

No. NHIDCL/PMU-Doda/Khellani-Chatroo/FC/2021-22/ 1467

Date: 06 Feb. 2022

To,

 Divisional Forest Officer,  
 Badherwah.

**Name of Project:** Construction and Upgradation to 2-lane with paved shoulder from design Km. 31.449 (Khellani) to Km 51.700 (Prem Nagar) of 20.251 Km. length on Khellani-Kishtwar-Chatroo section of NH-244 in the Union Territory of Jammu and Kashmir on EPC Mode (PKG-II)- **Compliance Report -reg.**

**Ref:** Forest Proposal No.- FP/JK/ROAD/146187/2021

Sir,

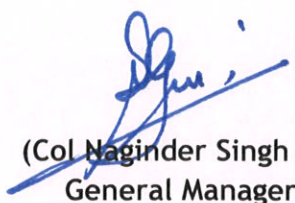
It is submitted that Forest proposal (FP/JK/ROAD/146187/2021) for the subject project for 3.2549356 Hectares was uploaded by PMU-Doda on 19.08.2021. The EDS raised by IRO, Jammu vide letter 9-JKB/-092-2021-Jammu dated 17.01.2022 and DFO, Badherwah letter no. DFO/Badh/5330 dated 01.02.2022 received to user agency via PARIVESH Portal on 01.02.2022. The compliance of the EDS raised by IRO, Jammu pertaining to User Agency are as follows:

S. No.	EDS raised by IRO Jammu	Compliance by User Agency
1.	Examination of KML file of the concerned area shows that out of total 3 Muck Dumping Sites. Muck Dumping Site no. 2 is located right at the banks of Chenab River. Also, Muck Dumping Site No. 3 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 into the river.	It is to mention that engineering (Gabions and retaining walls) and biological measures 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 places for avoiding of the rolling of debris and damaged to Chenab river. Undertaking enclosed.
2.	Since the proposal is applied for 3.2549356 ha by the UA which is more than four numeric digits after the decimal, this has led to ambiguity in the documents uploaded by the UA and UT Administration particularly in.  a) Authorization letter which is provided.	The proposal for forest land diversion for 3.2549356 Hectare along with changes in following documents are attached as Annexure and uploaded in particular section /additional documents sections as well:  a) Revised Authorization certificate for 3.2549356 Hectares uploaded.



	<p>b) Joint Inspection Report.</p> <p>c) SIR and Recommendation by CF.</p> <p>d) Recommendation by the State Govt.</p> <p>e) Undertaking for the CA. UT may do the correction towards the same</p>	<p>b) Revised joint inspection report for 3.2549356 Hectares.</p> <p>(c) Pertains to forest department.</p> <p>(d) Pertains to forest department.</p> <p>(e) Revised undertaking of CA and NPV for 3.2549356 Hectares.</p>
3.	The Muck Disposal Plan needs to be verified by the concerned DFO.	Muck disposal plan verified by DFO is attached as annexure and uploaded in additional document section on PARIVESH.
4.	Under column E of PART-I the project is said to generate 300 permanent employments whereas just 500 man-days towards temporary employment. UA may clarify.	The permanent employment generated along the project highway would include small commercial activity and project specific employments during Operation and maintenance phase along the project highway and is expected to be approximately 300. Whereas the duration of the project is 18 months which is approximated 500 days, thus the temporary employment has been considered for 500 man- days.
5.	Under Column J (i) of PART I it is mention "Yes" for the the Project or a part thereof is located in a Scheduled Area. UT administration may give the clarification for the same.	The project is not located in scheduled area and corresponding correction has been done on the PRIVESH Portal.
6	NPV to be calculated as per Ministrys directions issued vide letter No. 5- ICTl-l 2011- dated 6 <sup>th</sup> January 2022	Pertains to forest department.
7	Under column 13 (i) the name of PF RF need to be provided	Pertains to forest department.

8	General Abstract and Enumeration list are to be updated and uploaded again	Pertains to forest department.
9	TA (DSS) analysis of the project site and found that the total area of project site is approx. 3.28 (ha.)	The area as per joint site visit and 3D of NH-Act, 1956, project requires 3.2549356 Hectares of forest land and KML file for 3.2549356 Hectares has been uploaded on PARIVESH Portal.

  
(Col. Naginder Singh Gill)  
General Manager (P),  
PMU-Doda, NHIDCL

- Copy to:** (i) The Executive Director (P), RO Jammu, NHIDCL for information Please.  
(ii) The Nodal Officer, (FCA), UT of Jammu & Kashmir for information please.  
(iii) The Conservator, Chenab circle for information please.



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.**

MINISTRY OF ROAD, TRANSPORT & HIGHWAYS (GOVT. OF INDIA)

**Regional Office:** H. No. 261, Sector No. 6, Channi Himmat, Jammu- Jammu & Kashmir

E-mail ID: rojammunhidcl@gmail.com, website: www.nhidcl.com



### **AUTHORIZATION CERTIFICATE**

Sh. Nagindra Singh Gill, General Manager (P), National Highways and Infrastructure Development Corporation Limited (NHIDCL) is hereby authorized to sign/submit the documents related to Forest Diversion proposal of **3.2549356 Ha** of forest area for the purpose of Construction and Upgradation of road from design Chainage 31.449 (Khellani, Pariyot) to Km 51.700 (Prem Nagar) (Design length 20.251 Km.) in the Union territory of Jammu and Kashmir Package-1 of National Highway Number -244 and further correspondence with the forest department.

*RK Singh*

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

*[Signature]*

General Manager (P)



## JOINT SITE INSPECTION REPORT

### Forest Proposal No: FP/JK/ROAD/146187/2021

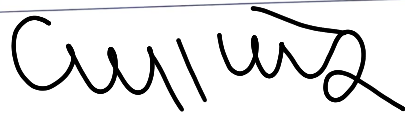
As per Joint survey Conducted on dated 15.09.2021 with Divisional Forest Officer, Bhadarwah, Revenue officials Doda, NHIDCL(User Agency) and Rodic Consultants Pvt Ltd (DPR Consultants) and it representative & revenue paper (Land Acquisition Plan) prepared by revenue officials and verification letter from DC cum CALA, Doda vide 497-502/LAC/D/21 dated 09.09.2021 and 3(D) of NH-Act 1956 vide Gazette of India Notification vide S. O 3886(E)dated 20.09.2021 found forest land of 3.2549356 Ha. to be diverted for non-forest purpose in favor of General Manager (P), National Highways and Infrastructure Development Corporation Limited (NHIDCL) for Construction and Upgradation of road from design Chainage 31.449 (Khellani, Pariyot) to Km 51.700 (Prem Nagar) (Design length 20.251 Km.) in the Union territory of Jammu and Kashmir Package-1 of National Highway Number 244.

#### Joint Site Visit Report for Forest land under Construction & upgradation of 2 lane with paved shoulder from Khellani (Design Ch.31.449) to Prem Nagar (Design Ch. 51.700) Package-1 on NH-244 in UT of Jammu and Kashmir.

Sr. No	Name of district	Name of Taluk	Name of village	Survey/Plot/Khasra No	Type of Land	Compartment No	Nature of Land	Area in Hectare (Ha)	Length	Right of Way	Chainage Details	
											from	to
1	Doda	Doda	Paryote	1008/91	Forest	001a/Marmat	Forest	0.9480561	451	21.0212	31.449	31.9
2	Doda	Doda	Jangalwar	188/171	Forest	001a/Marmat	Forest	0.1155780	50	23.1156	33.7	33.75
3	Doda	Doda	Paryote	993/783	Forest		Forest	0.1259370	50	25.1874	33.75	33.8
4	Doda	Doda	Paryote	1242/992/783	Forest		Forest	0.3312470	140	23.6605	33.8	33.94
5	Doda	Doda	Paryote	1244/993/783	Forest		Forest	0.3363960	120	28.033	34.26	34.38
6	Doda	Doda	Paryote	993/783	Forest		Forest	0.0586550	20	29.3275	34.38	34.4
7	Doda	Doda	Jangalwar	188/171	Forest		Forest	0.4756488	172	27.654	34.4	34.572
8	Doda	Doda	Sohanda	Un-Dermarcated Forest Land	Forest	033/Chiralla	Forest	0.0198520	80	2.4815	37.33	37.41

**Joint Site Visit Report for Forest land under Construction & upgradation of 2 lane with paved shoulder from Khellani (Design Ch.31.449) to Prem Nagar (Design Ch. 51.700) Package-1 on NH-244 in UT of Jammu and Kashmir.**

Sr. No	Name of district	Name of Taluk	Name of village	Survey/Plot/Khasra No	Type of Land	Compartment No	Nature of Land	Area in Hectare (Ha)	Length	Right of Way	Chainage Details	
											from	to
9	Doda	Doda	Sohanda	Un-Dermarked Forest Land	Forest		Forest	0.0140849	65	2.1669	37.435	37.5
10	Doda	Doda	Sohanda	Un-Dermarked Forest Land	Forest		Forest	0.0349992	180	1.9444	37.7	37.88
11	Doda	Doda	Kehlote	Un-Dermarked Forest Land	Forest		Forest	0.0202339	65	3.1129	41.215	41.28
12	Doda	Doda	Bhadra	42	Forest	032a/Chiralla	Forest	0.0251947	65	3.8761	42.9	42.965
13	Doda	Doda	Shaja	Un-Dermarked Forest Land	Forest		Forest	0.0932675	25	37.307	43.05	43.075
14	Doda	Doda	Thalela	4	Forest	030/Chiralla	Forest	0.6557857	290	22.6133	45.8	46.09
<b>Total Land</b>								<b>3.2549356</b>	<b>1773</b>			



Divisional Forest Officer, Bhadarwah Seal

Divisional Forest Officer  
Forest Division Bhadarwah

  
Range Officer  
Kellar Range

  
Forest Range Officer  
Forest Range Chiralla  
HQ Thathri

  
20/1/22  
Signature of User Agency Office Seal



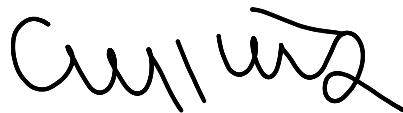
**Forest Proposal No: - FP/JK/ROAD/146187/2021**

**Project:** Construction and Upgradation to 2 lane with paved Shoulder of road from design Chainage 31.449 (Khellani, Pariyot) to Km 51.700 (Prem Nagar) (Design length 20.251 Km.) in the Union territory of Jammu and Kashmir Package-1 of NH-244.

**UNDERTAKING**

It is hereby submitted that Muck generates during the Construction and Upgradation to 2 lane with paved Shoulder of road from design Chainage 31.449 (Khellani, Pariyot) to Km 51.700 (Prem Nagar) (Design length 20.251 Km.) in the Union territory of Jammu and Kashmir Package-1 of NH-244 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.



Divisional Forest Officer, Bhadarwah Seal

Divisional Forest Officer,  
Forest Division Bhadarwah



Range Officer  
Kellar Range



Forest Range Officer  
Forest Range Chiralla  
HQ Thathri



20/11/22  
Signature of User Agency Office Seal

## Joint Inspection for Muck Dumping and Wayside Amenities

**FOREST PROPOSAL NO. - FP/JK/ROAD/146187/2021**

**Project:** Construction and Upgradation to 2 lanes with paved Shoulder of road from design Chainage 31.449 (Khellani, Pariyot) to Km 51.700 (Prem Nagar) (Design length 20.251 Km.) in the Union territory of Jammu and Kashmir Package-1 of NH-244

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

(Non-Forest Land)

Sr. No	Muck Disposal/Wayside Amenities Pocket code	Length(m)	Area in Ha	Area in Kanal (local unit)	Nature of land	Remarks
1	MD-1	780	3.7272	73.6809	State	Width in meter is variable from one location to another location
2	MD-2	560	3.5366	69.9130	State	
3	MD-3	181	0.9664	19.1042	State	
<b>Total</b>			<b>8.2302</b>	<b>162.6982</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.

Divisional Forest Officer, Bhadarwah Seal

Divisional Forest Officer  
Forest Division Bhadarwah

Range Officer  
Kellar Range

  
Forest Range Officer  
Forest Range Chiralla  
HQ Thathri  
Signature of User Agency Office Seal  
20/1/22



## 1. MUCK GENERATION

The project shall generate a total quantum of about **812000 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: Muck to be generated from Khellani-Chhatru-Khanabal road (Chainage Km 31.449(Khellani) to km. 51.700(Prem Nagar) Pkg-I**

Description	Unit	Pkg-I
Road Component	m <sup>3</sup>	812000
<b>Total Quantity of Excavation</b>	<b>m<sup>3</sup></b>	<b>812000</b>
<b>Consumed Quantity</b>	<b>m<sup>3</sup></b>	<b>71292</b>
<b>Quantity for Muck Disposal</b>	<b>m<sup>3</sup></b>	<b>740708</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 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 8.12 lac cum, out of which 0.71 lac cum shall be consumed on

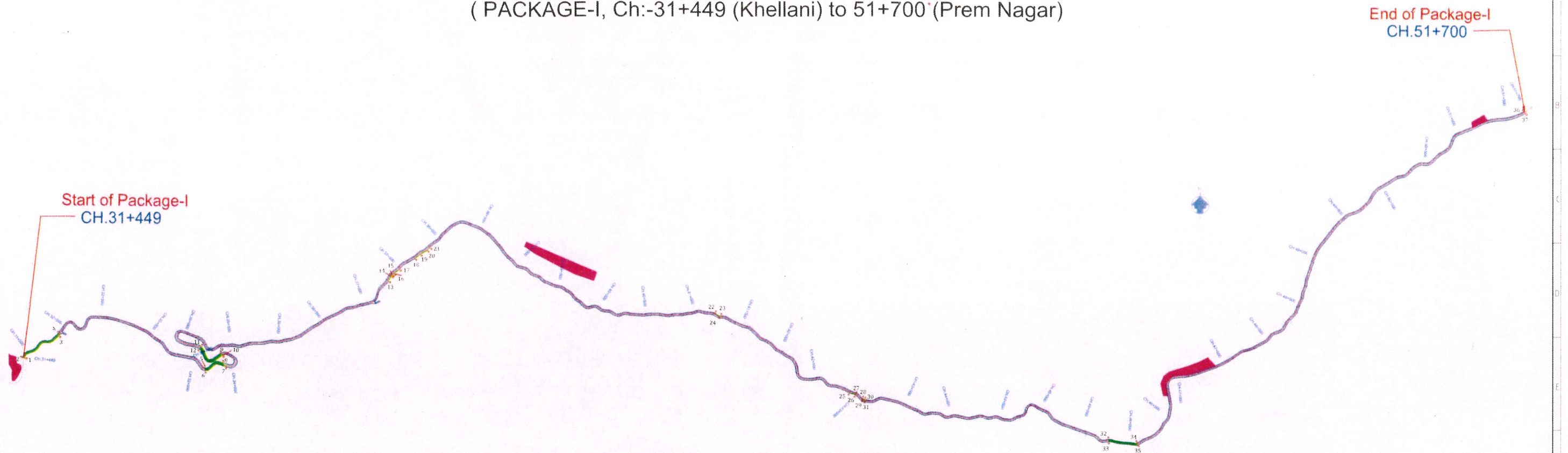
Divisional Forest Officer  
Forest Division Bhadarwah  
Range Officer

General Manager (P)  
MILC L.L.  
P.O. (J&K)

Forest Range Officer  
Forest Range Chiralla  
HQ Thathri



# PROJECT LAYOUT PLAN ( PACKAGE-I, Ch:-31+449 (Khellani) to 51+700 (Prem Nagar)



Sr. No	Name of District	Name of Village	Compartment No	Area in Hectare (Ha)	Length	Right of Way	Chainage Details	
							From	To
1	Doda	Paryote	001a/Marmat	0.94805	451	21.0212	31.449	31.900
2	Doda	Jangawar	001a/Marmat	0.11558	50	23.1156	33.700	33.750
3	Doda	Paryote		0.12594	50	25.1874	33.750	33.800
4	Doda	Paryote		0.33125	140	23.6605	33.800	33.940
5	Doda	Paryote		0.3364	120	28.0330	34.260	34.380
6	Doda	Paryote		0.05866	20	29.3275	34.380	34.400
7	Doda	Jangalwar		0.47565	172	27.6540	34.400	34.572
8	Doda	Sohanda	033/Chiralla	0.01985	80	2.4815	37.330	37.410
9	Doda	Sohanda		0.01409	65	2.1669	37.435	37.500
10	Doda	Sohanda		0.035	180	1.9444	37.700	37.880
11	Doda	Kehlote	032a/Chiralla	0.02023	65	3.1129	41.215	41.280
12	Doda	Bhadra		0.0252	65	3.8761	42.900	42.965
13	Doda	Shuja	032a/Chiralla	0.09327	25	37.3060	43.050	43.075
14	Doda	Thalela	030/Chiralla	0.65579	290	22.6133	45.800	46.090
Total Land				3.25494	1773			

Point	UTM Co-Ordinate		Degree, minute and econd	
	Easting	Northing	Latitude	Longitude
1	548376.5337	3666112.009	33° -7' 57.529" S	75° -31' 7.093" W
2	548355.8068	3666115.429	33° -7' 57.643" S	75° -31' 6.293" W
3	548731.3121	3666341.368	33° -8' 4.919" S	75° -31' 20.829" W
4	548715.2215	3666354.754	33° -8' 5.356" S	75° -31' 20.21" W
5	550204.2233	3666003.564	33° -7' 53.708" S	75° -32' 17.608" W
6	550207.9327	3665976.475	33° -7' 52.828" S	75° -32' 17.746" W
7	550415.7654	3666017.71	33° -7' 54.132" S	75° -32' 25.775" W
8	550393.5601	3666055.182	33° -7' 55.353" S	75° -32' 24.926" W
9	550369.1135	3666151.854	33° -7' 58.496" S	75° -32' 24.001" W
10	550383.8427	3666128.221	33° -7' 57.726" S	75° -32' 24.565" W
11	550167.6222	3666220.023	33° -8' 0.743" S	75° -32' 16.238" W
12	550151.9706	3666196.66	33° -7' 59.987" S	75° -32' 15.63" W
13	552078.2873	3666870.887	33° -8' 21.553" S	75° -33' 30.112" W
14	552102.6078	3666921.24	33° -8' 23.184" S	75° -33' 31.061" W
15	552115.7438	3666932.529	33° -8' 23.548" S	75° -33' 31.571" W
16	552132.2371	3666946.305	33° -8' 23.992" S	75° -33' 32.21" W
17	552189.1512	3666986.104	33° -8' 25.275" S	75° -33' 34.415" W
18	552346.5186	3667092.823	33° -8' 28.713" S	75° -33' 40.511" W
19	552400.886	3667134.691	33° -8' 30.063" S	75° -33' 42.618" W
20	552469.4198	3667174.833	33° -8' 31.354" S	75° -33' 45.271" W
21	552499.0245	3667202.637	33° -8' 32.252" S	75° -33' 46.42" W
22	555396.1931	3666544.669	33° -8' 10.368" S	75° -35' 38.099" W
23	555455.1914	3666518.013	33° -8' 9.492" S	75° -35' 40.37" W
24	555438.9574	3666515.532	33° -8' 9.414" S	75° -35' 39.743" W
25	556766.2779	3665745.562	33° -7' 44.165" S	75° -36' 30.798" W

Point	UTM Co-Ordinate		Degree, minute and econd	
	Easting	Northing	Latitude	Longitude
26	556827.6084	3665724.971	33° -7' 43.485" S	75° -36' 33.16" W
27	556829.3143	3665732.01	33° -7' 43.713" S	75° -36' 33.228" W
28	556900.7761	3665687.076	33° -7' 42.241" S	75° -36' 35.975" W
29	556895.2381	3665681.249	33° -7' 42.053" S	75° -36' 35.76" W
30	556924.4122	3665676.745	33° -7' 41.901" S	75° -36' 36.885" W
31	556920.2698	3665667.033	33° -7' 41.586" S	75° -36' 36.723" W
32	559402.3962	3665278.075	33° -7' 28.477" S	75° -38' 12.42" W
33	559404.5682	3665256.169	33° -7' 27.765" S	75° -38' 12.498" W
34	559693.7208	3665242.961	33° -7' 27.279" S	75° -38' 23.653" W
35	559695.103	3665219.747	33° -7' 26.525" S	75° -38' 23.701" W
36	563624.9278	3668575.493	33° -9' 14.683" S	75° -40' 56.192" W
37	563634.6455	3668553.793	33° -9' 13.976" S	75° -40' 56.561" W

Component wise breakup			
S.no	Component	Forest Land (Ha.)	Non-Forest Land (Ha.)
1	Road and Protection Works	3.2549356	45.4083
2	Wayside Amenities, Road furniture and Muck disposal	0	8.230004
Total		3.254936	53.638304

## LEGENDS

- Forest land
- PROW
- Proposed Centre Line
- GPS Points
- Muck Disposal, Wayside amenities

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	APPROVAL	CLIENT	CONSULTANT	PROJECT	PROJECT DESCRIPTION
R0	April-2021			NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	TPE GETINS & EUROESTUDIOS RAMON DE AGUIAGA, 8 28026 MADRID, SPAIN RODIC CONSULTANTS PVT. LTD. (JV) 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA)	PROJECT LAYOUT PLAN (PACKAGE-I, Ch:-31+449 (Khellani) to 51+700 (Prem Nagar))	Consultancy Services for Feasibility Study, Preparation of Detailed Project Report and providing pre-construction services for upgradation to 2 lane with paved shoulder from (i) Km44.500 to Km 142.00 of Chaitroo Village & (ii) Km 235.00 (Village Village) to Km 269.00 (Gumbal) of Khellani-Kashwar- Chaitroo-Khanabal Section of NH 244 in the state of Jammu & Kashmir
				PROJECT LAYOUT PLAN (PACKAGE-I)			
				Date: _____ Project No: _____ Drawing No: _____ Sheet No: _____			



project work leaving 7.40 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 812000 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
- g. No debris is to be deposited or disposed into/adjacent to water courses Substantial quantity of muck can be put to various uses.

## 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 Khellani - Kishtwar - Chattru - Khanabal Section of NH 244.

**Table: Details Regarding the Utility of Muck Generated**

Total Muck Generation	<b>812000 m<sup>3</sup></b>
Re-use of Muck Quantity	<b>71292 m<sup>3</sup></b>
Balance Muck Requiring Disposal	<b>740708 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)
812000 m <sup>3</sup>	740708 m <sup>3</sup>	162.6 Kanal
		82300 sq.m.(8.23 Ha)

Muck disposal site identify on Government (State Barren Land) for Muck Disposal of Khellani-Khanabal-Chhatru Road Project Package-1 (Design Km.31.449 to Km. 51.700) on NH-244.

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-Chattru-Khanabal road section.

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.

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-Vasicular 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.

### **3.4 Plantation Technique**

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.



## 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 Khellani - Kishtwar - Chattroo - Khanabal Section of NH 244.

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 biological measures would be protected with barbed wire fencing on 2m high RCC posts and provided with inspection paths. Since the muck dumping sites are being provided with either RCC walls or the wire crate (gabion) wall on the valley side (towards river) which is not negotiable by animals and human 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. 0.54 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

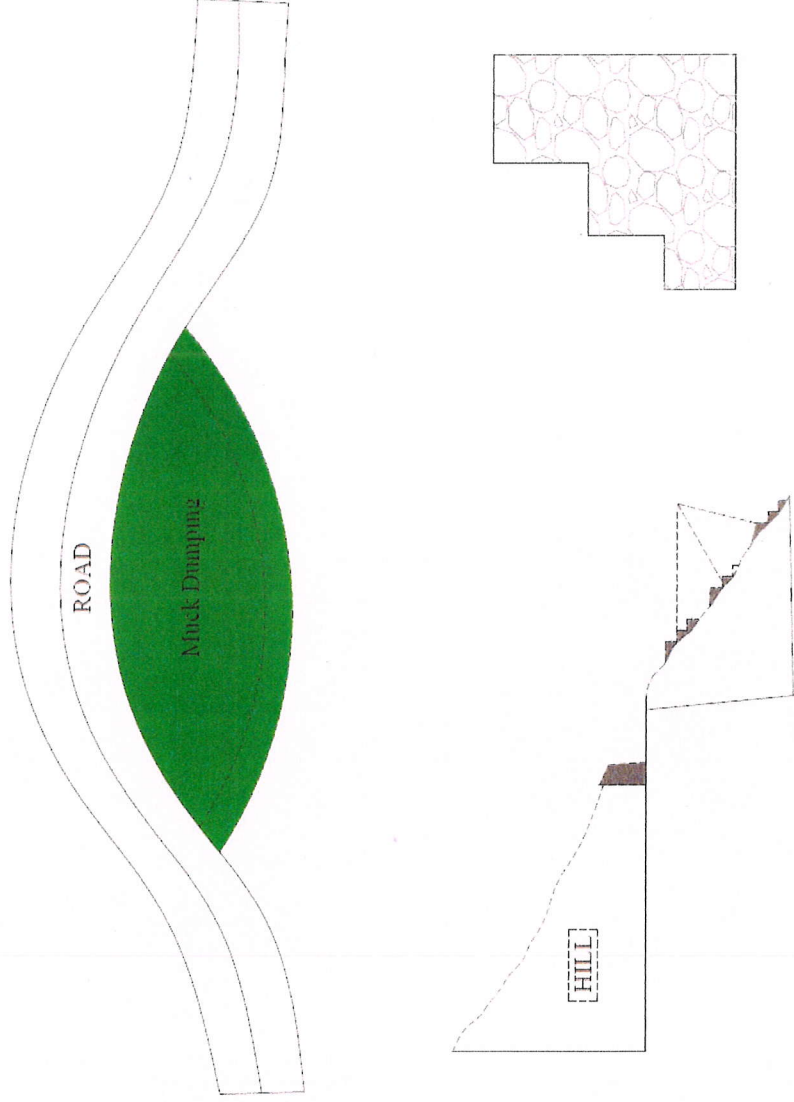
The estimated cost of the relocation and rehabilitation of excavated material given below Table. The total cost of these measures will be Rs. **54.54 lakhs**.

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

S. No.	Item	Pkg-1 (Rs.in lakhs)
1	Engineering measures	37.30
2	Biological measures	17.24
<b>Total</b>		<b>54.54</b>



## TYPICAL PLAN FOR MUCK DISPOSAL SITE

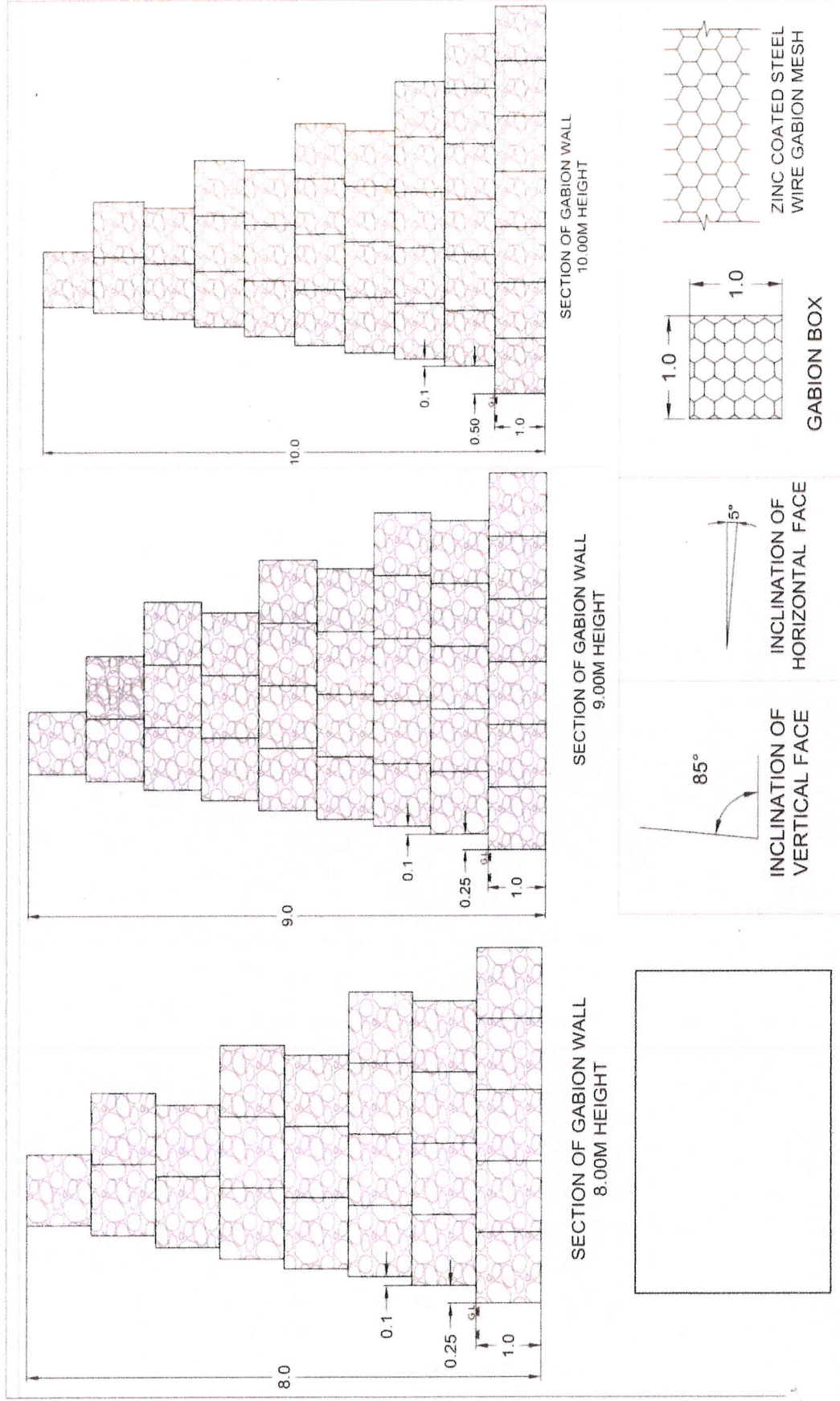


General Manager (P)  
N.H.I.D.C.L.  
PMU-Doda (J&K)



# 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 Khellani - Kishtwar - Chattru - Khanabal Section of NH 244.



TYPICAL PLAN OF KHELLANI CHATTRU-KHANABAL

General Manager (B)  
N.H.D.C.B.

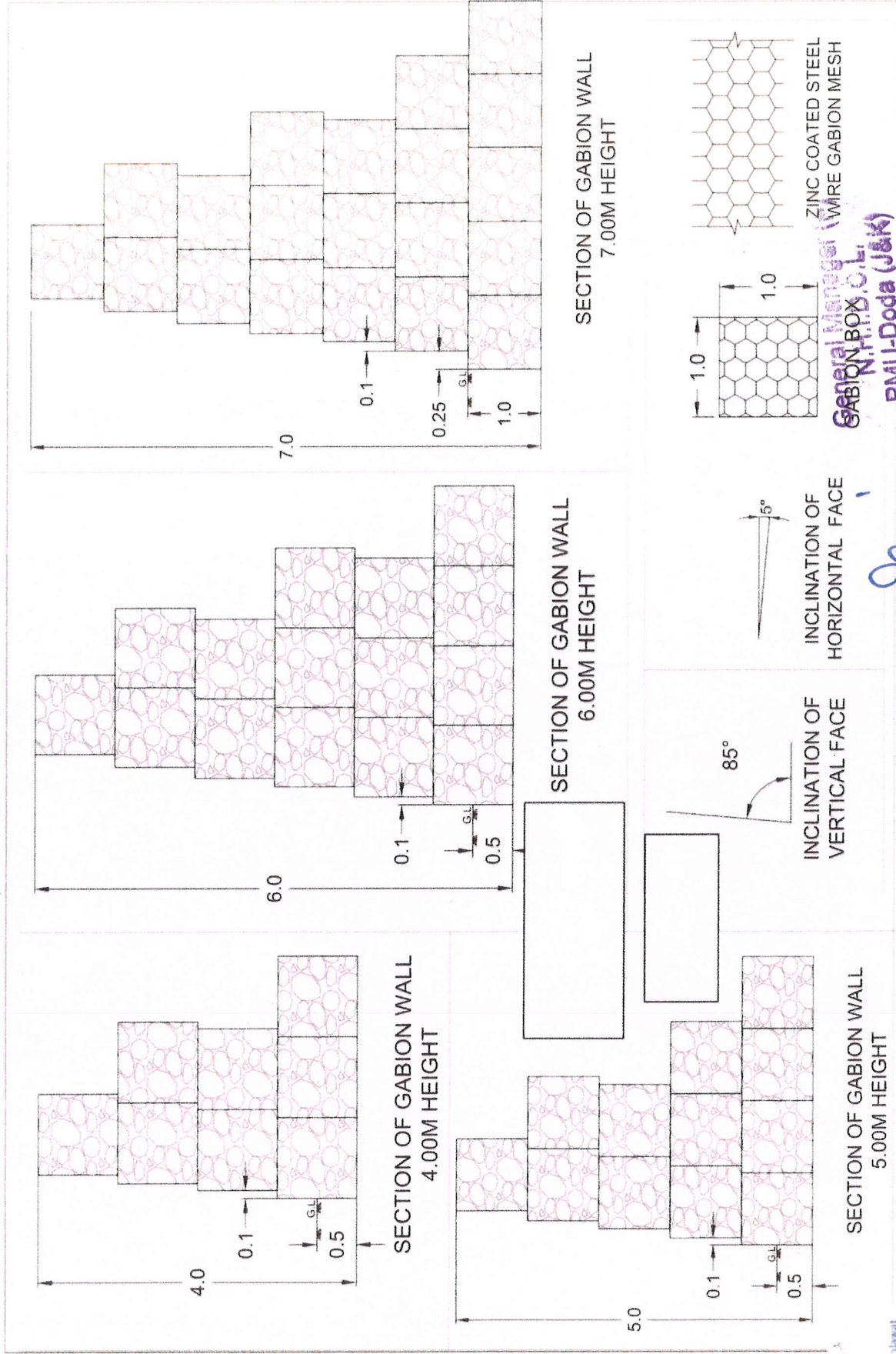
*[Signature]*

PMU-Dada (J&K)



## 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 Khellani - Kishitwar - Chattroo - Khanabal Section of NH 244.

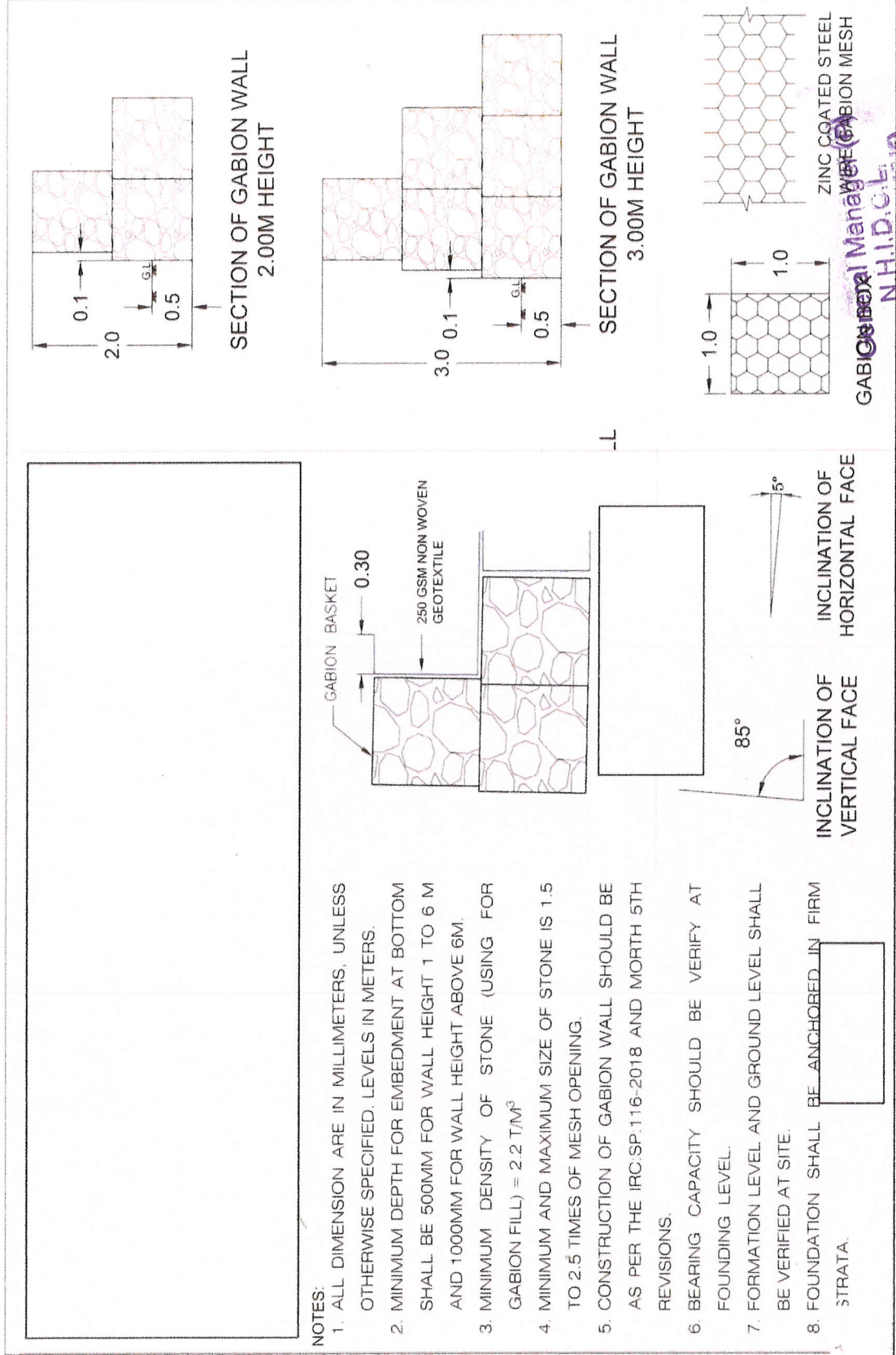


*[Signature]*

General Manager  
N.H.I.D.C.L.  
PMU-Doda (J&K)

# 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 Khellani - Kishitwar - Chattrai - Khanabal Section of NH 244.



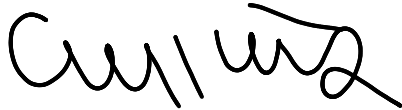
GABION WALL  
N.H.I.D.C.L.  
PMU-Doda (J&K)



## UNDERTAKING FOR PAYMENT OF NPV AND OTHER COMPONENTS

It is to certify that I, Col. Naginder Singh Gill, General Manager (P), PMU-Doda, National Highways and Infrastructure Development Corporation Limited (NHIDCL) have applied for diversion of **3.2549356 Ha** of forest area for the purpose of Construction and Upgradation of road from design Chainage 31.449 (Khellani, Pariyot) to Km 51.700 (Prem Nagar) (Design length 20.251 Km.) in the Union territory of Jammu and Kashmir Package-1 of National Highway Number -244. 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. I also undertake to pay the amount as assessed for the compensatory afforestation, compensation of tress and other components as decided in the case.

Place: Doda.



Divisional Forest Officer, Bhadarwah Seal

Divisional Forest Officer  
Forest Division Bhadarwah



Range Officer  
Kellar Range



Forest Range Officer  
Forest Range Chiralla  
HC Thathri




20/1/22  
Signature of User Agency Office Seal



## UNDERTAKING FOR PAYMENT OF COST OF COMPENSATORY AFFORESTATION (CA)

I, Col. Naginder Singh Gill, General Manager (P), PMU-Doda, hereby, on behalf of National highway infrastructure Development Corporation Limited (NHIDCL) undertake that NHIDCL would pay the entire amount for compensatory afforestation in lieu of the forest area diverted for **3.2549356 Ha** of forest land proposed to be diverted in favor of General Manager (P), National Highways and Infrastructure Development Corporation Limited (NHIDCL) for Construction and Upgradation of road from design Chainage 31.449 (Khellani, Pariyot) to Km 51.700 (Prem Nagar) (Design length 20.251 Km.) in the Union territory of Jammu and Kashmir Package-1 of National Highway Number -244 as per prevailing wage and maintenance as per scheme.



Divisional Forest Officer, Bhadarwah Seal

Divisional Forest Officer  
Forest Division Bhadarwah

  
20/1/22  
Signature of User Agency Office Seal  
Range Officer  
Kellar Range  
Forest Range Officer  
Forest Range Chiralla  
HQ Thathri