



**GOVERNMENT OF INDIA
MINISTRY OF SHIPPING, ROAD TRANSPORT & HIGHWAYS
(DEPARTMENT OF ROAD TRANSPORT & HIGHWAYS)**

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

Dated: 10TH July, 2009

NH-12013/32/2008/Ar.P/SARDP/NH-10

To

The Commissioner & Special Secretary,
Public Works Department,
Government of Arunachal Pradesh, Itanagar

(Job No.SARDP-NE/NH-153/Ar.P/PWD/2009-10/134)

Subject: 2-laning of NH-153 from Km.24.00 to 40.00 in the State of Arunachal Pradesh under SARDP-NE, Phase 'A'.

Ref No.: Letter No. CEAP (EZ)/WTC-10/MoST-NH/SARDP-NE/2009-10/1047-49 dated 12.06.2009

Sir,

I am directed to convey the administrative approval and technical & financial sanction of the President to the estimate for the work mentioned in the subject heading as per the following details, subject to the conditions stipulated herein and in the attached technical note.

(i)	Amount as indicated in the estimate sent by the State PWD, Arunachal Pradesh	Rs. 4231.00 lakh
(ii)	Amount as modified in the Ministry	Rs. 4231.00 lakh
(iii)	Amount of technical approval	Rs. 4231.00 lakh
(iv)	Amount of financial sanction	Rs. 4231.00 lakh

(Rupees Forty-Two Crore and Thirty-one Lakh only).

2. This sanction is further subject to the following condition: -

- (i) The work should be completed as per the targets indicated in paragraph 8 below and the stipulations made in the enclosed technical note.
- (ii) In accordance with the order contained in this Ministry's circular No.RW/NH-11026/2/99-US(D-I) dated 29.10.2001, which was issued in supper-session of earlier circular No.RW/NH-11026/2/99-US(D-I) dated 13.01.2000, if the cost of work exceeds 5% of the sanctioned amount, revised estimate be got sanctioned from the Ministry. Further, it may be ensured that the guidelines issued by this Ministry vide circular No.RW/NH-11024/3/99-US(D-I) dated 9.3.2000 regarding invitation of tenders for execution of works on National Highways and other centrally financed schemes relating to advertisements should be adhered to, depending on the requirements

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

4. The expenditure during current financial year on this work as also on other sanctioned works should not exceed the allotment placed at the disposal of the State Government during the year, under the head mentioned in paragraph 6 below.

Contd...2/-

5. The expenditure should be incurred consistent with the completion of finished road. The work programme shall be prepared accordingly by the Executive Agency.

6. The expenditure is Debitable to the Major Head '5054' Capital Outlay on Roads & Bridges (Major Head), 01-National Highways (Sub Major Head); 01.337-Road works (Minor Head); 02 – Special Accelerated Road Development Programme in North Eastern Areas; 02.00.53 – Major Works; 02.03 works under Roads Wing/State PWD, corresponding Demand No. '87', Ministry of Shipping, Road Transport & Highways, Department of Road Transport & Highways for the current financial year 2009-10.

7. Quarterly progress reports in the stipulated proforma should be sent to this Ministry till the work is completed. On completion of the work, project completion report shall also be submitted in the prescribed proforma.

8. The following physical and financial targets shall be adhered to:

Finance Year	Cumulative progress	
	Physical(%)	Financial (Rs. In Lakh)
2009-10	10	500.00
2010-11	60	2500.00
2011-12	100	4231.00

9. This sanction issues with the concurrence of Finance Division vide their **U.O.No.484/TF-II/2009 dated 19.06.2009.**

Yours faithfully,


(K.R. GATTI)

Under Secretary to the Government of India

Copy with a copy of the technical note forwarded to: -

- ✓ 1. The Chief Engineer (NH), PWD, Arunachal Pradesh, Itanagar-791111
2. The Regional Officer, Ministry of Shipping, Road Transport & Highways (Department of Road Transport & Highways), Rajgarh Road, Guwahati – 781 003
3. The Accountant General, Assam, Guwahati.
4. The Pay and Accounts Officer, M/o Shipping, Road Transport & Highways (Department of Road Transport and Highways), Jam Nagar House, IDA Building, New Delhi.
5. The Regional Pay and Accounts Officer (NH), M/o Shipping, Road Transport & Highways (Department of Road Transport & Highways), Hrishikeshayan, Hriday Ranjan Path, 6th Byelane (W), R.G. Baruah Road, Guwahati – 781 003.
6. The Principal Director of Audit, Economic & Services Ministries, A.G.C.R. Building, New Delhi – 02.
7. The Director (NE-II), Ministry of Home Affairs, NE Division, North Block, New Delhi w.r.t. MHA ID No. 1/15/05-NEDC dated 25.09.2006 for news letter.


(K.R. GATTI)

Under Secretary to the Government of India

Copy with enclosures also forwarded to:-

CE(P-10)/SE(P-10)/EE(P-10)-3/SE(PL)/SE(Mon)/W&A Section/Finance Wing (TF-II) Section / Guard File.


(A.K. Ranjan)
Section Officer

Government of India
Ministry of Road Transport and Highways

TECHNICAL NOTE

NH-12013/ 32/2008/Ar. P/SARDP/NH-10 New Delhi, 10TH July, 2009

1.	Name of work	2-laning of NH 153 from km 24.0 to 40.0 in the state of Arunachal Pradesh under SARDP-NE Phase 'A' (Job No. SARDP-NE/NH 153/Ar. P/PWD/2009-10-134)	
2.	State	Arunachal Pradesh	
3.	NH	153	
4.	Estimated cost (Rs. in lakh)	As furnished by the State PWD 4231.00	As approved by Ministry 4231.00
5.	Length (km)	16.00	16.00
6.	Rate / km (Rs. lakh)	264.44	264.44
7.	Reference	Letter No. CEAP(EZ)/WTC-10/MoST-NH/SARDP-NE/2009-10/1047-49 dated 12.06.2009,	

COMMENTS

1. Scope of work

- (i) 2 laning from km 24.0 to 40.0(16 km) along with provision of hard crust in 1.6/1.9 m wide shoulders on either side of carriageway.
- (ii) Construction of 2 minor bridges;
- (iii) Extension of 56 slab culverts to full formation width;
- (iv) Construction of two new HP culverts of double row each;
- (v) Construction of Retaining Wall/Breast Wall/Toe wall;
- (vi) Centre line marking, edge line marking & road safety items, etc
- (vii) Provision of land acquisition & shifting of HT/ LT power lines.

2. Alignment

The existing intermediate lane in 4.60 km from km 24.0 to 28.600 and single lane in 11.40 km is reported to be passing through hilly terrain. The minor realignments have been proposed from km 38.400 to 38.600 and from km 39.700 to 39.990 to avoid sharp U turn and for re-location of a bridge, respectively. The ruling design speed of 40 kmph has been adopted throughout the stretch except at km 24.400 (Jairampur town) where 30 kmph minimum design speed has been adopted. The proposed gradient has been kept within allowable gradient as per IRC:73, 1980. It is also reported that proposed road does not involve forest clearance.

3. **Right - of - Way**

Arunachal Pradesh PWD has stated that ROW of 18 km is available, which is sufficient for widening purpose, except from km. 34.800 to 35.200 & from km 35.600 to 38.650 (3.450 km) due to interception of tea gardens. A provision of Rs 45 lakhs has been made in the estimate for acquiring additional land in 3.45 km.

4. **Formation**

4.1 The proposed formation width from km 24.0 to km 40.0 is 12m, as per NH standards.

4.2 Eccentric widening of road formation towards hill side is proposed.

4.3 In order to achieve heavy compaction of earth, the mandatory use of vibratory roller shall be specified in the bid documents. It may be ensured by PWD that the earthwork in embankment is carried out strictly as per clause 305 of Ministry's specification for road & bridge works, 4th revision. Density/ compaction requirements as per table 300-1 & 300-2 of above mentioned specification shall be met with fully.

4.4 The earth to be used for filling has been proposed to be utilized from cutting of the hill.

5. **Pavement thickness and composition in carriageway**

5.1. Existing crust of 375mm has been reported by PWD throughout the length. The widening of carriageway from 3.75/5.5 to 7 m has been proposed with the following crust composition:

Items	Proposed by PWD	Allowed by Ministry
GSB	250mm	250mm
WMM	125 mm	125mm

5.2 200 mm WMM in 2 layers has been allowed in the estimate over 7m width achieved in above manner, as strengthening course. Proper camber of 2.5% slope shall be achieved in first 100 mm layer of WMM, which shall be provided after scrapping existing PC & SC layer.

5.3 The GSB and WMM layers shall be properly compacted using vibrating rollers of appropriate specifications. This will be incorporated in the contract as an essential requirement.

5.4 Over WMM, 60 mm DBM & 40 mm BC has been allowed, instead of 75 m BM & 25 mm SDBC due to high rainfall area.

5.5 The tack and prime coats shall be provided with bitumen emulsion, complying with the requirements of clause No. 503 and 502 of Ministry's specifications for road & bridge works, 4th revision, respectively. Further, the prime coat over WMM shall be provided @1 kg/ sqm keeping in view the high rainfall region.

5.6 Extra provision of 5% has been allowed in the estimate to enable extra width on curves.

6. Shoulders

- 6.1 The shoulders of 1.9 m width on valley side and 1.6 m on hill side has been provided with the following crust:-

Item	As proposed by PWD	As modified in Ministry
GSB	150 mm	-
WMM	100 mm	-
GSBC (Locally available material)	-	510 mm
WBM Gr. II	-	75 mm
WBM Gr. III	-	75 mm
Surface dressing	Proposed	Allowed as proposed

The earthen shoulder width of 30 cm has been left on hill side so that the layers of crust in shoulders is not exposed to earthen drains

7. Culverts

- 7.1 PWD has proposed extension of 56 slab culverts (40 having 2m span, 14 having 3m span & 2 having 6m span) from 10 m to 12 m. This provision has been allowed.
- 7.2 Provision of 2 new HP culverts having 2 row of 1000 mm int. dia has been proposed to provide diversion at km 38.200 to avoid sharp U turn & another at km 37.230 to avoid water logging. The same has been allowed. The working drawing of culverts shall be approved by the Chief Engineer, PWD keeping in view the guidelines vide IRC:SP:13, 2004.

8. Bridges (Ch. 33.425 km, ch. 39.675) :

8.1 Bridge at km 33.425

- 8.1.1 PWD has proposed to construct single span of 40 m with 8.58 m width without footpath over river Namchip, with open foundation. State PWD, Ar. Pradesh shall provide bridge width of 12m without footpath as per Ministry's standard plans for highway bridges, as per NH standards. The additional cost implication @ Rs 56 lakhs including centages has been added in the estimate to this account, on proportionate basis. CE(EZ), PWD, satisfy itself about the detailed design of the foundation, sub structure and super structure of the bridge for 12m width as per relevant IRC codes and ensure the safety and adequacy of the structure including sub structure and foundation before work is put to tender.
- 8.1.2 This bridge is proposed to be constructed at u/s of existing bailey bridge. The existing bridge is proposed to be used as subway during construction. The same has been allowed.

8.2 Bridge at km 39.675

PWD has proposed single span of 35 m with proposed width of the bridge as 11.250 m with footpath of 1.5 m either side, over river Namgoi. The foundation has been proposed as well foundation. State PWD, Ar. Pradesh shall provide bridge width of 12m without footpath as per Ministry's standard plans for highway bridges, as per NH standards. The additional cost implication @ Rs 19 lakhs including centages has been

added in the estimate to this account, on proportionate basis. CE(EZ), PWD, shall satisfy itself about the detailed design of the foundation, sub structure and super structure of the bridge for 12m width as per relevant IRC codes and ensure the safety and adequacy of the structure including sub structure and foundation before work is put to tender.

- 8.2.1 This bridge is proposed to be realigned to ease the geometrics. The proposed bridge is provided at u/s side of existing Hemilton bridge (steel bridge of single lane). This steel bridge is proposed to be used as subway during construction. This has been allowed.
- 8.2.2 A lumpsum provision of land acquisition of Rs 5 lakh has been included to ease the geometrics. The same has been allowed.
- 8.2.3 A detailed provision of Rs 29.80 lakhs has been made for shifting of HT/ LT power lines, which has been retained.

9. Other provisions

- 9.1 The provision for centreline & edge line marking as made in the estimate has been retained. These marking may be provided as per IRC: 35, 1997. The work of road marking with stipulated paint (Thermoplastic) shall be done as per Cl. 803 of Ministry's latest specifications.
- 9.2 The provision of retaining wall with height varying from 2 to 5 m in an aggregating length of 596 m, Breast wall with 2 m ht in a length of 180 m & toe wall having height of 2 m in a length of 120m has been allowed as proposed. This shall be provided as per relevant IRC codes.
- 9.3 Provision of boulder apron to protect abutments & approach has been made. While providing stone pitching, it may be ensured that no stone be allowed weighing less than 40 kg as per clause 5.3.5.1 of IRC:89, 1997. The quantities of boulder in wire crated apron key may be reviewed in view of clause 5.3.7.1 of IRC : 89-1997.
- 9.4 Provision of longitudinal earthen drain throughout the stretch has been made with average cross section area of 0.4 sqm. The same has been retained.
- 9.5 Provision of parapet wall at the location of retaining wall has been allowed.
- 9.6 For safety of road user, provision of hollow concrete pipe with reflectors on both sides, having outer dia of 30 cm & length of 75 mm with 45 cm above the road surface, with staggered placement of 5 m on both sides of road (200 number/ km) has been added.

10. Rates & Leads

- 10.1 The estimate is based on rates quoted by M/s Valecha Engeering Ltd. except for Shifting of Electrical Power lines as per rates of Department of Power and Lump Sum provision has been made for acquisition of land.

11. Cost of work

In the light of above comments, the estimated cost works out to Rs. 4231.00 lakh, including 9% agency charges.

12. General observations

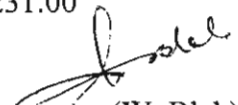
- 12.1 The contractor shall possess or undertake to procure and deploy all machinery required for the work. The list of plant and equipment shall be prepared on the basis of scope of work and enclosed with the bid documents and the same shall be enforced during the execution. It must be ensured that the work is carried out in mechanized manner using appropriate equipment.
- 12.2 Collection of material on the roadside, if any, should be commensurate with the physical progress of work, so as to avoid any hindrance to traffic. It must be ensured that contractor arranges for separate land for storage of road construction material and machinery and these shall not be allowed to be stacked on the roadside.

- 12.3 Bitumen shall be heated in boilers and heating in drums on open fire shall not be permitted in any case. Spraying of bitumen shall be done only with the mechanical sprayers and premixing of bitumen and stone aggregates should be done only in proper mechanical mixer / hot mix plant. The manufacture of WMM will be carried out in pug mill.
- 12.4 In conformity to this Ministry's circular No.RW/NHIII/Coord/32/84 dated 19.5.84, no work beyond the scope of the sanctioned estimate leading either to increase in the scope of the work or change in specifications should be undertaken without obtaining prior written approval of the Ministry.
- 12.5 Neither the work nor any item of work shall be spilt into small parts for awarding the work to more than one Contractor, except that specialized items such as road marking and signage could be executed separately. In case any splitting is essential, over and above as mentioned above, due to the specific prevailing conditions, it should be done only after prior approval of this Ministry. In this regard instructions issued in the Ministry's letter No. NHIII/P/75/78 dated 4.8.84 refers
- 12.6 The work shall be executed as per Ministry's "Specifications for Road and Bridge Works (Fourth Revision-2001)" and instructions issued by this Ministry from time to time.
- 12.7 Various measures will be taken to ensure quality of works in accordance with the "Hand Book of Quality Control for construction of Roads & Runways (Second Revision) – IRC: SP:11-1988" and the instructions contained in Ministry's letter No.NHIII/P/1/83 dated 19.4.84. Permanent record of the tests carried out shall be maintained.
- 12.8 The grade of bitumen to be used for the work shall be as per guidelines/ instructions issued vide Ministry's circulars No RW/NH-33044/3/98-(S&R) dated 04.11.99 and RW/NH-35074/7/2001-S&R(R) dated 3.4.2001.
- 12.9 During execution of the work, traffic management shall be done in accordance with the guidelines contained in Ministry's Letter No.RW/NH-11060/1/1998-D.O.1 dated 7.10.87 and IRC: SP:55-2001 "Guidelines on Safety in Construction Zone".
- 12.10 The display boards giving details of the project shall be provided as per guidelines issued vide Ministry's Letter No.RW/NH-33044/10/2000-S&R (R) dated 12.8.2002.
- 12.11 Central Government machinery if available in the area shall be used for the work as spelt out in this Ministry's Letter No.RW-14(1)/83-RMP dated 7.6.88. In case of non-availability of the Central Government machinery in the area, the work will be allotted to such contractors only who possess the required machinery or produces proof of procuring or hiring the same to the satisfaction of the Chief Engineer.
- 12.12 It may be ensured that the site is free from any encumbrances before taking up the work.

13. **Targets for the work**

The following **cumulative** physical and financial targets should be achieved depending upon the availability of funds:

Year	Physical phasing (%)	Financial phasing (Rs. in lakh)
2009-10	10	500.00
2010-11	60	2500.00
2011-12	100	4231.00


(W. Blah)

Executive Engineer

For Director General (Road Development) and Special Secretary