



भारतीय राष्ट्रीय राजमार्ग प्राधिकरण National Highways Authority of India

(सड़क परिवहन और राजमार्ग मंत्रालय)
(Ministry of Road Transport & Highways)
परियोजना क्रियान्वयन इकाई - बागपत
Project Implementation Unit, Baghpat

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भारतमाला
प्रगति के पथ पर अग्रसर
BHARATMALA
ROAD TO PROSPERITY

NHAI/PIU-BPT/1012/Greenfield/2020/D- 6933

Date:- 20-09-2021

To,

The Divisional Forest Officer
Baghu road, Meerut Rd,
Near Sugar Mill, Baghpat, 250609

Sub: - "Development of 6 lane National Highway from the junction of Eastern Peripheral Expressway at Khekra to Saharanpur Bypass at Latifpur village from km 0.000 to km 118.533 of Delhi to Dehradun Economic Corridor under Bharatmala Pariyojana. Package-1 (km 0+000 to 27+000)" (online proposal no- FP/UP/ROAD/118170/2020.)

Ref: - (1) Our letter no. NHAI/PIU-BPT/1012/Greenfield/2021/D-6841 dated 8/9/2021
(2) EDS issued from MoEFCC, RO Lucknow vide letter no 8B/UP/06/193/2021/FC/ 277 dated 04/08/2021
(3) Letter no. 223/14-1 dated 12/08/2021, EDS from office of DFO, Baghpat.
(4) Letter no. 910/14-1 dated 17/09/2021 EDS from office of DFO, Baghpat

Sir

Please refer to the above captioned subject and aforementioned reference.

We herewith submit the compliance of above cited EDS under reference no.4 which is as follows.

S. No.	EDS issued from office of DFO Baghpat dated 17/09/2021	Compliance
1	Muck calculation sheet is not provided in Muck Disposal Plan.	<p>Construction package-I of this project road for which Forest Land Diversion Proposal is uploaded has a total length 27.000 km and it is a green field alignment having PRoW 70 meter and embankment height (in general) 2.00 to 2.5 meter located on plane terrain.</p> <p>Any hill cutting, tunnelling, deep excavation other than construction of cross drainage and bridges are NOT proposed and to raise the height of embankment additional earth material is required.</p> <p>Since, no muck is likely to be generated due to construction of project road, disposal of muck is not required.</p> <p>However, approx. 4,46,125.71 Cum of excavated ordinary earth is likely to be generated which will be reutilized in embankment of the project work.</p> <p>As compliance of EDS, detailed calculation sheet of excavated material and its utilization is attached with Disposal Plan (Annexure-7).</p>

Being a priority project, we request to you kindly accept and submit it for onwards early processing of forest land diversion proposal.

Thanking You

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20.9.2021

Project Director
NHAI-PIU, Baghpat

Name of Project: - "Development of 6 lane National Highway from the junction of Eastern Peripheral Expressway at Khekra to Saharanpur Bypass at Latifpur village from km 0.000 to km 118.533 of Delhi to Dehradun Economic Corridor under Bharatmala Pariyojana. Package-1 (km 0+00 to 27+000)"

Introduction

The Muck often considered as waste material generated from tunnelling, cutting of hill, deep excavation etc. Based on the geological nature of the rocks and engineering properties of the soil, a part or full of the excavated material will be used as construction material/filling material in road work.

Construction package-I of this project road for which Forest Land Diversion Proposal is uploaded has a total length 27.000 km and it is a green field alignment having PRoW 70 meter and embankment height (in general) 2.00 to 2.5 meter located on plane terrain. Any cutting, tunnelling other than construction of cross drainage, bridges are NOT proposed and to raise the height of embankment additional earth material is required. Keeping in view of road work, small quantity of excavated material (ordinary earth) will be generated from foundation work of, bridges/ cross drainages as well as Clearing & Grabbing. Excavated material generated from these construction sites will be utilized in filling/raising of Embankment of project road.

Being a greenfield alignment, in this entire section of project road, NO muck will be generated and any disposal is not required as excavated ordinary earth material will be re-utilized in filling of embankment.

Component wise quantification of excavated material and it utilization

Excavated Material Generation			Utilization of excavated Material	
SL	Project Component	Excavated Material Generation Quantity (cum)	Project Component	Excavated Material - Utilization Quantity (cum)
1	Box Bridge	8,644.43	Embankment Quantity (Raising of Embankment upto FRL)	43,41,323.93
2	Minor Bridge	12,306.54	-	-
3	Cut & Cover Box	18,992.40	-	-
4	ROB	22,172.40	-	-
5	EUP	6,687.93	-	-
6	Pipe Culvert	1,142.32	-	-
7	Box Culvert	8,125.78	-	-
8	Box VUP	11,627.11	-	-
9	Miscellaneous ROAD work (Earthen Drain, Boundary Stone Fixing, Clearing & Grubbing)	3,56,426.80		
	Total	4,46,125.71		43,41,323.93

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परियोजना निदेशक/Project Director
पी०आई०यू०-बागपत/P.I.U.-Baghpat

Balance Disposal (without factor)	Quantity (without swell factor)	for 4,46,125.71- 43,41,323.93= (-) 38,95,198.22 cum
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Total quantity of excavated material is 4,46,125.71 Cum.

Soil in project area i.e district Baghpat is of loamy textured soil which has swell factor 15-25 %)

Add Swell factor 20% (average) for Earth material

So, Bank material is $100\%/100 = 1$

Loose Material = Bank Material + Swell

Or

Loose = $1 + (20/100) = 1.20$

Total Material to be disposed/utilized considering swell factor = $4,46,125.71 \times 1.20 = 5,35,350.852$ Cum

Disposal/Utilization of Excavated Material

As detailed, above total quantity of excavated material is 4,46,125.71 cum (with Swell factor it will be 5,35,350.852) cum. However, ordinary earth material required for raising/filling of embankment is 43,41,323.93 cum, so remaining quantity of excavated material to be disposed off/utilized, will be

$4,46,125.71$ (generated quantity) - $43,41,323.93$ (required quantity) = (-) 38,95,198.22 cum

It means, filling quantity for raising of embankment is much more than quantity of excavated material and no separate disposal of these excavated material is required as all the excavated material will be re-utilized in project road for raising of embankment upto FRL.

SL	Particulars	Remarks
1	Calculation of muck to be generated. Swell factor to be applied.	Total quantity of excavated material 4,46,125.71 Cum. Soil in project area i.e district Baghpat is of loam textured soil which has swell factor 15-25 %) Add swell factor 20% (average) for Earth material So, Bank material is $100\%/100 = 1$ Loose Material = Bank Material + Swell Or Loose = $1 + (20/100) = 1.20$ Total excavated material considering swell factor = $4,46,125.71 \times 1.20 = 5,35,350.852$ Cum Note- Component wise quantification is given in above table.
2.	Quantity of muck to be utilized in the project activities	A total 4,46,125.71 Cum, excavated material will be generated and it will be fully utilized in project.
3.	Balance quantity of muck which requires disposal/ management plan.	No muck is generated so its disposal is not required. However, excavated material / ordinary earth will be generated which is detailed above. Total quantity of Excavated Material = 4,46,125.71 Cum. Total requirement of filling ordinary earth material - 43,41,323.93 Cum.

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		Balance quantity of muck for disposal= (-) 38,95,198.22 cum. That means disposal of excavated material is not required as utilization quantity is much more than generation quantity.
4	Carriage of muck from the muck generation site to the dumping site.	As per contract condition generated/excavated will be disposed by contractor at their own cost which is included in civil cost. Also, as stated above, the generated quantity of muck will be utilized in embankment of project road.
5.	Ownership of land and the consent of land owners in case muck disposal is proposed on non-forest land.	Excavated quantity will be utilized in Embankment of project road which is in jurisdiction & under control of NHAI-PIU Baghpat.
6	Photograph & carrying capacity of proposed dumping site (Muck disposal site)	Carrying capacity of proposed site is much more than required disposal quantity (4,46,125.71 Cum). Length of project road for which Forest Land Diversion Proposal is uploaded 27000-meter X width 70-meter X Average height 2.5 meter= Total capacity 47,25,000 Cum.
7	Development of dumping site- construction of retaining walls and other structure as per requirement of the site. The objective is to completely stop rolling down of the muck.	No dumping site required to be constructed for disposal of Excavated Material, as it will be re- utilized in embankment of project road.
8	Rehabilitation of dumping site like leveling, planting of grass, shrubs and tree species.	Not applicable, due to above mentioned reason in column no. 7.

Note: - Cost to be incurred on the above activities has to be given component wise. Details of dumping site including length, width and height of structures to be erected must be mentioned. - included under civil cost.

Undertaking by user agency has to be given to the effect that:

- 1. Muck management plan will be implemented by user agency and in case of non-implementation of plan; they will be liable to penalty / action at their cost- Agreed*
- 2. The proposed dumping site is located away from river/ stream/ Nala.-Yes*

Date:-

Place: - Baghpat

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नई दिल्ली/नयागपत/P.I.U.-Baghpat
NHAI-PIU Baghpat
Uttar Pradesh
Name: - Sanjay Kumar Mishra

Signature & Seal