

No: NHIDCL/PMU-Kishtwar/FC/Pkg-4/2021-22/04

Dated: 10.03.2022

To,  
 Divisional Forest Officer,  
 Kishtwar and Doda Forest Division

**Sub:** Diversion of 2.65072 ha of Forest Land in Doda and Kishtwar Forest Division for Construction and Upgradation to 2-lane with paved shoulder from Km. 80.675 (Start of Kishtwar bypass) to Km 95+550 (end of Helmet top bypass) of length 14.875 Km & link road from 0+000 to 1.871 of length=1.871 km total length = 16.746 km (including link road) on Khellani- Kishtwar-Chattroo-Khanabal section of NH-244, District Kishtwar, UT of Jammu and Kashmir -reg.

**Ref:** Forest Proposal No: FP/JK/ROAD/143808/2021

Sir,

It is submitted that Forest Proposal FP/JK/ROAD/143808/2021 for the subject project for 2.65072Ha was Uploaded by NHIDCL, PMU-Kishtwar on dated 23 June 2021. The EDS raised by IRO, Jammu vide File No: 9-JKB-004/2022-Jammu 28.02.2022 and DFO Kishtwar vide 372/FCA/KFD dated 10.03.2022 received to user agency via Parivesh Portal on 10.03.2022. The Compliance of the EDS raised by IRO-Jammu pertaining to user Agency are as follow:

Sr.N o	Observation raised by IRO vide File No: 9-JKB- 004/2022-Jammu 28.02.2022	Compliance by User Agency						
		List of proposal submitted in Past						
1	The Authorization certificate uploaded under column A3 (xvii) mentioned total area to be diverted is 2.650720757 ha instead of 2.65072 ha also details of the project for the forest land is required is not matched. UT Administration may do the correction and upload the appropriate one	Proposal Status.	Proposal No.	Moef File No.	Area Propose d for Diversio n (Ha.)	Area Diverte d (Ha.)	Date of In- Principal Approval	Date of Final Approval
		Approved	FP/JK/ROAD /48822/2020	9-JKB-013/2021 -Jammu	5.325	5.325	25.06.2021	09.03.2022
		In- Principal	FP/JK/ROAD /143629/2021	9-JKB-082/2021 -Jammu	3.5183	3.518	24.01.2022	

Sr.N o	Observation raised by IRO vide File No: 9-JKB- 004/2022-Jammu 28.02.2022	Compliance by User Agency
3	Under column C of Part I UT Administration is requested to provide complete KML file showing non-forest and forest land in different colour for each division distinctly.	Kml file showing non forest and forest land in different colour for each, and every division is uploaded in Parivesh portal.
4	The Muck Disposal Plan need to verify by the concerned DFO.	Muck disposal plan verified by DFO is already uploaded on Part-II Additional documents hence again attached for your reference.
5	The Details of Muck Deposals Sites involved in Kishtwar, and Doda Forest Division need to be provided.	Muck disposal plan verified by DFO is already uploaded on Part-II Additional documents hence again attached for your reference.
6	The Muck Disposals Sites marked in KML appears to be located on a very steep slope from where debris can easily roll down into the river Chenab. UT Administration may ensure effective protection measures before any dumping is made to avoid spillage of muck directly into the river.	It is to mention that Engineering (Gabions and retaining walls) and biological engineering have been catered in the protection works of the muck dumping sites.it is submitted that all due precautions and remedial measures would be ensured while muck dumping at the designated place for avoiding of the rolling of debris and damage to river.
7	The Density is mentioned as 0.5 for Kishtwar Forest Division appears to be incorrect for 12 trees in 1.28235 ha area. UT Administration may submit the clarification in this regard.	Pertaining Forest Department
8	The Enumeration List of Kishtwar Forest Division needs to be provided	Pertaining Forest Department
9	Under column 8 (v) for Kishtwar Forest Division presence of endangered/unique species of flora and fauna has been reported by the DFO which includes Leopard ( <i>panther pardus fusca</i> ) which is protected under Schedule I (Part I) of the	Pertaining Forest Department

Sr.N o	Observation raised by IRO vide File No: 9-JKB- 004/2022-Jammu 28.02.2022	Compliance by User Agency
	Indian Wildlife(Protection) Act 1972. The UT Administration may contemplate the details and submit the descriptive conservation plan for the conservation of the species	
10	Under column 13 (i) Name pf PF/RF need to be provided for Doda Forest Division.	Pertaining Forest Department
11	Examination of KML Provided for CA site of Doda Forest Division appears to be on very steep slope where any kind of plantation activities seems to be difficult. UT Administration may look for another area suitable for raising CA.	Pertaining Forest Department
12	NPV rates to be calculated as per Ministry's directions issued vide letter No. 5-3/2011-FC (vol-I) dated 6th January 2022 for Doda Forest Division	Pertaining Forest Department
13	Under column 14 district profile of Doda need to be provided.	Pertaining Forest Department
14	CF recommendation letter need to be provided for Kishtwar Forest Division	Pertaining Forest Department
15	<p>TA (DSS) analysis the project site and CA site and found the following shortcomings and UT Administration may do the correction towards the same</p> <p>a) Two KMLs uploaded by the SG/UA. Need to delete one because both of them are same shape and size.</p>	<p>a) Two Kml uploaded by User agency for two Division i.e. Doda and Kishtwar Forest Division)</p>

Sr.N o	Observation raised by IRO vide File No: 9-JKB- 004/2022-Jammu 28.02.2022	Compliance by User Agency
	<p>b) There are 06 features added inside the uploaded KML under column C  (i) Part 1. The area of two feature with green color is approx. 2.65 (ha.). The name of feature is Compartment 026/K and Compartment 066A/K. Need to revise proposed project site because total KML area is 14.26 (ha.) instead of 12.052 (ha.)</p> <p>c) Need to revised SOI Toposheet pdf because the shape demarcated on the attached toposheet under column 13  (iv) is not matching with the uploaded CA KML under column 13 (i).</p>	<p>b) Revised Kml file uploaded on Parivesh portal.</p> <p>c) Pertaining to Forest Department</p>



A handwritten signature in blue ink, appearing to read 'Praveen Ahlawat'.

(Praveen Ahlawat)  
General Manager (P),  
NHIDCL, PMU-Kishtwar

**Copy To:**

1. CCF-cum-Nodal Officer (FC), Department of Forest, Ecology & Environment, Van Bhawan, Below Gumat, Jammu-180001 ([ccffcajk1@gmail.com](mailto:ccffcajk1@gmail.com)) for information please.
2. Executive Director (Project), Regional Office, Jammu, NHIDCL for information please
3. General Manager (LA-C& Admin) Regional Office, Jammu, NHIDCL for information please.
4. The Conservator of Forest, Chenab Circle, Doda for information.



### AUTHORIZATION CERTIFICATE

Shri **Praveen Ahlawat**, General Manager (P), PMU-Kishtwar National Highways and Infrastructure Development Corporation Limited (NHIDCL) is hereby authorized to sign/submit the documents related to Forest Diversion proposal of **2.65072** Ha of forest area for the purpose of Construction of Kishtwar bypass with 2 lane with paved shoulder from Design Km. 80.675 (Dulhasti) to Km 95.550 (Bandarkoot) of 14.88 Km length on Khellani – Kishtwar –Chattroo section and a link road to Kishtwar town of 1.871 km on NH244 in the Union Territory of Jammu & Kashmir on EPC mode (Pkg –IV) and further correspondence with the forest department.

Place: Jammu.

Date: 15.06.2021

*RK Ahlawat*  
Executive Director (P)

**EXECUTIVE DIRECTOR (P) &  
REGIONAL OFFICER  
N.H.I.D.C.L., JAMMU**

*Praveen Ahlawat*  
General Manager (P)



**Praveen Ahlawat  
General Manager (P)  
N.H.I.D.C.L.  
PMU-Kishtwar (J&K)**

**Full Title of the project:** Construction & Upgradation of 2 lane with paved shoulder from design km 80.675(Start of Kishtwar bypass) to km 95+550(end of Helmet top bypass) of Length 14.875km & link road from 0+000 to 1.871 of length 1.87km total length 16.746km (including link road) on khellani-kishtwar-chattroo-khanabal section of Nh-244 in the Union territory of jammu & Kashmir on EPC Mode(Pkg-IV)

File No: FP/JK/ROAD/143808/2021

Date of proposal: 23.06.2021

### Certificate for Minimum use of Forest Land

This is to certify that all alternative alignment/location have been explored and the forest area involved in the proposal is unavoidable and barest minimum forest area i.e **2.65072 Ha. (1.36837 Hec under Doda forest division and 1.28235 Hec under Kishtwar forest division )** area has been proposed diversion.

Place: kishtwar

Date: 15 . 06 . 2021

C/S  
Divisional Forest officer,

Divisional Forest Officer  
Kishtwar Forest Division

Office Seal



  
Signature of User Agency

Office Seal

Praveen Ahlawat  
General Manager (P)  
N.H.I.D.C.L.  
PMU-Kishtwar (J&K)

**Full Title of the project:** Construction & Upgradation of 2 lane with paved shoulder from design km 80.675(Start of Kishtwar bypass) to km 95+550(end of Helmet top bypass) of Length 14.875km & link road from 0+000 to 1.871 of length 1.87km total length 16.746km (including link road) on khellani-kishtwar-chattroo-khanabal section of Nh-244 in the Union territory of Jammu & Kashmir on EPC Mode(Pkg-IV)

**File No:** FP/JK/ROAD/143808/2021

**Date of proposal:** 23.06.2021

**Undertaking for the payment of net present value of forest area**

It is to certify that I/We **Parveen Ahlawat, General Manager(P)** , National Highway Infrastructure Development Corporation Ltd. have applied for diversion of **2.65072 Ha (1.36837 Hec under Doda forest division and 1.28235 Hec under Kishtwar forest division )** of forest are for the purpose of Road. I/We , hereby undertake to pay the net present value(NPV) of the above forest land. I/We also hereby undertake to pay the additional amount of NPV, if so determined as per the decision of the Hon'ble Supreme court, at a later date.

Place: **kishtwar**

Date: **15.06.2021**



Signature of User Agency



Office Seal

**Praveen Ahlawat**  
**General Manager (P)**  
**N.H.I.D.C.L.**  
**PMU-Kishtwar (J&K)**

**Divisional Forest Officer**  
**Divisional Forest Officer**  
**Kishtwar Forest Division,**

**Office Seal**

**C/S**

**X**

**Full Title of the project:** Construction & Upgradation of 2 lane with paved shoulder from design km 80.675(Start of Kishtwar bypass) to km 95+550(end of Helmet top bypass) of Length 14.875km & link road from 0+000 to 1.871 of length 1.87km total length 16.746km (including link road) on khellani-kishtwar-chattroo-khanabal section of Nh-244 in the Union territory of Jammu & Kashmir on EPC Mode(Pkg-IV)

File No: FP/JK/ROAD/143808/2021

Date of proposal: 23.06.2021

**Undertaking for payment of cost of compensatory afforestation**

I/We Parveen Ahlawat, General Manager(P),National Highway Infrastructure Development Corporation Ltd. hereby undertake to pay the entire amount for the compensatory afforestation in lieu of the forest area diverted for road as per the prevailing wage rates at the time of plantations.

Place: Kishtwar

Date: 15.06.2021



Signature of User Agency

Office Seal



Praveen Ahlawat  
General Manager (P)  
N.H.I.D.C.L.  
PMU-Kishtwar (J&K)

Divisional Forest officer,  
**Divisional Forest Officer**  
Kishtwar Forest Division, J&K

  
Office Seal

**OFFICE OF THE DEPUTY COMMISSIONER**  
**New DC Office Complex Mini Secretariat, Kishtwar**

Phone/Fax: 01995-261466/259555, E-mail:crrdcktr@gmail.com, dckishtwar-jk@nic.in  
No. DCK/JA/21/F No. 274/639 Dated... 11-02-2022

**TO WHOM SO EVER IT MAY CONCERN**

In compliance with the Ministry of Environment and Forest (MoEF), Govt of India's letter no. 11-9/98-FC (pT) Dt:- 3<sup>rd</sup> Aug 2009, wherein the MoEF issued guidelines on submission of evidences for having initiated and completed the process of settlement of rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006, (FRA for short) on the Forest Land proposed to be diverted for Non Forest purposes read with MoEF's letter Dt:-5<sup>th</sup> Feb 2013, wherein, MoEF issued certain exemption/ relaxation in respect of linear projects, **it is certified that 1.28235 Hectare of Forest land is proposed to be diverted in village Hidyal and 0.4123 Hectare of Forest land is proposed to be diverted in village Janwas in favour of NHIDCL Kishtwar, required for the construction of & upgradation to 2-lanes with Pave shoulder in District Kishtwar.**

It is further certified that:

- (a) The complete process of recognition and vesting of forest rights under the FRA has been carried out for the entire **1.28235 Hectare in village Hidyal and 0.4123 Hectare in village Janwas** of forest land proposed for diversion. The proposed area does not cover any part of the FRA-2006, since there is no any claim in this area as on date. A report in this regard from Sub Division Level FRC Committee Kishtwar) including report of BDO Kishtwar along with recommendation / report of Gram Sabha Resolution ( duly signed by FRC committee members) is enclosed as **Annexure "A"**
- (b) The diversion of forest land for facilities managed by the Government as required under section 3(2) of the FRA, 2006 have been completed and the Gram Sabha have given their consent to it: A report in this regard from Sub Division Level FRC Committee Kishtwar) including report of BDO Kishtwar along with recommendation / report of Gram Sabha Resolution ( duly signed by FRC committee members) is enclosed as **Annexure "A"**
- (c) The proposed area does not involve recognized rights of Primitive Tribal Groups and Pre Agricultural Communities: A report in this regard from Sub Division Level FRC Committee Kishtwar) including report of BDO Kishtwar along with recommendation / report of Gram Sabha Resolution ( duly signed by FRC committee members) is enclosed as **Annexure "A"**

  
(Ashok Kumar Sharma) KAS,  
District Collector,  
Kishtwar



## OFFICE OF THE DEPUTY COMMISSIONER

### New DC Office Complex Mini Secretariat, Kishtwar

Phone/Fax: 01995-261466/259555, E-mail:crrdcktr@gmail.com, dckishtwar-jk@nic.in

No DCK/LA/21/FN/274/44% Dated..11.02.2022

#### TO WHOM SO EVER IT MAY CONCERN

In compliance with the Ministry of Environment and Forest (MoEF), Govt of India's letter no. 11-9/98-FC (pT) Dt:- 3<sup>rd</sup> Aug 2009, wherein the MoEF issued guidelines on submission of evidences for having initiated and completed the process of settlement of rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006, (FRA for short) on the Forest Land proposed to be diverted for Non Forest purposes read with MoEF's letter Dt:-5<sup>th</sup> Feb 2013, wherein, MoEF issued certain exemption/ relaxation in respect of linear projects, **it is certified that 3.106 Hectare of Forest land is proposed to be diverted in village Salana and 1.36837 Hectare of Forest land is proposed to be diverted in village Ohli in favour of NHIDCL Kishtwar, required for the construction of & upgradation to 2-lanes with Pave shoulder in District Kishtwar.**

It is further certified that:

- (a) The complete process of recognition and vesting of forest rights under the FRA has been carried out for the entire **3.106 Hectare in village Salana and 1.36837 Hectare in village Ohli** of forest land proposed for diversion. The proposed area does not cover any part of the FRA-2006, since there is no any claim in this area as on date. A report in this regard from Sub Division Level FRC Committee Kishtwar) including report of Tehsildar Drabshalla along with recommendation / report of Gram Sabha Resolution ( duly signed by FRC committee members) is enclosed as **Annexure "A"**
- (b) The diversion of forest land for facilities managed by the Government as required under section 3(2) of the FRA, 2006 have been completed and the Gram Sabha have given their consent to it: A report in this regard from Sub Division Level FRC Committee Kishtwar) including report of Tehsildar Drabshalla along with recommendation / report of Gram Sabha Resolution ( duly signed by FRC committee members) is enclosed as **Annexure "A"**
- (c) The proposed area does not involve recognized rights of Primitive Tribal Groups and Pre Agricultural Communities: A report in this regard from Sub Division Level FRC Committee Kishtwar) including report of Tehsildar Drabshalla along with recommendation / report of Gram Sabha Resolution ( duly signed by FRC committee members) is enclosed as **Annexure "A"**

  
(Ashok Kumar Sharma) KAS  
District Collector,  
Kishtwar

Forest Proposal No: - FP/JK/ROAD/143808/2021

Project: Construction & Upgradation of 2 lane with paved shoulder from design km 80.675(Start of Kishtwar bypass) to km 95+550(end of Helmet top bypass) of Length 14.875km & link road from 0+000 to 1.871 of length 1.87km total length 16.746km (including link road) on khellani-kishtwar-chattroo-khanabal section of Nh-244 in the Union territory of jammu & Kashmir on EPC Mode(Pkg-IV)

### UNDERTAKING

It is hereby submitted that Muck generates during the Construction & Upgradation of 2 lane with paved shoulder from design km 80.675(Start of Kishtwar bypass) to km 95+550(end of Helmet top bypass) of Length 14.875km & link road from 0+000 to 1.871 of length 1.87km total length 16.746km (including link road) on khellani-kishtwar-chattroo-khanabal section of Nh-244 in the Union territory of jammu & Kashmir on EPC Mode(Pkg-IV) will be dumped on approved designated muck disposal site. The state land has been designated for muck disposal and it will not affect any forest land.

Once the muck disposal site/land is filled up to brim i.e., the ground level, it will further be used by MoRTH/NHIDCL/Government of India, PSUs as Wayside Amenities/Road Furniture or further it can be used by any of UT/Govt of India for the purpose of public interest.




(Praveen Ahlawat)  
General Manager (P),  
NHIDCL, PMU-Kishtwar

C/S

  
Divisional Forest Officer  
Forest Division Kishtwar



**Joint Inspection for Muck Dumping and Wayside Amenities**

**FOREST PROPOSAL NO. - FP/JK/ROAD/143808/2021**

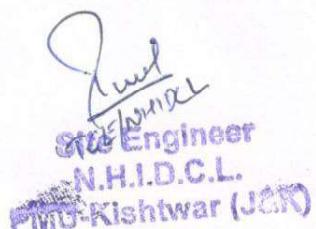
**Project:** Construction and Upgradation to 2-lane with paved shoulder from Km. 80.675 (Start of Kishtwar bypass) to Km 95+550 (end of Helmet top bypass) of length 14.875 Km & link road from 0+000 to 1.871 of length=1.871 km total length = 16.746 km (including link road) on Khellani- Kishtwar-Chattroo-Khanabal section of NH-244 in Jammu and Kashmir

**Area Proposed for Muck Dumping and Wayside Amenities on State/Government Land**

**(Non-Forest Land)**

Sr. No	Plot/Survey No	Chainage		Length(m)	Area in Ha	Area in Kanal (local unit)	Nature of land	Remarks
		From	To					
1	270	81+300	81+800	500	3.1652	62.5710	State	Width in meter is variable from one location to another location
2	1089/867	82+900	83+450	550	2.0771	41.0610	State	
3	2421/1235	86+510	86+920	410	1.5238	30.1231	State	
4	911/517	91+790	92+000	210	1.5412	30.4671	State	
				<b>8.3073</b>	<b>164.2223</b>			

The state land has been designated for muck disposal. All Muck disposal/wayside amenities points fall outside of Forest land and muck management plan of which has been prepared by user agency which stands verified by Under Signed.

  
 Civil  
Engineer  
N.H.I.D.C.L.  
PWD-Kishtwar (J&K)

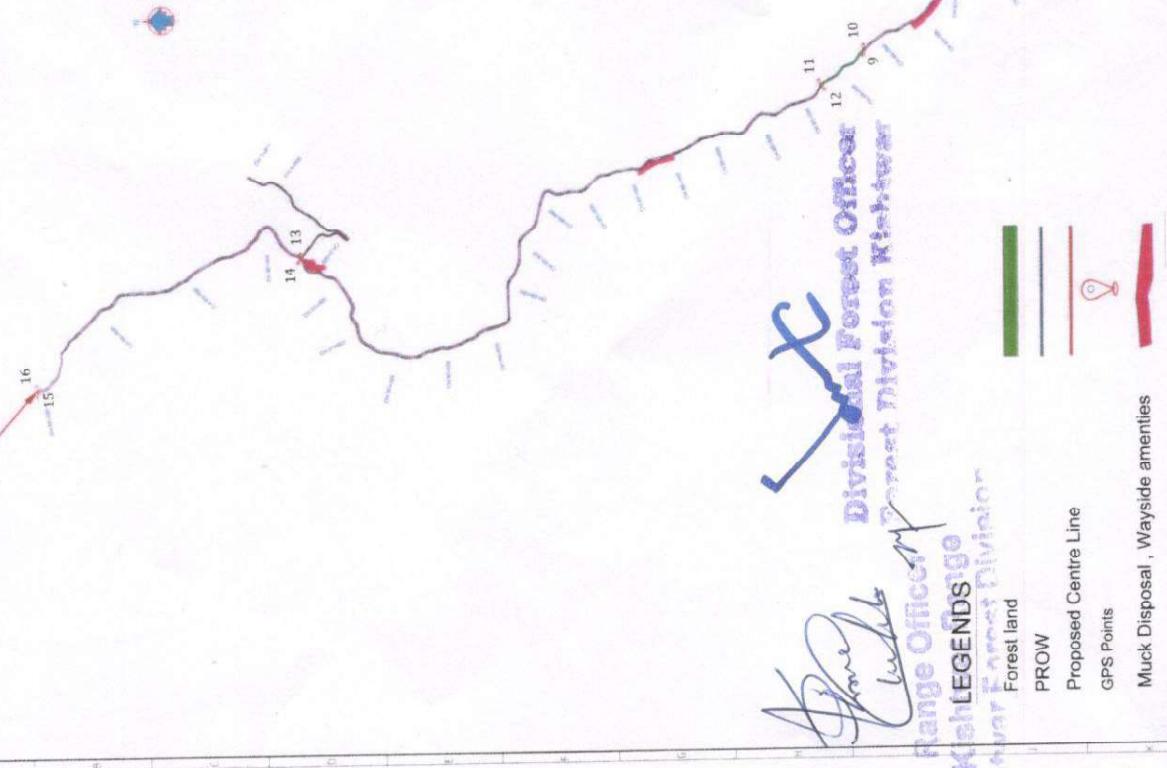
  
 C/S  
 X  
 Divisional Forest Officer  
 Forest Division Kishtwar

  
 Range Officer  
 Kishtwar Range  
 Kishtwar Forest Division

PROJECT LAYOUT PLAN

Construction of Kishanwar bypass with 2 lane with paved shoulder from Design Km. 80.675 (Dulhasti) to Km 95.550 (bandarkoot) of 14.88 Km length on Kheilani – Kishanwar –Chattroo section and a link road to town of 1.871 km on NH-244 in the Union Territory of Jammu & Kashmir on EPC mode (Pkg –IV)

End of Package-IV  
Ch 95+550



Point	UTM CoOrdinate		Degree, minute and Second	
	Easting	Northing	Latitude	Longitude
1	571579.9674	3681905.9332	33° 16' 25.726"	75° 46' 7.049"
2	571600.7242	3681902.3762	33° 16' 25.606"	75° 46' 7.85"
3	571540.8972	3682140.3404	33° 16' 33.346"	75° 46' 5.605"
4	571549.5214	3682160.1661	33° 16' 33.988"	75° 46' 5.944"
5	571040.8962	3682172.5828	33° 16' 52.044"	75° 45' 46.439"
6	571016.7994	3682700.7264	33° 16' 51.666"	75° 45' 45.504"
7	570686.9666	3683300.0207	33° 17' 11.203"	75° 45' 32.923"
8	570700.9380	3683307.8190	33° 17' 11.453"	75° 45' 33.465"
9	569911.8340	3684507.0698	33° 17' 51.499"	75° 45' 3.317"
10	569930.4880	3684610.7451	33° 17' 51.938"	75° 45' 4.042"
11	569596.3028	3685040.9385	33° 18' 8.017"	75° 44' 51.24"
12	569580.4764	3685024.7801	33° 18' 8.463"	75° 44' 50.643"
13	567940.7755	3690290.0381	33° 20' 58.798"	75° 43' 48.628"
14	567924.0006	3690309.0214	33° 20' 59.418"	75° 43' 48.004"
15	566638.5968	3692952.6541	33° 22' 25.544"	75° 42' 58.978"
16	566659.1190	3692957.1202	33° 22' 25.684"	75° 42' 59.773"

Component wise breakup			
\$,no	Component	Forest Land(ha.)	Non-Forest Land(ha.)
1	Road and Protection works	265072	3251418
2	Wayside Amenities, Road Furniture and Muck Disposal	0	8.31
<b>Total</b>		<b>265072</b>	<b>40,8241</b>



 Fayeen Aliawat  
General Manager (P)  
N.H.I.D.C.L.  
PMU-Kishtwar (J&K)

Start of Package-IV  
CH 80+675

10

ENT  
NATIONAL HIGHWAY & INFRASTRUCTURE  
(MINISTRY)  


ISSUE	DATE	AMENDMENT/ISSUE DESCRIPTION	APPROVAL	CL
R0	Nov 2021			

## 1. MUCK GENERATION

The project shall generate a total quantum of about **881171 m<sup>3</sup>** of muck. The details are given in the Table. The excavated rock from the road would be generally moderately hard to very hard; these include Volcanic Traps- basalts, phyllites, limestones and slates etc. Apart from hard component the soft material comprise overburden which is existing as debris upon the slopes on the road alignment. The theoretical excavated estimated quantities are below.

**Table: 01**

Muck to be generated from Design Km. 80.675 (Dulhasti) to Km 95.550 (Bandarkoot ) of 14.88 Km length on Khellani – Kishtwar –Chattru section and a link road to Kishtwar town of 1.871 km on NH-244 in the Union Territory of Jammu & Kashmir on EPC mode (Pkg –IV)

Description	Unit	Package-IV	Kishtwar Link Road	Total
Road Component	m <sup>3</sup>	845000	36171	881171
<b>Total Quantity of Excavation</b>	<b>m<sup>3</sup></b>	<b>845000</b>	<b>36171</b>	<b>881171</b>
<b>Consumed Quantity</b>	<b>m<sup>3</sup></b>	<b>124025</b>	<b>8444</b>	<b>132469</b>
<b>Quantity for Muck Disposal</b>	<b>m<sup>3</sup></b>	<b>720975</b>	<b>27727</b>	<b>748702</b>

### 1.1 Monitoring of Muck Disposal

It has already been made eloquent in the relevant muck management plan that the excavated material shall be evacuated from site with suitable usable muck to be utilized in project works by the project proponents and allowed to be used by private users and the non-usable muck is to be disposed off on designated areas so as not to interfere with either environment/ecology or the river flow regime. Thus, there is an imperative need to regularly monitor the quantum of muck generated and its disposal for which purpose the project concessioner shall furnish monthly statement of muck/debris disposal to project proponent (user Agency).

### 1.2 Sharing of Monitoring Results

The results of monitoring of various environment attributes either during or post construction would be shared by the monitoring agency, with the project proponents and other agencies of the Government as and when required. Monitoring agency may disseminate the results in any other forms.

## 2. MUCK MANAGEMENT PLAN

### 2.1 GENERAL

For construction of different components of Khellani-Khanabal-Chattru-Kishtwar Road Package-IV to be evacuated, disposed of and roller compacted or laid on mild slopes with the excavation work, to such designated areas where the muck piles do not substantially interfere with either environment/ ecology or the river flow regime and cause turbidity impairing the quality of water. The disposal of muck scientifically planned to keep in view the pecuniary aspects necessitating nearness to the generating

component of work, which understandably reduce the travel time of dumpers, interference to surface flow and ground water aquifer, and disposition of habitation. In the present case, the total quantity of muck / debris, to be generated due to the project, shall be 5.50 lac cum, out of which 0.59 lac cum shall be consumed on project work leaving 4.90 lac cum, to be disposed-off away from sites to make available the clear site for construction activities. The muck which is suitable for use as aggregate material for concrete on non-wearing surface, backfill concrete and for widening of the road shall be properly stacked. The muck unsuitable for use in concrete etc. shall be dumped on slopes and treated to mix and match with the surrounding environment with least change in landscape. During construction of the project, huge quantities of excavation will be carried out from the Road and shall be either roller compacted to provide stable terraces for erection of labour camps, job facilities and storage area, or dumped in designated areas to provide stable slopes.

## 2.2 Muck Disposal and Possible Sites

A huge quantity of muck (about **881171 m<sup>3</sup>**), which will be generated during the construction work, needs to be disposed off. The dumping of rock spoil can potentially be a cause for environmental problems and land degradation. It would cause landslides and be an aesthetical damage to the natural landscape.

All Highway works in India are to be in accordance with the MORTH specifications and guidelines of Indian Roads Congress (IRC). The MORTH specifications have special provisions towards protection of environment under Clause 501, Annexure A and the contractor is to satisfy these provisions. Apart from this there are provisions for control of erosion, drainage, dust suppression, borrow area and haul road management under relevant sections.

Provisions of clause 501 Annexure A, cover the environmental aspects regarding the disposal of the muck, etc. For example, it is unambiguously clarified that.

- a. The contractor shall take all necessary measures and precautions to carry out the work in conformity with the statutory and regulatory environmental requirements.
- b. The contractor shall take all measures and precautions to avoid nuisance or disturbance from the work.
- c. In the event of any spoil, debris, waste, or any deleterious material from site being deposited on adjacent land, the same shall be removed and affected area shall be restored to its original state.
- d. The contractor shall prevent any interference with supply/abstraction of water resources
- e. Water used for dust suppression shall be reused after settlement of material in collected water
- f. Liquid waste products to be disposed of such that it does not cause pollution

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g. No debris is to be deposited or disposed into/adjacent to water courses Substantial quantity of muck

can be put to various uses.

**Table-02 Details Regarding the Utility of Muck Generated**

Total Muck Generation	<b>881171 m<sup>3</sup></b>
Re-use of Muck Quantity	<b>132469 m<sup>3</sup></b>
Balance Muck Requiring Disposal	<b>748702 m<sup>3</sup></b>

Depending upon the characteristics of the excavated material, it can be used for different purposes after appropriate sorting from the areas where it is dumped. The following can be the chief reuses:

- Producing aggregate for construction purposes. Basalts and limestones can be used. The use as backfill material, material for road, Bridge as well as material for filter and drainage layers is most suitable. If the material has sufficient quality for use as in sub-base layers or as mineral aggregates for concrete must be further investigated.
- Earth filling works. Slope debris material, slates and phyllites can only be used for unloaded/uncharged landfills.

Total Excavation	Total Disposal	Identified Muck disposal (State Barren Land)
881171 m <sup>3</sup>	748702 m <sup>3</sup>	164.45 Kanal 83189.11 sq. m. (8.31 Ha)

Muck disposal site identify on Government (State Barren Land) for Muck Disposal Construction from Design Km. 80.675 (Dulhasti) to Km 95.550 (Bandarkoot) of 14.88 Km length on Khellani – Kishtwar – Chatroo section and a link road to Kishtwar town of 1.871 km on NH-244 in the Union Territory of Jammu & Kashmir on EPC mode (Pkg –IV)

The muck to be generated shall have to be appropriately dumped in tips at various suitable locations so that it does not degrade the various elements of the natural environment. For final disposal of the material convenient locations have been identified viz-a-viz to environmental aspects. The most suitable locations for dumping the muck that would be generated from the Khellani-Chatru-Khanabal road section Package-IV and Kishtwar Link Road.

The details of Muck Disposal plan as **Annexure**

### 3. STABILIZATION OF DUMPED MUCK

The utilization and management of the remaining muck needs to be planned well in advance. The spoil tips must be built where flatter to moderate spaces is available enabling the tips to maintain an angle of repose. The efforts will be made to relocate and rehabilitate the material within short distances from sites of its generation. For the stabilization of the dumped muck, various engineering measures (construction of wire crate retaining walls, breast walls, sausage walls, gabions etc. wherever needed) and biological measures are recommended. All efforts should be made to find ways to dispose of the material in such a

manner that negative impacts on the environment are avoided and it is washing away into the river water.

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Spoil tips be spread and levelled. Stabilization of dumped muck through biological measures include adopting measures like turfing, resurfacing, and re-vegetating of exposed areas to grow a plant cover on it. Biotechnological approach is also currently in vogue as a restoration measure for the consolidation of unused dumped material to stabilize the same with vegetation by employing traditional method of afforestation supplemented by modern biotechnological approach. The spoil tip areas are treated through turfing and afforestation of suitable plant species, using VAM-Vascular Arbuscular Mycorrhiza-and nitrogen fixing bacteria. This method be also tried. Under this combined approach the fungi form partnership with plant roots. The fungus grows on and extends the reach of plant roots for water and nutritional requirements. The seedlings inoculated with VAM survive better after transplanting and grow faster in nutrient poor soils.

### **3.1 Implementation of Engineering & Biological Measures**

As already explained engineering measures like providing of GI wire crates Gabion Wall, Retaining Walls and compaction of muck will provide stability to the profile of muck piles.

### **3.2 Engineering Measures**

It has been observed that after excavation the disposal of muck creates problem as it is susceptible to scattering unless the muck disposal yards are supported with engineering measures such as retaining structures, crate walls and gabions. All the dumping sites need proper handling to avoid spilling of muck either on the adjoining and or into the river/stream/nallah water while dumping and in the post dumping stages. The muck disposal sites shall have to be developed from below the ground level by providing retaining wall with height of 4.0m - 6.0m including 0.75 m of buffer to avoid any rollover falling to the riverbed. 8 SWG GI wire crates for side protection with 10 cm x 10 cm mesh and dimension 1.15 m x 1.15 m x 1.15 m in multi tiers will be laid with 0.5 m wide offset, concurrently with the dumping of muck. After preparing the RCC wall at muck disposal site, the muck brought in dumpers shall be dumped and manually spread behind the wall in such a manner that rock mass is properly stacked behind the wall with minimum of voids. The muck pile shall be later rehabilitated by afforestation of herbs and shrubs. Geo-coir textile should also be provided on surface of muck piles where top surface is to be vegetated.

### **3.3 Biological Measures**

Biological measures, however, require special efforts as the muck disposed in disposal yards will in general be devoid of nutrients and soil contents to support vegetation. The selection of soil for spreading over such an area would require nutrient profiling of soil for different base elements. Suitable admixture of nutrients would be done before placing the soil on the top surface of muck disposal areas to have administered growth of forest canopy.

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**3.4 General Manager (P)**  
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In view of the peculiar site conditions particularly the soil conditions, the planting technique for all the

categories of the plants must be very site specific and suited to the stress conditions as anticipated and discussed above. The planting substrates would need to be considerably improved to support the plants in their initial stages of establishment. The moisture retention capability, availability of nutrients and soil aeration, permeability and porosity would require intervention and assistance.

Multistore and multipurpose plantations are proposed to be raised on the muck dumping sites as also in roadside strips using grasses, shrubs and bushes in the under story and trees in the upper story. Nursery raised grass slips, seedlings of shrubs & bushes and tree species would be planted in the area combined with grass sowing in patches. In addition, cuttings of bushes and shrubs can also be planted to supplement the nursery raised stock, but this would substitute requirement of raising the nursery of these species. Intimate mixture of species would be avoided right at the planning stage and would be strictly followed during planting. Each patch should contain maximum of two species. Grasses would be mixed by groups in rows, shrubs, and bushes by group again in rows.

Grass slip planting and grass seed sowing would be done in strips at 0.10 m x 0.10 m spacing in the prepared staggered patches of 1 m x 0.5 m with a depth of 0.30 m. Soil mixture would be used while filling the patches. Balance dug up soil/muck will be stacked along the patch on the downhill side for rainwater tapping and enhanced percolation in the patch. Number of such patches in each hectare is proposed at 500.

Shrubs and bushes would be planted in elongated strips of 1.5 m x 0.5 m with a depth of 0.45m. Soil mixture would be used while filling the patches. Balance dug up soil/muck will be stacked along the patch on the downhill side for water tapping and better percolation in the patch. These would be staggered throughout the area numbering 500 per hectare. Each patch would have two rows of planting with staggered spacing between plants in a row as 15 cm and distance between rows as 15 cm.

Planting of trees would be done in contour staggered pits of 0.45 m x 0.45 m x 0.45 m size numbering 800 per hectare. Out of these 800 plants, about 200 plants per hectare are meant for planting along the periphery of the area. If the periphery gets filled up with lesser numbers, the remainder would be planted in the core/main area. Soil mixture would be used while filling the pits. Balance dug up soil/muck will be stacked on downhill side of the pit for trapping the rainwater and allowing it to percolate in the pit.

It is proposed to use soil mixture in the pits & patches consisting of soil imported from nearby areas mixed with compost or human or vermin-compost or all of these. The ratio for the mix would be 5 parts: Compost/manure 2 parts: Sand 2 part: and humus or vermin-compost 1 part. This will make nutrients available for the plants in the preliminary stages and help increase soil aeration, porosity & permeability and improved moisture available for the plants. The stabilization sites from the time of execution of

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beings, fencing would not be required along the entire perimeter. Hence, it would be done on the vulnerable sections i.e., towards the hillside only. The proposed costs include nursery costs for initial planting and for mortality replacement. The biological measures shall be taken up towards the end of construction. The plantations would be maintained for a period of 5 years by irrigating the plantation during dry seasons, mortality replacement and repair of fencing & inspection paths within the area. The task of irrigation would be performed by the watch & ward (chowkidar / rakha) provided in the cost estimate.

### 3.5 Species for Plantation

Afforestation with suitable plant species of high ecological and economic value and adaptable to local conditions will be undertaken at the rate of 800 plants per hectare in accordance with canopy cover requirement. The major plant species which can be used in the area shall belong to indigenous species.

## 4. ESTIMATED COST FOR MUCK MANAGEMENT

The estimated cost of these measures would be Rs. 0.47 Cr. This cost includes the cost of turfing of slopes, preparation of ground, spreading of manure, etc., providing 5 cm of soil cover and transportation and carriage. It also includes the Suitable engineer structure like Breast wall and Gabion Wall, cost of fencing, irrigation, watch and ward, etc.

### 4.1 Financial Requirement

The estimated cost of the relocation and rehabilitation of excavated material given below Table. The total cost of these measures will be Rs. **47.24 lakhs**.

#### Financial requirements for implementation of Muck Disposal Plan

S. No.	Item	Package-IV (Rs.in lakhs)	Kishtwar Link Road	Total
1	Engineering measures	28.75	5.35	34.1
2	Biological measures	11.34	1.80	13.14
<b>Total</b>		<b>40.09</b>	<b>7.15</b>	<b>47.24</b>



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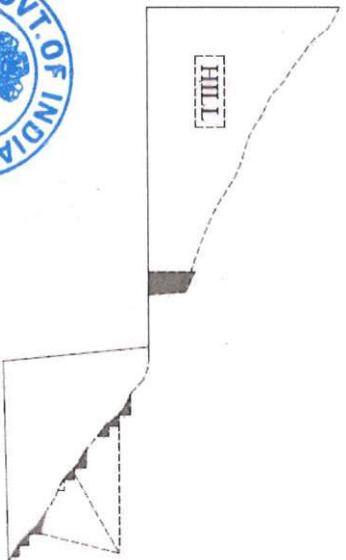
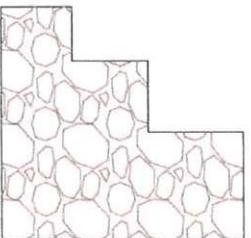
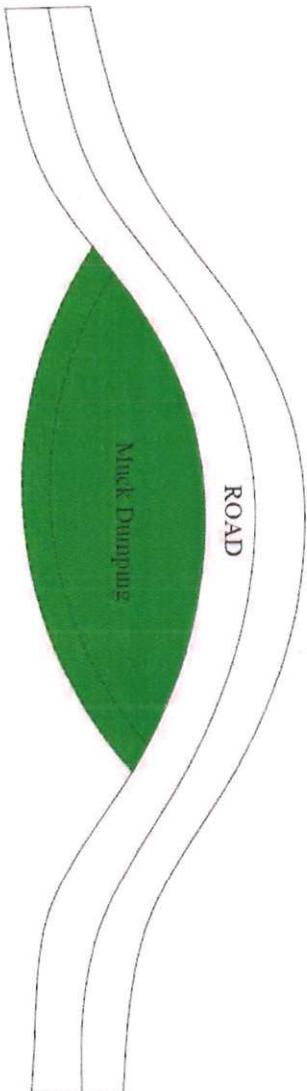


## FINAL DETAILED PROJECT REPORT

Consultancy Services for Feasibility Study, Preparation of Detailed Project Report and providing Pre-Construction Services for upgradation to 2 lane with paved shoulder from Km 235.00 (Vailoo Village) to Km 269.00 (Khanabal) of Khellam - Kishtwar - Chatroo - Khanabal Section of NH 244.



## TYPICAL PLAN FOR MUCK DISPOSAL SITE



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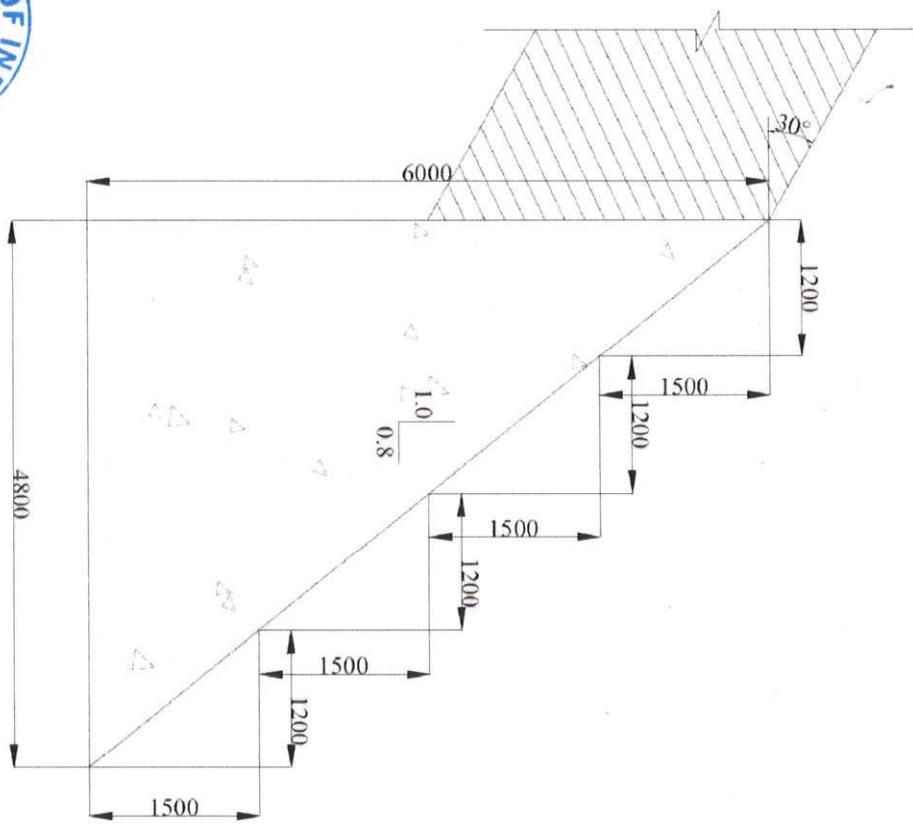


## FINAL DETAILED PROJECT REPORT

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### TYPICAL PLAN FOR DEVELOPMENT OF A MUCK DISPOSAL SITE FOR KHELLANI CHHATRU ROAD SECTION



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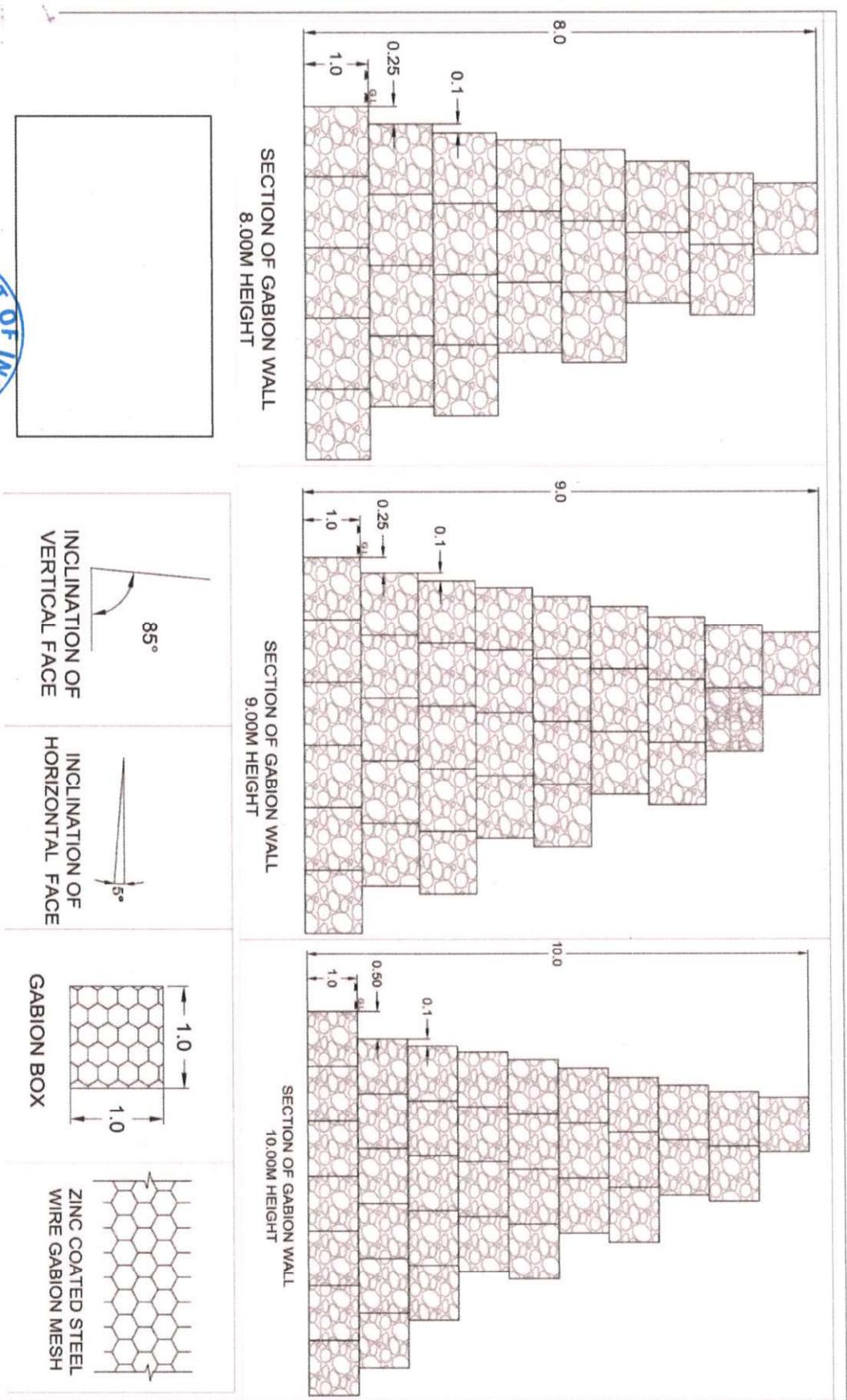
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Consultancy Services for Feasibility Study, Preparation of Detailed Project Report and providing Pre-Construction Services for upgradation to 2 lane with paved shoulder from Km 235.00 (Vailoo Village) to Km 269.00 (Khanabal) of Khellani - Kishtwar - Chattroo - Khanabal Section of NH 244.



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General Manager (P)

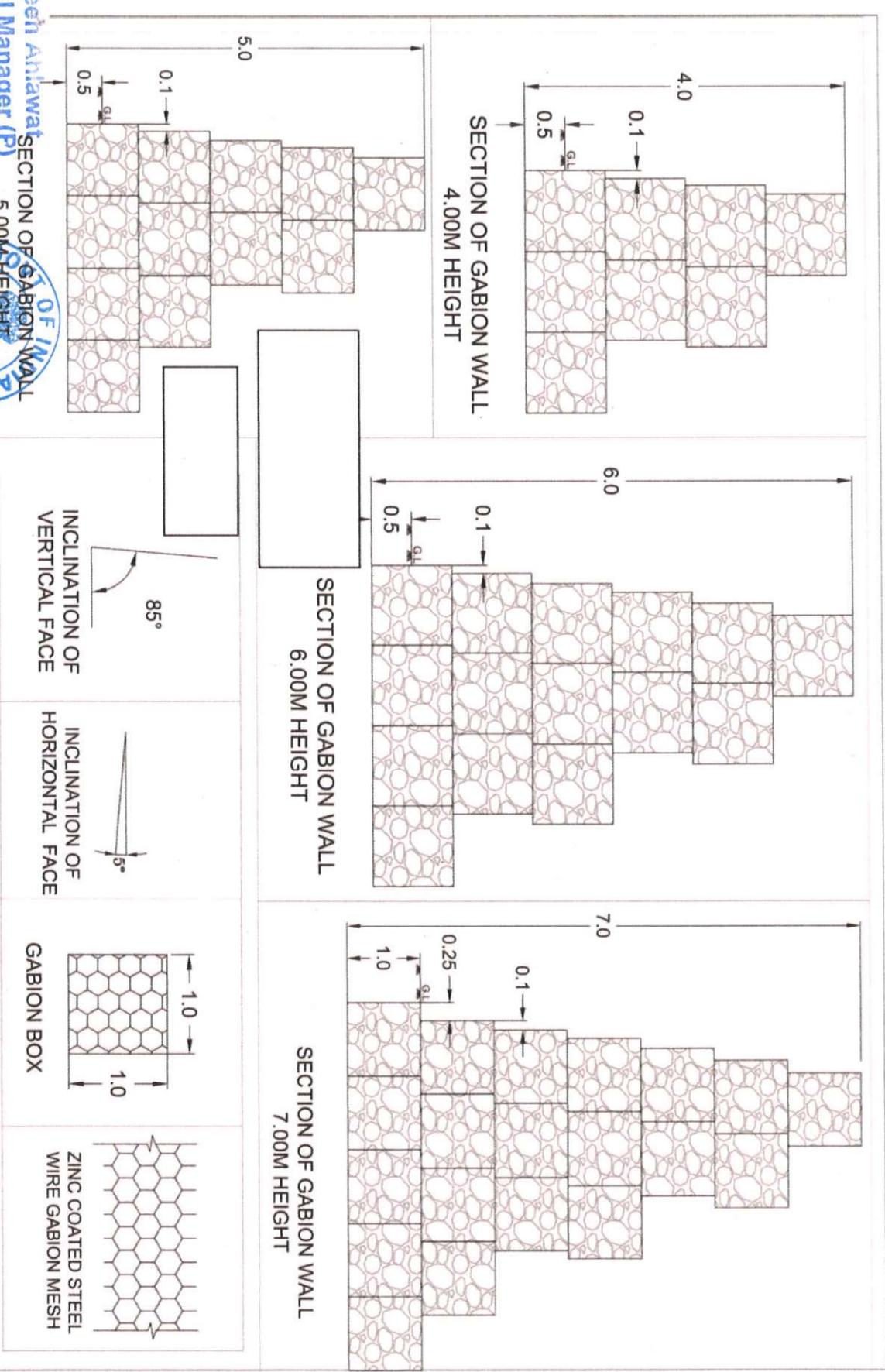
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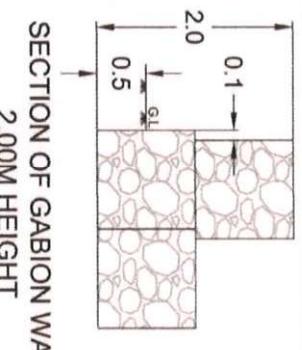


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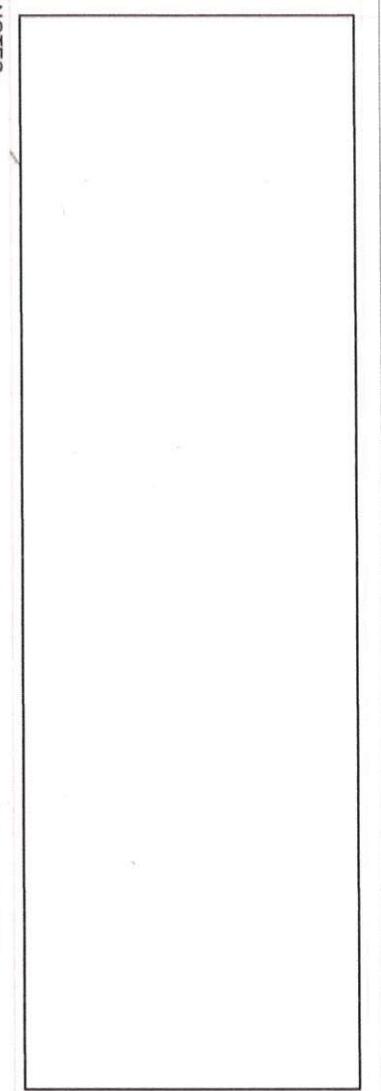


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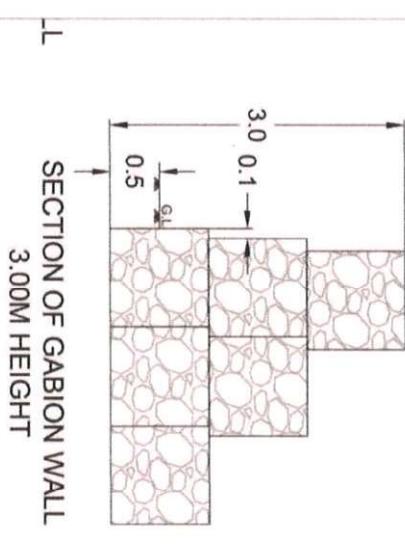
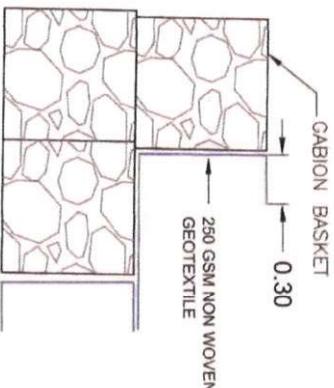
SECTION OF GABION WALL  
2.00M HEIGHT



SECTION OF GABION WALL  
3.00M HEIGHT

NOTES:

1. ALL DIMENSION ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED. LEVELS IN METERS.
2. MINIMUM DEPTH FOR EMBEDMENT AT BOTTOM SHALL BE 500MM FOR WALL HEIGHT 1 TO 6M AND 1000MM FOR WALL HEIGHT ABOVE 6M.
3. MINIMUM DENSITY OF STONE (USING FOR GABION FILL) = 2.2 T/M<sup>3</sup>
4. MINIMUM AND MAXIMUM SIZE OF STONE IS 1.5 TO 2.5 TIMES OF MESH OPENING.
5. CONSTRUCTION OF GABION WALL SHOULD BE AS PER THE I.R.C:SP:116-2018 AND MORTH 5TH REVISIONS.
6. BEARING CAPACITY SHOULD BE VERIFY AT FOUNDING LEVEL.
7. FORMATION LEVEL AND GROUND LEVEL SHALL BE VERIFIED AT SITE.
8. FOUNDATION SHALL BE ANCHORED IN FIRM STRATA.



INCLINATION OF VERTICAL FACE  
INCLINATION OF HORIZONTAL FACE

GABION BOX

85°

5°



ZINC COATED STEEL WIRE GABION MESH

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## MUCK DISPOSAL LOCATION MAP

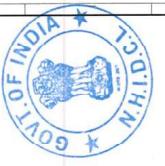
Construction of Kishwar bypass with 2 lane with paved shoulder from Design Km. 80.675 (Dulhasti) to Km 95.550 (bandarkoot) of 14.88 Km length on Khellani – Kishwar –Chattro section & link road to town of 1.871 Km on NH244 in the Union Territory of Jammu & Kashmir on EPC mode (Pkg –V)

End of Package-IV

of Package  
Ch. 95+550

An aerial satellite map of a mountainous terrain, likely a forested area. A blue line, representing a survey or route, is drawn across the map, starting from the bottom left and extending towards the top right. Two red arrows point along this blue line: one from the bottom left towards the center, and another from the center towards the top right. A red rectangular box highlights a specific location in the upper right quadrant. To the right of this box, the text 'Site of Package-IV' is written vertically in red, with the coordinate 'D+89+575' written below it. The map shows various mountain peaks and valleys, with some human-made structures like roads and small settlements visible.

  
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## LEGENDS

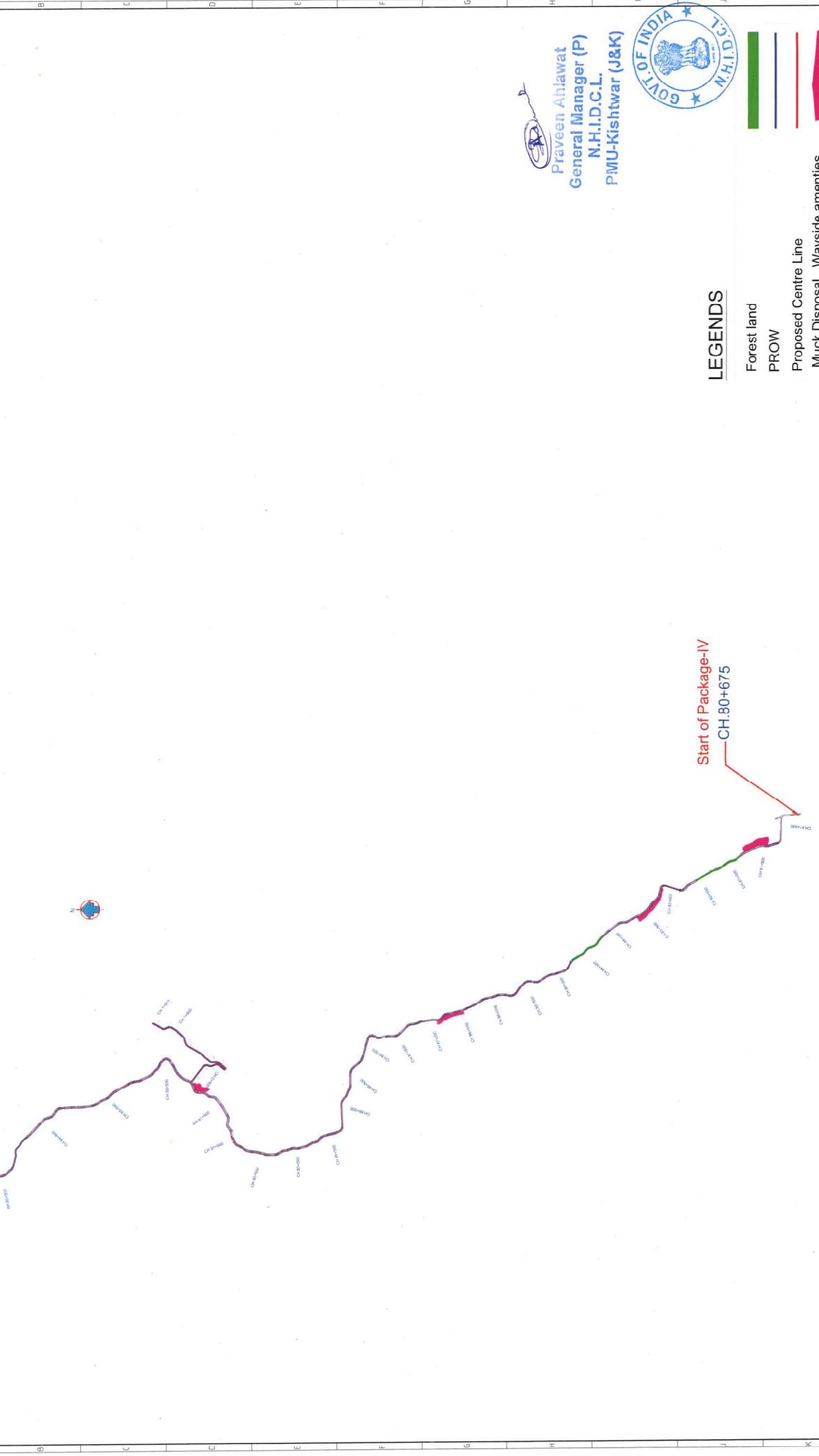
### Forest land

Proposed Centre Line  
Muck Disposal , Wayside amenities

MUCK DISPOSAL LOCATION MAP

Construction of Kishanwar bypass with 2 lane with paved shoulder from Design Km. 80.675 (Dulhasti) to Km 95.550 (bandankoot) of 14.88 Km length on Kishanwar – Kishanwar –Chhattrao section and a link road to Kishanwar town (Km 1.871 Km on NH244 in the Union Territory of Jammu & Kashmir on EPC mode (Pkg -V)

End of Package-IV  
Ch. 95+550 —



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## LEGENDS

Forest land

PROW

## Proposed Centre Line Muck Disposal, Wayside amenities

ISSUE	DATE	AMENDMENT / ISSUE DESCRIPTION	APPROVAL	CLIENT
R0	Nov 2021			NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA

