

TECHNICAL REPORT

Name of the Work: "DPR in respect of Hunli-Anini road from KM 0.00 to 21.500 of NH-313-one time investment by NHIDCL"

1. Introduction:

- 1.1 NHIDCL has been entrusted with the responsibility of repair and improvement of road Hunli-Anini from KM 0.000 to 21.500 (length 21.500 KM) in Dibang Valley District in the state of Arunachal Pradesh to the single lane section 3.75 meter wide with 1.0 meter both side earthen shoulders.
- 1.2 To improve the existing transportation system and to provide basic accessibility for connectivity of the people of various stretches for escalating socio-economic development, Ministry of road Transport and Highways, Government of India proposes to undertake a comprehensive connectivity programme to improve access of the rural area to the mainstream economy, build up opportunities and major social services.
- 1.3 The Index Map of the project road is enclosed as Fig 1.1. The total length of the project road is 21.500 KM and presently being maintained by project Udayank/BRO. This road at present has CI-9 (MDR) surfaced specification. The entire road passes through hilly terrain in Dibang Valley District of Arunachal Pradesh. This road is an extension of road Roing-Hunli (90.00 KM long) which originates from NH-52 at Roing (Meka) (KM 632.45) which is District Head Quarter of Dibang Valley District of AP. Anini is also a District HQ of upper Dibang Valley of AP. Anini is connected from Roing by road and as also by Helicopter service. At present, connectivity to Roing from nearest rail head Tinsukia and Airport Dibrugarh is via Dholaghat where erries are operated across Lohit River. Roing is about 120.000 KM away from Tinsukia. There is daily flight from Delhi to Dibrugarh. Roing is also connected nby Helicopter service from Dibrugarh. The existing roadway is having an average width of 6 M with combination of bituminous and earthen. The road passes through the village i.e. Pilee, Sjhukia Nagar, Anaya, Ryali, Arju Anoya, Angoliyan, Punali. As per reconnaissance survey, road is having ruts and undulations and requires to be improved. Breast walls and retaining walls are required in some stretches. Additional cross drainage structures are required in some places.
- 1.4 The Detailed Project Report in respect of existing Hunli-Anini Road from KM 0.000 to 21.500 of NH-313 under one time investment plan to be carried out by National Highways & Infrastructure Development Corporation having civil cost Rs. 109.01 Crores is being modified as to meet out the following modifications and a new detailed estimate is prepared incorporating the guide lines given as under:-
 - (a) Estimate includes the renovation/strengthening of the existing road single lane of 3.75 meters width with an additional earthen shoulders of 1.0 meter both side.



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- (b) The Estimate does not include any LA & FS as the existing RoW is quite sufficient for single lane road having 3.75 meters width.
- (c) 60 mm thick DBM with 40 mm thick BC has been proposed in the existing B.T. Road with 250mm thick WMM in the estimate. Also 230 mm thick 3.85 meters wide GSB has been proposed for shinking area having length of 1200 meters and 39 numbers of passing places (each having 30 meter length) to facilitate the traffic on sharp curves within the available RoW.
- (d) 1.00 (one) meter wide earthen shoulder of 350mm thick GSB on both side along 3.75M carriage way of 250 mm WMM + 60 mm DBM + 40 mm BC has been proposed in the estimate.
- (e) For adequate drainage and cross drainage, open earthen drain of 600 mm X 600 mm on hill side has been proposed though out the length of the road. Also, to protect the edge of berm from erosion, a toe wall of appropriate section has been added to safe the road section.
- (f) Out of available of total bridges and CD structures on this road section, only 56 numbers of CD structures may be required new construction/replacement/repairs for the purpose of permanent restoration. At present, these are in working condition & will serve the purpose. So, no CD structure works (new construction/repair) has been considered while preparation of estimate.
- (g) Restoration and strengthening has been included for 5 numbers of shinking area in the alignment as per ground condition.
- (h) The rates of estimate have been considered as per Schedule of Rates of Arunachal Pradesh PWD of 2018.

1.5 Design Standards: Preliminary pavement design for a 15-years period based on investigations carried out and following the guidelines of IRC and other standards has yielded the following tentative proposals. The MSA for the project is coming less than 3 as per traffic growth, so considering the other similar projects in Arunachal Pradesh for the same traffic, the crust considered is:-

Pavement Composition of Main Carriageway:

Sl No.	Pavement layers	Crust of Proposed Single Lane Carriageway
1	GSB for both side shoulders	350mm
2	GSB on Shinking Areas	230mm
2	WMM on existing carriageway	250mm
3	DBM on existing carriageway	60 mm
4	BC on existing carriageway	40 mm



Note: The overlay will be applied after correcting the profile by WMM. The Crust suggested above have been discussed with NHIDCL officials. Ref-NHIDCL Letter No. NHIDCL/H-A/DPR/0-21.5/BO-NMS/2017-18/Vol-I/3780 dated 14/05/2018.

- 1.6** The civil cost for the above works is estimated to Rs. 21,14,05,715/- based on the current SOR' 2018 of Arunachal Pradesh. The following specifications have been incorporated:-
- (i) GSB of 350 mm thick has been provided on both side shoulders in entire length of the existing road excluding the length of structures i.e. on 20760 meters. Also, GSB of 230mm thick has been provided in Shinking areas of 1200 meters and 39 numbers of Passing Places of 30M each i.e. 1170 meters.
 - (ii) WMM of 250mm thick has been provided on entire existing road over the existing B.T. and on GSB of Passing Places of 3.85 meters width.
 - (iii) 20% extra WMM has been provisioned for correction of profiles i.e. for potholes ruts etc.
 - (iv) 60 mm thick DBM with 40 mm BC over the WMM has been considered keeping in view of the traffic volume.
 - (v) For proper drainage specially towards hill side in full length, a surface drain of 600mmX600mm size has been provided to facilitate the water to flow into the CD Structures.
 - (vi) To protect the earthen shoulder, a toe wall of appropriate size of 600mm height of RR Masonry in 1:6 Cement Mortar has been provided at the end of the shoulder to separate the drain water from the shoulder. It will facilitate the flow of water smoothly without erosion of the edge of shoulder and the road will be protected and will be last long.
- 1.7** Labour & Materials: the local labour is easily available in the nearby areas. The construction material like aggregate, sand stones etc are locally available.
- 1.8** Borrow Areas - Good quality soil along the road is available.

