF-II Finance Wing



F.No. CE-RO-BPL/10010/173/Kundam-Shahpura /2021-22/
GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT & HIGHWAYS
Transport Bhawan 1, Parliament Street, New Delhi-110 001
New Delhi, the 11.01.2022

To,

The Regional Pay & Accounts Officer,
Ministry of Road Transport & Highways,
NH Campus, Pension Bada,
Raipur (C.G.)

Sub: Financial sanction of Rs. 146.44 Cr (Rupees One Hundred and Forty Six Crore and Forty Four Lakh only) for the work "Rehabilitation & Upgradation of Kundam to Shahpura section of NH-45 from design km 68.100 to 103.700 (Total Length-35.600km) to Two lane with paved shoulder configuration in the State of Madhya Pradesh on EPC Mode" (Job No. 45-MP-2021-22-09) for F.Y. 2021-22 to F. Y. 2028-29 - Reg.

I am directed to convey the financial sanction of the President for the above mentioned work having Job No. 45-MP-2021-22-09 amounting to Rs. 146.44 Cr. including agency charges and other centages.

2. The expenditure shall be allowed to be incurred as per the year wise phasing details for the total sanction amount as mentioned below in accordance with the terms and conditions of the work sanction letter and technical note:-

Year	Physical	Cumulative progress			
		Construction	Financial (Rs. in cr.)		
			Pre-construction activities	Maintenance	Total
2021-22	5%	6.67	2.09		8.76
2022-23	60%	80.03	5.23		85.27
2023-24	100%	133.39	5.23		138.62
2024-25	100%+ maintenance	133.39	5.23	0.93	139.55
2025-26		133.39	5.23	2.49	141.11
2026-27		133.39	5.23	4.06	142.68
2027-28		133.39	5.23	5.62	144.24
2028-29		133.39	5.23	7.82	146.44

3. The expenditure on the work is debitable to NH (O) under Major Head '5054' Capital outlays on Roads and Bridges (Major Head), 01-National Highways (Sub Major Head), 01.337 Road Works (Minor Head), 03-National Highways original works, 03.01- works financed from central road Infrastructure Fund, 03.01.53 Major Works for which the corresponding Demand for the current financial year 2021-22 is "85" Ministry of Road Transport and Highways.

4. The accounts of PWD shall be open to inspection by the sanctioning authority and audit, both by the C & AG and internal audit by the Office of Principal Chief Controller of

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Accounts.

5. The issue with the concurrence of IFD vide Note #16 dated 15.12.2021.

You
rs faithfully

(Kamal Parkash)
Under Secretary to the Government of India (Road Wing)

Copy with a copy of Technical Note forwarded to:-

- I. The CE (Zone-IV), MoRT&H, Transport Bhawan, New Delhi.
- II. The Chief Engineer-Regional Officer, MoRT&H, Bhopal, Madhya Pradesh.
- III. The Engineer-in-Chief, Public Works Department, Bhopal, Madhya Pradesh.
- IV. The Chief Engineer (NH), MPPWD, Bhopal, Madhya Pradesh.
- V. AFA, MoRT&H, Transport Bhawan, New Delhi.

Yours faithfully,

(Kamal Parkash)
Under Secretary to the Government of India (Road Wing)

Copy to:

1. Sr. PPS to Secretary (RT&H), MoRT&H, New Delhi.
2. Sr. PPS to DG (RD) & SS, MoRT&H, New Delhi.
3. Sr. PPS to AS & FA, MoRT&H, New Delhi.
4. Sr. PPS to Pr. CCA, MoRT&H, New Delhi.

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Digitally Signed by Kamal
Parkash

Date: 11-01-2022 16:01:24

Reason: Approved



GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT & HIGHWAYS
Office of Chief Engineer-RO, MoRT&H,
2nd Floor, Nirman Bhawan, Arera Hills, Bhopal

TECHNICAL NOTE

F.No. CE-RO-BPL/10010/173/Kundam-Shahpura /2021-22/2519 Dated: 10.01.2022

1.	Name of work	:	Rehabilitation & Upgradation of Kundam to Shahapura section of NH-45 from design km 68.100 to 103.700 (Total Length- 35.600km) to Two lane with paved shoulder configuration in the State of Madhya Pradesh on EPC Mode.	
2.	Name of State	:	Madhya Pradesh	
3.	NH No.	:	45	
4.	Estimated cost (Rs. in Crores)	:	As furnished by the MPPWD NH	As modified/approved by Ministry
			147.35	146.44
5.	Length	:	35.60 Km	35.60 Km
6.	Rate / Km. (Rs. Crores)	:	Rs. 4.14 Crore/ Km (including pre-construction activities& centages)	Rs. 4.11 Crore/ Km (including pre-construction activities& centages)
7.	Reference	:	CE (NH) MPPWD Bhopal's Letter No. 2745/NH Zone/Kundam to Shahpura/NH 45/EPC/2021-22, Bhopal, dated 06.12.2021.	

COMMENTS

1. **Scope of work:** Rehabilitation & Upgradation of Kundam to Shahapura section of NH-45 from design Km 68.100 to 103.700 (Total Length- 35.600Km) to Two lane with paved shoulder configuration in the State of Madhya Pradesh on EPC Mode.
2. **Provisions allowed in the estimate:**
 - 2.1 Reconstruction & Widening of existing intermediate carriageway to two lane with paved shoulder (2L+PS) flexible pavement in 19.320 km length (7 + 2x1.5m)
 - 2.2 Realignment & upgradation to two lane with paved shoulder (2L+PS) flexible pavement in 14.890 km length (7 + 2x1.5m).
 - 2.3 Reconstruction & widening of existing intermediate carriageway to 2L+PS rigid pavement in 1.390 km length (7 + 2x2.5m) along with paver block & drain on both sides in 3 nos of built-up areas (i.e. Mahgawan, Chaurai Khurd, Deori Kalan).
 - 2.4 Brief details of the work is as under:

Sr. No.	Description of item	Provisions proposed
1.	Name of the Project	Rehabilitation & Upgradation of Kundam to Shahapura section of NH-45 from design km 68.100 to 103.700 (Total Length- 35.600km) to Two lane with paved shoulder configuration in the State of Madhya Pradesh on EPC Mode.

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2.	Project road length	Proposed Road length = 35.600 km
3.	Existing Pavement type and carriageway width	Existing Pavement is BT with 5.5m width of length 36.400 km.
4.	Proposed carriageway & formation width	Flexible pavement (34.21 km) with 7m + 2x1.5m=10m and earthen shoulders 1m either side Rigid Pavement (1.39 km) (with (7m+ 2x2.5m= 12m)
5.	Last original work and DLP	Nil
6.	Design traffic & CBR (%)	PCU- 4119, CVPD- 645 (2021), MSA-20, CBR-8%
7.	Metal Beam Crash Barrier (in length)	7400m (For Both Side=3700x2)
8.	Junction Improvement	Major Junction: 01 Minor Junction: 27
9.	Bypass/ Realignment	0 bypasses/13 no in a length of 14.89km
10.	Major Bridge	Total -01 nos. New Construction-1
11.	Minor Bridge	Total-10 nos. New Construction-04 Reconstruction-05 and Widening-01,
12.	CD Structures (Culverts)	Total-82 nos. New Construction-13 (02 nos. Slab & 11 nos. HPC), Reconstruction- 05 (01 nos. Box, 03 nos. Slab & 1 nos. HPC), Widening- 32 (03 nos. Slab & 29 nos. HPC), Cross road culvert- 29 nos. HPC, and Retain-03 (03 nos. HPC)
13.	Passenger Underpass	Nil
14.	VUP/PUP	Nil
15.	ROB/RUB	Nil
16.	Level Crossing	Nil

2.5 Realignment in 13 locations in total 14.98 km length has been proposed for improvement of existing geometry.

2.6 Details of Bridges:

Sl. No.	Nos. of Bridges	Design Chainage	Existing details	Proposed details
Reconstruction				
1.	1 Nos.	69+000	Minor Bridge 2X5.5 Length-11 m	Minor Bridge 1X15 Length- 15 m
2.	1 Nos.	69+400	Minor Bridge 8x5.5 Length- 44 m	Minor Bridge 3x20 Length- 60 m
3.	1 Nos.	81+190	Minor Bridge	Minor Bridge

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Sl. No.	Nos. of Bridges	Design Chainage	Existing details	Proposed details
			2x4 Length- 8 m	1x10 Length- 10 m
4.	1 Nos.	101+580	Minor Bridge 6x6.5 Length- 39 m	Minor Bridge 2x22 Length- 44 m
5.	1 Nos.	103+400	VCW 2x1200 Length- 10 m	Minor Bridge 1x10 Length 10 m
New Construction				
6	01 Nos.	77+700		Minor Bridge 1X10 Length-10 m
7	01 Nos.	79+750		Major Bridge 4X30 Length-120 m
8	01 Nos.	90+000		Minor Bridge 3x20 Length- 60 m
9	01 Nos.	99+880		Minor Bridge 2X10 Length- 20 m
10	01 Nos.	102+100		Minor Bridge 2X25 Length- 50 m
Widening				
11	01 Nos.	71+280	Minor Bridge 3x8.5 Length-25.5 m	Box Minor Bridge 3x8.5 Length-25.5 m
Retain/Retain with Repair				
Total	11 Nos.			

2.7 Details of culverts

Sl. No.	Nos. of culverts	Existing details	Proposed details
Reconstruction			
1.	03 Nos.	HPC/Slab Culvert	Slab Culvert
2.	01 Nos.	Slab Culvert	Box Culvert
3.	01 Nos.	Hume Pipe Culvert	Hume Pipe Culvert
Widening			
4.	03 Nos.	Slab Culvert	Slab Culvert
5.	29 Nos.	Hume Pipe Culvert	Hume Pipe Culvert
Retain/Retain with Repair			
6.	03 Nos.	Hume Pipe Culvert	
New Construction (Realignment)			
7.	00 Nos.	-	Box Culverts
8.	02 Nos.	-	Slab Culverts
9.	11 Nos.	-	Hume Pipe Culverts
Cross road culverts (HPC)			
10	29 Nos		
Total	82 Nos.		

3/12

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- 2.8 Roadside Drainage: Construction of RCC covered drain along built up areas in total 2780m length (2 x 1390m = 2780 m).
- 2.9 Bus Lay Bys & Truck Lay Bys: Construction of (3x2) 06 Nos. of Bus Lay Bys along with Bus Shelters and (1x2) 2 Nos. of Truck Lay Bys have been proposed in the estimated cost.
- 2.10 Traffic Control Devices and Road Safety Works and Road Furniture:
- Provision of road marking, sign boards, other road Side Furniture/ Appurtenance's. Street lighting, road safety works & Delineators, etc. as per Ministry guidelines & IRC specifications.
 - Diversion road for bridges with NP4 pipes, GSB 150mm & WMM 250mm.
 - Thrie Metal Beam Crash Barrier in 7400 m length (3700 m on both side i.e. 7400 m).
 - RCC M15 grade boundary pillars.
 - Providing generators & street lights in 3 nos. of Built-up sections on both side at 30 m interval, junctions, truck lay bye, bus lay bye locations along with provision for electricity bill payment during the period of contract.
 - RCC pipe utility duct 600mm dia. across the road at every 300 m interval (Single Row) in open section & 200m interval (Double Row) in built-up section.
 - Electrical lighting for street lights along the built-up areas, truck lay byes, bus bays, and high mast lighting at major junctions shall be provided.
 - Rain water harvesting pits - 35 nos.
- 2.11 Toll plaza: Nil.
- 2.12 Retaining wall in 2.35 km, Toe wall in 2.8 km & Pitching at required locations according to IRC SP 73:2018 have also been considered while working out the estimated cost
- 2.13 Proposed Crust thickness and composition:

Pavement Design:

A. Crust thickness and composition for the proposed wok shall be as under:

Sr. No	Type of pavement & Length in Km		Design Traffic	CBR	Composition
(I)	Flexible Pavement (As per IRC 37:2018)	34.210 km	20 MSA (Adopted)	8%	BC-30mm DBM- 90mm WMM-250 mm GSB-200 mm Subgrade-500mm

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(II)	Rigid Pavement (As per IRC 58:2015)	1.390 km	CVPD- 645	8%	PQC- 300 mm DLC- 150 mm GSB- 225 mm Subgrade-500 mm
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B. EPC Contractor shall design the pavement as per design requirement subject to minimum pavement thickness and design requirements as indicated above. This shall be incorporated in Schedule "B" of the Draft Contract Agreement to be issued along with the RFP.

C. Provision of bituminous concrete with polymer modified bitumen and DBM with VG-40 has been made in the estimate.

Other General provisions:

2.14 Incident Management Services (IMS): Provision taken under IMS as per Ministry's circular no. RW/G 23012/01/2019-W&A(pt.III) dated 09.02.2021 are as follows:

- a) Rescue Ambulance
- b) Patrol Vehicle
- c) Tow Away crane
- d) Incident cum Road Property Manager-Cum- Route Operation Manager

2.15 Construction of embankment with materials deposited from roadway cutting and from materials obtained from borrow pits, construction of subgrade and earthen shoulder.

2.16 Bituminous concrete with polymer modified bitumen and use of waste plastic (Aprx 10 km) in accordance with IRC:SP-98-2013 has been proposed in the estimate in accordance with Ministry's guidelines for use of new technology.

2.17 Shifting of Electrical Utility, water utility and tree cutting as per site requirement. Provision for shifting of utilities has been made in the estimate based on the estimate provided by Utility owning department as stated by MPPWD.

3. Modifications by RO in the proposal:

3.1 Arithmetical error in various items is corrected.

3.2 State PWD has proposed Rain water harvesting pit rate @ Rs. 1,00,000/no for which no rate analysis is proposed. As such the same is enquired from NHAI officials of MP and lumpsum rate of Rs. 50,000/no is considered for estimate purpose.

3.3 State PWD has proposed street lighting for built-up section @ Rs. 50,000/ no for which no rate analysis is proposed. As such the same is enquired from SOR of Karnataka State and rate of Rs. 10,750/ no is considered for estimate purpose.

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4. **Design specifications:** Chief Engineer (NH), MPPWD, Bhopal shall ensure that all material, design and construction operations for the project are proposed conforming to the IRC:SP:73-2018, Manual of Specifications and Standards for Two Laning of Highways with Paved Shoulder.

5. **Pre-construction activities:**

5.1 **Land Acquisition:**

Total area required for the project is 68.474 Ha out of which 41.686 Ha land is available. Total Land to be acquired is 26.788 Ha (21.659 Ha. Private land + 5.129 Ha. Govt. land) at a cost of Rs. 2.42 Cr. (including supplementary award amount) affecting total 14.89 km project reach. State PWD has submitted that 3(A) & 3 (D) has been published for 14.89 km. State PWD shall ensure that 100% LA including 3(G) is completed before award of work.

5.2 **Forest clearance:**

Nil.

5.3 **Environmental clearance:**

Environmental clearance is not required as per latest MoEF notification Dated 23.08.2013.

5.4 **Utility Shifting:**

Electrical Utility Shifting	Rs. 2.38 Cr.
Water Utility Shifting	Rs. 0.37 Cr.
EMP Cost (Tree Cutting)	Rs. 0.06 Cr.

- 5.5 Out of the total 35.600 km, project reach is affected in 14.890 km for Land Acquisition. MPPWD shall ensure that 100% land shall be available before award of the work.

6. **Standing Finance Committee (SFC) conditions/comments:**

- 6.1 Award of work shall only be made after declaration of 90% of 3(G) of LA, R&R etc. compensation amount and receipt of all forest clearances.

7. **Specifications & Standards:**

- 7.1. The design, construction and specifications of materials to be used for the construction of the project road shall be as per specifications and standards stipulated in Schedule-D of the EPC contract agreement issued vide Ministry's circular No. RW/NH-37010/4/2010-EAP (Printing) Vol. IV dated 05.03.2019 and subsequent amendments made thereon till appointed date of the contract.

- 7.2. The work shall be executed on EPC mode. All the relevant schedules shall be finalized by Chief Engineer(NH), MPPWD, Bhopal and got approved from the Regional Officer, MoRTH, Bhopal before tendering. CE (NH), MPPWD, M.P shall ensure that all the provisions of the approved estimate and the requirements of

the project highway have been duly incorporated in the respective technical schedules.

- 7.3. CE (NH), MPPWD, M.P. shall ensure that the quality of works conforms to the provisions stipulated in the contract agreement in accordance with the IRC:SP:112-2017 "Manual for Quality Control in Roads & Bridge works". The quality of certain percentage of the executed works may preferably be got checked by the State MPPWD through the NABL approved laboratories.
- 7.4. Bitumen to be used for the road works shall be as per Ministry's circular No.RW/NH-35072/05/2018-S&R(P&B) dated 24.08.2018. Also, anti-stripping agent shall be used as per Ministry guideline circulated vide letter NO.RW/NH-33044/127/2016-S&R(P&B) dated 06.08.2018.

8. Invitation of tender and award of work:

- 8.1 The bids for the work shall be invited through e-procurement system as per guidelines issued vide this Ministry's circular letter No.RW/NH-24035/4/2008-P & M/PIC Vol. II dated 23.02.2018. Further, the procedure for tendering, evaluation of bids, acceptance of bids and award of the work including the timeline for award of the work shall also be as per guidelines issued vide this Ministry's circular letter No.RW/NH-24035/4/2008-P & M/PIC Vol. II dated 23.02.2018.
- 8.2 For invitation of bids, the RFP document including procedure for submission of bids shall be as per Ministry's circular no. RW/NH-37010/4/2010-EAP (Printing) Vol. IV dated 05.03.2019. Further, the standard EPC contract document issued vide Ministry's circular no. RW/NH-37010/4/2010-EAP (Printing) Vol. IV dated 05.03.2019 shall be adopted.
- 8.3 In accordance with the instructions contained in 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.
- 8.4 The advertisement for invitation of tenders shall be done as per Ministry's letter No. RW/NH-34066/14/2018-S&R(R&B) dated 25.06.2018. The work is to be awarded within six months from the date of issue of sanction. In this connection, guidelines issued vide Ministry's Circular No. RW/NH-24035/4/2008-P&M/PIC Vol.II dated 23.02.2018 shall be referred to. If the work is not awarded within the stipulated time, it may lead to de-sanction of the work unless Ministry's prior approval to extension of the time limit is obtained.
- 8.5 The state PWD will intimate this Ministry and Ministry's Regional officer at Bhopal 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.
- 8.6 CVC guidelines in tendering may also be followed.

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8.7 The appointed date of the project shall be given only after getting all necessary clearances in no less than 90% of the required ROW of the construction zone of the total length of the project highway as specified in the contract agreement.

8.8 Single stage two-cover bidding on EPC mode is to be adopted as per issued vide letter no. RW/NH-37010/4/2010-EAP (printing) vol/-IV dated 05-03-2019

8.9 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 letter no. RW/NH-37010/4/2010-EAP (printing) vol/-IV dated 05-03-2019.

8.10 RFP will be received, opened and evaluated by the Evaluation Committee in the Ministry with following composition:

Chief Engineer - RO	Chairman
Chief Engineer (NH), MPPWD	Member
Superintending Engineer (NH), MPPWD	Member
Representative of Finance Wing (MoRT&H)	Member
Executive Engineer (NH), MPPWD	Member

8.11 The Authority to accept bids shall be the Chief Engineer - RO, MoRTH & LOA may be issued by the appropriate Authority not below the rank of Chief Engineer (NH) in the State PWD. Thereafter, the Contract Agreement shall be signed by the appropriate Authority in the State PWD, but not below the rank of Superintending Engineer within the prescribed period mentioned in the RFP.

9. General observations:

9.1 No work beyond the scope of the sanctioned estimate leading to increase in the scope of the work or change in specification should be undertaken without obtaining prior written approval of the Ministry. In case, the estimate needs revision due to change in scope of work or change in specification for any reasons, the revised estimate shall be submitted immediately for Ministry's approval along with recommendations of the Authority Engineer and in accordance with the provisions of the EPC Contract Agreement. In this connection, this Ministry's letter no. NH-24035/4/2008-P&M dated 23.02.2018 and G-20016/23/2017-TF-II dated 01.10.2020 may be referred.

9.2 The provision of contingencies should be utilized as per Ministry's circular letter no. No. RW/NH-24035/4/2008-P&M/PIC Vol.II dated 23.02.2018. For any other item which is not covered in the above circular, necessary approval of Ministry (in-principle) with the recommendation of Concerned RO shall be taken before execution. However, sub estimate for the same shall be got approved from Concerned RO, before execution.

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.

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9.4 CE(NH), MPPWD shall ensure that the quality of works conforms to the provisions stipulated in the contract agreement. The quality of certain percentage of the executed works shall be got checked by the State PWD through the NABL approved laboratories in accordance with the IRC:SP:112-2017 "Manual for Quality Control in Roads & Bridge works".

9.5 Bitumen to be used for the road works shall be as per Ministry's circular no. RW/NH-35072/05/2018-S&R(P&B) dated 24.08.2018. Also, anti-stripping agent shall be used as per Ministry guideline circulated vide letter No. RW/NH-33044/127/2016-S&R(P&B) dated 06.08.2018.

9.6 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.

9.7 The contractor should possess all requisite machineries such as Batch mix plant, sensor paver, roller etc. required for execution of the work as per requirement of the contract agreement.

9.8 For maintenance of proper record of the execution of the work Photography/videography shall be taken by state PWD before, during and after execution of work and a digital copy of the same may be forwarded to Ministry/RO for record. Cost of the same shall be considered accidental to the work and no extra cost shall be paid to the contractor.

9.9 In order to ensure that there is no slippage in achieving the project milestone/completion date to avoid cost and time overrun, the progress shall be closely monitored by CE(NH), MPPWD and RO, Bhopal and quarterly status report furnished to the Ministry in the prescribed Performa.

9.10 Traffic management during construction of the work shall be done in accordance with stipulations of IRC:SP:55-2014 to ensure proper regulation of traffic and causing least inconvenience to road users. Further, guidelines for Road Safety measures on NHs issued vide Ministry's circular No. RW/NH-29011/01/2015-P&M(RSCE) dated 20.09.2019 shall be strictly followed. Cost of the same shall be considered accidental to the work and no extra cost shall be paid to the contractor.

9.11 It is observed that simultaneous working at large number of work fronts in long stretches is causing severe inconvenience to traffic during construction. Therefore, it is suggested that fronts may not be operated in more than 3 km length simultaneously, without completing the bituminous surfacing in the stretches where excavation/granular layers are carried out. Suitable provisions in the contract shall be incorporated for proper traffic management.

9.12 All the items of work included in the scope of work will be executed as per specifications and standards stipulated in Schedule-D of the contract agreement and circulars/guidelines issued by the Ministry from time to time

9/12



9.13 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 (R) dated 26th May, 2003. The cost of the same will be met out of the provision of contingencies allowed in the estimate.

9.14 The transverse bars marking may be provided by the contractor at identified accident prone spots and at junctions where the need for alerting drivers/reduction in speed desired as per Ministry circular no. RW/NH/33044/13/2012-S&R (R) dated 04.05.2013. Cost of the same shall be considered accidental to the work and no extra cost shall be paid to the contractor

9.15 Waste plastic shall be utilized in wearing course in projects near urban area and other feasible stretches in accordance to Ministry's circular no. RW-NH-33044/24/2015-S&R (R) dated 09.11.2015 and 27.12.2016. Also, instruction issued vide Ministry's circular no. RW/NH-33044/24/2015-S&R (R) dated 27.08.2019 regarding "collection and re-use of waste plastic" may also be complied with.

9.16 As per Ministry's circular no. RW/NH-33044/32/2019-S&R(P&B) dated 13.11.2019, project highway shall necessarily be surveyed with Network Survey Vehicle and road safety audit shall be carried.

10. RATES

The estimate is based on the latest Schedule of Rates, August, 2017 & Addendum No. 4 Dated 01/08/2018 applicable for Public Work Department for Road and Bridge Works in the State of Madhya Pradesh. MPWD SOR is inclusive of taxes prior to GST regime and therefore SOR rates has been reduced by 6% for the implication of taxes prior to GST regime and thereafter 12% GST has been included in the estimate. CE (NH), MPPWD has intimated that rates for all the Non-SOR items has been approved by competent authority in MPPWD.

11. **Centages:** Centages have been proposed as per Ministry's guidelines issued from time to time as under:

11.1. Contingency @1%, Supervision @3% and Agency Charges @3% as per Ministry's circular no. No. RW-NH-33044/10/2019-S&R(P&B) dated 07.03.2019.

11.2. Price Escalation @ 5% of total estimated civil construction cost as per the phasing of the project execution only for the period beyond one year of Bid Submission date. Accordingly Price Escalation @ 5% for project phasing of 2nd year (i.e. 60% of project cost) is considered.

11.3. Maintenance charges 2.5% in accordance with Ministry's Standard EPC documents issued vide letter no. RW/NH-37010/4/2010-EAP (printing) vol/-IV dated 05-03-2019.

11.4 Provision of Incidence management have been taken in the estimate as per as per Ministry's circular no. RW/G 23012/01/2019-W&A (pt.III) dated 09.02.2021.

12. **Estimated Cost:** The estimate is based on the Ministry's Standard Data Book and latest State Schedules of Rates. The leads for the collection of various materials as adopted in the estimate have been allowed for estimate purpose only. However, while calling tenders, the source may not be indicated. The contractor shall be responsible to

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procure the material conforming to the specifications of the work. No provision of extra lead during execution of the work shall be allowed. The estimated cost works out to Rs. 146.44 Cr in the light of the above observations and comments as per details given below:

Abstract of Cost				
Sr No.	DESCRIPTION	Amount as submitted by State MPPWD vide letter dt 27.11.2021	Amount Modified by Ministry (in Rs.)	TOTAL AMOUNT (in Cr.)
a.	Site-Clearance	47,67,003	47,67,003	0.48
b.	Earthwork	9,35,74,145	9,35,74,145	9.36
c.	Sub-base	8,20,62,690	8,20,62,690	8.21
d.	Base Course & Bituminous Work	38,98,21,927	38,98,21,927	38.98
e.	CC Pavement	3,24,28,346	3,24,28,346	3.24
1	Cost of Road Works	60,26,54,111	60,26,54,111	60.27
2	Cost of Cross-Drainage structures			
3	Major Bridges	5,53,77,251	5,53,77,251	5.54
4	Minor Bridges	13,60,24,317	13,60,24,317	13.60
5	Pipe Culverts, Slab Culverts & Box Culverts	5,15,03,148	5,15,03,148	5.15
6	Bus Bays & Bus Shelter	1,00,91,660	1,00,91,660	1.01
7	Truck Lay Bay	46,93,547	46,93,547	0.47
12	CC Drain	2,32,99,276	2,32,99,276	2.33
9	CC Paver Block	49,89,575	49,89,575	0.50
10	Traffic Signs	75,30,889	75,30,889	0.75
11	Road Marking	78,01,823	78,01,823	0.78
12	Road Appurtenances	1,09,80,802	1,09,80,802	1.10
13	Metal beam crash barrier (Type - B, "THRIE")	3,37,74,717	3,37,74,717	3.38
14	Junction improvement	4,00,20,855	4,00,20,855	4.00
15	Avenue Tree Plantation	81,75,736	81,75,736	0.82
16	Rain Water Harvesting	35,60,000	17,80,000	0.18
17	Protection Work (Retaining wall, etc.)	8,47,49,115	8,47,49,115	8.47
18	Street Lighting (Builtup Sections)	70,75,472	15,21,226	0.15
19	Incident Management Services (IMS)	4,65,00,000	4,65,00,000	4.65
	Total Civil Cost (A)	1,13,88,02,294	1,13,14,68,04 9	113.15
	Per km Cost of Civil Works	3,19,88,828	3,17,82,810	3.18
ii	GST @12% of (A)	13,66,56,275	13,57,76,166	13.58
iii	Contingencies @ 1%	1,13,88,023	1,13,14,680	1.13
iv	Agency charges @ 3 % of (A)	3,41,64,069	3,39,44,041	3.39

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v	Supervision Consultancy Charges @ 3% of (A)	3,41,64,069	3,39,44,041	3.39
vi	Price Escalation (5% on 60% work) of (A)	3,41,64,069	3,39,44,041	3.39
vii	Post Construction Maintenance Charges @ 2.5% of (Civil work (A)+GST)	3,18,86,464	3,16,81,105	3.17
	Centages	28,24,22,969	28,06,04,076	28.06
vii i	Total Project Cost	1,42,12,25,263	1,41,20,72,125	141.21
	Per km Cost	3,99,22,058	3,96,64,947	3.97
ix	a. Electrical works	2,38,10,606	2,38,10,606	2.38
x	b. Water supply works	37,03,194	37,03,194	0.37
xi	c. EMP Cost(Plantation of 2 times of Tree Cutting)	5,96,887	5,96,887	0.06
xii	d. Land acquisition cost	2,42,09,327	2,42,09,327	2.42
	LA,Utility Shifting EW & EMP Charges	5,23,20,013	5,23,20,013	5.23
xii i	TOTAL CAPITAL COST OF THE PROJECT	1,47,35,45,276	1,46,43,92,138	146.44
	Cost per km	4,13,91,721	4,11,34,611	4.11

13. Phasing of expenditure: Following cumulative physical targets and financial phasing targets and financial phasing of expenditure shall be adhered to subject to overall availability of funds:

Year	Physical	Cumulative progress			
		Financial (Rs. in cr.)			
		Construction	Pre-construction activities	Maintenance	Total
2021-22	5%	6.67	2.09		8.76
2022-23	60%	80.03	5.23		85.27
2023-24	100%	133.39	5.23		138.62
2024-25	100%+ maintenance	133.39	5.23	0.93	139.55
2025-26		133.39	5.23	2.49	141.11
2026-27		133.39	5.23	4.06	142.68
2027-28		133.39	5.23	5.62	144.24
2028-29		133.39	5.23	7.82	146.44

14. This issues with the approval of Competent Authority.

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M K Chowdary
(M K Chowdary)
Executive Engineer (NFSG)
For CE-RO, MoRTH, Bhopal



F.No. CE-RO-BPL/10010/173/Jabalpur-Kundam/2021-22/

GOVERNMENT OF INDIA

MINISTRY OF ROAD TRANSPORT & HIGHWAYS

Transport Bhawan 1, Parliament Street, New Delhi-110 001

New Delhi, the 17.03.2022

To,

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

Subject: Upgradation and reconstruction of Jabalpur to Kundam Section of NH-45 from Km 40.500 (Design) to Km 68.100 (Design) including Kundam bypass (Total length 27.60 km) to Two lane with paved shoulder configuration along with One time improvement of bypassed built-up areas in a total length of 14.470 km in the state of Madhya Pradesh on EPC mode.

Sir,

[Job No. 45-MP-2021-22-31]

I am directed to refer to CE (NH), MPPWD, Bhopal Letter No. 3000/NH Zone/Jabalpur-Kundam/EPC/01/2020-21, Bhopal, Dated 25.02.2022 forwarding therewith an estimate amounting to Rs. 125.51 Cr for the above noted work and to say that the estimate has been examined in this office and approved for Rs. 125.51 Cr in the light of comments contained in the enclosed Technical Note dated 16.03.2022.

2. I am to convey the technical, administrative and financial sanction of the President of India to the modified estimate amounting to Rs.125.51 Cr (Rupees One Hundred and Twenty Five Crore and Fifty One Lakh only).

3. The work has been assigned (**Job No. 45-MP-2021-22-31**). This Job number may be quoted in all future correspondence regarding the work.

4. The expenditure is debitable to Major Head '5054' Capital Outlay on Roads & Bridges (Major Head), 01-National Highways (Sub Major Head), 01.337 Road Works (Minor Head), 03 -NH Original Works, 03.01 Works financed from Central Road and Infrastructure Fund 03.01.53 Major Works for which the corresponding Demand for the current financial year 2021-22 is '85'-Ministry of Road Transport & Highways.

5. In accordance with the orders contained in this Ministry's Circular letter No. RW/NH-11026/2/99-US(D.I) dt. 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 dt. 21.05.2011, in addition to guidelines issued by this Ministry's Circular letter No. RW/NH-11024/3/99-US(D.I) dt. 09.03.2000, No. RW/NH-24035/4/2008-P&M dt. 21.05.2010 and No. NH-12037/67/2010 LWE dt. 02.08.2010. The work shall be awarded as per guidelines issued by the Ministry vide letter No. NH-15015/29/2001-PL dt. 05.07.2001.

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.

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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-a-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 technical approval and financial sanction may lapse after six months from the date of its issue in case the work is not awarded within time period.

9. The Chief Engineer - Regional Officer, MoRTH, Bhopal is authorized to draw and disburse the sanctioned amount.

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

Year	Physical	Cumulative progress			
		Financial (Rs. in cr.)			
		Construction	Pre-construction activities	Maintenance	Total
2021-22	5%	5.79	2.99		8.78
2022-23	60%	69.51	6.99		76.51
2023-24	100%	115.85	6.99		122.85
2024-25	100%+ maintenance	115.85	6.99	0.00	122.84
2025-26		115.85	6.99	0.53	123.38
2026-27		115.85	6.99	1.06	123.91
2027-28		115.85	6.99	1.60	124.44
2028-29		115.85	6.99	2.66	125.51

11. This sanction issues with the concurrence of the Finance Wing vide their Note #10 Dated 03.03.2022.

Yours faithfully,

Encl: As above

(Kamal Parkash)

Under Secretary to the Government of India (Road Wing)

Copy with a copy of Technical Note forwarded to:-

- I. The Chief Secretary to the Govt. of Madhya Pradesh, Bhopal.
- II. The Principal Director of Audit, Economics & Services Ministries, IP Estate, New Delhi.
- III. The Chief Engineer-Regional Officer, MoRTH, Bhopal, Madhya Pradesh.
- IV. The Engineer-in-Chief, Public Works Department, Bhopal, Madhya Pradesh.
- V. The Regional Pay and Accounts Officer, MoRTH, Raipur
- VI. The Pay and Accounts Office, MoRTH, IDA Building, Jamnagar House, New Delhi.
- VII. Accountant General, Government of Madhya Pradesh, Bhopal.
- VIII. PF-I Division, Ministry of Finance, North Block, New Delhi.
- IX. The Chief Engineer (NH), MPPWD, Bhopal, Madhya Pradesh.

Yours faithfully,

18

(Kamal Parkash)

Under Secretary to the Government of India (Road Wing)

Copy to:

1. Sr. PPS to DG(RD)&SS, MoRT&H, New Delhi.
2. CE(Zone-IV), MoRT&H, Transport Bhawan, New Delhi
3. W&A Section, TF-II Finance Wing

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Signed by Kamal Parkash

Date: 17-03-2022 14:23:42

Reason: Approved



F.No. CE-RO-BPL/10010/173/Jabalpur-Kundam/2021-22/

GOVERNMENT OF INDIA

MINISTRY OF ROAD TRANSPORT & HIGHWAYS

Transport Bhawan 1, Parliament Street, New Delhi-110 001

New Delhi, the 17.03.2022

To,

The Regional Pay & Accounts Officer,
Ministry of Road Transport & Highways,
NH Campus, Pension Bada,
Raipur (C.G.)

Sub: Financial sanction of Rs. 125.51 Cr (Rupees One Hundred and Twenty Five Crore and Fifty One Lakh only) for the work Upgradation and reconstruction of Jabalpur to Kundam Section of NH-45 from Km 40.500 (Design) to Km 68.100 (Design) including Kundam bypass (Total length 27.60 km) to Two lane with paved shoulder configuration along with One time improvement of bypassed built-up areas in a total length of 14.470 km in the state of Madhya Pradesh on EPC mode (Job No. 45-MP-2021-22-31) for F.Y. 2021-22 to F. Y. 2028-29 - Reg.

I am directed to convey the financial sanction of the President for the above mentioned work having Job No. 45-MP-2021-22-31 amounting to Rs. 125.51 Cr. including agency charges and other centages.

2. The expenditure shall be allowed to be incurred as per the year wise phasing details for the total sanction amount as mentioned below in accordance with the terms and conditions of the work sanction letter and technical note:-

Year	Physical	Cumulative progress			
		Financial (Rs. in cr.)			
		Construction	Pre-construction activities	Maintenance	Total
2021-22	5%	5.79	2.99		8.78
2022-23	60%	69.51	6.99		76.51
2023-24	100%	115.85	6.99		122.85
2024-25	100%+ maintenance	115.85	6.99	0.00	122.84
2025-26		115.85	6.99	0.53	123.38
2026-27		115.85	6.99	1.06	123.91
2027-28		115.85	6.99	1.60	124.44
2028-29		115.85	6.99	2.66	125.51

3. The expenditure on the work is debitable to NH (O) under Major Head '5054' Capital outlays on Roads and Bridges (Major Head), 01-National Highways (Sub Major Head), 01.337 Road Works (Minor Head), 03-National Highways original works, 03.01- works financed from central road Infrastructure Fund, 03.01.53 Major Works for which the corresponding Demand

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for the current financial year 2021-22 is "85" Ministry of Road Transport and Highways.

4. The accounts of PWD shall be open to inspection by the sanctioning authority and audit, both by the C & AG and internal audit by the Office of Principal Chief Controller of Accounts.

5. The issue with the concurrence of IFD vide Note #10 dated 03.03.2022.

Yours faithfully

(Kamal Parkash)

Under Secretary to the Government of India (Road Wing)

Copy with a copy of Technical Note forwarded to:-

- I. The CE (Zone-IV), MoRT&H, Transport Bhawan, New Delhi.
- II. The Chief Engineer-Regional Officer, MoRT&H, Bhopal, Madhya Pradesh.
- III. The Engineer-in-Chief, Public Works Department, Bhopal, Madhya Pradesh.
- IV. The Chief Engineer (NH), MPPWD, Bhopal, Madhya Pradesh.
- V. AFA, MoRT&H, Transport Bhawan, New Delhi.

Yours faithfully,

(Kamal Parkash)

Under Secretary to the Government of India (Road Wing)

Copy to:

1. Sr. PPS to Secretary (RT&H), MoRT&H, New Delhi.
2. Sr. PPS to DG (RD) & SS, MoRT&H, New Delhi.
3. Sr. PPS to AS & FA, MoRT&H, New Delhi.
4. Sr. PPS to Pr. CCA, MoRT&H, New Delhi.

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Signed by Kamal Parkash

Date: 17-03-2022 14:25:21

Reason: Approved



GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT & HIGHWAYS
Office of Chief Engineer-RO, MoRT&H,
2nd Floor, Nirman Bhawan, Arera Hills, Bhopal

TECHNICAL NOTE

F.No. CE-RO-BPL/10010/173/Jabalpur-Kundam/2021-22/ 3497 Dated: 16.03.2022

1.	Name of work	:	"Upgradation and reconstruction of Jabalpur to Kundam Section of NH-45 from Km 40.500 (Design) to Km 68.100 (Design) including Kundam bypass (Total length 27.60 km) to Two lane with paved shoulder configuration along with One time improvement of bypassed built-up areas in a total length of 14.470 km in the state of Madhya Pradesh on EPC mode".	
2.	Name of State	:	Madhya Pradesh	
3.	NH No.	:	45	
4.	Estimated cost (Rs. in Crores)	:	As furnished by the MPPWD NH	As modified/approved by Ministry
			125.51	125.51
5.	Length	:	27.60 Km	27.60 Km
6.	Rate / Km. (Rs. Crores)	:	Rs. 4.55 Crore/ Km (including pre-construction activities & centages)	Rs. 4.55 Crore/ Km (including pre-construction activities & centages)
7.	Reference	:	Letter No. 3000/NH Zone/Jabalpur-Kundam/EPC/01/2020-21, Bhopal, Dated 25.02.2022 from CE (NH), MPPWD, Bhopal	

COMMENTS

1. **Scope of work:** Upgradation and reconstruction of Jabalpur to Kundam Section of NH-45 from Km 40.500 (Design) to Km 68.100 (Design) including Kundam bypass. (Total length 27.60 km) to Two lane with paved shoulder configuration along with One time improvement of bypassed built-up areas in a total length of 14.470 km in the state of Madhya Pradesh on EPC mode.
2. **Provisions allowed in the estimate:**
 - 2.1 Reconstruction & Widening of existing intermediate carriageway to two lane with paved shoulder (2L+PS) flexible pavement in 17.825 km length (7 + 2x1.5m).
 - 2.2 Realignment & upgradation of existing intermediate carriageway to two lane with paved shoulder (2L+PS) flexible pavement in 4.360 km length (7 + 2x1.5m).
 - 2.3 Construction of 01 nos. of bypass (Kundam) to 2L+PS flexible pavement in 3.880 km length (7 + 2x1.5m).
 - 2.4 Reconstruction & widening of existing intermediate carriageway to 2L+PS rigid pavement in 1.535 km length (7 + 2x2.5m) along with paver block & drain on both sides in 04 nos of built-up areas (i.e. Padariya, Badraji, Negai, & Bairagi)
 - 2.5 Improvement under One time investment policy of existing stretch in 02 nos of bypassed built-up sections in total 14.470 km length with White-topping overlay (200 mm) along with construction of drain and paver blocks in 3.970 km and bituminous overlay (50 mm DBM & 30 mm BC) in 10.500 km length

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2.6 Brief details of the work is as under:

Sr. No.	Description of item	Provisions proposed
1.	Name of the Project	Upgradation and reconstruction of Jabalpur to Kundam Section of NH-45 from Km 40.500 (Design) to Km 68.100 (Design) including Kundam bypass. (Total length 27.60 km) to Two lane with paved shoulder configuration along with One time improvement of bypassed built-up areas in a total length of 14.470 km in the state of Madhya Pradesh on EPC mode".
2.	Project road length	Proposed Road length = 27.60 Km
3.	Existing Pavement type and carriageway width	Existing Pavement is flexible with 5.5m width of length 27.10 Km.
4.	Proposed carriageway & formation width	Flexible pavement (26.065 km) with 7m + 2x1.5m = 10m) and earthen shoulders 1m either side Rigid Pavement (1.535 km) with 7m + 2x2.5m = 12m) One-time improvement in 14.470km (White topping along with paver locks and drains in 3970m + BT overlay with DBM 50mm, BC 30mm in 10.500 km) in bypassed sections of built-up areas.
5.	Last original work and DLP	No original work. Strengthening (2km) completed and DLP is up to Feb 2024. PR (10km) completed and DLP is up to Dec 2023.
6.	Design traffic & CBR (%)	PCU- 4119, CVPD- 645, MSA - 20, CBR-8%
7.	Metal Beam Crash Barrier (in length)	4200m (2100mx2)
8.	Junction Improvement	Major Junction: 02 Minor Junction: 28
9.	Bypass/ Realignment	01/09
10.	Major Bridge	Nil
11.	Minor Bridge	Reconstruction-3, New Construction-1 (Total: 4)
12.	CD Structures (Culverts)	Reconstruction-13, New Construction (including culverts at Junctions)-39, Widening-7 (Total-59)
13.	Passenger Underpass	Nil
14.	Toll Plaza	01 at Km 58.300 with 8-lanes with ETC facilities

2.7 **Realignments/Curve Improvements and Bypasses:** 01 nos. of Bypasses in total length of 3.88 km. Realignment/Curve Improvements in a total length of 4.360 km (09 locations). Details are as under: -



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Bypasses

Sr. No.	Design Chainage in Km		Length in km	Remarks
	From	To		
1	62+220	68+100	3.880	Kundam Bypass
	Total Length in Km		3.880 km	

Realignment

Sr. No.	Design Chainage		Length(m)	Remarks
	From (Km)	To (Km)		
1	40+600	40+800	200	Curve Improvement
2	41+400	41+630	230	Curve Improvement
3	44+100	44+400	300	Curve Improvement
4	45+800	46+300	500	Realignment
5	46+480	46+700	220	Curve Improvement
6	48+280	50+025	1745	Realignment
7	52+860	53+500	640	Realignment
8	54+400	54+725	325	Realignment
9	61+130	61+330	200	Curve Improvement
	Total Length in Km		4+360	

2.8 Details of Bridges:

Major Bridges - Nil

Minor Bridges - 04 No's

Sl. No.	Nos. of Bridges	Design Chainage	Existing details	Proposed details
Reconstruction				
1.	3 Nos.	51+670 59+160 60+010	3X3.5 VCVW 7 X 900 1X6.5	1x20, L- 20m (Width: 13m) 2X10, L- 20m (Width: 13m) 1x10, L- 10m (Width: 13m)
New Construction				
2	1 Nos.	49+530	4X3.2	1X15, L- 15m (Width: 13m)

2.9 Details of culverts

Sl. No.	Nos. of culverts	Existing details	Proposed details
Reconstruction- 13			
1	03Nos.	Hume Pipe Culvert	Box Culvert
2.	02Nos.	Hume Pipe Culvert	Hume Pipe Culvert
3.	08 Nos.	Slab Culvert	Box Culvert
Widening-07			
1.	07 Nos.	Hume Pipe Culvert	Hume Pipe Culvert
New Construction-39			
1.	02 Nos.	-	Box Culvert
2.	04 Nos.	-	Hume Pipe Culvert
3.	33 Nos.		Hume Pipe Culverts(At Junctions)
Total	59 Nos.		

2.10 Roadside Drainage: RCC Covered drain in length of 1535m (BHS) of built up sections and in a length of 3970m (BHS) for one time improvement sections.

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- 2.11 Bus Lay Byes & Truck Lay Byes: Construction of (5x2) 10 Nos. of Bus Lay Byes along with Bus Shelters and (2x2) 04 Nos. of Truck Lay Byes have been proposed in the estimation.
- 2.12 Toll Plaza - 01 Nos. at Km 58+300 with 8-lanes, along with ETC arrangement in all lanes.
- 2.13 Other provisions:-
- Protection work is provided along the project stretch at required locations according to IRC SP 73:2018.
 - Pitching at required locations according to IRC SP 73:2018.
 - For construction of bridges a 1000m diversion road is considered for estimate purpose.
 - Construction of embankment with materials deposited from roadway cutting and from materials obtained from borrow pits, construction of sub grade and earthen shoulder.
 - Bituminous concrete with polymer modified bitumen and use of waste plastic (10% of total length) in accordance with IRC: SP-98-2013 has been proposed in the estimate in accordance with Ministry's guidelines for use of new technology.
 - Provision of road Marking, Traffic sign Boards, Other road Side Furniture, Road safety Works, W Beam Crash Barrier (4200m), Delineators etc.
 - Providing cautionary, mandatory & informatory signboards and place & identification sign boards, Overhead Sign boards at required locations.
 - Painting lines, dashes, arrows, providing road marking, providing Km stones, 5th Km stones, hectometre stones, road delineators, road studs, RCC M15 grade boundary pillars.
 - Cable ducts, gantry sign boards.
 - Street lighting in built up areas (both sides @ 30mc-c), near bus lay byes, truck lay byes, toll plazas.
 - Rain water harvesting pits-26 Nos.

2.14 Proposed Crust thickness and composition:

Pavement Design:

A. Crust thickness and composition for the proposed work shall be as under:

Sr. No	Type of pavement		Proposed Carriageway Width	Design Traffic	CBR	Composition
(I)	Flexible Pavement (As per IRC 37:2018) (26.065 km)		7m carriageway + 2 x 1.5m paved shoulders + 2 x 1m earthen shoulder	20 MSA (Adopted)	8%	200mm GSB +250mm WMM + 90mm DBM + 30 mm BC
(II)	Rigid Pavement (As per IRC 58:2015) (1.535 km)		7m carriageway + 2 x 2.5m paved shoulders + paver blocks + RCC drain	645 CVPD	8%	225mm GSB +150mm DLC +300mmPQC
(III)	One-time improvement in 14.47 km (White topping along with paver locks and drains in 3970m (BHS) + BT overlay - 10.500 km) in bypassed sections of built-up areas. (As per IRC SP 76:2015)	White topping in 3.970km				200 mm thickness on Existing Road.
		BT overlay in 10.500 km				50mm DBM & 30mm BC overlay

- B. MPPWD shall ensure that EPC Contractor shall design the pavement as per design requirement subject to minimum pavement thickness and design requirements as indicated above. This shall be incorporated in Schedule "B" of the Draft Contract Agreement to be issued along with the RFP.



- C. Provision of bituminous concrete with polymer modified bitumen and DBM with VG-40 has been made in the estimate.
- 2.15 Bituminous concrete with polymer modified bitumen and use of waste plastic (10% of total length) in accordance with IRC:SP-98-2013 has been proposed in the estimate in accordance with Ministry's guidelines for use of new technology.
- 2.16 Shifting of Electrical Utility, water utility and tree cutting as per site requirement. Provision for shifting of utilities has been made in the estimate based on the estimate provided by Utility owning department as stated by MPPWD.
3. **Modifications by RO in the proposal:**
- 3.1 Arithmetical errors are corrected.
4. **Design specifications:** Manual Of Specifications and Standards for Two Laning of Highways with Paved Shoulder IRC: SP: 73-2018 have been followed for the work. Chief Engineer (NH), MPPWD, shall ensure that all material, design and construction operations for the project are proposed conforming to the IRC:37-2018, IRC:58-2015, IRC-73:2018- Manual of specifications and standards for two-laning of Highways with paved shoulders & all other relevant IRC code
5. **Pre-construction activities:**
- 5.1 **Land Acquisition:** State PWD has reported the following
Total area required for the project is 31.189 Ha (5.401 Ha. Govt. + 25.788 Ha. Private). A length of 14.435 km is affected due to LA.
3(D) notification is published in Gazette on 25.02.2021 for 14.791 Ha affecting in a length of 10.365 km.
And for the remaining 16.398 Ha, 3(A) is likely to be submitted by 15.03.2022.

Land Acquisition is being acquired mainly for Bypasses, Geometric improvement and Toll plaza. Cost of LA is Rs. 4.69 crore
- 5.2 **Forest clearance:**
Diversion of forest land for 6.78 ha is required affecting in a length of 3.55 km. Stage-I permission applied. State PWD has reported that Stage-II clearance will be obtained by April 2022. Cost towards forest clearance is Rs. 0.92 crore.
- 5.3 **Environmental clearance:**
Environmental clearance is not required as per latest MoEF notification dated 23.08.2013.
- 5.4 **Utility Shifting:**

Electrical Utility Shifting	Rs. 0.71 Cr.
Water Utility Shifting	Rs. 0.57 Cr.
EMP Cost (Tree Cutting)	Rs. 0.10 Cr.

State PWD stated that utility estimates have also been technically sanctioned from utility owning departments.

Out of the total 27.600km, project reach is affected in 14.435km for Land Acquisition and project reach is affected in 3.550 km for diversion of forest land.

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Considering published 3(D) as available length, at present 19.980 km length is available i.e. 72% land is available in terms of linear length. MPPWD stated that 100% land shall be available before award of the work.

6. IFD conditions/comments:

IFD has observed that (i) 90% of the total land may be made available before award/appointed date of the work, (ii) All Statutory clearances may be obtained before award of the work, (iii) Ministry's circular dated 14.12.2020 regarding use of new/alternative material and Technology in construction of Highways may be adhered to & (iv) Work may be monitored timely so that there is no cost & time overrun. State Govt. has assured to complete LA activities by 30th April, 2022. State Govt. has assured to complete LA, Forest clearance before award of work. This needs to be adhered to by State PWD.

7. Specifications & Standards:

- 7.1. The design, construction and specifications of materials to be used for the construction of the project road shall be as per specifications and standards stipulated in Schedule-D of the EPC contract agreement issued vide Ministry's circular No. RW/NH-37010/4/2010-EAP (Printing) Vol. IV dated 05.03.2019 and subsequent amendments made thereon till appointed date of the contract.
- 7.2. The work shall be executed on EPC mode. All the relevant schedules shall be finalized by Chief Engineer (NH), MPPWD, Bhopal and got approved from the Regional Officer, MoRTH, Bhopal before tendering. CE (NH), MPPWD, M.P shall ensure that all the provisions of the approved estimate and the requirements of the project highway have been duly incorporated in the respective technical schedules.
- 7.3. CE (NH), MPPWD, M.P. shall ensure that the quality of works conforms to the provisions stipulated in the contract agreement in accordance with the IRC: SP:112-2017 "Manual for Quality Control in Roads & Bridge works". The quality of certain percentage of the executed works may preferably be got checked by the State MPPWD through the NABL approved laboratories.
- 7.4. Bitumen to be used for the road works shall be as per Ministry's circular No.RW/NH-35072/05/2018-S&R(P&B) dated 24.08.2018. Also, anti-stripping agent shall be used as per Ministry guideline circulated vide letter NO.RW/NH-33044/127/2016-S&R(P&B) dated 06.08.2018.

8. Invitation of tender and award of work:

- 8.1 The bids for the work shall be invited through e-procurement system as per guidelines issued vide this Ministry's circular letter No.RW/NH-24035/4/2008-P & M/PIC Vol. II dated 23.02.2018. Further, the procedure for tendering, evaluation of bids, acceptance of bids and award of the work including the timeline for award of the work shall also be as per guidelines issued vide this Ministry's circular letter No.RW/NH-24035/4/2008-P & M/PIC Vol. II dated 23.02.2018.
- 8.2 For invitation of bids, the RFP document including procedure for submission of bids shall be as per Ministry's circular no. RW/NH-37010/4/2010-EAP (Printing) Vol. IV dated 05.03.2019. Further, the standard EPC contract document issued vide

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Ministry's circular no. RW/NH-37010/4/2010-EAP (Printing) Vol. IV dated 05.03.2019 shall be adopted.

- 8.3 In accordance with the instructions contained in 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.
- 8.4 The advertisement for invitation of tenders shall be done as per Ministry's letter No. RW/NH-34066/14/2018-S&R(R&B) dated 25.06.2018. The work is to be awarded within six months from the date of issue of sanction. In this connection, guidelines issued vide Ministry's Circular No. RW/NH-24035/4/2008-P&M/PIC Vol.II dated 23.02.2018 shall be referred to. If the work is not awarded within the stipulated time, it may lead to de-sanction of the work unless Ministry's prior approval to extension of the time limit is obtained.
- 8.5 The state PWD will intimate this Ministry and Ministry's Regional officer at Bhopal 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.
- 8.6 CVC guidelines in tendering may also be followed.
- 8.7 The appointed date of the project shall be given only after getting all necessary clearances in no less than 90% of the required ROW of the construction zone of the total length of the project highway as specified in the contract agreement.
- 8.8 Single stage two-cover bidding on EPC mode is to be adopted as per issued vide letter no. RW/NH-37010/4/2010-EAP (printing) vol/-IV dated 05-03-2019
- 8.9 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 letter no. RW/NH-37010/4/2010-EAP (printing) vol/-IV dated 05-03-2019.
- 8.10 RFP will be received, opened and evaluated by the Evaluation Committee in the Ministry with following composition:

Chief Engineer (NH), MPPWD	Chairman
Officer nominated by CE-RO	Member
Superintending Engineer (NH), MPPWD	Member
Representative of State Finance Wing	Member
Executive Engineer (NH), MPPWD	Member Secretary

- 8.11 The LOA shall be issued by the appropriate Authority not below the rank of Superintending Engineer (NH) in the State PWD. Thereafter, the Contract Agreement shall be signed by the appropriate Authority in the State PWD, but not below the rank of Superintending Engineer within the prescribed period mentioned in the RFP.

9. **General observations:**

- 9.1 No work beyond the scope of the sanctioned estimate leading to increase in the scope of the work or change in specification should be undertaken without obtaining prior written approval of the Ministry. In case, the estimate needs revision due to change

in scope of work or change in specification for any reasons, the revised estimate shall be submitted immediately for Ministry's approval along with recommendations of the Authority Engineer and in accordance with the provisions of the EPC Contract Agreement. In this connection, this Ministry's letter no. NH-24035/4/2008-P&M dated 23.02.2018 and G-20016/23/2017-TF-II dated 01.10.2020 may be referred.

9.2 The provision of contingencies should be utilized as per Ministry's circular letter no. No. RW/NH-24035/4/2008-P&M/PIC Vol.II dated 23.02.2018. For any other item which is not covered in the above circular, necessary approval of Ministry (in-principle) with the recommendation of Concerned RO shall be taken before execution. However, sub estimate for the same shall be got approved from Concerned RO, before execution.

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 CE(NH), MPPWD shall ensure that the quality of works conforms to the provisions stipulated in the contract agreement. The quality of certain percentage of the executed works shall be got checked by the State PWD through the NABL approved laboratories in accordance with the IRC:SP:112-2017 "Manual for Quality Control in Roads & Bridge works".

9.5 Bitumen to be used for the road works shall be as per Ministry's circular no. RW/NH-35072/05/2018-S&R(P&B) dated 24.08.2018. Also, anti-stripping agent shall be used as per Ministry guideline circulated vide letter No. RW/NH-33044/127/2016-S&R(P&B) dated 06.08.2018.

9.6 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.

9.7 The contractor should possess all requisite machineries such as Batch mix plant, sensor paver, roller etc. required for execution of the work as per requirement of the contract agreement.

9.8 For maintenance of proper record of the execution of the work Photography/videography shall be taken by state PWD before, during and after execution of work and a digital copy of the same may be forwarded to Ministry/RO for record. Cost of the same shall be considered accidental to the work and no extra cost shall be paid to the contractor.

9.9 In order to ensure that there is no slippage in achieving the project milestone/completion date to avoid cost and time overrun, the progress shall be closely monitored by CE(NH), MPPWD and RO, Bhopal and quarterly status report furnished to the Ministry in the prescribed Performa.

9.10 Traffic management during construction of the work shall be done in accordance with stipulations of IRC:SP:55-2014 to ensure proper regulation of traffic and causing least inconvenience to road users. Further, guidelines for Road Safety measures on NHs issued

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vide Ministry's circular No. RW/NH-29011/01/2015-P&M(RSCE) dated 20.09.2019 shall be strictly followed. Cost of the same shall be considered accidental to the work and no extra cost shall be paid to the contractor.

9.11 It is observed that simultaneous working at large number of work fronts in long stretches is causing severe inconvenience to traffic during construction. Therefore, it is suggested that fronts may not be operated in more than 3 km length simultaneously, without completing the bituminous surfacing in the stretches where excavation/granular layers are carried out. Suitable provisions in the contract shall be incorporated for proper traffic management.

9.12 All the items of work included in the scope of work will be executed as per specifications and standards stipulated in Schedule-D of the contract agreement and circulars/guidelines issued by the Ministry from time to time

9.13 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 (R) dated 26th May, 2003. The cost of the same will be met out of the provision of contingencies allowed in the estimate.

9.14 The transverse bars marking may be provided by the contractor at identified accident prone spots and at junctions where the need for alerting drivers/reduction in speed desired as per Ministry circular no. RW/NH/33044/13/2012-S&R (R) dated 04.05.2013. Cost of the same shall be considered accidental to the work and no extra cost shall be paid to the contractor

9.15 Waste plastic shall be utilized in wearing course in projects near urban area and other feasible stretches in accordance to Ministry's circular no. RW-NH-33044/24/2015-S&R (R) dated 09.11.2015 and 27.12.2016. Also, instruction issued vide Ministry's circular no. RW/NH-33044/24/2015-S&R (R) dated 27.08.2019 regarding "collection and re-use of waste plastic" may also be complied with.

9.16 As per Ministry's circular no. RW/NH-33044/32/2019-S&R(P&B) dated 13.11.2019, project highway shall necessarily be surveyed with Network Survey Vehicle and road safety audit shall be carried.

10. RATES

The estimate is based on the latest Schedule of Rates, August, 2017 & Addendum No. 4 Dated 01/08/2018 applicable for Public Work Department for Road and Bridge Works in the State of Madhya Pradesh. MPWD SOR is inclusive of taxes prior to GST regime and therefore SOR rates has been reduced by 6% for the implication of taxes prior to GST regime and thereafter 12% GST has been included in the estimate. CE (NH), MPPWD has intimated that rates for all the Non-SOR items has been approved by competent authority in MPPWD.

11. Centages: Centages have been proposed as per Ministry's guidelines issued from time to time as under:

11.1. Contingency @1%, Supervision @3% and Agency Charges @3% as per Ministry's circular no. No. RW-NH-33044/10/2019-S&R(P&B) dated 07.03.2019.

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11.2. Price Escalation @ 5% of total estimated civil construction cost as per the phasing of the project execution only for the period beyond one year of Bid Submission date. Accordingly, Price Escalation @ 5% for project phasing of 2nd year (i.e., 60% of project cost) is considered.

11.3. Maintenance charges 2.5% in accordance with Ministry's Standard EPC documents issued vide letter no. RW/NH-37010/4/2010-EAP (printing) vol/-IV dated 05-03-2019.

12. **Estimated Cost:** The estimate is based on the Ministry's Standard Data Book and latest State Schedules of Rates. The leads for the collection of various materials as adopted in the estimate have been allowed for estimate purpose only. However, while calling tenders, the source may not be indicated. The contractor shall be responsible to procure the material conforming to the specifications of the work. No provision of extra lead during execution of the work shall be allowed. The estimated cost works out to Rs. 125.51 Cr. In the light of the above observations and comments as per details given below:

Sr. No.	DESCRIPTION	TOTAL AMOUNT (Rs.)	TOTAL AMOUNT (Crores)
a.	Site-Clearance	43,03,774	0.43
b.	Earthwork	7,18,00,823	7.18
c.	Sub-base	6,18,31,637	6.18
d.	White Topping with Drain & Paver Block and Overlay on Existing road (Bypass location)	9,04,32,780	9.04
e.	Base Course & Bituminous Work	28,98,43,846	28.98
f.	CC Pavement	3,58,11,342	3.58
1	Cost of Road Works	55,40,24,202	55.40
2	Cost of Cross-Drainage structures		
3	Major Bridges	0	0.00
4	Minor Bridges	40201077	4.02
5	Pipe Culverts, Slab Culverts & Box Culverts	68645879	6.86
6	Toll Plaza (Including Project Facilities)	13,27,25,768	13.27
7	Bus Bays & Bus Shelter	1,68,19,433	1.68
8	Truck Lay Bay	93,87,095	0.94
9	CC Drain	2,57,29,793	2.57
10	CC Paver Block	55,10,071	0.55
11	Traffic Signs	76,91,112	0.77
12	Road Marking	60,48,396	0.60
13	Road Appurtenances	85,54,537	0.86
14	Metal beam crash barrier (Type - B, "THRIE")	1,91,69,434	1.92
15	Junction improvement	4,92,62,596	4.93
16	Avenue Tree Plantation	29,68,302	0.30
17	Rain Water Harvesting	13,00,000	0.13
18	Street Lighting (Builtup Sections)	15,82,075	0.16
19	Incident Management Services (IMS)	0	0.00
i	Total Civil Cost (A)	94,96,19,769	94.96



	Per km Cost of Civil Works	3,44,06,513	3.44
ii	GST @ 12% of (A)	11,39,54,372	11.40
iii	Contingencies @ 1%	94,96,198	0.95
iv	Agency charges @ 3 % of (A)	2,84,88,593	2.85
v	Supervision Consultancy Charges @ 3% of (A)	2,84,88,593	2.85
vi	Price Escalation (5% on 60% work) of (A)	2,84,88,593	2.85
vii	Post Construction Maintenance Charges 2.5% of (A)	2,65,89,354	2.66
	Centages	23,55,05,703	23.55
viii	Total Project Cost	1,18,51,25,472	118.51
	Per km Cost	4,29,39,329	4.29
ix	a. Electrical works	71,02,914	0.71
x	b. Water supply works	56,99,000	0.57
xi	c. EMP Cost(Plantation of 2 times of Tree Cutting)	9,84,057	0.10
xii	d. Forest diversion cost	92,46,446	0.92
xiii	e. Land acquisition cost	4,69,09,314	4.69
	LA,Utility Shifting EW & EMP Charges	6,99,41,731	6.99
xiv	TOTAL CAPITAL COST OF THE PROJECT	1,25,50,67,203	125.51
	Cost per km	4,54,73,449	4.55

13. Phasing of expenditure: Following cumulative physical targets and financial phasing targets and financial phasing of expenditure shall be adhered to subject to overall availability of funds:

Year	Physical	Cumulative progress			
		Financial (Rs. in cr.)			
		Construction	Pre-construction activities	Maintenance	Total
2021-22	5%	5.79	2.99		8.78
2022-23	60%	69.51	6.99		76.51
2023-24	100%	115.85	6.99		122.85
2024-25	100%+ maintenance	115.85	6.99	0.00	122.84
2025-26		115.85	6.99	0.53	123.38
2026-27		115.85	6.99	1.06	123.91
2027-28		115.85	6.99	1.60	124.44
2028-29		115.85	6.99	2.66	125.51

14. This issues with the approval of Competent Authority.

MK Chowdary
(M K Chowdary)
Executive Engineer (NFSG)
For CE-RO, MoRTH, Bhopal