

1.Introduction

1.1 **Objectives of Pradhan Mantri Gram Sadak Yojana (PMGSY-III)**

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.

Rural Road connectivity is not only a key component of Rural Road Development in the country but is also recognized as an effective poverty reduction program. Even after the efforts made so far over the years, all weather roads yet do not connect about 40% of the villages in the country.

The Pradhan Mantri Gram Sadak Yojana has indicated various guiding principles, which among others are as follows:

- The rural roads to be connected /developed under the scheme will cover only Other District Roads and Village Roads.
- An unconnected Habitation is one with a population of more than 500 persons and located at a distance of at least 500 meters or more from an All-weather road or a connected village / Habitation.
- The Unconnected Habitations are to be connected to nearby Habitations or to another existing all-weather road to ensure availability of educational, health and marketing facilities etc.
- Providing road connectivity through good all-weather road – its surface depending upon the traffic and other rural requirements.

It was against this background of poor connectivity that the Prime Minister announced in 2014, a massive rural roads program. The Prime Minister's Rural Road Program (Pradhan Mantri Gram Sadak Yojana, PMGSY) set a target of:

- Providing all-weather road access to all villages/habitations of population greater than 500 people , the desert areas and tribal areas, Proposed road is identified as Through in core network and this designated . By construction of this road it will provide access to the habitation all round the road.

1.2 **All Weather Road**

The primary focus of the PMGSY is to provide All-weather road connectivity to the eligible unconnected Habitations. An All-weather road is one which is negotiable in all seasons of the year. This implies that the road-bed is drained effectively (by adequate cross-drainage structures such as culverts, minor bridges and causeways), but this does not necessarily imply that it should be paved or surfaced or black-topped. Interruptions to traffic as per permitted frequency and duration may be allowed.

Project Background

The Ministry of Rural Development has been established with in the task of implementation to this programme. The work has been entrusted to NRRDA at New Delhi at central. The MPRRDA has been created to implement the scheme in M.P. state under Nodal agency Panchayat and Gramin vibhag of M.P. Government.

1.3 **Core Network**

The Sub-project road Suhapura To Achalawda Upto Block-Border T-11 in Peepalkhunt block of Pratapgarh District. This road directly connects the habitations of SH-81 B to Arnod Nagdera Bedma Jajli Athinera Kodinera Vanpura Chupna road with populations benefited of 16987

1.4 **Geography**

As the proposed road i.e. Suhagpura To Achalawda Upto Block Border Block Peepalkhunt Distt Pratapgarh

It is situated at 23°55'9.70"N to 74°42'34.44"E. in the Sothern part of Rajasthan. It is surrounded by Chittorgarh districts of Rajasthan, Udaipur district of Rajasthan. The terrain is Plain and rolling. Average rainfall in the district is about 920 mm. The district is divided into five tehsils and five community development blocks.

1.5 **History**

On 26th January 2008 Pratapgarh got the proud of being 33rd district shown on the map of Rajasthan. It is created by the areas taken from Udaipur, Banswara and Chittorgarh districts. As a newly created district Pratapgarh includes the tehsil area Arnod, Pratapgarh and Chotisadri from Chittorgarh district, Dhariawad from Udaipur district and Pipalkhoont from Banswara district. Pratapgarh is situated in the southeastern part of Rajasthan in Chittorgarh district. The area adjoins Udaipur and Bhilwara districts of Rajasthan and Mandsaur district of Madhya Pradesh. It is situated at the junction of the Aravali mountain ranges and the Malwa Plateau; hence the characteristics of both prominently feature in the area. Pratapgarh is located at 24.03° North & 74.78° East. It has an average elevation of 491 meters (1610 feet). Well known for pure gold and glass-inlay handmade unique jewellery called "Thewa".

Covered with natural beauty and lifestyle of Vagad, Mewad and Malwa this new district is famous by the name of KANTHAL. Tribble dominated population is the rich Ganga-Jamuna culture of this district. From the historical view, this is a place where the emperors of Mewar Rajwansh ruled which has been famous as a name of Devaliya state in the history whose capital has been situated 10 Km. west from Pratapgarh named avasthit devaliya town. District's sub-tehsil Devgarh's historical fort on which roof clock is placed which is created to show the time from sunlight. In the fort historic remains of royal houses is yet available. Devgarh's then Emperor Maharaval Pratap Singh of independent Rajasthan established the "Pratapgarh" nagar which is covered by perkota (boundary walls) from four directions. In the perkota (boundary walls) there are 56 link roads and 6 important city gates which show its design and citizens lifestyle. Just after independance, from 1948 to 1952, it was district headquater but after reorganisation of districts due to administrative and political issues district headquater has been changed.

Pratapgarh also have good scope of Eco Tourism. The Sita Mata Wildlife Sanctuary encompasses good Fauna and Flora; if you are lucky you can spot Flying squirrel, Black Naped Monarch, Lesser Florican etc.

1.6 **Climatic Condition**

Climate is generally moderate and seasons are well defined. The summers are hot, winters are short and the monsoon season is generally pleasant. The average annual rainfall in the district is 855.5mm. Most of the rainfall occurs in monsoon season while there is also a little of rainfall in winter season. A hot summer and general dryness characterize the climate of Alirajpur district, except during the southwest monsoon season. The year can be divided in to four seasons. The winter commences from middle of November and lasts till the end of February. The period from March to about middle of June is the hot summer season. May is the hottest month of the year. The southwest monsoon starts from middle of June and lasts till end of September. October and middle of November constitute the post monsoon or retreating monsoon season. The temperature starts rising from the beginning of February and reaching maximum in the month of May. The normal annual mean maximum temperature is 32.80C and normal annual mean minimum temperature is 19.10C. The individual day maximum temperature in May goes up to 39.50C. The individual day minimum temperature is recorded 110C in the month of January. The march is the driest month of the year. The humidity comes down lowest in April. It varies between 41 % and 89 % at different during April and August. The wind velocity is high during the pre monsoon period as compared to post monsoon period. The wind velocity is highest in June around 15.9 km/hr and lowest is 3.2 km/hr in November. The average normal annual wind velocity of Jhabua district is 7.8 km/hr. The normal annual rainfall of Jhabua district is 855.5 mm. Jhabua district receive maximum rainfall during southwest monsoon period i.e. June to November. About 92.8% of annual rainfall is received during monsoon season. Only 7.2% of annual rainfall takes place between Octobers to May period. The surplus water for ground water recharge is available only during the southwest monsoon period.

1.7 **The Sub-Project Road**

The proposed road is a village road. This road starts from Suhagpura. from Ch. 00 km to 8/0 km, it passes through village habitation. In that proposed road there is 26 existing crossdrainage structure.

The length for roadway available has been found to be 6.5 mt to 15.0 mt (Approx). There is all structure like School, Temple etc. are by the side of road land and these will not affect the proposed road way.

District:- Pratapgarh
Block:- Peepalkhunt
Road Name:- Suhagpura To Achalawda Upto Block Border
Road Code:- T-11
Package No.:- 0
Road Length:- 8.00
Start Point: latitude 23°55'9.70"N
 longitude 74°42'34.44"E
End Point:- latitude 23°54'22.34"N
 longitude 74°46'8.76"E

This road ends to connect a habitation CHICHLANA AMKUT TO PANALA at outside of village.

Sl.No.	Habitation benefited	Direct / Indirect	Population benefited
1	Suhagpura	DIRECT	1036
2	Lalpura	DIRECT	209
3	Achalawada	DIRECT	1529
4	Panawala	INDIRECT	170
5	Bilari	INDIRECT	636
6	Pathar	INDIRECT	628
7	Kunee	INDIRECT	175
8	Khora	INDIRECT	190
9	Sujanpura	INDIRECT	272
10	Naya khera	INDIRECT	188


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Chapter 2.Planning and Basic Design Consideration

2.5 **Transect Walk Summary**

Proposed walk was coordinate on date 13/11/2019 along with department engineer site condition the road is designed with RTL average 1.05 m above ground level. The traffic survey, soil investigation, borrow material availability, Topographical survey and requirment was examined accordingly. The road was designed as per provisions of IRC SP 62,IRC-72 and Rural road specifications. it is propose to provide all weather road with 20mm OGPC in carrigeway width with providing 5.5 m. cross drainage structure and necessary field crossing. The cement concrete road is provided in village area where width was restricted, side drain and provide with cover over entrance of house.

2.6 **Checklist**

Transect walk done	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Transect walk summary table included	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Photographs taken	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Major changes in alignment perceived	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Design brief provided	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>


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2.40 Road Design Brief

Table 2.1 Road Design Brief

Proposed road is designed as per specification given in IRC-72-2015 for flexible pavement and IRC SP 62-2014 for cement concrete pavement and reference given in SP-20 MORD Rural Road Manual.

Sl.	Location		Issue	Design Solutions
1	RD	0	Start Point	Speed Breaker Proposed
2	RD	500	Built Up Area	CC road proposed
3	RD	500-8000	Open Area	BT Road Proposed

Chapter 3. Topographic Survey

3.1 General

Topographic survey true to ground realities have been done using a total station, and bringing out data in digital form (x,y,z format) for developing digital terrain model (DTM) and using auto level for leveling survey.

The in-house standards, work procedures and quality plan prepared with reference to IRC: SP 19-2001, IRC: SP 20, IRC: SP 13 (in respect of surveys for rivers/streams) and current international practices have been followed during the above survey.

3.2 Traversing

Traversing has been done by compass having angular measurement accuracy ± 20 sec.

The primary reference at water-level recording stations is a set of stable bench-marks, installed in locations where their level should not change. Upon initial set-up of a station, the levels of the relevant parts of the installation are established and recorded by means of accurate levelling.

3.3 Leveling

Levelling has been done by auto level interval of 25 m taken offset from centre four reading both side. And bearing were taken by compass survey. For cross-checking fly survey has been done.

Precise levelling is a particularly accurate method of differential levelling which uses highly accurate levels and with a more rigorous observing procedure than general engineering levelling. It aims to achieve high orders of accuracy such as 1 mm per 1 km traverse. A level surface is a surface which is everywhere perpendicular to the direction of the force of gravity. An example is the surface of a completely still lake. For ordinary levelling, level surfaces at different elevations can be considered to be parallel.

A level datum is an arbitrary level surface to which elevations are referred. The most common surveying datum is mean sea-level (MSL), but as hydrological work is usually just concerned with levels in a local area, we often use: An assumed datum, which is established by giving a benchmark an assumed value (e.g. 100.000 m) to which all levels in the local area will be reduced. It is not good practice to assume a level which is close to the actual MSL value, as it creates potential for confusion.

A reduced level is the vertical distance between a survey point and the adopted level datum.

A bench mark (BM) is the term given to a definite, permanent accessible point of known height above a datum to which the height of other points can be referred. It is usually a stainless steel pin embedded in a substantial concrete block cast into the ground. At hydrological stations rock bolts driven into bedrock or concrete structures can be used, but structures should be used warily as they themselves are subject to settlement. The locations of benchmarks shall be marked with BM marker posts and/or paint, and recorded on the Station History Form. List of TBM attached in 3.6

A set-up refers the position of a level or other instrument at the time in which a number of observations are made without mooring the instrument.

The first observation is made to the known point and is termed a backsight; the last observation is to the final point or the next to be measured on the run, and all other points are intermediates

A run is the levelling between two or more points measured in one direction only. The outward run is from known to unknown points and the return run is the check levelling in the opposite direction.

A close is the difference between the starting level of the initial point for the outward run and that determined at the end of the return run. If the levels have been reduced correctly this value should be the same as the difference between the sum of the rises and falls and also the difference between the sum of the backsights and foresights.

Height of Collimation is the elevation of the optical axis of the telescope at the time of the setup.

The **line of collimation** is the imaginary line at the elevation.

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 has been taken at every 25m interval, and taken four offset reading from centre both side of road. Offset distance are 0, 1.50, 3.0, 4.50, 6.50.

3.5 **Data Processing**

All data from topographic survey recorded by auto level were downloaded in Auto plotter and final alignment, plan, profile were prepared and presented in AutoCAD Format.

3.6 **T.B.M. List**

S. No.	Chainage	R.L	Location	Remarks
TBM-0	100	100.000	Electrical Pole	RHS
TBM-1	1990		Kilometer stone	LHS
TBM-2	2985		Kilometer stone	LHS
TBM-3	3800		Electrical Pole	RHS
TBM-4	5075		Electrical Pole	RHS
TBM-5	6090		Culvert pillar	LHS
TBM-6	7000		Retaining wall pillar	RHS
TBM-7	7995		Culvert pillar	LHS

Checklist

Reference pillars given	Yes	No
TBM	Yes	No
Traverse survey carried out	Yes	No
Cross section and detailing carried	Yes	No

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Chapters – 3

3 Topographic Survey

3.1 General

Topographic survey true to ground realities have been done using Auto Levels, and prismatic compass.

The topographic survey have been carried out by the Surveyors / Supervisors under the guidance of PIU.

The in-house standards, work procedures and quality plan prepared with reference to IRC: SP 19-2001, IRC: SP 20, IRC: SP 13 (in respect of surveys for rivers / streams) and current international practices have been followed during the above survey.

3.2 Traversing

Traverse have been done by prismatic compass & Tape.

3.3 Leveling

All leveling for establishing Benchmark are to be carried out as per method adopted by Survey of India. All leveling are to be carried out with Auto Level having accuracy ± 2.5 mm/ km. The Consultant started the work by assuming arbitrary level, as no GTS benchmark may be available in the nearby location of the road.

3.4 Cross Section & Detailing

Cross section were taken at 25 m interval and at closer interval in curved portion of the existing road. The following features of the road have been recorded:

- Existing road details
- Existing toe point of Road
- Natural Surface Points
- Edge of Water Body / Pond
- Edge of ditch / Borrow pit
- Electricity and Telephone poles
- Edge of Building & Fence line
- Religious Structure & Graves
- Temporary House or Hut
- Edge of Wall
- Concrete Wall
- Trees
- Cross roads and other major crossings

3.5 Data Processing

All data from topographic survey recorded by Auto Levels, and prismatic compass were downloaded and final alignment, plan, profile were prepared and presented in AutoCAD Format.

Chapter 4. Soil and Materials Survey

4.1 **General**

The soil and material investigations were done following the guidelines of IRC: SP: 20-2002 and IRC: SP: 72-2015 and other relevant IS codes. The potential sources of borrow areas for soil and quarry sites will be identified

4.2 **Soil sample collection and Testing**

Soil samples will be collected along and around the road alignment at one location per km, from the adjoining borrow areas, as well as one sample is collected from the existing road. Soil Classification tests like grain size analysis and Atterberg's limit were conducted for all the samples collected. Standard Proctor test and the corresponding 4 day 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:

Summary of Test

S.No.	Location	CBR (%)	MDD gm/cc	OMC (%)	L.L. (%)	P.I. (%)
1	0+600	3.57	1.89	9.10	44.32	12.25
2	1+400	3.94	1.88	9.50	43.25	9.12
3	2+450	3.82	1.90	9.20	43.60	11.20
4	3+500	3.88	1.89	9.40	37.25	9.20
5	4+600	3.82	1.88	9.50	47.23	12.32
6	5+550	3.82	1.89	9.35	42.12	10.62
7	6+500	3.70	1.87	9.60	38.25	12.68
8	7+500	3.70	1.88	9.25	44.25	10.80

4.3 **Analysis of Test Results**

Table 4.1 CBR values for different stretches

Sl.No.	Section	Avg. CBR (%)
1	0+600	3.57
2	1+400	3.94
3	2+450	3.82
4	3+500	3.88
5	4+600	3.82
6	5+550	3.82
7	6+500	3.70
8	7+500	3.70

4.4 Coarse and Fine Aggregates

Information regarding the source of aggregate and sand will be gathered. The stone aggregates shall be procured from where as the locally available sand shall be used. The source and the lead distance from the quarry to project site will be finalized in discussion with the PIU. The aggregates and sand where available and acceptable shall be used for bituminous work, concrete works, other pavement works.

Material & Quarries Details

Sr no	Material	Location/Description	Distance (IN KM)
1	Earth	Borrow pits	-
2	Murum	APPROVED QUARRY	ALLOWABLE
3	Aggregate	APPROVED QUARRY	ALLOWABLE
4	Sand	APPROVED QUARRY	ALLOWABLE
5	Cement	Nimbahera	120 KM
6	Emulsion	Barodara	ALLOWABLE
7	Bitumen	Barodara	ALLOWABLE

4.5 Sub-soil investigation for bridges

Where the rock or some firm undisturbed soil stratum is not likely to be far below the alluvial bed of the stream , a trail pit should be dug down to such rock or firm soil . But if there is no rock or undisturbed firm soil for a great depth below the stream bed level , then the trail pit may be taken down roughly 2 to 3 meter below the lowest bed level . The location of each trail pit should be shown in the cross section of the proposed site . The trail pit section should be plotted to show the kind of soil passed through . However depth of trail pit in soil shall minimum 2 m for culverts and 3 m for small bridges .

4.6 Checklist

Borrow pit suitable	Yes
SSI for existing ground	Yes
Investigation for coarse/fine aggregate	Yes
Quarry Details	Yes

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Chapter 5. Traffic Survey

5 General

In the present scenario of new connectivity/upgradation road, 7 day, 24 hr traffic volume count has been conducted on the already completed or similar type of PMGSY road in the vicinity of the project road. 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,). The surveys have been carried out by trained enumerators manually under the monitoring of Engineering Supervisor.

5 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 Harvesting season. It is assumed that peak harvesting season traffic is double of non harvesting season.

Average of 7 day traffic data is presented in Table 5.1.

Table 5.1 Average daily Traffic data at Rd 200 both directions for seven days

Sl. No.	Type of Vehicle	Day-1	Day-2	Day-3	Day-4	Day-5	Day-6	Day-7	Average	
		14/Dec	15/Dec	16/Dec	17/Dec	18/Dec	19/Dec	20/Dec		
		2019	2019	2019	2019	2019	2019	2019		
1	Car, Jeep, Van	62	66	98	67	75	62	102	76	
2	Auto Rickshaw	0	0	0	0	0	0	0	0	
3	Scooters/Motorbikes	105	62	98	67	70	141	64	87	
4	Bus / Minibus	61	93	55	48	52	44	48	57	
5	Trucks	97	110	67	69	62	79	74	80	
6	Tractors with trailer	123	95	93	81	81	103	90	95	
7	Tractor without trailer	0	0	0	0	0	0	0	0	
8	Cycles	62	55	62	73	70	141	133	85	
9	Cycle Rickshaw / Hand Cart	0	0	0	0	0	0	0	0	
10	Horse cart / Bullock Cart	38	38	49	34	47	91	70	52	
11	Pedestrian	121	120	110	99	122	98	102	111	
Growth rate adopted (%) = 6%										
Design Life = 10 Year and 2 year construction										
Number of Harvesting Seasons = 2 no.										
No. of Days In Each Harvesting Season (t) = 75 Days										
CVPD (More than 03 tonnes laden weight)=						232				
Cumulative ESAL =						1896063				

5 Traffic Growth Rate and Forecast

As there are no specification generators of traffic growth, the consultant has adopted an average annual growth rate of 6% over the design life as set out in IRC: SP: 72-2015. Also there is no availability of past traffic data so as estimate traffic growth trends.

[Tick the relevant box]

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

✓


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Chapter 6. Hydrological Survey

6.1 **General**

Hydrological survey is necessary for design of adequate and safe Cross Drainage Structures so that the rain water can pass as per natural slope. Hydrological survey of the proposed road is based on the following observations:

- Rainfall Data
- Catchments Area
- Time of Concentration
- Existing Cross Drainage Structures

Drainage of road refers to the satisfactory disposal of surplus water within the road limits. The water involved may be precipitation falling on the road, surface runoff from the adjacent land, seepage water moving through sub-terrain channels, or moisture rising by capillary action. Adequate information about drainage patterns is necessary to devise an effective drainage system, which brings into focus the need for requisite studies and investigations

Drainage studies have the following principal objectives

- Fixing the grade line of the road
 - Design of pavement and
 - Design of the surface/sub-surface drainage system
- Main components of drainage investigation are determination of HFL and ponded water level, depth of water table, range of tidal levels and amount of surface runoff. Besides this, for cut sections in rolling and hilly areas, it would be necessary to carry out special investigations for sub-terrain flows and seepage of irrigation water from fields situated above the road.
- Extent of studies and the data to be collected will depend on the type and scope of the project. Usually good deal of information could be collected through site inspection, simple measurements and local enquiry. Most appropriate time for such enquiries is during the stage of preliminary survey so that the information gathered can be of use in fixing the alignment and finalizing the broad strategy for improving the drainage. Detailed investigations could continue till the final location survey when any adjustment in the light of further data could still be made before the projects are finally ready. In the case of cut sections, investigations for seepage and sub-terrain flows may generally have to be done again at the stage of formation cut when new features may come to light warranting modifications in design or the need for special measures.

6.2 **Rainfall Data**

Rainfall Data as applicable for the project road were collected with maximum Rainfall occurring in the months of July/ August.

6.3 **Catchment Area**

The Catchments area is calculated by gathering local information and survey as per sheet enclosed here. Catchment area have been calculated from toposheet. Discharge is calculated by Dickenn's Formula

6.4 **Time of Concentration**

Time of concentration (t_c) in hours is calculated from the formula of $(0.87 \times L^3/H)^{0.385}$, where L is distance from the critical point to the structure site in km and H is the difference in elevation between the critical point and the structure site in meters.

6.5 **Existing Cross Drainage Structures**

There are 21 number of cross drainage structures along the existing project road as listed below:

Table-6.1 List and condition of existing culverts

Sl.	Chainage (km)	Description of Existing Structure		
		Type	Span/ Dia. (m)	Condition & Solution
1	1+210	HPC	1 Row 1000	FAIR
2	1+375	HPC	1 Row 1000	FAIR
3	1+900	HPC	1 Row 1000	FAIR
4	2+590	HPC	1 Row 1000	FAIR
5	2+775	HPC	2 Row 1000	POOR
6	4+300	HPC	1 Row 1000	FAIR
7	4+430	HPC	2 Row 1000	POOR
8	4+575	HPC	1 Row 1000	FAIR
9	4+725	HPC	1 Row 1000	FAIR
10	5+050	HPC	3 Row 1000	FAIR
11	5+300	HPC	1 Row 600	FAIR
12	5+475	HPC	1 Row 1000	FAIR
13	5+625	HPC	2 Row 1000	POOR
14	6+090	HPC	1 Row 1000	FAIR
15	6+125	HPC	1 Row 600	FAIR
16	7+775	HPC	1 Row 600	FAIR
17	7+995	HPC	1 Row 600	FAIR


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Chapter 7. Geometric Design Standards

7.1 General

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

7.2 Terrain

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

Terrain classification	Cross slope of the country	
Plain	0-10%	More than 1 in 10
Rolling	10-25%	1 in 10 to 1 in 4
Mountainous	25-60%	1 in 4 to 1 in 1.67
Steep	Greater than 60%	Less than 1 in 1.67

7.3 Design Speed

The proposed design speed along this project road will be selected from the following table:

Road classification	Plain terrain		Rolling terrain		Mountainous terrain		Steep terrain	
	Ruling	Min.	Ruling	Min.	Ruling	Min.	Ruling	Min.
Rural Roads (ODR and VR)	65	65	65	65	25	20	25	20

7.4 Right of Way (ROW)

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

Road classification	Plain and Rolling Terrain (ROW in m)				Mountainous and Steep Terrain (ROW in m)			
	Open Area		Built-up Area		Open Area		Built-up Area	
	Normal	Range	Normal	Range				
Rural roads (ODR and VR)	12.0	12-15.	8.0	12-15.	NA	NA	NA	NA

7.5 Roadway Width

As the road is Through road way width is increased from 9.00 M existing to 15.00 m as per instruction given by NRRDA through letter no. P-17035/1/2007-Tech dated 13.10.2010.

Terrain Classification	Roadway Width (m)
Plain and Rolling	9.0
Mountainous and Steep	NA

7.6 Carriageway Width

The width of carriageway for this project road is 3.75m. as traffic is less than 2000 PCU per day and where the traffic is likely to increase due to situation.

7.7 Shoulders

It is proposed to have 1.875 / 1.75 / 1.5 m wide shoulder in open area and in builtup area as per space available.

7.8 Roadway width at cross-drainage structures

The roadway width at culvert locations for this road is 9.0 m in plain terrain.

7.9 Sight Distance

The safe stopping sight distance in open area is taken as

Design Speed (km/hr)	Safe Stopping Sight Distance (m)
20	20
30	30
40	45
50	60
60	80
65	90

In built-up area, in sharp curves necessary signages will be provided.

7.10 Radius of Horizontal Curve

According to IRC recommendations/standards, the minimum radius of horizontal curve for this project road is given below:

Terrain Category	Radius of Horizontal Curve (m)	
	Ruling Minimum	Absolute Minimum
Plain	90	60

To minimize extra land arrangement, minimum radius used is 20 m and design speed in these curves are also restricted to 20 km/hr.

7.11 Camber & Super elevation

A camber adopted on this road section is given below. The maximum super elevation is --7--% for this project road.

Surface type	Camber (%)	
	Low rainfall (Annual rainfall <1000mm)	High rainfall (Annual rainfall >1000mm)
Earth road	4	5
WBM Gravel Road	3.5	4
Thin bituminous Road	3	3.5
Rigid Pavement	2	2.5

7.12 **Vertical Alignment**

The present road is in plain terrain and vertical alignment has been designed well within ruling gradient.

Generally, minimum gradient of 0.3% for drainage purpose is considered for designing the vertical alignment of this road.

7.13 **Vertical Curves**

For satisfactory appearance, the minimum length of vertical curve for different design speed is given in IRC-SP 20:2002. Vertical curves will be designed to provide the visibility at least corresponding to the safe stopping sight distance. Valley curves will be designed for headlight sight distance.

7.14 **Side slope**

Side slope for this rural road embankment height is less than 1.05m from ground level. is given in the table below.

Condition		Slope (H:V)	
Embankment in silty/sandy/gravel soil		2:1,	
Embankment in clay or clayey silt or inundated		2.5:1 to 3:1	
Cutting in silty/sandy/gravelly soil		1:1 to 0.5:1	
Radius of Curve (m)	Upto 20	21 - 60	Above 60
Cutting in disintegrated rock or conglomerate		0.5:1 to 0.25:1	
Cutting in soft rock like shale		0.25:1 to 0.125:1	
Cutting in medium rock like sandstone, phyllite		0.083:1 to 0.0625:1	
Cutting in hard rock like quartzite, granite		Near vertical	

7.15 **Extra Widening of Pavement**

The Extra Widening of Pavement at Curve as per IRC guideline is given below:

Extra Widening for 3.75 /5.5 m wide single lane carriageway, (m)	0.9	0.6	Nil
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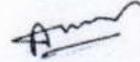
8.5 **Design of Junctions**

The proposed alignment intersects cross roads and forms junctions. The locations of junctions are given below:

S.No.	Location	Type Junction	Carriageway Width
1	2178	O	5.5
2	2414	T	5.5
3	2722	T	5.5
4	7030	Y	5.5
5	15750	Y	5.5
6	5820	X	5.5



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Chapter 9. Pavement Design

9.1 General

Considering the sub-grade strength, projected traffic and the design life, the pavement design for High volume PMGSY roads was carried out as per guidelines of IRC SP-72-2015 "Design of Gravel Road" and IRC SP-62-2014 "Cement Concrete roads". In built up area for hygienic and safety reasons, C.C. pavement was used with a hard shoulder and drain appropriate line drain.

9.2 Pavement Design Approach

9.2.1 Design Life

A design life of 10 years was considered for the purpose of pavement design of flexible and granular pavements.

9.2.2 Design Traffic

The average annual daily traffic (AADT) for the opening year as well as the total commercial vehicle per day (CVPD) was presented in Table 5.2.

9.2.3 Determination of ESAL applications

Only commercial vehicles with a gross laden weight of 3 tonnes or more are considered. The design traffic was considered in terms of cumulative number of standard axles to be carried during the design life of the road. The numbers of commercial vehicles of different axle loads are converted to number of standard axle repetitions by a multiplier called the Vehicle Damage Factor (VDF). An indicative VDF value was considered as the traffic volume of rural road does not warrant axle load survey.

For calculating the VDF, the following categories of vehicles was considered as suggested in paragraph 3.4.4 of IRC: SP: 72 – 2015

- Laden heavy/medium commercial vehicles
- Un-laden /partially loaded heavy/medium commercial vehicles
- Over loaded heavy/medium commercial vehicles

9.3 Design Alternatives

Design alternatives considered

Chainage		Design alternatives considered					
From	To	Pavement		Shoulder	Soil stabilization and use of locally	Specify design alternative selected	Justification
		Flexible	Rigid				
0	0	Yes		1.75BHS			
0	2000	Yes		1.75BHS			
3000	4500	Yes		1.75BHS			
5000	5850	Yes		1.75BHS			
6000	6800	Yes		1.75BHS			
7200	8000	Yes		1.75BHS			

9.4 Pavement composition

Flexible Pavement

The designed pavement thickness and composition was calculated by referring Figure 4 (Pavement design catalogue) of IRC: SP: 72 – 2015. The ratio between heavy commercial vehicles and medium commercial vehicles as given in Page no. 26 should be maintained as far as possible.

The pavement layers provided are given below:

Growth rate adopted (%) = 6.0%

Design Life = 10 Year

Number of Harvesting Seasons = 2 no.

No. of Days in Each Harvesting Season (t) = 75 Days

CVPD = 232

Cumulative ESAL in MSA= 1.90

Crust details of Existing and proposed Pavement

FLEXIBLE PAVEMENT											
Chainage		Length (in M)	Design CBR	Ex Crust	Pro. Crust	Subgrade (in mm)	WMM (in mm)	GSB (in mm)	BM (in mm)	OGPC (in mm)	REMARK
From	To										
2000	3000	1000	3.70%	280	575	-	225	0	50	20	Ex BT Road
7000	8500	1500	3.88%	280	575	-	225	0	50	20	New BT
15750	17000	1250	3.70%	280	575	-	225	0	50	20	New BT
17000	18000	1000	3.57%	280	575	-	225	0	50	20	New BT
18000	19000	1000	3.70%	280	575	-	225	0	50	20	New BT
19000	19800	800	3.57%	280	575	-	225	0	50	20	New BT
22800	24000	1200	3.57%	280	575	-	225	0	50	20	New BT
24000	24800	800	3.57%	280	575	-	225	0	50	20	New BT
Total:-		8550									

RIGID PAVEMENT

CC pavement design as per IRC:SP:62-2014

Design Crust :- WMM 225, GSB 0 (Total 575 MM)

9.5 Embankment Design

As there is no high embankment in proposed road, hence Need not required to design embankment


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Chapter 10. Design of Cross Drainage Works

10.1 General

On the basis of hydrological survey, number of new cross drainage works are recommended for the project road as listed below. {Consultants shall review these guidelines with respect to the Expert Committee guidelines "Review of Geometric Design Standards for Rural Roads in Hill Areas (meeting at Mussorie – 29-30 November 2007) and Review of Geometric Design Standards for Rural Roads in Plains}

10.2 Hydrological Design

Agricultural conduits, which basically act as balancers, have also been provided as listed below in Table 10.2.

10.3 Design Feature

Design Standards for culverts has been prepared based on standard codes and guidelines of IRC: SP: 20: 2002 & IRC-SP-013 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 10.00 m,

Width of culvert : 10.00 m with parapet.

Width of Bridge: 10.00 m with parapet

10.4 Justification for retaining/widening and replacement of culverts

There are five no existing culvert and four no. of field crossing along the project road are present as follows

10.5 Hydraulic calculation for Culvert

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

$$Q = CM^{3/4} \text{ Cum / sec}$$

Where C = Coefficient of Run Off for the catchments characteristics, M = Catchments Area in Sqm KM

Small bridge-site length of which exceeds 15 m to be jointly visited by STA and S.E. Design – as per SP-20 & SP-13 and relevant IRC Codes for Bridges.

Causeways and submersible bridges – Design to be done as per SP-20 and SP-82:2008.

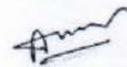
Detailed hydraulic calculation of all replaced and proposed new culverts and attached as Annexure-2 of this report.

List of c/d works proposed/upgraded, type, location, span/dia in a tabular form. This should connect to the decisions taken during transect walk.

Table 10.2 Proposed Culverts

Sl. No.	Chainage	Type of Culvert	Span & Pipe Dia
1	0+000	0	0
2	0+000	0	0
4	0+000	0	0
5	2+775	HPC	2 Row 1000
6	0+000	0	0
7	4+430	HPC	2 Row 1000
8	0+000	0	0
9	0+000	0	0
10	0+000	0	0
11	0+000	0	0
12	0+000	0	0
13	5+625	HPC	2 Row 1000


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Chapter 11. Protective Works & Drainage

11.1 General

11.2 Road side drain

As the insufficient drainage of surface water leads to rapid damage of road, road side drain as shown in drawing volume has been provided particularly on the location of habitation areas i.e. not required. Sketch for a standard roadside drain should be made available, confirming to any of the sections suggested in SP:20:2002.

11.3 Protective Works

Necessary protection works consisting of closed {Insert type of piling} piling and {Insert ballah suggested} ballah piling/ Retainig Walls/ Toe Walls{Insert type of Retaining Wall/ Toe wall} (have been provided near pond and water bodies falling within the proposed alignment. Table 11.1 gives the chainage-wise protection works adopted

Table 11.1 List of protective works

Sl. No.	Chainage		SIDE (LHS/RHS)	LENGTH	Comments
	From	TO			
1	5300	5700	LHS&RHS	400 MM	


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Chapter 12. Land Requirement

12.1 General

The existing road is generally an BT road in poor condition, rest is earthen road in some stretch. Thus the project road is a new connectivity road. The existing Right of Way (ROW) is varying from 8.00 m to 15.00 m.

12.2 Proposed ROW

The width of carriageway has been considered as 5.5 m in accordance with the IRC-Code. The total roadway width is limited to 9.00 m with 1.75m earthen shoulder on either side of carriage way. The proposed ROW generally varies from 10 m – 15 m depending upon the embankment height and the proposed ROW is even less than 12 m in some stretches of habitation area and in areas having tree plantation.

12.3 Additional Land

Local administration and local panchayat need to apprise the villagers about requirement of minor areas in places for development of the road. Villagers are generally highly enthusiastic during site visits for selection of the road. Table 12.1 provides the chainage-wise additional land required.

Table 12.1 Additional Land Required

Sl. No.	Chainage	Width of Land Required in m		Comments
		LHS	RHS	
		Not Required		



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Chapter 13. Utility shifting/relocation

13.1 Existing utilities

There is no existing utilities that require relocation along the project road. That were connect to the decisions taken during transect walk.

13.2 List of departments responsible for utility shifting-

a) Electric pole :-

b) Hand pump :-

13.3 Rules pertaining to shifting of utilities N.R

13.4 An estimate for relocation of utilities is given below in Table 13.1

{Provide an estimate with breakdown of costs for relocation of utilities}

Table 13.1 Estimated Cost for Relocation of Utilities

Sl. No.	Utility Type	Qty	Estimated Rate	Estimated Cost
1				
2				
3				
4				
Estimated Total Cost				-



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Chapter 14. Traffic Management and Road Safety Measures

This DPR may be subjected to a road safety audit by an independent third party. The recommendations of the road safety audit as approved by PIU shall be incorporated in the final DPR.

14.1 Road Furniture

Road Furniture details include:

- Road markings for extra widening & speed breaker
- Cautionary, mandatory and information signs
- KM stones and 200m stones
- Guard posts, crash barriers and speed breakers

14.1.1 Road Markings

Road markings perform the important function of guiding and controlling traffic. In village road traffic volume has low only given marking for speed breaker for safety.

14.1.2 Cautionary, Mandatory and Informatory Signs

Cautionary, mandatory and informatory signs are provided depending on the situation and function they perform in accordance with the IRC: 67-2001 guidelines for Road Signs.

Overhead signs are proposed in accordance with IRC: 67-2001.

Type of cautionary board	Location (m)
curve	0+770,0+630,0+780,0+850,1+530,1+690,1+800,2+000,2+230,2+430,2+700,3+150,3+400,3+900,4+070,4+200,4+730,4+900,5+140,5+230,5+400,5+700,5+900,6+350,6+650,6+820,7+120,7+250,7+350,7+500,7+630,7+850,8+070,8+200,8+440,8+540,8+600,8+700,8+750,8+800,8+900,9+070,9+250,
Govt. Control Room	

14.1.3 Kilometer Stone and Hectometer Stone

The details of kilometre stones are in accordance with IRC: 8-1980 guidelines. Both ordinary and fifth kilometre stones are provided as per the schedule. Kilometre stones are located on both the side of the road.

The details of 200m stones conform to IRC: 26-1967. 200m stones are located on the same side of the road as the kilometre stones. The inscription on the stones shall be the numerals 2,4,6 and 8 marked in an ascending order in the direction of increasing kilometerage away from the starting station. Table 14.1 gives the details of Km. stone, 5th km. stone and boundary pillars provided. {Insert figures in the table below and this should be shown in the drawings also}

Table 14.1

Details of Km. stone, 5th km. stone and boundary pillars

Sl.	Name of Road	5th. Km. stone (nos.)	Km. stone (nos.)	200m stone (nos.)	Boundary stone (nos.)
1	Suhagpura To Achalawda Upto Block Border	2	9	32	64

14.1.4 Delineators and Object Markers

Roadway delineators are intended to mark the edges of the roadway to guide drivers on the alignment ahead. Object markers are used to indicate hazards and obstructions within the vehicle flow path, for example, channelising islands close to the intersections.

Delineators and object markers are provided in accordance with the provisions of IRC: 79-1981. They are driving aids and should not be regarded as substitutes for warning signs, road markings or barriers

14.1.5 Guard Posts, Crash Barriers and Speed Breakers

Guard posts are proposed on embankments of height more than 1.5m and bridge approaches. The spacing of guard post shall be 10.0 m c/c in these areas. Typical Guard post consists of pre-cast (M20) CC post of size 200 mm x 200 mm and a height of 600 mm above ground level. They are encased in M15 cement concrete to a depth of 450 mm below ground level. Guard posts are painted with alternate black and white reflective paint of 150 mm wide bands. Table 14.2 gives the details of guard posts, crash barrier and speed breakers. A layout of a typical speed breaker is given below.

Table 14.2

Details of guard posts, crash barrier and speed breakers

Guard stone (nos.)	Crash Barrier (m)	Speed breakers (nos)
0	200	16

14.2 Temporary traffic control

The road under consideration has to be widened alongwith the bridges and culvert. The list below provides the c/d structures to be widened/reconstructed and temporary traffic control measures to be implemented.

Table 14.3 gives the section-wise details of temporary traffic control measures to be adopted.

Table 14.3

Details of temporary traffic control measures to be adopted

Sl.	Chainage (km)	Temporary traffic control measures to be adopted
No diversion required		

14.3 Checklist for Road Safety Measures

Sl	Road Safety Checklist	
a	A minimum 100 mm thickness of pavement GSB layer constructed to the full roadway width.(Insert Justification for the same)	As per PMGSY guide lines and specification the Subgrade layers to be provided beside of WBM layer which Widening Portion
b	The upper layer of all shoulders of sub-base quality compacted to a minimum thickness if 100 mm.	Yes , provided
c	Shoulder side slopes are not be steeper than 2H:1V unless stone pitching of the slope is provided.	Side slope not steeper than 2H:1V
d	Speed breakers as per NRRDA circular comply with the requirements of IRC:99-1988 for general traffic.	Yes , provided
e	Speed breakers placed at the threshold of a habitation and at regular intervals (150 -200 m) through the habitation.	Yes , provided
f	Within densely populated habitations, a cement concrete (CC) pavement or L-shaped side drain is constructed to the full width of the available roadway.	No , provided
g	Within habitations, wherever deep side drains are constructed either within or adjacent to the roadway, is covered by slabs laid level with the adjacent pavement and capable of being manually removed.	Yes , provided
h	In habitations where child playing areas border the road, a low profile wall, raised kerb or similar form of boundary marking (depending on the site conditions), is constructed to create a physical boundary and act as a deterrent to the random movement of a child onto the road.	Children play area is away from road
i	On roads where, because of the lack of dry land in the general area, the shoulder will be continually occupied and only intermittently available for traffic, speed breakers are installed at regular intervals, not more than 300 m apart, for the entire length of the road.	Not Applicable
j	The drawings show all obstructions in the proposed road shoulder with a note that the obstruction is to be removed.	There is no obstruction on the shoulder
k	If a shoulder obstruction cannot be removed, hazard markers are installed to mark the Obstruction	Not Applicable
l	Hazard markers are installed at all pipe culvert headwalls.	Not Applicable
m	Hazard markers are installed at each end of all box culverts, river crossing causeways and similar CD structures.	Not Applicable
n	Hazard markers are installed at any discontinuity in the shoulder.	Not Applicable
o	Directional sight boards are installed on all sharp curves and bends.	Yes , provided
p	Speed breakers are provided at sharp curves and bends where the curve design speed is less than 40 km/h in plain and rolling terrain, and less than 25 km/h in mountainous and steep terrain.	Yes , provided
q	Speed breakers are provided and directional sight boards installed at sites where reverse horizontal curves are closely spaced and speed reduction is required.	Not Required
r	At a main road intersection, signs and pavement markings for STOP control on the PMGSY village road are installed, side road warning signs on the main road and intersection warning signs on the village road are installed, and speed breakers on the PMGSY village road are provided as given in the figures (refer IRC 99-1988).	Yes , provided
	This DPR may be subjected to a road safety audit by an independent third party. The recommendations of the road safety audit as approved by PIU shall be incorporated in the final DPR.]	
	Road safety issues identified during the design were and the mitigation measures are included in all designs and shown on the DPR drawings. Details of the issues and measures are:	Yes , provided

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Chapter 15. Specification

15.1 **General**

The "Specification for Rural Roads" published by IRC on behalf of the Ministry of Rural Development, Govt. of India has been followed.

15.2 **Construction Equipment**

Construction by manual means and simple tools has been considered for the project as per the guideline of NRRDA. For handling of bulk materials like spreading of aggregates in sub-base & base courses by mix-in-place method, use of motor grader & tractor-towed rotavator has been allowed in line with the schedule of rate for PMGSY work. Compaction of all items shall be done by ordinary smooth wheeled roller if the thickness of the compacted layer does not exceed 100 mm. It is also considered that, hot mix plant of medium type & capacity with separate dryer arrangement for aggregate shall be used for bituminous surfacing work that can be easily shifted. A self-propelled or towed bitumen pressure sprayer shall be used for spraying the materials in narrow strips with a pressure hand sprayer.

Now the vibratory rollers are also being used for rapid progress.

For structural works, concrete shall be mixed in a mechanical mixer fitted with water measuring device.

The excavation shall be done manually or mechanically using suitable medium size excavators.

15.3 **Construction Methods**

15.3.1 **Preparation for Earthwork**

After setting out existing ground shall be scarified to a minimum depth of 50 mm and leveled manually and compacted with ordinary roller to receive the first layer of earthwork. In filling area, existing embankment will be generally widened on both sides as per the alignment plan. Continuous horizontal bench, each at least 300 mm wide, shall be cut on the existing slopes for bonding with the fresh embankment/ subgrade material as per CI 301.7.

15.3.2 **Embankment work**

Material from borrow pits will be used for embankment construction as well as the approved material deposited at site from roadway cutting and excavation of drain & foundation may be used. Earthwork/Embankment filling & cutting is to be done for widening of existing road below the subgrade level at OMC to meet 97% of Standard Proctor Density.

Material for embankment and sub-grade shall satisfy the requirements of Table 300-1 and 300-2 as per the Specification for Rural Roads.

15.3.3 **Sub-grade**

Material from borrow pits will be used for construction of top 30 cm as sub-grade. Soil in these sections is quite good for road construction. Top 30 cm upto the subgrade level and shoulder at OMC to meet 100 % of Standard Proctor Density by proper control of moisture and by required compaction with a smooth wheeled roller.

15.3.4 **Sub-base**

Sub base material in the form of stone aggregates and sand as available in the area to be used in GSB Grade II layer.

15.3.5 **Rigid Pavement**

Construction of Cement Concrete Pavement (M-30) 200MM & 125 MM Thickness.

15.3.6 **Shoulder**

Earthen shoulder shall be constructed in layers and compacted to 100% of Proctor's Density. First layer of shoulder shall be laid after the sub-base layer is laid. Thereafter earth layer shall be laid with base layer of pavement and compacted.

15.3.7 **Cement Concrete joint**

The construction joint shall be provided by cutting the concrete slab with diamond cutter of width 6-8 mm and depth 60mm after 48-72 hours of casting the slabs the construction joints spacing shall be at 4.5 m c/c filled with hot bituminous scaling compound (upto one third of the thickness of PQC) to be provided up to say 60mm in height

Expansion joint are provided when thickness of PQC is more than 150mm the width of the expansion joint shall be 20mm premoulded joint filler board of width 20mm and height 110-200mm over the board hot sealing compound may be filled.

15.3.8 **Structural Works**

Following grades of concrete are proposed for Structural works and comply with MORD and IRC specifications:

- Concrete in superstructure of slab culvert - M-25(RCC)
- Concrete in abutment cap, dirt wall of slab culverts - M-15} (RCC)
- Concrete below abutment, return wall, headwall - M-15 (RCC)



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Chapter 16. Environmental Issues

16.1 Alignment

The proposed road has planned and designed considering the impact on environment. Proposed road alignment follows existing pathway to the maximum extent so that huge land acquisition is not necessary for construction of the project road. Proposed road, when completed, will be an addition to the aesthetics of this rural area.

Environmental Sensitive Area (National Park, Wild Life Sanctuary, Protected /Reserve Forest, Wet land etc.)

16.2

The alignment was finalised avoiding the environmental sensitive areas such as National Park, Wild Life Sanctuary, Protected /Reserve Forest, Wet land etc. It is also necessary to maintain the minimum distance of 500 m of the project road from environmental sensitive area.

16.3 Construction Camp

Construction camps will be established away from forest area/water body. The minimum facilities such as water supply, sanitation, storm water drainage, solid waste management and first aid box will be provided during the construction period of the project. Necessary provision for rehabilitation or restoration after the completion of construction phase will be done.

16.4 Permit / Clearance required prior to commencing of civil work

- No objection Certificate- This will be taken by PIU from SPCB (State Pollution Control Board).

- Forest Department- If the project road passing thorough forest land and acquisition of the same is involved and it will be taken by PIU from Forest Department

- Consent to establish (CFE) and Consent to Operate (CFO) - This is required for Plant Hot Mix Plant, WMM Plant, Batching Plant required for the project and the same will be taken by the Contractor from SPCB.

- Lease from Mines & Geology-As materials are available from established quarry. No new mines will be required.

16.5 Borrow area

The filling soil will have to be procured from borrow pit. Borrow area will be so excavated that the lands can reused as agricultural field. The depth of borrow pit shall not exceed 450 mm (150 mm top soil included). The top soil shall be stripped and stacked and shall be spread back on the land. As far as possible the borrow pits shall not be dug close to the road embankment. The Redevelopment of borrow area will be done before closure of the same and it will be as per agreement between landowner and the Contractor.

16.6 Erosion Control

Turfing of the embankment slopes and earthen shoulder to prevent erosion of slopes of the embankment, rain cuts and erosion of shoulder is being suggested.

16.7 Drainage

Suitable cross drainage structures have been provided on the basis of hydrological survey of the area. So, there will be no obstruction to the natural drainage of the area. Road side drainage is also duly considered in a manner so that surface water is led to the low points and is drained through the CD structures.

16.8 Rigid Pavement

Construction of Cement Concrete Pavement (M-30) 200MM Thickness.

Chapter 18. Cost Estimate

18.1 General

Cost Estimate of project has been arrived on the following basis

- Selection of Items of work
- Estimation of item wise quantities
- Analysis of Rates

18.2 Estimation of Quantities

All the relevant road and structure work Items will be identified as per survey, design and drawings. Following major item of works considered are given below:

- Site clearance, dismantling and earthwork
- Pavement works (GSB, WBM, Bituminous layers)
- Cross drainage structure works
- Drainage and protective works
- Utility relocation
- Road safety and furniture
- Maintenance works

Quantity of earthwork will be derived from the proposed cross section drawings. Volume of cut and fill will be obtained directly using the design package software. Quantity derived from software will be manually verified. There are some stretches of the road in cut section. The details are provided chainage wise in Table-18.1 of total cut and fill volume. The soil obtained from roadway excavation shall be used for construction of embankment and shall be paid as per item no.4. All other quantities will be computed from the drawings of finished road, miscellaneous drawings & drawings of CD Structures.

Table of cut and fill volume enclosed here.

18.3 Abstract of Cost

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

18.4 Maintenance

Cost of Annual Maintenance for five years after completion of project will be estimated as per the PMGSY Guidelines. Different activities of ordinary repairs are done as and when.

DPR
Consultant


Assistant Engineer
PWD Sub Dn Peepalkhunt


Executive Engineer
PWD Dn II Pratapgarh

Chapter 19. Analysis of Rates

17.1 General

Rates for various item of works of the project have been derived from the "Schedule of Rates November 2019. . for Road works, Culvert works & Carriage etc. RRRDA. The rates of different items have been worked out inclusive of all labour charges, hire charges of Tools & Plants, Machineries and all other cost estimates for the item of work, overhead and contractor's profit.

17.2 Basic Rate of Material

The basic rates for stone materials & river bed materials have been taken

For bituminous materials, basic rate at (location) for equivalent viscosity grade bitumen and for emulsion the basic rate of (location) has been considered as suggested.

Basic rate of other materials like coarse & fine sand, cement are as per the latest from

Basic rate of steel materials at sub-divisional office has been considered in analysis after adding cost of carriage, loading & unloading.

17.3 Lead for Materials

For stone aggregates and sand, lead from source to work site is calculated from the district map and block level map of core network and finalizing the same in discussion with PIU. The supply of different materials to worksite is by road. Lead for bituminous & steel materials are similarly obtained using SOR.

Note : The Rates were taken from Schedule of Rates enforced from November 2019.


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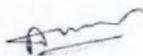
PRADHAN MANTRI GRAM SADAK YOJANA-II

Technical Report and Specification

1	Name of work	Construction of Rural Roads under P.M.G.S.Y.-III
2	Name of Road	Suhagpura To Achalawda Upto Block Border
3	Length of road (KM)	8.000
4	Name of Block	Peepalkhunt
5	Name of District	Pratapgarh
6	Estimated cost	Rs 478.75 Lakh
7	Head	P.M.G.S.Y.-III
8	Year	2019-20
10	Authority	Rajasthan Rural Road Department
(a)	Administrative sanction	Rajasthan Rural Road Department
(b)	Technical Sanction	Additional Chief Engineer PWD Zone Udaipur is the authority for issuing the Technical Sanction.
11	Necessity of work	To provide the facilities to the villagers for transportation of their Agro products, Educations, Medical aids etc
12	Provisions	
	1	Clearing and grubbing of road land to desired width
	2	Earth work for Embankment is proposed.
	3	Granular Sub Base as per 20% CBR is provided in required width.
	4	WMM Layer in 5.50m, width and 225, 75 mm. thickness
	5	Shoulder in 1.75m width Both Sides.
	6	-
	7	OGPC 5.5m. width and 20mm thickness
	8	Cross Drainage works
	9	Road Furnishing..
	11	The CDs on the road need to be replaced with new ones. The Road is passing through open area. Hence the CDs proposed are slab culverts.& Hume pipes obtained from dismanteling of culverts, will be handed over to concerned agency.
	12	The Design CBR has been taken 3-4 %.
13	Rates and specification	The rates and specifications are based on the Schedule of Rate inforced from 01/11/2019 in PMGSY.

DPR Consultant


Assistant Engineer
PWD Sub Dn Peepalkhunt


Executive Engineer
PWD Dn II Pratapgarh

PRADHAN MANTRI GRAM SADAK YOJANA-II

GENERAL ABSTRACT

Name of Road : *Suhagpura To Achalawda Upto Block Border*

Length of Road: *8.000 Km*

Block: *Peepalkhunt*

District : *Pratapgarh*

<i>Sr. No.</i>	<i>Particulars</i>	<i>Total Cost in Lacs (Rs)</i>
<i>1</i>	<i>Flexible Pavement</i>	<i>422.61</i>
<i>2</i>	<i>Rigid Pavement</i>	<i>0.00</i>
<i>3</i>	<i>Misc. Works (Including Protection Work)</i>	<i>7.13</i>
<i>4</i>	<i>Road Furnitures</i>	<i>40.07</i>
<i>5</i>	<i>Cost of Utility Shifting/Relocation</i>	<i>0.00</i>
<i>6</i>	<i>Cost Of Cross Drainage works</i>	<i>8.95</i>

Total Cost of Road Project Rs. 478.75 Lacs

Cost Per KM Rs. 59.84 Lacs

Maintenance Cost for 5 Years Rs. 142.10 Lacs

Total Cost of Road Project including maintainance Rs. 620.85 Lacs


(Suresh Chand Meena)
PWD Sub Dn. Peepalkhunt)


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PWD Dn. II Pratapgarh


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Pratapgarh

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY- III)
 COST ESTIMATE FOR ROAD CONSTRUCTION
 DETAILED ESTIMATE FOR CONVERSION OF TOP SOIL

Package No. :

Name of Road :- Suhagpura To Achalawda Upto Block Border

Block : Peepalkhunt
 8.000 Km

District : Pratapgarrh

S.No.	Description of Item	Nos	L (m)	B (m)	D (m)	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
1 3.10	Stripping, Storing and Relaying Top Soil from Right-of-Way (R.O.W)									
2 3.11	50% Stripping of top soil from borrow areas located in agriculture fields, storing at a suitable place, spreading and relaying after taking the borrow earth to maintain fertility of the agricultural field, finishing it to the required levels to the satisfaction of the farmer/land owner as per MoRD Specification Clause 302.3.2.	8.00	1000.00	7.00	0.10	cum	2800.00	145.00	406000.00	454,720.00
	5 % of Filling Qty from boro Area		14370.68	3 %		cum	431.12	114.00	49148.00	55,045.00
							Total		455148.00	509765.00


 (S.C. Meena)
 Assistant Engineer
 PWD Sub Dn Peepalkhunt


 (V.S.Meena)
 Executive Engineer
 PWD Dn. II Pratapgarrh

**PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY-III)
COST ESTIMATE FOR ROADS CONSTRUCTION**

Name of Road :- Suhagpura To Achalawda Upto Block Border

Length of the Road (Km) : 8.00 KM

Block : Peepalkhunt District : Pratapgarrh

Sl.No.	Description of Item	No	L (m)	B (m)	D (m)	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
1	2	3	4	5	6	7	8	9	10	11
1	PART - " A " - EARTH WORK									
1	Clearing and grubbing road land including uprooting wild vegetation, grass, bushes, shrubs, saplings and trees of girth upto 300 mm, removal of stumps of such trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, upto a lead of 1000 m including removal and disposal of top organic soil not exceeding 150 mm in thickness as per MoRD Specification Clause 201. By Mechanical Means	2	8000.00	1.50	-	Sqm	12000.00	14265.00	17118.00	19,172.00
	In area of non-thorny jungle				or	Hect.	1.200			
2	Dismantling of flexible pavements and disposal of dismantled materials upto a lead of 100 m, stacking serviceable and unserviceable materials separately as per MoRD Specification Clause 202	1	8000.00	3.75	0.020	cum	600.00	186.00	111600.00	124,992.00
	By Mechanical Means									
	Bituminous Courses									
	Earth Work									
	As enclosed quantity calculation sheet									
	(a) cutting Qty as per X- Section									
	Qty of Hoda Cutting	2	8000.00	2.00	0.325	cum	8516.36			
	Total Cutting Qty						10400.00			
	(b) Total filling Qty :- As per X- Section						18916.36			
	Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross-sections, and transporting to the embankment location with a lift upto 1.5 m and lead upto 1000 m as per MoRD Specification Clause 302.3						33287.04			
3	(i) 3.5 (iii)		95% of cutting qty			cum	17970.54	35.00	628969.00	704,445.00

**PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY-III)
COST ESTIMATE FOR ROADS CONSTRUCTION**

Name of Road :- Suhagpura To Achalawda Upto Block Border

Length of the Road (Km) :

8.00 KM

Block : Peepalkhunt District : Pratapgarh

Sl.No.	Description of Item	No	L (m)	B (m)	D (m)	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
		3	4	5	6	7	8	9	10	11
(ii) 3.9 (ii) B	Excavation for roadway in hard rock (blasting prohibited) with rock breakers including breaking rock, loading in tippers and disposal with a lift upto 1.5 m and lead upto 1000 metres, trimming bottom and side slopes in accordance with requirements of lines, grades and cross-sections as per MoRD Specification Clause 302.3.5 Mechanical Means									
(iii) 3.8 (iii)	Excavation for roadway in ordinary rock with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, transporting to embankment site with a lift upto 1.5 m and lead upto 1000 m, trimming bottom and side slopes in accordance with requirements of lines, grades and cross-sections as per MoRD Specification Clause 302.3.5		0% of cutting qty			cum	0.00	269.00	0.00	-
(v) 3.4 i	Construction of embankment with approved material obtained from borrow pits with a lift upto 1.5 m, transporting to site, spreading, grading to required slope and compacting to meet requirement of Tables 300.1 and 300.2 with a lead upto 1000 m as per MoRD Specification Clause 301.5		5% of cutting qty			cum	945.82	51.00	48237.00	54,025.00
	Net Filling Qty.					cum	14370.68			-
(vi) 3.3	Construction of embankment with approved materials deposited at site obtained from roadway cutting and excavation from drain and foundation or other structures graded and compacted to meet requirement of Tables 300.1 and 300.2 as per MoRD Specification Clause 301.5 Used for filling from cutting qty. as per Item No.(i),(ii) & (iii)						14370.68	132.00	699905.00	783,894.00
								#####		2,124,561.00

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY-III)
COST ESTIMATE FOR ROADS CONSTRUCTION

Name of Road :- Suhagpura To Achalawda Upto Block Border

Length of the Road (Km) : 8.00 KM

Block : Peepalkhunt District : Pratapgarrh

SI.No.	Description of Item	No	L (m)	B (m)	D (m)	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
1	(vii) Construction of reference bench mark (1 No.), working bench mark (4 Nos.) and near all drainage structures and bridges (as per direction of Engineer-in-charge), reference pillar/ burgees @ 50m interval on both side of formation width including marking of centre line, setting out curves, recording of levels, white washing and lettering etc. complete as per MORD specifications cl. 108.	3	4	5	6	7	8	9	10	11
					8.000	Km	8.00	50915.00	407320.00	456,198.00
Total Part - "A"									#####	4267287.00



(S.C. Meena)

Assistant Engineer

PWD Sub Dn Peepalkhunt



(V.S. Meena)

Executive Engineer

PWD Dn. II Pratapgarrh

**PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY- III)
COST ESTIMATE FOR ROADS CONSTRUCTION**

Name of Road :- Suhagpura To Achalawda Upto Block Border
Length of the Road (Km) :

8.00 KM Flexible Pavement 8.00 Km
Block : Peepalkhunt District : Pratapgarrh

Sl.No.	Description of Item	No.	L (m)	B (m)	D (m)	Unit	Quantity	Rate(Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
1	2	3	4	5	6	7	8	9	10	11
	PART - " B" - WMM & Hard Shoulder									
1	Construction of granular sub-base by providing well graded crusher borken material, mixing in a mechanical mix plant at OMC , carriage of mixed material to work site upto lead of 1000m spreading in uniform layers with Tractor Mount Grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with smooth wheel roller to achieve the desired density, complete as per MoRD Specification Clause 401. For Grading II Material									
4.1		2	8000.00	0.875	0.200	cum	2800.00	588.00	1646400.00	1843968.00
(B)		2	8000.00	1.500	0.075	cum	1800.00	588.00	1058400.00	1185408.00
(ii)										
2	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mixer (Pug Mill), carriage of mixed material by tipper to site, laying in uniform layers in sub-base/base course on a well prepared sub-base and compacting with smooth wheel roller of 80 to 100kN weight to achieve the desired density including lighting, barricading and maintenance of diversion, etc as per Tables 400.11 & 400.12 and MoRD Specification Clause 406. By Mechanical Means with lead up 11 km to 20 Km									
4.9		2	8000.00	0.875	0.075	cum	1050.00			
&		1.013	8000.00	5.50	0.150	cum	6682.50			
4.10.							7732.50	1182.60	9144455.00	10241789.00
(ii)							Total Part - "B"	11849255.00	13271165.00	

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**PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY-III)
COST ESTIMATE FOR ROADS CONSTRUCTION**

Name of Road :- Suhagpura To Achalawda Upto Block Border

Length of the Road (Km) : 8.00 KM Flexible Pavement 8.00 Km
Block : Peepalkhunt District : Pratapgarrh

S.No.	Description of Item	No	L (m)	B (m)	D (m)	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
1	2	3	4	5	6	7	8	9	10	11
1	PART - " C " - B.T. Work									
1	Low porosity									
5.1(i)	Providing and applying primer coat with bitumen emulsion (SS-1) on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.70-1.0 kg/sqm using mechanical means as per MoRD Specification Clause 502	1.013	8000.00	5.50	-	Sqm.	44550.00	49.00	2182950.00	2444904.00
2.	Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared granular surfaces treated with primer & cleaned with Hydraulic broom as per MoRD Specification Clause 503.				TOTAL	Sqm.	44550.00			
	For Carriageway Width	1.013	8000.00	5.50	-	Sqm.	44550.00	11.00	490050.00	548856.00
3	Providing and laying bituminous macadam with hot mix plant using crushed aggregates of grading as per Table 500.4 premixed with bituminous binder, transported to site with all leads laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled to achieve the desired compaction as per MoRD Specification Clause 504. Bitumen (VG-10)	1.013	8000.00	5.50	0.050	Cum	2227.50			
5.3 (i)					TOTAL	Cum	2227.50	4955.00	11037263.00	12361734.00

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PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY-III)
 COST ESTIMATE FOR Renewal of Road After 5th Year Maintenance
 Name of Road :- Suhagpura To Achalawda Upto Block Border

Name of Road :- Suhagpura To
 Achalawda Upto Block Border

Length of the Road (Km) : 8.00 KM Flexible Pavement 8.00 Km

S.No.	Description of Item	Block : Peepalkhant						District : Pratapgargh		
		No	L (m)	B (m)	D (m)	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
1	2	3	4	5	6	7	8	9	10	11
	PART - " C " - B.T. Work									
1	Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared granular surfaces treated with primer & cleaned with Hydraulic broom as per MoRD Specification Clause 503.									
	For Carriageway Width	1.01	8000.00	5.50	-	Sqm.	44550.00			
					TOTAL	Sqm.	44550.00	11.00	490050.00	548856.00
2	Providing and laying bituminous macadam with hot mix plant using crushed aggregates of grading as per Table 500.4 premixed with bituminous binder, transported to site with all leads laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled to achieve the desired compaction as per MoRD Specification Clause 504.									
5.3	Bitumen (VG-10)									
	2.5 % For Patching	1.01	8000.00	5.50	0.050	Cum	55.69			
					TOTAL	Cum	55.69	4955.00	275932.00	309043.00

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY-III)
COST ESTIMATE FOR ROADS CONSTRUCTION

Name of Road :- Suhagpura To Achalawda Upto Block Border

Length of the Road (Km) : 8.00 Km

Rigid Pavament 0.000 Km

Block : Peepalkhant

District : Pratappgarh

CH -0/0 to 0/500

Sl. No.	Description of Item	No	L (m)	B (m)	D (m)	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
1	2	3	4	5	6	7	8	9	10	11
1	4.1 Construction of granular sub-base by providing well graded crusher borken material, mixing in a mechanical mix plant at OMC , carriage of mixed material to work site upto lead of 1000m spreading in uniform layers with Tractor Mount Grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with smooth wheel roller to achieve the desired density, complete as per MoRD Specification Clause 401. For Grading II Material									
	Crust	2	0.00	0.875	0.200	cum	0.00	588.00	0.00	0.00
	Hard Shoulder	2	0.00	1.750	0.150	cum	0.00	588.00	0.00	0.00
2	4.9 Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material & with water at OMC in mechanical mixer (Pug Mill), carriage of mixed material by tipper to site, laying in uniform layers in sub-base/base course on a well prepared sub-base and compacting with smooth wheel roller of 80 to 100kN weight to achieve the desired density including lighting, barricading and maintenance of diversion, etc as per Tables 400.11 & 400.12 and MoRD Specification Clause 406. By Mechanical Means with lead up to 20 Km									
		2	0.00	0.875	0.075	cum	0.00			
		1	0.00	5.50	0.100	cum	0.00			
							0.00	1182.60	0.00	0.00

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY - III)
COST ESTIMATE FOR ROADS CONSTRUCTION

Name of Road :- Suhagpura To Achalawda Upto Block Border

Length of the Road (Km) :

8.00 Km

Rigid Pavament

0.000 Km

Block : Peepalkhant

District : Pratapgarrh

CH -0/0 to 0/500

Sl. No.	Description of Item	No	L (m)	B (m)	D (m)	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
1		3	4	5	6	7	8	9	10	11
3										
6.4.1	Construction of un-reinforced, dowel jointed at expansion and construction joint only, plain cement concrete pavement, thickness as per design, over a prepared sub base, with 43 grade cement or any other type as per Clause 1501.2.2 M30 (Grade), coarse and fine aggregates conforming to IS:383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a concrete mixer of not less than 0.2 cum capacity and appropriate weigh batcher using approved mix design, laid in approved fixed side formwork (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the formwork as per drawing).									
	spreading the concrete with shovels, rakes, compacted using needle, screed and plate vibrators and finished in continuous operation including provision of contraction and expansion, construction joints, applying debonding strips, primer, sealant, dowel bars, near approaches to bridge/culvert and construction joints, admixtures as approved, curing of concrete slabs for 14-days, using curing compound and water finishing to lines and grade as per drawing and MoRD Specification Clause 1501 including vacuum dewatering process with all required equipments									
		1	0.00	5.50	0.20	0.00		5083.00	0.00	0.00
						0.00	cum			

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY - III)
COST ESTIMATE FOR ROADS CONSTRUCTION

Name of Road :- Suhagpura To Achalawda Upto Block Border

Length of the Road (Km) :

8.00 Km Rigid Pavement 0.000 Km

Block : Peepalkhunt

District : Pratapgarrh

CH -0/0 to 0/500

Sl. No.	Description of Item	No	L (m)	B (m)	D (m)	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
1	2	3	4	5	6	7	8	9	10	11
4	Providing, fabricating and lying form work of plastic cells made from reclaimed High Density Polythelene (HDPE) sheets of thickness 0.20mm to about 0.25mm or LDPE sheets of thickness 0.30mm to 0.35mm thickness, 100mm wide heat welded or stitched to form cell at 300mm interval and fixed with iron spikes of about 200mm long to keep the cell walls taut and with nylon threads to prevent collapse of the cell walls during placement of concrete, form work of cells should be so stitched to form a roll of cells of a pavement width 3.75m and has a length of 10m to 20m and successive rolls of cell to be stapled									
		1	0.00	5.50		0.00				
Total for CC Pavement							Sqm	116.00	0.00	0.00
								Rs	0.00	0.00



(S.C. Meena)
Assistant Engineer
PWD Sub Dn Peepalkhunt



(V.S. Meena)
Executive Engineer
PWD Dn. II Pratapgarrh

**PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY-III)
COST ESTIMATE FOR ROADS CONSTRUCTION**

Name of Road :- Suhagpura To Achalawda Upto Block Border

Length of the Road (Km) :

8.00 Km

Block : Peepalkhant

District : Pratapgarh

Part-D :- Road Furnishing

S.N.	Description of Item	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
1	2	3	4	5	6	7
1	Reinforced cement concrete M15 grade kilometre stone/local stone of standard design as per IRC:8 fixing in position including painting and printing, etc as per drawing and MoRD Specification Clause 1703. 5th Kilometer Stone (precast)	No	2	2485.00	4970.00	5566.00
A i	Ordinary Kilometer Stone (Precast)	No	9	1477.00	13293.00	14888.00
10.10	200 m stone (precast)	No	32	337.00	10784.00	12078.00
A iii						
2	Reinforced cement concrete M15 grade boundary pillars/local stone of standard design as per IRC:25, fixed in position including finishing and lettering but excluding painting as per drawing and MoRD Specification Clause 1704	No	64	383.00	24512.00	27453.00
10.11	Providing and fixing of PMGSY logo with definition plate (as per MORD design/drawing) 2mm thick MS plate framed to angle Iron 40x40x6mm including orange luminous colour paint on logo, size of diamond plate 600x600mm definition plate 900x250mm supported on MS post of angle Iron of size 65x65x6mm, 3m long stove enameled paint with hold fast firmly fixed to the ground by means of properly designed foundation with M-15 grade cement concrete 450 x 450 x 600 mm, 600 mm below ground level as per approved drawing and MoRD Specification Clause 1700	No	5	4007.00	20035.00	22439.00
10.19						

**PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY - III)
COST ESTIMATE FOR ROADS CONSTRUCTION**

Name of Road :- Suhagpura To Achalawda Upto Block Border

Length of the Road (Km) :

8.00 Km

Block : Peepalkhant

District : Pratapgarh

Part- D :- Road Furnishing

S.N.	Description of Item	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
4 10.16	Providing and fixing of typical PMGSY informative sign board with Logo as per MORD specifications and drawing. Three plates of Aluminium Composite Materials (ACM), material specifications as per Clause 1701.3.7. The top most plate will be in diamond shape of 600mm x 600 mm size, riveted over welded M.S. angle iron frame of 25 mm x 25mm x 5mm size on back on edges. The middle plate will be 1200 mm x 150 mm size riveted over welded M.S. angle iron frame of 25mm x 25mm x 5 mm size on back on edges. The main lower most plate will be 1500 mm x 600 mm size, riveted over welded M.S. angle iron frame of 25 mm x 25 mm size. Welding of all the sheets over angle iron frame will be done neatly to have plain surface on one side. The angle iron frames of the lower most plate and the middle plate will be welded to two nos. 75 mm x 75 mm (12 SWG) sheet tubes posts placed at 1125 mm apart centre to centre. The top of the middle plate will be flushed with the top of 75 mm dia medium steel tube posts and these posts will be embedded in cement concrete M15 grade blocks of 450 mm x 450 mm x 600 mm below ground level. The height of bottom of the lower most plate will be 1200 mm from normal ground level and the bottom of middle plate will be 100 mm above the top level of the lower most plate. The lettering and borders, etc. of middle and bottom plate, PMGSY logo on top plate shall be as per clause 1701.4.6 Messages/Borders. All the sections of frame and posts will be painted with primer and two coats of Epoxy paint. The steel tube below ground level will be painted with three coats of Epoxy paint. The design, painting and lettering shall be done as per approved drawing. For warranty and durability the clause 1701.5 and for maintenance the clause 1911 shall be applicable. A reference number along with the month and year of installation should be placed on the back of a sign in a contrasting colour or by stamping in characters not exceeding 50 mm in height as per approved drawing and MoRD Specification Clause 1700	No	1	12962.00	12962.00	14517.00
5 10.2 (A) 2	Providing and fixing of retro-reflectorised cautionary, mandatory and informative sign as per IRC:67 made of encapsulated lens type reflective sheeting vide Clause 1701.2.3, fixed over aluminium sheeting, 1.5 mm thick supported on RCC Post 100 mm x 100 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per approved drawing Clause 1701	No	32	2,747.00	87904.00	98452.00
(i)	900 mm equilateral triangle	No	4	5,204.00	20816.00	23314.00
(iv)	800 mm x 600 mm rectangular	No				

**PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY-III)
COST ESTIMATE FOR ROADS CONSTRUCTION**

Name of Road :- Suhagpura To Achalawda Upto Block Border

Length of the Road (Km) :

8.00 Km

Block : Peepalkhunt

District : Pratapggarh

Part-D :- Road Furnishing

S.N.	Description of Item	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
6 10.20	Providing and Erecting typical Citizen's information Board as per approved drawing & specification of MORDE made of Two plates of Aluminium Composite Materials (ACM), material specifications as per Clause 1701.3.7 of size 900 mm x 750 mm size riveted over welded M.S. angle iron frame of 25mm x 25mm x 5 mm size on back on edges. Frame will be welded to two nos. 75 mm x 75 mm (12 SWG) sheet tubes posts placed at 1000 mm apart centre to centre these posts will be embedded in cement concrete M15 grade blocks of 450 mm x 450 mm x 600 mm below ground level. The lettering and borders, etc. of plates shall be as per clause 1701.4.6 Messages/Borders. All the sections of frame and posts will be painted with primer and two coats of Epoxy paint. The steel tube below ground level will be painted with three coats of Epoxy paint. The design, painting and lettering shall be done as per approved drawing and MoRD Specification Clause 1700	No	1	13916.00	13916.00	15586.00
7 17.10 1	Supply of Chevron sign of size 75x60 cm made out of aluminum sheet 2 mm thick with fixing provision on M.S. angle iron post 50x50x6 mm 3 M long screwed with stainless steel nut bolts of 8 M dia, plate is covered by high intensity grade yellow retro-reflective sheeting and black screen printed arrow on Retro Reflective Sheet, complete in all respect. Comp. in all respect duly post painted in alternate band of Black/White synthetic enamel paint & hold fast at bottom	No	200	5865.00	1173000.00	1313760.00
8 17.98	Providing and erecting a "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 70 cm above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m centre to centre, 1.8 m high, 1.1 m below ground/road level, all steel parts and fittings to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a spacer of channel section 150 x 75 x 5 mm, 330 mm long complete as per clause 810	P. Rmt	200	2289.00	457800.00	512736.00
9 17.75	Supplying of Cat's Eye made of aluminium alloy size 75x100x22 mm having 21 biconvex lenses embedded in circular disk of ABS plastic on each side.	No	960	242.00	232320.00	260198.00
10 17.70	Supply of Hazard Marker made out of 2 mm thick M.S. sheet size 300x300x3 mm framed with angle iron 25x25x3 mm and fixed on channel posts 75x40x6 mm and hold fast at bottom whole body is painted in white stoving enamel and 6 Nos., 5 cm dia reflective sheet on white reflective background with additional border of 1.25 cm all around it.	No	48	769.00	36912.00	41341.00

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY - III)
COST ESTIMATE FOR ROADS CONSTRUCTION

Name of Road :- Suhagpura To Achalawda Upto Block Border

Length of the Road (Km) :

8.00 Km

Block : Peepalkhunt

District : Pratapggarh

Part- D :- Road Furnishing

S.N.	Description of Item	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
11	Supplying & Fixing Direction and place identification sign board made out of 2 mm thick M.S. sheet framed to angle iron 40x40x5 mm and two vertical posts of angle iron of size 65x65x6 mm 3 meter long with hold fasts, stove enameled paint reflective letter symbol complete of size. :	No	16	5077.00	81232.00	90980.00
17.62	150 x 120 cm.					
.1						
17.62	90 x 60 cm.	No	24	3025.00	72600.00	81312.00
.4						
17.62	60 x 45 cm.	No	32	2257.00	72224.00	80891.00
.6						
12	Marking Centre Line and stop lines etc. on road as per IRC pattern with thermoplastic paint of approved quality and make with 8% glass beads laid on the road surface at temperature 160" C with a special applicator machine complete with a special applicator machine complete with labour material and traffic diversion arrangements.					
10.21	Edge Line Both side 0.15 CM thick		1200.00			
	Zebra 6 strip of 3 metre length and 0.50 m wide		600			
	Stop Line		132			
	Other Lum Sum		80			
		Sqm	2012.00	529.00	1064348.00	1192070.00
13	Construction of speed breaker of IRC standard having width of 3.70 M including cost of stone aggregate (50-25mm) size hire charges for roller for consolidation and compaction and other machines required for the work (excluding cost of bitumen)	Sqm	59.2	164.00	9708.80	10874.00
17.38						

**PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY- III)
COST ESTIMATE FOR ROADS CONSTRUCTION**

Name of Road :- Suhagpura To Achalawda Upto Block Border

Length of the Road (Km) :

8.00 Km

Block : Peepalkhant

District : Pratapgarrh

Part-D :- Road Furnishing

S.N.	Description of Item	Unit	Quantity	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
14 17.90	Supply & Planting of shady plants (Neem, Peepal, Goolar, Jamun, Imli or other specified) along road side including the following activities:- 1. Preparation of soil including cleaning & removing of unwanted shrubs removal of stones & garbage. 2. Supply of plant at site of two years of age & height more than 1.50 Mtr 3. Supply of dry manure (Farm yard manure organic) 4. Supply of Insecticides 5. Digging of pits size 60x60x60 cms. Including removal of stones. Manuring application of insecticides & watering at least 15 liter per plant after planting. 6. Half brick Circular tree guard in second class bricks, internal dia 1.25 meter and height 1.20 meter above ground and 0.20 meter below ground, bottom two courses laid dry and top three courses in cement mortar 1:6 (1Cement : 6 Sand) and the intermediate courses being in dry honey comb masonry, as per design complete.					
		P. Plant	94.11765	1785.00	168000.00	188160.00
				Total Part - "D"	3577336.80	4006615.00


(S.C. Meena)
Assistant Engineer
PWD Sub Dn Peepalkhant


(V.S. Meena)
Executive Engineer
PWD Dn. II Pratapgarrh

PRADHAN MANTRI GRAM SADAK YOJANA-III

Maintenance of Road

Road Name	Suhagpura To Achalawda Upto Block Border	District	Pratapgarh
Length	8.000 Km		
Block	Peepalkhunt		
Project Cost	478.75 Lacs		

Description of Item

Amount Required for maintenance of Road for five years after completion of Project.	Length of Road (KM)	Amount	Amount	Amount incl GST (Rs)
1st Year @ 1.12% of Project Cost	8.000	536201.38	536201.38	600545.55
2nd Year @ 1.43% of Project Cost	8.000	684614.26	684614.26	766767.97
3rd Year @ 1.83% of Project Cost	8.000	876114.76	876114.76	981248.53
4th Year @ 2.15% of Project Cost	8.000	1029315.15	1029315.15	1152832.97
5th Year @ 2.47% of Project Cost	8.000	1182515.54	1182515.54	1324417.41
Total 5 Year Cost @ 26000 Rs/KM (24500 @ Per Year for CC)	0.000	26000.00	0.00	0.00
		Total Amount		4825812.42
			48.26	Lacs

(Suresh Chand Meena)
PWD Sub Dn. Peepalkhunt)

(V.S.Meena)
PWD Dn.II Pratapgarh

(R.S. Chauhan)
PIU PWD Circle Pratapgarh

DETAILED ESTIMATE FOR RAMP

Name of Road :- Subhagura To Achahawds Upto Block Border

Black : Peepalkhunt
8.00 km

Length of the Road (Km.) :

S.No.	Description of Item	For 5 Nos					Unit	Rate (Rs)	Amount (Rs)	AMOUNT Incl GST (Rs.)
		No	L (m)	B (m)	D (m)	Qty =				
		2x25	(0.0+1.50)/2		37.50					
		7.50	1.50		11.25					
		10.00	(7.50+3.75)/2		56.25					
			2		105.00					
1	Construction of embankment with approved material obtained from borrow pits with a lift upto 1.5 m, transporting to site, spreading, grading to required slope and compacting to meet requirement of Tables 300.1 and 300.2 with a lead upto 1000 m as per MoRD Specification Clause 301.5	5	1.00	105.00	0.25	131.25	cum	132.00	17325.00	19404.00
2	Construction of granular sub-base by providing well graded crusher broken material, mixing in a mechanical mix plant at OMC, carriage of mixed material to work site upto lead of 1000m spreading in uniform layers with Tractor Mount Grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with smooth wheel roller to achieve the desired density, complete as per MoRD Specification Clause 401. For Grading II Material	5	1.00	105.00	0.10	52.500	cum	568.00	30870.00	34574.00
3	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including preparing the material with water at OMC in mechanical mixer (Pug Mill), carriage of mixed material by tipper to site, laying in uniform layers in sub-basebase course on a well prepared sub-base and compacting with smooth wheel roller of 80 to 100kN weight to achieve the desired density including lighting, barricading and maintenance of diversion, etc as per Tables 400.11 & 400.12 and Technical Specification Clause 406.	5		105.00	0.150	78.75	cum	1179.00	92846.00	103988.00
4	By Mechanical Means with lead up to 20 Km			105.00						
5.1	(SS-1) on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.20-1.0 l/sgm using mechanical means as per Technical Specification Clause 502-Low Porosity	5		105.00	-	525.00	Sq.m.	45.00	25725.00	28812.00
5.2(iii)	1) using emulsion distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared granular surfaces treated with primer as per Technical Specification Clause 503.	5		105.00	-	525.00	Sq.m.	11.00	5775.00	6468.00
5.9	Providing, laying and rolling of open-graded premix carpet of 20 mm thickness composed of 13.2 mm to 5.5 mm (i) & aggregates either using penetration grade bitumen or 5.9 emulsion to required line, grade and level to serve as (a) wearing course on a previously prepared base, including making in a suitable plant, laying and rolling with a three wheel 80-100 kN static roller capacity, finished to required level and grades to be followed by seal coat of either Type A or Type B or Type C as per MoRD Specification Clause 508, Case - II By Mechanical Means Bitumen (VG-10). Add extra over item no. 5.9. Case-II (ii) for providing waste plastic-8% of bitumen including of cutting of plastic waste and mixing of aggregate and plastic waste cutting in a hot mix plant.	5		105.00						
7	Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A, Type B and Type C as per MoRD Specification Clause 510 By Mechanical Means Case - II : Type B Bitumen (VG-10)	5	5.00	105.00		525.00	sqm	103.00	54075.00	60564.00
5.12	bluminous surface laid to the specified levels, grade and cross fall using Type A, Type B and Type C as per MoRD Specification Clause 510 By Mechanical Means Case - II : Type B Bitumen (VG-10)	5	5.00	105.00		525.00	sqm	35.00	18375.00	20580.00
						525.00	Total Rs	244991.00		274390.00

DETAILED ESTIMATE FOR PLATE FORM

Name of Road :- Suhagpura To Achalawda Upto Block Border

Block : Peepalkhunt

8.00 km

Length of the Road (Km.) :

For 1 Nos

District : Pratappgarh

S.No	Description of Item	Nos	L (m)	B (m)	D (m)	Quantity	Unit	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
1 3.4 i	Construction of embankment with approved material obtained from borrow pits with a lift upto 1.5 m, transporting to site, spreading, grading to required slope and compacting to meet requirement of Tables 300.1 and 300.2 with a lead upto 1000 m as per MoRD Specification Clause 301.5	1	(16.0+10) 2	3.00	0.30	11.70	cum	132.00	1544.00	1730.00



(S.C. Meena)

Assistant Engineer

PWD Sub Dn Peepalkhunt



(V.S. Meena)

Executive Engineer

PWD Dn. II Pratappgarh

DETAILED ESTIMATE FOR RAMP

Name of Road :- Suhagpura To Achalawda Upto Block Border

Block : Peepalkhunt

8.00 km

Length of the Road (Km.) :

For 1 Nos

S.No	Description of Item	No	L (m)	B (m)	D (m)	Quantity	Unit	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
			Area of Bus Stop (25.0 + 55.0)/2 x 15.0 = 600.00sqm							
					600.00					
1	Construction of embankment with approved material obtained from borrow pits with a lift upto 1.5 m, transporting to site, spreading, grading to required slope and compacting to meet requirement of Tables 300.1 and 300.2 with a lead upto 1000 m as per MoRD Specification Clause 301.5	1	1.00	600.00	0.25	150.00	cum	132.00	19800.00	22176.00
2	Construction of granular sub-base by providing well graded crusher borken material, mixing in a mechanical mix plant at OMC , carriage of mixed material to work site upto lead of 1000m spreading in uniform layers with Tractor Mount Grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with smooth wheel roller to achieve the desired density, complete as per MoRD Specification Clause 401. For Grading II Material									
3	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mixer (Pug Mill), carriage of mixed material by tipper to site, laying in uniform layers in sub-base/base course on a well prepared sub-base and compacting with smooth wheel roller of 80 to 100kN weight to achieve the desired density including lighting, barricading and maintenance of diversion, etc as per Tables 400.11 & 400.12 and Technical Specification Clause 406.	1	Qty =	600.00	0.10	60.000	cum	588.00	35280.00	39514.00
4	By Mechanical Means with lead up to 20 Km									
5.1	Providing and applying primer coat with bitumen emulsion (SS-1) on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.70-1.0 kg/sqm using mechanical means as per Technical Specification Clause 502- Low Porosity	1		600.00	0.150	90.00	cum	1179.00	106110.00	118843.00
				600.00		600.00	Sqm.	49.00	29400.00	32928.00

S.No	Description of Item	No	L (m)	B (m)	D (m)	Quantity	Unit	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
5	Providing and applying tack coat with Bitumen emulsion (RS-5.2(iii) 1) using emulsion distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared granular surfaces treated with primer as per Technical Specification Clause 503.	1		600.00	-	600.00	Sqm.	11.00	6600.00	7392.00
6	Providing, laying and rolling of open-graded premix carpet of 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen or emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a three wheel 80-100 kN static roller capacity, finished to required level and grades to be followed by seal coat of either Type A or Type B or Type C as per MoRD Specification Clause 508. Case - II By Mechanical Means Bitumen (VG-10). Add extra over item no. 5.9, Case-II (ii) for providing waste plastic -8% of bitumen including of cutting of plastic waste and mixing of aggregate and plastic waste cutting in a hot mix plant.	1	1.00	600.00		600.00	sqm	103.00	61800.00	69216.00
7	Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A, Type B and Type C as per MoRD Specification Clause 510 By Mechanical Means Case - II : Type B Bitumen (VG-10)	1	1.00	600.00		600.00	sqm	35.00	21000.00	23520.00
Total Rs									279990.00	313589.00

(S.C. Meena)
PWD Sub Dn Peepalkhunt

(V.S.Meena)
PWD Dn. II Pratepgarh

DETAILED ESTIMATE FOR RAMP

Name of Road :- Suhagpura To Achalawda Upto Block Border

Block : Peepalkhunt
8.00 km

Length of the Road (Km.) :

For 3 Nos

S.No.	Description of Item	No	L (m)	B (m)	D (m)	Quantity	Unit	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
		3	2	30.00	$\frac{(1.25+2.7)}{2}$	1.00	360.00	Sqm		
		3	2	30.00	$\frac{(1.25+3.1)}{2}$	1.00	393.750	Sqm		
		3	1	7.50	4.00	1.00	90.000	Sqm		
					843.75		843.75			
1	Construction of embankment with approved material obtained from borrow pits with a lift upto 1.5 m, transporting to site, spreading, grading to required slope and compacting to meet requirement of Tables 300.1 and 300.2 with a lead upto 1000 m as per MoRD Specification Clause 301.5	3	1.00	843.75	0.25	632.81	cum	132.00	83531.00	93555.00
2	Construction of granular sub-base by providing well graded crusher borken material, mixing in a mechanical mix plant at OMC , carriage of mixed material to work site upto lead of 1000m spreading in uniform layers with Tractor Mount Grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with smooth wheel roller to achieve the desired density, complete as per MoRD Specification Clause 401. For Grading II Material	3	Qty =	843.75	0.10	253.125	cum	588.00	148838.00	166698.00
3	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mixer (Pug Mill), carriage of mixed material by tipper to site, laying in uniform layers in sub-base/base course on a well prepared sub-base and compacting with smooth wheel roller of 80 to 100kN weight to achieve the desired density including lighting, barricading and maintenance of diversion, etc as per Tables 400.11 & 400.12 and Technical Specification Clause 406.	3		Area as above						
	By Mechanical Means with lead up to 20 Km	3		843.75	0.150	379.69	cum	1179.00	447652.00	501370.00

S.No.	Description of Item	No	L (m)	B (m)	D (m)	Quantity	Unit	Rate (Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
4	Providing and applying primer coat with bitumen emulsion (SS-1) on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.70-1.0 kg/sqm using mechanical means as per Technical Specification Clause 502- Low Porosity	3		843.75	-	2531.25	Sqm.	49.00	124031.00	138915.00
5	Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared granular surfaces treated with primer as per Technical Specification Clause 503.	3		843.75	-	2531.25	Sqm.	11.00	27844.00	31185.00
6	Providing, laying and rolling of open-graded premix carpet of 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen or emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a three wheel 80-100 kN static roller capacity, finished to required level and grades to be followed by seal coat of either Type A or Type B or Type C as per MoRD Specification Clause 508. Case - II By Mechanical Means Bitumen (VG-10). Add extra over item no. 5.9, Case-II (ii) for providing waste plastic -8% of bitumen including of cutting of plastic waste and mixing of aggregate and plastic waste cutting in a hot mix plant.	3	3.00	843.75		2531.25	sqm	103.00	260719.00	292005.00
7	Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A, Type B and Type C as per MoRD Specification Clause 510 By Mechanical Means Case - II ; Type B Bitumen (VG-10)	3	3.00	843.75		2531.25	sqm	35.00	88594.00	99225.00
								Total Rs	1181209.00	1322953.00

(S.C. Meena)
PWD Sub Dn Peepalkhunt

(V.S. Meena)
PWD Dn. II Pratapgarh

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY- II)
COST ESTIMATE FOR ROADS CONSTRUCTION OF CROSS DRAINAGE WORKS

Name of Road :- Suhagpura To Achalawda Upto Block Border

Length of the Road (Km) : 8.00 KM

CH 5/300 to 5/700

PART -" N " - Retaining Wall

Block : Peepalkhunt

125.00 M

District : Pratapgarh

S.No.	Description of item	No	L (m)	B (m)	D (m)	Qty	Unit	Rate (Rs.)	Amount (Rs.)	AMOUNT incl GST (Rs.)
1	2	3	4	5	6	7	8	9	10	10
1	Earthwork in excavation for structures as per drawing and MoRD specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. Ordinary soil Upto 3 m depth	1	125.00	1.30	1.00	162.50	cum	211.00	34288.00	38402.00
2	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRD specifications Clause 802, 803, 1202 & 1203 P.C.C grade M 10 - Nominal mix 1:3:6	1	125.00	1.30	0.10	16.25	cum			
3	Stone masonry work in cement mortar in foundation complete as per drawing and MoRD specifications Clauses 702, 704, 1202 & 1203. Random Rubble Masonry In 1:6 cement mortar	1	125.00	0.40	2.25	217.97	cum			
4	Providing PCC M-20 architectural coping on the top of wing wall, return wall etc. complete as per drawing and MoRD specification Clauses 615, 710 and 1204.3.11 and 1204.3.11 50 mm thick	1	125.00	0.40	-	50.00	sqm			
									52894.00	59241.00
									513534.00	575159.00

S.No.	Description of item	No	L (m)	B (m)	D (m)	Qty	Unit	Rate(Rs.)	Amount (Rs.)	AMOUNT incl GST (Rs.)
5	12.9 Providing weepholes in brick masonry/stone masonry, plain/reinforced concrete abutment, wing wall, return wall with 100 mm dia AC pipe extending through the full width of the structures with slope of 1(V):20(H) towards drawing face complete as per drawing and MoRD specification Clauses 614, 709, 1204.3.7					50.00	sqm	213.00	10650.00	11928.00
6	12.3 Plastering with cement mortar (1:4), 15 mm thick on brickwork in substructure as per MoRD specification Clauses 613.4 & 1204	62.5	1.00	-	-	62.50	Each	65.00	4063.00	4550.00
		1	125.00	1.35	-	168.75	sqm			
						168.75	sqm	123.00	20756.00	23247.00
								Total - F =	636185.00	712527.00



(S.C. Meena)
Assistant Engineer
PWD Sub Dn Peepalkhunt



(V.S. Meena)
Executive Engineer
PWD Dn. II Pratappgarh

PRADHAN MANTRI GRAM SADAK YOJANA-II (PMGSY-II)
(Ministry of Rural Development, Govt. of India)

NAME OF ROAD: Subangura To Achalawada Upto Block Border
 DISTRICT: Pratapgarh
 BLOCK: Pespahabant
 TOTAL ROAD LENGTH: 8.000 KM

DETAIL OF PROPOSED AND EXISTING CD STRUCTURE

S.NO	CHAINAGE E (M)	TYPE OF STRUCTURE	SPAN ARRANGEMENT	CONDITION/PROVISION	REPAIRING COST	CHAINAGE (PROPOSED)	TYPE OF STRUCTURE	SPAN ARRANGEMENT	LENGTH (MTR)	WIDTH (MTR)	COST IN LAKH
1	1+213	HPC	1 Row 1000	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
2	1+375	HPC	1 Row 1000	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
3	1+900	HPC	1 Row 1000	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
4	2+850	HPC	1 Row 1000	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
5	2+775	HPC	2 Row 1000	POOR	0.00	2+775	HPC	2 Row 1000	6.49	1.0	5.00
6	4+300	HPC	1 Row 1000	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
7	4+430	HPC	2 Row 1000	POOR	0.00	4+430	HPC	2 Row 1000	6.49	1.0	5.00
8	4+575	HPC	1 Row 1000	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
9	4+725	HPC	1 Row 1000	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
10	5+050	HPC	3 Row 1000	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
11	5+300	HPC	1 Row 600	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
12	5+475	HPC	1 Row 1000	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
13	5+625	HPC	2 Row 1000	POOR	0.00	5+625	HPC	2 Row 1000	6.49	1.0	5.00
14	6+090	HPC	1 Row 1000	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
15	6+125	HPC	1 Row 600	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
16	7+775	HPC	1 Row 600	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
17	7+995	HPC	1 Row 600	FAIR	0.00	0+000	0	0	0.00	0.0	0.00
TOTAL COST										21.81	16.80

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY- III)
COST ESTIMATE FOR CONSTRUCTION OF CROSS DRAINAGE WORKS
(Culverts and Minor Bridges)

#REF!

Type of cross Drainage works : Pipe Culvert - 1000mm Dia. 2Row

Block : Peepalkhant

District : Pratapggarh

2 Row 1000mm dia. 2

Width = 12.50

Design Discharge : M³/Sec.

Type of Soil : HSMB

Sl.No.	Description of item	No.	L (m)	B (m)	D (m)	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	AMOUNT incl GST (Rs.)
1	2	3	4	5	6	7	8	9	10	11
11.1	Earthwork in excavation for structures as per drawing and MoRD specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. Ordinary soil Upto 3 m depth	2	8.00	1.60	1.20	cum	30.72			
	Under Pipe	1	10.48	2.00	1.20	cum	25.15			
						Total	55.87	211.00	11789.00	13204.00
11.4	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRD specifications Clause 802, 803, 1202 & 1203 P.C.C grade	2	8.00	1.60	0.10	cum	2.56	3255.00	8333.00	9333.00
9.3 (B)	Providing and laying reinforced cement concrete pipe NP3 for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets Clause 1106, 1000 mm dia	2	12.50	-	-	RM	25.00	3966.00	99150.00	111048.00
11.6 III (iii)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRD specifications Clauses 702, 704, 1202 & 1203. Random Rubble Masonry In 1:6 cement mortar	2	8.00	$\frac{(0.40+1.25)}{2}$	2.50	cum	33.00			
	Deduction	4	$\frac{3.142}{4}$	$(1.23)^2$	$\frac{(1.01+0.60)}{2}$	(-)	3.83			
						Net	29.17	2356.00	68725.00	76971.00
12.3	Plastering with cement mortar (1:4), 15 mm thick on brickwork in substructure as per MoRD specification Clauses 613.4 & 1204	8	0.40	-	0.60	sqm.	1.92	123.00	236.00	264.00

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY- III)
COST ESTIMATE FOR CONSTRUCTION OF CROSS DRAINAGE WORKS
(Culverts and Minor Bridges)

#REF!

Type of cross Drainage works : Pipe Culvert - 1000mm Dia. 2Row

Design Discharge : M³ /Sec.

Block : Peepalkhunt

Type of Soil : HSMB

District : Pratapgarh

2 Row 1000mm dia. 2 Width = 12.50

Sl.No.	Description of item	No.	L (m)	B (m)	D (m)	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	AMOUNT incl GST (Rs.)
1	2	3	4	5	6	7	8	9	10	11
6.	Stone masonry work in cement mortar in substructure complete as per drawing and MoRD specifications III (ii) Clauses 702, 704, 1202 & 1203. Random Rubble Masonry In 1:4 cement mortar	2	0.40	0.40	0.60	cum.	0.19	2995.00	569.00	637.00
7	Pointing with cement mortar (1:3) on Stone work as per drawing and MoRD specification Clauses 613.3 and 1204 Raised and Cut Type	2	8.00	-	1.80	sqm.	28.80			
		4	-	0.71	1.80		33.88			
	Deduction	2	$\frac{3.142}{4}$	(1.23) ²		(-)	2.38			
						Net	31.50	75.00	2363.00	2646.00
8 9.2	Laying concrete cradle bedding with M15 Grade Cement Concrete as per Clause 1105 (i)	1	10.48	2.00	0.15	cum.	3.14	3259.00	10233.00	11461.00
(i) 11.4	P.C.C grade M 15 Nominal mix (1:2.5:5)									
(ii) i	Providing PCC M-20 architectural coping on the top of wing wall, return wall etc. complete as per drawing and MoRD specification Clauses 615, 710 and 1204.3.11 50 mm thick	2	8.00	0.40	-	sqm	6.40	213.00	1363.00	1527.00
						Total Cost for 1No (Rs.)			202761.00	227091.00
						Total Cost for 2 No (Rs.)	2		405522.00	454182.00


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PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY - III)
COST ESTIMATE FOR CONSTRUCTION OF CROSS DRAINAGE WORKS
 (Culverts and Minor Bridges)

#REF!

Type of cross Drainage works : Syphon - 500mm Dia. 1Row

Package No. - RJ - 14-...
 Design Discharge : M³ /Sec.

Block : Peepalkhunt

District : Pratapgarrh

Type of Soil : HSMB

PART - Syphon

Width = 7.50 M

SI.No.	Description of Item	No	L (m)	B (m)	D (m)	Unit	Quantity	Rate(Rs)	Amount (Rs)	AMOUNT incl GST (Rs.)
		3	4	5	6	7	8	9	10	11
1	2									
1	Earthwork in excavation for structures as per drawing and MoRD specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. Ordinary soil Upto 3 m depth	2	3.00	1.30	0.80	cum	6.24			
		1	6.80	0.70	0.80	cum	3.81			
					Total	cum	10.05	211.00	2121.00	2375.00
2	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRD specifications Clause 802, 803, 1202 & 1203 P.C.C grade M 10 - Nominal mix 1:3:6	2	3.00	1.25	0.15	cum	1.13			
		1	6.80	0.70	0.10	cum	0.48			
					Total	cum	1.61	3255.00	5241.00	5869.00
3	Laying Cement Concrete Pipe NP3 (buried conduits) on first class bedding of granular material including fixing collar with cement sand mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry work in head wall and parapets 500 mm dia	1	7.50	-	-	Mtr.	7.50	1469.00	11018.00	12340.00
3	Providing and Laying Reinforced Cement Concrete Pipe NP3 as per Design in Single Row Providing and laying reinforced cement concrete pipe NP3 for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets as per Clause 1106.300 mm dia	1	7.50	-	-	Mtr.	7.50	787.00	5903.00	6611.00

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY- III)
COST ESTIMATE FOR CONSTRUCTION OF CROSS DRAINAGE WORKS
(Culverts and Minor Bridges)

#REF!

Type of cross Drainage works : Syphon - 500mm Dia. 1Row

Package No. - RJ - 14-...

Design Discharge : M³ /Sec.

Block : Peepalkhant

District : Pratapgarh

Type of Soil : HSMB

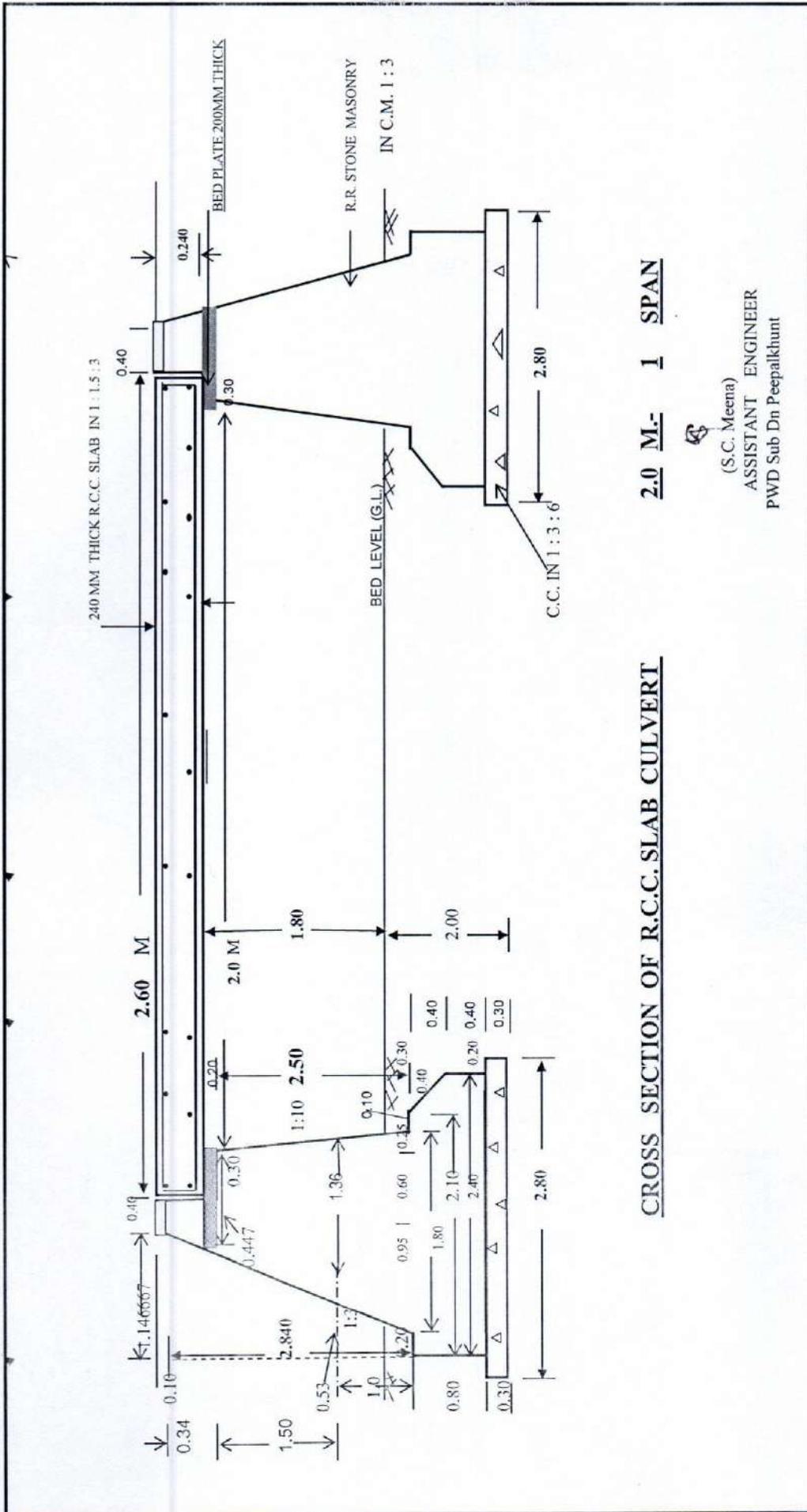
PART - Syphon

Width = 7.50 M

Sl.No.	Description of Item	No	L (m)	B (m)	D (m)	Unit	Quantity	Rate(Rs)/Amount (Rs)	AMOUNT incl GST (Rs.)
	Stone masonry work in cement mortar in foundation complete as per drawing and MoRD specifications Clauses 702, 704, 1202 & 1203. Random Rubble Masonry In 1:6 cement mortar	2	3.00	0.85	1.20	cum	6.12		
		2	0.45	0.45	0.70	cum	0.28		
	Duct for pipe	2	$\frac{3.142}{4}$	(0.70) ²	0.45	cum	-0.43		
							5.97	2356.00	14072.00
5	Providing PCC M-20 architectural coping on the top of wing 12.13 wall, return wall etc. complete as per drawing and MoRD specification Clauses 615, 710 and 1204.3.11 50 mm thick	2	3.00	0.45		sqm	2.70	213.00	575.00
6	Plastering with cement mortar (1:4), 15 mm thick on brickwork 12.3 in substructure as per MoRD specification Clauses 613.4 & 1204	8	0.45	-	1.00	sqm.	3.60	123.00	443.00
								Total	39373.00
						For	10 Nos		393730.00
									44096.00
									440960.00


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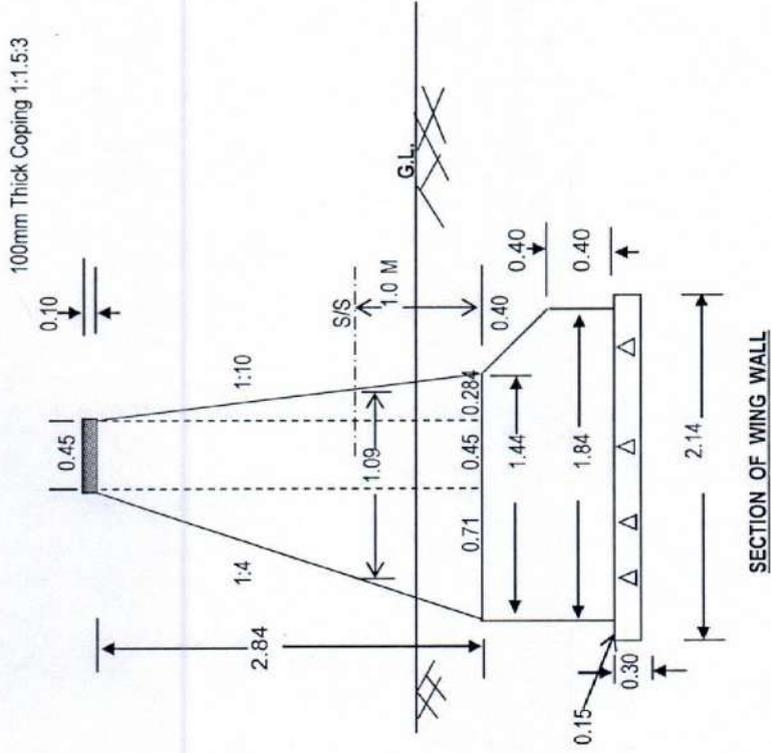
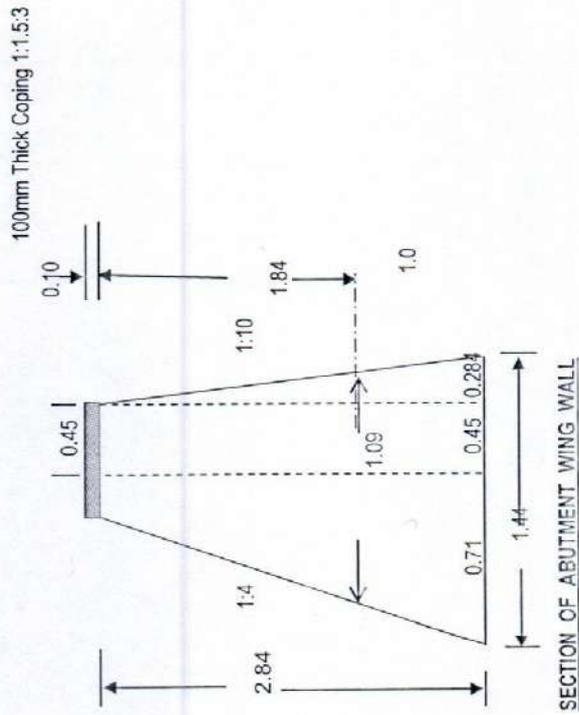


CROSS SECTION OF R.C.C. SLAB CULVERT

2.0 M- 1 SPAN

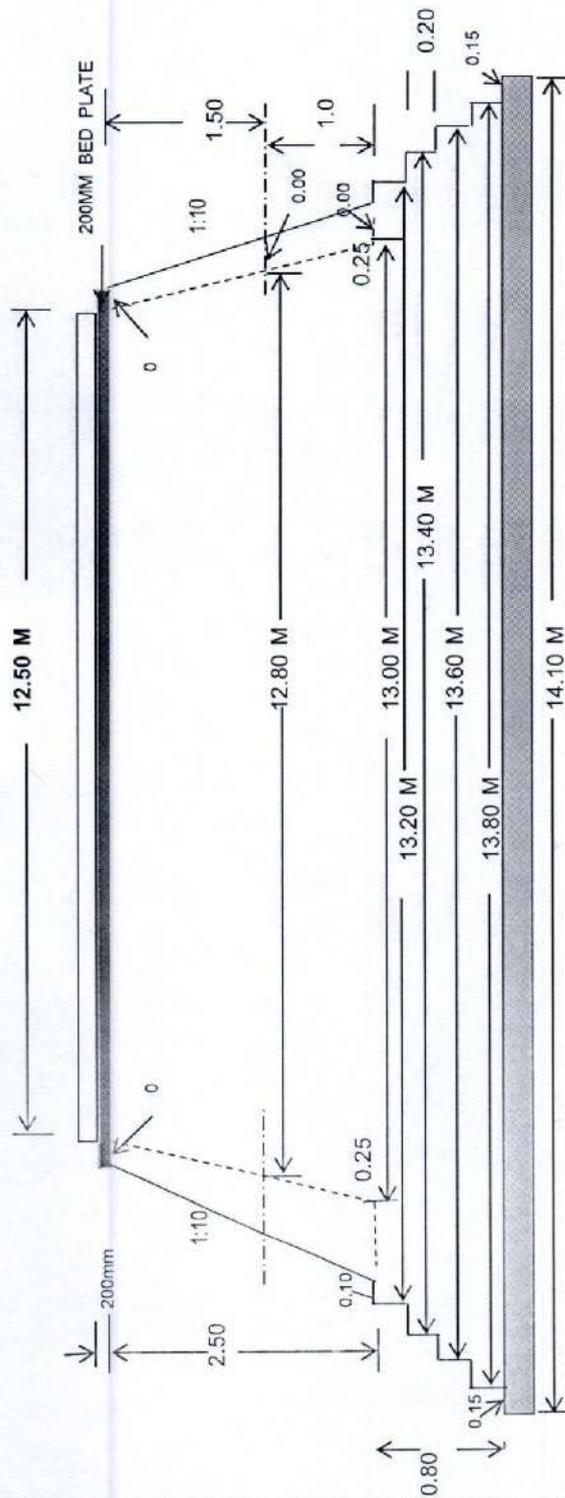


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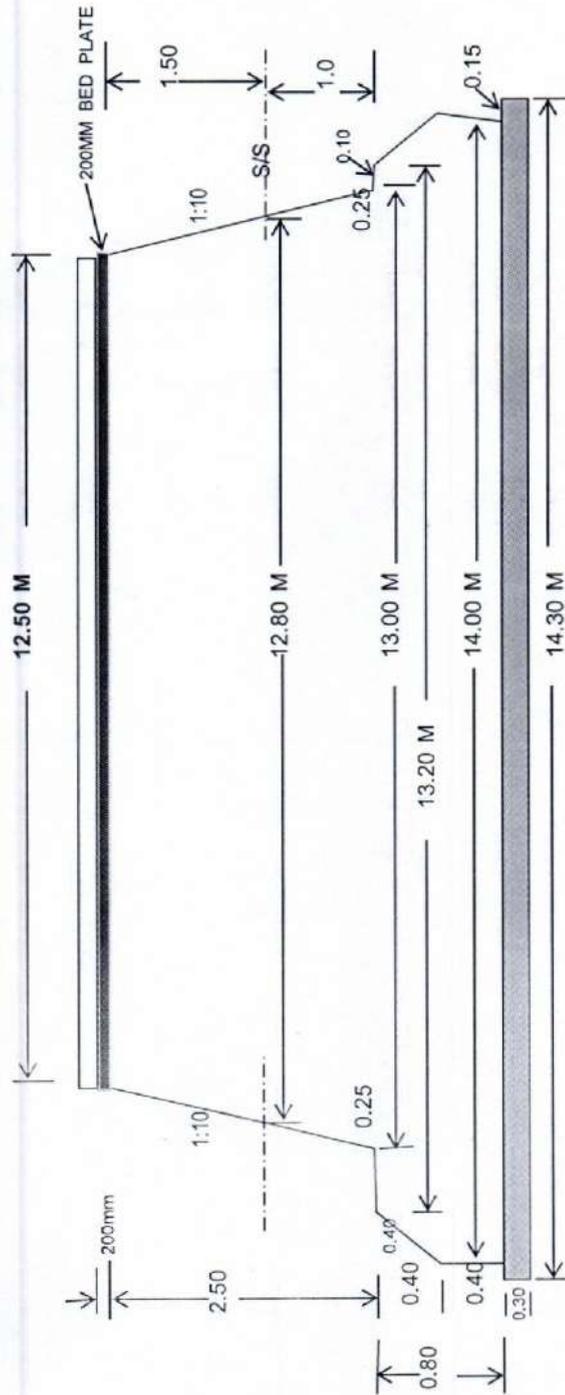
CROSS - SECTION OF ABUTMENT WING AND WING WALL

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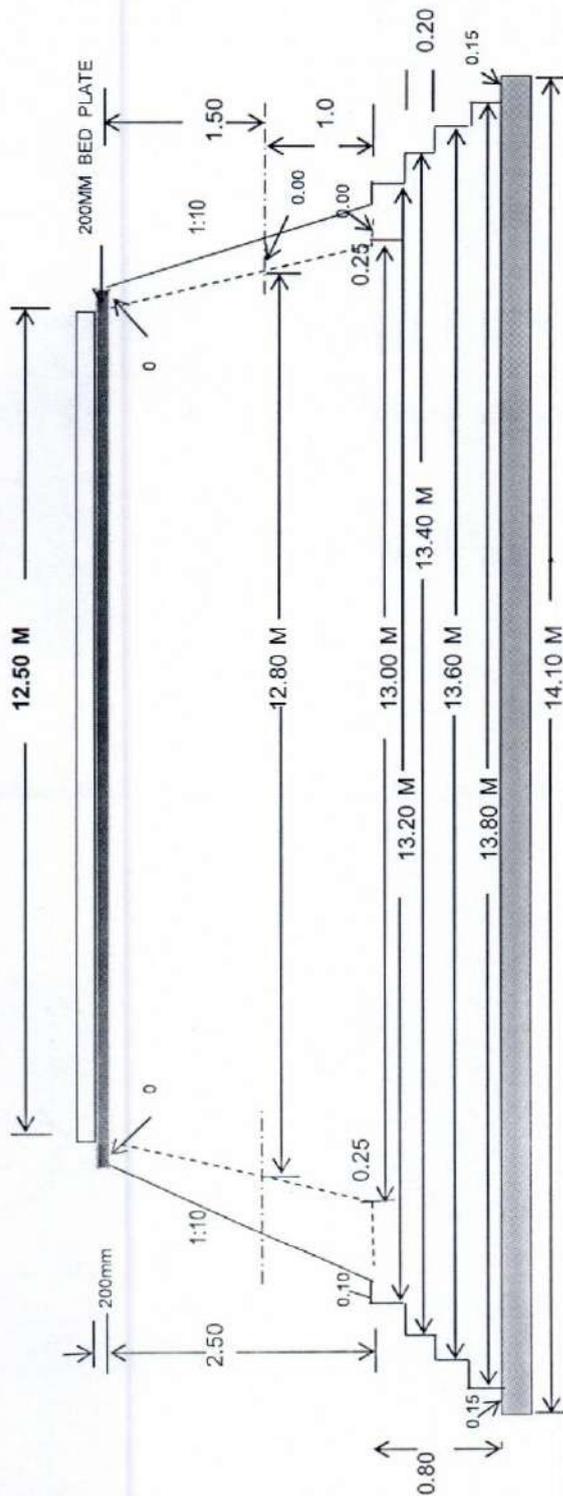
L - SECTION OF PIER


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L- SECTION OF ABUTMENT

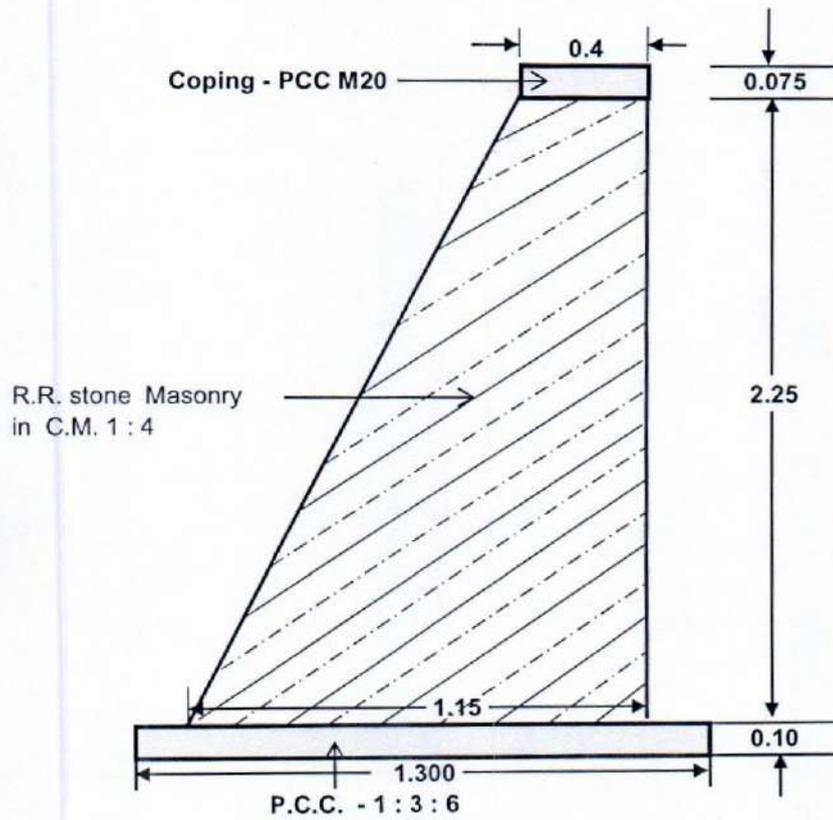
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L - SECTION OF PIER

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Name of Road :- Suhagpura To Achalawda Upto Block Border



CROSS - SECTION OF R / WALL

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HYDRAULIC DESIGN

Name of Road :- Suhagpura To Achalawda Upto Block Border

Design of 1000 mm dia RCC H. P. Culvert

Catchment area = 0.1188 Sqkm. [0.330 x 0.360]

By Dickens Formula

$$\begin{aligned} Q &= CM^{3/4} \\ &= 14 \cdot 0.1188^{3/4} \\ &= 14 \cdot 0.20235 \\ &= 2.833 \text{ cumecs} \end{aligned}$$

Discharge which can pass through 1000 mm dia pipe
Flowing full with operating head 1.00 m.

$$Q = y \sqrt{2g h}$$

Length of the pipe = 7.50 M
Diameter = 1.00 M
(From IRC Paper No.13 Plate-16/page176
for circular pipe with rounded Entry
For L= 7.50 M and D= 1.00 M
The Conveyance Factor $y = 0.686$

$$\begin{aligned} Q &= y \sqrt{2g h} \\ &= 0.686 \sqrt{2 \cdot 9.8 \cdot 1.00} \\ &= 3.0371 \text{ cumecs} \end{aligned}$$

$$\text{No. Of Pipes} = \frac{2.833}{3.0371} = \boxed{0.9328} \text{ Nos.}$$

Say 1 Nos. Rows

Hence provide 1000mm dia R.C.C. Hume pipe 1 Row


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HYDRAULIC DESIGN

Name of Road :- Suhapura To Achalawda Upto Block Border

Design of 1000 mm dia RCC H. P. Culvert

Catchment area = 0.32 Sqkm. [0.400 x 0.800]

By Dickens Formula

$$\begin{aligned} Q &= CM^{3/4} \\ &= 14 \quad 0.32^{3/4} \\ &= 14 \quad 0.42546 \\ &= 5.9565 \text{ cumecs} \end{aligned}$$

Discharge which can pass through 1000 mm dia pipe
Flowing full with operating head 1.00 m.

$$Q = y \sqrt{2g h}$$

Length of the pipe = 7.50 M
Diameter = 1.00 M
(From IRC Paper No.13 Plate-16/page176
for circular pipe with rounded Entry
For L= 7.50 M and D = 1.00 M
The Conveyance Factor $y = 0.686$

$$\begin{aligned} Q &= y \sqrt{2g h} \\ &= 0.686 \sqrt{2 \times 9.8 \times 1.00} \\ &= 3.0371 \text{ cumecs} \end{aligned}$$

$$\text{No. Of Pipes} = \frac{5.9565}{3.0371} = \boxed{1.96127} \text{ Nos.}$$

Say 2 Nos. Rows

Hence provide 1000mm dia R.C.C. Hume pipe 2 Row


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Hydraulic Calculation

Name of Road :- Suhagpura To Achalawda Upto Block Border

Design of 1000 mm dia Vented Causeway

Catchment area = 12.600 Sqkm. (As per G-T Sheet)

By Dicken's Formula

$$\begin{aligned} Q &= CM^{3/4} \\ &= 14 \times 12.6^{3/4} \\ &= 14 \times 6.688 \\ &= 93.628 \text{ cumecs} \end{aligned}$$

30% Of Total Discharge Consider for Providing RCC Hume Pipe
93.628 x 30% = 28.09 Cumecs

Discharge which can pass through 1000 mm dia pipe
Flowing full with operating head = 1.00 m.

$$Q = \frac{y \sqrt{2gh}}{\text{Length of the pipe} = 7.50 \text{ M.}}$$

Diameter = 1.00 M
(From IRC paper No.13. Plate -16 /Page 176)
For circular pipe with rounded Entry
for L = 7.50 and D = 1.00 M.
The Conveyance Factor y = 0.700

$$\begin{aligned} Q &= \frac{y \sqrt{2gh}}{\text{Length of the pipe} = 7.50 \text{ M.}} \\ &= \frac{0.700 \sqrt{2 \times 9.80 \times 1.00}}{7.50} \\ &= 3.09903 \text{ cumecs} \end{aligned}$$

$$\text{No. Of Pipes Required} = \frac{28.088}{3.099} = 9.06361 \text{ Nos.}$$

Say 9 Nos. Rows

Hence provide 1000mm dia 9 Row R.C.C. Hume pipe


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Design of Hume Pipe Culvert (1000 MM Dia. One Row)

As there is no Defined channel in D/S as well as U/S only rain water from top to foot of hill crosses one side to another side of the road .

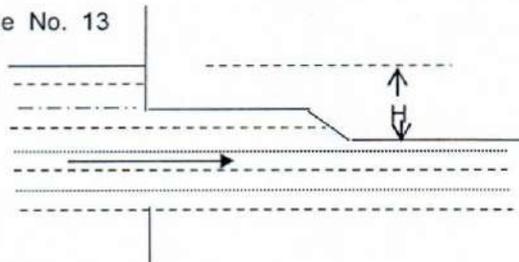
Assuming Catchment Area = 200 x 500 M (Max.)
 = 0.20 x 0.50
 = 0.10 Sq.km. Or 10 Hectares.

Apply Dicken's Formula :

$Q = CM^{3/4}$ C = 11 - 14 Where annual rainfall is 60 - 120 cm.

Value of C = 12 As per IRC Paper No.13, Page No. 13

$Q = 12 \cdot 0.10^{3/4}$
 = 2.13 cumecs



Conveyance factor for 1000 mm dia hume pipe (round edge) of Length

10 M (y) = 0.686

Discharge through 1000 mm pipe for operating head = 0.50 M.

$Q = y \cdot 2g h$
 = $\frac{0.686}{2} \cdot 9.8 \cdot 0.50$
 = 2.148 cumecs
 d = 0.70
 = $\frac{2.148}{0.70} = 3.068$ M/Sec.

No. Of Pipes = $\frac{2.13}{3.068} = 0.696$ Nos.

Say 1 No.

Hence one Row of 1000 mm dia Hume pipe is required to cover Discharge to cover Discharge 2.13 Cum./ Sec.


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HYDROLIC CALCULATION OF CD STRUCTURES

Name of Work :- Suhagpura To Achalawda Upto Block Border

S.No.	Chainage	Catchment Area (Hectare)	Catchment Area (Sq.Km.)	Q' from Dicken's Formula in Cumecs (C=19)	Area of Flow	Allowable Discharge through Culvert	Type of CD Proposed	Remark
1	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
2	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
3	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
4	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
5	2+775	3.140	0.031	1.417	0.785	1.96	2 Row 1000	100% Discharge passing
6	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
7	4+430	3.140	0.031	1.417	0.785	1.96	2 Row 1000	100% Discharge passing
8	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
9	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
10	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
11	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
12	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
13	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
14	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
15	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
16	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
17	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
18	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
19	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
20	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
21	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
22	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
23	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
24	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
25	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing
26	0+000	3.140	0.031	1.417	0.785	1.96	0	100% Discharge passing

Chapter 21. Construction Program

19.1 General

Assuming that the Construction of the Batch – {Insert Batch No.} roads will start from L-0 RD 9350 Km construction programme is enclosed here. This is a high rainfall area and rainy season extends from June to September. However, the construction program is based for a total working period of 24 months, considering the program set out by MoRD. Generally, dry working season of about 16 months are required for construction of PMGSY roads. However, works will be affected for the monsoon during the month June to September. It is anticipated that some activity like collection of materials, CD works etc. will continue in monsoon period also.

19.2 Realistic duration

The whole construction work completed in Two year including rainy season as per rural road manual.



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CONSTRUCTION PROGRAMME

Name of Road:- **Suhagpura To Achalawda Upto Block Border**

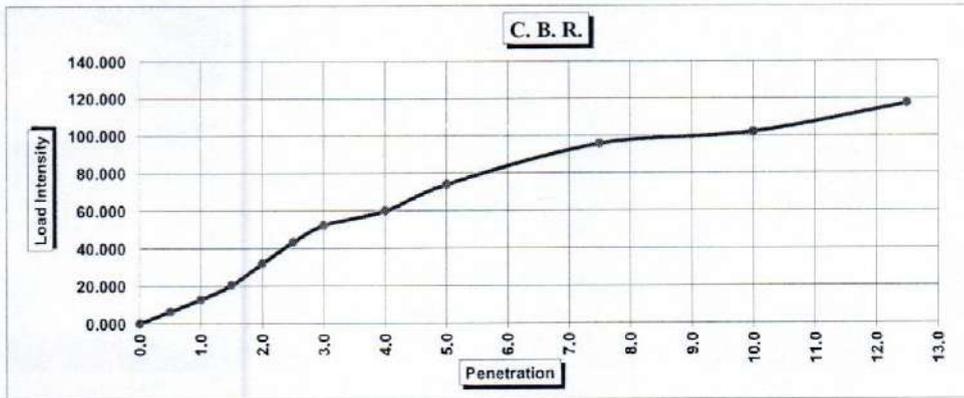
	Months	ITEMS
1	1	Site & Lab. Establishment
2	1	Site Clearance
3	1	Initial Survey
4	1-6	Earth Work
5	5-9	GSB
6	6-10	WMM
7	8-12	BT
8	7-10	Earthen Shoulder
9	2-5	CD Work
10	8-12	CC Road
11	9-12	Hard Shoulder
12	11-12	Protection Work
13	11-12	Road Furniture

C.B.R. Test of Soil (IS:2720(PART))

Name of Road : Suhagpura To Achalawda Upto Block Date :- 11/Dec/19
 Sample Details :-0+600 Capacity of Proving Ring :- 10 KN
 Type of Soil Subgrade Soil Value of one division :- 1.274

Time of Penetration @ 1.25 mm/min.	Penetration	Proving ring Reading			Load Intensity (kg/cm ²) (A) x one division Value Area of Plunger			Corrected Load Intensity Kg/cm ²			Standard Load Intensity (kg/cm ²) (D)	Unsoaked/ Soaked C.B.R. (%) (C) x100/(D)			Average C.B.R. (%)
		(A)			(B)			(C)				(E)			
Min.:Sec.	(mm)	i	ii	iii	i	ii	iii	i	ii	iii	Std.	i	ii	iii	
0:00	0.0	0			0.000			0							
0:24	0.5	5			6.370			0.32335							
0:48	1.0	10			12.740			0.6467							
1:12	1.5	16			20.384			1.03472							
1:36	2.0	25			31.850			1.61675							
2:00	2.5	34			43.316			2.19878			70				3.14
2:24	3.0	41			52.234			2.65147							
3:12	4.0	47			59.878			3.03949							
4:00	5.0	58			73.892			3.75086			105				3.57
6:00	7.5	75			95.550			4.85025			134				
8:00	10.0	80			101.920			5.1736			162				
10:00	12.5	92			117.208			5.94964			183				

Average C.B.R. at 2.5 mm penetration: (%) 3.14
 Average C.B.R. at 5.0 mm penetration: (%) 3.57
 Maximum CBR (%) 3.57 3.57%




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 PWD Sub Dn. Peepalkhant

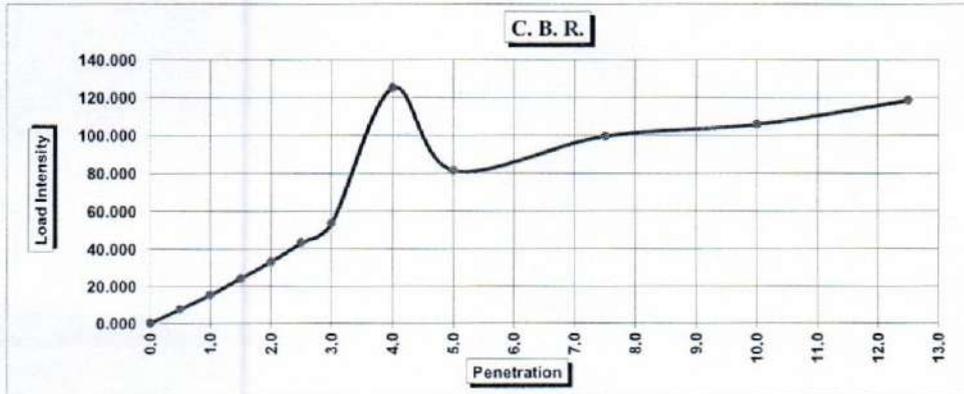

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C.B.R. Test of Soil (IS:2720(PART))

Name of Road : Suhagpura To Achalawda Date :- 11/Dec/19
 Sample Details :-1+400 Capacity of Proving Ring :- 10 KN
 Type of Soil Subgrade Soil Value of one division :- 1.274

Time of Penetration @ 1.25 mm/min.	Penetration	Proving ring Reading			Load Intensity (kg/cm ²) (A) x one division Value Area of Plunger			Corrected Load Intensity Kg/cm ²			Standard Load Intensity (kg/cm ²)	Unsoaked/ Soaked C.B.R. (%) (C) x100/(D)			Average C.B.R. (%)
		(A)	(B)	(C)	(D)	(E)									
Min.:Sec.	(mm)	i	ii	iii	i	ii	iii	i	ii	iii	Std.	i	ii	iii	
0:00	0.0	0			0.000			0							
0:24	0.5	6			7.644			0.38802							
0:48	1.0	12			15.288			0.77604							
1:12	1.5	19			24.206			1.22873							
1:36	2.0	26			33.124			1.68142							
2:00	2.5	34			43.316			2.19878			70				3.14
2:24	3.0	42			53.508			2.71614							
3:12	4.0	48			125.000			6.34518							
4:00	5.0	64			81.536			4.13888			105				3.94
6:00	7.5	78			99.372			5.04426			134				
8:00	10.0	83			105.742			5.36761			162				
10:00	12.5	93			118.482			6.01431			183				

Average C.B.R. at 2.5 mm penetration: (%) 3.14
 Average C.B.R. at 5.0 mm penetration: (%) 3.94
 Maximum CBR (%) 3.94 3.94%



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 PWD Sub Dn. Peepalkhant

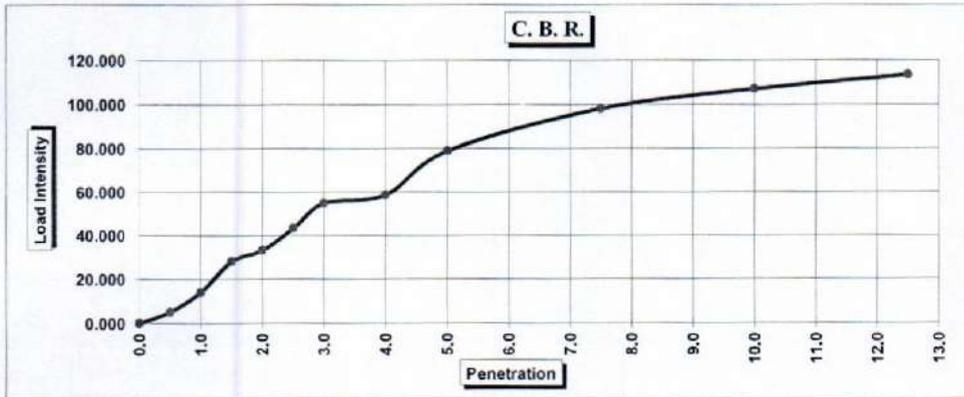
(V.S.Meena)
 PWD Dn.II Pratapgarh

C.B.R. Test of Soil (IS:2720(PART))

Name of Road : Suhagpura To Achalawda Upto Block Date :- 11/Dec/19
 Sample Details :-2+450 Capacity of Proving Ring :- 10 KN
 Type of Soil Subgrade Soil Value of one division :- 1.274

Time of Penetration @ 1.25 mm/min.	Penetration	Proving ring Reading			Load Intensity (kg/cm ²) (A) x one division Value Area of Plunger			Corrected Load Intensity Kg/cm ²			Standard Load Intensity (kg/cm ²) (D)	Unsoaked/ Soaked C.B.R. (%) (C) x100/(D)			Average C.B.R. (%)
		(A)			(B)			(C)			(D)	(E)			
Min.:Sec.	(mm)	i	ii	iii	i	ii	iii	i	ii	iii	Std.	i	ii	iii	
0:00	0.0	0			0.000			0							
0:24	0.5	4			5.096			0.25868							
0:48	1.0	11			14.014			0.71137							
1:12	1.5	22			28.028			1.42274							
1:36	2.0	26			33.124			1.68142							
2:00	2.5	34			43.316			2.19878			70				3.14
2:24	3.0	43			54.782			2.78081							
3:12	4.0	46			58.604			2.97482							
4:00	5.0	62			78.988			4.00954			105				3.82
6:00	7.5	77			98.098			4.97959			134				
8:00	10.0	84			107.016			5.43228			162				
10:00	12.5	89			113.386			5.75563			183				

Average C.B.R. at 2.5 mm penetration: (%) 3.14
 Average C.B.R. at 5.0 mm penetration: (%) 3.82
 Maximum CBR (%) 3.82 3.82%



(Suresh Chand Meena)
 PWD Sub Dn. Peepalkhunt

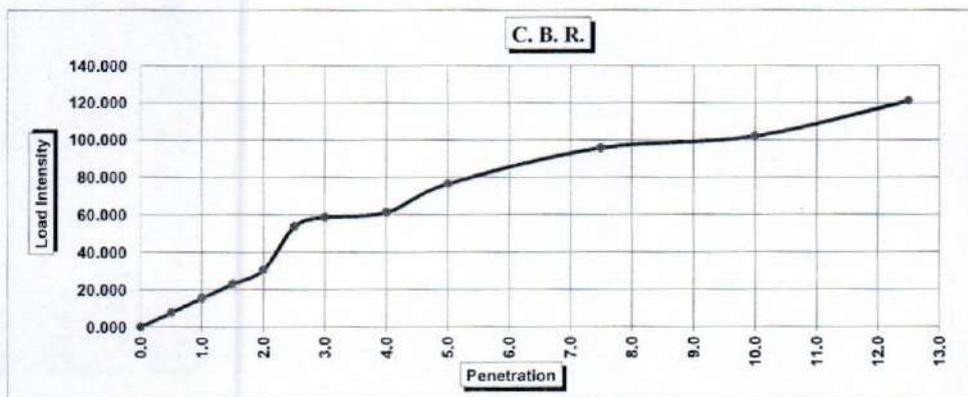
(V.S.Meena)
 PWD Dn.II Pratapgarh

C.B.R. Test of Soil (IS:2720(PART))

Name of Road : Suhagpura To Achalawda Upto Block Date :- 11/Dec/19
 Sample Details :-3+500 Capacity of Proving Ring :- 10 KN
 Type of Soil Subgrade Soil Value of one division :- 1.274

Time of Penetration @ 1.25 mm/min.	Penetration	Proving ring Reading			Load Intensity (kg/cm ²) (A) x one division Value Area of Plunger			Corrected Load Intensity Kg/cm ²			Standard Load Intensity (kg/cm ²) (D)	Unsoaked/ Soaked C.B.R. (%) (C) x100/(D)			Average C.B.R. (%)
		(A)			(B)			(C)				(E)			
Min.:Sec.	(mm)	i	ii	iii	i	ii	iii	i	ii	iii	Std.	i	ii	iii	
0:00	0.0	0			0.000			0							
0:24	0.5	6			7.644			0.38802							
0:48	1.0	12			15.288			0.77604							
1:12	1.5	18			22.932			1.16406							
1:36	2.0	24			30.576			1.55208							
2:00	2.5	42			53.508			2.71614			70				3.88
2:24	3.0	46			58.604			2.97482							
3:12	4.0	48			61.152			3.10416							
4:00	5.0	60			76.440			3.8802			105				3.70
6:00	7.5	75			95.550			4.85025			134				
8:00	10.0	80			101.920			5.1736			162				
10:00	12.5	95			121.030			6.14365			183				

Average C.B.R. at 2.5 mm penetration: (%) **3.88**
 Average C.B.R. at 5.0 mm penetration: (%) **3.70**
 Maximum CBR (%) **3.88** **3.88%**




 (Suresh Chand Meena)
 PWD Sub Dn. Peepalkhunt

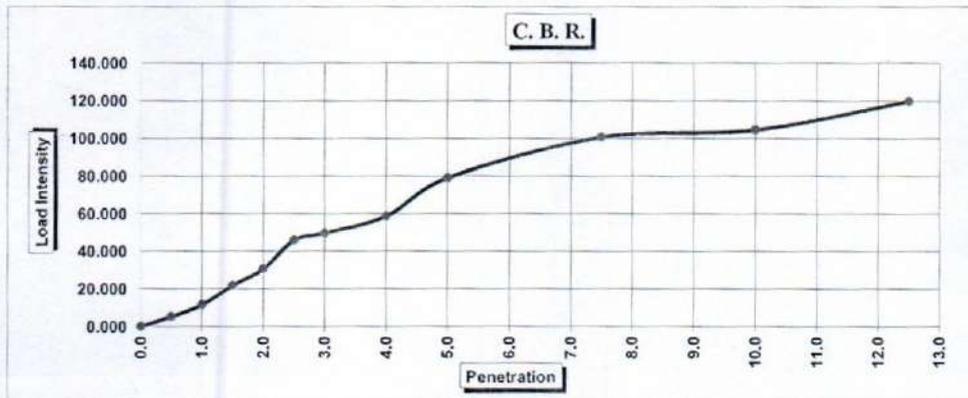

 (V.S.Meena)
 PWD Dn.II Pratapgarh

C.B.R. Test of Soil (IS:2720(PART))

Name of Road : Suhagpura To Achalawda Upto Block Date :- 11/Dec/19
 Sample Details :-4+600 Capacity of Proving Ring :- 10 KN
 Type of Soil Subgrade Soil Value of one division :- 1.274

Time of Penetration @ 1.25 mm/min.	Penetration	Proving ring Reading			Load Intensity (kg/cm ²) (A) x one division Value Area of Plunger			Corrected Load Intensity Kg/cm ²			Standard Load Intensity (kg/cm ²) (D)	Unsoaked/ Soaked C.B.R. (%) (C) x100/(D)			Average C.B.R. (%)
		(A)			(B)			(C)				(E)			
Min.:Sec.	(mm)	i	ii	iii	i	ii	iii	i	ii	iii	Std.	i	ii	iii	
0:00	0.0	0			0.000			0							
0:24	0.5	4			5.096			0.25868							
0:48	1.0	9			11.466			0.58203							
1:12	1.5	17			21.658			1.09939							
1:36	2.0	24			30.576			1.55208							
2:00	2.5	36			45.864			2.32812			70				3.33
2:24	3.0	39			49.686			2.52213							
3:12	4.0	46			58.604			2.97482							
4:00	5.0	62			78.988			4.00954			105				3.82
6:00	7.5	79			100.646			5.10893			134				
8:00	10.0	82			104.468			5.30294			162				
10:00	12.5	94			119.756			6.07898			183				

Average C.B.R. at 2.5 mm penetration: (%) 3.33
 Average C.B.R. at 5.0 mm penetration: (%) 3.82
 Maximum CBR (%) 3.82 3.82%



(Suresh Chand Meena)
 PWD Sub Dn. Peepalkhant

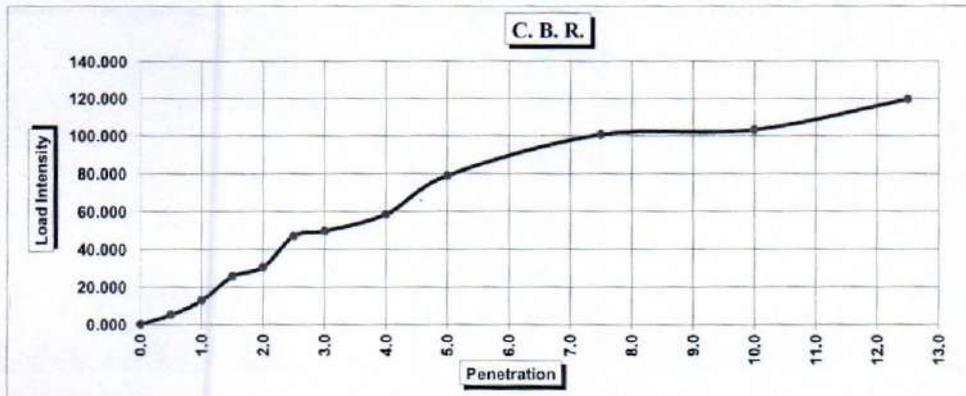
(V.S.Meena)
 PWD Dn.II Pratagarh

C.B.R. Test of Soil (IS:2720(PART))

Name of Road : Suhagpura To Achalawda Upto Block Date :- 11/Dec/19
 Sample Details :-5+550 Capacity of Proving Ring :- 10 KN
 Type of Soil Subgrade Soil Value of one division :- 1.274

Time of Penetration @ 1.25 mm/min.	Penetration	Proving ring Reading			Load Intensity (kg/cm ²) (A) x one division Value Area of Plunger			Corrected Load Intensity Kg/cm ²			Standard Load Intensity (kg/cm ²) (D)	Unsoaked/ Soaked C.B.R. (%) (C) x100/(D)			Average C.B.R. (%)
		(A)			(B)			(C)			(D)	(E)			
Min.:Sec.	(mm)	i	ii	iii	i	ii	iii	i	ii	iii	Std.	i	ii	iii	
0:00	0.0	0			0.000			0							
0:24	0.5	4			5.096			0.25868							
0:48	1.0	10			12.740			0.6467							
1:12	1.5	20			25.480			1.2934							
1:36	2.0	24			30.576			1.55208							
2:00	2.5	37			47.138			2.39279			70				
2:24	3.0	39			49.686			2.52213							
3:12	4.0	46			58.604			2.97482							
4:00	5.0	62			78.988			4.00954			105				
6:00	7.5	79			100.646			5.10893			134				
8:00	10.0	81			103.194			5.23827			162				
10:00	12.5	94			119.756			6.07898			183				

Average C.B.R. at 2.5 mm penetration: (%) 3.42
 Average C.B.R. at 5.0 mm penetration: (%) 3.82
 Maximum CBR (%) 3.82 3.82%




 (Suresh Chand Meena)
 PWD Sub Dn. Peepalkhunt)

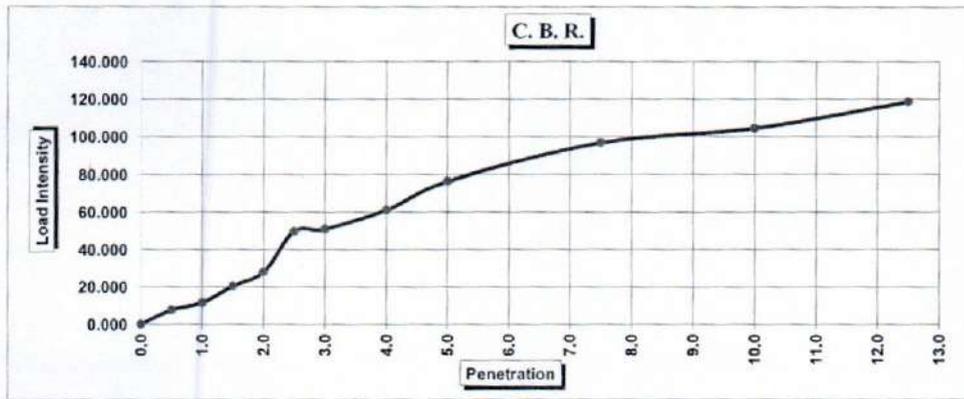

 (V.S.Meena)
 PWD Dn.II Pratapgarh

C.B.R. Test of Soil (IS:2720(PART))

Name of Road : Suhagpura To Achalawda Date :- 11/Dec/19
 Sample Details :-6+500 Capacity of Proving Ring :- 10 KN
 Type of Soil : Subgrade Soil Value of one division :- 1.274

Time of Penetration @ 1.25 mm/min.	Penetration	Proving ring Reading			Load Intensity (kg/cm ²) (A) x one division Value Area of Plunger			Corrected Load Intensity Kg/cm ²			Standard Load Intensity (kg/cm ²)	Unsoaked/ Soaked C.B.R. (%) (C) x100/(D)			Average C.B.R. (%)
		(A)			(B)			(C)			(D)	(E)			
Min.:Sec.	(mm)	i	ii	iii	i	ii	iii	i	ii	iii	Std.	i	ii	iii	
0:00	0.0	0			0.000			0							
0:24	0.5	6			7.644			0.38802							
0:48	1.0	9			11.466			0.58203							
1:12	1.5	16			20.384			1.03472							
1:36	2.0	22			28.028			1.42274							
2:00	2.5	39			49.686			2.52213			70				3.60
2:24	3.0	40			50.960			2.5868							
3:12	4.0	48			61.152			3.10416							
4:00	5.0	60			76.440			3.8802			105				3.70
6:00	7.5	76			96.824			4.91492			134				
8:00	10.0	82			104.468			5.30294			162				
10:00	12.5	93			118.482			6.01431			183				

Average C.B.R. at 2.5 mm penetration: (%) **3.60**
 Average C.B.R. at 5.0 mm penetration: (%) **3.70**
 Maximum CBR (%) 3.70 3.70%



(Suresh Charid Meena)
 PWD Sub Dn. Peepalkhunt)

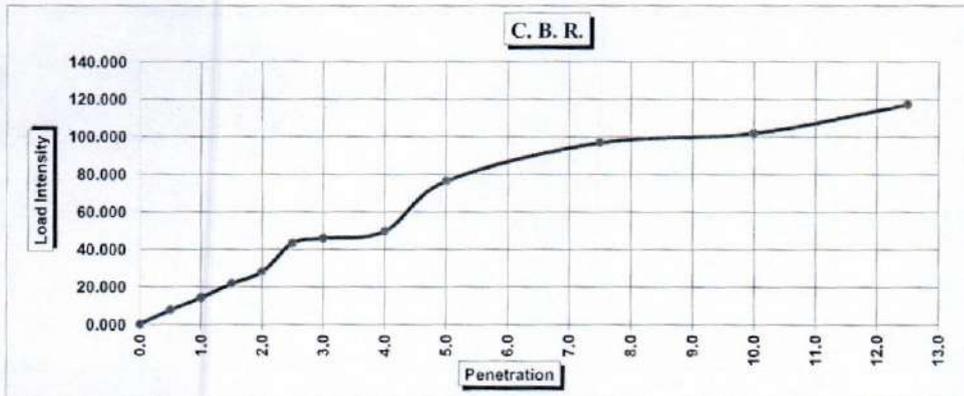
(V.S.Meena)
 PWD Dn.II Pratapgarh

C.B.R. Test of Soil (IS:2720(PART))

Name of Road : Suhagpura To Achalawda Date :- 11/Dec/19
 Sample Details :-7+500 Capacity of Proving Ring :- 10 KN
 Type of Soil Subgrade Soil Value of one division :- 1.274

Time of Penetration @ 1.25 mm/min.	Penetration	Proving ring Reading			Load Intensity (kg/cm ²) (A) x one division Value Area of Plunger			Corrected Load Intensity Kg/cm ² (C)			Standard Load Intensity (kg/cm ²) (D)	Unsoaked/ Soaked C.B.R. (% (C) x100/(D)) (E)			Average C.B.R. (%)
		(A)	(B)	(C)	(D)	(E)									
Min.:Sec.	(mm)	i	ii	iii	i	ii	iii	i	ii	iii	Std.	i	ii	iii	
0:00	0.0	0			0.000			0							
0:24	0.5	6			7.644			0.38802							
0:48	1.0	11			14.014			0.71137							
1:12	1.5	17			21.658			1.09939							
1:36	2.0	22			28.028			1.42274							
2:00	2.5	34			43.316			2.19878			70				3.14
2:24	3.0	36			45.864			2.32812							
3:12	4.0	39			49.686			2.52213							
4:00	5.0	60			76.440			3.8802			105				3.70
6:00	7.5	76			96.824			4.91492			134				
8:00	10.0	80			101.920			5.1736			162				
10:00	12.5	92			117.208			5.94964			183				

Average C.B.R. at 2.5 mm penetration: (%) 3.14
 Average C.B.R. at 5.0 mm penetration: (%) 3.70
 Maximum CBR (%) 3.70 3.70%



(Suresh Chand Meena)
 PWD Sub Dn. Peepalkhant

(V.S.Meena)
 PWD Dn.II Pratapgarh

Traffic Volume Count

Name of Road : Suhagpura To Achalawda Upto Block Border

Date From: 14-Dec-2019 To 20-Dec-2019

Block : Peepalkhunt

Location :- Achalawada m.

DISTRICT Pratappgarh

Date & Day	Two Wheeler		Car/Jeep/ Van etc.		Buses			Truck			Agricultural Tractor- trailer			Total Col. 2 to 12		Animal Drawn Veh.	Cycle	Other	Total Col. 11 to 13	Remark
			Laden	Unladen	Laden	Unladen	Overloaded	Laden	Unladen	Overloaded	Laden	Unladen	Overloaded							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
14-Dec-19	105	62	32	7	22	39	36	22	59	45	19	448	38	62	-	100				
15-Dec-19	62	66	62	6	25	29	55	26	30	43	22	426	38	55	-	93				
16-Dec-19	98	98	22	7	26	23	24	20	23	52	18	411	49	62	-	111				
17-Dec-19	67	67	17	6	25	10	32	27	18	45	18	332	34	73	-	107				
18-Dec-19	70	75	13	6	33	9	33	20	25	41	15	340	47	70	-	117				
19-Dec-19	141	62	9	8	27	39	24	16	37	44	22	429	91	141	-	232				
20-Dec-19	64	102	12	8	28	35	24	15	33	38	19	378	70	133	-	203				
Total for 7 Days	607	532	167	48	186	184	228	146	225	308	133	2764	367	596	0	963				
Avg. Daily Traffic	87	76	24	7	27	26	33	21	32	44	19	395	52	85	0	138				
Avg. Annual Daily Traffic AADT = $T + (1.2 \times nT \times t/365)$	108	95	30	9	33	33	41	26	40	55	24	492	65	106	0	171				
ADT (after 10+2 years) = AADT x (1+0.06) ⁿ	194	170	53	15	59	59	73	47	72	99	43	894	117	191	0	308				
PCU CONVERSION FACTOR	0.50	1.00	3.00	3.00	3.00	3.00	3.00	3.00	4.50	4.50	4.50	-	6.00	0.50	-	-				
P.C.U. For 24 Hrs.	97	170	159	45	177	177	219	141	324	446	194	2148	702	96	-	798				
Grand Total PCU	2946																			
Commercial Vehicle per day (Bus & Truck)	232																			


 (Suresh Chand Meena)
 PWD Sub.Dn. Peepalkhunt)


 (V.S.Meena)
 PWD Dn.II Pratappgarh

07 day, 24 Hr Traffic volume count Sheet

NAME OF ROAD LOCATION	Subhagnura To Achalawda Upto Block Border Achalawad MT							DISTRICT BLOCK		Pratapgarh Peepalkhant		FROM TO		14-Dec-19 20-Dec-19							
	Truck (Laden)							Truck (Unladen)							Truck (Overloaded)						
Time	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
7.00 to 9.00 A.M.	6	1	4	4	0	10	8	6	8	4	8	8	8	7	8	8	9	9	3	7	4
9.00 to 11.00 A.M.	4	2	3	2	2	5	4	3	10	9	8	7	2	2	2	2	2	2	7	2	2
11.00 to 1.00 P.M.	7	1	2	1	1	2	4	9	12	1	5	5	2	2	2	7	2	7	2	0	2
1.00 to 3.00 P.M.	6	4	1	2	0	9	7	10	4	4	5	7	4	7	4	2	0	1	0	2	2
3.00 to 5.00 P.M.	2	6	6	0	0	1	1	2	6	1	1	1	2	1	1	3	3	3	3	1	1
5.00 to 7.00 P.M.	5	3	2	1	1	2	2	1	3	0	0	0	1	1	0	0	0	1	0	0	0
7.00 to 9.00 P.M.	1	2	2	0	0	2	1	0	2	0	0	0	0	1	0	0	0	0	0	1	0
9.00 to 11.00 P.M.	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
11.00 to 1.00 A.M.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.00 to 3.00 A.M.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.00 to 5.00 A.M.	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0
5.00 to 6.00 A.M.	2	4	1	0	2	4	4	2	2	2	2	2	2	1	2	2	2	2	2	2	2
6.00 to 7.00 A.M.	6	6	2	0	3	4	4	2	2	2	2	2	2	1	2	2	2	2	2	2	2
Total	39	29	23	10	9	39	35	36	55	24	32	33	24	24	22	26	20	27	20	16	15
Average :	26							33							21						
Time	Bus (Laden)							Bus (Unladen)							Bus (Overloaded)						
Day	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
7.00 to 9.00 A.M.	3	3	2	2	2	2	2	1	1	1	1	1	1	1	9	9	10	8	14	10	11
9.00 to 11.00 A.M.	2	5	4	3	2	1	2	1	1	1	1	1	1	1	8	9	9	9	12	10	10
11.00 to 1.00 P.M.	4	9	3	4	4	2	2	1	1	1	0	1	1	1	2	2	3	3	3	3	3
1.00 to 3.00 P.M.	2	10	2	0	0	1	2	1	1	1	1	1	1	1	1	2	2	2	1	2	2
3.00 to 5.00 P.M.	5	0	8	2	2	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1
5.00 to 7.00 P.M.	6	6	0	2	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1
7.00 to 9.00 P.M.	6	7	0	3	1	0	1	1	1	1	1	1	1	1	0	1	0	0	1	0	0
9.00 to 11.00 P.M.	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11.00 to 1.00 A.M.	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.00 to 3.00 A.M.	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.00 to 5.00 A.M.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.00 to 6.00 A.M.	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.00 to 7.00 A.M.	4	1	1	1	1	1	1	0	0	1	0	0	1	1	0	0	0	1	0	0	0
Total	32	62	22	17	13	9	12	7	6	7	6	6	8	8	22	25	26	25	33	27	28
Average :	24							7							27						

Time	Agricultural Tractor-trailor (Laden)							Agricultural Tractor-trailor (Unladen)							Agricultural Tractor-trailor (Overloaded)						
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
7.00 to 9.00 A.M.	8	4	1	3	0	7	8	12	12	18	16	15	15	14	8	9	8	8	2	8	8
9.00 to 11.00 A.M.	6	3	3	1	1	7	6	9	9	9	9	8	9	9	2	3	2	2	2	2	2
11.00 to 1.00 P.M.	10	6	6	2	9	8	7	10	5	7	2	6	2	4	2	2	2	2	2	2	2
1.00 to 3.00 P.M.	6	1	4	1	2	3	5	4	9	9	8	2	9	0	2	2	2	1	3	2	2
3.00 to 5.00 P.M.	11	3	2	6	4	2	2	1	1	2	1	4	0	2	1	2	1	1	1	4	2
5.00 to 7.00 P.M.	9	6	4	0	1	1	2	4	2	0	2	1	0	1	2	1	0	2	1	0	0
7.00 to 9.00 P.M.	4	5	0	4	5	3	0	0	2	1	1	1	2	1	1	1	1	0	0	1	0
9.00 to 11.00 P.M.	0	0	1	0	0	1	0	0	0	2	0	0	2	0	0	0	0	0	2	0	0
11.00 to 1.00 A.M.	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.00 to 3.00 A.M.	0	0	0	0	1	0	1	0	0	1	1	0	1	0	0	0	0	0	0	0	0
3.00 to 5.00 A.M.	0	0	0	0	1	2	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0
5.00 to 6.00 A.M.	2	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6.00 to 7.00 A.M.	3	0	1	0	1	2	1	3	2	2	3	3	2	6	1	1	1	1	1	2	1
Total	59	30	23	18	25	37	33	45	43	52	45	41	44	38	19	22	18	18	15	22	19
Average :	32							44							19						

Time	LCV - Cans/ Vans/ Jeps/Three Wheelers (Loaded, Unladen & Overloaded)							Two Wheelers							Cycles						
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
7.00 to 9.00 A.M.	6	20	20	10	13	6	30	20	6	20	10	30	30	8	6	9	11	25	30	30	30
9.00 to 11.00 A.M.	4	6	10	5	2	4	12	10	4	10	5	2	25	9	4	6	6	5	2	25	25
11.00 to 1.00 P.M.	8	5	10	4	0	8	16	10	8	10	4	5	20	4	8	5	4	4	5	20	20
1.00 to 3.00 P.M.	6	9	14	6	5	6	10	14	6	14	6	3	22	1	6	9	10	3	3	22	22
3.00 to 5.00 P.M.	3	4	16	9	19	3	8	23	3	16	9	4	8	12	3	4	7	8	4	8	5
5.00 to 7.00 P.M.	4	6	5	6	8	4	4	5	4	5	6	8	10	6	4	6	7	8	8	10	8
7.00 to 9.00 P.M.	6	0	6	5	12	6	2	6	6	6	5	7	7	9	6	0	7	4	7	7	5
9.00 to 11.00 P.M.	4	1	9	9	3	4	3	9	4	9	9	4	4	4	4	1	1	5	4	4	3
11.00 to 1.00 A.M.	8	6	0	6	6	8	8	0	8	0	6	0	0	0	8	6	0	0	0	0	0
1.00 to 3.00 A.M.	3	4	2	1	4	3	4	2	3	2	1	0	0	0	3	4	0	0	0	0	0
3.00 to 5.00 A.M.	1	3	0	3	2	1	3	0	1	0	3	2	1	0	1	3	1	1	2	1	1
5.00 to 6.00 A.M.	1	2	1	1	1	1	2	1	1	1	1	4	4	5	1	2	2	5	4	4	2
6.00 to 7.00 A.M.	8	0	5	2	0	8	0	5	8	5	2	1	10	6	8	0	6	5	1	10	12
Total	62	66	98	67	75	62	102	105	62	98	67	70	141	64	62	55	62	73	70	141	133
Average :	76							87							85						

Time	Animal Drawn Cart							Pedestrian						
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
7.00 to 9.00 A.M.	4	12	2	1	10	20	10	10	11	15	10	20	16	17
9.00 to 11.00 A.M.	6	2	5	6	8	14	10	20	10	10	11	11	12	14
11.00 to 1.00 P.M.	2	10	6	2	3	11	10	18	8	10	18	15	15	15
1.00 to 3.00 P.M.	6	8	11	9	4	17	11	10	7	8	10	13	10	10
3.00 to 5.00 P.M.	2	4	16	1	8	10	11	22	7	5	8	9	4	7
5.00 to 7.00 P.M.	6	0	1	3	1	1	1	15	12	11	10	17	11	9
7.00 to 9.00 P.M.	2	0	0	0	0	0	0	4	8	7	4	6	4	5
9.00 to 11.00 P.M.	1	0	0	0	0	0	0	6	4	7	4	7	2	2
11.00 to 1.00 A.M.	0	0	0	0	0	0	0	0	0	0	0	1	0	2
1.00 to 3.00 A.M.	0	0	0	0	0	0	0	0	1	1	1	0	1	0
3.00 to 5.00 A.M.	0	0	0	0	0	0	0	1	2	1	2	2	1	1
5.00 to 6.00 A.M.	3	2	2	2	3	3	2	5	20	10	11	10	11	10
6.00 to 7.00 A.M.	6	0	6	10	10	15	15	10	30	25	10	11	11	10
Total	38	38	49	34	47	91	70	121	120	110	99	122	98	102
Average :	52							111						

PAVEMENT DESIGN(AS PER IRC SP-72 2015)

HVC-Bus/Truck (Laden)	HVC-Bus/Truck (Unladen)	HVC-Bus/Truck (overload)	Agricultural Tractor Trailer (Laden)	Agricultural Tractor Trailer (Unladen)	Agricultural Tractor Trailer (overload)	LCV -Cars/ Vans/ Jeeps/ Three Wheelers	Two wheelers	Cycles	Bullock Cart (SWC)	Total	Motorized
50	39	47	32	44	19	76	87	85	52	532	395

Duration of Harvesting Season in Days (From Local Inquiry) $t = 75$
 $n = 1$
 Average Traffic During Non-Harvesting Season $T = 532$
 Average increase in Traffic During Harvesting Season (Total Traffic in Peak Season - Traffic During Non-Harvesting Season) $nT = 532$
 Average Annual Daily Traffic AADT = $T + ((1.2 \times nT \times t)^{1/365})$ $AADT = 532 + (1.2 \times 532 \times 75)^{1/365} = 663.7$

It is Presumed that road will open for traffic after 1 Year Therefore ADT after 1 year. By considering 6% growth rate $ADT = AADT \times (1 + 0.06)^n = 663.7 \times (1.06)^1 = 704$

For Pavement Design Consider the Proportionate value of HCV, MCV, SWC out of ADT

S. No.	Vehicle Type	Proportionate Number	VDF Value	ESAL Per Day (T_0)	Cumulative ESAL $N = T_0 \times 365 \times L \times [((1+0.06)^n - 1)/0.06]$ $N = T_0 \times 4811 \times L$
1	HVC-Bus/Truck (Laden)	67	2.58	172.86	831629
2	HVC-Bus/Truck (Unladen)	53	0.31	16.43	79045
	HVC-Bus/Truck (overload)	63	2.86	180.18	866846
3	Agricultural Tractor Trailer (Laden)	43	0.34	14.62	70337
4	Agricultural Tractor Trailer (Unladen)	59	0.02	1.18	5677
	Agricultural Tractor Trailer (Overload)	26	0.34	8.84	42529
	Total	311		394.11	1896063

Final Cumulative ESAL 1896063 MSA 1.8

Traffic Category T9

The Traffic parameters has been categorized into 9 categories as under :-

T1	10,000 to 30,000 ESAL Applications
T2	30,000 to 60,000 ESAL Applications
T3	60,000 to 1,00,000 ESAL Applications
T4	1,00,000 to 2,00,000 ESAL Applications
T5	2,00,000 to 3,00,000 ESAL Applications
T6	3,00,000 to 6,00,000 ESAL Applications
T7	6,00,000 to 10,00,000 ESAL Applications
T8	10,00,000 to 15,00,000 ESAL Applications
T9	15,00,000 to 20,00,000 ESAL Applications

Subgrade Strength Classes (according to SP-72 -2015)

Quality of Subgrade	Class	Range (CBR %)
Very Poor	S1	2
Poor	S2	3 - 4
Fair	S3	5 - 6
Good	S4	7 - 9
Very Good	S5	10 - 15

From the Soil Test Result Design CBR of Subgrade 5-5.5%
 From the Soil Surveys the Subgrade Strength Class S3

Minimum thickness of different layer is provided given below:-

OGPC with Seal Coat	=	20 mm		
BM	=	50 mm		
		WMM	=	225 mm
		GSB	=	0 mm
Subgrade	=	0 mm		
Total Crust Thickness	=		=	295 mm

TRAFFIC CATEGORY \leftrightarrow	T_1 (40,000 to 80,000)	T_2 (80,000 to 1,00,000)	T_3 (1,00,000 to 1,50,000)	T_4 (1,50,000 to 2,00,000)	T_5 (2,00,000 to 3,00,000)	T_6 (3,00,000 to 4,00,000)	T_7 (4,00,000 to 1,00,00,000)	T_8 (1,00,00,000 to 1,50,00,000)	T_9 (1,50,00,000 to 2,00,00,000)
SUBGRADE STRENGTH CBR \downarrow									
S₁ VERY POOR CBR = 2	100	100	100	100	100	100	100	100	100
S₂ POOR CBR = 3 to 4	100	100	100	100	100	100	100	100	100
S₃ FAIR CBR = 5 to 6	100	100	100	100	100	100	100	100	100
S₄ GOOD CBR = 7 to 9	100	100	100	100	100	100	100	100	100
S₅ VERY GOOD CBR = 10 to 15	100	100	100	100	100	100	100	100	100

LEGEND

- Modified Subgrade (Subgrade CBR not < 10)
- For similar Subgrade (CBR not < 10) in exceptional case per IS 15
- Gravel (IS 38)
- Gravel (IS 38) (max 50%) in lower base (only for 3rd and 4th base)
- Gravel (IS 38) (max 50%) in exceptional case per IS 15
- Water Grade-3
- Microsilica Mortar
- Surface Grouting
- CBR

Note: Base of Gravel (IS 38) (max 50%) in lower base (only for 3rd and 4th base) be modified to 75 mm for WBM with correct increase of 25 mm in thickness

DESIGN OFF RIGID PAVEMENT (As Per IRC SP-62-2014)

WHEEL LOAD : 50000 N
 k VALUE :
 From Table 1, The k Value Corresponding to a CBR Value of 5 : 42×10^{-3} N/mm²/mm 42
 Sub Base :
 GSB : 200 mm
 WMM : 150 mm WMM

Effective k Value

Since a Sub Base is Provided, the k Value can be increased by 10 %

Effective k Value : $1.2 \times 42 \times 10^{-3}$
 : 50.40×10^{-3} N/mm²/mm 50.4

Concrete Strength

Adopt a 28 days compressive strength of 30 Mpa

Flexural Strength $f_r = 0.7 \sqrt{f_c}$: 3.834
 : 3.834 MPa

90 days Flexural Strength : 1.1×3.834 4.22 MPa
 : 4.22 MPa

Thickness

Try a Thickness of 180 mm

Edge Load Stress

By Equation $\sigma_e = 0.803 P/h^2 (4 \log_{10} l/a + 0.666(a/l) - 0.034)$

$\sigma_e =$ 2.76 Mpa

$\sigma_e =$ Load Stress in Edge Region (Mpa)

P = Design Wheel Load (N) 50000 N

h = Pavement Slab Thickness mm 180 mm

E = Modulus of Elasticity of Concrete (Mpa) 30000 N/mm²

k = Modulus of Subgrade Reaction of Pavement Foundation (N/mm² x 10³) 50.40×10^{-3} 0.0504

l = radius of raltive stiffness (mm)

$l = 4 \sqrt{Eh^3 / 12(1-\mu^2)k}$

l = 737.57

a = radius of contact assumed circular (mm)

$a = ((0.8521 \times P/p \times 3.14) + (S/3.14) \times (P/0.5227p)^{1/2})^{1/2}$ 226.05 mm

p = Tyre Pressure 0.8 Mpa

Temperature Stress

From Table-4, the temprature differential for North MP for a slab thickness of 180 mm is 12.86 °C 53256.25 16960.59

Assuming a Contraction Joint Spacing of 3.75m and 3.75 m width.

$\sigma_e = (E\alpha\Delta T)C$

$\sigma_e =$ 1.42

$\sigma_e =$ Temperature Stress in the edge region (Mpa)

Δt Maximum temprature differential (°C) 12.86

α Coefficient of Thermal expansion of Concrete (°C) 10×10^{-6}

L 3750 mm

B 3750 mm

L/l 5.08

W/l 5.08

C 0.74

L/l and W/l	C
1	0
2	0.04
3	0.175
4	0.44
5	0.72
6	0.92
7	1.03
8	1.077
9	1.08
10	1.075
11	1.05
12 & above	1

Total Stress 4.18 < 4.22 0.016
 Hence Safe 0.736

PRADHAN MANTRI GRAM SADAK YOJANA-II
CHACK LIST FOR P.I.U. & S.T.A.
(For Individual Road Works)

To be filled by the S. T. A.	
Name of the road:	Suhapura To Achalawda Upto Block Border
Length (k.m.)	8.00 Km.
Name of Distt :	Pratapgarh
Name of Block :	Peepalkhunt
Name of the S. T. A. : MBM Jodhpur	
15-	Is the proposed road entered on the OMMS : <input checked="" type="checkbox"/> YES / NO
16-	If the proposal is for new connectivity :
-	Have you satisfied yourself that the proposed Road is a part of the Core Network <input checked="" type="checkbox"/> YES / NO
-	Is the unconnected Habitation(s) part of list of unconnected Habitations as per CN-6 : <input checked="" type="checkbox"/> YES / NO
-	Does the Proposal ensure full connectivity of the target Habitation: YES / NO <input checked="" type="checkbox"/>
a)	If No, the name of Unconnected Habitation up to which it is connected
b)	Is such Unconnected Habitation eligible Under PMGSY YES / NO <input checked="" type="checkbox"/>
17-	Are you satisfied with the following
-	Engineering Surveys <input checked="" type="checkbox"/> YES / NO
-	Soil/Material Investigation <input checked="" type="checkbox"/> YES / NO
-	Traffic Surveys/Estimation <input checked="" type="checkbox"/> YES / NO
-	Hydraulic Studies <input type="checkbox"/> YES / NO
18-	In Case Traffic is projected beyond T-3 category are you satisfied with the reason given <input checked="" type="checkbox"/> YES / NO
19-	In Case, sub grade CBR is less than 3; has soil stabilization etc. been proposed. <input type="checkbox"/> YES / NO
20-	Is the design of the following elements as per Rural Roads Manual :
-	Alignment & Geometric <input checked="" type="checkbox"/> YES / NO
-	Pavement Design <input checked="" type="checkbox"/> YES / NO
-	CD works and protection measures <input checked="" type="checkbox"/> YES / NO
-	Side drains <input checked="" type="checkbox"/> YES / NO
-	Integration for Cross and Longitudinal Drainage <input checked="" type="checkbox"/> YES / NO
21-	Does the Estimation confirm to Standard rate analysis and SSR <input checked="" type="checkbox"/> YES / NO
22-	Does the proposal have provision for :
-	P. M. G. S. Y. Logo Sign Boards <input checked="" type="checkbox"/> YES / NO
-	K.m./H.m. Stones <input checked="" type="checkbox"/> YES / NO
-	Guard Stones (where necessary) <input checked="" type="checkbox"/> YES / NO
-	Traffic Sign Boards (as necessary) <input checked="" type="checkbox"/> YES / NO
23. Specific remarks, if any, by S. T. A.	
Certified that the Design and Estimation for the Proposed Road work are based on the data and S. S. R. provided by Engineers. The Proposal after final Correction is entered on the OMMS. The Proposal may be considered for clearance.	

Technical Scrutiny : Done by  Signature MEMBER	Coordinator S.T.A.  Signature Name
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STA JODHPUR

Coordinator
STATE TECHNICAL AGENCY
JODHPUR

Prapira -1
Pradhan Mantri Gram Sadak Yojna-II
Rajasthan Rural Road Development Authority, Jaipur
Year : 2019-2020 - CUCPL (as per SOR w.e.f. November 2019)
Proforma P-4

Name of PIU : Pratagarh

S.N o.	Distt.	Block	Name of Road	Village proposed for connectivity		Village getting connected on way		Total Population Served (8+10)	Type of proposal NIJ	Pavement		CD Works/15mt-60mt Water way Bridge cost		Total Cost borne by GOI share	Total Cost borne by State	Total Project Cost	Average Cost/ Km	Through Router Link No.	Name of MLA Constituency	Name of MP Constituency	Remarks
				Name	Pop.	Name	Pop.			Length (in Km)	Cost (Rs. In Lakh)	No. of work	Cost (Rs. In Lakhs)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	Pratagarh	Peepalkhant	Suhagpura To Adhalenda Upto Block Border	0	272	Suhagpura	4573	4545	U	8.00	459.80	12	7.99	285.68	191.12	477.79	59.72	T-11	Ramjal Meena	C.P.Joshi	

Block	No. of benefited hab.		Total
	Directly	Indirectly	
Peepalkhant	Suhagpura	Panawala	1206
Peepalkhant	Lajpura	Bilari	845
Peepalkhant	Achhalwada	Pathar	2157
Peepalkhant	0	Kunee	175
Peepalkhant	0	Khoya	190
Peepalkhant	0	Suempura	272
Total	6		4545

Pradhan Mantri Gram Sadak Yojna-III
Rajasthan Rural Road Development Authority, Jaipur
Year : 2019-2020 - CUCPL (as per SOR w.e.f. November 2019)

S. No.	Name of District	Name of PIU	Name of Block	Name of the Road	Trace Map Ranking	Type of Proposal (U)	Proposed Length (in Kms)				No. of CD Works	Cost of CD Works (Rs.in Lakh) i/c GST (Rs.in Lakh)	No of Brigde above 15 mt. Water way up to 60 mt. (Rs.in Lakh) i/c GST	Cost of Brigde above 15 mt. Water way up to 60 mt. (Rs.in Lakh) i/c GST	Total Estimated Cost (Rs.in Lakh) (12+14+16)	GOI Share (60% estimated cost)	State Share (40% estimated cost)	
							BT Lengt h (in kms)	CC Lengt h (in kms)	R&D Lengt h (in kms)	Total Lengt h (in kms)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Pratapgarh	Pratapgarh	Peepalkhunt	Suhagpura To Achalawda Upto Block Border	61.00	U	8.00	0.00	0.00	8.00	469.80	12	8.95	0	478.75	287.25	191.50	
				0.00			8.00	0.00	0.00	8.00	469.80	12.00	8.95	0.00	478.75	287.25	191.50	

नोट -
1. विकासखण्डवार एवं जिले का टोटल करें।

Revised FORM-B

Additional Cost to be borne by State Fund (Rs.in Lakh) i/c GST		Additional Cost to be borne by State Fund (Rs.in Lakh) i/c GST										Remark													
		Provision for Utility Shifting	State Share for exceed 5msa	State Share for part of PMGSY road which is included in proposal but design life not completed	Additional Total State Cost (20+21+22)	Total State Cost (17+23)	G.Total (16+24) (TOTAL PROJECT COST)	Avg. Cost/Km.	Carriage way Width (3.75mt/ 5.50mt)	Traffic intensity in msa	S. No. of CUCPL		Maintenance Cost (Rs. in Lakh)	Name of R&D Technology											
20	0.00	21	0.00	22	0.00	23	0.00	24	191.50	25	478.75	26	59.84	27	5.50	28	1.82	29	2.00	30	142.10	31	Plastic Waste	32	
0.00																									
0.00			0.00	0.00	0.00	0.00	0.00	191.50	191.50	478.75	478.75	59.84	59.84								142.10				

(R.S. Chauhan)

PIU PWD Circle Pratapgarh

Statement showing the details of Component wise cost of roads proposed under PMGSY-2B

S. No.	District	Block	Pkg. No.	Trace map rank of roads	Existing Surface Type (In km)			Proposed Surface Type (In km)			Proposed Pavement Details (Rs. in Lakhs)										Total Project Cost (Rs in Lakhs) (2012/13)	Average Cost (Rs in Lakhs) (2012/13)	Carriage Width	Traffic Capacity	Proposed Technology																
					Earthm	CC	RT	CC	RT	CC	RT	Earthwork Including Shoulders	CSB	WDM Col Oil	WMM	WWM	Prime Coat	Tack Coat	BMDSM	SDPC /SDPC/CC						Seal Coat	CC	Total Cost	Average Cost (2012/13)	Total Cost (2012/13)	Drain	Other Works including Road	Total Cost (2012/13)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
1.00	Hydrabad	Perambur		51.00	1.00	2.30	4.00	3.00	0.00	8.00	8.00	0.91	10.26	0.00	0.00	94.11	23.88	5.32	130.37	48.77	16.91	0.00	377.88	47.17	12.00	7.94	0.67	1.00	0.80	0.00	35.77	35.77	4.47	427.46	53.43	3.75	5.30	1.9	1.82	Plastic	

RAJASTHAN PMGSY - III						
Road Name	Suhagpura To Achalawda Upto Block Border					
District	Pratapgarh	Block	Peepalkhunt		PIU	Pratapgarh
C/w width		5.5		Traffic		1.82 Msa
Total Length		8		BT		8.00
				CC		0

S.No.		After Scrutiny	Before Scrutiny	Difference
1	Flexible Pavement	377.33	377.33	0.000
2	Rigid Pavement	0.00	0.00	0.00
3	Road Furniture	35.77	35.77	0.00
4	Utility Shifting	0.00	0.00	0.00
5	Drains	0.00	0.00	0.00
6	Protection Work	6.36	6.36	0.00
	Total	419.46	419.46	0.00
	Total No. Of CD	12.00	12.00	0.00
	Cost of CD	7.99	7.99	0.00
	Grand Total	427.46	427.46	0.00
	Average Cost/ km	53.43	53.43	0.00

(REPAIRING)No. Of Minor Bridge	0
Length of Bridge	0
Cost of Bridge	0

MoRD Share	256.47
State Share	170.98
Year of Sanction	2019-20

Pavement Composition

Flexible	Proposed	Existing		
	Type of Material	Thickness	Type of Material	Thickness
	OGPC	20	PMC	20
	BM	50	WBM	150
	WMM	225	GSB	150
	GSB	0		
	Total Thickness	295	Total Thickness	320
Rigid	Type of Material	Thickness		
	M-30	200		
	DLC			

Flexible

Type of Material	Cost (in lakh)
Earthwork	43.91
GSB	29.26
WMM	98.11
Prime Coat	23.68
Tack Coat	5.32
BM	110.37
OGPC	49.77
Seal Coat	16.91
CC	0.00
Total Cost	377.33

Pradhan Mantri Gram Sadak Yojna-III
Rajasthan Rural Road Development Authority, Jaipur
Year : 2019-2020 - CUCPL (as per SOR w.e.f. November 2019)

S. No.	Name of District	Name of PIU	Name of Block	Name of the Road	Trace MAP Ranking	Type of Proposal (U)	Proposed Length (in Kms)				Cost of Pavement (Rs.in Lakh)				No. of CD Works	Cost of CD Works (Rs.in Lakh)	No of Brigde above 15 mt. Water way up to 60 mt.	Cost of Brigde above 15 mt. Water way up to 60 mt.	Provision of social economic & safeguard etc.	Estimated Cost (Rs.in Lakh) (14+16+19)	GOI Share (60% estimated cost) (Rs. In Lacs)	State Share (40% estimated cost) (Rs. In Lacs)
							BT Length (in kms)	CC Length (in kms)	R&D Length (in kms)	Total Length (in kms)	Additional Cost of Provision in F 6	Additional Cost of Provision on F 6 (a)	Total Cost (12+13)									
1	Pratapgarh	Pratapgarh	Peepalkhant	Suhagpura To Achalawda	61	U	8.000	0.000	-	8.00	419.46	0.00	419.46	12	7.99	0.00	0.00	427.46	256.47	170.98		
							8.000	0.000	8.00	419.46	0.00	419.46	12.00	7.99	0.00	0.00	427.46	256.47	170.98			

नोट -

1. विकासखण्डवार एवं जिले का टोटल करें।

427.46

Consultant
INTRATECH CIVIL

FORM-B

Additional Cost to be borne by State Fund (Rs. in Lakh)																									
Provision for Electric Telephone Service	State Share for exceed 5msa	Additional Total State Cost (23+24)	Total State Cost (22+25)	G.Total (26+27) (TOTAL PROJECT COST)	Avg. Cost/ Km.	Carriage way Width (3.75mt/ 5.50mt)	Traffic intensity in MSA	S. no. of CUCP L	Maintenance Cost (Rs. in Lakh)	Name of R&D Technology	Remark	23	24	25	26	27	28	29	30	31	32	33	34		
0.00	0.00	0.00	170.98	427.46	53.432	5.50	1.82	-	142.10	Plastic Waste															
0.00	0.00	0.00	0.00	0.00	53.43				142.10																

महाप्रबंधक..
परियोजना कि.इकाई.....

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY-III)

CHECK LIST FOR P.L.U. & S.T.A.
(For Individual Road Works)
To be filled by PIU.

1. Location :- State: District: Block

2. Package No:-

3. Name of the Road: To

4. Total Length (Km) - In Built up area - Km In Open Area - Km

5. Type of proposal : Upgradation/Riding Quality Improvement/Both - Both

If portion of the proposed road is existing PMGSY road than indicate
Name of the road :
Year of sanction under PMGSY Year of completion L/T No. Design Traffic (CVPD/ ESAL)

Whether road deteriorated due non maintenance

Yes	NO
	No

6. Estimated Cost Rs :

Cost sharing pattern for this road	Normal Area (60:40)	Special Area (90:10)
Item	Total Cost in Rs.	Average Cost per Km. Lakhs
Flexible Pavement	377.33	47.17
Rigid Pavement	0.00	#DIV/0!
Others (CD Works, Protective works & Misc Items)	50.13	6.27
Cost due to higher specification such as carriage way width, Higher Axle load , Hard shoulders, Shifting of Utilities	0.00	0.00
GST & LWF	76.39	9.55
Total Project Cost	503.85	62.98
MoRD Share		
State Share		

7. Is the road a part of DRRP and Approved CUCPL

Yes/No	Yes			
Component Road	DRRP Road Number	Road Name	Trace Map Rank	
a) If yes, what are the Trace map rankings of the components of the candidate road?	Component Road 1	1129564	Kelamela Peepalkhant Via Morwania	1
	Component Road 2	0	0	0
	Component Road 3	0	0	0

b) If Yes , Through Route/ MRL No.

T-	0	9	OR	MRL-
Name of Habitation	Population	Overall Weightage		
Suhagpura	1036			
Lalpura	209			
Achalawada	1529			
0	0			
0	0			
0	0			
Total weight	2774			
d) Utility value = Total weight/ Length of road	346.75			

e) Name of facilities located on this proposed road as per DRRP.

2 Panchayat
H.Q. and 1
govt. control

f) Whether the proposed road leads to

MDR	<input checked="" type="checkbox"/> SH	NH
-----	--	----

g) Average PCI of the road to which proposed TR or MRL will be connected

h) Average PCI value of proposed road

i) If PCI of MDR / SH / NH is 3 or below , whether the State's undertaking for simultaneously upgrading it from State fund is available

j) Age of the proposed road

k) Existing surface of proposed road

l) Cumulative maintenance expenditure in last three years(in lacs)

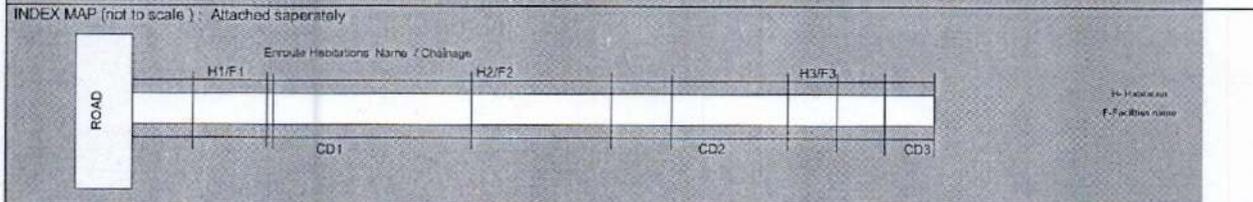
m) Whether the road proposed using new technologies

If Yes, Name of the technology proposed

4	
1.67	
Yes	No
	No
10	
BT	
7.73	
Yes	No

NO

8. a) Whether the Proposed Road has the desired carriage way width, Roadway width and Road Land Width (RLW)	Carriage way		Roadway width		Road Land width		
	Yes	No	Yes	No	Yes	No	
b) Indicate the actual widths of the following for the proposed road	In the Built Up Area (m)			In the Open Area (m)			
	i) Carriageway	-			5.50		
	ii) Roadway	-			9.00		
c) Indicate the proposed widths of the following for the proposed road	In the Built Up Area (m)			In the Open Area (m)			
	i) Carriageway	-			5.50		
	ii) Roadway	-			9.00		



Name of Road :- Suhagpura To Achalawda Upto Block Border

Gross Section details

a) Cross Section of The Existing road showing different component layers.

Item	Thickness
Bituminous Layers	20mm
G3+G2	150mm
GSB	150mm

b) Cross Section of The Proposed road showing different component layers. (Should be as per Actual Provisions of DPR)

Item	Thickness
OGPC+Seal coat	20mm
BM	50mm
WMM	225mm
GSB	0mm
OGPC+Seal coat	20mm
BM	0mm
WMM	150mm
GSB	150mm

For Existing Surface

For new Road Surface

10 Base year traffic volume

Month & Year of Traffic Volume Count =		Motorised Traffic											Non Motorised Traffic				
Days	Cars, Jeep, Vans, Three Wheelers	Motorised two Wheelers	Pedestrian	Trucks			Agricultural Tractors Trailers			Buses			Cycles	Cycle Rickshaws	Animal Drawn Vehicle		
				L	U	OL	L	U	OL	L	U	OL			SWC	Num. Tyred	
Day 1	62	105	121	39	36	22	59	45	19	32	7	22	62			38	
Day 2	60	62	120	29	55	26	30	43	22	62	6	25	55			38	
Day 3	98	98	110	23	24	20	23	52	18	22	7	26	62			49	
Day 4	67	67	99	10	32	27	18	45	18	17	6	25	73			34	
Day 5	75	70	122	9	33	20	25	41	15	13	6	33	70			47	
Day 6	62	141	98	39	24	16	37	44	22	9	8	27	141			91	
Day 7	102	64	102	35	24	15	33	38	19	12	8	28	133			70	
Average	76	87	111	26	33	21	32	44	19	24	7	27	85			52	

3 days traffic count is required in case design is done using IRC SP:72-2015 and 7 day count required in case design is done with IRC 37:2018

Passenger car unit(PCU) = 2946

a) Traffic Details in case design is done as per SP IRC 72:2015
 ADT in the year of Traffic Count = 704
 Growth rate adopted (%) = 6% Base Year Traffic AADT (T) = 863.71
 Design Life = 12 Years
 Number of Harvesting Seasons = 75
 No. of Days in Each Harvesting Season (t) = 2
 Value of (n) assumed =
 Cumulative ESAL = 1896063
 Traffic Category = T9

b) Traffic Details in case design is done as per IRC 37-2001 /IRC 37 :2012

A= Initial traffic in the year of completion of construction in terms of the number of commercial vehicles per day

D= Lane distribution factor

F= Vehicle damage factor

n= Design life in years

r= growth rate adopted %

N= The cumulative number of standard axles to be catered for the design in terms of msa

CVPD

11. Subgrade CBR (for Different Sections) =

Change	0+600	1+400	2+450	3+500	4+600	5+550	6+500	7+500
Design CBR %	3.57%	3.94%	3.82%	3.88%	3.82%	3.82%	3.70%	3.70%

12. Cost Details of upgradation proposal						
A. Pavement Components						
Description of layer	Thickness in mm		Quantity	Rate Rs	Cost Rs.	Cost/ km (Rs)
Clearing, dismantling existing CDs etc			1.20		19,172.00	
Scarifying			600.00		124,992.00	
Setting Out			8.00		456,198.00	
Earth Work - in Excavation/ Cutting			22147.48		1,268,235.00	
Earthwork- in Filling (Embankment)			34240.93		3,049,478.00	
Subgrade (if provided seperately)/ Treated subgrade			0.00		-	
Shoulders (if not considered in the Earthwork)			1800.00		1,185,408.00	
Granular Sub base			3176.88		2,092,163.00	
Soil + Aggregate Mix			0		0	
WBM Gr -I I			0		0	
WBM Gr -I I I			0		0	
WMM			8297.81	1182.60	10,988,273.00	
Bituminous Layers						
Prime Coat			48318.75	49.00	2,651,733.00	
Tack Coat			48318.75	11.00	595,287.00	
BM /DBM (if designed using IRC 37-2018, DBM is applicable)			2227.50	4955.00	12,361,734.00	
OGPC /SDBC/BC (SDBC / BC if designed using IRC 37-2018)			48318.75	103.00	5,574,051.00	
Seal Coat			48318.75	35.00	1,894,095.00	
Surface Dressing			0.00		-	
Total cost of Flexible pavement					42,260,819.00	
Cement Concrete Road						
Design done with	IRCSP 82-2014	IRC 58-2011				
GSB			0		0.00	
WBM/WMM			0		0.00	
Dry lean concrete(DLC)						
Concrete for Pavement (M30)			0		0.00	
Total Cost of Concrete Pavement					0.00	
B: C D Works						
i	Location - Chainage (Similar Type of CD's may be grouped together)	Type of CD & their Nos	Total Length of Culvert	Cost in Rs.(in lacs)		
	Existing CD (requiring repair)					
ii	New proposed CD (including complete replacement of existing CDs)					
		1000mm dia HP 1 Row -	0.00		0.00	
		1000mm dia HP 2 Row -	2.00		454162.00	
		Syphon -	10.00		440960.00	
		RCC Slab Culvert - 2M -1SPAN -	0.00		0.00	
		RCC Slab Culvert - 4M -1SPAN -	0.00		0.00	
		RCC Slab Culvert - 6M -1SPAN -	0.00		0.00	
		Box 1 Cell	0.00		0.00	
		Box 2 Cell	0.00		0.00	
		Vented Causeway -	0.00		0.00	
		Total			895142.00	
Total Cost of CD works in lacs					8.95	
C. Protection works						
		Chainage			Cost in Rs	Average cost / m
		From	To	Length(m)		
Retaining wall		0	0	125.00	712527.00	5700.22
Breast wall						
Toe wall						
Gabbion						
Pitching / turfing for slopes						
Total cost of protection works						
D. Pucca Side Drains (if Provided)						
		Chainage		Length(m)	Cost in Rs	Average cost / m
		From	To			
		0	0	0	0.00	#DIV/0!
Total cost of side drains works						
E. Road Logo, other Road Furniture including Road safety signs						
Number of Boards			Number	Cost in Rs	Average cost / km	
			363	4006615.00	500826.88	
Total cost of road furniture				4006615.00	500826.88	
F. Any other Provisions (Please Specify)				0.00	0.00	
Total Cost of the Project (Rs)					47,875,103.00	59.84

13. Five Year Routine Maintenance

To be estimated as per provision of Operation Manual	Year	Cost in lakhs	% Cost	Cost /km
	I	6.01	1.12	0.75
	II	7.67	1.43	0.96
	III	9.81	1.83	1.23
	IV	11.53	2.15	1.44
	V	13.24	2.47	1.66
	Renewal coat after 5 years	82.11		10.26
	Total Maintenance Cost	130.36		16.30

Maintenance after 6th years renewal cost	Year	Cost in lakhs	% Cost	Cost /km
	I	1.46	1.12	0.18
	II	1.86	1.43	0.23
	III	2.39	1.83	0.30
	IV	2.80	2.15	0.35
	V	3.22	2.47	0.40
	Total Maintenance Cost	11.73		17.76

Grand Total of maintenance

Yes No

14. Whether the road has Geometrics as per Rural Roads Manual RRM / Latest Circulars of NRIDA.

Yes No

15. Whether C.D. works / Protection works are provided as per RRM / Latest Circulars of NRIDA/ Respective Codes of IRC.

16. Does the Estimation Conform to Standard Rate Analysis and SSR generated for the current Phase

Vetted at NRIDA
Yes No

Year

17. Sources and the Lead distances of Materials are as under

Material	Source	Lead Distance (Km)	Material	Source	Lead Distance
Earth	Borrow pits	-	Emulsion	Barodara	ALLOWABLE
Murum	APPROVED	ALLOWA	Bitumen	Barodara	ALLOWABLE
Aggregate	APPROVED	ALLOWA	Steel	Pratapgarh	ALLOWABLE
Sand	APPROVED	ALLOWA			
Cement	Nimbahera	120 KM			

Certified that information provided is true

Prepared By
(Name)

Checked By

Technical Scrutiny at STA done by:

Counter Signatures of
Co-ordinator STA:

**MEMBER
STA JODHPUR**

**Coordinator
STATE TECHNICAL AGENCY
JODHPUR**



To be filled by State Technical Agency		
Name of the STA:		
Name of Road :		Yes / NO to be filled by STA in own handwriting
18	Is the Proposed Road entered on the OMMAS under PMGSY III proposal module: (Data entries to be verified by STA before Clicking the Proposal)	yes
19	a. Have you satisfied yourself that the proposed road is a part of DRRP	yes
	b. Are you satisfied that the proposed road is significantly more beneficial to the public than the roads with higher trace maps rank in the same block?	yes
Are you satisfied with the following		
20	a. Engineering Surveys (L section, X section on A3 size paper must be verified)	yes
	b. Soil/ Material Investigation (CBR, Density, LL, PI, Gradation to be verified)	yes
	c. Whether Traffic Surveys / count has been done by third party	yes
	d. Hydraulic Studies. (Catchment for structures with more than 2 Vents to be verified from topo sheet. Location and requirement of all CD structures to be verified from L section)	—
21	a. In case , Traffic is projected beyond T 9 Category and road designed using IRC 37 are you satisfied with the reason given by PIU	—
	b. Whether 3rd party Traffic verification / Axle load Surveys carried out on such roads designed with more than 1 MSA traffic and carriageway width of 5.5 m	—
22	a. In case , sub grade CBR is less than 5, has Soil Stabilisation etc. been proposed	—
	b. (If not , specific Reasons given by PIU)	—
Is the design of the following elements as per Rural Roads Manul / Circulars of NRIDA:		
23	a. Alignment & Geometrics	yes
	b. Location and type of CD works and Side drains	yes
	c. Integration for Cross and longitudinal Drainage	yes
	d. Protection Works	yes
24	a. Is the design of flexible Pavement as per IRC SP: 72- 2015 and design of Rigid Pavement as per IRC SP:62-2014 .	yes
	b. Is the design of flexible Pavement as per IRC 37 2018 and design of Rigid Pavement as per IRC SP:58-2011.	yes
Does the proposal have provisions for		
25	a. PMGSY Logo Sign Boards and Information Board	yes
	b. Km/Hm Stones	yes
	c. Guard Stones (where necessary)	yes
	d. Traffic Sign Boards (as necessary)	yes
26	a. Are you satisfied with the Road safety provisions made in the DPR	yes
	b. Whether Road Safety Audit certificate attached in case of the proposed length is more than 5 Km	—
27	Specific Remarks, if any, by STA (Specific remarks of STA about the overall project are necessary on each DPR)	

Certified that the Design and Estimation for the Proposed Road work are based on the data and SSR provided by PIU Engineers . The Proposal after final Correction is entered on the OMMAS.The Proposal may be considered for clearance.

Technical Scrutiny at STA done by:

Signature
Name
Date

**MEMBER
STA JODHPUR**

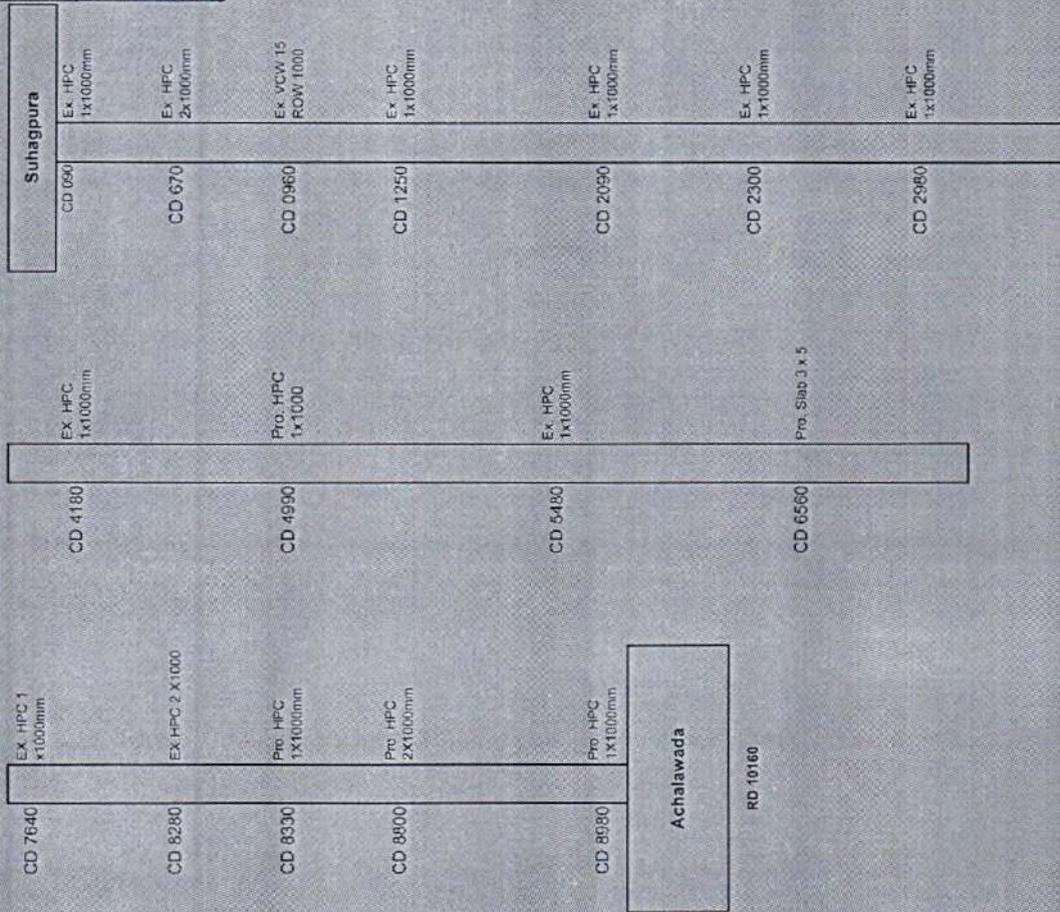
Co-ordinator STA:

Signature
Name
Date

**Coordinator
STATE TECHNICAL AGENCY
JODHPUR**

C FORM NO		TYPE OF PROPOSAL : PNC / ATR / SLR				
PROFARMA "C" PRADHAN MANTRI GRAM SADAK YOJANA CHECK LIST FOR P.I.U. & S.T.A. (For Individual Road Works)						
1- Location :-	State :-	Rajasthan	District :-	Pratapgarh	Block :- Peepalkhunt	
2- Package No. :-	0					
3- Name of Road :-	Suhagpura To Achalawda Upto Block Border					
4- Length :-	8.000	Km.	In Built up Area : KM	0.00	In Open Area KM	8.00
5- Estimated Cost Rs. :	427.46	Lakhs	Average Cost:	53.43 Lakhs per Km		
State Cost			Cost to be born by GOI			
Name of Item	Total Cost in Lakhs	Name of Item	Total Cost in Lakhs	Cost per Km. Lakhs		
Electric & Utilities Sevice	0.00	Flexible Pavement	413.10	51.64		
Social Economic survey etc. @ 12000 Rs / KM	0.00	Rigid Pavement	0.00	#DIV/0!		
Difference Preparation of DPR	0.00	Cross Drainage	7.99	1.00		
Misc. / Others	0.00	Drain Pucca	0.00	#DIV/0!		
		Protection work	6.36	0.80		
Total	0.00	Total	427.46	53.43		
6- Type of Proposal :-	Up gradation					
If The Proposed Road is a New Connectivity						
Is the road a part of core network	YES / NO					
If Yes Through/Link Route Number	T-11					
Name of the unconnected Habitation (to be crosschecked with CN-6)						
List of Habitations Connected enroute.						
S. N	Name of Habitation	Habitation Code	Population	Direct/ Indirect		
1	Suhagpura	1013346	1036	DIRECT		
2	Lalpura	618969	209	DIRECT		
3	Achalawada	10191	1529	DIRECT		
4	0		0	DIRECT		
5	0		0	DIRECT		
6	0		0	DIRECT		
		Total	90404			
Population sub served by the proposed road	90404					
Does the Proposed Road lead up to 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 (a) Another Habitation having All - weather road. (b) Directly to an All weather road. If (b), indicate the nature of road to which the proposed road leads. If The Proposal Is For Up Gradation						
Is the road a part of core network	YES / NO					
Is it associted Through Route	YES / NO					
It is Certified that there are no Unconnected Habitation in the District	YES / NO					
Part B :- Technical						
7- A) Whether the proposed Road has the desired carriageway width, Roadway width and Road Land width (RLW). B) Indicate the actual widths adopted for the Proposed road.	YES / NO					
Particulars	In the Built Up Area(m)		In the Open Area (m)			
a) Carriageway	5.5		5.5			
b) Roadway	9		9			
c) Road Land Width	15		15			

C) INDEX MAP (NOT TO SCALE)



Cross Section Details

- a) Cross Section of the existing road showing different component layers:
- b) Cross Section of the proposed road showing different component layers:
Attached Saprately

Traffic Volume

8. Base Year Traffic Volume

Truck	Car, Jeep, Van	Auto Rickshaw	Scooters/Mot orbikes	Trucks	Tractors with trailer	Tractor without trailer	Total				
							Bus / Minibus	Cycl es	Cycle Rickshaw / Hand Cart	Horse cart / Bullock Cart	Pedestrian
Day 1	62	0	105	97	123	0	61	62	0	38	121
Day 2	66	0	62	110	95	0	93	55	0	38	120
Day 3	98	0	98	67	93	0	55	62	0	49	110
Day 4	67	0	67	69	81	0	48	73	0	34	99
Day 5	75	0	70	62	81	0	52	70	0	47	122
Day 6	62	0	141	79	103	0	44	141	0	91	96
Day 7	102	0	64	74	90	0	48	133	0	70	102
Average	76	0	87	80	95	0	57	85	0	52	111

Growth rate adopted (%) =	6.0%
Design Life and 2 year construction period =	12 years
Number of Harvesting Seasons =	2
No. of Days in Each Harvesting Season (t) =	75
CVPD =	232
Cumulative ESAL =	1896063
	T9
	T9

9. Sub grade CBR & Different Sections =

Chainage in (m)	500	1400	2200	3300	4600	5700	6700	7300	8500	9600	10300	11400	12700			
CBR in %	6.16%	7.02%	7.11%	7.30%	7.20%	7.39%	7.02%	7.39%	7%	7.11	7.30	7.39	7.21			
Design CBR in %	7															

10	Cost Details:		Cost Rs.	Cost/km (Rs)	
A.	General Costs: Preparation of DPR		14300.00	1787.50	
B.	Pavement Components				
	Description of the layer	Thickness (mm)	Quantity	Cost Rs.	Cost/km (Rs)
	SETTING OUT		8.00	407,320.00	50,915.00
	CLEARING & GRUBBING		1.20	17,118.00	2,139.75
	Tree Cutting		0.00	-	-
	SCARIFYING		600.00	111,600.00	13,950.00
	Earth Work - in Excavation/ Cutting		22147.48	1,132,354.00	141,544.25
	Earth Work - in Filling (Embankment)		34240.93	2,722,748.00	340,343.50
	Subgrade (if provided seperately)	0	0.00	-	-
	Hard shoulder	-	1800.00	1,058,400.00	132,300.00
	Granular Sub-Base widening portion	150	3176.88	1,868,003.00	233,500.38
	WMM	225	8297.81	9,810,959.00	1,226,369.88
C.	Bituminous Layers				
	Prime Coat		48318.75	2,367,619.00	295,952.38
	Tack Coat		48318.75	531,507.00	66,438.38
	BM	50	2227.50	11,037,263.00	1,379,657.88
	OGPC	20	48318.75	4,976,832.00	622,104.00
	Seal Coat		0.00	1,691,157.00	211,394.63
	Pavement Quality Concrete (M30)				-
D.	Cement Concrete Road				
	Excavation		0.00	0.00	0.00
	GSB for New section	150	0.00	0.00	#DIV/0!
	GSB for Paved Shoulders	100	0.00	0.00	0.00
	WMM	175	0.00	0.00	#DIV/0!
	Panneled Concrete	125	0.00	0.00	0.00
	Pavement Quality Concrete (M30)	200	0.00	0.00	#DIV/0!
	Paved Shoulder	100	0.00	0.00	0.00
	Saw cut joint		0.00	0.00	0.00
				37732880.00	
E.	CD Works				
	No. of Existing CD Works :		15		
	Do they require any improvement- specify the nature of improvement proposed		Yes/No	Improvement of 0CDs	
	If yes, their Number and Cost of improvement		0	Cost	0.00 0.00
S.No	Location - Chainage (similar Type of CD's may be grouped together)	Type of CD & their Nos.		Total Length of Bridge/ Culvert	Cost in Rs.
1	1000mm dia HP 1 Row -	0	HPC	12.98	-
2	1000mm dia HP 2 Row -	2	HPC	123.31	405,522.00
3	Syphon -	10	HPC	16.44	393,730.00
4	RCC Slab Culvert - 2M.-1SPAN -	0	Slab	8.22	-
5	RCC Slab Culvert - 4M.-1SPAN -	0	Slab	30.00	-
	RCC Slab Culvert - 6M.-1SPAN -	0	Slab		-
	Box 1_Cell	0	Box		-
	Box 2_Cell	0	Box		-
	Vented Causeway -	0	VC		-
	Cost of CD Works				799,252.00
				Cost in Lakh.	7.99
				Cost in Rs.	Cost / Km (Rs)

F.	Protection Works				636,185.00	79,523.13
G.	Pucca Drains (if provided)	LENGTH		0.00	m	-
H.	Road Logo , other Road Furniture				3,577,336.80	447,167.10
I.	Any other provisions (Please Specify) Service Duct				-	-
Total Cost of the Project (Rs)					42,745,653.80	5,343,206.73
Say Cost in Lakhs					427.46	53.43
Name of the Road						
K.	Suhagpura To Achalawda Upto Block Border			Five Year Routine Maintenance For BT		
	Year	Cost in Lakhs	% Cost	Cost / Km		
	I	5.09	1.19	0.64		
	II	6.05	1.42	0.76		
	III	11.39	2.67	1.42		
	IV	13.63	3.19	1.70		
	V	15.88	3.71	1.98		
	Five Year Routine Maintenance for CC @ 26000 Rs per year /K.M					
	VI	0.00	#DIV/0!	#DIV/0!		
	TOTAL	52.05	12.18	6.51		
11. Whether the road has Geometrics as per Rural Road Manual (RRM)					YES / NO	
12. Whether CD works /Protection works are provided as per RRM					YES / NO	
13. Whether the Cost estimates are as per standard data analysis and S.S.R.01.09.2017					YES / NO	
14. Sources and the Lead distances of Materials are as under						
	Material	Source	Lead Distance	Material	Source	Lead Distance
	Earth	Borrow pits	-	Emulsion	Barodara	ALLOWABLE
	Murum	APPROVED	ALLOWABLE	Bitumen	Barodara	ALLOWABLE
	Aggregate	APPROVED	ALLOWABLE	Steel	Pratapgarh	ALLOWABLE
	Sand	APPROVED	ALLOWABLE			
	Cement	Nimbahera	120 KM			
Certified that information provided is true						
Prepared By :		Checked By :		Scrutinized By :		
						
Assistant Engineer PWD Sub Dn Feepalkhunt		Executive Engineer PWD Dn II Pratapgarh		C.G.M. Project Circle MPRDA		

PRADHAN MANTRI GRAM SADAK YOJNA -II

Proforma - B

ESTIMATE SUMMARY

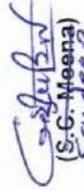
State :- Rajasthan

District :- Dungarpur

S. No.	Name of the Block	Name of the Road		Type of Proposal (N/U)	Proposed Length (In Km)	Cost of Pavement (in Lacs)	No. of CD Works (in No)	Cost of C.D. Works (in Lacs)	Total Estimated Cost (in Lacs)	Average Cost per Km.
		From	To							
1	2	3	4	5	6	7	8	9	10	11
1	Peepalkhunt	Suhagpura	Achalawada	U	8.000	469.80	12	8.95	478.75	59.84

Estimated Cost in Rs. :- 478.75 Lacs

Prepared by :-


(S.C. Meena)
Assistant Engineer
PWD Sub Dn Peepalkhunt

Checked by :-


(V.S. Meena)
Executive Engineer
PWD Dn. II Pratapgarrh

Scrutinized by :-


(R.S. Chauhan)
Superintending Engineer
PIU PWD Circle Pratapgarrh

Technical Scrutiny
done by :-

Signature

Name :-


MEMBER
STA JODHPUR

Co-ordinator STA

Signature

Name :-


Coordinator
STATE TECHNICAL AGENCY
JODHPUR



PRADHAN MANTRI GRAM SADAK YOJANA

FORMAT F-1

Name of Road :- Suhagpura To Achalawda Upto Block Border

SUMMARY SHEET

Name of the Block	TOTAL No. OF HABITATIONS	Unconnected Habitation / VILLAGES			DISTRICT				
		> 1000	500 - 999	250 - 499					
Peepalkhant	10	2	2	1	Pratapgarh				
Type of Proposal	No. of Road	Total length of road (KM.)	No. of New CD Structures	Improve ment Of CD	Estimated Cost (Rs. in LAKHS)			No. of Unconnected Habitation Connected / Benefited	
					Pavement from format F-2B	CD Structure from format 2A	Utility Shifting/ Relocatio n		
1	2	3	4	5	6	7	8	9	10
New Proposal	1.00	8.000	12	0	419.46	7.99	0.00	427.46	10
TOTAL	1.00	8.00	12	0	419.46	7.99	0.00	427.46	10
Cost of Pavement Per KM =		52.43	Lacs						
Cost of CD Per KM =		1.00	Lacs						



(Suresh Chand Meena)
PWD Sub Dn. Peepalkhant



(V.S.Meena)
PWD Dn.II Pratapgarh

FORMAT F-2B

PRADHAN MANTRI GRAM SADAK YOJANA
ROADS PROPOSED IN PMGSY FOR RURAL CONNECTIVITY (PAVEMENT LAYERS)

DISTRICT : Pratapgarh BLOCK: Peepalkhant

S.No.	FROM	TO	New Connectivity (N)/ Upgrad ation (U)	Facility Accessed (A/B/C/D)	Road Length (KM.)	Existing surface type	DETAILS OF THICKNESS & COST FOR PAVEMENT (RS. IN LACS)											TOTAL COST OF PAVEMENT (SUM OF (09) TO (21))					
							8	9	10	11	12	13	14	15	16	17	19		20	21	22		
						Details			Setting Out, Dismantling, C & G	EARTH-WORK	SUB-BASE (GSB)	WMM	HARD SHOULDERS	CC DRAIN (PCC + RCC)	PRIME COAT & TACK COAT	BM	OGPC+ SEAL COAT	C.C. ROAD	PROTECTION WORK	Service Duct & Field Crossing	MISC. ITEMS INC ROAD FURNITURE		
						Thickness in mm	Cost																
1	Subhagpura	Achalawada	U	D	8.000	Poor					150	225	170	-	-	50	20	200		300/60 0	-	-	
							5.36	38.55	18.68	98.11	10.58	0.00	28.99	110.37	66.68	0.00	6.36	0.00	35.77				419.46

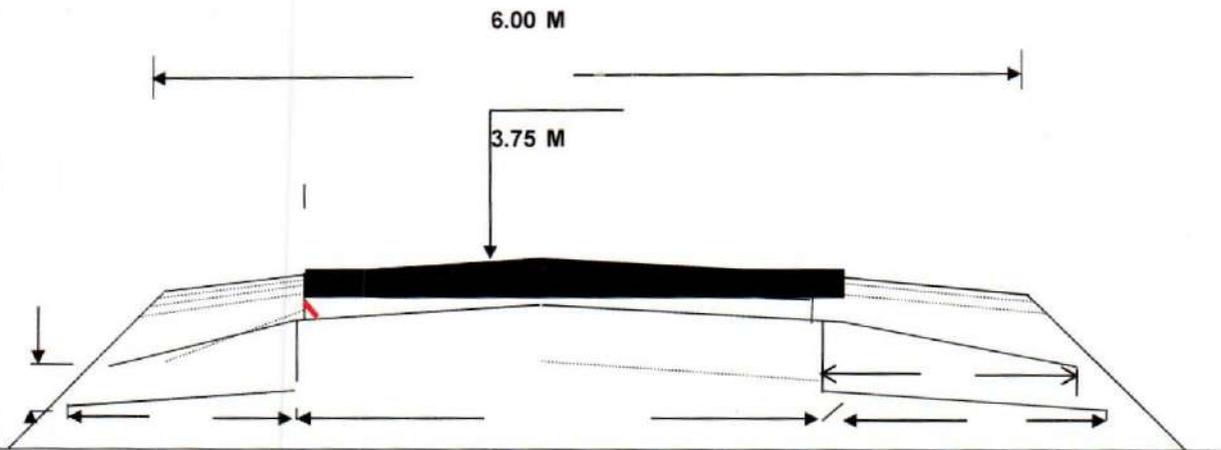
Use A - Market, B - Educational Facility, C - Health & D - Combination of all.

DPR Consultant


(V.S.Meena)
PWD Dn.II Pratapgarh

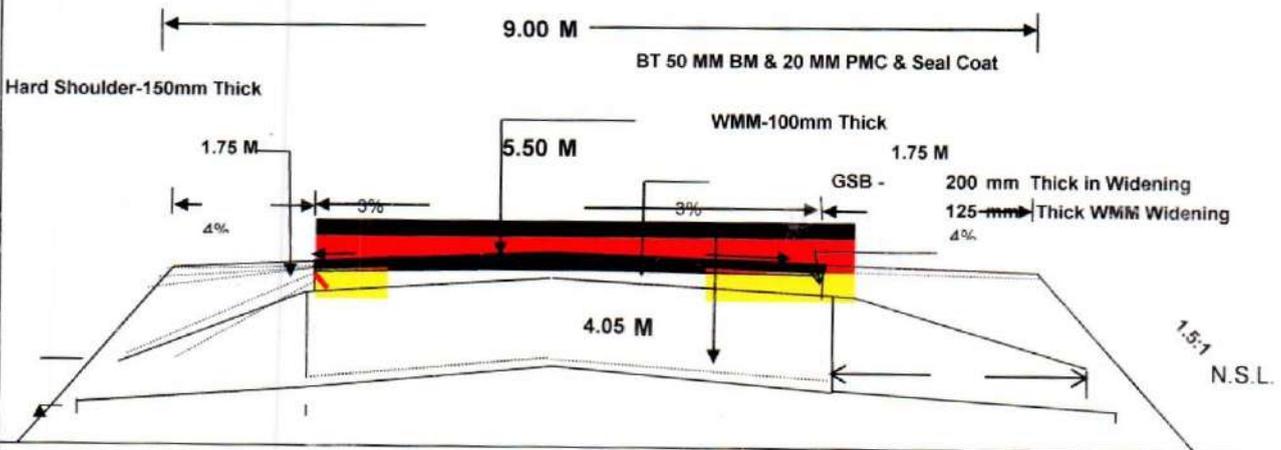
Name of Road :- Suhagpura To Achalawda Upto Block Border
 Cross Section details

a) Cross Section of the Existing Road showing different component Layers.



EXISTING ROAD TYPICAL CROSS - SECTION

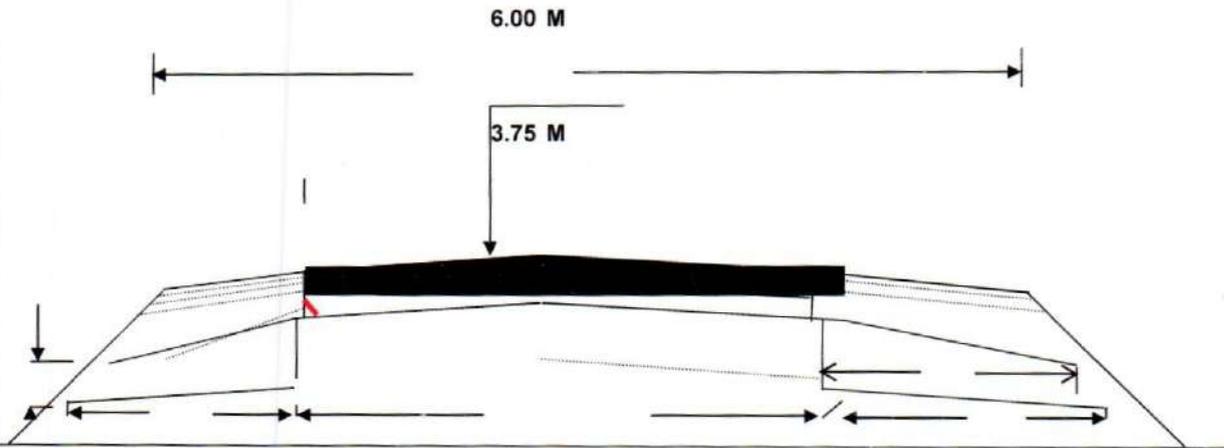
b) Cross Section of the Proposed road showing different component Layers



PROPOSED TYPICAL CROSS - SECTION

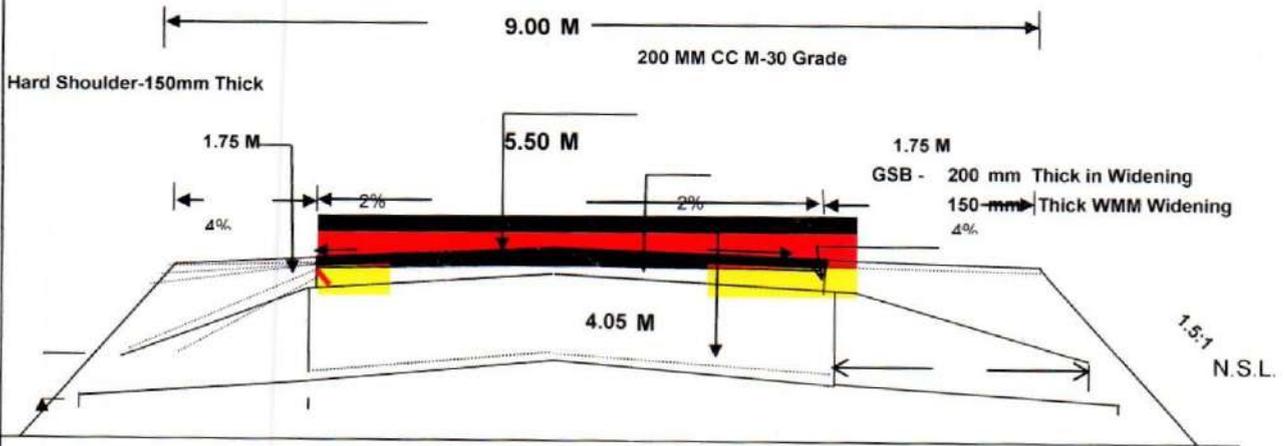
Name of Road :- Suhagpura To Achalawda Upto Block Border
 Cross Section details

a) Cross Section of the Existing Road showing different component Layers.



EXISTING CC ROAD TYPICAL CROSS - SECTION

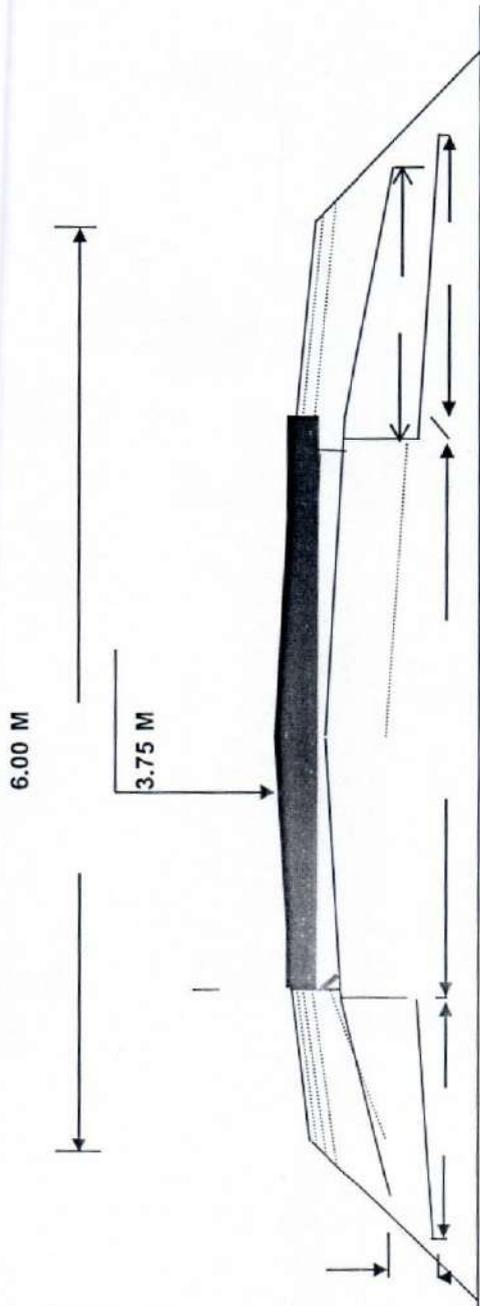
b) Cross Section of the Proposed road showing different component Layers



PROPOSED CC Road TYPICAL CROSS - SECTION

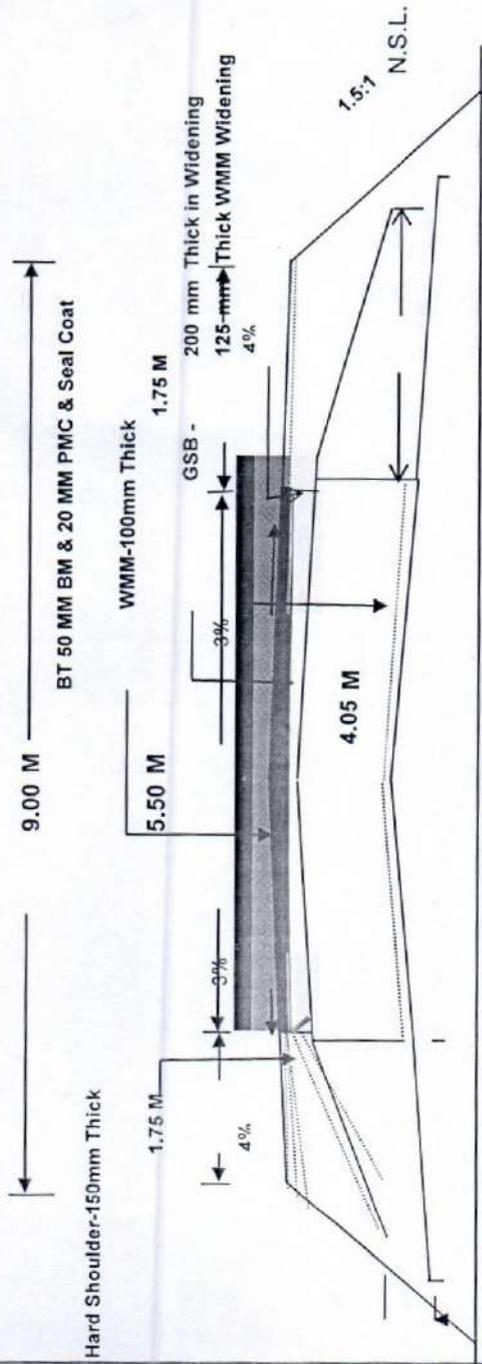
Name of Road :- Suhagpura To Achalawda Upto Block Border
Cross Section details

a) Cross Section of the Existing Road showing different component Layers.



EXISTING ROAD TYPICAL CROSS - SECTION

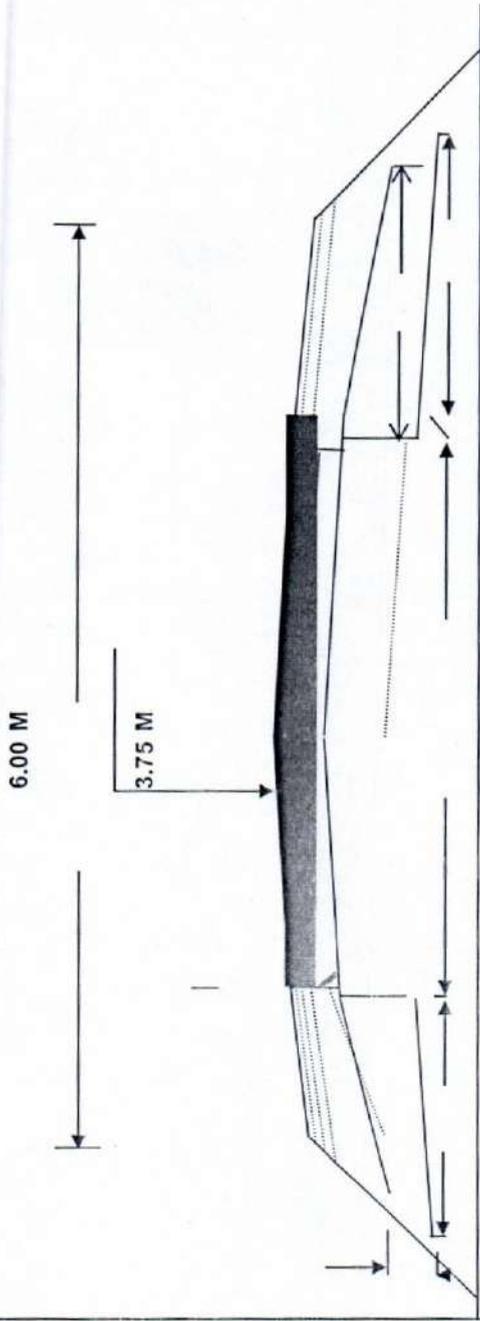
b) Cross Section of the Proposed road showing different component Layers



PROPOSED TYPICAL CROSS - SECTION

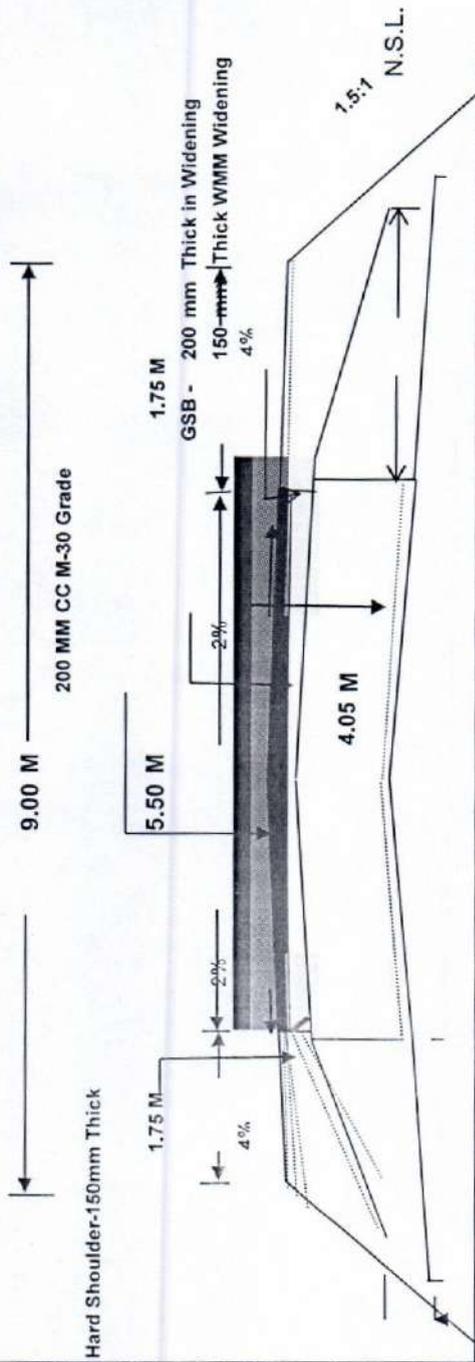
Name of Road :- Suhagpura To Achalawda Upto Block Border
Cross Section details

a) Cross Section of the Existing Road showing different component Layers.



EXISTING CC ROAD TYPICAL CROSS - SECTION

b) Cross Section of the Proposed road showing different component Layers



PROPOSED CC Road TYPICAL CROSS - SECTION

Road Name:- Suhagpura To Achalawda Upto Block Border
PRADHAN MANTRI GRAM SADAK YOJANA-III

CERTIFIED OF GROUND VERIFICATION FROM EXECUTIVE ENGINEER / HEAD OF PIU

- 1 a) Certified that the Land Width for the Road is available and that no addition land is required; or
b) Certified that land width for the Road is likely to be available as certified by the Panchayat
c) Certified that no fund has been obtained for GOI or State Govt. in any scheme for the proposed Road.
- 2 a) Certified that no forest lands is involved along the entire road way; or
b) Certified that the case for permission under Forest conservation Act has been moved to the Forest Department on (date)
- 3 Certified that the DPR has been checked at site.



(V.S.Meena)
PWD Dn. II Pratapgarh



(R.S. Chauhan)
PIU PWD Circle Pratapgarh

Community Consultation Checklist - Engineering

Question	Yes	No	N/a
1 Are there any flood prone areas on the road?		✓	
if yes:			
1.1 Are locations specified and inspected?			
1.2 Is high flood level specified for each stretch?			
1.3 Are locations specified and inspected?			
2. Are there any locations on the road where irrigations ducts need to be provided?	✓		
If yes:			
2.1 Are locations specified and inspected?	✓		
3. Can the road be used as a shortcut by through traffic?		✓	
4. Does the road lead to any quarries, missing area, brick kilns, logging areas, tourist attractions etc?		✓	
5. Are there plans to build new schools, hospitals, temples etc?			✓
6. Is there potential for double connectivity?		✓	
if yes on any of 3-6:			
6.1 is information on location, size and nature of additional traffic generators and specific routes obtained?			
7. Is there a need for deviations from existing track?		✓	
If yes:			
7.1 Where the proposals for deviation shown on site and explained to the community?			
7.2 Is the land availability checked?			
7.3 If there is a need to donation, were the owners consulted regarding their agreement to donate the land?			
8. Is there a need for speed breakers?	✓		
If yes:			
8.1 Is location and rational for speed breakers identified?	✓		
8.2 Is rational verified and checked on site?	✓		
8.3 Are alternative or additional locations discussed?	✓		
9. Are all existing intersections checked with the community on site?	✓		
9.1 Is the use of intersecting roads identified(e.g. school children, farm machinery, etc)?	✓		
10. Are proposed culvert locations verified with the community?	✓		
10.1 Is there a need for additional culverts?		✓	
10.2 If yes: are locations identified?			


 (S.C. Meena)
 PWD Sub Dn Peepalkhant


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 PWD Dn. II
 Pratapgarh


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 PIU PWD Circle
 Pratapgarh