

No. RW/NH-12014/71/2017-ORS/Z-III
Government of India
Ministry of Road Transport & Highways
(Zone-III_ Section)
Transport Bhawan, 1, Parliament Street, New Delhi-110001

EW DELHI, Dated the 13th March, 2018

To

The Secretary to the Govt. of Orissa,
Sachivalaya
Public Works Department,
BHUBANESWAR

Sub:-“ Widening to 2 lane with paved shoulder & strengthening from km.269/300 to 328/200 of NH-49 on EPC mode in the State of Odisha .

(Job No.49-ORS-2017-18-599)

Sir,

I am directed to refer to Chief Engineer (NHs) PWD, Orissa letter No.WB IC-BAM-EPC-13/16-11801 dated 22.12.2017 on the above mentioned subject forwarding therewith an estimate amounting to Rs 207.88 crore for the above mentioned work and to convey the administrative approval and technical & financial sanction of the President of India to the Estimate amounting to Rs.199.16 crore (Rupees One Hundred Ninety Nine crore and Sixteen Lakh only) subject to the condition stipulated in the enclosed Technical Note.

(Rs. in Crore)

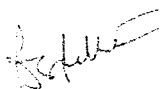
(i) Amount as indicated in the estimate sent by the state CE(NH) , Odisha	Rs. 207.88
(ii) Amount modified by the Ministry	Rs. 199.16
(iii) Amount of technical sanction	Rs. 199.16
(iv) Amount of financial sanction	Rs. 199.16

(Rupees One Hundred Ninety Nine crore and Sixteen Lakh only)

2. The sanction is further subject to the following conditions:

- (i) The work should be completed as targeted. As such there shall not be any cost over-run due to time over-run;
- (ii) The following physical and financial targets shall be strictly adhered to and depending upon the availability of funds.

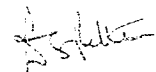
Year	Cumulative Progress		
	Physical in %age	Financial (Rs. In Crore)	
2017-18	Preliminary	0.10	Construction period
2018-19	50%	96.39	
2019-20	100%	192.78	



2020-21	1 st year	0.65	Maintenance
2021-22	2 nd year	1.94	
2022-23	3 rd year	3.85	
2023-24	4 th year	6.38	

- (i) In accordance with the order contained in this Ministry's circular letter No.RW/NH-11026/2/99-US (D-I) dated 29.10.2011, it would be ensured while accepting the tenders that the over all cost at tender rates including contingencies, work charge establishment and agency charges does not exceed by more than 5% of the sanctioned cost.
- (ii) Sanction of the Ministry for the revised estimate shall be obtained where the cost exceeds of 5% of the sanctioned cost.
- (vi) The expenditure during the current financial year on this work as also on the other sanctioned work should not exceed the allotment placed at the disposal of the State Government during the year;
- (vii) The guidelines relating to norms of advertisements in newspapers/journals for invitation of tenders for executing of works of National Highway's and under other Centrally Financed Schemes issued vide this Ministry's letter No.RW/NH-11024/3/99-US(D.I) dated 09/03/2000 shall be followed strictly.
- .3. The expenditure is debitable to Major Head "5054" Capital Outlay on Roads and Bridges (Major Head) 01-National Highways (Sub Major Head), 01.337-Road Works (Minor Head) 01-Works under Roads Wing, 01.02-Other Schemes, 01.02.53-Major Works under the Demand No.81 - Ministry of Road Transport & Highways for the financial year 2017-2018.
4. This sanction issues with the concurrence of the Finance Wing vide their , Dy.No.2345/TFII/ 2018 dated 11.01.2018 .

Yours faithfully,



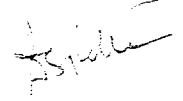
(D.S.Pathania)

Under Secretary to the Government of India

Copy to:-

1. The Accountant General, Orissa, Bhubaneswar.
2. The Pay & Accounts Officer, Ministry of Road Transport & Highways(RW), IDA, Building, Jamnagar House, Shahjahan Road, New Delhi.
3. The Regional Pay & Accounts Officer, Ministry of Road Transport & Highways(RW), Putra Bhavan, Salt Lake, Kolkata.
4. The Principal Director of Audit, Economics and Services Ministries, IP Estate, New Delhi.

5. The Chief Engineer (NHs) Post Box No.73, Unit-IV, Sachivalaya Marg, Bhubaneswar.
One copy of modified estimate is enclosed.
6. The Superintending Engineer, Ministry of Road Transport & Highways, Plot No.184, In
front of CRPF Stadium, Baramunda, Bhubaneswar-751003, Odisha.

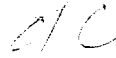


(D.S.Pathania)

Under Secretary to the Government of India

CE (P-5)/ SE (P-5)/W&A Section/ TF II Fin Wing/ Mon. Cell /Guard file.

(Mohinder Singh)
Section Officer (Z-III)



No.RW/12014/71/2017/ORS/Z-III

Government of India

Ministry of Road Transport & Highways

(Zone-III Section)

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

TECHNICAL NOTE

(Job No. 49-ORS-2017-18-599)

1.	Name of work	:	Widening to two lane with paved shoulder and Strengthening from km 269/300 to 328/200 of NH-49 on Engineering, Procurement & Construction (EPC) mode in the State of Odisha.	
2.	State & Division	:	Odisha/ Jharsuguda	
3.	NH No.	:	NH-49	
4.	Estimated cost including 3% agency charges	:	As proposed by State PWD (Rs. in crore)	As agreed in the Ministry (Rs. in crore)
			207.88	199.16
5.	Length (km.)	:	56.60	56.60
6.	Rate per km (Rs. in lakh)	:	3.67	3.52
7.	Reference	:	CE (NH) Odisha letter dated 22.12.2017.	

COMMENTS

1. Scope of the project:-

1.1 Widening to two lane with paved shoulder and Strengthening in a length of 52.6 km and 4 lane in a length of 4.00km. the typical cross-sections of the Project Highway is bifurcated as below

TCS	Scheme of widening	Length (in km)
TCS-I, IV, VI, VIII & IX	2 lane with paved shoulder with 2.0m Earthen Shoulders each side in Open area.	38
TCS-II & VII	2 lane with paved shoulder with Paver Block and RCC drain in Built-up area	6.30
TCS-III	Improvement of existing four laning	4.0
TCS-V	2 lane with paved shoulder with 2.0m Earthen Shoulders each side- New construction (bypass, realignment etc.)	8.30
	Total	56.60



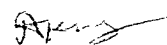
1.2 Realignment/Bypass:-

- A bypass is to be constructed to Kuchinda town from km 307.500 to km 315.800 for a length of 8.300 Km. Alignment has been approved by Ministry on 09.03.2016 and 3(D) notification has been published in Oct., 2017.
- Realignment has been proposed from km 299.190 to km 299.370 for geometric improvement in a length of 0.180Kms (1 location).

1.3 Pavement Design: The pavement for main carriageway has been designed for 15 years for design traffic of 20msa and CBR 8% based on IRC 37-2012.

Provision (in existing alignment)	Widening strip	Over laying portion
TCS-I & TCS-IV (in widening portion open & Built-up area)	BC: 40 DBM:100 WMM: 275 GSB: 200 Total:615	BC: 40 DBM:50
TCS-VI, TCS-VIII & TCS-IX (in widening portion)	BC: 40 DBM: 85 WMM: 250 GSB: 200 Total:575	BC: 40
TCS-II (in widening portion in built-up area)	BC: 40 DBM:100 WMM: 275 Total:415	BC: 40 DBM:50
TCS-VII (in widening portion in built-up area)	BC: 40 DBM: 85 WMM: 250 Total:375	BC: 40
TCS-V (New construction)	BC: 40 DBM: 85 WMM: 250 GSB: 200 Total:575	
TCS-III (overlying 4 laning portion)		BC: 40 DBM:50

1.4 Major Bridge: There are 3 nos. existing major bridge at km 286/830, 313/440 and 317/405. The state PWD has proposed to retain these bridges. Out of three major bridges, two bridges (Jhulen and Bheden bridges) are on proposed Kuchinda bypass which have already been sanctioned by the Ministry as standalone work. These 2 bridges are not included in the scope of this project. Since existing bridge at km 286/830 is narrow (7m), a new additional major bridge at km 286/830 is proposed in accordance to CL No. 7.3 of IRC: SP: 73-2015 i.e. carriageway width is 11.0 m including kerb shyness & overall width is 16.0 m. Same has been allowed as proposed.



The details are given below:

Sl. No.	Bridge Location	Span Arrangement	Foundation	Sub-structure	Super-structure	Waterway
1	286/830	7x 15.5 x 11.8	Pile foundation	RCC Pier & Abutment	RCC T-beam Girder	120m

1.5. Minor Bridge: There are total 07 nos. of Minor Bridges in the project stretch. All the minor bridge having 10.50 carriageway width & overall width of 12.9 m & are in good condition. State PWD has proposed to retain these bridges.

1.6. Culvert: There are total 82 existing culverts in the project stretch. Width of all culverts is equal to or more than road way width & are in good condition and proposed to retain. The State PWD has proposed following 14 nos of additional new culverts to be constructed at realignment and bypass stretch.

Sl. No.	Type of culvert	No.
1	Hume Pipe	04
2	Box/slab Culvert	10
	Total	14

1.7. Road safety:-

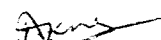
- **Protection work:**

Sl. no.	Description	Length(in m)
1	Concrete Drain (Deep &Succer)	22087.00
2	Toe Wall	14974.00
3	Retaining wall	3238.00
4	W-Metal Beam crash barrier	13840.00

- **Junctions Improvement:** The State PWD has proposed provision for improvement of one major at grade junction at Km 269.300and 87 nos. of minor junctions made in the estimate.

1.8. Road Furniture:

- 08 nos.bus bays/bus shelter.
- 100 Nos. Water harvesting structures
- 01 No. Toll Plaza at km 322.520.
- Provisions of road marking, traffic sign boards, boundary/hectometre/kilometer etc.

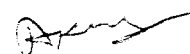


- 1.9. **ROW:** The existing ROW is reported as varies from 12m to 43.50 m.
- 1.10. **Alignment:** Widen the existing 2 lane to 2 lane with 1.5 m paved shoulder along the existing alignment except 8.30 km (km 307.500 to km 315.800) in Kuchinda bypass & 0.180 km (km 299.190 to km 299.370) in realignment.
- 1.11. **Horizontal curves:** There are 73 horizontal curves in the existing alignment out of which 67 nos. meets the minimum design speed as per IRC:SP:73-2015 and remaining 06 nos. curves are allowed for 65kmph as proposed since they are falling in built-up area where there sufficient ROW available is not available for improvement.
- 1.12. **Formation width:** The State PWD has kept 14.0 m formation in plain/rolling terrain in accordance with IRC: SP-73-2015.
- 1.13. **Earthen Shoulders:** 2m width earthen shoulder in accordance with IRC(SP: 73) 2015excluding Built up portion.

2.1 **Utility Shifting:** Provision of Rs. 673.34 lakh for shifting of utility service has been allowed as proposed. State PWD should auction the abandoned material of the existing utilities and take the credit for such proceeds in the project cost estimates. It could, however, be allowed to be used by the concerned state utility if the credit in the estimates is equal to or higher than the auction value. Further, it was also mentioned that the shifting of utilities meant shifting of the same standards as proposed to be shifted and in case the State utility proposed any augmentation/ enhancement of existing utilities, such enhancement may be allowed only if the state Utility is agreeable to bear such incremental costs

Description	Total
Shifting of Electric pole	Rs. 408.30 lakh
Shifting of Water pipeline	Rs. 265.04 lakh
Total	Rs. 673.34 lakh

2.3 **Tree cutting/ Avenues Plantation:** The provision of Rs. 49.14 lakh for cutting & removal of trees and provision of Rs. 19.67 lakhs for Plantation of trees @ 2 times of felled trees in non-forest area has been allowed.



3. **Design specifications including deviations, if any:** All material, design and construction operations for the project are proposed conforming to - the IRC: SP: 73-2015 with following deviations:-
- a) To carry out improvement proposal within existing land availability in some urban location and to avoid impact on settlement cross sections was customized as against recommended in manual applicable for the project alignment.

Sl. No.	As per manual	Adopted sections	Remarks
1	As per clause 2.6.1 (Table 2.2) of IRC:SP:73-2015, the paved shoulder in Built-up Areas shall be 2.50 m on either side.	The paved shoulder is provided in 1.50m width on either side with 1.0m drain.	Paved shoulder is limited to 1.50m on either side in built-up area due to inadequate ROW.
2	As per clause 2.2 of 2-laning Manual, the design speed shall be minimum 80KM/H for plain area.	Design speed in curve at Km 286.980, 297.610, 297.750, 299.520, 304.680, 306.230 is 65 Km/h	The stretch is falling in built-up area where there is insufficient ROW available for curve improvement.

4. **Estimated cost:**

4.1 **Modifications:** The following modifications have been made in the above project: -

- (i) Provision of Administrative charges for LA have been deleted.
- (ii) Maintenance charges@ 5% for Road work & 1.75% for structures have been provided.
- (iii) Compensatory Plantation have been restricted to 2 times against 10 times proposed.
- (iv) Salvage material obtained in shifting of utilities shall be auctioned & auction money shall be deposited in appropriate central head of account. Suitable para in this regard shall be included in technical note.
- (v) Construction period has been modified from 2 years to 1 ½ years and Escalation charges have been modified from 10% to 2.5%.



4.2 CE, NH, Odisha vide letter dt. 11.12.2017 has submitted a sub-estimate amounting to Rs. 15.63 lakh for operation of CALA cell and payment of Advertisement bill for publication of 3(A) notification for construction of Kuchinda by-pass on NH-49. This amount may be meet from the contingency of this work.

4.3 The details of the cost estimate are as given below:-

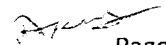
SI No.	Details	Estimated Cost (Rs. in cr.)
1	Road work	67.14
2	Culvert	1.98
3	Major Bridge	9.52
4	Road Safety Work	35.45
5	Miscellaneous	6.01
A	Civil Construction Cost	120.11
	Add GST @12% on (A)	14.41
1	Civil cost Including GST	134.52
	Civil cost (road)	123.85
	Civil cost (Structure)	10.67
2	Contingencies @ 2.8% of (1) above	3.77
3	Total cost Including Contingencies	138.28
4	Supervision Charges @ 3% of (3) above	4.15
5	Agency charges @ 3% of (3) above	4.15
6	Maintenance charge @ 5% for road & 1.75% for structures	6.38
	Price Escalation @ 2.5 % for 1.50 year of (1) above	3.00
	Utility Shifting	6.73
	Felling of Trees	0.49
	Plantation	0.20
	Land Acquisition	32.31
	Forest diversion	3.47
	Total	199.16

6. **Specifications:-**The work shall be strictly executed as per Ministry's specification for road & Bridge(Vth Edition-2012) and relevant IRC norms and guidelines of the Ministry issued from time to time.



7. General Observations:

- (i) The work shall be executed on EPC mode.
- (ii) The schedule and EPC documents shall be finalized by CE(NH), Odisha in consultation with R.O. BBSR as per extant guidelines before inviting tenders.
- (iii) The bids for the work should be invited through e-tendering system as per the instructions issued vide Ministry's circular letter No RW/NH/33044/2/2010- S7R(R), dated 17.06.2011 and letter No. RW/NH/33044/2/2010-S&R(R), dated 17.11.2011.
- (iv) The tenders for the work shall be invited as per guidelines issued by this Ministry vide circular letter No RW/NH - 11024/3/99-US- (D-I) dated 9.3.2000. Since, the sanction cost of the instant work is more than Rs. 100.00 crore, the tender should essentially be based on Ministry's Model Engineering Procurement and Construction (EPC), in accordance with the order contained in the Ministry Circular letter No. RW/NH-37010/4/2010/PIC dated 30.10.2013 & 14/2/2015.
- (v) The time limit for awarding of this work is 6 months from the date of sanction should be strictly followed as per the instructions communicated to all State PWDs vide this Ministry's letter no. RW/NH-15015/29/2001-PL dated 5th July, 2001 and compliance reported to the Ministry. 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.
- (vi) No work beyond the scope of the sanctioned estimate leading either to increase in the scope of work or change in specifications should be undertaken without obtaining prior written approval of the Ministry. In this connection, Ministry's letter No.RW/NHIII/Coord/32/84 dated 19.5.84 and letter No. RW/NH-33044/10/2002/S&R(R.) dated 09.09.2002 may be referred.
- (vii) It would be ensured while accepting the tenders that the overall cost at tender rates including supervision charges does not exceed by more than 5% of the sanctioned cost. In case, the cost of the work exceeds 5% of the sanctioned cost, revised sanction of the Ministry should be obtained. In this connection, Ministry's letter No.NH-11026/2/99-US (D.I) dated 29th October, 2001 may be referred.
- (viii) The work is to be carried out in accordance with the "Hand Book of Quality Control for construction of Roads and Runways (Second Revision) - IRC SP: 11-1988", observing strict quality control instructions contained in Ministry's letter No. NHIII/P/I/83 dated 19.4.84 and permanent records maintained thereof. The quality control testing should be done through NABL (National Accreditation Board for Testing and calibration Laboratories) accredited laboratories only. CE (NH) State PWD shall ensure strict quality control



during actual execution of work and shall ensure that suitable instructions are issued to all Field Officers in this regard.

- (ix) 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.
- (x) Bitumen used for the work shall be heated in boilers only and not in drums on open fire. Spraying of bitumen wherever necessary should be done only with the mechanical sprayers and premixing of bitumen and stone aggregates should be done only in the proper mechanical mixer/hot mix plant.
- (xi) CVC guidelines in tendering may be followed.
- (xii) Video/photo records of the road, before/during & after the execution of work shall be made available in the Ministry/RO Bhubaneswar.

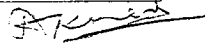
8. Special Conditions:-The Project has been sanctioned/approved subject to following conditions:-

- (i) The work shall be awarded by 31.03.2018.
- (ii) The extra cost of Utility Shifting and the extra cost arising due to default of the Authority/non-availability of work front, if any, shall be borne by the State Government.

9. Award for the work:- The works shall be awarded as per Ministry's norms for EPC projects and tenders evaluated as per Ministry's circular No. H-39011/30/2015-P&P(Pt.) dated 12.05.2017.

10. Phasing of work: Following cumulative physical and financial targets may be achieved subject to the availability of funds:

Financial Year	Physical (%)	Financial (Rs. in crore)	
2017-18	Preliminary	0.10	Construction period
2018-19	50%	96.39	
2019-20	100%	192.78	
2020-21	1 st year	0.65	Maintenance period
2021-22	2nd year	1.94	
2022-23	3rd year	3.85	
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(Anil Kumar Meena)

Executive Engineer(Z-III)

For Director General (Road Development) & SS