

GOVERNMENT OF JAMMU AND KASHMIR



PMGSY DEPARTMENT (J&K)
JAMMU

DETAILED PROJECT REPORT FOR CONSTRUCTION OF
ROAD PROPOSED UNDER
BHARAT NIRMAN
IN BLOCK BILLAWAR
DISTRICT KATHUA

Name of the Scheme

TREMBLI TO DEOTA

Length = 23.334 Kms

PKG:- JK07-87

Cost :- Rs.1656.65 Lacs

1. Introduction

1.1 Objectives of Pradhan Mantri Gram Sadak Yojna (PMGSY)

Rural Road connectivity is a key component of rural development by promoting access to economic and social services and thereby generating increased agricultural incomes and productive employment opportunities. It is also a key ingredient in ensuring poverty reduction.

It was against this background of poor connectivity that the Prime Minister announced in 2000, a massive rural roads program. The Prime Minister's Rural Road Program (Pradhan Mantri Gram Sadak Yojana, PMGSY) set a target of:

- Achieving all-weather road access to every village/habitation with a population greater than 1000 by 2003
- Providing all-weather road access to all villages/habitations of population greater than 500 people [250 in case of hill States (North-Eastern states, Sikkim, Himachal Pradesh, Jammu & Kashmir and Uttaranchal), the desert areas and tribal areas] by the end of the Tenth Five Year Plan, i.e., 2007

1.2 All Weather Road

It is proposed to construct the road to fair weather status i.e, Stage-I in the initial Stage and then upgrade to an all weather road i.e which can be travelled in all seasons with at the most 15 days traffic disruption in one year, but not more than 24 hours at a stretch 6 times a year.

1.3 Core Network

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 Centers. 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 centers, 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-project road Sarthli upper to Tappar, is a link road with Code **Jk07- L022** in Billawar block of Kathua District. This road directly connects the habitations of Batnu, Beli, Cheral, Dhoata, Dror, Dugnoo, Garali, Gothri, Huttar, Jakhnu, Kota, Kund, Mandi, Mangreli, Narad, Panghah, Phalli, Sallen Sarangala, Seri, Thingn & Vakari with populations of 273, 176, 222, 479, 286, 326, 210, 412, 218, 275, 393, 269, 375, 225, 244, 180, 228, 296, 105, 231, 287 & 328 respectively. Thus this link road serves the total population of 6038.

1.4 Geography

Road is in hilly terrain

1.5 Climatic Condition

In summer day temperature rises to max. 44 and in winter night temperature fall to min of 0
0C

1.6 The Sub-Project Road

The road passes through Mountainous terrain

Road is in both cutting and filling and passes through Mountainous area.

District: Kathua

Block: Bani

Road Name: Trembli to Deota

Road Code: JK07-L022

Package No: JK07-87

Road Length: 23.334 Km

Start Point: Trembli ($32^{\circ}49.31''$ N $75^{\circ}24.53''$ E)

End Point: Deota ($32^{\circ}23'29.80''$ N $75^{\circ}43'10.81''$ E)

$32^{\circ}36'39.49''$ N , $75^{\circ}30'14.75''$ E
 $32^{\circ}37'34.58''$ N $75^{\circ}43'9.13''$ E

S.No.	Habitation benefited	Population benefited		Chaniage	
		Direct	Indirect	From	To
1	✓ Batnu	273			
2	Beli		176		
3	Cheral	222			
4	Dhoata	479			
5	Dror	286			
6	Dugnoo	326			
7	Garali		210		
8	Gothri	412			
9	Huttar		218		
10	Jaknu	275			
11	Kota		393		
12	Kund		269		
13	Mandi	375			
14	Mangreli		225		
15	Narad		244		
16	Panghah		180		
17	Phalli		228		
18	Sallen	296			
19	Sarangala		105		
20	Seri		231		
21	Thingn				
21	Vakari	328			

2. Planning and Basic Design Consideration

2.1 Key maps



Figure-1 Section of Block Maps showing all existing connectivity like District/block HQ, new townships, National and State highway network, mandis, hospitals, colleges, schools etc.

10. Design of Cross Drainage Works

10.1 General

On the basis of hydrological survey, 98 new cross drainage structures are recommended for the project road as listed below.

SI No	Design CH.	Type of culvert	Remarks
1	30	HPC 1X1000 MM ✓	NEW PROPOSAL
2	220	HPC 1X1000 MM ✓	NEW PROPOSAL
3	400	1X2.0 M SLAB HPC ✓	NEW PROPOSAL
4	700	1X2.0 M SLAB ✓	NEW PROPOSAL
5	1020	HPC 1X1000 MM ✓	NEW PROPOSAL
6	1300	1X2.0 M SLAB ✓	NEW PROPOSAL
7	1530	HPC 1X1000 MM ✓	NEW PROPOSAL
8	1740	HPC 1X1000 MM ✓	NEW PROPOSAL
9	1950	1X6.0 M Slab ✓	NEW PROPOSAL
10	2200	1X6.0 M Slab ✓	NEW PROPOSAL
11	2390	1X3.0 M SLAB ✓	NEW PROPOSAL
12	2650	HPC 1X1000 MM ✓	NEW PROPOSAL
13	2850	HPC 1X1000 MM ✓	NEW PROPOSAL
14	3070	HPC 1X1000 MM ✓	NEW PROPOSAL
15	3280	1X1.0 M Scupper ✓	NEW PROPOSAL
16	3530	1X3.0 M SLAB ✓	NEW PROPOSAL
17	3730	HPC 1X1000 MM ✓	NEW PROPOSAL
18	3940	HPC 1X1000 MM ✓	NEW PROPOSAL
19	4200	HPC 1X1000 MM ✓	NEW PROPOSAL
20	4380	1X6.0 M Slab ✓	NEW PROPOSAL
21	4730	1X1.0 M Scupper ✓	NEW PROPOSAL
22	5200	HPC 1X1000 MM ✓	NEW PROPOSAL
23	5520	HPC 1X1000 MM ✓	NEW PROPOSAL
24	5750	HPC 1X1000 MM ✓	NEW PROPOSAL
25	6000	HPC 1X1000 MM ✓	NEW PROPOSAL
26	6260	HPC 1X1000 MM ✓	NEW PROPOSAL
27	6590	1X3.0 M SLAB ✓	NEW PROPOSAL
28	6750	1X1.0 M Scupper ✓	NEW PROPOSAL
29	7000	1X3.0 M SLAB ✓	NEW PROPOSAL
30	7250	HPC 1X1000 MM ✓	NEW PROPOSAL
31	7570	HPC 1X1000 MM ✓	NEW PROPOSAL
32	7950	HPC 1X1000 MM ✓	NEW PROPOSAL
33	8080	1X1.0 M Scupper ✓	NEW PROPOSAL
34	8420	1X1.0 M Scupper ✓	NEW PROPOSAL
35	8700	HPC 1X1000 MM ✓	NEW PROPOSAL
36	9000	1X1.0 M Scupper ✓	NEW PROPOSAL
37	9430	HPC 1X1000 MM ✓	NEW PROPOSAL
38	9600	HPC 1X1000 MM ✓	NEW PROPOSAL
39	9900	HPC 1X1000 MM ✓	NEW PROPOSAL
40	10150	HPC 1X1000 MM ✓	NEW PROPOSAL

41	10450	1X 1.0 M Scupper	NEW PROPOSAL
42	10700	HPC 1X1000 MM	NEW PROPOSAL
43	10940	HPC 1X1000 MM	NEW PROPOSAL
44	11150	HPC 1X1000 MM	NEW PROPOSAL
45	11360	HPC 1X1000 MM	NEW PROPOSAL
46	11570	HPC 1X1000 MM	NEW PROPOSAL
47	11720	HPC 1X1000 MM	NEW PROPOSAL
48	11900	HPC 1X1000 MM	NEW PROPOSAL
49	12150	HPC 1X1000 MM	NEW PROPOSAL
50	12370	HPC 1X1000 MM	NEW PROPOSAL
51	12620	HPC 1X1000 MM	NEW PROPOSAL
52	12810	HPC 1X1000 MM	NEW PROPOSAL
53	13050	HPC 1X1000 MM	NEW PROPOSAL
54	13220	HPC 1X1000 MM	NEW PROPOSAL
55	13560	HPC 1X1000 MM	NEW PROPOSAL
56	13750	1X 1.0 M Scupper	NEW PROPOSAL
57	13960	1X2.0 M SLAB	NEW PROPOSAL
58	14240	HPC 1X1000 MM	NEW PROPOSAL
59	14380	HPC 1X1000 MM	NEW PROPOSAL
60	14650	1X 1.0 M Scupper	NEW PROPOSAL
61	14870	1X3.0 M SLAB	NEW PROPOSAL
62	15100	HPC 1X1000 MM	NEW PROPOSAL
63	15230	1X 1.0 M Scupper	NEW PROPOSAL
64	15430	HPC 1X1000 MM	NEW PROPOSAL
65	15660	HPC 1X1000 MM	NEW PROPOSAL
66	15800	HPC 1X1000 MM	NEW PROPOSAL
67	15950	HPC 1X1000 MM	NEW PROPOSAL
68	16120	HPC 1X1000 MM	NEW PROPOSAL
69	16300	1X3.0 M SLAB	NEW PROPOSAL
70	16460	1X2.0 M Slab	NEW PROPOSAL
71	16790	1X3.0 M Slab	NEW PROPOSAL
72	16880	1X 1.0 M Scupper	NEW PROPOSAL
73	17100	HPC 1X1000 MM	NEW PROPOSAL
74	17380	1X 1.0 M Scupper	NEW PROPOSAL
75	17630	1X6.0 M Slab	NEW PROPOSAL
76	17720	HPC 1X1000 MM	NEW PROPOSAL
77	18050	1X 1.0 M Scupper	NEW PROPOSAL
78	18260	HPC 1X1000 MM	NEW PROPOSAL
79	18400	HPC 1X1000 MM	NEW PROPOSAL
80	18660	1X 1.0 M Scupper	NEW PROPOSAL
81	18930	HPC 1X1000 MM	NEW PROPOSAL
82	19300	HPC 1X1000 MM	NEW PROPOSAL
83	19570	1X 1.0 M Scupper	NEW PROPOSAL
84	19760	HPC 1X1000 MM	NEW PROPOSAL
85	19950	HPC 1X1000 MM	NEW PROPOSAL
86	20100	1X 1.0 M Scupper	NEW PROPOSAL
87	20300	HPC 1X1000 MM	NEW PROPOSAL

88	20540	HPC 1X1000 MM	NEW PROPOSAL
89	20780	1X 10 M Scupper	NEW PROPOSAL
90	21040	HPC 1X1000 MM	NEW PROPOSAL
91	21220	HPC 1X1000 MM	NEW PROPOSAL
92	21410	HPC 1X1000 MM	NEW PROPOSAL
93	21825	HPC 1X1000 MM	NEW PROPOSAL
94	22125	1X2.0 M SLAB	NEW PROPOSAL
95	22625	1X2.0 M SLAB	NEW PROPOSAL
96	22850	HPC 1X1000 MM	NEW PROPOSAL
97	23125	1X2.0 M SLAB	NEW PROPOSAL
98	23325	HPC 1X1000 MM	NEW PROPOSAL

10.2 Hydrological Design

The existing structures in poor condition that are proposed for replacement as listed below. Agricultural conduits, which basically act as balancers, have also been provided as listed below.

10.3 Design Feature

Design Standards for culverts has been prepared based on standard codes and guidelines of IRC: SP: 20: 2002 and similar type of ongoing projects. General features of the designed cross drainage structures are given below:

For hume pipe culvert, minimum road width has been taken as {6.00} m,

Width of culvert : 6.00 m with parapet.

10.4 Justification for retaining/widening and replacement of culverts

10.5 Hydraulic calculation for Culvert

The design discharge was calculated by the rational method considering peak runoff from catchment using the formula,

$$Q = 0.028 \times P \times A \times I_c$$

Where P = Coefficient of Run Off for the catchments characteristics, A = Catchments Area in Hectares & I_c = Rainfall Intensity

Causeways and submersible bridges – Design to be done as per SP-20 and SP-82:2005.

SI No	Design CH.	Type of culvert	Remarks
1	30	HPC 1X1000 MM	NEW PROPOSAL
2	220	HPC 1X1000 MM	NEW PROPOSAL
3	400	1X2.0 M SLAB HPC	NEW PROPOSAL
4	700	1X2.0 M SLAB	NEW PROPOSAL
5	1020	HPC 1X1000 MM	NEW PROPOSAL
6	1300	1X2.0 M SLAB	NEW PROPOSAL
7	1530	HPC 1X1000 MM	NEW PROPOSAL
8	1740	HPC 1X1000 MM	NEW PROPOSAL
9	1950	1X6.0 M Slab	NEW PROPOSAL
10	2200	1X6.0 M Slab	NEW PROPOSAL
11	2390	1X3.0 M SLAB	NEW PROPOSAL

Stone pillar
CBR 40 or
waste by pa

7298625134
Sh. Suman Singh

Station

9797659025
Sh. Suresh J. S.
Billwar

18.3 Abstract of Cost

Unit rates will be derived by using the "Schedule of Rates for Road Works, Culvert works and Carriage etc. {JKRRDA}". The abstract of Cost estimate is given in the Table below.

S.No	S.No as per MORD SDB for Rural Roads	Description	Unit	Qty	Rate (Rs)	Amount (Rs)
	A. Construction Activities					
1		E/W in Cutting Ordinary Soil	CUM	183174.26	115	210.65
2		Soft Rock	CUM	61058.088	201	122.72
3		Hard Rock	CUM	61058.088	343	209.42
4		Earthwork in Filling	CUM	110.237	58	0.63
5		4.00 mtr R/Wall	RMT	3150	14644	461.29
6		2.00 mtr B/Wall	RMT	2450	6853	167.80
7		1000 mm Ø HP Culvert	Nos	63	2.11	132.93
8		2 mtr Span RCC Culvert	Nos	7	6.86	48.02
9		3 mtr Span RCC Culvert	Nos	7	9.26	64.82
10		6 mtr Span RCC Culvert	Nos	4	21.76	87.04
11		10 mtr long Scupper	Nos	17	8.52	144.84
12		Add cost of Logo Sign Boards				1.77
		Add Cost for Preparation of DPR, Survey & Setting out				4.73
				Total		1656.65 Lacs

- Sol -
Asstt. Executive Engineer
PMGSY Sub-Division
Billwar

Executive Engineer
PMGSY Division
Billwar

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calculations, high flood level estimates and justification for selection.

Retaining walls, breast walls, check walls, stone pitching, turfing and planting.

11 Protective Works:

Adopted Geometric Design Standards

General

The geometric design standards for this project conform to PMGSY guidelines and the guidelines as stated in IRC-SP 20:2002. Recommended design standards vis-à-vis the standards followed for this road are described below.

Terrain

The classification of terrain was selected from plain/rolling/hilly/steep classification for which following criteria will be applicable.

Terrain classification	Cross slope of the country	
	25-60%	1 in 4 to 1 in 1.67
Mountainous		

Design Speed

The proposed design speed along this project road will be as per the following table:

Road classification	Mountainous terrain	
	Ruling	Min.
Rural Roads (ODR and VR)	25	20

Right of Way (ROW)

The requirement of ROW for this road is as follows (as specified in IRC-SP 20:2002):

Road classification	Mountainous and Steep Terrain			
	Open Area		Built-up Area	
	Normal	Range	Normal	Range
Rural roads (ODR and VR)	12	12	12	9

Roadway Width

Roadway width for this road is given below:

Terrain Classification	Roadway Width (m)
Mountainous	6.0

Carriageway Width

The width of carriageway for this project road is 3.00m.

Shoulders

It is proposed to have 1.2 m wide shoulder as the case may be on both sides.

Roadway width at cross-drainage structures

The roadway width at culvert locations for this road is 6.0 m being a mountainous terrain

Sight Distance