

PRADHAN MANTRI GRAM SADAK YOGNA



GOVERNMENT OF JAMMU AND KASHMIR

PMGSY DEPARTMENT JAMMU

DETAILED PROJECT REPORT

UPGRADATION OF ROAD FROM KOTLI TO SHIKARI

PACKAGE NO.	: JK 14-739
STATE	: JAMMU AND KASHMIR
PROVINCE	: JAMMU
DISTRICT	: UDHAMPUR
BLOCK	: MAHORE
LENGTH	: 7.000
ESTIMATED COST	: 1142.80 LAES 910.6861
5 YEARS MAINTENANCE COST	: 137.14 LACS 181.6061
TOTAL COST OF PROJECT	: 1279.94 LACS 1092.5661

Chief Engineer

PMGSY(JKRRDA)

JAMMU

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:

- 1) Achieving all-weather road access to every village/habitation with a population greater than 1000 by 2003.
- 2) 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

{Insert description of all-weather roads, duration of interruption on ODRs and VRs.}

1.3 Core Network

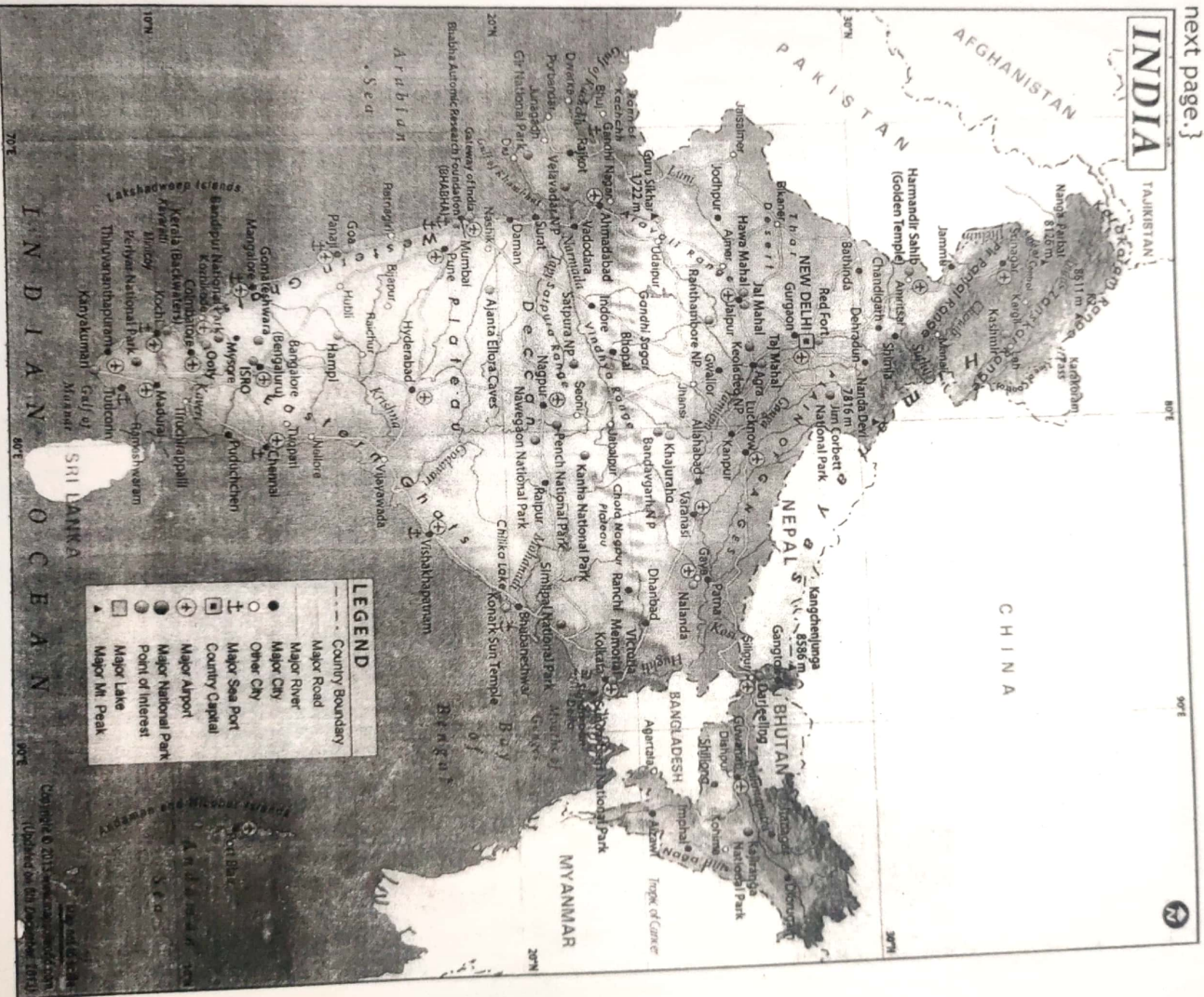
The rural road network required for providing the 'basic access' to all villages/ habitations is termed as the Core Network. Basic access is defined as one all-weather road access from each village/ habitation to the nearby Market Centre or Rural Business Hub (RBH) and essential social and economic services. 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 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-project road Kotli to Shikari, is a link road with Code L061 in Mahore block of Udhampur (Reasi) District. This road directly connects the habitation of Shikari with populations of 1775. Thus this link road serves the total population of 1775.

2. PLANNING AND BASIC DESIGN CONSIDERATION

2.1

Key maps:

{Insert relevant portion of the Block Map showing project road and all existing connectivity like District/block HQ, new townships, National and State highway network, hospitals, colleges, schools etc. at 1:50,000 scale. Example is given in the next page.}



Comprehensive Upgradation cum Consolidation Priority List (CUCPL)																									
State : Jammu and Kashmir (15)					Name of District and Code : Udhampur (562)					Name of Block and Code : Mahore (3538)															
Sl. No	Name of the Block	Name of the MP Constituency	Name of the MLA Constituency	Name of through route / MRL	T route no / MRL No	Road code in DRIP	Length (in Km)	Year of construction	Year of last periodic renewal	Present surface Details				Average PCI and year of PCI		Directly benefited Habitations			Road Score	Utility Value	Indirectly benefited Habitations		Average per km maintenance expenditure to last 3 years	Total Population	
										Start Km	End Km	Surface Type	PCI	Name of the Habitation	Population	Growth Score	Name of the Habitation	Population							
2	MAHORE	Udhampur	Basel	SINGRI TO BAJUDAS (4-0 to 4)	L067	JN1406L067	4.000	2008-2009		0	4.00	B.T EARTHEN	3	2	25-12-2018	SUKSAR SINGRI	338 698	7 15	22	5.50					2255
3	MAHORE	Udhampur	Basel	GANIOTE TO BALLAR VIA THIRAL (SHAKKARI)	L043	JN1406L043	5.000	2010-2011		0	5.00	EARTHEN	2	2	08-01-2019	GANIOTE THIRAL	590 621	10 12	22	4.40					2486
1	MAHORE	Udhampur	Basel	SINGRI TO CHANKA	L070	JN1406L070	7.000	2007-2008		0	5.00	EARTHEN	2	2	20-12-2018	Chana Kotli	302 852	13 16	29	4.14					1832
4	MAHORE	Udhampur	Basel	SETHI TO SHAKKARI	L061	JN1406L061	6.000	2012-2013		0	6.00	EARTHEN	2	2	27-11-2018	Solan	1775	20	20	3.33					
5	MAHORE	Udhampur	Basel	DIHANNI TO DEVALI (UP TO BADEE GALL)	L066	JN1406L066	11.000	2009-2010		0	5.00	B.T EARTHEN	3 2	2	27-12-2018	DHAMNI Kachh Daddar	453 358 774	10 7 19	36	3.27					4313
6	MAHORE	Udhampur	Basel	BAGGA TO ANGRALLA	L064	JN1406L064	10.000	2008-2009		0	10.00	B.T	2	2	06-01-2019	Bhall Angalla	250 133	5 14	19	1.90					375

Note: Only the Candidate roads whose PCI value is 1 or 2 (or) portion of the Candidate roads whose PCI value is 1 or 2 should be listed in this format.

Signature
Signature
Signature
 Executive Engineer
 PMGSY Division
 Mahore

2.4 Road Design Brief

Table 2.1 Road Design Brief

Sl.	Location	Issue	Design Solutions
1	0.00	The proposed road is connecting Kotli to Shikari. The road starts from Kotli.	All the Hindrances are being cleared
2	Ch. 0.000 to 7.000	Side Slopes are not adequate at places and gets eroded with rain and endanger the traffic movement and block the traffic	Proper protection works like 4mtr, 3mtr & 6mtr height Retaining wall/Edge wall to be provided
3	Ch. 0.000 to 7.000	Side Slopes are not stable at different stretches of road which endanger to the existing structures and public property	Breast wall & crated wall to be provided for safety of road
4	Ch. 0.000 to 7.000	Water collects on road which damages the road by crossing over road formation resulting in the halting of traffic during rains.	18 Nos Hume pipe culverts of 1000 mm dia, 1 no of 3m span RCC culvert and 3 no and 13no 6m long scupper are proposed for the safety of road

3.2 Traversing

Traverse has been done by prismatic compass.
{Fore bearing is taken by prismatic compass.}

3.3 Levelling

Levelling is done by using dumpy level/auto level (Height of Instrument method), accuracy adopted, nearest assumed bench mark, etc.

3.4 Cross Section & Detailing

Cross sections were taken at 25 m interval and at closer interval in curved portion of the existing road. All physical features of the road were recorded.

{Generally, cross section will be taken at every 25m interval. In case of any major variation in the long section cross sections have to be taken irrespective of the 25m interval. The cross section details are to be taken for a further distance of half the formation width beyond the shoulders on either side of the road.}

3.5 Data Processing

All data from topographic survey recorded by survey instruments were plotted and final alignment, plan, profile were prepared.

3.6 Reference Pillars & TBMs

{Insert List of permanent reference pillars and TBMs including northing easting and levels}

Details of Temporary Bench Mark (TBM)

Name of Road: Shikari to Kotli

S.No	R.D	R.L	TBM
1	600	120.15	On Stone
2	1875	157.4	On Stone
3	2700	254.34	On Stone
4	3325	273.9	On Stone
5	5125	160.97	On Stone
6	5.500	140.89	On Stone
7	6125	148.4	On Stone
8	7000	195.89	On Stone

soaked CBR test were conducted either for a minimum of one test per km for soil samples of same group or more tests due to variation of soil type. The following tests were conducted as detailed below:

Grain size analysis as per IS : 272 (Part 4) - 1985

Atterberg's limit as per IS : 2720 (Part 5) - 1985

Standard Proctor density test as per IS : 2720 (Part 7) - 1980

4 day soaked CBR test as per IS : 2720 (Part 16) - 1985

{The IRC Rural Roads Manual SP: 20 contain instructions on Soil Survey and materials for the road projects. Supplementary guidance on these subjects is given in Annexure 5.1. The identification of the soil type in the field and the quick determination of its properties, including CBR are the basic requirement for an economical pavement design. The grain-size (wet sieve) analysis leading to the soil classification is a simple test and must be carried out to have an idea of the CBR value with a reasonable level of accuracy; the nomograph given in Annexure 5.2 can be used. This would minimise the need for CBR determination in lab. The determination of CBR by a rigorous CBR apparatus on a large number of samples may not be possible unless properly planned, and hence the nomograph given in Annexure 5.2 may be used.}

4.3 Analysis of Test Results

The laboratory soaked CBR value ranges from 4.5% to 4.8%. The soil laboratory test results will be summarized in Table 4.1.

Table 4.1 CBR values for different stretches

S. No.	Section	CBR (%)
1	1 st Km	4.6
2	3 rd KM	5.0
3	5 rd KM	5.2
4	6 th KM	4.9
5	7 th KM	5.1

Traffic Survey:- General

In the present scenario of new connectivity/upgradation road, 3 day, 24 hr traffic volume count has been conducted on the already completed. The Classified Volume Count survey has been carried out in accordance with the requirements of the TOR and relevant codes (IRC: SP: 19-2001, IRC: SP: 20, IRC: SP: 72-2007). The surveys have been carried out by trained enumerators manually under the monitoring of Engineering Supervisor.

Traffic Data and Analysis

The traffic count done was classified into different vehicle category as given below:

- Motorized vehicle comprising of light commercial vehicle, medium commercial vehicle, heavy commercial vehicle, trucks, buses, agricultural tractors with trailers, car, jeep, two wheelers etc.
- Non- motorized vehicles comprising of cycle, rickshaw, cycle van, animal drawn vehicle etc.

The number of laden and un-laden commercial vehicles was recorded during the traffic counts. Traffic volume count for this project road was done during summer season.

Average of 3 day traffic data is presented in Table 5.1.

Table 5.1 Average Daily Traffic at TOP (both ways) has been surveyed.

Sl. No.	Type of Vehicle	Day-1	Day-2	Day-3	Average
1	Car, Jeep, Van	23	17	20	20
2	Auto Rickshaw	-	-	-	
3	Scooters/Motorbikes	45	52	53	50
4	Minibus	8	9	10	9
5	Trucks/Bus	3	5	4	4
6	Tractors with trailer	8	4	6	6
7	Tractor without trailer	3	2	4	3
8	Cycles	1	2	3	2
9	Cycle Rickshaw / Hand Cart	-	-	-	
10	Horse cart / Bullock Cart	-	-	-	
11	Pedestrian	56	62	59	59
Total commercial vehicle per day (cvpd)					19
Total motorised vehicle per day					92
Total non-motorised vehicle per day					2

- Traffic volume and mix do not vary along the road
- Traffic volume and mix vary along the road
- Traffic volume and mix will vary along the road in the future
- There is a potential for through traffic using the road
- % of loaded vehicles

ESAL Calculation Sheet

Name of Road: Construction of Road from "(Kotli to Shikari)"
Package Number JK14-

Traffic Non Peak Season :

HCV		MCV		Commercial Vehicles	Two wheelers	Bi-cycles	Cars/Van/Jeep
L	UL	L	UL				
8	2	8	4	19	20	0	20

Total vehicles= 92

$$AADT = 92 + 1.2 \times 92 \times 75 / 365 = 115$$

Add 6% growth(For Construction period of 01 1.06 X 115 = 121.57

New AADT= 121.57

Proportioning factor= New AADT/AADT= 121.6 / 115 = 1.06

New No. of vehicles;

HCV/MCV	HCV				MCV			
	L		UL		L		UL	
I/ul								
Traffic x P.F	8	X 1.06	2	X 1.1	8	X 1.1	4	X 1.06
	8.48		2.12		8.48		4.24	
VDF	2.86		0.31		0.34		0.02	
ESAL/Day	24.25		0.66		2.88		0.08	
27.88								

Commulative ESAL= 4811 X 27.9 = 134121

Hence Traffic Category T4

District: Udhampur

S.No.	Name of Block	Name of road		Type of Proposal	Proposed Length	Cost of pavement (Rs. in Lacs)	No. of CD works	Cost of CD works (Rs. in Lacs)	Total estimated cost	Average cost/Km
		From	To		Km		Nos.		(Rs. in Lacs)	(Rs. in Lacs)
1	Mahore	kotli	Shikari	U	7	208.59	28	280.27	695.56	97.936
								Protection work R/wall + B/wall + Edge wall + Drain	367.45	52.450
								Road Logo, other road Furniture	2.23	0.319
								Provision for preparation of DPR etc	0.56	0.080
								Total	4855.49	68
								Routine Maintenance	497.44	19.591
								Total	1192.63	170.976

Suraj K. S.

G.T.L. 1092.56 lac

Designation: USTA

MANZOOK HUSSAIN
Superintending Engineer

Superintending Engineer
PMGSY Circle Udhampur/Reasi
Reasi

W. & Co. Ord STA (PMGSY)
Govt. College of Engg. & Tech.,
Gurgaon.

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY)

PROFORMA - C

CHECK LIST FOR P.I.U & S.T.A

For Individual Road Works

To be filled by PIU

1	Location: State: Jammu & Kashmir	District: Udhampur (Reasi)	Block: Mahore																
2	Package No:- JK14-																		
3	Name of Project: Kotli to Shikari - Upgradation																		
4	Length of Road:- 7.00Km	In Built Area Km	In Open Area Km																
5	<table border="1"> <thead> <tr> <th>ITEM</th> <th>Cost per KM in Lacs</th> </tr> </thead> <tbody> <tr> <td>Earth Work in Cutting</td> <td>454.88</td> </tr> <tr> <td>Flexible Pavement</td> <td>338.68</td> </tr> <tr> <td>Protection Works</td> <td>114.83</td> </tr> <tr> <td>Cross Drainage Works</td> <td></td> </tr> <tr> <td>Drain</td> <td></td> </tr> <tr> <td>Others</td> <td>2.79</td> </tr> <tr> <td>Total</td> <td>910.68</td> </tr> </tbody> </table>			ITEM	Cost per KM in Lacs	Earth Work in Cutting	454.88	Flexible Pavement	338.68	Protection Works	114.83	Cross Drainage Works		Drain		Others	2.79	Total	910.68
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6	<p>Construction Cost = Rs 1142.80 Lacs</p> <p>Five Years Maintenance Cost = Rs 137.14 Lacs</p> <p>Total Project Cost = Rs 1279.94 Lacs</p> <p>Cost Per Km = Rs 182.99 Lacs/KM</p> <p>6th yr Renewal cost 72.60</p> <p>1092.56</p>																		
6	Types of Connectivity New Connectivity (Stage II)																		
	If the proposed road is a new connectivity	No																	
	Is the road a part of core network	Yes																	
	If Yes through/link route number	L061																	
	Name of the unconnected target habitation (to be cross checked with CN-6)	Shikari																	
	List of habitation connected enroute	1775																	
	Population sub served by the proposed road	yes/no																	
	Does the proposed road lead upto the habitation for which it is supposed to provide connectivity (in other words are you sure that the road is not being made partially?)	Yes/No																	
	Does the proposed road connect the unconnected Habitation to	Yes																	
	a. Another habitation having all weather road (connected status)	Yes/No																	
	b. Directly to an all weather road	Yes																	
	If (b), indicate the nature of road to which the proposed road leads	Yes/No																	
	If the proposal is for up gradation	yes/no																	
	Is the road a part of the core network	yes/no																	
	Is it associated through route or not	No																	
	PCI value	No																	
	Age of road	Yes																	
	Is it certified that there are no other unconnected habitations in the district	Yes																	
7	a) Whether the proposed road has the desired carriage way width, roadway width and road land width (RLW)																		
	Indicate the actual widths adopted for the proposed road	In the Built Area	In the open area																
	i) Carriage way	3.75	3.75																
	ii) Roadway	6.00	6.00																
	iii) Road lane width	Varies	12.0 m																
8	Base year traffic volume								Total										
	Bus/Truck	LCV/MINIBUS	Cars/Vans/Jeeps	Three Wheelers	Two wheelers	Cycle Rikshaw	cycles	Bullock cart	Motorized	non-motorized									
	4	9	20	0	50	0	3	0	92	3									
9	Growth rate adopted(%) 6% Project Traffic: CVPD 19																		
	Sub Grade CBR	Chainage	Design CBR	2.200km	4.25km	7.000km													
		4.60%		5.00%	5.20%	5.10%													

ESAL = 134121

COST DETAILS						
A. Pavement Component						
	P	Thickness in (mm)	Quantity	Cost In Lacs	Total Rs in lacs	Cost/Km
1	Earth Work in Cutting	Excavation in All Kinds Of Soil	Cum	26009.26	29.91	
		Excavation in Ordinary Rock	Cum	10854	17.43	
		Excavation in Hard Rock	Cum	10854	29.74	
		Extra for Carriages of excavated material	Cum	45000.00	2.74	
2	Filling in Embankment	Filling in Embankment	Cum	4715.75	7.50	76.73
		Retaining wall (4m height)	RM	400	105.57	
		Retaining wall (3m height)	RM	1100	128.81	
		Breast wall (2.50m height)	RM	400	63.09	
2	Protection Work	Crated wall	RM	700	7.43	309.63
		Parapet	Each	600	7.43	
		Pucca Drain	RM	1200	10.68	
		Pucca Drain with Slab	RM	300	21.13	
3	Drain	Mume Pipe Culvert 1000 mm dia	No	5	10.08	
		3m span Culvert	No	1	10.27	
		6 m long Scupper	No	17	83.77	
		2m span culvert	No	1	7.17	
3	CD Works	6m Span Culvert	No	1	22.18	114.33
		Laying of slab of Existing Scupper	No	3	3.04	
		Compaction of Original Ground Supporting Sub-Grade	Cum	8773.326	3.07	
		Providing and Laying GSB 300mm thick.	Cum	8773.33	112.85	
5	Others	Providing and Laying WMM 75mm thick.	Cum	2087.64	49.33	
		Providing and Laying BM.	Cum	1391.7348	127.41	
		Providing and applying Primer Coat.	Sqm	27835.38	14.49	
		Providing and applying Tack Coat.	Cum	27835.38	5.11	
		Providing and applying Tack Coat(Over BM)	Sqm	27835.38	4.25	
		Providing and Laying OGPC.	Sqm	27835.38	50.58	
		Providing and Laying Seal Coat.	Sqm	27835.38	17.77	
		Making of Earthen Shoulders.	Cum	4902.09	13.73	
		Road logo and other road furniture	-	-	2.23	
		Provision for Preparation of DPR,CBR Tests , Painting of Boards ,Lines, Dashes, Arrows etc. as per Technical Specification Clause 1702.	-	-	0.56	
Total For Construction Part:-				1442.06	1442.06	
7	Maintenance Cost	Maintenance Cost	Age of	Cost In Lacs		Cost/Km
		Maintenance Cost 1st year	10.92	1.20%	12.71	
		Maintenance Cost 2nd Year	16.35	4.80%	20.57	
		Maintenance Cost 3rd Year	21.85	2.40%	27.43	
		Maintenance Cost 4th Year	27.32	3.00%	34.28	
		Maintenance Cost 5th Year	32.38	3.60%	41.14	
Total for Maintenance Part:-				137.14		
Grand Total Construction + Maintenance Part:-				1579.20	1579.20	
In case of hill roads, the formation and cutting may be filled against Earth work and sub grade preparation.						
11	Whether the road has geometrics as per rural roads manual (RRM)				Yes/No	72.68 lacs
12	Whether CD works / Protection works are provided as per RRM				Yes/No	97 = 1092.56 lacs
13	Whether the cost estimates are per standard data analysis and SSR				Yes/No	
14						
Grand Total (Rs in Lacs)					1279.94	

Certified that information provided is true

Assistant Executive Engineer

Executive Engineer
PMGSY Division
Mahore

Superintending Engineer
PMGSY Circle
Udhampur/Reasi

Signature by Co
Ordinator S.T.A

To be filled by S.T.A
Name of the S.T.A:

GCET Sammu

15	Is the proposed road entered on the OMWS	Yes/No
16	If the proposal is for new connectivity	Yes/No
	Have you satisfied your self that the proposed road is a part of the core network	Yes/No
	Is the unconnected habitation(s) part of list of unconnected habitation as per CN-6	Yes/No
	Does the proposal ensure full connectivity of the larger habitation	Yes/No
17	Are u satisfied with the following	Yes/No
	Engineering survey	Yes/No
	Soil / Material Investigation	Yes/No
	Traffic survey / Estimation	Yes/No
	Hydraulic Studies	Yes/No
18	In case, traffic is projected beyond 45CPD, are you satisfied with the reason given	Yes/No
19	In case, sub grade CBR is less than 3, has soil stabilization etc. been proposed	Yes/No
20	Is the design of the following elements as per roads manual	Yes/No
	Alignment & Geometrics	Yes/No
	Pavement Designs	Yes/No