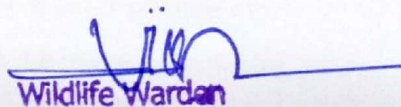



**CONSTRUCTION/IMPROVEMENT TO NHDL SPECIFICATION
DAYALCHAK-RAMKOT (CHALLAN) ROAD BETWEEN KM 8.00 TO KM
25.421 (NET LENGTH 17.421 KM) INCLUDING SHIFTING OF UTILITIES
UNDER PROJECT SAMPARK IN J&K (UT)**

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**CONSTRUCTION/IMPROVEMENT TO NHDL SPECIFICATION
DAYALCHAK-RAMKOT (CHALLAN) ROAD BETWEEN KM 8.00 TO KM
25.421 (NET LENGTH 17.421 KM) INCLUDING SHIFTING OF UTILITIES
UNDER PROJECT SAMPARK IN J&K (UT)**

1. Introduction to the Project:

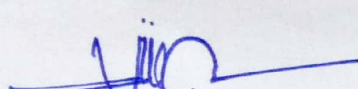
- The road Dayalchak-Challan (Ramkot) has been op endorsed by Directorate of Military Operations (MO4) General Staff for Construction / Improvement by BRO (GREF) in the area of responsibility of Project Sampark. The length of road is 25.421 Kms.
- Road Dayalchak-Challan (Ramkot) takes off from Dayalchak i.e Km 43.00 on road Pathankot-Jammu (Jammu-NH1A) and terminates at Challan (Ramkot) i.e at Km 72.925 on road Dhar-Udhampur. The road portion from Dayalchak to village Dinga Amb measuring 10 Kms was constructed by J&K state PWD in year 1954-62 and was being maintained till the physical handing over of the road to the BRO during the Feb 1993. The remaining road portion between km 10.00 to Km 25.421 from Dinga Amb to Challan was originally constructed by CPWD as service road for transportation of materials for the construction of Dhar-Udhampur road was later handed over to the J & K state PWD during the year 1974-75. This road portion was re-aligned and constructed up to the motorable specification and was being maintained by the J&K state PWD till the physical handing over of the road to BRO during Feb 1993. The complete road sector from Km 0 to Km 25.421 was taken over by BRO (Project Sampark) during Feb 1993 from J & K state PWD. The road was maintained by BRO (Project Sampark) from Feb 1993 to 04 Dec 2001 and after 04 Dec 2001 the road was handed over to state PWD J & K and again, the road has been taken over by BRO from state PWD on 17 June 2020.
- This road is being extensively used by Army & Civil traffic as shortest route from Dayalchak to Udhampur as it will be shorter by 25 Kms when compare with NH-1A (Via Jammu).


Objectives of Animal Passage Plan Study:

The objectives of animal passage plan are:

- To incorporate the needs of wildlife into transportation projects.
- To maintain the habitat connectivity
- To aid in the reduction of human wildlife conflict, improving awareness, safety and reducing collisions.

Achieving these goals will include restoring connections where they have been removed and ensuring that existing connections remain as the project road expands.

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2. Project Location & Technical details of the Project Proposed.

Project:	Construction/improvement to NHDL specification Dayalchak-Ramkot (Challan) road between KM 8.00 to KM 25.421 (net length 17.421 KM) including shifting of utilities under project Sampark in J&K (UT)
Project Proponent:	Officer Commanding, 69 RCC (GREF), 35 BRTF/ Project Sampark
Details of PA involved.	Jasrota Wild Life Sanctuary
Project Cost	9729.00 Lakh.
Project Area inside PA	74.4948 Ha.
Forest land inside PA	12.0147 Ha.
Non-Forest Land inside PA	62.48 Ha

3. Justification for proposed route & alternative examined.

The road is included in the BRDB Programme of Ministry of Defence (MOD) Border Roads at S/No 66 LTROWP and work is planned in AWP BE 2021-22 at Sr No 67.

The riding surface of this road Dayalchak - (Challan) Ramkot is badly damaged and causing in-convenience to road users. Road surface in town and village area have damaged due to plying of heavily loaded vehicles and army vehicles are plying on this road to Udhampur / Srinagar due to short distance. The carriageway between km 8.00 to Km 25.421 is CI-9 specification. Hence, the CL- 9 road has to be improved in NHDL specification due to increase in intensity of vehicle traffic and condition of road.

4. Area details falling in Jasrota Wildlife Sanctuary.

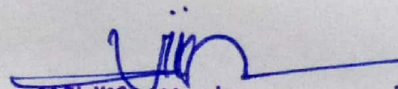
Total Length of Road = 17.421 Km.

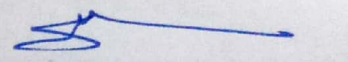
Width of Road = 12.00 meter

Total project area= 74.4948 Ha.

Area of Forest land within protected area (Marked A) = 12.0147 Ha.

Calculation Sheet for the Construction/improvement to NHDL specification Dayalchak-Ramkot (Challan) road between KM 8.00 to KM 25.421 (net length 17.421 KM)

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S/No	Loc/RD (KM)		length (Mtr)	Width (Mtr)	Area (Sqm)
	From	To			
1	8.000	12.870	4870	45.73	222705.1
2	12.870	13.235	365	41.23	15049.0
3	13.235	13.500	265	45.73	12118.45
4	13.500	13.955	455	41.23	18759.65
5	13.955	14.137	182	45.73	8322.86
6	14.137	14.320	183	41.23	7545.09
7	14.320	14.500	330	41.23	13605.9
8	14.500	14.830	180	45.73	8231.4
9	14.830	15.240	360	41.23	14842.8
10	15.240	15.600	410	45.73	18749.3
11	15.600	16.300	700	19.50	13650
12	16.300	17.300	1000	24.00	24000
13	17.300	18.700	1400	45.73	64022
14	18.700	19.590	890	41.23	36694.7
15	19.590	25.421	5831	45.73	266651.63
			17421		744947.88

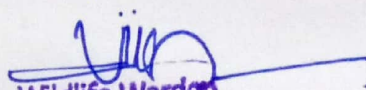
Total Project Area = 744947.88 Sqm = 74.4948 Hectare

S No	Total Project Area	Project area under protected area	Project area under non - protected area	Forest Area involved in project within protected area	Non Forest Area involved in project within protected area
1	74.4948 ha	74.4948 ha	Nil	12.01 ha	62.48 Ha

5. Major Activities involved in the execution of Project.

1.	Construction of 2.0 M Span RCC Culvert – 46 NOS
2.	Construction of 3.0 M Span RCC Culvert – 20 NOS
3.	Construction of 6.0 M Span RCC Culvert- 03 NOS
4.	Maj Bridges KM 9.120-60.40 Mtr, KM 9.450-60.40 Mtr & KM 9.800 30.20 Mtr, KM 24.580- 10.00 Mtr
5.	R/Wall Ht. 1.00 M to 6.0 Mtr Height
6.	B/Wall Ht. 1.5 m to 3.0 Mtr
7.	Parapet

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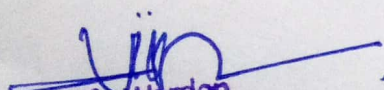

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8.	Lined Drain
9.	P/L WBM-2 & WBM-3
10.	OGPC
11.	Citizen & Main Information Board
12.	Logo Board
13.	Road Sign Boards
14.	KM Stones
15.	200 M Stones
16.	Earthen Shoulders

6. Likely impact of the Project on Protected Area of Jasrota Wildlife Sanctuary.

Current Status of Wildlife: - The Jasrota Wildlife Sanctuary is situated on the right bank of river Ujh and spread over 10.04 sq.km which is rich in variety of fauna & avi fauna species typically to area of sub-tropical climate. The arial distance of the Jasrota Wildlife Sanctuary and the proposed project area is 5.36 Km and has a potential corridor for movement of wildlife as per the report of the Wildlife Protection Department. The major species observed in the compartment No. 32/J, 32a/J and 33/J of Rajwalta Block, Jasrota Forest Range of Kathua Forest Division are enlisted as under: -

S.NO	COMMON NAMES	SCIENTIFIC NAMES
1	Macaque Monkeys	<i>Macaca Mulatta</i>
2	Common Leopard	<i>Panthera Pardus</i>
3	Goldern Jackal	<i>Canis aureus</i>
4	Indian Porcupine	<i>Hustrix indica</i>
5	Wild boar	<i>Sus scrofa</i>
6	Barking deer	<i>Muntiacus Muntjac</i>
7	Nilgai	<i>Boselaphus tragocamelus</i>
8	Nambar	<i>Rusa unicolor</i>
9	Indian Hare	<i>Lepus Nigicollis</i>
10	Red Fox	<i>vulpes vulpes</i>
11	Jungle Cat	<i>Felis chaus</i>
12	Egyptian Vulture	<i>Neophron pencnoptrun</i>

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13	Griffion Vulture	<i>Gyps himalayensis</i>
14	Kalij Pheasant	<i>Lophura leucomelanos</i>
15	Indian Peacock	<i>Pavo cristatus</i>

- No significant negative impact of the current proposal on Jasrota Wildlife Sanctuary is likely to occur in terms of section 29 of the Wildlife Protection Act, 1972, but a little impact on the corridor of the Wildlife may happen.

6.1 Adverse effect associated with Linear Project vis-à-vis present project

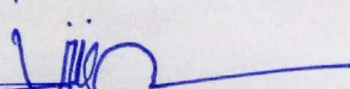
The linear projects passing through wildlife protected areas are associated with:


- Loss of habitat resulting reduced carrying capacity.
- Fragmentation of habitat into spatially isolated parts.
- Injury/mortality to animals.
- Presence of construction camps.
- Deprive animals from using their entire habitat.
- Increased human wildlife conflict.
- Pollution due to liquid or solid waste.

a. Habitat Loss and Fragmentation: Generally, linear Projects like Roads are known to affect many different animal groups, predominantly mammals. These impacts are largely associated with fragmentation & degradation of wildlife habitats along the Project corridor. The Project might impact the habitat and movement of others arboreal species like monkey, primates etc.

b. Induced Impact on Wildlife from Construction workers:

Construction manpower will be required for execution of the project and makeshift construction camps and will be set up as per site requirement. Generally, for construction works, local manpower/workers will be engaged. The induced impact on the wildlife of Jasrota Wildlife Sanctuary from such construction workers is the likelihood of involvement in hunting/trafficking of wild animals and other unlawful activity during the execution of the project. In case of The Improvement/Widening of Dayalchak-Ramkot (Chhalan) Road, no labour camp will be established in Sanctuary area. It shall be ensured that

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that no activity is carried out after sunset. Awareness-raising will be done to mitigate this risk. The workers must be informed on the Forest and Nature Conservation Act, Rules and Regulations and copies of these shall be made available to them. Workers shall be made aware of the fines and penalties as well as the risk of job loss for poaching/hunting to avoid such illegal activities.

7. Safeguard for Animal/Wildlife Passage.

Necessity of Passage Plan: The road is already constructed in Cl-9 specification and traffic continue passing over the road, the present project only for improvement/widening of the road in NHDL specification. Animals move between habitats in order to survive by finding food, mates and areas of refuge. As rural areas continue to expand and road network and traffic increase there is a threat to animals while crossing the roads. All proposals for roads, railway tracks, canals and power lines will now have to include a plan to provide for safe movement of wildlife and allocate budget for animal passages as per NBWL proceedings dated 25th January 2018.

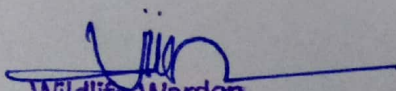
Adverse effect associated with Linear Project vis-à-vis present project

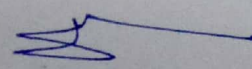
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- Deprive animals from using their entire habitat.
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- Pollution due to liquid or solid waste.

Project Corridor

The present project under discussion, through a linear project has very negligible or null ill effect to the project. On critical analysis/ observation of this project is seen that:

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- The project length of Dayalchak-Ramkot (Chhalan) Road km 08th to 25.421th due to submergence of 98.00 Mtr span PSC Box-Girder Bridge over Saniyal nallah is 11.200 Kms and 32.00 Mtr Span T-Beam Girder Bridge over Galman Nallah which is passing through Jasrota Wildlife Sanctuary.
- The land required for this project is 12.01 Ha in protected area.
- The project road is of National highway double lane specification and is in proposal to come within protected area.
- The problem of human wildlife conflict, depriving free flow of habitats will be avoided by the provision of under passages in the form of RCC Culverts and bridges.

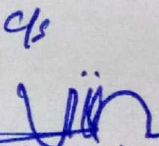
Passage to the wildlife habitats will be provided in the form of under passages by means of RCC Culverts and bridges already proposed in the DPR. The locations of animal passage are also shown in the GPS Map attached below.

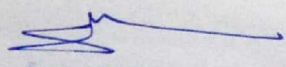
Table Showing Location of Bridges

S/N	Loc/RD	Span of Bridges	Remarks
1	KM 9.120	60.40	Proposed Maj Bridge
2	KM 9.450	60.40	
3	KM 9.800	30.20	
4	KM 11.200	98.00	Existing Maj Bridge
5	KM 14.570	32.00	
6	KM 24.580	10.00	Proposed Minor Bridge

Table Showing Location of RCC Culverts

Sl/ No	LOC/ RD	Span	Sl/ No	LOC/RD	Span
1	8.300	06 M	36	18.185	03 M
2	8.550	02 M	37	18.460	02 M
3	8.660	02 M	38	18.810	03 M
4	8.775	06 M	39	18.930	02 M
5	9.265	02 M	40	19.420	03 M
6	9.990	02 M	41	19.920	02 M
7	10.180	06 M	42	19.960	02 M
8	10.270	03 M	43	20.060	02 M


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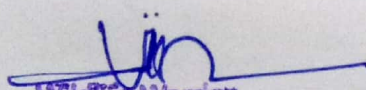

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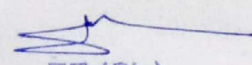
9	10.460	02 M	44	20.120	02 M
10	13.115	02 M	45	20.220	02 M
11	13.180	02 M	46	20.270	02 M
12	13.255	02 M	47	20.350	03 M
13	13.445	02 M	48	20.380	02 M
14	13.740	03 M	49	20.480	02 M
15	13.850	03 M	50	20.645	03 M
16	13.930	03 M	51	20.780	02 M
17	14.080	02 M	52	20.820	02 M
18	14.100	02 M	53	20.895	03 M
19	14.125	02 M	54	20.920	02 M
20	14.225	03 M	55	20.990	02 M
21	14.380	03 M	56	21.126	03 M
22	14.570	02 M	57	21.235	02 M
23	14.675	02 M	58	21.570	02 M
24	14.750	02 M	59	21.880	02 M
25	14.825	02 M	60	22.260	02 M
26	15.180	02 M	61	23.110	03 M
27	15.460	02 M	62	23.260	02 M
28	15.960	03 M	63	23.320	03 M
29	16.165	03 M	64	23.685	02 M
30	16.580	02 M	65	23.970	02 M
31	16.880	02 M	66	24.215	03 M
32	16.980	03 M	67	25.080	02 M
33	17.080	02 M	68	25.260	02 M
34	17.150	03 M	69	25.370	02 M
35	17.790	02 M			

The land use of the project area and the adjacent lands will play a large role in determining the type and extent of mitigation required. As the area surrounding the project is slated for high density residential/commercial development, the facilitating wildlife movement through this area is likely not feasible or desired. As per observation made in the site visits and during different survey proceedings, no wildlife crossings were found in the project stretch.

Common land uses in the project road include the following:

- Residential
- Agricultural
- Natural Area
- Drainage Channels

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It is important to not only consider present development, but also consider future development. The present road is in hilly terrain. So, the land use pattern is mostly open section with few stretches of built-up section and semi-built up sections. Farming is found in many stretches. Few stretches come under forest region.

7.3 Conflict with Habitats

Generally, there may be conflicts between local wildlife and the transportation projects. But as per observations and information collected from the forest department, no passage of land animals is seen to cross the project road as the project corridor is full with patches of built-up sections and human interference.

The project has low traffic volume and/or speed or large vehicles. Different species will be less affected by the traffic volume and /or speed in different ways depending on their mobility. But as mentioned above, there is no crossing across the project road.

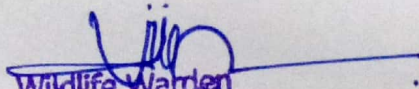
7.4 Conflict with road characteristics


Traffic volume and speed play an important role in determining whether a road will impact wildlife movement. Because vehicle traffic behaves as a filter to movement rather than a absolute barrier, the number of species both attempting and successfully crossing the road will be reduced at greater traffic volume and speeds. The majority of wildlife-vehicle collisions occur on the roads with immediate traffic volume while low traffic volume roads have essentially no incidents.

7.5 Conflicts with Existing Infrastructure

Many existing structures are not designed for wildlife and were installed with human function as the major goal. In order to avoid hindrance for wildlife, the followings are need to be kept in mind:

- Removal of physical barriers
- Structures that incorporate both pedestrian and wildlife into the same structures
- No perched culverts
- Structures with insufficient water depth for aquatic passage
- Structures with excessive water velocities

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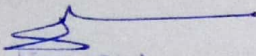
- During the construction phase, the excavated pits shall be properly barricaded and fenced so as to prevent accidental falling of mammals in the vicinity of the construction sites.
- Noise levels during the construction phase shall be monitored properly to avoid disturbance, if any to the animals.
- No construction activity shall be undertaken after sunset and during the night.
- No harm to wildlife habitat including fauna and flora of the sanctuary shall be ensured.
- The WLS area shall not be used for any other work other than the work permitted.
- No establishment of any temporary or permanent labour camp inside the sanctuary area.
- Alternate Fuel (LPG) shall be provided to Laborer's for cooking purpose.
- No vehicular movement inside sanctuary area shall be allowed from sunset to sunrise except emergency vehicle.
- Awareness-raising will be done to mitigate this risk. The contractor and his workers shall be informed on the Forest and Nature Conservation Act, Rules and Regulations and copies of these shall be made available to them. Workers shall be made aware of the fines and penalties as well as the risk of job loss for poaching/hunting to avoid such illegal activities.
- In addition to above mitigation measures, any other measures as envisaged by the CWLW/State Board of Wildlife/National Board of Wildlife and as per provisions of The Wildlife (Protection) Act, 1972 shall be implemented by the company during execution of the project.

7.6 Design Guidelines

The design of the roadway can help to reduce the effects of transportation infrastructure on wildlife. Some simple principles that should be considered in the road design include:

- Consider the slope of the roadside
- Consider potential/known areas of higher wildlife activity
- Consider impact of drainage ditches
- Consider the implications of the roadway design for emergency response access and maintenance access.

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7.7 Identify Ecological Design Group

The vast biodiversity in nature provides a challenge when attempting to maintain connectivity and reduce genetic isolation. Each species within an area will have slightly different habitat requirements and behavior making it difficult to design a corridor that will satisfy the requirements of all the species. In addition, there is insufficient data for many species which provides a challenge when attempting to understand their life history strategy and to design a corridor that will satisfy the requirements.

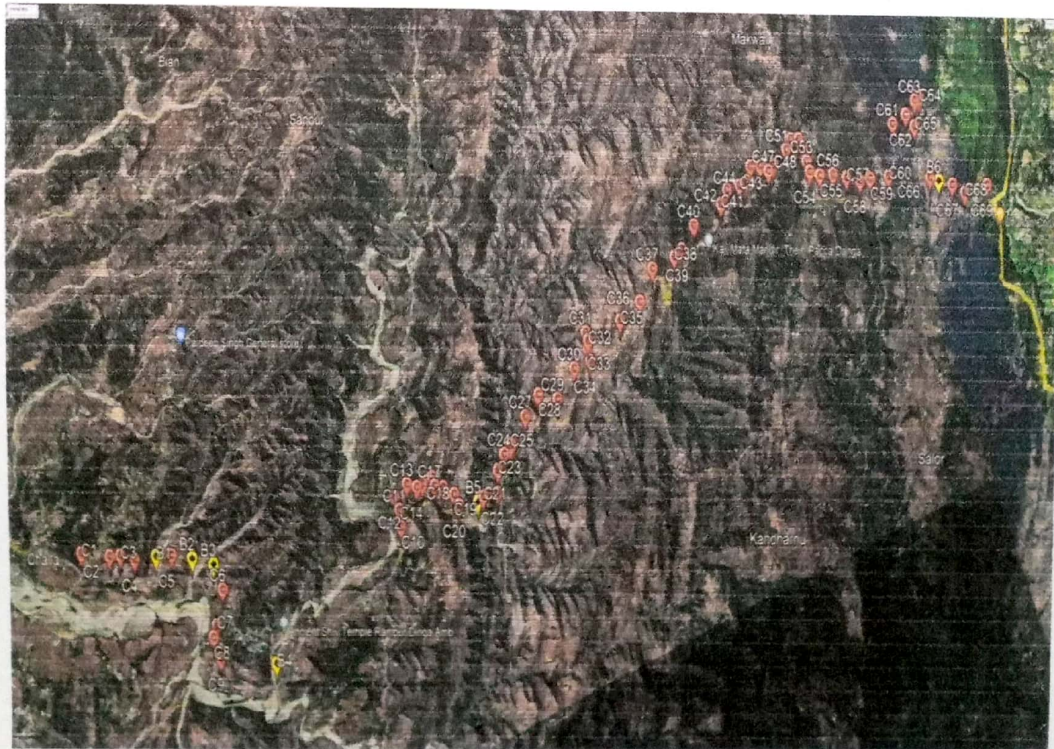
The category of species which special attention are as follows:

- Species that require dispersal for survival
- Species that are integral to ecological processes
- Species that are dominant but could become less important if connectivity is lost
- Species that need connectivity to prevent genetic divergence
- Species experiencing high vehicle associated mortality in or near the study area
- Rare, endangered or vulnerable species

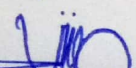
7.8 Identify Mitigation

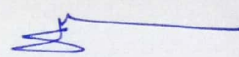
Mitigation for the purpose of this passage plan, is intended to be site specific and practical. The details of the crossings provided are as under:

Fig.1: Showing Locations of Animal Crossing



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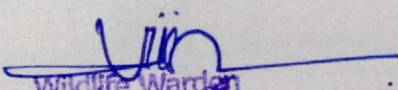
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	Span	Northing	Easting		Span	Northing	Easting
C1	06 M	32°32'8.87"N	75°20'53.91"E	C36	03 M	32°35'39.12"N	75°21'3.52"E
C2	02 M	32°32'18.01"N	75°20'58.50"E	C37	02 M	32°35'46.53"N	75°20'56.00"E
C3	02 M	32°32'21.64"N	75°20'59.72"E	C38	03 M	32°35'54.84"N	75°20'56.01"E
C4	06 M	32°32'26.15"N	75°21'2.89"E	C39	02 M	32°35'58.13"N	75°20'55.08"E
C5	02 M	32°32'38.90"N	75°21'7.01"E	C40	03 M	32°36'4.08"N	75°20'50.14"E
C6	02 M	32°32'53.61"N	75°21'23.96"E	C41	02 M	32°36'15.77"N	75°20'47.94"E
C7	06 M	32°32'48.99"N	75°21'32.88"E	C42	02 M	32°36'19.46"N	75°20'44.59"E
C8	03 M	32°32'47.16"N	75°21'36.05"E	C43	02 M	32°36'23.92"N	75°20'45.44"E
C9	02 M	32°32'47.84"N	75°21'42.98"E	C44	02 M	32°36'26.87"N	75°20'45.08"E
C10	02 M	32°33'58.34"N	75°21'31.99"E	C45	02 M	32°36'29.67"N	75°20'41.30"E
C11	02 M	32°33'59.15"N	75°21'26.87"E	C46	02 M	32°36'33.22"N	75°20'42.42"E
C12	02 M	32°33'58.62"N	75°21'22.44"E	C47	03 M	32°36'35.27"N	75°20'45.39"E
C13	02 M	32°34'3.11"N	75°21'20.00"E	C48	02 M	32°36'37.99"N	75°20'44.07"E
C14	03 M	32°34'6.86"N	75°21'22.93"E	C49	02 M	32°36'43.73"N	75°20'41.45"E
C15	03 M	32°34'9.00"N	75°21'22.82"E	C50	03 M	32°36'46.66"N	75°20'38.90"E
C16	03 M	32°34'12.78"N	75°21'22.20"E	C51	02 M	32°36'48.88"N	75°20'40.41"E
C17	02 M	32°34'13.06"N	75°21'25.39"E	C52	02 M	32°36'49.73"N	75°20'43.68"E
C18	02 M	32°34'15.80"N	75°21'26.84"E	C53	03 M	32°36'49.70"N	75°20'47.65"E
C19	02 M	32°34'18.37"N	75°21'29.55"E	C54	02 M	32°36'49.78"N	75°20'51.18"E
C20	03 M	32°34'19.80"N	75°21'34.40"E	C55	02 M	32°36'52.71"N	75°20'53.79"E
C21	03 M	32°34'28.71"N	75°21'35.22"E	C56	03 M	32°36'57.45"N	75°20'55.34"E
C22	02 M	32°34'33.78"N	75°21'36.18"E	C57	02 M	32°37'1.61"N	75°20'58.32"E
C23	02 M	32°34'35.81"N	75°21'30.00"E	C58	02 M	32°37'5.77"N	75°21'1.26"E
C24	02 M	32°34'39.26"N	75°21'26.31"E	C59	02 M	32°37'9.41"N	75°21'2.10"E
C25	02 M	32°34'41.81"N	75°21'25.67"E	C60	02 M	32°37'16.07"N	75°21'3.93"E
C26	02 M	32°34'39.24"N	75°21'26.77"E	C61	03 M	32°37'23.39"N	75°20'49.22"E
C27	02 M	32°34'43.38"N	75°21'24.75"E	C62	02 M	32°37'29.28"N	75°20'48.22"E
C28	03 M	32°35'2.32"N	75°21'11.59"E	C63	03 M	32°37'34.14"N	75°20'45.32"E
C29	03 M	32°35'2.25"N	75°21'18.78"E	C64	02 M	32°37'36.21"N	75°20'45.10"E
C30	02 M	32°35'10.63"N	75°21'12.73"E	C65	02 M	32°37'31.52"N	75°20'52.75"E
C31	02 M	32°35'17.83"N	75°21'4.20"E	C66	03 M	32°37'31.60"N	75°21'9.65"E
C32	03 M	32°35'17.87"N	75°21'6.88"E	C67	02 M	32°37'38.59"N	75°21'15.08"E
C33	02 M	32°35'16.95"N	75°21'9.04"E	C68	02 M	32°37'42.02"N	75°21'19.12"E
C34	03 M	32°35'16.66"N	75°21'12.98"E	C69	02 M	32°37'50.64"N	75°21'20.18"E
C35	02 M	32°35'30.62"N	75°21'5.91"E				

7.9 Calculation of Openness Ratio

- Openness Ratio = $\frac{\text{height of the opening} \times \text{width of the structure}}{\text{length of the underpass}}$

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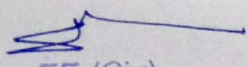
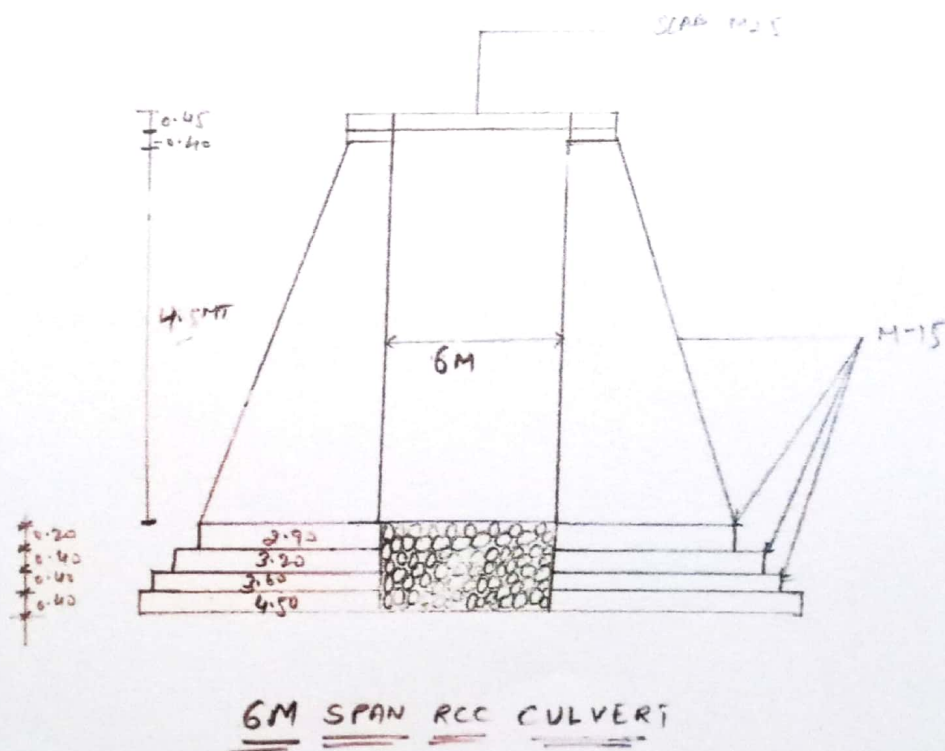
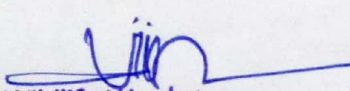

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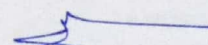
Fig.2 : Dimensions of an underpass determining its openness ratio



Fig.3: Specifications of 6 m Span RCC Culvert

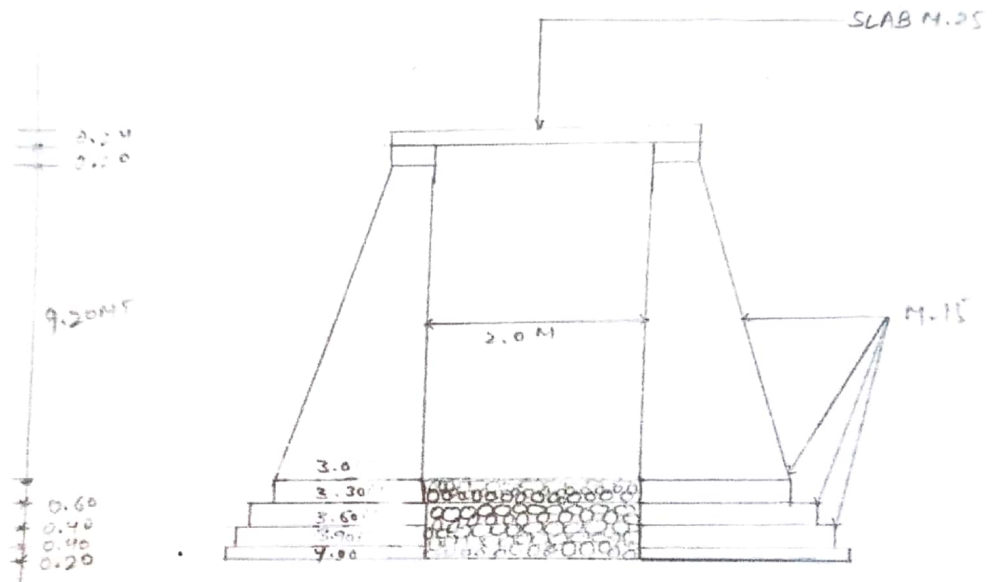


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- Length = 12.000 m
- Width = 6.00 m
- Height = 4.50 m
- Openness Ratio = $\frac{6.00 \times 4.50}{12.00} = 2.25$

Fig.4: Specifications of 2 m Span RCC Culvert



2.0 M SPAN RCC CULVERT

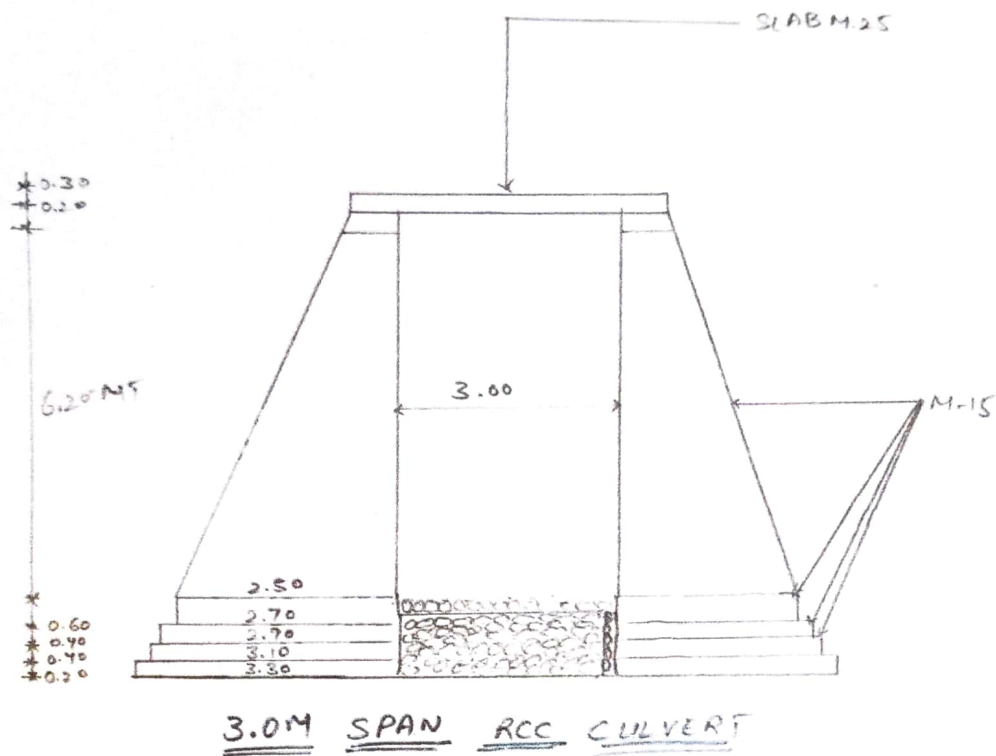
- Length = 12.000 m
- Width = 2.00 m
- Height = 9.20 m
- Openness Ratio = $\frac{2.00 \times 9.20}{12.00} = 1.53$

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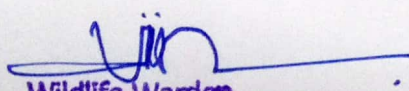
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Fig.5: Specifications of 3 m Span RCC Culvert




- Length = 12.00 m
- Width = 3.00 m
- Height = 6.20 m
- Openness Ratio = $\frac{3.00 \times 6.20}{12.00} = 1.55$

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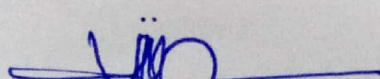
**Table Showing Openness Ratio Value of RCC Culverts
to be used as Underpass**

S/N	Loc/RD	Span of Culverts (Mtr)	Opening Ratio
1	KM 8.300	6.00	2.25
2	KM 10.180	6.00	2.25
3	KM 12.370	2.00	1.53
4	KM 13.480	2.00	1.53
5	KM 14.125	2.00	1.53
6	KM 15.180	2.00	1.53
7	KM 15.960	3.00	1.55
8	KM 16.580	2.00	1.53
9	KM 17.150	3.00	1.55
10	KM 18.120	3.00	1.55
11	KM 18.810	3.00	1.55
12	KM 19.420	3.00	1.55
13	KM 19.920	2.00	1.53
14	KM 20.350	3.00	1.55
15	KM 20.920	2.00	1.53
16	KM 21.570	2.00	1.53
17	KM 22.210	2.00	1.53
18	KM 23.110	2.00	1.53
19	KM 23.320	3.00	1.55
20	KM 23.970	2.00	1.53
21	KM 24.580	10.00	3.75
22	KM 25.370	3.00	1.55

7.10 Provision of Safety Features

- Cautionary / Warning Sign Boards will be provided at the start and at the end of each stretch of forest land. Fig. below showing board to be used:




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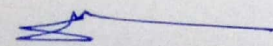

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Table Showing location of Animal Crossing Boards

S No	LOC (KM)	Board Count
1	12.870	01
2	13.235	01
3	13.500	01
4	13.955	01
5	14.137	01
6	14.320	01
7	14.500	01
8	14.830	01
9	15.240	01
10	15.600	01
11	16.300	01
12	17.300	01
13	18.700	01
14	19.590	01
	Total	14

- **Road Studs / Reflectores / Speed Breakers** will be provided at the start and at the end of each stretch of forest land. Fig. below showing road studs to be used

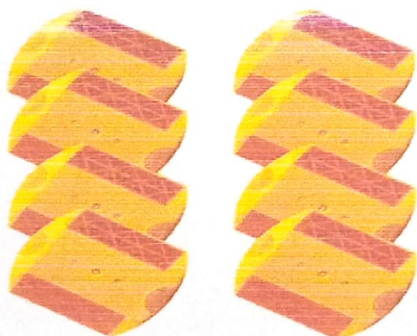


Table showing location of Road Studs

S No	Loc (KM)	Road Studs (No)
1	KM 10.00 – KM 10.300	80
2	KM 12.550-KM 13.650	100
3	KM 14.300-KM 14.800	120
4	KM 17.500-KM 18.000	150
5	KM 19.400-KM 21.230	150
6	KM 22.350-KM 23.450	150
	Total	750

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