



**PRADHAN MANTRI
GRAM SADAK YOJANA**

**DETAILS OF UNDER PASSES/OVERPASSES PROPOSED
FOR THE SAFE PASSAGE OF WILD ANIMALS**

On

Nowapachi Dehrana upto Hanzal Road

Package No:- JK04-168

Length: - 18.00kms

Length of Road in forest Area: - 11.250kms

[Signature]
Executive Engineer
PMGSY Division
Marwah

1. INTRODUCTION

The rural road network required for providing the 'basic access' to all villages/ habitations is termed as the Core Network. Basic access is defined as one all-weather road access from each village/ habitation to the nearby Market Centre or Rural Business Hub (RBH) and essential social and economic services.

A Core Network comprises of Through Routes and Link Routes. Through routes are the ones which collect traffic from several link roads or a long chain of habitations and lead it to a market centre or a higher category road, i.e. the District Roads or the State or National Highways. Link Routes are the roads connecting a single habitation or a group of habitations to Through Roads or District Roads leading to Market Centres. Link Routes generally have dead ends terminating on habitations, while Through Routes arise from the confluence of two or more Link Routes and emerge on to a major road or to a Market Centre.

The Core Network may not represent the most convenient or economic route for all purposes. However, since studies show 85-90% of rural trips are to market centres, the Core Network is likely to be a cost-effective conceptual frame work for investment and management purposes, particularly in the context of scarce resources.

The sub Road project takes off from Village Nowpachi being the Headquarter of Sub-Division Marwah for connecting the destination point village Hanzal where the Road from District Headquarter Kishtwar is being constructed from Dachhan to Hanzal namely by the nomenclature Ikhala Block Boundary Kishtwar to Lopara being the both Roads with the aim to connect the whole Sub Division Marwah and Tehsil Dachhan directly with the District Headquarter by taking up of work from both ends (Tail & Take-off) for its completion to connect the Sub Division at an earliest.

Hanzal is situated on the right bank of River Marsudhar and towards east side of block Marwah. Presently Hanzal is connected with a bridle track having deep ascends and descends and remains mostly cut off during winter season. All the essential commodities are to be carried upto Hanzal by head load or ponies resulting in backwardness of the area both socially as well as economically.

Mostly the people are illiterate and unemployed due to lack of education facilities in the vicinity of the area

The Block Marwah is spreaded over a vast hilly area having many beautiful tourist spots, pastures and meadows having great exploration of Tourism potential. The construction of road shall boast tourism sector in the area in general and the whole block shall come up at par with the famous

Tourist resorts and shall improve the socio-economical condition of the down trodden and poverty stricken populace of the block.

This road will increase the intensity of tourism in the area similar as Phalgam in Kashmir. The road shall also provide accessibility to school, High school, Health Centre etc. The road construction has been proposed with a formation width of 6.0M except , except at valley/zig points where construction of R/walls are inevitable from geometrical constraints and at horizontal curves, extra widening has been proposed ranging from 0.60 to 0.90 Mtr. depending upon the radius of horizontal curve and as per IRC specification.

**Details of Under passes proposed for safe passage of wild Animals in forest Land on Nowapachi
Dherna upto Hanzal Road**

2. 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.

1. Project Location and Technical Details:

Project:	Construction of Motorable Road from Nowpachi Deherna upto Hanzal
Proposal No.	FP/JK/ROAD/51198/2020
Project Proponent:	Marwah & Dachhan Forest Range
Project Cost:	2071.15 lacs(Stage-I,Stage-II &Bridge)
Details of Forest Area involved:	7.4783 Ha

1. **Justification for Proposed route & alternative examined:** The present proposed road alignment is only feasible for construction of road Nowpachi Deherna upto Hanzal. There is no possibility of alternate alignment for the project road. Hence, the diversion of the Forest is the only choice to construct the road.

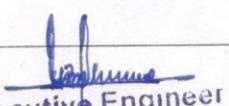
2. Area Details Falling in Forest area

Part- 1

- (i) Total Length of the Road: 18000m
- (ii) Total Length of the Road in Forest Area:- 11250m
- (iii) Width of the Road: 6.00m
- (iv) Area in forest land 7.47Ha.

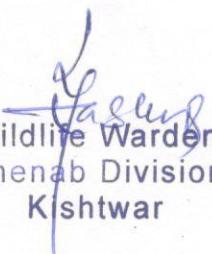
3. Major Activities involved in the execution of Project:

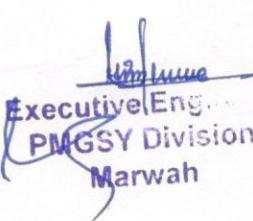
A	Earthwork in excavation in Hilly area
1	Earthwork in cutting
2	Earthwork in filling
B	CD Works


Executive Engineer

**Details of Under passes proposed for safe passage of wild Animals in forest Land on Nowapachi
Dhera upto Hanzal Road**

4	Construction of 2.0m Span RCC Culvert
5	Construction of 3.0m Span RCC Culvert
6	Construction of 6.0m Span RCC Culvert
C	Construction of Semi Pucca Walling
7	R/Wall Ht. 2.00 m
8	R/Wall Ht. 3.00 m
9	R/Wall Ht. 4.00 m
10	R/Wall Ht. 2.55 m
11	Parapet
12	Pucca Drain
D	Providing & Fixing of Signage and Boards
13	Citizen & Main Information Board
14	Logo Board
15	Road Sign Boards
16	Km Stone
17	200 m Stones
18	5 Km Stones


Wildlife Warden
Chenab Division
Kishtwar


Executive Eng.
PMGSY Division
Marwah

Proposed mitigation measures: In addition to proposed action plan following measures could be undertaken in view of projected increase in traffic load which could facilitates the animals to cross the road:

- Creation of barriers
- To provide RCC Box culverts/Animal Underpass at various strategic point, so that along with water various wildlife can also pass through the culvert to reach the other side of the road
- The culvert floor must be naturalized so that small vegetation can grow and give the underneath area a natural passage look.
- Noise barriers shall be installed near the underpasses for effective use of underpasses
- The culvert height shall accommodate animals like Black bear , Leapord, Muskdeer etc
- The hydrological importance shall also be kept in mind while deciding on the relocation / modification of the culverts.
- During Construction period no construction work shall be allowed after night fall.
- Special care should be taken to ensure that the animal movement is not restricted due to the construction work
- Workers & local populace should be made aware through awareness workshops about the importance of wildlife and biodiversity and special attention paid that no poaching and hunting takes place
- Creation of rumble strip on stretches which are passing through longer forest patches.
- Pipe culverts shall be avoided and be replaced with box culverts if located in places having good forest patches on both side with larger and continuous patch size to save the smaller wild animals from road accidents. Culvert floor shall be planted with indigenous plant and grass species.
- No labour camps should be allowed at the construction sites. Arrangements should be made to bring in the labour during the working hours and drop them after that. No fire or cooking should be allowed at the construction site.
- No stocking and dumping of construction material other than the designated sites duly agreed by the Forest Department.
- Construction workers and local communities should be sensitized about importance of wildlife conservation and do's and don'ts through awareness workshops/meeting with full involvement of local Forest personnel. Workers should be made aware of provision of legal penalties to stop poaching and wood cutting.
- Vehicle speed limit should not be more than 30-40 km/hr. in the animal prone stretch warning signage shall be installed at every 25 m in entire project road. Night traffic should be controlled through barriers at appropriate locations to be decided by the project authorities and local forest department. Random checking by the Flying Squad of Transport Authority.

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Abstract of Proposed action plan for safe passage of wild Animals

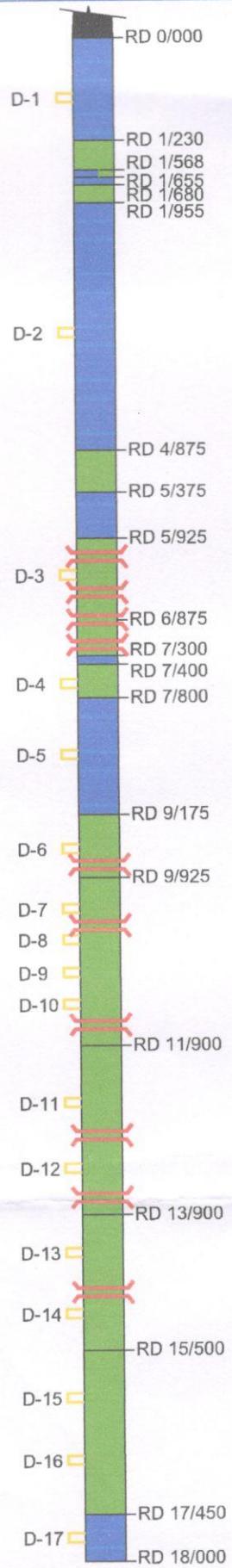
S.No	Name of Particulars	Amount (Rs in Lacs)
1	Provision for construction of B/walls & R/walls in addition to the already proposed in Project	20.00
2	Construction of 03mtr Span RCC Culvert/Animal Passage including Approach Track 10No's	166.80
3	Road Studs /Speed Breakers on 20 stretches	3.00
4	Provision for construction of Parapets	5.00
5	Provision for P/F Sign boards /Cautionary warning signs at every 20 to 25mtrs of Road Stretch	10.00
	G-Total	204.80

Say Rs.204.80

Hasan
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AYOUT PLAN FOR CONSTRUCTION OF ROAD FROM NOWPACHI TO DEHARNA UPTO HANZAL UNDER PACKAGE
NO. JK04-166, PHASE-X, STAGE-I, LENGTH=18.00KM PIU- MARWAH, DISTRICT KISHTWAR.



FOREST AREA DETAILS

	LENGTH X WIDTH	AREA
RD 1/230	TO 1568	2028 M ²
RD 1/568	TO 1655	87 M ²
RD 1/680	TO 1955	1650 M ²
RD 4/875	TO 5375	3000 M ²
RD 5/925	TO 6875	5700 M ²
RD 6/875	TO 7300	2550 M ²
RD 7/400	TO 7800	2400 M ²
RD 9/175	TO 9925	4500 M ²
RD 9/925	TO 11900	11850 M ²
RD 11/900	TO 13900	12000 M ²
RD 13/900	TO 15500	9600 M ²
RD 15/500	TO 17450	11700 M ²
TOTAL		67065 M² - A

DUMPING AREA DETAILS IN FOREST LAND

$$\frac{13}{13} = \frac{7718 \text{ M}^2}{7718 \text{ M}^2} - B$$

$$\text{TOTAL AREA} = A+B = \frac{67065 \text{ M}^2}{67065 \text{ M}^2} + \frac{7718 \text{ M}^2}{7718 \text{ M}^2} = 74783 \text{ M}^2 \text{ OR } 7.4783 \text{ HECTARES}$$

LEGEND:-

1.	FOREST LAND (6 M WIDE)	
2.	STATE / PRIVATE LAND	
3.	OTHER ROAD	
4.	DUMPING POINT	
4.	PASSAGE SITE	

Wildlife Warden

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**GEO REFERENCE MAP FOR CONSTRUCTION OF ROAD FROM NOWPACHI TO DEHARNA UPTO HANZAL
UNDER PACKAGE NO. JK04-166, PHASE-X, STAGE-I, LENGTH=18.00KM PIU- MARWAH, DISTRICT KISHTWAR.**



SCALE:- 1:45000

GPS COORDINATES

ID	LATITUDE	LONGITUDE	ID	LATITUDE	LONGITUDE
20.	33°35'39.98"N	75°44'49.21"E	1.	33°39'4.51"N	75°42'21.21"E
21.	33°35'35.45"N	75°45'4.02"E	2.	33°38'45.73"N	75°42'13.73"E
22.	33°35'33.08"N	75°45'20.93"E	3.	33°38'26.71"N	75°42'17.77"E
23.	33°35'29.00"N	75°45'37.26"E	4.	33°38'16.31"N	75°42'19.45"E
24.	33°35'15.79"N	75°46'5.07"E	5.	33°38'13.59"N	75°42'18.76"E
25.	33°35'7.07"N	75°46'28.48"E	6.	33°38'12.85"N	75°42'17.91"E
26.	33°34'46.36"N	75°46'49.01"E	7.	33°38'4.88"N	75°42'14.24"E
27.	33°34'29.64"N	75°47'1.03"E	8.	33°37'22.28"N	75°42'20.67"E
28.	33°34'31.86"N	75°46'46.19"E	9.	33°36'48.57"N	75°42'46.48"E
29.	33°34'24.85"N	75°46'45.32"E	10.	33°36'33.23"N	75°42'54.96"E
30.	33°34'12.41"N	75°47'8.52"E	11.	33°36'18.62"N	75°43'6.89"E
31.	33°33'55.16"N	75°47'7.36"E	12.	33°36'19.88"N	75°43'20.91"E
32.	33°33'48.34"N	75°47'8.47"E	13.	33°36'2.20"N	75°43'46.29"E
			14.	33°36'0.51"N	75°43'49.61"E
			15.	33°35'57.65"N	75°43'56.80"E
			16.	33°35'50.55"N	75°43'55.54"E
			17.	33°35'46.66"N	75°44'9.41"E
			18.	33°35'46.87"N	75°44'25.34"E
			19.	33°35'45.81"N	75°44'35.34"E

GPS COORDINATES PASSAGE SITE

P-1	33°36'19.54"N	75°43'19.98"E
P-2	33°36'17.01"N	75°43'26.91"E
P-3	33°36'8.15"N	75°43'35.74"E
P-4	33°36'2.45"N	75°43'46.20"E
P-5	33°35'39.32"N	75°44'41.40"E
P-6	33°35'35.98"N	75°45'1.65"E
P-7	33°35'26.64"N	75°45'42.77"E
P-8	33°35'14.50"N	75°46'6.01"E
P-9	33°35'0.11"N	75°46'40.66"E
P-10	33°34'33.11"N	75°46'57.64"E

LEGEND:-

1. FOREST LAND	
2. REVENUE LAND	
3. DUMPING POINT	
4. PASSAGE SITE	

Surgeon
Wildlife Warden
Chenab Division
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Engineer
Executive Engineer
PMGSY Division
Marwah

**Details of Under passes proposed for safe passage of wild Animals in forest Land on Nowapachi
Dherna upto Hanzal Road**

DETAILED ESTIMATE FOR CONSTRUCTION OF 03MTR SPAN RCC CULVERT / ANIMAL PASSAGE FOR SAFE PASSAGE OF ANIMALS IN FOREST AREA ON NOWAPACHI DHERNA UPTO HANZAL ROAD					
S. No.	Description	Unit	App. Quantity	Rate	Amount
1	<p>Earth work in excavation by mechanical means (hydraulic excavator) in trenches for foundations, drains, pipes, cables etc. (not exceeding 1.5 m in width) and for shafts, wells, cesspits and the like not exceeding 10 sqm on plan, including dressing of sides and ramming of bottoms lift upto 1.5 m, including getting out excavated earth and disposal of surplus excavated earth as directed, within a lead of 50 metres:70% all kinds of soil & 30 % ordinary rock</p> <p>Abutment = $7.50 \times 8.60 \times 4.30 = 277.35$ cum</p> <p>Wing wall = $4 \text{ nos} \times 2.50 \times 1.40 \times 3.80 = 53.20$ cum</p> <p>Approaches = $2 \text{ nos} \times 1/2 \times 1.60 \times 2.50 \times 3.00 = 12.00$ cum</p> <p>Approach for culvert to wild animals $1/2 \times 1.50 \times 2.50 \times 5.00 \times 4 \text{ Nos} = 37.50$ cum</p> <p>Total = 350.05 cum</p>	cum	380.05	317.43	120639.00
2	<p>Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with:1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)</p> <p>Abutment step I = $8.60 \times 7.00 \times 0.20 = 12.04$ cum</p> <p>Step ii = $8.00 \times 7.00 \times 0.20 = 11.20$ cum</p> <p>Wing wall = $4 \text{ nos} \times 1.40 \times 2.50 \times 0.40 = 1.16$ cum</p> <p>Approaches = $2 \text{ nos} \times 3.00 \times 1.60 \times 0.20 = 1.92$ cum</p> <p>Bottom Inside = $2.00 \times 7.00 \times 0.10 = 2.80$ cum</p> <p>Total = 29.12 cum</p>	cum	29.12	4943.40	143951.00
3	<p>Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with:1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)</p> <p>Abutments 2nd step = $2 \text{ nos} \times 6.50 \times 7.20 \times 0.80 = 37.44$ cum</p> <p>2nd step = $2 \text{ nos} \times (0.60+2.00)/2 \times 7.00 \times 3.00 = 54.60$ cum</p> <p>Dirt wall = $2 \text{ nos} \times 7.00 \times 0.30 \times 0.30 = 1.26$ cum</p> <p>Wing wall 1st step 4 nos x 2.50 x 1.20 x 0.80 = 9.60 cum</p>				

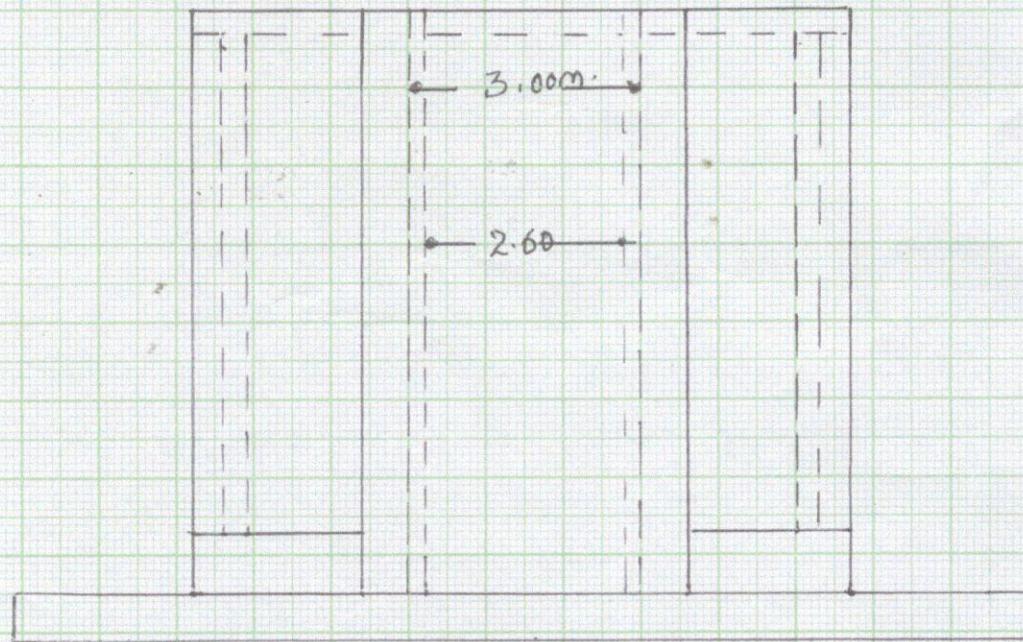
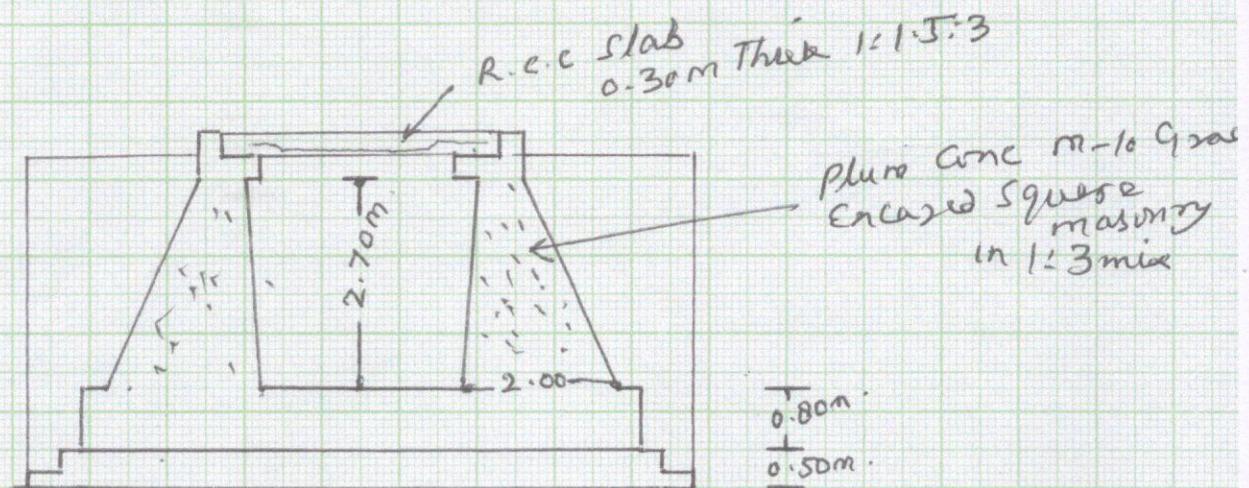
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	2 nd step 4 nos x (0.60+1.20)/2 x 2.50 x 2.90 = 26.10 cum Bottom inside = 3.00 x 7.00 x 0.10 = 2.10cum Parapet Over culvert 2 x 3.40 x 0.60 x 0.40 = 1.63 cum Over approaches & wing wall = 2 sides x 4 nos x1.50 x(0.45+0.60)/2x 0.60 = 3.78 cum T = 136.51 M³	cum	136.51	5877.45	802330.00
4	Providing and laying in position specified grade of reinforced cement concrete including curing but excluding the cost of centering, shuttering, finishing and reinforcement. All works upto plinth level in 1:1½:3 (1 cement : 1½ coarse sand : 3 graded stone aggregate 20 mm nominal size)				
	Slab = 1 x 7.00 x 3.60 x 0.30 = 7.56 cum				
	Total = 7.56cum				
5	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level Mild steel and medium tensile steel bars	kg	1134	78.55	89075.00
	Qty. vide item no. 4 = 7.56 @ 150 kgs / cum = 1134.00kgs				
	Total = 1134.00 kgs				
6	Random Rubble masonry with hard stone in foundation and plinth including leveling up with cement concrete 1:6:12 (1 Cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level and curing complete with: Cement mortar 1:6 (1 Cement : 6 coarse sand) Nallah	cum	64.00	4400.5	281632.00
	2 nos x 2.50 x (0.60 + 1.60)/2 x 3.00 = 16.50 cum				
	Approaches for wild animals				
	0.60+1.30/2x2.50x5Nos x4Nos = 47.50cum				
	Net Total = 64.00 cum				
7	Back filling with stones behind abutment, wing wall and return wall complete as per drawing and technical specification clause 1204.3.8	cum	6.00	527.00	3162.00
	2 x 2.50 x ½ x 1.20 x 2.00 = 6.00 cum				
	Total = 6.00 cum				
8	carriage of stone av. Distance 1 km by M.T		64.00	139.71	8941.00
9	Carriage of sand av. Distance 33.00 km by M.T		102.24	462.14	47249.00
10	Carriage of aggr. av. Distance of 35 km by MT		155.85	479.42	74717.00
11	Carriage of steel Distance of 44 km by M.T		1.134	495.31	561.00

**Details of Under passes proposed for safe passage of wild Animals in forest Land on Nowapachi
Dhera upto Hanzal Road**

12	Carriage of cement Distance of 44 km by M.T		57.87	495.31	28644.00
				Total =	1668593.00
				Grand Total =	16.68laes

[Signature]
Executive Engineer
PMGSY Division
Makwah



PLAN
3m span R.C.C. culvert.

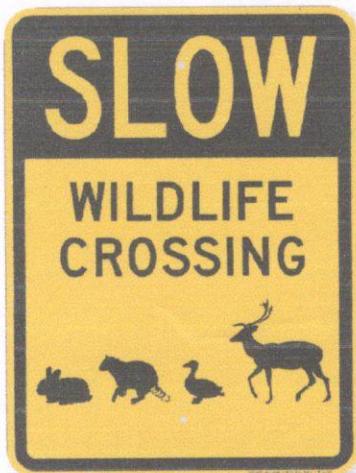
Chhatri
Wildlife Warden
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Kishtwar

Yashwant
Executive Engineer
PMGSY Division
Marwah

Details of Under passes proposed for safe passage of wild Animals in forest Land on Nowapachi
Dhera upto Hanzal Road

Provision of Safety Features

Cautionary / Warning Sign Boards such as Over Hanging Signage will be provided at start and at the end of each stretch of Wildlife area / Forest area

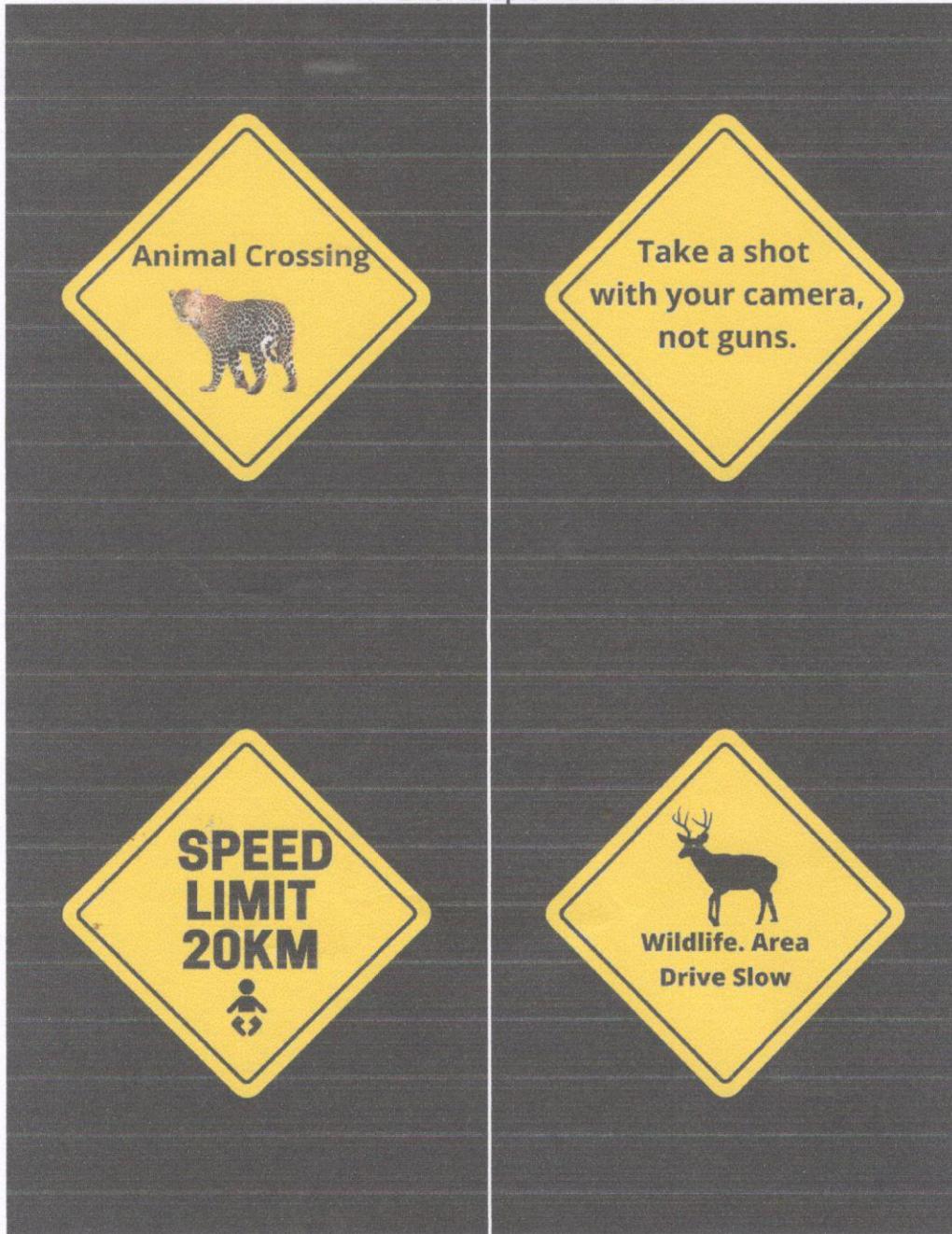


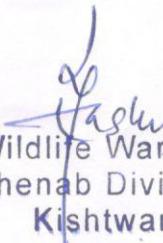
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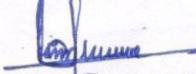
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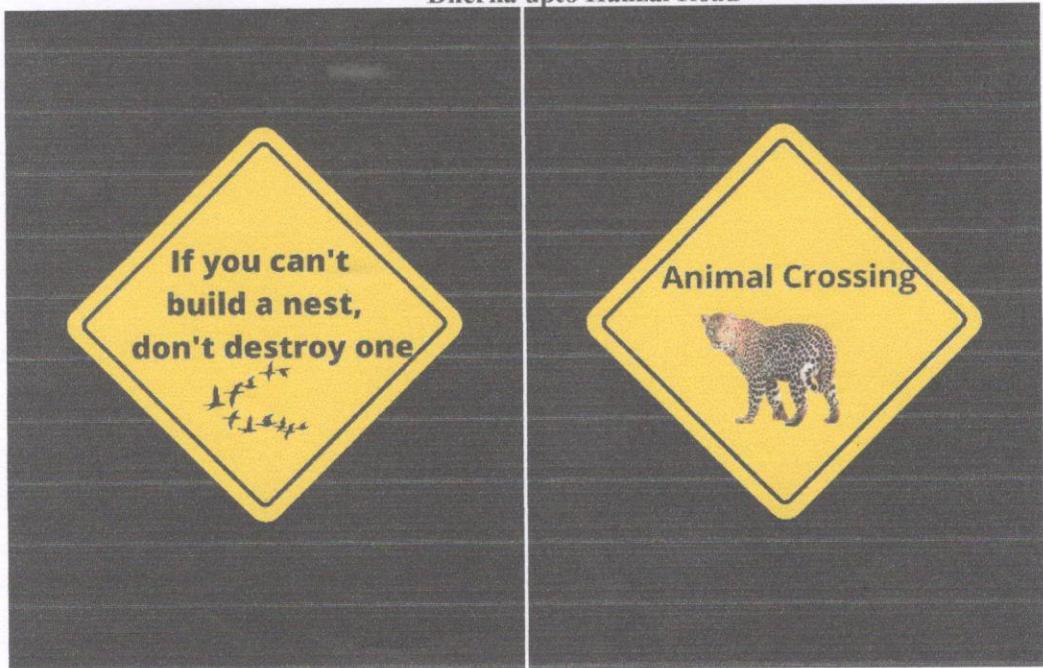
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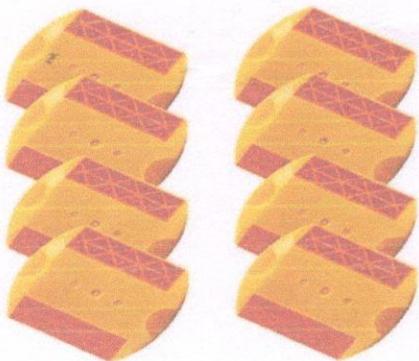

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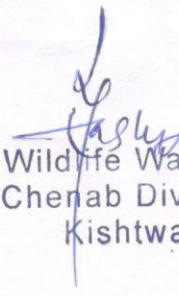

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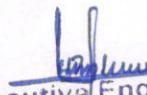
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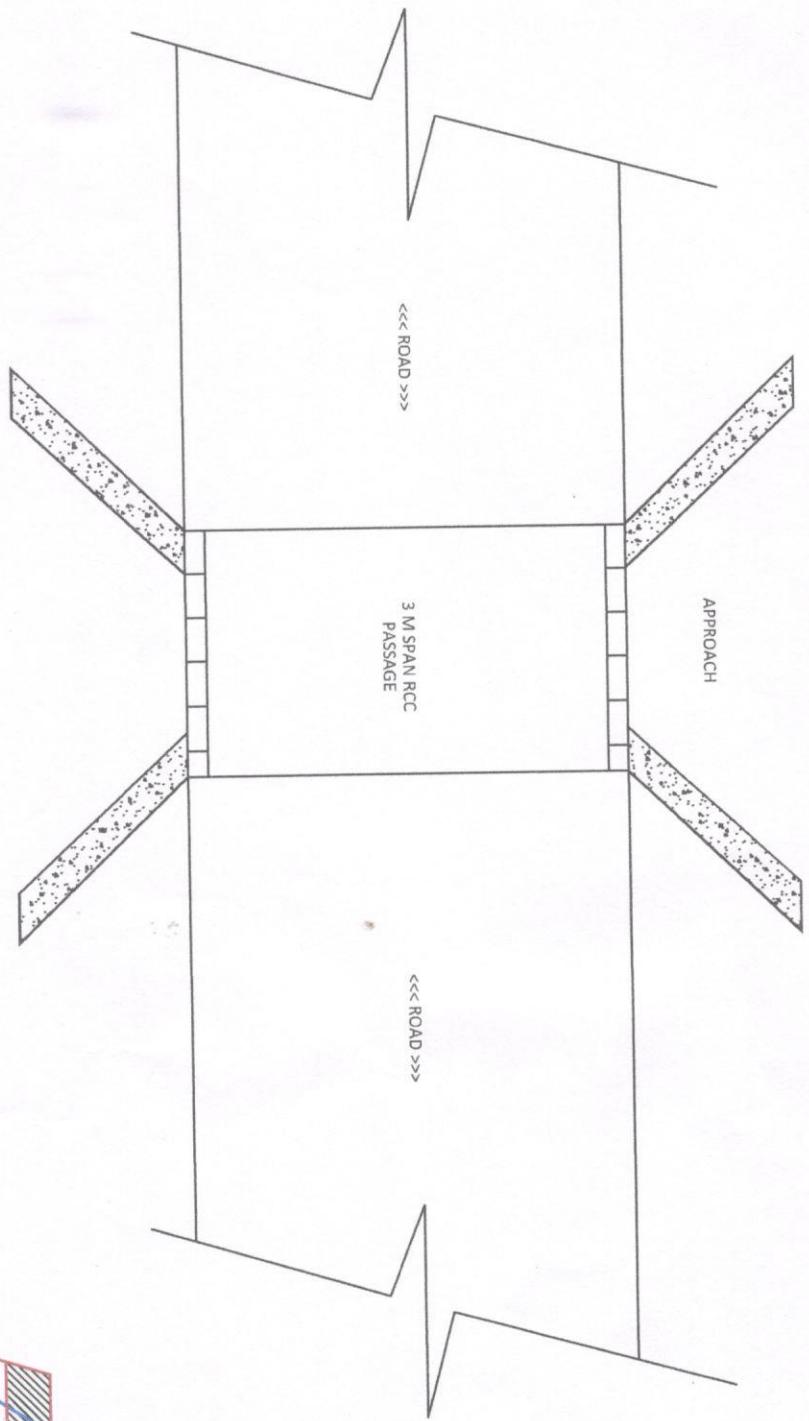
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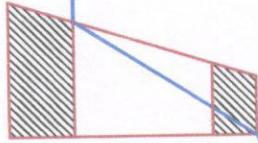

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**PLAN SHOWING THE DRAWINGS OF APPROACH PATH WALLING AND 3MTR SPAN RCC CULVERT FOR
SAFE PASSAGE OF WILD ANIMALS IN FOREST LAND ON NOWAPACHI DHERNA UPTO HANZAL ROAD**



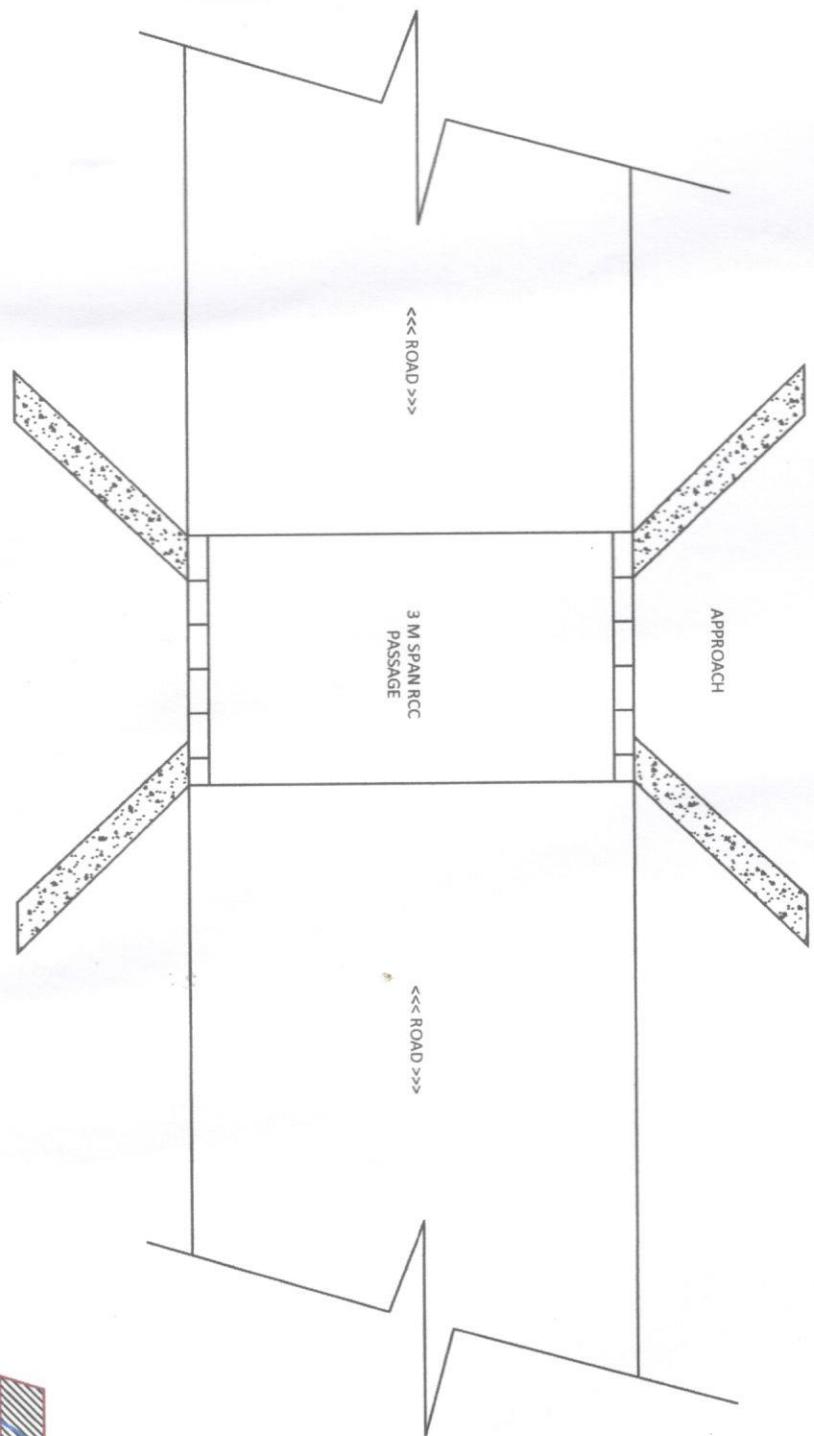
X-SECTION OF APPROACH WALL TO
CULVERT FOR PASSING WILD ANIMALS



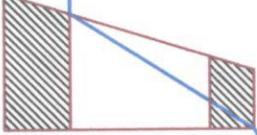
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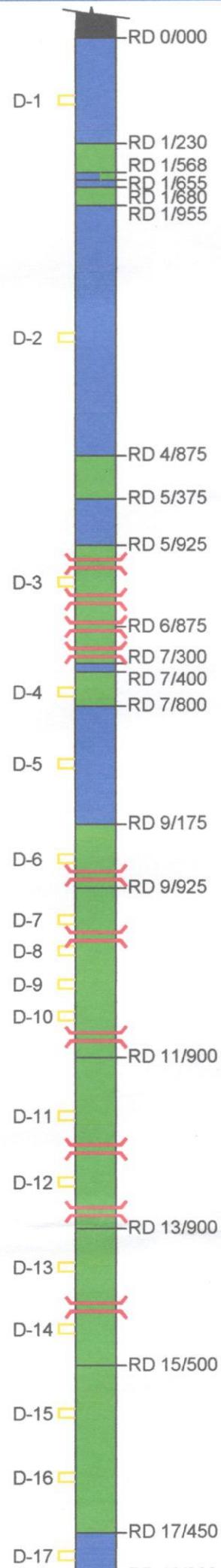
X-SECTION OF APPROACH WALL TO
CULVERT FOR PASSING WILD ANIMALS



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**LAYOUT PLAN FOR CONSTRUCTION OF ROAD FROM NOWPACHI TO DEHARNA UPTO HANZAL UNDER PACKAGE
NO. JK04-166, PHASE-X, STAGE-I, LENGTH=18.00KM PIU- MARWAH, DISTRICT KISHTWAR.**



FOREST AREA DETAILS

	LENGTH X WIDTH	AREA
RD 1/230	TO 1/568	2028 M ²
RD 1/568	TO 1/655	87 M ²
RD 1/680	TO 1/955	1650 M ²
RD 4/875	TO 5/375	3000 M ²
RD 5/925	TO 6/875	5700 M ²
RD 6/875	TO 7/300	2550 M ²
RD 7/400	TO 7/800	2400 M ²
RD 9/175	TO 9/925	4500 M ²
RD 9/925	TO 11/900	11850 M ²
RD 11/900	TO 13/900	12000 M ²
RD 13/900	TO 15/500	9600 M ²
RD 15/500	TO 17/450	11700 M ²
TOTAL		67065 M² - A

DUMPING AREA DETAILS IN FOREST LAND

$$\overline{13} = \frac{7718 \text{ M}^2 - \text{B}}{}$$

$$\text{TOTAL AREA} = \text{A} + \text{B} = \underline{67065 \text{ M}^2} + \underline{7718 \text{ M}^2} = \underline{74783 \text{ M}^2} \text{ OR } 7.4783 \text{ HECTARES}$$

LEGEND:-

1. FOREST LAND (6 M WIDE)
2. STATE / PRIVATE LAND
3. OTHER ROAD
4. DUMPING POINT
4. PASSAGE SITE

Chhajne
Wildlife Warden
Chenab Division
Kishtwar

Waqar
Executive Engineer
PMGSY Division
Marwah