



# ग्रामीण कार्य विभाग

Rural Works Department, Govt of Bihar

बिहार ग्रामीण कार्य विकास एजेंसी



## BIHAR RURAL ROADS PROJECT Bihar Rural Road Development Agency (BRRDA) Govt. of Bihar

YEAR 24-25

MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)



Name of the Road :-

Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

|                                                                                 |   |           |     |
|---------------------------------------------------------------------------------|---|-----------|-----|
| Survey ID                                                                       | : | 54344     |     |
| DISTRICT                                                                        | : | Gaya      |     |
| DIVISION                                                                        | : | Sherghati |     |
| BLOCK                                                                           | : | Gurua     |     |
| TOTAL LENGTH OF ROAD                                                            | : | 1.500     | KM  |
| TOTAL COST OF CONSTRUCTION                                                      | : | 111.890   | Lac |
| COST OF ROAD CONSTRUCTION PER KM                                                | : | 74.593    | Lac |
| SIX YEARS OPERATION & MANAGEMENT (O&M) COSTS AFTER COMPLETION OF CONSTRUCTION . | : | 15.934    | Lac |
| (EMERJENT@15% ,CONTINGENCY @1% & ADMINISTRATIVE COST @2.25% ) .                 | : | 23.328    | Lac |
| LAND ACQUISITION COST.                                                          | : | 0.000     | Lac |
| TOTAL COST OF PROJECT.                                                          | : | 151.152   | Lac |

SUBMITTED BY:-

PREPARED BY:-

EXECUTIVE ENGINEER  
RWD (W) DIVISION Sherghati  
Gaya

Prepared By:

A.K. ENGINEERING SERVICES.  
Darna Road, Mahunwan  
Hamzapur, Sherghati-824211  
MOB: +91 7739181616

**MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)****YEAR 24-25****GENERAL ABSTRACT OF COST**Block:- **Gurua**District:- **Gaya**Length of Road:- **1.500 KM**Name of Road:- **Rcd Road Baijudham Dharmkata TO Primary School Phulwariya**

| SL. No. | Item of Work                                                                                                | Amount               |
|---------|-------------------------------------------------------------------------------------------------------------|----------------------|
| 1       | CONSTRUCTION COST :                                                                                         | 78.883 Lacs          |
| 2       | 5TH YEAR PERIODIC RENEWAL COST . :                                                                          | 12.827 Lacs          |
|         | TOTAL ESTIMATED COST (1+2) :                                                                                | 91.710 Lacs          |
|         | Add Labour Cess @ 1% :                                                                                      | 0.917 Lacs           |
|         | Add Seigniorage Fee @ 10% on Material Cost only :                                                           | 2.195 Lacs           |
|         | Sub Total :                                                                                                 | 94.822 Lacs          |
|         | Add GST @ 18% :                                                                                             | 17.068 Lacs          |
| A       | TOTAL CONSTRUCTION COST (INC GST, LC @ SEIGN. FEE) SAY "A" :                                                | 111.890 Lacs         |
| 3       | <del>MAINTENANCE</del><br>SIX YEARS OPERATION & MANAGEMENT (O&M) COSTS AFTER COMPLETION OF CONSTRUCTION . : | 13.023 Lacs          |
|         | Add Labour Cess @ 1% :                                                                                      | 0.130 Lacs           |
|         | Add Seigniorage Fee @ 10% on Material Cost only :                                                           | 0.350 Lacs           |
|         | Sub Total :                                                                                                 | 13.503 Lacs          |
|         | Add GST @ 18% :                                                                                             | 2.431 Lacs           |
| B       | TOTAL OPERATION & MANAGEMENT COST (INC GST, LC @ SEIGN. FEE) SAY "B" :                                      | 15.934 Lacs          |
| C       | SUB TOTAL COST (A+B)                                                                                        | 127.824 Lacs         |
| D       | <del>MAINTENANCE</del><br>EMERGENT & PRICE ADJUSTMENT COST @ 15% OF "C" :                                   | 19.174 Lacs          |
| E       | Contingency @ 1% OF "C" :                                                                                   | 1.059 1.278 Lacs     |
| F       | Administrative Cost @ 2.25% OF "C" :                                                                        | 2.517 2.876 Lacs     |
| G       | Land acquisition :                                                                                          | 0.000 Lacs           |
| H       | TOTAL PROJECT COST (C+D+E+F+G+H) :                                                                          | 131.400 151.152 Lacs |

Junior Engineer

Asstt. Engineer

E. Engineer

SE  
RWDSuperintending Engineer  
Rural Works Department  
Works Circle, Gaya

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## SUMMARY OF COST ESTIMATE FOR THE PROJECT

NAME OF ROAD : Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

DISTRICT Gaya

BLOCK Gurua

DIVISION Sherghati

LENGTH OF ROAD (in Km) 1.500

LENGTH OF BT PAVEMENT 900

LENGTH OF CC PAVEMENT 600

CD STRUCTURES

HUME PIPE 1

RCC CULVERT 0

BOX CELL CULVERT 0

CAUSEWAY / MINOR BRIDGE 0

| Sl. No. | DESCRIPTION                                                                                   | AMOUNT (LAKHS) |
|---------|-----------------------------------------------------------------------------------------------|----------------|
| 1       | PREPARATORY WORKS ,SITE CLEARANCE , DISMANTLING                                               | 0.703          |
| 2       | EARTHWORK                                                                                     | 10.546         |
| 3       | GSB GRADING - II                                                                              | 12.631         |
| 5       | WBM GRADE II                                                                                  | 7.655          |
| 5       | WMM GRADE III                                                                                 | 14.466         |
| 6       | PRIME COAT                                                                                    | 1.888          |
| 7       | TACK COAT                                                                                     | 0.650          |
| 8       | MIX SEAL SURFACING WITH WASTE PLASTIC                                                         | 7.035          |
| 9       | PAVEMENT QUALITY CONCRETE.                                                                    | 14.839         |
| 10      | Edging with 1st Class Bricks                                                                  | 1.165          |
| 11      | SIDE DRAINS & CROSS DRAIN                                                                     | 0.000          |
| 12      | PROTECTION WORKS                                                                              | 0.000          |
| 13      | ROAD FURNITURES , KM STONES , TRAFFIC & DIRECTION SIGN, PMGSY LOGO                            | 4.129          |
| 14      | CABLE DUCT ACROSS THE ROAD                                                                    | 0.333          |
|         | <b>SUB TOTAL OF PAVEMENT COST IN LACS =</b>                                                   | <b>76.041</b>  |
| 14      | <b>CROSS DRAINAGE STRUCTURES</b>                                                              |                |
| I       | HUME PIPE                                                                                     | 2.842          |
| II      | RCC                                                                                           | 0.000          |
| III     | BOX                                                                                           | 0.000          |
| IV      | CAUSEWAY                                                                                      | 0.000          |
| V       | REPAIR OF CD WORK                                                                             | 0.000          |
|         | <b>SUB TOTAL OF CD STRUCTURES COST IN LACS =</b>                                              | <b>2.842</b>   |
|         | <b>Total Construction Cost.</b>                                                               | <b>78.883</b>  |
| 15      | <b>SIX YEARS OPERATION &amp; MANAGEMENT (O&amp;M) COSTS AFTER COMPLETION OF CONSTRUCTION.</b> |                |
|         | I st Year                                                                                     | 1.777          |
|         | II nd Year                                                                                    | 2.190          |
|         | III rd Year                                                                                   | 2.604          |
|         | IV th Year                                                                                    | 3.018          |
|         | VI th Year                                                                                    | 1.473          |
|         | VII th Year                                                                                   | 1.962          |
|         | <b>SUB TOTAL OF =SIX YEARS OPERATION &amp; MANAGEMENT (O&amp;M)</b>                           | <b>13.024</b>  |

*[Signature]*  
JE  
RWD

*[Signature]*  
AE  
RWD

*[Signature]*  
EE  
RWD 04.02.25

Total Construction Cost — 111.890 lacs.  
 Minor Improvement  
 Initial Rectification  
 5th Year Periodic Renewal  
 Total Maintenance Cost — 15.934 lacs.  
 (1st, 2nd, 3rd, 4th, 6th & 7th):  
 Other Cost:  
 Emergent Cost —  
 Contingency Cost — 1.059 lacs  
 Administrative Cost — 2.517 lacs.  
 Total... 131.400 lacs.

T.A. No.....dt.....

Ref. SE letter No.....dt.....

Technically Approved for Rs. 131.400 lacs.

(Rupees one crore thirty one lac forty thousand ) Only

for construction work & 5 Years Maintenance

A.E.

E.E.

Tec. Secy.

C.E., 2

| Miscellaneous : |  |                           |   |   |   |   |     |           |   |  |
|-----------------|--|---------------------------|---|---|---|---|-----|-----------|---|--|
| 1               |  | Cost of Private land      | 1 | 0 | 8 | 0 | Sqm |           |   |  |
|                 |  | 1 Decimal =40.465 Sqm     |   |   |   | 0 | Dec | 26,000.00 | 0 |  |
|                 |  | Four Time multiply Amount | 4 |   |   |   |     |           | 0 |  |
|                 |  |                           |   |   |   |   |     |           |   |  |





# ग्रामीण कार्य विभाग

Rural Works Department, Govt of Bihar



## BIHAR RURAL ROADS PROJECT Bihar Rural Road Development Agency (BRRDA) Govt. of Bihar

YEAR 24-25

MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)



A.A. COPY

Name of the Road :-

Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

|                                                                                    |   |           |     |
|------------------------------------------------------------------------------------|---|-----------|-----|
| Survey ID                                                                          | : | 54344     |     |
| DISTRICT                                                                           | : | Gaya      |     |
| DIVISION                                                                           | : | Sherghati |     |
| BLOCK                                                                              | : | Gurua     |     |
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| LAND ACQUISITION COST.                                                             | : | 0.000     | Lac |
| TOTAL COST OF PROJECT.                                                             | : | 151.152   | Lac |

SUBMITTED BY:-

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EXECUTIVE ENGINEER  
RWD (W) DIVISION Sherghati  
Gaya

Prepared By:

**A.K. ENGINEERING SERVICES.**  
Darna Road, Mahunwan  
Hamzapur, Sherghati-824211  
Mob: +91 7739181616

**प्रपत्र**  
**एकल संपर्कता प्रमाण - पत्र**  
 (Single Conectivity Certificate )  
 (यह प्रमाण-पत्र कार्यपालक अभियंता द्वारा स्व-हस्तालिखित होना चाहिए)

प्रमाणित किया जाता है कि:-

(1) Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

पथ का DPR बनाया गया है वह राज्य कोर नेटवर्क में सम्मिलित है

तथा                      Gaya                      जिला                      Gurua                      प्रखंड के State CNCPL/State CUPL के कमांक  
**54344**                      पर अंकित है।

(2) इस पथ को मैंने स्वयं देखा है तथा इस पर भ्रमण किया है। इस पथ का बनाया जाना जनोपयोगी है तथा इसके लिये सरकारी भूमि उपलब्ध है।

(3) इस पथ से जिन बसावटो को संपर्कता प्रदान की जा रही है उन्हें पहले से किसी बारहमासी पथ से संपर्कता पथ नहीं मिल रही है तथा प्रस्तावित पथ/पुल उन्हें बारहमासी एकल संपर्कता (Single connectivity) ही प्रदान करेगा।

(4) इस पथ के निर्माण होने पर अनुसूचित जाति/जनजाति के लगभग ..... जनसंख्या लाभान्वित होंगे ।

कार्यपालक अभियंता  
 ग्रामीण कार्य विभाग  
 कार्य प्रमंडल



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|                | Annexure - 5 (Plan & Profile and Cross Section )         | Attached         |

# R E P O R T

## **1 Introduction**

### **1.1 Objectives of Mukhya Mantri Gram Sampark Yojna**

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. To Provide all weather connectivity having population more than 250, A new scheme name as **Mukhya Mantri Gram Sampark Yojna** has been started.

The project road Rcd Road Baijudham Dharmkata to Primary School Phulwariya, is a link road with Link No 54344 in Gurua block of Gaya District. This road directly connects the habitations of Primary School Phulwariya, 0, 0, , with total populations of 250. Thus this link Road serves the total population of 250.

### **1.2 All Weather Road**

An all-weather road is one which is negotiable during all weathers, with some permitted interruptions as given below :

At cross-drainage structures, the duration of overflow or interruption at one stretch shall not exceed 12 hours for ODRs and 24 hours for VRs in hilly terrain, and 3 days in the case of roads in plain terrain. The total period of interruption during the year should not exceed 10 days for ODRs and 15 days for VRs.

The pavement should be negotiable during all-weathers, but this does not necessarily imply that it should be paved or surfaced or black-topped. The pavement should consist of metalling (WBM) or higher type where rainfall is more than 1500mm/ year and should at least be of material better than local soil, such as moorum, gravel, kankar, laterite etc where the rainfall is less than 1500mm/ year.

### **1.3 Core Network**

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

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

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

## 1.6 The Sub-Project Road

The road passes through plain terrain

District :-- Gaya

Block :-- Gurua

Road Name :-- Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

Survey ID :-- 54344

Road Length :-- 1.500 Km

Start Point :-- Latitude 0.000000 Longitude 0.000000

End Point: :-- Latitude 0.000000 Longitude 0.000000

| Sl.No. | Habitation benefited      | Poulation benefited |          | Chaniage |    |
|--------|---------------------------|---------------------|----------|----------|----|
|        |                           | Direct              | Indirect | From     | To |
| 1      | Primary School Phulwariya | 250                 | -        |          |    |
| 2      | 0                         | -                   | 0        |          |    |
| 3      | 0                         | -                   | 0        |          |    |

## 2.0 Planning and Basic Design Consideration

### 2.1 Key maps

### 2.2 Preliminary alignment investigation :-- (Transect Walk)

Refer Annexure-1.

### 2.3 Site Photographs :--

Refer Annexure-2

### 2.4 Road Design Brief

Table 2.1 Road Design Brief

| Sl. No | Location           | Issue        | Design Solution                      |
|--------|--------------------|--------------|--------------------------------------|
| 1      | 0.00 to 400.00     | Open Area    | Flexible Pavement has been Provided. |
| 2      | 400.00 to 1000.00  | Village Area | Rigid Pavement has been Provided.    |
| 3      | 1000.00 to 1500.00 | Open Area    | Flexible Pavement has been Provided. |
| 4      |                    |              |                                      |
| 5      |                    |              |                                      |
| 6      |                    |              |                                      |

In preparation of detail project report of rural road , we consider following activities i.e. Topographic Survey, Soil/ Materials test, Traffic Survey, Hydrological Survey, Geometric Design Standards, Alignment Design, Pavement Design, Design of Cross Drainage, Protective Works & Drainage, Utility shifting, Road Furniture, Analysis of Rates, carriage cost by economical mode of transport as per material lead / source, quantity estimation & Cost Estimate. Site visit with authorized persons of department to see the proposed road alignment.



# Initially, reconnaissance survey is done for the assigned road. By local enquiry we collect the data about starting served village to last served village of road, villages along road, block / district name, the habitation adjoining the road, villages served, direct/indirect benefited villages by this road, cross drainage works lying along the stretch of road, tracking of road alignment by GPS & gathering latitude/longitude data of all important point along the alignment.

# We collect all important input data for elaborate description of road ( Climatic condition of the area , whether there are temples, schools, mosques along the alignment, existing cross drainage structures, existing utilities like electric & telephone poles and water lines along the existing road.

# In preliminary planning, locational map showing proposed new road, entire important features adjoining the road and its connectivity to nearest block, district, SH & NH. Strip plan of proposed road alignment containing important features i.e. existing width of road, merging of another road, location of utilities, electric poles, road crossing amidst the village, C/D structures, markets, godowns, educational / health and religious structure etc are shown by taken Latitue, Longitude from GPS instrument.

# Topographical, Traversing & Leveling survey is done by total station & temporary bench mark is fixed for rural road design. Cross section will be taken at every 50m interval. In case of any major variation in the long section cross sections have to be taken irrespective of the 50m interval.

## 2.5 Transect Walk Summary

| Chainage     | Existing Land Width* | Additional Land Required |     | Type of Loss |     | Village      | Remarks /Suggestions |
|--------------|----------------------|--------------------------|-----|--------------|-----|--------------|----------------------|
|              |                      | LHS                      | RHS | LHS          | RHS |              |                      |
| 0 to 400     | 12                   | No                       | No  | No           | No  | Open Area    |                      |
| 400 to 1000  | 6                    | No                       | No  | No           | No  | Village Area |                      |
| 1000 to 1500 | 6                    | No                       | No  | No           | No  | Village Area |                      |
|              |                      |                          |     |              |     |              |                      |
|              |                      |                          |     |              |     |              |                      |
|              |                      |                          |     |              |     |              |                      |
|              |                      |                          |     |              |     |              |                      |
|              |                      |                          |     |              |     |              |                      |

1 Total No. of people present for the Transect walk:

Male :-- 5

Female :--

Total :-- 7

2 Demographic information where the walk was conducted: :--

3 No. of Govt. Employees present :--

4 No. of Contractors Employees :--

5 No. of participants from Minority community :--

6 Enclose a separate sheet with names, designation (if Govt.Employee,or Elected Representative) and signatures of participants of transect walk

## 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"/>            |

## 3.0 Topographic Survey

### **3.1 General**

Topographical surveys will be carried out on the identified stretches of rural roads with the help of Total Station Equipment. The width of the corridor to be covered would be sufficient enough to plot the existing profile of the road and also to cater to the requirement of engineering designs. All the features of the road like centerline, pavement edges, shoulder edges, toe points etc. shall be accurately lifted from the ground on the map including details of trees & permanent structures if any. The X-sections of the road shall be taken at every 25 m interval or less if so required in the case of steep rise & fall & horizontal curves. The permanent reference pillars shall be marked on the ground at suitable intervals for the purpose of layout work during execution. The features of all water bodies shall also be taken during the survey including bed levels & HFL.

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**

The Consultant has carried out detailed topographical survey as per detailed methodology and TOR for all the project roads under MMGSY in Bihar. It includes carrying out continuous open traverse along the existing road, establishing the elevations of the survey stations by using Auto Levels/Digital Level, topographic survey by using Total Station instrument.

To control the traverse the consultant fixed 4-6 cement concrete reference pillars per km along the project road and then carried out open traverse using these reference pillars as control points. Three coordinates (X,Y and Z i.e. easting, northing and altitude) of controlled beacons with respect to the cumulative chainage of alignment have been prepared. The reference pillars were also connected with the benchmark (if available) by carrying out double run levelling by Auto Level/Digital Level for vertical Control. The starting coordinate was assumed depending upon the direction of the road and accordingly the coordinates of other reference/temporary bench mark was established. All the control points was established on existing permanent structures i.e. near school building, panchayat bhawan, hand pump and pucca structures. On each instrument station, back station and fore station readings have been taken in x,y,z form. A check station was established for each instrument setting and its reading was taken from two traverse stations.

### **3.3 Leveling**

Topographical survey was conducted by total station machine and the data was processed by Mx Road, Auto-plotter and Road Design software. After field work was completed, all the drawings are prepared which is presented in Drawing Volume. RL of TBM has been assuming as 100 m. Temporary Bench Marks have been left at permanent structures.

### **3.4 Cross Section & Detailing**

Generally, cross section will be taken at every 50m interval. In case of any major variation in the long section cross sections have to be taken irrespective of the 50m interval. The cross section details are to be taken for a further distance of half the formation width beyond the shoulders on either side of the road. Cross sections were taken in smaller interval (05 to 10m) in locations of sharp curves and change of gradients. The details i.e. spot levels, typical features; habitation, canals, drain, rivers etc. have been mapped during topographic survey. The plan covers all permanent features near the alignment, the existing roadway, location of culverts, bridges, retaining walls, house/building, utility services etc.

### **3.5 Data Processing**

All data from topographic survey recorded in Total Station was downloaded in computer in X,Y,Z (Northing, Easting and Elevation) format and final alignment, plan, profile were prepared by MX Road software and presented in AutoCAD Format.

### 3.6 Checklist

|                                         |     |                                     |    |                          |
|-----------------------------------------|-----|-------------------------------------|----|--------------------------|
| Reference pillars given                 | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
| TBM with northing-easting given         | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
| Traverse survey carried out             | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
| Cross section and detailing carried out | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |

### 4.0 Soil and Materials Survey

#### 4.1 General

The soil and material investigations were done following the guidelines of IRC: SP: 20-2014 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 three (3) locations 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:

- Grain size analysis as per IS : 272 (Part 4) – 1985
- Atterberg's limit as per IS : 2720 (Part 5) – 1985
- Standard Proctor density test as per IS : 2720 (Part 7) – 1980
- 4 day soaked CBR test as per IS : 2720 (Part 16) – 1985

#### 4.3 Analysis of Test Results

The IRC Rural Roads Manual SP: 20 contains instructions on Soil Survey and materials for the road projects. Soil samples will be collected along and around the road alignment at three (3) locations per km, from the adjoining borrow areas, as well as one sample is collected from the existing road.

Grain size analysis, atterberg limit & CBR value is obtained in lab after its testing.

CBR is the basic requirement for an economical pavement design. The grain-size (wet sieve) analysis leading to the soil classification is a simple test and must be carried out to have an idea of the CBR value with a reasonable level of accuracy,

The soil laboratory test results has been summarized in Annexure-1

#### 4.4 Coarse and Fine Aggregates

Information regarding the source of aggregate and sand will be gathered. The stone aggregates shall be procured from Mirzapur & Mirzapur 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.

Figure -3

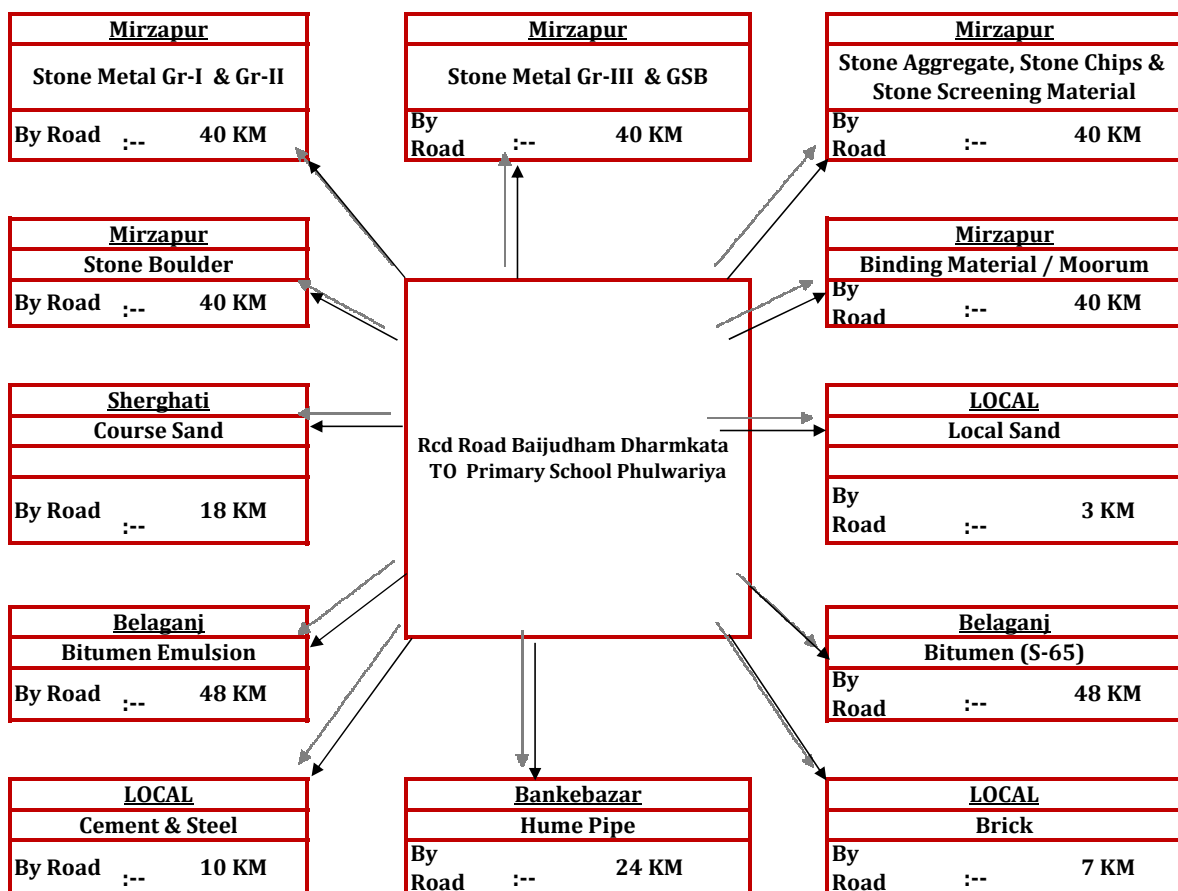
**Quarry Map**

Name of Road :- Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

Block :- Gurua

District :- Gaya

Length of the Road:- 1.500 KM



\* Subjected to Verification of Lead

J.E

A.E.

E.E

S.E.



#### 4.5 Sub-soil investigation for bridges

Soil survey has been done by collecting samples of local soils from the project road in accordance to the guidelines of IRC: SP: 19-2001. The important tests carried out on the soil intended for use for sub-grade.

#### 4.6 Checklist

|                                         |     |                                     |    |                          |
|-----------------------------------------|-----|-------------------------------------|----|--------------------------|
| Borrow pit suitable                     | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
| SSI for existing ground                 | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
| Investigation for coarse/fine aggregate | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
| Quarry map                              | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |

#### 6.0 Hydrological Survey

##### A. Local drainage plan for the area of the road

One of the very important reasons for a very rapid loss in the level of serviceability of most of the rural roads in the country is the lack of attention to appropriate drainage. It is basically due to the lack of proper drainage that the maintenance requirements of a rural road rise rapidly even during the early years of its service life. The modern trend is to incorporate maintenance considerations at the design stage itself. Ensuring proper drainage during the design life is considered one of the most essential pre-requisites for a satisfactory performance of the road during its service life.

Provision of adequate drainage should be considered more of an investment than an expenditure, since it yields benefits by way of more economical designs and much reduced subsequent maintenance costs.

As the insufficient drainage of surface water leads to rapid damage of road, road side drain should be provided particularly on the location of habitation areas.

Generally, minimum gradient of 0.3% for drainage purpose is considered for designing the vertical alignment of this road. Vertical curves are not required when grade change is less than 1%, however a minimum vertical curve is provided to avoid vertical kink.

It is mandatory to have a drainage plan prepared for each rural road project. The following points must be taken into the design of Rural Roads:

- Provide the specified camber both for the carriageway and the shoulder. Shoulders should never be allowed to be higher than the pavement.
- Roadside drains, with proper longitudinal slopes leading the water to cross drains and hence to a natural water course, must be provided.
- When the road passes through a village, keep the road level high, with side drains on both sides to ensure proper drainage and to prevent water from entering dwellings. The drains should be open L Shaped drains or U shaped depending upon site conditions.
- Integration of cross-drainage and longitudinal drainage is essential in the project.
- Hydrological design of waterway considering afflux, scour due to restricted water way is essential. High afflux causes flooding of up-stream and excessive scour on the downstream.
- Water balancing culverts (average 2 Km per Km) needs to be provided in areas which do not have a well defined water channel to drain out rain water.

##### B. Data required for hydraulic design of CD works

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: ie. Rainfall Data, Catchments Area , Time of Concentration, Existing Cross Drainage Structures

Maximum rainfall / hr in Gaya 16.99 cm/hr as per CWC report.

Time of concentration (tc) 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.

1) Discharge by area velocity method =  $A \times (1/n) \times R^{2/3} \times S^{0.5}$

Area of cross section = A

Wetted perimeter = P

Hydraulic mean depth = A/P

Longitudinal slope = S

Mannings coefficient = n

Velocity of flow of stream =  $V = (1/n) \times R^{2/3} \times S^{0.5}$

$$\text{Discharge} = Q = A * V$$

2) BY CATCHMENT AREA METHOD (DICKENS'S FORMULA)

Dickens's formula, ( $Q = CM^{3/4}$ )

M - Area in Sq.Km from Topo sheets

3) BY PEAK RUNOFF FROM CATCHMENT METHOD (RATIONAL FORMULA)

Rational formula, ( $Q = 0.028 P.f.M.Ic$ )

Considering, P - runoff coefficient

f - Mean intensity factor

Ic, critical intensity of rainfall in cm/hr =  $I_o\{2 / (tc + 1)\}$

I<sub>o</sub> - Max. hourly rainfall, in cm/hr =  $0.37 * \text{Rain fall in 24 hrs}$

**tc, time of concentration, =  $[0.87 * L^3 / H]^{0.385}$ ;**

L, distance in km =

(L & H as per Topo sheet or by google map)

M - Area Topo sheets in hectares =

Discharge, Q, at Bridge site =  $0.028 P.f.M.Ic$

### 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

### 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 topographical survey data as it was not possible to calculate from topographical sheets due to their unavailability.

### 6.4 Time of Concentration

Time of concentration (tc) in hours is calculated from the formula of  $(0.87 * L^3 / H)^{0.385}$ , 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 0 number of cross drainage structures along the existing project road as listed below:

**Table-6.1 List and condition of existing culverts**

| SL No. | Chainage (km) | Description of Existing Structure |           |         |
|--------|---------------|-----------------------------------|-----------|---------|
|        |               | Type                              | Condition | Remarks |
| 1      | 0+100         |                                   |           |         |
|        |               |                                   |           |         |
|        |               |                                   |           |         |
|        |               |                                   |           |         |
|        |               |                                   |           |         |
|        |               |                                   |           |         |
|        |               |                                   |           |         |
|        |               |                                   |           |         |
|        |               |                                   |           |         |
|        |               |                                   |           |         |
|        |               |                                   |           |         |
|        |               |                                   |           |         |
|        |               |                                   |           |         |

## 7 Adopted Genometric Design Standards

### 7.1 General

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

### 7.2 Terrain

The classification of terrain was selected from plain/rolign classification for Which follwing criteria will be applicable.

| Terrain classification | Cross slope for the countru |                     |
|------------------------|-----------------------------|---------------------|
| Plain                  | 0-10%                       | More then 1in10     |
| Rolling                | 10-25%                      | 1 in 10 to 1 in 4   |
| Mountainous            | 25-60%                      | 1 in 4 to 1 in 1.67 |
| Sleep                  | Greater than 60%            | Less than 1in 1.67  |

### 7.3 Design Speed

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

| Road classification      | Plain terrain |     | Roling terrain |     | Mountainous |     | Steep terrain |     |
|--------------------------|---------------|-----|----------------|-----|-------------|-----|---------------|-----|
|                          | Rulling       | Min | Ruling         | Min | Ruling      | Min | Ruling        | Min |
| Rural Roads (DOR and VR) | 50            | 40  | 40             | 35  | 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 |       |               |       | Mountinous and Steep Terrain |       |               |       |
|--------------------------|---------------------------|-------|---------------|-------|------------------------------|-------|---------------|-------|
|                          | Open Area                 |       | Built-up Area |       | Open Area                    |       | Built-up Area |       |
|                          | Normal                    | Range | Normal        | Range | Normal                       | Range | Normal        | Range |
| Rural roads (ODR and VR) | 15                        | 15-25 | 15            | 15-20 | 12                           | 12    | 12            | 9     |

### 7.5 Roadway Width

Roadway Width for this road is given below:

| Terrain Classification | Roadway Width (m) |
|------------------------|-------------------|
| Plain and Rolling      | 6.00              |
|                        |                   |

### 7.6 Carriageway Width

The width of carriageway for this project road is 3.75 m.

### 7.7 Shoulders

It is proposed to have (1.125 m) wide shoulder.

### 7.8 Roadway width at Cross -drainage structure

Roadway width at culvert location for this road is (6.0 m in plain terrain and 6.0 m in mountainous terrain). Roadway width at bridges will be (4.25 m on link routes and 5.5m in through routes in plain-area and 4.25m in hilly areas)

### 7.9 Sight Distance

The safe stopping sight distance is applicable in the geometric design. The sight distance value for this road as per IRC recommendation are presented below:

| Design Speed (km/hr) | Safe Stopping Sight Distance (m) |
|----------------------|----------------------------------|
| 20                   | 20                               |
| 30                   | 30                               |
| 40                   | 45                               |
| 50                   | 60                               |

### 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 curve are also restricted to 20 km/hr. For safety condition speed limit board will be erected at limited speed as per (<50Km/hr)

### 7.11 Camber & Super elevation

A camber adopted on this road section is given below. The maximum super elevation as per design for this project road.

| Surface Type         | Camber (%)                             |                                         |
|----------------------|----------------------------------------|-----------------------------------------|
|                      | Low rainfall (Annual rainfall <1000mm) | High rainfall (Annual rainfall >1000mm) |
| Earth road           | 4.0                                    | 5.0                                     |
| WBM Gravel road      | 3.5                                    | 4.0                                     |
| Thin bituminous road | 3.0                                    | 3.5                                     |
| Rigid Pavement       | 2.0                                    | 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 verticle alignment of this road. Vertical curves are not required when grade change is less than 1% however a minimum vertical curve is provided to avoid vertical kink.

### 7.13 Vertical Curves

For satisfactory appearance, the minimum length of vertical curve for different design speed is given in IRC-SP 20:2015. 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 for this rural road where embankment height is less than 3.0m is given in the table below.

| Condition                                                   | Shope (H:V)         |
|-------------------------------------------------------------|---------------------|
| Embankment in silty/sandy/gravel soil                       | 2:01                |
| Embankment in clay or clayey silt or includedated condition | 2.5:1 to 3:1        |
| Cutting in silty/sandy/gravelly soil                        | 1:1 to 0.5:1        |
| 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, phylite              | 0.083:1 to 0.0625:1 |
| Cutting in hard rock like quartlize, granite                | Near Vertical       |

### 7.15 Extra Widening of Pavement

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

| Radius of Curve (m)                                         | Upto 20 | 21-60 | above 60 |
|-------------------------------------------------------------|---------|-------|----------|
| Extra Widening for 3.75 m wide single lane carriageway, (m) | 0.9     | 0.6   | Nil      |

## 8 Alignment Design



## 8.1 General

The basic aim of highway design is to identify sound, environment-friendly and economically feasible highway alignment. The ensuing sections deal with obligatory points, which control highway alignment, design of cross-section, highway geometric design & methodology, design of miscellaneous items.

The main components included in the highway design are:

- \* Cross-section elements
- \* Embankment
- \* Horizontal alignment
- \* Vertical profile
- \* Junctions and/or Interchanges
- \* Road furniture
- \* Miscellaneous items

## 8.2 Horizontal alignment

Attached with DWG

**Table 8.1 - Features of Horizontal Alignment (Example )**

| Chainage  |         | Length | Description | Reason for deviation from existing alignment, if necessary |
|-----------|---------|--------|-------------|------------------------------------------------------------|
| From (km) | To (km) | (Km)   |             |                                                            |
|           |         |        |             |                                                            |

### Checklist

- a) Centre line of the existing and proposed horizontal alignment coincide
- b) Centre line of the existing and proposed horizontal alignment deviate at certain sections

|     |                                     |
|-----|-------------------------------------|
| Yes | <input checked="" type="checkbox"/> |
| Yes | <input type="checkbox"/>            |

**Table 8.2-Horizontal Curve details**

:- With Dwg

| Curve No. | Chainage | Radius | Ls  | Speed  | S.E. | Def Angle |   |   | Lc  | L total | Hand of Curve |
|-----------|----------|--------|-----|--------|------|-----------|---|---|-----|---------|---------------|
|           |          | (m)    | (m) | (kmph) |      | D         | M | S | (m) | (m)     |               |
|           |          |        |     |        |      |           |   |   |     |         |               |
|           |          |        |     |        |      |           |   |   |     |         |               |

## 8.3 vertical alignment :- With Dwg.

**Table 8.3-Vertical Curve details**

| Sl. No | Chainage (m) | Level of pvi | Length of curve | Type of Curve | Grade in(%) | Grade out(%) | Grade difference (%) | Chainage    |              | Level       |              |
|--------|--------------|--------------|-----------------|---------------|-------------|--------------|----------------------|-------------|--------------|-------------|--------------|
|        |              |              |                 |               |             |              |                      | St.of Curve | End of Curve | St.of Curve | End of Curve |
| 1      |              |              |                 |               |             |              |                      |             |              |             |              |
| 2      |              |              |                 |               | Nil         |              |                      |             |              |             |              |
| 3      |              |              |                 |               |             |              |                      |             |              |             |              |

## 9 Pavement Design

### 9.1 General

Considering the subgrade strength, projected traffic and the design life, the pavement design for low volume MMSY roads was carried out as per guidelines of IRC: SP: 72-2015, or IRC SP:77 "Design of Gravel Road". 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. For Rigid pavement it will be taken as 20 years.

### 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 standard axies to be carried during the design life of the road. The numbers of commercial vehicle 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 vehicle 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

Indicative VDF values considered 10% of laden MCV and 10% of laden MCV and 10% laden HCV as overloaded & given below:

| Vehicle type | Laden | Un-laden/partially laden |
|--------------|-------|--------------------------|
| HCV          | 2.86  | 0.31                     |
| MCV          | 0.34  | 0.02                     |

Lane distribution factor (L) for single lane road = 1.0 Cumulative ESAL application =  $T_o \times 4811 \times L$ , Where  $T_o$  = Easal application per day. The cumulative ESAL application for the project road as per paragraph 3.5 of IRC: SP: 72-2015.

### 9.2.4 Subgrade CBR

The subgrade CBR range of 5 % was considered and the traffic falls in the Traffic category : T03 (Cumulative ESAL Application, Para No. 3.5, (60000 to 100000) category.

## 9.3 Design Alternatives

Design alternatives considered {tick the applicable box}

| Chainage |      | Design alternatives considered |       |                    |                 |                                 | Soil stabilizati on and use of locally available marginal materials. | Specify design alternative selected | justification |
|----------|------|--------------------------------|-------|--------------------|-----------------|---------------------------------|----------------------------------------------------------------------|-------------------------------------|---------------|
| From     | To   | Pavement                       |       | Shoulder           |                 |                                 |                                                                      |                                     |               |
|          |      | Flexible                       | Rigid | Earthen full Width | Hard Full width | Hard shoulder 0.500 m each side |                                                                      |                                     |               |
| 0        | 400  | ✓                              |       |                    |                 |                                 |                                                                      |                                     |               |
| 400      | 1000 |                                | ✓     |                    |                 |                                 |                                                                      |                                     |               |
| 1000     | 1500 | ✓                              |       |                    |                 |                                 |                                                                      |                                     |               |
|          |      |                                |       |                    |                 |                                 |                                                                      |                                     |               |
|          |      |                                |       |                    |                 |                                 |                                                                      |                                     |               |
|          |      |                                |       |                    |                 |                                 |                                                                      |                                     |               |
|          |      |                                |       |                    |                 |                                 |                                                                      |                                     |               |

## 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 Chapter 5 should be maintained as far as possible.

The pavement layers provided are given below:

|                        |                               |               |
|------------------------|-------------------------------|---------------|
| Top Layer              | Mix Seal Surfacing            |               |
| Base layer             | WMM Grading-III               | 75 mm         |
| Base layer             | WBM Grading-II                | 75 mm         |
| Sub-Base layer         | Granular Sub -Base Grading-II | 125 mm        |
| <b>Total thickness</b> |                               | <b>275 mm</b> |

### Rigid Pavement

|                        |                               |               |
|------------------------|-------------------------------|---------------|
| Top Layer              | PQC                           | 100 mm        |
| Base layer             | WMM Grading-III               | 75 mm         |
| Sub-Base layer         | Granular Sub -Base Grading-II | 100 mm        |
| <b>Total thickness</b> |                               | <b>275 mm</b> |

**9.5 Embankment Design :-** Not a high embankment hence normal slope of 2:1 will be provided

## 10 Design of Cross Drainage Works

### 10.1 General

There are many types of cross drainage works. The type of CD works depends on the flood discharge and the site conditions. These may include pipe culverts, box culverts, RCC Slab Culverts and Causeways. Some times only a flushed causeway is sufficient but if a discharge is more, a vented Causeway is provided.

In general, RCC Slab Culvert and for small drainage, pipe culvert with 1000mm (min) diameter NP-3 Pipe shall be provided.

### 10.2 Catchment & discharge calculation

1. Catchments area: Marking the watershed on topo sheet and measuring the area, or by google map with the help of latitude & longitude at culvert location.
2. Cross-sections: Three cross-sections, one at selected site, one at upstream and one at downstream.
3. Longitudinal section: Should show bed levels, L.W.L. and H.F.L.
4. Maximum H.F.L. : Observation of marks left by flood, local enquiry and comparing with data for any nearby structure.
5. Velocity observations: Calculate by Manning formula or Observed during actual flood.
6. Discharge is calculated by By peak runoff from catchment method (rational formula)

### 10.3 Justification for selection

The Rural Roads Manual contains instructions on the suitability of various types of cross-drainage structures. Generally, the provisions of the Rural Roads Manual are adequate for CD Structures for Rural Roads. However, when special CD Works are needed due to location specific conditions, such CD Structures are to be designed after appropriate exploratory investigations. Number of existing cross drainage structures with its conditions along the existing project road are listed during survey & accordingly pipe or slab culvert is provided. On the basis of hydrological survey & requirement as per past overtopping of water or irrigational point of view to cross the water from one side to another side / necessity of villagers for watering their crop, new cross drainage structures are recommended with consent of JE / AE / Mukhiya / Sarpanch etc. Hydrological survey is necessary for design of adequate and safe Cross Drainage Structures so that the rain water can pass as per natural slope.

On the basis of above points / hydrological survey, 1 No new cross drainage structures are recommended for the project road as listed below.

| SL No. | Chainage (km) | Description of Proposed Structure |                |         |
|--------|---------------|-----------------------------------|----------------|---------|
|        |               | Type                              | Span/ Dia. (m) | Remarks |
| 1      | 0+100         | HPC                               |                |         |
|        |               |                                   |                |         |
|        |               |                                   |                |         |
|        |               |                                   |                |         |
|        |               |                                   |                |         |
|        |               |                                   |                |         |
|        |               |                                   |                |         |
|        |               |                                   |                |         |
|        |               |                                   |                |         |
|        |               |                                   |                |         |
|        |               |                                   |                |         |
|        |               |                                   |                |         |

## 10.2 Hydrological Design

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

| SL No. | Chainage (km) | Description of Existing Structure |           | Description of Proposed Structure |                |
|--------|---------------|-----------------------------------|-----------|-----------------------------------|----------------|
|        |               | Type                              | Condition | Type                              | Span/ Dia. (m) |
| 1      | 0+100         |                                   |           | HPC                               |                |
|        |               |                                   |           |                                   |                |
|        |               |                                   |           |                                   |                |
|        |               |                                   |           |                                   |                |
|        |               |                                   |           |                                   |                |
|        |               |                                   |           |                                   |                |
|        |               |                                   |           |                                   |                |
|        |               |                                   |           |                                   |                |
|        |               |                                   |           |                                   |                |
|        |               |                                   |           |                                   |                |
|        |               |                                   |           |                                   |                |
|        |               |                                   |           |                                   |                |
|        |               |                                   |           |                                   |                |

## 10.3 Design Feature

Design standards for culverts has been prepared based on standard codes and guidelines of IRC : SP: 20:2014 and similar type of ongoing projects. General features of the designed cross drainage structures are given below:

For Hume Pipe culvert, minimum road width has been taken as 6.00 m

Width of culvert: 7.5 m with parapet.

Width of Bridge : 7.5m with parapet.

#### 10.4 Justification for retaining/widening and replacement of culverts

During the visit of the road it has been observed there are ponds and water logged areas near the right of way of the proposed road. At some locations the height of embankment is very high due to the existing slab/box culverts constructed above HFL. The approach of such type of culverts needed to be protected so that there is no any erosion of the slope of the embankment. Therefore keeping in mind the above conditions toe wall with boulder pitching in slopes of the embankment or retaining wall would be provided. The existing condition of the Pipe Culverts are mostly poor. Most of the Pipe Culverts are choked and are with broken headwalls. So all the Cross Drainage works are to be designed to ensure that water is quickly drained off and no stagnation takes place. During the site visit it was felt that culverts were inadequate at certain locations.

#### 10.5 Hydraulic calculation for culvert

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

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

Where P = coefficient of Run off for the catchments characteristics, A = Catchments Area in Hectares & I<sub>c</sub> = Rainfall intensity 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-80:2005

**Table 10.2 Proposed Culverts**

| Sl. No. | Chainage | Type of Culvert | Span/ Dia. (m) |
|---------|----------|-----------------|----------------|
| 1       | 0+100    | HPC             |                |
|         |          |                 |                |
|         |          |                 |                |
|         |          |                 |                |
|         |          |                 |                |
|         |          |                 |                |
|         |          |                 |                |
|         |          |                 |                |
|         |          |                 |                |
|         |          |                 |                |
|         |          |                 |                |
|         |          |                 |                |
|         |          |                 |                |
|         |          |                 |                |

#### 11.0 Protective Works & Drainage

##### 11.1 General

Protective Works :-- Nil  
Cross Drain (Drainage) :-- Nil  
Road Side Drainage :-- Nil

##### 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. Sketch for a standard roadside drain should be made available.

### 11.3 Protective Works

Necessary protection works consisting of closed piling and ballah piling 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 | Type of protective works |     | Comments |
|---------|----------|--------------------------|-----|----------|
|         |          | LHS                      | RHS |          |
| 1       |          |                          |     |          |
| 2       |          | Nil                      |     |          |

### 12.0 Land Requirement :-- Nil

#### 12.1 General

The existing road is generally an earthen track with some stretches of brick bat soling (description of the road surface). Thus the project road is a new connectivity road. The existing Right of Way (ROW) is varying from 4.00 m to 12 m.

#### 12.2 Proposed ROW

The width of carriageway has been considered as 3.75 m in accordance with the IRC-SP 20: 2014. The total roadway width is limited to 6 m with 1.125 m earthen shoulder on either side of carriage way. The proposed ROW generally varies from 12 m – 15 m depending upon the embankment height and the proposed ROW is even less than 10 m in some stretches of habitation area and in areas having tree plantation.

#### 12.3 Additional Land

As the road will be built in Govt. land no additional land is required.

### 13.0 Utility shifting/relocation

#### 13.1 Existing utilities

:-- Nil

Utility line like electricity pole ,sewer line overhead wire , water pipe line or underground telephone line may be shifted during construction of road. This electric line required some additional electric pole in between to raise the electric wires.Protect utility services during construction period.

**Table 13.1 Estimated Cost for Relocation of Utilities**

| Sl. No.              | Utility Type | Qty | Estimated Rate | Estimated Cost |
|----------------------|--------------|-----|----------------|----------------|
| 1                    |              |     |                |                |
| 2                    |              | Nil |                |                |
| 3                    |              |     |                |                |
| Etc.                 |              |     |                |                |
| Estimated Total Cost |              |     |                |                |

#### 13.2 list of departments responsible for utility shifting

:-- Nil

State Electricity Board of Bihar or power grid of india is responsible for electrical utility shifting. PHED responsible for water utility & BSNL for telephone wire,its pole or tower.



### 13.3 Rules pertaining to shifting of utilities

--- Nil

Total expenses occurred will be paid by BRRDA for Shifting or relocating of any utility services as per their norms / guidelines without any interruption. Parent department will do the shifting of utility services job if required.

### 13.4 Provide an estimate with breakdown of costs for relocation of utilities --- Nil

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

## 14.0 Traffic Management and Road Safety Measures

Rural roads are generally designed for a design speed of 50 km/hr in plain and 40 km/hr in rolling terrain. On the low volume roads drivers have tendency to cross these limits. Over speeding has been a major cause of accidents on certain location and most vulnerable are pedestrians and riders of two wheelers. To control the speed of vehicles on rural roads at such locations, some engineering measures are available. Constructing a speed breaker with sign post and marking has been most effective measure in regulating the speed of vehicle.

### Location

Provision of speed breaker on the following critical locations on rural or PMGSY road may be made for new projects.

- (i) All manned and unmanned railway crossings.
- (ii) Junction of rural road with higher order roads (MDRs, SH & NH).
- (iii) Near Schools/ Anganwadi Centers / Health Centers.
- (iv) Entry points of habitation
- (v) Any situation where there is a consistent record of accidents primarily attributed to speed of vehicles
  
- (vi) Approaches to weak or narrow bridges and culverts requiring speed restriction for safety
- (vii) Sharp curves with poor sight distances

### Design

Design of speed breaker shall conform to IRC-99:1988. For rural roads in PMGSY/MMGSY single speed breaker may be provided on both sides of such locations as per design suggested for rounded hump type of speed breaker for general traffic at preferred crossing of 25 kmph. This can be constructed by providing a rounded (17 meter radius) hump of 3.7m width and 10 cm height

### Specifications for speed breakers

Location of speed breaker is marked on the pavement. Surface is cleaned for dust and loose particles and tack coat is applied. Forms of requisite height and shape are placed and hot premix bitumen is poured to required dimensions and shape. Compaction of material, curing and finishing using fine premix bituminous material is completed before traffic is allowed.

### Placement

These speed breakers shall be placed at 40m on either side of the locations mentioned in the previous paragraphs. Only one hump on each side of the locations would be sufficient.

Speed breakers placed at the threshold of a habitation and at regular intervals (150 - 200 m) through the habitation.

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.

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.

Speed breakers are provided and directional sight boards installed at sites where reverse horizontal curves are closely spaced and speed reduction is required.

In certain locations speed breakers may have to be repeated over section to keep speeds low throughout. The distance between one hump to another can vary 100 to 120 m centre to centre. This is only provided to control the speeds / deceleration.

#### 14.1 Road Furniture

Road Furniture details include:

- \* Road markings
- \* Cautionary, mandatory and information signs
- \* KM stones and 200m stones
- \* Delineators and object markers
- \* Delineators and object markers

**Table 14.1**  
**Details of Km. stone. 5<sup>th</sup> km. stone and boundary pillars**

| Sl. | Name of Road                                   | Chainage (km) | 5th . Km. stone (nos.) | Km. stone (nos.) | 200m stone (nos.) | Boundary stone (nos.) |
|-----|------------------------------------------------|---------------|------------------------|------------------|-------------------|-----------------------|
| 1   | Rcd Road Baijudham Dharmkata TO Primary School | -             | 0                      | 4                | 5                 | -                     |
|     |                                                |               |                        |                  |                   |                       |

##### 14.1.1 Road Markings

Road markings perform the important function of guiding and controlling traffic on a highway. The markings serve as psychological barriers and signify the delineation of traffic paths and their lateral clearance from traffic hazards for safe movement of traffic. Road markings are therefore essential to ensure smooth and orderly flow of traffic and to promote road safety. The Code of Practice for Road Markings, IRC: 35-1997 has been used in the study as the design basis. Schedules of Road Markings are included in contract drawings.

##### 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.

##### 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. 5<sup>th</sup> km. stone and boundary pillars provided.

#### 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, Crash Barriers and Speed Breakers are proposed on embankments of height more than 1.5m and bridge approaches. The spacing of guard post shall be 10.0m c/c in these areas. Typical Guard post consists of pre-cast (M20) CC post of size 200mm x 200mm and a height of 600mm above ground level. They are encased in M15 cement concrete to a depth of 450mm below ground level. Guard posts are painted with alternate black and white reflective paint of 150mm 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.

**Table 14.2**  
**Details of guard posts, crash barrier and speed breakers**

| Sl. | Name of Road (km)                                         | Chainage (m) | Guard post (nos.) | Crash Barrier (m) | Speed breakers (nos) |
|-----|-----------------------------------------------------------|--------------|-------------------|-------------------|----------------------|
| 1   | Rcd Road Baijudham Dharmkata TO Primary School Phulwariya | -            |                   |                   |                      |
|     |                                                           |              |                   |                   |                      |

#### 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. | Name of Road                                              | Chainage (km) | Temporary traffic control measures to be adopted |  |  |  |
|-----|-----------------------------------------------------------|---------------|--------------------------------------------------|--|--|--|
| 1   | Rcd Road Baijudham Dharmkata TO Primary School Phulwariya | -             |                                                  |  |  |  |
|     |                                                           |               |                                                  |  |  |  |

### 15.0 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 MMGSY 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 150 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. Layer of the earth shall be laid in not more than 25 cm (loose) thick layers & compacted each layer of the soil up to 30 cm 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 I layer.

### **15.3.5 Base**

Stone aggregates will be used in base course. 53 mm to 24.4 mm size (Grading 3) aggregate as been proposed for the layer.

### **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 Surfacing**

Slow setting bitumen emulsion will be applied as primer on water bound layer. Emulsion shall be sprayed on surface with pressure distributor.

Mix Seal Surfacing equivalent viscosity grade bitumen shall be laid as surfacing course.

#### **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-20 (RCC)
- Brickwork in abutment, return wall, headwall - M-20 (RCC)
- Concrete below abutment, return wall, headwall – M-20 (RCC)

### **16.0 Environmental Issues**

#### **16.1 Alignment**

The proposed road has planned to be 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.

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

The alignment will be finalise avoiding the environmental sensitive area 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.
- 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- This will be taken by the Contractor for new Stone Quarry required for the project.

#### **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 Use of Material**

Cut back bitumen is not proposed in the project to avoid contamination with Kerosene. Bitumen emulsion is proposed for primer coat.

## **17.0 Analysis of Rates**

### **17.1 General**

Rates for various item of works of the project have been derived from the "Department Schedule of rates published in 2024 based on MORD data book and updated rates of RCD SOR approved by State Level Schedule Rate Committee, Road Construction Department, Govt. of Bihar for Road works, Culvert works & Carriage. 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@ 12.5%,

### **17.2 Basic Rate of Material**

The basic rates for stone materials & river bed materials have been taken from Sixteenth edition, Road Construction Department, Govt of Bihar effective from 01/04/2024. **State Level Schedule Rate Committee, Road Construction Department, Govt. of Bihar.**

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 in from **State Level Schedule Rate Committee, Road Construction Department, Govt. of Bihar.**

Basic rate of other materials like coarse & fine sand, cement are as per the latest from **State Level Schedule Rate Committee, Road Construction Department, Govt. of Bihar.**

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 & Rail. Lead for bituminous & steel materials are similarly obtained using SOR. Earth in builtup area will be brought from 1 Km lead.

## **18.0 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 have been 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 have been 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 same 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 in Earthwork Chart in page no :

154 to 155

## 18.3 Abstract of Cost

Unit rates have been derived by using the “Schedule of Rates for Road Works, Culvert works and Carriage etc. **Stat Level Schedule Rate Committee, Road Construction Department, Govt. of Bihar.**” The abstract of Cost estimate is given in the Table below.

The details of cost in Format F6 Attached.

## 18.4 Maintenance

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

Total Cost of 5 year Routine Maintenance Works Attached

## 19.0 Construction Program :- Attached

JE  
RWD

AE  
RWD

EE  
RWD



**MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)**

**YEAR 24-25**

**GENERAL ABSTRACT OF COST**

Block:-- Gurua

District:- Gaya

Length of Road:-- 1.500 KM

Name of Road:-- Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

| SL. No. | Item of Work                                                                      | Amount       |
|---------|-----------------------------------------------------------------------------------|--------------|
| 1       | CONSTRUCTION COST :                                                               | 78.883 Lacs  |
| 2       | 5TH YEAR PERIODIC RENEWAL COST . :                                                | 12.827 Lacs  |
|         | TOTAL ESTIMATED COST (1+2) :                                                      | 91.710 Lacs  |
|         | Add Labour Cess @ 1% :                                                            | 0.917 Lacs   |
|         | Add Seigniorage Fee @ 10% on Material Cost only :                                 | 2.195 Lacs   |
|         | Sub Total :                                                                       | 94.822 Lacs  |
|         | Add GST @ 18% :                                                                   | 17.068 Lacs  |
| A       | TOTAL CONSTRUCTION COST (INC GST, LC @ SEIGN. FEE) SAY "A" :                      | 111.890 Lacs |
| 3       | SIX YEARS OPERATION & MANAGEMENT (O&M) COSTS AFTER COMPLETION OF CONSTRUCTION . : | 13.023 Lacs  |
|         | Add Labour Cess @ 1% :                                                            | 0.130 Lacs   |
|         | Add Seigniorage Fee @ 10% on Material Cost only :                                 | 0.350 Lacs   |
|         | Sub Total :                                                                       | 13.503 Lacs  |
|         | Add GST @ 18% :                                                                   | 2.431 Lacs   |
| B       | TOTAL OPERATION & MANAGEMENT COST (INC GST, LC @ SEIGN. FEE) SAY "B" :            | 15.934 Lacs  |
| C       | SUB TOTAL COST (A+B)                                                              | 127.824 Lacs |
| D       | EMERGENT & PRICE ADJUSTMENT COST @ 15% OF "C" :                                   | 19.174 Lacs  |
| E       | Contingency @ 1% OF "C" :                                                         | 1.278 Lacs   |
| F       | Administrative Cost @ 2.25% OF "C" :                                              | 2.876 Lacs   |
| G       | Land acquisition :                                                                | 0.000 Lacs   |
| H       | TOTAL PROJECT COST (C+D+E+F+G+H) :                                                | 151.152 Lacs |

Junior Engineer

Asstt. Engineer

E. Engineer

SE  
RWD

## **SUMMARY OF COST ESTIMATE FOR THE PROJECT**

**NAME OF ROAD :** Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

DISTRICT Gaya  
 BLOCK Gurua  
 DIVISION Sherghati  
 LENGTH OF ROAD (in Km) 1.500  
 LENGTH OF BT PAVEMENT 900  
 LENGTH OF CC PAVEMENT 600

**CD STRUCTURES**

HUME PIPE 1  
 RCC CULVERT 0  
 BOX CELL CULVERT 0  
 CAUSEWAY / MINOR BRIDGE 0

| Sl. No.   | DESCRIPTION                                                                                        | AMOUNT<br>(LAKHS) |
|-----------|----------------------------------------------------------------------------------------------------|-------------------|
| 1         | PREPARATORY WORKS ,SITE CLEARANCE , DISMANTLING                                                    | 0.703             |
| 2         | EARTHWORK                                                                                          | 10.546            |
| 3         | GSB GRADING - II                                                                                   | 12.631            |
| 5         | WBM GRADE II                                                                                       | 7.655             |
| 5         | WMM GRADE III                                                                                      | 14.466            |
| 6         | PRIME COAT                                                                                         | 1.888             |
| 7         | TACK COAT                                                                                          | 0.650             |
| 8         | MIX SEAL SURFACING WITH WASTE PLASTIC                                                              | 7.035             |
| 9         | PAVEMENT QUALITY CONCRETE.                                                                         | 14.839            |
| 10        | Edging with 1st Class Bricks                                                                       | 1.165             |
| 11        | SIDE DRAINS & CROSS DRAIN                                                                          | 0.000             |
| 12        | PROTECTION WORKS                                                                                   | 0.000             |
| 13        | ROAD FURNITURES , KM STONES , TRAFFIC & DIRECTION SIGN,<br>PMGSY LOGO                              | 4.129             |
| 14        | CABLE DUCT ACROSS THE ROAD                                                                         | 0.333             |
|           | <b>SUB TOTAL OF PAVEMENT COST IN LACS =</b>                                                        | <b>76.041</b>     |
| 14        | <b>CROSS DRAINAGE STRUCTURES</b>                                                                   |                   |
| I         | HUME PIPE                                                                                          | 2.842             |
| II        | RCC                                                                                                | 0.000             |
| III       | BOX                                                                                                | 0.000             |
| IV        | CAUSEWAY                                                                                           | 0.000             |
| V         | REPAIR OF CD WORK                                                                                  | 0.000             |
|           | <b>SUB TOTAL OF CD STRUCTURES COST IN LACS =</b>                                                   | <b>2.842</b>      |
|           | <b>Total Construction Cost.</b>                                                                    | <b>78.883</b>     |
| <b>15</b> | <b>SIX YEARS OPERATION &amp; MANAGEMENT (O&amp;M) COSTS AFTER<br/>COMPLETION OF CONSTRUCTION .</b> |                   |
|           | I st Year                                                                                          | 1.777             |
|           | II nd Year                                                                                         | 2.190             |
|           | III rd Year                                                                                        | 2.604             |
|           | IV th Year                                                                                         | 3.018             |
|           | VI th Year                                                                                         | 1.473             |
|           | VII th Year                                                                                        | 1.962             |
|           | <b>SUB TOTAL OF =SIX YEARS OPERATION &amp; MANAGEMENT (O&amp;M)</b>                                | <b>13.024</b>     |

JE

AE

EE



| Sl. NO.         | SOR Item No. | Description               | Qty. | Length (m) | Width (m) | Height (m) | Quantity | Unit | Rate in Rs. | Amount in Rs. |
|-----------------|--------------|---------------------------|------|------------|-----------|------------|----------|------|-------------|---------------|
| Miscellaneous : |              |                           |      |            |           |            |          |      |             |               |
| 1               |              | Cost of Private land      | 1    | 0          | 8         |            | 0        | Sqm  |             |               |
|                 |              | 1 Decimal =40.465 Sqm     |      |            |           |            | 0        | Dec  | 26,000.00   | 0             |
|                 |              | Four Time multiply Amount | 4    |            |           |            |          |      |             | 0             |

**MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)**

YEAR 24-25

**Checklist for P.I.U.**  
**(For Individual Road Works)****To be Filed by PIU**

|                                                   |                                                                                                                                                                             |                                    |                                |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------------------------|
| <b>1 Location :</b>                               | State : Bihar                                                                                                                                                               | District : Gaya                    | Block : Gurua                  |
| <b>2 PACKAGE NO :</b>                             | Survey ID 54344                                                                                                                                                             |                                    |                                |
| <b>3 Name of Road :</b>                           | From : Rcd Road Baijudham Dharmkata                                                                                                                                         | To : Primary School Phulwariya     |                                |
| <b>4 Total Length :</b>                           | 1.500 Km                                                                                                                                                                    | In Built - up Area : 0.600 Km      | In Open Area : 0.900 Km        |
| <b>5 Estimated Cost</b>                           | 87.479 Lakhs                                                                                                                                                                | Cost Per Km                        | 58.320 Lakhs                   |
| <b>6 Type of Proposal :</b>                       | <b>New Connectivity</b>                                                                                                                                                     |                                    |                                |
| <b>If the proposal road is a new connectivity</b> |                                                                                                                                                                             | √                                  |                                |
| *                                                 | Is the road a part of core network                                                                                                                                          | YES / No                           |                                |
| *                                                 | Name of the unconnected Habitation {s} (To be crosschecked with CN-6)                                                                                                       | Primary School Phulwariya, 0, 0, , |                                |
| *                                                 | Does the proposed road lead upto the habitation for which it is supposed to provide connectivity (In other words are you sure that the road is not being made partially ? ) | √<br>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                                                                                                                                             | <b>( b )</b>                       |                                |
|                                                   | If 'b', indicate the nature of the road to which the proposed road leads.                                                                                                   | <b>RR</b>                          | <b>MDR</b> <b>SH</b> <b>NH</b> |
| <b>If the proposal for upgradation</b>            |                                                                                                                                                                             | √                                  |                                |
| *                                                 | - Is the road a part of core network                                                                                                                                        | YES / No                           |                                |
|                                                   | - Is it associated through route or not                                                                                                                                     | √<br>YES / No                      |                                |
|                                                   | (In case if it is not associated TR)                                                                                                                                        |                                    |                                |
|                                                   | Whether                                                                                                                                                                     | √                                  |                                |
|                                                   | - PCI has been done                                                                                                                                                         | YES / No                           |                                |
|                                                   | - Age of road given                                                                                                                                                         | √<br>YES / No                      |                                |
|                                                   | - Is it certified that there are no other Unconnected Habitation in the district                                                                                            | √<br>YES / No                      |                                |
|                                                   | - Total Population sub served by the proposed road                                                                                                                          | 250                                |                                |
| <b>7 a)</b>                                       | <b>Whether the proposed road</b> has desired carriageway width.                                                                                                             | √<br>YES / No                      |                                |
|                                                   | roadway width and road land width (RLW).                                                                                                                                    |                                    |                                |
| <b>b)</b>                                         | <b>Indicate the actual widths</b> of the following for the proposed road.                                                                                                   | In the Built-Up Area(m)            | In the Open Area (m)           |
|                                                   | a Carriageway                                                                                                                                                               | 3.75                               | 3.75                           |
|                                                   | b Roadway                                                                                                                                                                   | 6.00                               | 6.00                           |
|                                                   | c Road Land Width                                                                                                                                                           | 10.00                              | 15.00                          |
| <b>c)</b>                                         | <b>Index Map (Not to Scale):- Attached</b>                                                                                                                                  |                                    |                                |
| Habitation                                        | Rcd Road Baijudham Dharmkata                                                                                                                                                |                                    |                                |
| Chainage                                          |                                                                                                                                                                             |                                    |                                |
| Culverts                                          |                                                                                                                                                                             |                                    |                                |
|                                                   |                                                                                                                                                                             | Primary School Phulwariya          |                                |

| 8 Base Year Traffic Volume :                                          |                                    |                        |                           |        |                                 |       |               |                 |                            |           |               |
|-----------------------------------------------------------------------|------------------------------------|------------------------|---------------------------|--------|---------------------------------|-------|---------------|-----------------|----------------------------|-----------|---------------|
| Date ,Month & Year of Traffic Volume : 4 - 06 - 2019 to 6 - 06 - 2019 |                                    |                        |                           |        |                                 |       |               |                 |                            |           |               |
| Days                                                                  | Motorized                          |                        |                           |        |                                 |       | Non Motorized |                 |                            | Total     |               |
|                                                                       | Cars, Jeeps, Vans, Three-wheelers, | Motorised two-wheelers | Light Commercial Vehicles | Trucks | Agricultural Tractors/ Trailers | Buses | Cycles        | Cycle Rickshaws | Cycle Rickshaw / Hand Cart | Motorized | Non Motorized |
| 1                                                                     | 2                                  | 3                      | 4                         | 5      | 6                               | 7     | 8             | 9               | 10                         | 11        | 12            |
| Day 1                                                                 | 65                                 | 108                    | 48                        | 50     | 79                              | 0     | 157           | 59              | 95                         | 350       | 311           |
| Day 2                                                                 | 52                                 | 98                     | 37                        | 38     | 84                              | 0     | 169           | 54              | 88                         | 309       | 311           |
| Day 3                                                                 | 56                                 | 104                    | 49                        | 32     | 65                              | 0     | 163           | 42              | 71                         | 306       | 276           |
| Day 4                                                                 | 47                                 | 108                    | 2                         | 0      | 40                              | 0     | 135           | 39              | 78                         | 197       | 252           |
| Day 5                                                                 | 62                                 | 111                    | 11                        | 2      | 42                              | 0     | 169           | 44              | 104                        | 228       | 317           |
| Day 6                                                                 | 52                                 | 106                    | 0                         | 3      | 27                              | 0     | 172           | 32              | 74                         | 188       | 278           |
| Day 7                                                                 | 52                                 | 93                     | 0                         | 2      | 44                              | 0     | 84            | 30              | 71                         | 191       | 185           |
| Average                                                               | 55.14                              | 104.00                 | 21.00                     | 18.14  | 54.43                           | 0.00  | 149.86        | 42.86           | 83.00                      | 252.71    | 276           |

|   |                                               |          |                                        |         |
|---|-----------------------------------------------|----------|----------------------------------------|---------|
| 9 | - Growth Rate Adopted (%) =                   | 6%       | Projected Traffic =                    | 94 CVPD |
|   | - Design Life in Years =                      | 10 Years | - Total Motorized Vehicle =            | 253     |
|   |                                               |          | - Total Non Motorized Vehicle =        | 276     |
|   | - No. of Days in each Harvesting Season (t) = | 75       | Cumulative ESAL in the design period = | 219285  |
|   | - Value of (n) Assumed =                      | 1        | Traffic Category =                     | T 3     |

|                   |     |  |  |  |  |  |  |  |  |  |  |
|-------------------|-----|--|--|--|--|--|--|--|--|--|--|
| 10 Sub-grade CBR  |     |  |  |  |  |  |  |  |  |  |  |
| Chainage (KM)     |     |  |  |  |  |  |  |  |  |  |  |
| Sub-grade CBR (%) |     |  |  |  |  |  |  |  |  |  |  |
| Design CBR (%)    | 5 % |  |  |  |  |  |  |  |  |  |  |

|                          |                      |                 |             |  |  |                                     |                 |                       |  |              |  |
|--------------------------|----------------------|-----------------|-------------|--|--|-------------------------------------|-----------------|-----------------------|--|--------------|--|
| 11 COST DETAILS          |                      |                 |             |  |  |                                     |                 |                       |  | Cost in Rs.  |  |
| A. Clearing and Grubbing |                      |                 |             |  |  |                                     |                 |                       |  | 70,313.00    |  |
| B. Pavement Components   |                      |                 |             |  |  |                                     |                 |                       |  |              |  |
| For Black Top            |                      |                 |             |  |  | For Unsealed (Cement Concrete Road) |                 |                       |  |              |  |
|                          | Item                 | Thickness in mm | Cost in Rs. |  |  | Item                                | Thickness in mm | Cost in Rs.           |  |              |  |
|                          | - EARTHWORK          |                 | 6,92,359.00 |  |  | EARTHWORK                           |                 | 3,62,261.00           |  |              |  |
|                          | - GRANULAR SUB BASE  | 125             | 8,45,534.00 |  |  | GRANULAR SUB BASE                   | 100             | 4,17,545.00           |  |              |  |
|                          | WBM - 1              |                 |             |  |  | WMM - 3                             | 75              | 5,03,178.00           |  |              |  |
|                          | - WBM - 2            | 75              | 7,65,518.00 |  |  | PQC                                 | 125             | 16,00,371.00          |  |              |  |
|                          | - WMM - 3            | 75              | 9,43,453.00 |  |  |                                     |                 |                       |  |              |  |
| C. Bituminous Layers     |                      |                 |             |  |  |                                     |                 |                       |  |              |  |
|                          | - Prime Coat         |                 | 1,88,821.00 |  |  |                                     |                 |                       |  |              |  |
|                          | - Tack Coat          |                 | 64,960.00   |  |  |                                     |                 |                       |  |              |  |
|                          | - Mix Seal Surfacing |                 | 7,03,509.00 |  |  |                                     |                 |                       |  |              |  |
| Total Cost of Black Top  |                      |                 |             |  |  | 42,04,154.00                        |                 | Total Cost of CC Road |  | 28,83,355.00 |  |
| Say Rs in Lakhs          |                      |                 |             |  |  | 42.04                               |                 | Say Rs in Lakhs       |  | 28.83        |  |

|                                                        |                                              |        |             |  |  |        |  |              |  |              |  |
|--------------------------------------------------------|----------------------------------------------|--------|-------------|--|--|--------|--|--------------|--|--------------|--|
| D. CD WORKS                                            |                                              |        |             |  |  |        |  |              |  |              |  |
| No of existing CD works                                |                                              |        |             |  |  | 0      |  |              |  |              |  |
| Do they require any improvement                        |                                              |        |             |  |  | YES/NO |  |              |  |              |  |
| If YES, their number & cost of improvement (In lakhs)= |                                              |        |             |  |  | 0.00   |  |              |  |              |  |
| No of proposed CD works with Classification :          |                                              |        |             |  |  | 1      |  |              |  |              |  |
|                                                        | Type of Culvert                              | Nos.   | Cost in Rs. |  |  |        |  |              |  |              |  |
|                                                        | Hume Pipe Culvert                            | 1      | 2,84,237.00 |  |  |        |  |              |  |              |  |
|                                                        | Slab                                         | 0      | 0.00        |  |  |        |  |              |  |              |  |
|                                                        | Box Culvert                                  | 0      | 0.00        |  |  |        |  |              |  |              |  |
|                                                        | REPAIR OF CD WORK                            | 0      | 0.00        |  |  |        |  |              |  |              |  |
|                                                        | CABLE DUCT ACROSS THE                        | 0      | 33,347.00   |  |  |        |  |              |  |              |  |
|                                                        | Total Cost of proposed CD works              |        | 3,17,584.00 |  |  |        |  |              |  |              |  |
| E.                                                     | Protection Works                             | Length | 0 M         |  |  |        |  | 0.00         |  |              |  |
| F.                                                     | Pucca Side Drain / Cross Drain (if Provided) | Length | 0 M         |  |  |        |  | 0.00         |  |              |  |
| G.                                                     | Road Logo and Other Furniture                |        |             |  |  |        |  | 4,12,883.00  |  |              |  |
| H                                                      | 5TH YEAR PERIODIC RENEWAL COST .             |        |             |  |  |        |  | 12,82,696.00 |  |              |  |
| Total Cost of Project in Rs.=                          |                                              |        |             |  |  |        |  |              |  | 91,70,985.00 |  |
| Add GST @ 18 % Rs.=                                    |                                              |        |             |  |  |        |  |              |  | 17,06,798.13 |  |
| Add Lavour Cess @ 1% Rs.=                              |                                              |        |             |  |  |        |  |              |  | 91,709.9     |  |
| Add Seigniorage Fee @ 10% Rs.=                         |                                              |        |             |  |  |        |  |              |  | 2,19,517.00  |  |

**H. Five Years Maintainance Cost**

| Years of Maintainance                               | Cost in Rs.         | Cost Rs in Lakhs | Percentage of Construction Cost |
|-----------------------------------------------------|---------------------|------------------|---------------------------------|
| 1st Year                                            | 1,77,700.00         | 1.777            | 1.588                           |
| 2nd Year                                            | 2,19,000.00         | 2.190            | 1.957                           |
| 3rd Year                                            | 2,60,400.00         | 2.604            | 2.327                           |
| 4th Year                                            | 3,01,800.00         | 3.018            | 2.697                           |
| 6th Year                                            | 1,47,300.00         | 1.473            | 1.316                           |
| 7th Year                                            | 1,96,200.00         | 1.962            | 1.754                           |
| <b>Total Cost</b>                                   | <b>13,02,400.00</b> | 13.024           | <b>9.886</b>                    |
| <b>Add GST @ 18 %</b>                               | <b>2,43,076.50</b>  | 2.431            | <b>1.780</b>                    |
| <b>Add L.C @ 1%</b>                                 | <b>13,024.00</b>    | 0.130            | <b>0.099</b>                    |
| <b>Add S.F @ 10%</b>                                | <b>35,001.00</b>    | 0.350            | <b>0.018</b>                    |
| <b>Total Maintenance Cost including GST and L.C</b> | <b>15,93,501.50</b> | 15.935           | <b>11.765</b>                   |

12 Whether the road has geometrics as per RRM/Latest Circulars of NRRDA

√  
YES/NO

13 Whether the CD works/Protection works are provided as per RRM

√  
YES/NO

14 Whether the Cost Estimates are as per standard data analysis an S.S.R.

√  
YES/NO

Certified that the information provided is true.

Prepared By

J.E

Checked By

A.E

R.W.D

E.E.

R.W.D

Scrutinized By

SE

## Association of Routes

**FORMAT F-4A**

DISTRICT: **Gaya**  
BLOCK: **Gurua**

| Package No. | Primary Network |                                     |     | Associated Through Route (ATR) | PCI | Age | Wheather proposed for Upgradation(U) or Renewal® | Other Non-conformance subsidiary to the ATR | Wheather includes in package Y/N | Habitation served with population |            |
|-------------|-----------------|-------------------------------------|-----|--------------------------------|-----|-----|--------------------------------------------------|---------------------------------------------|----------------------------------|-----------------------------------|------------|
|             | No.             | Habitation served (with population) |     |                                |     |     |                                                  |                                             |                                  | Habitation                        | Population |
|             |                 | Primary School Phulwariya           | 250 |                                |     |     |                                                  |                                             |                                  | Primary School Phulwariya         | 250        |
|             |                 | 0                                   | 0   |                                |     |     |                                                  |                                             |                                  |                                   |            |
|             |                 | 0                                   | 0   |                                |     |     |                                                  |                                             |                                  |                                   |            |
|             |                 |                                     |     |                                |     |     |                                                  |                                             |                                  |                                   |            |
|             |                 |                                     |     |                                |     |     |                                                  |                                             |                                  |                                   |            |
|             |                 |                                     |     |                                |     |     |                                                  |                                             |                                  |                                   |            |
|             |                 |                                     |     |                                |     |     |                                                  |                                             |                                  |                                   |            |
|             |                 |                                     |     |                                |     |     |                                                  |                                             |                                  |                                   |            |
|             |                 |                                     |     |                                |     |     |                                                  |                                             |                                  |                                   |            |
|             |                 |                                     |     |                                |     |     |                                                  |                                             |                                  |                                   |            |



**MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)**

**Cost Estimate for Road Construction**

Name of Road : Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

**Block : Gurua**

Total Length : 1.5

B T Length : 900 mt

C C Length : 600 mt

District : Gaya

| Sl. No. | SDB<br>SL.NO | MORD<br>Ref.No | Description                                                                                                                                                                                                                                                                                                                                                                                                | Unit | NOS  | LENGTH            | WIDTH  | HEIGHT | QUANTITY       | RATE      | AMOUNT<br>(in Rs.) |
|---------|--------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-------------------|--------|--------|----------------|-----------|--------------------|
|         |              |                | SUB HEAD : PREPARATORY WORKS ,SITE CLEARANCE , DISMANTLING                                                                                                                                                                                                                                                                                                                                                 |      |      |                   |        |        |                |           |                    |
| 1       |              | 100            | Setting Out Pillars                                                                                                                                                                                                                                                                                                                                                                                        |      |      |                   |        |        |                |           |                    |
|         |              |                | Providing & Fixing of Working benchmark Pillars 2 nos. per km & 6 Nos. of reference pillars required for 1 Km. as per drawings given and direction of E/I                                                                                                                                                                                                                                                  |      |      |                   |        |        |                |           |                    |
|         |              |                |                                                                                                                                                                                                                                                                                                                                                                                                            | No   | 8.00 | 1.500             |        |        | 12.0           | 2,654.79  | 31,857.00          |
| 2       | 2.2          | 201<br>(I-A )  | Clearing and Grubbing Road Land (By manual means) including uprooting wild vegetation, grass, bushes, shrubs, saplings and trees of girth upto 300mm, removals of stumps of such trees cut earlier & disposal of unserviceable materials & stacking of serviceable materials to be used or auctioned upto a lead of 1000 m including removal and disposal of top organic soil not                          |      |      |                   |        |        |                |           |                    |
|         |              |                |                                                                                                                                                                                                                                                                                                                                                                                                            | Ha   | 1    | 1,500.00          | 3.500  |        | 5,250.00       |           |                    |
|         |              |                |                                                                                                                                                                                                                                                                                                                                                                                                            |      |      |                   |        |        | 0.525          | 73,248.75 | 38,456.00          |
| 3       | 2.14         | 202            | Box Cutting                                                                                                                                                                                                                                                                                                                                                                                                |      |      |                   |        |        |                |           |                    |
|         | I            |                | Excavation for roadway in soil using manual means for carrying of cut earth to embankment site with a lift upto 1.5 m and lead upto 50 m as per Technical Specification Clause 302.3                                                                                                                                                                                                                       |      |      |                   |        |        |                |           |                    |
|         |              | A              | Be side of BES for Provision of Flexible Road                                                                                                                                                                                                                                                                                                                                                              | cum  | 2    | 0.00              | 0.525  | 0.100  | 0.00           |           |                    |
|         |              | B              | Be side of BES for Provision of Rigid Road                                                                                                                                                                                                                                                                                                                                                                 | cum  | 2    | 0.00              | 0.375  | 0.100  | 0.00           |           |                    |
|         |              | C              | Be side of CC for Provision of Rigid Road                                                                                                                                                                                                                                                                                                                                                                  | cum  | 2    | 0.00              | 0.0375 | 0.175  | 0.00           |           |                    |
|         |              |                |                                                                                                                                                                                                                                                                                                                                                                                                            |      |      |                   |        |        | 0.00           | 95.97     | 0.00               |
|         |              |                |                                                                                                                                                                                                                                                                                                                                                                                                            |      |      |                   |        |        | A) SUB TOTAL = |           | 70,313.00          |
|         |              |                | SUB HEAD : EARTHWORK                                                                                                                                                                                                                                                                                                                                                                                       |      |      |                   |        |        |                |           |                    |
| 4       | 3.3          | 301.5          | Construction of embankment with approved material deposited from road way cutting and excavation from drain and foundation of other structures and excavated with an average lead of 50 m graded and compacted to meet requirement of tables 300.1 and 300.2 as per technical specification clause 301.5 (Including Royalty & Labour Cess).                                                                |      |      |                   |        |        |                |           |                    |
|         |              |                |                                                                                                                                                                                                                                                                                                                                                                                                            |      |      |                   |        | 280.42 |                |           |                    |
|         |              |                |                                                                                                                                                                                                                                                                                                                                                                                                            | Cum  |      | 60% of Total Qty. | 168.25 |        | 168.25         | 58.36     | 9,819.00           |
|         |              |                |                                                                                                                                                                                                                                                                                                                                                                                                            |      |      |                   |        |        |                |           |                    |
| 5       | 3.5          | (iii)          | Excavation in Soil using Hydraulic Excavator and Tippers with disposal upto 1000 m                                                                                                                                                                                                                                                                                                                         |      |      |                   |        |        |                |           |                    |
|         |              |                | 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 Technical Specification Clause 302.3 (Including Royalty & Labour Cess). |      |      |                   |        |        |                |           |                    |
|         |              |                | As per Earth Work Calculation Sheet Annexure - 3                                                                                                                                                                                                                                                                                                                                                           |      |      |                   |        |        |                |           |                    |
|         |              |                | TOTAL QTY. OF CUT                                                                                                                                                                                                                                                                                                                                                                                          | Cum  |      |                   |        |        | 280.42         | 95.97     | 26,912.00          |

### Cost Estimate for Road Construction

**Block : Gurua**

District : Gaya

[illegible]

**MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)**

**Cost Estimate for Road Construction**

Name of Road : Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

**Block : Gurua**

Total Length : 1.5

B T Length : 900 mt

C C Length : 600 mt

District : Gaya

| Sl. No.   | SDB<br>SL.NO | MORD<br>Ref.No | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Unit | NOS  | LENGTH | WIDTH | HEIGHT | QUANTITY | RATE                           | AMOUNT<br>(in Rs.)  |
|-----------|--------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|--------|-------|--------|----------|--------------------------------|---------------------|
|           |              |                | <b>Sub Head : PAVEMENT LAYERS - GSB &amp; WBM ITEMS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |      |      |        |       |        |          |                                |                     |
| <b>8</b>  | <b>4.1</b>   | <b>401</b>     | <b>Granular Sub-base with Well Graded Material (Table 400.1)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |      |        |       |        |          |                                |                     |
|           |              | <b>(i)</b>     | <b>(By mix in place method) For Grading II Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |      |      |        |       |        |          |                                |                     |
|           |              |                | Construction of granular sub-base by providing well graded material, spreading in uniform layers with motor 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 Technical Specification Clause 401.                                                                                                                                                                                           |      |      |        |       |        |          |                                |                     |
|           |              |                | <b>GSB in Earthen Portion</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Cum  | 1.00 | 900.00 | 4.050 | 0.125  | 455.63   |                                |                     |
|           |              |                | <b>GSB in Widening</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Cum  | 2.00 | 0.00   | 0.525 | 0.100  | 0.00     |                                |                     |
|           |              |                | <b>GSB in Full width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Cum  | 1.00 | 0.00   | 4.050 | 0.075  | 0.00     |                                |                     |
|           |              |                | <b>Add for extra for Profile Correction (20%)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Cum  | 20%  | 0.00   | 3.000 | 0.100  | 0.00     |                                |                     |
|           |              |                | <b>Add for extra widening on curve (2%)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cum  |      |        |       |        | 9.11     |                                |                     |
|           |              |                | <b>Net GSB Qty. Required form Grading I Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |      |        |       |        | 464.74   | 1,819.37                       | 8,45,534.00         |
| <b>9</b>  | <b>4.8</b>   | <b>405</b>     | <b>Water Bound Macadam with Crushable Screenings</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |      |        |       |        |          |                                |                     |
|           | <b>(2-A)</b> |                | <b>WBM Grading 2</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |      |        |       |        |          |                                |                     |
|           |              |                | Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with three wheel 80-100 kN static roller in stages to proper grade and camber, applying and brooming, crushable screening to fill-up the interstices of coarse aggregate, watering and compacting to the required density Grading 2 as per Technical Specification Clause 405.                                                 |      |      |        |       |        |          |                                |                     |
|           |              |                | <b>In full width WBM Qty. Required</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Cum  | 1.00 | 900.00 | 3.750 | 0.075  | 253.13   |                                |                     |
|           |              |                | <b>Add for extra widening on curve (2%)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cum  |      |        |       |        | 5.06     |                                |                     |
|           |              |                | <b>Net WBM -2 Qty</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |      |        |       |        | 258.19   | 2,964.94                       | 7,65,518.00         |
| <b>10</b> | <b>4.7</b>   | <b>405</b>     | <b>Wet Mix Macadam</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |      |      |        |       |        |          |                                |                     |
|           | <b>(3-A)</b> |                | 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 |      |      |        |       |        |          |                                |                     |
|           |              |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Cum  | 1.00 | 900.00 | 3.750 | 0.125  | 421.88   |                                |                     |
|           |              |                | <b>Add for extra widening on curve (2%)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      |      |        |       |        | 8.44     |                                |                     |
|           |              |                | <b>Net WBM -3 Qty</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |      |        |       |        | 430.31   | 2,192.50                       | 9,43,453.00         |
|           |              |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |      |        |       |        |          | <b>C) SUB TOTAL OF CRUST =</b> | <b>25,54,505.00</b> |

### Cost Estimate for Road Construction

**Block : Gurua**

District : Gaya

Page 4

### Cost Estimate for Road Construction

**Block : Gurua**

**B T Length : 900 mt**

**District : Gaya**

[illegible]

**MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)**

**Cost Estimate for Road Construction**

Name of Road : Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

**Block : Gurua**

Total Length : 1.5  
B T Length : 900 mt  
C C Length : 600 mt  
District : Gaya

| Sl. No. | SDB<br>SL.NO | MORD<br>Ref.No | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Unit | NOS  | LENGTH | WIDTH | HEIGHT | QUANTITY | RATE     | AMOUNT<br>(in Rs.) |
|---------|--------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|--------|-------|--------|----------|----------|--------------------|
|         |              |                | <b>SUB HEAD : ROAD FURNITURES , KM STONES , TRAFFIC &amp; DIRECTION SIGN , PMGSY LOGO</b>                                                                                                                                                                                                                                                                                                                                                                                                             |      |      |        |       |        |          |          |                    |
| 19      | 10.1         | 1700           | <b>Kilometre stone</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |      |        |       |        |          |          |                    |
|         |              |                | Reinforced cement concrete M15 grade kilometre local stone of standard design as per IRC:8 fixing in position including painting and printing , etc as per drawing and technical specification clause 1703.                                                                                                                                                                                                                                                                                           |      |      |        |       |        |          |          |                    |
|         |              |                | i) 5th km stone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | No.  | 0.00 |        |       |        |          | 4,397.06 | 0.00               |
|         |              |                | ii) Km stone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No.  | 4.00 |        |       |        |          | 2,354.52 | 9,418.00           |
|         |              |                | iii) 200 m stone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | No.  | 5.00 |        |       |        |          | 691.88   | 3,459.00           |
| 20      | 10.2         | 1700.3,        | <b>Retro-reflectorised Traffic Signs</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |      |        |       |        |          |          |                    |
|         |              | 800            | Providing and fixing of retro-reflectorised cautionary, mandatory and informatory 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 a mild steel angle iron post 75 mm x 75 mm x 6 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 drawings and Technical Specification Clause 801 |      |      |        |       |        |          |          |                    |
|         |              | i)             | 600 mm equilateral & triangle,<br>Left Hand & Right Hand Curve                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos  | 4    |        |       |        |          |          |                    |
|         |              |                | School                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Nos  | 0    |        |       |        |          |          |                    |
|         |              |                | Total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      | 4    |        |       |        |          | 3,830.48 | 15,322.00          |
|         |              | ii)            | 900 mm side octagon, OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |      |        |       |        |          |          |                    |
|         |              |                | Stop                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Nos  | 4    |        |       |        |          | 9,176.46 | 36,706.00          |
|         |              | iii)           | 600 mm x 450 mm rectangular,<br>Place Board                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Nos  | 4    |        |       |        |          | 5,011.57 | 20,046.00          |
| 21      | 11.9         | 307            | <b>Planting of Trees and their Maintenance for one Year</b>                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |      |        |       |        |          |          |                    |
|         |              |                | Planting of trees by the road side (Avenue trees) in 0.60 m dia holes, 1 m deep dug in the ground, mixing the soil with decayed farm yard/sludge manure, planting the saplings, backfilling the trench, watering, fixing the tree guard and maintaining the plants for one year                                                                                                                                                                                                                       |      |      |        |       |        |          |          |                    |
|         |              |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Each | 2.00 | 900.00 | /     | 50.00  | 36.00    | 1,221.96 | 43,991.00          |
| 22      | 8.13         | 803            | <b>Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface</b>                                                                                                                                                                                                                                                                                                                                                                                     |      |      |        |       |        |          |          |                    |
|         | RCD          | 300            | Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes.                                                                                                                                                                                                        |      |      |        |       |        |          |          |                    |
|         |              | i)             | <b>At Edge</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Sqm  | 2    | 900.00 | 0.100 |        | 180.00   | 801.65   | 1,44,297.00        |
| 23      | 8.13         | 803            | <b>Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Concrete Surface</b>                                                                                                                                                                                                                                                                                                                                                                                       |      |      |        |       |        |          |          |                    |
|         | RCD          | 300            | Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes. Sealing primer may be applied in advance which is incidentally Included to the work.                                                                                                                   |      |      |        |       |        |          |          |                    |
|         |              | i)             | <b>At Edge</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Sqm  | 2    | 600.00 | 0.100 |        | 120.00   | 902.11   | 1,08,253.00        |
| 24      | 10.6         | 1700           | <b>(I)Providing and Fixing 'Logo' of MMGSY Project</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |      |        |       |        |          |          |                    |

# MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)

## Cost Estimate for Road Construction

Name of Road : Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

Block : Gurua

Total Length : 1.5

B T Length : 900 mt

C C Length : 600 mt

District : Gaya

| Sl. No. | SDB<br>SL .NO | MORD<br>Ref.No | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Unit | NOS  | LENGTH | WIDTH | HEIGHT | QUANTITY                                            | RATE      | AMOUNT<br>(in Rs.)  |
|---------|---------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|--------|-------|--------|-----------------------------------------------------|-----------|---------------------|
|         |               |                | Providing and fixing of typical MMGSY WB informatory sign board with Logo as per MORD specifications and drawing. Three MS Plates of 1.6 mm thick, top and middle plate duly welded with MS flat iron 25mm x 5m size on back on edges. The lower plate will be welded with MS angle iron frame of 25mm x 25mm x 5mm. The angle iron frame of the lower most plate and flat iron frame of middle plate will be welded to 2 nos. 75mm x 75 mm of 12 SWG sheet tubes posts duly embedded in cement concrete M-15 grade blocks of 450mm x 450mm x 600mm, 600mm below ground level. The top most diamond plate will be welded to middle plate by 47mm x 47mm of 12 SWG steel plate tube. All M.S. will be stove enameled on both sides. Lettering and printing arrows, border etc. will be painted with ready mixed synthetic enamel paint of superior quality in required shade and colour. All sections of framed posts and steel tube will be painted with primer and two coats of epoxy paint as per drawing Clause 1701 and Annexure 1700.1 |      |      |        |       |        |                                                     |           |                     |
|         |               |                | Providing and Fixing 'Logo' of MMGSY (NDB) Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No.  | 1.00 |        |       |        | 1.00                                                |           |                     |
|         |               |                | Citizen Information Board As per Drawing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | No.  | 1.00 |        |       |        | 1.00                                                |           |                     |
|         |               |                | Providing and Fixing 'Logo' of Maintenance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | No.  | 1.00 |        |       |        | 1.00                                                |           |                     |
|         |               |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |      |      |        |       |        | 3.00                                                | 10,463.82 | 31,391.00           |
|         |               |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |      |      |        |       |        | <b>F) SUB TOTAL OF ROAD FURNITURES =</b>            |           | <b>4,12,883.00</b>  |
|         |               |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |      |      |        |       |        | <b>TOTAL COST OF PAVEMENT IN RS. (A+B+C+D+E+F)=</b> |           | <b>76,04,052.00</b> |

JE  
RWD

AE  
RWD

EE  
RWD

## SUMMARY OF 1ST FOUR YEARS OPERATION & MANAGEMENT (O&M) COSTS AFTER COMPLETION OF CONSTRUCTION .

NAME OF ROAD:- Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

Survey ID 54344  
DISTRICT:- Gaya  
BLOCK:- Gurua  
LENGTH OG ROAD (KM):- 1.500

| Particulars                                     | Amount in Rs.      | Amount in (Lakh) |
|-------------------------------------------------|--------------------|------------------|
| 1st Year Maintenance cost                       | 1,77,721.00        | 1.777            |
| 2nd Year Maintenance cost                       | 2,18,964.00        | 2.190            |
| 3rd Year Maintenance cost                       | 2,60,364.00        | 2.604            |
| 4th Year Maintenance cost                       | 3,01,764.00        | 3.018            |
| <b>Total Cost of Ist Four years Maintenance</b> | <b>9,58,813.00</b> | <b>9.588</b>     |
| <b>Total Cost</b>                               | <b>9,58,813.00</b> | <b>9.588</b>     |

### MATE FOR 4 YEARS MAINTENANCE WO

|                                       |       |   |
|---------------------------------------|-------|---|
| Total Length of Road(L) =             | 1500  | m |
| Length of the Flexible Pavement(Lf) = | 900   | m |
| Length of the Rigid Pavement(Lc) =    | 600   | m |
| Width of the Road (Br) =              | 3.750 | m |
| Width Of the Shoulder (Bs) =          | 1.125 | m |
| No. Of Hume Pipe Culvert =            | 1     |   |
| No. Of Slab Culvert =                 | 0     |   |
| No. Of Box Culvert =                  | 0     |   |
| Length of Drain=                      | 0     | m |
| No. of guard stone                    | 0     |   |

JE  
RWD

AE  
RWD

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RWD



### Multiplying factor for traffic intensity( $\beta$ )

| Low ( $\leq 15$ CVD) | Medium (15 to 45 CVD) | High ( $> 45$ CVD) |
|----------------------|-----------------------|--------------------|
| 1.0                  | 1.25                  | 1.5                |

### Multiplying factor for making for pothole( $\alpha_1$ )

| Rainfall |        |          |       |
|----------|--------|----------|-------|
|          | High % | Medium % | Low % |
| I YEAR   | 1.0    | 0.5      | --    |
| II YEAR  | 2.0    | 1.0      | 0.5   |
| III YEAR | 3.0    | 1.5      | 1.0   |
| IV YEAR  | 4.0    | 2.0      | 1.5   |
|          |        |          |       |

### Multiplying factor for making for berms( $\alpha_2$ )

| Rainfall |        |          |       |
|----------|--------|----------|-------|
|          | High % | Medium % | Low % |
| I YEAR   | 15.0   | 18.0     | 7.5   |
| II YEAR  | 18.0   | 16.0     | 9.0   |
| III YEAR | 21.0   | 14.0     | 10.5  |
| IV YEAR  | 24.0   | 12.0     | 12.0  |
|          |        |          |       |

### Multiplying factor for making for rain cut( $\alpha_3$ )

| Rainfall |        |          |       |
|----------|--------|----------|-------|
|          | High % | Medium % | Low % |
| I YEAR   | 7.5    | 10.8     | 5.0   |
| II YEAR  | 9.0    | 9.6      | 6.0   |
| III YEAR | 10.5   | 8.4      | 7.0   |
| IV YEAR  | 12.0   | 7.2      | 8.0   |
|          |        |          |       |

| DETAILED ESTIMATE FOR 4 YEAR ORDINARY MAINTENANCE                                                                          |                 |           |                                                                                                                                                                                                                                                                                                                                                                                |      |         |                       |            |              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. - Annexure 14.4 operation Manual from Rural Road} |                 |           |                                                                                                                                                                                                                                                                                                                                                                                |      |         |                       |            |              |
| Sl. No.                                                                                                                    | OM No.          | SOR No.   | Description of Items                                                                                                                                                                                                                                                                                                                                                           | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.) |
| 1                                                                                                                          | OM 101 & OM 105 | 15.3(ii)  | <b>Pot hole patching-</b><br>Treatment of isolated failed pavement areas in traffic lanes using appropriate materials to repair the defect and restore the riding surface to a smooth condition and<br><b>Edge Repair -</b><br>Repair of broken edge of seal to line and level to maintain nominal sealed width. with Mix Seal Surfacing<br>(Qty=Lf*Br* $\alpha_1$ * $\beta$ ) | Sqm  | 0.5%    | 21.094                | 849.71     | 17,924.00    |
| 2                                                                                                                          | OM 102          | 15.3 (i)  | <b>Surface Depression and Rut Patching</b><br>Application of a levelling course of bituminous materials to depressed or rutted areas of pavement Repair of Pot holes filled with 75 mm BM X 1.25<br>(Qty=Lf*0.15*0.075* $\alpha_1$ * $\beta$ )                                                                                                                                 | Cum  | 0.5%    | 0.063                 | 12,045.98  | 762.00       |
| 3                                                                                                                          | OM 103          | RCD 10.6  | <b>Crack Sealing</b><br>Filling of cracks and joints,excluding "crocodile" cracking using liquid bituminous sealents in accordance with monthly works program<br>(Qty=L <sub>r</sub>                                                                                                                                                                                           | M    | -       | 900                   | 4.17       | 3,753.00     |
| 4                                                                                                                          | OM 104          | 15.3(iii) | <b>Surface Treatmentt</b><br>Application of bituminous surface materials and cover aggregate ares of pavement with:-<br>(a) Loss of aggregate(surface ravelled)<br>(b) bleeding and flushing; or<br>(c) Laminated asphalt surface.<br>Patch repair over bituminous surface with 20 mm Premix carpet with seal coat Type B<br>(Qty=Lf*Br* $\alpha_1$ * $\beta$ )                | Sqm  | 0.5%    | 21.094                | 870.55     | 18,363.00    |
| 5                                                                                                                          | OM 106          | 15.3 (i)  | <b>Digout Repair</b><br>Treatment of isolated failed pavement areas>0.25m <sup>3</sup> by replacemnet with new material or improvement of existing material,including reinstatement of road surface.<br>Repair of Pot holes filled with 75 mm BM X 1.25<br>(Qty=Lf*Br* $\alpha_1$ *0.075* $\beta$ )                                                                            | Cum  | 0.5%    | 1.582                 | 12,045.98  | 19,057.00    |
| 6                                                                                                                          | OM 107          | 15.3 (ii) | <b>Repair of concrete pavement</b><br>Repair isolated areas of damaged concrete pavement <0.25m <sup>2</sup> patching with 20 mm thick premix carpet with seal coat Type B seal coat Type B<br>(Qty=Lc*Br* $\alpha_1$ * $\beta$ )                                                                                                                                              | Sqm  | 0.5%    | 14.063                | 849.71     | 11,949.00    |

| DETAILED ESTIMATE FOR 4 YEAR ORDINARY MAINTENANCE                                                                          |                 |           |                                                                                                                                                                                                                                                              |      |         |                       |            |                    |
|----------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |                 |           |                                                                                                                                                                                                                                                              |      |         |                       |            |                    |
| Sl. No.                                                                                                                    | OM No.          | SOR No.   | Description of Items                                                                                                                                                                                                                                         | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.)       |
| 7                                                                                                                          |                 | RCD 10.10 | Reapir of old joint selant<br>Removal of existing sealant and re sealing of construction,longitudial or expension joint in concrete pavement with fresh sealant materiaial<br>$Qty=(L_c/4)*B_r$                                                              | M    | -       | 562.500               | 45.86      | 25,796.00          |
| 8                                                                                                                          | OM 201          | 15.2      | <b>Unsealed Shoulder Repair</b><br>Making up the irregularities/loss material on shoulder to design level/profit/<br>Making up of Berms/shoulder, stripping excess soil from the shoulder surfaces to achieve level etc.<br>$(Qty=L_f*B_s*\alpha_2*\beta)*2$ | Sqm  | 18.0%   | 455.625               | 67.34      | 30,682.00          |
| 9                                                                                                                          | OM 202          | 15.1      | <b>Embankment Repairs</b><br>Restoration of Raincuts in the embankment and shoulder/Berms with soil.moorumetc<br>$(Qty=L_f*B_s*0.3*\alpha_3)\times\beta)*2$                                                                                                  | Cum  | 10.8%   | 82.013                | 459.70     | 37,701.00          |
| 10                                                                                                                         | OM 301          | 15.6      | <b>Surface Drain Cleaning</b><br>Cleaning of channels,including kerb and channel,and reshaping earthen drain,including culvert inlet and outlet drains,to maintain flow of water and protect road and road side from scour.                                  | M    | -       | 0                     | 3.87       | 0.00               |
| 11                                                                                                                         | OM 302 & OM 303 |           | <b>Culvert Cleaning and Culvert Repair</b>                                                                                                                                                                                                                   |      |         |                       |            |                    |
|                                                                                                                            |                 | 15.7 (i)  | Maintenance of C/D Works (Hume Pipe Culvert)                                                                                                                                                                                                                 | No.  | -       | 1                     | 1,515.71   | 1,516.00           |
|                                                                                                                            |                 | 15.7 (ii) | Maintenance of C/D Works (Slab Culvert)                                                                                                                                                                                                                      | No.  | -       | 0                     | 3,070.58   | 0.00               |
|                                                                                                                            |                 | 15.13     | Painting of parapet walls of CD work                                                                                                                                                                                                                         | Sqm  | -       | 0                     | 128.82     | 0.00               |
| 12                                                                                                                         | OM 401          | 15.12     | <b>Tree and Shrub management</b><br>Cutting of branches of trees,shrubs and trimming of glass and weeds from the Roadway or within the Road land.                                                                                                            |      |         |                       |            |                    |
|                                                                                                                            |                 |           | (I)Cutting of branches of trees and shrubs                                                                                                                                                                                                                   | No.  | -       | 2                     | 157.21     | 314.00             |
|                                                                                                                            |                 |           | (ii) Cutting of shrubs from roadway                                                                                                                                                                                                                          | No.  | -       | 0                     | 9.66       | 0.00               |
|                                                                                                                            |                 |           | (iii) Trimming of grass and weeds                                                                                                                                                                                                                            | Sqm  | -       | 2025                  | 3.22       | 6,521.00           |
| 13                                                                                                                         | OM 501          | 15.9      | <b>Sign maintenance</b><br>Sign repair,re-erection,support replacement and/or maintenance cleaning.                                                                                                                                                          | Km   | -       | 1.500                 | 1,382.29   | 2,073.00           |
| 15                                                                                                                         | OM 503          | 15.11     | Maintenance of 200 m and km stones                                                                                                                                                                                                                           | Km   | -       | 1.500                 | 873.56     | 1,310.00           |
|                                                                                                                            |                 |           | <b>Estimate For First Year Maintenance Work</b>                                                                                                                                                                                                              |      |         |                       | <b>Rs.</b> | <b>1,77,721.00</b> |

| DETAILED ESTIMATE FOR 4 YEAR ORDINARY MAINTENANCE                                                                          |                 |           |                                                                                                                                                                                                                                                                                                                                                                                                       |      |         |                       |            |              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |                 |           |                                                                                                                                                                                                                                                                                                                                                                                                       |      |         |                       |            |              |
| Sl. No.                                                                                                                    | OM No.          | SOR No.   | Description of Items                                                                                                                                                                                                                                                                                                                                                                                  | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.) |
| Sl. No.                                                                                                                    | OM No.          | SOR No.   | Description of Items                                                                                                                                                                                                                                                                                                                                                                                  | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.) |
| 1                                                                                                                          | OM 101 & OM 105 | 15.3(ii)  | <b>Pot hole patching-</b><br>Treatment of isolated failed pavement areas in traffic lanes using appropriate materials to repair the defect and restore the riding surface to a smooth condition and<br><b>Edge Repair -</b><br>Repair of broken edge of seal to line and level to maintain nominal sealed width. with 20 mm Premix carpet with seal coat Type B<br>(Qty=Lf*Br* $\alpha_1$ * $\beta$ ) | Sqm  | 1.0%    | 42.188                | 849.71     | 35,847.00    |
| 2                                                                                                                          | OM 102          | 15.3 (i)  | <b>Surface Depression and Rut Patching</b><br>Application of a levelling course of bituminous materials to depressed or rutted areas of pavement Repair of Pot holes filled with 75 mm BM X 1.25<br>(Qty=Lf*0.15*0.075* $\alpha_1$ * $\beta$ )                                                                                                                                                        | Cum  | 1.0%    | 0.127                 | 12,045.98  | 1,525.00     |
| 3                                                                                                                          | OM 103          | RCD 10.6  | <b>Crack Sealing</b><br>Filling of cracks and joints,excluding "crocodile" cracking using liquid bituminous sealents in accordance with monthly works program<br>(Qty=L <sub>f</sub>                                                                                                                                                                                                                  | M    | -       | 900                   | 4.17       | 3,753.00     |
| 4                                                                                                                          | OM 104          | 15.3(iii) | <b>Surface Treatmentt</b><br>Application of bituminous surface materials and cover aggregate ares of pavement with:-<br>(a) Loss of aggregate(surface ravelled)<br>(b) bleeding and flushing; or<br>(c) Laminated asphalt surface.<br>Patch repair over bituminous surface with 20 mm Premix carpet with seal coat Type B<br>(Qty=Lf*Br* $\alpha_1$ * $\beta$ )                                       | Sqm  | 1.0%    | 42.188                | 870.55     | 36,726.00    |
| 5                                                                                                                          | OM 106          | 15.3 (i)  | <b>Digout Repair</b><br>Treatment of isolated failed pavement areas>0.25m <sup>3</sup> by replacemnet with new material or improvement of existing material,including reinstatement of road surface.<br>Repair of Pot holes filled with 75 mm BM X 1.25<br>(Qty=Lf*Br* $\alpha_1$ *0.075* $\beta$ )                                                                                                   | Cum  | 0.50%   | 1.582                 | 12,045.98  | 19,057.00    |
| 6                                                                                                                          | OM 107          | 15.3 (ii) | <b>Repair of concrete pavement</b><br>Repair isolated areas of damaged concrete pavement <0.25m <sup>2</sup> patching with 20 mm thick premix carpet with seal coat Type B<br>seal coat Type B<br>(Qty=Lc*Br* $\alpha_1$ * $\beta$ )                                                                                                                                                                  | Sqm  | 1.0%    | 28.125                | 849.71     | 23,898.00    |

| DETAILED ESTIMATE FOR 4 YEAR ORDINARY MAINTENANCE                                                                          |                 |           |                                                                                                                                                                                                                                                              |      |         |                       |            |              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |                 |           |                                                                                                                                                                                                                                                              |      |         |                       |            |              |
| Sl. No.                                                                                                                    | OM No.          | SOR No.   | Description of Items                                                                                                                                                                                                                                         | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.) |
| 7                                                                                                                          |                 | RCD 10.10 | <b>Reapir of old joint selant</b><br>Removal of existing sealant and re sealing of construction,longitudial or expension joint in concrete pavement with fresh sealant materiaial<br>$Qty=(L_c/4)*B_r$                                                       | M    | -       | 562.500               | 45.86      | 25,796.00    |
| 8                                                                                                                          | OM 201          | 15.2      | <b>Unsealed Shoulder Repair</b><br>Making up the irregularities/loss material on shoulder to design level/profit/<br>Making up of Berms/shoulder, stripping excess soil from the shoulder surfaces to achieve level etc.<br>$(Qty=L_f*B_s*\alpha_2*\beta)*2$ | Sqm  | 16.0%   | 405.000               | 67.34      | 27,273.00    |
| 9                                                                                                                          | OM 202          | 15.1      | <b>Embankment Repairs</b><br>Restoration of Raincuts in the embankment and shoulder/Berms with soil.moorumetc<br>$(Qty=L_f*B_s*0.3*\alpha_3) X \beta ) *2$                                                                                                   | Cum  | 9.6%    | 72.900                | 459.70     | 33,512.00    |
| 10                                                                                                                         | OM 301          | 15.6      | <b>Surface Drain Cleaning</b><br>Cleaning of channels,including kerb and channel,and reshaping earthen drain,including culvert inlet and outlet drains,to maintain flow of water and protect road and road side from scour.                                  | M    | -       | 0                     | 3.87       | 0.00         |
| 11                                                                                                                         | OM 302 & OM 303 |           | <b>Culvert Cleaning and Culvert Repair</b>                                                                                                                                                                                                                   |      | -       |                       |            |              |
|                                                                                                                            |                 | 15.7 (i)  | Maintenance of C/D Works (Hume Pipe Culvert)                                                                                                                                                                                                                 | No.  | -       | 1                     | 1,515.71   | 1,516.00     |
|                                                                                                                            |                 | 15.7 (ii) | Maintenance of C/D Works (Slab Culvert)                                                                                                                                                                                                                      | No.  | -       | 0                     | 3,070.58   | 0.00         |
|                                                                                                                            |                 | 15.13     | Painting of parapet walls of CD work                                                                                                                                                                                                                         | Sqm  | -       | 0                     | 128.82     | 0.00         |

| DETAILED ESTIMATE FOR 4 YEAR ORDINARY MAINTENANCE                                                                          |        |                         |                                                                                                                                                                                                                                                                    |      |         |                       |            |                    |
|----------------------------------------------------------------------------------------------------------------------------|--------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |        |                         |                                                                                                                                                                                                                                                                    |      |         |                       |            |                    |
| Sl. No.                                                                                                                    | OM No. | SOR No.                 | Description of Items                                                                                                                                                                                                                                               | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.)       |
| 12                                                                                                                         | OM 401 | 15.12                   | <b>Tree and Shrub management</b><br>Cutting of branches of trees,shrubs and trimming of glass and weeds from the Roadway or within the Road land.                                                                                                                  |      | -       |                       |            |                    |
|                                                                                                                            |        |                         | (I)Cutting of branches of trees and shrubs                                                                                                                                                                                                                         | No.  |         | 1                     | 157.21     | 157.00             |
|                                                                                                                            |        |                         | (ii) Cutting of shrubs from roadway                                                                                                                                                                                                                                | No.  |         | 0                     | 9.66       | 0.00               |
|                                                                                                                            |        |                         | (iii) Trimming of grass and weeds                                                                                                                                                                                                                                  | Sqm  |         | 2025                  | 3.22       | 6,521.00           |
| 13                                                                                                                         | OM 501 | 15.9                    | <b>Sign maintenance</b><br>Sign repair,re-erection,support replacement and/or maintenance cleaning.                                                                                                                                                                | Km   |         | 1.500                 | 1,382.29   | 2,073.00           |
| 15                                                                                                                         | OM 503 | 15.11                   | Maintenance of 200 m and km stones                                                                                                                                                                                                                                 | Km   |         | 1.500                 | 873.56     | 1,310.00           |
| 16                                                                                                                         | OM 504 | RCD 8.13                | Road marking<br>(Qty=Lf*0.1*2)                                                                                                                                                                                                                                     | Sqm  |         | 0                     | 801.65     | 0.00               |
| 17                                                                                                                         | New    | Ref. to MoRTH Spec. 307 | Maintenance of Already Planted Trees for additional four Years-Maintenance of trees by the road side (Avenue trees) by mixing the soil with decayed farm yard/sludge manure, watering, fixing the tree guard and maintaining the plants for additional four years. | Each | -       | 0                     | 1013.46    | 0.00               |
|                                                                                                                            |        |                         | <b>Estimate For Second Year Maintenance Work</b>                                                                                                                                                                                                                   |      |         |                       | <b>Rs.</b> | <b>2,18,964.00</b> |

| Sl. No. | OM No.          | SOR No.  | Description of Items                                                                                                                                                                                                                                                                                                                                                                                  | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.) |
|---------|-----------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------|
| 1       | OM 101 & OM 105 | 15.3(ii) | <b>Pot hole patching-</b><br>Treatmnet of isolated failed pavement areas in traffic lanes using appropriate materials to repair the defect and restore the riding surface to a smooth condition and<br><b>Edge Repair -</b><br>Repair of broken edge of seal to line and level to maintain nominal sealed width. with 20 mm Premix carpet with seal coat Type B<br>(Qty=Lf*Br* $\alpha_1$ * $\beta$ ) | Sqm  | 1.5%    | 63.281                | 849.71     | 53,771.00    |
| 2       | OM 102          | 15.3 (i) | <b>Surface Depression and Rut Patching</b><br>Application of a levelling course of bituminous materials to depressed or rutted areas of pavement Repair of Pot holes filled with 75 mm BM X 1.25<br>(Qty=Lf*0.15*0.075* $\alpha_1$ * $\beta$ )                                                                                                                                                        | Cum  | 1.5%    | 0.190                 | 12,045.98  | 2,287.00     |

| DETAILED ESTIMATE FOR 4 YEAR ORDINARY MAINTENANCE                                                                          |        |           |                                                                                                                                                                                                                                                                                                                                                                                |      |         |                       |            |              |
|----------------------------------------------------------------------------------------------------------------------------|--------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |        |           |                                                                                                                                                                                                                                                                                                                                                                                |      |         |                       |            |              |
| Sl. No.                                                                                                                    | OM No. | SOR No.   | Description of Items                                                                                                                                                                                                                                                                                                                                                           | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.) |
| 3                                                                                                                          | OM 103 | RCD 10.6  | <b>Crack Sealing</b><br>Filling of cracks and joints,excluding "crocodile" cracking using liquid bituminous sealents in accordance with monthly works program<br>(Qty= $L_f$ )                                                                                                                                                                                                 | M    | -       | 900                   | 4.17       | 3,753.00     |
| 4                                                                                                                          | OM 104 | 15.3(iii) | <b>Surface Treatmentt</b><br>Application of bituminous surface materials and cover aggregate ares of pavement with:-<br>(a) Loss of aggregate(surface ravelled)<br>(b) bleeding and flushing; or<br>(c) Laminated asphalt surface.<br>Patch repair over bituminous surface with 20 mm Premix carpet with seal coat Type B<br>(Qty= $L_f \cdot Br \cdot \alpha_1 \cdot \beta$ ) | Sqm  | 1.5%    | 63.281                | 870.55     | 55,089.00    |
| 5                                                                                                                          | OM 106 | 15.3 (i)  | <b>Digout Repair</b><br>Treatment of isolated failed pavement areas $>0.25m^3$ by replacemnet with new material or improvement of existing material,including reinstatement of road surface.<br>Repair of Pot holes filled with 75 mm BM X 1.25<br>(Qty= $L_f \cdot Br \cdot \alpha_1 \cdot 0.075 \cdot \beta$ )                                                               | Cum  | 0.5%    | 1.582                 | 12,045.98  | 19,057.00    |
| 6                                                                                                                          | OM 107 | 15.3 (ii) | <b>Repair of concrete pavement</b><br>Repair isolated areas of damaged concrete pavement $<0.25m^2$ patching with 20 mm thick premix carpet with seal coat Type B<br>seal coat Type B<br>(Qty= $L_c \cdot Br \cdot \alpha_1 \cdot \beta$ )                                                                                                                                     | Sqm  | 1.5%    | 42.188                | 849.71     | 35,847.00    |
| 7                                                                                                                          |        | RCD 10.10 | <b>Reapir of old joint selant</b><br>Removal of existing sealant and re sealing of construction,longitudial or expension joint in concrete pavement with fresh sealant materiaal<br>Qty= $(L_c/4) \cdot B_r$                                                                                                                                                                   | M    | -       | 562.500               | 45.86      | 25,796.00    |
| 8                                                                                                                          | OM 201 | 15.2      | <b>Unsealed Shoulder Repair</b><br>Making up the irregularities/loss material on shoulder to design level/profit/<br>Making up of Berms/shoulder, stripping excess soil from the shoulder surfaces to achieve level etc.<br>(Qty= $L_f \cdot Bs \cdot \alpha_2 \cdot \beta$ )*2                                                                                                | Sqm  | 14.0%   | 354.375               | 67.34      | 23,864.00    |
| 9                                                                                                                          | OM 202 | 15.1      | <b>Embankment Repairs</b><br>Restoration of Raincuts in the embankment and shoulder/Berms with soil.moorumetc<br>(Qty= $L_f \cdot Bs \cdot 0.3 \cdot \alpha_3 \cdot \beta$ ) *2                                                                                                                                                                                                | Cum  | 8.4%    | 63.788                | 459.70     | 29,323.00    |

| DETAILED ESTIMATE FOR 4 YEAR ORDINARY MAINTENANCE                                                                          |                 |                         |                                                                                                                                                                                                                                                                    |      |         |                       |            |                    |
|----------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |                 |                         |                                                                                                                                                                                                                                                                    |      |         |                       |            |                    |
| Sl. No.                                                                                                                    | OM No.          | SOR No.                 | Description of Items                                                                                                                                                                                                                                               | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.)       |
| 10                                                                                                                         | OM 301          | 15.6                    | <b>Surface Drain Cleaning</b><br>Cleaning of channels,including kerb and channel,and reshaping earthen drain,including culvert inlet and outlet drains,to maintain flow of water and protect road and road side from scour.                                        | M    | -       | 0                     | 3.87       | 0.00               |
| 11                                                                                                                         | OM 302 & OM 303 |                         | <b>Culvert Cleaning and Culvert Repair</b>                                                                                                                                                                                                                         |      | -       |                       |            |                    |
|                                                                                                                            |                 | 15.7 (i)                | Maintenance of C/D Works (Hume Pipe Culvert)                                                                                                                                                                                                                       | No.  | -       | 1                     | 1,515.71   | 1,516.00           |
|                                                                                                                            |                 | 15.7 (ii)               | Maintenance of C/D Works (Slab Culvert)                                                                                                                                                                                                                            | No.  | -       | 0                     | 3,070.58   | 0.00               |
|                                                                                                                            |                 | 15.13                   | Painting of parapet walls of CD work                                                                                                                                                                                                                               | Sqm  | -       | 0                     | 128.82     | 0.00               |
| 12                                                                                                                         | OM 401          | 15.12                   | <b>Tree and Shrub management</b><br>Cutting of branches of trees,shrubs and trimming of grass and weeds from the Roadway or within the Road land.                                                                                                                  |      |         |                       |            |                    |
|                                                                                                                            |                 |                         | (I)Cutting of branches of trees and shrubs                                                                                                                                                                                                                         | No.  | -       | 1                     | 157.21     | 157.00             |
|                                                                                                                            |                 |                         | (ii) Cutting of shrubs from roadway                                                                                                                                                                                                                                | No.  | -       | 0                     | 9.66       | 0.00               |
|                                                                                                                            |                 |                         | (iii) Trimming of grass and weeds                                                                                                                                                                                                                                  | Sqm  | -       | 2025                  | 3.22       | 6,521.00           |
| 13                                                                                                                         | OM 501          | 15.9                    | <b>Sign maintenance</b><br>Sign repair,re-erection,support replacement and/or maintenance cleaning.                                                                                                                                                                | Km   | -       | 1.500                 | 1,382.29   | 2,073.00           |
| 15                                                                                                                         | OM 503          | 15.11                   | Maintenance of 200 m and km stones                                                                                                                                                                                                                                 | Km   | -       | 1.500                 | 873.56     | 1,310.00           |
| 17                                                                                                                         | New             | Ref. to MoRTH Spec. 307 | Maintenance of Already Planted Trees for additional four Years-Maintenance of trees by the road side (Avenue trees) by mixing the soil with decayed farm yard/sludge manure, watering, fixing the tree guard and maintaining the plants for additional four years. | Each | -       | 0.00                  | 874.41     | 0.00               |
|                                                                                                                            |                 |                         | <b>Estimate For Third Year Maintenance Work</b>                                                                                                                                                                                                                    |      |         |                       | <b>Rs.</b> | <b>2,60,364.00</b> |



| DETAILED ESTIMATE FOR 4 YEAR ORDINARY MAINTENANCE                                                                          |                 |           |                                                                                                                                                                                                                                                                                                                                                                                                       |      |         |                       |            |              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |                 |           |                                                                                                                                                                                                                                                                                                                                                                                                       |      |         |                       |            |              |
| Sl. No.                                                                                                                    | OM No.          | SOR No.   | Description of Items                                                                                                                                                                                                                                                                                                                                                                                  | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.) |
| 1                                                                                                                          | OM 101 & OM 105 | 15.3(ii)  | <b>Pot hole patching-</b><br>Treatmnet of isolated failed pavement areas in traffic lanes using appropriate materials to repair the defect and restore the riding surface to a smooth condition and<br><b>Edge Repair -</b><br>Repair of broken edge of seal to line and level to maintain nominal sealed width. with 20 mm Premix carpet with seal coat Type B<br>(Qty=Lf*Br* $\alpha_1$ * $\beta$ ) | Sqm  | 2.0%    | 84.375                | 849.71     | 71,694.00    |
| 2                                                                                                                          | OM 102          | 15.3 (i)  | <b>Surface Depression and Rut Patching</b><br>Application of a levelling course of bituminous materials to depressed or rutted areas of pavement Repair of Pot holes filled with 75 mm BM X 1.25<br>(Qty=Lf*0.15*0.075* $\alpha_1$ * $\beta$ )                                                                                                                                                        | Cum  | 2.0%    | 0.253                 | 12,045.98  | 3,049.00     |
| 3                                                                                                                          | OM 103          | RCD 10.6  | <b>Crack Sealing</b><br>Filling of cracks and joints,excluding "crocodile" cracking using liquid bituminous sealents in accordance with monthly works program<br>(Qty=L <sub>f</sub>                                                                                                                                                                                                                  | M    | -       | 900                   | 4.17       | 3,753.00     |
| 4                                                                                                                          | OM 104          | 15.3(iii) | <b>Surface Treatmentt</b><br>Application of bituminous surface materials and cover aggregate ares of pavement with:-<br>(a) Loss of aggregate(surface ravelled)<br>(b) bleeding and flushing; or<br>(c) Laminated asphalt surface.<br>Patch repair over bituminous surface with 20 mm Premix carpet with seal coat Type B<br>(Qty=Lf*Br* $\alpha_1$ * $\beta$ )                                       | Sqm  | 2.0%    | 84.375                | 870.55     | 73,453.00    |
| 5                                                                                                                          | OM 106          | 15.3 (i)  | <b>Digout Repair</b><br>Treatment of isolated failed pavement areas>0.25m <sup>3</sup> by replacemnet with new material or improvement of existing material,including reinstatement of road surface.<br>Repair of Pot holes filled with 75 mm BM X 1.25<br>(Qty=Lf*Br* $\alpha_1$ *0.075* $\beta$ )                                                                                                   | Cum  | 0.5%    | 1.582                 | 12,045.98  | 19,057.00    |

| DETAILED ESTIMATE FOR 4 YEAR ORDINARY MAINTENANCE                                                                          |                 |           |                                                                                                                                                                                                                                                        |      |         |                       |            |              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |                 |           |                                                                                                                                                                                                                                                        |      |         |                       |            |              |
| Sl. No.                                                                                                                    | OM No.          | SOR No.   | Description of Items                                                                                                                                                                                                                                   | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.) |
| 6                                                                                                                          | OM 107          | 15.3 (ii) | <b>Repair of concrete pavement</b><br>Repair isolated areas of damaged concrete pavement <0.25m <sup>2</sup> patching with 20 mm thick premix carpet with seal coat Type B seal coat Type B<br>(Qty=Lc*Br*α <sub>1</sub> * β)                          | Sqm  | 2.0%    | 56.250                | 849.71     | 47,796.00    |
| 7                                                                                                                          |                 | RCD 10.10 | <b>Reapir of old joint selant</b><br>Removal of existing sealant and re sealing of construction,longitudial or expansion joint in concrete pavement with fresh sealant materiaial<br>Qty=(Lc/4)*B <sub>r</sub>                                         | M    | -       | 562.500               | 45.86      | 25,796.00    |
| 8                                                                                                                          | OM 201          | 15.2      | <b>Unsealed Shoulder Repair</b><br>Making up the irregularities/loss material on shoulder to design level/profit/ Making up of Berms/shoulder, stripping excess soil from the shoulder surfaces to achieve level etc. (Qty=Lf*Bs*α <sub>2</sub> * β)*2 | Sqm  | 12.0%   | 303.750               | 67.34      | 20,455.00    |
| 9                                                                                                                          | OM 202          | 15.1      | <b>Embankment Repairs</b><br>Restoration of Raincuts in the embankment and shoulder/Berms with soil.moorumetc<br>(Qty=L <sub>r</sub> *Bs*0.3*α <sub>3</sub> ) X β ) *2                                                                                 | Cum  | 7.2%    | 54.675                | 459.70     | 25,134.00    |
| 10                                                                                                                         | OM 301          | 15.6      | <b>Surface Drain Cleaning</b><br>Cleaning of channels,including kerb and channel,and reshaping earthen drain,including culvert inlet and outlet drains,to maintain flow of water and protect road and road side from scour.                            | M    | -       | 0                     | 3.87       | 0.00         |
| 11                                                                                                                         | OM 302 & OM 303 |           | <b>Culvert Cleaning and Culvert Repair</b>                                                                                                                                                                                                             |      |         |                       |            |              |
|                                                                                                                            |                 | 15.7 (i)  | Maintenance of C/D Works (Hume Pipe Culvert)                                                                                                                                                                                                           | No.  | -       | 1                     | 1,515.71   | 1,516.00     |
|                                                                                                                            |                 | 15.7 (ii) | Maintenance of C/D Works (Slab Culvert)                                                                                                                                                                                                                | No.  | -       | 0                     | 3,070.58   | 0.00         |
|                                                                                                                            |                 | 15.13     | Painting of parapet walls of CD work                                                                                                                                                                                                                   | Sqm  |         | 0                     | 128.82     | 0.00         |
| 12                                                                                                                         | OM 401          | 15.12     | <b>Tree and Shrub management</b><br>Cutting of branches of trees,shrubs and trimming of glass and weeds from the Roadway or within the Road land.                                                                                                      |      |         |                       |            |              |
|                                                                                                                            |                 |           | (I)Cutting of branches of trees and shrubs                                                                                                                                                                                                             | No.  | -       | 1                     | 157.21     | 157.00       |
|                                                                                                                            |                 |           | (ii) Cutting of shrubs from roadway                                                                                                                                                                                                                    | No.  | -       | 0                     | 9.66       | 0.00         |
|                                                                                                                            |                 |           | (iii) Trimming of grass and weeds                                                                                                                                                                                                                      | Sqm  | -       | 2025                  | 3.22       | 6,521.00     |
| 13                                                                                                                         | OM 501          | 15.9      | <b>Sign maintenance</b><br>Sign repair,re-erection,support replacement and/or maintenance cleaning.                                                                                                                                                    | Km   | -       | 1.500                 | 1,382.29   | 2,073.00     |
| 15                                                                                                                         | OM 503          | 15.11     | Maintenance of 200 m and km stones                                                                                                                                                                                                                     | Km   | -       | 1.500                 | 873.56     | 1,310.00     |
| 16                                                                                                                         | OM 504          | RCD 8.13  | Road marking<br>(Qty=Lf*0.1*2)                                                                                                                                                                                                                         | Sqm  | -       | 0                     | 801.65     | 0.00         |

| DETAILED ESTIMATE FOR 4 YEAR ORDINARY MAINTENANCE                                                                          |        |         |                                           |      |         |                       |            |              |
|----------------------------------------------------------------------------------------------------------------------------|--------|---------|-------------------------------------------|------|---------|-----------------------|------------|--------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |        |         |                                           |      |         |                       |            |              |
| Sl. No.                                                                                                                    | OM No. | SOR No. | Description of Items                      | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.) |
|                                                                                                                            |        |         | Estimate For Fourth Year Maintenance Work |      |         |                       | Rs.        | 3,01,764.00  |

| <b>MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)</b> |               |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |      |        |       |       |                    |                                        |                     |
|--------------------------------------------------------|---------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|--------|-------|-------|--------------------|----------------------------------------|---------------------|
| <b>ESTIMATE FOR RENEWABLE COAT</b>                     |               |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |      |        |       |       |                    |                                        |                     |
| <b>1</b>                                               | <b>5.2</b>    | <b>503</b>     | <b>Tack Coat</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |     |      |        |       |       |                    |                                        |                     |
|                                                        |               | <b>( III )</b> | Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared granular surface treated with Primer and cleaned with hydriloc broom as per technical specification clause 503.                                                                                                                                                                                                                                                                                                           |     |      |        |       |       |                    |                                        |                     |
|                                                        |               |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Sqm | 1.00 | 900.00 | 3.75  |       | 3,375.00           |                                        |                     |
|                                                        |               |                | <b>Add for extra widening on curve (2%)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Sqm |      |        |       |       | 67.50              |                                        |                     |
|                                                        |               |                | <b>Net Area</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Sqm |      |        |       |       | 3,442.50           | 18.87                                  | 64,960.00           |
| <b>2</b>                                               | <b>5.7</b>    | <b>508</b>     | <b>Semi-Dense Bituminous Concrete</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |     |      |        |       |       |                    |                                        |                     |
|                                                        | <b>( II )</b> | <b>RCD</b>     | Providing and laying semi dense bituminous concrete with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.5 to 5 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 508 complete in all respects. |     |      |        |       |       |                    |                                        |                     |
|                                                        |               |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Cum | 1.00 | 900.00 | 3.75  | 0.025 | 84.38              |                                        |                     |
|                                                        |               |                | <b>Add For Extra Widening On Curve (2%)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Cum |      |        |       |       | 1.69               |                                        |                     |
|                                                        |               |                | <b>Net Area</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Cum |      |        |       |       | 86.06              | 11,215.27                              | 9,65,186.00         |
| <b>3</b>                                               | <b>8.13</b>   | <b>803</b>     | <b>Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |      |        |       |       |                    |                                        |                     |
|                                                        | <b>RCD</b>    |                | Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes.                                                                                                                                                                                                                                                                              |     |      |        |       |       |                    |                                        |                     |
|                                                        |               |                | <b>At Both Edge</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Sqm | 2    | 900.00 | 0.100 |       | 180.00             | 801.65                                 | 1,44,297.00         |
| <b>4</b>                                               | <b>8.13</b>   | <b>803</b>     | <b>Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Concrete Surface</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |      |        |       |       |                    |                                        |                     |
|                                                        | <b>RCD</b>    |                | Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes.                                                                                                                                                                                                                                                                              |     |      |        |       |       |                    |                                        |                     |
|                                                        |               |                | <b>At Both Edge</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Sqm | 2    | 600.00 | 0.100 |       | 120.00             | 902.11                                 | 1,08,253.00         |
|                                                        |               |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |      |        |       |       | <b>SUB TOTAL =</b> |                                        | <b>12,82,696.00</b> |
|                                                        |               |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |      |        |       |       |                    | <b>TOTAL COST OF PAVEMENT IN RS. =</b> | <b>12,82,696.00</b> |

Junior Engineer

Assistant Engineer

Executive Engineer

## SUMMARY OF LAST TWO YEARS OPERATION & MANAGEMENT (O&M) COSTS.

NAME OF ROAD:- Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

Survey ID 54344

DISTRICT:- Gaya

BLOCK:- Gurua

LENGTH OG ROAD (KM):- 1.500

| Particulars                                     | Amount in Rs.      | Amount in (Lakh) |
|-------------------------------------------------|--------------------|------------------|
| 6TH Year Maintenance cost                       | 1,47,328.00        | 1.473            |
| 7TH Year Maintenance cost                       | 1,96,169.00        | 1.962            |
| <b>Total Cost of Ist Four years Maintenance</b> | <b>3,43,497.00</b> | <b>3.435</b>     |
| <b>Total Cost</b>                               | <b>3,43,497.00</b> | <b>3.435</b>     |

### MAINTENANCE FOR 2 YEARS MAINTENANCE WORKS

|                                       |       |   |
|---------------------------------------|-------|---|
| Total Length of Road(L) =             | 1500  | m |
| Length of the Flexible Pavement(Lf) = | 900   | m |
| Length of the Rigid Pavement(Lc) =    | 600   | m |
| Width of the Road (Br) =              | 3.750 | m |
| Width Of the Shoulder (Bs) =          | 1.125 | m |
| No. Of Hume Pipe Culvert =            | 1     |   |
| No. Of Slab Culvert =                 | 0     |   |
| No. Of Box Culvert =                  | 0     |   |
| Length of Drain=                      | 0     | m |
| No. of guard stone                    | 0     |   |

JE  
RWD

AE  
RWD

EE  
RWD

### Multiplying factor for traffic intensity( $\beta$ )

| Low ( $\leq 15$ CVD) | Medium (15 to 45 CVD) | High ( $> 45$ CVD) |
|----------------------|-----------------------|--------------------|
| 1.0                  | 1.25                  | 1.5                |

### Multiplying factor for making for pothole( $\alpha_1$ )

| Rainfall |        |          |       |
|----------|--------|----------|-------|
|          | High % | Medium % | Low % |
| VI YEAR  | 5.0    | 0.5      | 2.0   |
| VII YEAR |        | 1.0      |       |
|          |        |          |       |
|          |        |          |       |
|          |        |          |       |

### Multiplying factor for making for berms( $\alpha_2$ )

| Rainfall |        |          |       |
|----------|--------|----------|-------|
|          | High % | Medium % | Low % |
| VI YEAR  | 27.0   | 10.0     | 13.5  |
| VII YEAR |        | 10.0     |       |
|          |        |          |       |
|          |        |          |       |
|          |        |          |       |

### Multiplying factor for making for rain cut( $\alpha_3$ )

| Rainfall |        |          |       |
|----------|--------|----------|-------|
|          | High % | Medium % | Low % |
| VI YEAR  | 13.5   | 6.0      | 9.0   |
| VII YEAR |        | 6.0      |       |
|          |        |          |       |
|          |        |          |       |
|          |        |          |       |

| DETAILED ESTIMATE FOR 2 YEAR (O&M)                                                                                         |                 |           |                                                                                                                                                                                                                                                                                                                                                                                |      |         |                       |            |              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |                 |           |                                                                                                                                                                                                                                                                                                                                                                                |      |         |                       |            |              |
| Sl. No.                                                                                                                    | OM No.          | SOR No.   | Description of Items                                                                                                                                                                                                                                                                                                                                                           | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.) |
| 1                                                                                                                          | OM 101 & OM 105 | 15.3(ii)  | <b>Pot hole patching-</b><br>Treatment of isolated failed pavement areas in traffic lanes using appropriate materials to repair the defect and restore the riding surface to a smooth condition and<br><b>Edge Repair -</b><br>Repair of broken edge of seal to line and level to maintain nominal sealed width. with Mix Seal Surfacing<br>(Qty=Lf*Br* $\alpha_1$ * $\beta$ ) | Sqm  | 0.5%    | 21.094                | 849.71     | 17,924.00    |
| 2                                                                                                                          | OM 102          | 15.3 (i)  | <b>Surface Depression and Rut Patching</b><br>Application of a levelling course of bituminous materials to depressed or rutted areas of pavement Repair of Pot holes filled with 75 mm BM X 1.25<br>(Qty=Lf*0.15*0.075* $\alpha_1$ * $\beta$ )                                                                                                                                 | Cum  | 0.5%    | 0.063                 | 12,045.98  | 762.00       |
| 3                                                                                                                          | OM 103          | RCD 10.6  | <b>Crack Sealing</b><br>Filling of cracks and joints,excluding "crocodile" cracking using liquid bituminous sealents in accordance with monthly works program<br>(Qty=L <sub>f</sub>                                                                                                                                                                                           | M    | -       | 900                   | 4.17       | 3,753.00     |
| 4                                                                                                                          | OM 104          | 15.3(iii) | <b>Surface Treatmentt</b><br>Application of bituminous surface materials and cover aggregate ares of pavement with:-<br>(a) Loss of aggregate(surface ravelled)<br>(b) bleeding and flushing; or<br>(c) Laminated asphalt surface.<br>Patch repair over bituminous surface with 20 mm Premix carpet with seal coat Type B<br>(Qty=Lf*Br* $\alpha_1$ * $\beta$ )                | Sqm  | 0.5%    | 21.094                | 870.55     | 18,363.00    |
| 5                                                                                                                          | OM 106          | 15.3 (i)  | <b>Digout Repair</b><br>Treatment of isolated failed pavement areas>0.25m <sup>3</sup> by replacemnet with new material or improvement of existing material,including reinstatement of road surface.<br>Repair of Pot holes filled with 75 mm BM X 1.25<br>(Qty=Lf*Br* $\alpha_1$ *0.075* $\beta$ )                                                                            | Cum  | 0.5%    | 1.582                 | 12,045.98  | 19,057.00    |
| 6                                                                                                                          | OM 107          | 15.3 (ii) | <b>Repair of concrete pavement</b><br>Repair isolated areas of damaged concrete pavement <0.25m <sup>2</sup> patching with 20 mm thick premix carpet with seal coat Type B<br>seal coat Type B<br>(Qty=Lc*Br* $\alpha_1$ * $\beta$ )                                                                                                                                           | Sqm  | 0.5%    | 14.063                | 849.71     | 11,949.00    |

| DETAILED ESTIMATE FOR 2 YEAR (O&M)                                                                                         |                 |           |                                                                                                                                                                                                                                                              |      |         |                       |            |                    |
|----------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |                 |           |                                                                                                                                                                                                                                                              |      |         |                       |            |                    |
| Sl. No.                                                                                                                    | OM No.          | SOR No.   | Description of Items                                                                                                                                                                                                                                         | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.)       |
| 7                                                                                                                          |                 | RCD 10.10 | Reapir of old joint selant<br>Removal of existing sealant and re sealing of construction,longitudial or expension joint in concrete pavement with fresh sealant materiaial<br>$Qty=(Lc/4)*B_r$                                                               | M    | -       | 562.500               | 45.86      | 25,796.00          |
| 8                                                                                                                          | OM 201          | 15.2      | <b>Unsealed Shoulder Repair</b><br>Making up the irregularities/loss material on shoulder to design level/profit/<br>Making up of Berms/shoulder, stripping excess soil from the shoulder surfaces to achieve level etc.<br>$(Qty=L_f*B_s*\alpha_2*\beta)*2$ | Sqm  | 10.0%   | 253.125               | 67.34      | 17,045.00          |
| 9                                                                                                                          | OM 202          | 15.1      | <b>Embankment Repairs</b><br>Restoration of Raincuts in the embankment and shoulder/Berms with soil.moorumetc<br>$(Qty=L_f*B_s*0.3*\alpha_3)*\beta)*2$                                                                                                       | Cum  | 6.0%    | 45.563                | 459.70     | 20,945.00          |
| 10                                                                                                                         | OM 301          | 15.6      | <b>Surface Drain Cleaning</b><br>Cleaning of channels,including kerb and channel,and reshaping earthen drain,including culvert inlet and outlet drains,to maintain flow of water and protect road and road side from scour.                                  | M    | -       | 0                     | 3.87       | 0.00               |
| 11                                                                                                                         | OM 302 & OM 303 |           | <b>Culvert Cleaning and Culvert Repair</b>                                                                                                                                                                                                                   |      |         |                       |            |                    |
|                                                                                                                            |                 | 15.7 (i)  | Maintenance of C/D Works (Hume Pipe Culvert)                                                                                                                                                                                                                 | No.  | -       | 1                     | 1,515.71   | 1,516.00           |
|                                                                                                                            |                 | 15.7 (ii) | Maintenance of C/D Works (Slab Culvert)                                                                                                                                                                                                                      | No.  | -       | 0                     | 3,070.58   | 0.00               |
|                                                                                                                            |                 | 15.13     | Painting of parapet walls of CD work                                                                                                                                                                                                                         | Sqm  | -       | 0                     | 128.82     | 0.00               |
| 12                                                                                                                         | OM 401          | 15.12     | <b>Tree and Shrub management</b><br>Cutting of branches of trees,shrubs and trimming of glass and weeds from the Roadway or within the Road land.                                                                                                            |      |         |                       |            |                    |
|                                                                                                                            |                 |           | (I)Cutting of branches of trees and shrubs                                                                                                                                                                                                                   | No.  | -       | 2                     | 157.21     | 314.00             |
|                                                                                                                            |                 |           | (ii) Cutting of shrubs from roadway                                                                                                                                                                                                                          | No.  | -       | 0                     | 9.66       | 0.00               |
|                                                                                                                            |                 |           | (iii) Trimming of grass and weeds                                                                                                                                                                                                                            | Sqm  | -       | 2025                  | 3.22       | 6,521.00           |
| 13                                                                                                                         | OM 501          | 15.9      | <b>Sign maintenance</b><br>Sign repair,re-erection,support replacement and/or maintenance cleaning.                                                                                                                                                          | Km   | -       | 1.500                 | 1,382.29   | 2,073.00           |
| 15                                                                                                                         | OM 503          | 15.11     | Maintenance of 200 m and km stones                                                                                                                                                                                                                           | Km   | -       | 1.500                 | 873.56     | 1,310.00           |
|                                                                                                                            |                 |           | <b>Estimate For Sixth Year Maintenance Work</b>                                                                                                                                                                                                              |      |         |                       | <b>Rs.</b> | <b>1,47,328.00</b> |



| DETAILED ESTIMATE FOR 2 YEAR (O&M)                                                                                         |                 |           |                                                                                                                                                                                                                                                                                                                                                                                                       |      |         |                       |            |              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |                 |           |                                                                                                                                                                                                                                                                                                                                                                                                       |      |         |                       |            |              |
| Sl. No.                                                                                                                    | OM No.          | SOR No.   | Description of Items                                                                                                                                                                                                                                                                                                                                                                                  | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.) |
| Sl. No.                                                                                                                    | OM No.          | SOR No.   | Description of Items                                                                                                                                                                                                                                                                                                                                                                                  | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.) |
| 1                                                                                                                          | OM 101 & OM 105 | 15.3(ii)  | <b>Pot hole patching-</b><br>Treatment of isolated failed pavement areas in traffic lanes using appropriate materials to repair the defect and restore the riding surface to a smooth condition and<br><b>Edge Repair -</b><br>Repair of broken edge of seal to line and level to maintain nominal sealed width. with 20 mm Premix carpet with seal coat Type B<br>(Qty=Lf*Br* $\alpha_1$ * $\beta$ ) | Sqm  | 1.0%    | 42.188                | 849.71     | 35,847.00    |
| 2                                                                                                                          | OM 102          | 15.3 (i)  | <b>Surface Depression and Rut Patching</b><br>Application of a levelling course of bituminous materials to depressed or rutted areas of pavement Repair of Pot holes filled with 75 mm BM X 1.25<br>(Qty=Lf*0.15*0.075* $\alpha_1$ * $\beta$ )                                                                                                                                                        | Cum  | 1.0%    | 0.127                 | 12,045.98  | 1,525.00     |
| 3                                                                                                                          | OM 103          | RCD 10.6  | <b>Crack Sealing</b><br>Filling of cracks and joints,excluding "crocodile" cracking using liquid bituminous sealents in accordance with monthly works program<br>(Qty=L <sub>f</sub>                                                                                                                                                                                                                  | M    | -       | 900                   | 4.17       | 3,753.00     |
| 4                                                                                                                          | OM 104          | 15.3(iii) | <b>Surface Treatmentt</b><br>Application of bituminous surface materials and cover aggregate ares of pavement with:-<br>(a) Loss of aggregate(surface ravelled)<br>(b) bleeding and flushing; or<br>(c) Laminated asphalt surface.<br>Patch repair over bituminous surface with 20 mm Premix carpet with seal coat Type B<br>(Qty=Lf*Br* $\alpha_1$ * $\beta$ )                                       | Sqm  | 1.0%    | 42.188                | 870.55     | 36,726.00    |
| 5                                                                                                                          | OM 106          | 15.3 (i)  | <b>Digout Repair</b><br>Treatment of isolated failed pavement areas>0.25m <sup>3</sup> by replacemnet with new material or improvement of existing material,including reinstatement of road surface.<br>Repair of Pot holes filled with 75 mm BM X 1.25<br>(Qty=Lf*Br* $\alpha_1$ *0.075* $\beta$ )                                                                                                   | Cum  | 0.50%   | 1.582                 | 12,045.98  | 19,057.00    |
| 6                                                                                                                          | OM 107          | 15.3 (ii) | <b>Repair of concrete pavement</b><br>Repair isolated areas of damaged concrete pavement <0.25m <sup>2</sup> patching with 20 mm thick premix carpet with seal coat Type B<br>seal coat Type B<br>(Qty=Lc*Br* $\alpha_1$ * $\beta$ )                                                                                                                                                                  | Sqm  | 1.0%    | 28.125                | 849.71     | 23,898.00    |

| DETAILED ESTIMATE FOR 2 YEAR (O&M)                                                                                         |                 |           |                                                                                                                                                                                                                                                              |      |         |                       |            |              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |                 |           |                                                                                                                                                                                                                                                              |      |         |                       |            |              |
| Sl. No.                                                                                                                    | OM No.          | SOR No.   | Description of Items                                                                                                                                                                                                                                         | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.) |
| 7                                                                                                                          |                 | RCD 10.10 | <b>Repair of old joint selant</b><br>Removal of existing sealant and re sealing of construction,longitudial or expension joint in concrete pavement with fresh sealant materiaial<br>$Qty=(Lc/4)*B_r$                                                        | M    | -       | 562.500               | 45.86      | 25,796.00    |
| 8                                                                                                                          | OM 201          | 15.2      | <b>Unsealed Shoulder Repair</b><br>Making up the irregularities/loss material on shoulder to design level/profit/<br>Making up of Berms/shoulder, stripping excess soil from the shoulder surfaces to achieve level etc.<br>$(Qty=L_f*B_s*\alpha_2*\beta)*2$ | Sqm  | 10.0%   | 253.125               | 67.34      | 17,045.00    |
| 9                                                                                                                          | OM 202          | 15.1      | <b>Embankment Repairs</b><br>Restoration of Raincuts in the embankment and shoulder/Berms with soil.moorumetc<br>$(Qty=L_f*B_s*0.3*\alpha_3) \times \beta ) *2$                                                                                              | Cum  | 6.0%    | 45.563                | 459.70     | 20,945.00    |
| 10                                                                                                                         | OM 301          | 15.6      | <b>Surface Drain Cleaning</b><br>Cleaning of channels,including kerb and channel,and reshaping earthen drain,including culvert inlet and outlet drains,to maintain flow of water and protect road and road side from scour.                                  | M    | -       | 0                     | 3.87       | 0.00         |
| 11                                                                                                                         | OM 302 & OM 303 |           | <b>Culvert Cleaning and Culvert Repair</b>                                                                                                                                                                                                                   |      | -       |                       |            |              |
|                                                                                                                            |                 | 15.7 (i)  | Maintenance of C/D Works (Hume Pipe Culvert)                                                                                                                                                                                                                 | No.  | -       | 1                     | 1,515.71   | 1,516.00     |
|                                                                                                                            |                 | 15.7 (ii) | Maintenance of C/D Works (Slab Culvert)                                                                                                                                                                                                                      | No.  | -       | 0                     | 3,070.58   | 0.00         |
|                                                                                                                            |                 | 15.13     | Painting of parapet walls of CD work                                                                                                                                                                                                                         | Sqm  | -       | 0                     | 128.82     | 0.00         |

| DETAILED ESTIMATE FOR 2 YEAR (O&M)                                                                                         |        |         |                                                                                                                                                   |      |         |                       |            |                    |
|----------------------------------------------------------------------------------------------------------------------------|--------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|-----------------------|------------|--------------------|
| Multiplying Factor for Commercial Vehicle 15 to 45 per days = 1.25 {ref. – Annexure 14.4 operation Manual from Rural Road} |        |         |                                                                                                                                                   |      |         |                       |            |                    |
| Sl. No.                                                                                                                    | OM No. | SOR No. | Description of Items                                                                                                                              | Unit | % Taken | Yearly Estimated Qty. | Rate (Rs.) | Amount (Rs.)       |
| 12                                                                                                                         | OM 401 | 15.12   | <b>Tree and Shrub management</b><br>Cutting of branches of trees,shrubs and trimming of grass and weeds from the Roadway or within the Road land. |      | -       |                       |            |                    |
|                                                                                                                            |        |         | (I)Cutting of branches of trees and shrubs                                                                                                        | No.  |         | 1                     | 157.21     | 157.00             |
|                                                                                                                            |        |         | (ii) Cutting of shrubs from roadway                                                                                                               | No.  |         | 0                     | 9.66       | 0.00               |
|                                                                                                                            |        |         | (iii) Trimming of grass and weeds                                                                                                                 | Sqm  |         | 2025                  | 3.22       | 6,521.00           |
| 13                                                                                                                         | OM 501 | 15.9    | <b>Sign maintenance</b><br>Sign repair,re-erection,support replacement and/or maintenance cleaning.                                               | Km   |         | 1.500                 | 1,382.29   | 2,073.00           |
| 15                                                                                                                         | OM 503 | 15.11   | Maintenance of 200 m and km stones                                                                                                                | Km   |         | 1.500                 | 873.56     | 1,310.00           |
|                                                                                                                            |        |         | <b>Estimate For Seventh Year Maintenance Work</b>                                                                                                 |      |         |                       | <b>Rs.</b> | <b>1,96,169.00</b> |

# Analysis of Rates for (Seigniorage Fee )

| Name of Road : Rcd Road Baijudham Dharmkata TO Primary School Phulwariya |             |              |                                                                                                                                                                                                                                                                                                                                                |            | BLOCK : Gurua |       |              | LENGTH : 1.500 KM            |                       |                          |
|--------------------------------------------------------------------------|-------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------|-------|--------------|------------------------------|-----------------------|--------------------------|
| Sl. No.                                                                  | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                    | Unit       | Quantity      | Rate  | Amount in Rs | Total material Qty. required | Total Material Amount | Add 10 % Seigniorage Fee |
|                                                                          |             |              | <b>EARTHWORK</b>                                                                                                                                                                                                                                                                                                                               |            |               |       |              |                              |                       |                          |
| 1                                                                        | 3.4         | 301.5        | <b>Construction of Embankment with Material Obtained from Borrow Pits</b>                                                                                                                                                                                                                                                                      |            |               |       |              |                              |                       |                          |
|                                                                          |             | ( A )        | 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 <u>lead upto 1000 m</u> as per Technical Specification Clause 301.5                                         |            |               |       |              |                              |                       |                          |
|                                                                          |             |              | Unit = cum                                                                                                                                                                                                                                                                                                                                     |            |               |       |              |                              |                       |                          |
|                                                                          |             |              | Taking output = 100 cum                                                                                                                                                                                                                                                                                                                        |            |               |       |              |                              |                       |                          |
|                                                                          |             | a)           | <b>Material</b>                                                                                                                                                                                                                                                                                                                                |            |               |       |              |                              |                       |                          |
|                                                                          |             |              | Compensation for earth taken from private land                                                                                                                                                                                                                                                                                                 | cum        | 100.00        | 35.25 | 3525.00      |                              |                       |                          |
|                                                                          |             |              | Cost for 100 cum = a                                                                                                                                                                                                                                                                                                                           |            |               |       | 3525.00      |                              |                       |                          |
|                                                                          |             |              | Rate per cum = (a)/100=                                                                                                                                                                                                                                                                                                                        |            |               |       | 35.25        |                              |                       |                          |
| <b>Total Cost</b>                                                        |             |              |                                                                                                                                                                                                                                                                                                                                                | <b>cum</b> |               |       | <b>35.25</b> | <b>48.55</b>                 | <b>1711.39</b>        | <b>171.139</b>           |
| 2                                                                        | 3.4 (II)    | 301.5        | <b>Construction of Embankment with Material Obtained from Borrow Pits</b>                                                                                                                                                                                                                                                                      |            |               |       |              |                              |                       |                          |
|                                                                          | B           | (ii)         | 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 100 m as per Technical Specification Clause 301.5                                                 |            |               |       |              |                              |                       |                          |
|                                                                          |             |              | Unit = cum                                                                                                                                                                                                                                                                                                                                     |            |               |       |              |                              |                       |                          |
|                                                                          |             |              | Taking output = 100 cum                                                                                                                                                                                                                                                                                                                        |            |               |       |              |                              |                       |                          |
|                                                                          |             | a)           | <b>Material</b>                                                                                                                                                                                                                                                                                                                                |            |               |       |              |                              |                       |                          |
|                                                                          |             |              | Compensation for earth taken from private land                                                                                                                                                                                                                                                                                                 | cum        | 100.00        | 35.25 | 3525.00      |                              |                       |                          |
|                                                                          |             |              | Rate for 100 cum = (a)                                                                                                                                                                                                                                                                                                                         |            |               |       | 3525.00      |                              |                       |                          |
|                                                                          |             |              | Rate per cum = (a)/100                                                                                                                                                                                                                                                                                                                         | cum        |               |       | 35.25        |                              |                       |                          |
| <b>Total Cost</b>                                                        |             |              |                                                                                                                                                                                                                                                                                                                                                | <b>cum</b> |               |       | <b>35.25</b> | <b>194.21</b>                | <b>6845.9</b>         | <b>684.59</b>            |
| 3                                                                        | 3.14        | 303.1        | <b>Construction of Subgrade and Earthen Shoulders</b>                                                                                                                                                                                                                                                                                          |            |               |       |              |                              |                       |                          |
|                                                                          |             |              | Construction of subgrade and earthen shoulders with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table 300.2 with lead upto 1000 m as per Technical Specification Clause 303.1.                                       |            |               |       |              |                              |                       |                          |
|                                                                          |             |              | Unit = cum                                                                                                                                                                                                                                                                                                                                     |            |               |       |              |                              |                       |                          |
|                                                                          |             |              | Taking output = 100 cum                                                                                                                                                                                                                                                                                                                        |            |               |       |              |                              |                       |                          |
|                                                                          |             | a)           | <b>Material</b>                                                                                                                                                                                                                                                                                                                                |            |               |       |              |                              |                       |                          |
|                                                                          |             |              | Compensation for earth taken from private land                                                                                                                                                                                                                                                                                                 | cum        | 100.00        | 35.25 | 3525.00      |                              |                       |                          |
|                                                                          |             |              | Cost for 100 cum = a                                                                                                                                                                                                                                                                                                                           |            |               |       | 3525.00      |                              |                       |                          |
|                                                                          |             |              | Rate per cum = (a)/100                                                                                                                                                                                                                                                                                                                         |            |               |       | 35.25        |                              |                       |                          |
| <b>Total Cost</b>                                                        |             |              |                                                                                                                                                                                                                                                                                                                                                | <b>cum</b> |               |       | <b>35.25</b> | <b>763.13</b>                | <b>26900.33</b>       | <b>2690.033</b>          |
|                                                                          |             |              | <b>PAVEMENT CRUST LAYERS</b>                                                                                                                                                                                                                                                                                                                   |            |               |       |              |                              |                       |                          |
| 4                                                                        | 4.1         | 401          | <b>Granular Sub-base with Well Graded Material (Table 400.1)</b>                                                                                                                                                                                                                                                                               |            |               |       |              |                              |                       |                          |
|                                                                          |             |              | <b>( By mix in place method ) For Grading I Material</b>                                                                                                                                                                                                                                                                                       |            |               |       |              |                              |                       |                          |
|                                                                          |             |              | Construction of granular sub-base by providing well graded material, spreading in uniform layers with tractor mounted grader arrangement 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 Technical Specification Clause 401. |            |               |       |              |                              |                       |                          |
|                                                                          |             | (i)          | <b>For Grading I Material</b>                                                                                                                                                                                                                                                                                                                  |            |               |       |              |                              |                       |                          |
|                                                                          |             |              | Unit = cum                                                                                                                                                                                                                                                                                                                                     |            |               |       |              |                              |                       |                          |

# Analysis of Rates for (Seigniorage Fee )

| Name of Road : Rcd Road Baijudham Dharmkata TO Primary School Phulwariya |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |         |                   |                              |                       |                          |
|--------------------------------------------------------------------------|-------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|---------|-------------------|------------------------------|-----------------------|--------------------------|
| BLOCK : Gurua                                                            |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |         | LENGTH : 1.500 KM |                              |                       |                          |
| Sl. No.                                                                  | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Unit       | Quantity | Rate    | Amount in Rs      | Total material Qty. required | Total Material Amount | Add 10 % Seigniorage Fee |
|                                                                          |             |              | Taking output = 300 cum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |          |         |                   |                              |                       |                          |
|                                                                          |             | a)           | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |         |                   |                              |                       |                          |
|                                                                          |             |              | For well graded granular sub-base material as per Table 400.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |          |         |                   |                              |                       |                          |
|                                                                          |             |              | 53 mm to 9.5 mm @ 50 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | cum        | 180.00   | 1115.24 | 200743.20         |                              |                       |                          |
|                                                                          |             |              | 9.5 mm to 2.36 mm @ 20 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | cum        | 72.00    | 434.45  | 31280.40          |                              |                       |                          |
|                                                                          |             |              | 2.36 mm below @ 30 per cent - Course Sand                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | cum        | 108.00   | 584.64  | 63141.12          |                              |                       |                          |
|                                                                          |             |              | <b>Cost for 300 cum = a</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |         | <b>295164.72</b>  |                              |                       |                          |
|                                                                          |             |              | <b>Rate per cum = (a)/300</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>cum</b> |          |         | <b>983.88</b>     |                              |                       |                          |
| <b>Total Cost</b>                                                        |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>cum</b> |          |         | <b>983.88</b>     | <b>694.24</b>                | <b>683048.85</b>      | <b>68304.885</b>         |
|                                                                          | (3-B)       |              | <b>WMM Grading 3</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |          |         |                   |                              |                       |                          |
|                                                                          |             |              | 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. |            |          |         |                   |                              |                       |                          |
|                                                                          |             | (A)          | <b>By Machnical Means</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |          |         |                   |                              |                       |                          |
|                                                                          |             |              | Unit = cum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |          |         |                   |                              |                       |                          |
|                                                                          |             |              | Taking output = 100 cum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |          |         |                   |                              |                       |                          |
|                                                                          |             | a)           | <b>Material (Refer Tables 400.7, 8, 9 and 10)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |          |         |                   |                              |                       |                          |
|                                                                          |             |              | <b>Aggregate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |         |                   |                              |                       |                          |
|                                                                          |             |              | <b>Coarse aggregate 45 mm to 22.4 mm @ 30 per cent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | cum        | 39.90    | 1115.24 | 44498.08          |                              |                       |                          |
|                                                                          |             |              | <b>Aggregates 22.4 mm to 2.36 mm @ 40 per cent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | cum        | 53.20    | 697.86  | 37126.15          |                              |                       |                          |
|                                                                          |             |              | Fine aggregate/Crushed sand 2.36 mm to 75 micron @ 30 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | cum        | 39.90    | 266.62  | 10638.14          |                              |                       |                          |
|                                                                          |             |              | <b>Cost for 360 cum = a</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |         | <b>92262.37</b>   |                              |                       |                          |
|                                                                          |             |              | <b>Rate per cum = (a)/100</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |          |         | <b>922.62</b>     |                              |                       |                          |
| <b>Total Cost</b>                                                        |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>cum</b> |          |         | <b>922.62</b>     | <b>659.81</b>                | <b>608753.9</b>       | <b>60875.39</b>          |
|                                                                          |             |              | <b>BITUMINOUS ITEMS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |          |         |                   |                              |                       |                          |
| 6                                                                        | 5.11        | 509          | <b>Mix Seal Surfacing with Waste Plastic (Type B) Bituminous (S-65) By Mechanical Means</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |         |                   |                              |                       |                          |
|                                                                          |             |              | Providing, laying and rolling of close-graded premix surfacing material of 20 mm thickness composed of 11.2 mm to 0.9 mm (Type-A) or 13.2 mm to 0.9 mm (Type-B) aggregates using penetration grade bitumen 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 8-10 kN static roller and finishing to required level and grades as per Technical Specification Clause 509.                                                         |            |          |         |                   |                              |                       |                          |
|                                                                          |             | (B)          | <b>Case - II By Mechanical Means</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |          |         |                   |                              |                       |                          |
|                                                                          |             |              | (i) Bitumen (S-90)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |          |         |                   |                              |                       |                          |
|                                                                          |             |              | <b>Unit = sqm</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |          |         |                   |                              |                       |                          |
|                                                                          |             |              | Taking output = 4000 sqm (80 cum)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |          |         |                   |                              |                       |                          |
|                                                                          |             | a)           | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |         |                   |                              |                       |                          |
|                                                                          |             |              | Stone crushed aggregates 13.2 mm to 0.09 mm @ 0.27 cum per 10 sqm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Sqm        | 108.00   | 523.37  | 56523.96          |                              |                       |                          |

# Analysis of Rates for (Seigniorage Fee )

| Name of Road : Rcd Road Baijudham Dharmkata TO Primary School Phulwariya |             |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | BLOCK : Gurua |          |        | LENGTH : 1.500 KM |                              |                       |                          |
|--------------------------------------------------------------------------|-------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|--------|-------------------|------------------------------|-----------------------|--------------------------|
| Sl. No.                                                                  | SDB Sl. No. | MORD Ref No.        | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Unit          | Quantity | Rate   | Amount in Rs      | Total material Qty. required | Total Material Amount | Add 10 % Seigniorage Fee |
|                                                                          |             |                     | <b>Cost of 4000 sqm = a</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |          |        | 56523.96          |                              |                       |                          |
|                                                                          |             |                     | Rate per sqm = (a)/4000                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |          |        | 14.13             |                              |                       |                          |
| <b>Total Cost sqm</b>                                                    |             |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |        | <b>14.13</b>      | <b>3442.5</b>                | <b>48642.53</b>       | <b>4864.253</b>          |
|                                                                          |             |                     | <b>CC PAVEMENT</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |          |        |                   |                              |                       |                          |
| 7                                                                        | 6.4         | 1500                | <b>PQC</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |          |        |                   |                              |                       |                          |
|                                                                          |             |                     | Providing, laying and rolling of close-graded premix surfacing material of 20 mm thickness composed of 11.2 mm to 0.9 mm (Type-A) or 13.2 mm to 0.9 mm (Type-B) aggregates using penetration grade bitumen 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 8-10 kN static roller and finishing to required level and grades as per Technical Specification Clause 509. |               |          |        |                   |                              |                       |                          |
|                                                                          |             |                     | Unit = cum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |          |        |                   |                              |                       |                          |
|                                                                          |             |                     | Taking Output=900cum                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |          |        |                   |                              |                       |                          |
|                                                                          |             | <b>a)</b>           | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |        |                   |                              |                       |                          |
|                                                                          |             | <b>(i)</b>          | Crushed Stone Of 25 mm & 12.5 mm nominal size                                                                                                                                                                                                                                                                                                                                                                                                                                                  | cum           | 810.00   | 913.48 | 739918.80         |                              |                       |                          |
|                                                                          |             | <b>(ii)</b>         | Coarse Sand                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | cum           | 405.00   | 584.64 | 236779.20         |                              |                       |                          |
|                                                                          |             |                     | Rate per cum = (a)/900                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |          |        | 1085.22           |                              |                       |                          |
| <b>Total Cost cum</b>                                                    |             |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |        | <b>1085.22</b>    | <b>284.06</b>                | <b>308267.59</b>      | <b>30826.759</b>         |
| 8                                                                        | 4.18        | 412                 | <b>Brick Soling (With New Brick)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |          |        |                   |                              |                       |                          |
|                                                                          |             |                     | Laying brick soling layer on prepared sub-grade with brick on end edging according to lines, graded and cross-section shown on the drawing filling joints with sand and earth, spreading 25 mm thick layer of earth over brick soling, watering and rolling the same with three wheel road roller 80-100 kN as per Technical Specification Clause 412.                                                                                                                                         |               |          |        |                   |                              |                       |                          |
|                                                                          |             |                     | Unit = sqm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |          |        |                   |                              |                       |                          |
|                                                                          |             |                     | Taking ouput = 150 sqm                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |          |        |                   |                              |                       |                          |
|                                                                          |             | <b>(a)</b>          | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |        |                   |                              |                       |                          |
|                                                                          |             |                     | Brick 1st Class                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | No.           | 8160.00  | 6.12   | 49939.20          |                              |                       |                          |
|                                                                          |             |                     | Brick 1st Class on edging                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | No.           | 1100.00  | 6.12   | 6732.00           |                              |                       |                          |
|                                                                          |             |                     | Fine Sand                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | cum           | 5.66     | 145.87 | 825.62            |                              |                       |                          |
|                                                                          |             |                     | Cost for 150 sqm = a                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |          |        | 57496.82          |                              |                       |                          |
|                                                                          |             |                     | <b>Rate per sqm = (a)/150</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |          |        | <b>383.31</b>     |                              |                       |                          |
| <b>Total Cost cum</b>                                                    |             |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |        | <b>383.31</b>     | <b>1200</b>                  | <b>459972</b>         | <b>45997.2</b>           |
| 9                                                                        | 9.3         | 1100                | <b>Providing and Laying Reinforced Cement Concrete Pipe NP4 as per design in Single Row</b>                                                                                                                                                                                                                                                                                                                                                                                                    |               |          |        |                   |                              |                       |                          |
| (II)                                                                     |             |                     | 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.                                                                                                                                                                                     |               |          |        |                   |                              |                       |                          |
|                                                                          |             | <b>B.</b>           | <b>1000 MM DIA</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |          |        |                   |                              |                       |                          |
|                                                                          |             |                     | Unit =m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |          |        |                   |                              |                       |                          |
|                                                                          |             |                     | Taking output =7.5 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |          |        |                   |                              |                       |                          |
|                                                                          |             |                     | ( 3 pipes of 2.5 m length each )                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |          |        |                   |                              |                       |                          |
|                                                                          |             | <b>a ) Material</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |        |                   |                              |                       |                          |
|                                                                          |             |                     | I) Sand at site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | cum           | 0.04     | 145.87 | 5.83              |                              |                       |                          |

# Analysis of Rates for (Seigniorage Fee )

| Name of Road : Rcd Road Baijudham Dharmkata TO Primary School Phulwariya |             |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |          |          |                   |                              |                       |                          |
|--------------------------------------------------------------------------|-------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|----------|-------------------|------------------------------|-----------------------|--------------------------|
| BLOCK : Gurua                                                            |             |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |          |          | LENGTH : 1.500 KM |                              |                       |                          |
| Sl. No.                                                                  | SDB Sl. No. | MORD Ref No.   | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Unit       | Quantity | Rate     | Amount in Rs      | Total material Qty. required | Total Material Amount | Add 10 % Seigniorage Fee |
|                                                                          |             |                | Cost for 7.5m = ( a )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |          | 5.83              |                              |                       |                          |
|                                                                          |             |                | Rate per m =(a)/7.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |          |          | 0.78              |                              |                       |                          |
| <b>Total Cost</b>                                                        |             |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>m</b>   |          |          | <b>0.78</b>       | <b>7.5</b>                   | <b>5.85</b>           | <b>0.585</b>             |
| 10                                                                       | 11.4        | 800 & 1200 II. | Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |          |          |                   |                              |                       |                          |
|                                                                          |             | (i)            | <b>Nominal mix (1:2.5:5)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |          |                   |                              |                       |                          |
|                                                                          |             |                | Unit = cum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |          |          |                   |                              |                       |                          |
|                                                                          |             | a)             | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |          |          |                   |                              |                       |                          |
|                                                                          |             |                | Coarse sand                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | cum        | 0.48     | 584.64   | 280.63            |                              |                       |                          |
|                                                                          |             |                | 40 mm aggregate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | cum        | 0.48     | 1,005.81 | 482.79            |                              |                       |                          |
|                                                                          |             |                | 20 mm aggregate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | cum        | 0.24     | 1,224.68 | 293.92            |                              |                       |                          |
|                                                                          |             |                | 10 mm aggregate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | cum        | 0.08     | 602.28   | 48.18             |                              |                       |                          |
|                                                                          |             |                | <b>Rate per cum =(a)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |          | <b>1105.52</b>    |                              |                       |                          |
| <b>Total Cost</b>                                                        |             |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>cum</b> |          |          | <b>1105.52</b>    | <b>4.600</b>                 | <b>5085.39</b>        | <b>508.539</b>           |
| 11                                                                       | 12.5        | 800            | Plain/reinforced <u><b>cement concrete in substructure</b></u> complete as per drawings and technical specification Clauses 802, 804, 805, 806, 807, 1202 and 1204                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |          |          |                   |                              |                       |                          |
|                                                                          |             |                | For height upto 5 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |          |          |                   |                              |                       |                          |
|                                                                          |             |                | Unit = cum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |          |          |                   |                              |                       |                          |
|                                                                          |             | II.            | <b>P.C.C. grade M 20</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |          |                   |                              |                       |                          |
|                                                                          |             | (i)            | <b>Nominal mix (1:2:4)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |          |          |                   |                              |                       |                          |
|                                                                          |             |                | Unit = cum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |          |          |                   |                              |                       |                          |
|                                                                          |             | a)             | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |          |          |                   |                              |                       |                          |
|                                                                          |             |                | Sand                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | cum        | 0.45     | 584.64   | 263.09            |                              |                       |                          |
|                                                                          |             |                | 40 mm aggregate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | cum        | 0.36     | 1,005.81 | 362.09            |                              |                       |                          |
|                                                                          |             |                | 20 mm aggregate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | cum        | 0.36     | 1,224.68 | 440.88            |                              |                       |                          |
|                                                                          |             |                | 10 mm aggregate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | cum        | 0.18     | 602.28   | 108.41            |                              |                       |                          |
|                                                                          |             |                | <b>Rate per cum =(a)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |          | <b>1174.47</b>    |                              |                       |                          |
| <b>Total Cost</b>                                                        |             |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>cum</b> |          |          | <b>1174.47</b>    | <b>33.740</b>                | <b>39626.62</b>       | <b>3962.662</b>          |
| 12                                                                       | 8.29        |                | <b>Cable Duct Across the Road</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |          |          |                   |                              |                       |                          |
|                                                                          | RCD         |                | Providing and laying of a reinforced cement concrete pipe duct,300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills,constructing head walls at both ends, providing a minimum fill ofgranular material over top and sides of RCC pipe as per IRC:981997,bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings. |            |          |          |                   |                              |                       |                          |
|                                                                          |             |                | <b>Unit = Rm</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |          |          |                   |                              |                       |                          |
|                                                                          |             |                | <b>Taking output = 20 m</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |          |          |                   |                              |                       |                          |
|                                                                          |             |                | <b>a) Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |          |          |                   |                              |                       |                          |
|                                                                          |             |                | Local Sand for bedding and sides of pipe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Cum        | 7.200    | 584.64   | 4209.41           |                              |                       |                          |
|                                                                          |             |                | <b>Cost for 20 Rm = a</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |          |          | <b>4209.41</b>    |                              |                       |                          |

# Analysis of Rates for (Seigniorage Fee )

| Name of Road : Rcd Road Baijudham Dharmkata TO Primary School Phulwariya |             |              |                                                                                                                                                                                                                                                                                                                                                                 | BLOCK : Gurua |          |         | LENGTH : 1.500 KM |                              |                       |                          |
|--------------------------------------------------------------------------|-------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|---------|-------------------|------------------------------|-----------------------|--------------------------|
| Sl. No.                                                                  | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                     | Unit          | Quantity | Rate    | Amount in Rs      | Total material Qty. required | Total Material Amount | Add 10 % Seigniorage Fee |
|                                                                          |             |              | Rate per Rm = a)/20                                                                                                                                                                                                                                                                                                                                             |               |          |         | 210.47            |                              |                       |                          |
| Total Cost                                                               |             |              |                                                                                                                                                                                                                                                                                                                                                                 | rm            |          |         | 210.47            | 30                           | 6314.1                | 631.41                   |
| Total Construction cost of Seigniorage Fee @ 10%                         |             |              |                                                                                                                                                                                                                                                                                                                                                                 |               |          |         |                   |                              |                       | 219517.00                |
| 13                                                                       | 15.1        | 1900         | <b>Restoration of Rain Cuts</b>                                                                                                                                                                                                                                                                                                                                 |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | Restoration of rain cuts with soil, moorum gravel or a mixture of these, clearing the loose soil, benching for 300mm width laying fresh material in layers not exceeding 250 mm and compaction with plate compactor or power rammer to restore the original alignment, level and slopes as per drawings and technical specifications Clause 1902                |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | <b>A Manual Means</b>                                                                                                                                                                                                                                                                                                                                           |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | <b>Unit = cum</b>                                                                                                                                                                                                                                                                                                                                               |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | <b>Taking output = 10 cum</b>                                                                                                                                                                                                                                                                                                                                   |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | <b>a) Material</b>                                                                                                                                                                                                                                                                                                                                              |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | Compensation for earth Taken from private land                                                                                                                                                                                                                                                                                                                  | Cum           | 7.500    | 35.25   | 264.38            |                              |                       |                          |
|                                                                          |             |              | Cost for 10 cum = a                                                                                                                                                                                                                                                                                                                                             |               |          |         | 264.38            |                              |                       |                          |
|                                                                          |             |              | <b>Rate per cum = a/10</b>                                                                                                                                                                                                                                                                                                                                      |               |          |         | 26.44             |                              |                       |                          |
| Total Cost                                                               |             |              |                                                                                                                                                                                                                                                                                                                                                                 | cum           |          |         | 26.44             | 273.38                       | 7228.04               | 722.804                  |
| 14                                                                       | 15.2        | 1900         | <b>Maintenance of Earthen shoulder (filling with fresh</b>                                                                                                                                                                                                                                                                                                      |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | Making up loss of material/irregularities on shoulders to the design level by adding fresh approved selected soil and compacting it with appropriate equipment at OMC upto a lead of 1000 m as per technical specification Clause 1903                                                                                                                          |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | <b>Unit = sqm</b>                                                                                                                                                                                                                                                                                                                                               |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | <b>Taking output = 100 sqm</b>                                                                                                                                                                                                                                                                                                                                  |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | <b>a) Material</b>                                                                                                                                                                                                                                                                                                                                              |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | Compensation of earth                                                                                                                                                                                                                                                                                                                                           | Cum           | 15.000   | 35.25   | 528.75            |                              |                       |                          |
|                                                                          |             |              | Cost for 100 sqm = a                                                                                                                                                                                                                                                                                                                                            |               |          |         | 528.75            |                              |                       |                          |
|                                                                          |             |              | <b>Rate per sqm = a/100</b>                                                                                                                                                                                                                                                                                                                                     |               |          |         | 5.29              |                              |                       |                          |
| Total Cost                                                               |             |              |                                                                                                                                                                                                                                                                                                                                                                 | sqm           |          |         | 5.29              | 1560.94                      | 8257.36               | 825.736                  |
| 15                                                                       | 15.3        | 1900         | <b>Maintenace of bituminous surface road</b>                                                                                                                                                                                                                                                                                                                    |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | Repair to pot holes by removal of failed material, trimming the sides to vertical and levelling the bottom, cleaning the same with compressed air or any appropriate method filled with 75mm B.M, applying bitumen emulsion prime coat at the bottom and bitumen emulsion tack coat on sides and on bottom as per technical specifications Clauses 502 and 503. |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | <b>Unit = cum</b>                                                                                                                                                                                                                                                                                                                                               |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | <b>Taking output = 187.5x0.075 = 14.06 cum = (30.94 Tonne)</b>                                                                                                                                                                                                                                                                                                  |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | <b>a) Material</b>                                                                                                                                                                                                                                                                                                                                              |               |          |         |                   |                              |                       |                          |
|                                                                          |             |              | 37.5 - 25 mm 15%                                                                                                                                                                                                                                                                                                                                                | cum           | 2.985    | 1115.24 | 3328.99           |                              |                       |                          |
|                                                                          |             |              | 25 - 10 mm 45%                                                                                                                                                                                                                                                                                                                                                  | cum           | 8.955    | 913.48  | 8180.21           |                              |                       |                          |
|                                                                          |             |              | 10 - 5 mm 25%                                                                                                                                                                                                                                                                                                                                                   | cum           | 4.975    | 602.28  | 2996.34           |                              |                       |                          |
|                                                                          |             |              | 5 mm and below 15%                                                                                                                                                                                                                                                                                                                                              | cum           | 2.985    | 434.45  | 1296.83           |                              |                       |                          |
|                                                                          |             |              | Cost of 14.06 cum = a                                                                                                                                                                                                                                                                                                                                           |               |          |         | 15802.38          |                              |                       |                          |



# Analysis of Rates for (Seigniorage Fee )

| Name of Road : Rcd Road Baijudham Dharmkata TO Primary School Phulwariya |             |              |                                                                                                                                          | BLOCK : Gurua |          |        | LENGTH : 1.500 KM |                              |                       |                          |
|--------------------------------------------------------------------------|-------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|--------|-------------------|------------------------------|-----------------------|--------------------------|
| Sl. No.                                                                  | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                              | Unit          | Quantity | Rate   | Amount in Rs      | Total material Qty. required | Total Material Amount | Add 10 % Seigniorage Fee |
|                                                                          |             |              | Rate per cum = a/14.06                                                                                                                   |               |          |        | 1123.92           |                              |                       |                          |
| Total Cost cum                                                           |             |              |                                                                                                                                          |               |          |        | 1123.92           | 262.93                       | 295516.32             | 29551.632                |
| 16                                                                       | 15.3        | 1900         | Patch repair on already filled pot holes with 75 mm BM with Mix Seal Surfacing as per drawings and technical specification Clause 1904.2 |               |          |        |                   |                              |                       |                          |
|                                                                          |             |              | Unit = sqm                                                                                                                               |               |          |        |                   |                              |                       |                          |
|                                                                          |             |              | Takign output = 200 sqm                                                                                                                  |               |          |        |                   |                              |                       |                          |
|                                                                          |             |              | a) Material                                                                                                                              |               |          |        |                   |                              |                       |                          |
|                                                                          |             |              | Crushed stone aggregate @ 0.27 cum per 10 sqm= 200 x 0.27 / 10 = 5.4 cum                                                                 | cum           | 5.400    | 913.48 | 4932.79           |                              |                       |                          |
|                                                                          |             |              | Cost of 200 sqm = a                                                                                                                      |               |          |        | 4932.79           |                              |                       |                          |
|                                                                          |             |              | Rate/sqm = a/200                                                                                                                         |               |          |        | 24.66             |                              |                       |                          |
| Total Cost sqm                                                           |             |              |                                                                                                                                          |               |          |        | 24.66             | 1582.03                      | 39012.89              | 3901.289                 |
| Total Maintenance Cost of Seigniorage Fee @ 10% =                        |             |              |                                                                                                                                          |               |          |        |                   |                              |                       | 35001.00                 |
| Total Construction and Maintenance Cost of Seigniorage Fee @ 10% =       |             |              |                                                                                                                                          |               |          |        |                   |                              |                       | 254518.00                |

## CROSS DRAINAGE STRUCTURE DETAILS

NAME OF ROAD : Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

CNCPL NO. : 54344

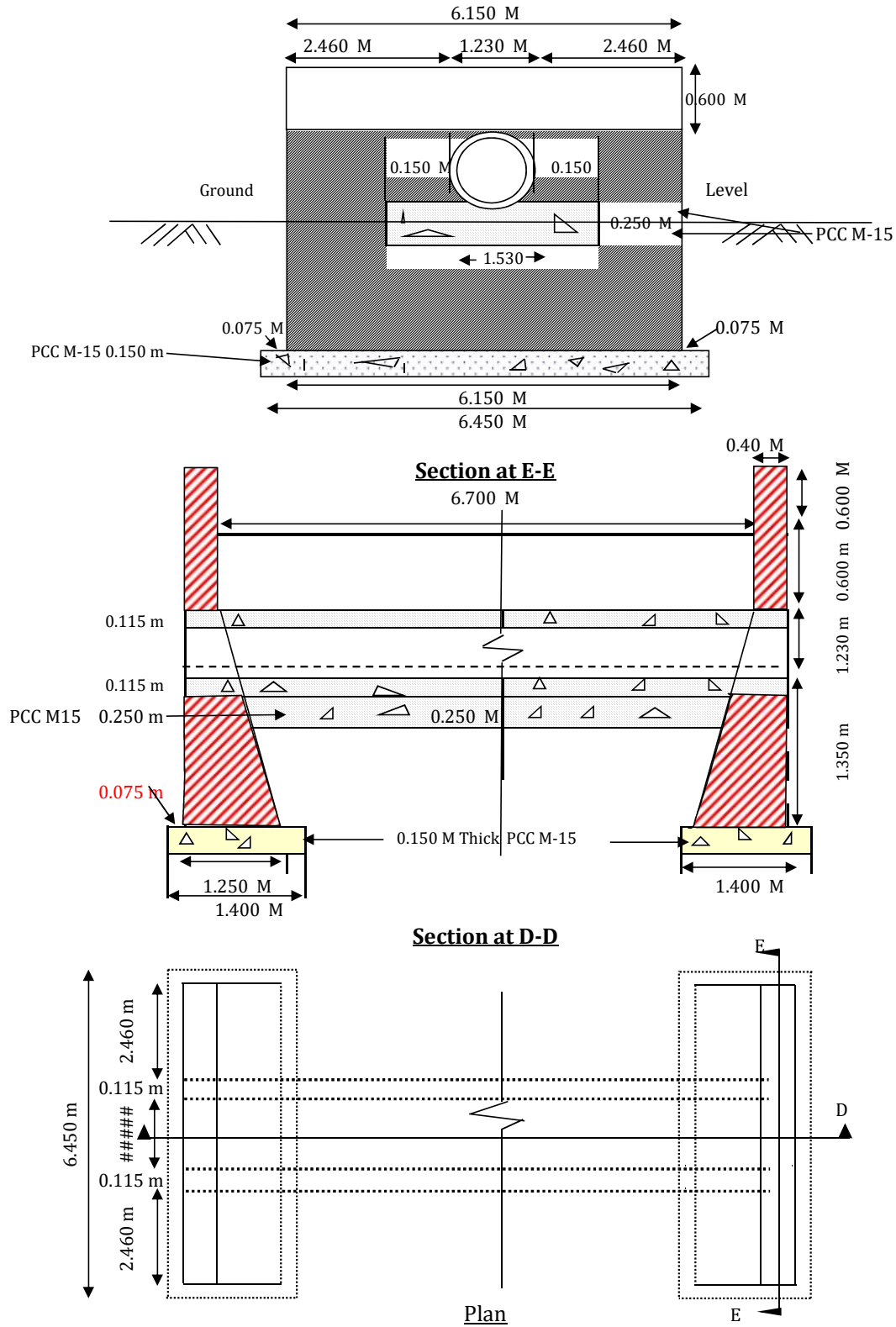
BLOCK Gurua

LENGTH OF ROAD ( in KM ) 1.500

| Sr. No | CHAINAGE IN<br>M | Existing Culvert arrangements |                        |           | Proposed Culvert arrangement |                        | Remarks |
|--------|------------------|-------------------------------|------------------------|-----------|------------------------------|------------------------|---------|
|        |                  | Existing Culvert              | Span , Dia /<br>height | Condition | Proposed Culvert             | Span , Dia /<br>height |         |
| 1      | 0+100            |                               |                        |           | HPC                          | 1X1000 MM              | NEW     |
|        |                  |                               |                        |           |                              |                        |         |
|        |                  |                               |                        |           |                              |                        |         |
|        |                  |                               |                        |           |                              |                        |         |
|        |                  |                               |                        |           |                              |                        |         |
|        |                  |                               |                        |           |                              |                        |         |
|        |                  |                               |                        |           |                              |                        |         |
|        |                  |                               |                        |           |                              |                        |         |
|        |                  |                               |                        |           |                              |                        |         |
|        |                  |                               |                        |           |                              |                        |         |
|        |                  |                               |                        |           |                              |                        |         |

**MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)**  
**(Govt. of Bihar)**  
**YEAR 24-25**

**Single Row 1000 mm Dia Hume Pipe Culvert**



## QUANTITY FOR NEW H.P. CULVERT

Proposed and New H.P. Culvert  
Internal Diameter  
No. of Rows

1.00 nos  
1000 mm  
1 nos

| Sl. No | SOR Item No | Description of Items                                                                                                                                                                                                                                                                     | Unit | Qty           | Rate (₹)        | Amount (₹)         |
|--------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------------|-----------------|--------------------|
| 1      | 9.1 / 11.1  | <b>Earth work in excavation</b> for foundation of structures upto 3.0 m depth as per drawing and technical specification clause 1104                                                                                                                                                     |      |               |                 |                    |
|        |             | H.W 2 x 6.450 x 1.400 x 1.500 = 27.090                                                                                                                                                                                                                                                   |      |               |                 |                    |
|        |             | Below Pipe 1 x 4.850 x 1.530 x 0.365 = 2.708                                                                                                                                                                                                                                             |      |               |                 |                    |
|        |             | <b>29.800 cum</b>                                                                                                                                                                                                                                                                        |      | <b>29.800</b> | <b>386.53</b>   | <b>11,519.00</b>   |
| 2      | 11.4 (II)   | Providing M15 (PCC 1:2.5:5) as levelling course in foundation :-- Providing PCC M 15 (1:2.5:5) concrete for plain concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203                                                        |      |               |                 |                    |
|        |             | H.W 2 x 6.450 x 1.400 x 0.150 = 2.709                                                                                                                                                                                                                                                    |      |               |                 |                    |
|        |             | Below Pipe 1 x 4.931 x 1.530 x 0.250 = 1.886                                                                                                                                                                                                                                             |      |               |                 |                    |
|        |             | <b>4.600 cum</b>                                                                                                                                                                                                                                                                         |      | <b>4.600</b>  | <b>4,981.13</b> | <b>22,913.00</b>   |
| 3      | 12.5(II)    | Plain/reinforced cement concrete in substructure complete as per drawings and technical specification Clauses 802, 804, 805, 806, 807, 1202 and 1204 ( M20 )                                                                                                                             |      |               |                 |                    |
|        |             | H.W. 2 x 6.150 x 0.825 x 3.180 = 32.269                                                                                                                                                                                                                                                  |      |               |                 |                    |
|        |             | Parrapet 2 x 6.150 x 0.400 x 0.600 = 2.952                                                                                                                                                                                                                                               |      |               |                 |                    |
|        |             | Less for pipe 2 x 0.7857 x 1.230 <sup>2</sup> x 0.622 = -1.478                                                                                                                                                                                                                           |      |               |                 |                    |
|        |             | <b>33.740 cum</b>                                                                                                                                                                                                                                                                        |      | <b>33.740</b> | <b>5,745.94</b> | <b>1,93,868.00</b> |
| 4      | 9.3 (B)     | Providing and laying RCC pipe NP-3 for culverts on first class bedding of PCC M10 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 |      |               |                 |                    |
|        |             | 3 x 2.50 = 7.50                                                                                                                                                                                                                                                                          |      |               |                 |                    |
|        |             | <b>7.50 m</b>                                                                                                                                                                                                                                                                            |      | <b>7.500</b>  | <b>7,103.72</b> | <b>53,278.00</b>   |
| 5      | 10.5        | <b>Painting on Parapet Wall (Black &amp; White Strips)</b> Painting two coats including primer coat after filling the surface with synthetic enamel paint in all shades on new, plastered / concrete surfaces as per drawing and Technical Specification Clause 1701                     |      |               |                 |                    |
|        |             | Top 2 x 6.150 x 0.400 = 4.920                                                                                                                                                                                                                                                            |      |               |                 |                    |
|        |             | Side 4 x 6.150 x 0.600 = 14.760                                                                                                                                                                                                                                                          |      |               |                 |                    |
|        |             | Front 4 x 0.400 x 0.600 = 0.960                                                                                                                                                                                                                                                          |      |               |                 |                    |
|        |             | <b>20.640 Sqm</b>                                                                                                                                                                                                                                                                        |      | <b>20.640</b> | <b>128.82</b>   | <b>2,659.00</b>    |
|        |             | <b>COST OF ONE HP CULVERT Size ( 1000mm x Single Row) Rs.</b>                                                                                                                                                                                                                            |      |               |                 | <b>2,84,237.00</b> |

Cost of 1 H.P. CULVERT Size ( 1000 mm ) Rs. =

2,84,237.00

Junior Engineer

Asstt. Engineer

Executive Engineer

**MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)**

**Name of Road:-- Rcd Road Baijudham Dharmkata TO Primary School Phulwariya**

**Block :- Gurua**

**District:- Gaya**

**LENGTH OF ROAD 1.500 Km**

| Sl No | Item                              | Unit     | Source     | Carriage Cost & Lead in Km |        |            |             |                      |         |        |            | Loading & Unloading Cost | Carriage by Road | Total ` | Lowest Rate |
|-------|-----------------------------------|----------|------------|----------------------------|--------|------------|-------------|----------------------|---------|--------|------------|--------------------------|------------------|---------|-------------|
|       |                                   |          |            | Pucka / Surface            |        |            |             | Katcha               |         |        |            |                          |                  |         |             |
| 1     | Stone Metal Gr-II/Via Road        | Cum      | Mirzapur   | $\frac{8.00}{4.59}$        | x 7.25 | x 40 Km    | = Rs 505.45 | $\frac{8.00}{4.59}$  | x 17.55 | x 0 Km | = Rs 0.00  | 209.22                   | 714.67           | 714.67  | 714.67      |
| 2     | Stone Metal Gr-III / GSB Via Road | Cum      | Mirzapur   | $\frac{8.00}{4.99}$        | x 7.25 | x 40 Km    | = Rs 464.93 | $\frac{8.00}{4.99}$  | x 17.55 | x 0 Km | = Rs 0.00  | 209.22                   | 674.15           | 674.15  | 674.15      |
| 3     | Stone Aggregate / Chips Via Road  | Cum      | Mirzapur   | $\frac{8.00}{4.99}$        | x 7.25 | x 40 Km    | = Rs 464.93 | $\frac{8.00}{4.99}$  | x 17.55 | x 0 Km | = Rs 0.00  | 209.22                   | 674.15           | 674.15  | 674.15      |
| 4     | Stone Boulder /Via Road           | Cum      | Mirzapur   | $\frac{8.00}{4.80}$        | x 7.25 | x 40 Km    | = Rs 483.33 | $\frac{8.00}{4.80}$  | x 17.55 | x 0 Km | = Rs 0.00  | 209.22                   | 692.55           | 692.55  | 692.55      |
| 5     | Coarse Sand/Via Road              | Cum      | Sherghati  | $\frac{8.00}{4.99}$        | x 7.25 | x 18 Km    | = Rs 209.22 | $\frac{8.00}{4.99}$  | x 17.55 | x 0 Km | = Rs 0.00  | 112.44                   | 321.66           | 321.66  | 321.66      |
| 6     | Mooram/Via Road                   | Cum      | Mirzapur   | $\frac{8.00}{6.00}$        | x 7.25 | x 40 Km    | = Rs 386.67 | $\frac{8.00}{6.00}$  | x 17.55 | x 0 Km | = Rs 0.00  | 112.44                   | 499.11           | 499.11  | 499.11      |
| 7     | Bitumen Muzaffarpur/Via Road      | MT       | Belaganj   | $\frac{8.00}{8.00}$        | x 7.25 | x 48 Km    | = Rs 348.00 | $\frac{8.00}{8.00}$  | x 17.55 | x 0 Km | = Rs 0.00  | 397.96                   | 745.96           | 745.96  | 745.96      |
| 8     | Bitumen Emulsion /Via Road        | MT       | Belaganj   | $\frac{8.00}{8.00}$        | x 7.25 | x 48 Km    | = Rs 348.00 | $\frac{8.00}{8.00}$  | x 17.55 | x 0 Km | = Rs 0.00  | 397.96                   | 745.96           | 745.96  | 745.96      |
| 9     | Local Sand                        | Cum      | LOCAL      | $\frac{8.00}{4.99}$        | x 7.25 | x 2 Km     | = Rs 23.25  | $\frac{8.00}{4.99}$  | x 17.55 | x 1 Km | = Rs 28.14 | 112.44                   | 163.82           | 163.82  | 163.82      |
| 10    | Brick                             | 1000 Nos | LOCAL      | $\frac{8.00}{2.00}$        | x 7.25 | x 7 Km     | = Rs 203.00 | $\frac{8.00}{2.00}$  | x 17.55 | x 1 Km | = Rs 70.20 | 467.66                   | 740.86           | 740.86  | 740.86      |
| 11    | Cement                            | MT       | LOCAL      | $\frac{8.00}{8.00}$        | x 7.25 | x 10 Km    | = Rs 72.50  | $\frac{8.00}{8.00}$  | x 17.55 | x 0 Km | = Rs 0.00  | 355.16                   | 427.66           | 427.66  | 427.66      |
| 12    | Steel                             | MT       | LOCAL      | $\frac{8.00}{8.00}$        | x 7.25 | x 10 Km    | = Rs 72.50  | $\frac{8.00}{8.00}$  | x 17.55 | x 0 Km | = Rs 0.00  | 383.96                   | 456.46           | 456.46  | 456.46      |
| 13    | Hume Pipe (1000 mm )              | M        | Bankebazar | $\frac{8.00}{10.00}$       | x 7.25 | x 24 Km    | = Rs 139.20 | $\frac{8.00}{10.00}$ | x 17.55 | x 0 Km | = Rs 0.00  | 68.02                    | 207.22           | 207.22  | 207.22      |
| 14    | Hume Pipe (600 mm )               | M        | Bankebazar | $\frac{8.00}{25.00}$       | x 7.25 | x 24 Km    | = Rs 55.68  | $\frac{8.00}{25.00}$ | x 17.55 | x 0 Km | = Rs 0.00  | 29.15                    | 84.83            | 84.83   | 84.83       |
| 15    | Hume Pipe (300 mm )               | M        | Bankebazar | $\frac{8.00}{60.00}$       | x 7.25 | x 24.00 Km | = Rs 23.20  | $\frac{8.00}{60.00}$ | x 27.10 | x 0 Km | = Rs 0.00  | 29.15                    | 52.35            | 52.35   | 52.35       |

**Cost of Haulage Excluding Loading & Unloading as per SOR**

| Type of Road        | Per Ton. Km by Tipper | Per Ton. Km by Truck |
|---------------------|-----------------------|----------------------|
| For Surface Road    | 11.20                 | 7.25                 |
| For Un Surface Road | 13.50                 | 8.72                 |
| For Kachha Road     | 27.10                 | 17.55                |

**\* Subjected to Verification of Lead**

**JE  
RWD**

**AE  
RWD**

**EE  
RWD**

**BASIC RATES  
(A) Labour**

| <b>Sl. No.</b> | <b>Description of Labour</b> | <b>Unit</b> | <b>Rate (Rs.)</b> |
|----------------|------------------------------|-------------|-------------------|
| L-01           | Bhisti                       | day         | 412.00            |
| L-02           | Bitumen Sprayer              | day         | 433.00            |
| L-03           | Head Blacksmith              | day         | 553.00            |
| L-04           | Blaster                      | day         | 680.00            |
| L-05           | Carpenter 1st Class          | day         | 553.00            |
| L-06           | Chips spreader               | day         | 519.00            |
| L-07           | Chiseller                    | day         | 636.00            |
| L-08           | Dresser (Skilled)            | day         | 521.00            |
| L-09           | Driller                      | day         | 428.00            |
| L-10           | Electrician                  | day         | 553.00            |
| L-11           | Fitter                       | day         | 494.00            |
| L-12           | Mason (1st class)            | day         | 553.00            |
| L-13           | Mason (2nd Class)            | day         | 494.00            |
| L-14           | Mate                         | day         | 437.00            |
| L-15           | Mazdoor (Unskilled)          | day         | 412.00            |
| L-16           | Mazdoor (Semi skilled)       | day         | 428.00            |
| L-17           | Mazdoor (Skilled)            | day         | 521.00            |
| L-18           | Painter (1st class)          | day         | 523.00            |
| L-19           | Plumber                      | day         | 523.00            |
| L-20           | Surveyor                     | day         | 499.00            |
| L-21           | White Washer                 | day         | 521.00            |

**BASIC RATES  
(B) Material**

| Sl. No. | SOR Code | Description                                                        | Unit | Basic Rate as per SOR |
|---------|----------|--------------------------------------------------------------------|------|-----------------------|
| 1       | 2        | 3                                                                  | 4    | 5                     |
| M-001   | M-056    | AC pipe 100 mm                                                     | m    | 47.15                 |
| M-002   | M-031    | Aggregate - For 37.5 mm Maximum size - 22.4 mm to 5.6 mm           | cum  | 913.48                |
| M-003   | M-033    | Aggregate - For 37.5 mm Maximum size - 45 mm to 22.5 mm            | cum  | 1,115.24              |
| M-004   | M-029    | Aggregate - For 37.5 mm Maximum size - Below 5.6 mm                | cum  | 434.45                |
| M-005   | M-031    | Aggregate - For 53 mm Maximum size - 22.5 mm to 5.6 mm             | cum  | 913.48                |
| M-006   | M-037    | Aggregate - For 53 mm Maximum size - 63 mm to 45 mm                | cum  | 1,005.81              |
| M-007   | M-029    | Aggregate - For 53 mm Maximum size - Below 5.6 mm                  | cum  | 774.85                |
| M-008   | M-039    | Aggregate - Grading I (40 mm nominal Size) 10 mm - 5 mm            | cum  | 602.28                |
| M-009   | M-045    | Aggregate - Grading I (40 mm nominal Size) 25 mm – 10 mm           | cum  | 913.48                |
| M-010   | M-048    | Aggregate - Grading I (40 mm nominal Size) 37.25 mm - 25 mm        | cum  | 1,115.24              |
| M-011   | M-029    | Aggregate - Grading I (40 mm nominal Size) 5 mm and below          | cum  | 434.45                |
| M-012   | M-039    | Aggregate - Grading II (19 mm nominal Size) 10 mm - 5 mm           | cum  | 602.28                |
| M-013   | M-045    | Aggregate - Grading II (19 mm nominal Size) 25 mm – 10 mm          | cum  | 913.48                |
| M-014   | M-029    | Aggregate - Grading II (19 mm nominal Size) 5 mm and below         | cum  | 434.45                |
| M-015   | M-050    | Aggregate 10 mm                                                    | cum  | 602.28                |
| M-016   | M-052    | Aggregate 20 mm                                                    | cum  | 1,224.68              |
| M-017   | M-054    | Aggregate 40 mm                                                    | cum  | 1,005.81              |
| M-018   | M-007    | Aggregate- Crushable type such as moorum or Gravel for Grading I   | cum  | 162.88                |
| M-019   | M-007    | Aggregate- Crushable type such as moorum or Gravel for Grading II  | cum  | 162.88                |
| M-020   | M-007    | Aggregate- Crushable type such as moorum or Gravel for Grading III | cum  | 162.88                |
| M-021   | M-038    | Aggregate-Grading I 90 mm to 45 mm                                 | cum  | 1,005.81              |
| M-022   | M-037    | Aggregate-Grading II 63 mm to 45 mm                                | cum  | 1,005.81              |
| M-023   | M-035    | Aggregate-Grading III 53 mm to 22.4 mm                             | cum  | 1,115.24              |

| Sl. No. | SOR Code | Description                                                                          | Unit  | Basic Rate as per SOR |
|---------|----------|--------------------------------------------------------------------------------------|-------|-----------------------|
| M-024   | M-030    | Aggregates 22.4 mm to 2.36 mm for wet mix macadam                                    | cum   | 697.86                |
| M-025   | M-033    | Aggregates 45 mm to 22.4 mm for wet mix macadam                                      | cum   | 1,115.24              |
| M-026   | M-059    | Aluminium sheeting (1.5 mm thick)                                                    | sqm   | 8,941.03              |
| M-027   | M-062    | Aluminium Studs 100 mm x 100 mm fitted with lense reflectors                         | Nos.  | 209.95                |
| M-028   |          | Bamboo (1st Class) 85 mm - 100 mm dia, 2.0 m long                                    | No.   | 23.52                 |
| M-029   |          | Bamboo (1st Class) 85 mm - 100 mm dia, 2.5 m long                                    | No.   | 23.52                 |
| M-029   |          | Bamboo (1st Class) 85 mm - 100 mm dia, 3.0 m long                                    | No.   | 23.52                 |
| M-030   |          | Bamboo (1st Class) 85 mm - 100 mm dia, 4.5 m - 5.5 m long                            | No.   | 23.52                 |
| M-029   |          | Bamboo (2nd Class) 75mm dia, 1.8 m - 2.5 m long                                      | No.   | 22.03                 |
| M-030   |          | Bamboo (2nd Class) 75mm dia, 2.1 m - 3.0 m long                                      | No.   | 22.03                 |
| M-031   | M-063    | Barbed wire                                                                          | kg    | 79.75                 |
| M-032   | M-007    | Binding Material (Moorum)                                                            | cum   | 162.88                |
| M-033   | M-072    | Binding wire                                                                         | kg    | 48.30                 |
| M-034   | M-078    | Bitumen (Crumb Rubber Modified)                                                      | tonne | 62,040.00             |
| M-035   |          | Bitumen (Natural Rubber Modified)                                                    | tonne | 41,271.30             |
| M-036   |          | Bitumen (Polymer Modified)                                                           | tonne |                       |
| M-037   | M-074    | Bitumen (S-65)/VG-30 (Excluding The Cost Of Empty Drum @ Rs. 1051.40/ Per MT) (Gaya) | Tonne | 56,202.60             |
| M-038   | M-075    | Bitumen (S-90)/VG-10 (Excluding The Cost Of Empty Drum @ Rs. 1051.40/ Per MT)        | Tonne | 54,402.60             |
| M-039   | M-077    | Bitumen Emulsion (RS-1)(Excluding The Cost Of Empty Drum @ Rs. 850.65/ Per MT)(Gaya) | Tonne | 53,071.35             |
| M-040   | M-077    | Bitumen Emulsion (SS-1) (Excluding The Cost Of Empty Drum @ Rs 850.65/ Per MT)       | Tonne | 54,204.35             |
| M-041   | M-119    | Bituminous sealant                                                                   | litre | 30.54                 |
| M-042   | M-147    | Randum Rubble Stone                                                                  | kg    | 694.61                |
| M-043   | M-104    | Blasting material                                                                    | kg    | 162.88                |
| M-044   | M-182    | Bond stone (400 mm x 150 mm x 150 mm)                                                | No.   | 10.80                 |



| Sl. No. | SOR Code | Description                                                                                           | Unit  | Basic Rate as per SOR |
|---------|----------|-------------------------------------------------------------------------------------------------------|-------|-----------------------|
| M-045   | M-079    | Brick 1st Class                                                                                       | No.   | 6.120                 |
| M-046   |          | <b>Cement (OPC - 43 Grade) (Excluding The Cost Of Empty Bag @ Rs. 3.58 / Per Bag ) (OPC 43 Grade)</b> | t     | <b>5,254.40</b>       |
| M-047   | M-097    | Cement Primer                                                                                         | litre | 125.53                |
| M-048   |          | Chlorprene Elastomer or Closed Cell Foam Sealing Element                                              | m     | 24,867.70             |
| M-049   | M-164    | Selected earth (Including royalty) @ 33.0 per cum & compensation @ 1.81 per cum)                      | cum   | 35.25                 |
| M-050   | M-085    | Compressible Fibre Board                                                                              | sqm   | 1,383.88              |
| M-051   | M-087    | Copper plate                                                                                          | kg    | 553.35                |
| M-052   |          | Corbelling Stones (300 mm x 150 mm x 150 mm)                                                          | No.   |                       |
| M-053   | M-088    | Corrosion Resistant Structural Steel Grating                                                          | kg    | 77.41                 |
| M-054   | M-090    | Credit for excavated rock found suitable for use                                                      | cum   | 112.08                |
| M-055   |          | Crow bars 40 mm dia (hire charges)                                                                    | hour  | 5.00                  |
| M-056   | M-020    | Crushed Sand or Grit Passing 2.36 mm and retained on 180 micron                                       | cum   | 266.62                |
| M-057   | M-167    | Crushed Slag                                                                                          | cum   | 729.73                |
| M-058   | M-025    | Crushed Stone Aggregate 26.5 mm to 75 micron                                                          | cum   | 913.48                |
| M-059   | M-051    | Crushed Stone chipping 13.2 mm nominal size                                                           | cum   | 602.28                |
| M-060   | M-049    | Crushed Stone Chipping 6.7 mm size 100% passing 11.2 mm and retained on 2.36 mm                       | cum   | 434.45                |
| M-061   | M-049    | Crushed Stone Chipping 6.7 mm size 100% passing 9.5 mm and retained on 2.36 mm                        | cum   | 434.45                |
| M-062   | M-050    | Crushed Stone chipping 9.5 mm nominal size                                                            | cum   | 602.28                |
| M-063   | M-034    | Crushed Stone Coarse Aggregate Passing 53 mm and retained on 2.8 mm                                   | cum   | 774.85                |
| M-064   | M-009    | Curing compound                                                                                       | litre | 38.00                 |
| M-065   |          | Debonding strips                                                                                      | m     | 49.91                 |
| M-066   |          | Edge Stone (450 mm x 350 mm x 100 mm)                                                                 | No.   |                       |
| M-067   |          | Edge Stone (450 mm x 350 mm x 200 mm)                                                                 | No.   |                       |
| M-068   |          | Elastomeric bearing assembly                                                                          | No.   | 24,867.70             |

| Sl. No. | SOR Code | Description                                                                                         | Unit  | Basic Rate as per SOR |
|---------|----------|-----------------------------------------------------------------------------------------------------|-------|-----------------------|
| M-069   | M-092    | Electric Detonator                                                                                  | each  | 568.80                |
| M-070   | M-095    | Epoxy Paint                                                                                         | litre | 482.35                |
| M-071   | M-097    | Epoxy Primer                                                                                        | litre | 105.24                |
| M-072   | M-168    | Farmyard manure                                                                                     | cum   | 552.10                |
| M-073   |          | Fevicol adhesive                                                                                    | kg    | 125.00                |
| M-074   | M-011    | Filter media                                                                                        | cum   | 697.86                |
| M-075   | M-021    | Fine aggregate/Crushed sand 2.36 mm to 75 micron                                                    | cum   | 266.62                |
| M-076   | M-103    | Galvanised angle                                                                                    | kg    | 57.02                 |
| M-077   | M-103    | Galvanised angle Section 100 mm x 100 mm of 12 mm thickness                                         | kg    | 112.84                |
| M-078   | M-104    | Gelatine 80 per cent                                                                                | kg    | 806.85                |
| M-079   | M-114    | GI Pipe 100 mm dia                                                                                  | m     | 647.73                |
| M-080   | M-115    | GI Pipe 50 mm dia                                                                                   | m     | 211.02                |
| M-081   | M-102    | GI wires                                                                                            | kg    | 96.39                 |
| M-082   | M-015    | Graded stone aggregate                                                                              | cum   | 689.23                |
| M-083   | M-009    | Granular material (Natural occurring, soil gravel mixture / quarry waste, kankar, laterite, dhandla | cum   | 168.37                |
| M-084   | M-054    | Hand Broken Metal 40 mm size                                                                        | cum   | 1,005.81              |
| M-085   |          | Indigo                                                                                              | kg    | 416.00                |
| M-086   |          | Interlocking Blocks with 60 mm thickness                                                            | sqm   | 416.00                |
| M-087   |          | Interlocking Blocks with 80 mm thickness                                                            | sqm   | 416.00                |
| M-088   | M-140    | Joint filler board                                                                                  | sqm   | 1,064.18              |
| M-089   | M-120    | Jute netting, open weave 25 mm square opening                                                       | sqm   | 41.26                 |
| M-090   | M-120    | Jute rope 12 mm dia                                                                                 | m     | 697.86                |
| M-091   | M-030    | Key Aggregates passing 22.4 mm and retained on 2.8 mm                                               | cum   | 697.86                |
| M-092   | M-190    | Lime                                                                                                | t     | 3,150.00              |

| Sl. No. | SOR Code | Description                                          | Unit  | Basic Rate as per SOR |
|---------|----------|------------------------------------------------------|-------|-----------------------|
| M-093   | M-190    | Lime putty                                           | t     | 3,000.00              |
| M-094   | M-196    | Local Wood Piles (1st Class) 150-200 mm dia ,6m long | No.   | 193.50                |
| M-095   | M-187    | Local Wood Piles (1st Class) 100 mm x 75 mm          | cum   | 20,775.00             |
| M-096   | M-002    | Loose stone                                          | cum   | 206.33                |
| M-097   | M-101    | MS clamps                                            | Nos.  | 84.83                 |
| M-098   | M-181    | MS Flat / Structural Steel                           | t     | 55,450.00             |
| M-099   | M-103    | MS Sheet Tube (47 mm x 47 mm x 12 SWG Sheet)         | kg    | 44.93                 |
| M-100   |          | MS Sheet 1.5 mm thick                                | sqm   | 416.00                |
| M-101   |          | MS Sheet 2 mm thick                                  | sqm   | 832.00                |
| M-102   | M-129    | Nuts, Bolts and Rivets                               | t     | 80.28                 |
| M-103   | M-130    | Paint (Synthetic Enamel)                             | litre | 283.74                |
| M-104   | M-182    | Plasticizer                                          | litre | 30.45                 |
| M-105   | M-137    | Polythene sheet (125 micron)                         | sqm   | 16.20                 |
| M-106   | M-137    | Polythene Sheething                                  | Nos.  | 17.81                 |
| M-107   | M-002    | Quarried Stone 150-200 mm size                       | cum   | 694.61                |
| M-108   | M-149    | RCC Pipe NP3 (1200 mm dia)                           | m     | 6,953.28              |
| M-109   | M-148    | RCC Pipe NP3 (1000 mm dia)                           | m     | 5,949.27              |
| M-110   |          | RCC Pipe NP3 (750 mm dia)                            | m     | 996.02                |
| M-111   |          | RCC Pipe NP3 (600 mm dia)                            | m     | 2,510.02              |
| M-112   |          | RCC Pipe NP3 (500 mm dia)                            | m     | -                     |
|         |          | RCC Pipe NP3 (300 mm dia)                            | m     | 568.48                |
| M-113   | M-147    | RCC Pipe NP4 (1200 mm dia)                           | m     | 6,953.28              |
| M-114   | M-148    | RCC Pipe NP4 (1000 mm dia)                           | m     | 5,949.27              |
| M-115   |          | RCC Pipe NP4 (750 mm dia)                            | m     |                       |

| Sl. No. | SOR Code | Description                                             | Unit  | Basic Rate as per SOR |
|---------|----------|---------------------------------------------------------|-------|-----------------------|
| M-116   | M-151    | RCC Pipe NP4 (600 mm dia)                               | m     | 2,510.02              |
| M-117   | M-152    | RCC Pipe NP4 (300 mm dia)                               | m     | 568.48                |
| M-118   |          | Red-oxide Primer                                        | litre | 246.65                |
| M-119   | M-131    | Road marking paint                                      | litre | 283.74                |
| M-120   | M-005    | Sand (Coarse)                                           | cum   | 584.64                |
| M-121   | M-006    | Sand (Fine)                                             | cum   | 145.87                |
| M-122   | M-163    | Seeds                                                   | kg    | 42.95                 |
| M-123   | M-176    | Steel Pipe 50 mm dia                                    | m     | 272.10                |
| M-124   |          | Steel Reinforcement (HYSD Bars) 12 mm                   | t     | 51,837.50             |
| M-125   |          | Steel Reinforcement (MS Round Bars) 6 mm                | t     | 51,837.50             |
| M-126   |          | Steel Reinforcement (TMT Bars) 8 mm                     | t     | 51,837.50             |
| M-127   | M-001    | Stone Boulder of size 150 mm and below                  | cum   | 694.61                |
| M-128   | M-051    | Stone Chips 12 mm size                                  | cum   | 602.28                |
| M-129   | M-042    | Stone Chips 13.2 mm to 5.6 mm                           | cum   | 602.28                |
| M-130   | M-040    | Stone Crushed Aggregate 11.2 mm to 0.09 mm              | cum   | 434.45                |
| M-131   |          | Stone for Coarse Rubble Masonry 1st Sort                | cum   | 686.03                |
| M-132   |          | Stone for Coarse Rubble Masonry 2nd Sort                | cum   |                       |
| M-133   | M-147    | Stone for Random Rubble Masonry                         | cum   | 694.61                |
| M-134   |          | Stone for Stone Set Pavement (300 mm x 200 mm x 150 mm) | No.   | 340.55                |
| M-135   | M-041    | Stone Screening - Type A 13.2 mm for Grading-1          | cum   | 434.45                |
| M-136   | M-041    | Stone Screening - Type A 13.2 mm for Grading-2          | cum   | 434.45                |
| M-137   | M-040    | Stone Screening - Type B 11.2 mm for Grading-2          | cum   | 434.45                |
| M-138   | M-040    | Stone Screening - Type B 11.2 mm for Grading-3          | cum   | 434.45                |
| M-139   | M-001    | Stone spall                                             | cum   | 363.47                |

| Sl. No.    | SOR Code | Description                                                        | Unit  | Basic Rate as per SOR |
|------------|----------|--------------------------------------------------------------------|-------|-----------------------|
| M-140      |          | Traffic cones                                                      | No.   | 441.78                |
| M-141      | M-189    | Water                                                              | kl    | 61.40                 |
| M-142      | M-021    | Well graded Granular Base Material - Grading A 2.36 mm below       | cum   | 266.62                |
| M-143      | M-025    | Well graded Granular Base Material - Grading A 26.5 mm to 4.75 mm  | cum   | 913.48                |
| M-144      | M-028    | Well graded Granular Base Material - Grading A 53 mm to 26.5 mm    | cum   | 1,115.24              |
| M-145      | M-021    | Well graded Granular Base Material - Grading B 2.36 mm below       | cum   | 266.62                |
| M-146      | M-025    | Well graded Granular Base Material - Grading B 26.5 mm to 4.75 mm  | cum   | 913.48                |
| M-147      | M-021    | Well graded Granular Base Material - Grading C 2.36 mm below       | cum   | 266.62                |
| M-148      | M-015    | Well graded Granular Base Material - Grading C 9.5 mm to 4.75 mm   | cum   | 602.28                |
| M-149      | M-021    | Well Graded Material for Sub-Base - Grading I 2.36 mm below        | cum   | 266.62                |
| M-150      | M-012    | Well Graded Material for Sub-Base - Grading I 53 mm to 9.5 mm      | cum   | 1,115.24              |
| M-151      | M-016    | Well Graded Material for Sub-Base - Grading I 9.5 mm to 2.36 mm    | cum   | 434.45                |
| M-152      | M-021    | Well Graded Material for Sub-Base - Grading II 2.36 mm below       | cum   | 266.62                |
| M-153      | M-026    | Well Graded Material for Sub-Base - Grading II 26.5 mm to 9.5 mm   | cum   | 913.48                |
| M-154      | M-016    | Well Graded Material for Sub-Base - Grading II 9.5 mm to 2.36 mm   | cum   | 434.45                |
| M-155      | M-021    | Well Graded Material for Sub-Base - Grading III 2.36 mm below      | cum   | 266.62                |
| M-156      | M-017    | Well Graded Material for Sub-Base - Grading III 4.75 mm to 2.36 mm | cum   | 266.62                |
| M-157      | M-015    | Well Graded Material for Sub-Base - Grading III 9.5 mm to 4.75 mm  | cum   | 602.28                |
| M-158      |          | Wooden sleepers (250 mm x 250 mm x 125 mm) (hire charges)          | No.   | 5.00                  |
| <b>RCD</b> |          |                                                                    |       |                       |
| M-159      | M-117    | Hot applied thermoplastic compound (Sp. Gravity - 2.10)            | litre | 210.99                |
| M-160      | M-153    | Reflectorising glass beads                                         | kg    | 80.71                 |
| M-161      |          | Stone crushed aggregates 13.2 mm to 0.09 mm                        | cum   | 523.37                |
| M-162      | M-077    | Slow-curing bitumen emulsion                                       | kg    | 43.00                 |
| M-163      | M-161    | Sapling 2 m high 25 mm dia                                         | each  | 28.64                 |
| M-164      | M-135    | Pesticide                                                          | Kg    | 89.55                 |

| Sl. No. | SOR Code | Description                                                                       | Unit  | Basic Rate as per SOR |
|---------|----------|-----------------------------------------------------------------------------------|-------|-----------------------|
| M-165   | M-092    | Delineators from ISI certified firm as per the standard drawing given in IRC - 79 | each  | 600.00                |
| M-011   | M-292    | Waste Plastic as per IRC:SP:98-2013                                               | tonne | 16974.00              |

| Final Rate |
|------------|
| 9          |
| 47.15      |
| 913.48     |
| 1,115.24   |
| 434.45     |
| 913.48     |
| 1,005.81   |
| 774.85     |
| 602.28     |
| 913.48     |
| 1,115.24   |
| 434.45     |
| 602.28     |
| 913.48     |
| 434.45     |
| 602.28     |
| 1,224.68   |
| 1,005.81   |
| 162.88     |
| 162.88     |
| 162.88     |
| 1,005.81   |
| 1,005.81   |
| 1,115.24   |

| Final Rate |
|------------|
| 697.86     |
| 1,115.24   |
| 8,941.03   |
| 209.95     |
| 23.52      |
| 23.52      |
| 23.52      |
| 23.52      |
| 22.03      |
| 22.03      |
| 79.75      |
| 162.88     |
| 48.30      |
| 62,040.00  |
| 41,271.30  |
| -          |
| 56,202.60  |
| 54,402.60  |
| 53,071.35  |
| 54,204.35  |
| 30.54      |
| 694.61     |
| 162.88     |
| 10.80      |



| Final Rate |
|------------|
| 6.120      |
| 5,254.40   |
| 125.53     |
| 24,867.70  |
| 35.25      |
| 1,383.88   |
| 553.35     |
| -          |
| 77.41      |
| 112.08     |
| 5.00       |
| 266.62     |
| 729.73     |
| 913.48     |
| 602.28     |
| 434.45     |
| 434.45     |
| 602.28     |
| 774.85     |
| 38.00      |
| 49.91      |
| -          |
| -          |
| 24,867.70  |

| Final Rate |
|------------|
| 568.80     |
| 482.35     |
| 105.24     |
| 552.10     |
| 125.00     |
| 697.86     |
| 266.62     |
| 57.02      |
| 112.84     |
| 806.85     |
| 647.73     |
| 211.02     |
| 96.39      |
| 689.23     |
| 168.37     |
| 1,005.81   |
| 416.00     |
| 416.00     |
| 416.00     |
| 1,064.18   |
| 41.26      |
| 697.86     |
| 697.86     |
| 3,150.00   |

| Final Rate |
|------------|
| 3,000.00   |
| 193.50     |
| 20,775.00  |
| 206.33     |
| 84.83      |
| 55,450.00  |
| 44.93      |
| 416.00     |
| 832.00     |
| 80.28      |
| 283.74     |
| 30.45      |
| 16.20      |
| 17.81      |
| 694.61     |
| 6,953.28   |
| 5,949.27   |
| 996.02     |
| 2,510.02   |
| -          |
| 568.48     |
| 6,953.28   |
| 5,949.27   |
| -          |

| Final Rate |
|------------|
| 2,510.02   |
| 568.48     |
| 246.65     |
| 283.74     |
| 584.64     |
| 145.87     |
| 42.95      |
| 272.10     |
| 51,837.50  |
| 51,837.50  |
| 51,837.50  |
| 694.61     |
| 602.28     |
| 602.28     |
| 434.45     |
| 686.03     |
| -          |
| 694.61     |
| 340.55     |
| 434.45     |
| 434.45     |
| 434.45     |
| 434.45     |
| 363.47     |

| Final Rate |
|------------|
| 441.78     |
| 61.40      |
| 266.62     |
| 913.48     |
| 1,115.24   |
| 266.62     |
| 913.48     |
| 266.62     |
| 602.28     |
| 266.62     |
| 1,115.24   |
| 434.45     |
| 266.62     |
| 913.48     |
| 434.45     |
| 266.62     |
| 266.62     |
| 602.28     |
| 5.00       |
| -          |
| 210.99     |
| 80.71      |
| 523.37     |
| 43.00      |
| 28.64      |
| 89.55      |

|                   |
|-------------------|
| <b>Final Rate</b> |
| 600.00            |
| 16,974.00         |

**BASIC RATES**  
**(C) USAGE RATES OF PLANT & MACHINERY**

| Sr. No. | SOR Code | Description of                                       |                                   | Output of Machine |          | Usage Rates in Rs. |           |
|---------|----------|------------------------------------------------------|-----------------------------------|-------------------|----------|--------------------|-----------|
|         |          | Machine                                              | Activity                          | Unit              | Output   | Unit               | Rate      |
| PM-001  | P&M-001  | Air Compressor 210 cfm                               | Supplying compressed air          | cfm               | 210.00   | per hour           | 455.00    |
| PM-002  | P&M-024  | HMP 30-40 TPH                                        | BM, DBM, SDBC, PM                 | Cum/h             | 17.00    | per hour           | 31,459.00 |
| PM-003  | P&M-002  | Batch mix Plant 30 cum capacity                      | Concrete mixing                   | Cum/h             | 20.00    | per hour           | 31,459.00 |
| PM-004  | P&M-005  | Bitumen boiler oil fired                             | Bitumen Spraying                  |                   |          |                    |           |
|         |          | 200 litre                                            |                                   | litre / h         | 400.00   | per hour           | 563.00    |
|         |          | 1000 litre                                           |                                   | litre / h         | 2000.00  | per hour           | 563.00    |
| PM-005  | P&M-004  | Bitumen pressure distributor                         | Applying bitumen tack coat        | sqm/h             | 1750.00  | per hour           | 1,362.00  |
| PM-006  | P&M-009  | Concrete mixer 0.28/0.4 cum                          | Mixing of ingredients             | cum/h             | 2.50     | per hour           | 351.00    |
| PM-007  | P&M-012  | Crane upto 3.5T                                      | Lifting of materials              |                   |          | per hour           | 822.00    |
| PM-008  | P&M-015  | Dozer D 50                                           | Dozing/cutting/ Clearing          | cum/h             | 200.00   | per hour           | 4,342.00  |
|         |          |                                                      |                                   | cum/h             | 100.00   |                    | 3,014.00  |
| PM-009  | P&M-018  | Electric generator set, 125 KVA                      | Electricity generation            | KVA               | 100.00   | per hour           | 1,646.00  |
| PM-010  | P&M-016  | Emulsion Sprayer with Tractor                        | Spraying of Emulsion              |                   |          | per hour           | 1,362.00  |
| PM-011  | P&M-017  | Front end-loader 1 cum bucket capacity @ 45 cum/hour | Loading Aggregates                | cum/h             | 45.00    | per hour           | 1,432.00  |
|         |          |                                                      | Loading Soil                      | cum/h             | 100.00   |                    | 1,432.00  |
| PM-012  | P&M-031  | Hydraulic broom with tractor                         | Surface cleaning                  | sqm/h             | 1250.00  | per hour           | 807.00    |
| PM-013  | P&M-026  | Hydraulic Excavator 0.9 cum                          | Excavation                        | cum/h             | 100.00   | per hour           | 2,288.00  |
| PM-014  | P&M-025  | Hydraulic self propelled chip spreader               | Surface Dressing                  | sqm/h             | 1500.00  | per hour           | 1,689.00  |
| PM-015  | P&M-084  | Jack Hammer with tractor                             | Pavement breaking & rock drilling | cum/h             | 05. to 1 | per hour           | 1,289.30  |
| PM-016  | P&M-083  | Joint Cutting Machine with 2-3 blades                | Cutting of Joints                 | h                 |          | per hour           | 357.00    |
| PM-017  |          | Mixall 6-10 t capacity                               | Mixing of bituminous materials    | t/h               | 8.00     | per hour           | 3,702.00  |
| PM-018  | P&M-032  | Motor Grader                                         | Scarifier & levelling             | cum/h             | 200.00   | per hour           | 4,479.00  |
|         | P&M-053  | Tractor Mounted Grader                               |                                   |                   | 100.00   |                    | 693.00    |
| PM-019  |          | Needle vibrator                                      | Vibrating cement concrete mix     | cum/h             | 3.50     | per hour           | 405.00    |
| PM-020  | P&M-035  | Paver finisher                                       | Laying/spreading                  | t/h               | 75.00    | per hour           | 2,157.00  |
| PM-021  | P&M-086  | Plate compactor                                      | Compaction                        | cum/h             |          | per hour           | 415.00    |
| PM-022  | P&M-086  | Plate vibrator                                       | Compaction                        | cum/h             |          | per hour           | 396.00    |
| PM-023  |          | Screed vibrator                                      | Compaction                        | cum/h             |          | per hour           | 102.65    |
| PM-024  | P&M-044  | Smooth wheeled 80-100 kN tandem roller               | Compaction of Sub-base/ Asphalt   | cum/h             | 30.00    | per hour           | 2,072.00  |
| PM-025  | P&M-028  | Stone crusher (Integrated) of 200 TPH                | Crushing of Spalls                | t/h               | 200.00   | per hour           | 13,800.00 |
| PM-026  | P&M-044  | Three wheel 80-100 kN Static Roller                  | Compaction/ Rolling               |                   |          |                    | 1,612.00  |
|         |          |                                                      | Earth:- Embankment or sub-grade   | cum/h             | 80/70    |                    | 1,612.00  |

| Sr. No.    | SOR Code | Description of                               |                                               | Output of Machine |          | Usage Rates in Rs. |           |
|------------|----------|----------------------------------------------|-----------------------------------------------|-------------------|----------|--------------------|-----------|
|            |          | Machine                                      | Activity                                      | Unit              | Output   | Unit               | Rate      |
|            |          |                                              | Sub-base G-I                                  | cum/h             | 10.00    | per hour           | 1,612.00  |
|            |          |                                              | Sub-base G-II/G-III                           | cum/h             | 8.00     |                    | 1,612.00  |
|            |          |                                              | WMM                                           | cum/h             | 16.00    |                    | 1,612.00  |
|            |          |                                              | BUSG                                          | cum/h             | 10.00    |                    | 1,612.00  |
|            |          |                                              | BM 50/75 mm                                   | cum/h             | 12.00    |                    | 1,612.00  |
|            |          |                                              | Premix 20 mm                                  | sqm/h             | 250.00   |                    | 1,612.00  |
|            |          |                                              | Seal Coat                                     | sqm/h             | 500.00   |                    | 1,612.00  |
|            |          |                                              | Surface Dressing 1st Coat                     | sqm/h             | 400.00   |                    | 1,612.00  |
|            |          |                                              | Surface Dressing 2ndCoat                      | sqm/h             | 500.00   |                    | 1,612.00  |
| PM-027     | P&M-048  | Tipper 5.5 cum/10 t                          | Carriage                                      | cum/trip          | 5.50     | per hour           | 1,441.00  |
| PM-028     | P&M-053  | Tractor with Disc Harrows                    | Pulverisation of soil                         | cum/h             | 80.00    | per hour           | 688.00    |
| PM-029     | P&M-055  | Tractor with ripper @ 60 cum per hour        | Ripping Pavements, uprooting trees            | cum/h             | 60.00    | per hour           | 697.00    |
| PM-030     | P&M-053  | Tractor with trolley/with Grading equipment  | Transportation of materials                   | t/trip            | 3 to 5   | per hour           | 688.00    |
| PM-031     | P&M-054  | Tractor with Rotavator                       | Scarifier                                     | cum/h             | 25.00    | per hour           | 705.00    |
| PM-032     | P&M-057  | Truck 10 t capacity                          | Carriage                                      | cum/trip          | 5.50     | per hour           | 934.30    |
| PM-033     | P&M-059  | Vibratory roller 80-100 kN                   | Compaction of soil WMM                        | cum/h             | 100.00   | per hour           | 2,072.00  |
|            |          |                                              | Compaction of BM                              | cum/h             | 60.00    |                    | 2,072.00  |
| PM-034     | P&M-060  | Water tanker 6 kl capacity (Truck Mounted)   | Carriage of water                             | litre / h         | 12000.00 | per hour           | 764.00    |
| PM-035     | P&M-062  | Wet mix plant (Pug Mill)                     | Wet Mix                                       | cum/h             | 25.00    | per hour           | 694.00    |
| <b>RCD</b> |          |                                              |                                               |                   |          |                    |           |
| PM-036     | P&M-043  | Road marking machine                         | Road marking                                  | Sqm/h             | 100.00   | per hour           | 1,423.00  |
| PM-037     |          | Mini Hot Mix Plant                           |                                               | Cum/h             | 2.70     | per hour           | 51,313.00 |
| PM-038     | P&M-043  | Vibratory Earth Compactor                    |                                               | Cum /h            |          |                    | 2,082.00  |
| PM-039     | P&M-047  | Tipper - 5 cum                               | Transportation of soil, GSB, WMM, Hotmix etc. | Capacity in cum   | 5.50     | tonne.km           | 9.89      |
|            | P&M-081  | 250 KVA Generator Set                        | Generation of Electric Energy                 | KVA               | 200.00   | per hour           | 3,134.00  |
|            |          | Tipper 10 Cum                                | Transportation of Soil, GSB, WMM, Hotmix etc. | Capacity in Cum   | 10.00    | Tonne.Km           | 1,954.00  |
|            |          | transit truck agiator                        |                                               |                   |          | Tonne.Km           | 10.75     |
|            |          | Texture Curing Machine upto 9 m              |                                               | hrs               |          |                    | 3,426.00  |
|            |          | transit Mixer 6 cum                          |                                               |                   |          |                    | 10.85     |
|            |          | Batching and Mixing Plant - 120 cum Capacity |                                               |                   |          |                    | 3,684.00  |
| P&M-042    | P&M-046  | Mastic Cooker                                | Mastic Wearing coat                           | capacity in tonne | 1.00     | per hour           | 514.00    |
| PM74001    |          | Tipper 10 Cum (Surface Road)                 | Loading/Unloading                             | Capacity in Cum   | 10.00    | Tonne.Km           | 7.10      |
| PM29002    | P&M-035  | Paver finisher (170 HP)                      | Laying/spreading                              | t/h               | 170.00   | per hour           | 6,427.00  |
|            | PM10001  | Pneumatic Tyre Roller                        |                                               |                   |          | per hour           | 2,077.00  |
|            |          | Front End loader 3.1 cum bucket capacity     |                                               |                   |          | per hour           | 3,519.00  |



## Chapter 1

### LOADING, UNLOADING, CARRIAGE CRUSHING OF MATERIALS AND SETTING OUT

**Notes:**

- 1 Rates are for net quantities after deduction of voids.
- 2 Part of km beyond 1 km will be payable for the full km.

| Sr. No. | Reference to MORD Specifications | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Unit       | Quantity     | Rate (Rs.) | Amount (Rs.) |
|---------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|------------|--------------|
| 1.2     |                                  | <b>Loading and Unloading Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Crushed Slag, Stone for Masonry Work by Mechanical Means</b><br><br>(i) Loading of Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Crushed Slag, Stone for Masonry Work by mechanical means including a lead upto 30 m<br><br>Placing tipper at loading point, loading with front end loader excluding time for haulage and return trip.<br>Unit = cum<br>Taking output = 5.5 cum<br><br><b>Time required for</b><br>i) Positioning of tipper at loading point<br>ii) Loading by front end loader 1 cum bucket capacity @ 45 cum per hour<br>iii) Waiting time, unforeseen contingencies, etc.<br><br><b>Total</b><br><br><b>a) Machinery</b><br>(i) Tipper 10 t capacity<br>(ii) Front end-loader 1 cum bucket capacity @ 45 cum per hour<br><br><b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b><br><br><b>c) Contractor's Profit @ 0% on (a+b)</b><br><br>Cost for 5.5 cum = a+b | Min        | 1            |            |              |
|         |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Min        | 7.33         |            |              |
|         |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Min        | 2            |            |              |
|         |                                  | <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Min</b> | <b>10.33</b> |            |              |
|         |                                  | (i) Tipper 10 t capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | hour       | 0.172        | 1,441.00   | 247.85       |
|         |                                  | (ii) Front end-loader 1 cum bucket capacity @ 45 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | hour       | 0.122        | 1,432.00   | 174.70       |
|         |                                  | <b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |              |            | <b>52.82</b> |
|         |                                  | <b>c) Contractor's Profit @ 0% on (a+b)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |              |            | <b>-</b>     |
|         |                                  | Cost for 5.5 cum = a+b                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |              |            | 475.38       |
|         |                                  | <b>Rate per cum = (a+b) /5.5</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |              |            | <b>86.43</b> |
|         |                                  | (ii) Loading of Earth, Sand, Moorum, Manure, Flyash by mechanical means including a lead upto 30 m.<br><br>Placing tipper at loading point, loading with front end loader excluding time for haulage and return trip.<br>Unit = cum<br>Taking output = 5.5 cum<br><br><b>Time required for</b><br>i) Positioning of tipper at loading point<br>ii) Loading by front end loader 1 cum bucket capacity @ 100 cum per hour<br>iii) Waiting time, unforeseen contingencies, etc.<br><br><b>Total</b><br><br><b>a) Machinery</b><br>(i) Tipper 10 t capacity<br>(ii) Front end-loader 1 cum bucket capacity @ 100 cum per hour<br><br><b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b><br><br><b>c) Contractor's Profit @ 0% on (a+b)</b><br><br>Cost for 5.5 cum = a+b+c                                                                                                                                                                                                                                               | Min        | 1.00         |            |              |
|         |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Min        | 3.30         |            |              |
|         |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Min        | 2.00         |            |              |
|         |                                  | <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Min</b> | <b>6.30</b>  |            |              |
|         |                                  | (i) Tipper 10 t capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | hour       | 0.105        | 1,441.00   | 151.31       |
|         |                                  | (ii) Front end-loader 1 cum bucket capacity @ 100 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | hour       | 0.055        | 1,432.00   | 78.76        |
|         |                                  | <b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |              |            | <b>28.76</b> |
|         |                                  | <b>c) Contractor's Profit @ 0% on (a+b)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |              |            | <b>-</b>     |
|         |                                  | Cost for 5.5 cum = a+b+c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |            | 258.83       |
|         |                                  | <b>Rate per cum = (a+b+c)/5.5</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |              |            | <b>47.06</b> |

| Sr. No.                            | Reference to MORD Specifications | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Unit                                    | Quantity                             | Rate (Rs.)                   | Amount (Rs.)                                       |
|------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------|------------------------------|----------------------------------------------------|
|                                    |                                  | <b>(iii)</b> Unloading of Earth, Sand, Lime, Moorum, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Manure, Crushed Slag, Flyash, Stone for Masonry Work by mechanical means.<br>Unit = cum<br>Taking output = 5.5 cum<br>Placing tipper at unloading point excluding time for haulage and return trip<br><b>Time required for</b><br>i) Positioning of tipper at unloading point<br>ii) Manoeuvring, reversing, dumping and turning for return<br>iii) Waiting time, unforeseen contingencies, etc.<br><b>Total</b><br><b>a) Machinery</b><br>Tipper 10 t capacity<br><b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b><br><b>c) Contractor's Profit @ 0% on (a+b)</b><br>Cost for 5.5 cum = a+b+c | Min<br>Min<br>Min<br>Min<br>Min<br>hour | 1.00<br>2.00<br>2.00<br>5.00<br>0.08 | <br><br><br><br><br>1,441.00 | <br><br><br><br><br>115.28<br>14.41<br>-<br>129.69 |
| <b>Rate per cum = (a+b+c)/5.5</b>  |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                         |                                      |                              | <b>23.58</b>                                       |
| <b>CALCULATION BY TIPPER</b>       |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                         |                                      |                              |                                                    |
| <b>1.10</b>                        |                                  | <b>Haulage excluding Loading &amp; Unloading</b><br>Haulage of materials by tipper excluding cost of loading, unloading and stacking.<br>Unit = t.km<br>Taking output 10 t load and lead 10 km = 100 t.km<br><b>Case-I : Surfaced Road</b><br>Speed with load: 25 km per hour<br>Speed while returning empty: 35 km per hour<br><b>a) Machinery</b><br><b>Tipper 10 t capacity</b><br>Haulage with load<br>Empty return trip<br><b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b><br><b>c) Contractor's Profit @ 0% on (a+b)</b><br>Cost for 100 t.km = a+b+c                                                                                                                                                             | hour<br>hour                            | 0.40<br>0.29                         | 1,441.00<br>1,441.00         | 576.40<br>417.89<br>124.29<br>-<br>1,118.58        |
| <b>Rate per t.km = (a+b+c)/100</b> |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                         |                                      |                              | <b>11.20</b>                                       |
|                                    | <b>Note:</b>                     | In case of carriage of Hume pipes, output of truck be taken as 8 t and the rate for t is to be divided by number of pipes of different<br><b>Case-II: Unsurfaced Gravel Road</b><br>Speed with load: 20 km/hour<br>Speed for empty return trip: 30 km/hour<br><b>a) Machinery</b><br><b>Tipper 10 t capacity</b><br>Haulage with load<br>Empty return trip<br><b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b><br><b>c) Contractor's Profit @ 0% on (a+b)</b><br>Cost for 100 t.km = a+b+c                                                                                                                                                                                                                               | hour<br>hour                            | 0.50<br>0.33                         | 1,441.00<br>1,441.00         | 720.50<br>475.53<br>149.50<br>-<br>1,345.53        |
| <b>Rate per t.km = (a+b+c)/100</b> |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                         |                                      |                              | <b>13.50</b>                                       |

| Sr. No.                            | Reference to MORD Specifications                              | Description                                                                                                                              | Unit | Quantity | Rate (Rs.) | Amount (Rs.)  |
|------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------|----------|------------|---------------|
|                                    | <b>Note:</b>                                                  | In case of carriage of Hume pipes, output of truck be taken as 8 t and the rate per t is to be divided by number of pipes of different   |      |          |            |               |
|                                    |                                                               | <b>Case-III: Katcha Track and Track in River Bed/Nallah Bed and Choe Bed</b>                                                             |      |          |            |               |
|                                    |                                                               | Speed with load: 10 km per hour                                                                                                          |      |          |            |               |
|                                    |                                                               | Speed while returning empty: 15 km per hour                                                                                              |      |          |            |               |
|                                    | <b>a) Machinery</b>                                           |                                                                                                                                          |      |          |            |               |
|                                    | <b>i) Tipper 10 t capacity</b>                                |                                                                                                                                          |      |          |            |               |
|                                    |                                                               | Haulage with load                                                                                                                        | hour | 1.00     | 1,441.00   | 1,441.00      |
|                                    |                                                               | Empty return trip                                                                                                                        | hour | 0.67     | 1,441.00   | 965.47        |
|                                    | <b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b> |                                                                                                                                          |      |          |            | <b>300.81</b> |
|                                    | <b>c) Contractor's Profit @ 0% on (a+b)</b>                   |                                                                                                                                          |      |          |            | -             |
|                                    |                                                               | Cost for 100 t.km = a+b+c                                                                                                                |      |          |            | 2,707.28      |
| <b>Rate per t.km = (a+b+c)/100</b> |                                                               |                                                                                                                                          |      |          |            | <b>27.10</b>  |
|                                    | <b>Note:</b>                                                  | In case of carriage of Hume pipes, output of truck be taken as 8 t and the cost for 8 t is to be divided by number of pipes of different |      |          |            |               |
| <b>CALCULATION BY TRUCK</b>        |                                                               |                                                                                                                                          |      |          |            |               |
| <b>1.10</b>                        |                                                               | <b>Haulage excluding Loading &amp; Unloading</b>                                                                                         |      |          |            |               |
|                                    |                                                               | Haulage of materials by tipper excluding cost of loading, unloading and stacking.                                                        |      |          |            |               |
|                                    |                                                               | Unit = t.km                                                                                                                              |      |          |            |               |
|                                    |                                                               | Taking output 10 t load and lead 10 km = 100 t.km                                                                                        |      |          |            |               |
|                                    |                                                               | <b>Case-I : Surfaced Road</b>                                                                                                            |      |          |            |               |
|                                    |                                                               | Speed with load: 25 km per hour                                                                                                          |      |          |            |               |
|                                    |                                                               | Speed while returning empty: 35 km per hour                                                                                              |      |          |            |               |
|                                    | <b>a) Machinery</b>                                           |                                                                                                                                          |      |          |            |               |
|                                    | <b>Truck 10 t capacity</b>                                    |                                                                                                                                          |      |          |            |               |
|                                    |                                                               | Haulage with load                                                                                                                        | hour | 0.40     | 934.30     | 373.72        |
|                                    |                                                               | Empty return trip                                                                                                                        | hour | 0.29     | 934.30     | 270.95        |
|                                    | <b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b> |                                                                                                                                          |      |          |            | <b>80.58</b>  |
|                                    | <b>c) Contractor's Profit @ 0% on (a+b)</b>                   |                                                                                                                                          |      |          |            | -             |
|                                    |                                                               | Cost for 100 t.km = a+b+c                                                                                                                |      |          |            | 725.25        |
| <b>Rate per t.km = (a+b+c)/100</b> |                                                               |                                                                                                                                          |      |          |            | <b>7.25</b>   |
|                                    | <b>Note:</b>                                                  | In case of carriage of Hume pipes, output of truck be taken as 8 t and the rate for t is to be divided by number of pipes of different   |      |          |            |               |
|                                    |                                                               | <b>Case-II: Unsurfaced Gravel Road</b>                                                                                                   |      |          |            |               |
|                                    |                                                               | Speed with load: 20 km/hour                                                                                                              |      |          |            |               |
|                                    |                                                               | Speed for empty return trip: 30 km/hour                                                                                                  |      |          |            |               |
|                                    | <b>a) Machinery</b>                                           |                                                                                                                                          |      |          |            |               |
|                                    | <b>Truck 10 t capacity</b>                                    |                                                                                                                                          |      |          |            |               |
|                                    |                                                               | Haulage with load                                                                                                                        | hour | 0.50     | 934.30     | 467.15        |
|                                    |                                                               | Empty return trip                                                                                                                        | hour | 0.33     | 934.30     | 308.32        |
|                                    | <b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b> |                                                                                                                                          |      |          |            | <b>96.93</b>  |
|                                    | <b>c) Contractor's Profit @ 10.0% on (a+b)</b>                |                                                                                                                                          |      |          |            | -             |
|                                    |                                                               | Cost for 100 t.km = a+b+c                                                                                                                |      |          |            | 872.40        |
| <b>Rate per t.km = (a+b+c)/100</b> |                                                               |                                                                                                                                          |      |          |            | <b>8.72</b>   |

| Sr. No.                               | Reference to MORD Specifications                              | Description                                                                                                                                                                                     | Unit | Quantity | Rate (Rs.) | Amount (Rs.)    |
|---------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|------------|-----------------|
|                                       | <b>Note:</b>                                                  | In case of carriage of Hume pipes, output of truck be taken as 8 t and the rate per t is to be divided by number of pipes of different                                                          |      |          |            |                 |
|                                       |                                                               | <b>Case-III: Katcha Track and Track in River Bed/Nallah Bed and Choe Bed</b>                                                                                                                    |      |          |            |                 |
|                                       |                                                               | Speed with load: 10 km per hour                                                                                                                                                                 |      |          |            |                 |
|                                       |                                                               | Speed while returning empty: 15 km per hour                                                                                                                                                     |      |          |            |                 |
|                                       | <b>a) Machinery</b>                                           |                                                                                                                                                                                                 |      |          |            |                 |
|                                       | <b>i) Truck 10 t capacity</b>                                 |                                                                                                                                                                                                 |      |          |            |                 |
|                                       |                                                               | Haulage with load                                                                                                                                                                               | hour | 1.00     | 934.30     | 934.30          |
|                                       |                                                               | Empty return trip                                                                                                                                                                               | hour | 0.67     | 934.30     | 625.98          |
|                                       | <b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b> |                                                                                                                                                                                                 |      |          |            | <b>195.04</b>   |
|                                       | <b>c) Contractor's Profit @ 0% on (a+b)</b>                   |                                                                                                                                                                                                 |      |          |            | -               |
|                                       |                                                               | Cost for 100 t.km = a+b+c                                                                                                                                                                       |      |          |            | 1,755.32        |
| <b>Rate per t.km = (a+b+c)/100</b>    |                                                               |                                                                                                                                                                                                 |      |          |            | <b>17.55</b>    |
| <b>TEC</b>                            | <b>Note:</b>                                                  | In case of carriage of Hume pipes, output of truck be taken as 8 t and the cost for 8 t is to be divided by number of pipes of different                                                        |      |          |            |                 |
|                                       |                                                               | <b>Brick Flat Soling</b>                                                                                                                                                                        |      |          |            |                 |
|                                       |                                                               | Laying brick soling layer on prepared sub-grade with brick on lines, graded and cross-section shown on the drawing filling joints with sand and earth as per Technical Specification Clause 412 |      |          |            |                 |
|                                       |                                                               | Unit = sqm                                                                                                                                                                                      |      |          |            |                 |
|                                       |                                                               | Taking output = 9.30 sqm                                                                                                                                                                        |      |          |            |                 |
|                                       | <b>a) Labour</b>                                              |                                                                                                                                                                                                 |      |          |            |                 |
|                                       |                                                               | Mazdoor (Unskilled)                                                                                                                                                                             | day  | 1.00     | 412.00     | 412.00          |
|                                       |                                                               | Mason 2nd class                                                                                                                                                                                 | day  | 0.50     | 494.00     | 247.00          |
|                                       | <b>b) Sundries</b>                                            |                                                                                                                                                                                                 |      |          |            | 1.60            |
|                                       | <b>c) Material</b>                                            |                                                                                                                                                                                                 |      |          |            |                 |
|                                       |                                                               | Brick 1st Class New                                                                                                                                                                             | No.  | 300.00   | 6.12       | <b>1,836.00</b> |
|                                       |                                                               | Fine Sand                                                                                                                                                                                       | cum  | 0.142    | 145.87     | 20.71           |
|                                       | <b>d) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b> |                                                                                                                                                                                                 |      |          |            | <b>314.66</b>   |
|                                       | <b>e) Contractor's Profit @ 0% on (a+b+c+d)</b>               |                                                                                                                                                                                                 |      |          |            | <b>0.00</b>     |
|                                       |                                                               | Cost for 9.30sqm = a+b+c+d+e                                                                                                                                                                    |      |          |            | 2,831.97        |
| <b>Rate per sqm = (a+b+c+d+e)/9.3</b> |                                                               |                                                                                                                                                                                                 |      |          |            | <b>304.51</b>   |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                          | Unit       | Quantity                  | Rate   | Amount in Rs  |
|---------|-------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------------|--------|---------------|
| 1       | 1.1         | (i)          | Loading of Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Crushed Slag, Stone for Masonry Work by manual means including a lead upto 30 m<br>Unit = cum<br>Taking output = 5.5 cum       |            |                           |        |               |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                        |            |                           |        |               |
|         |             |              | Mate                                                                                                                                                                                                                 | day        | 0.02                      | 437.00 | 8.74          |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                  | day        | 0.50                      | 412.00 | 206.00        |
|         |             | b)           | <b>Machinery</b>                                                                                                                                                                                                     |            |                           |        |               |
|         |             |              | Truck                                                                                                                                                                                                                | hour       | 0.50                      | 934.30 | 467.15        |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)                                                                                                                                                                    |            |                           |        | 85.24         |
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)                                                                                                                                                                                  |            |                           |        | 0.00          |
|         |             |              | Cost for 5.5 cum = a+b+c+d                                                                                                                                                                                           |            |                           |        | 767.13        |
|         |             |              | <b>Rate per cum = (a+b+c+d) /5.5</b>                                                                                                                                                                                 |            |                           |        | 139.48        |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                    | <b>Cum</b> |                           |        | 139.48        |
| 2       |             | (ii)         | Loading of Earth, Sand, Moorum, Manure, Flyash by manual means including a lead upto 30 m.<br>Unit = cum<br>Taking output = 5.5 cum                                                                                  |            |                           |        |               |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                        |            |                           |        |               |
|         |             |              | Mate                                                                                                                                                                                                                 | day        | 0.01                      | 437.00 | 4.37          |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                  | day        | 0.25                      | 412.00 | 103.00        |
|         |             | b)           | <b>Machinery</b>                                                                                                                                                                                                     |            |                           |        |               |
|         |             |              | Truck                                                                                                                                                                                                                | hour       | 0.25                      | 934.30 | 233.58        |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)                                                                                                                                                                    |            |                           |        | 42.62         |
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)                                                                                                                                                                                  |            |                           |        | 0.00          |
|         |             |              | Cost for 5.5 cum = a+b+c+d                                                                                                                                                                                           |            |                           |        | 383.56        |
|         |             |              | <b>Rate per cum = (a+b+c+d) /5.5</b>                                                                                                                                                                                 |            |                           |        | 69.74         |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                    | <b>Cum</b> |                           |        | 69.74         |
| 3       |             | (iii)        | Unloading of Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Crushed Slag, Stone for Masonry Work by mechanical means including a lead upto 30 m<br>Unit = cum<br>Taking output = 5.5 cum |            |                           |        |               |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                        |            |                           |        |               |
|         |             |              | Mate                                                                                                                                                                                                                 | day        | 0.01                      | 437.00 | 4.37          |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                  | day        | 0.25                      | 412.00 | 103.00        |
|         |             | b)           | <b>Machinery</b>                                                                                                                                                                                                     |            |                           |        |               |
|         |             |              | Truck                                                                                                                                                                                                                | hour       | 0.25                      | 934.30 | 233.58        |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)                                                                                                                                                                    |            |                           |        | 42.62         |
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)                                                                                                                                                                                  |            |                           |        | 0.00          |
|         |             |              | Cost for 5.5 cum = a+b+c+d                                                                                                                                                                                           |            |                           |        | 383.56        |
|         |             |              | <b>Rate per cum = (a+b+c+d) /5.5</b>                                                                                                                                                                                 |            |                           |        | 69.74         |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                    | <b>Cum</b> |                           |        | 69.74         |
|         |             |              | <b>Total Loding &amp; Unloading of Stone Aggregate</b>                                                                                                                                                               | <b>Cum</b> | <b>= 139.48 + 69.74 =</b> |        | <b>209.22</b> |
| 4       |             | (iv)         | Unloading of Earth, Sand, Moorum, Manure, Flyash by manual means including a lead upto 30 m.<br>Unit = cum<br>Taking output = 5.5 cum                                                                                |            |                           |        |               |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                        |            |                           |        |               |
|         |             |              | Mate                                                                                                                                                                                                                 | day        | 0.01                      | 437.00 | 2.19          |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                  | day        | 0.13                      | 412.00 | 51.50         |
|         |             | b)           | <b>Machinery</b>                                                                                                                                                                                                     |            |                           |        |               |
|         |             |              | Truck                                                                                                                                                                                                                | hour       | 0.166                     | 934.30 | 155.09        |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)                                                                                                                                                                    |            |                           |        | 26.10         |
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)                                                                                                                                                                                  |            |                           |        | 0.00          |
|         |             |              | Cost for 5.5 cum = a+b+c+d                                                                                                                                                                                           |            |                           |        | 234.88        |
|         |             |              | <b>Rate per cum = (a+b+c+d) /5.5</b>                                                                                                                                                                                 |            |                           |        | 42.70         |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                    | <b>Cum</b> |                           |        | 42.70         |
|         |             |              | <b>Total Loding &amp; Unloading of Sand / Moorum</b>                                                                                                                                                                 | <b>Cum</b> | <b>= 69.74 + 42.7 =</b>   |        | <b>112.44</b> |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Unit       | Quantity | Rate   | Amount in Rs  |
|---------|-------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|--------|---------------|
| 5       | 1.3         |              | <b>Loading, Unloading and Stacking of Bricks by Manual Means</b><br>(i) Loading of Bricks by manual means including a lead upto 30 m<br>Unit = 1000 Nos.<br>Taking output = 2000 Nos.<br><b>a) Labour</b><br>Mate<br>Mazdoor (Unskilled)<br><b>b) Machinery</b><br>Truck<br><b>c)</b> Overheads & Contractor's profit @ 12.5 % on (a+b)<br><b>d)</b> Contractor's profit @ 0% on (a+b+c)<br>Cost for 2000 Nos. = a+b+c+d<br><b>Rate for 1000 bricks = (a+b+c+d)/2</b> |            |          |        |               |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | day        | 0.01     | 437.00 | 4.37          |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | day        | 0.25     | 412.00 | 103.00        |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | hour       | 0.33     | 934.30 | 308.32        |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | <b>51.96</b>  |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | <b>0.00</b>   |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | 467.65        |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | <b>233.83</b> |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>no.</b> |          |        | <b>233.83</b> |
| 6       |             | (ii)         | Unloading and Stacking of Bricks by manual means including a lead upto 30 m<br>Unit = 1000 Nos.<br>Taking output = 2000 Nos.<br><b>a) Labour</b><br>Mate<br>Mazdoor (Unskilled)<br><b>b) Machinery</b><br>Truck<br><b>c)</b> Overheads & Contractor's profit @ 12.5 % on (a+b)<br><b>d)</b> Contractor's profit @ 0% on (a+b+c)<br>Cost for 2000 Nos. = a+b+c+d<br><b>Rate for 1000 bricks = (a+b+c+d)/2</b>                                                          |            |          |        |               |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | day        | 0.01     | 437.00 | 4.37          |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | day        | 0.25     | 412.00 | 103.00        |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | hour       | 0.33     | 934.30 | 308.32        |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | <b>51.96</b>  |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | <b>0.00</b>   |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | 467.65        |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | <b>233.83</b> |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>no.</b> |          |        | <b>233.83</b> |
|         |             |              | <b>Total Loding &amp; Unloading of Brick Per 1000 = 233.83 + 233.83 =</b>                                                                                                                                                                                                                                                                                                                                                                                             |            |          |        | <b>467.66</b> |
| 7       |             | (i)          | <b>Loading and Unloading of Cement by Manual Means</b><br>Loading of Cement by manual means including a lead upto 30 m<br>Unit = t<br>Taking output = 10 t<br><b>a) Labour</b><br>Mate<br>Mazdoor (Unskilled)<br><b>b) Machinery</b><br>Truck<br><b>c)</b> Overheads & Contractor's profit @ 12.5 % on (a+b)<br><b>d)</b> Contractor's profit @ 0% on (a+b+c)<br>Cost for 10 t = a+b+c+d<br><b>Rate per tonnes = (a+b+c+d)/10</b>                                     |            |          |        |               |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | day        | 0.06     | 437.00 | 26.22         |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | day        | 1.50     | 412.00 | 618.00        |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | hour       | 1.00     | 934.30 | 934.30        |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | <b>197.32</b> |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | <b>0.00</b>   |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | 1775.84       |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | <b>177.58</b> |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>t</b>   |          |        | <b>177.58</b> |
| 8       |             | (ii)         | Unloading of Cement by manual means including a lead upto 30 m<br>Unit = t<br>Taking output = 10 t<br><b>a) Labour</b><br>Mate<br>Mazdoor (Unskilled)<br><b>b) Machinery</b><br>Truck<br><b>c)</b> Overheads & Contractor's profit @ 12.5 % on (a+b)<br><b>d)</b> Contractor's profit @ 0% on (a+b+c)<br>Cost for 10 t = a+b+c+d<br><b>Rate per tonne = (a+b+c+d)/10</b>                                                                                              |            |          |        |               |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | day        | 0.06     | 437.00 | 26.22         |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | day        | 1.50     | 412.00 | 618.00        |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | hour       | 1.00     | 934.30 | 934.30        |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | <b>197.32</b> |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | <b>0.00</b>   |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | 1775.84       |
|         |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |        | <b>177.58</b> |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>t</b>   |          |        | <b>177.58</b> |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                              | Unit     | Quantity                   | Rate   | Amount in Rs  |
|---------|-------------|--------------|--------------------------------------------------------------------------------------------------------------------------|----------|----------------------------|--------|---------------|
|         |             |              | <b>Total Loding &amp; Unloading of Cement</b>                                                                            | <b>t</b> | <b>= 177.58 + 177.58 =</b> |        | <b>355.16</b> |
| 9       | 1.5         |              | <b>Loading and Unloading of Structural Steel and Steel Bars by manual means</b>                                          |          |                            |        |               |
|         |             | (i)          | Loading of Structural Steel, Steel Bars by manual means including a lead upto 30 m<br>Unit = t<br>Taking output = 10 t   |          |                            |        |               |
|         |             | a)           | <b>Labour</b>                                                                                                            |          |                            |        |               |
|         |             |              | Mate                                                                                                                     | day      | 0.07                       | 437.00 | 30.59         |
|         |             |              | Mazdoor (Unskilled)                                                                                                      | day      | 1.80                       | 412.00 | 741.60        |
|         |             | b)           | <b>Machinery</b>                                                                                                         |          |                            |        |               |
|         |             |              | Truck                                                                                                                    | hour     | 1.00                       | 934.30 | 934.30        |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)                                                                        |          |                            |        | <b>213.31</b> |
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)                                                                                      |          |                            |        | <b>0.00</b>   |
|         |             |              | Cost for 10 t = a+b+c+d                                                                                                  |          |                            |        | 1919.80       |
|         |             |              | <b>Rate per tonnes = (a+b+c+d)/10</b>                                                                                    |          |                            |        | <b>191.98</b> |
|         |             |              | <b>Total Cost</b>                                                                                                        | <b>t</b> |                            |        | <b>191.98</b> |
| 10      |             | (ii)         | Unloading of Structural Steel, Steel Bars by manual means including a lead upto 30 m<br>Unit = t<br>Taking output = 10 t |          |                            |        |               |
|         |             | a)           | <b>Labour</b>                                                                                                            |          |                            |        |               |
|         |             |              | Mate                                                                                                                     | day      | 0.07                       | 437.00 | 30.59         |
|         |             |              | Mazdoor (Unskilled)                                                                                                      | day      | 1.80                       | 412.00 | 741.60        |
|         |             | b)           | <b>Machinery</b>                                                                                                         |          |                            |        |               |
|         |             |              | Truck                                                                                                                    | hour     | 1.00                       | 934.30 | 934.30        |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)                                                                        |          |                            |        | <b>213.31</b> |
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)                                                                                      |          |                            |        | <b>0.00</b>   |
|         |             |              | Cost for 10 t = a+b+c+d                                                                                                  |          |                            |        | 1919.80       |
|         |             |              | <b>Rate per t = (a+b+c+d)/10</b>                                                                                         |          |                            |        | <b>191.98</b> |
|         |             |              | <b>Total Cost</b>                                                                                                        | <b>t</b> |                            |        | <b>191.98</b> |
|         |             |              | <b>Total Loding &amp; Unloading of Steel</b>                                                                             | <b>t</b> | <b>= 191.98 + 191.98 =</b> |        | <b>383.96</b> |
| 11      | 1.6         |              | <b>Loading and Unloading of Bitumen Drums by Manual Means</b>                                                            |          |                            |        |               |
|         |             | (i)          | Loading of Bitumen Drums by manual means including a lead upto 30 m<br>Unit = t<br>Taking output = 10 t                  |          |                            |        |               |
|         |             | a)           | <b>Labour</b>                                                                                                            |          |                            |        |               |
|         |             |              | Mate                                                                                                                     | day      | 0.06                       | 437.00 | 26.22         |
|         |             |              | Mazdoor (Unskilled)                                                                                                      | day      | 1.60                       | 412.00 | 659.20        |
|         |             | b)           | <b>Machinery</b>                                                                                                         |          |                            |        |               |
|         |             |              | Truck                                                                                                                    | hour     | 1.25                       | 934.30 | 1167.88       |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)                                                                        |          |                            |        | <b>231.66</b> |
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)                                                                                      |          |                            |        | <b>0.00</b>   |
|         |             |              | Cost for 10 t = a+b+c+d                                                                                                  |          |                            |        | 2084.96       |
|         |             |              | <b>Rate per tonnes = (a+b+c+d)/10</b>                                                                                    |          |                            |        | <b>208.50</b> |
|         |             |              | <b>Total Cost</b>                                                                                                        | <b>t</b> |                            |        | <b>208.50</b> |
| 12      |             | (ii)         | Unloading of Bitumen Drums by Manual Means including a lead upto 30 m<br>Unit = t<br>Taking output = 10 t                |          |                            |        |               |
|         |             | a)           | <b>Labour</b>                                                                                                            |          |                            |        |               |
|         |             |              | Mate                                                                                                                     | day      | 0.05                       | 437.00 | 21.85         |
|         |             |              | Mazdoor (Unskilled)                                                                                                      | day      | 1.20                       | 412.00 | 494.40        |
|         |             | b)           | <b>Machinery</b>                                                                                                         |          |                            |        |               |
|         |             |              | Truck                                                                                                                    | hour     | 1.25                       | 934.30 | 1167.88       |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)                                                                        |          |                            |        | <b>210.52</b> |
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)                                                                                      |          |                            |        | <b>0.00</b>   |
|         |             |              | Cost for 10 t = a+b+c+d                                                                                                  |          |                            |        | 1894.64       |
|         |             |              | <b>Rate per t = (a+b+c+d)/10</b>                                                                                         |          |                            |        | <b>189.46</b> |
|         |             | Note :-      | The rate is inclusive of the self weight of drum                                                                         |          |                            |        |               |
|         |             |              | <b>Total Cost</b>                                                                                                        | <b>t</b> |                            |        | <b>189.46</b> |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                      | Unit         | Quantity                  | Rate   | Amount in Rs  |
|---------|-------------|--------------|----------------------------------------------------------------------------------|--------------|---------------------------|--------|---------------|
|         |             |              | <b>Total Loding &amp; Unloading of Bitumen Drums</b>                             | <b>t</b>     | <b>= 208.5 + 189.46 =</b> |        | <b>397.96</b> |
| 13      | 1.9         |              | <b>Loading and Unloading of Hume Pipes</b>                                       |              |                           |        |               |
|         |             | (i)          | Loading of RCC Hume pipes by mechanical means including a lead upto 30 m         |              |                           |        |               |
|         |             | A.           | <b>1000 / 1200 mm dia Hume pipe</b>                                              |              |                           |        |               |
|         |             |              | Unit = per pipe                                                                  |              |                           |        |               |
|         |             |              | Taking output = 9 pipes                                                          |              |                           |        |               |
|         |             | a)           | <b>Labour</b>                                                                    |              |                           |        |               |
|         |             |              | Mate                                                                             | day          | 0.02                      | 437.00 | 8.74          |
|         |             |              | Mazdoor (Unskilled)                                                              | day          | 0.50                      | 412.00 | 206.00        |
|         |             | b)           | <b>Machinery</b>                                                                 |              |                           |        |               |
|         |             |              | Truck                                                                            | hour         | 0.33                      | 934.30 | 308.32        |
|         |             |              | Crane                                                                            | hour         | 0.33                      | 822.00 | 271.26        |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)                                |              |                           |        | 99.29         |
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)                                              |              |                           |        | 0.00          |
|         |             |              | Cost for 9 pipes = a+b+c+d                                                       |              |                           |        | 893.61        |
|         |             |              | <b>Rate per pipe = (a+b+c+d)/9</b>                                               |              |                           |        | <b>99.29</b>  |
|         |             |              | <b>Total Cost</b>                                                                | <b>per p</b> |                           |        | <b>99.29</b>  |
| 14      |             | C.           | <b>600/450 mm dia Hume pipe</b>                                                  |              |                           |        |               |
|         |             |              | Unit = per pipe                                                                  |              |                           |        |               |
|         |             |              | Taking output = 21 pipe                                                          |              |                           |        |               |
|         |             | a)           | <b>Labour</b>                                                                    |              |                           |        |               |
|         |             |              | Mate                                                                             | day          | 0.02                      | 437.00 | 8.74          |
|         |             |              | Mazdoor (Unskilled)                                                              | day          | 0.50                      | 412.00 | 206.00        |
|         |             | b)           | <b>Machinery</b>                                                                 |              |                           |        |               |
|         |             |              | Truck                                                                            | hour         | 0.33                      | 934.30 | 308.32        |
|         |             |              | Crane                                                                            | hour         | 0.33                      | 822.00 | 271.26        |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)                                |              |                           |        | 99.29         |
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)                                              |              |                           |        | 0.00          |
|         |             |              | Cost for 21 pipes = a+b+c+d                                                      |              |                           |        | 893.61        |
|         |             |              | <b>Rate per pipe = (a+b+c+d)/21</b>                                              |              |                           |        | <b>42.55</b>  |
|         |             |              | <b>Total Cost</b>                                                                | <b>per p</b> |                           |        | <b>42.55</b>  |
| 15      |             | (ii)         | <b>Unloading of RCC Hume pipe by mechanical means including a lead upto 30 m</b> |              |                           |        |               |
|         |             | A.           | <b>1000/1200 mm dia RCC Hume pipes</b>                                           |              |                           |        |               |
|         |             |              | Unit = per pipe                                                                  |              |                           |        |               |
|         |             |              | Taking output = 9 pipes                                                          |              |                           |        |               |
|         |             | a)           | <b>Labour</b>                                                                    |              |                           |        |               |
|         |             |              | Mate                                                                             | day          | 0.02                      | 437.00 | 8.74          |
|         |             |              | Mazdoor (Unskilled)                                                              | day          | 0.50                      | 412.00 | 206.00        |
|         |             | b)           | <b>Machinery</b>                                                                 |              |                           |        |               |
|         |             |              | Truck                                                                            | hour         | 0.20                      | 934.30 | 186.86        |
|         |             |              | Crane                                                                            | hour         | 0.20                      | 822.00 | 164.40        |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)                                |              |                           |        | 70.75         |
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)                                              |              |                           |        | 0.00          |
|         |             |              | Cost for 9 pipes = a+b+c+d                                                       |              |                           |        | 636.75        |
|         |             |              | <b>Rate per pipe = (a+b+c+d)/9</b>                                               |              |                           |        | <b>70.75</b>  |
|         |             |              | <b>Total Cost</b>                                                                | <b>per p</b> |                           |        | <b>70.75</b>  |
|         |             |              | <b>Total Loding &amp; Unloading of RCC Hume Pipe per Pipe</b>                    |              | <b>= 99.29 + 70.75 =</b>  |        | <b>170.04</b> |
|         |             |              | <b>Total Loding &amp; Unloading of RCC Hume Pipe</b>                             | <b>m</b>     | <b>= 170.04 / 2.50 =</b>  |        | <b>68.02</b>  |
| 16      |             | C.           | <b>600/450 mm dia Hume pipe</b>                                                  |              |                           |        |               |
|         |             |              | Unit = per pipe                                                                  |              |                           |        |               |
|         |             |              | Taking output = 21 pipes                                                         |              |                           |        |               |
|         |             | a)           | <b>Labour</b>                                                                    |              |                           |        |               |
|         |             |              | Mate                                                                             | day          | 0.02                      | 437.00 | 8.74          |
|         |             |              | Mazdoor (Unskilled)                                                              | day          | 0.50                      | 412.00 | 206.00        |
|         |             | b)           | <b>Machinery</b>                                                                 |              |                           |        |               |
|         |             |              | Truck                                                                            | hour         | 0.20                      | 934.30 | 186.86        |
|         |             |              | Crane                                                                            | hour         | 0.20                      | 822.00 | 164.40        |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)                                |              |                           |        | 70.75         |
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)                                              |              |                           |        | 0.00          |
|         |             |              | Cost for 21 pipes = a+b+c+d                                                      |              |                           |        | 636.75        |
|         |             |              | <b>Rate per pipe = (a+b+c+d)/21</b>                                              |              |                           |        | <b>30.32</b>  |



# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Unit                           | Quantity                         | Rate                                   | Amount in Rs                                                          |
|---------|-------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------------|----------------------------------------|-----------------------------------------------------------------------|
|         |             |              | Total Cost                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | per p                          |                                  |                                        | 30.32                                                                 |
|         |             |              | <i>Total Loding &amp; Unloading of RCC Hume Pipe</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <i>per Pipe</i>                | <i>= 42.55 + 30.32 =</i>         |                                        | <i>72.87</i>                                                          |
|         |             |              | <i>Total Loding &amp; Unloading of RCC Hume Pipe</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <i>m</i>                       | <i>= 72.87 / 2.50 =</i>          |                                        | <i>29.15</i>                                                          |
| 17      | 1.16        | 100          | <b>Setting Out Pillars</b><br>Unit = 1 No.<br>Analysis of rates per pillar shall account for following :<br>Typical Benchmark 1 no. as per Dwg no. 200.1 of MORD Data Book ( Page 1-18 )<br>The rate analysis for a typical benchmark as per dwg.<br>1. Excavation<br>2. P.C.C. grade M 10<br>3. Brick Masonry in CM 1:4<br>4. Plastering with CM 1:4 , 15 mm thick cement plaster on Brick work.<br><b>Add 5 per cent cost of items No.1 to 4 for white washing,</b><br><div style="text-align: right;">Sub Total</div>                                                                                                                                                                                                                                                             | cum<br>cum<br>cum<br>sqm<br>NO | 0.325<br>0.100<br>0.475<br>2.630 | 386.53<br>5117.64<br>6619.29<br>190.12 | 125.62<br>511.76<br>3144.16<br>500.01<br><br>214.08<br><b>4495.64</b> |
|         |             |              | <b>A Total 6 Nos. of Pillars required for 1 Km.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NO                             | 2                                | 4495.64                                | 8991.28                                                               |
| 18      | 1.16        | 100          | <b>Setting Out Pillars</b><br>Unit = 1 No.<br>Analysis of rates per pillar shall account for following :<br>Reference Pillar 1 no. as per Dwg no. 200.2 of MORD Data Book ( Page 1-18 )<br>The rate analysis for a typical benchmark as per dwg.<br>1. Excavation<br>2. P.C.C. grade M 10<br>3. Brick Masonry in CM 1:4<br>4. Plastering with CM 1:4 , 15 mm thick cement plaster on Brick work.<br><b>Add 5 per cent cost of items No.1 to 4 for white washing,</b><br><div style="text-align: right;">Sub Total</div>                                                                                                                                                                                                                                                              | cum<br>cum<br>cum<br>sqm<br>NO | 0.192<br>0.060<br>0.193<br>1.500 | 386.53<br>5117.64<br>6619.29<br>190.12 | 74.21<br>307.06<br>1277.52<br>285.18<br><br>97.20<br><b>2041.17</b>   |
|         |             |              | <b>B Total 2 Nos. of reference pillars required for 1 Km.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NO                             | 6                                | 2041.17                                | 12247.02                                                              |
|         |             |              | <b>Cost of Setting out</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Km                             | A + B                            |                                        | 2654.790                                                              |
|         |             |              | <i>Total Cost including 1 % Labour Cess</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Km                             |                                  |                                        | <i>2681.34</i>                                                        |
| 19      | 2.2 (I)     | 201          | <b>Clearing and Grubbing Road Land</b><br>Clearing and Grubbing Road Land including uprooting wild vegetation , grass,bushes,shurbs,saplins and trees of girth upto 300mm, removal of stumps of such trees cut earlier and unseviceable materials & stacking of serviceable materials to be used or auctioned upto a lead of 1000m including removal and disposal of top organic soil not exceeding 150mm in thickness as per technical specification(clause201.1)<br>By Manual Means<br>(A) In area of non-thorny jungle<br>a) Labour<br>Mate<br>Mazdoor (Unskilled)<br>b) Machinery<br>Tractor with trolley<br>c) Overheads & Contractor's profit @ 12.5 % on (a+b)<br>d) Contractor's profit @ 0% on (a+b+c)<br><div style="text-align: right;">Rate per hectare = a+b+c+d=</div> | day<br>day<br>hour             | 6.00<br>150.00<br>1.00           | 437.00<br>412.00<br>688.00             | 2622.00<br>61800.00<br>688.00<br>8138.75<br>0.00<br>73248.75          |
|         |             |              | Total Cost                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Ha.                            |                                  |                                        | 73248.75                                                              |
| 20      | 2.5         | 202          | <b>Dismantling of Structures</b><br>Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 m as per Technical Specification Clause 202.<br>Unit = cum<br>Taking output = 1.25 cum<br>(I) <b>By Manual Means</b><br>(C) <b>Reinforced Cement Concrete</b><br>a) <b>Labour</b><br>Mate                                                                                                                                                                                              | day                            | 0.04                             | 437.00                                 | 17.48                                                                 |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                   | Unit       | Quantity | Rate     | Amount in Rs  |
|---------|-------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|----------|---------------|
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                           | day        | 1.00     | 412.00   | 412.00        |
|         |             |              | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                              |            |          |          |               |
|         |             | <b>b)</b>    | Tractor with trolley                                                                                                                                                                                                                                                                                                                                                                                          | hour       | 0.27     | 688.00   | 185.76        |
|         |             | <b>c)</b>    | Overheads & Contractor's profit @ 12.5 % on (a+b)                                                                                                                                                                                                                                                                                                                                                             |            |          |          | 76.91         |
|         |             | <b>d)</b>    | Contractor's profit @ 0% on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                           |            |          |          | 0.00          |
|         |             |              | Cost for 1.25 cum = a+b+c+d                                                                                                                                                                                                                                                                                                                                                                                   |            |          |          | 692.15        |
|         |             |              | <b>Rate per cum = (a+b+c+d)/1.25</b>                                                                                                                                                                                                                                                                                                                                                                          |            |          |          | <b>553.72</b> |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                             | <b>cum</b> |          |          | <b>553.72</b> |
| 21      | 2.6- D      | 202          | <b>Dismantling of existing structures</b> , like culverts, bridge,retaining wall and other structures comprising of brick masonry including unserviceable material and stacking the serviceable material with all lift and lead of 1000m as per technical specification clause 202.<br>( Dismantling of dry brick pitching or Brick Soling,Masonry work )                                                     |            |          |          |               |
|         |             | <b>a)</b>    | Labour                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |          |               |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                          | day        | 0.014    | 437.00   | 6.12          |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                           | day        | 0.35     | 412.00   | 144.20        |
|         |             | <b>b)</b>    | Machinery                                                                                                                                                                                                                                                                                                                                                                                                     |            |          |          |               |
|         |             |              | Tractor with trolley                                                                                                                                                                                                                                                                                                                                                                                          | hour       | 0.27     | 688.00   | 185.76        |
|         |             | <b>c)</b>    | Overheads & Contractor's profit @ 12.5 % on (a+b)                                                                                                                                                                                                                                                                                                                                                             |            |          |          | 42.01         |
|         |             | <b>d)</b>    | Contractor's profit @ 0% on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                           |            |          |          | 0.00          |
|         |             |              | Cost for 1.25 cum = a+b+c+d                                                                                                                                                                                                                                                                                                                                                                                   |            |          |          | 378.09        |
|         |             |              | <b>Rate per cum = (a+b+c+d)/1.25=</b>                                                                                                                                                                                                                                                                                                                                                                         |            |          |          | <b>302.47</b> |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                             | <b>cum</b> |          |          | <b>302.47</b> |
| 22      | 2.13        | 202.1        | <b>Removing all types of Hume pipe and stacking</b><br>Removing all types of Hume pipes and stacking within a lead of 1000 m including Earthwork and Dismantling of Masonry Works as per Technical Specification Clause 202.                                                                                                                                                                                  |            |          |          |               |
|         |             | <b>(A)</b>   | Upto 600 mm dia Hume pipe                                                                                                                                                                                                                                                                                                                                                                                     |            |          |          |               |
|         |             | <b>a)</b>    | Labour                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |          |               |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                          | day        | 0.02     | 437.00   | 8.74          |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                           | day        | 0.52     | 412.00   | 214.24        |
|         |             | <b>b)</b>    | Overheads & Contractor's profit @ 12.5 % on (a)                                                                                                                                                                                                                                                                                                                                                               |            |          |          | 27.87         |
|         |             | <b>c)</b>    | Contractor's profit @ 0% on (a+b)                                                                                                                                                                                                                                                                                                                                                                             |            |          |          | 0.00          |
|         |             |              | <b>Rate per m = a+b+c</b>                                                                                                                                                                                                                                                                                                                                                                                     |            |          |          | <b>250.85</b> |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                             | <b>m</b>   |          |          | <b>250.85</b> |
|         |             | <b>(B)</b>   | Above 600 mm to 900 mm dia Hume pipe                                                                                                                                                                                                                                                                                                                                                                          |            |          |          |               |
|         |             | <b>a)</b>    | Labour                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |          |               |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                          | day        | 0.03     | 437.00   | 13.11         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                           | day        | 0.70     | 412.00   | 288.40        |
|         |             | <b>b)</b>    | Overheads & Contractor's profit @ 12.5 % on (a)                                                                                                                                                                                                                                                                                                                                                               |            |          |          | 37.69         |
|         |             | <b>c)</b>    | Contractor's profit @ 0% on (a+b)                                                                                                                                                                                                                                                                                                                                                                             |            |          |          | 0.00          |
|         |             |              | <b>Rate per m = a+b+c=</b>                                                                                                                                                                                                                                                                                                                                                                                    |            |          |          | <b>339.20</b> |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                             | <b>m</b>   |          |          | <b>339.20</b> |
|         |             | <b>(C)</b>   | Above 900 mm dia Hume pipe                                                                                                                                                                                                                                                                                                                                                                                    |            |          |          |               |
|         |             | <b>a)</b>    | Labour                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |          |               |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                          | day        | 0.05     | 437.00   | 21.85         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                           | day        | 1.20     | 412.00   | 494.40        |
|         |             | <b>b)</b>    | Overheads & Contractor's profit @ 12.5 % on (a)                                                                                                                                                                                                                                                                                                                                                               |            |          |          | 64.53         |
|         |             | <b>c)</b>    | Contractor's profit @ 0% on (a+b)                                                                                                                                                                                                                                                                                                                                                                             |            |          |          | 0.00          |
|         |             |              | <b>Rate per m = a+b+c</b>                                                                                                                                                                                                                                                                                                                                                                                     |            |          |          | <b>580.78</b> |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                             | <b>m</b>   |          |          | <b>580.78</b> |
|         |             |              | <b>EARTHWORK</b>                                                                                                                                                                                                                                                                                                                                                                                              |            |          |          |               |
| 23      | 3.3         | 301.5        | <b>Construction of embankment with material obtained from road way cutting</b><br>Construction of embankment with approved materials deposited at site and obtained from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of Tables 300.1 and 300.2 as per Technical Specification Clause 301.5<br>Unit = cum<br>Taking output = 100 cum |            |          |          |               |
|         |             | <b>a)</b>    | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                 |            |          |          |               |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                          | day        | 0.02     | 437.00   | 8.74          |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                           | day        | 0.50     | 412.00   | 206.00        |
|         |             | <b>b)</b>    | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                              |            |          |          |               |
|         |             |              | Tractor mounted grader arrangement for grading @ 100 cum per hour                                                                                                                                                                                                                                                                                                                                             | hour       | 1.00     | 693.00   | 693.00        |
|         |             |              | Water tanker 6 kl capacity                                                                                                                                                                                                                                                                                                                                                                                    | hour       | 2.00     | 764.00   | 1528.00       |
|         |             |              | Three wheel 80-100 kN Static Roller                                                                                                                                                                                                                                                                                                                                                                           | hour       | 1.25     | 1,612.00 | 2015.00       |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Unit       | Quantity | Rate     | Amount in Rs  |
|---------|-------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|----------|---------------|
|         |             | c)           | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |          |               |
|         |             |              | Water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | kl         | 12.00    | 61.40    | 736.80        |
|         |             | d)           | Overheads & Contractor's profit @ 12.5 % on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |          |          | 648.44        |
|         |             | e)           | Contractor's profit @ 0% on (a+b+c+d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |          |          | 0.00          |
|         |             |              | Rate for 100 cum = a+b+c+d+e                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |          |          | 5835.98       |
|         |             |              | <b>Rate per cum = (a+b+c+d+e)/100=</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |          | 58.36         |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>CUM</b> |          |          | <b>58.36</b>  |
| 24      | 3.5         | (iii)        | <b>Excavation in Soil using Hydraulic Excavator and Tippers with disposal upto 1000 m</b><br>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 Technical Specification Clause 302.3<br>Unit = cum<br>Taking output = 360 cum |            |          |          |               |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |          |          |               |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | day        | 0.08     | 437.00   | 34.96         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | day        | 2.00     | 412.00   | 824.00        |
|         |             | b)           | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |          |          |               |
|         |             |              | Hydraulic excavator 0.9 cum bucket capacity @ 100 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                | hour       | 3.60     | 2,288.00 | 8236.80       |
|         |             |              | Tipper 5.5 cum capacity, 4 trips per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | hour       | 15.00    | 1,441.00 | 21615.00      |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |          |          | 3838.85       |
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |          |          | 0.00          |
|         |             |              | Cost for 360 cum = a+b+c+d                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |          |          | 34549.61      |
|         |             |              | <b>Rate per cum = (a+b+c+d)/360</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |          |          | <b>95.97</b>  |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>CUM</b> |          |          | <b>95.97</b>  |
| 25      | 3.4         | 301.5 (A)    | <b>Construction of Embankment with Material Obtained from Borrow Pits</b><br>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 <b>lead upto 1000 m</b> as per Technical Specification Clause 301.5<br>Unit = cum<br>Taking output = 100 cum                                                                                  |            |          |          |               |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |          |          |               |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | day        | 0.04     | 437.00   | 17.48         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | day        | 1.00     | 412.00   | 412.00        |
|         |             | b)           | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |          |          |               |
|         |             |              | Hydraulic Excavator 0.9 cum bucket capacity @ 60 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                 | hour       | 1.67     | 2288.00  | 3820.96       |
|         |             |              | Tipper 5.5 cum with 10 t capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | hour       | 4.50     | 1,441.00 | 6484.50       |
|         |             |              | Add 10 % of the cost of carriage by tipper                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |          |          | 648.45        |
|         |             |              | Dozer D-50 for spreading @ 100 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | hour       | 0.50     | 3,014.00 | 1507.00       |
|         |             |              | Tractor mounted grader arrangement for grading @ 100 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                                                             | hour       | 1.00     | 693.00   | 693.00        |
|         |             |              | Water tanker 6 kl capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | hour       | 2.00     | 764.00   | 1528.00       |
|         |             |              | Three wheel 80-100 kN Static Roller @ 80 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                         | hour       | 1.43     | 1,612.00 | 2305.16       |
|         |             | c)           | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |          |               |
|         |             |              | Water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | kl         | 12.00    | 61.40    | 736.80        |
|         |             |              | Compensation for earth taken from private land                                                                                                                                                                                                                                                                                                                                                                                                                                                                | cum        | 100.00   | 35.25    | 3525.00       |
|         |             | d)           | Overheads & Contractor's profit @ 12.5 % on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |          |          | 2709.79       |
|         |             | e)           | Contractor's profit @ 0% on (a+b+c+d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |          |          | 0.00          |
|         |             |              | Cost for 100 cum = a+b+c+d+e                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |          |          | 24388.14      |
|         |             |              | <b>Rate per cum = (a+b+c+d+e)/100=</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |          | <b>243.88</b> |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>CUM</b> |          |          | <b>243.88</b> |
|         | 3.4 (II)    | 301.5 (ii)   | <b>Construction of Embankment with Material Obtained from Borrow Pits</b><br>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 100 m as per Technical Specification Clause 301.5<br>Unit = cum                                                                                                                     |            |          |          |               |
|         |             | A            | Excavation Part<br>Taking output = 180 cum                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |          |          |               |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |          |          |               |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | day        | 0.08     | 437.00   | 34.96         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | day        | 2.00     | 412.00   | 824.00        |
|         |             | b)           | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |          |          |               |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                              | Unit       | Quantity | Rate     | Amount in Rs  |
|---------|-------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|----------|---------------|
|         |             | C)           | Dozar D-50 cum per hour (cutting with pushing )                                                                                                                                                                                                                                                                          | hour       | 3.60     | 3,014.00 | 10850.40      |
|         |             | C)           | Overheads & Contractor's profit @ 12.5 % on (a+b+c)                                                                                                                                                                                                                                                                      |            |          |          | 1463.67       |
|         |             | C)           | Contractor's profit @ 0% on (a+b+c+d)                                                                                                                                                                                                                                                                                    |            |          |          | 0.00          |
|         |             |              | Cost of 180 cum = a+b+C                                                                                                                                                                                                                                                                                                  |            |          |          | 13173.03      |
|         |             |              | Rate per cum = (a+b)/180=                                                                                                                                                                                                                                                                                                |            |          |          | 73.18         |
|         |             |              | Rate Adopted in DPR                                                                                                                                                                                                                                                                                                      |            |          |          | 73.18         |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                        | <b>CUM</b> |          |          | <b>73.18</b>  |
|         | <b>B</b>    |              | <b>Compaction Part</b>                                                                                                                                                                                                                                                                                                   |            |          |          |               |
|         |             |              | Unit = cum                                                                                                                                                                                                                                                                                                               |            |          |          |               |
|         |             |              | Taking output = 100 cum                                                                                                                                                                                                                                                                                                  |            |          |          |               |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                                                                                                                            |            |          |          |               |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                     | day        | 0.04     | 437.00   | 17.48         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                      | day        | 1.00     | 412.00   | 412.00        |
|         |             | b)           | <b>Machinery</b>                                                                                                                                                                                                                                                                                                         |            |          |          |               |
|         |             |              | Tractor mounted grader arrangement for grading @ 100 cum per hour                                                                                                                                                                                                                                                        | hour       | 1.00     | 693.00   | 693.00        |
|         |             |              | Water tanker 6 kl capacity                                                                                                                                                                                                                                                                                               | hour       | 2.00     | 764.00   | 1528.00       |
|         |             |              | Three wheel 80-100 kN Static Roller                                                                                                                                                                                                                                                                                      | hour       | 1.25     | 1,612.00 | 2015.00       |
|         |             | c)           | <b>Material</b>                                                                                                                                                                                                                                                                                                          |            |          |          |               |
|         |             |              | Water                                                                                                                                                                                                                                                                                                                    | kl         | 12.00    | 61.40    | 736.80        |
|         |             |              | Compensation for earth taken from private land                                                                                                                                                                                                                                                                           | cum        | 100.00   | 35.25    | 3525.00       |
|         |             | d)           | Overheads & Contractor's profit @ 12.5 % on (a+b+c)                                                                                                                                                                                                                                                                      |            |          |          | 1115.91       |
|         |             | e)           | Contractor's profit @ 0% on (a+b+c+d)                                                                                                                                                                                                                                                                                    |            |          |          | 0.00          |
|         |             |              | <b>Rate for 100 cum = (a+b+c+d+e)</b>                                                                                                                                                                                                                                                                                    |            |          |          | 10043.19      |
|         |             |              | <b>Rate per cum = (a+b+c+d+e)/100</b>                                                                                                                                                                                                                                                                                    | cum        |          |          | <b>100.43</b> |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                        | <b>CUM</b> |          |          | <b>173.61</b> |
| 26      | 3.14        | 303.1        | <b>Construction of Subgrade and Earthen Shoulders</b>                                                                                                                                                                                                                                                                    |            |          |          |               |
|         |             |              | Construction of subgrade and earthen shoulders with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table 300.2 with lead upto 1000 m as per Technical Specification Clause 303.1.                 |            |          |          |               |
|         |             |              | Unit = cum                                                                                                                                                                                                                                                                                                               |            |          |          |               |
|         |             |              | Taking output = 100 cum                                                                                                                                                                                                                                                                                                  |            |          |          |               |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                                                                                                                            |            |          |          |               |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                     | day        | 0.04     | 437.00   | 17.48         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                      | day        | 1.00     | 412.00   | 412.00        |
|         |             | b)           | <b>Machinery</b>                                                                                                                                                                                                                                                                                                         |            |          |          |               |
|         |             |              | Hydraulic excavator 0.9 cum bucket capacity @ 100 cum per hour                                                                                                                                                                                                                                                           | hour       | 1.67     | 2288.00  | 3820.96       |
|         |             |              | Tipper 5.5 cum capacity, 4 trips per hour                                                                                                                                                                                                                                                                                | hour       | 4.50     | 1441.00  | 6484.50       |
|         |             |              | Add 10 % of the cost of carriage to cover loading & unloading                                                                                                                                                                                                                                                            | cum        |          |          | 648.45        |
|         |             |              | Dozer D-50 for spreading @ 100 cum per hour                                                                                                                                                                                                                                                                              | hour       | 0.50     | 3014.00  | 1507.00       |
|         |             |              | Tractor mounted grader arrangement for grading @ 100 cum per hour                                                                                                                                                                                                                                                        | hour       | 1.00     | 693.00   | 693.00        |
|         |             |              | Water tanker with 6 kl capacity                                                                                                                                                                                                                                                                                          | hour       | 2.00     | 764.00   | 1528.00       |
|         |             |              | Three wheel 80-100 kN Static Roller @ 70 cum per hour                                                                                                                                                                                                                                                                    | hour       | 1.43     | 1,612.00 | 2305.16       |
|         |             | c)           | <b>Material</b>                                                                                                                                                                                                                                                                                                          |            |          |          |               |
|         |             |              | Water                                                                                                                                                                                                                                                                                                                    | kl         | 12.00    | 61.40    | 736.80        |
|         |             |              | Compensation for earth taken from private land                                                                                                                                                                                                                                                                           | cum        | 100.00   | 35.25    | 3525.00       |
|         |             | d)           | Overheads & Contractor's profit @ 12.5 % on (a+b+c)                                                                                                                                                                                                                                                                      |            |          |          | 2709.79       |
|         |             | e)           | Contractor's profit @ 0% on (a+b+c+d)                                                                                                                                                                                                                                                                                    |            |          |          | 0.00          |
|         |             |              | Cost for 100 cum = a+b+c+d+e                                                                                                                                                                                                                                                                                             |            |          |          | 24388.14      |
|         |             |              | <b>Rate per cum = (a+b+c+d+e)/100</b>                                                                                                                                                                                                                                                                                    |            |          |          | <b>243.88</b> |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                        | <b>sqm</b> |          |          | <b>243.88</b> |
|         |             |              | <b>PAVEMENT CRUST LAYERS</b>                                                                                                                                                                                                                                                                                             |            |          |          |               |
| 27      | 4.1         | 401          | <b>Granular Sub-base with Well Graded Material (Table 400.1)</b>                                                                                                                                                                                                                                                         |            |          |          |               |
|         |             |              | <b>( By mix in place method ) For Grading I Material</b>                                                                                                                                                                                                                                                                 |            |          |          |               |
|         |             |              | Construction of granular sub-base by providing well graded material, spreading in uniform layers with motor 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 Technical Specification Clause 401. |            |          |          |               |
|         |             | (i)          | <b>For Grading II Material</b>                                                                                                                                                                                                                                                                                           |            |          |          |               |
|         |             |              | Unit = cum                                                                                                                                                                                                                                                                                                               |            |          |          |               |
|         |             |              | Taking output = 300 cum                                                                                                                                                                                                                                                                                                  |            |          |          |               |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                                                                                                                            |            |          |          |               |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                     | day        | 0.48     | 437.00   | 209.76        |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No.  | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Unit       | Quantity | Rate    | Amount in Rs     |
|---------|--------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|---------|------------------|
|         |              |              | Mazdoor (Skilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                  | day        | 2.00     | 521.00  | 1042.00          |
|         |              |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                | day        | 10.00    | 412.00  | 4120.00          |
|         |              | <b>b)</b>    | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |          |         |                  |
|         |              |              | Tractor mounted grader for grading @ 25 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                               | hour       | 12.00    | 693.00  | 8316.00          |
|         |              |              | Three wheel 80-100 kN static roller @ 10 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                              | hour       | 30.00    | 1612.00 | 48360.00         |
|         |              |              | Tractor with Rotavator 25 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                                             | hour       | 12.00    | 705.00  | 8460.00          |
|         |              |              | Water tanker 6 kl capacity                                                                                                                                                                                                                                                                                                                                                                                                                                         | hour       | 5.00     | 764.00  | 3820.00          |
|         |              | <b>c)</b>    | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |          |         |                  |
|         |              |              | For well graded granular sub-base material as per Table 400.1                                                                                                                                                                                                                                                                                                                                                                                                      |            |          |         |                  |
|         |              |              | 26.5 mm to 9.5 mm @ 35 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                    | cum        | 126.00   | 913.48  | 115098.48        |
|         |              |              | 9.5 mm to 2.36 mm @ 25 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                    | cum        | 90.00    | 434.45  | 39100.50         |
|         |              |              | 2.36 mm below @ 40 per cent -(Coarse Sand)                                                                                                                                                                                                                                                                                                                                                                                                                         | cum        | 144.00   | 584.64  | 84188.16         |
|         |              |              | Water                                                                                                                                                                                                                                                                                                                                                                                                                                                              | kl         | 30.00    | 61.40   | 1842.00          |
|         |              | <b>d)</b>    | Overheads & Contractor's profit @ 12.5 % on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                                                                |            |          |         | 39319.61         |
|         |              |              | <b>Cost of GSB without carriage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                |            |          |         | <b>353876.51</b> |
|         |              | <b>A)</b>    | <b>Cost of GSB without carriage per cum</b>                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>cum</b> |          |         | <b>1179.59</b>   |
|         |              | <b>f)</b>    | <b>Carriage Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |         |                  |
|         |              |              | 26.5 mm to 9.5 mm @ 35 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                    | cum        | 0.420    | 674.15  | 283.14           |
|         |              |              | 9.5 mm to 2.36 mm @ 25 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                    | cum        | 0.300    | 674.15  | 202.25           |
|         |              |              | 2.36 mm below @ 40 per cent -(Coarse Sand)                                                                                                                                                                                                                                                                                                                                                                                                                         | cum        | 0.480    | 321.66  | 154.40           |
|         |              |              | <b>Rate per cum with carriage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>cum</b> |          |         | <b>1819.37</b>   |
|         |              |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>CUM</b> |          |         | <b>1819.37</b>   |
| 28      | 4.8<br>(2-A) | 405          | <b>Water Bound Macadam with Crushable Screenings (Moorum) Gr - II</b>                                                                                                                                                                                                                                                                                                                                                                                              |            |          |         |                  |
|         |              |              | <b>WBM Grading 2</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |         |                  |
|         |              |              | Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with three wheel 80-100 kN static roller in stages to proper grade and camber, applying and brooming, crushable screening to fill-up the interstices of coarse aggregate, watering and compacting to the required density Grading 2 as per Technical Specification Clause 405. |            |          |         |                  |
|         |              | <b>(A)</b>   | <b>By Machnical Means, Unit = cum</b>                                                                                                                                                                                                                                                                                                                                                                                                                              |            |          |         |                  |
|         |              |              | Taking output = 360 cum                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |         |                  |
|         |              | <b>a)</b>    | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |          |         |                  |
|         |              |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                               | day        | 0.68     | 437.00  | 297.16           |
|         |              |              | Mazdoor (Skilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                  | day        | 2.00     | 521.00  | 1042.00          |
|         |              |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                | day        | 15.00    | 412.00  | 6180.00          |
|         |              | <b>b)</b>    | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |          |         |                  |
|         |              |              | Motor grader 110 HP @ 50 cum per hour for spreading                                                                                                                                                                                                                                                                                                                                                                                                                | hour       | 14.40    | 693.00  | 9979.20          |
|         |              |              | Three wheel 80-100 kN static roller @ 8 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                               | hour       | 45.00    | 1612.00 | 72540.00         |
|         |              |              | Water tanker 6 kl capacity                                                                                                                                                                                                                                                                                                                                                                                                                                         | hour       | 24.00    | 764.00  | 18336.00         |
|         |              | <b>c)</b>    | <b>Material (Refer Tables 400.7, 8, 9 and 10)</b>                                                                                                                                                                                                                                                                                                                                                                                                                  |            |          |         |                  |
|         |              |              | <b>Aggregate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |          |         |                  |
|         |              |              | <b>Grading 2</b> 63 mm to 45 mm @ 0.91 cum per 10 sqm for compacted thickness of 75 mm                                                                                                                                                                                                                                                                                                                                                                             | cum        | 435.60   | 1005.81 | 438130.84        |
|         |              |              | <b>Stone Screening</b>                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |          |         |                  |
|         |              |              | Type B 11.2 mm for Grading 2 @ 0.20 cum per 10 sqm                                                                                                                                                                                                                                                                                                                                                                                                                 | cum        | 96.01    | 434.45  | 41711.54         |
|         |              |              | <b>Binding Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |         |                  |
|         |              |              | Binding Material @ 0.06 cum per 10 sqm for Grading 2 material                                                                                                                                                                                                                                                                                                                                                                                                      | cum        | 28.80    | 162.88  | 4690.94          |
|         |              |              | Water                                                                                                                                                                                                                                                                                                                                                                                                                                                              | kl         | 144.00   | 61.40   | 8841.60          |
|         |              | <b>d)</b>    | Overheads & Contractor's profit @ 12.5% on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                                                                 |            |          |         | 75218.66         |
|         |              |              | Cost for 360 cum = a+b+c+d+e                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |         | 676967.95        |
|         |              |              | Rate per cum = (a+b+c+d+e)/360                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |          |         | 1880.47          |
|         |              | <b>f)</b>    | <b>CARRIAGE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |          |         |                  |
|         |              |              | Stone material Grading 2 63 mm to 45 mm                                                                                                                                                                                                                                                                                                                                                                                                                            | Cum        | 1.21     | 714.67  | 864.75           |
|         |              |              | Stone Screening Type B 11.2 mm for Grading 2 @ 0.20 cum per 10 sqm                                                                                                                                                                                                                                                                                                                                                                                                 | cum        | 0.27     | 674.15  | 179.79           |
|         |              |              | Crushable type such as Moorum                                                                                                                                                                                                                                                                                                                                                                                                                                      | Cum        | 0.08     | 499.11  | 39.93            |
|         |              |              | <b>Rate per cum with carriage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |          |         | <b>2964.94</b>   |
|         |              |              | <b>Total Cost including</b>                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>cum</b> |          |         | <b>2964.94</b>   |
| 29      | 4.9          | 406          | <b>Wet Mix Macadam</b>                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |          |         |                  |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Unit       | Quantity | Rate      | Amount in Rs    |
|---------|-------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|-----------|-----------------|
|         |             |              | 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. |            |          |           |                 |
|         |             | (A)          | <b>By Mechanical Means with 1 km lead</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |          |           |                 |
|         |             |              | Unit = cum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |          |           |                 |
|         |             |              | Taking output = 100 cum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |          |           |                 |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |          |           |                 |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | day        | 0.40     | 437.00    | 174.80          |
|         |             |              | Dresser (Skilled) for alignment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | day        | 8.00     | 521.00    | 4168.00         |
|         |             |              | Mazdoor (Skilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | day        | 2.00     | 521.00    | 1042.00         |
|         |             | b)           | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |           |                 |
|         |             |              | Front end loader 1 cum capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | hour       | 4.00     | 1432.00   | 5728.00         |
|         |             |              | Wet mix plant (Pug Mill)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | hour       | 4.00     | 694.00    | 2776.00         |
|         |             |              | Tipper/Dumper (10-t) capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | hour       | 5.00     | 1441.00   | 7205.00         |
|         |             |              | Tractor Mounted grader for grading @ 100 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | hour       | 4.00     | 688.00    | 2752.00         |
|         |             |              | Water tanker 6 kl capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | hour       | 1.33     | 764.00    | 1016.12         |
|         |             |              | Three wheel 80-100 kN static roller @ 16 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | hour       | 6.25     | 1612.00   | 10075.00        |
|         |             | c)           | <b>Material (Refer Tables 400.7, 8, 9 and 10)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |          |           |                 |
|         |             |              | <b>Aggregate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |           |                 |
|         |             |              | Coarse aggregate 45 mm to 22.4 mm @ 30 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | cum        | 39.90    | 1115.24   | 44498.08        |
|         |             |              | Aggregates 22.4 mm to 2.36 mm @ 40 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | cum        | 53.20    | 697.86    | 37126.15        |
|         |             |              | Fine aggregate/Crushed sand 2.36 mm to 75 micron @ 30 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | cum        | 39.90    | 266.62    | 10638.14        |
|         |             |              | Water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | kl         | 8.00     | 61.40     | 491.20          |
|         |             | d)           | Overheads & CP @ 12.5% on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |          |           | <b>15961.31</b> |
|         |             |              | Cost for 100 cum = a+b+c+d                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |          |           | 143651.80       |
|         |             |              | Rate per cum = (a+b+c+d)/100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |          |           | <b>1436.52</b>  |
|         |             | e)           | <b>CARRIAGE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |           |                 |
|         |             |              | Coarse aggregate 45 mm to 22.4 mm @ 30 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cum        | 0.40     | 674.15    | 268.99          |
|         |             |              | Aggregates 22.4 mm to 2.36 mm @ 40 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Cum        | 0.53     | 674.15    | 358.65          |
|         |             |              | Fine aggregate/Crushed sand 2.36 mm to 75 micron @ 30 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Cum        | 0.40     | 321.66    | 128.34          |
|         |             |              | <b>Rate per cum with carriage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |          |           | <b>2192.50</b>  |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>cum</b> |          |           | <b>2,192.50</b> |
|         |             |              | <b>BITUMINOUS ITEMS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |          |           |                 |
| 29      | 5.1 (I)     | 502          | <b>Prime Coat ( Low Porosity )</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |          |           |                 |
|         |             |              | 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                                                                                                                                                                                                                                                                                            |            |          |           |                 |
|         |             |              | Unit = sqm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |          |           |                 |
|         |             |              | Taking output = 1750 sqm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |           |                 |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |          |           |                 |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | day        | 0.04     | 437.00    | 17.48           |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | day        | 1.00     | 412.00    | 412.00          |
|         |             | b)           | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |           |                 |
|         |             |              | Hydraulic broom @ 1250 sqm per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | hour       | 1.40     | 807.00    | 1129.80         |
|         |             |              | Air compressor 210 cfm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | hour       | 1.40     | 455.00    | 637.00          |
|         |             |              | Bitumen emulsion pressure distributor @ 1750 sqm per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | hour       | 1.00     | 1,362.00  | 1362.00         |
|         |             |              | Water tanker 6 kl capacity 1 trip per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | hour       | 0.50     | 764.00    | 382.00          |
|         |             | c)           | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |           |                 |
|         |             |              | Bitumen emulsion (SS-1) @ 0.85 kg per sqm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | t          | 1.48     | 54,204.35 | 80222.44        |
|         |             |              | Water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | kl         | 3.00     | 61.40     | 184.20          |
|         |             | d)           | Overheads & Contractor's profit @ 12.5 % on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |          |           | 10543.36        |
|         |             | e)           | Contractor's profit @ 0% on (a+b+c+d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |          |           | 0.00            |
|         |             |              | Cost of 1750 sqm = a+b+c+d+e                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |          |           | 94890.28        |
|         |             |              | Rate per sqm = (a+b+c+d+e)/1750                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |           | 54.22           |
|         |             | f)           | <b>Carriage Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |          |           |                 |
|         |             |              | Bitumen Emulsion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ton        | 0.00085  | 745.96    | 0.63            |
|         |             |              | <b>Rate per sqm with carriage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |          |           | <b>54.85</b>    |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>sqm</b> |          |           | <b>54.85</b>    |
| 30      | 5.2         | 503          | <b>Tack Coat</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |           |                 |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Unit       | Quantity | Rate      | Amount in Rs     |
|---------|-------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|-----------|------------------|
|         | ( III )     |              | Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared granular surface treated with Primer and cleaned with hydriloc broom as per technical specification clause 503.<br>Unit = sqm<br>Taking output = 1750 sqm                                                                                                                                                                                                                                                                                  |            |          |           |                  |
|         |             | a)           | Labour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |           |                  |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | day        | 0.04     | 437.00    | 17.48            |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | day        | 1.00     | 412.00    | 412.00           |
|         |             | b)           | Machinery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |          |           |                  |
|         |             |              | Hydraulic broom @ 1250 sqm per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | hour       | 1.40     | 807.00    | 1129.80          |
|         |             |              | Air compressor 210 cfm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | hour       | 1.40     | 455.00    | 637.00           |
|         |             |              | Emulsion pressure distributor @1750 sqm per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | hour       | 1.00     | 1,362.00  | 1362.00          |
|         |             | c)           | Material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |          |           |                  |
|         |             |              | Bitumen emulsion (RS-1) @ 0.275 kg per sqm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | t          | 0.48     | 53,071.35 | 25474.25         |
|         |             | d)           | Overheads & Contractor's profit @ 12.5 % on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |          |           | 3629.07          |
|         |             | e)           | Contractor's profit @ 0% on (a+b+c+d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |           | 0.00             |
|         |             |              | Cost of 1750 sqm = a+b+c+d+e                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |          |           | 32661.59         |
|         |             |              | Rate per sqm = (a+b+c+d+e)/1750                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |          |           | 18.66            |
|         |             |              | <u>Carriage Cost</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |          |           |                  |
|         |             |              | Bitumen Emulsion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ton        | 0.000274 | 745.96    | 0.20             |
|         |             |              | <b>Rate per sqm with carriage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |           | <b>18.87</b>     |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>sqm</b> |          |           | <b>18.87</b>     |
| 31      | 5.11        | 509          | <b>Mix Seal Surfacing with Waste Plastic(Type B) Bituminous (S-65) By Mechanical Means</b><br>Providing, laying and rolling of close-graded premix surfacing material of 20 mm thickness composed of 11.2 mm to 0.9 mm (Type-A) or 13.2 mm to 0.9 mm (Type-B) aggregates using penetration grade bitumen 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 8-10 kN static roller and finishing to required level and grades as per Technical Specification Clause 509. |            |          |           |                  |
|         |             | (B)          | <b>Case - II By Mechanical Means</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |          |           |                  |
|         |             |              | (i) Bitumen (S-90)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |          |           |                  |
|         |             |              | <b>Unit = sqm</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |           |                  |
|         |             |              | Taking output = 4000 sqm (80 cum)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |           |                  |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |          |           |                  |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | day        | 0.52     | 437.00    | 227.24           |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | day        | 10.00    | 412.00    | 4120.00          |
|         |             |              | Mazdoor (Unskilled) for Waste Plastic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | day        | 2.00     | 412.00    | 824.00           |
|         |             |              | Mazdoor (Skilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | day        | 3.00     | 521.00    | 1563.00          |
|         |             | b)           | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |          |           |                  |
|         |             |              | HMP of appropriate capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | hour       | 3.00     | 51,313.00 | 153939.00        |
|         |             |              | Electric generator set 125 KVA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | hour       | 6.00     | 1,646.00  | 9876.00          |
|         |             |              | Front end loader 1 cum bucket capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | hour       | 6.00     | 1,432.00  | 8592.00          |
|         |             |              | Tipper 5.5 10 t capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | tonne.km   | 176 x L  | 9.89      | 1,740.64         |
|         |             |              | Add 10 per cent of cost of carriage to cover cost of loading and unloading                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |          |           | 174.06           |
|         |             |              | Paver finisher                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | hour       | 6.00     | 2,157.00  | 12942.00         |
|         |             |              | Three wheel 80-100 kN static roller                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | hour       | 6.00     | 1,612.00  | 9672.00          |
|         |             | c)           | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |          |           |                  |
|         |             |              | Bitumen (S-65) @ 19 kg per 10 sqm replaced by 7% by Waste Plastic i.e.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | t          | 7.068    | 56,202.60 | 397239.98        |
|         |             |              | Processed Waste Plastic/Bitumen i.e 7% of 19 kg bitumen =                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | t          | 0.532    | 16,974.00 | 9030.17          |
|         |             |              | Stone crushed aggregates 13.2 mm to 0.09 mm @ 0.27 cum per 10 sqm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | cum        | 108.00   | 434.45    | 46920.60         |
|         |             | d)           | Overheads & Contractor's profit @ 12.5 % on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |          |           | 82107.59         |
|         |             |              | Contractor's profit @ 0% on (a+b+c+d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |           | 0.00             |
|         |             |              | <b>Cost of 4000 sqm = a+b+c+d</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |           | <b>738968.27</b> |
|         |             |              | Rate per sqm = (a+b+c+d)/4000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |          |           | 184.74           |
|         |             |              | <u>Carriage Cost</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |          |           |                  |
|         |             |              | Bitumen S-65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ton        | 0.0019   | 745.96    | 1.42             |
|         |             |              | Stone crushed aggregates 13.2 mm to 0.09 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | cum        | 0.027    | 674.15    | 18.20            |
|         |             |              | <b>Rate per sqm with carriage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |           | <b>204.36</b>    |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>sqm</b> |          |           | <b>204.36</b>    |
| 32      | 5.70        | 508          | <b>Semi-Dense Bituminous Concrete</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |           |                  |



# Analysis of Rates ( FORMAT F8 )

| Sl. No.  | SDB Sl. No. | MORD Ref No.            | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Unit       | Quantity   | Rate     | Amount in Rs     |
|----------|-------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|----------|------------------|
|          |             | <b>RCD</b>              | Providing and laying semi dense bituminous concrete with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.5 to 5 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 508 complete in all                                                                   |            |            |          |                  |
|          |             |                         | Unit = cum<br>Taking output = 195 cum (450 tonnes)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |            |          |                  |
|          |             | <b>a) Labour</b>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |            |          |                  |
|          |             |                         | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | day        | 0.84       | 437.00   | 367.08           |
|          |             |                         | Mazdoor working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | day        | 16.00      | 412.00   | 6592.00          |
|          |             |                         | Mazdoor skilled for Waste Plastic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | day        | 2.00       | 437.00   | 874.00           |
|          |             |                         | Skilled mazdoor for checking line & levels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | day        | 5.00       | 521.00   | 2605.00          |
|          |             | <b>b) Machinery</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |            |          |                  |
|          |             |                         | Batch mix HMP @ 75 tonne per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | hour       | 6.00       | 51313.00 | 307878.00        |
|          |             |                         | Paver Finisher                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | hour       | 6.00       | 2157.00  | 12942.00         |
|          |             |                         | Generator 250 KVA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | hour       | 6.00       | 3134.00  | 18804.00         |
|          |             |                         | Front end loader 1 cum bucket capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | hour       | 6.00       | 1432.00  | 8592.00          |
|          |             |                         | Tipper 10 tonne capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | tonne.km   | 450.00     | 9.89     | 4450.50          |
|          |             |                         | Add 10 per cent of cost of carriage to cover cost of loading and unloading                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |            |          | 445.05           |
|          |             |                         | Smooth wheeled roller 8-10 tonnes for initial break down rolling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | hour       | 6.00x0.65* | 1612.00  | 6286.80          |
|          |             |                         | Vibratory roller 8 tonnes for intermediate rolling.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | tonne.km   | 6.00x0.65* | 2072.00  | 8080.80          |
|          |             |                         | Finish rolling with 6-8 tonnes smooth wheeled tandem roller.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | tonne.km   | 6.00x0.65* | 1612.00  | 6286.80          |
|          |             | <b>c) Material</b>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |            |          |                  |
|          |             |                         | Bitumen @ 5 per cent of weight of mix                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | t          | 20.93      | 56202.60 | 1176039.41       |
|          |             |                         | Processed Waste Plastic i.e. 7% weight of mix = 450 tonne                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | t          | 1.575      | 16974.00 | 26734.05         |
|          |             |                         | Aggregate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |            |          |                  |
|          |             |                         | Total weight of mix = 450 tonnes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |            |          |                  |
|          |             |                         | Weight of bitumen = 22.5 tonnes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |            |          |                  |
|          |             |                         | Weight of aggregate = 450 - 22.50 = 427.50 tonnes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |            |          |                  |
|          |             |                         | Taking density of aggregate = 1.5 ton/cum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |            |          |                  |
|          |             |                         | Volume of aggregate = 285 cum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |            |          |                  |
|          |             |                         | <b>Grading II: 10 mm (Nominal Size)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |            |          |                  |
|          |             |                         | 9.5 - 4.75 mm @ 57 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Cum        | 162.45     | 602.28   | 97840.39         |
|          |             |                         | 4.75 and below @ 41 per cent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cum        | 116.85     | 434.45   | 50765.48         |
|          |             |                         | Filler @ 2 per cent of weight of aggregates                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | t          | 8.62       | 3150.00  | 27153.00         |
|          |             | <b>d)</b>               | Overheads & CP @ 12.5% on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |            |          | <b>220342.04</b> |
|          |             |                         | Cost for 195 cum = a+b+c+d+e                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |            |          | 1983078.40       |
|          |             |                         | Rate per cum = (a+b+c+d+e)/195 (For Grading-II)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |            |          | 10169.63         |
|          |             | <b>f) Carriage Cost</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |            |          |                  |
|          |             |                         | Bitumen (S-90)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | t          | 0.11       | 745.96   | 80.05            |
|          |             |                         | Stone chips                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | cum        | 1.43       | 674.15   | 965.59           |
|          |             |                         | <b>Rate per Cum with carriage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |            |          | <b>11215.27</b>  |
|          |             |                         | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>cum</b> |            |          | <b>11215.27</b>  |
| <b>1</b> | <b>6.02</b> | <b>602</b>              | <b>Cement Concrete Pavement (PQC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |            |          |                  |
|          |             |                         | Construction of un-reinforced, plain cement concrete pavement (M35 Grade) over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form paver, spread, compacted and finished in a continuous operation including provision of 0.5 x 0.5 panel, joint filler, separation membrane, sealant primer, joint sealant, debonding strip as approved, curing compound, finishing to lines and grades as per drawing . |            |            |          |                  |
|          |             |                         | <b>Unit = cum</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |            |          |                  |
|          |             |                         | <b>Taking output = 900</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |            |          |                  |
|          |             | <b>a) Labour</b>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |            |          |                  |
|          |             |                         | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | day        | 0.440      | 437.00   | 192.28           |
|          |             |                         | Mazdoor skilled                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | day        | 5.000      | 521.00   | 2605.00          |



# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                 | Unit  | Quantity   | Rate    | Amount in Rs   |
|---------|-------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------|---------|----------------|
|         |             |              | Mazdoor Semi-skilled (For panel cutting)                                                                                                                                                                                                                                                                                                                                    | day   | 5.000      | 428.00  | 2140.00        |
|         |             |              | Bhisti (For panel cutting)                                                                                                                                                                                                                                                                                                                                                  | day   | 7.000      | 412.00  | 2884.00        |
|         |             |              | Mazdoor                                                                                                                                                                                                                                                                                                                                                                     | day   | 6.000      | 412.00  | 2472.00        |
|         |             |              | <b>b) Machinery</b>                                                                                                                                                                                                                                                                                                                                                         |       |            |         |                |
|         |             |              | Mechanical Broom @ 1250 sqm per hour                                                                                                                                                                                                                                                                                                                                        | hour  | 0.893      | 807.00  | 720.65         |
|         |             |              | Air Compressor                                                                                                                                                                                                                                                                                                                                                              | hour  | 0.893      | 455.00  | 406.32         |
|         |             |              | Paver finisher Concrete with 118HP Motor                                                                                                                                                                                                                                                                                                                                    | hour  | 11.250     | 2157.00 | 24266.25       |
|         |             |              | For Transporter transit truck agiator 6cum capacity                                                                                                                                                                                                                                                                                                                         | t.km  | 2070xL1    | 10.85   | 22459.50       |
|         |             |              | For unloading time                                                                                                                                                                                                                                                                                                                                                          | hour  | 11.250     | 1954.00 | 21982.50       |
|         |             |              | concrete joint cutting machine (For panel cutting)                                                                                                                                                                                                                                                                                                                          | hour  | 101.587    | 357.00  | 36266.56       |
|         |             |              | Water tanker 6 kl capacity                                                                                                                                                                                                                                                                                                                                                  | hour  | 8.75xL1+42 | 764.00  | 38773.00       |
|         |             |              | Generator Set KVA (For panel cutting)                                                                                                                                                                                                                                                                                                                                       | hour  | 10.000     | 3134.00 | 31340.00       |
|         |             |              | <b>c) Material</b>                                                                                                                                                                                                                                                                                                                                                          |       |            |         |                |
|         |             |              | Using Batching Plant 120cum capacity                                                                                                                                                                                                                                                                                                                                        | cum   | 900.000    | 3442.03 | 3097828.74     |
|         |             |              | Separation Membrane of impermeable plastic sheeting 125 micron thick                                                                                                                                                                                                                                                                                                        | sqm   | 3150.000   | 16.20   | 51030.00       |
|         |             |              | Joint sealant                                                                                                                                                                                                                                                                                                                                                               | kg    | 609.524    | 30.54   | 18614.86       |
|         |             |              | Sealant primer                                                                                                                                                                                                                                                                                                                                                              | kg    | 100.003    | 30.54   | 3054.09        |
|         |             |              | Curing compound                                                                                                                                                                                                                                                                                                                                                             | liter | 600.000    | 38.00   | 22800.00       |
|         |             |              | Cost of water                                                                                                                                                                                                                                                                                                                                                               | KL    | 472.500    | 61.40   | 29011.50       |
|         |             |              | Add 1 per cent of material for cost of miscellaneous materials like tarpauline, Hessian cloth, metal cap, cotton / compressible sponge and cradle for dowel bars, work bridges for men to approach concrete surface without walking over it, cutting blades and bites, minor equipments like scabbling machine, threads, ropes, guide wires and any other unforeseen items. |       |            |         | 32223.39       |
|         |             |              | <b>d) Overhead charges &amp; Contractor's profit @ 12.5% on (a+b+c)</b>                                                                                                                                                                                                                                                                                                     |       |            |         | 430133.83      |
|         |             |              | Cost for 900cum = a+b+c+d+e                                                                                                                                                                                                                                                                                                                                                 |       |            |         | 3871204.48     |
|         |             |              | <b>Rate per cum = (a+b+c+d+e)/900</b>                                                                                                                                                                                                                                                                                                                                       |       |            |         | <b>4301.34</b> |
|         |             |              | <b>Carriage</b>                                                                                                                                                                                                                                                                                                                                                             |       |            |         |                |
|         |             |              | Carriage stone aggregate                                                                                                                                                                                                                                                                                                                                                    | cum   | 0.90       | 674.15  | 606.74         |
|         |             |              | Carriage sand                                                                                                                                                                                                                                                                                                                                                               | cum   | 0.45       | 321.66  | 144.75         |
|         |             |              | carriage cement                                                                                                                                                                                                                                                                                                                                                             | ton   | 0.40       | 427.66  | 171.06         |
|         |             |              | <b>Rate per cum including carriage</b>                                                                                                                                                                                                                                                                                                                                      |       |            |         | <b>5223.88</b> |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                             | Unit       | Quantity | Rate    | Amount in Rs   |
|---------|-------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|---------|----------------|
| 2       | 21.19       | 602          | <b>PQC M35 Grade using Batching Plant-120 cum capacity</b>                                                                                                                                                                                                                                                                                              |            |          |         |                |
|         |             |              | Unit-cum                                                                                                                                                                                                                                                                                                                                                |            |          |         |                |
|         |             |              | Taking Output=900cum                                                                                                                                                                                                                                                                                                                                    |            |          |         |                |
|         |             | <b>a)</b>    | <b>Material</b>                                                                                                                                                                                                                                                                                                                                         |            |          |         |                |
|         |             |              | Cement @400 kg/cum of concrete                                                                                                                                                                                                                                                                                                                          | tonne      | 360.00   | 5254.40 | 1891584.00     |
|         |             |              | Coarse Sand                                                                                                                                                                                                                                                                                                                                             | cum        | 405.00   | 584.64  | 236779.20      |
|         |             |              | Crushed Stone Of 25 mm & 12.5 mm nominal size                                                                                                                                                                                                                                                                                                           | cum        | 810.00   | 913.48  | 739918.80      |
|         |             |              | Admixture @ 0.5 % of Cement                                                                                                                                                                                                                                                                                                                             | kg         | 1800.00  | 30.45   | 54810.00       |
|         |             |              | Cost of Water                                                                                                                                                                                                                                                                                                                                           | kl         | 144.00   | 61.40   | 8841.60        |
|         |             | <b>b)</b>    | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                           |            |          |         |                |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                    | day        | 0.16     | 437.00  | 69.92          |
|         |             |              | Skilled Mazdoor                                                                                                                                                                                                                                                                                                                                         | day        | 1.00     | 521.00  | 521.00         |
|         |             |              | Mazdoor                                                                                                                                                                                                                                                                                                                                                 | day        | 3.00     | 412.00  | 1236.00        |
|         |             | <b>c)</b>    | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                        |            |          |         |                |
|         |             |              | Batching plant of capacity 120 cum/hour                                                                                                                                                                                                                                                                                                                 | hour       | 10.00    | 3684.00 | 36840.00       |
|         |             |              | Generator 250kva                                                                                                                                                                                                                                                                                                                                        | hour       | 10.00    | 3134.00 | 31340.00       |
|         |             |              | loader 3.1 cum capacity                                                                                                                                                                                                                                                                                                                                 | hour       | 21.696   | 3519.00 | 76348.22       |
|         |             |              | Trasit Truck agiator for loading & Unloading                                                                                                                                                                                                                                                                                                            | hour       | 10.00    | 1954.00 | 19540.00       |
|         |             |              | Per Cum Basic Cost (a+b+c)/900                                                                                                                                                                                                                                                                                                                          |            |          |         | 3442.03        |
|         |             |              | <b>Rate per cum = (a+b+c+d+e)/900</b>                                                                                                                                                                                                                                                                                                                   |            |          |         | <b>3442.03</b> |
| 1       | 16.13       |              | <b>Edging with 1st Class Bricks, Lald Dry Length wise.</b>                                                                                                                                                                                                                                                                                              |            |          |         |                |
|         |             |              | Edging with 1st class bricks, laid dry lengthwise, including excavation, refilling, consolidation, with a hand packing and spreading nearly surplus earth within a lead of 50 metres                                                                                                                                                                    |            |          |         |                |
|         |             |              | Unit = meter                                                                                                                                                                                                                                                                                                                                            |            |          |         |                |
|         |             |              | Taking ouput = 10 m                                                                                                                                                                                                                                                                                                                                     |            |          |         |                |
|         |             | <b>(a)</b>   | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                           |            |          |         |                |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                    | day        | 0.004    | 437.00  | 1.75           |
|         |             |              | Mason 1st Class                                                                                                                                                                                                                                                                                                                                         | day        | 0.100    | 553.00  | 55.30          |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                     | day        | 0.100    | 412.00  | 41.20          |
|         |             | <b>(b)</b>   | <b>Material</b>                                                                                                                                                                                                                                                                                                                                         |            |          |         |                |
|         |             |              | Brick 1st Class including Carriage                                                                                                                                                                                                                                                                                                                      | No.        | 100.00   | 6.861   | 686.09         |
|         |             | <b>(c)</b>   | Overheads & Contractor's profit @ 12.5 % on (a+b+c)                                                                                                                                                                                                                                                                                                     |            |          |         | <b>98.04</b>   |
|         |             |              | Cost for 10m = a+b+c                                                                                                                                                                                                                                                                                                                                    |            |          |         | 97.06          |
|         |             |              | <b>1.00</b>                                                                                                                                                                                                                                                                                                                                             | <b>m</b>   |          |         | <b>97.06</b>   |
| 33      | 4.18        | 412          | <b>Brick Soling (With New Brick)</b>                                                                                                                                                                                                                                                                                                                    |            |          |         |                |
|         |             |              | Laying brick soling layer on prepared sub-grade with brick on end edging according to lines, graded and cross-section shown on the drawing filling joints with sand and earth, spreading 25 mm thick layer of earth over brick soling, watering and rolliing the same with three wheel road roller 80-100 kN as per Technical Specification Clause 412. |            |          |         |                |
|         |             |              | Unit = sqm                                                                                                                                                                                                                                                                                                                                              |            |          |         |                |
|         |             |              | Taking ouput = 150 sqm                                                                                                                                                                                                                                                                                                                                  |            |          |         |                |
|         |             | <b>a)</b>    | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                           |            |          |         |                |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                    | day        | 0.52     | 437.00  | 227.24         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                     | day        | 10.00    | 412.00  | 4120.00        |
|         |             |              | Mason 1st Class                                                                                                                                                                                                                                                                                                                                         | day        | 3.00     | 553.00  | 1659.00        |
|         |             | <b>b)</b>    | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                        |            |          |         |                |
|         |             |              | Three wheel 80-100 kN static roller                                                                                                                                                                                                                                                                                                                     | hour       | 1.00     | 1612.00 | 1612.00        |
|         |             |              | Water tanker                                                                                                                                                                                                                                                                                                                                            | hour       | 1.00     | 764.00  | 764.00         |
|         |             | <b>c)</b>    | <b>Material</b>                                                                                                                                                                                                                                                                                                                                         |            |          |         |                |
|         |             |              | Brick 1st Class                                                                                                                                                                                                                                                                                                                                         | No.        | 8160.00  | 6.12    | 49939.20       |
|         |             |              | Brick 1st Class on edging                                                                                                                                                                                                                                                                                                                               | No.        | 1100.00  | 6.12    | 6732.00        |
|         |             |              | Fine Sand                                                                                                                                                                                                                                                                                                                                               | cum        | 5.66     | 145.87  | 825.62         |
|         |             |              | Water                                                                                                                                                                                                                                                                                                                                                   | kl         | 6.00     | 61.40   | 368.40         |
|         |             | <b>d)</b>    | Overheads & Contractor's profit @ 12.5 % on (a+b+c)                                                                                                                                                                                                                                                                                                     |            |          |         | <b>8280.93</b> |
|         |             | <b>e)</b>    | Contractor's profit @ 0% on (a+b+c+d)                                                                                                                                                                                                                                                                                                                   |            |          |         | <b>0.00</b>    |
|         |             |              | Cost for 150 sqm = a+b+c+d+e+f                                                                                                                                                                                                                                                                                                                          |            |          |         | 496.86         |
|         |             | <b>f)</b>    | <b>Carriage Cost</b>                                                                                                                                                                                                                                                                                                                                    |            |          |         |                |
|         |             |              | Brick 1st Class                                                                                                                                                                                                                                                                                                                                         | No.        | 61.73333 | 0.74086 | 45.74          |
|         |             |              | Fine Sand                                                                                                                                                                                                                                                                                                                                               | cum        | 0.04     | 163.83  | 6.18           |
|         |             |              | <b>Rate per sqm = (a+b+c+d+e+f)</b>                                                                                                                                                                                                                                                                                                                     |            |          |         | <b>548.77</b>  |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                       | <b>cum</b> |          |         | <b>548.77</b>  |
| 34      | 10.5        | 1700         | <b>Painting Two Coats on New Concrete Surfaces</b>                                                                                                                                                                                                                                                                                                      |            |          |         |                |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                               | Unit            | Quantity | Rate     | Amount in Rs   |
|---------|-------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------|----------|----------------|
|         |             |              | Painting two coats including primer coat after filling the surface with synthetic enamel paint in all shades on new, plastered / concrete surfaces as per drawing and Technical Specification Clause 1701 |                 |          |          |                |
|         |             |              | Unit = sqm                                                                                                                                                                                                |                 |          |          |                |
|         |             |              | Taking output = 40 sqm                                                                                                                                                                                    |                 |          |          |                |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                             |                 |          |          |                |
|         |             |              | Mate                                                                                                                                                                                                      | day             | 0.20     | 437.00   | 87.40          |
|         |             |              | Painter (1st Class)                                                                                                                                                                                       | day             | 3.00     | 523.00   | 1569.00        |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                       | day             | 2.00     | 412.00   | 824.00         |
|         |             | b)           | <b>Material</b>                                                                                                                                                                                           |                 |          |          |                |
|         |             |              | Cement Primer as per specifications                                                                                                                                                                       | litre           | 3.00     | 125.53   | 376.59         |
|         |             |              | Paint conforming to requirement of Clause 1701.3.8                                                                                                                                                        | litre           | 6.00     | 283.74   | 1702.44        |
|         |             |              | Add for scaffolding @ 1 per cent of labour cost where required                                                                                                                                            |                 |          |          | 20.79          |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                              |                 |          |          | 572.53         |
|         |             | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                |                 |          |          | 0.00           |
|         |             |              | Cost for 40 sqm = a+b+c+d                                                                                                                                                                                 |                 |          |          | 5152.75        |
|         |             |              | Rate per sqm = (a+b+c+d)/40                                                                                                                                                                               |                 |          |          | 128.82         |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                         |                 |          |          | <b>128.82</b>  |
| 35      | 10.10       | 1700         | <b>Kilometre stone</b>                                                                                                                                                                                    |                 |          |          |                |
|         |             |              | Reinforced cement concrete M15 grade kilometre stone/local stone of standard design as per IRC:8 fixing in position                                                                                       |                 |          |          |                |
|         |             | i)           | <b>5th KILOMETRE STONE (precast)</b>                                                                                                                                                                      |                 |          |          |                |
|         |             |              | Unit = each                                                                                                                                                                                               |                 |          |          |                |
|         |             |              | Taking output = 6 Nos.                                                                                                                                                                                    |                 |          |          |                |
|         |             | a)           | M-15 grade of concrete                                                                                                                                                                                    | cum             | 2.35     | 4,981.13 | 11705.66       |
|         |             |              | As per item No.12.5 of Chapter 12                                                                                                                                                                         |                 |          |          |                |
|         |             | b)           | Steel reinforcement @ 5 kg per sqm                                                                                                                                                                        | kg              | 22.08    | 66.47    | 1467.66        |
|         |             |              | As per item No.12.6 of Chapter 12                                                                                                                                                                         |                 |          |          |                |
|         |             | c)           | Excavation in soil for foundation                                                                                                                                                                         | cum             | 1.68     | 386.53   | 649.37         |
|         |             |              | As per item No.11.1 of Chapter 11                                                                                                                                                                         |                 |          |          |                |
|         |             | d)           | Painting two coats on concrete surface                                                                                                                                                                    | sqm             | 9.85     | 128.82   | 1268.88        |
|         |             |              | As per item No.10.5 of Chapter 10                                                                                                                                                                         |                 |          |          |                |
|         |             | e)           | lettering on km post (average 30 letters of 10 cm height each)                                                                                                                                            | per cm          | 1,800.00 | 0.73     | 1314.00        |
|         |             |              | As per item No.10.1 of Chapter 10                                                                                                                                                                         | high per        |          |          |                |
|         |             |              | <b>Transportation and fixing</b>                                                                                                                                                                          |                 |          |          |                |
|         |             | f)           | <b>Labour</b>                                                                                                                                                                                             |                 |          |          |                |
|         |             |              | Mate                                                                                                                                                                                                      | day             | 0.26     | 437.00   | 113.62         |
|         |             |              | Mason (1st Class)                                                                                                                                                                                         | day             | 0.60     | 553.00   | 331.80         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                       | day             | 6.00     | 412.00   | 2472.00        |
|         |             | g)           | <b>Machinery</b>                                                                                                                                                                                          |                 |          |          |                |
|         |             |              | 50 HP Tractor with trolley                                                                                                                                                                                | hour            | 6.00     | 688.00   | 4128.00        |
|         |             | h)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c+d+e+f+g)</b>                                                                                                                                    |                 |          |          | 2931.37        |
|         |             | i)           | <b>Contractor's profit @ 0% on (a+b+c+d+e+f+g+h)</b>                                                                                                                                                      |                 |          |          | 0.00           |
|         |             |              | Cost for 6 Nos. 5th km stone = a+b+c+d+e+f+g+h+i                                                                                                                                                          |                 |          |          | 26382.35       |
|         |             |              | <b>Rate for each 5th km stone = (a+b+c+d+e+f+g+h+i)/6</b>                                                                                                                                                 | <b>no.</b>      |          |          | <b>4397.06</b> |
|         |             | II)          | <b>KM STONE</b>                                                                                                                                                                                           |                 |          |          |                |
|         |             | ii)          | <b>Ordinary Kilometer Stone (Precast)</b>                                                                                                                                                                 |                 |          |          |                |
|         |             |              | Unit = each                                                                                                                                                                                               |                 |          |          |                |
|         |             |              | Taking output = 14 Nos.                                                                                                                                                                                   |                 |          |          |                |
|         |             | a)           | M15 grade of concrete                                                                                                                                                                                     | cum             | 3.77     | 4,981.13 | 18778.86       |
|         |             |              | As per item No.12.5 of Chapter 12                                                                                                                                                                         |                 |          |          |                |
|         |             | b)           | Steel reinforcement @ 5 kg per sqm                                                                                                                                                                        | kg              | 26.32    | 66.47    | 1749.49        |
|         |             |              | As per item No.12.6 of Chapter 12                                                                                                                                                                         |                 |          |          |                |
|         |             | c)           | Excavation in soil for foundation                                                                                                                                                                         | cum             | 2.77     | 386.53   | 1070.69        |
|         |             |              | As per item No.11.1 of Chapter 11                                                                                                                                                                         |                 |          |          |                |
|         |             | d)           | Painting two coats on concrete surface                                                                                                                                                                    | sqm             | 11.41    | 128.82   | 1469.84        |
|         |             |              | As per item No.10.5 of Chapter 10                                                                                                                                                                         |                 |          |          |                |
|         |             | e)           | lettering on km post (average 12 letters of 10 cm height each)                                                                                                                                            | per cm          | 1,680.00 | 0.73     | 1226.40        |
|         |             |              | As per item No.10.1 of Chapter 10                                                                                                                                                                         | high per letter |          |          |                |
|         |             |              | <b>Transportation and fixing</b>                                                                                                                                                                          |                 |          |          |                |
|         |             | f)           | <b>Labour</b>                                                                                                                                                                                             |                 |          |          |                |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Unit   | Quantity | Rate     | Amount in Rs   |
|---------|-------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------|----------|----------------|
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | day    | 0.32     | 437.00   | 139.84         |
|         |             |              | Mason (1st Class)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | day    | 1.00     | 553.00   | 553.00         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | day    | 7.00     | 412.00   | 2884.00        |
|         |             | <b>g)</b>    | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |          |          |                |
|         |             |              | 50 HP Tractor with trolley                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | hour   | 6.00     | 688.00   | 4128.00        |
|         |             | <b>h)</b>    | <b>Overheads &amp; Contractor's profit @ 12.5 % on (f+g)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                          |        |          |          | 963.11         |
|         |             | <b>i)</b>    | <b>Contractor's profit @ 0% on (f+g+h)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |          |          | 0.00           |
|         |             |              | Cost for 14 Nos. ordinary km stone = (a+b+c+d+e+f+g+h+i)                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |          |          | 32963.22       |
|         |             |              | <b>Rate for each ordinary km stone = (a+b+c+d+e+f+g+h+i)/14=</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |          |          | <b>2354.52</b> |
|         |             |              | <b>Rate for each ordinary km stone = (a+b+c+d+e+f+g+h+i)/14=</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |          |          | <b>2354.52</b> |
|         |             | <b>iii)</b>  | <b>200 m STONE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |          |          |                |
|         |             |              | 200 m stone (precast)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |          |          |                |
|         |             |              | Unit = each                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |          |          |                |
|         |             |              | Taking output = 33 Nos.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |          |          |                |
|         |             | <b>a)</b>    | <b>M15 grade of concrete</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |        |          |          |                |
|         |             |              | As per item No.12.5 of Chapter 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | cum    | 1.58     | 4,981.13 | 7870.19        |
|         |             | <b>b)</b>    | <b>Steel reinforcement @ 5 kg per sqm</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |          |          |                |
|         |             |              | As per item No.12.6 of Chapter 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | kg     | 66.00    | 66.47    | 4387.02        |
|         |             | <b>c)</b>    | <b>Excavation in soil for foundation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |          |          |                |
|         |             |              | As per item No.11.1 of Chapter 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | cum    | 1.39     | 386.53   | 537.28         |
|         |             | <b>d)</b>    | <b>Painting two coats on concrete surface</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |          |          |                |
|         |             |              | As per item No.10.5 of Chapter 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | sqm    | 6.27     | 128.82   | 807.70         |
|         |             | <b>e)</b>    | <b>lettering on km post (average 1 letter of 10 cm height each)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                   |        |          |          |                |
|         |             |              | As per item No. 10.1 of Chapter 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | per cm | 330.00   | 0.73     | 240.90         |
|         |             |              | <b>Transportation and fixing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |          |          |                |
|         |             | <b>f)</b>    | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |          |          |                |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | day    | 0.34     | 437.00   | 148.58         |
|         |             |              | Mason (1st Class)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | day    | 1.50     | 553.00   | 829.50         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | day    | 7.00     | 412.00   | 2884.00        |
|         |             | <b>g)</b>    | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |          |          |                |
|         |             |              | 50 HP Tractor with trolley                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | hour   | 6.00     | 688.00   | 4128.00        |
|         |             | <b>h)</b>    | <b>Overheads &amp; Contractor's profit @ 12.5 % on (f+g)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                          |        |          |          | 998.76         |
|         |             | <b>i)</b>    | <b>Contractor's profit @ 0% on (f+g+h)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |          |          | 0.00           |
|         |             |              | Cost for 33 Nos. 200 m stone = (a+b+c+d+e+f+g+h)                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |          |          | 22831.92       |
|         |             |              | <b>Rate for each 200 m stone = (a+b+c+d+e+f+g+h)/33</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |          |          | <b>691.88</b>  |
|         |             |              | <b>Rate for each 200 m stone = (a+b+c+d+e+f+g+h)/33</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |          |          | <b>691.88</b>  |
| 36      | 10.2        | 1700.3, 800  | <b>Retro-reflectorised Traffic Signs</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |          |          |                |
|         |             |              | Providing and fixing of retro-reflectorised cautionary, mandatory and informatory 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 a mild steel angle iron post 75 mm x 75 mm x 6 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 drawings and Technical Specification Clause 801 |        |          |          |                |
|         |             |              | Unit = Each                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |          |          |                |
|         |             |              | Taking output = one traffic sign                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |          |          |                |
|         |             | <b>(i)</b>   | <b>Excavation foundations</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |          |          |                |
|         |             |              | As per Item No. 1 to 11.1 of Chapter 11                                                                                                                                                                                                                                                                                                                                                                                                                                                               | cum    | 0.126    | 386.53   | 48.70          |
|         |             | <b>(ii)</b>  | <b>Cement concrete M-15 Grade</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |          |          |                |
|         |             |              | As per item no. 11.4 of Chapter 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | cum    | 0.126    | 4,981.13 | 627.62         |
|         |             | <b>(iii)</b> | <b>Painting Angle Iron Post with Primer and two coats of Epoxy Paint as per specifications</b>                                                                                                                                                                                                                                                                                                                                                                                                        |        |          |          |                |
|         |             |              | As per item no 10.7 of Chapter 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | sqm    | 0.46     | 152.53   | 70.16          |
|         |             | <b>a)</b>    | <b>Labour (For fixing at site)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |          |          |                |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | day    | 0.01     | 437.00   | 4.37           |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | day    | 0.25     | 412.00   | 103.00         |
|         |             | <b>b)</b>    | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |          |          |                |
|         |             |              | Mild steel angle iron 75 x 75 x 6 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | kg     | 20.00    | 55.45    | 1109.00        |
|         |             |              | 3050 mm long                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |        |          |          |                |
|         |             |              | Aluminium sheeting fixed with encapsulated lens type reflective sheeting of size including lettering and signs as applicable background with epoxy paint                                                                                                                                                                                                                                                                                                                                              | sqm    | 0.350    | 8,941.03 | 3129.36        |
|         |             |              | Add 3% cost of MS Sheet tube 12 SWG and angle irons towards the cost of fabrication, drilling holes, nuts and bolts etc.                                                                                                                                                                                                                                                                                                                                                                              |        |          |          | 127.15         |
|         |             | <b>i)</b>    | 900 mm equilateral & triangle , OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | sqm    | 0.35     |          |                |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Unit       | Quantity | Rate     | Amount in Rs   |
|---------|-------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|----------|----------------|
|         |             | ii)          | 600 mm equilateral & triangle, OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | sqm        | 0.156    |          |                |
|         |             | iii)         | 600 mm circular , OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | sqm        | 0.283    |          |                |
|         |             | iv)          | 800 mm x 600 mm rectangular, OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | sqm        | 0.48     |          |                |
|         |             | v)           | 600 mm x 450 mm rectangular, OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | sqm        | 0.27     |          |                |
|         |             | vi)          | 600 mm x 600 mm, OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | sqm        | 0.36     |          |                |
|         |             | vii)         | 900 mm side octagon, OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | sqm        | 0.672    |          |                |
|         |             | c)           | <b>Machinery</b><br>Tractor with Trolley                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | hour       | 0.08     | 688.00   | 55.04          |
|         |             | d)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |          |          | 565.99         |
|         |             | i)           | <b>Contractor's profit @ 0% on (a+b+c+d)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |          |          | 0.00           |
|         |             |              | <b>Rate per traffic sign = (i+ii+iii+a+b+c+d+i)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |          |          | <b>5840.40</b> |
|         |             |              | <b>Cost of Retro-reflectorised Traffic Signs as per above Analysis</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |          |          |                |
|         |             | i)           | 900 mm equilateral & triangle , OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |          |          | <b>5840.40</b> |
|         |             | ii)          | 600 mm equilateral & triangle, OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |          | <b>3830.48</b> |
|         |             | iii)         | 600 mm circular , OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |          | <b>5146.25</b> |
|         |             | iv)          | 800 mm x 600 mm rectangular, OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |          |          | <b>7187.25</b> |
|         |             | v)           | 600 mm x 450 mm rectangular, OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |          |          | <b>5011.57</b> |
|         |             | vi)          | 600 mm x 600 mm, OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |          |          | <b>5944.00</b> |
|         |             | vii)         | 900 mm side octagon, OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |          |          | <b>9176.46</b> |
| 37      | 10.3 (B)    | 1700.3       | <b>Direction sign</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |          |          |                |
|         |             | 800          | <b>Direction and place identification signs up to 0.9 sqm size board</b><br>Providing and erecting direction and place identifications of semi reflective sign boards as per IRC:67 made of 2 mm thick M.S. Sheet duly stove enameled paint in white colour in front and grey colour on back with red reflective border of 70 mm width and required message, letters, figures with reflective engineering grade tape as per MORD specifications of required shade and colour. Supported and welded on 47 mm x 47mm of 12 SWG Square tube of 3050 mm height duly strengthened by 25 mm x 5 mm M/s flat iron on edges on back firmly fixed to the ground by means of properly designed foundations with M-15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per approved drawing and Technical Specification Clause 1701<br>Unit = each<br>Take Output = 0.9 sqm                                                                                                                                                    |            |          |          |                |
|         |             | (i)          | Excavation for foundations<br>As per Item No. 11.1 of Chapter 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | cum        | 0.126    | 386.53   | 48.70          |
|         |             | (ii)         | Cement Concrete M-15 grade<br>As per Item No. 11.4 of Chapter 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | cum        | 0.126    | 4,981.13 | 627.62         |
|         |             | (iii)        | Painting on M.S. tube post with primer and two coat of epoxy paint as per specifications<br>As per item No.10.7 of Chapter 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | sqm        | 0.59     | 152.53   | 89.99          |
|         |             | a)           | <b>Labour (For fixing at site)</b><br>Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | day        | 0.01     | 437.00   | 4.37           |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | day        | 0.25     | 412.00   | 103.00         |
|         |             | b)           | <b>Materials</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |          |          |                |
|         |             | i)           | Support of MS sheet tube<br>47 mm x 47 mm of 12 SWG sheet 3050 mm long                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | kg         | 12.40    | 44.93    | 557.13         |
|         |             | ii)          | Angle iron 50 x 50 x 6 mm for lugs including 5% wastage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | kg         | 1.06     | 28.91    | 30.64          |
|         |             | iii)         | 2 mm thick MS sheet strengthened by 25 mm x 5 mm MS flat iron & painted with stove enameled paint including lettering, signs, message, Add 3% cost of MS sheet angle iron towards the cost of fabrications, drilling, holes, nuts, bolts, etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | sqm        | 0.90     | 832.00   | 748.80         |
|         |             | c)           | <b>Machinery</b><br>Tractor with Trolley                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | hour       | 0.08     | 688.00   | 55.04          |
|         |             | d)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b><br>Cost for 0.9 sqm = (i+ii+iii+a+b+c+d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |          |          | 192.39         |
|         |             |              | <b>Rate per sqm = (i+ii+iii+a+b+c+d) / 0.9</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |          |          | 2497.78        |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>SQM</b> |          |          | <b>2775.31</b> |
| 38      | 10.16       | 1,700        | <b>Providing and Fixing 'Logo' of PMGSY / MMGSY Project</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |          |          |                |
|         |             |              | Providing and fixing of typical PMGSY/ MMGSY informatory sign board with Logo as per MORD specifications and drawing. Three MS Plates of 1.6 mm thick, top and middle plate duly welded with MS flat iron 25mm x 5m size on back on edges. The lower plate will be welded with MS angle iron frame of 25mm x 25mm x 5mm. The angle iron frame of the lower most plate and flat iron frame of middle plate will be welded to 2 nos. 75mm x 75 mm of 12 SWG sheet tubes posts duly embedded in cement concrete M-15 grade blocks of 450mm x 450mm x 600mm, 600mm below ground level. The top most diamond plate will be welded to middle plate by 47mm x 47mm of 12 SWG steel plate tube. All M.S. will be stove enameled on both sides. Lettering and printing arrows, border etc. will be painted with ready mixed synthetic enamel paint of superior quality in required shade and colour. All sections of framed posts and steel tube will be painted with primer and two coats of epoxy paint as per drawing Clause 1701 and Annexure 1700.1 |            |          |          |                |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No.  | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Unit                       | Quantity                      | Rate                              | Amount in Rs                          |
|---------|--------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------|-----------------------------------|---------------------------------------|
|         |              |              | Unit = Each<br>Taking out put = one typical board                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            |                               |                                   |                                       |
|         |              | a)           | <b>Excavation for foundations</b><br>As per item No. 11.1 of Chapter 11                                                                                                                                                                                                                                                                                                                                                                                                                  | cum                        | 0.252                         | 386.530                           | 97.41                                 |
|         |              |              | <b>Cement Concrete M15 grade</b><br>As per item No. 11.4 of Chapter 11                                                                                                                                                                                                                                                                                                                                                                                                                   | cum                        | 0.252                         | 4,981.130                         | 1255.24                               |
|         |              |              | <b>Painting on MS Steel tubes with primer and two coats of epoxy</b><br>2x2.05x.30 = 1.23<br>1x1.10x188 = 0.21<br>As per item no. 10.7 of Chapter 10<br>Printing new letters and figures of any shade with synthetic enamel paint black or any other approved colour to give an even shade.                                                                                                                                                                                              | sqm                        | 1.80                          | 152.53                            | 274.55                                |
|         |              |              | Logo Border 60x4x5 = 1200 per cm height per letter<br>Figure 60x10 = 600 per cm height per letter<br>Middle plate words 28x5 = 140 per cm height per letter<br>Bottom plate border 150x2x5 = 1500 per cm height per letter<br>Bottom plate border 60x2x5 = 600 per cm height per letter<br>Words 101x2.5 = 252.5<br>Words 80x3 = 240.00<br>Total=4532.5 per cm height per letter<br>As per item No.10.1 of Chapter 10<br>Labour (for fixing at site)                                     | per cm height<br>per litre | 4532.50                       | 0.73                              | 3308.73                               |
|         |              |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | day                        | 0.03                          | 437.00                            | 13.11                                 |
|         |              |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | day                        | 0.75                          | 412.00                            | 309.00                                |
|         |              | b)           | <b>Material</b><br>2 nos. MS tubes 75mx75mm of 12 SWG sheet 2650 mm long<br>1 No. MS tube 47mm x 47mm of 12 SWG 1100 mm long<br>Angle iron 50mm x 50mm x 5 mm for lugs<br>1.6 mm thick MS sheet strengthened by 25mm x 5 MS flat iron on logo and middle plate angle iron 25mm x 25mm x 5mm on bottom plate<br>painting with stove enameled paint on both sides as per MORD<br>Add 3% cost of MS tube and angle iron towards the cost of fabrications, drilling holes, nuts, bolts, etc. | kg<br>kg<br>kg<br>sqm      | 63.15<br>4.47<br>2.12<br>1.44 | 44.93<br>44.93<br>28.91<br>832.00 | 2837.33<br>200.84<br>61.28<br>1198.08 |
|         |              |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                            |                               |                                   | 128.93                                |
|         |              | c)           | <b>Machinery</b><br>Tractor with trolley                                                                                                                                                                                                                                                                                                                                                                                                                                                 | hour                       | 0.24                          | 688.00                            | 165.12                                |
|         |              | d)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                                                                                                                           |                            |                               |                                   | 614.21                                |
|         |              | i)           | <b>Contractor's profit @ 0% on (a+b+c+d)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            |                               |                                   | 0.00                                  |
|         |              |              | <b>COST OF ONE BOARD=</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            |                               |                                   | 10463.82                              |
|         |              |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Nos.</b>                |                               |                                   | <b>10463.82</b>                       |
| 39      | 8.13<br>RCD  | 803          | <b>Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface</b><br>Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes.<br><b>Unit = sqm</b><br><b>Taking output = 640 sqm</b>               |                            |                               |                                   |                                       |
|         |              | a)           | <b>Labour</b><br>Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | day                        | 0.500                         | 437.00                            | 218.50                                |
|         |              |              | Mazdoor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | day                        | 2.000                         | 412.00                            | 824.00                                |
|         |              | b)           | <b>Machinery</b><br>Road marking machine @ 80 sqm per hour<br>Tractor-trolley                                                                                                                                                                                                                                                                                                                                                                                                            | hour<br>hour               | 8.000<br>8.000                | 1423.00<br>688.00                 | 11384.00<br>5504.00                   |
|         |              | c)           | <b>Material</b><br>Hot applied thermoplastic compound<br>Reflectorising glass beads                                                                                                                                                                                                                                                                                                                                                                                                      | Litre<br>kg                | 2000.000<br>200.000           | 210.99<br>80.71                   | 421980.00<br>16142.00                 |
|         |              | d)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                                                                                                                           |                            |                               |                                   | 57006.56                              |
|         |              | e)           | <b>Contractor's profit @ 0% on (a+b+c+d)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            |                               |                                   | 0.00                                  |
|         |              |              | Cost for 640 sqm = a+b+c+d+e                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            |                               |                                   | 513059.06                             |
|         |              |              | <b>Rate per sqm = a+b+c+d+e)/640</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |                               |                                   | 801.65                                |
|         |              |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>sqm</b>                 |                               |                                   | <b>801.65</b>                         |
| 40      | 14.16<br>RCD | 800          | <b>Painting on concrete surface</b><br>Providing and applying 2 coats of water based cement paint to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease, efflorescence and applying paint @ of 1 litre for 2 sqm.                                                                                                                                                                                                                                        |                            |                               |                                   |                                       |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No.  | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Unit       | Quantity                   | Rate    | Amount in Rs   |
|---------|-------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|---------|----------------|
|         |             |               | <b>Unit = sqm</b><br>Taking output = 10 sqm                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                            |         |                |
|         |             | a)            | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                            |         |                |
|         |             |               | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | day        | 0.01                       | 437.00  | 4.37           |
|         |             |               | Painter                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | day        | 0.25                       | 523.00  | 130.75         |
|         |             |               | Mazdoor                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | day        | 0.25                       | 521.00  | 130.25         |
|         |             | b)            | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                            |         |                |
|         |             |               | Water based paint of approved quality for cement concrete surface                                                                                                                                                                                                                                                                                                                                                                                                        | Litres     | 5.00                       | 125.53  | 627.65         |
|         |             | c)            | Overheads & Contractor's profit @ 12.5 % on (a+b)                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                            |         | 111.63         |
|         |             | d)            | Contractor's profit @ 0% on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                            |         | 0.00           |
|         |             |               | Cost for 10 sqm (a+b+c+d)                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                            |         | <b>1004.65</b> |
|         |             |               | Rate per sqm (a+b+c+d)/10                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                            |         | <b>100.46</b>  |
|         |             |               | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>sqm</b> |                            |         | <b>100.46</b>  |
|         |             |               | <b>SUB HEAD : ANALYSIS OF CULVERT/ MINOR BRIDGES ITEMS</b>                                                                                                                                                                                                                                                                                                                                                                                                               |            |                            |         |                |
| 41      | 8.13<br>RCD | 803           | <b>Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Concrete Surface</b><br>Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes.<br><b>Unit = sqm</b><br><b>Taking output = 640 sqm</b> |            |                            |         |                |
|         |             | a)            | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                            |         |                |
|         |             |               | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | day        | 0.500                      | 437.00  | 218.50         |
|         |             |               | Mazdoor                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | day        | 2.000                      | 412.00  | 824.00         |
|         |             | b)            | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                            |         |                |
|         |             |               | Road marking machine @ 80 sqm per hour                                                                                                                                                                                                                                                                                                                                                                                                                                   | hour       | 8.000                      | 1423.00 | 11384.00       |
|         |             |               | Tractor-trolley                                                                                                                                                                                                                                                                                                                                                                                                                                                          | hour       | 8.000                      | 688.00  | 5504.00        |
|         |             | c)            | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                            |         |                |
|         |             |               | Hot applied thermoplastic compound                                                                                                                                                                                                                                                                                                                                                                                                                                       | Litre      | 2000.000                   | 210.99  | 421980.00      |
|         |             |               | Reflectorising glass beads                                                                                                                                                                                                                                                                                                                                                                                                                                               | kg         | 200.000                    | 80.71   | 16142.00       |
|         |             | d)            | Overheads & Contractor's profit @ 12.5 % on (a+b+c)                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                            |         | 57006.56       |
|         |             | e)            | Contractor's profit @ 0% on (a+b+c+d)                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                            |         | 0.00           |
|         |             |               | Cost for 640 sqm = a+b+c+d+e                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                            |         | 513059.06      |
|         |             |               | Rate per sqm = a+b+c+d+e)/640                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                            |         | 801.65         |
|         |             |               | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>sqm</b> |                            |         | <b>801.65</b>  |
|         |             |               | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Cum</b> | <b>= 100.46 + 801.65 =</b> |         | <b>902.11</b>  |
|         |             |               | <b>SUB HEAD : ANALYSIS OF CULVERT/ MINOR BRIDGES ITEMS</b>                                                                                                                                                                                                                                                                                                                                                                                                               |            |                            |         |                |
| 42      | 11.1        | 300           | <b>Excavation for Structures</b><br>Earthwork in excavation for structures as per drawing and technical                                                                                                                                                                                                                                                                                                                                                                  |            |                            |         |                |
|         |             | I.            | <b>Ordinary soil</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |                            |         |                |
|         |             | (i)           | <b>Upto 3 m depth</b><br>Unit = cum<br>Taking output = 10 cum                                                                                                                                                                                                                                                                                                                                                                                                            |            |                            |         |                |
|         |             | a)            | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                            |         |                |
|         |             |               | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | day        | 0.32                       | 437.00  | 139.84         |
|         |             |               | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                      | day        | 8.00                       | 412.00  | 3296.00        |
|         |             | b)            | Overheads & Contractor's profit @ 12.5 % on (a)                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                            |         | 429.48         |
|         |             | c)            | Contractor's profit @ 0% on (a+b)                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                            |         | 0.00           |
|         |             |               | Cost for 10 cum = a+b                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                            |         | 386.53         |
|         |             |               | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>cum</b> |                            |         | <b>386.53</b>  |
|         |             | <b>NOTE:-</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                            |         |                |
|         |             | 1             | Cost of dewatering may be added, where required, up to 10 per cent of labour cost. Assessment for dewatering shall be made as per site conditions.                                                                                                                                                                                                                                                                                                                       |            |                            |         |                |
|         |             | 2             | The excavated earth if found suitable, can be used partly for backfilling in trenches & partly for road work. Hence cost of disposal has not been added except for marshy soil. This note is common to all cases of item 11.1 excluding 11.1 V                                                                                                                                                                                                                           |            |                            |         |                |
| 43      | 9.2<br>(I)  | 1100 &<br>800 | <b>Type B ( First Class ) Bedding</b><br>Laying (First Class) bedding on well compacted sand, moorum or approved granular material as per Clause 1105 (ii)<br><b>Fillling in foundation trenches as per drawing and technical specification Clause 305.3.9</b>                                                                                                                                                                                                           |            |                            |         |                |



# Analysis of Rates ( FORMAT F8 )

| Sl. No.     | SDB Sl. No.  | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                      | Unit       | Quantity | Rate    | Amount in Rs   |
|-------------|--------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|---------|----------------|
|             |              | I.           | <b>Sand filling</b><br>Unit = cum                                                                                                                                                                                                                                                                                                                                                                                |            |          |         |                |
|             |              | a)           | <b>Labour</b><br>Mate                                                                                                                                                                                                                                                                                                                                                                                            | day        | 0.01     | 437.00  | 4.37           |
|             |              |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                              | day        | 0.30     | 412.00  | 123.60         |
|             |              | b)           | <b>Material</b><br>Sand (assuming 20 per cent voids)                                                                                                                                                                                                                                                                                                                                                             | cum        | 1.20     | 145.87  | 175.04         |
|             |              | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                                                                                                                                     |            |          |         | 37.88          |
|             |              | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                                                                       |            |          |         | 0.00           |
|             |              |              | <u><b>CARRIAGE COST</b></u><br>sand                                                                                                                                                                                                                                                                                                                                                                              | Cum        | 1.2      | 321.66  | 385.99         |
|             |              |              | <b>Rate per cum = a+b+c</b>                                                                                                                                                                                                                                                                                                                                                                                      |            |          |         | <b>726.88</b>  |
|             |              |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                | <b>CUM</b> |          |         | <b>726.88</b>  |
| 44<br>(I)   | 9.3          | 1100         | <b>Providing and Laying Reinforced Cement Concrete Pipe NP3 as per design in Single Row</b><br>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.        |            |          |         |                |
|             |              | A.           | <b>600 MM DIA</b><br>Unit =m<br>Taking output =7.5 m<br>( 3 pipes of 2.5 m length each )                                                                                                                                                                                                                                                                                                                         |            |          |         |                |
|             |              | a)           | <b>Material</b><br>i) Sand at site                                                                                                                                                                                                                                                                                                                                                                               | cum        | 0.024    | 309.70  | 7.43           |
|             |              |              | ii ) Cement at site                                                                                                                                                                                                                                                                                                                                                                                              | ton        | 0.018    | 5682.06 | 102.28         |
|             |              |              | iii) RCC pipe NP 3 pipe including collar at site                                                                                                                                                                                                                                                                                                                                                                 | m          | 7.50     | 2594.85 | 19461.38       |
|             |              | b)           | <b>Labour</b><br>Mate                                                                                                                                                                                                                                                                                                                                                                                            | day        | 0.04     | 437.00  | 17.48          |
|             |              |              | Mason ( 1st class )                                                                                                                                                                                                                                                                                                                                                                                              | day        | 0.12     | 553.00  | 66.36          |
|             |              |              | Mazdoor ( Unskilled )                                                                                                                                                                                                                                                                                                                                                                                            | day        | 0.96     | 412.00  | 395.52         |
|             |              | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                                                                                                                                     |            |          |         | 2506.31        |
|             |              | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                                                                       |            |          |         | 0.00           |
|             |              |              | Cost for 7.5m = ( a+b+c)                                                                                                                                                                                                                                                                                                                                                                                         |            |          |         | 22556.75       |
|             |              |              | Rate per m =(a+b+c)/7.5                                                                                                                                                                                                                                                                                                                                                                                          |            |          |         | 3007.57        |
|             |              |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                | <b>M</b>   |          |         | <b>3007.57</b> |
| 44<br>(II)  | 9.3          | 1100         | <b>Providing and Laying Reinforced Cement Concrete Pipe NP4 as per design in Single Row</b><br>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.        |            |          |         |                |
|             |              | B.           | <b>1000 MM DIA</b><br>Unit =m<br>Taking output =7.5 m<br>( 3 pipes of 2.5 m length each )                                                                                                                                                                                                                                                                                                                        |            |          |         |                |
|             |              | a)           | <b>Material</b><br>i) Sand at site                                                                                                                                                                                                                                                                                                                                                                               | cum        | 0.04     | 309.70  | 12.39          |
|             |              |              | ii ) Cement at site                                                                                                                                                                                                                                                                                                                                                                                              | ton        | 0.03     | 5682.06 | 170.46         |
|             |              |              | iii) RCC pipe NP 3 pipe including collar at site                                                                                                                                                                                                                                                                                                                                                                 | m          | 7.50     | 6156.49 | 46173.68       |
|             |              | b)           | <b>Labour</b><br>Mate                                                                                                                                                                                                                                                                                                                                                                                            | day        | 0.09     | 437.00  | 39.33          |
|             |              |              | Mason ( 1st class )                                                                                                                                                                                                                                                                                                                                                                                              | day        | 0.25     | 553.00  | 138.25         |
|             |              |              | Mazdoor ( Unskilled )                                                                                                                                                                                                                                                                                                                                                                                            | day        | 2.00     | 412.00  | 824.00         |
|             |              | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                                                                                                                                     |            |          |         | 5919.76        |
|             |              | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                                                                       |            |          |         | 0.00           |
|             |              |              | Cost for 7.5m = ( a+b+c+d)                                                                                                                                                                                                                                                                                                                                                                                       |            |          |         | 53277.87       |
|             |              |              | Rate per m =(a+b+c+d)/7.5                                                                                                                                                                                                                                                                                                                                                                                        |            |          |         | 7103.72        |
|             |              |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                | <b>m</b>   |          |         | <b>7103.72</b> |
| 44<br>(III) | 9.5<br>( C ) | 1100         | <b>Providing and Laying Reinforced Cement Concrete Pipe NP3 as per Design in Double Row</b><br>Providing and laying reinforced cement concrete pipe NP3 for culverts on first class bedding of granular material in double 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. |            |          |         |                |
|             |              | C.           | <b>2 X 1000 MM DIA</b><br>Unit =m<br>Taking output =7.5 m<br>(6 pipes of 2.5 m length each in two rows)                                                                                                                                                                                                                                                                                                          |            |          |         |                |
|             |              | a)           | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                  |            |          |         |                |



# Analysis of Rates ( FORMAT F8 )

| Sl. No.   | SDB Sl. No. | MORD Ref No.          | DESCRIPTION                                                                                                                                                       | Unit       | Quantity | Rate     | Amount in Rs     |
|-----------|-------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|----------|------------------|
|           |             |                       | i) Sand at site                                                                                                                                                   | cum        | 0.08     | 309.70   | 24.78            |
|           |             |                       | ii ) Cement at site                                                                                                                                               | ton        | 0.06     | 5682.06  | 340.92           |
|           |             |                       | iii) RCC pipe NP 3 pipe including collar at site                                                                                                                  | m          | 15.00    | 6156.49  | 92347.35         |
|           |             | <b>b )</b>            | <b>Labour</b>                                                                                                                                                     |            |          |          |                  |
|           |             |                       | Mate                                                                                                                                                              | day        | 0.22     | 437.00   | 96.14            |
|           |             |                       | Mason ( 1st class )                                                                                                                                               | day        | 0.6      | 553.00   | 331.80           |
|           |             |                       | Mazdoor ( Unskilled )                                                                                                                                             | day        | 4.80     | 412.00   | 1977.60          |
|           |             | <b>c )</b>            | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                      |            |          |          | 11889.82         |
|           |             | <b>d )</b>            | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                        |            |          |          | 0.00             |
|           |             |                       | Cost for 7.5m = ( a+b+c)                                                                                                                                          |            |          |          | 107008.41        |
|           |             |                       | Rate per m =(a+b+c)/7.5                                                                                                                                           |            |          |          | 14267.79         |
|           |             |                       | <b>Total Cost</b>                                                                                                                                                 | <b>M</b>   |          |          | <b>14,267.79</b> |
| <b>45</b> | <b>11.4</b> | <b>800 &amp; 1200</b> | Providing concrete for plain/reinforced <u>concrete in open foundations</u> complete as per drawings and technical specifications<br>Clause 802, 803, 1202 & 1203 |            |          |          |                  |
|           |             | <b>I.</b>             | <b>P.C.C grade M 10</b>                                                                                                                                           |            |          |          |                  |
|           |             | <b>(i)</b>            | <b>Nominal mix 1:3:6</b>                                                                                                                                          |            |          |          |                  |
|           |             |                       | Unit = cum                                                                                                                                                        |            |          |          |                  |
|           |             | <b>a)</b>             | <b>Material</b>                                                                                                                                                   |            |          |          |                  |
|           |             |                       | Cement                                                                                                                                                            | t          | 0.250    | 5,254.40 | 1313.60          |
|           |             |                       | Coarse sand                                                                                                                                                       | cum        | 0.48     | 584.64   | 280.63           |
|           |             |                       | 40 mm aggregate                                                                                                                                                   | cum        | 0.576    | 1,005.81 | 579.35           |
|           |             |                       | 20 mm aggregate                                                                                                                                                   | cum        | 0.288    | 1,224.68 | 352.71           |
|           |             |                       | 10 mm aggregate                                                                                                                                                   | cum        | 0.096    | 602.28   | 57.82            |
|           |             | <b>b)</b>             | <b>Labour</b>                                                                                                                                                     |            |          |          |                  |
|           |             |                       | Mate                                                                                                                                                              | day        | 0.08     | 437.00   | 34.96            |
|           |             |                       | Mason (1st Class)                                                                                                                                                 | day        | 0.10     | 553.00   | 55.30            |
|           |             |                       | Mazdoor (Unskilled)                                                                                                                                               | day        | 1.63     | 412.00   | 671.56           |
|           |             |                       | Bhisti                                                                                                                                                            | day        | 0.27     | 412.00   | 111.24           |
|           |             | <b>c)</b>             | <b>Machinery</b>                                                                                                                                                  |            |          |          |                  |
|           |             |                       | Mechanical concrete mixer 0.4/0.28 cum capacity fitted with water measuring device and preferably also with load cell.                                            | hour       | 0.40     | 351.00   | 140.40           |
|           |             | <b>d)</b>             | Formwork @ 4% on cost of material, labour and machinery (a+b+c)                                                                                                   |            |          |          | 143.90           |
|           |             | <b>e)</b>             | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c+d)</b>                                                                                                  |            |          |          | 467.68           |
|           |             | <b>f)</b>             | <b>Contractor's profit @ 0% on (a+b+c+d+e)</b>                                                                                                                    |            |          |          | 0.00             |
|           |             |                       | Rate per cum =(a+b+c+d+e+f)                                                                                                                                       |            |          |          | 4209.15          |
|           |             |                       | <b>Carrige cost:-</b>                                                                                                                                             |            |          |          |                  |
|           |             |                       | Cement                                                                                                                                                            | t          | 0.250    | 427.66   | 106.92           |
|           |             |                       | Coarse sand                                                                                                                                                       | cum        | 0.48     | 321.66   | 154.40           |
|           |             |                       | Aggregate                                                                                                                                                         | cum        | 0.960    | 674.15   | 647.18           |
|           |             |                       | Rate per cum including Carrige                                                                                                                                    |            |          |          | 5117.64          |
|           |             |                       | <b>Rate per cum = a+b+c+d+e+f= (Total Cost)</b>                                                                                                                   | <b>cum</b> |          |          | <b>5,117.64</b>  |
|           |             | <b>II.</b>            | <b>P.C.C grade M 15</b>                                                                                                                                           |            |          |          |                  |
|           |             | <b>(i)</b>            | <b>Nominal mix (1:2.5:5)</b>                                                                                                                                      |            |          |          |                  |
|           |             |                       | Unit = cum                                                                                                                                                        |            |          |          |                  |
|           |             | <b>a)</b>             | <b>Material</b>                                                                                                                                                   |            |          |          |                  |
|           |             |                       | Cement                                                                                                                                                            | t          | 0.275    | 5,254.40 | 1444.96          |
|           |             |                       | Coarse sand                                                                                                                                                       | cum        | 0.48     | 584.64   | 280.63           |
|           |             |                       | 40 mm aggregate                                                                                                                                                   | cum        | 0.48     | 1,005.81 | 482.79           |
|           |             |                       | 20 mm aggregate                                                                                                                                                   | cum        | 0.24     | 1,224.68 | 293.92           |
|           |             |                       | 10 mm aggregate                                                                                                                                                   | cum        | 0.08     | 602.28   | 48.18            |
|           |             | <b>b)</b>             | <b>Labour</b>                                                                                                                                                     |            |          |          |                  |
|           |             |                       | Mate                                                                                                                                                              | day        | 0.08     | 437.00   | 34.96            |
|           |             |                       | Mason (1st Class)                                                                                                                                                 | day        | 0.10     | 553.00   | 55.30            |
|           |             |                       | Mazdoor (Unskilled)                                                                                                                                               | day        | 1.63     | 412.00   | 671.56           |
|           |             |                       | Bhisti                                                                                                                                                            | day        | 0.27     | 412.00   | 111.24           |
|           |             | <b>c)</b>             | <b>Machinery</b>                                                                                                                                                  |            |          |          |                  |
|           |             |                       | Concrete mixer 0.4/0.28 cum capacity                                                                                                                              | hour       | 0.40     | 351.00   | 140.40           |
|           |             | <b>d)</b>             | Formwork @ 4% on cost of material, labour and machinery (a+b+c)                                                                                                   |            |          |          | 142.56           |
|           |             | <b>e)</b>             | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c+d)</b>                                                                                                  |            |          |          | 463.31           |
|           |             | <b>f)</b>             | <b>Contractor's profit @ 0% on (a+b+c+d+e)</b>                                                                                                                    |            |          |          | 0.00             |
|           |             |                       | Rate per cum =(a+b+c+d+e+f)                                                                                                                                       |            |          |          | 4169.81          |
|           |             |                       | <b>Carrige cost:-</b>                                                                                                                                             |            |          |          |                  |
|           |             |                       | Cement                                                                                                                                                            | t          | 0.275    | 427.66   | 117.61           |
|           |             |                       | Coarse sand                                                                                                                                                       | cum        | 0.48     | 321.66   | 154.40           |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                             | Unit       | Quantity | Rate     | Amount in Rs    |
|---------|-------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|----------|-----------------|
|         |             |              | Aggregate                                                                                                                                                                                               | cum        | 0.80     | 674.15   | 539.32          |
|         |             |              | Rate per cum including Carriage                                                                                                                                                                         |            |          |          | 4981.13         |
|         |             |              | <b>Rate per cum = a+b+c+d+e+f= (Total Cost)</b>                                                                                                                                                         | <b>cum</b> |          |          | <b>4,981.13</b> |
|         | (i)         | III.         | <b>P.C.C. grade M 20</b><br>Nominal mix (1:2:4)<br>Unit = cum                                                                                                                                           |            |          |          |                 |
|         |             | a)           | <b>Material</b>                                                                                                                                                                                         |            |          |          |                 |
|         |             |              | Cement                                                                                                                                                                                                  | t          | 0.33     | 5,254.40 | 1733.95         |
|         |             |              | Sand                                                                                                                                                                                                    | cum        | 0.45     | 584.64   | 263.09          |
|         |             |              | 40 mm aggregate                                                                                                                                                                                         | cum        | 0.36     | 1,005.81 | 362.09          |
|         |             |              | 20 mm aggregate                                                                                                                                                                                         | cum        | 0.36     | 1,224.68 | 440.88          |
|         |             |              | 10 mm aggregate                                                                                                                                                                                         | cum        | 0.18     | 602.28   | 108.41          |
|         |             | b)           | <b>Labour</b>                                                                                                                                                                                           |            |          |          |                 |
|         |             |              | Mate                                                                                                                                                                                                    | day        | 0.08     | 437.00   | 34.96           |
|         |             |              | Mason (1st Class)                                                                                                                                                                                       | day        | 0.10     | 553.00   | 55.30           |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                     | day        | 1.63     | 412.00   | 671.56          |
|         |             |              | Bhisti                                                                                                                                                                                                  | day        | 0.27     | 412.00   | 111.24          |
|         |             | c)           | <b>Machinery</b>                                                                                                                                                                                        |            |          |          |                 |
|         |             |              | Concrete mixer 0.4/0.28 cum capacity                                                                                                                                                                    | hour       | 0.40     | 351.00   | 140.40          |
|         |             | d)           | Formwork @ 4% on (a+b+c)                                                                                                                                                                                |            |          |          | 156.88          |
|         |             | e)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c+d)</b>                                                                                                                                        |            |          |          | 509.85          |
|         |             | f)           | <b>Contractor's profit @ 0% on (a+b+c+d+e)</b>                                                                                                                                                          |            |          |          | 0.00            |
|         |             |              | Rate per cum =(a+b+c+d+e+f)                                                                                                                                                                             |            |          |          | 4588.61         |
|         |             |              | <b>Carriage cost:-</b>                                                                                                                                                                                  |            |          |          |                 |
|         |             |              | Cement                                                                                                                                                                                                  | t          | 0.33     | 427.66   | 141.13          |
|         |             |              | Coarse sand                                                                                                                                                                                             | cum        | 0.45     | 321.66   | 144.75          |
|         |             |              | Aggregate                                                                                                                                                                                               | cum        | 0.90     | 674.15   | 606.74          |
|         |             |              | Rate per cum including Carriage                                                                                                                                                                         |            |          |          | 5481.22         |
|         |             |              | <b>Rate per cum = a+b+c+d+e+f= (Total Cost)</b>                                                                                                                                                         | <b>cum</b> |          |          | <b>5,481.22</b> |
| 46      | 12.5        | 800          | Plain/reinforced <u><b>cement concrete in substructure</b></u> complete as per drawings and technical specification Clauses 802, 804, 805, 806, 807, 1202 ans 1204<br>For height upto 5 m<br>Unit = cum |            |          |          |                 |
|         |             | II.          | <b>P.C.C grade M 15</b>                                                                                                                                                                                 |            |          |          |                 |
|         |             | (i)          | <b>Nominal mix (1:2.5:5)</b><br>Unit = cum                                                                                                                                                              |            |          |          |                 |
|         |             | a)           | <b>Material</b>                                                                                                                                                                                         |            |          |          |                 |
|         |             |              | Cement                                                                                                                                                                                                  | t          | 0.275    | 5,254.40 | 1,444.96        |
|         |             |              | Coarse sand                                                                                                                                                                                             | cum        | 0.48     | 584.64   | 280.63          |
|         |             |              | 40 mm aggregate                                                                                                                                                                                         | cum        | 0.48     | 1,005.81 | 482.79          |
|         |             |              | 20 mm aggregate                                                                                                                                                                                         | cum        | 0.24     | 1,224.68 | 293.92          |
|         |             |              | 10 mm aggregate                                                                                                                                                                                         | cum        | 0.18     | 602.28   | 108.41          |
|         |             | b)           | <b>Labour</b>                                                                                                                                                                                           |            |          |          |                 |
|         |             |              | Mate                                                                                                                                                                                                    | day        | 0.08     | 437.00   | 34.96           |
|         |             |              | Mason (1st Class)                                                                                                                                                                                       | day        | 0.10     | 553.00   | 55.30           |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                     | day        | 1.63     | 412.00   | 671.56          |
|         |             |              | Bhisti                                                                                                                                                                                                  | day        | 0.27     | 412.00   | 111.24          |
|         |             | c)           | <b>Machinery</b>                                                                                                                                                                                        |            |          |          |                 |
|         |             |              | Concrete mixer 0.4/0.28 cum capacity                                                                                                                                                                    | hour       | 0.40     | 351.00   | 140.40          |
|         |             | d)           | Formwork @ 10% on cost of material, labour and machinery (a+b+c)                                                                                                                                        |            |          |          | 362.42          |
|         |             | e)           | Overheads & Contractor's profit @ 12.5 % on (a+b+c+d)                                                                                                                                                   |            |          |          | 498.32          |
|         |             | f)           | Contractor's profit @ 0% on (a+b+c+d+e)                                                                                                                                                                 |            |          |          | 0.00            |
|         |             |              | Rate per cum =(a+b+c+d+e+f)                                                                                                                                                                             |            |          |          | 4484.91         |
|         |             |              | <b>Carriage cost:-</b>                                                                                                                                                                                  |            |          |          |                 |
|         |             |              | Cement                                                                                                                                                                                                  | t          | 0.275    | 427.66   | 117.61          |
|         |             |              | Coarse sand                                                                                                                                                                                             | cum        | 0.48     | 321.66   | 154.40          |
|         |             |              | Aggregate                                                                                                                                                                                               | cum        | 0.90     | 674.15   | 606.74          |
|         |             |              | Rate per cum including Carriage                                                                                                                                                                         |            |          |          | 5,363.65        |
|         |             |              | <b>Rate per cum = a+b+c+d+e+f= (Total Cost)</b>                                                                                                                                                         | <b>cum</b> |          |          | <b>5,363.65</b> |
| 46      | 12.5        | 800          | Plain/reinforced <u><b>cement concrete in substructure</b></u> complete as per drawings and technical specification Clauses 802, 804, 805, 806, 807, 1202 ans 1204<br>For height upto 5 m<br>Unit = cum |            |          |          |                 |
|         |             | II.          | <b>P.C.C. grade M 20</b>                                                                                                                                                                                |            |          |          |                 |
|         |             | (i)          | <b>Nominal mix (1:2:4)</b>                                                                                                                                                                              |            |          |          |                 |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                      | Unit       | Quantity | Rate     | Amount in Rs    |
|---------|-------------|--------------|------------------------------------------------------------------|------------|----------|----------|-----------------|
|         |             |              | Unit = cum                                                       |            |          |          |                 |
|         |             | a)           | <b>Material</b>                                                  |            |          |          |                 |
|         |             |              | Cement                                                           | t          | 0.33     | 5,254.40 | 1733.95         |
|         |             |              | Sand                                                             | cum        | 0.45     | 584.64   | 263.09          |
|         |             |              | 40 mm aggregate                                                  | cum        | 0.36     | 1,005.81 | 362.09          |
|         |             |              | 20 mm aggregate                                                  | cum        | 0.36     | 1,224.68 | 440.88          |
|         |             |              | 10 mm aggregate                                                  | cum        | 0.18     | 602.28   | 108.41          |
|         |             | b)           | <b>Labour</b>                                                    |            |          |          |                 |
|         |             |              | Mate                                                             | day        | 0.08     | 437.00   | 34.96           |
|         |             |              | Mason (1st Class)                                                | day        | 0.10     | 553.00   | 55.30           |
|         |             |              | Mazdoor (Unskilled)                                              | day        | 1.63     | 412.00   | 671.56          |
|         |             |              | Bhisti                                                           | day        | 0.27     | 412.00   | 111.24          |
|         |             | c)           | <b>Machinery</b>                                                 |            |          |          |                 |
|         |             |              | Concrete mixer 0.4/0.28 cum capacity                             | hour       | 0.40     | 351.00   | 140.40          |
|         |             | d)           | <b>Formwork @ 10% on (a+b+c)</b>                                 |            |          |          | <b>392.19</b>   |
|         |             | e)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c+d)</b> |            |          |          | 539.26          |
|         |             | f)           | <b>Contractor's profit @ 0% on (a+b+c+d+e)</b>                   |            |          |          | 0.00            |
|         |             |              | Rate per cum =(a+b+c+d+e+f)                                      |            |          |          | 4853.33         |
|         |             |              | <b>Carrige cost:-</b>                                            |            |          |          |                 |
|         |             |              | Cement                                                           | t          | 0.330    | 427.66   | 141.13          |
|         |             |              | Coarse sand                                                      | cum        | 0.450    | 321.66   | 144.75          |
|         |             |              | Aggregate                                                        | cum        | 0.900    | 674.15   | 606.74          |
|         |             |              | Rate per cum including Carrige                                   |            |          |          | 5745.94         |
|         |             |              | <b>Rate per cum = a+b+c+d+e (Total Cost)</b>                     | <b>cum</b> |          |          | <b>5,745.94</b> |
|         |             | IV.          | <b>R.C.C. grade M 25</b>                                         |            |          |          |                 |
|         |             |              | Unit = cum                                                       |            |          |          |                 |
|         |             | a)           | <b>Material</b>                                                  |            |          |          |                 |
|         |             |              | Cement                                                           | t          | 0.404    | 5,254.40 | 2122.78         |
|         |             |              | Coarse sand                                                      | cum        | 0.45     | 584.64   | 263.09          |
|         |             |              | 20 mm aggregate                                                  | cum        | 0.54     | 1,224.68 | 661.33          |
|         |             |              | 10 mm aggregate                                                  | cum        | 0.36     | 602.28   | 216.82          |
|         |             | b)           | <b>Labour</b>                                                    |            |          |          |                 |
|         |             |              | Mate                                                             | day        | 0.08     | 437.00   | 34.96           |
|         |             |              | Mason (1st Class)                                                | day        | 0.12     | 553.00   | 66.36           |
|         |             |              | Mazdoor (Unskilled)                                              | day        | 1.73     | 412.00   | 712.76          |
|         |             |              | Bhisti                                                           | day        | 0.27     | 412.00   | 111.24          |
|         |             | c)           | <b>Machinery</b>                                                 |            |          |          |                 |
|         |             |              | Concrete mixer 0.4/0.28 cum capacity                             | hour       | 0.40     | 351.00   | 140.40          |
|         |             | d)           | <b>Formwork @ 10% on (a+b+c)</b>                                 |            |          |          | 432.97          |
|         |             | e)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c+d)</b> |            |          |          | 595.34          |
|         |             | f)           | <b>Contractor's profit @ 0% on (a+b+c+d+e)</b>                   |            |          |          | 0.00            |
|         |             |              | Rate per cum =(a+b+c+d+e+f)                                      |            |          |          | 5358.05         |
|         |             |              | <b>Carrige cost:-</b>                                            |            |          |          |                 |
|         |             |              | Cement                                                           | t          | 0.40     | 427.66   | 172.77          |
|         |             |              | Coarse sand                                                      | cum        | 0.45     | 321.66   | 144.75          |
|         |             |              | Aggregate                                                        | cum        | 0.90     | 674.15   | 606.74          |
|         |             |              | Rate per cum including Carrige                                   |            |          |          | 6282.30         |
|         |             |              | <b>Rate per cum = a+b+c+d+e+f= (Total Cost)</b>                  | <b>cum</b> |          |          | <b>6,282.30</b> |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No.                                                        | DESCRIPTION                                                                                                                                                              | Unit       | Quantity | Rate     | Amount in Rs    |
|---------|-------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|----------|-----------------|
|         |             | <b>NOTE :</b>                                                       |                                                                                                                                                                          |            |          |          |                 |
|         |             | <b>1</b>                                                            | For height above 5 m upto 10 m same as above with following changes:                                                                                                     |            |          |          |                 |
|         |             | <b>a.</b>                                                           | Add 2 per cent of cost of material, labour and machinery to cater for extra lift.                                                                                        |            |          |          |                 |
|         |             | <b>b.</b>                                                           | The provision of formwork shall be 12 per cent instead of 10 per cent of cost of material, labour and machinery                                                          |            |          |          |                 |
|         |             | <b>2</b>                                                            | The cost of formwork has been increased for more height to account for cost of side support to formwork.                                                                 |            |          |          |                 |
|         |             | <b>3</b>                                                            | Extra expenditure on structures which are more than 5 m height is to cater for cost involved for approaching the work spot by providing ramp for use by labour.          |            |          |          |                 |
| 47      | 13.1        | 800                                                                 | <b>Providing and laying reinforced cement concrete in superstructure as per drawing and technical specifications</b>                                                     |            |          |          |                 |
|         |             |                                                                     | <b>Clauses 800, 1205.4 and 1205.5</b>                                                                                                                                    |            |          |          |                 |
|         |             | <b>II. R.C.C M 25</b>                                               |                                                                                                                                                                          |            |          |          |                 |
|         |             |                                                                     | Unit =cum                                                                                                                                                                |            |          |          |                 |
|         |             | <b>a) Material</b>                                                  |                                                                                                                                                                          |            |          |          |                 |
|         |             |                                                                     | Cement                                                                                                                                                                   | t          | 0.40     | 5,254.40 | 2101.76         |
|         |             |                                                                     | Coarse sand                                                                                                                                                              | cum        | 0.45     | 584.64   | 263.09          |
|         |             |                                                                     | 20 mm aggregate                                                                                                                                                          | cum        | 0.54     | 1,224.68 | 661.33          |
|         |             |                                                                     | 10 mm aggregate                                                                                                                                                          | cum        | 0.36     | 602.28   | 216.82          |
|         |             | <b>b) Labour</b>                                                    |                                                                                                                                                                          |            |          |          |                 |
|         |             |                                                                     | Mate                                                                                                                                                                     | day        | 0.08     | 437.00   | 34.96           |
|         |             |                                                                     | Mason (1st Class)                                                                                                                                                        | day        | 0.12     | 553.00   | 66.36           |
|         |             |                                                                     | Mazdoor (Unskilled)                                                                                                                                                      | day        | 1.73     | 412.00   | 712.76          |
|         |             |                                                                     | Bhisti                                                                                                                                                                   | day        | 0.27     | 412.00   | 111.24          |
|         |             | <b>e) Machinery</b>                                                 |                                                                                                                                                                          |            |          |          |                 |
|         |             |                                                                     | Concrete mixer 0.4/0.28 cum capacity                                                                                                                                     | hour       | 0.40     | 351.00   | 140.40          |
|         |             | <b>d) For formwork and staging 20%of a+b</b>                        |                                                                                                                                                                          |            |          |          | <b>861.74</b>   |
|         |             | <b>e) Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c+d)</b> |                                                                                                                                                                          |            |          |          | 646.31          |
|         |             | <b>f) Contractor's profit @ 0% on (a+b+c+d+e)</b>                   |                                                                                                                                                                          |            |          |          | 0.00            |
|         |             |                                                                     | Rate per cum =(a+b+c+d+e+f)                                                                                                                                              |            |          |          | 5816.77         |
|         |             |                                                                     | <b>Carriage cost:-</b>                                                                                                                                                   |            |          |          |                 |
|         |             |                                                                     | Cement                                                                                                                                                                   | t          | 0.40     | 427.66   | 171.06          |
|         |             |                                                                     | Coarse sand                                                                                                                                                              | cum        | 0.45     | 321.66   | 144.75          |
|         |             |                                                                     | Aggregate                                                                                                                                                                | cum        | 0.90     | 674.15   | 606.74          |
|         |             |                                                                     | Rate per cum including Carriage                                                                                                                                          |            |          |          | 6739.31         |
|         |             |                                                                     | <b>Rate per cum = a+b+c+d+e+f= (Total Cost)</b>                                                                                                                          | <b>cum</b> |          |          | <b>6,739.31</b> |
|         |             | <b>II. R.C.C M 30</b>                                               |                                                                                                                                                                          |            |          |          |                 |
|         |             |                                                                     | Unit =cum                                                                                                                                                                |            |          |          |                 |
|         |             | <b>a) Material</b>                                                  |                                                                                                                                                                          |            |          |          |                 |
|         |             |                                                                     | Cement                                                                                                                                                                   | t          | 0.43     | 5,254.40 | 2,259.39        |
|         |             |                                                                     | Coarse sand                                                                                                                                                              | cum        | 0.45     | 584.64   | 263.09          |
|         |             |                                                                     | 20 mm aggregate                                                                                                                                                          | cum        | 0.54     | 1,224.68 | 661.33          |
|         |             |                                                                     | 10 mm aggregate                                                                                                                                                          | cum        | 0.36     | 602.28   | 216.82          |
|         |             | <b>b) Labour</b>                                                    |                                                                                                                                                                          |            |          |          |                 |
|         |             |                                                                     | Mate                                                                                                                                                                     | day        | 0.08     | 437.00   | 34.96           |
|         |             |                                                                     | Mason (1st Class)                                                                                                                                                        | day        | 0.12     | 553.00   | 66.36           |
|         |             |                                                                     | Mazdoor (Unskilled)                                                                                                                                                      | day        | 1.73     | 412.00   | 712.76          |
|         |             |                                                                     | Bhisti                                                                                                                                                                   | day        | 0.27     | 412.00   | 111.24          |
|         |             | <b>e) Machinery</b>                                                 |                                                                                                                                                                          |            |          |          |                 |
|         |             |                                                                     | Concrete mixer 0.4/0.28 cum capacity                                                                                                                                     | hour       | 0.40     | 351.00   | 140.40          |
|         |             | <b>d) For formwork and staging 20%of a+b</b>                        |                                                                                                                                                                          |            |          |          | 865.19          |
|         |             | <b>e) Overheads &amp; Contractor's profit @ 20 % on (a+b+c+d)</b>   |                                                                                                                                                                          |            |          |          | 1066.31         |
|         |             | <b>f) Contractor's profit @ 10% on (a+b+c+d+e)</b>                  |                                                                                                                                                                          |            |          |          | 639.78          |
|         |             |                                                                     | Rate per cum =(a+b+c+d+e+f)                                                                                                                                              |            |          |          | 7037.63         |
|         |             |                                                                     | <b>Carriage cost:-</b>                                                                                                                                                   |            |          |          |                 |
|         |             |                                                                     | Cement                                                                                                                                                                   | t          | 0.43     | 427.66   | 183.89          |
|         |             |                                                                     | Coarse sand                                                                                                                                                              | cum        | 0.45     | 321.66   | 144.75          |
|         |             |                                                                     | Aggregate                                                                                                                                                                | cum        | 0.90     | 674.15   | 606.74          |
|         |             |                                                                     | Rate per cum including Carriage                                                                                                                                          |            |          |          | <b>7,973.01</b> |
|         |             |                                                                     | <b>Rate per cum = a+b+c+d+e+f Cost</b>                                                                                                                                   | <b>cum</b> |          |          | <b>7,973.01</b> |
|         |             |                                                                     | <i>This analysis will hold good for concrete of nominal mix 1:1½:3 also</i>                                                                                              |            |          |          |                 |
| 48      | 11.5        | 600 & 1200                                                          | <b>Brick masonry work in cement mortar in foundation</b> complete excluding pointing and plastering as per drawing and technical specifications Clauses 600, 1202 & 1203 |            |          |          |                 |
|         |             | <b>I) 1 : 3 Cement Mortar</b>                                       |                                                                                                                                                                          |            |          |          |                 |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                      | Unit       | Quantity | Rate     | Amount in Rs   |
|---------|-------------|--------------|------------------------------------------------------------------|------------|----------|----------|----------------|
|         |             | I.           | Unit = cum                                                       |            |          |          |                |
|         |             | a)           | <b>Brick masonry in 1:3 cement mortar</b>                        |            |          |          |                |
|         |             |              | <b>Material</b>                                                  |            |          |          |                |
|         |             |              | Brick                                                            | Nos.       | 500.00   | 6.12     | 3060.00        |
|         |             |              | Cement mortar 1:3                                                | cum        | 0.24     | 3,714.86 | 891.57         |
|         |             |              | (Rate as per Sub-analysis)                                       |            |          |          |                |
|         |             | b)           | <b>Labour</b>                                                    |            |          |          |                |
|         |             |              | Mate                                                             | day        | 0.09     | 437.00   | 39.33          |
|         |             |              | Mason (1st Class)                                                | day        | 0.80     | 553.00   | 442.40         |
|         |             |              | Mazdoor (Unskilled)                                              | day        | 1.60     | 412.00   | 659.20         |
|         |             |              | Bhisti                                                           | day        | 0.20     | 412.00   | 82.40          |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>     |            |          |          | 646.86         |
|         |             | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                       |            |          |          | 0.00           |
|         |             |              | Rate per cum =(a+b+c+d)                                          |            |          |          | 5821.76        |
|         |             |              | <u><b>Carriage Cost</b></u>                                      |            |          |          |                |
|         |             |              | carriage brick                                                   | no.        | 500.00   | 0.74     | 370.43         |
|         |             |              | carriage cement                                                  | t          | 0.11     | 427.66   | 48.11          |
|         |             |              | carriage sand                                                    | cum        | 0.25     | 321.66   | 81.06          |
|         |             |              | Rate per cum including Carriage                                  |            |          |          | 6321.36        |
|         |             |              | <b>Rate per cum = a+b+c</b>                                      | <b>cum</b> |          |          | <b>6321.36</b> |
|         |             |              | <b>Sub-analysis</b>                                              |            |          |          |                |
|         |             |              | <b>Cement mortar 1:3 (1 cement : 3 sand)</b>                     |            |          |          |                |
|         |             |              | Unit = cum                                                       |            |          |          |                |
|         |             | a)           | <b>Material</b>                                                  |            |          |          |                |
|         |             |              | Cement                                                           | t          | 0.51     | 5,254.40 | 2679.74        |
|         |             |              | Sand                                                             | cum        | 1.05     | 584.64   | 613.87         |
|         |             | b)           | <b>Labour</b>                                                    |            |          |          |                |
|         |             |              | Mate                                                             | day        | 0.04     | 437.00   | 17.48          |
|         |             |              | Mazdoor (Unskilled)                                              | day        | 0.90     | 412.00   | 370.80         |
|         |             |              | Bhisti                                                           | day        | 0.08     | 412.00   | 32.96          |
|         |             |              | Rate per cum =(a+b+c+d)                                          |            |          |          | 3714.86        |
|         |             |              | <u><b>Carriage Cost</b></u>                                      |            |          |          |                |
|         |             |              | carriage cement                                                  | t          | 0.51     | 427.66   | 0.00           |
|         |             |              | carriage sand                                                    | cum        | 1.05     | 321.66   | 0.00           |
|         |             |              | Rate per cum including Carriage                                  |            |          |          | 3714.86        |
|         |             |              | <b>Total material and labour = (a+b)</b>                         | <b>cum</b> |          |          | <b>3714.86</b> |
|         |             | III.         | <b>In 1:5 cement mortar</b>                                      |            |          |          |                |
|         |             |              | Unit = cum                                                       |            |          |          |                |
|         |             | a)           | <b>Material</b>                                                  |            |          |          |                |
|         |             |              | Bricks 1st class                                                 | Nos.       | 500.00   | 6.12     | 3060.00        |
|         |             |              | Cement mortar                                                    | cum        | 0.24     | 3236.44  | 776.75         |
|         |             | b)           | <b>Labour</b>                                                    |            |          |          |                |
|         |             |              | Mate                                                             | day        | 0.09     | 437.00   | 39.33          |
|         |             |              | Mason 1st Class                                                  | day        | 0.80     | 553.00   | 442.40         |
|         |             |              | Mazdoor (Unskilled)                                              | day        | 1.60     | 412.00   | 659.20         |
|         |             |              | Bhisti                                                           | day        | 0.20     | 412.00   | 82.40          |
|         |             |              | Add for scaffolding @ 5 per cent of cost of materials and labour |            |          |          | 253.00         |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @20 % on (a+b)</b>        |            |          |          | 1062.62        |
|         |             | d)           | <b>Contractor's profit @ 10% on (a+b+c)</b>                      |            |          |          | 637.57         |
|         |             |              | <b>Rate per cum = a+b+c+d=</b>                                   |            |          |          | <b>7013.26</b> |
|         |             |              | <b>Total Cost including 1 % LABOUR CESS</b>                      | <b>cum</b> |          |          | <b>7083.40</b> |
| 48      |             |              | <b>Sub-analysis</b>                                              |            |          |          |                |
|         |             |              | <b>Cement mortar 1:6(1 cement, 6 sand)</b>                       |            |          |          |                |
|         |             | a)           | <b>Material</b>                                                  |            |          |          |                |
|         |             |              | Cement                                                           | t          | 0.288    | 5254.40  | 1513.27        |
|         |             |              | Sand                                                             | cum        | 1.337    | 584.64   | 781.66         |
|         |             | b)           | <b>Labour</b>                                                    |            |          |          |                |
|         |             |              | Mate                                                             | day        | 0.040    | 437.00   | 17.48          |
|         |             |              | Mazdoor (Unskilled)                                              | day        | 0.900    | 412.00   | 370.80         |
|         |             | c)           | <b>Carriage cost</b>                                             |            |          |          |                |
|         |             |              | Cement                                                           | t          | 0.288    | 427.66   | 123.17         |
|         |             |              | Sand                                                             | cum        | 1.337    | 321.66   | 430.06         |
|         |             |              | <b>Total Cost</b>                                                |            |          |          | <b>3236.44</b> |
|         |             |              | <b>Total material and labour = (a+b)</b>                         | <b>cum</b> |          |          | <b>3236.44</b> |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                   | Unit     | Quantity | Rate      | Amount in Rs    |
|---------|-------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-----------|-----------------|
| 49      | 11.7        | 1000 & 1200  | Supplying, fitting and placing <u><b>HYSD bar reinforcement in foundation</b></u> complete as per drawings and technical specifications<br>Clauses 1000 and 1202<br>Unit = t                  |          |          |           |                 |
|         |             | a)           | <b>Material</b>                                                                                                                                                                               |          |          |           |                 |
|         |             |              | HYSD bars including 5 per cent for overlaps and wastage                                                                                                                                       | t        | 1.05     | 51,837.50 | 54429.38        |
|         |             |              | Binding wire                                                                                                                                                                                  | kg       | 6.00     | 48.30     | 289.80          |
|         |             | b)           | <b>Labour for cutting, bending, shifting to site, tying and placing in position</b>                                                                                                           |          |          |           |                 |
|         |             |              | Mate                                                                                                                                                                                          | day      | 0.40     | 437.00    | 174.80          |
|         |             |              | Blacksmith                                                                                                                                                                                    | day      | 2.00     | 553.00    | 1106.00         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                           | day      | 6.00     | 412.00    | 2472.00         |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                  |          |          |           | 7309.00         |
|         |             | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                    |          |          |           | 0.00            |
|         |             |              | <b>Rate per t = a+b+c+d</b>                                                                                                                                                                   |          |          |           | <b>65780.97</b> |
|         |             |              | <u><b>CARRIAGE</b></u>                                                                                                                                                                        |          |          |           |                 |
|         |             |              | Reinforcement                                                                                                                                                                                 | t        | 1.05     | 456.46    | 479.28          |
|         |             |              | Rate per t including Carriage                                                                                                                                                                 |          |          |           | 66260.25        |
|         |             |              | <b>Rate per t = a+b+c= (Total Cost)</b>                                                                                                                                                       | <b>t</b> |          |           | <b>66260.25</b> |
| 48      | 12.6        | 1000         | Supplying, fitting and placing <u><b>HYSD bar reinforcement (Fe 415) in substructure</b></u> complete as per drawings and technical specification Clauses 1002, 1005, 1010 & 1202<br>Unit = t |          |          |           |                 |
|         |             | a)           | <b>Material</b>                                                                                                                                                                               |          |          |           |                 |
|         |             |              | HYSD bars including 5 per cent overlaps and wastage                                                                                                                                           | t        | 1.05     | 51,837.50 | 54429.38        |
|         |             |              | Binding wire                                                                                                                                                                                  | kg       | 6.00     | 48.30     | 289.80          |
|         |             | b)           | <b>Labour for cutting, bending, shifting to site, tying, and placing in position</b>                                                                                                          |          |          |           |                 |
|         |             |              | Mate                                                                                                                                                                                          | day      | 0.34     | 437.00    | 148.58          |
|         |             |              | Blacksmith                                                                                                                                                                                    | day      | 2.00     | 553.00    | 1106.00         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                           | day      | 6.50     | 412.00    | 2678.00         |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                  |          |          |           | 7331.47         |
|         |             | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                    |          |          |           | 0.00            |
|         |             |              | <b>Rate per t = a+b+c+d</b>                                                                                                                                                                   |          |          |           | <b>65983.22</b> |
|         |             |              | <u><b>CARRIAGE</b></u>                                                                                                                                                                        |          |          |           |                 |
|         |             |              | Reinforcement                                                                                                                                                                                 | t        | 1.05     | 456.46    | 479.28          |
|         |             |              | Binding wire                                                                                                                                                                                  |          | 0.01     | 456.46    | 2.74            |
|         |             |              | <b>Total Cost per t including Carriage</b>                                                                                                                                                    |          |          |           | 66465.25        |
|         |             |              | <b>Rate per t = a+b+c+d= (Total Cost)</b>                                                                                                                                                     | <b>t</b> |          |           | <b>66465.25</b> |
| 49      | 13.2        | 1000         | Supplying, fitting, and placing <u><b>HYSD bar reinforcement in superstructure</b></u> complete as per drawing and technical<br>Unit = t                                                      |          |          |           |                 |
|         |             | a)           | <b>Material</b>                                                                                                                                                                               |          |          |           |                 |
|         |             |              | HYSD bars including 5 per cent for laps and wastage                                                                                                                                           | t        | 1.05     | 51,837.50 | 54429.38        |
|         |             |              | Binding wire                                                                                                                                                                                  | kg       | 8.00     | 48.30     | 386.40          |
|         |             | b)           | <b>Labour for cutting, bending, tying and placing in position</b>                                                                                                                             |          |          |           |                 |
|         |             |              | Mate                                                                                                                                                                                          | day      | 0.44     | 437.00    | 192.28          |
|         |             |              | Blacksmith                                                                                                                                                                                    | day      | 3.00     | 553.00    | 1659.00         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                           | day      | 8.00     | 412.00    | 3296.00         |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                  |          |          |           | 7495.38         |
|         |             | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                    |          |          |           | 0.00            |
|         |             |              | <b>Rate per t = a+b+c+d</b>                                                                                                                                                                   |          |          |           | <b>67458.44</b> |
|         |             |              | <u><b>CARRIAGE</b></u>                                                                                                                                                                        |          |          |           |                 |
|         |             |              | Reinforcement                                                                                                                                                                                 | t        | 1.05     | 456.46    | 479.28          |
|         |             |              | Binding wire                                                                                                                                                                                  |          | 0.0080   | 456.46    | 3.65            |
|         |             |              | <b>Total Cost per t including Carriage</b>                                                                                                                                                    |          |          |           | 67941.37        |
|         |             |              | <b>Rate per t = a+b+c+d= (Total Cost)</b>                                                                                                                                                     | <b>t</b> |          |           | <b>67941.37</b> |
| 50      | 13.10       | 1200         | <u><b>Drainage spouts</b></u> complete as per drawing and technical specifications Clause 1209<br>Unit = 1 No                                                                                 |          |          |           |                 |
|         |             | a)           | <b>Material</b>                                                                                                                                                                               |          |          |           |                 |
|         |             | i)           | Corrosion resistant structural steel grating including 5 per cent wastage                                                                                                                     | kg       | 4.00     | 77.41     | 309.64          |
|         |             | ii)          | G I pipe 100 mm dia                                                                                                                                                                           | m        | 1.00     | 647.73    | 647.73          |
|         |             | b)           | <b>Labour</b>                                                                                                                                                                                 |          |          |           |                 |
|         |             |              | <b>For fabrication</b>                                                                                                                                                                        |          |          |           |                 |
|         |             |              | Mate                                                                                                                                                                                          | day      | 0.02     | 437.00    | 8.74            |
|         |             |              | Blacksmith, Welder etc. (Skilled)                                                                                                                                                             | day      | 0.02     | 553.00    | 11.06           |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                      | Unit       | Quantity | Rate      | Amount in Rs   |
|---------|-------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|-----------|----------------|
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                              | day        | 0.20     | 412.00    | 82.40          |
|         |             |              | <b>For fixing in position</b>                                                                                                                                                                                                                                    |            |          |           |                |
|         |             |              | Mate                                                                                                                                                                                                                                                             | day        | 0.01     | 437.00    | 4.37           |
|         |             |              | Mason (1st Class)                                                                                                                                                                                                                                                | day        | 0.01     | 553.00    | 5.53           |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                              | day        | 0.20     | 412.00    | 82.40          |
|         |             |              | Add @ 5 per cent of cost of material and labour (a+b) for electrodes, gas cutting, sealant, anti-corrosive bituminous paint, mild steel grating etc.                                                                                                             |            |          |           | 57.59          |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                     |            |          |           | 151.18         |
|         |             | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                       |            |          |           | 0.00           |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                |            |          |           | 1360.65        |
|         |             |              | <b>Rate per cum = a+b+c= (Total Cost)</b>                                                                                                                                                                                                                        | <b>cum</b> |          |           | <b>1360.65</b> |
| 51      | 13.16 IV)   | 1200         | <b>Filler Joint</b><br>Providing and filling joint sealing compound as per drawings and technical specifications with coarse sand and 6 per cent bitumen by weight.<br>Unit = Running m<br>Taking output = 7.5 m<br>7.5 m long x 100 mm wide x 10 mm deep recess |            |          |           |                |
|         |             | a)           | <b>Material</b>                                                                                                                                                                                                                                                  |            |          |           |                |
|         |             |              | Sand                                                                                                                                                                                                                                                             | cum        | 0.008    | 584.64    | 4.68           |
|         |             |              | Volume = 7.5 x 0.1 x 0.01 = 0.008 cum<br>Weight = 0.008 x 1400 = 11.2 kg                                                                                                                                                                                         |            |          |           |                |
|         |             |              | Bitumen-11.2 x 0.06 = 0.672 kg                                                                                                                                                                                                                                   | t          | 0.0007   | 56,202.60 | 39.34          |
|         |             | b)           | <b>Labour</b>                                                                                                                                                                                                                                                    |            |          |           |                |
|         |             |              | Mate                                                                                                                                                                                                                                                             | day        | 0.02     | 437.00    | 8.74           |
|         |             |              | Mazdoor (Skilled)                                                                                                                                                                                                                                                | day        | 0.50     | 521.00    | 260.50         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                              | day        | 0.10     | 412.00    | 41.20          |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                     |            |          |           | 44.31          |
|         |             | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                       |            |          |           | 0.00           |
|         |             |              | Cost for 7.5 m with 10 mm depth =a+b+c+d                                                                                                                                                                                                                         |            |          |           | 398.77         |
|         |             |              | <b>Rate per m 1 cm depth = (a+b+c+d)/7.5</b>                                                                                                                                                                                                                     |            |          |           | <b>53.17</b>   |
|         |             |              | <b>Rate per m = a+b+c= (Total Cost)</b>                                                                                                                                                                                                                          | <b>no.</b> |          |           | <b>53.17</b>   |
|         |             | <b>Note:</b> | For arriving at the final rate for filler joints per m length and per cm depth of joint filling compound, the rates of Sr. Nos (i), (ii), (iii) and (iv) shall be added.                                                                                         |            |          |           |                |
| 52      | 12.10       | 1200         | <b>Backfilling behind abutment, wing wall and return wall</b> complete as per drawings & technical specification Clause 1204.3.8<br>Unit = cum<br>Taking output = 10 cum                                                                                         |            |          |           |                |
|         |             | I)           | <b>Granular material</b>                                                                                                                                                                                                                                         |            |          |           |                |
|         |             | a)           | <b>Material</b>                                                                                                                                                                                                                                                  |            |          |           |                |
|         |             |              | Granular material                                                                                                                                                                                                                                                | cum        | 12.00    | 168.37    | 2020.44        |
|         |             | b)           | <b>Labour</b>                                                                                                                                                                                                                                                    |            |          |           |                |
|         |             |              | Mate                                                                                                                                                                                                                                                             | day        | 0.28     | 437.00    | 122.36         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                              | day        | 10.00    | 412.00    | 4120.00        |
|         |             |              | Bhisti                                                                                                                                                                                                                                                           | day        | 0.40     | 412.00    | 164.80         |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                     |            |          |           | 803.45         |
|         |             | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                       |            |          |           | 0.00           |
|         |             |              | <b>Carriage cost:-</b>                                                                                                                                                                                                                                           |            |          |           |                |
|         |             |              | Granular Material                                                                                                                                                                                                                                                | cum        | 12.00    | 674.15    | 8089.80        |
|         |             |              | <b>Cost for 10 cum of granular backfill = a+b+c</b>                                                                                                                                                                                                              |            |          |           | 15320.85       |
|         |             |              | <b>Rate per cum = (a+b+c+d)/10</b>                                                                                                                                                                                                                               |            |          |           | <b>1532.09</b> |
|         |             | II)          | <b>Sandy material</b>                                                                                                                                                                                                                                            |            |          |           |                |
|         |             |              | Unit = cum<br>Taking output = 10 cum                                                                                                                                                                                                                             |            |          |           |                |
|         |             | a)           | <b>Material</b>                                                                                                                                                                                                                                                  |            |          |           |                |
|         |             |              | Sand (Local)                                                                                                                                                                                                                                                     | cum        | 12.00    | 145.87    | 1750.44        |
|         |             | b)           | <b>Labour</b>                                                                                                                                                                                                                                                    |            |          |           |                |
|         |             |              | Mate                                                                                                                                                                                                                                                             | day        | 0.40     | 437.00    | 174.80         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                              | day        | 10.00    | 412.00    | 4120.00        |
|         |             |              | Bhisti                                                                                                                                                                                                                                                           | day        | 0.40     | 412.00    | 164.80         |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                     |            |          |           | 776.26         |
|         |             | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                       |            |          |           | 0.00           |
|         |             |              | Cost for per cum of sand backfill = (a+b+c+d)/10                                                                                                                                                                                                                 |            |          |           | 698.63         |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Unit       | Quantity | Rate     | Amount in Rs              |
|---------|-------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|----------|---------------------------|
|         |             |              | Carriage cost:-<br>Sand<br>Cost for per cum of sand backfill including carriage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | cum        | 1.20     | 163.83   | 196.60<br>895.23          |
|         |             |              | <b>Rate per cum = (a+b+c)/10 = (Total Cost)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>cum</b> |          |          | <b>895.23</b>             |
| 53      | 12.11       | 1200         | <b>Providing and laying filter media</b> with granular crushed aggregates as per specification to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and providing over the entire surface behind abutment, wing wall, return wall to the full height, compacted to firm condition complete as per drawing and technical specification Clause 1204.3.8<br>Unit = cum<br>Taking output = 10 cum                                                                                                             |            |          |          |                           |
|         |             | a)           | <b>Material</b><br>Filter media as per specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | cum        | 12.00    | 697.86   | 8374.32                   |
|         |             | b)           | <b>Labour</b><br>Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | day        | 0.40     | 437.00   | 174.80                    |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | day        | 9.00     | 412.00   | 3708.00                   |
|         |             |              | Mazdoor (Skilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | day        | 1.00     | 521.00   | 521.00                    |
|         |             |              | Bhisti                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | day        | 0.50     | 412.00   | 206.00                    |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |          |          | 1623.02                   |
|         |             | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |          |          | 0.00                      |
|         |             |              | Cost for per cum = (a+b+c+d)/10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |          |          | 1460.71                   |
|         |             |              | Carriage cost:-<br>Filter Material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | cum        | 1.20     | 674.15   | 808.98                    |
|         |             |              | <b>Cost for per cum including carriage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |          |          | 2269.69                   |
|         |             |              | <b>Rate per cum = (a+b+c)/10 (Total Cost)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>cum</b> |          |          | <b>2269.69</b>            |
| 54      | 12.13       | 600          | Providing <b>PCC M-20 architectural coping</b> on the top of wing wall, return wall etc. complete as per drawing and technical specification Clauses 615, 710 and 1204.3.11<br>Unit = Running m<br>Taking output = 1 m<br>Assume wall thickness = 345 mm<br>Projection of the coping will be 25 mm wide on both side of the wall = 345 + 50 = 395 mm<br>Quantity = 1 x 0.395 x 0.150 = 0.059<br><b>PCC M-20 Grade (1:2:4) Nominal Mix</b><br>As per item No. 12.5 (II)(i)<br>Add 10 per cent extra of cost of (a) being architectural coping<br>Cost of 1 m = a | cum        | 0.059    | 5,745.94 | 339.01<br>33.90<br>372.91 |
|         |             |              | <b>Rate per cum = (a+b+c)/10 (Total Cost)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>cum</b> |          |          | <b>372.91</b>             |
| 55      | 12.14       | 1200         | Providing <b>pressure relief pipes 100 mm dia</b> in bottom slab of box cell on a filter media base of 500 mm x 500 mm as per drawing and technical specification Clause 1205.5.7<br>Unit = Nos                                                                                                                                                                                                                                                                                                                                                                 |            |          |          |                           |
|         |             | a)           | <b>Material</b><br>AC pipe 100 mm dia i/c wastage of 5 per cent 600 mm long upto the bottom of levelling course                                                                                                                                                                                                                                                                                                                                                                                                                                                 | m          | 0.63     | 47.15    | 29.70                     |
|         |             |              | Filter media base with stone aggregate 0.5 m x 0.5 m area 1 m deep                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | cum        | 0.25     | 697.86   | 174.47                    |
|         |             | b)           | <b>Labour</b><br>Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | day        | 0.031    | 437.00   | 13.55                     |
|         |             |              | Mason 1st Class                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | day        | 0.016    | 553.00   | 8.85                      |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | day        | 0.80     | 412.00   | 329.60                    |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |          |          | 69.52                     |
|         |             |              | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |          |          | 0.00                      |
|         |             |              | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |          | 625.69                    |
|         |             |              | <b>Rate per No = (a+b+c)= (Total Cost)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>no.</b> |          |          | <b>625.69</b>             |
|         |             |              | <b>PROTECTION WORK</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |          |          |                           |
| 56      | 14.1        | 1300         | Providing and laying <b>boulder apron</b> for bed protection with stone boulders of minimum size and weight as per Table 1300.1, no fragment weighing less than 25 kg laid dry complete as per drawing and technical specifications Clause 1301<br>Unit = cum                                                                                                                                                                                                                                                                                                   |            |          |          |                           |
|         |             | a)           | <b>Material</b><br>Stone boulder (25 kg minimum)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | cum        | 1.00     | 694.61   | 694.61                    |
|         |             |              | Stone spalls                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | cum        | 0.20     | 694.61   | 138.92                    |
|         |             | b)           | <b>Labour</b><br>Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | day        | 0.04     | 437.00   | 17.48                     |
|         |             |              | Mason 1st Class                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | day        | 0.35     | 553.00   | 193.55                    |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | day        | 0.75     | 412.00   | 309.00                    |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |          |          | 169.20                    |



# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                    | Unit                     | Quantity                     | Rate                                 | Amount in Rs                                      |
|---------|-------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------|--------------------------------------|---------------------------------------------------|
|         |             | d)           | Contractor's profit @ 0% on (a+b+c)<br>Rate per cum = (a+b+c+d)<br><u>Carriage Cost</u><br>Stone boulder (25 Kg minimum )<br>Stone spalls                                                      |                          |                              |                                      | 0.00<br>1522.76<br><br>692.55<br>142.93           |
|         |             |              | Rate per cum = a+b+c                                                                                                                                                                           | cum                      |                              |                                      | 2358.24                                           |
|         |             | NOTE :       | Nominal excavation required for preparation of bed has been taken into account while making provisions for labour.                                                                             |                          |                              |                                      |                                                   |
|         |             |              | Total Cost                                                                                                                                                                                     | cum                      |                              |                                      | 2358.24                                           |
| 57      | 14.5        | 1300         | Providing and laying <u>boulder pitching on slopes</u> laid over prepared filter media as per drawing and technical specifications Clause 1302                                                 |                          |                              |                                      |                                                   |
|         |             | I.           | Stone/Boulder<br>Unit = cum                                                                                                                                                                    |                          |                              |                                      |                                                   |
|         |             | a)           | Material<br>Stone boulder (25 kg minimum)<br>Stone spalls of minimum 25 mm size                                                                                                                | cum<br>cum               | 1.00<br>0.20                 | 694.61<br>694.61                     | 694.61<br>138.92                                  |
|         |             | b)           | Labour<br>Mate<br>Mason 1st Class<br>Mazdoor (Unskilled)                                                                                                                                       | day<br>day<br>day        | 0.04<br>0.35<br>0.75         | 437.00<br>553.00<br>412.00           | 17.48<br>193.55<br>309.00                         |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)<br>Contractor's profit @ 0% on (a+b+c)<br>Rate per cum = (a+b+c+d)<br><u>Carriage Cost</u><br>Stone boulder (25 Kg minimum )<br>Stone spalls |                          |                              |                                      | 169.20<br>0.00<br>1522.76<br><br>692.55<br>142.93 |
|         |             |              | Rate per cum including Carriage                                                                                                                                                                | Nos<br>cum               | 1.00<br>0.20                 | 692.55<br>714.67                     | 692.55<br>142.93                                  |
|         |             |              | Total Cost                                                                                                                                                                                     | CUM                      |                              |                                      | 2358.24                                           |
| 58      | 14.6        | 1300         | Providing and laying <u>filter material underneath pitching</u> in slopes complete as per drawing and technical specifications Clause 1302                                                     |                          |                              |                                      |                                                   |
|         |             | a)           | Material<br>Graded stone aggregate of required size                                                                                                                                            | cum                      | 1.20                         | 697.86                               | 837.43                                            |
|         |             | b)           | Labour<br>Mate<br>Mazdoor (Skilled)<br>Mazdoor (Unskilled)                                                                                                                                     | day<br>day<br>day        | 0.05<br>0.25<br>1.02         | 437.00<br>521.00<br>412.00           | 21.85<br>130.25<br>420.24                         |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)<br>Contractor's profit @ 0% on (a+b+c)<br>Rate per cum = (a+b+c)<br><u>Carriage Cost</u><br>Graded stone aggregate of required size          |                          |                              |                                      | 176.22<br>0.00<br>1585.99<br><br>831.06           |
|         |             |              | Rate per cum including Carriage                                                                                                                                                                | cum                      | 1.20                         | 692.55                               | 831.06                                            |
|         |             |              | Total Cost                                                                                                                                                                                     | Cum                      |                              |                                      | 2417.05                                           |
| 59      | 14.7        | 1300         | Providing and laying flooring laid over cement concrete bedding complete as per drawing and technical specification Clause 1303                                                                |                          |                              |                                      |                                                   |
|         | (III)       |              | Brick on edge laid in cement mortar (1:3)<br>Unit=cum                                                                                                                                          |                          |                              |                                      |                                                   |
|         |             | a)           | Material<br>Bricks<br>Cement mortar (1:3) [(Rate as in item 11.5 (i))<br>Cement mortar bedding (1:5) [(Rate as in itm 12.1 (iii))                                                              | Nos<br>cum<br>cum        | 500.00<br>0.15<br>0.25       | 6.12<br>6299.58<br>5261.51           | 3060.00<br>944.94<br>1315.38                      |
|         |             | b.           | Labour<br>Mate<br>Mason 1st Class<br>Mazdoor (Unskilled)<br>Bhisti                                                                                                                             | day<br>day<br>day<br>day | 0.10<br>0.80<br>1.60<br>0.20 | 437.00<br>553.00<br>412.00<br>412.00 | 43.70<br>442.40<br>659.20<br>82.40                |
|         |             | c)           | Overheads & Contractor's profit @ 12.5 % on (a+b)<br>Contractor's profit @ 0% on (a+b+c)<br>Rate per cum = (a+b+c)                                                                             |                          |                              |                                      | 818.50<br>0.00<br>7366.52                         |
|         |             | d)           | Carriage Cost<br>i) Bricks<br>ii) Cement                                                                                                                                                       | Nos<br>cum               | 500.00<br>0.15               | 0.74<br>427.66                       | 370.43<br>65.86                                   |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No.   | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                           | Unit       | Quantity | Rate     | Amount in Rs   |
|---------|-------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|----------|----------------|
|         |             |                | iii) Sand                                                                                                                                                                                                                                                                                                                                                             | cum        | 0.42     | 163.83   | 68.81          |
|         |             |                | <b>Rate per cum including Carriage = a+b+c+d</b>                                                                                                                                                                                                                                                                                                                      |            |          |          | <b>7871.61</b> |
|         |             |                | <b>Total Cost</b>                                                                                                                                                                                                                                                                                                                                                     | <b>cum</b> |          |          | <b>7871.61</b> |
| 60      | 12.9        | 600            | Providing <u>weepholes</u> 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 technical specification Clauses 614, 709, 1204.3.7<br>Unit = Nos<br>Taking output = 30 Nos |            |          |          |                |
|         |             | a)             | <b>Material</b><br>AC pipe 100 mm dia including wastage @ 5 per cent. Average length of weep hole is taken as one metre for the purpose of estimating<br>MS clamps                                                                                                                                                                                                    | m          | 31.50    | 47.15    | 1485.23        |
|         |             |                | Cement mortar 1:3 (For rate refer to item 11.5 I)                                                                                                                                                                                                                                                                                                                     | Nos.       | 30.00    | 84.83    | 2544.90        |
|         |             |                |                                                                                                                                                                                                                                                                                                                                                                       | cum        | 0.05     | 3,714.86 | 185.74         |
|         |             | b)             | <b>Labour</b><br>Mate                                                                                                                                                                                                                                                                                                                                                 | day        | 0.03     | 437.00   | 13.11          |
|         |             |                | Mason 1st Class                                                                                                                                                                                                                                                                                                                                                       | day        | 0.50     | 553.00   | 276.50         |
|         |             |                | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                   | day        | 0.25     | 412.00   | 103.00         |
|         |             | c)             | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                                                                                          |            |          |          | 576.06         |
|         |             | d)             | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                            |            |          |          | 0.00           |
|         |             |                | Cost for 30 Nos = (a+b+c)                                                                                                                                                                                                                                                                                                                                             |            |          |          | 5184.54        |
|         |             |                | <b>Rate per No = (a+b+c)/30= (Total Cost)</b>                                                                                                                                                                                                                                                                                                                         | <b>no.</b> |          |          | <b>172.82</b>  |
| 61      | 11.2        | 300 & 1200     | Filling in foundation trenches as per drawing and technical specification Clause 305.3.9<br><b>Sand filling</b><br>Unit = cum                                                                                                                                                                                                                                         |            |          |          |                |
|         |             | a)             | <b>Labour</b><br>Mate                                                                                                                                                                                                                                                                                                                                                 | day        | 0.01     | 437.00   | 4.37           |
|         |             |                | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                   | day        | 0.30     | 412.00   | 123.60         |
|         |             | b)             | <b>Material</b><br>Sand (assuming 20 per cent voids)                                                                                                                                                                                                                                                                                                                  | cum        | 1.20     | 145.87   | 175.04         |
|         |             | c)             | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                                                                                          |            |          |          | 37.88          |
|         |             | d)             | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                            |            |          |          | 0.00           |
|         |             |                | <b>Rate per cum = (a+b+c+d)</b>                                                                                                                                                                                                                                                                                                                                       |            |          |          | 340.89         |
|         |             |                | <u>Carriage Cost</u><br>Sand (assuming 20 per cent voids)                                                                                                                                                                                                                                                                                                             | cum        | 1.20     | 163.83   | 196.60         |
|         |             |                | <b>Rate per cum = a+b+c+d= (Total Cost)</b>                                                                                                                                                                                                                                                                                                                           | <b>cum</b> |          |          | <b>537.49</b>  |
| 62      | 11.4        | 800 & 1200 IV. | Providing concrete for plain /reinforced concrete in open foundation complete as per drawings and technical specifications Clause 802,803,1202 & 1203.<br><b>R.C.C. grade M 20</b><br>Unit = cum                                                                                                                                                                      |            |          |          |                |
|         |             | a)             | <b>Material</b><br>Cement                                                                                                                                                                                                                                                                                                                                             | t          | 0.35     | 5,254.40 | 1839.04        |
|         |             |                | Coarse sand                                                                                                                                                                                                                                                                                                                                                           | cum        | 0.45     | 584.64   | 263.09         |
|         |             |                | 20 mm aggregate                                                                                                                                                                                                                                                                                                                                                       | cum        | 0.54     | 1,224.68 | 661.33         |
|         |             |                | 10 mm aggregate                                                                                                                                                                                                                                                                                                                                                       | cum        | 0.36     | 602.28   | 216.82         |
|         |             | b)             | <b>Labour</b><br>Mate                                                                                                                                                                                                                                                                                                                                                 | day        | 0.08     | 437.00   | 34.96          |
|         |             |                | Mason (1st Class)                                                                                                                                                                                                                                                                                                                                                     | day        | 0.12     | 553.00   | 66.36          |
|         |             |                | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                   | day        | 1.73     | 412.00   | 712.76         |
|         |             |                | Bhisti                                                                                                                                                                                                                                                                                                                                                                | day        | 0.27     | 412.00   | 111.24         |
|         |             | c)             | <b>Machinery</b><br>Concrete mixer 0.4/0.28 cum capacity                                                                                                                                                                                                                                                                                                              | hour       | 0.40     | 351.00   | 140.40         |
|         |             | d)             | Formwork @ 4% on (a+b+c)                                                                                                                                                                                                                                                                                                                                              |            |          |          | 161.84         |
|         |             | e)             | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c+d)</b>                                                                                                                                                                                                                                                                                                      |            |          |          | 525.98         |
|         |             | f)             | <b>Contractor's profit @ 0% on (a+b+c+d+e)</b>                                                                                                                                                                                                                                                                                                                        |            |          |          | 0.00           |
|         |             |                | <b>Rate per cum =(a+b+c+d+e+f)</b>                                                                                                                                                                                                                                                                                                                                    |            |          |          | 4733.82        |
|         |             |                | <b>Carriage cost:-</b><br>Cement                                                                                                                                                                                                                                                                                                                                      | t          | 0.35     | 427.66   | 149.68         |
|         |             |                | Coarse sand                                                                                                                                                                                                                                                                                                                                                           | cum        | 0.45     | 321.66   | 144.75         |
|         |             |                | Aggregate                                                                                                                                                                                                                                                                                                                                                             | cum        | 0.90     | 674.15   | 606.74         |
|         |             |                | <b>Rate per cum including Carriage</b>                                                                                                                                                                                                                                                                                                                                |            |          |          | 5634.98        |
|         |             |                | <b>Rate per cum = a+b+c+d+e+f= (Total Cost)</b>                                                                                                                                                                                                                                                                                                                       | <b>cum</b> |          |          | <b>5634.98</b> |
| 63      | 10.11       | 1700           | <b>Boundary Pillar</b><br>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 Technical Specification Clause 1704                                                                                                       |            |          |          |                |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                | Unit       | Quantity | Rate     | Amount in Rs   |
|---------|-------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|----------|----------------|
|         |             |              | Unit = each<br>Taking output = 57 Nos.                                                                                                                                                                                                                                                                                                                                                                                                                     |            |          |          |                |
|         |             | a)           | <b>M-15 grade of Concrete</b><br>As per Item No. 12.5 of Chapter 12                                                                                                                                                                                                                                                                                                                                                                                        | cum        | 1.25     | 5,745.94 | 7182.43        |
|         |             | b)           | <b>Steel reinforcement</b><br>As per Item No. 12.6 of Chapter 12                                                                                                                                                                                                                                                                                                                                                                                           | kg         | 79.80    | 66.47    | 5303.93        |
|         |             | c)           | <b>Excavation in soil</b><br>As per Item No. 11.1 of Chapter 11                                                                                                                                                                                                                                                                                                                                                                                            | cum        | 10.72    | 386.53   | 4143.60        |
|         |             | d)           | <b>lettering, each 10 cm high</b><br>As per Item No. 10.1 of Chapter 10                                                                                                                                                                                                                                                                                                                                                                                    | per litre  | 2,280.00 | 0.73     | 1664.40        |
|         |             | e)           | <b>Transportation and fixing Labour</b><br>Mate                                                                                                                                                                                                                                                                                                                                                                                                            | day        | 0.57     | 437.00   | 249.09         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                        | day        | 14.25    | 412.00   | 5871.00        |
|         |             | f)           | <b>Machinery</b><br>Tractor with trolley                                                                                                                                                                                                                                                                                                                                                                                                                   | hour       | 6.00     | 688.00   | 4128.00        |
|         |             | g)           | <b>Material</b><br>Stone spall                                                                                                                                                                                                                                                                                                                                                                                                                             | cum        | 11.97    | 363.47   | 4350.74        |
|         |             | h)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c+d)</b>                                                                                                                                                                                                                                                                                                                                                                                           |            |          |          | 1824.85        |
|         |             | i)           | <b>Contractor's profit @ 0% on (a+b+c+d+e+f+g+h)</b>                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |          | 0.00           |
|         |             |              | Cost for 57 Nos. boundary pillar = a+b+c+d+e+f+g+h+i                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |          | 34718.03       |
|         |             |              | Rate for each boundary pillar = (a+b+c+d+e+f+g+h)/57                                                                                                                                                                                                                                                                                                                                                                                                       |            |          |          | 609.09         |
|         |             |              | <b>Rate per cum = a+b+c+d+e= (Total Cost)</b>                                                                                                                                                                                                                                                                                                                                                                                                              | <b>cum</b> |          |          | <b>609.09</b>  |
| 64      | 2.15        | 202          | <b>Dismantling of Cement Concrete Pavements as per Technical Specification Clause 202.</b><br>Dismantling of cement concrete pavements by mechanical means using pneumatic tools breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials upto a lead of 1000 m, stacking serviceable and unserviceable materials separately<br><b>Unit = cum</b><br><b>Taking output = 1 cum</b> |            |          |          |                |
|         |             | a)           | <b>Labour</b><br>Mate                                                                                                                                                                                                                                                                                                                                                                                                                                      | day        | 0.03     | 437.00   | 13.11          |
|         |             |              | Mazdoor (Semi-skilled)                                                                                                                                                                                                                                                                                                                                                                                                                                     | day        | 0.50     | 428.00   | 214.00         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                        | day        | 0.50     | 412.00   | 206.00         |
|         |             | b)           | <b>Machinery</b><br>Air compressor 210 cfm with two leads for pneumatic cutters / hammers @ 1 cum per hour                                                                                                                                                                                                                                                                                                                                                 | hour       | 1.00     | 455.00   | 455.00         |
|         |             |              | Tractor with trolley                                                                                                                                                                                                                                                                                                                                                                                                                                       | hour       | 0.40     | 688.00   | 275.20         |
|         |             |              | Joint Cutting Machine with 2-3 blades                                                                                                                                                                                                                                                                                                                                                                                                                      | hour       | 1.00     | 357.00   | 357.00         |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                                                                                                                                                                               |            |          |          | 190.04         |
|         |             | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                                                                                                                 |            |          |          | 0.00           |
|         |             |              | <b>Rate per cum = a+b+c+d</b>                                                                                                                                                                                                                                                                                                                                                                                                                              |            |          |          | 1710.35        |
|         |             |              | <b>Rate per Cum</b>                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Cum</b> |          |          | <b>1710.35</b> |
| 65      | 11.9        | 307          | <b>Planting of Trees and their Maintenance for one Year</b><br>Planting of trees by the road side (Avenue trees) in 0.60 m dia holes, 1 m deep dug in the ground, mixing the soil with decayed farm yard/sludge manure, planting the saplings, backfilling the trench, watering, fixing the tree guard and maintaining the plants for one year<br><b>Unit = each</b><br><b>Taking output = 10 trees</b>                                                    |            |          |          |                |
|         |             | b)           | <b>Labour</b><br>Mate                                                                                                                                                                                                                                                                                                                                                                                                                                      | day        | 1.70     | 437.00   | 742.90         |
|         |             |              | Mazdoor for planting                                                                                                                                                                                                                                                                                                                                                                                                                                       | day        | 2.00     | 412.00   | 824.00         |
|         |             |              | Mazdoor for maintenance for one year                                                                                                                                                                                                                                                                                                                                                                                                                       | day        | 15.00    | 412.00   | 6180.00        |
|         |             | b)           | <b>Machinery</b><br>Water tanker 6 KL capacity                                                                                                                                                                                                                                                                                                                                                                                                             | hour       | 2.00     | 764.00   | 1528.00        |
|         |             | c)           | <b>Material</b><br>Sapling 2 m high 25 mm dia                                                                                                                                                                                                                                                                                                                                                                                                              | Each       | 10.00    | 28.64    | 286.40         |
|         |             |              | Farm yard manure                                                                                                                                                                                                                                                                                                                                                                                                                                           | Cum        | 0.94     | 552.10   | 518.97         |
|         |             |              | Pesticide                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Kg         | 0.50     | 89.55    | 44.78          |
|         |             |              | Cost of water                                                                                                                                                                                                                                                                                                                                                                                                                                              | Kl         | 12.00    | 61.40    | 736.80         |
|         |             | d)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c+d)</b>                                                                                                                                                                                                                                                                                                                                                                                           |            |          |          | 1357.73        |
|         |             | e)           | <b>Contractor's profit @ 0% on (a+b+c+d)</b>                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |          | 0.00           |
|         |             |              | Cost for 10 trees = a+b+c+d+e                                                                                                                                                                                                                                                                                                                                                                                                                              |            |          |          | 12219.58       |
|         |             |              | Rate per trees = (a+b+c+d+e)/10                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |          | 1221.96        |
|         |             |              | <b>Rate per tree = a+b+c+d+e=</b>                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>cum</b> |          |          | <b>1221.96</b> |

# Analysis of Rates ( FORMAT F8 )

| Sl. No. | SDB Sl. No. | MORD Ref No. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Unit       | Quantity | Rate     | Amount in Rs   |
|---------|-------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|----------|----------------|
| 66      | 11.14       | New          | Half brick circular tree guard, in 2nd class brick, internal diametre 1.25 metres, and height 1.2 metres, above ground and 0.20 metre below ground, bottom two courses laid dry, and top three courses in cement mortar 1:6 (1 cement 6 sand) and the intermediate courses being in dry honey comb masonry, as per design complete<br>Unit = each<br>Taking output =one trees                                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |          |                |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |          |                |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | day        | 0.050    | 437.00   | 21.85          |
|         |             |              | Mason                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | day        | 0.250    | 553.00   | 138.25         |
|         |             |              | Mazdoor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | day        | 0.250    | 412.00   | 103.00         |
|         |             | b)           | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |          |          |                |
|         |             |              | Brick 2nd class including carriage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Each       | 230.00   | 4.71     | 1083.76        |
|         |             |              | Cement mortar 1:6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Cum        | 0.025    | 3,236.44 | 80.91          |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c+d)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |          | 178.47         |
|         |             | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |          |          | 0.00           |
|         |             |              | Rate per tree Guard = a+b+c+d                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |          | 1606.24        |
|         |             |              | <b>Rate per tree = a+b+c+d+e=</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |          |          | <b>1606.24</b> |
| 67      | 2.15        | 202          | <b>Dismantling of Cement Concrete Pavements as per Technical Specification Clause 202.</b><br>Dismantling of cement concrete pavements by mechanical means using pneumatic tools breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials upto a lead of 1000 m, stacking serviceable and unserviceable materials separately<br>Unit = cum<br>Taking output = 1 cum                                                                                                                                                                                                                                                                                                                                                                |            |          |          |                |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |          |                |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | day        | 0.03     | 437.00   | 13.11          |
|         |             |              | Mazdoor (Semi-skilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | day        | 0.50     | 428.00   | 214.00         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | day        | 0.50     | 412.00   | 206.00         |
|         |             | b)           | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |          |                |
|         |             |              | Air compressor 210 cfm with two leads for pneumatic cutters / hammers @ 1 cum per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | hour       | 1.00     | 455.00   | 455.00         |
|         |             |              | Tractor with trolley                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | hour       | 0.40     | 688.00   | 275.20         |
|         |             |              | Joint Cutting Machine with 2-3 blades                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | hour       | 1.00     | 357.00   | 357.00         |
|         |             | c)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |          |          | 190.04         |
|         |             | d)           | <b>Contractor's profit @ 0% on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |          |          | 0.00           |
|         |             |              | Rate per cum = a+b+c+d                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |          |          | 1710.35        |
|         |             |              | <b>Rate per Cum</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Cum</b> |          |          | <b>1710.35</b> |
| 68      | 8.29 RCD    |              | <b>Cable Duct Across the Road</b><br>Providing and laying of a reinforced cement concrete pipe duct,300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills,constructing head walls at both ends, providing a minimum fill ofgranular material over top and sides of RCC pipe as per IRC:981997,bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings.<br><b>Unit = Rm</b><br><b>Taking output = 20 m</b> |            |          |          |                |
|         |             | a)           | <b>Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |          |          |                |
|         |             |              | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | day        | 0.500    | 437.00   | 218.50         |
|         |             |              | Mazdoor (skilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | day        | 0.250    | 521.00   | 130.25         |
|         |             |              | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | day        | 1.000    | 412.00   | 412.00         |
|         |             | b)           | <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |          |          |                |
|         |             |              | Reinforced Cement Concrete pipe 300 mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rm         | 20.000   | 613.10   | 12262.00       |
|         |             |              | Local Sand for bedding and sides of pipe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Cum        | 7.200    | 584.64   | 4209.41        |
|         |             |              | Collar for joints 300 mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Each       | 9.000    | 118.00   | 1062.00        |
|         |             |              | Cement mortar 1:3 for joints                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Cum        | 0.020    | 3714.86  | 74.30          |
|         |             | c)           | <b>Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |          |          |                |
|         |             |              | Tractor-trolley                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Hour       | 0.500    | 688.00   | 344.00         |
|         |             | d)           | <b>Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |          |          | 2339.06        |
|         |             | e)           | <b>Contractor's profit @ 0% on (a+b+c+d)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |          |          | 0.00           |
|         |             |              | Cost for 20 Rm = a+b+c+d+e                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |          |          | 21051.51       |
|         |             |              | <b>Rate per Rm = a+b+c+d+e)/20 Sub Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |          |          | 1052.58        |
|         |             |              | <b>Carriage Cost</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |          |                |
|         |             |              | Local Sand                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Cum        | 0.36000  | 163.83   | 58.98          |
|         |             |              | <b>Rate per Rm = a+b+c+d+e)/20 Final</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |          |          | 1111.55        |
|         |             |              | <b>Total Cost including</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Rm</b>  |          |          | <b>1111.55</b> |

## F-8 (Rate Maintainance)

| Sr. No. | Ref to MORD Sp. | Description                                                                                                                                                                                                                                                                                                                                         | Unit              | Quantity   | Rate (Rs.) | Amount (Rs.)  |
|---------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------|------------|---------------|
| 15.1    | 1900            | <b>Restoration of Rain Cuts</b>                                                                                                                                                                                                                                                                                                                     |                   |            |            |               |
|         |                 | i) Restoration of rain cuts with soil, moorum gravel or a mixture of these, clearing the loose soil, benching for 300mm width laying fresh material in layers not exceeding 250 mm and compaction with plate compactor or power rammer to restore the original alignment, level and slopes as per drawings and technical specifications Clause 1902 |                   |            |            |               |
|         |                 | <b>A. Manual Means</b>                                                                                                                                                                                                                                                                                                                              |                   |            |            |               |
|         |                 | Unit = cum                                                                                                                                                                                                                                                                                                                                          |                   |            |            |               |
|         |                 | Taking output = 10 cum                                                                                                                                                                                                                                                                                                                              |                   |            |            |               |
|         |                 | <b>a) Labour</b>                                                                                                                                                                                                                                                                                                                                    |                   |            |            |               |
|         |                 | Mate                                                                                                                                                                                                                                                                                                                                                | day               | 0.24       | 437.00     | 104.88        |
|         |                 | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                 | day               | 6.00       | 412.00     | 2,472.00      |
|         |                 | <b>b) Machinery</b>                                                                                                                                                                                                                                                                                                                                 |                   |            |            |               |
|         |                 | Plate compactor                                                                                                                                                                                                                                                                                                                                     | hour              | 3.00       | 415.00     | 1,245.00      |
|         |                 | <b>c) Materials</b>                                                                                                                                                                                                                                                                                                                                 |                   |            |            |               |
|         |                 | Compensation for earth Taken from private land                                                                                                                                                                                                                                                                                                      | cum               | 7.50       | 35.25      | 264.38        |
|         |                 | <b>d) Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                                                                                                                                                                                                                                   |                   |            |            | <b>510.78</b> |
|         |                 | <b>e) Contractor's profit @ 0% on a+b+c+d</b>                                                                                                                                                                                                                                                                                                       |                   |            |            | <b>0.00</b>   |
|         |                 | Cost for 10 cum = a+b+c+d+e                                                                                                                                                                                                                                                                                                                         |                   |            |            | 4,597.04      |
|         |                 | <b>Rate per cum = a+b+c+d/10</b>                                                                                                                                                                                                                                                                                                                    |                   |            |            | <b>459.70</b> |
|         |                 |                                                                                                                                                                                                                                                                                                                                                     | <b>Total Cost</b> | <b>cum</b> |            | <b>459.70</b> |
| 15.2    | 1900            | <b>1. Maintenance of Earthen shoulder (filling with fresh selected soil)</b>                                                                                                                                                                                                                                                                        |                   |            |            |               |
|         |                 | Making up loss of material/irregularities on shoulders to the design level by adding fresh approved selected soil and compacting it with appropriate equipment at OMC upto a lead of 1000 m as per technical specification Clause 1903                                                                                                              |                   |            |            |               |
|         |                 | Unit = sqm                                                                                                                                                                                                                                                                                                                                          |                   |            |            |               |
|         |                 | Taking output = 100 sqm                                                                                                                                                                                                                                                                                                                             |                   |            |            |               |
|         |                 | Assuming average thickness of filling to be 150 mm                                                                                                                                                                                                                                                                                                  |                   |            |            |               |
|         |                 | Quality of fresh material = 15 cum                                                                                                                                                                                                                                                                                                                  |                   |            |            |               |
|         |                 | <b>a. Labour</b>                                                                                                                                                                                                                                                                                                                                    |                   |            |            |               |
|         |                 | Mate                                                                                                                                                                                                                                                                                                                                                | day               | 0.20       | 437.00     | 87.40         |
|         |                 | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                 | day               | 5.00       | 412.00     | 2,060.00      |
|         |                 | <b>b. Machinery</b>                                                                                                                                                                                                                                                                                                                                 |                   |            |            |               |
|         |                 | Hydraulic Excavator 0.9 cum bucket capacity @ 60 cum                                                                                                                                                                                                                                                                                                | hour              | 0.25       | 2,288.00   | 572.00        |
|         |                 | Tipper 5.5 cum                                                                                                                                                                                                                                                                                                                                      | hour              | 0.68       | 1,441.00   | 979.88        |
|         |                 | Add 10% cost of transportation to cover cost of loading and unloading                                                                                                                                                                                                                                                                               |                   |            |            | 97.99         |
|         |                 | Plate compactor @ 25 sqm per hour                                                                                                                                                                                                                                                                                                                   | hour              | 4.00       | 415.00     | 1,660.00      |
|         |                 | <b>c. Material</b>                                                                                                                                                                                                                                                                                                                                  |                   |            |            |               |
|         |                 | Compensation of earth                                                                                                                                                                                                                                                                                                                               | cum               | 15.00      | 35.25      | 528.75        |
|         |                 | <b>d. Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                                                                                                                                                                                                                                   |                   |            |            | <b>748.25</b> |
|         |                 | <b>e. Contractor's profit @ 0% on a+b+c+d</b>                                                                                                                                                                                                                                                                                                       |                   |            |            | <b>0.00</b>   |
|         |                 | Cost for 100 sqm = a+b+c+d+e                                                                                                                                                                                                                                                                                                                        |                   |            |            | 6,734.27      |
|         |                 | <b>Rate per sqm = (a+b+c+d+e)/100</b>                                                                                                                                                                                                                                                                                                               |                   |            |            | <b>67.34</b>  |
|         |                 |                                                                                                                                                                                                                                                                                                                                                     | <b>Total Cost</b> | <b>Sqm</b> |            | <b>67.34</b>  |

**F-8 (Rate Maintainance)**

| Sr. No.                                                                                                                                                                                                                                                                                                                                                                                    | Ref to MORD Sp. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Unit  | Quantity | Rate (Rs.) | Amount (Rs.)  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------|------------|---------------|
| <b>2. Maintenance of Earthen shoulder (stripping of excess soil)</b><br>Stripping excess soil from the shoulder surface to achieve the approved level and compacting with plate compactor at OMC as per drawings and Technical Specification Clause 1903<br>Unit = sqm<br>Taking output = 100 sqm<br>Assuming height of stripping as 75 mm<br>Quantity of earth cutting involved = 7.5 cum |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |          |            |               |
| <b>a. Labour</b>                                                                                                                                                                                                                                                                                                                                                                           |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                               | day   | 0.10     | 437.00     | 43.70         |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                | day   | 2.50     | 412.00     | 1,030.00      |
| <b>b. Machinery</b>                                                                                                                                                                                                                                                                                                                                                                        |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Plate compactor                                                                                                                                                                                                                                                                                                                                                                                                                                                    | hour  | 4.00     | 415.00     | 1,660.00      |
| <b>c. Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                                                                                                                                                                                                                                                                          |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |          |            | <b>341.71</b> |
| <b>d. Contractor's profit @ 0% on a+b+c+d</b>                                                                                                                                                                                                                                                                                                                                              |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |          |            | <b>0.00</b>   |
| Cost for 100 sqm = a+b+c+d                                                                                                                                                                                                                                                                                                                                                                 |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |          |            | 3,075.41      |
| <b>Rate per sqm = a+b+c+d/100</b>                                                                                                                                                                                                                                                                                                                                                          |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |          |            | <b>30.75</b>  |
| <b>Total Cost Sqm</b>                                                                                                                                                                                                                                                                                                                                                                      |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |          |            | <b>30.75</b>  |
| <i>Note: Earth stripped from earthen shoulders to be used as shoulders or dumped on the side slopes locally for disposal.</i>                                                                                                                                                                                                                                                              |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |          |            |               |
| 15.3                                                                                                                                                                                                                                                                                                                                                                                       | 1900            | <b>Maintenace of bituminous surface road</b>                                                                                                                                                                                                                                                                                                                                                                                                                       |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | i. Repair to pot holes by removal of failed material, trimming the sides to vertical and levelling the bottom, cleaning the same with compressed air or any appropriate method filled with 75mm B.M, applying bitumen emulsion prime coat at the bottom and bitumen emulsion tack coat on sides and on bottom as per technical specifications Clauses 502 and 503.<br>Unit = cum<br>Taking output = 187.5x0.075 = 14.06 cum = (30.94 Tonne)<br>(5% area of one km) |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | <b>a) Labour</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                               | day   | 0.80     | 437.00     | 349.60        |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                                                                                                                                                                | day   | 20.00    | 412.00     | 8,240.00      |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | <b>b) Machinery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Jack hammer 25 kg with tractor                                                                                                                                                                                                                                                                                                                                                                                                                                     | hour  | 4.00     | 1,289.30   | 5,157.20      |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Compressor 210 cfm with tractor                                                                                                                                                                                                                                                                                                                                                                                                                                    | hour  | 2.00     | 455.00     | 910.00        |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Emulsion pressure distributor                                                                                                                                                                                                                                                                                                                                                                                                                                      | hour  | 4.00     | 1,362.00   | 5,448.00      |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Mixall 6/10 t capacity / Mini hot mix plant                                                                                                                                                                                                                                                                                                                                                                                                                        | hour  | 4.00     | 3,702.00   | 14,808.00     |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Three wheeled 80-100 kN Static Roller                                                                                                                                                                                                                                                                                                                                                                                                                              | hour  | 4.00     | 1,612.00   | 6,448.00      |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | <b>c) Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Primer with bitumen emulsion @ 9 kg/10 sqm 187.5x9 = 168.75 kg.                                                                                                                                                                                                                                                                                                                                                                                                    | Tonne | 0.168    | 54,204.35  | 9,106.33      |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Tack coat with bitumen emulsion @ 3.0 kg/ 10 sqm                                                                                                                                                                                                                                                                                                                                                                                                                   |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Bottom = 187.5                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Sides = 28.27                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Tonne | 0.064    | 53,071.35  | 3,396.57      |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Total = 215.77                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Bitumen for BM @ 3.5% by weight of mix = 30.94 x 3.5 / 100 = 1.082                                                                                                                                                                                                                                                                                                                                                                                                 | Tonne | 1.082    | 54,402.60  | 58,863.61     |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Weight of mix (BM) 14.06 cum = (30.94 tonne)                                                                                                                                                                                                                                                                                                                                                                                                                       |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Weight of Bitumen = 1.082                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Weight of aggregate 30.94 -1.082 = 29.86                                                                                                                                                                                                                                                                                                                                                                                                                           |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Taking density of aggregate 1.5 t per cum                                                                                                                                                                                                                                                                                                                                                                                                                          |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Volume of aggregate 29.86 / 1.5 = 19.90 cum                                                                                                                                                                                                                                                                                                                                                                                                                        |       |          |            |               |
|                                                                                                                                                                                                                                                                                                                                                                                            |                 | Grading (1) (40 mm nominal size)                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |          |            |               |

## F-8 (Rate Maintainance)

| Sr. No.               | Ref to MORD Sp. | Description                                                                                                                              | Unit  | Quantity  | Rate (Rs.) | Amount (Rs.)     |
|-----------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------|------------|------------------|
|                       |                 | 37.5 - 25 mm 15%                                                                                                                         | cum   | 2.985     | 1,115.24   | 3,328.99         |
|                       |                 | 25 - 10 mm 45%                                                                                                                           | cum   | 8.96      | 913.48     | 8,180.21         |
|                       |                 | 10 - 5 mm 25%                                                                                                                            | cum   | 4.975     | 602.28     | 2,996.34         |
|                       |                 | 5 mm and below 15%                                                                                                                       | cum   | 2.99      | 434.45     | 1,296.83         |
|                       |                 | <b>d) Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                        |       |           |            | <b>16,066.21</b> |
|                       |                 | <b>e) Contractor's profit @ 0% on a+b+c+d</b>                                                                                            |       |           |            | <b>0.00</b>      |
|                       |                 | Cost of 14.06 cum = a+b+c+d+e                                                                                                            |       |           |            | 144,595.90       |
|                       |                 | <b>Rate per cum = a+b+c+d+e/14.06</b>                                                                                                    |       |           |            | <b>10,284.20</b> |
|                       |                 | <b>Carriage Cost</b>                                                                                                                     |       |           |            |                  |
|                       |                 | Bitumin Emulsion                                                                                                                         | tonne | 0.0165007 | 869.21     | 14.34            |
|                       |                 | Bitumin 80/100                                                                                                                           | tonne | 0.0769559 | 869.21     | 66.89            |
|                       |                 | Aggregate                                                                                                                                | Cum   | 1.4153627 | 1187.36    | 1680.55          |
|                       |                 | <b>Rate per cum with carriage</b>                                                                                                        |       |           |            | <b>12045.98</b>  |
| <b>Total Cost Cum</b> |                 |                                                                                                                                          |       |           |            | <b>12,045.98</b> |
| ii.                   |                 | Patch repair on already filled pot holes with 75 mm BM with Mix Seal Surfacing as per drawings and technical specification Clause 1904.2 |       |           |            |                  |
|                       |                 | Unit = sqm                                                                                                                               |       |           |            |                  |
|                       |                 | Takign output = 200 sqm                                                                                                                  |       |           |            |                  |
|                       |                 | <b>a) Labour</b>                                                                                                                         |       |           |            |                  |
|                       |                 | Mate                                                                                                                                     | day   | 0.64      | 437.00     | 279.68           |
|                       |                 | Mazdoor (Unskilled)                                                                                                                      | day   | 16.00     | 412.00     | 6,592.00         |
|                       |                 | <b>b) Machinery</b>                                                                                                                      |       |           |            |                  |
|                       |                 | Mixall 6/10 tonne (Mini Hot Mix Plant)                                                                                                   | hour  | 2.00      | 51,313.00  | 102,626.00       |
|                       |                 | Bitumen pressure distributor                                                                                                             | hour  | 1.00      | 1,362.00   | 1,362.00         |
|                       |                 | Three wheeled 80-100 kN Static Roller                                                                                                    | hour  | 4.00      | 1,612.00   | 6,448.00         |
|                       |                 | <b>c) Material</b>                                                                                                                       |       |           |            |                  |
|                       |                 | Bitumen for Mix Seal Surfacing @ 19 kg/10 sqm                                                                                            | tonne | 0.380     | 54,402.60  | 20,672.99        |
|                       |                 | 200x19/10 =380 kg                                                                                                                        |       |           |            |                  |
|                       |                 | Bitumen for tack coat @ 2 kg per 10 sqm 200 x 2 / 10 =                                                                                   | tonne | 0.04      | 53,071.35  | 2,122.85         |
|                       |                 | 40 kg                                                                                                                                    |       |           |            |                  |
|                       |                 | Crushed stone aggregate @ 0.27 cum per 10 sqm                                                                                            | cum   | 5.40      | 913.48     | 4,932.79         |
|                       |                 | = 200 x 0.27 / 10 = 5.4 cum                                                                                                              |       |           |            |                  |
|                       |                 | <b>d) Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                        |       |           |            | <b>18,129.54</b> |
|                       |                 | <b>e) Contractor's profit @ 0% on a+b+c+d</b>                                                                                            |       |           |            | <b>0.00</b>      |
|                       |                 | Cost of 200 sqm = a+b+c+d+e                                                                                                              |       |           |            | 163,165.85       |
|                       |                 | <b>Rate/sqm = a+b+c+d+e/200</b>                                                                                                          |       |           |            | <b>815.83</b>    |
|                       |                 | <b>Carraige</b>                                                                                                                          |       |           |            |                  |
|                       |                 | Bitumen Emulsion                                                                                                                         | Ton   | 0.0002    | 869.21     | 0.17             |
|                       |                 | Bitumin 80/100                                                                                                                           | Ton   | 0.0019    | 869.21     | 1.65             |
|                       |                 | Aggregate                                                                                                                                | cum   | 0.027     | 1187.36    | 32.06            |
|                       |                 | <b>Rate per cum with carriage</b>                                                                                                        |       |           |            | <b>849.71</b>    |
| <b>Total Cost Sqm</b> |                 |                                                                                                                                          |       |           |            | <b>849.71</b>    |

**F-8 (Rate Maintainance)**

| Sr. No. | Ref to MORD Sp. | Description                                                                                                                                                                                                    | Unit       | Quantity | Rate (Rs.) | Amount (Rs.)  |
|---------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|------------|---------------|
|         |                 | iii. Repair to pot holes and removal of loose material, trimming of sides, cleaning of surface by providing tack coat, Mix Seal Surfacing specification Clause 1904.2<br>Unit = sqm<br>Taking output = 200 sqm |            |          |            |               |
|         |                 | <b>a) Labour</b>                                                                                                                                                                                               |            |          |            |               |
|         |                 | Mate                                                                                                                                                                                                           | day        | 0.80     | 437.00     | 349.60        |
|         |                 | Mazdoor (Unskilled)                                                                                                                                                                                            | day        | 20.00    | 412.00     | 8,240.00      |
|         |                 | <b>b) Machinery</b>                                                                                                                                                                                            |            |          |            |               |
|         |                 | Air compressor 210 cfm with tractor                                                                                                                                                                            | hour       | 2.00     | 455.00     | 910.00        |
|         |                 | Bitumen pressure distributor                                                                                                                                                                                   | hour       | 1.00     | 1,362.00   | 1,362.00      |
|         |                 | Mixall 6/10t capacity (Mini Hot Mix Plant)                                                                                                                                                                     | hour       | 2.00     | 51,313.00  | 102,626.00    |
|         |                 | Three wheeled 80-100 kN Static Roller                                                                                                                                                                          | hour       | 4.00     | 1,612.00   | 6,448.00      |
|         |                 | <b>c) Material</b>                                                                                                                                                                                             |            |          |            |               |
|         |                 | Bitumen for tack coat @ 3kg per 10 sqm 200 x 3 / 10 = 60 kg                                                                                                                                                    | tonne      | 0.060    | 53,071.35  | 3,184.28      |
|         |                 | Bitumen for Mix Seal Surfacing @ 19 kg per 10 sqm = 200 x 14.6 / 10 = 380 kg                                                                                                                                   | tonne      | 0.38     | 54,402.60  | 20,672.99     |
|         |                 | Crushed stone aggregate @ 0.27 cum per 10 sqm = 200 x 0.27 / 10 = 5.4 cum                                                                                                                                      | cum        | 5.40     | 913.48     | 4,932.79      |
|         |                 | <b>d) Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                                                                                              |            |          |            | 18,590.71     |
|         |                 | <b>e) Contractor's profit @ 0% on a+b+c+d</b>                                                                                                                                                                  |            |          |            | 0.00          |
|         |                 | Cost for 200 sqm = a+b+c+d+e                                                                                                                                                                                   |            |          |            | 167,316.37    |
|         |                 | <b>Rate per sqm = a+b+c+d+e/200</b>                                                                                                                                                                            |            |          |            | <b>836.58</b> |
|         |                 | <b>Carriage Cost</b>                                                                                                                                                                                           |            |          |            |               |
|         |                 | Bitumin Emulsion                                                                                                                                                                                               | tonne      | 0.0003   | 869.21     | 0.26          |
|         |                 | Bitumin 80/100                                                                                                                                                                                                 | tonne      | 0.0019   | 869.21     | 1.65          |
|         |                 | Aggregate                                                                                                                                                                                                      | Cum        | 0.027    | 1187.36    | 32.06         |
|         |                 | <b>Rate per cum with carriage</b>                                                                                                                                                                              |            |          |            | <b>870.55</b> |
|         |                 | <b>Total Cost</b>                                                                                                                                                                                              | <b>Sqm</b> |          |            | <b>870.55</b> |
| 15.6    | 1900            | <b>Maintenance of Drains</b>                                                                                                                                                                                   |            |          |            |               |
|         |                 | The maintenance of drains include erosion, repair, clearing, cleaning, reshaping, regrading, deepening of side drains as well as catch water drains as per technical specification Clause 1907.                |            |          |            |               |
|         |                 | Unit - Per Metre                                                                                                                                                                                               |            |          |            |               |
|         |                 | Taking output one km = 1000 metre                                                                                                                                                                              |            |          |            |               |
|         |                 | <b>a) Labour</b>                                                                                                                                                                                               |            |          |            |               |
|         |                 | Mate                                                                                                                                                                                                           | day        | 0.32     | 437.00     | 139.84        |
|         |                 | Mazdoor (Unskilled)                                                                                                                                                                                            | day        | 8.00     | 412.00     | 3,296.00      |
|         |                 | <b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b>                                                                                                                                                  |            |          |            | <b>429.48</b> |
|         |                 | <b>c) Contractor's profit @ 0% on a+b</b>                                                                                                                                                                      |            |          |            | <b>0.00</b>   |
|         |                 | Cost for 1000 metre = a+b+c                                                                                                                                                                                    |            |          |            | 3,865.32      |
|         |                 | <b>Rate per Metre = a+b+c/1000</b>                                                                                                                                                                             |            |          |            | <b>3.87</b>   |
|         |                 | <b>Total Cost per Metre</b>                                                                                                                                                                                    |            |          |            | <b>3.87</b>   |



**F-8 (Rate Maintainance)**

| Sr. No.                                 | Ref to MORD Sp. | Description                                                                                                                                                                                                                                                                                                                | Unit | Quantity | Rate (Rs.) | Amount (Rs.)    |
|-----------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|------------|-----------------|
| 15.7                                    | 1900            | <b>(I) Maintenance of Culverts</b><br>Maintenance of Hume pipe Culvert by way of Clearing, Cleaning, Erosion repair, repairs to cracks, parapet wall and protection work as per drawing and technical specification Clause 1908<br>Unit = One No. Hume pipe (1000 mm dia)<br>Taking output = One No.H.P. Culvert           |      |          |            |                 |
|                                         |                 | <b>a) Labour</b>                                                                                                                                                                                                                                                                                                           |      |          |            |                 |
|                                         |                 | Mate                                                                                                                                                                                                                                                                                                                       | day  | 0.10     | 437.00     | 43.70           |
|                                         |                 | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                        | day  | 1.00     | 412.00     | 412.00          |
|                                         |                 | Mason 2nd Class                                                                                                                                                                                                                                                                                                            | day  | 1.40     | 494.00     | 691.60          |
|                                         |                 | <b>b) Material</b>                                                                                                                                                                                                                                                                                                         |      |          |            |                 |
|                                         |                 | Cement, Sand, Brick, Boulder etc.                                                                                                                                                                                                                                                                                          | L.S  |          |            | 200.00          |
|                                         |                 | <b>c) Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                                            |      |          |            | <b>168.41</b>   |
|                                         |                 | <b>d) Contractor's profit @ 0% on a+b+c</b>                                                                                                                                                                                                                                                                                |      |          |            | <b>0.00</b>     |
|                                         |                 | Cost for one No. Hume pipe culvert = a+b+c+d                                                                                                                                                                                                                                                                               |      |          |            | 1,515.71        |
|                                         |                 | <b>Rate per hume pipe Culvert = a+b+c+d</b>                                                                                                                                                                                                                                                                                |      |          |            | <b>1,515.71</b> |
| <b>Total Cost Per hume pipe Culvert</b> |                 |                                                                                                                                                                                                                                                                                                                            |      |          |            | <b>1,515.71</b> |
|                                         |                 | <b>(II) Maintenance of Culverts Slab type</b><br>Maintenance of Slab type Culverts by way of clearing, Cleaning, Erosion repair, repairs to cracks, parapet walls and Protection works as per drawing and technical specification Clasue 1908<br>Unit = One No. Culvert (2 m span)<br>Taking output = one No. Slab Culvert |      |          |            |                 |
|                                         |                 | <b>a) Labour</b>                                                                                                                                                                                                                                                                                                           |      |          |            |                 |
|                                         |                 | Mate                                                                                                                                                                                                                                                                                                                       | day  | 0.20     | 437.00     | 87.40           |
|                                         |                 | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                        | day  | 4.00     | 412.00     | 1,648.00        |
|                                         |                 | Mason 2nd Class                                                                                                                                                                                                                                                                                                            | day  | 1.00     | 494.00     | 494.00          |
|                                         |                 | <b>b) Material</b>                                                                                                                                                                                                                                                                                                         |      |          |            |                 |
|                                         |                 | Cement, Sand, Bricks, Stone Boulder etc.                                                                                                                                                                                                                                                                                   | L.S  |          |            | 500.00          |
|                                         |                 | <b>c) Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                                            |      |          |            | <b>341.18</b>   |
|                                         |                 | <b>d) Contractor's profit @ 0% on a+b+c</b>                                                                                                                                                                                                                                                                                |      |          |            | <b>0.00</b>     |
|                                         |                 | Cost for One Slab Culverts =a+b+c+d                                                                                                                                                                                                                                                                                        |      |          |            | 3,070.58        |
|                                         |                 | <b>Rate per Culvert = a+b+c+d</b>                                                                                                                                                                                                                                                                                          |      |          |            | <b>3,070.58</b> |
| <b>Total Cost Per Culvert</b>           |                 |                                                                                                                                                                                                                                                                                                                            |      |          |            | <b>3,070.58</b> |
| 15.9                                    | 1900            | <b>Maintenance of Road Signs</b><br>Maintenance of road signs by way of cleaning and repainting of mandatory / regulatory / cautionary / informatory and place identifications sign board as perdrawings and technical specification Clause 1910<br>Unit = 1 km<br>Taking output = one km<br>All types of signs in one Km  |      |          |            |                 |
|                                         |                 | <b>a) Labour</b>                                                                                                                                                                                                                                                                                                           |      |          |            |                 |
|                                         |                 | Mate                                                                                                                                                                                                                                                                                                                       | day  | 0.09     | 437.00     | 39.33           |
|                                         |                 | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                                        | day  | 2.00     | 412.00     | 824.00          |
|                                         |                 | Painter 1st Class                                                                                                                                                                                                                                                                                                          | day  | 0.125    | 523.00     | 65.38           |
|                                         |                 | <b>b) Material</b>                                                                                                                                                                                                                                                                                                         |      |          |            |                 |
|                                         |                 | Synthetic Enamel Paint, Engineering grade tape, welding machine etc. (LS Rs.300)                                                                                                                                                                                                                                           | LS   |          |            | 300.00          |
|                                         |                 | <b>c) Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                                            |      |          |            | <b>153.59</b>   |
|                                         |                 | <b>d) Contractor's profit @ 0% on a+b+c</b>                                                                                                                                                                                                                                                                                |      |          |            | <b>0.00</b>     |
|                                         |                 | Cost for one Km = a+b+c+d                                                                                                                                                                                                                                                                                                  |      |          |            | 1,382.29        |
|                                         |                 | <b>Rate per km = a+b+c+d</b>                                                                                                                                                                                                                                                                                               |      |          |            | <b>1,382.29</b> |
| <b>Total Cost Per Km</b>                |                 |                                                                                                                                                                                                                                                                                                                            |      |          |            | <b>1,382.29</b> |

**F-8 (Rate Maintainance)**

| Sr. No.                     | Ref to MORD Sp. | Description                                                                                                                                                                                                                                      | Unit   | Quantity | Rate (Rs.) | Amount (Rs.)    |
|-----------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------|------------|-----------------|
| 15.10                       | 1900            | <b>Maintenance of steel and RCC Railing</b>                                                                                                                                                                                                      |        |          |            |                 |
|                             |                 | (ii) Repair of RCC railing to bring it to the original shape, cleaning and repainting as per drawings and technical specification Clause 1911                                                                                                    |        |          |            |                 |
|                             |                 | <b>RCC Railing</b>                                                                                                                                                                                                                               |        |          |            |                 |
|                             |                 | Unit = running metre                                                                                                                                                                                                                             |        |          |            |                 |
|                             |                 | Taking output = 1 metre                                                                                                                                                                                                                          |        |          |            |                 |
|                             |                 | It is assumed that damage is to the extent of 10%                                                                                                                                                                                                |        |          |            |                 |
|                             |                 | <b>a) Labour</b>                                                                                                                                                                                                                                 |        |          |            |                 |
|                             |                 | Mate                                                                                                                                                                                                                                             | day    | 0.012    | 437.00     | 5.24            |
|                             |                 | Mazdoor (Unskilled)                                                                                                                                                                                                                              | day    | 0.20     | 412.00     | 82.40           |
|                             |                 | Mason 1st Class                                                                                                                                                                                                                                  | day    | 0.10     | 553.00     | 55.30           |
|                             |                 | <b>b) Materials</b>                                                                                                                                                                                                                              |        |          |            |                 |
|                             |                 | M 25 grade cement concrete                                                                                                                                                                                                                       |        |          |            |                 |
|                             |                 | Rate as per item no. 13.1 (III) of Chapter 13                                                                                                                                                                                                    | cum    | 0.10     | 6,739.31   | 673.93          |
|                             |                 | Steel bars reinforcement                                                                                                                                                                                                                         |        |          |            |                 |
|                             |                 | Rate as per item no.13.2 of Chapter 13                                                                                                                                                                                                           | t      | 0.013    | 67,941.37  | 883.24          |
|                             |                 | <b>c) Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                  |        |          |            | <b>212.51</b>   |
|                             |                 | <b>d) Contractor's profit @ 0% on a+b+c</b>                                                                                                                                                                                                      |        |          |            | <b>0.00</b>     |
|                             |                 | <b>Rate per metre = a+b+c+d</b>                                                                                                                                                                                                                  |        |          |            | <b>1,912.63</b> |
| <b>Total Cost Per metre</b> |                 |                                                                                                                                                                                                                                                  |        |          |            | <b>1,912.63</b> |
| 15.11                       | 1900            | <b>Maintenance of 200 metre and km stones</b>                                                                                                                                                                                                    |        |          |            |                 |
|                             |                 | Maintenance of 200 metre km stone by way of refitting of tilted stones repairing with cement mortar, cleaning, repairing and lettering on 200 metre km stone and 5 <sup>th</sup> km stone as per drawing and technical specification Clause 1912 |        |          |            |                 |
|                             |                 | Unit = 1 km                                                                                                                                                                                                                                      |        |          |            |                 |
|                             |                 | Assuming 1 km stone, 4 nos 200 metre stone and 1/5th 5km stone                                                                                                                                                                                   |        |          |            |                 |
|                             |                 | (i) Painting two coats with synthetic enamel paint                                                                                                                                                                                               |        |          |            |                 |
|                             |                 | 200 m stone 4 nos = 0.760 sqm.                                                                                                                                                                                                                   |        |          |            |                 |
|                             |                 | One km stone = 0.815 sqm.                                                                                                                                                                                                                        |        |          |            |                 |
|                             |                 | 5th km stone 1x1/5 = 0.320 sqm.                                                                                                                                                                                                                  |        |          |            |                 |
|                             |                 | Total = 1.895 sqm.                                                                                                                                                                                                                               |        |          |            |                 |
|                             |                 | As per item No. 10.5 of chapter 10                                                                                                                                                                                                               | sqm    | 1.895    | 128.82     | 244.11          |
|                             |                 | (ii) Printing letters and figures of any shade with synthtic enamel paint of any approved colour to give an even shade                                                                                                                           |        |          |            |                 |
|                             |                 | 200 m stone 4 Nos. = 40 per cm height per letter                                                                                                                                                                                                 |        |          |            |                 |
|                             |                 | One no km stone = 120 per cm height per letter                                                                                                                                                                                                   |        |          |            |                 |
|                             |                 | 5th km stones 1/5th = 60 per cm height per letter                                                                                                                                                                                                |        |          |            |                 |
|                             |                 | Total = 220 per cm height per letter                                                                                                                                                                                                             |        |          |            |                 |
|                             |                 | Rate as per item no 10.1 of chapter 10                                                                                                                                                                                                           | per cm | 220.00   | 0.73       | 160.60          |
|                             |                 | <b>a) Labour</b>                                                                                                                                                                                                                                 |        |          |            |                 |
|                             |                 | Mate                                                                                                                                                                                                                                             | day    | 0.024    | 437.00     | 10.49           |
|                             |                 | Mazdoor                                                                                                                                                                                                                                          | day    | 0.50     | 412.00     | 206.00          |
|                             |                 | Mason 1st Class                                                                                                                                                                                                                                  | day    | 0.10     | 553.00     | 55.30           |
|                             |                 | <b>b) Materials</b>                                                                                                                                                                                                                              |        |          |            |                 |
|                             |                 | Cement, sand, aggregates etc.                                                                                                                                                                                                                    | LS     |          |            | 100.00          |
|                             |                 | (LS = Rs.100.00)                                                                                                                                                                                                                                 |        |          |            |                 |
|                             |                 | <b>c) Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                  |        |          |            | <b>97.06</b>    |
|                             |                 | <b>d) Contractor's profit @ 0% on a+b+c</b>                                                                                                                                                                                                      |        |          |            | <b>0.00</b>     |
|                             |                 | Cost for one km = (i+ii+a+b+c+d)                                                                                                                                                                                                                 |        |          |            | 873.56          |
|                             |                 | <b>Rate per/km = (i+ii+a+b+c+d)</b>                                                                                                                                                                                                              |        |          |            | <b>873.56</b>   |
| <b>Total Cost Per Km</b>    |                 |                                                                                                                                                                                                                                                  |        |          |            | <b>873.56</b>   |

**F-8 (Rate Maintainance)**

| Sr. No.                     | Ref to MORD Sp. | Description                                                                                                                                                                                                                                                 | Unit | Quantity | Rate (Rs.) | Amount (Rs.)  |
|-----------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|------------|---------------|
| 15.12                       | 1900            | <b>Cutting of branches of trees shrubs and trimming of grass and weeds</b>                                                                                                                                                                                  |      |          |            |               |
|                             |                 | (i) Cutting of branches of trees and shrubs from the road way or with in R.O.W including disposal of wood and leaves to suitable location as per technical specification Clause 1914<br>Unit = one tree<br>Taking output = 10 trees of 900 mm average girth |      |          |            |               |
|                             |                 | <b>a) Labour</b>                                                                                                                                                                                                                                            |      |          |            |               |
|                             |                 | Mate                                                                                                                                                                                                                                                        | day  | 0.12     | 437.00     | 52.44         |
|                             |                 | Mazdoor (Skilled)                                                                                                                                                                                                                                           | day  | 1.00     | 521.00     | 521.00        |
|                             |                 | Mazdoor (Unskilled)                                                                                                                                                                                                                                         | day  | 2.00     | 412.00     | 824.00        |
|                             |                 | <b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b>                                                                                                                                                                                               |      |          |            | <b>174.68</b> |
|                             |                 | <b>c) Contractor's profit @ 0% on a+b</b>                                                                                                                                                                                                                   |      |          |            | <b>0.00</b>   |
|                             |                 | Cost for 10 trees = (a+b+c)                                                                                                                                                                                                                                 |      |          |            | 1,572.12      |
|                             |                 | <b>Rate per tree = (a+b+c)/10</b>                                                                                                                                                                                                                           |      |          |            | <b>157.21</b> |
| <b>Total Cost Per tree</b>  |                 |                                                                                                                                                                                                                                                             |      |          |            | <b>157.21</b> |
|                             |                 | (ii) Cutting of shrubs from the road way or with in R.O.W and disposal of shrubs to suitable locations as per technical specifications Clause 1914<br>Unit=Each<br>Taking output = 100 nos shrubs                                                           |      |          |            |               |
|                             |                 | <b>a) Labour</b>                                                                                                                                                                                                                                            |      |          |            |               |
|                             |                 | Mate                                                                                                                                                                                                                                                        | day  | 0.08     | 437.00     | 34.96         |
|                             |                 | Mazdoor (Unskilled)                                                                                                                                                                                                                                         | day  | 2.00     | 412.00     | 824.00        |
|                             |                 | <b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b>                                                                                                                                                                                               |      |          |            | 107.37        |
|                             |                 | <b>c) Contractor's profit @ 0% on a+b</b>                                                                                                                                                                                                                   |      |          |            | 0.00          |
|                             |                 | Cost for 100 shrubs = a+b+c                                                                                                                                                                                                                                 |      |          |            | 966.33        |
|                             |                 | <b>Rate per shrub = a+b+c/100</b>                                                                                                                                                                                                                           |      |          |            | <b>9.66</b>   |
| <b>Total Cost Per shrub</b> |                 |                                                                                                                                                                                                                                                             |      |          |            | <b>9.66</b>   |
|                             |                 | (iii) Trimming of grass and weeds from the shoulders/berms and disposing off the same to suitable locations as per technical specifications Clause 1914<br>Unit = sqm<br>Taking output = 1500 sqm                                                           |      |          |            |               |
|                             |                 | <b>a) Labour</b>                                                                                                                                                                                                                                            |      |          |            |               |
|                             |                 | Mate                                                                                                                                                                                                                                                        | day  | 0.40     | 437.00     | 174.80        |
|                             |                 | Mazdoor (Unskilled)                                                                                                                                                                                                                                         | day  | 10.00    | 412.00     | 4,120.00      |
|                             |                 | <b>b) Overheads &amp; Contractor's profit @ 12.5 % on (a)</b>                                                                                                                                                                                               |      |          |            | <b>536.85</b> |
|                             |                 | <b>c) Contractor's profit @ 0% on a+b</b>                                                                                                                                                                                                                   |      |          |            | <b>0.00</b>   |
|                             |                 | Cost for 1500 sqm = a+b+c                                                                                                                                                                                                                                   |      |          |            | 4,831.65      |
|                             |                 | <b>Rate per sqm = a+b+c/1500</b>                                                                                                                                                                                                                            |      |          |            | <b>3.22</b>   |
| <b>Total Cost Per sqm</b>   |                 |                                                                                                                                                                                                                                                             |      |          |            | <b>3.22</b>   |

**F-8 (Rate Maintainance)**

| Sr. No.                     | Ref to MORD Sp. | Description                                                                                                                                                                                                                                                                                                   | Unit    | Quantity | Rate (Rs.) | Amount (Rs.)    |
|-----------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------|------------|-----------------|
| 15.13                       | 1900            | <b>White washing of parapet walls of CD work and tree trunks</b><br>White washing two coats on parapet walls and tree trunks including preparation of surface by cleaning scraping etc. as per technical specifications Clause 1915<br>Unit = sqm<br>Taking output = 9 sqm                                    |         |          |            |                 |
|                             |                 | <b>a) Labour</b>                                                                                                                                                                                                                                                                                              |         |          |            |                 |
|                             |                 | Mate                                                                                                                                                                                                                                                                                                          | day     | 0.01     | 437.00     | 4.37            |
|                             |                 | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                           | day     | 0.143    | 412.00     | 58.86           |
|                             |                 | White washer                                                                                                                                                                                                                                                                                                  | day     | 0.143    | 521.00     | 74.43           |
|                             |                 | <b>b) Materials</b>                                                                                                                                                                                                                                                                                           |         |          |            |                 |
|                             |                 | Lime                                                                                                                                                                                                                                                                                                          | quintel | 0.045    | 315.00     | 14.18           |
|                             |                 | Fevicol adhesive                                                                                                                                                                                                                                                                                              | kg      | 0.10     | 125.00     | 12.50           |
|                             |                 | Indigo                                                                                                                                                                                                                                                                                                        | kg      | 0.013    | 416.00     | 5.41            |
|                             |                 | <b>c) Overheads &amp; Contractor's profit @ 12.5 % on (a+b)</b>                                                                                                                                                                                                                                               |         |          |            | <b>21.22</b>    |
|                             |                 | <b>d) Contractor's profit @ 0% on a+b+c</b>                                                                                                                                                                                                                                                                   |         |          |            | <b>0.00</b>     |
|                             |                 | Cost for 9 sqm = a+b+c+d                                                                                                                                                                                                                                                                                      |         |          |            | 190.96          |
|                             |                 | <b>Rate per sqm = a+b+c+d/9</b>                                                                                                                                                                                                                                                                               |         |          |            | <b>21.22</b>    |
| <b>Total Cost Per sqm</b>   |                 |                                                                                                                                                                                                                                                                                                               |         |          |            | <b>21.22</b>    |
| 307                         | New             | <b>Maintenance of Already Planted Trees for Second Year</b><br>Maintenance of trees by the road side (Avenue trees) by mixing the soil with decayed farm yard/sludge manure, watering, fixing the tree guard and maintaining the plants for additional four years.<br>Unit = Each<br>Taking output = 10 trees |         |          |            |                 |
|                             |                 | <b>a) Labour</b>                                                                                                                                                                                                                                                                                              |         |          |            |                 |
|                             |                 | Mazdoor for maintenance of already Planted Trees                                                                                                                                                                                                                                                              | day     | 15.00    | 412.00     | 6,180.00        |
|                             |                 | <b>b) Machinery</b>                                                                                                                                                                                                                                                                                           |         |          |            |                 |
|                             |                 | Water tanker6 KL capacity                                                                                                                                                                                                                                                                                     | hour    | 2.000    | 764.00     | 1,528.00        |
|                             |                 | <b>c) Materials</b>                                                                                                                                                                                                                                                                                           |         |          |            |                 |
|                             |                 | Farm yard manure                                                                                                                                                                                                                                                                                              | cum     | 0.940    | 552.10     | 518.97          |
|                             |                 | Pesticide                                                                                                                                                                                                                                                                                                     | kg      | 0.50     | 89.55      | 44.78           |
|                             |                 | Cost of water                                                                                                                                                                                                                                                                                                 | KL      | 12.000   | 61.40      | 736.80          |
|                             |                 | <b>d) Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                                                                                                                                                                                             |         |          |            | <b>1,126.07</b> |
|                             |                 | <b>e) Contractor's profit @ 0% on a+b+c+d</b>                                                                                                                                                                                                                                                                 |         |          |            | <b>0.00</b>     |
|                             |                 | Cost for 10 trees = a+b+c+d+e                                                                                                                                                                                                                                                                                 |         |          |            | 10,134.62       |
|                             |                 | <b>Rate per trees = (a+b+c+d+e)/10</b>                                                                                                                                                                                                                                                                        |         |          |            | <b>1,013.46</b> |
| <b>Total Cost Per trees</b> |                 |                                                                                                                                                                                                                                                                                                               |         |          |            | <b>1,013.46</b> |
| 307                         | New             | <b>Maintenance of Already Planted Trees for Third Year</b><br>Maintenance of trees by the road side (Avenue trees) by mixing the soil with decayed farm yard/sludge manure, watering, fixing the tree guard and maintaining the plants for additional four years.<br>Unit = Each<br>Taking output = 10 trees  |         |          |            |                 |
|                             |                 | <b>a) Labour</b>                                                                                                                                                                                                                                                                                              |         |          |            |                 |
|                             |                 | Mazdoor for maintenance of already Planted Trees                                                                                                                                                                                                                                                              | day     | 12.00    | 412.00     | 4,944.00        |
|                             |                 | <b>b) Machinery</b>                                                                                                                                                                                                                                                                                           |         |          |            |                 |
|                             |                 | Water tanker6 KL capacity                                                                                                                                                                                                                                                                                     | hour    | 2.000    | 764.00     | 1,528.00        |
|                             |                 | <b>c) Materials</b>                                                                                                                                                                                                                                                                                           |         |          |            |                 |
|                             |                 | Farm yard manure                                                                                                                                                                                                                                                                                              | cum     | 0.940    | 552.10     | 518.97          |
|                             |                 | Pesticide                                                                                                                                                                                                                                                                                                     | kg      | 0.50     | 89.55      | 44.78           |
|                             |                 | Cost of water                                                                                                                                                                                                                                                                                                 | KL      | 12.000   | 61.40      | 736.80          |
|                             |                 | <b>d) Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                                                                                                                                                                                             |         |          |            | <b>971.57</b>   |
|                             |                 | <b>e) Contractor's profit @ 0% on a+b+c+d</b>                                                                                                                                                                                                                                                                 |         |          |            | <b>0.00</b>     |
|                             |                 | Cost for 10 trees = a+b+c+d+e                                                                                                                                                                                                                                                                                 |         |          |            | 8,744.12        |
|                             |                 | <b>Rate per trees = (a+b+c+d+e)/10</b>                                                                                                                                                                                                                                                                        |         |          |            | <b>874.41</b>   |
| <b>Total Cost Per trees</b> |                 |                                                                                                                                                                                                                                                                                                               |         |          |            | <b>874.41</b>   |

**F-8 (Rate Maintainance)**

| Sr. No.                     | Ref to MORD Sp. | Description                                                                                                                                                                                                                                                                                                   | Unit | Quantity | Rate (Rs.) | Amount (Rs.)  |
|-----------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|------------|---------------|
| 307                         | New             | <b>Maintenance of Already Planted Trees for Fourth Year</b><br>Maintenance of trees by the road side (Avenue trees) by mixing the soil with decayed farm yard/sludge manure, watering, fixing the tree guard and maintaining the plants for additional four years.<br>Unit = Each<br>Taking output = 10 trees |      |          |            |               |
|                             |                 | <b>a) Labour</b>                                                                                                                                                                                                                                                                                              |      |          |            |               |
|                             |                 | Mazdoor for maintenance of already Planted Trees                                                                                                                                                                                                                                                              | day  | 10.00    | 412.00     | 4,120.00      |
|                             |                 | <b>b) Machinery</b>                                                                                                                                                                                                                                                                                           |      |          |            |               |
|                             |                 | Water tanker 6 KL capacity                                                                                                                                                                                                                                                                                    | hour | 2.000    | 764.00     | 1,528.00      |
|                             |                 | <b>c) Materials</b>                                                                                                                                                                                                                                                                                           |      |          |            |               |
|                             |                 | Farm yard manure                                                                                                                                                                                                                                                                                              | cum  | 0.940    | 552.10     | 518.97        |
|                             |                 | Pesticide                                                                                                                                                                                                                                                                                                     | kg   | 0.50     | 89.55      | 44.78         |
|                             |                 | Cost of water                                                                                                                                                                                                                                                                                                 | KL   | 12.000   | 61.40      | 736.80        |
|                             |                 | <b>d) Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                                                                                                                                                                                             |      |          |            | <b>868.57</b> |
|                             |                 | <b>e) Contractor's profit @ 0% on a+b+c+d</b>                                                                                                                                                                                                                                                                 |      |          |            | <b>0.00</b>   |
|                             |                 | Cost for 10 trees = a+b+c+d+e                                                                                                                                                                                                                                                                                 |      |          |            | 7,817.12      |
|                             |                 | <b>Rate per trees = (a+b+c+d+e)/10</b>                                                                                                                                                                                                                                                                        |      |          |            | <b>781.71</b> |
| <b>Total Cost Per trees</b> |                 |                                                                                                                                                                                                                                                                                                               |      |          |            | <b>781.71</b> |
| 307                         | New             | <b>Maintenance of Already Planted Trees for Fifth Year</b><br>Maintenance of trees by the road side (Avenue trees) by mixing the soil with decayed farm yard/sludge manure, watering, fixing the tree guard and maintaining the plants for additional four years.<br>Unit = Each<br>Taking output = 10 trees  |      |          |            |               |
|                             |                 | <b>a) Labour</b>                                                                                                                                                                                                                                                                                              |      |          |            |               |
|                             |                 | Mazdoor for maintenance of already Planted Trees                                                                                                                                                                                                                                                              | day  | 10.00    | 412.00     | 4,120.00      |
|                             |                 | <b>b) Machinery</b>                                                                                                                                                                                                                                                                                           |      |          |            |               |
|                             |                 | Water tanker 6 KL capacity                                                                                                                                                                                                                                                                                    | hour | 2.000    | 764.00     | 1,528.00      |
|                             |                 | <b>c) Materials</b>                                                                                                                                                                                                                                                                                           |      |          |            |               |
|                             |                 | Farm yard manure                                                                                                                                                                                                                                                                                              | cum  | 0.940    | 552.10     | 518.97        |
|                             |                 | Pesticide                                                                                                                                                                                                                                                                                                     | kg   | 0.50     | 89.55      | 44.78         |
|                             |                 | Cost of water                                                                                                                                                                                                                                                                                                 | KL   | 12.000   | 61.40      | 736.80        |
|                             |                 | <b>d) Overheads &amp; Contractor's profit @ 12.5 % on (a+b+c)</b>                                                                                                                                                                                                                                             |      |          |            | <b>868.57</b> |
|                             |                 | <b>e) Contractor's profit @ 0% on a+b+c+d</b>                                                                                                                                                                                                                                                                 |      |          |            | <b>0.00</b>   |
|                             |                 | Cost for 10 trees = a+b+c+d+e                                                                                                                                                                                                                                                                                 |      |          |            | 7,817.12      |
|                             |                 | <b>Rate per trees = (a+b+c+d+e)/10</b>                                                                                                                                                                                                                                                                        |      |          |            | <b>781.71</b> |
| <b>Total Cost Per trees</b> |                 |                                                                                                                                                                                                                                                                                                               |      |          |            | <b>781.71</b> |
| 10.10                       | 3005.2          | <b>RCD Repair of old joints Sealant</b><br>Removal of existing sealant and re sealing of construction, longitudinal or expansion joint in concrete pavement with fresh sealant material<br>Unit = running metre<br>Taking output = 10 metres                                                                  |      |          |            |               |
|                             |                 | <b>a) Labour</b>                                                                                                                                                                                                                                                                                              |      |          |            |               |
|                             |                 | Mate                                                                                                                                                                                                                                                                                                          | day  | 0.040    | 437.00     | 17.48         |
|                             |                 | Mazdoor (Unskilled)                                                                                                                                                                                                                                                                                           | day  | 0.500    | 412.00     | 206.00        |
|                             |                 | <b>b) Machinery</b>                                                                                                                                                                                                                                                                                           |      |          |            |               |
|                             |                 | Air compressor 210 cfm with tractor                                                                                                                                                                                                                                                                           | hour | 0.050    | 455.00     | 22.75         |
|                             |                 | <b>c) Material</b>                                                                                                                                                                                                                                                                                            |      |          |            |               |
|                             |                 | Primer                                                                                                                                                                                                                                                                                                        | Kg   | 0.250    | 523.37     | 130.84        |
|                             |                 | Sealant                                                                                                                                                                                                                                                                                                       | Kg   | 1.000    | 30.54      | 30.54         |
|                             |                 | <b>d) Overheads &amp; CP @ 12.5% on (a+b+c)</b>                                                                                                                                                                                                                                                               |      |          |            | <b>50.95</b>  |
|                             |                 | Cost for 10 sqm = a+b+c+d+e                                                                                                                                                                                                                                                                                   |      |          |            | 458.56        |
|                             |                 | <b>Rate per sqm = a+b+c+d+e/10</b>                                                                                                                                                                                                                                                                            |      |          |            | <b>45.86</b>  |
| <b>Total Cost Per sqm</b>   |                 |                                                                                                                                                                                                                                                                                                               |      |          |            | <b>45.86</b>  |
| 10.6                        | 3004.3.3        | <b>RCD Crack Filling</b><br>Filling of crack using slow-curing bitumen emulsion and applying dust in case crack are wider than 3mm.<br>Unit = running metre<br>Taking output = 500 metres                                                                                                                     |      |          |            |               |
|                             |                 | <b>a) Labour</b>                                                                                                                                                                                                                                                                                              |      |          |            |               |

# F-8 (Rate Maintainance)

| Sr. No.                   | Ref to MORD Sp. | Description                              | Unit | Quantity | Rate (Rs.) | Amount (Rs.)  |
|---------------------------|-----------------|------------------------------------------|------|----------|------------|---------------|
|                           |                 | Mate                                     | day  | 0.040    | 437.00     | 17.48         |
|                           |                 | Mazdoor (Unskilled)                      | day  | 1.000    | 412.00     | 412.00        |
|                           | <b>b)</b>       | <b>Material</b>                          |      |          |            |               |
|                           |                 | Slow-curing bitumen emulsion             | Kg   | 33.000   | 43.00      | 1,419.00      |
|                           |                 | Stone crusher dust                       | Cum  | 0.020    | 266.62     | 5.33          |
|                           | <b>c)</b>       | <b>Overheads &amp; CP @12.5%on (a+b)</b> |      |          |            | <b>231.73</b> |
|                           |                 | Cost for 500 sqm = a+b+c+d               |      |          |            | 2,085.54      |
|                           |                 | <b>Rate per sqm = a+b+c+d/500</b>        |      |          |            | <b>4.17</b>   |
| <b>Total Cost Per sqm</b> |                 |                                          |      |          |            | <b>4.17</b>   |

**MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)**  
**With Respect to Revised Core Network**

Name of Road: Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

Link No: 54344

Package No:

District: Gaya

Block: Gurua

Length: 1.5 Km

| Sl.No. | Description                                                                                   | Yes | No |  |
|--------|-----------------------------------------------------------------------------------------------|-----|----|--|
| 1      | The Proposed road is part of revised Core Network and revised State CNCPL                     | √   |    |  |
| 2      | The population of the connected village or Tola is $\geq 1000$                                |     |    |  |
| 3      | Certified that the land width for the road is available and no additional width is required.  | √   |    |  |
| 4      | Certified that the land width for the road is available and no additional width is required.  | √   |    |  |
| 5      | The proposed alignment provides only single connectivity to the Village or Tola.              | √   |    |  |
| 6      | The length of the proposed alignment will provide all weather connectivity to village or tola | √   |    |  |
| 7      | Certified that no forest land is involved along the entire roadway.                           | √   |    |  |
| 8      | Certified that the Alingment has been verified at site & does not require LA.                 | √   |    |  |

JE/AE

Executive Engineer  
(Head of PIU)

Remarks if any:

Dated: \_\_\_\_\_

**MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)**  
**YEAR 24-25**

**CERTIFICATE OF GROUND VERIFICATION FROM EXECUTIVE ENGINEER**

1. a) Certified that the land width for the Road is available and that no additional land is required ; or  
b) Certified that the land width for the road is likely to be available as certified by Panchayats.
2. a) Certified that no forest land is involved along the entire roadway ; or  
b) Certified that the case for permission under forest conservation Act has been moved to the Forest department on (Date ).
- 3 Certified that DPR has been checked at site by

**A.E.**  
**on date.....**

**E.E**

**S.E**

(DPR wise summary in Formate F9-B)

**Executive Engineer**  
**Work Division.....**



**FORMAT F-9B**

**LIST OF DPR's VERIFIED ON GROUND**

| <b>Sl. No.</b> | <b>DPRs seen on Ground By</b> | <b>DPR Nos.</b> | <b>Percentage of Total Number</b> |
|----------------|-------------------------------|-----------------|-----------------------------------|
| 1              | A.E.                          |                 |                                   |
| 2              | E.E                           |                 |                                   |
| 3              | S.E.                          |                 |                                   |

**Executive Engineer**  
**Work Division.....**

**MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)**  
**YEAR 24-25**  
**FIELD DATA SHEET FOR TRAFFIC SURVEY (BOTH DIRECTIONS)**

**Day-1**

Name of Road      Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

Date: 17 - 01 - 2025

Block                Gurua  
District             Sherghati

| Hour                           | Vehicle Class               |        |                    |                               |                                                |                                    |         |                              |         |        |         |       |         |         |
|--------------------------------|-----------------------------|--------|--------------------|-------------------------------|------------------------------------------------|------------------------------------|---------|------------------------------|---------|--------|---------|-------|---------|---------|
|                                | Animal<br>Drawn<br>Vehicles | Cycles | Cycle<br>Rickshaws | Motorised<br>two-<br>wheelers | Cars,<br>Jeeps,<br>Vans,<br>Three-<br>wheelers | Agricultural<br>Tractors/ Trailers |         | Light Commercial<br>Vehicles |         | Trucks |         | Buses |         | Remarks |
|                                |                             |        |                    |                               |                                                | Laden                              | Unladen | Laden                        | Unladen | Laden  | Unladen | Laden | Unladen |         |
| From 7.00 Hrs<br>To 9.00 Hrs   | 16                          | 38     | 14                 | 23                            | 15                                             | 5                                  | 12      | 5                            | 5       | 8      | 1       | -     | -       |         |
| From 9.00 Hrs<br>To 13.00 Hrs  | 16                          | 41     | 12                 | 24                            | 14                                             | 6                                  | 11      | 6                            | 6       | 6      | 5       | 0     | -       |         |
| From 13.00 Hrs<br>To 18.00 Hrs | 24                          | 40     | 16                 | 26                            | 11                                             | 6                                  | 10      | 3                            | 3       | 5      | 1       | 0     | -       |         |
| From 18.00 Hrs<br>To 20.00 Hrs | 22                          | 38     | 17                 | 22                            | 14                                             | 5                                  | 5       | 2                            | 5       | 6      | 5       | -     | -       |         |
| From 20.00 Hrs<br>To 24.00 Hrs | -                           | -      | -                  | -                             | -                                              | 6                                  | 9       | 5                            | 6       | 5      | 8       | -     | -       |         |
| From 24.00 Hrs<br>To 7.00 Hrs  | 17                          | -      | -                  | 13                            | 11                                             | 2                                  | 2       | 1                            | 1       |        | -       | -     | -       |         |
| Total for Day                  | 95                          | 157    | 59                 | 108                           | 65                                             | 30                                 | 49      | 22                           | 26      | 30     | 20      | 0     | 0       |         |

# MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)

## FIELD DATA SHEET FOR TRAFFIC SURVEY (BOTH DIRECTIONS)

Day-2

Name of Road Rcd Road Baijudham Dharmkata TO Primary School Phulwariya  
Block Gurua  
District Sherghati

Date: 18 - 01 - 2025  
Link route no. where Traffic Survey conducted = 54344

| Hour                        | Vehicle Class         |        |                 |                        |                                   |                                 |         |                           |         |        |         |       |         |         |
|-----------------------------|-----------------------|--------|-----------------|------------------------|-----------------------------------|---------------------------------|---------|---------------------------|---------|--------|---------|-------|---------|---------|
|                             | Animal Drawn Vehicles | Cycles | Cycle Rickshaws | Motorised two-wheelers | Cars, Jeeps, Vans, Three-wheelers | Agricultural Tractors/ Trailers |         | Light Commercial Vehicles |         | Trucks |         | Buses |         | Remarks |
|                             |                       |        |                 |                        |                                   | Laden                           | Unladen | Laden                     | Unladen | Laden  | Unladen | Laden | Unladen |         |
| From 7.00 Hrs To 9.00 Hrs   | 20                    | 40     | 15              | 21                     | 15                                | 15                              | 5       | 2                         | 5       | 2      | 0       | 0     | -       |         |
| From 9.00 Hrs To 13.00 Hrs  | 23                    | 50     | 14              | 25                     | 8                                 | 11                              | 6       | 3                         | 6       | 3      | 8       | -     | -       |         |
| From 13.00 Hrs To 18.00 Hrs | 14                    | 47     | 12              | 20                     | 9                                 | 10                              | 3       | 2                         | 3       | 5      | 5       | 0     | -       |         |
| From 18.00 Hrs To 20.00 Hrs | 16                    | 32     | 13              | 19                     | 11                                | 14                              | 5       | 1                         | 5       | 0      | 6       | -     | -       |         |
| From 20.00 Hrs To 24.00 Hrs | -                     | -      | -               | -                      | -                                 | 6                               | 6       | 1                         | 6       | 1      | 3       | -     | -       |         |
| From 24.00 Hrs To 7.00 Hrs  | 15                    | -      | -               | 13                     | 9                                 | 1                               | 2       | 3                         | -       |        | 5       | -     | -       |         |
| Total for Day               | 88                    | 169    | 54              | 98                     | 52                                | 57                              | 27      | 12                        | 25      | 11     | 27      | 0     | 0       |         |

# MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)

## FIELD DATA SHEET FOR TRAFFIC SURVEY (BOTH DIRECTIONS)

Day-3

Name of Road Rcd Road Baijudham Dharmkata TO Primary School Phulwariya  
Block Gurua  
District Sherghati

Date: 12 - 12 - 2023  
Link route no. where Traffic Survey conducted = 54344

| Hour                        | Vehicle Class         |        |                 |                        |                                   |                                 |         |                           |         |        |         |       |         |         |
|-----------------------------|-----------------------|--------|-----------------|------------------------|-----------------------------------|---------------------------------|---------|---------------------------|---------|--------|---------|-------|---------|---------|
|                             | Animal Drawn Vehicles | Cycles | Cycle Rickshaws | Motorised two-wheelers | Cars, Jeeps, Vans, Three-wheelers | Agricultural Tractors/ Trailers |         | Light Commercial Vehicles |         | Trucks |         | Buses |         | Remarks |
|                             |                       |        |                 |                        |                                   | Laden                           | Unladen | Laden                     | Unladen | Laden  | Unladen | Laden | Unladen |         |
|                             |                       |        |                 |                        |                                   |                                 |         |                           |         |        |         |       |         |         |
| From 7.00 Hrs To 9.00 Hrs   | 19                    | 39     | 10              | 23                     | 13                                | 8                               | 5       | 8                         | 5       | 2      | 1       | 0     | -       |         |
| From 9.00 Hrs To 13.00 Hrs  | 17                    | 41     | 14              | 26                     | 13                                | 6                               | 6       | 6                         | 3       | 3      | 4       | -     | -       |         |
| From 13.00 Hrs To 18.00 Hrs | 10                    | 43     | 9               | 21                     | 10                                | 9                               | 3       | 5                         | 5       | 2      | 2       | 0     | -       |         |
| From 18.00 Hrs To 20.00 Hrs | 12                    | 40     | 9               | 20                     | 11                                | 5                               | 5       | 6                         | 3       | 8      | 2       | -     | -       |         |
| From 20.00 Hrs To 24.00 Hrs | -                     | -      | -               | -                      | -                                 | 6                               | 6       | 5                         | 2       | 6      | 1       | -     | -       |         |
| From 24.00 Hrs To 7.00 Hrs  | 13                    | -      | -               | 14                     | 9                                 | 5                               | 1       | 1                         | -       | 1      | -       | -     | -       |         |
| Total for Day               | 71                    | 163    | 42              | 104                    | 56                                | 39                              | 26      | 31                        | 18      | 22     | 10      | 0     | 0       |         |

**MUKHYA MANTRI GRAM SAMPRAK YOJNA, AWASHES (NDB)**  
**SUMMARY OF 7-DAY COUNTS**

Name of Road                      Rcd Road Baijudham Dharmkata TO Primary School Phulwariya  
Block                                   Gurua  
District                                Sherghati  
State                                    Bihar

| DAY   |                | Vehicle Class            |                        |                           |         |        |         |                                 |         |       |         |        |                 |                       | Total |
|-------|----------------|--------------------------|------------------------|---------------------------|---------|--------|---------|---------------------------------|---------|-------|---------|--------|-----------------|-----------------------|-------|
|       |                | Cars, Jeeps, Vans, Three | Motorised two-wheelers | Light Commercial Vehicles |         | Trucks |         | Agricultural Tractors/ Trailers |         | Buses |         | Cycles | Cycle Rickshaws | Animal Drawn Vehicles |       |
|       |                |                          |                        | Laden                     | Unladen | Laden  | Unladen | Laden                           | Unladen | Laden | Unladen |        |                 |                       |       |
| DAY 1 | 17 - 01 - 2025 | 65                       | 108                    | 22                        | 26      | 30     | 20      | 30                              | 49      | 0     | 0       | 157    | 59              | 95                    | 661   |
| DAY 2 | 18 - 01 - 2025 | 52                       | 98                     | 12                        | 25      | 11     | 27      | 57                              | 27      | 0     | 0       | 169    | 54              | 88                    | 620   |
| DAY 3 | 12 - 12 - 2023 | 56                       | 104                    | 31                        | 18      | 22     | 10      | 39                              | 26      | 0     | 0       | 163    | 42              | 71                    | 582   |
| TOTAL |                | 173                      | 310                    | 65                        | 69      | 63     | 57      | 126                             | 102     | 0     | 0       | 489    | 155             | 254                   | 1863  |

|                                            | Cars,<br>Jeeps,<br>Vans,<br>Three | Motoris<br>ed<br>two-<br>wheele<br>rs | Light<br>Commercial<br>Vehicles |             | Trucks    |             | Agricultural<br>Tractors/<br>Trailers |             | Buses     |             | Cycles | Cycle<br>Rickshaws | Animal<br>Drawn<br>Vehicles |              |
|--------------------------------------------|-----------------------------------|---------------------------------------|---------------------------------|-------------|-----------|-------------|---------------------------------------|-------------|-----------|-------------|--------|--------------------|-----------------------------|--------------|
|                                            |                                   |                                       | Lade<br>n                       | Unlad<br>en | Lade<br>n | Unlad<br>en | Lade<br>n                             | Unlad<br>en | Lade<br>n | Unlad<br>en |        |                    |                             |              |
| Average Daily Traffic (T)                  | 24.71                             | 44.29                                 | 9.29                            | 9.86        | 9.00      | 8.14        | 18.00                                 | 14.57       | 0.00      | 0.00        | 69.86  | 22.14              | 36.29                       | 266.14       |
| AADT at the time of<br>Traffic Survey **   | 30.81                             | 55.21                                 | 11.58                           | 12.29       | 11.22     | 10.15       | 22.44                                 | 18.16       | 0.00      | 0.00        | 87.08  | 27.60              | 45.23                       | <b>332</b>   |
| AADT at the time of<br>opening of Road *** | 32.66                             | 58.52                                 | 12.27                           | 13.02       | 11.89     | 10.76       | 23.78                                 | 19.25       | 0.00      | 0.00        | 92.31  | 29.26              | 47.95                       | <b>352</b>   |
| VDF                                        |                                   |                                       |                                 |             | 2.84      | 0.31        | 0.34                                  | 0.02        | 2.86      | 0.31        | -      | -                  | -                           |              |
| ESAL per Day                               |                                   |                                       |                                 |             | 33.77     | 3.34        | 8.09                                  | 0.39        | 0         | 0           | -      | -                  | -                           | <b>45.58</b> |

\*, \*\*,\*\*\*

Formula explained in next page

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## Computation of Design Traffic

**Name of Road:** Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

**Link Route No.** 54344

**Block:** Gurua

$$** \text{ AADT at the time of Traffic survey from ADT (To) } = T + \frac{1.2 \times n \times T \times t}{365}$$

where,

T = ADT at the time of traffic survey  
 n = Ratio of Harvesting season traffic to Lean season traffic  
 t = Harvesting period in no. of Days

$$*** \text{ AADT at the time of opening of Road } = T_o (1 + 0.01r)^n$$

where,

T<sub>o</sub> = AADT at the time of Traffic survey  
 r = Traffic growth rate  
 n = Time period between traffic survey & opening of road to traffic

There are two harvesting seasons in the area each having a duration of about 2½ months, the harvesting season traffic remaining at its peak for 15 days

The traffic data was collected 1 years before opening the road to traffic and in the lean season. It may be assumed that peak harvesting season traffic is double the lean season traffic.

$$\text{Cumulative ESAL applications over design life @ } r\% \text{ growth rate} = T_o \times 365 \left[ \frac{(1 + 0.01r)^n - 1}{0.01r} \right] \times L$$

Where,

T<sub>o</sub> = ESAL per day  
 r = Growth rate of traffic over the design life  
 n = Design life of pavement  
 L = Lane distribution factor.

Here,

T<sub>o</sub> = 45.58  
 r = 6%  
 n = 10  
 L = 1

Therefore,

$$\text{Cumulative ESAL applications over 10 years @ 6\% growth rate} = 45.58 \times 365 \times \left[ \frac{(1 + 0.01 \times 6)^{10} - 1}{0.01 \times 6} \right]$$

$$\begin{aligned} \text{Cumulative ESAL} &= 45.58 \times 4811 \\ &= \mathbf{219285} \end{aligned}$$

3.5. Traffic Categories:--

| Traffic Categories | Cumulative ESAL Applications |   |              |
|--------------------|------------------------------|---|--------------|
| T01                | 10,000.00                    | - | 30,000.00    |
| T02                | 30,000.00                    | - | 60,000.00    |
| T03                | 60,000.00                    | - | 1,00,000.00  |
| T04                | 1,00,000.00                  | - | 2,00,000.00  |
| T05                | 2,00,000.00                  | - | 3,00,000.00  |
| T06                | 3,00,000.00                  | - | 6,00,000.00  |
| T07                | 6,00,000.00                  | - | 10,00,000.00 |
| T08                | 10,00,000.00                 | - | 15,00,000.00 |
| T09                | 15,00,000.00                 | - | 20,00,000.00 |

Design pavement thickness as per Fig 4 of IRC-SP - 72 - 2015 = 325 mm

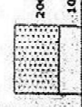
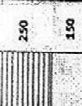
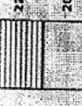
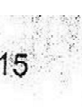
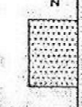
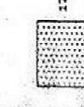
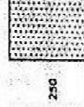
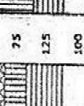
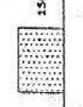
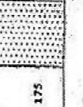
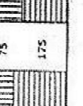
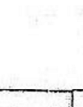
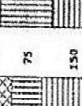
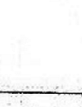
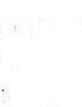
Hence Thickness Corresponding to CBR 5% (mm) to be adopted

Thickness of grade III (mm) 175 mm

Hence thickness of GSB (mm) 150 mm

Provide **Mix Seal Surfacing** as wearing course



| TRAFFIC CATEGORY $\Rightarrow$       | $T_1$<br>(10,000 TO 30,000)                                                           | $T_2$<br>(30,000 TO 60,000)                                                           | $T_3$<br>(60,000 TO 1,00,000)                                                        | $T_4$<br>(1,00,000 TO 2,00,000)                                                     | $T_5$<br>(2,00,000 TO 3,00,000)                                                     | $T_6$<br>(3,00,000 TO 6,00,000)                                                     | $T_7$<br>(6,00,000 TO 1,00,00,000)                                                  | $T_8$<br>(1,00,00,000 TO 1,50,00,000)                                             | $T_9$<br>(1,50,00,000 TO 2,00,00,000)                                             |
|--------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| SUBGRADE STRENGTH<br>CBR $\uparrow$  |                                                                                       |                                                                                       |                                                                                      |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                   |                                                                                   |
| $S_1$<br>VERY POOR<br>CBR = 2        |    |    |    |    |    |    |    |    |    |
| $S_2$<br>POOR<br>CBR = 3 to 4        |    |    |    |    |    |    |    |    |    |
| $S_3$<br>FAIR<br>CBR = 5 to 6        |    |    |    |    |    |    |    |    |    |
| $S_4$<br>GOOD<br>CBR = 7 to 9        |   |   |   |   |   |   |   |   |   |
| $S_5$<br>VERY GOOD<br>CBR = 10 to 15 |  |  |  |  |  |  |  |  |  |

LEGEND

-  Modified Soil/Improved Subgrade (CBR not < 10)
-  Granular Subbase (CBR not < 20) in exceptional case can be 15
-  Gravel Base (CBR not < 80). In Lower base course shall not be less than 50 Clause 2.3.5 (in exceptional case may be relaxed suitably)
-  WBM Grade-3
-  Bituminous Macadam
-  Surface Dressing
-  OGPC

Base of Gravel/CRMB/WBM (CBR not < 100) Where 100mm thickness is recommended it can be modified to 75 mm for WBM with corresp. increase of 25 mm in Subbase

| PAVEMENT COMPOSITION DETAILS                                                      |                            |   |      |              |                         |           |                           |                       |
|-----------------------------------------------------------------------------------|----------------------------|---|------|--------------|-------------------------|-----------|---------------------------|-----------------------|
| NAME OF ROAD :    :--   Rcd Road Baijudham Dharmkata TO Primary School Phulwariya |                            |   |      |              |                         |           |                           |                       |
| Survey ID               :--   54344                                               |                            |   |      |              |                         |           |                           |                       |
| BLOCK                   :--   Gurua                                               |                            |   |      |              |                         |           |                           |                       |
| LENGTH OF ROAD    :--   1.500       Km                                            |                            |   |      |              |                         |           |                           |                       |
|                                                                                   |                            |   |      |              |                         |           |                           |                       |
| S.L.                                                                              | Chainages                  |   |      | Total Length | Existing                | Condition | Type of Pavement Proposed | Type of Existing Area |
| No.                                                                               | From                       | - | To   | in Meter     | Pavement                |           |                           |                       |
| 1                                                                                 | 0                          | - | 400  | 400          | Earthen                 | DAMAGED   | Flexible                  | Open Area             |
| 2                                                                                 | 400                        | - | 1000 | 600          | Earthen                 | DAMAGED   | Rigid                     | Village Area          |
| 3                                                                                 | 1000                       | - | 1500 | 500          | Earthen                 | DAMAGED   | Flexible                  | Open Area             |
|                                                                                   |                            |   |      |              |                         |           |                           |                       |
|                                                                                   |                            |   |      |              |                         |           |                           |                       |
|                                                                                   | Total Length               |   |      | 1500         |                         |           |                           |                       |
|                                                                                   | Total Brick Soling         |   |      | 0            |                         |           |                           |                       |
|                                                                                   | Total Earthen              |   |      | 1500         |                         |           |                           |                       |
|                                                                                   | CC LENFTH                  |   |      | 0            |                         |           |                           |                       |
|                                                                                   | Proposed Flexible Pavement |   |      |              | Proposed Rigid Pavement |           |                           |                       |
|                                                                                   | On BES Portion             |   |      | 0            | On BES Portion          |           | 0                         |                       |
|                                                                                   | On Earthen Portion         |   |      | 900          | On Earthen Portion      |           | 600                       |                       |
|                                                                                   | ON BT                      |   |      |              | ON CC                   |           | 0                         |                       |
|                                                                                   | Total Flexible Pavement    |   |      | 900          | Total Rigid Pavement    |           | 600                       |                       |
|                                                                                   |                            |   |      |              |                         |           |                           |                       |

| Existing Pavement |       |       |   |  |                |       |     |
|-------------------|-------|-------|---|--|----------------|-------|-----|
| Flexible Pavement |       |       |   |  | Rigid Pavement |       |     |
| Brick Soling      |       |       |   |  | Brick Soling   |       |     |
| From              | To    |       |   |  | From           | To    |     |
| 0                 | 0     | 0     |   |  | 0              | 0     | 0   |
| 0                 | 0     | 0     |   |  | 0              | 0     | 0   |
|                   |       | 0     |   |  | 0              | 0     | 0   |
|                   |       | 0     |   |  |                |       | 0   |
| Tota              |       | Total | 0 |  | Total          |       | 0   |
| Earthen           |       |       |   |  | Earthen        |       |     |
| From              | To    |       |   |  | From           | To    |     |
| 0                 | 400   | 400   |   |  | 400            | 1000  | 600 |
| 1000              | 1500  | 500   |   |  | 0              | 0     | 0   |
|                   |       | 0     |   |  |                |       |     |
|                   | Total | 900   |   |  |                | Total | 600 |

## EARTHWORK CHART

Name of Road:

Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

Survey ID

54344

Block:

Gurua

| CH                                 | Area Cut (m2) | Area Fill (m2) | Volume Cut (m3) | Volume Fill (m3) |
|------------------------------------|---------------|----------------|-----------------|------------------|
| 0                                  | 0.00          | 0.08           | 0.00            | 0.00             |
| 50                                 | 0.00          | 0.20           | 0.00            | 7.00             |
| 100                                | 0.00          | 0.22           | 0.00            | 10.48            |
| 150                                | 0.00          | 2.12           | 0.00            | 58.45            |
| 200                                | 0.00          | 4.15           | 0.00            | 156.68           |
| 250                                | 0.00          | 4.32           | 0.00            | 211.78           |
| 300                                | 0.00          | 3.70           | 0.00            | 200.66           |
| 350                                | 0.00          | 4.25           | 0.00            | 198.87           |
| 400                                | 0.00          | 6.24           | 0.00            | 262.33           |
| 450                                | 0.00          | 0.00           | 0.00            | 156.06           |
| 500                                | 0.00          | 2.59           | 0.00            | 64.69            |
| 550                                | 0.00          | 8.00           | 0.00            | 264.69           |
| 600                                | 0.00          | 3.46           | 0.00            | 286.41           |
| 650                                | 0.00          | 4.03           | 0.00            | 187.18           |
| 700                                | 0.00          | 4.79           | 0.00            | 220.44           |
| 750                                | 0.00          | 5.40           | 0.00            | 254.76           |
| 800                                | 0.00          | 5.78           | 0.00            | 279.60           |
| 850                                | 0.00          | 4.15           | 0.00            | 248.19           |
| 900                                | 0.00          | 4.03           | 0.00            | 204.35           |
| 950                                | 0.00          | 5.24           | 0.00            | 231.74           |
| 1000                               | 0.00          | 5.42           | 0.00            | 266.45           |
| 1050                               | 0.00          | 5.61           | 0.00            | 275.72           |
| 1100                               | 0.00          | 5.75           | 0.00            | 284.17           |
| 1150                               | 0.00          | 5.67           | 0.00            | 285.66           |
| 1200                               | 0.00          | 6.15           | 0.00            | 295.51           |
| 1250                               | 0.00          | 5.10           | 0.00            | 281.20           |
| 1300                               | 0.00          | 4.15           | 0.00            | 231.35           |
| 1350                               | 0.00          | 4.52           | 0.00            | 216.86           |
| 1400                               | 0.02          | 4.89           | 0.43            | 235.33           |
| 1450                               | 0.00          | 5.27           | 0.43            | 254.02           |
| 1500                               | 0.00          | 5.65           | 0.00            | 272.97           |
|                                    |               |                |                 |                  |
|                                    |               |                |                 |                  |
| <b>NET E/W (Including Crust) =</b> |               |                | <b>280.420</b>  | <b>6403.600</b>  |

### Proposed Flexible Pavement

|                                   |                 |
|-----------------------------------|-----------------|
| <b>E/W Including Crust</b>        | <b>6403.600</b> |
| <b>Deduction</b>                  |                 |
| GSB                               | 694.240         |
| GRADE-II                          | 258.190         |
| GRADE-III                         | 659.810         |
| SUB-GRADE                         | 3986.930        |
| PCC                               | 281.250         |
| <b>Net Qty of E/w for Filling</b> | <b>242.760</b>  |
| Box Cutting Qty                   | 0.000           |
| Cutting                           | 280.420         |
| <b>Net Cut Volume</b>             | <b>280.420</b>  |

## 1. Project Background

### Part A: General Information

- 1 District Background – District Background all Ready given in Report in chapter Sl 1.4 on page no. 2.
- 2 Location of the Road – Proposed Road Starts From Rcd Road Baijudham Dharmkata and ends at Primary School Phulwariya, Total Length 1.5 km.
- 3 Socio-economic setting of the project road – After Construction of the Project Road, It Will help in the Conveyance of the people of the area. Which will improve their economic status. Also in the Emergency this Road will be helpful for them.
- 4 Environmental setting of the project road – Existing Environment setting will not be changed due to Construction of the Project Road.

### Part B: Overview

| Name of District | Name of Block | Total Proposed length (in kms) | Details about Beneficiary Villages* |          |    |                  |               |               |
|------------------|---------------|--------------------------------|-------------------------------------|----------|----|------------------|---------------|---------------|
|                  |               |                                | Names of Village/Ha bitation        | Chainage |    | Total Population | SC Population | ST Population |
|                  |               |                                |                                     | From     | To |                  |               |               |
| Gaya             | Gurua         | 1.5                            | Primary School                      |          |    | 250              | 63            | 40            |
|                  |               |                                | 0                                   |          |    | 0                | 0             | 0             |
|                  |               |                                | 0                                   |          |    | 0                | 0             | 0             |

## 2. Project Location

- . Start and end points of the road with settlement and chainage – Shown on the map attached in page no. 184
- . Key settlements (town/city) around the project road – No Such Case Exists.
- . Other key road/s (NH and/or SH in the block) or road network in the vicinity – No Such Case Exists.
- . A major river (if any) in the area – The Project Road does not Cross any Major River in the area.

### 3. Transact Walk Map

- Start and end point of the road - Shown on the Map attach page no. 184
- Key features such as settlement area/s – Shown on the Transect Walk Sketch & Road Plan on page no. 184
- Key environmental features such as trees, water bodies, irrigation channels, religious/cultural properties and sensitive receptors such as educational and health facilities - No Such Case Exists.
- Any other locally important feature/s and/or – Along the Alignment of the Road No Such Case exists .

The Transect Walk has-been Conducted by the Engineer of the Company along with Local People including Mukhiya, Local Members, Important people and Engineer of the RWD Department. The Local Mukhiya and the People have given their consent for the Project Road.

### 4. Outputs of the Transact Walk

- 1 Environmentally sensitive locations and features – No Such Case exists along the Project Road.
- 2 Socially sensitive locations and features (including sections with land availability constraints) – No Such Case exists along the Project Road.
- 3 Identified Key Issues – No Key issues exists along the Project Road.
- 4 Required Design Interventions – No Such Case has been seen during the Transect Walk.
- 5 Suggestions received from the community during the transact walk – No Such Suggestion received from the Community during the Transect Walk.
- 6 Participants by gender and social groups - Local People as well as Social groups have participated during the Transect Walk.

## 5. Public Consultation – Summary

| S.No. | Date of Consultation | Settlement Name/ Location of the Meeting | Total Duration of the Meeting | Venue of the Meeting      | Name of the Facilitator (who conducted the meeting) | Method/Type of Materials Used for Dissemination of Information about the Meeting | Remarks |
|-------|----------------------|------------------------------------------|-------------------------------|---------------------------|-----------------------------------------------------|----------------------------------------------------------------------------------|---------|
| 1     | 17 - 01 - 2025       | Primary School Phulwariya                | 2.00Hr.                       | Primary School Phulwariya | MUKHIYA                                             | Public Notice                                                                    |         |

## 6. Public Consultation Record

**Block:** Gurua

**District:** Gaya

**Road Name:** Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

**Date:** 17 - 01 - 2025

**Time:**

**Venue:** Primary School Phulwariya

**Duration:** 2.00Hr.

1. **Project Description** – The Project Road is Very Important for the Community of the area.

2. **Issues raised by the community and responses provided**

- **Issues:** The Villagers also advised that PCC Road should be constructed in the Portion of the Village and some Cross drainages in the Project road.

- **Response by PIU/field office staff:** - Since no any issue raised by the community so response by PIU/Field Office Staff does not arise.

- **Key Agreements and Conclusion**

(i) No Key Agreements has been executed with the community.

## Attendance Sheet

**Name of the Village:**

**Road Name:** Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

**Date of Meeting :**

| S.No. | Name of the Person   |  | Village of Residence |  | Signature |  |  |
|-------|----------------------|--|----------------------|--|-----------|--|--|
|       |                      |  |                      |  |           |  |  |
|       | Attach in Next page. |  |                      |  |           |  |  |
|       |                      |  |                      |  |           |  |  |
|       |                      |  |                      |  |           |  |  |
|       |                      |  |                      |  |           |  |  |

### 1. Basic Environmental Datasheet

| Sl.No | Aspect                                                                   | Details                                                              |  |  |  |
|-------|--------------------------------------------------------------------------|----------------------------------------------------------------------|--|--|--|
| 1     | District/s                                                               | Gaya                                                                 |  |  |  |
| 2     | Block/s                                                                  | Gurua                                                                |  |  |  |
| 3     | Start Point of the Road<br>(GPS coordinates)<br>(Longitude and Latitude) | Rcd Road Baijudham Dharmkata<br>Latitude 0.000000 Longitude 0.000000 |  |  |  |
| 4     | End Point of the Road<br>(GPS coordinates)<br>(Longitude and Latitude)   | Primary School Phulwariya<br>Latitude 0.000000 Longitude 0.000000    |  |  |  |
| 5     | Rainfall (in cm) – annual average                                        | 114.23 cm                                                            |  |  |  |
| 6     | Temperature (Max.)                                                       | 43°C.                                                                |  |  |  |
| 7     | Temperature (Minimum)                                                    | 6 °C.                                                                |  |  |  |
| 8     | Altitude (in mts.)                                                       | 52                                                                   |  |  |  |
| 9     | Soil Type                                                                | Clay & Sandy Soil                                                    |  |  |  |
| 10    | Wind Direction (pre-dominant)                                            | From South -West to North -East                                      |  |  |  |
| 11    | Wind Velocity                                                            | 6 Km/h                                                               |  |  |  |
| 12    | Pre-dominant Land-use                                                    | Agriculture                                                          |  |  |  |
| 13    | Water lable                                                              | 52 m                                                                 |  |  |  |
| 14    | Flooding Details<br>(Frequency; HFL)                                     | 48.5 m                                                               |  |  |  |

#### 4. Tree Cutting Requirement

| S.No. | Species                   | Chainage | Side of the Road | Girth Size | Distance from the proposed Centre Line | Ownership | Remarks |
|-------|---------------------------|----------|------------------|------------|----------------------------------------|-----------|---------|
|       | (Name)                    |          |                  |            |                                        |           |         |
| 1     | No Tree Cutting Required. |          |                  |            |                                        |           |         |
| 2     |                           |          |                  |            |                                        |           |         |
| 3     |                           |          |                  |            |                                        |           |         |

#### 5. Strip Plan showing Drainage Arrangements

- Start and end point of the road - Rcd Road Baijudham Dharmkata TO Primary School Phulwariya
- Key Drainage Related Features (river, a local stream, nala, pond etc.) - No Pound In this project Road.
- Existing culverts (categorized by type) – Attached in page no. 57
- New/proposed culverts (categorized by type) - Attached in page no. 57
- Show the outfalls / flow direction, as applicable

#### 6. Strip Plan showing Proposed Safety Measures

- Start and end point of the road - Rcd Road Baijudham Dharmkata TO Primary School Phulwari
- Location of signage (by type)
- Location of access roads to villages/junctions
- Location of sensitive receptors such as primary health centers and school
- Location of settlement area
- Location of safety measures like rumble strips, signage by type, lane markings etc.at each critical location in line with given design speeds.
- Any other

**Different Signages for villages, Junction, School, Health Centre etc. has been mention in the DPR of the Project Road.**



## 8. Materials Requirement – Summary Chart

| S.No. | Type of Material                  | GSB       | WBM II | WBM III | PANEL CONCRETE | PRIME & TACK | MIX SEAL SURFACE WITH WASTE PLASTIC |
|-------|-----------------------------------|-----------|--------|---------|----------------|--------------|-------------------------------------|
| 1     | Stone/Aggregate (M <sup>3</sup> ) | 694.24    |        | 659.81  | 284.06         |              | 3442.50                             |
| 2     | Sand (M <sup>3</sup> )            |           |        |         | 1.42           |              |                                     |
| 3     | Earth (M <sup>3</sup> )           | 1125.59   |        |         |                |              |                                     |
| 4     | Local Sand (M <sup>3</sup> )      | 179256.07 |        |         |                |              |                                     |
| 5     | Water (Kl)                        |           |        |         | 1136.24        |              |                                     |
|       | Moorum & Dust (M <sup>3</sup> )   |           |        | 86.40   |                |              |                                     |
| 6     | Bitumen (kg)                      |           |        |         |                | 1960.00      | 7068.00                             |
| 7     | Cement (Bag)                      |           |        |         | 2352.00        |              |                                     |

## 9. Lead Chart – Quarry Area/s

- Start and end point of the road - Rcd Road Baijudham Dharmkata TO Primary School Phulwariya
- Location of the existing approved quarry area/s

| S.NO. | TYPE OF MATERIAL          | SOURCE     | DISTANCE BY RAIL | DISTANCE BY ROAD |
|-------|---------------------------|------------|------------------|------------------|
| 1     | Stone Metal Gr-I & Gr-II  | Mirzapur   | 152              | 60               |
| 2     | Stone Metal Gr-III / GSB  | Mirzapur   | 152              | 60               |
| 3     | Stone Aggregate / Chips   | Mirzapur   | 262              | 60               |
| 4     | Stone Boulder             | Mirzapur   | 152              | 60               |
| 5     | Course Sand               | Sherghati  | Nil              | 18               |
| 6     | Binding Material (Moorum) | Mirzapur   | 152              | 60               |
| 7     | Cement +Steel             | LOCAL      | Nil              | 10               |
| 8     | Local Sand                | LOCAL      | Nil              | 3                |
| 9     | Brick                     | LOCAL      | Nil              | 8                |
| 10    | Bitumen Emulsion          | Belaganj   | 0                | 65               |
| 11    | Bitumen                   | Belaganj   | 0                | 65               |
| 12    | Hume Pipe                 | Bankebazar | Nil              | 16               |

## 10. Lead Chart – Borrow Area/s

- Start and end point of the road - Rcd Road Baijudham Dharmkata TO Primary School Phulwariya
- Location of the suggested borrow areas (include sand, earth, murram, GSB sources) - Location of the suggested borrow areas Such as Sand, Moorum, GSB etc Shown at SL.No-9. Earth will be procured within 1 km from the Centre of the Road.

## 11. Debris Related Information -

### Debris Related Information - No Debris obtain from the Project Road.

- Total Quantum of Debris likely to be generated = \_\_\_\_\_ cu. mt. or \_\_\_\_\_ tonnes**  
Break-up by type of debris
  - Concrete = \_\_\_\_\_ cu. mt. or \_\_\_\_\_ tonnes
  - Bitumen/Scarified Bitumen = \_\_\_\_\_ cu. mt. or \_\_\_\_\_ tonnes
  - Spoils/earth/other debris = \_\_\_\_\_ cu. mt. or \_\_\_\_\_ tonnes
- Total Quantum of Debris that is being proposed for re-use = \_\_\_\_\_ cu. mt. or \_\_\_\_\_ tonnes**
- Total Quantum of Debris would require disposal = \_\_\_\_\_ cu. mt. or \_\_\_\_\_ tonnes**
- Area/s for disposal**
  - Location 1 (----- Village; Near -----) = \_\_\_\_\_ cu. mt. or \_\_\_\_\_ tonnes
  - Location 2 (----- Village; Near -----) = \_\_\_\_\_ cu. mt. or \_\_\_\_\_ tonnes
  - Location 3 (----- Village; Near -----) = \_\_\_\_\_ cu. mt. or \_\_\_\_\_ tonnes
  - Start and end point of the road - Rcd Road Baijudham Dharmkata TO Primary School Phulwariya
  - Stretch/es of the project road requiring dismantling/re-construction (indicate above that the approx. quantity of debris that would be generated)
  - Existing old/damaged culvert/s or other drainage structures requiring dismantling/re-construction (indicate the approx. quantity of debris that would be generated)
  - Stretch/es of the project road requiring scarification (indicate the approx. quantity of debris that would be generated)
  - Stretches where re-use of the generated debris is being proposed (with approx. quantity)
  - Area/s where debris (balance after re-use or otherwise) would be disposed off (with approx. quantity)

Note: Debris disposal area/s should be carefully selected depending upon the nature of waste (primarily keeping in mind the pollution issue). Please seek specific guidance on the topic from the Nodal Environment Officer.

### 11. Affected Common Property Resources (CPRs)

| S.No. | Type of Affected CPR                           | Chainage | Side of the Road | Settlement/ Village Name | Distance from the proposed Centre Line | Extent of Impact | Remarks |
|-------|------------------------------------------------|----------|------------------|--------------------------|----------------------------------------|------------------|---------|
|       |                                                |          |                  |                          |                                        | (Partial/Full)   |         |
| 1     | No Common Property Resources will be effected. |          |                  |                          |                                        |                  |         |
| 2     |                                                |          |                  |                          |                                        |                  |         |
| 3     |                                                |          |                  |                          |                                        |                  |         |
| 5     |                                                |          |                  |                          |                                        |                  |         |

### 12. Utility Shifting Details

| S.No. | Type of Affected Utility             | Chainage/s                                                 | Side of the Road | Settlement / Village Name | Number and/or Length Affected | Distance from the proposed Centre Line | Remarks |
|-------|--------------------------------------|------------------------------------------------------------|------------------|---------------------------|-------------------------------|----------------------------------------|---------|
| 1     | Electrical Poles/Lines/ Transformers | <b>No Such Case Shown along the alignment of the Road.</b> |                  |                           |                               |                                        |         |
| 2     | Water Supply Lines                   |                                                            |                  |                           |                               |                                        |         |
| 3     | Irrigation (Ducts; Channels)         |                                                            |                  |                           |                               |                                        |         |
| 4     | Telephone/OFC                        |                                                            |                  |                           |                               |                                        |         |

## Social 4 :Affected Property Census Survey

**Affected Property Census Survey would not Required. For the Project Road.**

Project Coordinator **Not Required**  
 Road Name \_\_\_\_\_  
 Affected Property Identification number \_\_\_\_\_  
 Plot no./Patta No./Khasra No. \_\_\_\_\_  
 Side of the Road \_\_\_\_\_  
 Distance from the Centre Line \_\_\_\_\_

AFFIX PHOTO OF AFFECTED PROPERTY

Name of Respondent \_\_\_\_\_  
 Head of Household (Name) \_\_\_\_\_

| SC | ST | Women HH | Handicap | BPL | Others |
|----|----|----------|----------|-----|--------|
|    |    |          |          |     |        |

Vulnerability (*tick*)  
 (whether belong to)

|     |  |          |
|-----|--|----------|
| Yes |  | Card No. |
| No  |  |          |

If BPL, proof of BPL Ration Card

Household size (No. of persons)  
 No. of earning adult members (Nos)

**Not Required**

|          |  |
|----------|--|
| Children |  |
| Adults   |  |

No. of dependents (Nos)

| Agriculture | Residence | Commercial | Other |
|-------------|-----------|------------|-------|
|             |           |            |       |

Nature of impact (*tick*)

|           |  |
|-----------|--|
| <Marginal |  |
| >Marginal |  |

**Agriculture**

Size of Total holding (ha)

|      |      |   |
|------|------|---|
| <10% | >10% | 1 |
|      |      |   |

Extent of Impact (% total land holding including any  
 other land parcels owned elsewhere by PAP)

Size of residual holding (ha)

**Residence**

Plot size (sqm)

Extent of impact (Full/Partial)

Impacted Area (sqm)

**Not Required**

|     |  |    |  |
|-----|--|----|--|
| Yes |  | No |  |
|-----|--|----|--|

Residual plot viable (Yes/No)

|     |    |                |
|-----|----|----------------|
| Yes | No | If yes Specify |
|     |    |                |

If No, Alternate house site (if relocation reqd)

**Commercial establishments**

Plot size (sqm)

|      |  |         |  |
|------|--|---------|--|
| Full |  | Partial |  |
|------|--|---------|--|

Extent of Impact (*tick*)

---

**Not Required**

Impacted Area (sqm)

|     |  |    |  |
|-----|--|----|--|
| Yes |  | No |  |
|-----|--|----|--|

Commercial Plot viable (*tick*)

|     |    |                |
|-----|----|----------------|
| Yes | No | If yes Specify |
|     |    |                |

If No, Alternate commercial site (if relocation required)

**Asset Loss**

Inventory assets lost (Trees, Wells, Handpump, CPRs, etc)

---

**Not Required**

|     |    |                |
|-----|----|----------------|
| Yes | No | If yes Specify |
|     |    |                |

**Livelihood loss**

Alternate livelihood sources, other than mentioned above

**Social 1. Land Availability Status**

| Chainage                                              | Existing Formation Width* | Adjoining land use | Available Road land Width** | Land availability Constraint (Y/N) |
|-------------------------------------------------------|---------------------------|--------------------|-----------------------------|------------------------------------|
| All Ready Mentioned in Single Conectivity Certificate |                           |                    |                             |                                    |

**Social 2.** Alignment superimposed over Khasra Map verified by Revenue Officer

Attach/provide here the Khasra map showing the following details:

- Start and end point of the road - Rcd Road Baijudham Dharmkata TO Primary School Phulwariya
- Proposed alignment
- Existing road width with proposed deviations if any clearly marked
- Color additional land requirement
- Highlight private land required clearly, if any.

**Not in needed, since no extra land is required for the Construction for the Project Road.**

**Social 3.** Summary of Affected Property (Titleholders/Non Titleholders) as per proposed design

| Chainage | Affected Property ID | Type of Property* | Affected Partial/Full | Census Survey Form attached (Y/N) | Titleholder s/Non Titleholder s | Vulnerable Category | Plan for Assistance/restoration |
|----------|----------------------|-------------------|-----------------------|-----------------------------------|---------------------------------|---------------------|---------------------------------|
|          |                      |                   |                       |                                   |                                 |                     |                                 |
|          |                      |                   |                       |                                   |                                 |                     |                                 |
|          |                      |                   |                       |                                   |                                 |                     |                                 |
|          |                      |                   |                       |                                   |                                 |                     |                                 |
|          |                      |                   |                       |                                   |                                 |                     |                                 |
|          |                      |                   |                       |                                   |                                 |                     |                                 |
|          |                      |                   |                       |                                   |                                 |                     |                                 |

House, Shop, Temple, Varandah, Cowshed, Handpump or any other private structure etc.  
Not affected for the Construction of the Project Road.

## Social 6. Model Format of Gift Deed/Affidavit

THIS GIFT DEED IS EXECUTED ON THIS.....DAY OF.....,20\_\_ at..... by :Mr/Mrs..... S/o /W/o.....,residing at ..... (herein after referred to as the DONOR which expression shall wherever the context so requires or admits, mean and include his/her successors, executors, administrators and assigns or anyone claiming through or under her)

IN FAVOUR OF:

.....Department, Government of..... (hereinafter referred to as the DONEE which expression shall wherever the context so requires).

**N/A**

WHEREAS the Donor herein, is the absolute owner of \_\_\_\_\_ acre of land bearing khasraNo. \_\_\_\_\_ in village \_\_\_\_\_ block \_\_\_\_\_, tehsil \_\_\_\_\_, and district \_\_\_\_\_ which is more fully described in the Schedule hereunder and hereinafter referred to as the Schedule Property:

WHEREAS the Donor, is desirous of gifting a portion the schedule property, a strip of land, .....m wide for a length of .....m required for laying the road (as delineated in the sketch appended to this deed by the letters ABCDEF absolutely and forever) to the Donee for the construction and development of PRADHAN MANTRI GRAM SADAK YOJANA road in the village \_\_\_\_\_ for the benefit of the villagers and the public at large.

NOW THIS DEED WITNESS AS UNDER:

- 1 In consideration of the benefit of the villagers and the public at large, the Donor hereby gifts in favour of the Donee the specified width of the above piece of land fully described in Schedule hereunder and delineated in the sketch appended to this deed by the letters ABCDEF absolutely and forever.
- 2 The Donor has this day put the Donee in actual physical possession of the said portion of the schedule property and the Donee has accepted the said Gift and has taken possession of the said portion of the Schedule Property, and has in token thereof signed this deed.
- 3 The Donee hereby commits that the extent of the proposed roads shall be strictly within the boundaries of the land gifted and shall not spillover into the residual holding of the Donor. In the event of any violation of the same or any damages to structure/assets outside the said portion, either by the Donee or the Contractor, the Donee shall be liable to compensate the Donor.

### SCHEDULE

(Describe the property)

All that piece and parcel of the property bearing No \_\_\_\_\_ in village \_\_\_\_\_ block \_\_\_\_\_, tehsil \_\_\_\_\_, and district \_\_\_\_\_ delineated in the annexed sketch by the letters..

IN WITNESS WHEREOF, parties above named have executed theses present s in the presence of the witnesses attesting hereunder on the day, month and year first above written.

### WITNESSES:

1. D O N O R
2. D O N E E

NOTE: 1) Documents to be stamped with appropriate non-Judicial stamp.

2) To be registered as contemplated by the Indian Registration Act.

**No Such Case Exists for the Construction of the Project Road.**

**Junior Engineer**

**Assistant Engineer**

**Executive Engineer**

## LOAD-PANETRATION CURVE OF LABORATORY C.B.R. TEST

Test conducted on compacted sample after 4-days soaking

Rcd Road Baijudham Dharmkata TO Primary School Phulwariya

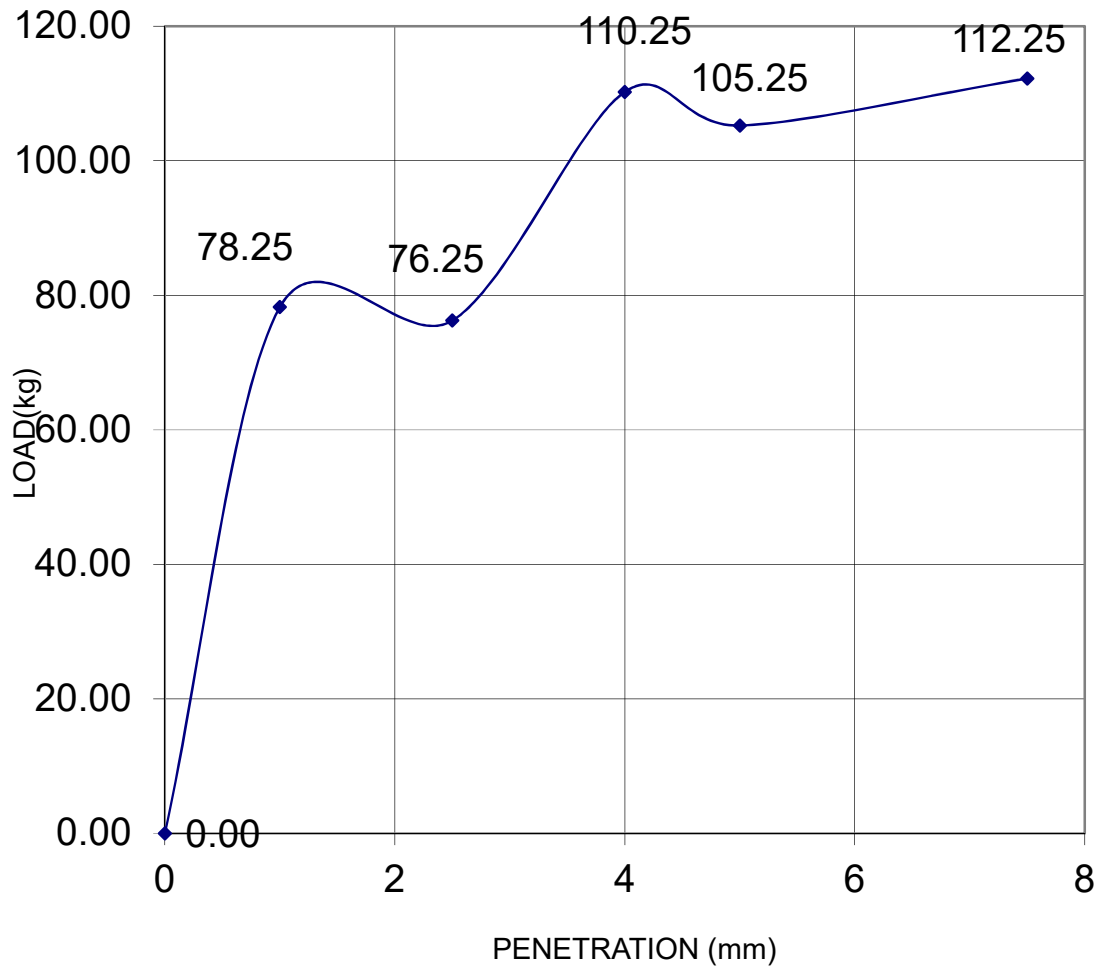
Location: CH : 0.5 km

| Panetration | Load   | CBR  |
|-------------|--------|------|
| 0           | 0.00   |      |
| 1           | 78.25  |      |
| 2.5         | 76.25  | 5.57 |
| 4           | 110.25 |      |
| 5           | 105.25 | 5.12 |
| 7.5         | 112.25 |      |

CBR at 2.5mm penetration = 5.57 %

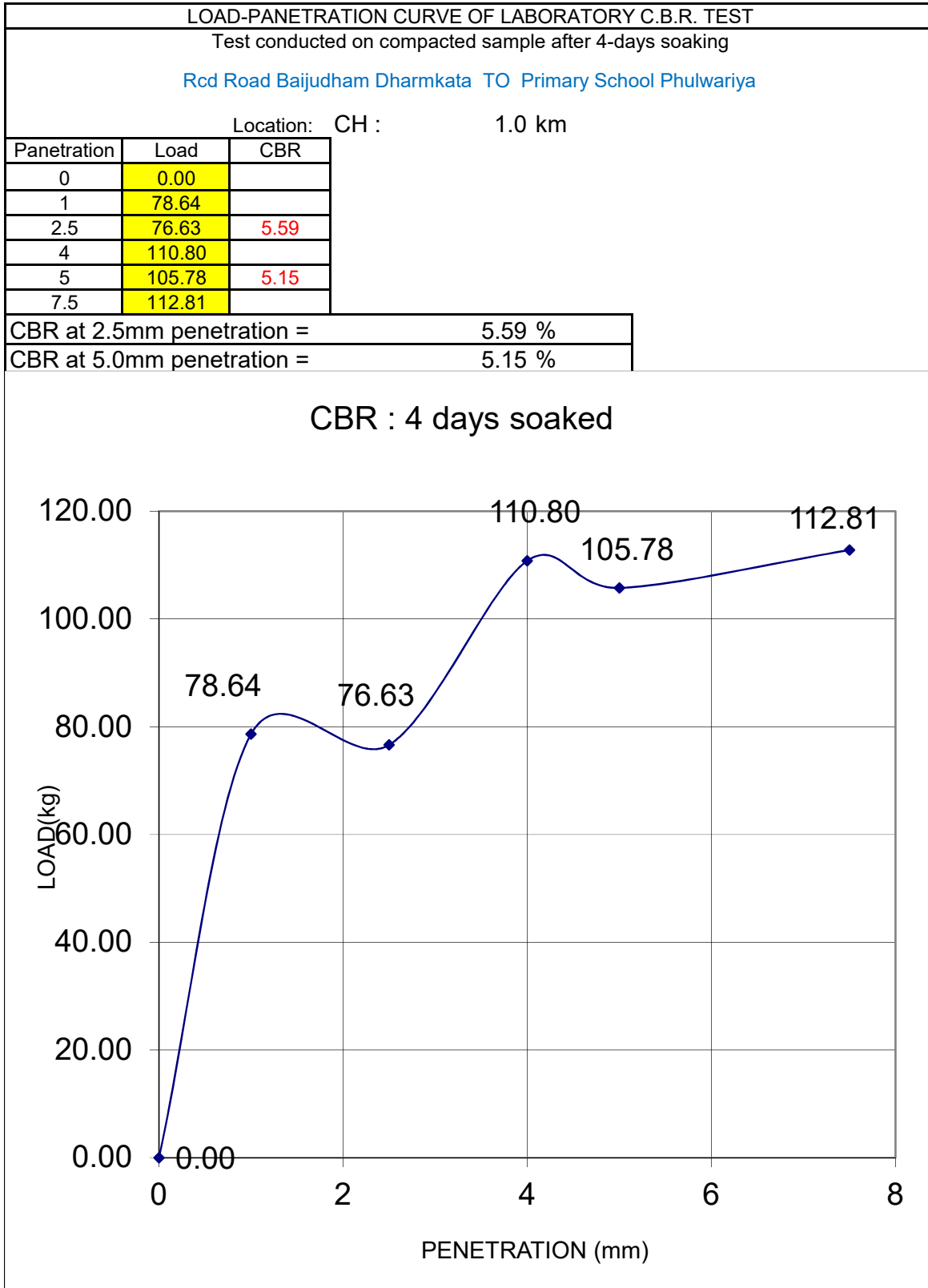
CBR at 5.0mm penetration = 5.12 %

CBR : 4 days soaked





## 2



## LOAD-PANETRATION CURVE OF LABORATORY C.B.R. TEST

Test conducted on compacted sample after 4-days soaking

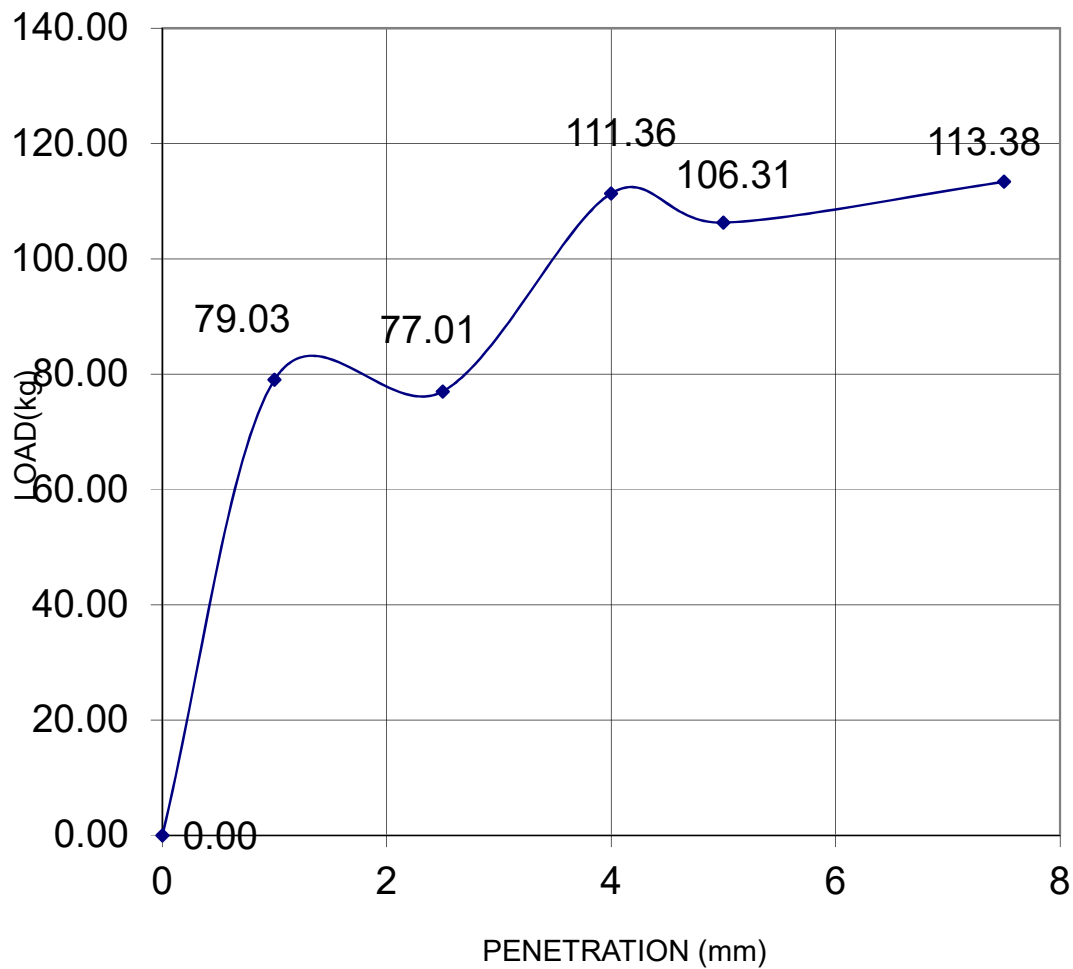
Rcd Road Bajjudham Dharmkata TO Primary School Phulwariya

Location: CH : 1.5 km

| Panetration | Load   | CBR  |
|-------------|--------|------|
| 0           | 0.00   |      |
| 1           | 79.03  |      |
| 2.5         | 77.01  | 5.62 |
| 4           | 111.36 |      |
| 5           | 106.31 | 5.17 |
| 7.5         | 113.38 |      |

|                            |        |
|----------------------------|--------|
| CBR at 2.5mm penetration = | 5.62 % |
| CBR at 5.0mm penetration = | 5.17 % |

CBR : 4 days soaked



## RESULT OF STANDERED PROCTOR COMPACTION TEST

**Road** Rcd Road Baijudham Dharmkata TO Primary School Phulwariya  
**Block** Gurua  
**District** Gaya  
**State** BIHAR

