

Volume I Final Detailed Project Report for

Widening of Jayamahal Road (from Mehkri Circle to Jayamahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

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Chapter 1

Introduction

CHAPTER 1 INTRODUCTION

1.1 Background

- 1.1.1 The conversion of Sri Kempegowda's 16th Century "Garden City" Bangalore to today's "Silicon Valley" has been rapid. The City has grown from 21 Sqkm. in 1897 to 800 Sqkm. in 2007. The Capital of Karnataka, Bengaluru, is the Fifth Largest City in the Country is the perfect blend of natural beauty and man – made marvels of architecture and technology. The City is the second fastest growing city in the world after Mexico City and the fastest growing city in Asia.
- 1.1.2 Bengaluru is growing at a rate, which is significantly higher than that of others. Due to the Growth in Economic Activities, the City is attracting migrants. To serve this Influx of Population, Residential Layouts are being developed. But adequate Transport Infrastructure Facilities such as Roads, Grade Separators, Subways, Mass Transit System, etc. to match this demand are conspicuously absent. The additional demand is to be catered by the already Saturated Road Network. Due to the Inherent Road Network in Bangalore, there are on the average 2 Major and 2 Minor Junctions per kilometer of Road Length. This has resulted in increase in Travel Time due to frequent Bottlenecks and Breakdowns.
- 1.1.3 The Urban Form of Bengaluru is characterized by a Radio – Concentric System structured by Ring Roads, Five Major Radial Roads and Five Secondary Radial Roads. The Five Major Radial Roads are Mysore Road (SH – 17) in the South / South West, Old Madras Road (NH – 4) in the North / North East, Bellary Road in the North, Hosur Road (NH – 7) in the South – East and Tumkur Road in the North – West. Similarly, the Five Secondary Radial Roads include Magadi Road (SH – 17E) in the West, Kanakapura Road (NH – 209) in the South, Bannerghatta Road (SH – 87) in the South, Varthur Road and Whitefield Road (SH – 35) in the East. The differentiated development of the City based on Geographical Sectors and the Star like Growth Array along the Major Roads, mark the change from a Concentric Spatial Growth to a Sectorial and Linear Radial Development.
- 1.1.4 The Estimated Population of BBMP's 198 Wards as per the 2011 Census is 84.74 Lakh, up from 45.92 Lakh in 2001 and 24.75 Lakh in 1981. The extent of Developed Area has also increased considerably, in 1971 the Area was 174.7 Sq. km. and today it is about 800 Sq. km. In absence of Adequate Mass Transportation System, the use of personal motor vehicles for intra city travel has increased substantially. This has resulted in growth of motor vehicles, which is eight times the rate of population growth in the last two decades (1.91 Lakh vehicles in 1981 and 38.86 Lakh vehicles in 2011). The Public Transport System (Bus) is overstressed carrying about 50 Lakh Commuters on a daily basis. Congested Streets and Longer Route Length due to Urban Sprawl have only served to reduce Bus Frequencies further.
- 1.1.5 The combined effect of all these on the Road Network of Bengaluru is Delay and Congestion beyond Tolerable Limits. Vehicular Conflicts at the Intersections are being eliminated by Traffic Signals but at the Expense of Delays and Long Queues. The Peak Hour has spread over a longer period of time, since there are no Perceptible "Capacity Augmentation / Conflict Reduction Measures. Traffic related Problems have become Regular Phenomena on Bangalore Roads, due to the Vast Developments. This fact is substantiated by the Traffic Study Results

On the other hand, after the opening of Kempegowda International Airport in Devanahalli in May 2008, the Bellary Road (AH - 47), the North Corridor of Bengaluru City, has become the most happening place of this Cosmopolitan City Bengaluru. With the boom in Real Estate Activities in and around this Corridor, the Vehicular Traffic along this Corridor has increased manifold. In fact, all the Business Eyes are focused on this Corridor due to its proximity to Bengaluru International Airport. This Corridor takes care of both Intercity and Intracity Vehicular Movement. This Corridor connects many centrally located Government Offices like Vidhana Soudha, Vikasa Soudha, Karnataka High Court, etc. with Kempegowda International Airport, Chikkaballapur, Doddaballapur, Hyderabad, etc.

This Project proposes Widening of Bellary Road from B. D. A. Junction on the southern side to Mehkri Circle on the northern side by covering a length of about 1475m.

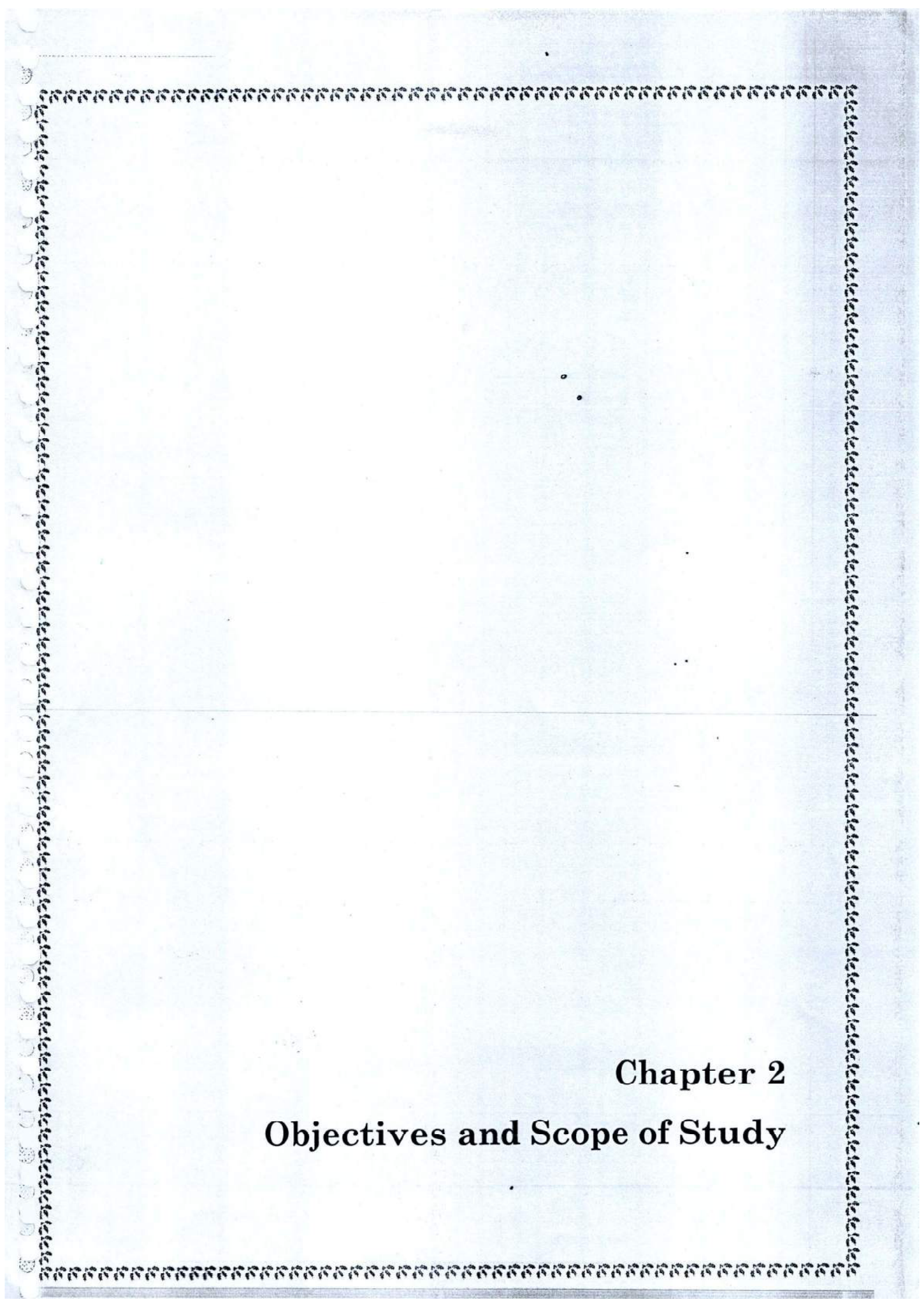
The Project has been taken up for the following reasons.

- The Revised Master Plan (RMP) 2015, Bangalore emphasizes to widen Jayamahahal Road to 45m from Ch: 0m to 900m (from Mehkri Circle to the Start of CIL Road Junction) and 30m from Ch: 1000m to 2600m (from the End of CIL Road Junction to the Start of Approach Ramp of Road under Bridge near Cantonment Railway Station) and Bellary Road to 45m from Ch: 0m to 1475m (from B. D. A. Junction to the Start of Approach Ramp to Underpass at Mehkri Circle).
- To augment the Capacity of the Corridors.
- To increase the Carriageway Width and thereby infuse Lane Discipline into the Vehicle Users using Jayamahahal Road and Bellary Road.

Key Plans of the Project Corridors proposed for Widening are enclosed in Annexure A.1.1.

Further, care has been taken to design the Alignment Plans of both the Corridors in such a way that significant numbers of trees (near Guttahalli Circle in case of Bellary Road; from Ch: 0m to 850m i.e. from Mehkri Circle to the Start of CIL Road Junction in case of Jayamahall Road and in the acquired Palace Property in case of both the Corridors) can be retained along both the Corridors by creating Tree Island, which also will function as Carriageway Divider.

Annexure A.1.1
Key Plans of Project Corridors



Chapter 2

Objectives and Scope of Study

CHAPTER 2 OBJECTIVES AND SCOPE OF STUDY

2.1 Objectives

The Project has been taken up to increase the Carriageway Width and thereby augment Vehicle Carrying Capacity of both the Project Corridors namely Jayamahal Road and Bellary Road. Further, the Revised Master Plan (RMP) 2015, Bangalore emphasizes to widen Jayamahal Road to 45m from Ch: 0m to 900m (from Mehkri Circle to the Start of CIL Road Junction) and 30m from Ch: 1000m to 2600m (from the End of CIL Road Junction to the Start of Approach Ramp of Road under Bridge near Cantonment Railway Station) and Bellary Road to 45m from Ch: 0m to 1475m (from B. D. A. Junction to the Start of Approach Ramp of Underpass at Mehkri Circle).

The Study Area spans between Mehkri Circle on the western side and Start of Approach Ramp of Road under Bridge near Cantonment Railway Station on the eastern side by covering a distance of around 2600m in case of Jayamahal Road and between B. D. A. Junction on the southern side and Start of Approach Ramp to Underpass at Mehkri Circle on the northern side by covering a distance of around 1475m in case of Bellary Road. Both the Study Corridors are located in the Northern Part of Bengaluru City.

The Primary Objectives of the Study are as follows.

- To effectively and optimally design the Carriageway in order to have a smooth flow of Vehicular Traffic all along the Corridors.
- To suggest Optimal and Feasible Corridor Improvement Measures to reduce travel time and in turn less Fuel Consumption.
- To increase the Life Cycle of the Selected Stretches of Roads by proper planning of Laying of Service Lines outside the Carriageway.
- To improve the Environmental Conditions of the Corridors by reducing Idle Time.
- To reduce the Vehicle Operation Cost of the Road Users.
- To reduce Traffic Accidents.

To summarise, the Main Objective of the Study of these Corridors is to offer to the Road Users commuting through these Corridors Comprehensive Connectivity, Convenience, Comfort, Affordability, Safety and Aesthetics.

2.2 Project Scope

The Scope of the Study to be carried out by the Consultant involves the following.

- Review of Available Data and Reports.
- Topographical Survey of the Corridors.
- Road Inventory and Visual Condition Survey.
- Pavement Condition Survey.
- Test Pit Investigation Survey.
- Benkelman Beam Deflection Survey.
- Basic Engineering Designs along with Detailed Estimate for the Approved Concept.
- Preparation of Tender Document as per KTPP Act to finalise the Contractor.

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2.3 Approach and Methodology

The Activities that are involved in the Preparation of Detailed Project Report for Widening of Jayamahal Road and Bellary Road are briefed below.

2.3.1 Stage 1

- To define the Objectives and Scope of Work.
- To plan Approach and Methodology, Data Collection.
- Carry out Field Reconnaissance Survey that includes Site Appreciation, Identification of Survey Locations and Site Constraints.

2.3.2 Stage 2

- Data Collection
 - Engineering Surveys and Investigations
 1. Topographical Survey.
 2. Road Inventory and Visual Condition Survey.
 3. Pavement Condition Survey.
 4. Benkelman Beam Deflection Survey.
 5. Test Pit Investigation Survey.
 - Secondary Data
 1. Economic Indicators affecting Traffic Growth.
 2. Details of any on going Road Improvements, Junction Improvements, Grade Separator Schemes; Footpath Improvement Scheme; NICE Corridor Scheme and Metro Rail Alignment along the Project Stretch.

- Preparation of Layout Drawings and Cross Sections of all the Proposals conceptualized.

2.3.3 Stage 3

- Basic Engineering Designs, Drawings and Cross Sections of the Approved Concept.
- Land Acquisition Details.
- Detailed Cost Estimate.

2.3.4 Stage 4

- Preparation of Tender Document as per KTPP Act to finalise the Contractor.

2.4 Design Philosophy

The Design Standards that will be adopted in the Design of Widening of Jayamahal Road and Bellary Road shall be in accordance with the Codal Provisions of India as stipulated by the Indian Road Congress (IRC), Bureau of Indian Standard (BIS) and the Ministry of Road Transport & Highways (MoRT&H). Deviations from the present Codal Provisions may be considered in the Planning Parameters, if absolutely necessary, considering the Dense Urban Conditions. These Modifications in the Design shall be adopted based on the Sound Engineering Practices.

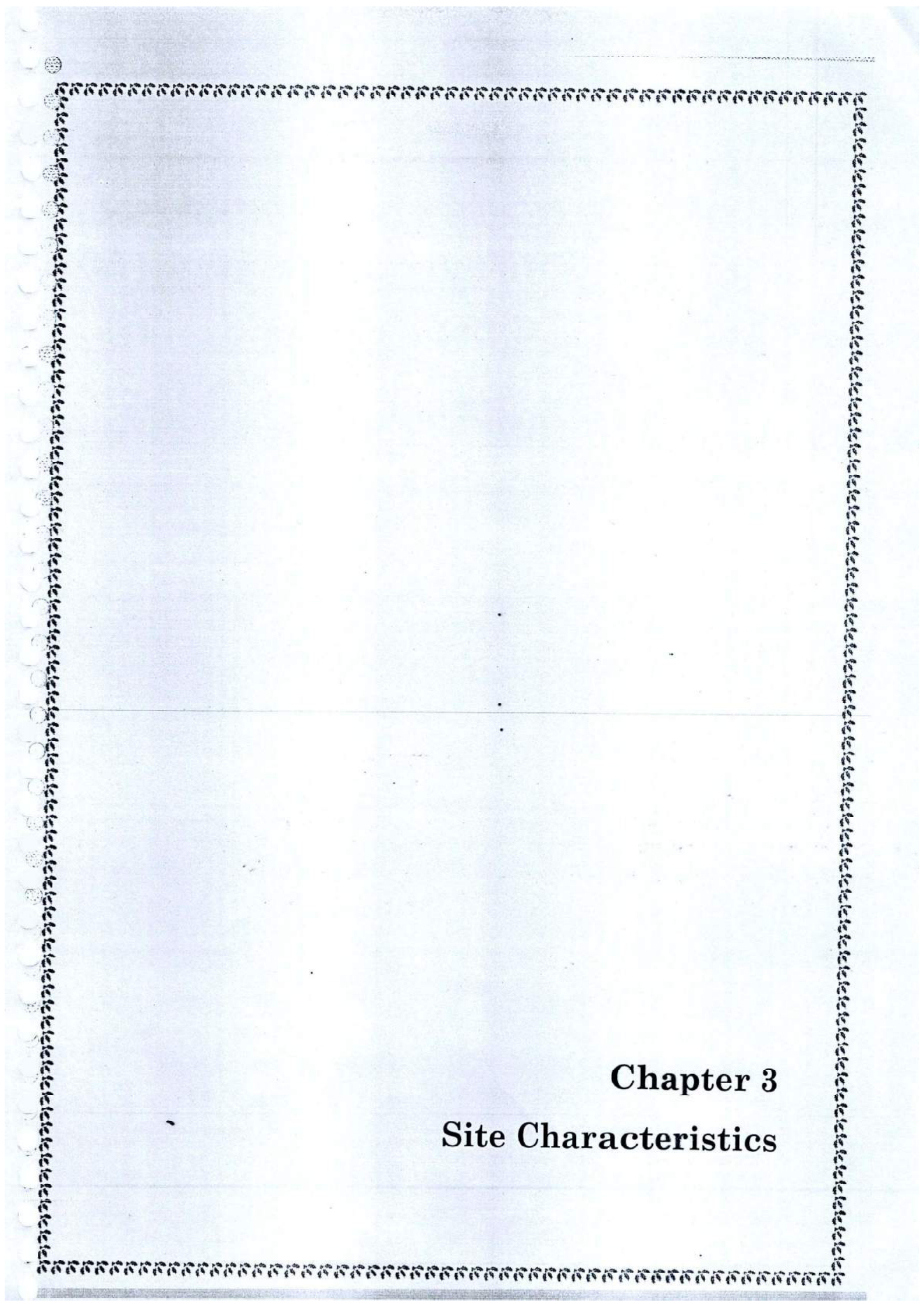

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The Basic Engineering Designs and Drawings of the Approved Concept that will be presented as part of the Detailed Project Report shall be based on the Studies and Investigations carried out at Site.




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Chapter 3

Site Characteristics

CHAPTER 3 SITE CHARACTERISTICS

3.1 Study Corridor

The Project Roads are located in the Northern Part of Bengaluru City and are the important Arterial Roads of this City. Salient Features of the Project Roads stretch wise are briefly mentioned below.

3.2 Salient Features

3.2.1 Jayamahal Road from Mehkri Circle to Jayamahal Palace Hotel

1. It starts at Mehkri Circle on the western side and ends near Jayamahal Palace Hotel or more precisely near the Road under Bridge of Cantonment Railway Station on the eastern side.
2. Total Length of the Corridor: 2600m.
3. Major / Minor Junctions along the Corridor:
 - Mehkri Circle, at Ch: 0m: Four Arms Junction.
 - CIL Road Junction, between Ch: 900m and 925m: Three Arms ('T' Shaped) Junction.
 - Munireddy Palya Road Junction, at Ch: 1425m: Three Arms ('Y' Shaped) Junction.
 - Nandidurga Road Junction, at Ch: 1500m: Three Arms ('Y' Shaped) Junction.
 - Jayamahal 5th Main Road Junction, between Ch: 1948m and 1962m: Three Arms ('T' Shaped) Junction.
 - Jayamahal 1st Main Road Junction, between Ch: 2125m and 2150m: Three Arms ('Y' Shaped) Junction.
4. The Corridor passes through the Areas of Munireddy Palya, J. C. Nagar, Jayamahal Extension, Nandidurga Road Extension, etc.
5. Divided bi directional Vehicular Movement with at least (3 + 2) lane is seen between Ch: 0m and 900m, divided bi directional Vehicular Movement with almost (2 + 2) lane is seen between Ch: 925m and 1225m, divided bi directional Vehicular Movement with at least (2 + 2) lane is seen between Ch: 1275m and 1950m, divided bi directional Vehicular Movement with almost (2 + 3) lane is seen between Ch: 1950m and 2400m, divided bi directional Vehicular Movement with almost (2 + 2) lane is seen between Ch: 2400m and 2600m.
6. Footpath is present on either side almost throughout the Corridor, except from Ch: 0m to Ch: 400m on the northern side and from Ch: 400m to Ch: 912m on the western side.
7. Service Lines (along with Service Chambers at frequent intervals) are present within the Carriageway Limit on either side of the Corridor between Ch: 925m and Ch: 2600m.

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8. **Type of Establishments:**

- **Northern Side:**
 - Between Ch: 0m and 400m: Defence Establishment.
- **Southern Side:**
 - Between Ch: 0m and 400m: Palace Property.
- **Eastern Side:**
 - Between Ch: 400m and 900m: Defence Establishment.
 - Between Ch: 925m and 1225m: Chandana Dooradarshan Kendra.
 - Between Ch: 1275m and 1600m: Mixed Development.
 - Between Ch: 1600m and 1900m: Religious Establishment.
 - Between Ch: 1900m and 1975m: Mixed Development.
 - Between Ch: 1975m and 2375m: Residential Establishment.
 - Between Ch: 2375m and 2600m: Jayamahar Palace Hotel.
- **Western Side:**
 - Between Ch: 400m and 2600m: Palace Establishment.

9. **Important / Well Known Establishments:**

- **Northern Side:**
 - Between Ch: 0m and 400m: Defence Establishments.
- **Eastern Side:**
 - Between Ch: 400m and 900m: Defence Establishment.
 - Between Ch: 925m and 1225m: Chandana Dooradarshan Kendra.
 - Between Ch: 1600m and 1900m: Darga and Burial Ground.
 - Between Ch: 1900m and 1925m: J. C. Nagar Post Office.
 - Between Ch: 2375m and 2600m: Jayamahar Palace Hotel.
- **Western Side:**
 - Between Ch: 1200m and 1425m: Fun World.
 - Between Ch: 1425m and 1550m: Snow City.
 - Between Ch: 1575m and 1625m: K. C. Palace Club.

10. Roadside Drain is present throughout the Corridor on either side adjacent to Properties, except from Ch: 1350m to Ch: 1950m on the eastern side and from Ch: 2575m to Ch: 2600m on the western side.

11. Street Lighting Arrangement is adequate along the Corridor. **ಮಾಹಿತಿ ಹಕ್ಕು ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ**

12. Tree Island is present within the Carriageway on the eastern side from Ch: 360m to Ch: 810m with average width of 2.3m.

13. 4 Nos. of Trees of Girth Diameter varying between 1800mm and 2700mm are present within the Carriageway on the northern side. This reduces the Safety of the Vehicle Users using this stretch of Road.

3.2.2 Bellary Road from B. D. A. Junction to Mehkri Circle

1. It starts at B. D. A. Junction on the southern side and ends at Start of Approach Ramp to Underpass at Mehkri Circle on the northern side.
2. Total Length of the Corridor: 1475m.
3. Major / Minor Junctions along the Corridor:
 - B. D. A. Junction, at Ch: 0m: Four Arms Junction.
 - Cauvery Theatre Junction, between Ch: 550m and 650m: Three Arms ('Y' Shaped) Junction.
4. The Corridor passes through the Areas of Guttahalli, Sadashiva Nagar, etc.
5. The Corridor runs along Guttahalli Main Road from Ch: 0m to Ch: 550m and Bellary Road from Ch: 550m to Ch: 1475m.
6. Divided bi directional Vehicular Movement with at least (4 + 4) lane is seen between Ch: 0m and 250m, divided bi directional Vehicular Movement with at least (2 + 2) lane is seen between Ch: 250m and 550m, divided bi directional Vehicular Movement with almost (2 + 2) lane is seen between Ch: 650m and 1250m, divided bi directional Vehicular Movement with almost (3 + 3) lane is seen between Ch: 1250m and 1350m, divided bi directional Vehicular Movement with at least (4 + 4) lane is seen between Ch: 1375m and 1475m.
7. Footpath along with Service Lines (along with Service Chambers at frequent intervals) is present from Ch: 0m to 1475m on the western side and from Ch: 0m to 1225m on the eastern side.
8. Type of Establishments:
 - Eastern Side:
 - Between Ch: 0m and 1475m: Palace Property.
 - Western Side:
 - Between Ch: 0m and 175m: Commercial Establishment.
 - Between Ch: 200m and 500m: Institutional Establishment.
 - Between Ch: 500m and 600m: Commercial Establishment.
 - Between Ch: 650m and 1475m: Mixed Developments.
9. Important / Well Known Establishments:
 - Eastern Side:
 - Between Ch: 0m and 1475m: Palace Property.

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- **Western Side:**

- Between Ch: 200m and 500m: National Tuberculosis Institute.
- Between Ch: 1075m and 1100m: All India Veerashaiva Maha Sabha.

10. Roadside Drain is present throughout the Corridor on either side adjacent to Properties, except from Ch: 650m to 775m and from Ch: 900m to 1000m on the western side.

11. Street Lighting Arrangement is adequate along the Corridor.

12. Tree Island is present within the Carriageway on the western side from Ch: 125m to Ch: 250m with average width of 10.2m.

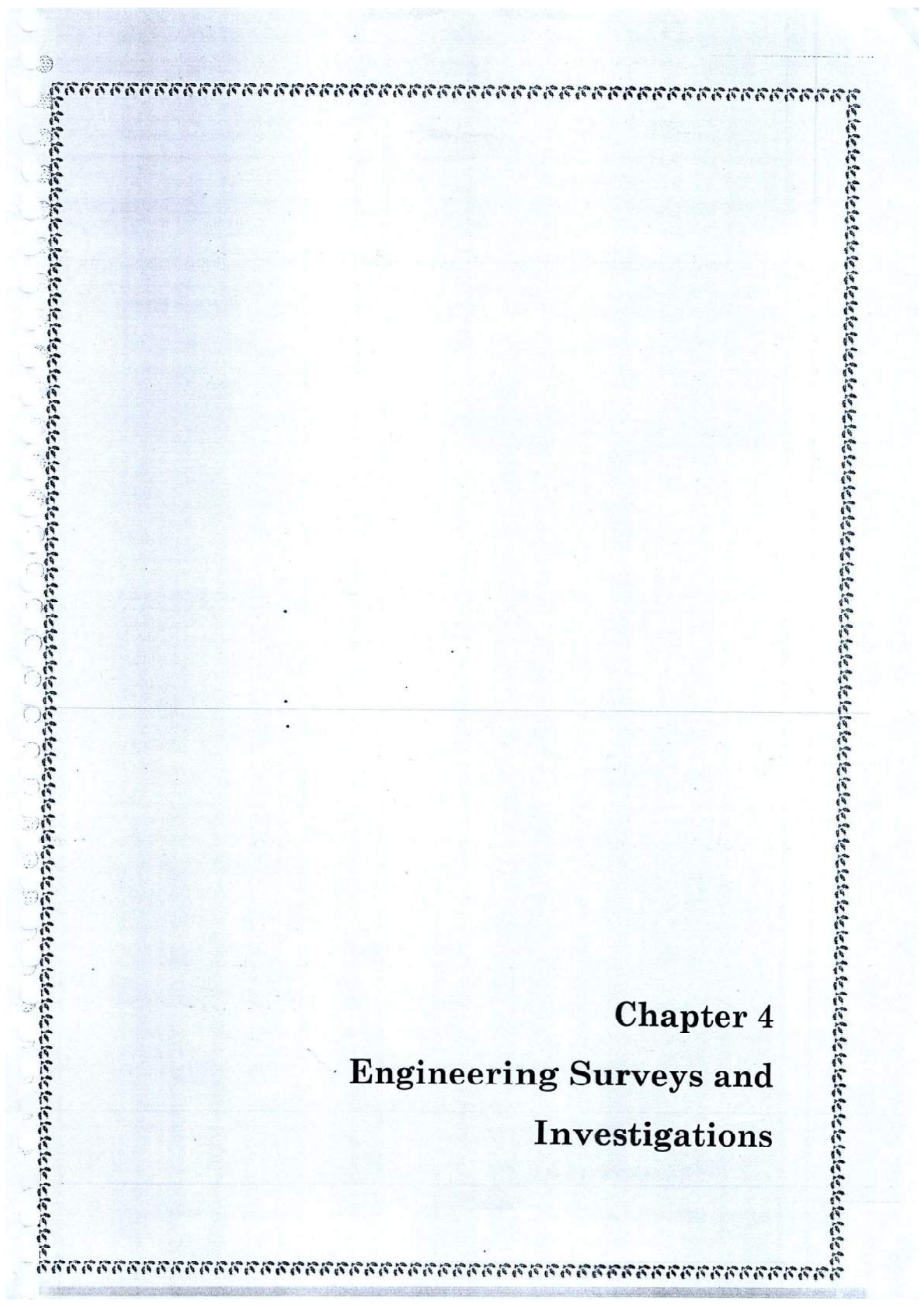
Key Plans of the Project Corridors are enclosed in **Annexure A.1.1** and the Existing Site Photographs are enclosed in **Chapter 7 – Photographs**.

The Site Details (Road Inventory) at every 50m chainage wise in tabular form are given in **Annexure A.4.1**.



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Chapter 4

Engineering Surveys and Investigations

CHAPTER 4 ENGINEERING SURVEYS AND INVESTIGATIONS

4.1 General

Various Surveys and Investigations that are essential Inputs for Detailed Engineering Design for the Widening of Jayamahal Road and Bellary Road are detailed out in this Chapter. All the relevant Maps / Data / Details available with the Concerned Departments have been collected, compiled and reviewed. Particular Attention has been given to Past / Historical Data / Reports. A Review of the Past Data available in the various Studies has been listed out and such Available Data has been made use of, after updating / augmenting the Data wherever necessary. The Data as collected have been made use of in Analysis, Design and Formulation of the Widening Proposals and Costing. The Activities have been performed on several fronts fully complying with the Requirements. The Activities those have been carried out are succinctly brought out hereunder.

The various Engineering Surveys / Investigations of the Road Sections include

- Reconnaissance Survey.
- Topographical Survey
- Road Inventory.
- Pavement Condition Survey.
 - Visual Condition Survey.
 - Benkelman Beam Deflection Survey.

4.2 Reconnaissance Survey

Reconnaissance Survey of the Project Corridor considered for Widening i.e. from Ch: 0m to Ch: 2600m in case of Jayamahal Road and from Ch: 0m to Ch: 1475m in case of Bellary Road has been carried out to identify the General Condition of Roads, Drains and Culverts / Bridges for further Surveys / Investigations, to understand the Kind of Establishments along the Project Stretch and to work out the Widening and other Development Schemes accordingly. Making use of the Observations / Data collected during Reconnaissance Survey, Detailed Schedule for Surveys / Investigations required for the Project has been finalised.

4.3 Topographical Survey

Topographical Survey has been carried out using Total Station based on the Requirements initiated in the Reconnaissance Survey. A Comprehensive Topographic Survey has been conducted all along both the Corridors using Total Station Equipment to accurately map the Area and obtain the Present Information on Carriageway Width, Centre Line of Road, Location of Median and its Width, Roadside Drain Width, Footpath Width; Location of Electrical Poles, Lamp Posts, Trees with the Girth Diameter, etc; Adjoining Land Use; Building Offsets; Available Right of Way (ROW) and Levelling Data using Auto Level. The entire Levelling has been carried out using Temporary Bench Mark established at Site. The Profiles and Levels of the Road Network within the Study Area have been also captured by taking Longitudinal and Cross Section Levels. The Extent of Survey has been limited to 100m beyond the Battery Limit on both the sides of the Corridors, to 30m from the Main Carriageway for all the Roads intersecting with the Main Carriageway in order to allow for the Geometric Improvements and to 50m from the Main Carriageway for all the Roads

intersecting with the Main Carriageway to form a Major Junction in order to allow for the Geometric Improvements. The Details have been captured adequately for Planning and Designing of the Proposed Widening Scheme. The Data captured is in 3D Format, which have been directly downloaded to Computers and is compatible for Modern Design Softwares. Topographical Maps along with Existing Cross Section Details for the above Project Roads are given in **Volume II – Drawings**.

4.4 Road Inventory

A Detailed Inventory of Road Sections has been carried out by making use of well structured Inventory Data Format. Various Data collected during the Road Inventory broadly include

- Road Length and Number of Lane.
- Surface Type and Condition.
- Shoulder, Median, Drain (Tertiary / Shoulder), Footpath – Type and Width.
- Right of Way.
- Cross Drainage and Bridge Structures.
- Land use type.
- Salient Buildings and Structures.
- Details of Major Junctions.
- Bus / Auto Stops.
- On Street Parking.

All the above Information have been compiled and presented (Chainage wise) in the form of tables for easy understanding. The Data captured with respect to Road Geometry have been made use of to identify the Scope for Improvement in Road Geometry and Width of Carriageway.

The Details of Road Inventory and Condition Survey in tabular form are given in Annexure A.4.1.

4.5 Pavement Condition Survey

The Pavement Condition Survey has been carried out in accordance with the IRC Guidelines. All Surveys and Investigations have been carried out with the following Objectives.

- To have an upto date Record of Road Assets.
- To have a clear understanding of Road Side Features including Land Use, Drainage Characteristics, etc. and
- To assess the Condition and Strength Data of the existing Carriageway for developing Bituminous Overlay Proposals and related Designs.

4.5.1 Visual Condition Survey

Visual Condition Survey of the Road Sections has been carried out by travelling along the Project Road and noting down the Pavement Conditions such as Extent of Cracking, Patching, Rutting, Potholes, Edge Breaking, etc. by visual observations in a well structured Data Format. During the Inspection of the Roads, it has been found that the Pavement Surface is Fair by Visual Observations for most of the Road Sections. The Data so collected has been compiled and presented (Chainage wise) in the form of tables for easy understanding. These Data have been used to assess the Pavement Condition.


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The Details of Visual Condition Survey in tabular form are given in Annexure A.4.1.

The Visual Condition Survey reveals that the existing Pavement Condition along both the Project Stretches is good to fair.

4.5.2 Benkelman Beam Deflection Survey

Benkelman Beam Deflection Survey of the Road Sections has been carried out in accordance with the Procedure given in IRC: 81 – 1997 “Tentative Guidelines for Strengthening of Flexible Road Pavements using Benkelman Beam Deflection Technique” in the Month of March 2018 in order to assess the Pavement Strength and related Parameters. During the Survey, Pavement Temperature has been measured for correcting the Deflection Values to the Standard Temperature. Seasonal Factor has also been determined from the Type and Moisture Content of Sub Grade Soil.

The Deflection Data have been analysed for each homogeneous section and the Analysed Data are presented in Annexure A.4.2. The Data so analysed form a Useful Input to estimate the Extent of Bituminous Overlay required for Strengthening of the existing Pavement. The Structural Evaluation especially with regard to the Adequacy / Inadequacy of the Road Sections improved earlier in Various Schemes has also been assessed so that not to duplicate the same in the Upgradation Proposals.

4.6 Secondary Data

Details of any Ongoing Development Works along the Project Road such as Road Improvements, Junction Improvements, Grade Separation Schemes, Footpath Improvement Schemes, NICE Corridor Scheme, Metro Rail Scheme, etc. have been collected so that to integrate the same with the Improvement Proposals suggested and also to avoid Duplication, which will have a direct bearing on the Project Cost.

It has been observed that no other Development Works have been taken up in both the Project Corridors.



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Bangalore

Annexure A.4.1
Details of Road Inventory and Visual
Condition Survey

Annexure A.4.2
Details of Benkelman Beam Deflection
Survey

Benkelman Beam Deflection Test

Name of Road: Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel)
Direction: From Ch: 0m to 2700m
Road Type: Arterial
Survey Along: Both Wheel Path
Date of Survey: 09 - 03 - 2018

SL No.	Chainage (m)	Pavement Temperature °C	Type of Soil	Moisture Content %	Dial Gauge Reading			D ₀ -D _f	D ₀ -D _i	D _i -D _f	Differential Reading (mm)	Actual Pavement Deflection (mm)	Correction for Temperature (mm)	Correction for Seasonal Variation (mm)	Corrected Deflection (mm)	Mean Deflection (mm)	Standard Deviation (mm)	Characteristic Deflection (mm)
					D ₀	D _i	D _f											
1	0	30	SM	5.00	100	86	84	16	14	2	2.00	0.32	0.05	1.16	0.43	0.42	0.07	0.56
2	100	30	SM	5.00	100	84	82	18	16	2	2.00	0.36	0.05	1.16	0.48			
3	200	30	SM	5.00	100	83	81	19	17	2	2.00	0.38	0.05	1.16	0.50			
4	300	33	SM	5.00	100	89	86	14	11	3	3.00	0.28	0.02	1.16	0.35			
5	400	33	SM	5.00	100	88	86	14	12	2	2.00	0.28	0.02	1.16	0.35			
6	500	33	SM	5.00	100	71	70	30	29	1	1.00	0.60	0.02	1.16	0.72	0.65	0.09	0.83
7	600	33	SM	7.00	100	70	69	31	30	1	1.00	0.62	0.02	1.04	0.67			
8	700	33	SM	8.00	100	72	69	31	28	3	3.00	0.62	0.02	1.03	0.66			
9	800	33	SM	6.00	100	69	67	33	31	2	2.00	0.66	0.02	1.08	0.73			
10	900	30	SM	5.00	100	70	68	32	30	2	2.00	0.64	0.05	1.16	0.80			
11	1000	30	SM	5.00	100	72	69	31	28	3	3.00	0.62	0.05	1.16	0.78	0.79	0.07	0.94
12	1100	30	SM	5.00	100	70	67	33	30	3	3.00	0.66	0.05	1.16	0.82			
13	1200	30	SM	6.00	100	71	68	32	29	3	3.00	0.64	0.05	1.08	0.85	0.85	0.07	0.94



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SL No.	Chainage (m)	Pavement Temperature °C	Type of Soil	Moisture Content %	Dial Gauge Reading			D ₀ -D _r	D ₀ -D _f	D ₀ -D _r	Differential Reading (mm)	Actual Pavement Deflection (mm)	Correction for Temperature (mm)	Correction for Seasonal Variation (mm)	Corrected Deflection (mm)	Mean Deflection (mm)	Standard Deviation (mm)	Characteristic Deflection (mm)
					D ₀	D _f	D _r											
14	1300	30	SM	5.00	100	69	66	34	31	3	3.00	0.68	0.05	1.16	0.85			
15	1400	30	SM	5.00	100	72	69	31	28	3	3.00	0.62	0.05	1.16	0.78			
16	1500	30	SM	8.00	100	69	67	33	31	2	2.00	0.66	0.05	1.03	0.73	0.74	0.02	0.77
17	1600	30	SM	8.00	100	68	66	34	32	2	2.00	0.68	0.05	1.03	0.75			
18	1700	31	SM	7.00	100	70	68	32	30	2	2.00	0.64	0.04	1.04	0.71			
19	1800	31	SM	7.00	100	69	67	33	31	2	2.00	0.66	0.04	1.04	0.73			
20	1900	31	SM	6.00	100	69	68	32	31	1	1.00	0.64	0.04	1.08	0.73			
21	2000	33	SP	6.00	100	65	63	37	35	2	2.00	0.74	0.02	1.08	0.82	0.72	0.05	0.82
22	2100	30	SP	7.00	100	72	71	29	28	1	1.00	0.58	0.05	1.04	0.66			
23	2200	30	SP	7.00	100	70	68	32	30	2	2.00	0.64	0.05	1.04	0.72			
24	2300	30	SP	6.00	100	71	70	30	29	1	1.00	0.60	0.05	1.08	0.70			
25	2400	31	SP	5.00	100	70	69	31	30	1	1.00	0.62	0.04	1.16	0.77			
26	2500	32	SP	7.00	100	72	69	31	28	3	3.00	0.62	0.03	1.04	0.68			
27	2600	32	SP	8.00	100	69	67	33	31	2	2.00	0.66	0.03	1.03	0.71			
28	2700	32	SP	8.00	100	68	67	33	32	1	1.00	0.66	0.03	1.03	0.71			

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Benkelman Beam Deflection Test

Name of Road: Jayamahar Road (from Mehkri Circle to Jayamahar Palace Hotel)
Direction: From Ch: 2700m to 0m
Road Type: Arterial
Survey Along: Both Wheel Path
Date of Survey: 09 - 03 - 2018

SL No.	Chainage (m)	Pavement Temperature °C	Type of Soil	Moisture Content %	Dial Gauge Reading				D ₀ -D _r	D ₀ -D _i	D _i -D _r	Differential Reading (mm)	Actual Pavement Deflection (mm)	Correction for Temperature (mm)	Correction for Seasonal Variation (mm)	Corrected Deflection (mm)	Mean Deflection (mm)	Standard Deviation (mm)	Characteristic Deflection (mm)
					D ₀	D _i	D _r												
1	2650	31	SP	7.00	100	81	79		21	19	2	2.00	0.42	0.04	1.04	0.48	0.52	0.05	0.62
2	2550	31	SP	7.00	100	80	78		22	20	2	2.00	0.44	0.04	1.04	0.50			
3	2450	31	SP	6.00	100	80	79		21	20	1	1.00	0.42	0.04	1.08	0.50			
4	2350	31	SP	6.00	100	76	74		26	24	2	2.00	0.52	0.04	1.08	0.60			
5	2250	31	SP	5.00	100	81	79		21	19	2	2.00	0.42	0.04	1.16	0.53			
6	2150	31	SP	5.00	100	82	81		19	18	1	1.00	0.38	0.04	1.16	0.49	0.47	0.02	0.52
7	2050	31	SP	8.00	100	81	80		20	19	1	1.00	0.40	0.04	1.03	0.45			
8	1950	33	SP	8.00	100	83	80		20	17	3	3.00	0.40	0.02	1.03	0.43			
9	1850	33	SM	7.00	100	80	78		22	20	2	2.00	0.44	0.02	1.04	0.48			
10	1750	33	SM	7.00	100	81	79		21	19	2	2.00	0.42	0.02	1.04	0.46			
11	1650	32	SM	6.00	100	82	81		19	18	1	1.00	0.38	0.03	1.08	0.44	0.49	0.04	0.58
12	1550	32	SM	6.00	100	81	80		20	19	1	1.00	0.40	0.03	1.08	0.46			
13	1450	32	SM	5.00	100	83	80		20	17	3	3.00	0.40	0.03	1.16	0.50			
14	1350	30	SM	5.00	100	80	78		22	20	2	2.00	0.44	0.05	1.16	0.57			

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Sl. No.	Chainage (m)	Pavement Temperature °C	Type of Soil	Moisture Content %	Dial Gauge Reading			D ₀ -D _i	D ₀ -D _f	D _i -D _f	Differential Reading (mm)	Actual Pavement Deflection (mm)	Correction for Temperature (mm)	Correction for Seasonal Variation (mm)	Corrected Deflection (mm)	Mean Deflection (mm)	Standard Deviation (mm)	Characteristic Deflection (mm)
					D ₀	D _i	D _f											
15	1250	30	SM	7.00	100	83	80	20	17	3	3.00	0.40	0.05	1.04	0.47			
16	1150	30	SM	7.00	100	80	78	22	20	2	2.00	0.44	0.05	1.04	0.51	0.51	0.03	0.57
17	1050	31	SM	8.00	100	79	77	23	21	2	2.00	0.46	0.04	1.03	0.52			
18	950	31	SM	8.00	100	81	79	21	19	2	2.00	0.42	0.04	1.03	0.47			
19	850	31	SM	5.00	100	80	78	22	20	2	2.00	0.44	0.04	1.16	0.56			
20	750	31	SM	5.00	100	80	79	21	20	1	1.00	0.42	0.04	1.16	0.53			
21	650	32	SM	5.00	100	74	72	28	26	2	2.00	0.56	0.03	1.16	0.68	0.57	0.07	0.72
22	550	32	SM	5.00	100	77	76	24	23	1	1.00	0.48	0.03	1.16	0.59			
23	450	33	SM	5.00	100	76	74	26	24	2	2.00	0.52	0.02	1.16	0.63			
24	350	34	SM	5.00	100	75	72	28	25	3	3.00	0.56	0.01	1.16	0.66			
25	250	34	SM	6.00	100	77	76	24	23	1	1.00	0.48	0.01	1.08	0.53			
26	150	34	SM	6.00	100	81	78	22	19	3	3.00	0.44	0.01	1.08	0.49			
27	50	35	SM	7.00	100	81	76	24	19	5	5.00	0.43	0.00	1.04	0.50			
28	0	35	SM	7.00	100	77	75	25	23	2	2.00	0.50	0.00	1.04	0.52			

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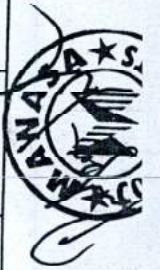


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Benkelman Beam Deflection Test

Name of Road: Bellary Road (From B.D.A. Junction to Mehkri Circle)
Direction: From Ch: 0m to 1475m
Road Type: Arterial
Survey Along: Both Wheel Path
Date of Survey: 09 - 03 - 2018

Sl. No.	Chainage (m)	Pavement Temperature °C	Type of Soil	Moisture Content %	Dial Gauge Reading			D ₀ -D _r	D ₀ -D _i	D ₀ -D _r	Differential Reading (mm)	Actual Pavement Deflection (mm)	Correction for Temperature (mm)	Correction for Seasonal Variation (mm)	Corrected Deflection (mm)	Mean Deflection (mm)	Standard Deviation (mm)	Characteristic Deflection (mm)
					D ₀	D _i	D _r											
1	0	32	SM	7.00	100	67	66		34	33	1	1.00	0.68	0.03	1.04	0.74	0.73	0.87
2	100	32	SM	7.00	100	66	65		35	34	1	1.00	0.70	0.03	1.04	0.76		
3	200	32	SM	7.00	100	64	62		38	36	2	2.00	0.76	0.03	1.04	0.82		
4	300	34	SM	7.00	100	71	70		30	29	1	1.00	0.60	0.01	1.04	0.63		
5	400	34	SM	8.00	100	69	67		33	31	2	2.00	0.66	0.01	1.03	0.69		
6	500	34	SM	8.00	100	70	69		31	30	1	1.00	0.62	0.01	1.03	0.65	0.04	0.79
7	600	32	SM	7.00	100	69	68		32	31	1	1.00	0.64	0.03	1.04	0.70		
8	700	33	SM	7.00	100	71	68		32	29	3	3.00	0.64	0.02	1.04	0.69		
9	800	33	SM	7.00	100	68	66		34	32	2	2.00	0.68	0.02	1.04	0.73		
10	900	31	SM	8.00	100	67	65		35	33	2	2.00	0.70	0.04	1.03	0.76		
11	1000	31	SM	8.00	100	69	67		33	31	2	2.00	0.66	0.04	1.03	0.72	0.77	0.85
12	1100	31	SM	8.00	100	68	66		34	32	2	2.00	0.68	0.04	1.03	0.74		
13	1200	30	SM	8.00	100	67	64		36	33	3	3.00	0.72	0.05	1.03	0.79		
14	1300	30	SM	5.00	100	70	68		32	30	2	2.00	0.64	0.05	1.16	0.80	ಮಾಹಿತಿ ಹಕ್ಕು ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ನವೀಕರಿಸಲಾಗಿದೆ	
15	1475	30	SM	5.00	100	71	69		31	29	2	2.00	0.62	0.05	1.16	0.78		



Benkelman Beam Deflection Test

Name of Road: Bellary Road (From B.D.A. Junction to Mehkri Circle)
Direction: From Ch: 1475m to 0m
Road Type: Arterial
Survey Along: Both Wheel Path
Date of Survey: 09 - 03 - 2018

SL. No.	Chainage (m)	Pavement Temperature °C	Type of Soil	Moisture Content %	Dial Gauge Reading			D ₀ -D _r	D ₀ -D _i	D _i -D _r	Differential Reading (mm)	Actual Pavement Deflection (mm)	Correction for Temperature (mm)	Correction for Seasonal Variation (mm)	Corrected Deflection (mm)	Mean Deflection (mm)	Standard Deviation (mm)	Characteristic Deflection (mm)
					D ₀	D _i	D _r											
1	1450	30	SM	6.00	100	66	65	35	34	1	1.00	0.70	0.05	1.08	0.81	0.76	0.08	0.92
2	1350	30	SM	6.00	100	66	64	36	34	2	2.00	0.72	0.05	1.08	0.83			
3	1250	30	SM	6.00	100	64	63	37	36	1	1.00	0.74	0.05	1.08	0.85			
4	1150	33	SM	6.00	100	71	70	30	29	1	1.00	0.60	0.02	1.08	0.67			
5	1050	33	SM	5.00	100	69	67	33	31	2	2.00	0.66	0.02	1.16	0.79			
6	950	33	SM	5.00	100	70	69	31	30	1	1.00	0.62	0.02	1.16	0.74	0.75	0.04	0.83
7	850	34	SM	6.00	100	69	68	32	31	1	1.00	0.64	0.01	1.08	0.70			
8	750	34	SM	6.00	100	71	68	32	29	3	3.00	0.64	0.01	1.08	0.70			
9	650	35	SM	6.00	100	68	66	34	32	2	2.00	0.68	0.00	1.08	0.73			
10	550	35	SM	6.00	100	67	65	35	33	2	2.00	0.70	0.00	1.16	0.81			
11	450	30	SM	5.00	100	69	68	32	31	1	1.00	0.64	0.05	1.16	0.80	0.81	0.06	0.92
12	350	30	SM	5.00	100	68	67	33	32	1	1.00	0.66	0.05	1.16	0.82			
13	250	30	SM	8.00	100	67	64	36	33	3	3.00	0.72	0.05	1.16	0.89			
14	150	32	SM	8.00	100	70	68	32	30	2	2.00	0.64	0.03	1.16	0.78			
15	50	32	SM	8.00	100	71	69	31	29	2	2.00	0.62	0.03	1.16	0.75			

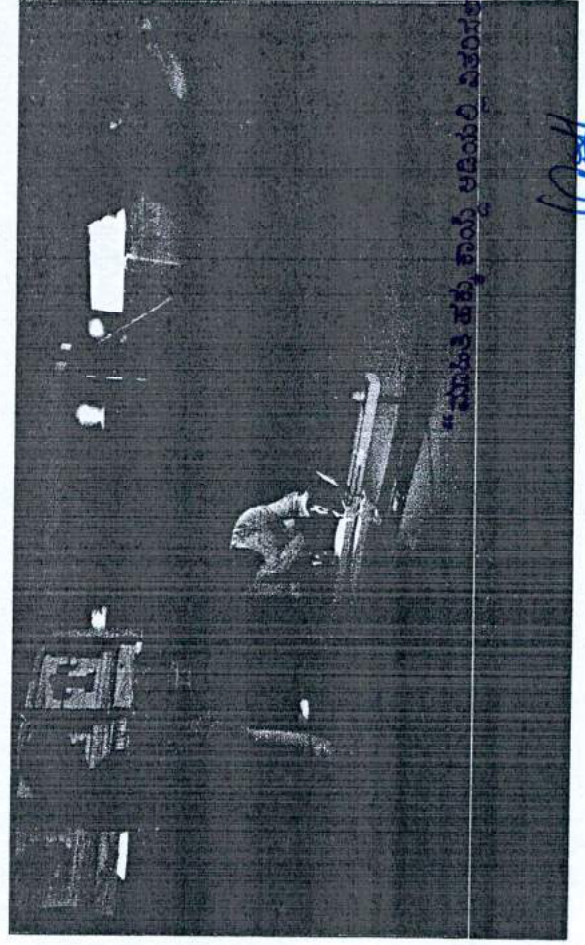
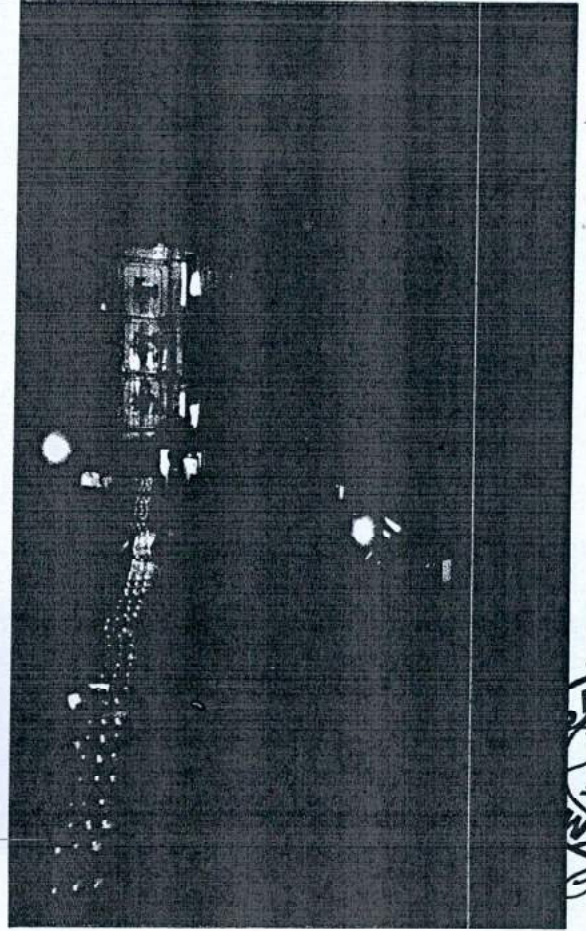
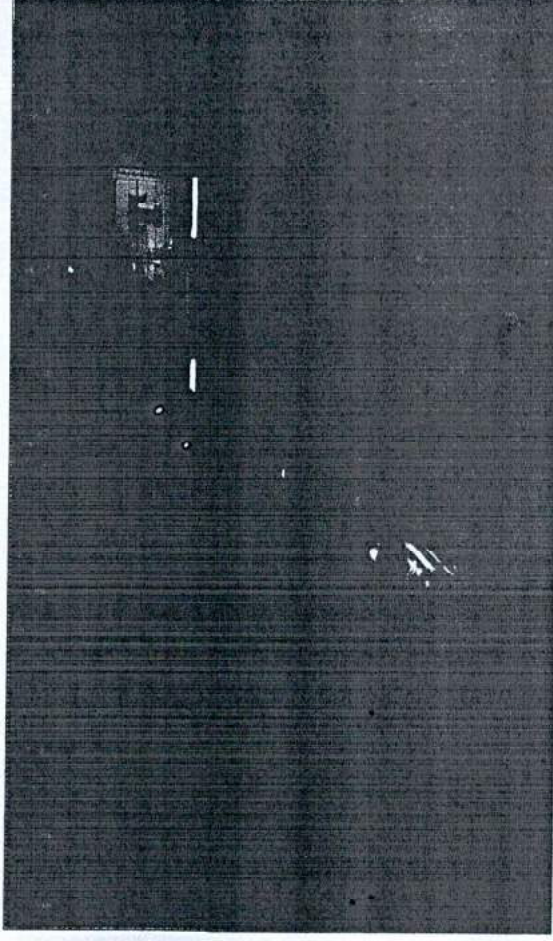
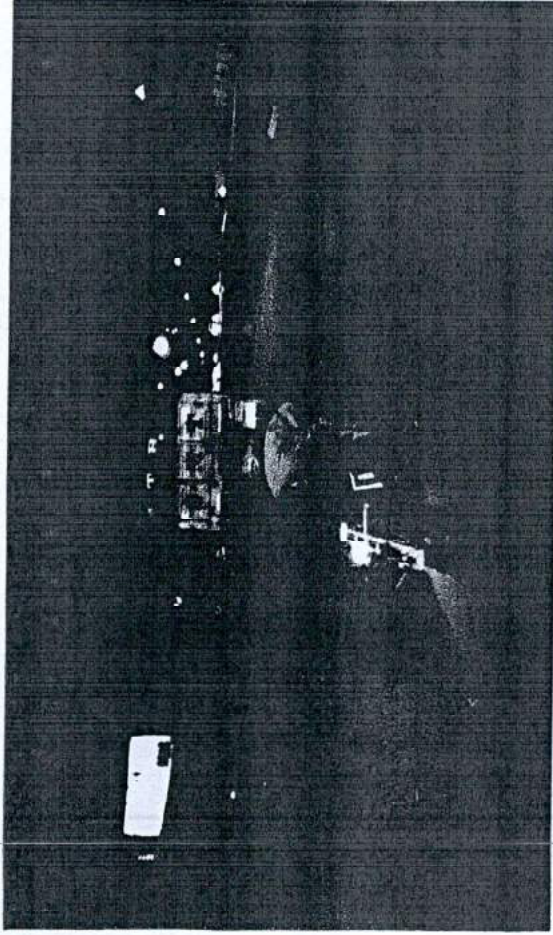
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Photographs depicting the Progress of Benkelman Beam Deflection (BBD) Survey
for Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) in Bengaluru City



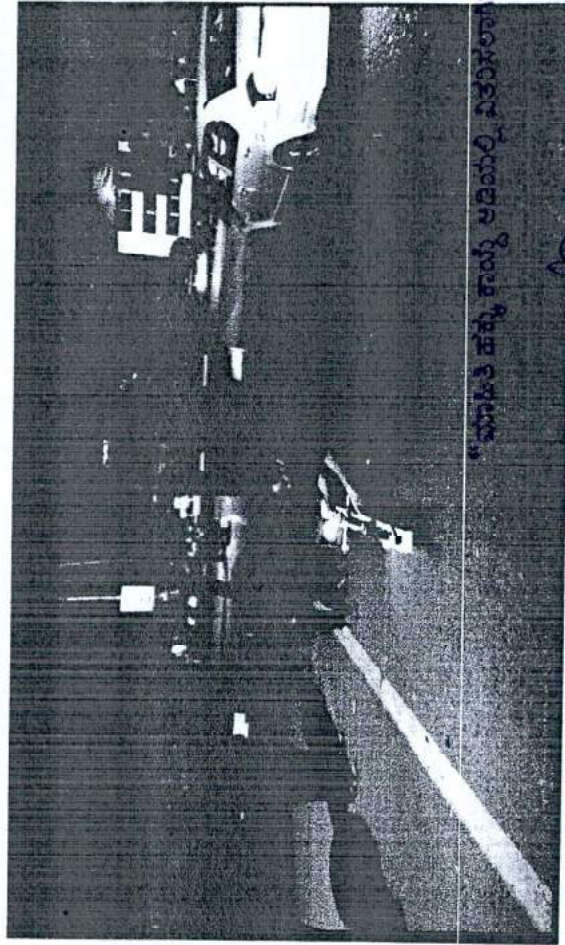
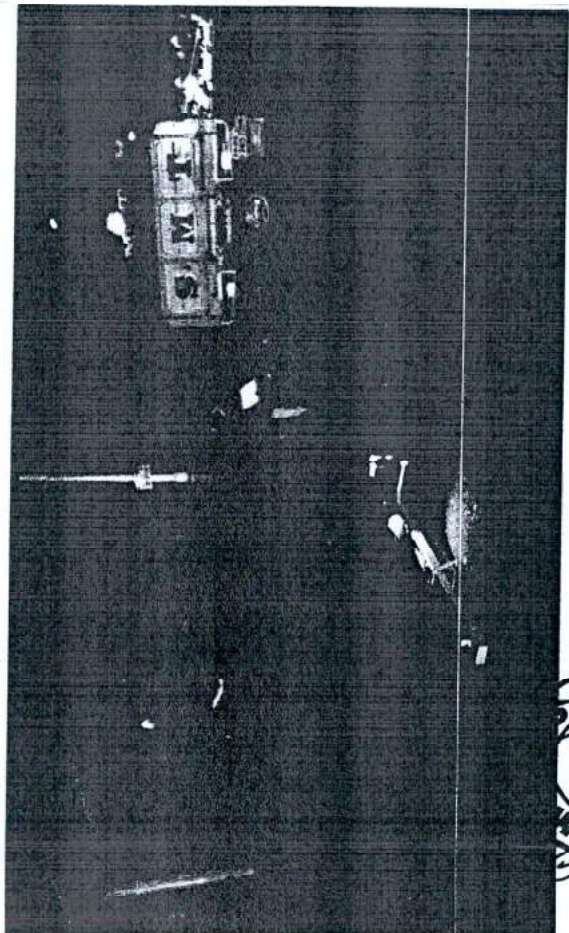
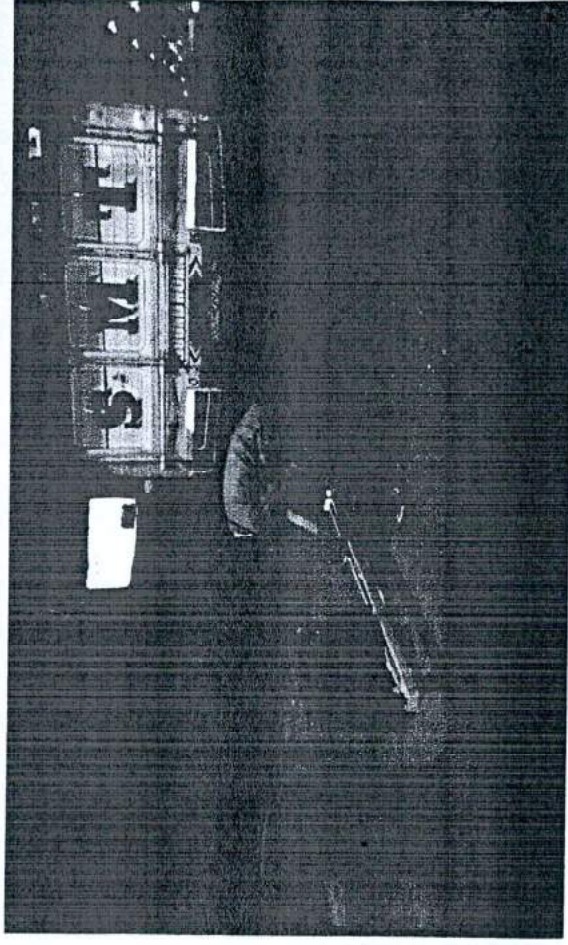
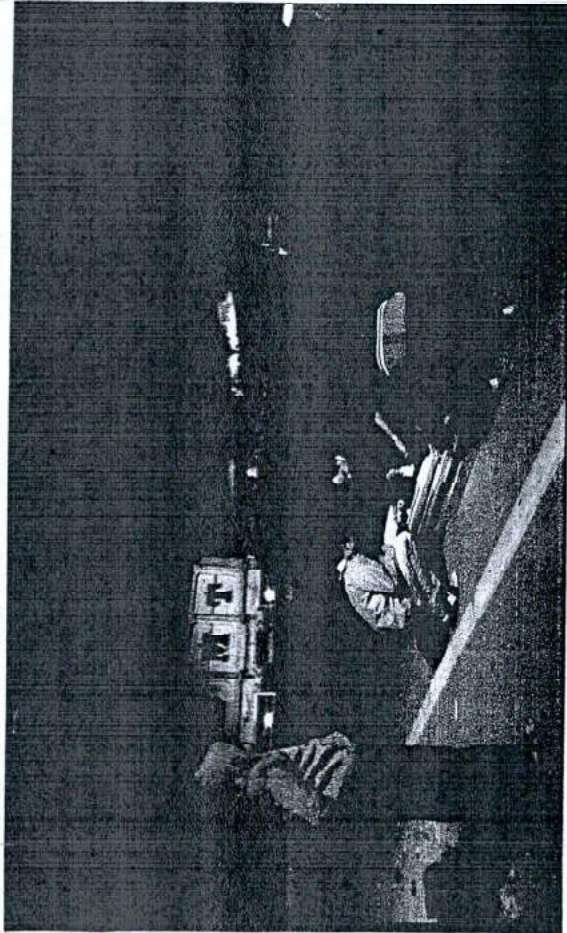
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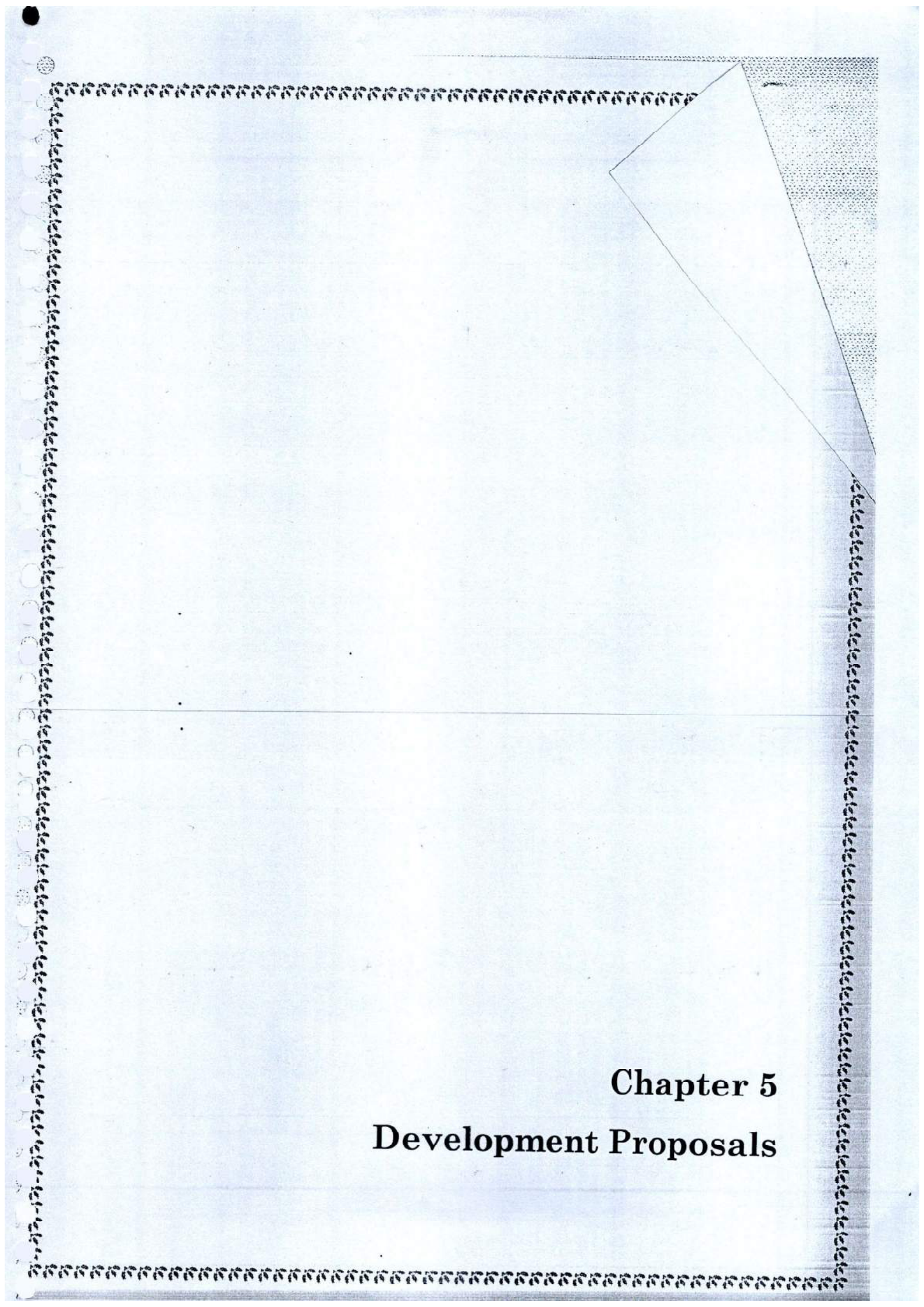
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BANGALORE

Photographs depicting the Progress of Benkelman Beam Deflection (BBD) Survey
for Widening of Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City



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Chapter 5

Development Proposals

CHAPTER 5 DEVELOPMENT PROPOSALS

5.1 General

Improvement Proposals for an existing Road Section and Widening of the Carriageway essentially consist of two components, Geometric and Structural Improvements. Geometric Improvements deal with Visible Dimensions of Roadway, Probable Road Widening and is dictated by the Traffic and Economic Considerations. Due to the inherent restrictions like Limitation in Land Acquisition, limited Right of Way and existing Utilities / Services, etc. the Horizontal and Vertical Alignments in general follow the Existing Geometry except in situations where Improvements are possible. The Geometric Improvements mainly involve Improvements to Cross Sectional Elements such as Carriageway, Shoulders, etc. The Structural Components deal with the Pavement and Embankment Design Aspects, i.e. the Ability of the Roads to adequately carry and support the Vehicle / Wheel Loads over the Design Period. Safety, Speed, Efficiency, Economy and Comfort in Traffic Movement to a large extent are governed by Adequacy of Design Standards used for a Specific Road Facility.

The Improvement Proposals need to consider the Method of Widening like Concentric or Eccentric to the Existing Road, which is dictated by Site Situations like Available Land for Acquisition, Curvature, Existing Utilities, Terrain, Places of Worship, Monuments, Grave Yards, Places of Importance, etc.

Based on the Studies and Investigations and thereafter the Data compiled, the Measures that have been proposed as Widening of Jayamahal Road and Bellary Road are briefly explained below.

5.1.1 Carriageway

5.1.1.1 Jayamahal Road

- **From Ch: 0m to 350m:** Carriageway with uniform and equal width of 2 X 11m with 4m wide Central Median (in order to save 36 Nos. of existing Trees located in the limit of the Carriageway). The Carriageway consists of Existing Carriageway and Widened Carriageway.
- **From Ch: 350m to 950m:** Carriageway with uniform and equal width of 2 X 11m with 3m wide Central Median (in order to save 23 Nos. of existing Trees located in the limit of the Carriageway) and 3m wide Tree Island (in order to save 31 Nos. of existing Trees located in the limit of the Carriageway), which will act as a Physical Barrier between Vehicular Carriageway and Cycle Track on the eastern side i.e. on the Defence Establishment Side. The Carriageway consists of Existing Carriageway and Widened Carriageway.
- **From 950m to 2600m:** Carriageway with uniform and equal width of 2 X 10.5m with 1m wide Central Median. The Carriageway consists of Existing Carriageway and Widened Carriageway.

- Eccentric Widening, due to Land Availability in the Palace Property only, has been proposed all along the Project Stretch.
- The Visual Condition Survey reveals that the existing Pavement Condition along the Project Stretch is good to fair. Further, the BBD Survey Result and its concurrent Design Analysis of the existing Pavement propose that the Pavement needs to be resurfaced by laying 40mm thick Bituminous Concrete (BC). **For Design Details refer Annexure A.5.1.**
- The Compositions of Pavement in the Widened Portion have been designed with Subgrade of 4 days soaked CBR of 10% and are as mentioned below.
 - i. Construction of 500mm thick Subgrade.
 - ii. Construction of 200mm thick Granular Sub Base.
 - iii. Construction of 250mm thick Base (Wet Mix Macadam).
 - iv. Providing and laying of 75mm thick Dense Bituminous Macadam (DBM).
 - v. Providing and laying of 40mm thick Bituminous Concrete (BC).**For Design Details refer Annexure A.5.2.**

5.1.1.2 Bellary Road

- Carriageway with uniform and equal width of 2 X 10.5m with Central Median of varying width (this is due to create Tree Island in order to save 172 Nos. of existing Trees located in the limit of the Carriageway) has been proposed all along the Project Stretch. The Carriageway consists of Existing Carriageway and Widened Carriageway.
- Eccentric Widening, due to Land Availability in the Palace Property only, has been proposed all along the Project Stretch.
- The Visual Condition Survey reveals that the existing Pavement Condition along the Project Stretch is good to fair. Further, the BBD Survey Result and its concurrent Design Analysis of the existing Pavement propose that the Pavement needs to be resurfaced by laying 40mm thick Bituminous Concrete (BC). **For Design Details refer Annexure A.5.1.**
- The Compositions of Pavement in the Widened Portion have been designed with Subgrade of 4 days soaked CBR of 10% and are as mentioned below.
 - i. Construction of 500mm thick Subgrade.
 - ii. Construction of 200mm thick Granular Sub Base.
 - iii. Construction of 250mm thick Base (Wet Mix Macadam).
 - iv. Providing and laying of 85mm thick Dense Bituminous Macadam (DBM).
 - v. Providing and laying of 40mm thick Bituminous Concrete (BC).**For Design Details refer Annexure A.5.2.**

5.1.2 Cycle Track

Cycle Track of minimum 1.5m Width on either side throughout the Project Stretch in case of Jayamahal Road and minimum 2.2m Width from Ch: 325m to 345m on either side in case of Bellary Road.

Bellary Road with Green Pigment Asphalt in order to differentiate the Track from the Vehicular Carriageway has been proposed.

5.1.3 Footpath along with Service Lines

- Footpath of minimum 2.5m Width along with Kerb Stone at the edge of Carriageway / Cycle Track on either side of both the Corridors has been proposed throughout the Project Stretch.
- For Dedicated Service Lines the following have been proposed all along the Footpath on either side. Further, these Provisions have been proposed as per the Requirements of the respective Service Departments.
 - i. 1 No. of 900mm diameter NP3 Pipe for Storm Water Drain on the Property Side and 1 No. of 1200mm diameter NP3 Pipe for Storm Water Drain on the Palace Side along with Covered Inspection Chamber of Clear Dimensions 1.3m X 1.3m X 1.85m for 900mm diameter Pipe and 1.6m X 1.6m X 2.05m for 1200mm diameter Pipe at every 10m c/c interval. Further, Catch Drain consisting of 300mm diameter NP3 Pipe at 30m c/c interval along with Covered Inspection Chamber of Clear Dimensions 0.5m X 0.5m X 0.4m has been proposed in order to convey the Storm Water from Right of Way to Storm Water Drain.
 - ii. 4 Nos. of 200mm diameter HDPE Pipes of Class PE – 100 PN 6 – 0 for Power Line along with House Connections and Covered Inspection Chamber of Clear Dimensions 2.0m X 1.0m X 1.7m at every 40m c/c interval.
 - iii. 6 Nos. of 90mm diameter HDPE Pipes of Class PE – 100 PN 6 – 0 for OFC Line along with House Connections and Covered Inspection Chamber of Clear Dimensions 1.0m X 1.0m X 1.5m at every 40m c/c interval.

Further, Cross Ducts of 300mm diameter RCC Pipe in double row have been proposed near Crossings along with Covered Chamber of Clear Dimensions 0.9m X 0.9m X 1.1m on either side at the edge of Footpath for Cross Utility Lines.

- 60mm thick Interlocking Concrete Paver Block with Concrete Band @ 7.5m c /c interval has been proposed to be laid on the Footpath.
- Tubular Steel Railing has been proposed to be fixed at the edge of the Footpath, in order to provide Safety to the Pedestrians, based on the location of the Commercial Establishments (where haphazard movement of Pedestrians is expected), at the following Chainages.

Jayamahal Road: From Ch: 1275m to 1525m on the Property Side i.e. on the eastern side of the Corridor.

Bellary Road: From Ch: 0m to 175m and from Ch: 650m to 1475m on the Property Side i.e. on the western side of the Corridor.

5.1.4 Docking Station

Docking Station (Parking Space for Bicycles) of 2m Width has been proposed at various scattered locations near Footpath, based on the Space Availability (where additional space is

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available after maintaining minimum 2.5m wide Footpath) on either side of both the Corridors. The Design Specifications of the Docking Station are same as of the Footpath.

5.1.5 Street Light

- **Jayamahal Road:** Adequate Street Light Provisions (LED Light of 150W) at the edge of Footpath on either side at every 25m c/c intervals have been proposed all along the Corridor.
- **Bellary Road:** Adequate Street Light Provisions (LED Light of 150W towards Carriageway and 25W towards Footpath) at the edge of Footpath on either side at every 25m c/c intervals have been proposed all along the Corridor.

Further, 2 Nos. of High Mast Lights have been proposed at Guttahalli Circle i.e. between Ch: 125m and 250m of Bellary Road.

Lighting Layout Details are given in Volume II – Drawings.

5.1.6 Tree Transplantation

Due to the Road Widening Proposals along both Jayamahal Road and Bellary Road, 327 Nos. of Trees in case of Jayamahal Road and 150 Nos. of Trees in case of Bellary Road are interfering with the Proposed Alignment of the Carriageway. After the Detailed Site Inspection and concurrent Discussions with the Forest Department, 205 Nos. of Trees (Girth Diameter varying from 300mm to 2700mm) in case of Jayamahal Road and 61 Nos. of Trees (Girth Diameter varying from 300mm to above 2700mm) in case of Bellary Road have been identified and proposed to be transplanted along the edge of Footpath of the respective Corridor. Space has been demarcated, based on the availability, at the edge of the Footpath on either side of both the Corridors for this purpose.

5.1.7 Lane Marking and Road Signs

- Provisions for Lane Marking, Zebra Crossing have been proposed.
- Construction of 4 Nos. of High Raised Pedestrian Crossings in each Corridor has been proposed.
- Road Sign Boards such as No Parking Board, Speed Limit Board, Informatory Sign Boards and Direction Boards have been proposed at suitable Locations at the edge of Footpath near the Carriageway.

Lane Marking and Road Sign Details are given in Volume II – Drawings.

5.1.8 Road Furniture

- Road Studs have been proposed all along the Carriageway at the Median Edge Line, Kerb Edge Line and Traffic Lane Line on either side of both the Corridors at suitable intervals.

Proposed Concept Plans along with Proposed Cross Section Details of the Project Corridors are given in Volume II – Drawings.

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Annexure A.5.1
Design Details for Strengthening of
Existing Pavement

Overlay Design of Existing Flexible Pavement (as per IRC: 81 - 1997)

Name of Project: Widening of Jayamahal Road (from Mehkri Circle to Jayamahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Name of Road: Jayamahal Road

Calculation of Deflection of Pavement by using 'Benkelman Beam Apparatus'

The Benkelman Beam Rebound Deflection Study has been conducted in the Month of March 2018 along the Project Road so that to assess the Pavement Strength and Related Parameters as per IRC: 81 - 1997. The Study has been carried out along the Outer Wheel Path, i.e., 0.9m from the Outer Edge of the Pavement along both directions. For divided carriageways, the Deflections have been measured at 28 locations for each direction i.e. LHS and RHS. As per the IRC Guidelines, the Deflection Observation Points have been staggered along the two wheel paths.

The Study has been carried out by the CGRA Procedure, by observing the Initial, Intermediate and Final Readings at each Deflection Observation Point. A Standard Truck with a Rear Axle Load of 8170 kg fitted with Dual Tyres inflated to a pressure of 5.6 kg / cm² has been used for conducting Rebound Deflection Study on the Road Pavement.

As the Deflection Values vary depending upon the Temperature of the Bituminous Layer hence the Pavement Temperature has been measured at a depth of 40mm as specified in IRC: 81 - 1997. The Subgrade Soil Samples have been collected from the Wheel Paths where Deflection Studies have been conducted. Samples of Soil Subgrade Material have been collected after excavating the Pavement Materials and removing of the same upto the Subgrade Level. The Subgrade Soil Samples have been subjected to Laboratory Tests for Determination of Field Moisture Content and Index Properties for Soil Classification. The Soil Samples thus collected have been therefore placed immediately in Air Tight Polythene Bags and sealed so that to conduct the desired Tests in the Laboratory.

Design of Overlay:

The Characteristic Deflection for the Pavement Sections have been determined from the Benkelman Beam Rebound Deflection Studies and the Overlay Composition for different roads in various zones as per Design CSA is presented in Table below.

Pavement Condition Survey						
Total Length	Type of Pavement	Condition of Pavement		Existing Crust Thickness		Total Crust Thickness
				HMA	Base	
2.7 Km	Flexible	Good 65%	Fair 35%	130mm	500mm	630mm

Benkelman Beam Deflection Summary

Chainage		Characteristic Deflection		Average Characteristic Deflection for both Wheel Paths	Max. Characteristic Deflection out of both Directions	Remarks
From	To	From Mehkri Circle to Jayamahal Palace Hotel	From Jayamahal Palace Hotel to Mehkri Circle			
0	2700	0.94	0.72	0.83	0.94	

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Design Parameters

	Design Parameters	Design Values	Unit
i	Design Traffic	23	msa
ii	Corrected Characteristic Deflection	0.94	mm
iii	Thickness of Overlay in terms of BM from the Chart	51.75	mm
iv	Thickness in terms of DBM / BC / SDBC	37.00	mm

Hence, the Overlay Thickness is converted in terms of Bituminous Concrete (BC) with 40mm i.e. 1 cm Bituminous Macadam = 0.7cm of DBM / BC / SDBC (as per Clause No. 7.4 of IRC: 81 - 1997) and in accordance to MORT&H Fifth Revision 2013.

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Overlay Design of Existing Flexible Pavement (as per IRC: 81 - 1997)

Name of Project: Widening of Jayamahal Road (from Mehkri Circle to Jayamahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Name of Road: Bellary Road

Calculation of Deflection of Pavement by using 'Benkelman Beam Apparatus'

The Benkelman Beam Rebound Deflection Study has been conducted in the Month of March 2018 along the Project Road so that to assess the Pavement Strength and Related Parameters as per IRC: 81 - 1997. The Study has been carried out along the Outer Wheel Path, i.e., 0.9m from the Outer Edge of the Pavement along both directions. For divided carriageways, the Deflections have been measured at 15 locations for each direction i.e. LHS and RHS. As per the IRC Guidelines, the Deflection Observation Points have been staggered along the two wheel paths.

The Study has been carried out by the CGRA Procedure, by observing the Initial, Intermediate and Final Readings at each Deflection Observation Point. A Standard Truck with a Rear Axle Load of 8170 kg fitted with Dual Tyres inflated to a pressure of 5.6 kg / cm² has been used for conducting Rebound Deflection Study on the Road Pavement.

As the Deflection Values vary depending upon the Temperature of the Bituminous Layer hence the Pavement Temperature has been measured at a depth of 40mm as specified in IRC: 81 - 1997. The Subgrade Soil Samples have been collected from the Wheel Paths where Deflection Studies have been conducted. Samples of Soil Subgrade Material have been collected after excavating the Pavement Materials and removing of the same upto the Subgrade Level. The Subgrade Soil Samples have been subjected to Laboratory Tests for Determination of Field Moisture Content and Index Properties for Soil Classification. The Soil Samples thus collected have been therefore placed immediately in Air Tight Polythene Bags and sealed so that to conduct the desired Tests in the Laboratory.

Design of Overlay:

The Characteristic Deflection for the Pavement Sections have been determined from the Benkelman Beam Rebound Deflection Studies and the Overlay Composition for different roads in various zones as per Design CSA is presented in Table below.

Pavement Condition Survey						
Total Length	Type of Pavement	Condition of Pavement		Existing Crust Thickness		Total Crust Thickness
				HMA	Base	
1.475 Km	Flexible	Good 90%	Fair 10%	150mm	500mm	650mm

Benkelman Beam Deflection Survey Summary

Chainage		Characteristic Deflection		Average Characteristic Deflection for both Wheel Paths	Max. Characteristic Deflection out of both Directions	Remarks
From	To	From B. D. A. Junction to Mehkri Circle	From Mehkri Circle to B. D. A. Junction			
0	1475	0.87	0.92	0.90	0.92	

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Design Parameters

	Design Parameters	Design Values	Unit
i	Design Traffic	30	msa
ii	Corrected Characteristic Deflection	0.92	mm
iii	Thickness of Overlay in terms of BM from the Chart	51.24	mm
iv	Thickness in terms of DBM / BC / SDBC	36.00	mm

Hence, the Overlay Thickness is converted in terms of Bituminous Concrete (BC) with 40mm i.e. 1 cm Bituminous Macadam = 0.7cm of DBM / BC / SDBC (as per Clause No. 7.4 of IRC: 81 - 1997) and in accordance to MORT&H Fifth Revision 2013.



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Annexure A.5.2
Design Details for Pavement in the
Widened Portion

Flexible Pavement Design as per IRC: 37 - 2018

Name of Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Name of Road: Bellary Road

Design Parameters	Design Values	Remarks
No. of Commercial Vehicles as per last count, P	987	
No. of Years between the last count and the Year of completion of Construction, x	1.5	
Lane Distribution Factor, D	0.6	
Vehicle Damage Factor, F	3.9	
Design Life in Years, n	20	
Annual Growth Rate of Commercial Vehicles in Decimal, r	0.05	
Initial Traffic in the year of completion of Construction in terms of the Number of Commerical Vehicles per Day (CVPD), A	$P(1+r)^x$	
	A= 1061.942743	
Cummulative No. of Standard Axles to be catered in the Design in terms of msa, N	$(365*((1+r)^n-1)*A*D*F)/r/10^6$	
	N= 29.99	Say 30
Design CBR Value of Sub Grade Soil	10%	

Pavement Composition from Plate 6, CBR 10% (IRC: 37 - 2018)

Bituminous Concrete (BC)	40	mm
Dense Bituminous Macadam (DBM)	85	mm
Wet Mix Macadam (WMM)	250	mm
Granular Sub Base (GSB)	200	mm
Total Pavement Thickness	575	mm

Note: 500mm thick Modified Subgrade with 4 days Soaked CBR > 10% shall be provided.

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Flexible Pavement Design as per IRC: 37 - 2018

Name of Project: Widening of Jayamahal Road (from Mehkri Circle to Jayamahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Name of Road: Jayamahal Road

Design Parameters	Design Values	Remarks
No. of Commercial Vehicles as per last count, P	751	
No. of Years between the last count and the Year of completion of Construction, x	1.5	
Lane Distribution Factor, D	0.6	
Vehicle Damage Factor, F	3.9	
Design Life in Years, n	20	
Annual Growth Rate of Commercial Vehicles in Decimal, r	0.05	
Initial Traffic in the year of completion of Construction in terms of the Number of Commerical Vehicles per Day (CVPD), A	$P(1+r)^x$	
A =	808.0233026	
Cummulative No. of Standard Axles to be catered in the Design in terms of msa, N	$(365*((1+r)^n-1)*A*D*F)/r/10^6$	
N =	22.82	Say 23
Design CBR Value of Sub Grade Soil	10%	

Pavement Composition interpolated From Plate 6, CBR 10% (IRC: 37 - 2018)

Bituminous Concrete (BC)	40	mm
Dense Bituminous Macadam (DBM)	75	mm
Wet Mix Macadam(WMM)	250	mm
Granular Sub Base (GSB)	200	mm
Total Pavement Thickness	565	mm

Note: 500mm thick Modified Subgrade with 4 days Soaked CBR > 10% shall be provided.



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CHAPTER 6 PROJECT COST

6.1 Rate Analysis

As part of Detailed Project Report (DPR), Rate Analysis of each of the item has been prepared by adopting PW, P & ISTD SR 2018 – 19, Issue Rate applicable from 01 – 01 – 2019, Bengaluru Circle, Bengaluru; Bangalore Water Supply and Sewerage Board SR 2017 – 18 and PW, P & ISTD SR 2019 – 20 for Electrical Works. The Rates as given in PW, P & ISTD SR for Civil Works are to be enhanced by 6% for Common Area Weightages for the Road Works to be executed under Bruhat Bangalore Mahanagara Palike (BBMP) Limits, Bengaluru Circle. Items, not covered in PW, P & ISTD SR / National Highway SR / BWSSB SR / PW, P & ISTD Electrical SR, have been based on the Market Rates.

6.2 Detailed Cost Estimate

As part of the DPR, Detailed Cost Estimate has been prepared for Proposed Widening of Jayamahal Road from Ch: 0m to Ch: 2525m and Bellary Road from Ch: 0m to Ch: 1475m based on the Detailed Engineering Design.

6.3 Project Cost

The Rates of the Various Items of Works have been analysed keeping in view of the Basic Rates as per SR and their respective lead. Provisions for Consultancy Charges towards DPR Preparation, Project Management and Construction Supervision; Contingencies, etc. have been made as per the normal practice.

The Abstract of the Project Cost is detailed in Table 6.1. Further, Item wise Abstract of Project Cost of Jayamahal Road and Bellary Road is detailed in tabular format in Table 6.2 and Table 6.3 respectively. For the proposed Widening of Jayamahal Road and Bellary Road, total Cost of the Project has been worked out as Rs. 6017.00 Lakh.

The Detailed Cost Estimate is presented in Annexure A.6.1.

Table 6.1
Abstract of Detailed Cost Estimate

Sl. No.	Description	Cost in Rs.
1.	Construction Cost for Jayamahal Road (C ₁)	315199487.64
2.	Construction Cost for Bellary Road (C ₂)	208113113.88
	Total Construction Cost (C) (C₁ + C₂)	523312601.52
3.	Add GST @ 12%	62797512.18
	Total Construction Cost including GST	586110113.70
4.	Consultancy Charges for DPR Preparation and PMC Services	6273691.58
5.	Contingencies and other Charges	8890254.59
	Sub Total	601274059.88
6.	Miscellaneous and rounding off	425940.12
	Grand Total	601700000.00

Table 6.2
Abstract of Project Cost

Jayamahal Road (from Mehkri Circle to Jayamahal Palace Hotel)

Sl. No.	Description	Cost in Rs.
1.	Site Clearance and Dismantling Works	7241832.26
2.	Construction of Missing Link of the Compound	24006352.56
3.	Laying of Utility Ducts (Pipes for Storm Water Drain, Power Cables and OFC) and Cross Ducts	95811810.80
4.	Construction of Footpath; Providing and Fixing of New Kerb Stones, Bollards and Railing and Construction of Tree Guard Wall	48897420.66
5.	Construction of Median	16128712.00
6.	Construction of Culverts	4830489.78
7.	Carriageway Construction / Strengthening Works	
	a. Construction of Carriageway in the Widened Portion	66586877.74
	b. Strengthening of existing Carriageway (Camber Correction, laying of Overlay)	29589800.50
8.	Construction of Docking Stations	561537.60
9.	Providing Traffic Signs, Lane Marking, Pedestrian Crossing, Studs, etc.	5592962.18
10.	Tree Transplantation	4079500.00
	Construction Cost for Civil Works (A₁)	303327296.08
11.	Construction Cost for Electrical Works (B ₁)	11872191.56
	Total Construction Cost (C₁) (A₁ + B₁)	315199487.64
12.	Add Goods and Service Tax (GST) @ 12%	37823938.52
	Total Construction Cost including GST	353023426.15
13.	Consultancy Charges for DPR Preparation and PMC Services	3151994.88
14.	Contingencies and other Charges	4885592.06
	Sub Total	361061013.09
15.	Miscellaneous and rounding off	138986.91
	Grand Total	361200000.00

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Table 6.3
Abstract of Project Cost

Bellary Road (from B. D. A. Junction to Mehkri Circle)

Sl. No.	Description	Cost in Rs.
1.	Site Clearance and Dismantling Works	3875490.38
2.	Construction of Compound	30444829.64
3.	Laying of Utility Ducts (Pipes for Storm Water Drain, Power Cables and OFC) and Cross Ducts	57448658.16
4.	Construction of Footpath; Providing and Fixing of New Kerb Stones, Bollards and Railing and Construction of Tree Guard Wall	26995464.54
5.	Construction of Median	8142796.00
6.	Construction of Culverts	4322443.92
7.	Carriageway Construction / Strengthening Works	
	a. Construction of Carriageway in the Widened Portion	41988975.44
	b. Strengthening of existing Carriageway (Camber Correction, laying of Overlay)	20146695.44
8.	Construction of Docking Stations	473544.76
9.	Providing Traffic Signs, Lane Marking, Pedestrian Crossing, Studs, etc.	5276570.55
10.	Tree Transplantation	1213900.00
	Construction Cost for Civil Works (A₂)	200329368.84
11.	Construction Cost for Electrical Works (B ₂)	7783745.040
	Total Construction Cost (C₂) (A₂ + B₂)	208113113.88
12.	Add Goods and Service Tax (GST) @ 12%	24973573.67
	Total Construction Cost including GST	233086687.55
13.	Consultancy Charges for DPR Preparation and PMC Services	3121696.71
14.	Contingencies and other Charges	4162262.28
	Sub Total	240370646.54
15.	Miscellaneous and rounding off	129353.46
	Grand Total	240500000.00



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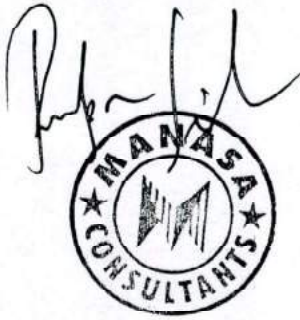
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Annexure A.6.1
Detailed Cost Estimate

Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Abstract of Detailed Cost Estimate

Sl. No.	Description	Cost in Rs.
1	Construction Cost for Jayamahahal Road (C ₁)	315199487.64
2	Construction Cost for Bellary Road (C ₂)	208113113.88
	Total Construction Cost (C) (C₁ + C₂)	523312601.52
3	Add GST @ 12%	62797512.18
	Total Construction Cost including GST	586110113.70
4	Consultancy Charges for DPR Preparation and PMC Services	6273691.58
5	Contingencies and other Charges	8890254.59
	Sub Total	601274059.88
6	Miscellaneous and rounding off	425940.12
	Grand Total	601700000.00



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Jayamahar Road

Project: Widening of Jayamahal Road (from Mehkri Circle to Jayamahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Name of Work: Widening of Jayamahal Road (from Mehkri Circle to Jayamahal Palace Hotel) in Bengaluru City

Abstract of Detailed Cost Estimate

Sl. No.	Particulars	Cost in Rs.
1	Site Clearence and Dismantling	7241832.26
	Construction of Missing Link of the Compound	24006352.56
3	Laying of Utility Ducts (Pipes for Storm Water Drain, Power Cables and OFC) and Cross Ducts	95811810.80
	Construction of Footpath; Providing and Fixing of New Kerb Stones, Bollards and Railing and Construction of Tree Guard Wall	48897420.66
	Construction of Median	16128712.00
6	Construction of Culverts	4830489.78
	Carriageway Construction / Strengthening Works	
	a. Construction of Carriageway in the Widened Portion	66586877.74
	b. Strengthening of existing Carriageway (Camber Correction, laying of Overlay)	29589800.50
8	Construction of Docking Stations	561537.60
	Providing Traffic Signs, Lane Marking, Pedestrian Crossing, Studs, etc.	5592962.18
10	Tree Transplantation	4079500.00
	Construction Cost for Civil Works (A₁)	303327296.08
11	Construction Cost for Electrical Works (B ₁)	11872191.56
	Total Construction Cost (C₁) (A₁+B₁)	315199487.64
2	Add GST @ 12%	37823938.52
	Total Construction Cost including GST	353023426.15
13	Consultancy Charges for DPR Preparation and PMC Services	3151994.88
4	Contingencies and other Charges	4885592.06
	Sub Total	361061013.09
5	Miscellaneous and rounding off	138986.91
	Grand Total	361200000.00

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BRUHAT BANGALORE MAHANAGARA PALIKE
BANGALORE

Project: Widening of Jayamahal Road (from Mehkri Circle to Jayamahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Name of Work: Widening of Jayamahal Road (from Mehkri Circle to Jayamahal Palace Hotel) in Bengaluru City

Detailed Cost Estimate

Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
1.00	Site Clearence and Dismantling								
1.01	Removing B. S. Slab of Drain and Stacking	Sqm							
	P.No.27, I.No.5.32 in PW, P&IWTDR SR 2018 - 19)								
	Drain Top Slab & Footpath Slab								
	Eastern Side								
	Ch: 950 to 2600		1	1650.00	1.50	--	2475.00		
	Deduction at Junction		-1	101.84	1.50	--	-152.76		
	Western Side								
	Ch:0 to 2600		1	2600.00	2.90	--	7545.00		
							9867.24		
1.02	Removing and resetting of Footpath Slab	Sqm				Sav	9867.50	104.94	1035495.00
	P.No.270, I.No. 37.56 in PW, P&IWTDR SR 2018 - 19)								
	Eastern Side								
	Ch 0 to 950		1	950.00	1.50	--	1425.00		
	Deduction at Junction		1	13.77	2.50	--	34.43		
	Ch 950 to 1300		1	350.00	3.01	--	1055.00		
	Deduction at Junction		-1	33.44	3.01	--	-100.80		
	Ch 2000 to 2350		1	350.00	1.71	--	599.38		
	Deduction at Junction		-1	14.80	1.71	--	-25.35		
	At Ch: 1675		1	51.70	10.40	--	537.68		
	At Ch: 2475		1	189.00	--	--	189.00		
							3714.34		
						Sav	3714.50	208.82	775662.00
1.03	KSRRB M200-26: Dismantling of Kerb Stone by manual means and disposal of dismantled materials with all lifts and complete as per specifications. MORTH Specification No. 202	m							
	P.No.141, I.No.18.49 in PW, P&IWTDR SR 2018 - 19)								
	Eastern Side								
	Ch 0 to 2600		1	2600.00	--	--	2600.00		
	Deduction at Junction		-1	115.64	--	--	-115.64		
	Western Side								
	Ch 0 to 2600		1	2600.00	--	--	2600.00		
	Median		1	2600.00	--	--	2600.00		
	Deduction		-1	370.57	--	--	-370.57		
	Tree avenue		2	400.00	--	--	800.00		
							8113.79		
						Sav	8114.00	12.72	103210.00

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
1.04	KSRRB M200-15.2: 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 complete as per specifications. iii) Dismantling Stone Masonry B. Rubble Stone Masonry, in Cement Mortar. SSM	Cum							
	(P.No.140, I.No.18.27 of PW, P&IWT SR 2018 - 19)								
	For Drain Walls								
	Eastern Side								
	Ch 0 to 1350		2	1350.00	0.45	1.00	1215.00		
	Ch 1975 to 2600		2	625.00	0.45	1.00	562.50		
	Deduction		-2	47.21	0.45	1.00	-42.49		
	Western Side		2	2600.00	0.45	1.00	2340.00		
	Storm Water Drain		2	14.00	0.45	1.50	18.90		
	For Compound								
	Sub Structure								
	Ch 0 to 725		1	725.00	0.75	0.25	135.94		
			1	725.00	0.60	0.60	261.00		
			1	725.00	0.45	0.45	146.81		
	Ch 1500 to 2500		1	1000.00	0.75	0.25	187.50		
			1	1000.00	0.60	0.60	360.00		
			1	1000.00	0.60	0.45	270.00		
	Compound at Ch 2475		1	42.00	0.75	0.25	7.88		
			1	42.00	0.60	0.60	15.12		
			1	42.00	0.45	0.45	8.51		
	Super Structure								
	Ch 0 to 725		1	725.00	0.45	1.50	489.38		
	Ch 1500 to 2500		1	1000.00	0.60	2.10	1260.00		
	Compound at Ch 2475		1	42.00	0.45	2.10	39.69		
	Room at Ch: 1575		1	7.00	0.75	0.25	1.31		
			1	7.00	0.60	0.60	2.52		
			1	7.00	0.45	0.45	1.42		
	Room at Ch: 1625		1	8.40	0.75	0.25	1.58		
			1	8.40	0.60	0.60	3.02		
			1	8.40	0.45	0.45	1.70		
	Wall at Ch: 250		1	60.00	0.75	0.25	11.25		
			1	60.00	0.60	0.60	21.60		
			1	60.00	0.45	0.45	12.15		
	Wall at Ch: 2500		2	75.00	0.75	0.25	28.13		
			2	75.00	0.60	0.60	54.00		
			2	75.00	0.45	0.45	30.38		
							7444.78		
						Sav	7445.00	372.06	2769987.00

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
1.05	KSRRB M200-13.1: 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 complete as per specifications. II. By Mechanical Means, A. Cement Concrete Grade M15 & M20.	Cum							
	P.No.139, I.No.18.20 in PW, P&IWTDR SR 2018 - 19)								
	Drain bed								
	Eastern Side								
	Ch 0 to 1350		1	1350.00	1.00	0.10	135.00		
	Ch 1975 to 2600		1	625.00	1.00	0.10	62.50		
	Deduction		-1	47.21	1.00	0.10	-4.72		
	Western Side		1	2600.00	1.00	0.10	260.00		
	Compound Bed Concrete		1	1725.00	0.90	0.10	155.25		
			1	42.00	0.90	0.10	3.78		
	Compound Plinth & Coping		1	1725.00	0.45	0.10	77.63		
			1	42.00	0.60	0.10	2.52		
	Room at Ch: 1575		1	7.00	0.90	0.10	0.63		
	Room at Ch: 1625		1	8.40	0.90	0.10	0.76		
	Wall at Ch: 250		1	60.00	0.90	0.10	5.40		
	Wall at Ch: 2500		2	75.00	0.90	0.10	13.50		
							712.24		
						Sav	712.50	413.40	294548.00
1.06	KSRRB M200-14.2: 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 complete as per specifications. ii) Dismantling brick / Tile work Masonary B. In Cement Mortar MORTH Specification No. 202	Cum							
	P.No.139, I.No.18.23 in PW,P&IWTDR SR 2018 - 19)								
	For Compound								
	Ch 0 to 725		1	725.00	0.20	1.50	217.50		
	Room at Ch: 1575		1	7.00	0.20	3.00	4.20		
	Room at Ch: 1625		1	8.40	0.20	3.00	5.04		
	Wall at Ch: 250		1	60.00	0.20	3.00	36.00		
	Wall at Ch: 2500		2	75.00	0.20	3.00	90.00		
							352.74		
						Sav	353.00	372.06	131337.00

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
1.07	KSSRRB M200-7.1: Clearing grass and removal of rubbish by manual means and stacking outside the periphery of the area cleaned complete as per specification. MORTH Specification No.201 (P.No.138, I.No. 18.10 of PW, P&IWTDSR 2018 - 19)	Ha							
	Ch: 0 to 750		1	750.00	20.00	--	1.50		
	Ch 1500 to 2600		1	1100.00	20.00	--	2.20		
							3.70		
						Sav	4.00	27300.30	109201.00
1.08	Dismantling A.C. sheet roofing and stacking the material within a radius of 50m including cost of materials, labour, HOM complete as per specifications. (P.No.269, I.No. 37.42.3 of PW, P&IWTDSR 2018 - 19)	Sqm							
	Zinc Sheets								
	At Ch: 250		1	84.60	5.00	--	423.00		
			1	39.60	3.00	--	118.80		
							541.80		
						Sav	542.00	104.94	56877.00
..09	KSSRRB M200-17.1: 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 complete as per specifications. v) Steel work in all types of Sections upto a Hight of 5m above plinth level excluding Cutting of Rivet. - A. Including dismantling. (P.No.140, I.No.18.33 of PW, P&IWTDSR 2018 - 19)	Tonne							
	Removing of Bus shelter		3	1394.12	--	--	4.182	2006.58	8392.00
1.10	KSSRRB 200-1: Cutting of trees girth including cutting of trunks, branches and removal of stumps roots stacking of serviceable materials earth filling in the depressions / pit, labour charges complete as per specifications. MORTH Specification Clause 201 / Chapter 2. Girth from 300mm to 600mm (P.No.138, I.No.18.1 of PW, P&IWTDSR 2018 - 19)	Each							
							29.00	316.94	9191.26

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(Signature)

ASSISTANT EXECUTIVE ENGINEER
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BANGALORE

Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
1.11	KSRRB 200-2: Cutting of trees girth including cutting of trunks, branches and removal of stumps roots stacking of serviceable materials earth filling in the depressions / pit, labour charges complete as per specifications. MORTH Specification Clause 201 / Chapter 2. Girth from 600mm to 900mm	Each							
	(P.No.138, I.No.18.2 of PW,P&IWTDR SR 2018 - 19)						23.00	977.32	22478.00
1.12	KSRRB 200-3: Cutting of trees girth including cutting of trunks, branches and removal of stumps roots stacking of serviceable materials earth filling in the depressions / pit, labour charges complete as per specifications. MORTH Specification Clause 201 / Chapter 2. Girth from 900mm to 1800mm	Each							
	(P.No.138, I.No.18.3 of PW,P&IWTDR SR 2018 - 19)						31.00	2377.58	73705.00
1.13	KSRRB 200-4: Cutting of trees girth including cutting of trunks, branches and removal of stumps roots stacking of serviceable materials earth filling in the depressions / pit, labour charges complete as per specifications. MORTH Specification Clause 201 / Chapter 2. Girth from 1800mm to 2700mm	Each							
	(P.No.138, I.No.18.4 of PW,P&IWTDR SR 2018 - 19)						39.00	3698.34	144235.00
1.14	Cutting of road surface for pipeline trenches and disposing of the excavated stuff as directed including barricading, danger lighting etc. In the Asphalt surface road including cost of materials, labour, HOM complete as per specifications.	Cum							
	(P.No.269, I.No.37.38 of PW,P&IWTDR S.R 2018 - 19)								
	Eastern Side								
	Ch 0 to 300		1	300.00	3.80	0.15	171.00		
	Ch 300 to 825		1	525.00	4.20	0.15	330.75		
	Ch 825 to 900		1	75.00	6.50	0.15	73.13		
	Ch 1200 to 1250		1	50.00	2.97	0.15	22.28		
	Ch 1275 to 1400		1	125.00	2.97	0.15	55.69		
	Ch 1450 to 1500		1	50.00	4.10	0.15	30.75		
	Ch 1520 to 1950		1	430.00	1.71	0.15	110.30		
	Ch 1975 to 2125		1	150.00	0.50	0.15	11.25		
	Ch 2175 to 2375		1	200.00	0.84	0.15	25.20		
	Ch 2425 to 2550		1	125.00	0.60	0.15	11.25		
	Western Side								
	Ch 425 to 550		1	125.00	0.60	0.15	11.25		
	Ch 1000 to 1150		1	150.00	4.40	0.15	99.00		
	Ch 1225 to 1325		1	100.00	5.26	0.15	78.90		
	Ch 1225 to 1375		1	150.00	1.98	0.15	44.55		
	Ch 1375 to 1525		1	150.00	2.94	0.15	66.15		
	Ch 1525 to 1950		1	425.00	2.75	0.15	175.31		
	Ch 2400 to 2475		1	75.00	3.95	0.15	44.44		
	Ch 2525 to 2575		1	50.00	2.14	0.15	16.05		
	For Cross Ducts		5	50.20	1.60	0.15	60.24		
			8	32.52	1.60	0.15	62.44		
							1499.91		
						Say	1500.00	475.94	713910.00

Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
1.15	Cutting of road surface for pipeline trenches and disposing of the excavated stuff as directed including barricading, danger lighting etc. In the Macadam road including cost of materials, labour, HOM complete as per specifications.	Cum							
	(P.No.269, L.No.37.37 of PW,P&I WTD S.R 2018 - 19)								
	Eastern Side								
	Ch 0 to 300		1	300.00	3.80	0.30	342.00		
	Ch 300 to 825		1	525.00	4.20	0.30	661.50		
	Ch 825 to 900		1	75.00	6.50	0.30	146.25		
	Ch 1200 to 1250		1	50.00	2.97	0.30	44.55		
	Ch 1275 to 1400		1	125.00	2.97	0.30	111.38		
	Ch 1450 to 1500		1	50.00	4.10	0.30	61.50		
	Ch 1520 to 1950		1	430.00	1.71	0.30	220.59		
	Ch 1975 to 2125		1	150.00	0.50	0.30	22.50		
	Ch 2175 to 2375		1	200.00	0.84	0.30	50.40		
	Ch 2425 to 2550		1	125.00	0.60	0.30	22.50		
	Western Side								
	Ch 425 to 550		1	125.00	0.60	0.30	22.50		
	Ch 1000 to 1150		1	150.00	4.40	0.30	198.00		
	Ch 1225 to 1325		1	100.00	5.26	0.30	157.80		
	Ch 1225 to 1375		1	150.00	1.98	0.30	89.10		
	Ch 1375 to 1525		1	150.00	2.94	0.30	132.30		
	Ch 1525 to 1950		1	425.00	2.75	0.30	350.63		
	Ch 2400 to 2475		1	75.00	3.95	0.30	88.88		
	Ch 2525 to 2575		1	50.00	2.14	0.30	32.10		
	For Cross Ducts		5	50.20	1.60	0.30	120.48		
			8	32.52	1.60	0.30	124.88		
							2999.82		
						Say	3000.00	316.94	950820.00
16	KSRRB M200-32: Removal of Telephone / Electric Poles including excavation and dismantling of foundation concrete and lines under the supervision of concerned department, disposal with all lifts and stacking the serviceable and unserviceable material separately complete as per specifications. MORTH Specification No. 202	Nos.							
	(P.No.141, L.No.18.57 of PW,P&I WTD S.R 2018 - 19)						186.00	230.02	42784.00
							Total Amount		7241832.26



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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
2.05	KSRB 4.2.7: Providing and laying in position reinforced cement concrete of design mix M25 with OPC cement @ 340kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @ 0.47Cum, with superplasticiser @ 3lts Conforming to IS: 9103 - 1999 Reaffirmed - 2008. machine mixed, concrete laid in layers not exceeding 15cm thick, vibrated for all works in Ground Floor Level for Roof Slabs, Staircase, Lintels and Beams, Retaining Walls, Return Walls, Walls (any thickness) including attached pilasters, columns, lintels, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window cills, fillets etc. including cost of all materials, labour, HOM of machinery, curing, complete but excluding cost of reinforcement as per specifications. Specification No. KBS 4.1, 4.6	Cum							
	(P.No.14, I.No.4.12 of PW, P&IWTDR SR 2018 - 19)								
	For Grade Beam		1	1083.00	0.75	0.90	731.03		
						Say	731.50	6407.70	4687233.00
2.06	KSRB 5.2-3: Providing and constructing granite / trap / basalt size stone masonry in foundation with cement mortar 1:6, stone hammered dressed in courses not less than 20cm high, bond stones at 2m. apart in each course including cost of materials, labour, curing complete as per specifications. Specification No. KBS 5.1.13.	Cum							
	(P.No.25, I.No.5.6 of PW, P&IWTDR SR 2018 - 19)								
			1	1083.00	0.60	1.35	877.23		
	We can Re Use the SSM Quantity					Say	877.50		
2.07	KSRB 4.2.1: Providing and laying in position reinforced cement concrete of Design mix M25 with OPC cement @ 340kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @ 0.47Cum, with superplasticiser @ 3lts Conforming to IS: 9103 - 1999 Reaffirmed - 2008, at machine mixed, concrete laid in layers not exceeding 15cm thick, vibrated for all works in foundation for footings, pedestals, retaining walls, return walls, walls (any thickness) including attached pilasters, columns, pillars, posts, struts, buttresses, bed blocks, anchor blocks and plinth etc. including cost of all materials, labour, HOM of machinery, curing, complete but excluding Cost of reinforcement as per specifications. Specification No. KBS 4.1, 4.6	Cum							
	(P.No.14, I.No.4.10 of PW, P&IWTDR SR 2018 - 19)								
	For RCC Band		1	1083.00	0.60	0.15	97.47		
						Say	97.50	6160.72	600670.00

Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
2.08	KSRB 4.9.2: Providing TMT Steel Reinforcement for RCC work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 4.6.3 TMT bars Fe 500	Tonne							
	(P.No.18, I.No.4.46.2 of PW, P&IWTDR SR 2018 - 19)								
	Grade beam @ 120Kg/Cum						87.72		
	RCC Band @ 40Kg/Cum						3.90		
2.09	KSRB 5.3-3: Providing and constructing granite / trap / basalt size stone masonry in basement with cement mortar 1:6, edges of stones chistle dressed in courses not less than 15cm high, bond stones at 2m apart in each course including cost of materials, labour, curing complete as per specifications. Specification No. KBS 5.1.13.	Cum					91.62	75223.96	6892155.00
	(P.No.25, I.No.5.9 of PW, P&IWTDR SR 2018 - 19)								
			1	895.80	0.45	1.15	463.58		
2.10	KSRB 4-1.6 : Providing and laying in position plain cement concrete of mix 1:2:4 with cement @240kgs, with 20mm and down size graded granite metal coarse aggregates @0.878Cum and fine aggregates @0.53Cum machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2	Cum				Say	464.00	5811.98	2696759.00
	(P.No.13, I.No.4.6 of PW, P&IWTDR SR 2018 - 19)								
	For Basement Coping Concrete (DPC)		1	895.80	0.45	0.15	60.47		
2.11	KSRB 5.4-4: Providing and constructing granite / trap / basalt size stone masonry in Super Structure with cement mortar 1:4, edges of stones chistle dressed in courses not less than 15cm high, bond stones at 2m apart in each course including cost of materials, labour, scaffolding, curing complete as per specifications. Specification No. KBS 5.1.13.	Cum				Say	60.50	5747.32	347713.00
	(P.No.25, I.No.5.13 of PW, P&IWTDR SR 2018 - 19)								
	SSM Column @ Every 4m c/c		272	0.60	0.60	2.30	225.22		
	SSM Column @ Every 28m c/c		40	0.60	0.60	2.30	33.12		
						Say	258.34	6365.30	1644386.00

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
2.12	KSRB 6-6.3: Providing and constructing Burnt Brick Masonry with approved quality of modular bricks of standard size of class designation 7.5 Newton per Sqmm (Machine moulded Wirecut Bricks) with cement mortar 1:4 for basement and super structure including cost of materials,labour charges, scaffolding, curing complete as per specifications. Specification No. KBS 6.2	Cum							
	(P.No.30, I.No 6.21 of PW, P&IWTDR SR 2018 - 19)								
	Deduct 40% for Voids Area		1	2206.60	0.23	1.00	507.52		
							-203.01		
							304.51		
						Say	305.00	10901.04	3324817.00
2.13	KSRB 4-1.5: Providing and laying in position plain cement concrete mix M20 with OPC cement @ 300kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69Cum and fine aggregates @ 0.43Cum machine mixed, concrete laid in layers not exceeding 15cm thick, well compacted in foundation, plinth and cills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No.KBS 4.1,4.2	Cum							
	(P.No.13, I.No 4.5 of PW, P&IWTDR SR 2018 - 19)								
	Coping Above Brick wall		1	2206.60	0.23	0.10	50.75		
	Above SSM Column		743	0.60	0.60	0.10	26.74		
							77.49		
						Say	77.50	5647.68	437695.00
14	KSRB 15.1.1: Providing flush pointing 20mm deep, to square rubble, course or uncoursed stone masonry with cement mortar 1:3, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications.	Sqm							
	(P.No.115, I.No.15.1 of PW, P&IWTDR SR 2018 - 19)								
	For Basement		2	895.80	--	1.15	2060.34		
	For Super structure		1486	0.60	--	2.30	2050.29		
							4110.63		
						Say	4111.00	149.46	614430.00
15	KSRB 2.4: Refilling available earth around pipeline,cables in layers not exceeding 20cm in depth, compacting each deposited layer by ramming after watering with lead upto 50m and lift upto 1.5m including cost of all labour complete as per specifications.	Cum							
	(P.No.7, I.No.2.11 of PW, P&IWTDR SR 2018 - 19)								
	For foundation						670.35		
						Say	670.60	128.26	85998.00

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
2.16	KSRRB M100-4.1: Cost of Haulage excluding loading and unloading MORTH Chapter - 100/1 (Lead upto 19Km) for Earth(Excavated Soil)	Cum							
	(P. No. 136, I.No. 17.4 of PW ,P & I WTD SR 2018-19)								
	(19*1.28*2) = 48.64						829.00	48.64	40322.56
							Total Amount		24006352.56
3.00	Laying of Utility Ducts (Pipes for Storm Water Drain, Power Cables and OFC) and Cross Ducts								
3.01	KSRRB M300 - 14: Excavation for roadwork in all types of soil by mechanical means including cutting and loading to tippers, trimming bottom and side slopes, in accordance with requirements of lines,grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301	Cum							
	(P.No.143, I.No.19.14 of PW,P&I WTD S.R 2018-19)								
	Western side								
	For Storm Water Drain (900mm)		1	2575.00	1.20	1.20	3708.00		
	For Utility Ducts		1	2575.00	0.70	0.95	1712.38		
	Eastern side								
	For Storm Water Drain (1200mm)		1	2575.00	1.80	1.50	6952.50		
	For Utility Ducts		1	2575.00	0.70	0.95	1712.38		
	For Catch Drain on both sides (For every 30m interval)		173	1.00	1.00	0.65	112.45		
	For Storm Water Drain Chamber on Western side (For every 10m interval)(900mm dia)		258	1.80	0.60	1.00	278.10		
	For Storm Water Drain Chamber on Eastern side (For every 10m interval) (1200mm dia)		258	2.10	0.30	0.90	146.00		
	Inspection Chamber for OFC lines (40m interval) on both sides		64	1.50	0.80	0.80	61.80		
			64	1.50	0.80	0.80	61.80		
	Inspection Chamber for Power line (40m interval) on both sides		64	2.50	0.80	1.10	141.63		
			64	2.50	0.80	1.10	141.63		
							15028.65		
							Sav 15029.00	43.46	653160.34
3.02	KSRRB M2100 - 13: Providing and laying Plain / Reinforced Cement Concrete mix 1:2:4 with OPC cement @240kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.84Cum and fine aggregates @ 0.56Cum in Open Foundation including cost of all materials, labour, HOM, curing, form works, scaffolding and centering complete as per specifications complete as per Drawing and Technical Specifications MORTH Specification No. 1500, 1700 & 2100	Cum							
	(P.No.222, I.No.27.24 of PW,P&I WTD S.R 2018 - 19)								
	Access Chamber for SWD (10m interval) (900mm dia)		258	1.80	1.80	0.10	83.43		

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	Access Chamber for SWD (10m interval) (1200mm dia)		258	2.10	2.10	0.10	113.56		
	Inspection Chamber for OFC lines (40m interval) on both sides		64	1.50	1.50	0.10	14.48		
	Inspection Chamber for Power line (40m interval) on both sides		64	1.50	1.50	0.10	14.48		
			64	2.50	1.50	0.10	24.14		
	For Catch Drain on both sides (For every 30m interval)		64	2.50	1.50	0.10	24.14		
			173	1.00	1.00	0.10	17.30		
							291.54		
							Sav	292.00	5409.18
3.03	KSRRB M2100 - 16.2: Providing and laying Plain / Reinforced Cement Concrete M25 with OPC @ 340 kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @ 0.47Cum, with superplasticizer @ 3lts Conforming to IS - 9103 - 1999 Reaffirmed - 2008 in Open Foundation complete as per Drawing and Technical Specifications including cost of all materials, labour, HOM curing, form works, scaffolding and centering complete as per specifications. MORTH specification No.1500, 1700 & 2100	Cum							1579480.56
	(P.No.223, I.No.27.29 of PW,P&I WTD S.R 2018 - 19)								
	Access Chamber for SWD (10m interval) (900mm dia)								
	Raft		258	1.60	1.60	0.15	98.88		
	Wall		258	6.40	0.15	1.85	457.32		
	Access Chamber for SWD (10m interval) (1200mm dia)								
	Raft		258	1.90	1.90	0.15	139.44		
	Wall		258	7.60	0.15	2.05	601.78		
	Inspection Chamber for OFC lines (40m interval) on both sides								
	Raft		64	1.30	1.30	0.15	16.32		
	Wall		64	5.20	0.15	1.50	75.32		
	Inspection Chamber for OFC lines (40m interval)								
	Raft		64	1.30	1.30	0.15	16.32		
	Wall		64	5.20	0.15	1.50	75.32		
	Inspection Chamber for Power line (40m interval) on both sides								
	Raft		64	2.30	1.30	0.15	28.87		
	Wall		64	7.20	0.15	1.70	118.19		
	Inspection Chamber for Power line (40m interval)								
	Raft		64	2.30	1.30	0.15	28.87		
	Wall		64	4.86	0.15	1.70	79.78		
	For Catch Drain on both sides (For every 30m interval)								
	Raft		173	0.80	0.80	0.15	16.61		
	Wall		173	3.20	0.15	0.40	33.22		
							1786.23		
							Sav	1786.50	5294.70
									9458981.55

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
3.04	KSRRB M2200-6: Providing TMT Steel Reinforcement for RCC Work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification. MORTH Specification No.1600 & 2200 TMT Bars Fe 500	Tonne							
	(P.No.229, I.No.28.8.2 of PW,P&IWD S.R 2018 - 19)								
	Consider 75kg per Cum								
						Sav	133.99	72326.98	9690911.23
3.05	KSRRB M100-4.1: Cost of Haulage excluding loading and unloading MORTH Chapter - 100/1 (Lead upto 19Km) for Earth(Excavated Soil)	Cum							
	(P. No.136 I.No. 17.4 of PW, P&IWD S.R 2018-19)								
	For Excavated Earth								
	(19*1.28*2) = 48.64								
3.06	KSRRB 2.4: Refilling available earth around pipeline,cables in layers not exceeding 20cm in depth, compacting each deposited layer by ramming after watering with lead upto 50m and lift upto 1.5m including cost of all labour complete as per specifications.	Cum				Sav	5395.00	48.64	262412.80
	(P.No.7, I.No.2.11 of PW, P&IWD SR 2018 - 19)								
	Eastern side								
			1	1.13112	2575		2912.634		
			4	0.03142	2575		323.626		
			6	0.006363	2575		98.3013975		
	Western side								
			1	0.636255	2575		1638.356625		
			4	0.03142	2575		323.626		
			6	0.006363	2575		98.3013975		
							5394.85		
							9634.15	128.26	1235676.67
3.07	Providing and fixing RCC Precast slab of 100mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per the directions of Engineer in-charge.	Sqm							
	BBMP Approved Rate								
	Access Chamber for SWD (10m interval) (900mm dia)		258	1.60	1.60		659.20		
	Access Chamber for SWD (10m interval) (1200mm dia)		258	1.90	1.90		929.58		

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	Inspection Chamber for OFC lines (40m interval) on both sides		129	1.30	1.30		217.59		
	Inspection Chamber for Power line (40m interval) on both sides		129	2.30	1.30		384.96		
							2191.33		
						Say	2191.50	1724.00	3778146.00
3.08	Supplying, laying and jointing HDPE Pipes of specified grade and conforming to IS: 4984 - 1995 with latest amendments and conveying to work site including loading and unloading at both destinations and rolling and lowering into trenches, laying true to line and jointing of pipes and specials, giving hydraulic test as per relevant ISS with all lead and lifts including encasing the pipe around to a depth of not less than 15cm. with soft gravel or selected earth available from the excavation. testing and commissioning. The rate is exclusive of required specials and fittings wherever necessary like saddle Tee, stub ends, flanged sets, bends, reducers etc. complete (Contractor will make his own arrangements for procuring water for testing) etc. for: PE - 100 PN 6.0	m							
	(P.No.125, BWSSB SR 2017-18, I.No. 6.1 - K060A, 6.7 - K060G, 6.5 - K060E)								
	i) 6*90mm dia for OFC / Telecom / Surveillance		6	5150.00	--	--	30900.00		
	Deductions of Chamber Portion		1	129.00	--	--	-129.00		
							30771.00	256.25	7885068.75
	ii) 4*200mm dia for Power Cables		4	5150.00	--	--	20600.00		
	Deductions of Chamber Portion		1	129.00	--	--	-129.00		
							20471.00	1016.07	20799998.21
	iii) 2*200mm dia for Power Cables (Toilets - UGD, Electrical)		2	35.00	--	--	70.00	1016.07	71125.00
	iv) 1*160mm dia for Street Light Cables		1	5150.00	--	--	5150.00		
	Deductions of Chamber Portion		1	64.50	--	--	-64.50		
							5085.50	670.54	3410009.38
3.09	Providing and laying reinforced cement concrete pipe NP3 for culverts including pointing ends, and fixing collars with cement mortar 1:2 including cost of all materials, labour, curing complete as per specifications. Specifications. No. KSRB 1000, 2300 MOST Specification No.1000 / 2300	m							
	(P.No.254, I.No.34.6.6 and 34.6.3 of PW & IWTDR SR 2018 - 19)								
	1200mm dia pipe		1	2575.00			2575.00		
	Deductions of Chamber Portion		1	412.80			-412.80		
							2162.20	8933.68	19316402.90

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	900mm dia pipe		1	2575.00			2575.00		
	Deductions of Chamber Portion		1	335.40			-335.40		
	300mm dia Pipe for Connection at 10m Interval		515	1.20			2239.60	5832.12	13061615.95
							618.00	1626.04	1004892.72
3.10	Providing, supplying and fixing MS Surface Grating of size 500mm x 400mm at gully trap along the road surface as per approved drawing including transportation to site, all charges of labor, loading and unloading etc. complete for fixing as indicated in the drawing with all lead and lifts as per detailed tender specifications and as directed by the engineer.	Sqm							
	BBMP Approved Rate		173	0.80	0.80	--	110.72	9300.00	1029696.00
3.11	Supplying PVC ringtite pipe confirming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading and unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour, with all lead & lift including encasing the pipe around to a depth of not less than 15cms with soft gravel or selected earth available from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing).	Rmt.							
	(P.No 133, I.No. 1.10 of BWSSB SR 2017-18 - M010)								
	25 - 10 Kg/Cm2 (Class 5) avg. 5m length 70%		35	--	--	--	35.00	40.18	1406.25

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	Construction of Cross Ducts								
3.12	KSRRB M300 - 14: Excavation for roadwork in all types of soil by mechanical means including cutting and loading to tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301 (P.No.143, I.No.19.14 of PW,P&I WTD S.R 2018-19)	Cum							
	For Cross Ducts								
	At 45' Angle			5	20.20	0.90	1.00	90.90	
				8	14.20	0.90	1.00	102.24	
								193.14	
							Sav	193.50	43.46 8409.51
3.13	KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300mm 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 of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450mm 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 complete as per specifications. -do- Case -II : Double row for two utility services (P.No.186, I.No.24.35 of PW,P&I WTD 2018 - 19)	m							
	For Cross Ducts			10	20.20			202.00	
				16	14.20			227.20	
								429.20	
							Sav	429.50	3382.46 1452766.57
3.14	KSRRB 2-4: Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5m. including cost of all labour complete as per specifications. (P.No.7, I.No.2.11 of PW,P&I WTD S.R 2018-19)	Cum							
	For Cross Ducts			5	20.20	0.90	0.46	41.81	
				8	14.20	0.90	0.46	47.03	
	Deduct Pipe Area			10	20.20	0.14		-28.56	
				16	14.20	0.14		-32.12	
								28.16	
							Sav	28.50	128.26 3655.41

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
3.15	Construction of granular sub-base Grading-V as Sub-base and drainage layer by Providing coarse graded crushed stone aggregate of granite / trap / basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98% proctor density, complete as per Specifications. Clause 401 of MORTH V Revision	Cum							
	(P.No.153, I.No.20.5 of PW,P&IWTDR SR 2018 - 19)								
	For Cross Ducts		5	20.20	0.90	0.20	18.18		
			8	14.20	0.90	0.20	20.45		
							38.63		
3.16	KSRRB M400 - 17: Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to Wet Mix Macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications. MORTH Specification No. 406	Cum				Sav	39.00	1994.92	77801.88
	(P.No.155, I.No.20.18 of PW,P&IWTDR SR 2018-19)								
	For Cross Ducts		5	20.20	0.90	0.25	22.73		
			8	14.20	0.90	0.25	25.56		
3.17	KSRRB 500-9: Providing and applying Tack Coat using 80/100 Grade Bitumen (VG10) on granular base such as WBM surfaces hot bitumen primed at 4kg per 10Sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM Complete as per specifications. Clause 503 of MORTH V revision	Sqm					48.29	2001.28	96631.80
	(I.No.21.9, Issue Rate as on 01 - 01 - 19)								
	For Cross Ducts		5	20.20	0.90		90.90		
			8	14.20	0.90		102.24		
							193.14	21.20	4094.57

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
3.18	KSRRB M500-17: Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500 - 10 complete in all respects complete as per specifications. MORTH Specificatin No. 507. Using 120 TPH capacity Asphalt batch mix plant with sensor paver Gr -II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen	Cum							
	(I.No.21.17.2, Issue Rate as on 01.01.2019)								
	For Cross Ducts		5	20.20	0.90	0.070	6.36		
			8	14.20	0.90	0.070	7.16		
							13.52	7049.00	95301.07
3.19	KSRRB 500-7: Providing and applying tack coat using 80 / 100 grade bitumen (VG 10) on the prepared black topped surfacen at 2.5kg per 10Sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM complete as per specifications. Clause 503 of MORTH V revision	Sqm							
	(I.No.21.7, Issue Rate as on 01.01.2019)								
	For Cross Ducts		5	20.20	0.90		90.90		
			8	14.20	0.90		102.24		
							193.14	12.72	2456.74
3.20	Providing and laying bituminous concrete 40mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications. Clause 507 of MORTH V revision as per IRC SP-53-2015. Using 120 TPH capacity Asphalt batch mix plant with sensor paver grading II (30-45mm) with 5.4% of modified bituminous binder consisting of 4.97% of VG-30 bitumen (60/70 grade) and 0.43% of plastomeric thermoplastics (waste plastic)	Cum							
	(I.No.21.78.8, Issue Rate as on 01.01.2019)								
	For Cross Ducts		5	20.20	0.90	0.04	3.64		
			8	14.20	0.90	0.04	4.09		
							7.73	8036.92	62090.03

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Assl EXECUTIVE ENGINEER
BRUHAT BANGALORE MAHANAGARA
BANGALORE

Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	Construction of Chamber								
3.21	KSRRB M300 - 14: Excavation for roadwork in all types of soil by mechanical means including cutting and loading to tipper, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301 (P.No.143, I.No.19.14 of PW,P&I WTD S.R 2018-19)	Cum							
			26	1.50	1.50	1.60	93.60		
						Sav	94.00	43.46	4085.24
3.22	KSRRB 2100-13 Plain/ Reinforcement cement concrete M15 with opc cement @ 240kgs, with 40mm down size graded granite metal coarse aggregate @ 0.84 Cum and fine aggregates @ 0.56 Cum in open foundation including cost of all materials,labour,HOM curing,form works,scaffolding and centering complete as per drawing and technical specifications MORTH Specification No.1500,1700, & 2100. (P. No.222 of INo 27.24 PW,P&I WTD SR 2018 - 19)	Cum							
			26	1.50	1.50	0.10	5.85		
						Sav	6.00	5409.18	32455.08
3.23	KSRRB 2200-5.12. Providing and laying Design mix M25 with OPC @340kgs, with 20mm and down size graded granite metal coarse aggregates @0.7Cum and fine aggregates @0.47 Cum, with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 (P.No.227, I.No.28.7.12 of PW,P&I WTD SR 2018 - 19)	Cum							
	Raft		26	1.50	1.50	0.20	11.70		
	Side Walls		26	6.00	0.20	1.10	34.32		
							46.02		
						Sav	46.50	5640.26	262272.09
3.24	KSRRB M2200-6. Providing T.M.T. steel reinforcement for R.C.C. work including straightening, cutting, bending, hooking, placing in position, lapping and/or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification. MORTH Specification No.1600 & 2200 -do-TMT Bars Fe 500 (P.No.229, I.No.28.8.2 of PW,P&I WTD SR 2018 - 19)	Tonne							
	Consider 110kg per Cum						5.12		
							5.12	72326.98	369952.50

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Assi. EXECUTIVE ENGINEER
BRUHAT BANGALORE MAHANAGARA PALIKE
BANGALORE

Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
3.25	Providing and fixing RCC Precast slab of 100mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per the directions of Engineer in-charge.	Sqm							
	BBMP Approved Rate								
	For Chambers		26	1.50	1.50	--	58.50		
						Say	58.50	1724.00	100854.00
4.00	Construction of Footpath; Providing and Fixing of New Kerb Stones, Bollards and Railing and Construction of Tree Guard Wall								95811810.80
4.01	KSRRB M300 - 14: Excavation for roadwork in all types of soil by mechanical means including cutting and loading to tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301	Cum							
	(P.No.143, I.No.19.14 of PW,P&I WTD S.R 2018-19)								
	Eastern Side				Avg.				
	Ch 25 to 325		1	300.00	3.00	0.45	405.00		
	Ch 325 to 900		1	575.00	3.00	0.45	776.25		
	Ch 925 to 1175		1	250.00	1.35	0.45	151.88		
	Ch 1175 to 1225		1	50.00	2.70	0.45	60.75		
	Ch 1225 to 1425		1	200.00	3.00	0.45	270.00		
	Ch 1425 to 1500		1	75.00	1.40	0.45	47.25		
	Ch 1525 to 2600		1	1075.00	1.60	0.45	774.00		
	Western Side								
	Ch 25 to 100		1	75.00	3.00	0.45	101.25		
	Ch 100 to 200		1	100.00	3.00	0.45	135.00		
	Ch 200 to 300		1	100.00	3.00	0.45	135.00		
	Ch 300 to 400		1	100.00	3.00	0.45	135.00		
	Ch 400 to 500		1	100.00	3.00	0.45	135.00		
	Ch 500 to 600		1	100.00	3.00	0.45	135.00		
	Ch 600 to 700		1	100.00	3.00	0.45	135.00		
	Ch 700 to 800		1	100.00	3.00	0.45	135.00		
	Ch 800 to 900		1	100.00	3.00	0.45	135.00		
	Ch 900 to 1000		1	100.00	3.00	0.45	135.00		
	Ch 1000 to 1100		1	100.00	1.30	0.45	58.50		
	Ch 1100 to 1200		1	100.00	2.37	0.45	106.65		
	Ch 1200 to 1300		1	100.00	3.00	0.45	135.00		
	Ch 1300 to 1400		1	100.00	1.35	0.45	60.75		
	Ch 1400 to 1500		1	100.00	2.70	0.45	121.50		
	Ch 1500 to 1600		1	100.00	2.50	0.45	112.50		
	Ch 1600 to 1700		1	100.00	1.35	0.45	60.75		
	Ch 1700 to 1800		1	100.00	1.35	0.45	60.75		
	Ch 1800 to 1900		1	100.00	1.35	0.45	60.75		
	Ch 1900 to 2000		1	100.00	1.35	0.45	60.75		
	Ch 2000 to 2100		1	100.00	1.35	0.45	60.75		
	Ch 2100 to 2200		1	100.00	1.35	0.45	60.75		
	Ch 2200 to 2300		1	100.00	1.35	0.45	60.75		
	Ch 2300 to 2400		1	100.00	1.35	0.45	60.75		
	Ch 2400 to 2500		1	100.00	1.35	0.45	60.75		
	Ch 2500 to 2600		1	100.00	1.35	0.45	60.75		
	Inspection Chamber for Street Light Cables (40m interval) on both sides		129	1.00	1.00	0.72	92.70		
	for Street Light Poles on both sides		406	1.40	1.40	1.20	954.912		
							6051.89		
						Say	6051.50	43.46	262998.19

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
4.02	KSRRB M2100 - 13: Providing and laying Plain / Reinforced Cement Concrete mix 1:2:4 with OPC cement @240kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.84Cum and fine aggregates @ 0.56Cum in Open Foundation including cost of all materials, labour, HOM, curing, form works, scaffolding and centering complete as per specifications complete as per Drawing and Technical Specifications MORTH Specification No. 1500, 1700 & 2100	Cum							
	(P.No.222, I.No.27.24 of PW,P&IWT D S.R 2018 - 19)								
	For Street Light Poles					49.00	49.00		
	Inspection Chamber for Street Light Cables (40m interval) on both sides		129	1.00	1.00	0.10	12.88		
							61.88	5409.18	334693.01
4.03	KSRRB M2100 - 16.2: Providing and laying Plain / Reinforced Cement Concrete M25 with OPC @ 340 kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @0.47Cum, with superplasticizer @3lts Conforming to IS - 9103 - 1999 Reaffirmed - 2008 in Open Foundation complete as per Drawing and Technical Specifications including cost of all materials, labour, HOM curing, form works, scaffolding and centering complete as per specifications. MORTH specification No.1500, 1700 & 2100	Cum							
	(P.No.223, I.No.27.29 of PW,P&IWT D S.R 2018 - 19)								
	Raft		129	0.8	0.80	0.15	12.36		
	Wall		129	3.2	0.15	0.41	25.34		
							37.70		
	For Street Light Poles		406	1.20	1.20	0.30	175.39		
			406	0.60	0.60	0.90	131.54		
							344.63	5294.70	1824733.64
4.04	Construction of granular sub-base Grading-V as Sub-base and drainage layer by Providing coarse graded crushed stone aggregate of granite / trap / basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98% proctor density, complete as per Specifications. Clause 401 of MORTH V Revision	Cum							
	(P.No.153, I.No.20.5 of PW,P&IWT D SR 2018 - 19)								
	Eastern Side				Avg.				
	Ch 25 to 325		1	300.00	3.00	0.20	180.00		
	Ch 325 to 900		1	575.00	3.00	0.20	345.00		
	Ch 925 to 1175		1	250.00	1.35	0.20	67.50		
	Ch 1175 to 1225		1	50.00	2.70	0.20	27.00		
	Ch 1225 to 1425		1	200.00	3.00	0.20	120.00		
	Ch 1425 to 1500		1	75.00	1.40	0.20	21.00		
	Ch 1525 to 2600		1	1075.00	1.60	0.20	344.00		
	Western Side								
	Ch 25 to 100		1	75.00	3.00	0.20	45.00		

Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	Ch 100 to 200		1	100.00	3.00	0.20	60.00		
	Ch 200 to 300		1	100.00	3.00	0.20	60.00		
	Ch 300 to 400		1	100.00	3.00	0.20	60.00		
	Ch 400 to 500		1	100.00	3.00	0.20	60.00		
	Ch 500 to 600		1	100.00	3.00	0.20	60.00		
	Ch 600 to 700		1	100.00	3.00	0.20	60.00		
	Ch 700 to 800		1	100.00	3.00	0.20	60.00		
	Ch 800 to 900		1	100.00	3.00	0.20	60.00		
	Ch 900 to 1000		1	100.00	3.00	0.20	60.00		
	Ch 1000 to 1100		1	100.00	3.00	0.20	60.00		
	Ch 1100 to 1200		1	100.00	1.30	0.20	26.00		
	Ch 1200 to 1300		1	100.00	2.37	0.20	47.40		
	Ch 1300 to 1400		1	100.00	3.00	0.20	60.00		
	Ch 1400 to 1500		1	100.00	1.35	0.20	27.00		
	Ch 1500 to 1600		1	100.00	2.70	0.20	54.00		
	Ch 1600 to 1700		1	100.00	2.50	0.20	50.00		
	Ch 1700 to 1800		1	100.00	1.35	0.20	27.00		
	Ch 1800 to 1900		1	100.00	1.35	0.20	27.00		
	Ch 1900 to 2000		1	100.00	1.35	0.20	27.00		
	Ch 2000 to 2100		1	100.00	1.35	0.20	27.00		
	Ch 2100 to 2200		1	100.00	1.35	0.20	27.00		
	Ch 2200 to 2300		1	100.00	1.35	0.20	27.00		
	Ch 2300 to 2400		1	100.00	1.35	0.20	27.00		
	Ch 2400 to 2500		1	100.00	1.35	0.20	27.00		
	Ch 2500 to 2600		1	100.00	1.35	0.20	27.00		
	Deduction of Street Light Chamber Portion		129	0.80	0.80	0.20	-16.51		
							2207.39		
						Say	2207.50	1994.92	4403786.00
4.05	KSRRB M400 - 17: Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to Wet Mix Macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications. MORTH Specification No. 406								
	(P.No.155, I.No.20.18 of PW,P&I WTD SR 2018-19)								
	Eastern Side				Avg.				
	Ch 25 to 325		1	300.00	3.00	0.25	225.00		
	Ch 325 to 900		1	575.00	3.00	0.25	431.25		
	Ch 925 to 1175		1	250.00	1.35	0.25	84.38		
	Ch 1175 to 1225		1	50.00	2.70	0.25	33.75		
	Ch 1225 to 1425		1	200.00	3.00	0.25	150.00		
	Ch 1425 to 1500		1	75.00	1.40	0.25	26.25		
	Ch 1525 to 2600		1	1075.00	1.60	0.25	430.00		
	Western Side								
	Ch 25 to 100		1	75.00	3.00	0.25	56.25		
	Ch 100 to 200		1	100.00	3.00	0.25	75.00		
	Ch 200 to 300		1	100.00	3.00	0.25	75.00		
	Ch 300 to 400		1	100.00	3.00	0.25	75.00		
	Ch 400 to 500		1	100.00	3.00	0.25	75.00		
	Ch 500 to 600		1	100.00	3.00	0.25	75.00		
	Ch 600 to 700		1	100.00	3.00	0.25	75.00		
	Ch 700 to 800		1	100.00	3.00	0.25	75.00		
	Ch 800 to 900		1	100.00	3.00	0.25	75.00		
	Ch 900 to 1000		1	100.00	3.00	0.25	75.00		
	Ch 1000 to 1100		1	100.00	1.30	0.25	32.50		
	Ch 1100 to 1200		1	100.00	2.37	0.25	59.25		
	Ch 1200 to 1300		1	100.00	3.00	0.25	75.00		
	Ch 1300 to 1400		1	100.00	1.35	0.25	33.75		
	Ch 1400 to 1500		1	100.00	2.70	0.25	67.50		
	Ch 1500 to 1600		1	100.00	2.50	0.25	62.50		
	Ch 1600 to 1700		1	100.00	1.35	0.25	33.75		
	Ch 1700 to 1800		1	100.00	1.35	0.25	33.75		

Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	Ch 1800 to 1900		1	100.00	1.35	0.25	33.75		
	Ch 1900 to 2000		1	100.00	1.35	0.25	33.75		
	Ch 2000 to 2100		1	100.00	1.35	0.25	33.75		
	Ch 2100 to 2200		1	100.00	1.35	0.25	33.75		
	Ch 2200 to 2300		1	100.00	1.35	0.25	33.75		
	Ch 2300 to 2400		1	100.00	1.35	0.25	33.75		
	Ch 2400 to 2500		1	100.00	1.35	0.25	33.75		
	Ch 2500 to 2600		1	100.00	1.35	0.25	33.75		
	Deduction of Street Light Chamber Portion		129	0.80	0.80	0.25	-20.64		
							2759.24		
						Say	2760.00	2001.28	5523532.80
4.06	KSRB 14.6-6: Providing and laying heavy duty interlock concrete paver block 60mm thick 300mm X 300mm using cement and coarse sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per Sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KBS	Sqm							
	(P.No.103, I.No. 14.6 of PW,P&I WTD SR 2018-19)								
	Eastern Side				Avg.				
	Ch 25 to 325		1	300.00	3.00	--	900.00		
	Ch 325 to 900		1	575.00	3.00	--	1725.00		
	Ch 925 to 1175		1	250.00	1.35	--	337.50		
	Ch 1175 to 1225		1	50.00	2.70	--	135.00		
	Ch 1225 to 1425		1	200.00	3.00	--	600.00		
	Ch 1425 to 1500		1	75.00	1.40	--	105.00		
	Ch 1525 to 2600		1	1075.00	1.60	--	1720.00		
	Western Side								
	Ch 25 to 100		1	75.00	3.00	--	225.00		
	Ch 100 to 200		1	100.00	3.00	--	300.00		
	Ch 200 to 300		1	100.00	3.00	--	300.00		
	Ch 300 to 400		1	100.00	3.00	--	300.00		
	Ch 400 to 500		1	100.00	3.00	--	300.00		
	Ch 500 to 600		1	100.00	3.00	--	300.00		
	Ch 600 to 700		1	100.00	3.00	--	300.00		
	Ch 700 to 800		1	100.00	3.00	--	300.00		
	Ch 800 to 900		1	100.00	3.00	--	300.00		
	Ch 900 to 1000		1	100.00	3.00	--	300.00		
	Ch 1000 to 1100		1	100.00	1.30	--	130.00		
	Ch 1100 to 1200		1	100.00	2.37	--	237.00		
	Ch 1200 to 1300		1	100.00	3.00	--	300.00		
	Ch 1300 to 1400		1	100.00	1.35	--	135.00		
	Ch 1400 to 1500		1	100.00	2.70	--	270.00		
	Ch 1500 to 1600		1	100.00	2.50	--	250.00		
	Ch 1600 to 1700		1	100.00	1.35	--	135.00		
	Ch 1700 to 1800		1	100.00	1.35	--	135.00		
	Ch 1800 to 1900		1	100.00	1.35	--	135.00		
	Ch 1900 to 2000		1	100.00	1.35	--	135.00		
	Ch 2000 to 2100		1	100.00	1.35	--	135.00		
	Ch 2100 to 2200		1	100.00	1.35	--	135.00		
	Ch 2200 to 2300		1	100.00	1.35	--	135.00		
	Ch 2300 to 2400		1	100.00	1.35	--	135.00		
	Ch 2400 to 2500		1	100.00	1.35	--	135.00		
	Ch 2500 to 2600		1	100.00	1.35	--	135.00		
							11119.50		
						Say	11119.50	1116.18	12411364.00

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
4.07	KSRRB 2200-5.12: Providing and laying Design Mix M25 with OPC @340kgs, with 20mm and down size graded granite metal coarse aggregates @0.7Cum and fine aggregates @0.47 Cum, with superplasticiser @3lts Conforming to IS: 9103-1999 Reaffirmed - 2008 including cost of materials, labour, HOM curing, form work, scaffolding and centering complete as per specifications. i) upto 5m height	Cum							
	(P.No.227, I.No.28.7.12 in PW,P&I WTD SR 2018-19)								
	RCC Band at 7.5m interval								
	Eastern Side								
	Ch 0 to 2600		1	347	0.15	0.11	5.73		
	along the Road		1	2600	0.30	0.30	234.00		
	Deduction at Junction		-1	16	0.15	0.11	-0.26		
	Western Side								
	Ch 0 to 2600		1	347	0.15	0.11	5.73		
	along the Road		1	2600	0.30	0.30	234.00		
							479.19		
						Say	479.50	5640.26	2704505.00
08	KSRRB M2100 - 13: Providing and laying Plain / Reinforced Cement Concrete mix 1:2:4 with OPC cement @240kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.84Cum and fine aggregates @ 0.56Cum in Open Foundation including cost of all materials, labour, HOM, curing, form works, scaffolding and centering complete as per specifications complete as per Drawing and Technical Specifications MORTH Specification No. 1500, 1700 & 2100	Cum							
	(P. No.222 of INo 27.24 in PW,P&I WTD SR 2018 - 19)								
	Eastern Side								
	Ch 0 to 2600		1	2600	0.465	0.15	181.35		
	For Cycle Track		1	1488	0.20	0.15	44.65		
	Deduction at Junction		-1	116	0.465	0.15	-8.07		
	Western Side								
	Ch 0 to 2600		1	2600	0.465	0.15	181.35		
	For Cycle Track		1	2210	0.20	0.15	66.30		
							465.59		
						Say	465.59	5409.18	2518439.00
4.09	Providing and laying Cement Concrete using 20mm and down size granite coarse aggregates and fine aggregates of Ready Mixed Concrete for RCC Works laid in 15cm thick layers and will compacted including vibrating, curing, etc. with all lead and lift, etc. complete (exclusive of cost of steel and fabrication charges) Ready Mixed Cement Concrete for Beams, Staircase and Roof with M30	Cum							
	(P.No.19, I.No.4.49.3 in PW,P&I WTD SR 2018 - 19)								
	Eastern Side								
	Ch 0 to 2600		1	2600	0.30	0.125	97.50		
	Deduction at Junction		-1	115.64	0.30	0.125	-4.34		
	Western Side								
	Ch 0 to 2600		1	2600	0.30	0.125	97.50		

Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
							190.66		
						Sav	191.00	5933.88	1133371.00
4.10	KSRRB M2200-6: Providing TMT Steel Reinforcement for RCC Work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification. MORTH Specification No.1600 & 2200 TMT Bars Fe 500	Tonne							
	(P.No.229, I.No.28.8.2 in PW,P&IWTDR SR 2018 - 19)								
	Consider 60kg/Cum for RCC M 30						11.46		
	Consider 60kg/Cum for RCC Band (along the Road)						28.08		
	For Street Light Chamber Consider 81kg per Cum						3.05		
	For Street Light Poles 80kg per Cum						24.56		
							67.15	72326.98	4856665.00
4.11	KSRRB 2.3 : Filling available excavated earth (excluding rock) Embankment with available earth in road upto plinth in layers not exceeding 20cm in depth, compacting each deposited layer by ramming after watering with lead upto 50m and lift upto 1.5m including cost of all labour complete as per specifications. Specification No. KBS 2.9	Cum							
	(P.No.7, I.No.2.10 of PW, P&IWTDR SR 2018-19)								
							598.979	213.06	127618.47
4.12	Providing and fixing Precast solid concrete kerb stones made out of CC 1 :2:4 and finished with CM 1 :3 plastering and finishing cutting etc., complete. Size 450 x 150 x 500 mm	Nos.							
	(P.No.27, I.No.5.29.2 in PW,P&IWTDR SR 2018 - 19)								
	For Footpath						11299		
	For Cycle Track		1	8219	--	--	8219		
							19518	467.46	9123884.00
4.13	Supply, Fabrication, Painting and Fixing of Mild steel items such as Horizontal and Vertical gratings, Flower baskets, Cycle stands, Tree guards, Edge angles, Bollards, etc and any other items as specified in drawings or as approved by Engineer Incharge.	Nos.							
	BBMP Approved Rate								
	At 0.40m Interval, Big Bollards for 10m		182				182.00		
	Access to Property		130	--	--	--	130.00		

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Asst. EXECUTIVE ENGINEER
BRUHAT BANGALORE MAHANAGARA PALIKE
BANGALORE

Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
5.00	Construction of Median								
5.01	Providing and Fixing Precast Solid Cement Concrete crash barrier / divider made out of M35 with top and bottom width 100mm and 350mm respectively 1000mm height and 2000mm in Length (as shown in the drawing), Finished with CM 1:3 plastering and finishing cutting, including form work TMT steel as required curing , including cost all material labour hire charges of machinery, loading, unloading, lead and lift, transportation etc., complete. To be laid between Travel lane, cycle track/ landscape etc.,with all lead and lift, loading, unloading, complete and as per the directions of Engineer - in - Charge.(Form Finish concrete and no painting to be done), (Excluding GST).	Each							
	BBMP Approved Rate		2400.0				2400.00	6400.00	15360000.00
5.02	KSRB M300 - 7.1: Planting permanent hedges including digging of trenches, 60cm wide and 45cm deep, refilling the excavated earth mixed with farmyard manure, supplied at the rate of 4.65Cum per 100metres and supplying and planting hedge plants at 30cm apart complete as per specifications. A) Planting permanent hedges including digging of trenches MORTH Specification No. 307.	m							
	P. No. 149, I No. 19.84 of PW,P&I WTD SR 2018-19)		1.0	2450.00			2450.00	313.76	768712.00
							Total Amount		16128712.00
6.01	Construction of Culverts								
6.01	KSRRB 300 - 50: Scarifying bituminous course 50mm to 75mm thick along with premix carpet / surface dressing by mechanical means attached with scarifier without disturbing the base and stacking the debris including cost of all labour charges, HOM complete as per specifications. MORTH / Chapter 3 (including loading, unloading and lead upto 20km)	Sqm							
	(39*1.06+20*1.3*2)+57 = 150.34								
	(P.No.146, I.No.19.56 of PW,P&I WTD SR 2018 - 19)								
	Eastern Side		1	13.00	3.00	--	39.00		
			1	22.50	3.00	--	67.50		
			1	17.50	3.00	--	52.50		
			1	29.44	3.00	--	88.32		
			1	25.70	3.00	--	77.10		
			1	13.00	3.00	--	39.00		
			1	14.00	3.00	--	42.00		
							405.42		
						Say	405.50	150.34	60963.00

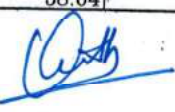


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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
6.02	KSRRB M300 - 14: Excavation for roadwork in all types of soil by mechanical means including cutting and loading to tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301 (P.No.143, I.No.19.14 of PW,P&I WTD S.R 2018-19)	Cum							
	Eastern Side		1	13.00	3.00	2.80	109.20		
			1	22.50	3.00	2.80	189.00		
			1	17.50	3.00	2.80	147.00		
			1	29.44	3.00	2.80	247.30		
			1	25.70	3.00	2.80	215.88		
			1	13.00	3.00	2.80	109.20		
			1	14.00	3.00	2.80	117.60		
							1135.18		
						Say	1135.50	43.46	49349.00
6.03	KSRRB M2200-5.1: Providing and laying cement concrete of mix 1:2:4 with OPC @ 240kgs, with 40mm and down size graded granite metal coarse aggregates @0.63Cum and fine aggregates @ 0.42Cum including cost of materials, labour, HOM, curing, form works, scaffolding and centering complete as per MORTH Section : 2200 & IS : 456 a) upto 5m height (P. No.226 of I.No.28.7.1 in PW,P&I WTD SR 2018-19)	Cum							
	Eastern Side		1	13.00	3.00	0.10	3.90		
			1	22.50	3.00	0.10	6.75		
			1	17.50	3.00	0.10	5.25		
			1	29.44	3.00	0.10	8.83		
			1	25.70	3.00	0.10	7.71		
			1	13.00	3.00	0.10	3.90		
			1	14.00	3.00	0.10	4.20		
							40.54		
						Say	41.00	5746.26	235597.00
6.04	KSRRB 2200-5.12: Providing and laying Design Mix M25 with OPC @340kgs, with 20mm and down size graded granite metal coarse aggregates @0.7Cum and fine aggregates @0.47 Cum, with superplasticiser @3lts Conforming to IS: 9103-1999 Reaffirmed - 2008 including cost of materials, labour, HOM curing, form work, scaffolding and centering complete as per specifications. i) upto 5m height (P.No.227, I.No.28.7.12 in PW,P&I WTD SR 2018-19)	Cum							
	Bottom Slab, Side Walls		1	13.00	7.40	0.20	19.24		
	Top Cover Slab		1	13.00	3.00	0.20	7.80		
			1	22.50	7.40	0.20	33.30		
			1	22.50	3.00	0.20	13.50		
			1	17.50	7.40	0.20	25.90		
			1	17.50	3.00	0.20	10.50		
			1	29.44	7.40	0.20	43.57		
			1	29.44	3.00	0.20	17.66		
			1	25.70	7.40	0.20	38.04		

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
			1	25.70	3.00	0.20	15.42		
			1	13.00	7.40	0.20	19.24		
			1	13.00	3.00	0.20	7.80		
			1	14.00	7.40	0.20	20.72		
			1	14.00	3.00	0.20	8.40		
						Say	281.09		
							281.50	5640.26	1587733.00
6.05	KSRRB M2200-6: Providing TMT Steel Reinforcement for RCC Work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification. MORTH Specification No.1600 & 2200 TMT Bars Fe 500	Tonne							
	(P.No.229, I.No.28.8.2 of PW,P&IWT S.R 2018 - 19)								
	100kgs per Cum		--	--	--	--	28.15		
						Say	28.15	72326.98	2036004.00
6.06	Culvert for existing Storm Water Drain Diversion of water course by providing Coffor dams or bunds or islands as may be necessary for piers and abutments foundations, bailing out or pumping water during excavation and until completion etc. including cost of materials, labour, HOM complete as per specifications. Beyond 1.50m depth upto & including 3m depth.	Cum							
	(P.No.269, I.No.37.41.2 of PW,P&IWT S.R 2018-19)								
	For Diversion of Water		1	14.00	3.60	1.50	75.60		
						Say	76.00	417.64	31741.00
6.07	KSRB 5 - 1.1: Providing and constructing granite / trap / basalt rubble stone masonry in foundation with mud mortar (uncoursed), bond stones at 2m, apart in each course including cost of materials, labour, curing complete as per specifications. KBS 5.1.12	Cum							
	(P.No.25, I.No.5.1 of PW,P&IWT S.R 2018-19)								
	For Diversion of Water		2	14.00	0.60	0.90	15.12		
						Say	15.50	2499.48	38742.00
6.08	KSRRB M300 - 14: Excavation for roadwork in all types of soil by mechanical means including cutting and loading to tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301	Cum							
	(P.No.143, I.No.19.14 of PW,P&IWT S.R 2018-19)								
			1	17.40	3.60	0.50	31.50		
						Say	31.50	43.46	1369.00

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
6.09	KSRB 2.8: Providing and Filling in foundation with granite / trap broken metal 100mm and down size, with approved sand including hand packing, ramming, watering, including cost of all materials and labour with all lead and lift. Complete as per specifications. Specification No. KBS 2.10.2	Cum							
	(P.No.7, I.No.2.15 of PW, P&IWT S.R 2018 - 19)								
			1	17.40	3.60	0.30	18.79		
						Sav	19.00	2574.74	48920.00
3.10	KSRRB M2100 - 13: Providing and laying Plain / Reinforced Cement Concrete mix 1:2:4 with OPC cement @240kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.84Cum and fine aggregates @ 0.56Cum in Open Foundation including cost of all materials, labour, HOM, curing, form works, scaffolding and centering complete as per specifications complete as per Drawing and Technical Specifications MORTH Specification No. 1500, 1700 & 2100	Cum							
	(P.No.222, I.No.27.24 of PW, P&IWT S.R 2018 - 19)								
			1	17.40	3.60	0.15	9.40		
						Sav	9.50	5409.18	51387.00
.11	KSRRB M2200 - 5.18: Providing and laying Design mix M35 with OPC @ 390kgs, with 20mm and down size graded granite metal coarse aggregates @0.68Cum and fine aggregates @ 0.45Cum, with superplasticiser @3lts conforming to IS: 9103 - 1999 Reaffirmed - 2008 including cost of materials, labour, HOM, curing, form works, scaffolding and centering complete as per specifications. i) Upto 5m height	Cum							
	(P.No.228, I.No.28.7.18 of PW, P&IWT S.R 2018 - 19)								
	Bottom Slab		1	17.40	3.60	0.20	12.53		
	Side Walls		2	17.40	0.20	1.50	10.44		
	Top Slab		1	17.40	3.60	0.20	12.53		
							35.50		
						Sav	35.50	5895.72	209298.00

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
6.12	KSRRB M2200-6: Providing TMT Steel Reinforcement for RCC Work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification. MORTH Specification No.1600 & 2200 TMT Bars Fe 500	Tonne							
	(P.No.229, I.No.28.8.2 of PW,P&I WTD S.R 2018 - 19)								
	Consider 140kg per Cum						4.97	72326.98	359425.00
6.13	KSRRB 2.4: Refilling available earth around pipeline,cables in layers not exceeding 20cm in depth, compacting each deposited layer by ramming after watering with lead upto 50m and lift upto 1.5m including cost of all labour complete as per specifications.	Cum							
	(P.No.7, I.No.2.11 of PW, P&I WTD SR 2018 - 19)								
					813.00		813.00	128.26	104275.38
6.14	KSRRB M100-4.1: Cost of Haulage excluding loading and unloading MORTH Chapter - 100/1 (Lead upto 19Km) for Earth(Excavated Soil)	Cum							
	(P. No.136 I.No.17.4 of PW, P&I WTD S.R 2018-19)								
	(19*1.28*2) = 48.64						322.50	48.64	15686.40
7.00	Carriageway Construction / Strengthening Works						Total Amount		4830489.78
7.01	Construction of Carriageway in the Widened Portion								
7.01	KSRRB M300 - 14: Excavation for roadwork in all types of soil by mechanical means including cutting and loading to tipper, trimming bottom and side slopes, in accordance with requirements of lines,grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301	Cum							
	(P.No.143, I.No.19.14 of PW,P&I WTD S.R 2018-19)								
	Ch 0 to 50		1	50.00	17.13	1.30	1113.22		
	Ch 50 to 100		1	50.00	32.03	1.30	2082.15		
	Ch 100 to 150		1	50.00	28.76	1.30	1869.30		
	Ch 150 to 200		1	50.00	27.34	1.30	1777.00		
	Ch 200 to 250		1	50.00	24.89	1.30	1617.85		
	Ch 250 to 300		1	50.00	23.00	1.30	1495.23		
	Ch 300 to 350		1	50.00	22.85	1.30	1485.12		
	Ch 350 to 400		1	50.00	23.34	1.30	1517.39		



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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	Ch 400 to 450		1	50.00	23.20	1.30	1507.71		
	Ch 450 to 500		1	50.00	24.23	1.30	1575.18		
	Ch 500 to 550		1	50.00	28.54	1.30	1854.94		
	Ch 550 to 600		1	50.00	29.78	1.30	1935.77		
	Ch 600 to 650		1	50.00	28.63	1.30	1860.63		
	Ch 650 to 700		1	50.00	29.82	1.30	1938.20		
	Ch 700 to 750		1	50.00	27.93	1.30	1815.42		
	Ch 750 to 800		1	50.00	25.95	1.30	1686.82		
	Ch 800 to 850		1	50.00	26.97	1.30	1752.82		
	Ch 850 to 900		1	50.00	29.88	1.30	1941.91		
	Ch 900 to 950		1	50.00	31.22	1.30	2029.24		
	Ch 950 to 1000		1	50.00	22.91	1.30	1488.86		
	Ch 1000 to 1050		1	50.00	15.32	1.30	995.64		
	Ch 1050 to 1100		1	50.00	13.65	1.30	886.99		
	Ch 1100 to 1150		1	50.00	12.86	1.30	835.58		
	Ch 1150 to 1200		1	50.00	10.26	1.30	666.80		
	Ch 1200 to 1250		1	50.00	13.12	1.30	852.57		
	Ch 1250 to 1300		1	50.00	14.41	1.30	936.42		
	Ch 1300 to 1350		1	50.00	14.10	1.30	916.47		
	Ch 1350 to 1400		1	50.00	15.20	1.30	987.87		
	Ch 1400 to 1450		1	50.00	14.91	1.30	969.28		
	Ch 1450 to 1500		1	50.00	14.50	1.30	942.44		
	Ch 1500 to 1550		1	50.00	13.21	1.30	858.36		
	Ch 1550 to 1600		1	50.00	12.83	1.30	833.79		
	Ch 1600 to 1650		1	50.00	10.39	1.30	675.19		
	Ch 1650 to 1700		1	50.00	9.32	1.30	605.61		
	Ch 1700 to 1750		1	50.00	9.35	1.30	608.01		
	Ch 1750 to 1800		1	50.00	8.78	1.30	570.38		
	Ch 1800 to 1850		1	50.00	8.70	1.30	565.18		
	Ch 1850 to 1900		1	50.00	7.55	1.30	490.78		
	Ch 1900 to 1950		1	50.00	5.97	1.30	388.25		
	Ch 1950 to 2000		1	50.00	3.71	1.30	241.18		
	Ch 2000 to 2050		1	50.00	2.23	1.30	145.21		
	Ch 2050 to 2100		1	50.00	1.87	1.30	121.81		
	Ch 2100 to 2150		1	50.00	1.44	1.30	93.67		
	Ch 2150 to 2200		1	50.00	1.43	1.30	93.02		
	Ch 2200 to 2250		1	50.00	1.57	1.30	101.79		
	Ch 2250 to 2300		1	50.00	1.77	1.30	114.86		
	Ch 2300 to 2350		1	50.00	2.78	1.30	180.90		
	Ch 2350 to 2400		1	50.00	3.25	1.30	210.96		
	Ch 2400 to 2450		1	50.00	4.10	1.30	266.37		
	Ch 2450 to 2500		1	50.00	4.26	1.30	277.19		
	Ch 2500 to 2550		1	50.00	4.67	1.30	303.45		
	Ch 2550 to 2600		1	50.00	5.53	1.30	359.26		
	Busbay (Area)		2	165.00	1.05	1.30	450.45		
							51890.41		
7.02	KSRB 2.3 : Filling available excavated earth (excluding rock) Embankment with available earth in road upto plinth in layers not exceeding 20cm in depth, compacting each deposited layer by ramming after watering with lead upto 50m and lift upto 1.5m including cost of all labour complete as per specifications. Specification No. KBS 2.9	Cum				Say	51890.50	43.46	2255161.00
	(P.No.7, I.No.2.10 of PW, P&I WTD SR 2018-19)								
	Ch 1850 to 1900		1	50.00	1.29	0.60	38.70		
	Ch 1900 to 1950		1	50.00	3.26	0.60	97.71		
	Ch 1950 to 2000		1	50.00	6.04	0.60	181.11		
	Ch 2000 to 2050		1	50.00	6.69	0.60	200.58		
	Ch 2050 to 2100		1	50.00	8.48	0.60	254.43		
	Ch 2100 to 2150		1	50.00	10.03	1.00	501.35		
	Ch 2150 to 2200		1	50.00	10.97	1.00	548.25		
	Ch 2200 to 2250		1	50.00	11.48	1.00	574.10		
	Ch 2250 to 2300		1	50.00	11.44	1.00	571.95		
	Ch 2300 to 2350		1	50.00	10.67	0.60	320.19		

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	Ch 2350 to 2400		1	50.00	8.22	0.60	246.54		
	Ch 2400 to 2450		1	50.00	10.63	0.60	318.93		
	Ch 2450 to 2500		1	50.00	12.30	0.60	368.91		
	Ch 2500 to 2550		1	50.00	10.02	0.60	300.51		
							4523.26		
7.03	KSRRB M300-55: Construction of Sub Grade and Earthen Shoulders with approved materials Gravel / Murrum with all lifts and leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table 300 - 2 complete as per specifications, including cost of earth, watering charges & compaction by vibratory roller to 97% of Modified Proctor Density MORTH Specification No. 305 CBR Value of Sub grade soil 10%	Cum				Sav	4523.50	213.06	963777.00
	(P. No.147, I.No 19.62 of PW,P&I WTD S.R 2018 - 19)								
	Western Side								
	Ch 0 to 25		1	25.00	13.20	0.50	165.00		
	Ch 25 to 825		1	800.00	13.20	0.50	5280.00		
	Ch 825 to 900		1	75.00	13.20	0.50	495.00		
	Ch 900 to 1000		1	100.00	18.30	0.50	915.00		
	Ch 1000 to 1150		1	150.00	8.80	0.50	660.00		
	Ch 1150 to 1225		1	75.00	5.20	0.50	195.00		
	Ch 1225 to 1925		1	700.00	10.80	0.50	3780.00		
	Ch 1925 to 1975		1	50.00	8.80	0.50	220.00		
	Ch 1975 to 2200		1	225.00	6.80	0.50	765.00		
	Ch 2200 to 2400		1	200.00	6.80	0.50	680.00		
	Ch 2400 to 2600		1	200.00	12.00	0.50	1200.00		
	Busbay (Area)		2	165.00		0.50	165.00		
	Deduct for cross ducts		-5	21.56	1.60	0.50	-86.25		
			-8	15.55	1.60	0.50	-99.55		
							14334.20		
04	Construction of granular sub-base Grading-V as Sub-base and drainage layer by Providing coarse graded crushed stone aggregate of granite / trap / basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98% proctor density, complete as per Specifications. Clause 401 of MORTH V Revision	Cum				Sav	14334.50	369.94	5302905.00
	(P.No.153, I.No.20.5 of PW,P&I WTD SR 2018 - 19)								
	Western Side								
	Ch 0 to 25		1	25.00	13.20	0.20	66.00		
	Ch 25 to 825		1	800.00	13.20	0.20	2112.00		
	Ch 825 to 900		1	75.00	13.20	0.20	198.00		
	Ch 900 to 1000		1	100.00	18.30	0.20	366.00		
	Ch 1000 to 1150		1	150.00	8.80	0.20	264.00		
	Ch 1150 to 1225		1	75.00	5.20	0.20	78.00		
	Ch 1225 to 1925		1	700.00	10.80	0.20	1512.00		
	Ch 1925 to 1975		1	50.00	8.80	0.20	88.00		
	Ch 1975 to 2200		1	225.00	6.80	0.20	306.00		
	Ch 2200 to 2400		1	200.00	6.80	0.20	272.00		
	Ch 2400 to 2600		1	200.00	12.00	0.20	480.00		

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	Busbay (Area)		2	165.00		0.20	0.00		
	Deduct for cross ducts		-5	21.56	1.60	0.20	-34.50		
			-8	15.55	1.60	0.20	-39.82		
							5667.68		
						Sav	5668.00	1994.92	11307207.00
7.05	KSRRB M400 - 17: Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to Wet Mix Macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications. MORTH Specification No. 406	Cum							
	(P.No.155, I.No.20.18 of PW,P&I WTD SR 2018-19)								
	Western Side								
	Ch 0 to 25		1	25.00	13.20	0.25	82.50		
	Ch 25 to 825		1	800.00	13.20	0.25	2640.00		
	Ch 825 to 900		1	75.00	13.20	0.25	247.50		
	Ch 900 to 1000		1	100.00	18.30	0.25	457.50		
	Ch 1000 to 1150		1	150.00	8.80	0.25	330.00		
	Ch 1150 to 1225		1	75.00	5.20	0.25	97.50		
	Ch 1225 to 1925		1	700.00	10.80	0.25	1890.00		
	Ch 1925 to 1975		1	50.00	8.80	0.25	110.00		
	Ch 1975 to 2200		1	225.00	6.80	0.25	382.50		
	Ch 2200 to 2400		1	200.00	6.80	0.25	340.00		
	Ch 2400 to 2600		1	200.00	12.00	0.25	600.00		
	Busbay (Area)		2	165.00		0.25	0.00		
	Deduct for cross ducts		-5	21.56	1.60	0.25	-43.13		
			-8	15.55	1.60	0.25	-49.77		
							7084.60		
						Sav	7085.00	2001.28	14179069.00
7.06	KSRRB 500-4: Providing and applying primer coat for surfaces of medium porosity like cement stabilized soil base @0.90kg/Sqm over prepared surface with S.S bitumen emulsion using tanker fitted with spray set (excluding cleaning of road surface) including cost of all material, labour, HOM complete as per specifications. Clause 501 of MORTH V revision	Sqm							
	(I.No.21.5, Issue Rate as on 01 - 01 - 19)								
	Western Side								
	Ch 0 to 25		1	25.00	13.20		330.00		
	Ch 25 to 825		1	800.00	13.20		10560.00		
	Ch 825 to 900		1	75.00	13.20		990.00		
	Ch 900 to 1000		1	100.00	18.30		1830.00		
	Ch 1000 to 1150		1	150.00	8.80		1320.00		
	Ch 1150 to 1225		1	75.00	5.20		390.00		
	Ch 1225 to 1925		1	700.00	10.80		7560.00		
	Ch 1925 to 1975		1	50.00	8.80		440.00		
	Ch 1975 to 2200		1	225.00	6.80		1530.00		
	Ch 2200 to 2400		1	200.00	6.80		1360.00		
	Ch 2400 to 2600		1	200.00	12.00		2400.00		
	Busbay (Area)		2	165.00			330.00		
	Deduct for cross ducts		-5	21.56	1.60		-172.51		
			-8	15.55	1.60		-199.09		
							28668.40	39.22	1124374.68

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
7.07	KSRRB 500-7: Providing and applying tack coat using 80 / 100 grade bitumen (VG 10) on the prepared black topped surfaces at 2.5kg per 10Sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM complete as per specifications. Clause 503 of MORTH V revision	Sqm							
	(I.No.21.7, Issue Rate as on 01.01.2019)								
	Qty Same as 7.06		1	--	--	--	28668.40	12.72	364662.06
7.08	KSRRB M500-17: Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500 - 10 complete in all respects complete as per specifications. MORTH Specificatin No. 507. Using 120 TPH capacity Asphalt batch mix plant with sensor paver Gr -II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen	Cum							
	(I.No.21.17.2, Issue Rate as on 01.01.2019)								
	Western Side								
	Ch 0 to 25		1	25.00	13.20	0.075	24.75		
	Ch 25 to 825		1	800.00	13.20	0.075	792.00		
	Ch 825 to 900		1	75.00	13.20	0.075	74.25		
	Ch 900 to 1000		1	100.00	18.30	0.075	137.25		
	Ch 1000 to 1150		1	150.00	8.80	0.075	99.00		
	Ch 1150 to 1225		1	75.00	5.20	0.075	29.25		
	Ch 1225 to 1925		1	700.00	10.80	0.075	567.00		
	Ch 1925 to 1975		1	50.00	8.80	0.075	33.00		
	Ch 1975 to 2200		1	225.00	6.80	0.075	114.75		
	Ch 2200 to 2400		1	200.00	6.80	0.075	102.00		
	Ch 2400 to 2600		1	200.00	12.00	0.075	180.00		
	Busbay (Area)		2	165.00		0.075	24.75		
	Deduct for cross ducts		-5	21.56	1.60	0.075	-12.94		
			-8	15.55	1.60	0.075	-14.93		
							2150.13		
						Say	2150.50	7049.00	15158875.00

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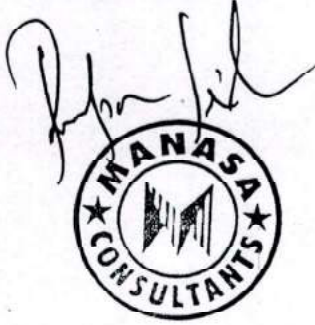
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Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
709	Cum							
Providing and laying bituminous concrete 40mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications. Clause 507 of MORTH V revision as per IRC SP-53-2015. Using 120 TPH capacity Asphalt batch mix plant with sensor paver grading II (30-45mm) with 5.4% of modified bituminous binder consisting of 4.97% of VG-30 bitumen (60/70 grade) and 0.43% of plastomeric thermoplastics (waste plastic)								
(I.No.21.78.8, Issue Rate as on 01.01.2019)								
Western Side								
Ch 0 to 25		1	25.00	13.20	0.04	13.20		
Ch 25 to 825		1	800.00	13.20	0.04	422.40		
Ch 825 to 900		1	75.00	13.20	0.04	39.60		
Ch 900 to 1000		1	100.00	18.30	0.04	73.20		
Ch 1000 to 1150		1	150.00	8.80	0.04	52.80		
Ch 1150 to 1225		1	75.00	5.20	0.04	15.60		
Ch 1225 to 1925		1	700.00	10.80	0.04	302.40		
Ch 1925 to 1975		1	50.00	8.80	0.04	17.60		
Ch 1975 to 2200		1	225.00	6.80	0.04	61.20		
Ch 2200 to 2400		1	200.00	6.80	0.04	54.40		
Ch 2400 to 2600		1	200.00	12.00	0.04	96.00		
Bushay (Area)		2	165.00		0.04	13.20		
Deduct for cross ducts		-5	21.56	1.60	0.04	-6.90		
		-8	15.55	1.60	0.04	-7.96		
						1146.74		
					Say	1147.00	8036.92	9218347.00

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
7.10	Green Pigmented Asphalt: Providing and laying green pigment with resin binder to concrete or asphalt surface by mechanical method, it comprises of a specially formulated binder system with a colour coated glass aggregate manufactured using a proprietary technology, provides a tactile warning system with a high friction, non-fading, consistent colour surface, environment friendly, sub angular, non-porous gives average service life of 5 years, installed effectively within 5-8 hours resulting in minimal traffic disruption. The finished surface to be level, uniform and free from streaks and holes, transporting the material, with all Lead & lift, including cost of all materials, labour, HOM of machineries compete as per specifications.	Sqm							
	BBMP Approved Rate								
	For Cycle Track (West)								
	Ch: 25m to Ch: 900m		1	875.00	2.20		1925.00		
	Ch: 900m to Ch: 2600m		1	1700.00	1.50		2550.00		
						Say	4475.00	1500.00	6712500.00
						Total Amount			66586877.74



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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
b.	Strengthening of existing Carriageway (Camber Correction, laying of Overlay)								
7.11	Milling the bituminous pavement surface upto a depth of 55mm using milling machine, to make a uniform surface without disturbing the base, cleaning the milled surface, including cost of all labour charges and hire charges of machineries, etc. complete, including stacking the milled material on the sides of road.	Sqm							
	(Pg.No.151, I No. 19.102 of PW, P & IWTD SR 2018 - 19)								
	Eastern Side								
	Over existing Pavement								
	Ch 0 to 25		1	25.00	33.38	--	834.50		
	Ch 25 to 325		1	300.00	13.25	--	3975.00		
	Ch 325 to 400		1	75.00	13.25	--	993.75		
	Ch 400 to 800		1	400.00	14.00	--	5600.00		
	Ch 800 to 1000		1	200.00	14.00	--	2800.00		
	Ch 1000 to 1150		1	150.00	11.00	--	1650.00		
	Ch 1150 to 1225		1	75.00	18.65	--	1398.75		
	Ch 1225 to 1275		1	50.00	17.00	--	850.00		
	Ch 1275 to 1400		1	125.00	11.00	--	1375.00		
	Ch 1400 to 1525		1	125.00	17.40	--	2175.00		
	Ch 1525 to 1925		1	400.00	11.00	--	4400.00		
	Ch 1925 to 2200		1	275.00	18.42	--	5065.50		
	Ch 2200 to 2400		1	200.00	17.00	--	3400.00		
	Ch 2200 to 2600		1	200.00	11.00	--	2200.00		
	Deduct for cross ducts		-5	21.56	1.60	--	-172.51		
			-8	15.55	1.60	--	-199.09		
	For Cross Roads								
	CIL Road		1	30.00	13.00	--	390.00		
	Marappa Garden Road		1	30.00	11.00	--	330.00		
	Nandidurga Road		1	30.00	14.00	--	420.00		
	Muniswamappa Road		1	30.00	5.20	--	156.00		
	6th Main Road		1	30.00	13.00	--	390.00		
	1st Main Road		1	30.00	11.00	--	330.00		
							38361.90		
12	KSRRB 500-9: Providing and applying Tack Coat using 80/100 Grade Bitumen (VG10) on granular base such as WBM surfaces hot bitumen primed at 4kg per 10Sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM Complete as per specifications. Clause 503 of MORTH V revision	Sqm				Sav	38362.00	74.20	2846460.00
	(I.No.21.9, Issue Rate as on 01 - 01 - 19)								
	Eastern Side								
	Over existing Pavement								
	Ch 0 to 25		1	25.00	33.38		834.50		
	Ch 25 to 325		1	300.00	13.25		3975.00		
	Ch 325 to 400		1	75.00	13.25		993.75		
	Ch 400 to 800		1	400.00	14.00		5600.00		
	Ch 800 to 1000		1	200.00	14.00		2800.00		
	Ch 1000 to 1150		1	150.00	11.00		1650.00		
	Ch 1150 to 1225		1	75.00	18.65		1398.75		
	Ch 1225 to 1275		1	50.00	17.00		850.00		
	Ch 1275 to 1400		1	125.00	11.00		1375.00		
	Ch 1400 to 1525		1	125.00	17.40		2175.00		
	Ch 1525 to 1925		1	400.00	11.00		4400.00		
	Ch 1925 to 2200		1	275.00	18.42		5065.50		
	Ch 2200 to 2400		1	200.00	17.00		3400.00		
	Ch 2200 to 2600		1	200.00	11.00		2200.00		
	Deduct for cross ducts		-5	21.56	1.60		-172.51		
			-8	15.55	1.60		-199.09		
	For Cross Roads						0.00		
	CIL Road		1	30.00	13.00		390.00		
	Marappa Garden Road		1	30.00	11.00		330.00		
	Nandidurga Road		1	30.00	14.00		420.00		
	Muniswamappa Road		1	30.00	5.20		156.00		

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	6th Main Road		1	30.00	13.00		390.00		
	1st Main Road		1	30.00	11.00		330.00		
	For Pedestrian Crossing						0.00		
			4	11.00	1.50		66.00		
			2	21.00	1.50		63.00		
			2	14.00	1.50		42.00		
							38532.90		
7.13	KSRRB M500-17: Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500 - 10 complete in all respects complete as per specifications. MORTH Specificatin No. 507. Using 120 TPH capacity Asphalt batch mix plant with sensor paver Gr -II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen	Cum					38532.90	21.20	816897.50
	(I.No.21.17.2, Issue Rate as on 01.01.2019)								
	For Camber Correction								
	21.5% of Existing Area		1	8247.83		0.10	824.78		
	Pedestrian Crossing								
			2	11.00	3.00	0.225	14.85		
			1	21.00	3.00	0.225	14.18		
			1	14.00	3.00	0.225	9.45		
		0.5	4	11.00	1.50	0.26	8.58		
		0.5	2	21.00	1.50	0.26	8.19		
		0.5	2	14.00	1.50	0.26	5.46		
							885.49		
7.14	KSRRB 500-7: Providing and applying tack coat using 80 / 100 grade bitumen (VG 10) on the prepared black topped surfaces at 2.5kg per 10Sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM complete as per specifications. Clause 503 of MORTH V revision	Sqm				Sav	886.00	7049.00	6245414.00
	(I.No.21.7, Issue Rate as on 01.01.2019)								
	Eastern Side								
	Over existing Pavement								
	Ch 0 to 25		1	25.00	33.38	--	834.50		
	Ch 25 to 325		1	300.00	13.25	--	3975.00		
	Ch 325 to 400		1	75.00	13.25	--	993.75		
	Ch 400 to 800		1	400.00	14.00	--	5600.00		
	Ch 800 to 1000		1	200.00	14.00	--	2800.00		
	Ch 1000 to 1150		1	150.00	11.00	--	1650.00		
	Ch 1150 to 1225		1	75.00	18.65	--	1398.75		
	Ch 1225 to 1275		1	50.00	17.00	--	850.00		
	Ch 1275 to 1400		1	125.00	11.00	--	1375.00		
	Ch 1400 to 1525		1	125.00	17.40	--	2175.00		
	Ch 1525 to 1925		1	400.00	11.00	--	4400.00		
	Ch 1925 to 2200		1	275.00	18.42	--	5065.50		
	Ch 2200 to 2400		1	200.00	17.00	--	3400.00		
	Ch 2200 to 2600		1	200.00	11.00	--	2200.00		
	Deduct for cross ducts		-5	21.56	1.60	--	-172.51		
			-8	15.55	1.60	--	-199.09		
	For Cross Roads								
	CIL Road		1	30.00	13.00	--	390.00		
	Marappa Garden Road		1	30.00	11.00	--	330.00		
	Nandidurga Road		1	30.00	14.00	--	420.00		

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	Muniswamappa Road		1	30.00	5.20	--	156.00		
	6th Main Road		1	30.00	13.00	--	390.00		
	1st Main Road		1	30.00	11.00	--	330.00		
	For Pedestrian Crossing								
			4	11.00	1.50	--	66.00		
			2	21.00	1.50	--	63.00		
			2	14.00	1.50	--	42.00		
							38532.90		
15	Providing and laying bituminous concrete 40mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications. Clause 507 of MORTH V revision as per IRC SP-53-2015. Using 120 TPH capacity Asphalt batch mix plant with sensor paver grading II (30-45mm) with 5.4% of modified bituminous binder consisting of 4.97% of VG-30 bitumen (60/70 grade) and 0.43% of plastomeric thermoplastics (waste plastic)	Cum				Sav	38533.00	12.72	490140.00
	(I.No.21.78.8, Issue Rate as on 01.01.2019)								
	Eastern Side								
	Over existing Pavement								
	Ch 0 to 25		1	25.00	33.38	0.04	33.38		
	Ch 25 to 325		1	300.00	13.25	0.04	159.00		
	Ch 325 to 400		1	75.00	13.25	0.04	39.75		
	Ch 400 to 800		1	400.00	14.00	0.04	224.00		
	Ch 800 to 1000		1	200.00	14.00	0.04	112.00		
	Ch 1000 to 1150		1	150.00	11.00	0.04	66.00		
	Ch 1150 to 1225		1	75.00	18.65	0.04	55.95		
	Ch 1225 to 1275		1	50.00	17.00	0.04	34.00		
	Ch 1275 to 1400		1	125.00	11.00	0.04	55.00		
	Ch 1400 to 1525		1	125.00	17.40	0.04	87.00		
	Ch 1525 to 1925		1	400.00	11.00	0.04	176.00		
	Ch 1925 to 2200		1	275.00	18.42	0.04	202.62		
	Ch 2200 to 2400		1	200.00	17.00	0.04	136.00		
	Ch 2200 to 2600		1	200.00	11.00	0.04	88.00		
	Deduct for cross ducts		-5	21.56	1.60	0.04	-6.90		
			-8	15.55	1.60	0.04	-7.96		
	For Cross Roads								
	CIL Road		1	30.00	13.00	0.03	11.70		
	Marappa Garden Road		1	30.00	11.00	0.03	9.90		
	Nandidurga Road		1	30.00	14.00	0.03	12.60		
	Muniswamappa Road		1	30.00	5.20	0.03	4.68		
	6th Main Road		1	30.00	13.00	0.03	11.70		
	1st Main Road		1	30.00	11.00	0.03	9.90		
	For Pedestrian Crossing								
			4	11.00	1.50	0.04	2.64		
			2	21.00	1.50	0.04	2.52		
			2	14.00	1.50	0.04	1.68		
							1521.16		
						Sav	1522.00	8036.92	12232192.00

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
7.16	KSRRB 300 - 50: Scarifying bituminous course 50mm to 75mm thick along with premix carpet / surface dressing by mechanical means attached with scarifier without disturbing the base and stacking the debris including cost of all labour charges, HOM complete as per specifications. MORTH / Chapter 3 (including loading, unloading and lead upto 20km) (39*1.06+20*1.3*2)+57 = 150.34 (P.No.146, I.No.19.56 of PW,P&I WTD SR 2018 - 19)	Sqm							
	Junction								
			2	11.00	3.00	-	66.00		
			1	21.00	3.00	-	63.00		
			1	14.00	3.00	-	42.00		
							171.00		
							171.00	150.34	25708.00
7.17	KSRRB 14.6-6: Providing and laying heavy duty interlock concrete paver block 75mm thick 300mm X 300mm using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281kg per Sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KRS (P.No.103, I.No. 14.7 of PW,P&I WTD SR 2018-19) Qty Same as Item No-2.02	Sqm							
							171.00		
							171.00	1176.60	201199.00
7.18	KSRRB 2200-5.12: Providing and laying Design Mix M25 with OPC @340kgs, with 20mm and down size graded granite metal coarse aggregates @0.7Cum and fine aggregates @0.47 Cum, with superplasticiser @3lts Conforming to IS: 9103-1999 Reaffirmed - 2008 including cost of materials, labour, HOM curing, form work, scaffolding and centering complete as per specifications. i) upto 5m height	Cum							
	(P.No.227, I.No.28.7.12 of PW, P&I WTD SR 2018 - 19) For Pedestrian crossing								
			4	11.00	0.30	0.10	1.32		
			2	21.00	0.30	0.10	1.26		
			2	14.00	0.30	0.10	0.84		
							3.42		
							3.42	5640.26	19290.00

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Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
7.19	Green Pigmented Asphalt: Providing and laying green pigment with resign binder to concrete or asphalt surface by mechanical method, it comprises of a specially formulated binder system with a colour coated glass aggregate manufactured using a proprietary technology, provides a tactile warning system with a high friction, non - fading, consistent colour surface, environment friendly, sub angular, non-porous gives average service life of 5 years, installed effectively within 5-8 hours resulting in minimal traffic disruption. The finished surface to be level, uniform and free from streaks and holes, transporting the material, with all Lead & lift, including cost of all materials, labour, HOM of machineries complete as per specifications.	Sqm						
	Market Rate							
	For Cycle Track (East)							
	Ch: 25m to Ch: 900m		1	875.00	2.20		1925	
	Ch: 900m to Ch: 2600m		1	1700.00	1.50		2550	
							4475	
						Say	4475	1500.00
								6712500.00
						Total Amount		29589800.50
8.00	Construction of Docking Stations							
71	KSRRB M300 - 14: Excavation for roadwork in all types of soil by mechanical means including cutting and loading to tipplers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301	Cum						
	(P. No.143, I.No.19.14 of PW,P&I WTD SR 2018 - 19)							
	Area		9	24.40	0.56		122.98	
							122.98	43.46
								5344.54
10.02	Construction of granular sub-base Grading-V as Sub-base and drainage layer by Providing coarse graded crushed stone aggregate of granite / trap / basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98% proctor density, complete as per Specifications. Clause 401 of MORTH V Revision	Cum						
	(P.No.153, I.No.20.5 of PW, P&I WTD SR 2018 - 19)							
	Area		9	24.40	0.20		43.92	
							43.92	1994.92
								87616.89

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
8.03	KSRRB M400 - 17: Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to Wet Mix Macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications. MORTH Specification No. 406	Cum							
	(P.No.155, I.No.20.18 of PW,P&IWTDR SR 2018 - 19)								
	Area		9	24.40		0.25	54.90		
							54.90	2001.28	109870.27
8.04	KSRRB 14.6-6: Providing and laying heavy duty interlock concrete paver block 60mm thick 300mm X 300mm using cement and coarse sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per Sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KBS	Sqm							
	(P.No.103, I.No. 14.6 of PW,P&IWTDR SR 2018-19)								
	Area		9	24.40		--	219.60		
							219.60	1116.18	245113.13
05	Providing and fixing Precast solid concrete kerb stones made out of CC 1 :2:4 and finished with CM 1 :3 plastering and finishing cutting etc., complete. Size 450 x 150 x 500mm	Nos.							
	(P.No.27, I.No.5.29.2 in PW,P&IWTDR SR 2018 - 19)								
	Area		9	27.00		--	243.00		
						Sav	243.00	467.46	113592.78
						Total Amount			561537.60

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
9.00	Providing Traffic Signs, Lane Marking, Pedestrian Crossing, Studs, etc.								
9.01	KSRRB M800 - 13: Road Marking with Hot Applied Thermo plastic Compound with Reflectrising Glass Beads on Bituminous surface/ Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms per Sqm area, thickness of 2.5mm is exclusive of surface applied glass heads as per IRC:35 Standards specified. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.	Sqm							
	(P.No.182, I.No.24.15 in PW,P&I WTD SR 2018 - 19)								
	Edge line								
	Ch 0 to 350		3	350.00	0.15	--	157.50		
	Ch 350 to 800		4	450.00	0.15	--	270.00		
	Ch 800 to 900		2	100.00	0.15	--	30.00		
	Ch 900 to 2600		2	1700.00	0.15	--	510.00		
	Broken Line For Centre 50% of Straight line)								
	Ch 0 to 2600	0.50	2	2600.00	0.10	--	260.00		
	Pedestrian Crossing	0.50	1	353.00	3.00	--	529.50		
	Busbay		2	10.00		--	20.00		
	Cycle Track		16	5.00		--	80.00		
	Lane Arrows		6	5.00		--	30.00		
	Edge line Cross Roads								
			4	30.00	0.15	--	18.00		
			2	30.00	0.15	--	9.00		
			4	30.00	0.15	--	18.00		
			4	30.00	0.15	--	18.00		
			2	30.00	0.15	--	9.00		
	Centre Line Cross Roads	0.50	2	30.00	0.10	--	3.00		
		0.50	1	30.00	0.10	--	1.50		
		0.50	2	30.00	0.10	--	3.00		
		0.50	2	30.00	0.10	--	3.00		
		0.50	1	30.00	0.10	--	1.50		
							1971.00		
	Ch 0 to 2600 Centre Line	0.50	2	2600.00	0.15	--	390.00		
	Broken Line For Centre 50% of Straight line)								
		0.50	2	2600.00	0.10	--	260.00		
							650.00		
						Sav	2621.00	454.74	1191874.00

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
9.02	Providing and fixing of Retro-reflectorised cautionary, mandatory, informatory sign as per IRC:67 made of high intensity grade sheeting vide Clause 801.3, fixed over aluminium sheeting. 1.5 mm thick supported on a mild steel angle iron post 75mm x 75mm x 6mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45cm x 45cm x 60cm, 60cm below ground level as per approved drawing.	Nos.							
	(P.No.180, I.No.24.2.4 in PW,P&IWTDR SR 2018 - 19)								
	600 X 800mm - Type XI								
	Informatory sign boards		24	--	--		24.00	4342.82	104227.68
	600mm Circle - Type XI	Nos.							
	(P.No.180, I.No.24.2.3 in PW,P&IWTDR SR 2018 - 19)								
	Compulsory Cycle Track, No Parking, Turning Movement		48						
			48				48.00	3309.32	158847.36
	900mm Equilateral triangle - Type XI	Nos.							
	(P.No.180, I.No.24.2.1 in PW,P&IWTDR SR 2018 - 19)								
	Pedestrian crossing sign boards		16				16.00	3661.24	58579.84
	900mm Octagon Stop Board- Type XI	Nos.							
	(P.No.180, of I.No.24.2.6 in PW,P&IWTDR SR 2018 - 19)								
			9				9.00	5349.82	48148.38

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
9.03	Supply and fixing of Retro Reflective Single Arrow Road Name Signboard of size 1600mm X 900mm made out of retro reflective sheeting conforming to Type-XI standards of ASTM D 4956-09 and as per IRC 67-2012 for full back ground of blue colour and white letters and fixed over 4mm thick Aluminium Composite Material sheet having minimum 0.5mm thick Aluminium skin on both sides with back side painted grey colour and fixed over back support frame SS angle of 15mm X 20mm X 1.2mm, supported by 38mm OD stainless steel pipe all round in 304 grade and 2 Nos. of vertical posts of 50mm OD stainless steel pipe of 202 grade firmly fixing to the ground by means of properly designed foundation of size 450mm X 450mm X 600mm in 1:1.5:3 ratio cement concrete. The background shall be blue in colour with letters and border in white, the item includes earthwork excavation, cost of all materials, loading, unloading, lead, lift, transportation etc., complete as per direction of engineer incharge of work clause 6.9 of IRC 67-2012 for Type-XI retro reflective sheeting from the sheeting manufacturer and a certified copy of test reports from independent test laboratory conforming to clause 6.7 of IRC 67-2012 including outdoor weather exposure report for the retro reflective sheeting offered shall be submitted by the contractor for technical qualification tender.	Sqm							
(P.No.190 of I.No.24.59. in PW.P&I.W.T.D SR 2018 - 19)									
			6	--	--	--	6.00	14094.82	84568.92

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
9.04	Supply and fixing of Retro Reflective Double arrow road name sign board of size 2000mm X 900mm made out of retro reflective sheeting conforming to Type XI standards of ASTM D 4956 - 09 & as per IRC 67 - 2012 for full back ground of blue colour & white letters and fixed over 4mm thick Aluminium Composite Material sheet having minimum 0.5mm thick Aluminium skin on both sides with back side painted grey colour and fixed over back support frame SS angle of 15mm X 20mm X 1.2mm, supported by 38mm OD stainless steel pipe all round in 304 grade and 2 nos of vertical posts of 50 mm OD stainless steel pipe of 202 grade firmly fixed to the ground by means of properly designed foundation of size 450mm X 450mm X 600mm in 1:1.5:3 ratio cement concrete. unloading, lead, lift, transportation etc. complete. as per clause 6.9 of IRC 67 - 2012 for Type-XI retro reflective sheeting from the sheeting manufacturer and a certified copy of text reports from independent test laboratory conforming to clause 6.7 of IRC 67 - 2012 including outdoor weather exposure report for the retro reflective sheeting offered shall be submitted by the contractor for technical qualification in the tender.	Sqm							
	(P.No.190 of I.No.24.60, in PW,P&I WTD SR 2018 - 19)		6	--	--	--	6.00	16732.1	100392.60

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
9.05	KSRRB M800-35: Supply and installation of Moulded Shank Raised Pavement Markers made of polycarbonate and ABS (Acrylonitrile Butadiene Styrene) moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000 kg tested in accordance to Specifications of category A of MORTH Circular No. RW/NH/33023/10-97, - DO III Dt 11.06.1997. The height, width and length shall not exceed 50mm, 100mm and 102mm and with minimum reflective area of 13Sqcm on each side and the slope to the base shall be 35 degree. The strength of detachment of the integrated cylindrical shanks, (of diameter not less than 19mm and height not less than 30mm) from the minimum value of 500kg. Fixing will be by drilling holes on the road for the shanks to go inside, Without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer.	Nos.							
	(P.No.187, I.No.24.41 of PW,P&I WTD SR 2018 - 19)								
	Edge line								
	Ch 0 to 350		467	--	--	--	467		
	Ch 350 to 800		900	--	--	--	900		
	Ch 800 to 900		133	--	--	--	134		
	Ch 900 to 2600		2267	--	--	--	2267		
	Pedestrian Crossing		177	--	--	--	177		
							3945		
						Sav	3945	357.22	1409233.00

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
9.06	Supply & Installation of Rigid Median Marker made of tough, high impact resistant, injection -molded, thermoplastic body with an isosceles trapezoidal structure of length, width and height not less than 15cm, 10cm and 10cm respectively and thickness not less than 1.8mm, the body structure shall be rounded suitably. The plastic used for molding the Median Marker shall conform to ASTM D256. The logo of the manufacturer shall be embossed on either side of the body in the injection molding process. The Median Marker shall have rectangular - shaped, fluorescent yellow color retro - reflective sheeting of size not less than 8.5cm*8.5cm and with fully reflective micro prismatic cube corners as its retro - reflective elements as per IRC 67 2012. The retro - reflective sheeting shall be a one or both sides of the Median Marker and shall be edge protected with no exposed edges which will prevent edge lifting, vandalism, sheeting damage, etc. The Median Marker shall be fixed by a combination of epoxy adhesive and grouting.	Nos.							
	(P.No.189 of I.No.24.56 in PW,P&IWTDR SR 2018 - 19)								
	From Ch: 350m to Ch: 810m		92				92		
	For Median both sides		490				490		
	At Every 5m Spacing					Say	582	471.70	274529.40
9.07	KSRRB M800-43: Installation of a steel portable barricade with horizontal rail 300mm wide, 2.5m in length fitted on a 'A' frame made with 45 x 45 x 5mm angle iron section, 1.5m in height, horizontal rail painted (2 coats) with yellow and white stripes, 150mm in width at an angle of 45°, 'A' frame painted with 2 coats of yellow paint, complete as per IRC: SP: 55 - 2001 complete as per specifications	Each							
	(P.No.187, I.No.24.44 in PW,P&IWTDR SR 2018 - 19)								
							800	2639.40	2111520.00

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Sl. No.	Sl. No.	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
9.08	KSRRB M800 15: Road Delineators: Supply & installation of Vertical Delineator having wide angle cube corner micro prismatic non metallic reflective sheeting Conforming to Type - XI of IRC: 67 - 2012 with White and Red colour combination and having minimum of retro reflective exposed area of 125Sqcm on top slots and 35Sqcm on bottom slots and no edges shall be exposed for tampering. This tubular delineator shall have a core and shell construction, shell shall be made of tough, high impact resistant, injection moulded, thermoplastic outer body and the inner core shell consist of power coated or painted mild steel of minimum thickness 1.0mm and core-shell structure shall be of height not less than 800mm above the ground	Nos.							
	(P.No.182 of I.No.24.19 in PW,P&I WTD SR 2018 - 19)								
			26				26	1963.12	51041.00
							Total Amount		5592962.18
10.00	Tree Transplantation								
10.01	Transplantation and Treatement for the Trees coming in the widened portion of Carriageway as per directions of Engineer - in - charge	Each							
	BBMP Approved Rate								
							205	19900.00	4079500.00
							Total Amount		4079500.00

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Project: Widening of Jayamahal Road (from Mehkri Circle to Jayamahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Name of Work: Widening of Jayamahal Road (from Mehkri Circle to Jayamahal Palace Hotel) in Bengaluru City

Detailed Cost Estimate for Street Illumination

PW, P&I WTD SR, Electrical Works 2019 - 20

Sl. No.	Page No.	Item No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1.0			Wires and Cables				
1.1	6	2.3.3	Wiring for Lighting / Power Circuit using one of FRLS PVC insulated 1100V grade, multistrand Copper Wire with low conductor resistance single core wire in open or concealed system of wiring with specified IS: 694 conforming to the latest Amendments 2.5 Sqmm (from Pole Box to Light Fixture)	Mtr.	8800.00	32.00	281600.00
2.0			Luminaries / Light Fixtures & Accessories				
2.1	67	12.8.6	Supply of LED Streetlight Luminaire with Pressure Die Cast Aluminium Housing Body for Optimal Thermal Dissipation. Lamp Compartment comprising of Anti Glare Clear Diffuser with Injection moulded Polycarbonate Material, delivering superior Light Output. Rate Life Burning hrs. 50000 hr. @ Lumen Maintenance of 70%, Maximum Light Intensity should be between 60 degrees and 70 degrees, CCT > 5500K, IP 66 Optical and Electrical Compartment and Impact Resistance of Complete Luminaire > IK08, Power Factor > 0.9 with Mains, Surge Protection minimum 5KV along with Over Voltage / Overload, Short Circuit / Miss - Wiring Protection. Compatible for Pole Mounting with Outer Dia of 40mm to 50mm. Universal Voltage Driver to operate wide Voltage range from 100V to 270V 50 / 60 Hz Application. Compliance to IS: 10322 / IEC 60598, LM 79 and LM 80 adherence with RoHS UL approved MCPCB. Top access Street Light with Single Screw to ensure ease of maintenance at the Sight Site Location with minimised minimal Tools. LED Light Fixture with 150 Watts System Power consumption. LED Efficiency > 130 lm / w, nominal CRI > 75. Luminaire Manufacturer should have in house Facility accredited by NABL / CPRI and any Government certified Agency and Design and Development Facility certified by ISO 9001: 2008. Housing with Supplier Word Mark / Name shall be engraved / embossing on the Die Cast Housing / Body Part. Warranty of 2 Years against any Manufacturing Defect working under Standard Electrical Conditions as mentioned above should be given by LED Manufacturer and Cree / Nichia / Lumileds / Osram Make LED Source. LED Streetlight 150 Watts	No.	260.00	12300.00	3198000.00
2.2	13	4.2.9	Fabricating, supplying and erection of 11m long hot dip Galvanized Octagonal Pole with BSEN 10025 grade S 355 JO steel plate of shaft, IS: 2062 for base plate with door opening arrangements, including suitable boards, bakelite sheet and MCBs as per IS Specification suitable to withstand the Wind Speed of 47m / sec for 11m Pole in single section and single joint welded as per IS: 9595 / IS: 10178AWS having dimensions Bottom 210mm, Top 90mm with 3mm thick, suitable base plate and 4Nos. 11m long J Bolts along with Template and Pole shall be Hot Dip Galvanized in single dipping with not less than 65micron as per ASTM - A123 and 153, etc. (excluding Foundation) as per drawing appended. 11meters - Top 90mm and Bottom 210 mm dia	Each	260.00	20698.00	5381480.00

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Sl. No.	Page No.	Item No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
2.3	16	4.7.6	Supplying, and fixing of Hot Dip Galvanized M. S. Bracket suitable for Outdoor Luminaries and mounted on Octogonal Pole using necessary Bolts, Nuts, etc. complete. Double Arm Bracket with 2000mm Standard 40 / 50 mm dia	Each	260.00	3696.00	960960.00
3.0			LT UG Cables				
			Earthing for Feeder Pillar				
3.1	40	6.2	Supplying, fixing and wiring Earth Electrode for grounding of Lifts, Transformers, DG Sets, etc. using 40mm dia 2.9mm thick 2.5m long GI Pipe with GI Funnel with Mesh and suitable Size Reducer fixed on the Top of the Earth Electrode. The Funnel should be enclosed in a CC Chamber of 400 X 400 X 400mm with a Cast Iron Cover. The Earth Electrode shall have Staggered Holes of 12mm dia and the Electrode should be covered 150mm around with Alternate Layers of Salt and Charcoal from the bottom of the CC Chamber. The Connection from the Electrode is to be established through GI Strip using GI Bolts and Nuts.	No.	6.00	4150.00	24900.00
3.2	40	6.3.1	Supplying and running of GI / Copper Strips for grounding Connections using necessary Fixing Materials as required. 25 X 3mm GI Strip	Mtr.	75.00	75.00	5625.00
3.3	40	6.4.2	Supplying of 1.1 KV LT UG Cable XLPE or Heat Resistant PVC insulated, PVC extruded Inner Sheath armoured UG LT Cable as per IS: 1554 (Part 1) or IS: 7098 Part 1. Armouring Strip Thickness in Average + 5% and Resistivity 14 Ohms / Km (Max) as per IS: 3975 4 Core 10 Sqmm	Mtr.	5500.00	130.00	715000.00
3.4	40	6.4.4	Supplying of 1.1 KV LT UG Cable XLPE or Heat Resistant PVC insulated, PVC extruded Inner Sheath armoured UG LT Cable as per IS: 1554 (Part 1) or IS: 7098 Part 1. Armouring Strip Thickness in Average + 5% and Resistivity 14 Ohms / Km (Max) as per IS: 3975 4 Core 16 Sqmm	Mtr.	300.00	150.00	45000.00
3.5	41	6.5.1	Labour Charges for laying of 1.1 KV Class UG Cable in existing Trench GI Pipe / Stoneware Pipe / on Wall / on Pole as required. In existing Trench / Duct 6 Sqmm to 16 Sqmm	Mtr.	5300.00	11.88	62964.00
3.6	41	6.5.6	Labour Charges for laying of 1.1 KV Class UG Cable in existing Trench GI Pipe / Stoneware Pipe / on Wall / on Pole as required. On Wall / Structure 6 Sqmm to 16 Sqmm	Mtr.	500.00	30.00	15000.00
3.7	41	6.6.1	Digging of Trench of 0.6m Deep X 0.5m Wide refilling the Trench to the required ground level and consolidating, etc. In Soil (Ordinary)	Mtr.	5300.00	76.00	402800.00
3.8	41	6.6.2	Digging of Trench of 0.6m Deep X 0.5m Wide refilling the Trench to the required ground level and consolidating, etc. In Soil (Hard)	Mtr.	200.00	102.00	20400.00
3.9	41	6.6.3	Digging of Trench of 0.6m Deep X 0.5m Wide refilling the Trench to the required ground level and consolidating, etc. Cutting Road Surface	Mtr.	200.00	82.00	16400.00

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Sl. No.	Page No.	Item No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
3.10	41	6.6.4	Digging of Trench of 0.6m Deep X 0.5m Wide refiling the Trench to the required ground level and consolidating, etc. Asphalt Cutting	Mtr.	50.00	113.00	5650.00
3.11	41	6.6.5	Digging of Trench of 0.6m Deep X 0.5m Wide refiling the Trench to the required ground level and consolidating, etc. C. C. Cutting	Mtr.	50.00	205.00	10250.00
3.12	42	6.11.2	Supplying and fixing of Heavy Duty Cable Glands suitable for UG Cable of 1.1 KV Class (metal only) 25mm dia	Each	526.00	84.00	44184.00
3.13	42	6.9.5	Supplying and fixing of Class A (Medium Duty) GI Pipe of Wall Thickness not less than 3.25mm on Pole / Wall / Drain Crossing with necessary Clamping Arrangements for UG Cable of 1.1 KV. 100mm	Mtr.	300.00	890.00	267000.00
3.14	42	6.12.2	Supplying and making Straight through Cable Joint with Epoxy Resin including Ferruls and other Jointing Materials for PVC Insulated and PVC Sheathed Steel Tape, Wire armoured Aluminium Conductor 4 Core Cable of 1.1 KV Grade. 10 / 16 Sqmm	Per Kit	2.00	1280.00	2560.00
3.15	43	6.14	Supplying Epoxy Resin and Covering the Cable Joint	Per Kg	1.00	870.00	870.00
3.16	43	6.15	Supply and wrapping the Conductor with Camabrick Tape Roll	Per Roll	1.00	118.00	118.00
3.17	43	6.17.5	Supplying tinned Copper Lugs and crimping and wiring to Terminal Point for Wire. 10 Sqmm	Each	2080.00	8.00	16640.00
3.18	43	6.17.6	Supplying tinned Copper Lugs and crimping and wiring to Terminal Point for Wire. 16 Sqmm	Each	24.00	12.44	298.56
3.19	44	6.18.3	Supplying and running GI / Copper Conductor for grounding and (along with other Wires in Conduit System of Wiring) using necessary suitable size Clamps, Nails, Guttas / Spacers, etc. 8 SWG GI Wire	Mtr.	11000.00	19.00	209000.00
4.0			Fixing Charges				
4.1	79	14.5	Fixing Halogen / Metal Halide / SVL / IL / LED Flood Light fitting over existing Pole / Wall Ceiling including Clamps, Bolts, Nuts and Wiring using suitable capacity wires.	Each	260.00	175.00	45500.00
5.0			External Lighting Feeder Pillar				
5.1	29	5.33	Supplying of Multi Function Digital Meter with three line Back Light LCD type Display of Voltage, Current, Frequency, Power, Power Factor, KVA, KWH, KVAR suitable for 3 Phase, 4 wire LT Network with IP 54 degree of Protection and completely wired as required with Communication Port and Class 0.5s Accuracy.	Each	3.00	7750.00	23250.00
5.2	29	5.34	Supplying, fixing and wiring 50 / 5 to 400 / 5 Amps 5VA burden Current Transformer, Class 0.5 Accuracy with tape wound.	Each	9.00	468.00	4212.00

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Sl. No.	Page No.	Item No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
5.3	29	5.38	Supplying and fixing of LED Type Panel Board indicating Lamp with required colour suitable for 230 / 440V A. C. 50HZ 12 / 24V D.C.	Each	9.00	430.00	3870.00
5.4	32	5.47	Supplying and fixing Microprocessor based Electronic Timer (without Contactor, Din Mounting using necessary Bolts, Nuts and Washers, etc.) 3 - 120 sec setting.	Each	3.00	1925.00	5775.00
5.5	26	5.13.3	Supply and fixing of 4 Pole Power Contactor with NO / NC Contacts on existing Wood / Panel Board using necessary Bolts, Nuts, Washers and Wiring, etc. complete with AC - 3 Rating and as per IS: 13947 60 Amps	Each	3.00	4200.00	12600.00
5.6	27	5.17.9	Supplying and fixing Miniature Circuit Breakers on existing MCB Distribution Boards using necessary Fixing Materials and 'C' Type Curve, Indicator ON / OFF, Energy Cross - 3 with Short Circuit Breaking Capacity of 10K and complete Wiring as required conforming to IEC: 60898. In comer 50 - 63 Amps TPN	Each	3.00	2397.00	7191.00
5.7	27	5.17.9	Supplying and fixing Miniature Circuit Breakers on existing MCB Distribution Boards using necessary Fixing Materials and 'C' Type Curve, Indicator ON / OFF, Energy Cross - 3 with Short Circuit Breaking Capacity of 10K and complete Wiring as required conforming to IEC: 60898. Out Going 50 - 63 Amps TPN	Each	15.00	2397.00	35955.00
5.8	31	5.44.3	Supply and Installation / Fixing / Provision of Outdoor type Thermoplastic Modular Panel enclosure with Transparent Polycarbonate Lid, Shock Proof, IP 65 (Weather Proof), Rust Proof, Dust Proof, Water Proof, Corrosion Proof having internally Embedded Gasket on both Lid and Flap suitable to fix Single Phase / Three Phase Energy Meter in suitable Base Plate and having a Provision for Fuse / MCB Cutout with suitable Transparent Hinged Flap Opening for operating MCB along with complete Tamper Proof SEALING Facility. 300 X 600 X 170mm	Each	3.00	5713.00	17139.00
5.9		Market Rate	Interlinking Copper Strip, Copper Wires with Lugs, Bolt and Nut between Busbar and Switch Fuse Unit, MCBs.	Each	3.00	10000.00	30000.00
Grand Total							11872191.56



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(Signature)

Bellary Road

Project: Widening of Jayamahar Road (from Mehkri Circle to Jayamahar Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Name of Work: Widening of Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Abstract of Detailed Cost Estimate

Sl. No.	Particulars	Cost in Rs.
1	Site Clearance and Dismantling	
2	Construction of Compound	3875490.3
3	Laying of Utility Ducts (Pipes for Storm Water Drain, Power Cables and OFC) and Cross Ducts	30444829.6
4	Construction of Footpath; Providing and Fixing of New Kerb Stones, Bollards and Railing and Construction of Tree Guard Wall	57448658.1
5	Construction of Median	26995464.5
6	Construction of Culverts	8142796.00
7	Carriageway Construction / Strengthening Works	4322443.92
	a. Construction of Carriageway in the Widened Portion	41988975.44
	b. Strengthening of existing Carriageway (Camber Correction, laying of Overlay)	20146695.44
8	Construction of Docking Stations	
9	Providing Traffic Signs, Lane Marking, Pedestrian Crossing, Studs,	473544.76
10	Tree Transplantation	5276570.55
	Construction Cost of Civil Works (A ₂)	1213900.00
11	Construction Cost of Electrical Works (B ₂)	200329368.84
	Total Construction Cost (C ₂) (A ₂ +B ₂)	7783745.04
12	Add GST @ 12%	208113113.88
	Total Construction Cost including GST	24973573.67
13	Consultancy Charges for DPR Preparation and PMC Services	233086687.55
14	Contingencies and other Charges	3121696.71
		4162262.28
15	Miscellaneous and rounding off	240370646.54
		129353.46
	Grand Total	240500000.00

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Project: Widening of Jayamahar Road (frommehkri Circle to Jayamahar Palace Hotel) and Bellary Road (from B. D. A. Junction to mehkri Circle) in Bengaluru City

Name of Work: Widening of Bellary Road (from B. D. A. Junction to mehkri Circle) in Bengaluru City

Detailed Cost Estimate

Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
1.00	Site Clearence and Dismantling								
1.01	KSRRB - M200-26: Dismantling of Kerb Stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications. MORTH Specification No. 202	Rmt.							
	(P.No.141, I.No.18.49 of PW, P&IWD SR 2018 - 19)								
	Western Side								
	Ch: 100m to 150m		1	50.00	--	--	50.00		
	Ch: 150m to 200m		1	50.00	--	--	50.00		
	Ch: 200m to 250m		1	50.00	--	--	50.00		
	Ch: 250m to 300m		1	50.00	--	--	50.00		
	Ch: 300m to 350m		1	50.00	--	--	50.00		
	Ch: 350m to 400m		1	50.00	--	--	50.00		
	Ch: 400m to 450m		1	50.00	--	--	50.00		
	Ch: 450m to 500m		1	50.00	--	--	50.00		
	Ch: 500m to 550m		1	50.00	--	--	50.00		
	Ch: 550m to 600m		1	50.00	--	--	50.00		
	Ch: 600m to 650m		1	50.00	--	--	50.00		
	Ch: 650m to 700m		1	50.00	--	--	50.00		
	Ch: 700m to 750m		1	50.00	--	--	50.00		
	Ch: 750m to 800m		1	50.00	--	--	50.00		
	Ch: 800m to 850m		1	50.00	--	--	50.00		
	Ch: 850m to 900m		1	50.00	--	--	50.00		
	Ch: 900m to 950m		1	50.00	--	--	50.00		
	Ch: 950m to 1000m		1	50.00	--	--	50.00		
	Ch: 1000m to 1050m		1	50.00	--	--	50.00		
	Ch: 1050m to 1100m		1	50.00	--	--	50.00		
	Ch: 1100m to 1150m		1	50.00	--	--	50.00		
	Ch: 1150m to 1200m		1	50.00	--	--	50.00		
	Ch: 1200m to 1250m		1	50.00	--	--	50.00		
	Ch: 1250m to 1300m		1	50.00	--	--	50.00		
	Ch: 1300m to 1350m		1	50.00	--	--	50.00		
	Ch: 1350m to 1400m		1	50.00	--	--	50.00		
	Ch: 1400m to 1450m		1	50.00	--	--	50.00		
	Ch: 1450m to 1475m		1	25.00	--	--	25.00		
	Deduct Cross Roads								
			1	24.80	--	--	-24.80		
	At Kaveri Junction		1	21.32	--	--	-21.32		
			1	99.00	--	--	-99.00		
			1	11.50	--	--	-11.50		
			1	12.40	--	--	-12.40		
			1	15.11	--	--	-15.11		
			1	13.38	--	--	-13.38		
	Eastern Side						1177.49		
	Ch: 0m to 50m		1	50.00	--	--	50.00		
	Ch: 50m to 100m		1	50.00	--	--	50.00		
	Ch: 100m to 150m		1	50.00	--	--	50.00		
	Ch: 150m to 200m		1	50.00	--	--	50.00		
	Ch: 200m to 250m		1	50.00	--	--	50.00		
	Ch: 250m to 300m		1	50.00	--	--	50.00		
	Ch: 300m to 350m		1	50.00	--	--	50.00		
	Ch: 350m to 400m		1	50.00	--	--	50.00		
	Ch: 400m to 450m		1	50.00	--	--	50.00		
	Ch: 450m to 500m		1	50.00	--	--	50.00		
	Ch: 500m to 550m		1	50.00	--	--	50.00		
	Ch: 550m to 600m		1	50.00	--	--	50.00		
	Ch: 600m to 650m		1	50.00	--	--	50.00		
	Ch: 650m to 700m		1	50.00	--	--	50.00		
	Ch: 700m to 750m		1	50.00	--	--	50.00		
	Ch: 750m to 800m		1	50.00	--	--	50.00		
	Ch: 800m to 850m		1	50.00	--	--	50.00		
	Ch: 850m to 900m		1	50.00	--	--	50.00		
	Ch: 900m to 950m		1	50.00	--	--	50.00		
	Ch: 950m to 1000m		1	50.00	--	--	50.00		
	Ch: 1000m to 1050m		1	50.00	--	--	50.00		

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10th

Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Ch: 1050m to 1100m		1	50.00	--	--	50.00		
	Ch: 1100m to 1150m		1	50.00	--	--	50.00		
	Ch: 1150m to 1200m		1	50.00	--	--	50.00		
	Ch: 1200m to 1250m		1	50.00	--	--	50.00		
	Ch: 1250m to 1300m		1	50.00	--	--	50.00		
	Ch: 1300m to 1350m		1	50.00	--	--	50.00		
	Ch: 1350m to 1400m		1	50.00	--	--	50.00		
	Ch: 1400m to 1450m		1	50.00	--	--	50.00		
	Ch: 1450m to 1475m		1	25.00	--	--	25.00		
	Median from Ch: 550m to 1475m		1	925.00	--	--	925.00		
							2400.00		
							3577.49		
1.02	Removing B. S. Slab of Drain and Stacking P.No.27, L.No.5.32 in PW, P&I WTD SR 2018 - 19)	Sqm				Say	3578.00	12.72	45512.16
	Western Side								
	Ch: 100m to 150m		1	50.00	1.85	--	92.50		
	Ch: 150m to 200m		1	25.20	1.50	--	37.80		
	Ch: 200m to 250m		1	50.00	1.50	--	75.00		
	Ch: 250m to 300m		1	50.00	1.50	--	75.00		
	Ch: 300m to 350m		1	50.00	1.50	--	75.00		
	Ch: 350m to 400m		1	50.00	1.50	--	75.00		
	Ch: 400m to 450m		1	50.00	1.50	--	75.00		
	Ch: 450m to 500m		1	50.00	1.50	--	75.00		
	Ch: 500m to 550m		1	50.00	1.50	--	75.00		
	Ch: 550m to 600m		1	50.00	1.50	--	75.00		
	Ch: 600m to 650m		1	25.78	1.45	--	37.38		
	Ch: 650m to 700m		1	38.50	0.68	--	26.18		
	Ch: 700m to 750m		1	50.00	1.09	--	54.50		
	Ch: 750m to 800m		1	50.00	1.50	--	75.00		
	Ch: 800m to 850m		1	50.00	1.50	--	75.00		
	Ch: 850m to 900m		1	50.00	1.50	--	75.00		
	Ch: 900m to 950m		1	50.00	1.50	--	75.00		
	Ch: 950m to 1000m		1	50.00	1.35	--	67.50		
	Ch: 1000m to 1050m		1	50.00	1.20	--	60.00		
	Ch: 1050m to 1100m		1	50.00	1.20	--	60.00		
	Ch: 1100m to 1150m		1	41.89	1.20	--	50.27		
	Ch: 1150m to 1200m		1	44.09	1.20	--	52.91		
	Ch: 1200m to 1250m		1	50.00	0.60	--	30.00		
	Ch: 1250m to 1300m		1	38.80	1.20	--	46.56		
	Ch: 1300m to 1350m		1	50.00	1.20	--	60.00		
	Ch: 1350m to 1400m		1	25.00	1.20	--	30.00		
	Ch: 1400m to 1450m		1				1380.60		
	Eastern Side								
	Ch: 0m to 50m		1	50.00	1.30	--	65.00		
	Ch: 50m to 100m		1	50.00	1.40	--	70.00		
	Ch: 100m to 150m		1	50.00	1.50	--	75.00		
	Ch: 150m to 200m		1	50.00	1.50	--	75.00		
	Ch: 200m to 250m		1	50.00	1.50	--	75.00		
	Ch: 250m to 300m		1	50.00	1.50	--	75.00		
	Ch: 300m to 350m		1	50.00	1.50	--	75.00		
	Ch: 350m to 400m		1	50.00	1.50	--	75.00		
	Ch: 400m to 450m		1	50.00	1.50	--	75.00		
	Ch: 450m to 500m		1	50.00	1.45	--	72.50		
	Ch: 500m to 550m		1	50.00	1.65	--	82.50		
	Ch: 550m to 600m		1	50.00	1.30	--	65.00		
	Ch: 600m to 650m		1	50.00	1.15	--	57.50		
	Ch: 650m to 700m		1	50.00	1.50	--	75.00		
	Ch: 700m to 750m		1	50.00	1.10	--	55.00		
	Ch: 750m to 800m		1	50.00	1.25	--	62.50		
	Ch: 800m to 850m		1	50.00	1.40	--	70.00		
	Ch: 850m to 900m		1	50.00	1.75	--	87.50		
	Ch: 900m to 950m		1	50.00	1.80	--	90.00		
	Ch: 950m to 1000m		1	50.00	1.80	--	90.00		
	Ch: 1000m to 1050m		1	25.00	1.65	--	41.25		
							1601.25		
							2981.85		
1.03	KSRRB - M200-25: Dismantling of guard rails by Manual means and disposal of dismantled materials with all lifts and stacking serviceable materials and unserviceable materials separately complete as per specifications. MORTH Specification No. 202 (P.No. 140, I. No 18.48 of PAW, P&WIT of SR 2018 - 19)	m				Say	2982.00	104.94	312931.08

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10/11

Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Western Side		3	5.50	--	--	16.50		
	Eastern Side		2	5.50	--	--	11.00		
							27.50		
1.04	KSRRB - M200-15.2: Dismantling of existing structures like culverts, Bridges, Retaining Walls and other Structures 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 complete as per specifications. iii) Dismantling Stone masonry B. Rubble Stone masonry in cement mortar. SSM (P.No.140, I.No.18.27 of PW, P&I WTD SR 2018 - 19)	Cum					Say 28.00	92.22	2582.16
	Drain								
	Western Side		2	1380.60	0.45	0.80	994.03		
	Eastern Side		2	1601.25	0.45	0.80	1152.90		
	Compound Wall(Eastern Side)								
	Sub Structure		1	895.00	0.75	0.25	167.81		
			1	895.00	0.60	0.60	322.20		
			1	895.00	0.45	0.45	181.24		
	Super Structure		1	895.00	0.60	2.20	1181.40		
							3999.58		
1.05	KSRRB - M200-13.1: Dismantling of existing structures like culverts, Bridges, Retaining Walls and other Structures 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 complete as per specifications. II. by mechanical means, A. Cement Concrete Graded 15 & m20. (P.No.139, I.No.18.20 in PW, P&I WTD SR 2018 - 19)	Cum					Say 4000.00	372.06	1488240.00
	Drain								
	Western Side		1	1380.60	0.80	0.35	386.57		
	Eastern Side		1	1601.25	0.80	0.35	448.35		
	Compound Bed Concrete (PCC)		1	895.00	0.90	0.15	120.83		
	Coping		1	895.00	0.60	0.10	53.70		
							1009.44		
1.06	Dismantling A. C. Sheet Roofing and Stacking the material within a radius of 50m including cost of materials, labour, HOM complete as per specifications. (P.No.269, I.No.37.42.3 in PW, P&I WTD SR 2018 - 19)	Sqm					Say 1010.00	413.40	417534.00
	Ch: 1010 to 1080m		1	70.00		2.80	196.00		
1.07	Removing and resetting of Footpath Slab (P.No.270, I.No.37.56 of PW, P&I WTD S.R 2018 - 19)	Sqm					Say 196.00	104.94	20568.24
	Western Side								
	Ch: 100m to 150m		1	50.00	0.45	--	22.50		
	Ch: 150m to 200m		1	25.20	0.70	--	17.64		
	Ch: 200m to 250m		1	50.00	0.95	--	47.50		
	Ch: 250m to 300m		1	50.00	1.13	--	56.25		
	Ch: 300m to 350m		1	50.00	1.40	--	70.00		
	Ch: 350m to 400m		1	50.00	1.25	--	62.50		
	Ch: 400m to 450m		1	50.00	1.00	--	50.00		
	Ch: 450m to 500m		1	50.00	0.75	--	37.50		
	Ch: 500m to 550m		1	50.00	2.35	--	117.50		
	Ch: 550m to 600m		1	25.78	2.90	--	74.76		
	Ch: 600m to 700m		1	50.00	3.80	--	190.00		
	Ch: 700m to 750m		1	50.00	6.70	--	335.00		
	Ch: 750m to 800m		1	38.45	7.10	--	273.00		
	Ch: 800m to 850m		1	50.00	5.85	--	292.50		
	Ch: 850m to 900m		1	50.00	3.40	--	170.00		
	Ch: 1000m to 1050m		1	50.00	4.40	--	220.00		
	Ch: 1050m to 1100m		1	50.00	5.15	--	257.50		
	Ch: 1100m to 1150m		1	50.00	5.15	--	257.50		
	Ch: 1200m to 1250m		1	41.89	4.50	--	188.51		
	Ch: 1200m to 1250m		1	50.00	3.55	--	177.50		

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Ch: 1300m to 1350m		1	50.00	2.95	--	147.50		
	Ch: 1350m to 1400m		1	38.08	2.50	--	95.20		
	Ch: 1400m to 1450m		1	50.00	2.20	--	110.00		
	Ch: 1450m to 1475m		1	25.00	2.20	--	55.00		
	Eastern Side						3325.35		
	Ch: 0m to 50m		1	50.00	0.60		30.00		
	Ch: 50m to 100m		1	50.00	2.30		115.00		
	Ch: 100m to 150m		1	50.00	4.05	--	202.50		
	Ch: 150m to 200m		1	50.00	4.05	--	202.50		
	Ch: 200m to 250m		1	50.00	3.25	--	162.50		
	Ch: 250m to 300m		1	50.00	2.90	--	145.00		
	Ch: 300m to 350m		1	50.00	2.75	--	137.50		
	Ch: 350m to 400m		1	50.00	1.83	--	91.25		
	Ch: 400m to 450m		1	50.00	1.58	--	78.75		
	Ch: 450m to 500m		1	50.00	2.20	--	110.00		
	Ch: 500m to 550m		1	50.00	2.65	--	132.50		
	Ch: 550m to 600m		1	50.00	3.09	--	154.50		
	Ch: 600m to 650m		1	50.00	3.24	--	162.00		
	Ch: 650m to 700m		1	50.00	3.20	--	160.00		
	Ch: 700m to 750m		1	50.00	3.15	--	157.50		
	Ch: 750m to 800m		1	50.00	3.10	--	155.00		
	Ch: 800m to 850m		1	50.00	3.10	--	155.00		
	Ch: 850m to 900m		1	50.00	3.10	--	155.00		
	Ch: 900m to 950m		1	50.00	3.10	--	155.00		
	Ch: 950m to 1000m		1	50.00	3.10	--	155.00		
	Ch: 1000m to 1050m		1	50.00	3.10	--	155.00		
	Ch: 1050m to 1100m		1	50.00	3.05	--	152.50		
	Ch: 1100m to 1150m		1	50.00	2.80	--	140.00		
	Ch: 1150m to 1200m		1	50.00	2.60	--	130.00		
	Ch: 1200m to 1250m		1	50.00	2.53	--	126.25		
							3210.25		
							6535.60		
1.08	KSRRB 200-2: Cutting of trees girth girth from 300mm to 600mm including cutting of trunks, branches and removal of stumps roots stacking of serviceble materials earth filling in the depressions / pit, labour charges complete as per specifications. MORTH Specification Clause 201/ Chapter 2. (P.No.138, I.No.18.1 of PW, P&IWTDR SR 2018 - 19)	Each				Sav	6536.00	208.82	1364847.52
							12.00		
1.09	KSRRB 200-2: Cutting of trees girth girth from 600mm to 900mm including cutting of trunks, branches and removal of stumps roots stacking of serviceble materials earth filling in the depressions / pit, labour charges complete as per specifications. MORTH Specification Clause 201/ Chapter 2. (P.No.138, I.No.18.2 of PW, P&IWTDR SR 2018 - 19)	Each				Sav	12.00	316.94	3803.28
							22.00		
1.10	KSRRB 200-3: Cutting of trees girth girth from 900mm to 1800mm including cutting of trunks, branches and removal of stumps roots stacking of serviceble materials earth filling in the depressions / pit, labour charges complete as per specifications. MORTH Specification Clause 201/ Chapter 2. (P.No.138, I.No.18.3 of PW, P&IWTDR SR 2018 - 19)	Each				Sav	22.00	977.32	21501.04
							39.00		
1.11	KSRRB 200-4: Cutting of trees girth girth from 1800mm to 2700mm including cutting of trunks, branches and removal of stumps roots stacking of serviceble materials earth filling in the depressions / pit, labour charges complete as per specifications. MORTH Specification Clause 201/ Chapter 2. (P.No.138, I.No.18.4 of PW, P&IWTDR SR 2018 - 19)	Each				Sav	39.00	2377.58	92725.62
							12.00		
						Sav	12.00	3698.34	44380.08

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(Signature)

Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
1.12	KSRRB 200-4: Cutting of trees girth girth from 2700mm to 3600mm including cutting of trunks, branches and removal of stumps roots stacking of serviceable materials earth filling in the depressions / pit, labour charges complete as per specifications. MORTH Specification Clause 201/ Chapter 2 (P.No.138, I.No.18.5 of PW, P&I WTD SR 2018 - 19)	Each							
			--	--	--	--	4.00		
1.13	KSRRB - M200-32: Removal of Telephone / Electric Poles including excavation and dismantling of foundation concrete and lines under the supervision of concerned department, disposal with all lifts and stacking the serviceable and unserviceable material separately complete as per specifications. MORTH Specification No. 202 (P.No.141, I.No.18.57 of PW, P&I WTD S.R 2018 - 19)	Nos.					Say 4.00	7395.62	29582.48
	Western Side		--	--	--	--	84.00		
	Eastern Side		--	--	--	--	52.00		
							136.00	230.02	31282.72
							Total Amount		3875490.38



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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
2.00	Construction of Compound								
2.01	KSRB 2-2.1: Earthwork excavation by Manual means for foundation of buildings, culverts, water supply and sanitary lines and electrical conduits, etc.either in pits or in trenches 1.5m and above in width, in ordinary soil not exceeding 1.5m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50m including breaking of clods complete as per specifications. No.KBS 2.1(a)/2.3.5	Cum							
	(P.No.6, I.No.2.3 of PW, P&I WTD S.R 2018 - 19)								
	Ch: 10 to 425m		1	415.00	0.90	2.55	952.43		
	Ch: 1010 to 1080m		1	66.00	0.90	2.55	151.47		
	Ch: 750 to 760m		1	10.00	0.90	2.55	22.95		
	Ch: 800 to 810m		1	10.00	0.90	2.55	22.95		
							1149.80		
2.02	KSRB 4-1.1: Providing and laying in position plain cement concrete of mix 1:2:4 with OPC Cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.878Cum and fine aggregates @ 0.459Cum machine mixed, concrete laid in layers not exceeding 15cm thick, well compacted, in foundation, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1.4.2	Cum				Say	1150.00	316.94	364481.00
	(P.No.13, I.No.4.1 of PW, P&I WTD S.R 2018 - 19)								
	Ch: 10 to 425m		1	415.00	0.90	0.15	56.03		
	Ch: 1010 to 1080m		1	66.00	0.90	0.15	8.91		
	Ch: 750 to 760m		1	10.00	0.90	0.15	1.35		
	Ch: 800 to 810m		1	10.00	0.90	0.15	1.35		
							67.64		
						Say	68.00	5599.98	380798.64
2.03	KSRB 4-6.4: Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for vertical surface such as walls at any thickness, including attached pilasters, buttresses, plinth cills and string courses cost of all materials, labour complete as per specifications. Specification No.KBS 4.6.2	Sqm							
	(P.No.16 I.No.4.31 of PW, P&I WTD SR 2018-19)								
	Ch: 10 to 425m								
	Grade Beam		1	415.00	--	1.80	747.00		
	RCC Band		1	415.00	--	0.30	124.50		
	Ch: 1010 to 1080m								
	Grade Beam		1	66.00	--	1.80	118.80		
	RCC Band		1	66.00	--	0.30	19.80		
	Ch: 750 to 760m								
	Grade Beam		1	10.00	--	1.80	18.00		
	RCC Band		1	10.00	--	0.30	3.00		
	Ch: 800 to 810m								
	Grade Beam		1	10.00	--	1.80	18.00		
	RCC Band		1	10.00	--	0.30	3.00		
							1052.10		
						Say	1053.00	379.48	399592.44

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Sl. No.	Description of work	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
2.04	KSRB 4.2.7: Providing and laying in position reinforced cement concrete of design mix M25 with OPC cement @ 340kgs, with 20mm, and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @ 0.47Cum, with superplasticiser @ 3lts Conforming to IS: 9103 - 1999 Reaffirmed - 2008, machine mixed, concrete laid in layers not exceeding 15cm thick, vibrated for all works in Ground Floor Level for Roof Slabs, Staircase, Lintels and Beams, Retaining Walls, Return Walls, Walls (any thickness) including attached pilasters, columns, lintels, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window cills, fillets etc. including cost of all materials, labour, HOM of machinery, curing, complete but excluding cost of reinforcement as per specifications. Specification No. KBS 4.1, 4.6	Cum							
	(P.No.14, I.No.4.12 of PW, P&IWTDR SR 2018-19)								
	For Grade Beam								
	Ch: 10 to 425m								
	Ch: 1010 to 1080m		1	415.00	0.75	0.90	280.13		
	Ch: 750 to 760m		1	66.00	0.75	0.90	44.55		
	Ch: 800 to 810m		1	10.00	0.75	0.90	6.75		
			1	10.00	0.75	0.90	6.75		
							338.18		
						Say	339.00	6407.70	2172210.30
2.05	KSRB 5.2-3: Providing and constructing granite / trap / basalt size stone masonry in foundation with cement mortar 1:6, stone hammered dressed in courses not less than 20cm high, bond stones at 2m. apart in each course including cost of materials, labour, curing complete as per specifications. Specification No. KBS 5.1.13.	Cum							
	(P.No.25, I.No.5.6 of PW, P&IWTDR SR 2018-19)								
	Ch: 10 to 425m								
	Ch: 1010 to 1080m		1	415.00	0.60	1.35	336.15		
	Ch: 750 to 760m		1	66.00	0.60	1.35	53.46		
	Ch: 800 to 810m		1	10.00	0.60	1.35	8.10		
			1	10.00	0.60	1.35	8.10		
	We can Re Use the available SSM Quantity						405.81		
						Say	406.00		
2.06	KSRB - M2200-8: Providing Weep Holes in Brick masonry / Plain / Reinforced Concrete Abutment, Wing Wall / Return Wall with 100mm dia AC Pipe, extending through the full width of the structure with slope of 1V:20H towards drawing face. Complete as per drawing and Technical Specifications including cost of materials, labour, HOM complete as per specifications. MORTH Specification No. 2706 & 2200	Nos. /m							
	(P.No.229, I.No.28.10 of PW, P&IWTDR SR 2018 - 19)								
			4810				4810.00	155.82	749494.20

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
2.07	KSRB 4.2.7: Providing and laying in position reinforced cement concrete of design mix M25 with OPC cement @ 340kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @ 0.47Cum, with superplasticiser @ 3lts Conforming to IS: 9103 - 1999 Reaffirmed - 2008, machine mixed, concrete laid in layers not exceeding 15cm thick, vibrated for all works in Ground Floor Level for Roof Slabs, Staircase, Lintels and Beams, Retaining Walls, Return Walls. Walls (any thickness) including attached pilasters, columns, lintels, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window cills, fillets etc. including cost of all materials, labour, HOM of machinery, curing, complete but excluding cost of reinforcement as per specifications. Specification No. KBS 4.1. 4.6	Cum							
	(P.No.14, I.No.4.12 of PW, P&IWTDR SR 2018-19)								
	For RCC Band								
	Ch: 10 to 425m		1	415.00	0.60	0.15	37.35		
	Ch: 1010 to 1080m		1	66.00	0.60	0.15	5.94		
	Ch: 750 to 760m		1	10.00	0.60	0.15	0.90		
	Ch: 800 to 810m		1	10.00	0.60	0.15	0.90		
							45.09		
2.08	KSRB 4.9.2: Providing TMT Steel Reinforcement for RCC work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 4.6.3 TMT bars Fe 500	Tonne				Say	46.00	6407.70	294754.20
	(P.No.18, I.No.4.46.2 of PW, P&IWTDR SR 2018 - 19)								
	Grade beam @120Kg/Cum						108.22		
	RCC Band @40Kg/Cum						6.01		
2.09	KSRB 5.3-3: Providing and constructing granite / trap / basalt size stone masonry in basement with cement mortar 1:6, edges of stones chiselled dressed in courses not less than 15cm high, bond stones at 2m apart in each course including cost of materials, labour, curing complete as per specifications. Specification No. KBS 5.1.13.	Cum					114.23	75223.96	8592682.50
	(P.No.25, I.No.5.9 of PW, P&IWTDR SR 2018-19)								
	Ch: 10 to 425m		1	352.00	0.45	1.15	182.16		
	Ch: 1010 to 1080m		1	55.20	0.45	1.15	28.57		
	Ch: 750 to 760m		1	10.00	0.45	1.15	5.18		
	Ch: 800 to 810m		1	10.00	0.45	1.15	5.18		
							221.08		
						Say	222.00	5811.98	1290259.56
2.10	KSRB 4.1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement using @ 240kgs, with 20mm and down size graded granite metal coarse aggregate @ 0.878Cum and fine aggregates @ 0.53Cum machine mixed, concrete laid in layers not exceeding 15cm thick well compacted in foundation, plinth and cills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1. 4.2	Cum							
	(P.No.13, I.No.4.6 of PW, P&IWTDR SR 2018-19)								
	For Basement Coping Concrete (DPC)								
	Ch: 10 to 425m		1	352.00	0.45	0.15	23.76		
	Ch: 1010 to 1080m		1	55.20	0.45	0.15	3.73		
	Ch: 750 to 760m		1	10.00	0.45	0.15	0.68		

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Ch: 800 to 810m		1	10.00	0.45	0.15	0.68		
	Ch: 750 to 1350m		1	600.00	0.45	0.15	40.50		
							69.34		
2.11	KSRB 5.4-4: Providing and constructing granite / trap / basalt size stone masonry in Super Structure with cement mortar 1:4, edges of stones chistle dressed in courses not less than 15cm high, bond stones at 2m apart in each course including cost of materials, labour, scaffolding, curing complete as per specifications. Specification No. KRS 5.1.12 (P.No.25, I.No.5.13 of PW, P&IWTDR SR 2018-19) SSM Column @ Every 4m c/c	Cum					Say 70.00	5747.32	402312.40
	Ch: 10 to 425m		105	0.60	0.60	2.30	86.94		
	Ch: 1010 to 1080m		18	0.60	0.60	2.30	14.90		
	Ch: 750 to 760m		4	0.60	0.60	2.30	3.31		
	Ch: 800 to 810m		4	0.60	0.60	2.30	3.31		
	Ch: 630 to 650		6	0.60	0.60	2.30	4.97		
							113.44		
2.12	KSRB 6-6.3: Providing and constructing Burnt Brick masonry with approved quality of modular bricks of standard size of class designation 7.5 Newton per Sqmm (Machine moulded Wirecut Bricks) with cement mortar 1:4 for basement and super structure including cost of materials, labour charges, scaffolding, curing complete as per specifications. Specification No. KBS 6.2 (P.No.30, I.No.6.21 of PW, P&IWTDR SR 2018-19)	Cum					Sav 114.00	6365.30	725644.20
	Ch: 10 to 425m		1	353.60	0.23	1.00	81.33		
	Ch: 1010 to 1080m		1	57.80	0.23	1.00	13.29		
	Ch: 750 to 760m		1	10.20	0.23	1.00	2.35		
	Ch: 800 to 810m		1	10.20	0.23	1.00	2.35		
	Ch: 750 to 1350m		1	510.00	0.23	1.00	117.30		
	Ch: 630 to 650		1	17.00	0.23	1.00	3.91		
	0.23*1*0.75*16 No.*4 rows		282	0.11			-31.13		
							189.39		
2.13	KSRB 4-1.5: Providing and laying in position plain cement concrete mix M20 with OPC cement @ 300kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69Cum and fine aggregates @ 0.43Cum machine mixed, concrete laid in layers not exceeding 15cm thick, well compacted in foundation, plinth and cills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No.KBS 4.1, 4.2 (P.No.13, I.No.4.5 of PW, P&IWTDR SR 2018-19) At Top Coping Above Brick wall	Cum					Sav 190.00	10901	2071197.60
			1	353.60	0.23	0.10	8.13		
			1	57.80	0.23	0.10	1.33		
			1	10.20	0.23	0.10	0.23		
			1	10.20	0.23	0.10	0.23		
			1	510.00	0.23	0.10	11.73		
			1	17.00	0.23	0.10	0.39		
	Above SSM Column		105	0.60	0.60	0.10	3.78		
			18	0.60	0.60	0.10	0.65		
			4	0.60	0.60	0.10	0.14		
			4	0.60	0.60	0.10	0.14		
			6	0.60	0.60	0.10	0.22		
							26.98		
2.14	KSRB 15.1-1: Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. (P. No.115, I.No.15.1 of PW, P&IWTDR SR 2018-19) For Basement	Sqm					Sav 27.00	5647.68	152487.36
			2	353.60	--	1.15	813.28		

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Sl. No.	Description of work	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	For Super structure		2	57.80	--	1.15	132.94		
			210	0.60	--	2.30	289.80		
			36	0.60	--	2.30	49.68		
			8	0.60	--	2.30	11.04		
			8	0.60	--	2.30	11.04		
			12	0.60	--	2.30	16.56		
							1324.34		
2.15	KSRB 2.4: Refilling available earth around pipeline, cables in layers not exceeding 20cms depth, compacting each deposited layers by ramming after watering with lead upto 50m. and lift upto 1.5mtrs including cost of all labour complete as per specifications.	Cum				Say	1325.00	149.46	198034.50
	(P.No.7, I.No.2.11 of PW, P&IWTDR SR 2018-19)								
	For foundation								
			--	--	--	--	291.00		
2.16	KSRRB M100-4.1: Cost of Haulage excluding loading and unloading MORTH Chapter - 100/1 (Lead upto 19Km) for Earth(Excavated Soil)	Cum				Say	291.00	128.26	37323.66
	(P. No. 136, I.No. 17.4 of PW, P & IWTDR SR 2018-19)								
							856.71		
	Plinth Beam (Storm Water Drain)					Say	857.00	48.64	41684.48
2.17	KSRB 2-2.1: Earthwork excavation by manual means for foundation of buildings, culverts, water supply and sanitary lines and electrical conduits, etc. either in pits or in trenches 1.5m and above in width, in ordinary soil not exceeding 1.5m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50m including breaking of clods complete as per specifications. No.KBS 2.1(a)/2.3.5	Cum							
	(P.No.6, I.No.2.3 of PW, P&IWTDR SR 2018-19)								
			10	1.60	1.40	2.00	44.80		
2.18	KSRB 4-6.1: Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for foundations, footings, bases of columns for mass concrete including cost of all materials, labour complete as per specifications. Specification No.KBS 4.6.2	Sqm				Say	45.00	316.94	14262.30
	(P.No.16, I.No.4.28 of PW, P&IWTDR SR 2018-19)								
			10	6.00	--	0.45	27.00		
2.19	KSRB 4-6.5: Providing and removing centering, shuttering, strutting, propping etc., for columns, pillars, post and struts, square/rectangular/polygon in plan including cost of all materials, labour complete as per specifications. Specification No.KBS 4.6.2	Sqm				Say	27.00	273.48	7383.96
	(P.No.16, I.No.4.32 of PW, P&IWTDR SR 2018-19)								
			10	2.20		4.05	89.10		
2.20	KSRB 2.2.7: Benching Hard Rock 5 to 7.5cm depth. For seating of foundation, including cost of all labours, tools etc., complete as per specifications. No.KBS 2.1(a)/2.3.1	Sqm				Say	90.00	483.36	43502.40
	(P.No.6, I.No.2.9 of PW, P&IWTDR SR 2018-19)								
			10	1.60	1.40	--	22.40		
						Say	23.00	2323.52	53440.96

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Sl. No.	Description of work	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
2.21	KSRB 4-1.1: Providing and laying in position plain cement concrete of mix 1:2:4 with OPC Cement @ 240kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.878Cum and fine aggregates @ 0.459Cum machine mixed, concrete laid in layers not exceeding 15cm thick, well compacted, in foundation, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2 (P.No.13, I.No.4.1 of PW, P&IWTDR SR 2018-19)	Cum							
			10	1.60	1.40	0.60	13.44		
2.22	Anchor Bolt Chemical (Market Rate)	Liter		Area		Say	14.00	5599.98	78399.72
			120	314.20		300.00	11.31		
2.23	KSRB 4.9.2: Providing T.M.T steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 4.6.3 TMT bars Fe 500 (P.No.18, I.No.4.46.2 of PW, P&IWTDR SR 2018 - 19)	Tonn				Say	11.31	6760.00	76463.71
				Area					
			120	0.0002		0.60	0.11		
2.24	KSRB 4.2.1 : Providing and laying in position reinforced cement concrete of design mix M25 with OPC cement @ 340kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @ 0.47Cum, with superplasticiser @ 3lts confirming to IS9103-1999 Reaffirmed-2008, machine mixed, concrete laid in layers not exceeding 15 cms thick, vibrated for all works in foundation for footings, Pedastals, retaining walls, return walls (any thickness) including attached pilasters, columns, pillars, posts, struts, bed blocks, anchor blocks and Plinth etc., including cost of all materials, labour, HOM of machinery, curing, complete as per specifications. Specification No. KBS 4.1, 4.6 (P.No.14, I.No.4.10 of PW, P&IWTDR SR 2018-19)	Cum				Say	0.11	75223.96	8549.57
			10	1.60	1.40	0.45	10.08		
			10	0.75	0.35	4.05	10.63		
							20.71		
2.25	KSRB 4-6.4: Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for vertical surface such as walls at any thickness, including attached pilasters, buttresses, plinth and string courses cost of all materials, labour complete as per specifications. Specification No. KBS 4.6.2 (P.No.16 I.No.4.31 of PW, P&IWTDR SR 2018-19)	Sqm				Say	21.00	6160.72	129375.12
	Grade Beam		1	40.00	--	0.90	36.00		
	RCC Band		1	40.00	--	0.30	12.00		
							48.00		
						Say	48.00	379.48	18215.04

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
2.26	KSRB 4.2.7 : Providing and laying in position reinforced cement concrete of design mix M25 with OPC cement @ 340kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @ 0.47Cum, with superplastisiser @ 3lts confirming to IS9103-1999 Reaffirmed-2008, machine mixed, concrete laid in layers not exceeding 15 cms thick, vibrated for all works in Ground Floor Level for Roof Slabs, Staircase, Lintels and Beams, retaining walls, return walls, Walls (any thickness) including attached pilasters, columns, pillars, posts, struts, buttresses, string or lacing courses, Parapets, Coping, bed blocks, anchor blocks, Plain Window Cills, Fillets etc., including cost of all materials, labour, HOM of machinery, curing, complete as per specifications. Specification No. KBS 4.1, 4.6 (P.No.14, I.No.4.12 of PW, P&IWTDR SR 2018-19) For Grade Beam	Cum							
			1	40.00	0.75	0.45	13.50		
2.27	KSRB 5.2-3: Providing and constructing granite size stone masonry in foundation with cement mortar 1:6, stone hammered dressed in courses not less than 20cms high, bond stones at 2m. apart in each course including cost of materials, labour, curing complete as per specifications. Specification No. KBS 5.1.13. (P.No.25, I.No.5.6 of PW, P&IWTDR SR 2018-19) Covering Vents	Cum				Say	14.00	6407.70	89707.80
			1	40.00	0.60	1.35	32.40		
			8	4.00	0.60	3.00	57.60		
							90.00		
2.28	KSRB 4.2.7 : Providing and laying in position reinforced cement concrete of design mix M25 with OPC cement @ 340kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @ 0.47Cum, with superplastisiser @ 3lts confirming to IS9103-1999 Reaffirmed-2008, machine mixed, concrete laid in layers not exceeding 15 cms thick, vibrated for all works in Ground Floor Level for Roof Slabs, Staircase, Lintels and Beams, retaining walls, return walls, Walls (any thickness) including attached pilasters, columns, pillars, posts, struts, buttresses, string or lacing courses, Parapets, Coping, bed blocks, anchor blocks, Plain Window Cills, Fillets etc., including cost of all materials, labour, HOM of machinery, curing, complete as per specifications. Specification No. KBS 4.1, 4.6 (P.No.14, I.No.4.12 of PW, P&IWTDR SR 2018-19) For RCC Band	Cum				Say	90.00	4871.76	438458.40
			1	40.00	0.60	0.15	3.60		
2.29	KSRB 4.9.2: Providing T.M.T steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 4.6.3 TMT bars Fe 500 (P.No.18, I.No.4.46.2 of PW, P&IWTDR SR 2018 - 19) Footing @ 45Kg/Cum Column @140Kg/Cum Grade beam @120Kg/Cum RCC Band @40Kg/Cum	Tonn				Say	4.00	6407.70	25630.80
							0.45		
							1.49		
							1.68		
							0.16		
							3.78	75223.96	284495.14

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
2.30	KSRB 5.3-3: Providing and constructing granite / trap / basalt size stone masonry in basement with cement mortar 1:6, edges of stones chistle dressed in courses not less than 15cms high. bond stones at 2m. apart in each course including cost of materials, labour, curing complete as per specifications. Specification No. KBS 5.1.13.	Cum							
	(P.No.25, I.No.5.9 of PW, P&IWD SR 2018-19)								
			1	34.00	0.45	1.15	17.60		
2.31	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement using @ 240kgs, with 20mm and down size graded granite metal coarse aggregate @ 0.878Cum and fine aggregates @ 0.53Cum machine mixed, concrete laid in layers not exceeding 15cm thick well compacted in foundation, plinth and cills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No.KBS 4.1, 4.2	Cum				Sav	18.00	5811.98	104615.64
	(P.No.13, I.No.4.6 of PW, P&IWD SR 2018-19)								
	For Basement Coping Concrete (DPC)		1	34.00	0.45	0.15	2.30		
2.32	Providing and fixing M.S.Grill over existing compound wall as per using 16mm x 16mm M.S.Square rod at 150mm c/c spacing and 6mm x 40mm M.S. flats at horizontal and 6mm x12mm M.S. flat for ornamental design and providing shop edge design at the vertex of every vertical rods, including welding, grinding wherever necessary. All the steel surface should be thoroughly cleaned free of rust and painted with anti corrosive paint (shop paint) etc., complete. The work includes cost of all materials, labour charges for all items of work, hire charges for welding, cutting and grinding equipment, and electricity charges, etc., complete as per specification.	Sqm				Sav	3.00	5747.32	17241.96
	(P.No.44, I.No.7.36 of PW, P&IWD SR 2018-19)								
2.33	KSRB 5.4-4: Providing and constructing granite / trap/ basalt size stone masonry in Super Structure with cement mortar 1:4, edges of stones chistle dressed in courses not less than 15cms high, bond stones at 2m. apart in each course including cost of materials, labour, Scaffolding, curing complete as per specifications. Specification No. KBS 5.1.13.	Cum	2	3.00	4.00		24.00	5691.14	136587.36
	(P.No.25, I.No.5.13 of PW, P&IWD SR 2018-19)								
	SSM Column @ Every 4m c/c		11	0.60	0.60	2.40	9.50		
34	KSRB - 6-6.3: Providing and constructing Burnt brick masonry with approved Quality of modular bricks of standard size of class designation 7.5 Newton per Sqmm (Machine moulded Wirecut bricks) with cement mortar 1:4 for basement and super structure including cost of materials, labour charges, scaffolding, curing complete as per specifications.	Cum				Sav	10.00	6365.30	63653.00
	(P.No.30, I.No.6.21 of PW, P&IWD SR 2018-19)								
	0.23*1*.075*16 No.*4 rows		1	34.00	0.23	1.00	7.82		
			10	0.11			-1.10		
							6.72		
2.35	KSRB 4-1.5: Providing and laying in position plain cement concrete of mix M20 with OPC cement using @ 300kgs, with 20mm and down size graded granite metal Course aggregate @ 0.69Cum and Fine aggregates @ 0.43Cum machine mixed, concrete laid in layers not exceeding 15 cms.thick well compacted in foundation, plinth and cills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No.KBS 4.1, 4.2	Cum				Sav	7.00	10901	76307.28

Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	(P.No.13, I.No 4.5 of PW, P&IWT SR 2018-19)								
	At Top Coping Above Brick wall		1	34.00	0.23	0.10	0.78		
	Above SSM Column		11	0.60	0.60	0.10	0.40		
							1.18		
2.36	KSRB 15.1-1: Providing flush pointing 20mm deep. to square rubble, course or uncoursed stone masonry with cement mortar 1:3, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications.	Sqm				Say	2.00	5647.68	11295.36
	(P.No.115, I.No.15.1 of PW, P&IWT SR 2018-19)								
	For Basement		2	33.40	--	1.35	90.18		
	For Superstructure		2	33.40	--	1.15	76.82		
	For SSM Pier		22	0.60	--	2.40	31.68		
							198.68		
2.37	KSRB 2.4: Refilling available earth around pipeline, cables in layers not exceeding 20cm in depth, compacting each deposited layer by ramming after watering with lead upto 50m and lift upto 1.5m including cost of all labour complete as per specifications.	Cum				Say	199.00	149.46	29742.54
	(P.No.7, I.No.2.11 of PW, P&IWT SR 2018-19)								
	For foundation		--	--	--	--	20.92	128.26	2683.20
2.38	KSRB 2-2.1: Earthwork excavation by manual means for foundation of buildings, culverts, water supply and sanitary lines and electrical conduits, etc. either in pits or in trenches 1.5m and above in width, in ordinary soil not exceeding 1.5m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50m including breaking of clods complete as per specifications. No.KBS 2.1(a)/2.3.5	Cum							
	(P.No.6, I.No.2.3 of PW, P&IWT SR 2018-19)								
	Pile Cap		84	2.50	1.00	1.05	220.50		
						Say	221.00	316.94	70043.74
2.39	KSRRB - M2100 - 13: Providing and laying Plain / Reinforced Cement Concrete mix 1:2:4 with OPC cement @240kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.84Cum and fine aggregates @ 0.56Cum in Open Foundation including cost of all materials, labour, HOM, curing, form works, scaffolding and centering complete as per specifications complete as per Drawing and Technical Specifications MORTH Specification No. 1500, 1700 & 2100	Cum							
	(P. No. 222, I.No. 27.24 of PW, P & IWT SR 2018 - 19)								
	For Pile cap								
	Ch: 10 to 425m		42	2.50	1.30	0.15	20.48		
						Say	21.00	5409.18	113592.78
2.40	KSRRB - M1200-47: Providing steel liner 10mm thick for curbs and 6mm thick for steining of wells including fabricating and setting out as per detailed drawing complete as per specifications including cost of all materials, labour, HOM, form works, scaffolding and centering complete as per specifications. MORTH Specifications No.1200 & 1900	MT							
	(Pg.No. 217, I.No. 26.125 of PW, P & IWT SR 2018 - 19)								
	Casing for Piles								
	3.142*0.5*0.006*7.85 = 0.074		84	5.00	0.074	--	31.07		
						Say	32.00	72704.3	2326538.88

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
2.41	KSRRB 1100 - 2: Driving cast - in -place Vertical RCC 500mm dia. Piles with cement design mix M35 @390kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69Cum and fine aggregates @ 0.45Cum, with superplasticiser @ 3lts conforming to IS - 9103 - 1999 Reaffirmed - 2008, excluding Reinforcement as per Drawing, including cost of all materials, labour, HOM complete as per specifications. MORTH Specifications No.1100 -do-m35, 500mm dia piles 390 kg Cement, C.A. 0.69Cum, F.A 0.45Cum	Rmt							
	(Pg.No. 197, I.No. 25.2.2 of PW, P & IWTD S.R 2018 - 19)								
2.42	KSRRB - M1100-11.2: Cement Concrete for Reinforced Concrete in Pile Cap as per Drawing and Technical Specification complete as per specifications. RCC with OPC design mix M35 @ 390kgs, with 20mm down size graded granite metal coarse aggregates @ 0.68Cum and fine aggregates @ 0.45Cum, with superplasticiser @ 3lts conforming to IS9103-1999 Reaffirmed - 2008. Case - II: Using Batching Plant, Transmixer and Concrete Pump. Including costs of all materials labour, HOM, form works, scaffolding & centering. MORTH Specification No. 1100, 1500 & 1700.	Cum	84			8.00	672.00	8230.9	5531164.80
	(Pg.No. 200, I.No. 25.25 of PW, P & IWTD S.R 2018 - 19)								
	For Pile cap								
	P1		42	2.50	1.00	0.90	94.50		
2.43	KSRRB - M2300 - 14: Providing TMT Steel Reinforcement for R.C.C. Work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) including cost of materials, labour, HOM complete as per specifications. MORTH Specifications No.1600 and 2200 TMT Bars Fe 500	Tonn				Say	95.00	5544.86	526761.70
	(P.No.239, I.No.29.29.2 of PW, P&IWTD SR 2018 - 19)								
	Considering 135kg/Cum for Item No. 41								
	$672 \times 3.142 \times 0.5 \times 0.5/4 = 131.96 \times 0.135$		--	--	--	--	17.81		
	Considering 135kg/Cum for Pile Cap		--	--	--	--	12.83		
							30.64		
						Say	31.00	73992.24	2293759.44
						Total Amount			30444829.64



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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
3.00	Laying of Utility Ducts (Pipes for Storm water Drain, Power Cables and OFC) and Cross Ducts								
3.01	KSRRB - M300 - 14: Excavation for road work in all types of soil by mechanical means including cutting and loading to tipper, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301 (P.No.142, I.No.19.14 of PW, P&I WTD S.R 2018 - 19) Eastern Side (Palace Side) For Storm Water Drain (900mm) For Utility Ducts Western Side For Storm Water Drain (1200mm) For Utility Ducts For Catch Drain on both sides (For every 30m interval) For Storm Water Drain Chamber on Western side (For every 10m interval) (900mm dia) For Storm Water Drain Chamber on Eastern side (For every 10m interval) (1200mm dia) Inspection Chamber for OFC lines (40m interval) on both sides Inspection Chamber for Power line (40m interval) on both sides	Cum							
			1	1475.00	1.20	1.20	2124.00		
			1	1475.00	0.70	0.95	980.88		
			1	1475.00	1.80	1.50	3982.50		
			1	1475.00	0.70	0.95	980.88		
			99	1.00	1.00	0.65	64.35		
			148	1.80	0.60	1.00	159.30		
			148	2.10	0.30	0.90	83.63		
			37	1.50	0.80	0.80	35.40		
			37	1.50	0.80	0.80	35.40		
			37	2.50	0.80	1.10	81.13		
			37	2.50	0.80	1.10	81.13		
							8608.58		
3.02	KSRRB - M2100 - 13: Providing and laying Plain / Reinforced Cement Concrete mix 1:2:4 with OPC cement @240kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.84Cum and fine aggregates @ 0.56Cum in Open Foundation including cost of all materials, labour, HOM, curing, form works, scaffolding and centering complete as per specifications complete as per Drawing and Technical Specifications MORTH Specification No. 1500, 1700 & 2100 (P.No.222, I.No.27.24 of PW, P&I WTD S.R 2018 - 19) Access Chamber for SWD (10m interval) (900mm dia) Access Chamber for SWD (10m interval) (1200mm dia) Inspection Chamber for OFC lines (40m interval) on both sides Inspection Chamber for Power line (40m interval) on both sides For Catch Drain on both sides (For every 30m interval)	Cum				Say	8609.00	43.46	374147.14
			148	1.80	1.80	0.10	47.79		
			148	2.10	2.10	0.10	65.05		
			37	1.50	1.50	0.10	8.30		
			37	1.50	1.50	0.10	8.30		
			37	2.50	1.50	0.10	13.83		
			37	2.50	1.50	0.10	13.83		
			99	1.00	1.00	0.10	9.90		
							166.99		
3.03	KSRRB - M2100 - 16.2: Providing and laying Plain / Reinforced Cement Concrete 25 with OPC @ 340 kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @0.47Cum, with superplasticizer @3lts Conforming to IS - 9103 - 1999 Reaffirmed - 2008 in Open Foundation complete as per Drawing and Technical Specifications including cost of all materials, labour, HOM curing, form works, scaffolding and centering complete as per specifications. MORTH specification No.1500, 1700 & 2100 (P.No.223, I.No.27.29 of PW, P&I WTD S.R 2018 - 19) Access Chamber for SWD (10m interval) (900mm dia) Raft Wall Access Chamber for SWD (10m interval) (1200mm dia)	Cum				Say	167.00	5409.18	903333.06
			148	1.60	1.60	0.15	56.64		
			148	6.40	0.15	1.85	261.96		

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Sl. No.	Description of work	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	Raft								
	Wall		148	1.90	1.90	0.15	79.87		
			148	7.60	0.15	2.05	344.71		
	Inspection Chamber for OFC lines (40m interval) on both sides								
	Raft								
	Wall		37	1.30	1.30	0.15	9.35		
	Inspection Chamber for OFC lines (40m interval)		37	5.20	0.15	1.50	43.14		
	Raft								
	Wall		37	1.30	1.30	0.15	9.35		
	Inspection Chamber for Power line (40m interval) on both sides		37	5.20	0.15	1.50	43.14		
	Raft								
	Wall		37	2.30	1.30	0.15	16.54		
	Inspection Chamber for Power line (40m interval)		37	7.20	0.15	1.70	67.70		
	Raft								
	Wall		37	2.30	1.30	0.15	16.54		
	For Catch Drain on both sides (For every 30m interval)		37	7.20	0.15	1.70	67.70		
	Raft								
	Wall		99	0.80	0.80	0.15	9.50		
			99	3.2	0.15	0.40	19.01		
							1045.16		
3.04	KSRRB - M2200-6: Providing TMT Steel Reinforcement for RCC Work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification. MORTH Specification No.1600 & 2200 TMT Bars Fe 500	Tonne					Say 1045.50	5294.70	5535608.85
	(P.No.229, I.No.28.8.2 of PW, P&IWT D S.R 2018 - 19)								
	Consider 60kg per Cum								
3.05	KSRRB M100-4.1: Cost of Haulage excluding loading and unloading MORTH Chapter - 100/1 (Lead upto 19Km) for Earth(Excavated Soil)	Cum					62.73	72326.98	4537071.46
	(P. No.136 I.No. 17.4 of PW, P&IWT D S.R 2018 - 19)								
							3090.25		
3.06	KSRRB 2.4: Refilling available earth around pipeline, cables in layers not exceeding 20cm in depth, compacting each deposited layer by ramming after watering with lead upto 50m and lift upto 1.5m including cost of all labour complete as per specifications.	Cum					Say 3091.00	48.64	150346.24
	(P.No.7, I.No.2.11 of PW, P&IWT D SR 2018 - 19)								
	Eastern side								
	Deduction of Pipe Area		1	1.13	1475		1668.40		
			4	0.03	1475		185.38		
	Western side		6	0.01	1475		56.31		
	Deduction of Pipe Area		1	0.64	1475		938.48		
			4	0.03	1475		185.38		
			6	0.01	1475		56.31		
							3090.25		
							5518.75	128.26	707834.71

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Sl. No.	Description of work	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
3.07	Providing and fixing RCC Precast slab of 100mm thick for drain in cement concrete using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per the directions of Engineer in-charge.	Sqm							
	BBMP Approved Rate								
	Access Chamber for SWD (10m interval) (900mm dia)		148	1.60	1.60	--	378		
	Access Chamber for SWD (10m interval) (1200mm dia)		148	1.90	1.90	--	532		
	Inspection Chamber for OFC lines (40m interval) on both sides		74	1.30	1.30	--	125		
	Inspection Chamber for Power line (40m interval) on both sides		74	2.30	1.30	--	221		
							1255.23		
3.08	Supplying, laying and jointing HDPE Pipes of specified grade and conforming to IS: 4984 - 1995 with latest amendments and conveying to work site including loading and unloading at both destinations and rolling and lowering into trenches, laying true to line and jointing of pipes and specials, giving hydraulic test as per relevant ISS with all lead and lifts including encasing the pipe around to a depth of not less than 15cm. with soft gravel or selected earth available from the excavation, testing and commissioning. The rate is exclusive of required specials and fittings wherever necessary like saddle Tee, stub ends, flanged sets, bends, reducers etc. complete (Contractor will make his own arrangements for procuring water for testing) etc. for: PE - 100 PN 6.0	m					Say 1255.50	1724.00	2164482.00
	(P.No.125, BWSSB SR 2017-18, I.No. 6.1 - K060A, 6.7 - K060G, 6.5 - K060E)								
	i) 6*90mm dia for OFC / Telecom / Surveillance		6	2950.00	--	--	17700.00		
	Deductions of Chamber Portion		1	74.00	--	--	-74.00		
							17626.00	256.25	4516662.50
	ii) 4*200mm dia for Power Cables		4	2950.00	--	--	11800.00		
	Deductions of Chamber Portion		1	74.00	--	--	-74.00		
							11726.00	1016.07	11914453.57
	iii) 2*200mm dia for Power Cables (Toilets - UGD, Electrical)		2	35.00	--	--	70.00	1016.07	71125.00
	iv) 1*160mm dia for Street Light Cables		1	2950.00	--	--	2950.00		
	Deductions of Chamber Portion		1	37.00	--	--	-37.00		
3.09	Providing and laying reinforced cement concrete pipe NP3 for culverts including pointing ends, and fixing collars with cement mortar 1:2 including cost of all materials, labour, curing complete as per specifications. Specifications. No. KSRB 1000, 2300mOST Specification No.1000 / 2300	m					2913.00	670.54	1953270.54
	(P.No.254, I.No.34.6.6 and 34.6.3 of PW & IWTD SR 2018 - 19)								
	SWD 900mm dia pipe		1	1475.00	--	--	1475.00		
	Deductions of Chamber Portion		1	192.40			-192.40		
							1282.60	5832.12	7480277.11
	SWD 1200mm dia pipe		1	1475.00	--	--	1475.00		
	Deductions of Chamber Portion		1	236.80			-236.80		
							1238.20	8933.68	11061682.58
	300mm dia Pipe for Connection at 30m Interval		1524	1.20	--	--	1828.80	1626.04	2973701.95
3.10	Providing, supplying and fixing MS Surface Grating of size 500mm x 400mm at gully trap along the road surface as per approved drawing including transportation to site, all charges of labor, loading and unloading etc. complete for fixing as indicated in the drawing with all lead and lifts as per detailed tender specifications and as directed by the engineer.	Sqm							
	BBMP Approved Rate		99	0.80	0.80		63.36	9300.00	589248.00

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
3.11	Supplying PVC ringite pipe conforming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading and unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour, with all lead & lift including encasing the pipe alround to a depth of not less than 15cms with soft gravel or selected earth available from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor willmake his own arrangements for procuring water for testing).	Rmt.							
	(P.No 133, I.No. 1.1 of BWSSB SR 2017-18 -m010)								
	25mm Outer dia - 10 Kg/Cm2 (Class5) avg. 5m length 70%		36	--	--	--	36.00	40.18	1446.43
	Construction of Cross Ducts								
12	KSRRB - M300 - 14: Excavation for road work in all types of soil by mechanical means including cutting and loading to tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301	Cum							
	(P.No.143, I.No.19.14 of PW, P&IWTD SR 2018 - 19)								
	For Cross Ducts								
	At 45' Angle								
			1	53.04	0.90	1.00	47.74		
			1	49.89	0.90	1.00	44.90		
			1	34.53	0.90	1.00	31.08		
			1	19.05	0.90	1.00	17.15		
			1	19.50	0.90	1.00	17.55		
			1	34.67	0.90	1.00	31.20		
			1	23.48	0.90	1.00	21.13		
							210.74		
						Say	211.00	43.46	9170.06
3	KSRRB - M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300mm 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 of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450mm 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 complete as per specifications. -do- Case -II : Double row for two utility services	m							
	(P.No.186, I.No.24.35 of PW, P&IWTD 2018 - 19)								
			2	53.04	--	--	106.08		
			2	49.89	--	--	99.78		
			2	34.53	--	--	69.06		
			2	19.05	--	--	38.10		
			2	19.50	--	--	39.00		
			2	34.67	--	--	69.34		
			2	23.48	--	--	46.96		
							468.32		
						Say	468.50	3382.46	1584682.51
3.14	KSRRB 2-4:Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m.and lift upto 1.5m. including cost of all labour complete as per specifications.	Cum							
	(P.No.7, I.No.2.11 of PW, P&IWTD S.R 2018-19)								
			1	53.04	0.90	0.46	21.96		
			1	49.89	0.90	0.46	20.65		

Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
			1	34.53	0.90	0.46	14.30		
			1	19.05	0.90	0.46	7.89		
			1	19.50	0.90	0.46	8.07		
			1	34.67	0.90	0.46	14.35		
			1	23.48	0.90	0.46	9.72		
	Deduct Pipe Area		2	53.04	0.14		-15.00		
			2	49.89	0.14		-14.11		
			2	34.53	0.14		-9.76		
			2	19.05	0.14		-5.39		
			2	19.50	0.14		-5.51		
			2	34.67	0.14		-9.80		
			2	23.48	0.14		-6.64		
							30.73		
						Sav	31.00	128.26	3976.06
15	Construction of granular sub-base Grading-V as Sub-base and drainage layer by Providing coarse graded crushed stone aggregate of granite / trap / basalt material, mixing in amechanicalmix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98% proctor density, complete as per Specifications. Clause 401 of MORTH V Revision (P.No.153, I.No.20.5 of PW, P&IWTDR SR 2018 - 19) For Cross Ducts	Cum							
			1	53.04	0.90	0.20	9.55		
			1	49.89	0.90	0.20	8.98		
			1	34.53	0.90	0.20	6.22		
			1	19.05	0.90	0.20	3.43		
			1	19.50	0.90	0.20	3.51		
			1	34.67	0.90	0.20	6.24		
			1	23.48	0.90	0.20	4.23		
							42.15		
						Sav	42.50	1994.92	84784.10
16	KSRRB - M400 - 17: Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to Wet mix macadam specifications including premixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications. MORTH Specification No. 406 (P.No.155, I.No.20.18 of PW, P&IWTDR SR 2018-19) For Cross Ducts	Cum							
			1	53.04	0.90	0.25	11.93		
			1	49.89	0.90	0.25	11.23		
			1	34.53	0.90	0.25	7.77		
			1	19.05	0.90	0.25	4.29		
			1	19.50	0.90	0.25	4.39		
			1	34.67	0.90	0.25	7.80		
			1	23.48	0.90	0.25	5.28		
							52.69	2001.28	10572.76
17	KSRRB 500-9: Providing and applying Tack Coat using 80/100 Grade Bitumen (VG10) on granular base such as WBM surfaces hot bitumen primed at 4kg per 10Sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM Complete as per specifications. Clause 503 of MORTH V revision (I.No.21.9, Issue Rate as on 01 - 01 - 19) For Cross Ducts	Sqm							
			1	53.04	0.90		47.74		
			1	49.89	0.90		44.90		
			1	34.53	0.90		31.08		
			1	19.05	0.90		17.15		
			1	19.50	0.90		17.55		
			1	34.67	0.90		31.20		
			1	23.48	0.90		21.13		
							210.74	21.20	4467.77

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Sl. No.	Description of work	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
3.18	KSRRB - M500-17: Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, pre mixed with VG30 grade bituminous binder and, transporting the hotmix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500 - 10 complete in all respects complete as per specifications. MORTH Specification No. 507. Using 120 TPH capacity Asphalt batchmix plant with sensor paver Gr -II (50mm to 75mm) with 4.5 % VG-30 bitumen	Cum							
	(I.No.21.17.2, Issue Rate as on 01.01.2019)								
			1	53.04	0.90	0.075	3.58		
			1	49.89	0.90	0.075	3.37		
			1	34.53	0.90	0.075	2.33		
			1	19.05	0.90	0.075	1.29		
			1	19.50	0.90	0.075	1.32		
			1	34.67	0.90	0.075	2.34		
			1	23.48	0.90	0.075	1.58		
							15.81	7049.00	111415.08
3.19	KSRRB 500-7: Providing and applying tack coat using 80 / 100 grade bitumen (VG 10) on the prepared black topped surfaces at 2.5kg per 10Sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM complete as per specifications. Clause 503 of MORTH V revision (I.No.21.7, Issue Rate as on 01.01.2019) For Cross Ducts	Sqm							
			1	53.04	0.90		47.74		
			1	49.89	0.90		44.90		
			1	34.53	0.90		31.08		
			1	19.05	0.90		17.15		
			1	19.50	0.90		17.55		
			1	34.67	0.90		31.20		
			1	23.48	0.90		21.13		
							210.74	12.72	2680.66
3.20	Providing and laying bituminous concrete 40mm thick with hotmix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hotmix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications. Clause 507 of MORTH V revision as per IRC SP-53-2015. Using 120 TPH capacity Asphalt batchmix plant with sensor paver grading II (30-45mm) with 5.4% of modified bituminous binder consisting of 4.97% of VG-30 bitumen (60/70 grade) and 0.43% of plastomeric thermo plastics (waste plastic) (I.No.21.78.8, Issue Rate as on 01.01.2019)	Cum							
			1	53.04	0.90	0.04	1.91		
			1	49.89	0.90	0.04	1.80		
			1	34.53	0.90	0.04	1.24		
			1	19.05	0.90	0.04	0.69		
			1	19.50	0.90	0.04	0.70		
			1	34.67	0.90	0.04	1.25		
			1	23.48	0.90	0.04	0.85		
							8.43	8036.92	67749.31
Construction of Chamber									
21	KSRRB - M300 - 14: Excavation for road work in all types of soil by mechanical means including cutting and loading to tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301 (P.No 143, I.No.19.14 of PW, P&I WTD SR 2018 - 19)	Cum							

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Sl. No.	Description of work	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
			14	1.50	1.50	1.60	50.40		
3.22	KSRRB 2100-13 Plain/ Reinforcement cement concrete m15 with opc cement @ 240kgs, with 40mm down size graded grinitemetal coarse aggregate @ 0.84 Cum and fine aggregates @ 0.56 Cum in open foundation including cost of all materials, labour, HOM curing, form works, scaffolding and centering complete as per drawing and technical specifications mORT&H Specification No.1500, 1700, & 2100.	Cum				Say	50.50	43.46	2194.73
	(P. No.222 of INo 27.24 PW, P&IWTDS.R 2018 - 19)								
			14	1.50	1.50	0.10	3.15		
3.23	KSRRB 2200-5.12. Providing and laying design mix M25 with OPC @340kgs, with 20mm and down size graded granite metal coarse aggregates @0.7Cum and fine aggregates @0.47 Cum, with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008	Cum				Say	3.50	5409.18	18932.13
	(P.No.227, I.No.28.7.12 of PW, P&IWTDS.R 2018 - 19)								
	Raft		14	1.50	1.50	0.20	6.30		
	Side Walls		28	6.00	0.20	1.10	37.06		
							43.36		
3.24	KSRRB - M2200-6. Providing T.M.T. steel reinforcement for R.C.C. work including straightening, cutting, bending, hooking, placing in position, lapping and/or welding wherever required, tying with binding wire and anchoring to the adjoiningmembers wherever necessary complete as per disign (laps, hooks and wastage shall not bemeasured and paid) cost of materials, labour, HOM complete as per specification.MORTH Specification No.1600 & 2200 -do-TMT Bars Fe 500	Tonne				Say	43.50	5640.26	245351.31
	(P.No.229, I.No.28.8.2 of PW, P&IWTDS.R 2018 - 19)								
	Consider 100kg per Cum						4.34		
3.25	Providing and fixing RCC Precast slab of 100mm thick for drain in cement concretem20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per the directions of Engineer in-charge.	Sqm					4.34	72326.98	313615.57
	BBMP Approved Rate								
	For Chambers		14	1.50	1.50		31.50		
							31.54	1724.00	54374.96
							Total Amount		57448658.16



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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
4.00	Construction of Footpath; Providing and Fixing of New Kerb Stones, Bollards and Railing and Construction of Tree Guard Wall								
4.01	KSRRB - M300 - 14: Excavation for road work in all types of soil by mechanical means including cutting and loading to tipper, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301 (P.No.142, I.No.19.14 of PW, P&I WTD S.R 2018 - 19)	Cum							
	Western Side								
	Ch: 100m to 150m		1	50.00	2.32	0.45	52.09		
	Ch: 150m to 200m		1	25.20	2.25	0.45	25.46		
	Ch: 200m to 250m		1	50.00	1.98	0.45	44.55		
	Ch: 250m to 300m		1	50.00	1.50	0.45	33.75		
	Ch: 300m to 350m		1	50.00	1.40	0.45	31.50		
	Ch: 350m to 400m		1	50.00	1.40	0.45	31.50		
	Ch: 400m to 450m		1	50.00	3.00	0.45	67.50		
	Ch: 450m to 500m		1	50.00	3.00	0.45	67.50		
	Ch: 500m to 550m		1	50.00	2.43	0.45	54.68		
	Ch: 550m to 600m		1	25.78	2.07	0.45	24.01		
	Ch: 600m to 650m		1	50.00	3.00	0.45	67.50		
	Ch: 650m to 700m		1	50.00	3.00	0.45	67.50		
	Ch: 700m to 750m		1	50.00	3.00	0.45	67.50		
	Ch: 750m to 800m		1	38.45	3.00	0.45	51.91		
	Ch: 800m to 850m		1	50.00	3.00	0.45	67.50		
	Ch: 850m to 900m		1	50.00	3.00	0.45	67.50		
	Ch: 900m to 950m		1	50.00	3.00	0.45	67.50		
	Ch: 950m to 1000m		1	37.63	3.00	0.45	50.80		
	Ch: 1000m to 1050m		1	50.00	3.00	0.45	67.50		
	Ch: 1050m to 1100m		1	50.00	3.00	0.45	67.50		
	Ch: 1100m to 1150m		1	50.00	3.00	0.45	67.50		
	Ch: 1150m to 1200m		1	50.00	3.00	0.45	67.50		
	Ch: 1200m to 1250m		1	41.89	3.00	0.45	56.55		
	Ch: 1250m to 1300m		1	44.10	3.00	0.45	59.54		
	Ch: 1300m to 1350m		1	50.00	3.00	0.45	67.50		
	Ch: 1350m to 1400m		1	38.08	3.00	0.45	51.41		
	Ch: 1400m to 1450m		1	50.00	2.90	0.45	65.25		
	Ch: 1450m to 1475m		1	25.00	2.68	0.45	30.09		
							1473.08		
	Eastern Side								
	Ch: 0m to 50m		1	50.00	2.30	0.45	51.75		
	Ch: 50m to 100m		1	50.00	2.50	0.45	56.25		
	Ch: 100m to 150m		1	50.00	3.00	0.45	67.50		
	Ch: 150m to 200m		1	50.00	2.20	0.45	49.50		
	Ch: 200m to 250m		1	50.00	1.60	0.45	36.00		
	Ch: 250m to 300m		1	50.00	3.00	0.45	67.50		
	Ch: 300m to 350m		1	50.00	1.50	0.45	33.75		
	Ch: 350m to 400m		1	50.00	1.50	0.45	33.75		
	Ch: 400m to 450m		1	50.00	1.50	0.45	33.75		
	Ch: 450m to 500m		1	50.00	1.50	0.45	33.75		
	Ch: 500m to 550m		1	50.00	1.50	0.45	33.75		
	Ch: 550m to 600m		1	50.00	1.50	0.45	33.75		
	Ch: 600m to 650m		1	50.00	1.50	0.45	33.75		
	Ch: 650m to 700m		1	50.00	1.50	0.45	33.75		
	Ch: 700m to 750m		1	50.00	1.87	0.45	42.08		
	Ch: 750m to 800m		1	50.00	1.60	0.45	36.00		
	Ch: 800m to 850m		1	50.00	2.00	0.45	45.00		
	Ch: 850m to 900m		1	50.00	2.00	0.45	45.00		
	Ch: 900m to 950m		1	50.00	2.65	0.45	59.63		
	Ch: 950m to 1000m		1	50.00	2.50	0.45	56.25		
	Ch: 1000m to 1050m		1	50.00	3.00	0.45	67.50		
	Ch: 1050m to 1100m		1	50.00	3.00	0.45	67.50		
	Ch: 1100m to 1150m		1	50.00	2.45	0.45	55.13		
	Ch: 1150m to 1200m		1	50.00	1.90	0.45	42.75		
	Ch: 1200m to 1250m		1	50.00	3.00	0.45	67.50		
	Ch: 1250m to 1300m		1	50.00	3.00	0.45	67.50		
	Ch: 1300m to 1350m		1	50.00	3.00	0.45	67.50		
	Ch: 1350m to 1400m		1	50.00	1.40	0.45	31.50		
	Ch: 1400m to 1450m		1	50.00	3.00	0.45	67.50		
	Ch: 1450m to 1475m		1	25.00	1.40	0.45	15.75		

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Inspection Chamber for Street Light Cables (40m interval) on both sides		74	1.00	1.00	0.72	53.10		
	For Highmast Poles		2	2.20	2.20	1.50	14.52		
							1500.20		
							2974.00	43.46	129250.04
4.02	KSRRB - M2100 - 13: Providing and laying Plain / Reinforced Cement Concrete mix 1:2:4 with OPC cement @240kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.84Cum and fine aggregates @ 0.56Cum in Open Foundation including cost of all materials, labour, HOM, curing, form works, scaffolding and centering complete as per specifications complete as per Drawing and Technical Specifications MORTH Specification No. 1500, 1700 & 2100 (P.No.222, I.No.27.24 of PW, P&IWT D S.R 2018 - 19)	Cum							
	For Highmast Poles		2	2.2	2.20	0.10	1.815		
	Inspection Chamber for Street Light Cables (40m interval) on both sides		74	1.00	1.00	0.10	7.38		
							9.19	5409.18	49710.36
03	KSRRB - M2100 - 16.2: Providing and laying Plain / Reinforced Cement Concrete M25 with OPC @ 340 kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @0.47Cum, with superplasticizer @3lts Conforming to IS - 9103 - 1999 Reaffirmed - 2008 in Open Foundation complete as per Drawing and Technical Specifications including cost of all materials, labour, HOM curing, form works, scaffolding and centering complete as per specifications. MORTH specification No.1500, 1700 & 2100 (P.No.223, I.No.27.29 of PW, P&IWT D S.R 2018 - 19)	Cum							
	Raft		74	0.8	0.80	0.15	7.08		
	Wall		74	3.2	0.15	0.41	14.51		
							21.59		
	For Highmast Poles		2	2	2.00	0.45	3.60		
			2	0.90	0.90	1.05	1.701		
							26.90	5294.70	142400.96
4.04	Construction of granular sub-base Grading-V as Sub-base and drainage layer by Providing coarse graded crushed stone aggregate of granite / trap / basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98% proctor density, complete as per Specifications. Clause 401 of MORTH V Revision (P.No.153, I.No.20.5 of PW, P&IWT D SR 2018 - 19)	Cum							
	Western Side								
	Ch: 100m to 150m		1	50.00	2.32	0.20	23.15		
	Ch: 150m to 200m		1	25.20	2.25	0.20	11.31		
	Ch: 200m to 250m		1	50.00	1.98	0.20	19.80		
	Ch: 250m to 300m		1	50.00	1.50	0.20	15.00		
	Ch: 300m to 350m		1	50.00	1.40	0.20	14.00		
	Ch: 350m to 400m		1	50.00	1.40	0.20	14.00		
	Ch: 400m to 450m		1	50.00	3.00	0.20	30.00		
	Ch: 450m to 500m		1	50.00	3.00	0.20	30.00		
	Ch: 500m to 550m		1	50.00	2.43	0.20	24.30		
	Ch: 550m to 600m		1	25.78	2.07	0.20	10.67		
	Ch: 650m to 700m		1	50.00	3.00	0.20	30.00		
	Ch: 700m to 750m		1	50.00	3.00	0.20	30.00		
	Ch: 750m to 800m		1	38.45	3.00	0.20	23.07		
	Ch: 800m to 850m		1	50.00	3.00	0.20	30.00		
	Ch: 850m to 900m		1	50.00	3.00	0.20	30.00		
	Ch: 900m to 950m		1	50.00	3.00	0.20	30.00		
	Ch: 950m to 1000m		1	37.63	3.00	0.20	22.58		
	Ch: 1000m to 1050m		1	50.00	3.00	0.20	30.00		
	Ch: 1050m to 1100m		1	50.00	3.00	0.20	30.00		

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Ch: 1100m to 1150m		1	50.00	3.00	0.20	30.00		
	Ch: 1150m to 1200m		1	50.00	3.00	0.20	30.00		
	Ch: 1200m to 1250m		1	41.89	3.00	0.20	25.13		
	Ch: 1250m to 1300m		1	44.10	3.00	0.20	26.46		
	Ch: 1300m to 1350m		1	50.00	3.00	0.20	30.00		
	Ch: 1350m to 1400m		1	38.08	3.00	0.20	22.85		
	Ch: 1400m to 1450m		1	50.00	2.90	0.20	29.00		
	Ch: 1450m to 1475m		1	25.00	2.68	0.20	13.38		
	Eastern Side								
	Ch: 0m to 50m		1	50.00	2.30	0.20	23.00		
	Ch: 50m to 100m		1	50.00	2.50	0.20	25.00		
	Ch: 100m to 150m		1	50.00	3.00	0.20	30.00		
	Ch: 150m to 200m		1	50.00	2.20	0.20	22.00		
	Ch: 200m to 250m		1	50.00	1.60	0.20	16.00		
	Ch: 250m to 300m		1	50.00	3.00	0.20	30.00		
	Ch: 300m to 350m		1	50.00	1.50	0.20	15.00		
	Ch: 350m to 400m		1	50.00	1.50	0.20	15.00		
	Ch: 400m to 450m		1	50.00	1.50	0.20	15.00		
	Ch: 450m to 500m		1	50.00	1.50	0.20	15.00		
	Ch: 500m to 550m		1	50.00	1.50	0.20	15.00		
	Ch: 550m to 600m		1	50.00	1.50	0.20	15.00		
	Ch: 600m to 650m		1	50.00	1.50	0.20	15.00		
	Ch: 650m to 700m		1	50.00	1.50	0.20	15.00		
	Ch: 700m to 750m		1	50.00	1.87	0.20	18.70		
	Ch: 750m to 800m		1	50.00	1.60	0.20	16.00		
	Ch: 800m to 850m		1	50.00	2.00	0.20	20.00		
	Ch: 850m to 900m		1	50.00	2.00	0.20	20.00		
	Ch: 900m to 950m		1	50.00	2.65	0.20	26.50		
	Ch: 950m to 1000m		1	50.00	2.50	0.20	25.00		
	Ch: 1000m to 1050m		1	50.00	3.00	0.20	30.00		
	Ch: 1050m to 1100m		1	50.00	3.00	0.20	30.00		
	Ch: 1100m to 1150m		1	50.00	2.45	0.20	24.50		
	Ch: 1150m to 1200m		1	50.00	1.90	0.20	19.00		
	Ch: 1200m to 1250m		1	50.00	3.00	0.20	30.00		
	Ch: 1250m to 1300m		1	50.00	3.00	0.20	30.00		
	Ch: 1300m to 1350m		1	50.00	3.00	0.20	30.00		
	Ch: 1350m to 1400m		1	50.00	1.40	0.20	14.00		
	Ch: 1400m to 1450m		1	50.00	3.00	0.20	30.00		
	Ch: 1450m to 1475m		1	25.00	1.40	0.20	7.00		
	Deduction of Street Light Chamber Portion		74	0.80	0.80	0.20	-9.44		
							1281.96		
						Say	1282.00	1994.92	2557487.44
5	KSRRB - M400 - 17: Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to Wetmix macadam specifications including premixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications. MORTH Specification No. 406	Cum							
	(P.No.155, I.No.20.18 of PW, P&IWTDR SR 2018-19)								
	Western Side								
	Ch: 100m to 150m		1	50.00	2.32	0.25	28.94		
	Ch: 150m to 200m		1	25.20	2.25	0.25	14.14		
	Ch: 200m to 250m		1	50.00	1.98	0.25	24.75		
	Ch: 250m to 300m		1	50.00	1.50	0.25	18.75		
	Ch: 300m to 350m		1	50.00	1.40	0.25	17.50		
	Ch: 350m to 400m		1	50.00	1.40	0.25	17.50		
	Ch: 400m to 450m		1	50.00	3.00	0.25	37.50		
	Ch: 450m to 500m		1	50.00	3.00	0.25	37.50		
	Ch: 500m to 550m		1	50.00	2.43	0.25	30.38		
	Ch: 550m to 600m		1	25.78	2.07	0.25	13.34		
	Ch: 650m to 700m		1	50.00	3.00	0.25	37.50		

Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Ch: 700m to 750m		1	50.00	3.00	0.25	37.50		
	Ch: 750m to 800m		1	38.45	3.00	0.25	28.84		
	Ch: 800m to 850m		1	50.00	3.00	0.25	37.50		
	Ch: 850m to 900m		1	50.00	3.00	0.25	37.50		
	Ch: 900m to 950m		1	50.00	3.00	0.25	37.50		
	Ch: 950m to 1000m		1	37.63	3.00	0.25	28.22		
	Ch: 1000m to 1050m		1	50.00	3.00	0.25	37.50		
	Ch: 1050m to 1100m		1	50.00	3.00	0.25	37.50		
	Ch: 1100m to 1150m		1	50.00	3.00	0.25	37.50		
	Ch: 1150m to 1200m		1	50.00	3.00	0.25	37.50		
	Ch: 1200m to 1250m		1	41.89	3.00	0.25	31.42		
	Ch: 1250m to 1300m		1	44.10	3.00	0.25	33.08		
	Ch: 1300m to 1350m		1	50.00	3.00	0.25	37.50		
	Ch: 1350m to 1400m		1	38.08	3.00	0.25	28.56		
	Ch: 1400m to 1450m		1	50.00	2.90	0.25	36.25		
	Ch: 1450m to 1475m		1	25.00	2.68	0.25	16.72		
	Eastern Side								
	Ch: 0m to 50m		1	50.00	2.30	0.25	28.75		
	Ch: 50m to 100m		1	50.00	2.50	0.25	31.25		
	Ch: 100m to 150m		1	50.00	3.00	0.25	37.50		
	Ch: 150m to 200m		1	50.00	2.20	0.25	27.50		
	Ch: 200m to 250m		1	50.00	1.60	0.25	20.00		
	Ch: 250m to 300m		1	50.00	3.00	0.25	37.50		
	Ch: 300m to 350m		1	50.00	1.50	0.25	18.75		
	Ch: 350m to 400m		1	50.00	1.50	0.25	18.75		
	Ch: 400m to 450m		1	50.00	1.50	0.25	18.75		
	Ch: 450m to 500m		1	50.00	1.50	0.25	18.75		
	Ch: 500m to 550m		1	50.00	1.50	0.25	18.75		
	Ch: 550m to 600m		1	50.00	1.50	0.25	18.75		
	Ch: 600m to 650m		1	50.00	1.50	0.25	18.75		
	Ch: 650m to 700m		1	50.00	1.50	0.25	18.75		
	Ch: 700m to 750m		1	50.00	1.87	0.25	23.38		
	Ch: 750m to 800m		1	50.00	1.60	0.25	20.00		
	Ch: 800m to 850m		1	50.00	2.00	0.25	25.00		
	Ch: 850m to 900m		1	50.00	2.00	0.25	25.00		
	Ch: 900m to 950m		1	50.00	2.65	0.25	33.13		
	Ch: 950m to 1000m		1	50.00	2.50	0.25	31.25		
	Ch: 1000m to 1050m		1	50.00	3.00	0.25	37.50		
	Ch: 1050m to 1100m		1	50.00	3.00	0.25	37.50		
	Ch: 1100m to 1150m		1	50.00	2.45	0.25	30.63		
	Ch: 1150m to 1200m		1	50.00	1.90	0.25	23.75		
	Ch: 1200m to 1250m		1	50.00	3.00	0.25	37.50		
	Ch: 1250m to 1300m		1	50.00	3.00	0.25	37.50		
	Ch: 1300m to 1350m		1	50.00	3.00	0.25	37.50		
	Ch: 1350m to 1400m		1	50.00	1.40	0.25	17.50		
	Ch: 1400m to 1450m		1	50.00	3.00	0.25	37.50		
	Ch: 1450m to 1475m		1	25.00	1.40	0.25	8.75		
	Deduction of Street Light Chamber Portion		74	0.80	0.80	0.25	-11.80		
							1602.45		
							Sav		
							1603.00	2001.28	3208051.84
06	KSRB 14.6-1: Providing and laying heavy duty interlock concrete paver block 60mm thick 300mm X 300mm, using cement and coarse sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per Sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KBS	Sqm							
	(P.No.103, I.No.14.6 of PW, P&IWD SR 2018-19)								
	Western Side								

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Ch: 100m to 150m		1	50.00	2.32	--	115.75		
	Ch: 150m to 200m		1	25.20	2.25	--	56.57		
	Ch: 200m to 250m		1	50.00	1.98	--	99.00		
	Ch: 250m to 300m		1	50.00	1.50	--	75.00		
	Ch: 300m to 350m		1	50.00	1.40	--	70.00		
	Ch: 350m to 400m		1	50.00	1.40	--	70.00		
	Ch: 400m to 450m		1	50.00	3.00	--	150.00		
	Ch: 450m to 500m		1	50.00	3.00	--	150.00		
	Ch: 500m to 550m		1	50.00	2.43	--	121.50		
	Ch: 550m to 600m		1	25.78	2.07	--	53.36		
	Ch: 650m to 700m		1	50.00	3.00	--	150.00		
	Ch: 700m to 750m		1	50.00	3.00	--	150.00		
	Ch: 750m to 800m		1	38.45	3.00	--	115.35		
	Ch: 800m to 850m		1	50.00	3.00	--	150.00		
	Ch: 850m to 900m		1	50.00	3.00	--	150.00		
	Ch: 900m to 950m		1	50.00	3.00	--	150.00		
	Ch: 950m to 1000m		1	37.63	3.00	--	112.89		
	Ch: 1000m to 1050m		1	50.00	3.00	--	150.00		
	Ch: 1050m to 1100m		1	50.00	3.00	--	150.00		
	Ch: 1100m to 1150m		1	50.00	3.00	--	150.00		
	Ch: 1150m to 1200m		1	50.00	3.00	--	150.00		
	Ch: 1200m to 1250m		1	41.89	3.00	--	125.67		
	Ch: 1250m to 1300m		1	44.10	3.00	--	132.30		
	Ch: 1300m to 1350m		1	50.00	3.00	--	150.00		
	Ch: 1350m to 1400m		1	38.08	3.00	--	114.24		
	Ch: 1400m to 1450m		1	50.00	2.90	--	145.00		
	Ch: 1450m to 1475m		1	25.00	2.68	--	66.88		
							3273.51		
	Eastern Side								
	Ch: 0m to 50m		1	50.00	2.30	--	115.00		
	Ch: 50m to 100m		1	50.00	2.50	--	125.00		
	Ch: 100m to 150m		1	50.00	3.00	--	150.00		
	Ch: 150m to 200m		1	50.00	2.20	--	110.00		
	Ch: 200m to 250m		1	50.00	1.60	--	80.00		
	Ch: 250m to 300m		1	50.00	3.00	--	150.00		
	Ch: 300m to 350m		1	50.00	1.50	--	75.00		
	Ch: 350m to 400m		1	50.00	1.50	--	75.00		
	Ch: 400m to 450m		1	50.00	1.50	--	75.00		
	Ch: 450m to 500m		1	50.00	1.50	--	75.00		
	Ch: 500m to 550m		1	50.00	1.50	--	75.00		
	Ch: 550m to 600m		1	50.00	1.50	--	75.00		
	Ch: 600m to 650m		1	50.00	1.50	--	75.00		
	Ch: 650m to 700m		1	50.00	1.50	--	75.00		
	Ch: 700m to 750m		1	50.00	1.87	--	93.50		
	Ch: 750m to 800m		1	50.00	1.60	--	80.00		
	Ch: 800m to 850m		1	50.00	2.00	--	100.00		
	Ch: 850m to 900m		1	50.00	2.00	--	100.00		
	Ch: 900m to 950m		1	50.00	2.65	--	132.50		
	Ch: 950m to 1000m		1	50.00	2.50	--	125.00		
	Ch: 1000m to 1050m		1	50.00	3.00	--	150.00		
	Ch: 1050m to 1100m		1	50.00	3.00	--	150.00		
	Ch: 1100m to 1150m		1	50.00	2.45	--	122.50		
	Ch: 1150m to 1200m		1	50.00	1.90	--	95.00		
	Ch: 1200m to 1250m		1	50.00	3.00	--	150.00		
	Ch: 1250m to 1300m		1	50.00	3.00	--	150.00		
	Ch: 1300m to 1350m		1	50.00	3.00	--	150.00		
	Ch: 1350m to 1400m		1	50.00	1.40	--	70.00		
	Ch: 1400m to 1450m		1	50.00	3.00	--	150.00		
	Ch: 1450m to 1475m		1	25.00	1.40	--	35.00		
							3183.50		
							6457.01		
						Say	6458.00	1116.18	7208290.44

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
4.07	KSRRB - M2100 - 13: Providing and laying Plain / Reinforced Cement Concrete mix 1:2:4 with OPC cement @240kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.84Cum and fine aggregates @ 0.56Cum in Open Foundation including cost of all materials, labour, IOM, curing, form works, scaffolding and centering complete as per specifications complete as per Drawing and Technical Specifications MORTH Specification No. 1500, 1700 & 2100 (P.No.222, I.No.27.24 in PW, P&IWTDR SR 2018 - 19)	Cum							
	For Kerb Stone(Both Sides)								
	Western Side		1	1226	0.465	0.15	85.52		
	Eastern Side		1	1475	0.465	0.15	189.88		
	For Cycle Track		1	1750.00	0.20	0.15	52.50		
							327.90		
						Say	328.00	5409.18	1774211.04
4.08	Providing and laying Cement Concrete using 20mm and down size granite coarse aggregates and fine aggregates of Ready mixed Concrete for RCC Works laid in 15cm thick layers and will compacted including vibrating, curing, etc. with all lead and lift, etc. complete (exclusive of cost of steel and fabrication charges) Readymixed Cement Concrete for Beams, Staircase and Roof with M30 (P.No.19, I.No.4.49.3 in PW, P&IWTDR SR 2018-19)	Cum							
	For Kerb Stone								
	Western Side		1	1226.13	0.30	0.125	45.98		
	Eastern Side		1	1475.00	0.30	0.125	55.31		
							101.29		
						Say	102.00	5933.88	605255.76
4.09	KSRRB - M2200-6: Providing TMT Steel Reinforcement for RCC Work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification. MORTH Specification No.1600 & 2200 TMT Bars Fe 500 (P.No.229, I.No.28.8.2 in PW, P&IWTDR SR 2018 - 19)	Tonne							
	Consider 40kg/Cum for RCC M30			--	--	--	4.08		
	Consider 40kg/Cum for Footpath zone Confinement(along the Road)						9.72		
	For Street Light Chamber Consider 70kg per Cum						15.12		
	For Highmast Poles 70kg per Cum						8.20		
							37.12		
						Say	37.12	72326.98	2684767.95
4.10	KSRB 2.3 : Filling available excavated earth (excluding rock) embankment with available earth in road upto plinth in layers not exceeding 20cm in depth, compacting each deposited layer by ramming after watering with lead upto 50m and lift upto 1.5m including cost of all labour complete as per specifications. Specification No. KBS 2.9 (P.No.7, I.No.2.10 of PW, P&IWTDR SR 2018-19)	Cum							
							9.105		
							9.105	213.06	1939.91

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Sl. No.	Description of work	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
4.11	KSRRB 2200-5.12: Providing and laying Design mix M25 with OPC @340kgs, with 20mm and down size graded granite metal coarse aggregates @0.7Cum and fine aggregates @0.47 Cum, with superplasticiser @3lts Conforming to IS: 9103-1999 Reaffirmed - 2008 including cost of materials, labour, HOM curing, form work, scaffolding and centering complete as per specifications. i) upto 5m height								
	(P.No.227, I.No.28.7.12 of PW, P&I WTD SR 2018 - 19)								
	For Footpath Zone Confinement at 7.5m Interval								
	Western Side								
	Ch: 0m to 1475m		1	164.00	0.15	0.11	2.71		
	along the Road		1	1226.13	0.30	0.30	110.35		
	Eastern Side								
	Ch: 0m to 1475m		1	197.00	0.15	0.11	3.25		
	along the Road		1	1475.00	0.30	0.30	132.75		
							249.06		
						Say	250.00	5640.26	1410065.00
4.12	Providing and fixing Precast solid concrete kerb stones made out of CC 1 : 2:4 and finished with CM 1:3 plastering and finishing cutting etc., complete. Size 450 x 150 x 500mm	Nos.							
	(P.No.27, I.No.5.29.2 in PW, P&I WTD SR 2018 - 19)								
	For Footpath		1	2725.00	--	--	2725.00		
	For Cycle Track		1	3889.00	--	--	3889.00		
						Say	6614.00	467.46	3091780.44
4.13	Supply, Fabrication, Painting and Fixing of mild steel items such as Horizontal and Vertical Gratings, Flower Baskets, Cycle stands, Tree Guards, Edge angles, Bollards, etc and any other items as specified in drawings or as approved by Engineer - In - Charge.	Nos.							
	BBMP Approved Rate								
	Big Bollards at 0.40m Interval								
	Western Side		7	--	--	--	7.00		
			35	--	--	--	35.00		
			21	--	--	--	21.00		
			20	--	--	--	20.00		
			19	--	--	--	19.00		
			30	--	--	--	30.00		
			16	--	--	--	16.00		
			14	--	--	--	14.00		
	Eastern Side		20	--	--	--	20.00		
			42	--	--	--	42.00		
			16	--	--	--	16.00		
			26	--	--	--	26.00		
			34	--	--	--	34.00		
			14	--	--	--	14.00		
			17	--	--	--	17.00		
			42	--	--	--	42.00		
			20	--	--	--	20.00		
			20	--	--	--	20.00		
	Near Junction		8	--	--	--	8.00		
	Infront of Bus Shelters		98	--	--	--	98.00		
			114	--	--	--	114.00		
							633.00	4000.00	2532000.00
4.14	KSRRB M100-4.1: Cost of Haulage excluding loading and unloading MORTH Chapter - 100/1 (Lead upto 19Km) for Earth(Excavated Soil)	Cum							
	(P. No.136 I.No. 17.4 of PW, P&I WTD S.R 2018-19)								
	(19*1.28*2)=48.64						2959.00	48.64	143925.76

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
4.15	KSRRB - M800 - 20: Tubular Steel Railing on medium Weight Steel Channel (ISMC Series) 100mm x 50mm: Providing, fixing and erecting 50mm dia steel pipe railing in 3 rows duly painted on medium weight steel channels (ISMC Series) 100mm x 50mm, 1.2m high above ground, 2m centre to centre, complete as per approved drawings as per specifications. MORTH Specification No. 808.	m							
	Pno 184, I No 24.24 of PW, P&I WTD SR 2018 - 19)								
	Ch: 0m to Ch: 175m		1	161.65			161.65		
	Ch: 650m to Ch: 1475m		1	801.81			801.81		
							963.46	1511.56	1456327.60
5.00	Construction of Median						Total Amount		26995464.54
5.01	Providing and Fixing Precast Solid Cement Concrete crash barrier / divider made out of m35 with top and bottom width 100mm and 350mm respectively 1000mm height and 2000mm in Length (as shown in the drawing), Finished with CM 1:3 plastering and finishing cutting, including form work TMT steel as required curing, including cost all material labour hire charges of machinery, loading, unloading, lead and lift, transportation etc., complete. To be laid between Travel lane, cycle track/ landscape etc., with all lead and lift, loading, unloading, complete and as per the directions of Engineer - in - Charge. (Form Finish concrete and no painting to be done), (Excluding GST).	Each							
	BBMP Approved Rate								
5.02	KSRB - M300 - 7.1 Planting permanent hedges including digging of trenches, 60cm wide and 45cm deep, refilling the excavated earth mixed with farmyard manure, supplied at the rate of 4.65 Cum per 100metres and supplying and planting hedge plants at 30cm apart complete as per specifications. A) Planting permanent hedges including digging of trenches MORTH Specification No. 307.	m	1	1200.00		Say	1200.00	6400.00	7680000.00
	P. No. 149, I No. 19.84 of PW, P&I WTD SR 2018-19)		1	1475.00			1475.00	313.76	462796.00
							Total Amount		8142796.00



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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
6.00	Construction of Culverts								
6.01	KSRRB 300 - 50: Scarifying bituminous course 50mm to 75mm thick along with premix carpet / surface dressing by mechanical means attached with scarifier without disturbing the base and stacking the debris including cost of all labour charges, HOM complete as per specifications. MORTH / Chapter 3 (Including loading and unloading and lead upto 20km)	Sqm							
	(P.No.146, I.No.19.56 of PW, P&IWD SR 2018 - 19)								
	(39*1.06+20*1.28*2+57)=150.34								
	Western Side		1	16.30	3.00	--	48.90		
			1	93.00	3.00	--	279.00		
			1	8.00	3.00	--	24.00		
			1	8.40	3.00	--	25.20		
			1	10.50	3.00	--	31.50		
			1	9.41	3.00	--	28.23		
							436.83		
6.02	KSRRB - M300 - 14: Excavation for road work in all types of soil by mechanical means including cutting and loading to tipplers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301	Cum				Say	437.00	150.34	65698.58
	(P. No.143, I.No.19.14 of PW, P&IWD SR 2018 - 19)								
	Western Side		1	16.30	3.00	2.75	134.48		
			1	93.00	3.00	2.75	767.25		
			1	8.00	3.00	2.75	66.00		
			1	8.40	3.00	2.75	69.30		
			1	10.50	3.00	2.75	86.63		
			1	9.41	3.00	2.75	77.63		
							1201.28		
6.03	KSRRB - M2200-5.1: Providing and laying cement concrete of mix 1:2:4 with OPC @ 240kgs, with 40mm and down size graded granite metal coarse aggregates @0.63Cum and fine aggregates @ 0.42Cum including cost of materials, labour, HOM, curing, form works, scaffolding and centering complete as per MORTH Section : 2200 & IS : 456 a) upto 5m height	Cum				Say	1201.00	43.46	52195.46
	(P. No.226 of INo 28.7.1 in PW, P&IWD SR 2018 - 19)								
	Western Side		1	16.30	3.00	0.10	4.89		
			1	93.00	3.00	0.10	27.90		
			1	8.00	3.00	0.10	2.40		
			1	8.40	3.00	0.10	2.52		
			1	10.50	3.00	0.10	3.15		
			1	9.41	3.00	0.10	2.82		
							43.68		
6.04	KSRRB 2200-5.12: Providing and laying design mix M25 with OPC @340kgs, with 20mm and down size graded granite metal coarse aggregates @0.7Cum and fine aggregates @0.47 Cum, with superplasticiser @3lts Conforming to IS: 9103-1999 Reaffirmed - 2008 including cost of materials, labour, HOM curing, form work, scaffolding and centering complete as per specifications. b) upto 5m height	Cum				Say	44.00	5746.26	252835.44
	(P.No.227, I.No.28.7.12 in PW, P&IWD SR 2018 - 19)								
	Bottom Slab, Side Walls		1	16.30	8.50	0.20	27.71		
	Top Cover Slab		1	16.30	3.00	0.20	9.78		
			1	93.00	8.50	0.20	158.10		
			1	93.00	3.00	0.20	55.80		
			1	8.00	8.50	0.20	13.60		

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
7.00	Carriageway Construction / Strengthening Works								
a.	a. Construction of Carriageway in the Widened Portion								
7.01	KSRRB - M300 - 14: Excavation for road work in all types of soil by mechanical means including cutting and loading to tipper, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301	Cum							
	(P.No.143, I.No.19.14 of PW, P&IWTDR SR 2018 - 19)								
	Ch:-0 to 50mtrs		1	50.00	10.10	1.30	656.50		
	Ch:-50 to 100mtrs		1	50.00	10.10	1.30	656.50		
	Ch:-100 to 150mtrs		1	50.00	13.60	1.30	884.00		
	Ch:-150 to 200mtrs		1	50.00	13.65	1.30	887.25		
	Ch:-200 to 250mtrs		1	50.00	10.95	1.30	711.75		
	Ch:-200 to 250mtrs		1	50.00	6.40	1.30	416.00		
	Ch:-250.00 to 300.00mtrs		1	50.00	7.55	1.30	490.75		
	Ch:-300.00 to 350.00mtrs		1	50.00	8.95	1.30	581.75		
	Ch:-350.00 to 400.00mtrs		1	50.00	6.05	1.30	393.25		
	Ch:-400.00 to 450.00mtrs		1	50.00	6.80	1.30	442.00		
	Ch:-450.00 to 500.00mtrs		1	50.00	2.90	1.30	188.50		
	Ch:-500.00 to 550.00mtrs		1	50.00	9.60	1.30	624.00		
	Ch:-650.00 to 700.00mtrs		1	50.00	19.40	1.30	1261.00		
	Ch:-700.00 to 750.00mtrs		1	50.00	17.11	1.30	1112.15		
	Ch:-750.00 to 800.00mtrs		1	50.00	16.18	1.30	1051.70		
	Ch:-800.00 to 850.00mtrs		1	50.00	18.84	1.30	1224.60		
	Ch:-850.00 to 900.00mtrs		1	50.00	14.98	1.30	973.70		
	Ch:-900.00 to 950.00mtrs		1	50.00	12.88	1.30	837.20		
	Ch:-950.00 to 1000.00mtrs		1	50.00	12.41	1.30	806.65		
	Ch:-1000.00 to 1050.00mtrs		1	50.00	11.10	1.30	721.50		
	Ch:-1050.00 to 1100.00mtrs		1	50.00	10.60	1.30	689.00		
	Ch:-1100.00 to 1150.00mtrs		1	50.00	10.82	1.30	703.30		
	Ch:-1150.00 to 1200.00mtrs		1	50.00	10.48	1.30	681.20		
	Ch:-1200.00 to 1275.00mtrs		1	75.00	12.37	1.30	1206.08		
	Ch:-1275.00 to 1300.00mtrs		1	25.00	11.85	1.30	385.13		
	Ch:-1300.00 to 1350.00mtrs		1	50.00	8.30	1.30	539.50		
	Ch:-1350.00 to 1400.00mtrs		1	50.00	3.55	1.30	230.75		
	Ch:-1400.00 to 1450.00mtrs		1	50.00	1.45	1.30	94.25		
	Ch:-1450.00 to 1475.00mtrs		1	25.00	0.65	1.30	21.19		
							19471.14		
7.02	KSRB 2.3 : Filling available excavated earth (excluding rock) embankment with available earth in road upto plinth in layers not exceeding 20cm in depth, compacting each deposited layer by ramming after watering with lead upto 50m and lift upto 1.5m including cost of all labour complete as per specifications. Specification No. KBS 2.9	Cum							
	(P.No.7, I.No.2.10 of PW, P&IWTDR SR 2018-19)								
	Ch:-550.00 to 600.00mtrs		1	50.00	18.78	0.8	751.20		
	Ch:-600.00 to 650.00mtrs		1	50.00	18.48	0.8	739.20		
							1490.40	213.06	317544.62
7.03	KSRRB - M300-55: Construction of Sub-Grade and Earthen Shoulders with approved materials Gravel /murrum with all lifts and leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table 300 - 2 complete as per specifications, including cost of earth, watering charges & compaction by vibratory roller to 97% of modified Proctor Density. MORTH Specification No. 305 CBR Value of Sub grade soil 10%	Cum							
	(P.No.147, I.No.19.62 of PW, P&IWTDR SR 2018 - 19)								
	Eastern Side								
	Ch: 0m to 50m		1	50.00	14.10	0.50	352.50		
	Ch: 50m to 100m		1	50.00	9.27	0.50	231.75		

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Ch: 100m to 150m		1	50.00	7.40	0.50	185.00		
	Ch: 150m to 200m		1	50.00	4.22	0.50	105.50		
	Ch: 200m to 250m		1	50.00	2.67	0.50	66.75		
	Ch: 250m to 300m		1	50.00	5.60	0.50	140.00		
	Ch: 300m to 350m		1	50.00	12.03	0.50	300.75		
	Ch: 350m to 400m		1	50.00	12.90	0.50	322.50		
	Ch: 400m to 450m		1	50.00	12.85	0.50	321.25		
	Ch: 450m to 500m		1	50.00	12.85	0.50	321.25		
	Ch: 500m to 550m		1	50.00	13.62	0.50	340.50		
	Ch: 550m to 600m		1	50.00	21.00	0.50	525.00		
	Ch: 600m to 650m		1	50.00	23.23	0.50	580.75		
	Ch: 650m to 700m		1	50.00	18.07	0.50	451.75		
	Ch: 700m to 750m		1	50.00	13.63	0.50	340.75		
	Ch: 750m to 800m		1	50.00	12.85	0.50	321.25		
	Ch: 800m to 850m		1	50.00	12.85	0.50	321.25		
	Ch: 850m to 900m		1	50.00	12.85	0.50	321.25		
	Ch: 900m to 950m		1	50.00	12.85	0.50	321.25		
	Ch: 950m to 1000m		1	50.00	12.85	0.50	321.25		
	Ch: 1000m to 1050m		1	50.00	12.85	0.50	321.25		
	Ch: 1050m to 1100m		1	50.00	12.85	0.50	321.25		
	Ch: 1100m to 1150m		1	50.00	12.85	0.50	321.25		
	Ch: 1150m to 1200m		1	50.00	12.85	0.50	321.25		
	Ch: 1200m to 1275m		1	75.00	12.90	0.50	483.75		
	Ch: 1275m to 1300m		1	25.00	12.90	0.50	161.25		
	Ch: 1250m to 1300m		1	50.00	12.20	0.50	305.00		
	Ch: 1300m to 1350m		1	50.00	8.85	0.50	221.25		
	Ch: 1350m to 1400m		1	50.00	8.94	0.50	223.50		
	Ch: 1400m to 1450m		1	50.00	3.62	0.50	90.50		
	Ch: 1450m to 1475m		1	25.00	1.86	0.50	23.25		
	45m Length		1	45.00	1.30	0.50	29.25		
	465m Length		1	465.00	0.80	0.50	186.00		
	Deduct Cobble Stone Area		1	5.18	1.60	0.50	-4.14		
			1	15.21	1.60	0.50	-12.17		
			1	32.23	1.60	0.50	-25.78		
			1	15.25	1.60	0.50	-12.20		
			1	15.16	1.60	0.50	-12.13		
			1	15.37	1.60	0.50	-12.30		
							9122.28		
..04	Construction of granular sub-base Grading-V as Sub-base and drainage layer by Providing coarse graded crushed stone aggregate of granite / trap / basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98% proctor density, complete as per Specifications. Clause 401 of MORTH V Revision (P.No.153, I.No.20.5 of PW, P&I WTD SR 2018 - 19)	Cum				Say	9122.00	369.94	3374592.68
	Eastern Side								
	Ch: 0m to 50m		1	50.00	14.10	0.20	141.00		
	Ch: 50m to 100m		1	50.00	9.27	0.20	92.70		
	Ch: 100m to 150m		1	50.00	7.40	0.20	74.00		
	Ch: 150m to 200m		1	50.00	4.22	0.20	42.20		
	Ch: 200m to 250m		1	50.00	2.67	0.20	26.70		
	Ch: 250m to 300m		1	50.00	5.60	0.20	56.00		
	Ch: 300m to 350m		1	50.00	12.03	0.20	120.30		
	Ch: 350m to 400m		1	50.00	12.90	0.20	129.00		
	Ch: 400m to 450m		1	50.00	12.85	0.20	128.50		
	Ch: 450m to 500m		1	50.00	12.85	0.20	128.50		
	Ch: 500m to 550m		1	50.00	13.62	0.20	136.20		
	Ch: 550m to 600m		1	50.00	21.00	0.20	210.00		
	Ch: 600m to 650m		1	50.00	23.23	0.20	232.30		
	Ch: 650m to 700m		1	50.00	18.07	0.20	180.70		
	Ch: 700m to 750m		1	50.00	13.63	0.20	136.30		

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Ch: 750m to 800m		1	50.00	12.85	0.20	128.50		
	Ch: 800m to 850m		1	50.00	12.85	0.20	128.50		
	Ch: 850m to 900m		1	50.00	12.85	0.20	128.50		
	Ch: 900m to 950m		1	50.00	12.85	0.20	128.50		
	Ch: 950m to 1000m		1	50.00	12.85	0.20	128.50		
	Ch: 1000m to 1050m		1	50.00	12.85	0.20	128.50		
	Ch: 1050m to 1100m		1	50.00	12.85	0.20	128.50		
	Ch: 1100m to 1150m		1	50.00	12.85	0.20	128.50		
	Ch: 1150m to 1200m		1	50.00	12.85	0.20	128.50		
	Ch: 1200m to 1275m		1	75.00	12.90	0.20	193.50		
	Ch: 1275m to 1300m		1	25.00	12.90	0.20	64.50		
	Ch: 1250m to 1300m		1	50.00	12.20	0.20	122.00		
	Ch: 1300m to 1350m		1	50.00	8.85	0.20	88.50		
	Ch: 1350m to 1400m		1	50.00	8.94	0.20	89.40		
	Ch: 1400m to 1450m		1	50.00	3.62	0.20	36.20		
	Ch: 1450m to 1475m		1	25.00	1.86	0.20	9.30		
	45m Length		1	45.00	1.30	0.20	11.70		
	465m Length		1	465.00	0.80	0.20	74.40		
	Deduct Cobble Stone Area		1	5.18	1.60	0.20	-1.66		
			1	15.21	1.60	0.20	-4.87		
			1	32.23	1.60	0.20	-10.31		
			1	15.25	1.60	0.20	-4.88		
			1	15.16	1.60	0.20	-4.85		
			1	15.37	1.60	0.20	-4.92		
							3648.91		
7.05	KSRRB - M400 - 17: Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to Wetmixmacadam specifications including premixing the material with water at OMC inmechanalmix plant carriage of mixedmaterials by tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications. MORTH Specification No. 406	Cum				Say	3649.00	1994.92	7279463.08
	(P.No.155, I.No.20.18 of PW, P&I WTD SR 2018 - 19)								
	Eastern Side								
	Ch: 0m to 50m		1	50.00	14.10	0.25	176.25		
	Ch: 50m to 100m		1	50.00	9.27	0.25	115.88		
	Ch: 100m to 150m		1	50.00	7.40	0.25	92.50		
	Ch: 150m to 200m		1	50.00	4.22	0.25	52.75		
	Ch: 200m to 250m		1	50.00	2.67	0.25	33.38		
	Ch: 250m to 300m		1	50.00	5.60	0.25	70.00		
	Ch: 300m to 350m		1	50.00	12.03	0.25	150.38		
	Ch: 350m to 400m		1	50.00	12.90	0.25	161.25		
	Ch: 400m to 450m		1	50.00	12.85	0.25	160.63		
	Ch: 450m to 500m		1	50.00	12.85	0.25	160.63		
	Ch: 500m to 550m		1	50.00	13.62	0.25	170.25		
	Ch: 550m to 600m		1	50.00	21.00	0.25	262.50		
	Ch: 600m to 650m		1	50.00	23.23	0.25	290.38		
	Ch: 650m to 700m		1	50.00	18.07	0.25	225.88		
	Ch: 700m to 750m		1	50.00	13.63	0.25	170.38		
	Ch: 750m to 800m		1	50.00	12.85	0.25	160.63		
	Ch: 800m to 850m		1	50.00	12.85	0.25	160.63		
	Ch: 850m to 900m		1	50.00	12.85	0.25	160.63		
	Ch: 900m to 950m		1	50.00	12.85	0.25	160.63		
	Ch: 950m to 1000m		1	50.00	12.85	0.25	160.63		
	Ch: 1000m to 1050m		1	50.00	12.85	0.25	160.63		
	Ch: 1050m to 1100m		1	50.00	12.85	0.25	160.63		
	Ch: 1100m to 1150m		1	50.00	12.85	0.25	160.63		
	Ch: 1150m to 1200m		1	50.00	12.85	0.25	160.63		
	Ch: 1200m to 1275m		1	75.00	12.90	0.25	241.88		

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Ch: 1275m to 1300m								
	Ch: 1300m to 1350m		1	25.00	12.90	0.25	80.63		
	Ch: 1350m to 1400m		1	50.00	8.85	0.25	110.63		
	Ch: 1400m to 1450m		1	50.00	8.94	0.25	111.75		
	Ch: 1450m to 1475m		1	50.00	3.62	0.25	45.25		
	45m Length		1	25.00	1.86	0.25	11.63		
	465m Length		1	45.00	1.30	0.25	14.63		
	Deduct Cobble Stone Area		1	465.00	0.80	0.25	93.00		
			1	5.18	1.60	0.25	-2.07		
			1	15.21	1.60	0.25	-6.08		
			1	32.23	1.60	0.25	-12.89		
			1	15.25	1.60	0.25	-6.10		
			1	15.16	1.60	0.25	-6.06		
			1	15.37	1.60	0.25	-6.15		
							4408.64		
7.06	KSRRB 500-4: Providing and applying primer coat for surfaces of medium porosity like cement stabilized soil base @0.90kg/Sqm over prepared surface with S.S bitumen emulsion using tanker fitted with spray set (excluding cleaning of road surface) including cost of all material, labour, HOM complete as per specifications. <i>Clause 501 of MORTH V revision</i> (I.No.21.5, Issue Rate as on 01 - 01 - 19)	Sqm				Say	4409.00	2001.28	8823643.52
	Ch: 0m to 50m								
	Ch: 50m to 100m		1	50.00	14.10		705.00		
	Ch: 100m to 150m		1	50.00	9.27		463.50		
	Ch: 150m to 200m		1	50.00	7.40		370.00		
	Ch: 200m to 250m		1	50.00	4.22		211.00		
	Ch: 250m to 300m		1	50.00	2.67		133.50		
	Ch: 300m to 350m		1	50.00	5.60		280.00		
	Ch: 350m to 400m		1	50.00	12.03		601.50		
	Ch: 400m to 450m		1	50.00	12.90		645.00		
	Ch: 450m to 500m		1	50.00	12.85		642.50		
	Ch: 500m to 550m		1	50.00	12.85		642.50		
	Ch: 550m to 600m		1	50.00	13.62		681.00		
	Ch: 600m to 650m		1	50.00	21.00		1050.00		
	Ch: 650m to 700m		1	50.00	23.23		1161.50		
	Ch: 700m to 750m		1	50.00	18.07		903.50		
	Ch: 750m to 800m		1	50.00	13.63		681.50		
	Ch: 800m to 850m		1	50.00	12.85		642.50		
	Ch: 850m to 900m		1	50.00	12.85		642.50		
	Ch: 900m to 950m		1	50.00	12.85		642.50		
	Ch: 950m to 1000m		1	50.00	12.85		642.50		
	Ch: 1000m to 1050m		1	50.00	12.85		642.50		
	Ch: 1050m to 1100m		1	50.00	12.85		642.50		
	Ch: 1100m to 1150m		1	50.00	12.85		642.50		
	Ch: 1150m to 1200m		1	50.00	12.85		642.50		
	Ch: 1200m to 1275m		1	50.00	12.85		642.50		
	Ch: 1275m to 1300m		1	75.00	12.90		967.50		
	Ch: 1300m to 1350m		1	25.00	12.90		322.50		
	Ch: 1350m to 1400m		1	50.00	8.85		442.50		
	Ch: 1400m to 1450m		1	50.00	8.94		447.00		
	Ch: 1450m to 1475m		1	50.00	3.62		181.00		
	45m Length		1	25.00	1.86		46.50		
	465m Length		1	45.00	1.30		58.50		
	Deduct Cobble Stone Area		1	465.00	0.80		372.00		
			1	5.18	1.60		-8.29		
			1	15.21	1.60		-24.34		
			1	32.23	1.60		-51.57		
			1	15.25	1.60		-24.40		
			1	15.16	1.60		-24.26		
			1	15.37	1.60		-24.59		
							17634.56		
						Say	17635.00	39.22	691644.70

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Dr. H.

Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Ch: 100m to 150m		1	50.00	7.40		370.00		
	Ch: 150m to 200m		1	50.00	4.22		211.00		
	Ch: 200m to 250m		1	50.00	2.67		133.50		
	Ch: 250m to 300m		1	50.00	5.60		280.00		
	Ch: 300m to 350m		1	50.00	12.03		601.50		
	Ch: 350m to 400m		1	50.00	12.90		645.00		
	Ch: 400m to 450m		1	50.00	12.85		642.50		
	Ch: 450m to 500m		1	50.00	12.85		642.50		
	Ch: 500m to 550m		1	50.00	13.62		681.00		
	Ch: 550m to 600m		1	50.00	21.00		1050.00		
	Ch: 600m to 650m		1	50.00	23.23		1161.50		
	Ch: 650m to 700m		1	50.00	18.07		903.50		
	Ch: 700m to 750m		1	50.00	13.63		681.50		
	Ch: 750m to 800m		1	50.00	12.85		642.50		
	Ch: 800m to 850m		1	50.00	12.85		642.50		
	Ch: 850m to 900m		1	50.00	12.85		642.50		
	Ch: 900m to 950m		1	50.00	12.85		642.50		
	Ch: 950m to 1000m		1	50.00	12.85		642.50		
	Ch: 1000m to 1050m		1	50.00	12.85		642.50		
	Ch: 1050m to 1100m		1	50.00	12.85		642.50		
	Ch: 1100m to 1150m		1	50.00	12.85		642.50		
	Ch: 1150m to 1200m		1	50.00	12.85		642.50		
	Ch: 1200m to 1275m		1	75.00	12.90		967.50		
	Ch: 1275m to 1300m		1	25.00	12.90		322.50		
	Ch: 1300m to 1350m		1	50.00	8.85		442.50		
	Ch: 1350m to 1400m		1	50.00	8.94		447.00		
	Ch: 1400m to 1450m		1	50.00	3.62		181.00		
	Ch: 1450m to 1475m		1	25.00	1.86		46.50		
	45m Length		1	45.00	1.30		58.50		
	465m Length		1	465.00	0.80		372.00		
	Deduct Cobble Stone Area		1	5.18	1.60		-8.29		
			1	15.21	1.60		-24.34		
			1	32.23	1.60		-51.57		
			1	15.25	1.60		-24.40		
			1	15.16	1.60		-24.26		
			1	15.37	1.60		-24.59		
							17634.56		
7.09	Providing and laying bituminous concrete 40mm thick with hotmix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hotmix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications. Clause 507 of MORTH V revision as per IRC SP-53-2015. Using 120 TPH capacity Asphalt batchmix plant with sensor paver grading II (30-45mm) with 5.4% of modified bituminous binder consisting of 4.97% of VG-30 bitumen (60/70 grade) and 0.43% of plastomeric thermoplastics (waste plastic) (I.No.21.78.8, Issue Rate as on 01.01.2019)	Cum				Say	17635.00	12.72	224317.20
	Eastern Side								
	Ch: 0m to 50m		1	50.00	14.10	0.04	28.20		
	Ch: 50m to 100m		1	50.00	9.27	0.04	18.54		
	Ch: 100m to 150m		1	50.00	7.40	0.04	14.80		
	Ch: 150m to 200m		1	50.00	4.22	0.04	8.44		
	Ch: 200m to 250m		1	50.00	2.67	0.04	5.34		
	Ch: 250m to 300m		1	50.00	5.60	0.04	11.20		
	Ch: 300m to 350m		1	50.00	12.03	0.04	24.06		
	Ch: 350m to 400m		1	50.00	12.90	0.04	25.80		
	Ch: 400m to 450m		1	50.00					



Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Ch: 450m to 500m		1	50.00	12.85	0.04	25.70		
	Ch: 500m to 550m		1	50.00	13.62	0.04	27.24		
	Ch: 550m to 600m		1	50.00	21.00	0.04	42.00		
	Ch: 600m to 650m		1	50.00	23.23	0.04	46.46		
	Ch: 650m to 700m		1	50.00	18.07	0.04	36.14		
	Ch: 700m to 750m		1	50.00	13.63	0.04	27.26		
	Ch: 750m to 800m		1	50.00	12.85	0.04	25.70		
	Ch: 800m to 850m		1	50.00	12.85	0.04	25.70		
	Ch: 850m to 900m		1	50.00	12.85	0.04	25.70		
	Ch: 900m to 950m		1	50.00	12.85	0.04	25.70		
	Ch: 950m to 1000m		1	50.00	12.85	0.04	25.70		
	Ch: 1000m to 1050m		1	50.00	12.85	0.04	25.70		
	Ch: 1050m to 1100m		1	50.00	12.85	0.04	25.70		
	Ch: 1100m to 1150m		1	50.00	12.85	0.04	25.70		
	Ch: 1150m to 1200m		1	50.00	12.85	0.04	25.70		
	Ch: 1200m to 1275m		1	75.00	12.90	0.04	38.70		
	Ch: 1275m to 1300m		1	25.00	12.90	0.04	12.90		
	Ch: 1300m to 1350m		1	50.00	8.85	0.04	17.70		
	Ch: 1350m to 1400m		1	50.00	8.94	0.04	17.88		
	Ch: 1400m to 1450m		1	50.00	3.62	0.04	7.24		
	Ch: 1450m to 1475m		1	25.00	1.86	0.04	1.86		
	45m Length		1	45.00	1.30	0.04	2.34		
	465m Length		1	465.00	0.80	0.04	14.88		
	Deduct Cobble Stone Area		1	5.18	1.60	0.04	-0.33		
			1	15.21	1.60	0.04	-0.97		
			1	32.23	1.60	0.04	-2.06		
			1	15.25	1.60	0.04	-0.98		
			1	15.16	1.60	0.04	-0.97		
			1	15.37	1.60	0.04	-0.98		
							705.38		
10	Green Pigmented Asphalt: Providing and laying green pigment with resin binder to concrete or asphalt surface by mechanical method, it comprises of a specially formulated binder system with a colour coated glass aggregate manufactured using a proprietary technology, provides a tactile warning system with a high friction, non - fading, consistent colour surface, environment friendly, sub angular, non-porous gives average service life of 5 years, installed effectively within 5-8 hours resulting in minimal traffic disruption. The finished surface to be level, uniform and free from streaks and holes, transporting the material, with all Lead & lift, including cost of all materials, labour, HOM of machineries compete as per specifications.	Sqm				Say	706.00	8036.92	5674065.52
	BBMP Approved Rate								
	For Cycle Track								
	East Ch: 205m to Ch: 1475m		1	1270.00	2.20		2794	1500	4191000.00
							Total Amount		41988975.44

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
b.	Strengthening of existing Carriageway (Camber Correction, laying of Overlay)								
7.11	Milling the bituminous pavement surface upto a depth of 55mm using milling machine, to make a uniform surface without disturbing the base, cleaning the milled surface, including cost of all labour charges and hire charges of machineries, etc. complete, including stacking the milled material on the sides of road.	Sqm							
	(Pg.No. 151, I.No. 19.102 of PW, P & I WTD SR 2018 - 19)								
	Western Side								
	Ch: 0m to 50m		1	50.00	16.65	--	832.50		
	Ch: 50m to 100m		1	50.00	19.25	--	962.50		
	Ch: 100m to 150m		1	50.00	30.83	--	1541.50		
	Ch: 150m to 200m		1	50.00	36.39	--	1819.50		
	Ch: 200m to 250m		1	50.00	35.16	--	1758.00		
	Ch: 250m to 300m		1	50.00	33.07	--	1653.50		
	Ch: 300m to 350m		1	50.00	20.38	--	1019.00		
	Ch: 350m to 400m		1	50.00	15.12	--	756.00		
	Ch: 400m to 450m		1	50.00	12.90	--	645.00		
	Ch: 450m to 500m		1	50.00	13.32	--	666.00		
	Ch: 500m to 550m		1	50.00	17.63	--	881.50		
	Ch: 550m to 600m		1	50.00	0.30	--	15.00		
	Ch: 600m to 650m		1	50.00	0.30	--	15.00		
	Ch: 650m to 700m		1	50.00	15.47	--	773.50		
	Ch: 700m to 750m		1	50.00	12.90	--	645.00		
	Ch: 750m to 800m		1	50.00	12.90	--	645.00		
	Ch: 800m to 850m		1	50.00	12.90	--	645.00		
	Ch: 850m to 900m		1	50.00	12.90	--	645.00		
	Ch: 900m to 950m		1	50.00	12.90	--	645.00		
	Ch: 950m to 1000m		1	50.00	12.85	--	642.50		
	Ch: 1000m to 1050m		1	50.00	12.60	--	630.00		
	Ch: 1050m to 1100m		1	50.00	11.79	--	589.50		
	Ch: 1100m to 1150m		1	50.00	12.02	--	601.00		
	Ch: 1150m to 1200m		1	50.00	12.15	--	607.50		
	Ch: 1200m to 1250m		1	50.00	12.90	--	645.00		
	Ch: 1250m to 1300m		1	50.00	12.90	--	645.00		
	Ch: 1300m to 1350m		1	50.00	12.90	--	645.00		
	Ch: 1350m to 1400m		1	50.00	19.50	--	975.00		
	Ch: 1400m to 1450m		1	50.00	19.50	--	975.00		
	Ch: 1450m to 1475m		1	25.00	19.50	--	487.50		
	Eastern Side								
	Ch: 1300m to 1350m		1	50.00	0.30	--	15.00		
	Ch: 1350m to 1400m		1	50.00	0.30	--	15.00		
	Ch: 1400m to 1450m		1	50.00	0.30	--	15.00		
	Ch: 1450m to 1475m		1	25.00	0.30	--	7.50		
	Deduct Cobble Stone Area		1	55.00	1.60	--	-88.00		
			1	20.10	1.60	--	-32.16		
			1	63.20	1.60	--	-101.12		
			1	22.60	1.60	--	-36.16		
			1	21.50	1.60	--	-34.40		
			1	21.70	1.60	--	-34.72		
							23732.44		
						Say	23732.00	74.20	1760914.40
..12	KSRRB 500-9: Providing and applying Tack Coat using 80/100 Grade Bitumen (VG10) on granular base such as WBM surfaces hot bitumen primed at 4kg per 10Sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM Complete as per specifications. Clause 503 of MORTH V revision (I.No.21.9, Issue Rate as on 01 - 01 - 19)	Sqm							
	Western Side								
	Ch: 0m to 50m		1	50.00	1.60	--	642.50		

Sl. No.	Description of work	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
	Ch: 50m to 100m		1	50.00	12.85		642.50		
	Ch: 100m to 150m		1	50.00	12.85		642.50		
	Ch: 150m to 200m		1	50.00	12.85		642.50		
	Ch: 200m to 250m		1	50.00	12.90		645.00		
	Ch: 250m to 300m		1	50.00	12.90		645.00		
	Ch: 300m to 350m		1	50.00	8.85		442.50		
	Ch: 350m to 400m		1	50.00	8.94		447.00		
	Ch: 400m to 450m		1	50.00	3.62		181.00		
	Ch: 450m to 500m		1	50.00	1.86		93.00		
	Ch: 500m to 550m		1	50.00	1.30		65.00		
	Ch: 550m to 600m		1	50.00	0.80		40.00		
	Ch: 600m to 650m		1	50.00	1.60		80.00		
	Ch: 650m to 700m		1	50.00	1.60		80.00		
	Ch: 700m to 750m		1	50.00	1.60		80.00		
	Ch: 750m to 800m		1	50.00	1.60		80.00		
	Ch: 800m to 850m		1	50.00	1.60		80.00		
	Ch: 850m to 900m		1	50.00	0.00		0.00		
	Ch: 900m to 950m		1	50.00	0.00		0.00		
	Ch: 950m to 1000m		1	50.00	0.00		0.00		
	Ch: 1000m to 1050m		1	50.00	0.00		0.00		
	Ch: 1050m to 1100m		1	50.00	0.00		0.00		
	Ch: 1100m to 1150m		1	50.00	0.00		0.00		
	Ch: 1150m to 1200m		1	50.00	0.00		0.00		
	Ch: 1200m to 1250m		1	50.00	14.10		705.00		
	Ch: 1250m to 1300m		1	50.00	9.27		463.50		
	Ch: 1300m to 1350m		1	50.00	7.40		370.00		
	Ch: 1350m to 1400m		1	50.00	4.22		211.00		
	Ch: 1400m to 1450m		1	50.00	2.67		133.50		
	Ch: 1450m to 1475m		1	25.00	5.60		140.00		
	Eastern Side						0.00		
	Ch: 1300m to 1350m		1	50.00	12.90		645.00		
	Ch: 1350m to 1400m		1	50.00	12.85		642.50		
	Ch: 1400m to 1450m		1	50.00	12.85		642.50		
	Ch: 1450m to 1475m		1	25.00	13.62		340.50		
	Deduct Cobble Stone Area		1	50.00	1.60		80.00		
			1	50.00	1.60		80.00		
			1	50.00	1.60		80.00		
			1	50.00	1.60		80.00		
			1	50.00	1.60		80.00		
			1	50.00	1.60		80.00		
	Cross Roads		8	30.00	12.50		3000.00		
	For Pedestrian Crossing		1	30.00	37.00		1110.00		
			4	8.00	1.50		48.00		
			2	11.00	1.50		33.00		
			2	9.00	1.50		27.00		
7.13	KSRRB - M500-17: Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hotmix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500 - 10 complete in all respects complete as per specifications. MORTH Specifacatin No. 507. Using 120 TPH capacity Asphalt batchmix plant with sensor paver Gr -II (50mm to 75mm) with 4.5 % VG-30 Bitumen (I.No.21.17.2, Issue Rate as on 01 - 01 - 19)	Cum					14600.00	21.2	309520.00
	For Camber Correction								
	20% of Existing Area		1	4746.40	0.125		593.30		
	Pedestrian Crossing								

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10/11/20

Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
			2	8.00	3.00	0.225	10.80		
			1	11.00	3.00	0.225	7.43		
			1	9.00	3.00	0.225	6.08		
		0.5	4	8.00	1.50	0.26	6.24		
		0.5	2	11.00	1.50	0.26	4.29		
		0.5	2	9.00	1.50	0.26	3.51		
							631.64		
7.14	KSRRB 500-7: Providing and applying tack coat using 80 / 100 grade bitumen (VG 10) on the prepared black topped surfaces at 2.5kg per 10Sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM complete as per specifications. Clause 503 of MORTH V revision	Sqm				Say	632.0	7049.00	4454968.00
	(I.No.21.7, Issue Rate as on 01.01.2019)								
	Qty Same as milling						23732.00		
	Cross Roads		8	30.00	12.50	--	3000.00		
	For Pedestrian Crossing		1	30.00	37.00		1110.00		
			4	8.00	1.50	--	48.00		
			2	11.00	1.50	--	33.00		
			2	9.00	1.50	--	27.00		
7.15	Providing and laying Bituminous concrete 40mm thick with hotmix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hotmix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications. Clause 507 of MORTH V revision as per IRC SP-53-2015. Using 120 TPH capacity Asphalt batchmix plant with sensor paver grading II (30-45mm) with 5.4% of modified bituminous binder consisting of 4.97% of VG-30 bitumen (60/70 grade) and 0.43% of plastomeric thermoplastics (waste plastic)	Cum					27950.00	12.72	355524.00
	(I.No.21.78.8 Issue Rate as on 01.01.2019)								
	Western Side								
	Ch: 0m to 50m		1	50.00	16.65	0.04	33.30		
	Ch: 50m to 100m		1	50.00	19.25	0.04	38.50		
	Ch: 100m to 150m		1	50.00	30.83	0.04	61.66		
	Ch: 150m to 200m		1	50.00	36.39	0.04	72.78		
	Ch: 200m to 250m		1	50.00	35.16	0.04	70.32		
	Ch: 250m to 300m		1	50.00	33.07	0.04	66.14		
	Ch: 300m to 350m		1	50.00	20.38	0.04	40.76		
	Ch: 350m to 400m		1	50.00	15.12	0.04	30.24		
	Ch: 400m to 450m		1	50.00	12.90	0.04	25.80		
	Ch: 450m to 500m		1	50.00	13.32	0.04	26.64		
	Ch: 500m to 550m		1	50.00	17.63	0.04	35.26		
	Ch: 550m to 600m		1	50.00	0.30	0.04	0.60		
	Ch: 600m to 650m		1	50.00	0.30	0.04	0.60		
	Ch: 650m to 700m		1	50.00	15.47	0.04	30.94		
	Ch: 700m to 750m		1	50.00	12.90	0.04	25.80		
	Ch: 750m to 800m		1	50.00	12.90	0.04	25.80		
	Ch: 800m to 850m		1	50.00	12.90	0.04	25.80		
	Ch: 850m to 900m		1	50.00	12.90	0.04	25.80		
	Ch: 900m to 950m		1	50.00	12.90	0.04	25.80		
	Ch: 950m to 1000m		1	50.00	12.85	0.04	25.70		
	Ch: 1000m to 1050m		1	50.00	12.60	0.04	25.20		
	Ch: 1050m to 1100m		1	50.00	11.79	0.04	23.58		
	Ch: 1100m to 1150m		1	50.00	12.02	0.04	24.04		

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
	Ch: 1150m to 1200m		1	50.00	12.15	0.04	24.30		
	Ch: 1200m to 1250m		1	50.00	12.90	0.04	25.80		
	Ch: 1250m to 1300m		1	50.00	12.90	0.04	25.80		
	Ch: 1300m to 1350m		1	50.00	12.90	0.04	25.80		
	Ch: 1350m to 1400m		1	50.00	19.50	0.04	39.00		
	Ch: 1400m to 1450m		1	50.00	19.50	0.04	39.00		
	Ch: 1450m to 1475m		1	25.00	19.50	0.04	19.50		
	Eastern Side								
	Ch: 1300m to 1350m		1	50.00	0.30	0.04	0.60		
	Ch: 1350m to 1400m		1	50.00	0.30	0.04	0.60		
	Ch: 1400m to 1450m		1	50.00	0.30	0.04	0.60		
	Ch: 1450m to 1475m		1	25.00	0.30	0.04	0.30		
	Deduct Cobble Stone Area		1	55.00	1.60	0.04	-3.52		
			1	20.10	1.60	0.04	-1.29		
			1	63.20	1.60	0.04	-4.04		
			1	22.60	1.60	0.04	-1.45		
			1	21.50	1.60	0.04	-1.38		
			1	21.70	1.60	0.04	-1.39		
	Cross Roads		8	30.00	12.50	0.04	120.00		
	For Pedestrian Crossing		1	30.00	37.00	0.04	44.40		
			4	8.00	1.50	0.04	1.92		
			2	11.00	1.50	0.04	1.32		
			2	9.00	1.50	0.04	1.08		
							1118.02		
16	KSRRB 300 - 50: Scarifying bituminous course 50mm to 75mm thick along with premix carpet / surface dressing by mechanical means attached with scarifier without disturbing the base and stacking the debris including cost of all labour charges, HOM complete as per specifications. MORTH / Chapter 3 (P. No.146 I No 19.56 of PW, P & IWT D S.R 2018 - 19) (39*1.06+19*1.3*2+57)=150.34 For Pedestrian Crossing Junction	Sqm				Say	1118.00	8036.92	8985276.56
			2	8.00	3.00	-	48.00		
			1	11.00	3.00	-	33.00		
			1	9.00	3.00	-	27.00		
							108.00		
17	KSRB 14.6-1: Providing and laying heavy duty interlock concrete paver block 75mm thick 300mmX300mm, using cement and course sand for manufacture of blocks of approved size, shape and colour with aminimum compressive strength of 281 kg per Sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KBS (P. No.103 I No 14.7 of PW, P & IWT D S.R 2018 - 19) For Pedestrian Crossing Qty Same as Item No-2.02	Sqm					108.00	150.34	16236.72
							108.00		
							108.00	1176.60	127072.80

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
7.18	KSRRB 2200-5.12: Providing and laying design mix M25 with OPC @340kgs. with 20mm and down size graded granite metal coarse aggregates @0.7Cum and fine aggregates @0.47 Cum, with superplasticiser @3lts Conforming to IS: 9103-1999 Reaffirmed - 2008 including cost of materials, labour, HOM curing, form work, scaffolding and centering complete as per specifications. i) upto 5m height (P.No.227, I.No.28.7.12 of PW, P& I WTD SR 2018 - 19) For Pedestrian Crossing	Cum							
			4	8.00	0.30	0.10	0.96		
			2	11.00	0.30	0.10	0.66		
			2	9.00	0.30	0.10	0.54		
							2.16		
							2.16	5640.26	12182.96
7.19	Green Pigmented Asphalt: Providing and laying green pigment with resin binder to concrete or asphalt surface by mechanical method, it comprises of a specially formulated binder system with a colour coated glass aggregate manufactured using a proprietary technology, provides a tactile warning system with a high friction, non - fading, consistent colour surface, environment friendly, sub angular, non-porous gives average service life of 5 years, installed effectively within 5-8 hours resulting in minimal traffic disruption. The finished surface to be level, uniform and free from streaks and holes, transporting the material, with all Lead & lift, including cost of all materials, labour, HOM of machineries complete as per specifications.	Sqm							
	BBMP Approved Rate								
	For Cycle Track								
	West Ch: 225m to Ch: 1475m		1	1250	2.20		2750		
							2750		
							Say 2750	1500	4125000.00
							Total Amount		20146695.44



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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
8.00	Construction of Docking Stations								
8.01	KSRRB - M300 - 14: Excavation for road work in all types of soil by mechanical means including cutting and loading to tipper, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301 (P. No.143, I.No.19.14 of PW, P&IWTDR SR 2018 - 19)	Cum							
	Area		4	24.40		0.56	54.66		
			2	43.90		0.56	49.17		
							103.82	43.46	4512.19
8.02	Construction of granular sub-base Grading-V as Sub-base and drainage layer by Providing coarse graded crushed stone aggregate of granite / trap / basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98% proctor density, complete as per Specifications. Clause 401 of MORTH V Revision (P.No.153, I.No.20.5 of PW, P&IWTDR SR 2018 - 19)	Cum							
			4	24.40		0.20	19.52		
			2	43.90		0.20	17.56		
							37.08	1994.92	73971.63
8.03	KSRRB - M400 - 17: Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to Wet mix macadam specifications including premixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications. MORTH Specification No. 406 (P.No.155, I.No.20.18 of PW, P&IWTDR SR 2018 - 19)	Cum							
			4	24.40		0.25	24.40		
			2	43.90		0.25	21.95		
							46.35	2001.28	92759.33
8.04	KSRRB 14.6-1: Providing and laying heavy duty interlock concrete paver block 60mm thick 300mmX300mm, using cement and coarse sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per Sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KBS (P.No.103, I.No.14.6 of PW, P&IWTDR SR 2018 - 19)	Sqm							
			4	24.40		--	97.60		
			2	43.90		--	87.80		
							185.40	1116.18	206939.77
8.05	Providing and fixing Precast solid concrete kerb stones made out of CC 1 :2:4 and finished with CM 1:3 plastering and finishing cutting etc., complete. Size 450 x 150 x 500mm (P.No.27, I.No.5.29.2 in PW, P&IWTDR SR 2018 - 19)	Nos.							
			4	27.00		--	108.00		
			2	48.00		--	96.00		
							Say 204.00	467.46	95361.84
							Total Amount		473544.76



Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
9.00	Providing Traffic Signs, Lanemarking, Pedestrian Crossing, Studs, etc.								
9.01	KSRRB - M800 - 13: Road marking with Hot Applied Thermo plastic Compound with Reflectrising Glass Beads on Bituminous surface/ Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250gms per Sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35 Standards specified. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.	Sqm							
	(P.No.182, I.No.24.15 in PW, P&IWTD SR 2018 - 19)								
	a) Broken Lane line								
	From Ch: 0m to Ch: 1475m		2	738.00	0.15	--	221.40		
	b) Edgemarking								
	From Ch: 0m to Ch: 1475m		2	1477.00	0.15	Say	443.10		
	c) Pedestrian Crossing								
	At Ch: 225m		1	18.50	3.00	--	55.50		
	At Ch: 550m and Ch: 600m		1	16.75	3.00	--	50.25		
	d) Stop Line								
	At Cauvery Junction		1	19.63	0.20	--	3.93		
			1	21.76	0.20	--	4.35		
	At Ch: 225m		1	15.20	0.20	--	3.04		
			1	104.00	0.20	--	20.80		
	Busbay		1	10.00		--	10.00		
	Cycle Track		6	5.00		--	30.00		
	Lane Arrows		7	5.00		--	35.00		
							877.37		
	a) Broken Lane line								
	From Ch: 0m to Ch: 1475m		2	738.00	0.15	--	221.40		
	b) Edgemarking								
	From Ch: 0m to Ch: 1475m		2	1477.00	0.15	Say	443.10		
	c) Pedestrian Crossing								
	At Ch: 225m		1	18.50	3.00	--	55.50		
	At Ch: 550m and Ch: 600m		1	16.75	3.00	--	50.25		
	d) Stop Line								
	At Cauvery Junction		1	19.63	0.20	--	3.93		
			1	21.76	0.20	--	4.35		
	At Ch: 225m		1	15.20	0.20	--	3.04		
			1	104.00	0.20	--	20.80		
	Busbay		1	10.00		--	10.00		
	Cycle Track		5	5.00		--	25.00		
							837.37		
						Say	1714.74	454.74	779759.05
9.02	Providing and fixing of Retro-reflectorised cautionary, mandatory, informatory sign as per IRC:67 made of high intensity grade sheeting vide Clause 801.3, fixed over aluminium sheeting, 1.5mm thick supported on mild steel angle iron post 75mm x 75mm x 6mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45cm x 45cm x 60cm, 60cm below ground level as per approved drawing.	Nos.							
	(P.No.180 of I.No.24.2.4, 24.2.3, 24.2.1, & 24.2.6 in PW, P&IWTD SR 2018 - 19)								
	600 X 800mm - Type XI					--			
	Informatory sign boards		20	--	--		20.00	4342.82	86856.40
	600mm Circle - Type XI	Nos.	35						
	Compulsory Cycle Track, No Parking, Turning movement		35				35.00	3309.32	115826.20
	900mm Equilateral triangle - Type XI	Nos.	10				10.00	3661.24	36612.40
	Pedestrian crossing sign boards		7				7.00	5349.82	37448.74
	900mm Octagon Stop Board- Type XI	Nos.							

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Sl. No.	Description of work	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
9.03	Supply and fixing of Retro Reflective Single Arrow Road Name Signboard of size 1600mm X 900mm made out of retro reflective sheeting conforming to Type XI standards of ASTM D 4956-09 and as per IRC 67-2012 for full back ground of blue colour and white letters and fixed over 4mm thick Aluminium Compositematerial sheet having minimum 0.5mm thick Aluminium skin on both sides with back side painted grey colour and fixed over back support frame SS angle of 15mm X 20mm X 1.2mm, supported by 38mm OD stainless steel pipe all round in 304 grade and 2 Nos. of vertical posts of 50mm OD stainless steel pipe of 202 grade firmly fixing to the ground by means of properly designed foundation of size 450mm X 450mm X 600mm in 1:1.5:3 ratio cement concrete. The background shall be blue in colour with letters and border in white, the item includes earthwork excavation, cost of all materials, loading, unloading, lead, lift, transportation etc., complete. as per direction of engineer incharge of work clause 6.9 of IRC 67-2012 for Typt-XI retro reflective sheeting from the sheeting manufacturer and a certified copy of test reports from independent test laboratory conforming to clause 6.7 of IRC 67-2012 including outdoor weather exposure report for the retro reflective sheeting offered shall be submitted by the contractor for technical qualification tender.	Sqm							
(P.No.190 of I.No.24.59, in PW, P&IWTDR SR 2018 - 19)									
9.04	Supply and fixing of Retro Reflective Double arrow road name sign board of size 2000mm X 900mm made out of retro reflective sheeting conforming to Type XI standards of ASTM D 4956 - 09 & as per IRC 67 - 2012 for full back ground of blue colour & white letters and fixed over 4mm thick Aluminium Compositematerial sheet having minimum 0.5mm thick Aluminium skin on both sides with back side painted grey colour and fixed over back support frame SS angle of 15mm X 20mm X 1.2mm, supported by 38mm OD stainless steel pipe all round in 304 grade and 2 nos of vertical posts of 50mm OD stainless steel pipe of 202 grade firmly fixed to the ground by means of properly designed foundation of size 450mm X 450mm X 600mm in 1:1.5:3 ratio cement concrete. The background shall be blue in color with letters and border in white, the item includes earthwork excavation, cost of all materials, loading, unloading, lead, lift, transportation etc., complete. as per clause 6.9 of IRC 67 - 2012 including outdoor weather exposure report for the retro reflective sheeting offered shall be submitted by the contractor for technical qualification in the tender.	Sqm	7	--	--	--	7.00	14094.82	98663.74
(P.No.190 of I.No.24.60, in PW, P&IWTDR SR 2018 - 19)									
			7	--	--	--	7.00	16732.14	117124.70

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Sl. No.	Description of work	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
9.05	KSRRB - M800-35: Supply and installation of moulded Shank Raised Pavement markers made of polycarbonate and ABS (Acrylonitrile Butadiene Styrene)moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000 kg tested in accordance to Specifications of category A of MORTH Circular No. RW/NH/33023/10-97. - DO III Dt 11.06.1997. The height, width and length shall not exceed 50mm, 100mm and 102mm and with minimum reflective area of 13Sqcm on each side and the slope to the base shall be 35 degree. The strength of detachment of the integrated cylindrical shanks, (of diameter not less than 19mm and height not less than 30mm) from the body is to be a minimum value of 500kg. Fixing will be by drilling holes on the road for the shanks to go inside, Without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer	Nos.							
	(P.No.189, I.No.24.41 in PW, P&I WTD SR 2018 - 19)								
	From Ch: 0m to Ch: 1475m		2067				2067	357.22	738373.74
	From Ch: 100m to Ch: 230m		26				26		
	For median both sides		233				233		
	At Every 5m Spacing						259	357.22	92519.98
9.06	KSRRB - M800-43: Installation of a steel portable barricade with horizontal rail 300mm wide, 2.5m in length fitted on a 'A' framemade with 45 x 45 x 5mm angle iron section, 1.5m in height, horizontal rail painted (2 coats) with yellow and white stripes, 150mm in width at an angle of 45°, 'A' frame painted with 2 coats of yellow paint, complete as per IRC: SP: 55 - 2001 complete as per specifications.	Each							
	(P.No.187, I.No.24.44 in PW, P&I WTD SR 2018 - 19)								
9.07	KSRRB - M800 - 15: Road Delineators: Supply & installation of Vertical Delineator having wide angle cube corner micro prismatic nonmetallic reflective sheeting Conforming to Type - XI of IRC: 67 - 2012 with White and Red colour combination and having minimum of retro reflective exposed area of 125Sqcm on top slots and 35Sqcm on bottom slots and no edges shall be exposed for tampering. This tubular delineator shall have a core and shell construction, shell shall be made of tough, high impact resistant, injection -moulded, thermoplastic outer body and the inner core shell consist of power coated or painted mild steel of minimum thickness 1.0mm and core-shell structure shall be of height not less than 800mm above the ground and width not less than 80mm. The metallic core of the delineator shall extend 300mm beyond the shell length from bottom for installing in the ground. The extended portion of the metallic core having suitable slots to be fixed in m20 grade Cement Concrete of size 300 X 300 X 400mm with suitable anchoring rods for enhancing the grip, As per IRC: 75 Specifications.	Nos.					1180	2639.40	3114492.00
	(P.No.182 of I.No.24.19 in PW, P&I WTD SR 2018 - 19)								
	From Ch-0.00m to Ch- 1475m		30				30		
							30	1963.12	58893.60
Total Amount									5276570.55

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Sl. No.	Description of work	Unit	No.	Length inm	Breadth inm	Depth inm	Quantity	Rate in Rs.	Amount in Rs.
10.00	Tree Transplantation								
10.0	Transplantation and Treatement for the Trees coming in the widened portion of Carriageway as per directions of Engineer - in - charge	Each							
	BBMP Approved Rate								
							61		
							61	19900.00	1213900.00
							Total Amount		1213900.00



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Project: Widening of Jayamahall Road (from Mehkri Circle to Jayamahall Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Name of Work: Widening of Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Detailed Cost Estimate for Street Illumination

PW, P&IWTDR, Electrical Works 2019 - 20

Sl. No.	Page No.	Item No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1.0			Wires and Cables				
1.1	6	2.3.3	Wiring for Lighting / Power Circuit using one of FRLS PVC insulated 1100V grade, multistrand Copper Wire with low conductor resistance single core wire in open or concealed system of wiring with specified IS: 694 conforming to the latest Amendments 2.5 Sqmm (from Pole Box to Light Fixture)	Mtr.	5900.00	32.00	188800.00
2.0			Luminaries / Light Fixtures and Accessories				
2.1	67	12.8.6	Supply of LED Streetlight Luminaire with Pressure Die Cast Aluminium Housing Body for Optimal Thermal Dissipation. Lamp Compartment comprising of Anti Glare Clear Diffuser with Injection moulded Polycarbonate Material, delivering superior Light Output. Rate Life Burning hrs. 50000 hr. @ Lumen Maintenance of 70%, Maximum Light Intensity should be between 60 degrees and 70 degrees, CCT > 5500K, IP 66 Optical and Electrical Compartment and Impact Resistance of Complete Luminaire > IK08, Power Factor > 0.9 with Mains, Surge Protection minimum 5KV along with Over Voltage / Overload, Short Circuit / Miss - Wiring Protection. Compatible for Pole Mounting with Outer Dia of 40mm to 50mm. Universal Voltage Driver to operate wide Voltage range from 100V to 270V 50 / 60 Hz Application. Compliance to IS: 10322 / IEC 60598, LM 79 and LM 80 adherence with RoHS UL approved MCPCB. Top access Street Light with Single Screw to ensure ease of maintenance at the Sight Site Location with minimised minimal Tools. LED Light Fixture with 150 Watts System Power consumption. LED Efficiency > 130 lm / w, nominal CRI > 75. Luminaire Manufacturer should have in house Facility accredited by NABL / CPRI and any Government certified Agency and Design and Development Facility certified by ISO 9001: 2008. Housing with Supplier Word Mark / Name shall be engraved / embossing on the Die Cast Housing / Body Part. Warranty of 2 Years against any Manufacturing Defect working under Standard Electrical Conditions as mentioned above should be given by LED Manufacturer and Cree / Nichia / Lumileds / Osram Make LED Source. LED Streetlight 150 Watts	No.	154.00	12300.00	1894200.00

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Sl. No.	Page No.	Item No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
2.2	67	12.8.1	Supply of LED Streetlight Luminaire with Pressure Die Cast Aluminium Housing Body for Optimal Thermal Dissipation. Lamp Compartment comprising of Anti Glare Clear Diffuser with Injection moulded Polycarbonate Material, delivering superior Light Output. Rate Life Burning hrs. 50000 hr. @ Lumen Maintenance of 70%, Maximum Light Intensity should be between 60 degrees and 70 degrees. CCT > 5500K, IP 66 Optical and Electrical Compartment and Impact Resistance of Complete Luminaire > IK08, Power Factor > 0.9 with Mains, Surge Protection minimum 5KV along with Over Voltage / Overload, Short Circuit / Miss - Wiring Protection. Compatible for Pole Mounting with Outer Dia of 40mm to 50mm. Universal Voltage Driver to operate wide Voltage range from 100V to 270V 50 / 60 Hz Application. Compliance to IS: 10322 / IEC 60598, LM 79 and LM 80 adherence with RoHS UL approved MCPCB. Top access Street Light with Single Screw to ensure ease of maintenance at the Sight Site Location with minimised minimal Tools. LED Light Fixture with 25 Watts System Power consumption. LED Efficiency > 130 lm / w, nominal CRI > 75. Luminaire Manufacturer should have in house Facility accredited by NABL / CPRI and any Government certified Agency and Design and Development Facility certified by ISO 9001: 2008. Housing with Supplier Word Mark / Name shall be engraved / embossing on the Die Cast Housing / Body Part. Warranty of 2 Years against any Manufacturing Defect working under Standard Electrical Conditions as mentioned above should be given by LED Manufacturer and Cree / Nichia / Lumileds / Osram Make LED Source. LED Streetlight 25 Watts	No.	146.00	1840.00	268640.00
2.3	13	4.2.9	Fabricating, supplying and erection of 11m long hot dip Galvanized Octagonal Pole with BSEN 10025 grade S 355 JO steel plate of shaft, IS: 2062 for base plate with door opening arrangements, including suitable boards, bakelite sheet and MCBs as per IS Specification suitable to withstand the Wind Speed of 47m / sec for 11m Pole in single section and single joint welded as per IS: 9595 / IS: 10178AWS having dimensions Bottom 210mm, Top 90mm with 3mm thick, suitable base plate and 4Nos. 11m long J Bolts along with Template and Pole shall be Hot Dip Galvanized in single dipping with not less than 65micron as per ASTM - A123 and 153, etc. (excluding Foundation) as per drawing appended. 11meters - Top 90mm and Bottom 210 mm dia	Each	146.00	20698.00	3021908.00

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Sl. No.	Page No.	Item No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
2.4	15	4.5.1	Fabrication, Supplying, Erection, Testing and Commissioning of 12Mtrs / 12.5Mtrs long Polygon High Mast with Single / Multiple Telescopic Sections having (minimum overlap distance of 1.5 times of top section) thickness as per BSEN 10025 Grade S355 JO / ASTM A572 - 50 Steel Sheet Plate for shaft suitable to withstand a wind velocity of 47 m / sec as per IS: 875 Part 3 (as per GA Drawing). Base Plate as per IS: 2062 / ASTM A572 - 50. The Mast shall be Galvanized in single Hot Dip as per BSEN ISO 1461 / ASTM A123 with an average 70 microns as per IS: 2629 and welded as per BS: 5135 Single L - Seam Joint. The Mast shall have 2 way Head Frame with Die Cast LM - 6 Pulleys, Stainless Steel Axle, Phosphorus Bronze bearing Bush press fitted with separate guides for 2 runs of 5mm dia, Stainless Steel Wire Rope of AISI 304 Grade 7 / 19 - Core. (Factor of Safety as per TR No. 7). 2.5 Sqmm EPR insulated PCP sheathed trailing power cable housed inside the Bottom Shaft of Mast with Door having Locking Arrangement. The Mast shall have Manual / Power Tool (suitable Reversible Geared Motor operating on 230 / 415V, 50 Hz, shall be provided above 15m Mast). The Mast shall have Lantern of 2 Segments, suitable dia with Maximum Load Carrying Capacity as per IS: 1239. The Mast shall be erected on existing RCC Footing. The Mast shall be supplied with 3mm thick template, Lightning Arrester of 1.2m length Galvanized Pipe with Top Arrow fitted on top of the Head Frame Cover and GLS Type Aviation Twin Lamps Fitting with Wiring complete (excluding Foundation) as per Technical Data. 12Mtrs / 12.5 Mtrs - Top 100mm an Bottom 310mm dia	Each	2.00	105600.00	211200.00
2.5	16	4.7.1	Supplying, and fixing of Hot Dip Galvanized M. S. Bracket suitable for Outdoor Luminaries and mounted on Octogonal Pole using necessary Bolts, Nuts, etc. complete. Single Arm Bracket with 1000mm Standard 40 / 50 mm dia	Each	146.00	1689.00	246594.00
2.6	16	4.7.6	Supplying, and fixing of Hot Dip Galvanized M. S. Bracket suitable for Outdoor Luminaries and mounted on Octogonal Pole using necessary Bolts, Nuts, etc. complete. Double Arm Bracket with 2000mm Standard 40 / 50 mm dia	Each	146.00	3696.00	539616.00
3.0			LT UG Cables				
3.1	40	6.2	Earthing for Feeder Pillar Supplying, fixing and wiring Earth Electrode for grounding of Lifts, Transformers, DG Sets, etc. using 40mm dia 2.9mm thick 2.5m long GI Pipe with GI Funnel with Mesh and suitable Size Reducer fixed on the Top of the Earth Electrode. The Funnel should be enclosed in a CC Chamber of 400 X 400 X 400mm with a Cast Iron Cover. The Earth Electrode shall have Staggered Holes of 12mm dia and the Electrode should be covered 150mm alround with Alterate Layers of Salt and Charcoal from the bottom of the CC Chamber. The Connection from the Electrode is to be established through GI Strip using GI Bolts and Nuts.	No.	4.00	4150.00	16600.00
3.2	40	6.3.1	Supplying and running of GI / Copper Strips for grounding Connections using necessary Fixing Materials as required. 25 X 3mm GI Strip	Mtr.	.50.00	75.00	3750.00
3.3	40	6.4.2	Supplying of 1.1 KV LT UG Cable XLPE or Heat Resistant PVC insulated, PVC extruded Inner Sheath armoured UG LT Cable as per IS: 1554 (Part 1) or IS: 7098 Part 1. Armouring Strip Thickness in Average + 5% and Resistivity 14 Ohms / Km (Max) as per IS: 3975 4 Core 10 Sqmm	Mtr.	3500.00	130.00	455000.00

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Sl. No.	Page No.	Item No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
3.4	40	6.4.4	Supplying of 1.1 KV LT UG Cable XLPE or Heat Resistant PVC insulated, PVC extruded Inner Sheath armoured UG LT Cable as per IS: 1554 (Part 1) or IS: 7098 Part 1. Armouring Strip Thickness in Average + 5% and Resistivity 14 Ohms / Km (Max) as per IS: 3975 4 Core 16 Sqmm	Mtr.	200.00	150.00	30000.00
3.5	41	6.5.1	Labour Charges for laying of 1.1 KV Class UG Cable in existing Trench GI Pipe / Stoneware Pipe / on Wall / on Pole as required. In existing Trench / Duct 6 Sqmm to 16 Sqmm	Mtr.	3500.00	11.88	41580.00
3.6	41	6.5.6	Labour Charges for laying of 1.1 KV Class UG Cable in existing Trench GI Pipe / Stoneware Pipe / on Wall / on Pole as required. On Wall / Structure 6 Sqmm to 16 Sqmm	Mtr.	200.00	30.00	6000.00
3.7	41	6.6.1	Digging of Trench of 0.6m Deep X 0.5m Wide refiling the Trench to the required ground level and consolidating, etc. In Soil (Ordinary)	Mtr.	2700.00	76.00	205200.00
3.8	41	6.6.2	Digging of Trench of 0.6m Deep X 0.5m Wide refiling the Trench to the required ground level and consolidating, etc. In Soil (Hard)	Mtr.	300.00	102.00	30600.00
3.9	41	6.6.3	Digging of Trench of 0.6m Deep X 0.5m Wide refiling the Trench to the required ground level and consolidating, etc. Cutting Road Surface	Mtr.	500.00	82.00	41000.00
3.10	41	6.6.4	Digging of Trench of 0.6m Deep X 0.5m Wide refiling the Trench to the required ground level and consolidating, etc. Asphalt Cutting	Mtr.	150.00	113.00	16950.00
3.11	41	6.6.5	Digging of Trench of 0.6m Deep X 0.5m Wide refiling the Trench to the required ground level and consolidating, etc. C. C. Cutting	Mtr.	50.00	205.00	10250.00
3.12	42	6.11.2	Supplying and fixing of Heavy Duty Cable Glands suitable for UG Cable of 1.1 KV Class (metal only) 25mm dia	Each	302.00	84.00	25368.00
3.13	42	6.9.5	Supplying and fixing of Class A (Medium Duty) GI Pipe of Wall Thickness not less than 3.25mm on Pole / Wall / Drain Crossing with necessary Clamping Arrangements for UG Cable of 1.1 KV. 100mm	Mtr.	300.00	890.00	267000.00
3.14	42	6.12.2	Supplying and making Straight through Cable Joint with Epoxy Resin including Ferruls and other Jointing Materials for PVC Insulated and PVC Sheathed Steel Tape, Wire armoured Aluminium Conductor 4 Core Cable of 1.1 KV Grade. 10 / 16 Sqmm	Per Kit	2.00	1280.00	2560.00
3.15	43	6.14	Supplying Epoxy Resin and Covering the Cable Joint	Per Kg	1.00	870.00	870.00
3.16	43	6.15	Supply and wrapping the Conductor with Camabrick Tape Roll	Per Roll	1.00	118.00	118.00

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Sl. No.	Page No.	Item No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
3.17	43	6.17.5	Supplying tinned Copper Lugs and crimping and wiring to Terminal Point for Wire. 10 Sqmm	Each	808.00	8.00	6464.00
3.18	43	6.17.6	Supplying tinned Copper Lugs and crimping and wiring to Terminal Point for Wire. 16 Sqmm	Each	16.00	12.44	199.04
3.19	44	6.18.3	Supplying and running GI / Copper Conductor for grounding and (along with other Wires in Conduit System of Wiring) using necessary suitable size Clamps, Nails, Guttas / Spacers, etc. 8 SWG GI Wire	Mtr.	7000.00	19.00	133000.00
4.0			Fixing Charges				
4.1	79	14.5	Fixing Halogen / Metal Halide / SVL / IL / LED Flood Light fitting over existing Pole / Wall Ceiling including Clamps, Bolts, Nuts and Wiring using suitable capacity wires.	Each	154.00	175.00	26950.00
5.0			External Lighting Feeder Pillar				
5.1	29	5.33	Supplying of Multi Function Digital Meter with three line Back Light LCD type Display of Voltage, Current, Frequency, Power, Power Factor, KVA, KWH, KVAR suitable for 3 Phase, 4 wire LT Network with IP 54 degree of Protection and completely wired as required with Communication Port and Class 0.5s Accuracy.	Each	2.00	7750.00	15500.00
5.2	29	5.34	Supplying, fixing and wiring 50 / 5 to 400 / 5 Amps 5VA burden Current Transformer, Class 0.5 Accuracy with tape wound.	Each	6.00	468.00	2808.00
5.3	29	5.38	Supplying and fixing of LED Type Panel Board indicating Lamp with required colour suitable for 230 / 440V A. C. 50HZ 12 / 24V D.C.	Each	6.00	430.00	2580.00
5.4	32	5.47	Supplying and fixing Microprocessor based Electronic Timer (without Contactor, Din Mounting using necessary Bolts, Nuts and Washers, etc.) 3 - 120 sec setting.	Each	2.00	1925.00	3850.00
5.5	26	5.13.3	Supply and fixing of 4 Pole Power Contactor with NO / NC Contacts on existing Wood / Panel Board using necessary Bolts, Nuts, Washers and Wiring, etc. complete with AC - 3 Rating and as per IS: 13947 60 Amps	Each	2.00	4200.00	8400.00
5.6	27	5.17.9	Supplying and fixing Miniature Circuit Breakers on existing MCB Distribution Boards using necessary Fixing Materials and 'C' Type Curve, Indicator ON / OFF, Energy Cross - 3 with Short Circuit Breaking Capacity of 10K and complete Wiring as required conforming to IEC: 60898. In comer 50 - 63 Amps TPN	Each	2.00	2397.00	4794.00
5.7	27	5.17.9	Supplying and fixing Miniature Circuit Breakers on existing MCB Distribution Boards using necessary Fixing Materials and 'C' Type Curve, Indicator ON / OFF, Energy Cross - 3 with Short Circuit Breaking Capacity of 10K and complete Wiring as required conforming to IEC: 60898. Out Going 50 - 63 Amps TPN	Each	10.00	2397.00	23970.00

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Sl. No.	Page No.	Item No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
5.8	31	5.44.3	Supply and Installation / Fixing / Provision of Outdoor type Thermoplastic Modular Panel enclosure with Transparent Polycarbonate Lid, Shock Proof, IP 65 (Weather Proof), Rust Proof, Dust Proof, Water Proof, Corrosion Proof having internally Embedded Gasket on both Lid and Flap suitable to fix Single Phase / Three Phase Energy Meter in suitable Base Plate and having a Provision for Fuse / MCB Cutout with suitable Transparent Hinged Flap Opening for operating MCB along with complete Tamper Proof SEALING Facility. 300 X 600 X 170mm	Each	2.00	5713.00	11426.00
5.9		Market Rate	Interlinking Copper Strip, Copper Wires with Lugs, Bolt and Nut between Busbar and Switch Fuse Unit, MCBs.	Each	2.00	10000.00	20000.00
Grand Total							7783745.04



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Cost

Rate Analysis and Data Rate

Project: Widening of Jayamahal Road (from Mehkri Circle to Jayamahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Rate Analysis

Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
1	Removing B. S. Slab of Drain and Stacking	2018 - 19	Sqm	27	5.32	99.00	5.94	104.94
2	Removing and resetting of Footpath Slab	2018 - 19	Sqm	270	37.56	197.00	11.82	208.82
3	KSRRB M200-25: Dismantling of guard rails by manual means and disposal of dismantled materials with all lifts and stacking serviceable materials and unserviceable materials seperately complete as per specifications. MORTH Specification No. 202	2018 - 19	m	140	18.48	87.00	5.22	92.22
4	KSRRB M200-26: Dismantling of Kerb Stone by manual means and disposal of dismantled materials with all lifts and complete as per specifications. MORTH Specification No. 202	2018 - 19	m	141	18.49	12.00	0.72	12.72
5	KSRRB M200-15.2: 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 complete as per specifications. iii) Dismantling Stone Masonary B. Rubble Stone Masonry, in Cement Mortar. SSM	2018 - 19	Cum	140	18.27	351.00	21.06	372.06
6	KSRRB M200-13.1: 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 complete as per specifications. II. By Mechanical Means, A. Cement Concrete Grade M15 & M20.	2018 - 19	Cum	139	18.20	390.00	23.40	413.40

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
7	KSRRB M200-14.2: 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 complete as per specifications. ii) Dismantling brick / Tile work Masonary B. In Cement Mortar MORTH Specification No. 202	2018 - 19	Cum	139	18.23	351.00	21.06	372.06
8	KSSRRB M200-7.1: Clearing grass and removal of rubbish by manual means and stacking outside the periphery of the area cleaned complete as per specification. MORTH Specification No.201	2018 - 19	Ha	138	18.10	25755.00	1545.30	27300.30
9	Dismantling A.C. sheet roofing and stacking the material within a radius of 50m including cost of materials, labour, HOM complete as per specifications.	2018 - 19	Sqm	269	37.42.3	99.00	5.94	104.94
10	KSRRB M200-17.1: 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 complete as per specifications. v) Steel work in all types of Sections upto a Hight of 5m above plinth level excluding Cutting of Rivet. - A. Including dismantling.	2018 - 19	Tonne	140	18.33	1893.00	113.58	2006.58
11	KSRRB 200-1: Cutting of trees girth including cutting of trunks, branches and removal of stumps roots stacking of serviceable materials earth filling in the depressions / pit. labour charges complete as per specifications. MORTH Specification Clause 201 / Chapter 2.							
	KSRRB 200-1: -do- girth from 300mm to 600mm	2018 - 19	Each	138	18.1	299.00	17.94	316.94
	KSRRB 200-2: -do- girth from 600mm to 900mm	2018 - 19	Each	138	18.2	922.00	55.32	977.32
	KSRRB 200-3: -do- girth from 900mm to 1800mm	2018 - 19	Each	138	18.3	2243.00	134.58	2377.58
	KSRRB 200-4: -do- girth from 1800mm to 2700mm	2018 - 19	Each	138	18.4	3489.00	209.34	3698.34
	KSRRB 200-5: -do- girth from 2700mm to 3600mm	2018 - 19	Each	138	18.5	6977.00	418.62	7395.62

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Sl. No.	Description of Work	PW, P & IWTD SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
12	Cutting of road surface for pipeline trenches and disposing of the excavated stuff as directed including barricading, danger lighting etc. In the Asphalt surface road including cost of materials, labour, HOM complete as per specifications.	2018 - 19	Cum	269	37.38	449.00	26.94	475.94
13	Cutting of road surface for pipeline trenches and disposing of the excavated stuff as directed including barricading, danger lighting etc. In the Macadam road including cost of materials, labour, HOM complete as per specifications.	2018 - 19	Cum	269	37.37	299.00	17.94	316.94
14	KSRRB M200-32: Removal of Telephone / Electric Poles including excavation and dismantling of foundation concrete and lines under the supervision of concerned department, disposal with all lifts and stacking the serviceable and unserviceable material separately complete as per specifications. MORTH Specification No. 202	2018 - 19	Nos.	141	18.57	217.00	13.02	230.02
15	KSRB 2-2.1: Earthwork excavation by manual means for foundation of buildings, culverts, water supply and sanitary lines and electrical conduits, etc. either in pits or in trenches 1.5m and above in width, in ordinary soil not exceeding 1.5m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50m including breaking of clods complete as per specifications. No. KBS 2.1(a)/2.3.5	2018 - 19	Cum	6	2.3	299.00	17.94	316.94
16	KSRB 2 - 2.2: Earthwork excavation by manual means for foundation of buildings, culverts, water supply, sanitary lines and electrical conduits etc, either in pits or in trenches 1.5m and above in width, in hard soil not exceeding 1.5m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50m. including breaking of clods complete as per specifications. No. KBS 2.1(b) / 2.3.5	2018 - 19	Cum	6	2.4	449.00	26.94	475.94
17	KSRB 4 - 1.1: Providing and laying in position plain cement concrete of Mix 1:2:4 with OPC cement @ 240kgs, with 40mm and down size graded granite metal coarse aggregate @0.878Cum and fine aggregates @ 0.459Cum machine mixed, concrete laid in layers not exceeding 15cm. thick, well compacted, in foundation, including cost of all materials, labour, HOM, curing complete as per specifications. Specification No. KBS 4.1, 4.2	2018 - 19	Cum	13	4.10	5283.00	316.98	5599.98

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Sl. No.	Description of Work	PW, P & IWTD SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
18	KSRB 4-6.4: Providing and removing centering, shuttering, strutting, propping, etc. and removal of form work for vertical surface such as walls at any thickness, including attached pilasters, buttresses, plinth and string courses cost of all materials, labour complete as per specifications. Specification No.KBS 4.6.2	2018 - 19	Sqm	16	4.31	358.00	21.48	379.48
19	KSRB 4.2.7: Providing and laying in position reinforced cement concrete of design mix M25 with OPC cement @ 340kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @ 0.47Cum, with superplasticiser @ 3lts Conforming to IS: 9103 - 1999 Reaffirmed - 2008, machine mixed, concrete laid in layers not exceeding 15cm thick, vibrated for all works in Ground Floor Level for Roof Slabs, Staircase, Lintels and Beams, Retaining Walls, Return Walls, Walls (any thickness) including attached pilasters, columns, lintels, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window cills, fillets etc. including cost of all materials, labour, HOM of machinery, curing, complete but excluding cost of reinforcement as per specifications. Specification No. KBS 4.1, 4.6	2018 - 19	Cum	14	4.12	6045.00	362.70	6407.70
20	KSRB 5.2-3: Providing and constructing granite / trap / basalt size stone masonry in foundation with cement mortar 1:6, stone hammered dressed in courses not less than 20cm high, bond stones at 2m. apart in each course including cost of materials, labour, curing complete as per specifications. Specification No. KBS 5.1.13.	2018 - 19	Cum	25	5.6	4596.00	275.76	4871.76
21	KSRB M2200-8: Providing Weep Holes in Brick Masonry / Plain / Reinforced Concrete Abutment, Wing Wall / Return Wall with 100mm dia AC Pipe, extending through the full width of the structure with slope of 1V:20H towards drawing face. Complete as per drawing and Technical Specifications including cost of materials, labour, HOM complete as per specifications. MORTH Specification No. 2706 & 2200	2018 - 19	Nos / mtr	229	28.10	147.00	8.82	155.82

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
22	KSRB 4.2.1: Providing and laying in position reinforced cement concrete of Design mix M25 with OPC cement @ 340kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @ 0.47Cum, with superplasticiser @ 3lts Conforming to IS: 9103 - 1999 Reaffirmed - 2008, at machine mixed, concrete laid in layers not exceeding 15cm thick, vibrated for all works in foundation for footings, pedestals, retaining walls, return walls, walls (any thickness) including attached pilasters, columns, pillars, posts, struts, buttresses, bed blocks, anchor blocks and plinth etc. including cost of all materials, labour, HOM of machinery, curing, complete but excluding Cost of reinforcement as per specifications. Specification No. KBS 4.1, 4.6	2018 - 19	Cum	14	4.10	5812.00	348.72	6160.72
23	KSRB 4.9.2: Providing TMT Steel Reinforcement for RCC work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 4.6.3							
	TMT bars Fe 500	2018 - 19	Tonne	18	4.46.2	70966.00	4257.96	75223.96
24	KSRB 5.3-3: Providing and constructing granite / trap / basalt size stone masonry in basement with cement mortar 1:6, edges of stones chistle dressed in courses not less than 15cm high, bond stones at 2m apart in each course including cost of materials, labour, curing complete as per specifications. Specification No. KBS 5.1.13.	2018 - 19	Cum	25	5.9	5483.00	328.98	5811.98
25	KSRB 4-1.6 : Providing and laying in position plain cement concrete of mix 1:2:4 with cement @240kgs, with 20mm and down size graded granite metal coarse aggregates @0.878Cum and fine aggregates @0.53Cum machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2	2018 - 19	Cum	13	4.6	5422.00	325.32	5747.32

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Sl. No.	Description of Work	PW, P & IWTD SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
26	Providing and fixing M. S. Grill over existing compound wall as per using 16mm x 16mm M.S. Square Rod at 150mm c/c spacing and 6mm x 40mm M.S. flats at horizontal and 6mm x 12mm M. S. Flat for ornamental design and providing shop edge design at the vertex of every vertical rods, including welding, grinding wherever necessary. All the steel surface should be thoroughly cleaned free of rust and painted with anti corrosive paint (shop paint), etc. complete. The work includes cost of all materials, labour charges for all items of work, hire charges for welding, cutting and grinding equipment, and electricity charges, etc. complete as per specification.	2018 - 19	Sqm	44	7.36	5369.00	322.14	5691.14
27	KSRB 5.4.4: Providing and constructing granite / trap / basalt size stone masonry in Super Structure with cement mortar 1:4, edges of stones chistle dressed in courses not less than 15cm high, bond stones at 2m apart in each course including cost of materials, labour, scaffolding, curing complete as per specifications. Specification No. KBS 5.1.13.	2018 - 19	Cum	25	5.13	6005.00	360.30	6365.30
28	KSRB 6-6.3: Providing and constructing Burnt Brick Masonry with approved quality of modular bricks of standard size of class designation 7.5 Newton per Sqmm (Machine moulded Wirecut Bricks) with cement mortar 1:4 for basement and super structure including cost of materials, labour charges, scaffolding, curing complete as per specifications. Specification No. KBS 6.2	2018 - 19	Cum	30	6.21	10284.00	617.04	10901.04
29	KSRB 4-1.5: Providing and laying in position plain cement concrete mix M20 with OPC cement @ 300kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69Cum and fine aggregates @ 0.43Cum machine mixed, concrete laid in layers not exceeding 15cm thick, well compacted in foundation, plinth and cills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2	2018 - 19	Cum	13	4.5	5328.00	319.68	5647.68
0	KSRB 15.1-1: Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm, nicely lining, including cost of materials, labour, curing complete as per specifications.	2018 - 19	Sqm	115	15.1	141.00	8.46	149.46

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
31	KSRB 2.4: Refilling available earth around pipeline, cables in layers not exceeding 20cm in depth, compacting each deposited layer by ramming after watering with lead upto 50m and lift upto 1.5m including cost of all labour complete as per specifications.	2018 - 19	Cum	7	2.11	121.00	7.26	128.26
32	KSRRB M100-4.1: Cost of Haulage excluding Loading and Unloading MORTH-100/Chapter 1 (Lead upto 19 Km)							
	for Earth (Excavated soil) (19*1.28*2) = 48.64	2018 - 19	Cum	136	17.4	48.64		48.64
33	KSRB 4-6.1: Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for foundations, footings, bases of columns for mass concrete including cost of all materials, labour complete as per specifications. Specification No.KBS 4.6.2	2018 - 19	Sqm	16	4.28	258.00	15.48	273.48
34	KSRB 4-6.5: Providing and removing centering, shuttering, strutting, propping etc., for columns, pillars, post and struts, square/rectangular/polygon in plan including cost of all materials, labour complete as per specifications. Specification No.KBS 4.6.2	2018 - 19	Sqm	16	4.32	456.00	27.36	483.36
35	KSRB 2.2.7: Benching Hard Rock 5 to 7.5cm depth of seating of foundation, including cost of all labours, tools etc. complete as per specifications. Specification. Specification No.KBS 2.1(a) / 2.3.1	2018 - 19	Sqm	6	2.9	2192.00	131.52	2323.52
36	Anchor Bolt Chemical	2018 - 19	Liter	Market Rate		6760.00		6760.00
37	KSRRB M300 - 14: Excavation for roadwork in all types of soil by mechanical means including cutting and loading to tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1km and complete as per specifications. MORTH Specification No. 301	2018 - 19	Cum	143	19.14	41.00	2.46	43.46

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Sl. No.	Description of Work	PW, P & I WTD SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
38	KSRRB M2100 - 13: Providing and laying Plain / Reinforced Cement Concrete mix 1:2:4 with OPC cement @240kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.84Cum and fine aggregates @ 0.56Cum in Open Foundation including cost of all materials, labour, HOM, curing, form works, scaffolding and centering complete as per specifications complete as per Drawing and Technical Specifications MORTH Specification No. 1500, 1700 & 2100	2018 - 19	Cum	222	27.24	5103.00	306.18	5409.18
39	KSRRB M2100 - 16.2: Providing and laying Plain / Reinforced Cement Concrete M25 with OPC @ 340 kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @0.47Cum, with superplasticizer @3lts Conforming to IS - 9103 - 1999 Reaffirmed - 2008 in Open Foundation complete as per Drawing and Technical Specifications including cost of all materials, labour, HOM curing, form works, scaffolding and centering complete as per specifications. MORTH specification No.1500, 1700 & 2100	2018 - 19	Cum	223	27.29	4995.00	299.70	5294.70
40	KSRRB M1200-47: Providing steel liner 10mm thick for curbs and 6mm thick for steining of wells including fabricating and setting out as per detailed drawing complete as per specifications including cost of all materials, labour, HOM, form works, scaffolding and centering complete as per specifications. MORTH Specifications No.1200 & 1900	2018 - 19	Tonne	217	26.125	68589.00	4115.34	72704.34
41	KSRRB 1100 - 2: Driving cast - in -place Vertical RCC 500mm dia. Piles with cement Design Mix M35 @390kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69Cum and fine aggregates @ 0.45Cum, with superplasticiser @ 3lts conforming to IS - 9103 - 1999 Reaffirmed - 2008, excluding Reinforcement as per Drawing, including cost of all materials, labour, HOM complete as per specifications. MORTH Specifications No.1100	2018 - 19	m	197	25.2.2	7765.00	465.90	8230.90

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
42	KSRRB M1100-11.2: Cement Concrete for Reinforced Concrete in Pile Cap as per Drawing and Technical Specification complete as per specifications. RCC with OPC design mix M35 @ 390kgs, with 20mm down size graded granite metal coarse aggregates @ 0.68Cum and fine aggregates @ 0.45Cum, with superplasticiser @ 3lts conforming to IS9103-1999 Reaffirmed - 2008. Case - II: Using Batching Plant, Transit Mixer and Concrete Pump. Including costs of all materials labour, HOM, form works, scaffolding & centering. MORTH Specification No. 1100, 1500 & 1700.	2018 - 19	Cum	200	25.25	5231.00	313.86	5544.86
43	KSRRB M2300 - 14: Providing TMT Steel Reinforcement for R.C.C. Work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) including cost of materials, labour, HOM complete as per specifications. MORTH Specifications No.1600 and 2200 TMT Bars Fe 500	2018 - 19	Tonne	239	29.29.2	69804.00	4188.24	73992.24
44	KSRRB M2200-6: Providing TMT Steel Reinforcement for RCC Work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification. MORTH Specification No.1600 & 2200 TMT Bars Fe 500	2018 - 19	Tonne	229	28.8.2	68233.00	4093.98	72326.98
45	Providing and fixing Precast RCC Slab of 100mm thick for Drain Cover in Cement Concrete M20 with Reinforced Steel and Pointing for joints with Cement Mortar in 1:3 including Form Work, lift, curing and finished surfaces on both sides etc. complete and as per the Directions of Engineer-in-Charge.	2018 - 19	Sqm	BBMP Approved Rate		1724.00	--	1724.00
	Providing and laying reinforced cement concrete pipe NP3 of dia 300mm for culverts including pointing ends, and fixing collars with cement mortar 1:2 including cost of all materials, labour, curing complete as per specifications. Specifications. No. KSRB 1000, 2300 MOST Specification No.1000 / 2300	2018 - 19	m	254	34.6.5	5502.00	330.12	5832.12
	SWD 900 mm dia pipe							

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
47	Providing and laying reinforced cement concrete pipe NP3 of dia 300mm for culverts including 'pointing ends, and fixing collars with cement mortar 1:2 including cost of all materials, labour, curing complete as per specifications. Specifications. No. KSRB 1000, 2300 MOST Specification No.1000 / 2300 SWD 1200mm dia pipe	2018 - 19	m	254	34.6.6	8428.00	505.68	8933.68
48	Providing and laying reinforced cement concrete pipe NP3 of dia 300mm for culverts including pointing ends, and fixing collars with cement mortar 1:2 including cost of all materials, labour, curing complete as per specifications. Specifications. No. KSRB 1000, 2300 MOST Specification No.1000 / 2300 300mm dia Pipe	2018 - 19	m	254	34.6.1	1534.00	92.04	1626.04
49	Providing, supplying and fixing MS Surface Grating of size 500mm x 400mm at gully trap along the road surface as per approved drawing including transportation to site, all charges of labor, loading and unloading etc. complete for fixing as indicated in the drawing with all lead and lifts as per detailed tender specifications and as directed by the engineer.	2018 - 19	Sqm	BBMP Approved Rate		9300.00		9300.00
50	KSRRB M800-29.2: Providing and laying of a Reinforced Cement Concrete Pipe Duct, 300mm 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 of granular material over top and sides of RCC pipe as per IRC: 98 - 1997, bedded on a 0.3m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450mm 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 complete as per specifications. Case - II: Double Row for two utility services	2018 - 19	m	186	24.35	3191.00	191.46	3382.46

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
51	Construction of granular sub-base Grading-V as Sub-base and drainage layer by Providing coarse graded crushed stone aggregate of granite / trap / basalt material, mixing in a mechanical mix plant at OMC , Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98% proctor density, complete as per Specifications. Clause 401 of MORTH V Revision	2018 - 19	Cum	153	20.5	1882.00	112.92	1994.92
52	KSRRB M400 - 17: Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to Wet Mix Macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications. MORTH Specification No. 406	2018 - 19	Cum	155	20.18	1888.00	113.28	2001.28
53	KSRRB 500-9: Providing and applying Tack Coat using 80/100 Grade Bitumen (VG10) on granular base such as WBM surfaces hot bitumen primed at 4kg per 10Sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM Complete as per specifications. Clause 503 of MORTH V revision	2018 - 19	Sqm	Issue Rate	21.9	20.00	1.20	21.20
54	KSRRB M500-17: Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500 - 10 complete in all respects complete as per specifications. MORTH Specification No. 507. Using 120 TPH capacity Asphalt batch mix plant with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen	2018 - 19	Cum	Issue Rate	21.17.2	6650.00	399.00	7049.00
55	KSRRB 500-7: Providing and applying tack coat using 80 / 100 grade bitumen (VG 10) on the prepared black topped surfaces at 2.5kg per 10Sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM complete as per specifications. Clause 503 of MORTH V revision	2018 - 19	Sqm	Issue Rate	21.7	12.00	0.72	12.72

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
56	Providing and laying bituminous concrete 40mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications. Clause 507 of MORTH V revision as per IRC SP-53-2015. Using 120 TPH capacity Asphalt batch mix plant with sensor paver grading II (30-45mm) with 5.4% of modified bituminous binder consisting of 4.97% of VG-30 bitumen (60/70 grade) and 0.43% of plastomeric thermoplastics (waste plastic)	2018 - 19	Cum	Issue Rate	21.78.8	7582.00	454.92	8036.92
57	KSRRB 2200-5.12: Providing and laying Design Mix M25 with OPC @340kgs, with 20mm and down size graded granite metal coarse aggregates @0.7Cum and fine aggregates @0.47 Cum, with superplasticiser @3lts Conforming to IS: 9103-1999 Reaffirmed - 2008 including cost of materials, labour, HOM curing, form work, scaffolding and centering complete as per specifications. i) upto 5m height	2018 - 19	Cum	227	28.7.12	5321.00	319.26	5640.26
58	KSRB 14.6-6: Providing and laying heavy duty interlock concrete paver block 60mm thick 300mm X 300mm using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per Sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KBS	2018 - 19	Sqm	103	14.6	1053.00	63.18	1116.18
59	Providing and laying Cement Concrete using 20mm and down size granite coarse aggregates and fine aggregates of Ready Mixed Concrete for RCC Works laid in 15cm thick layers and will compacted including vibrating, curing, etc. with all lead and lift, etc. complete (exclusive of cost of steel and fabrication charges) Ready Mixed Cement Concrete for Beams, Staircase and Roof with M30	2018 - 19	Cum	19	4.49.3	5598.00	335.88	5933.88

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Sl. No.	Description of Work	PW, P & I WTD SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
60	KSRB 2.3 : Filling available excavated earth (excluding rock) Embankment with available earth in road upto plinth in layers not exceeding 20cm in depth, compacting each deposited layer by ramming after watering with lead upto 50m and lift upto 1.5m including cost of all labour complete as per specifications. Specification No. KBS 2.9	2018 - 19	Cum	7	2.10	201.00	12.06	213.06
61	Providing and fixing Precast solid concrete kerb stones made out of CC 1 :2:4 and finished with CM 1 :3 plastering and finishing cutting etc., complete. Size 450 x 150 x 500 mm	2018 - 19	Nos.	27	5.29.2	441.00	26.46	467.46
62	Supply, Fabrication, Painting and Fixing of Mild steel items such as Horizontal and Vertical Gratings, Flower Baskets, Cycle stands, Tree Guards, Edge angles, Bollards, etc and any other items as specified in drawings or as approved by Engineer - In - Charge.	2018 - 19	Nos.	BBMP Approved Rate		4000.00	--	4000.00
63	KSRRB M800 - 20: Tubular Steel Railing on Medium Weight Steel Channel (ISMC Series) 100 mm x 50mm: Providing, fixing and erecting 50mm dia steel pipe railing in 3 rows duly painted on medium weight steel channels (ISMC Series) 100 mm x 50mm, 1.2m high above ground, 2m centre to centre, complete as per approved drawings as per specifications. MORTH Specification No. 808.	2018 - 19	m	184	24.24	1426.00	85.56	1511.56
64	Providing and Fixing Precast Solid Cement Concrete crash barrier / divider made out of M35 with top and bottom width 100mm and 350mm respectively 1000mm height and 2000mm in Length (as shown in the drawing), Finished with CM 1:3 plastering and finishing cutting, including form work TMT steel as required curing , including cost all material labour hire charges of machinery, loading, unloading, lead and lift, transportation etc., complete. To be laid between Travel lane, cycle track/ landscape etc.,with all lead and lift, loading, unloading, complete and as per the directions of Engineer - in - Charge.(Form Finish concrete and no painting to be done), (Excluding GST).	2018 - 19	Each	BBMP Approved Rate		6400.00	--	6400.00

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
65	KSRB M300 - 7.1: Planting permanent hedges including digging of trenches, 60cm wide and 45cm deep, refilling the excavated earth mixed with farmyard manure, supplied at the rate of 4.65Cum per 100metres and supplying and planting hedge plants at 30cm apart complete as per specifications. A) Planting permanent hedges including digging of trenches MORTH Specification No. 307.	2018 - 19		149	19.84	296.00	17.76	313.76
66	KSRRB 300 - 50: Scarifying bituminous course 50mm to 75mm thick along with premix carpet / surface dressing by mechanical means attached with scarifier without disturbing the base and stacking the debris including cost of all labour charges, HOM complete as per specifications. MORTH / Chapter 3 (including loading, unloading and lead upto 20km)	2018 - 19	Sqm	146	19.56	148.00	2.34	150.34
67	KSRRB M2200-5.1: Providing and laying cement concrete of mix 1:2:4 with OPC @ 240kgs, with 40mm and down size graded granite metal coarse aggregates @0.63Cum and fine aggregates @ 0.42Cum including cost of materials, labour, HOM, curing, form works, scaffolding and centering complete as per MORTH Section : 2200 & IS : 456 a) upto 5m height	2018 - 19	Cum	226	28.7.1	5421.00	325.26	5746.26
68	Diversion of water course by providing Coffor dams or bunds or islands as may be necessary for piers and abutments foundations, bailing out or pumping water during excavation and until completion etc. including cost of materials, labour, HOM complete as per specifications. Beyond 1.50m depth upto & including 3m depth.	2018 - 19	Cum	269	37.41.2	394.00	23.64	417.64
69	KSRB 5 - 1.1: Providing and constructing granite / trap / basalt rubble stone masonry in foundation with mud mortar (uncoursed), bond stones at 2m, apart in each course including cost of materials, labour, curing complete as per specifications. KBS 5.1.12	2018 - 19	Cum	25	5.1	2358.00	141.48	2499.48
70	KSRB 2.8: Providing and Filling in foundation with granite / trap broken metal 100mm and down size, with approved sand including hand packing, ramming, watering, including cost of all materials and labour with all lead and lift. Complete as per specifications. Specification No. KBS 2.10.2	2018 - 19	Cum	7	2.15	2429.00	145.74	2574.74

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
71	KSRRB M2200 - 5.18: Providing and laying Design mix M35 with OPC @ 390kgs, with 20mm and down size graded granite metal coarse aggregates @0.68Cum and fine aggregates @ 0.45Cum, with superplasticiser @3lts conforming to IS: 9103 - 1999 Reaffirmed - 2008 including cost of materials, labour, HOM, curing, form works, scaffolding and centering complete as per specifications. i) Upto 5m height	2018 - 19	Cum	228	28.7.18	5562.00	333.72	5895.72
72	KSRRB M300-55: Construction of Sub-Grade and Earthen Shoulders with approved materials Gravel / Murrum with all lifts and leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table 300 - 2 complete as per specifications, including cost of earth, watering charges & compaction by vibratory roller to 97% of Modified Proctor Density MORTH Specification No. 305 CBR Value of Sub grade soil 10%	2018 - 19	Cum	147	19.62	349.00	20.94	369.94
73	KSRRB 500-4: Providing and applying primer coat for surfaces of medium porosity like cement stabilized soil base @0.90kg/Sqm over prepared surface with S.S bitumen emulsion using tanker fitted with spray set (excluding cleaning of road surface) including cost of all material, labour, HOM complete as per specifications. Clause 501 of MORTH V revision	2018 - 19	Sqm	Issue Rate	21.5	37.00	2.22	39.22
74	Green Pigmented Asphalt: Providing and laying green pigment with resin binder to concrete or asphalt surface by mechanical method, it comprises of a specially formulated binder system with a colour coated glass aggregate manufactured using a proprietary technology, provides a tactile warning system with a high friction, non - fading, consistent colour surface, environment friendly, sub angular, non-porous gives average service life of 5 years, installed effectively within 5-8 hours resulting in minimal traffic disruption. The finished surface to be level, uniform and free from streaks and holes, transporting the material, with all Lead & lift, including cost of all materials, labour, HOM of machineries complete as per specifications.		Sqm	BBMP Approved Rate		1500.00		1500.00
75	Milling the bituminous pavement surface upto a depth of 55mm using milling machine, to make a uniform surface without disturbing the base, cleaning the milled surface, including cost of all labour charges and hire charges of machineries, etc. complete, including stacking the milled material on the sides of road.	2018 - 19	Sqm	151	19.102	70.00	4.20	74.20

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
76	KSRB 14.6-6: Providing and laying heavy duty interlock concrete paver block 75mm thick 300mm X 300mm using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per Sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KBS	2018 - 19	Sqm	103.00	14.7	1110.00	66.60	1176.60
77	KSRRB M800 - 13: Road Marking with Hot Applied Thermo plastic Compound with Reflectrising Glass Beads on Bituminous surface/ Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per Sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35 Standards specified. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.	2018 - 19	Sqm	182	24.15	429.00	25.74	454.74
3	Providing and fixing of Retro-reflectorised cautionary, mandatory, informatory sign as per IRC:67 made of high intensity grade sheeting vide Clause 801.3, fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 75mm x 75mm x 6mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45cm x 45cm x 60cm, 60cm below ground level as per approved drawing.							
	600 X 800mm - Type XI	2018 - 19	Nos.	180	24.2.4	4097.00	245.82	4342.82
	600mm Circle - Type XI	2018 - 19	Nos.	180	24.2.3	3122.00	187.32	3309.32
	900mm Equilateral triangle - Type XI	2018 - 19	Nos.	180	24.2.1	3454.00	207.24	3661.24
	900 mm Octagon Stop Board- Type XI	2018 - 19	Nos.	180	24.2.6	5047.00	302.82	5349.82

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
79	<p>Supply and fixing of Retro Reflective Single Arrow Road Name Signboard of size 1600mm X 900mm made out of retro reflective sheeting conforming to Type-XI standards of ASTM D 4956-09 and as per IRC 67-2012 for full back ground of blue colour and white letters and fixed over 4mm thick Alluminium Composite Material sheet having minimum 0.5mm thick Aluminium skin on both sides with back side painted grey colour and fixed over back support frame SS angle of 15mm X 20mm X 1.2mm, supported by 38mm OD stainless steel pipe all round in 304 grade and 2 no's of vertical posts of 50mm OD stainless steel pipe of 202 grade firmly fixing to the ground by means of properly designed foundation of size 450mm X 450mm X 600mm in 1:1.5:3 ratio cement concrete.</p> <p>The background shall be blue in colour with letters and border in white, the item includes earthwork excavation, cost of all materials, loading, unloading, lead, lift, transportation etc., complete. as per direction of engineer incharge of work clause 6.9 of IRC 67-2012 for Type-XI retro reflective sheeting from the sheeting manufacturer and a certified copy of test reports from independent test laboratory conforming to clause 6.7 of IRC 67-2012 including outdoor weather exposure report for the retro reflective sheeting offered shall be submitted by the contractor for technical qualification tender.</p>	2018 - 19	Sqm	190	24.59	13297	797.82	14094.8

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Sl. No.	Description of Work	PW, P & IWTD SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
80	Supply and fixing of Retro Reflective Double arrow road name sign board of size 2000mm X 900mm made out of retro reflective sheeting conforming to Type XI standards of ASTM D 4956 - 09 & as per IRC 67 - 2012 for full back ground of blue colour & white letters and fixed over 4mm thick Aluminium Composite Material sheet having minium 0.5mm thick Aluminium skin on both sides with back side painted grey colour and fixed over back support frame SS angle of 15mm X 20mm X 1.2mm, supported by 38mm OD stainless steel pipe all round in 304 grade and 2 nos of vertical posts of 50 mm OD stainless steel pipe of 202 grade firmly fixed to the ground by means of properly designed foundation of size 450mm X 450mm X 600mm in 1:1.5:3 ratio cement concrete. The background shall be blue in colour with letters and border in white, the item includes earthwork excavation, cost of all materials, loading, unloading, lead, lift, transportation etc. complete. as per clause 6.9 of IRC 67 - 2012 for Type-XI retro reflective sheeting from the sheeting manufacturer and a certified copy of test reports from independent test laboratory conforming to clause 6.7 of IRC 67 - 2012 including outdoor weather exposure report for the retro reflective sheeting offered shall be submitted by the contractor for technical qualification in the tender.	2018 - 19	Sqm	190	24.60	15785.00	947.10	16732.10
81	KSRRB M800-35: Supply and installation of Moulded Shank Raised Pavement Markers made of polycarbonate and ABS (Acrylonitrile Butadiene Styrene) moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000 kg tested in accordance to Specifications of category A of MORTH Circular No. RW/NH/33023/10-97, - DO III Dt 11.06.1997. The height, width and length shall not exceed 50mm, 100mm and 102mm and with minimum reflective area of 13Sqcm on each side and the slope to the base shall be 35 degree. The strength of detachment of the integrated cylindrical shanks, (of diameter not less than 19mm and height not less than 30mm) from the body is to be a minimum value of 500kg. Fixing will be by drilling holes on the road for the shanks to go inside, Without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer.	2018 - 19	Nos.	187.00	24.41	337.00	20.22	357.22

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Sl. No.	Description of Work	PW, P & I WTD SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
82	Supply & Installation of Rigid Median Marker made of tough, high impact resistant, injection -molded, thermoplastic body with an isosceles trapezoidal structure of length, width and height not less than 15cm, 10 cm and 10 cm respectively and thickness not less than 1.8mm, the body structure shall be rounded suitably. The plastic used for molding the Median Marker shall conform to ASTM D256. The logo of the manufacturer shall be embossed on either side of the body in the injection molding process. The Median Marker shall have rectangular - shaped, fluorescent yellow color retro - reflective sheeting of size not less than 8.5cm*8.5cm and with fully reflective micro prismatic cube corners as its retro - reflective elements as per IRC 67 2012. The retro - reflective sheeting shall be a one or both sides of the Median Marker and shall be edge protected with no exposed edges which will prevent edge lifting, vandalism, sheeting damage, etc. The Median Marker shall be fixed by a combination of epoxy adhesive and grouting.	2018 - 19	Nos.	189	24.56	445.00	26.70	471.70
83	KSRRB M800-43: Installation of a steel portable barricade with horizontal rail 300mm wide, 2.5m in length fitted on a 'A' frame made with 45 x 45 x 5mm angle iron section, 1.5 m in height, horizontal rail painted (2 coats) with yellow and white stripes, 150mm in width at an angle of 45°, 'A' frame painted with 2 coats of yellow paint, complete as per IRC: SP: 55 - 2001 complete as per specifications.	2018 - 19	Each	187	24.44	2490.00	149.40	2639.40

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
84	<p>KSRRB M800 - 15: Road Delineators: Supply & installation of Vertical Delineator having wide angle cube corner micro prismatic non metallic reflective sheeting Conforming to Type - XI of IRC: 67 - 2012 with White and Red colour combination and having minimum of retro reflective exposed area of 125Sqcm on top slots and 35Sqcm on bottom slots and no edges shall be exposed for tampering. This tubular delineator shall have a core and shell construction, shell shall be made of tough, high impact resistant, injection - moulded, thermoplastic outer body and the inner core shell consist of power coated or painted mild steel of minimum thickness 1.0mm and core-shell structure shall be of height not less than 800mm above the ground and width not less than 80mm.</p> <p>The metallic core of the delineator shall extend 300mm beyond the shell length from bottom for installing in the ground. The extended portion of the metallic core having suitable slots to be fixed in M20 grade Cement Concrete of size 300 X 300 X 400mm with suitable anchoring rods for enhancing the grip, As per IRC: 75 Specifications.</p>	2018 - 19	Nos.	182	24.19	1852	111.12	1963.11
85	Transplantation and Treatment for the Trees coming in the widened portion of Carriageway as per directions of Engineer in - charge		Each	BBMP Approved Rate		19900.00		19900.00
86	<p>Wiring for Lighting / Power Circuit using one of FRLS PVC insulated 1100V grade, multistrand Copper Wire with low conductor resistance single core wire in open or concealed system of wiring with specified IS: 694 conforming to the latest Amendments</p> <p>2.5 Sqmm (from Pole Box to Light Fixture)</p>	2019 - 20, Electrical Works	Mtr.	6.00	2.3.3	32.00		32.00

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Sl. No.	Description of Work	PW, P & IWTD SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Ra in Rs.
87	<p>Supply of LED Streetlight Luminaire with Pressure Die Cast Aluminium Housing Body for Optimal Thermal Dissipation. Lamp Compartment comprising of Anti Glare Clear Diffuser with Injection moulded Polycarbonate Material, delivering superior Light Output. Rate Life Burning hrs. 50000 hr. @ Lumen Maintenance of 70%, Maximum Light Intensity should be between 60 degrees and 70 degrees, CCT > 5500K, IP 66 Optical and Electrical Compartment and Impact Resistance of Complete Luminaire > IK08, Power Factor > 0.9 with Mains, Surge Protection minimum 5KV along with Over Voltage / Overload, Short Circuit / Miss - Wiring Protection. Compatible for Pole Mounting with Outer Dia of 40mm to 50mm. Universal Voltage Driver to operate wide Voltage range from 100V to 270V 50 / 60 Hz Application. Compliance to IS: 10322 / IEC 60598, LM 79 and LM 80 adherence with RoHS UL approved MCPCB.</p> <p>Top access Street Light with Single Screw to ensure ease of maintenance at the Sight Site Location with minimised minimal Tools. LED Light Fixture with 150 Watts System Power consumption. LED Efficiency > 130 lm / w, nominal CRI > 75.</p> <p>Luminaire Manufacturer should have in house Facility accredited by NABL / CPRI and any Government certified Agency and Design and Development Facility certified by ISO 9001: 2008. Housing with Supplier Word Mark / Name shall be engraved / embossing on the Die Cast Housing / Body Part. Warranty of 2 Years against any Manufacturing Defect working under Standard Electrical Conditions as mentioned above should be given by LED Manufacturer and Cree / Nichia / Lumileds / Osram Make LED Source.</p> <p>LED Streetlight 150 Watts</p>	2019 - 20, Electrical Works	Nos.	67.00	12.8.6	12300.00		12300.00

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
88	<p>Supply of LED Streetlight Luminaire with Pressure Die Cast Aluminium Housing Body for Optimal Thermal Dissipation. Lamp Compartment comprising of Anti Glare Clear Diffuser with Injection moulded Polycarbonate Material, delivering superior Light Output. Rate Life Burning hrs. 50000 hr. @ Lumen Maintenance of 70%, Maximum Light Intensity should be between 60 degrees and 70 degrees, CCT > 5500K, IP 66 Optical and Electrical Compartment and Impact Resistance of Complete Luminaire > IK08, Power Factor > 0.9 with Mains. Surge Protection minimum 5KV along with Over Voltage / Overload, Short Circuit / Miss - Wiring Protection. Compatible for Pole Mounting with Outer Dia of 40mm to 50mm.</p> <p>Universal Voltage Driver to operate wide Voltage range from 100V to 270V 50 / 60 Hz Application. Compliance to IS: 10322 / IEC 60598, LM 79 and LM 80 adherence with RoHS UL approved MCPCB. Top access Street Light with Single Screw to ensure ease of maintenance at the Sight Site Location with minimised minimal Tools. LED Light Fixture with 25 Watts System Power consumption. LED Efficiency > 130 lm / w, nominal CRI > 75. Luminaire</p> <p>Manufacturer should have in house Facility accredited by NABL / CPRI and any Government certified Agency and Design and Development Facility certified by ISO 9001: 2008. Housing with Supplier Word Mark / Name shall be engraved / embossing on the Die Cast Housing / Body Part. Warranty of 2 Years against any Manufacturing Defect working under Standard Electrical Conditions as mentioned above should be given by LED Manufacturer and Cree / Nichia / Lumileds / Osram Make LED Source.</p> <p>LED Streetlight 25 Watts</p>	2019 - 20, Electrical Works	Each	67.00	12.8.1	1840.00		1840.00

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Sl. No.	Description of Work	PW, P & IWTD SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
89	Fabricating, supplying and erection of 11m long hot dip Galvanized Octagonal Pole with BSEN 10025 grade S 355 JO steel plate of shaft, IS: 2062 for base plate with door opening arrangements, including suitable boards, bakelite sheet and MCBs as per IS Specification suitable to withstand the Wind Speed of 47m / sec for 11m Pole in single section and single joint welded as per IS: 9595 / IS: 10178AWS having dimensions Bottom 210mm, Top 90mm with 3mm thick, suitable base plate and 4Nos. 11m long J Bolts along with Template and Pole shall be Hot Dip Galvanized in single dipping with not less than 65micron as per ASTM - A123 and 153, etc. (excluding Foundation) as per drawing appended. 11meters - Top 90mm and Bottom 210 mm dia	2019 - 20, Electrical Works	Each	13.00	4.2.9	20698.00		20698.0

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
90	<p>Fabrication, Supplying, Erection, Testing and Commissioning of 12Mtrs / 12.5Mtrs long Polygon High Mast with Single / Multiple Telescopic Sections having (minimum overlap distance of 1.5 times of top section) thickness as per BSEN 10025 Grade S355 JO / ASTM A572 - 50 Steel Sheet Plate for shaft suitable to withstand a wind velocity of 47 m / sec as per IS: 875 Part 3 (as per GA Drawing). Base Plate as per IS: 2062 / ASTM A572 - 50. The Mast shall be Galvanized in single Hot Dip as per BSEN ISO 1461 / ASTM A123 with an average 70 microns as per IS: 2629 and welded as per BS: 5135 Single L - Seam Joint. The Mast shall have 2 way Head Frame with Die Cast LM - 6 Pulleys, Stainless Steel Axle, Phosphorus Bronze bearing Bush press fitted with separate guides for 2 runs of 5mm dia, Stainless Steel Wire Rope of AISI 304 Grade 7 / 19 - Core, (Factor of Safety as per TR No. 7). 2.5 Sqmm EPR insulated PCP sheathed trailing power cable housed inside the Bottom Shaft of Mast with Door having Locking Arrangement.</p> <p>The Mast shall have Manual / Power Tool (suitable Reversible Geared Motor operating on 230 / 415V, 50 Hz, shall be provided above 15m Mast). The Mast shall have Lantern of 2 Segments, suitable dia with Maximum Load Carrying Capacity as per IS: 1239. The Mast shall be erected on existing RCC Footing. The Mast shall be supplied with 3mm thick template, Lightning Arrester of 1.2m length Galvanized Pipe with Top Arrow fitted on top of the Head Frame Cover and GLS Type Aviation Twin Lamps Fitting with Wiring complete (excluding Foundation) as per Technical Data.</p> <p>12Mtrs / 12.5 Mtrs - Top 100mm and Bottom 310mm dia</p>	2019 - 20, Electrical Works	No.	15.00	4.5.1	105600.00		105600.00
91	<p>Supplying, and fixing of Hot Dip Galvanized M. S. Bracket suitable for Outdoor Luminaries and mounted on Octagonal Pole using necessary Bolts, Nuts, etc. complete.</p> <p>Single Arm Bracket with 1000mm Standard 40 / 50 mm dia</p>	2019 - 20, Electrical Works		16.00	4.7.1	1689.00		1689.00
92	<p>Supplying, and fixing of Hot Dip Galvanized M. S. Bracket suitable for Outdoor Luminaries and mounted on Octagonal Pole using necessary Bolts, Nuts, etc. complete.</p> <p>Double Arm Bracket with 2000mm Standard 40 / 50 mm dia</p>	2019 - 20, Electrical Works	Each	16.00	4.7.6	3696.00		3696.00

Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
93	Supplying, fixing and wiring Earth Electrode for grounding of Lifts, Transformers, DG Sets, etc. using 40mm dia 2.9mm thick 2.5m long GI Pipe with GI Funnel with Mesh and suitable Size Reducer fixed on the Top of the Earth Electrode. The Funnel should be enclosed in a CC Chamber of 400 X 400 X 400mm with a Cast Iron Cover. The Earth Electrode shall have Staggered Holes of 12mm dia and the Electrode should be covered 150mm around with Alternate Layers of Salt and Charcoal from the bottom of the CC Chamber. The Connection from the Electrode is to be established through GI Strip using GI Bolts and Nuts.	2019 - 20, Electrical Works	No.	40.00	6.2	4150.00		4150.0
94	Supplying and running of GI / Copper Strips for grounding Connections using necessary Fixing Materials as required. 25 X 3mm GI Strip	2019 - 20, Electrical Works	Mtr.	40.00	6.3.1	75.00		75.00
95	Supplying of 1.1 KV LT UG Cable XLPE or Heat Resistant PVC insulated, PVC extruded Inner Sheath armoured UG LT Cable as per IS: 1554 (Part 1) or IS: 7098 Part 1. Armouring Strip Thickness in Average + 5% and Resistivity 14 Ohms / Km (Max) as per IS: 3975 4 Core 10 Sqmm	2019 - 20, Electrical Works	Mtr.	40.00	6.4.2	130.00		130.00
96	Supplying of 1.1 KV LT UG Cable XLPE or Heat Resistant PVC insulated, PVC extruded Inner Sheath armoured UG LT Cable as per IS: 1554 (Part 1) or IS: 7098 Part 1. Armouring Strip Thickness in Average + 5% and Resistivity 14 Ohms / Km (Max) as per IS: 3975 4 Core 16 Sqmm	2019 - 20, Electrical Works	Mtr.	40.00	6.4.4	150.00		150.00
97	Labour Charges for laying of 1.1 KV Class UG Cable in existing Trench GI Pipe / Stoneware Pipe / on Wall / on Pole as required. In existing Trench / Duct 6 Sqmm to 16 Sqmm	2019 - 20, Electrical Works	Mtr.	41.00	6.5.1	11.88		11.88
98	Labour Charges for laying of 1.1 KV Class UG Cable in existing Trench GI Pipe / Stoneware Pipe / on Wall / on Pole as required. On Wall / Structure	2019 - 20, Electrical Works	Mtr.	41.00	6.5.6	30.00		30.00

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
99	Digging of Trench of 0.6m Deep X 0.5m Wide refilling the Trench to the required ground level and consolidating, etc. In Soil (Ordinary)	2019 - 20, Electrical Works	Mtr.	41.00	6.6.1	76.00		76.00
100	Digging of Trench of 0.6m Deep X 0.5m Wide refilling the Trench to the required ground level and consolidating, etc. In Soil (Hard)	2019 - 20, Electrical Works	Mtr.	41.00	6.6.2	102.00		102.00
101	Digging of Trench of 0.6m Deep X 0.5m Wide refilling the Trench to the required ground level and consolidating, etc. Cutting Road Surface	2019 - 20, Electrical Works	Mtr.	41.00	6.6.3	82.00		82.00
102	Digging of Trench of 0.6m Deep X 0.5m Wide refilling the Trench to the required ground level and consolidating, etc. Asphalt Cutting	2019 - 20, Electrical Works	Mtr.	41.00	6.6.4	113.00		113.00
103	Digging of Trench of 0.6m Deep X 0.5m Wide refilling the Trench to the required ground level and consolidating, etc. C. C. Cutting	2019 - 20, Electrical Works	Mtr.	41.00	6.6.5	205.00		205.00
104	Supplying and fixing of Heavy Duty Cable Glands suitable for UG Cable of 1.1 KV Class (metal only) 25mm dia	2019 - 20, Electrical Works	Each	42.00	6.11.2	84.00		84.00
105	Supplying and fixing of Class A (Medium Duty) GI Pipe of Wall Thickness not less than 3.25mm on Pole / Wall / Drain Crossing with necessary Clamping Arrangements for UG Cable of 1.1 KV. 100mm	2019 - 20, Electrical Works	Mtr.	42.00	6.9.5	890.00		890.00
106	Supplying and making Straight through Cable Joint with Epoxy Resin including Ferruls and other Jointing Materials for PVC Insulated and PVC Sheathed Steel Tape, Wire armoured Aluminium Conductor 4 Core Cable of 1.1 KV Grade. 10 / 16 Sqmm	2019 - 20, Electrical Works	Per Kit	42.00	6.12.2	1280.00		1280.00
107	Supplying Epoxy Resin and Covering the Cable Joint	2019 - 20, Electrical Works	Per Kg	43.00	6.14	870.00		870.00
108	Supply and wrapping the Conductor with Camabrick Tape Roll	2019 - 20, Electrical Works	Per Roll	43.00	6.15	118.00		118.00
109	Supplying tinned Copper Lugs and crimping and wiring to Terminal Point for Wire. 10 Sqmm	2019 - 20, Electrical Works	Each	43.00	6.17.5	8.00		8.00

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Sl. No.	Description of Work	PW, P & IWTDR SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
110	Supplying tinned Copper Lugs and crimping and wiring to Terminal Point for Wire. 16 Sqmm	2019 - 20, Electrical Works	Each	43.00	6.17.6	12.44		12.4
111	Supplying and running GI / Copper Conductor for grounding and (along with other Wires in Conduit System of Wiring) using necessary suitable size Clamps, Nails, Guttas / Spacers, etc. 8 SWG GI Wire	2019 - 20, Electrical Works	Mtr.	44.00	6.18.3	19.00		19.00
112	Fixing Halogen / Metal Halide / SVL / IL / LED Flood Light fitting over existing Pole / Wall Ceiling including Clamps, Bolts, Nuts and Wiring using suitable capacity wires.	2019 - 20, Electrical Works	Each	79.00	14.5	175.00		175.00
113	Supplying of Multi Function Digital Meter with three line Back Light LCD type Display of Voltage, Current, Frequency, Power, Power Factor, KVA, KWH, KVAR suitable for 3 Phase, 4 wire LT Network with IP 54 degree of Protection and completely wired as required with Communication Port and Class 0.5s Accuracy.	2019 - 20, Electrical Works	Each	29.00	5.33	7750.00		7750.00
114	Supplying, fixing and wiring 50 / 5 to 400 / 5 Amps 5VA burden Current Transformer, Class 0.5 Accuracy with tape wound.	2019 - 20, Electrical Works	Each	29.00	5.34	468.00		468.00
115	Supplying and fixing of LED Type Panel Board indicating Lamp with required colour suitable for 230 / 440V A. C. 50HZ 12 / 24V D.C.	2019 - 20, Electrical Works	Each	29.00	5.38	430.00		430.00
116	Supplying and fixing Microprocessor based Electronic Timer (without Contactor, Din Mounting using necessary Bolts, Nuts and Washers, etc.) 3 - 120 sec setting.	2019 - 20, Electrical Works	Each	32.00	5.47	1925.00		1925.00
117	Supply and fixing of 4 Pole Power Contactor with NO / NC Contacts on existing Wood / Panel Board using necessary Bolts, Nuts, Washers and Wiring, etc. complete with AC - 3 Rating and as per IS: 13947 60 Amps	2019 - 20, Electrical Works	Each	26.00	5.13.3	4200.00		4200.00
118	Supplying and fixing Miniature Circuit Breakers on existing MCB Distribution Boards using necessary Fixing Materials and 'C' Type Curve, Indicator ON / OFF, Energy Cross - 3 with Short Circuit Breaking Capacity of 10K and complete Wiring as required conforming to IEC: 60898. In comer 50 - 63 Amps TPN	2019 - 20, Electrical Works	Each	27.00	5.17.9	2397.00		2397.00

Sl. No.	Description of Work	PW, P & IWTD SR, Bengaluru Circle Reference	Unit	SR Pg. No.	Item No.	Basic Rate in Rs.	AW 6%	Total Rate in Rs.
119	Supplying and fixing Miniature Circuit Breakers on existing MCB Distribution Boards using necessary Fixing Materials and 'C' Type Curve, Indicator ON / OFF, Energy Cross - 3 with Short Circuit Breaking Capacity of 10K and complete Wiring as required conforming to IEC: 60898. Out Going 50 - 63 Amps TPN	2019 - 20, Electrical Works	Each	27.00	5.17.9	2397.00		2397.00
120	Supply and Installation / Fixing / Provision of Outdoor type Thermoplastic Modular Panel enclosure with Transparent Polycarbonate Lid, Shock Proof, IP 65 (Weather Proof), Rust Proof, Dust Proof, Water Proof, Corrosion Proof having internally Embedded Gasket on both Lid and Flap suitable to fix Single Phase / Three Phase Energy Meter in suitable Base Plate and having a Provision for Fuse / MCB Cutout with suitable Transparent Hinged Flap Opening for operating MCB along with complete Tamper Proof SEALING Facility. 300 X 600 X 170mm	2019 - 20, Electrical Works	Each	31.00	5.44.3	5713.00		5713.00
121	Interlinking Copper Strip, Copper Wires with Lugs, Bolt and Nut between Busbar and Switch Fuse Unit, MCBs.		Each	Market Rate		10000.00		10000.00



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Project: Widening of Jayamahall Road (from Mehkri Circle to Jayamahall Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Rate Analysis as per BWSSB SR 2017 - 18

Sl. No.	Description of work	Unit	SR Page No.	Item No. and Code	Basic Rate in Rs. including GST	Basic Rate in Rs. excluding GST
1	Supplying, laying and jointing HDPE Pipes of specified grade and conforming to IS: 4984 - 1995 with latest amendments and conveying to work site including loading and unloading at both destinations and rolling and lowering into trenches, laying true to line and jointing of pipes and specials, giving hydraulic test as per relevant ISS with all lead and lifts including encasing the pipe around to a depth of not less than 15cm. with soft gravel or selected earth available from the excavation, testing and commissioning. The rate is exclusive of required specials and fittings wherever necessary like saddle Tee, stub ends, flanged sets, bends, reducers etc. complete (Contractor will make his own arrangements for procuring water for testing) etc. for:	Rmt				
	90mm dia Pipe PE - 100 PN 6.0		125	6.1 K060A	287.00	256.25
	160mm dia Pipe PE - 100 PN 6.0		125	6.5 K060E	751.00	670.54
	200mm dia Pipe PE - 100 PN 6.0		125	6.7 K060G	1138.00	1016.07
2	Supplying PVC Ring Tight Pipes conforming to IS: 4985 - 2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading and unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour, lead & lift including encasing the pipe around to a depth of not less than 15cm. with soft gravel or selected earth available from the excavation, etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing), etc. for 25 mm outer dia, 10 kg / Sqcm & class 5	m	133	1.1 M010A	45.00	40.18



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Data Rate for Precast RCC Median

Data Rate for Precast RCC Median

Providing Precast RCC Medians of 2m Length, 0.1m Top Width, 0.35m Bottom Width and 1m Height of M35 Grade including Loading at Casting Yard, Transportation to Site, Lowering, Hoisting and Erecting to line including all Labour Charges, Taxes, complete as per the directions of the Engineer - in - Charge.

Considering for 30m i.e., 15 Units of each 2.0m Length

Sl. No.	Description of work	Unit	No.	Length in m	Breadth in m	Depth in m	Total Quantity	Rate Rs.	Amount Rs.
1	Materials:								
a	KSRRB M2200 - 5.18: Providing and laying Design Mix M35 with OPC @ 390kgs, with 20mm and down size graded granite metal Coarse Aggregates @0.68cum and Fine Aggregates @ 0.45cum, with Superplastisiser @3lts conforming to IS: 9103 - 1999 Reaffirmed 2008 including Cost of Materials, Labour, HOM, Curing, Form Works, Scaffolding and Centering complete as per Specifications. i) Upto 5m height	Cum							
	Page No. 228, I. No. 28.7.18 of PW, P & I WTD SR 2018 - 19, Bengaluru Circle)								
	For Medians		15	2.00	0.295		8.85		
b	KSRRB M2200 - 6: Providing TMT Steel Reinforcement for RCC Work including Straightening, Cutting, Bending, Hooking, Placing in Position, Lapping and / or Welding wherever required, Tying with Binding Wire and Anchoring to the Adjoining Members wherever necessary complete as per Design (Laps, Hooks and Wastage shall not be measured and paid), Cost of Materials, Labour, HOM, complete as per Specification. MoRT&H Specification No.1600 & 2200 TMT Bars Fe 500	Tonne				Say	8.85	5895.72	52177.1
	Page No. 229, I. No. 28.8.2 of PW, P & I WTD SR 2018 - 19, Bengaluru Circle)								
	Main Bar 10mm dia at 180mm c/c		167	2.55	0.613	-	261.25		
	Distribution Bar 8mm dia at 200mm c/c		13	30	0.393	-	153.12		
							414.37	Kg	
							0.414		
							0.414	72326.98	29970.28
c	Providing GI Pipes 50mm dia B Class to make m Holes for Lifting and Erection of Precast Median Segments	m							
	(Sl. No. 499, Code No. 0154, Page No. XIX of PW, P & I WTD SR 2018 - 19, Bengaluru Circle)								
		2 X 15	0.002			0.059	0.059		
d	Preparation of Base for Fixing of Precast Medians	LS				Total Qty	0.059	296.44	17.46
									790.00

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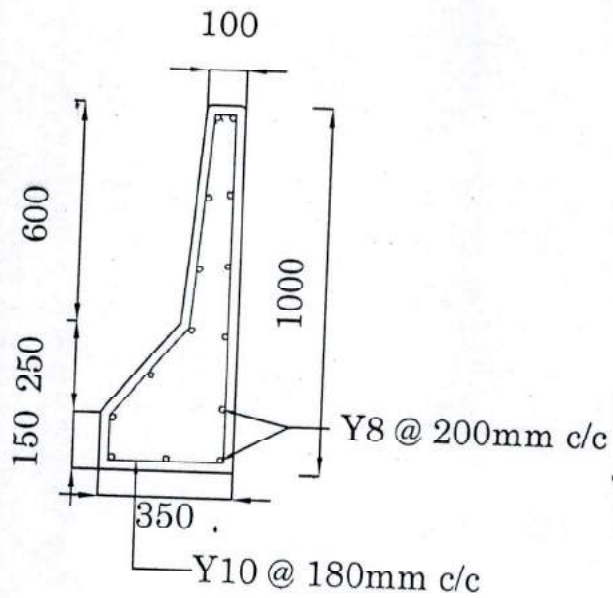
e	Providing Steel Bolts and Nuts for Anchoring of Precast Medians to the Road								
	(Sl. No. 414, Code No. 0719, Page No. XVI of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)								
		2 X 15					30	71.19	2135.7
								Total (A)	85090.5
2	Transportation and Erection Charges	Nos.	Hours	Days	Total Quantity	Rate in Rs.	Amount in Rs.		
a	Providing Crane Facility for Loading, Lowering, Hoisting and Erecting, etc. including Fuel / Consumable T&P.								
	(Sl. No. 69, Code No. 1092, Page No. L of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)								
b	Crane Operator Charges	1	9		9	424.00	3816.0		
	(Sl. No. 62, 63, Page No. LIX, Zone - 1 Labour Rates for South Zone of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)								
	Grade I	1			2	466.2	932.4		
	Grade II	1			2	456.2	912.4		
c	Labour Charges towards Mazdoor Heavy								
	(Sl. No. 5, Page No. LVI, Zone - 1 Labour Rates for South Zone of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)								
d	Providing Tipper for Transportation of Precast Medians from Casting Yard to Site	1	9	5	5	446.2	2231.0		
	(Sl. No. 73, Code No. 1096, Page No. LI of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)								
								Total (B)	9718.80
	Total Cost towards Materials and Labour (C)								94809.36
	Add 10% for Contractors Profit								407.58
	Add 10% Over heads charges								777.87
	Grand Total								95994.81
	Cost towards One Median								6400.00



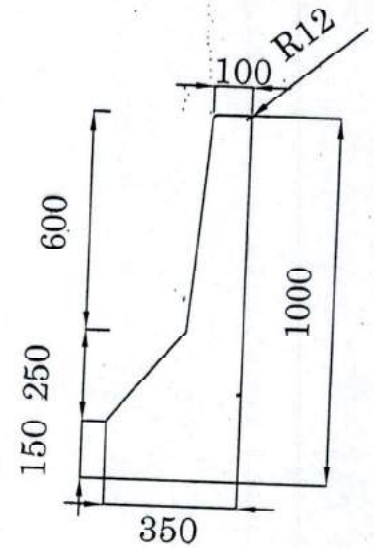
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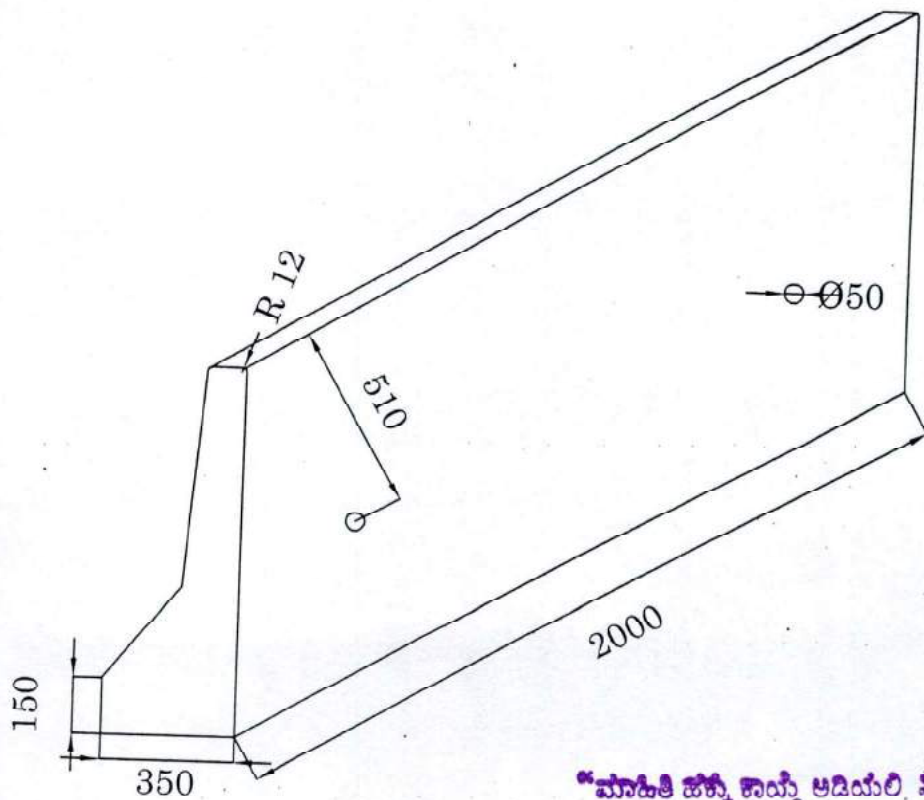
Precast RCC Median



Reinforcement Details



Dimension Details



Elevation Details



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**Data Rate for Precast RCC Slab of
100mm thick**

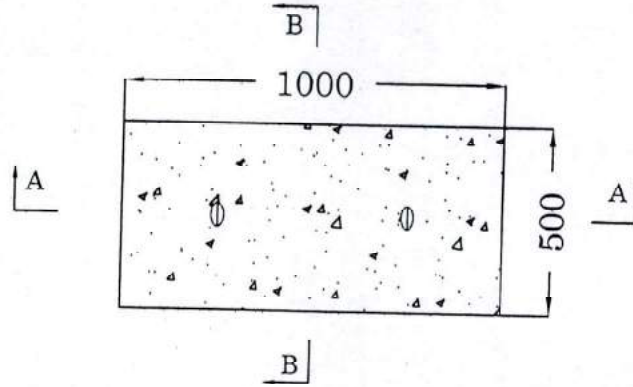
Data Rate for the Precast Slab of 100mm thick

Providing and fixing Precast RCC Slab of 100mm thick over Box Drain / Service Chambers, etc. in Cement Concrete M20 using Graded Granite Jelly 20mm and down size with Steel Reinforcement and Pointing for Joints with 1:3 Cement Mortar including Form Work, Lift Charges, Curing and Concrete Finished Surfaces on both sides, etc., complete and as per the directions of the Engineer - in - Charge.

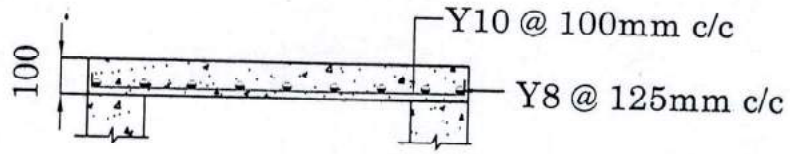
Consider 10 Sqm (Slab Size 1.0m X 0.5m and 20 Nos.)

Sl. No.	Description of work	Unit	No.	Length in m	Breadth in m	Depth in m	Total Quantity	Rate in Rs.	Amount in Rs.
1	Materials:								
a	KSRRB M2100 - 15.2: Providing and laying Plain / Reinforcement Cement Concrete M20 with OPC @ 320 kgs. with 20mm and down size graded granite metal Coarse Aggregates @0.69cum and Fine Aggregates @ 0.46cum, with Superplasticizer @31ts conforming to IS: 9103 - 1999 Reaffirmed - 2008 in Open Foundation complete as per Drawing and Technical Specifications including Cost of all Materials, Labour, HOM, Curing, Form Works, Scaffolding and Centering complete as per specifications. MoRT&H Specification No. 1500, 1700 & 2100	Cum							
	Page No. 222, I. No. 27.27 of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)		20	0.50	1.00	0.10	1.00		
	For Slab					Say	1.00	5148.42	5148.00
b	KSRRB M2200 - 6: Providing TMT Steel Reinforcement for RCC Work including Straightening, Cutting, Bending, Hooking, Placing in Position, Lapping and / or Welding wherever required, Tying with Binding Wire and Anchoring to the Adjoining Members wherever necessary complete as per Design (Laps, Hooks and Wastage shall not be measured and paid), Cost of Materials, Labour, HOM, complete as per Specification. MoRT&H Specification No.1600 & 2200 TMT Bars Fe 500	Tonne							
	Page No. 229, I. No. 28.8.2 of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)								
	Main Bar 10mm @ 100mm c/c		100	1.00	0.613	-	61.35		
	Distribution Bar 8mm @ 125mm c/c		8	10	0.393	-	31.41		
							92.76		
							0.093		
						Say	0.10	72326.98	7233.00
2	Pointing in CM (1:3) over Drain Slab	Cum	20	1.00	0.04	0.012	0.010		
	Materials:								
a	Cement 510 Kg i.e. 5.1 Quintal	Quintal					0.05	490.63	24.02
	(Sl. No. 123, Page No. V of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)								
b	Sand 1.07 per cum	Cum					0.01	1680.95	17.27
	(Sl. No. 51, Page No. III of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)								
								Total (A)	12422.29
	Labour Charges	No.		Hours	Days	Total Quantity	Rate in Rs.	Amount in Rs.	
3.1	For Fixing of Precast RCC Slab								
a	Mason Class I (With Tools)				3	3	466.20		1399.00
	(Sl. No. 12, Page No. LVI, Zone - 1 Labour Rates for South Zone of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)								
b	Mazdoor Light / Bisti				4	4	446.20		1785.00
	(Sl. No. 6, Page No. LVI, Zone - 1 Labour Rates for South Zone of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)								

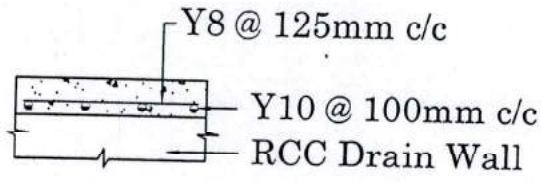
Precast RCC Slab



Plan



Section A - A



Section B - B

Signature



“ಮಾಹಿತಿ ಹಕ್ಕು ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ”

Signature

Data Rate for MS Bollards

Data Rate for MS Bollards

Supply, Fabrication, Painting and Fixing of Mild Steel (MS) Items such as Horizontal and Vertical Gratings, Flower Baskets, Cycle Stands, Tree Guards, Edge Angles, Bollards, etc. and any other Items as specified in Drawings or as approved by the Engineer - in - Charge, complete as per Specifications including all Leads and Lifts and as per the direction of the Engineer - in - Charge.

Sl. No.	Description	Unit	Quantity	Rate in Rs.	Amount in Rs.
1	Materials				
	MS Plates	Kg	1	37.29	37.29
	(Sl. No. 209, Code No. 0257, Page No. VIII of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)				
	Total (A)				37.29
2	Labour				
a	Fabricator	Nos.	Days	Rate in Rs.	Amount in Rs.
		1	0.12	466.2	55.94
	(Sl. No. 112, Page No. LXII, Zone - 1 Labour Rates for South Zone of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)				
b	Gas or Electric Welder				
		1	0.12	466.2	55.94
	(Sl. No. 41, Page No. LVIII, Zone - 1 Labour Rates for South Zone of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle)				
	Total (B)				111.89
	Total Cost towards Materials and Labour (C)				149.18
	Add 10% Contractor's Profit				14.92
	Add 10% Overhead Charges				14.92
	Total for 1kg of Structural Steel				179.01
	Consider 22.4Kg of Structural Steel per Bollard	Kg	22.4	-	4009.90
	Total				4009.90
	Say				4000.00



“ಮಾಹಿತಿ ಹಕ್ಕು ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ”

(Signature)

**Data Rate for MS Grating over Catch
Drain**

Data Rate for MS Grating over Catch Drain

Providing, supplying and fixing MS Surface Grating of Size 500mm X 400mm at gully trap along the Road Surface as per Approved Drawing including Transportation to Site, Labour Charges, Loading and Unloading, etc., complete for Fixing as indicated in the Drawing with all Lead and Lift as per the Detailed Tender Specifications and as directed by the Engineer - in - Charge.

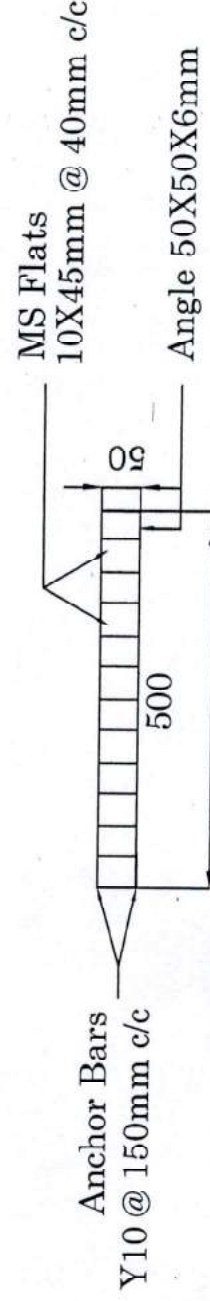
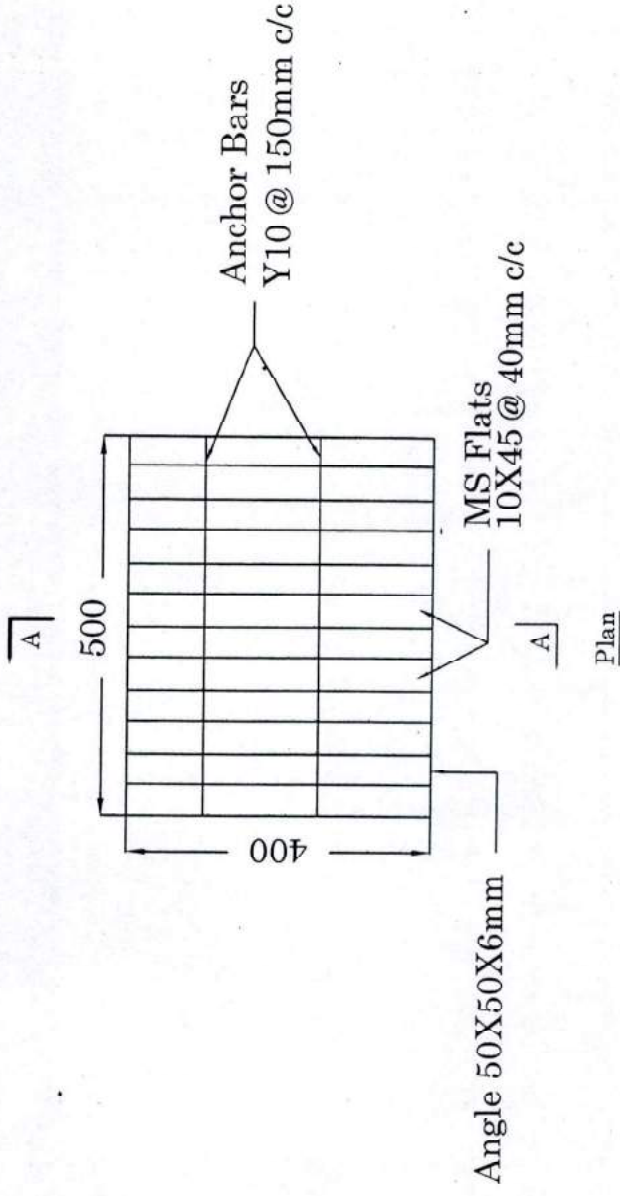
Consider Catch Drain of Size 0.50m X 0.40m = 0.20 Sqm

Sl. No.	Description	Unit	No.	Length in m	Breadth in m	Depth in m	Quantity	Rate in Rs.	Amount in Rs.
1	Materials:								
	Supplying, Fabricating, Erecting, and Fixing in Position, inserts and embedments, Truss, Clamps, Brackets, Insert Plates and all miscellaneous Steel Works as shown in the Drawing and as directed by the Engineer - in - Charge at all depths, using MS Angles, Channels, Steel Beams, Rails, Tees, Plates, Flats, Rounds, Squares, etc. of various Sizes and other Structural Section conforming to IS: 2062 Grade A, Medium Class GI Pipes, etc. including Straightening, Cutting, Fabricating, Welding, Bending to Slope, Fixing to Position, Welding to insert Plate embedded in Concrete and inclusive of 2 coats of Enamel Paint over one coat of Metal Primer. The Rate is to include the Cost of all Materials, Labour, Tools, Tackles, Cranes, Devices and Plants, Wastage, etc. as per the Specifications and Drawings complete including Cost of Bolts, Nuts, Washers, Clamps, Welding. Electrodes and Connections required for the Work. Rate to include Shims and Packing Pieces, etc., complete with all Lead and Lift as directed by the Engineer - in - Charge.								
a	Angle 50 X 50 X 6	Kg	2	1.64	--	--	3.28		
	4.5 Kg / m						14.76		
b	MS Flats 10 X 45 @ 40mm c/c	Kg	8	0.40		0.0005	0.001		
	0.001 X 7850 kg / cum		--	--	--	--	11.68		
	Anchor Bar 10mm dia @ 150mm c/c on both sides - Top and Bottom		8	0.50	--	--	3.67		
	10mm dia = 3.67m X 0.625kg/m = 2.29	Kg	--	--	--	--	2.29		
Total Qty.							28.73		
							0.0287	Tonne	
	Structural Steel in Plates, Angles, Galvanised Structural Steel Plate, etc. including 5% Wastage	Tonne					0.0287	37288.14	1071.00
(Sl. No. 251, Code No. 0963, Page No. X of PW, P & IWTDR SR 2018 - 19, Bengaluru Circle									
								Total (A)	1071.00
	Labour								
	Labour Charges for Fabrication, Cutting and Welding; and Electricity Charges	Kg					28.73	20.00	575.00
								Total (B)	575.00
								Total Cost towards Materials and Labour (C)	1646.00
								Add 10% Contractor's Profit	107.10
								Add 10% Overhead Charges	107.10
								Total for 0.20 Sqm of Mild Steel for Grating	1860.20
Hence for 1 Sqm of Grating over Catch Drain									9301.00
								Sax	9300.00



(Signature)

MS Grating over Catch Drain



“ಮಾಡಿಕೆ ಪಕ್ಕ ಕಾಯಿ ಅಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ”

Carth



**Approved Rate of Green Pigmented
Asphalt**

Scanned with CamScanner

Providing and fixing of retro-reflectised 80cm Circular - Type IV mandatory sign as per revised IRC 67:2012 made of high intensity grade aluminium vda clause 800-1.3, fixed over aluminium sheeting, same to be mounted on standard steel angle iron post 75mm x 75mm and to be secured by means of properly designed and fabricated steel angle brace 45mm x 45mm x 50mm.

**Approved Rate for Tree
Transplantation**

T.M.R.H. PLANTATIONS

Phone : 09972522240
Mobile : 98217691902

45, Sreerama Mandira Road, Basvanagudi, Bangalore - 560 004

QUOTATION

Date: - 12/11/19
Place: - Bengaluru.

TO : Executive Engineer,
Road Widening Division,
BBMP, Bengaluru

Sir
Sub: - Quotation for Transplantation of trees on
Taya Mahal road and Bellary road.

Ref: Enquiry regarding Transplantation of trees.

SC.
NO.

I.

TRANSPLANT THE MARKED TREES TO
THE PLACE SHOWN BY THE HIGHWAY
AUTHORITIES, WITH ALL LEAD AND
HET TOOLS, PLANTS, TECHNICAL
MEN, MACHINARIES AND NECESSARY
PREPERATION:-

- i) Preparation of Earth ball of tree, root stock, on technical basis of desired depth and diameter, by machinery and manual labour (machinaries involves J.C.B. and other required tools, power saws for trimming cutting & tending the exposed roots, So as to prepare the ball of earth with uniform size & girth).
- ii) Excavation of pits of adequate size, proportionate to the size of prepared ball of Earth, at the exact relocation point, by J.C.B. other implements and technical labour.

tree

Rs. 19,900/-

including all operations.

"ಮಾಹಿತಿ ಪಕ್ಕಾ ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ವಿತರಣೆಗಾಗಿ"

Auth

T.M.R.H. PLANTATIONS

45, Sreerama Mandira Road, Basvanagudi, Bangalore - 560 004

- iii) Trimming the branches to facilitate the lifting the tree transportation and to keep the gravitational force of the total mass of the tree in tact.
- iv) Dislodging, lifting, with the help of required capacity cranes (one or two) as the case may be, transportation by crane only, if the distance is bearable, or transportation the treated tree to a distance by truck. (if the distance is more than the bearable range) as the case may be; and planting the tree, at re-location point; with proper Anchoring & balancing with the help of cranes & technically sound manual labours.
- v) Arranging loose soil, Consolidation while filling the planted pit; Ramming for tightening the base portion of the tree & other related technical works.
- vi) Preparation of chemicals. Watering, Application of chemicals by way of mixing in water & application on cut edges of roots & stumps etc.

"ಮಾಹಿತಿ ಹಕ್ಕು ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ"

(Signature)

Phone :
Mobile :

T.M.R.H. PLANTATIONS

45, Sreerama Mandira Road, Basvanagudi, Bangalore - 560 004

VII) MAINTENANCE after the Transplantation process, has to be borne by the Customer himself as per the maintenance chart given by the Execution agency. mainly watering over a period of 8 (Eight months).

[Rupees nineteen thousand
nine hundred only]
Per tree including all
operations.

For T.M.R.H Plantations

Signature

Proprietor

“ಮಾಹಿತಿ ಹಕ್ಕು ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ”
Signature

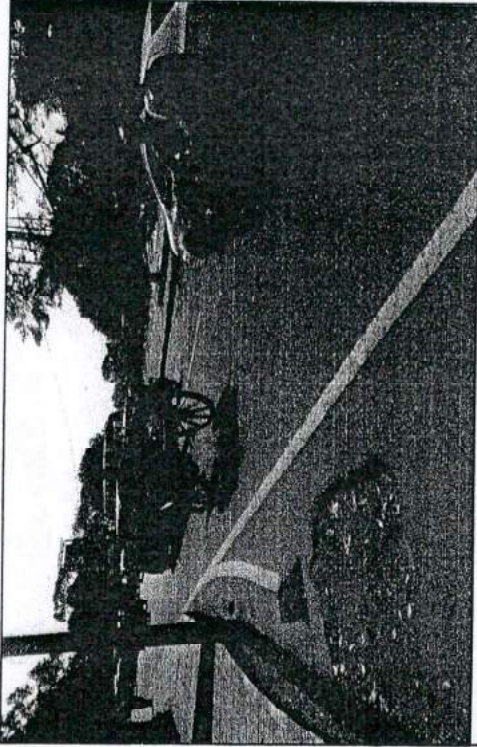
Chapter 7

Photographs

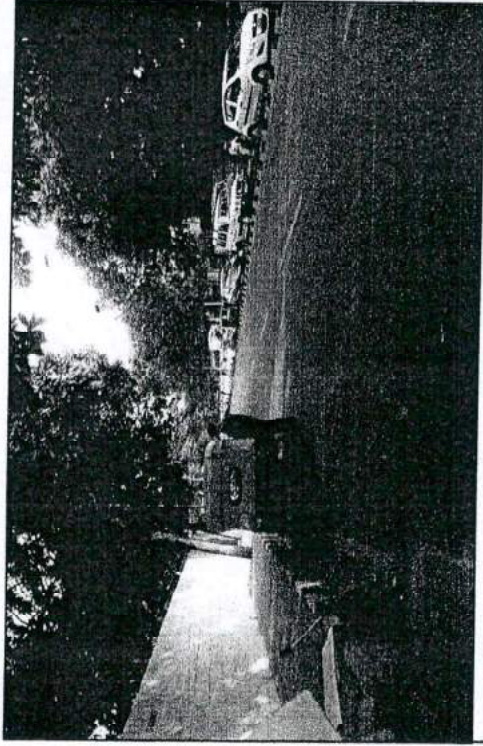
Existing Views

Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

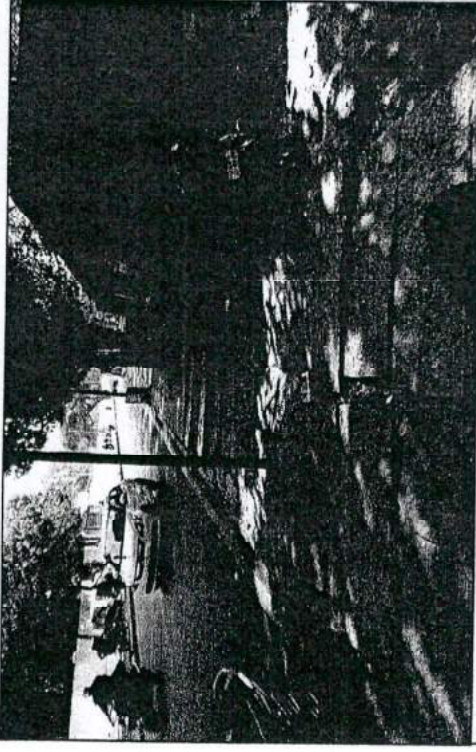
Name of Road: Jayamahahal Road



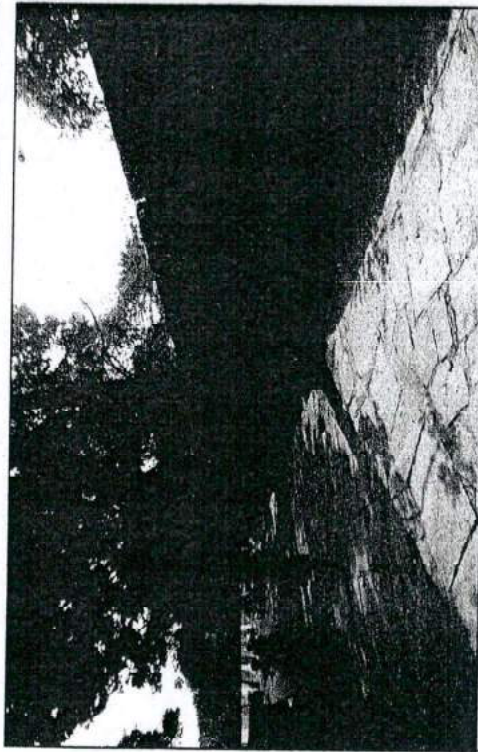
Northern Side between Ch: 25m and 50m



Northern Side between Ch: 200m and 225m



Southern Side between Ch: 0m and 25m



Southern Side between Ch: 175m and 200m

“ಮಾಹಿತಿ ಹಕ್ಕು ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ”

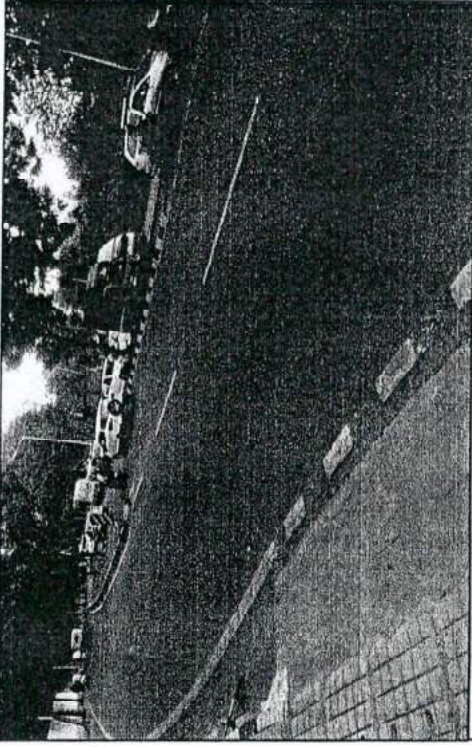
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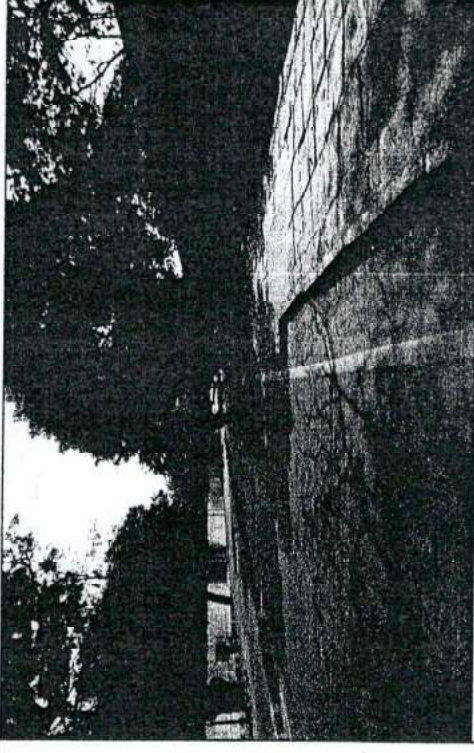
Existing Views

Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

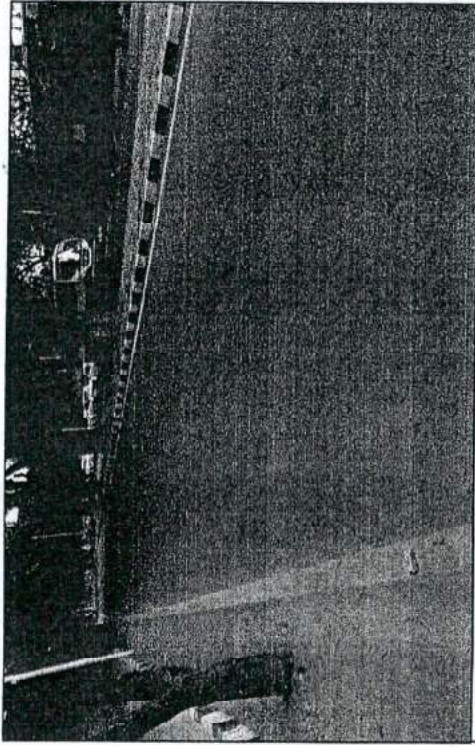
Name of Road: Jayamahahal Road



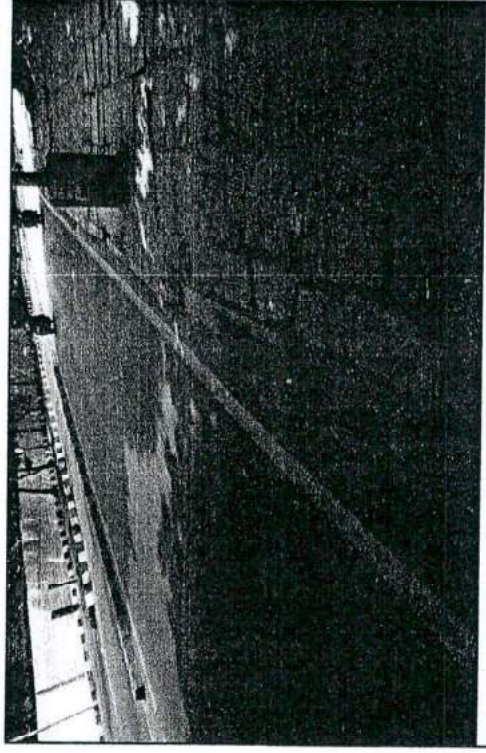
Eastern Side between Ch: 400m and 425m



Western Side between Ch: 425m and 450m



Eastern Side between Ch: 500m and 525m



Western Side between Ch: 450m and 475m

“ಮಾಹಿತಿ ಪಟ್ಟಿ ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ”

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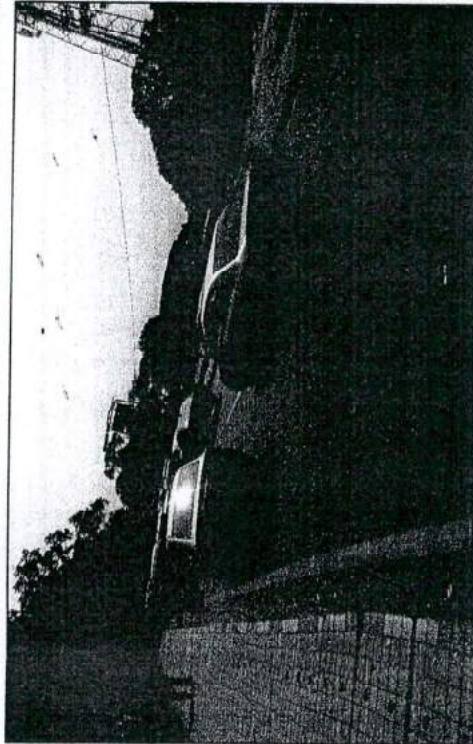
Existing Views

Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

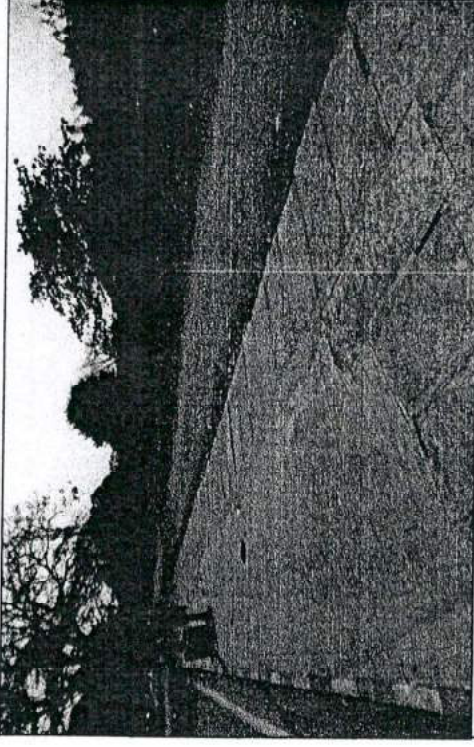
Name of Road: Jayamahahal Road



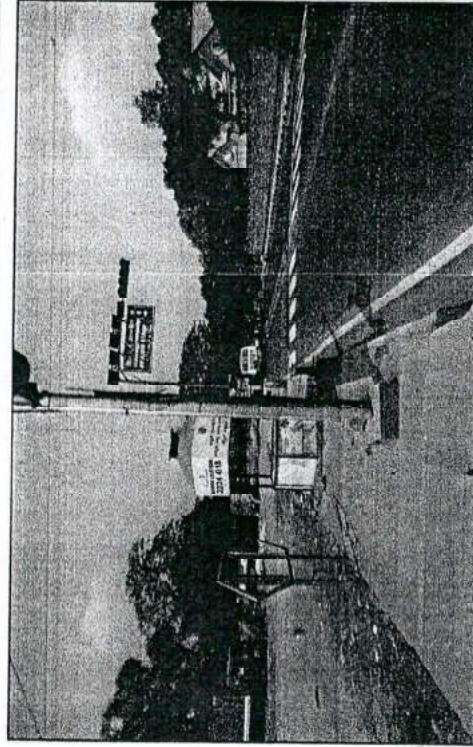
Eastern Side between Ch: 700m and 725m



Eastern Side between Ch: 800m and 825m



Western Side between Ch: 750m and 775m



Western Side between Ch: 875m and 900m

“ಮಾಹಿತಿ ಹಕ್ಕು ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ”

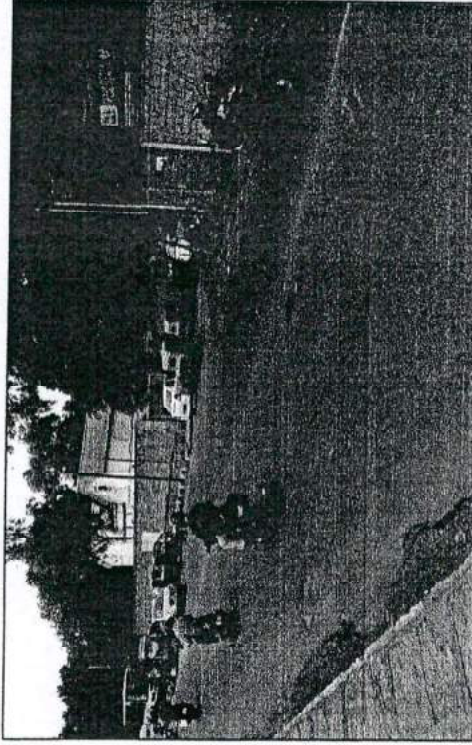
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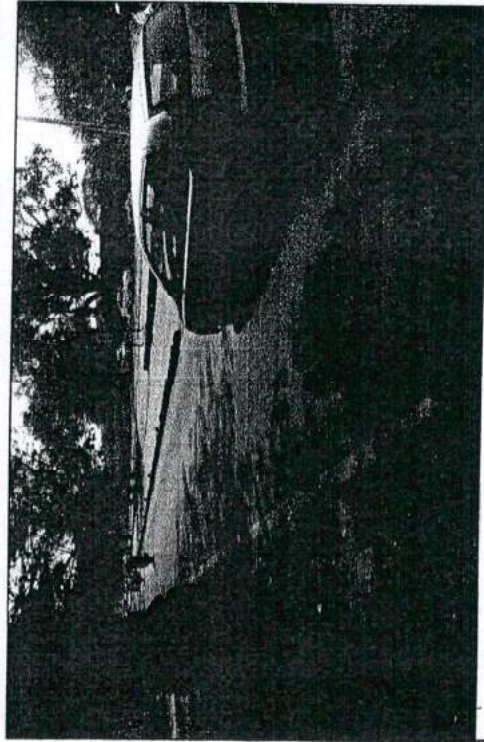
Existing Views

Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Name of Road: Jayamahahal Road



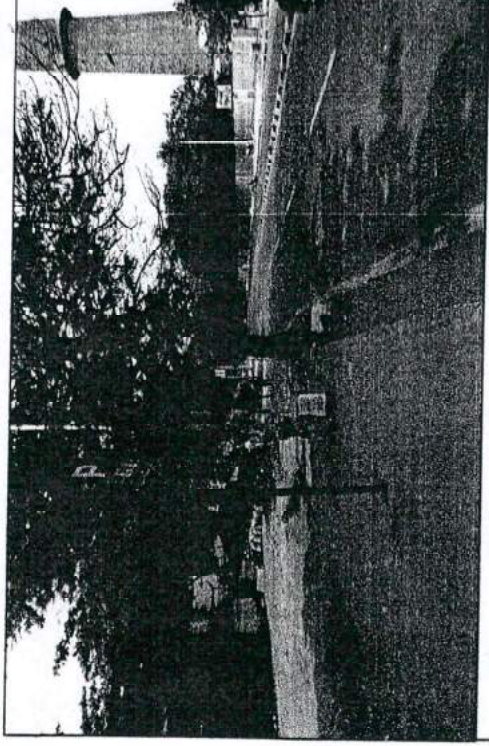
CIL Road Junction between Ch: 900m and 950m



Eastern Side between Ch: 1000m and 1025m



Western Side between Ch: 950m and 975m



Western Side between Ch: 1025m and 1050m

“ಮಾಹಿತಿ ಕಟ್ಟಿ ಕಾಯ್ದು ಆಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ”

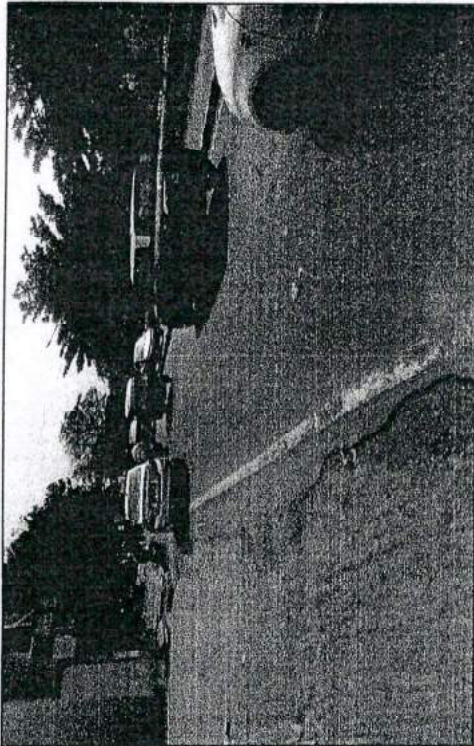
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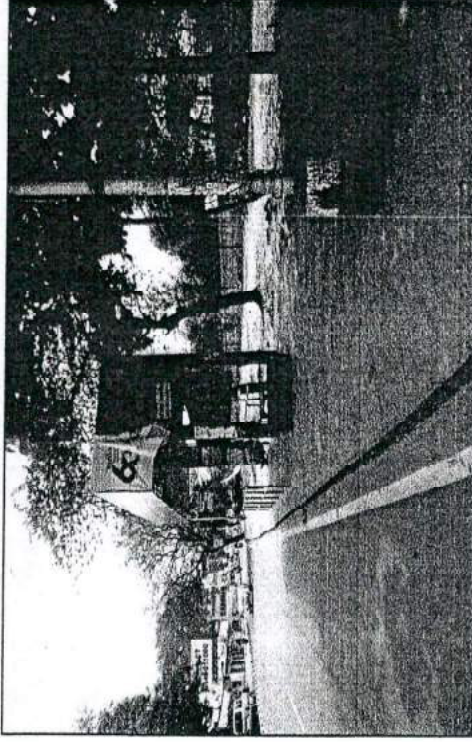
Existing Views

Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

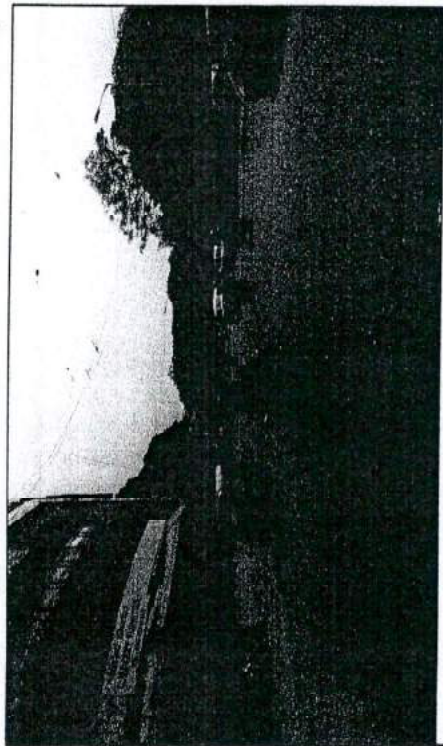
Name of Road: Jayamahahal Road



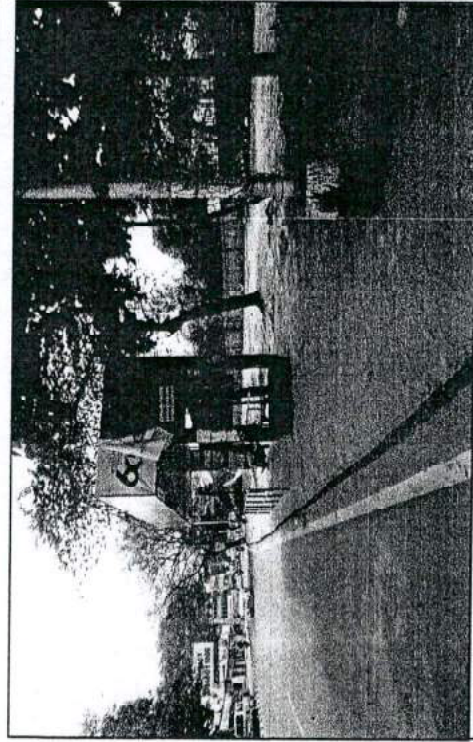
Eastern Side between Ch: 1250m and 1275m



Western Side between Ch: 1200m and 1225m



Munireddy Palya Road Junction between
Ch: 1400m and 1450m



Western Side between Ch: 1325m and 1350m

“ಮಾಹಿತಿ ಹಕ್ಕು ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ”

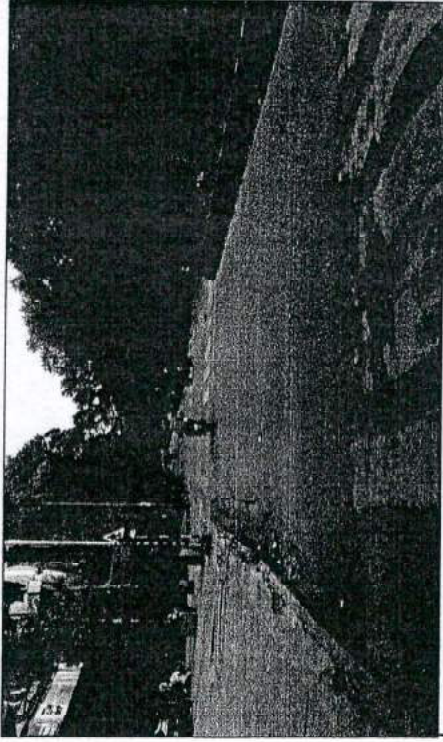
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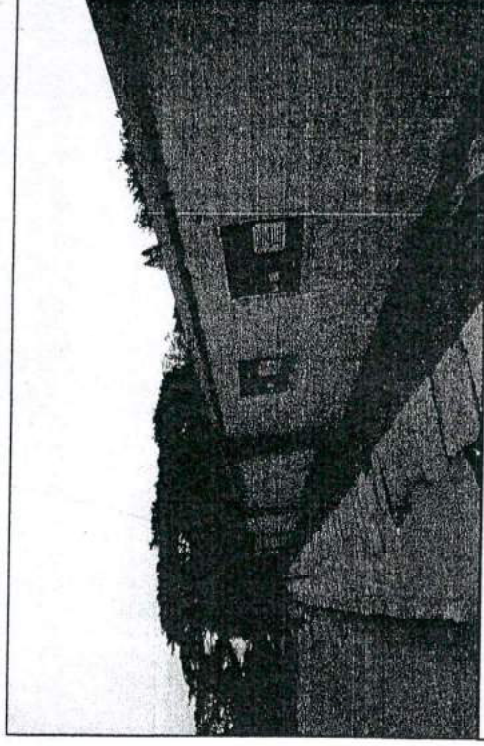
Existing Views

Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

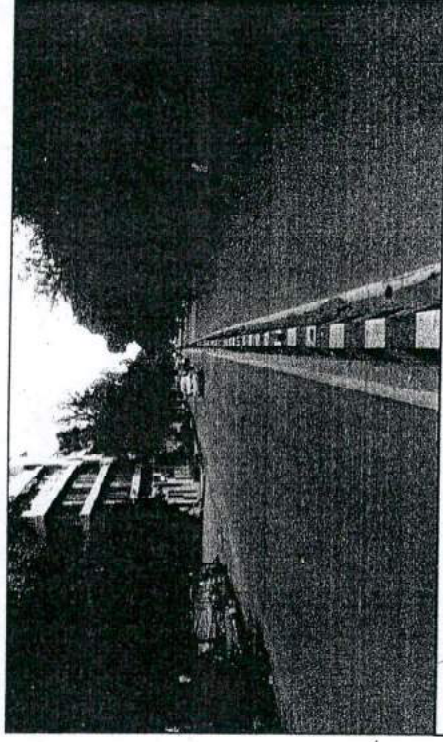
Name of Road: Jayamahahal Road



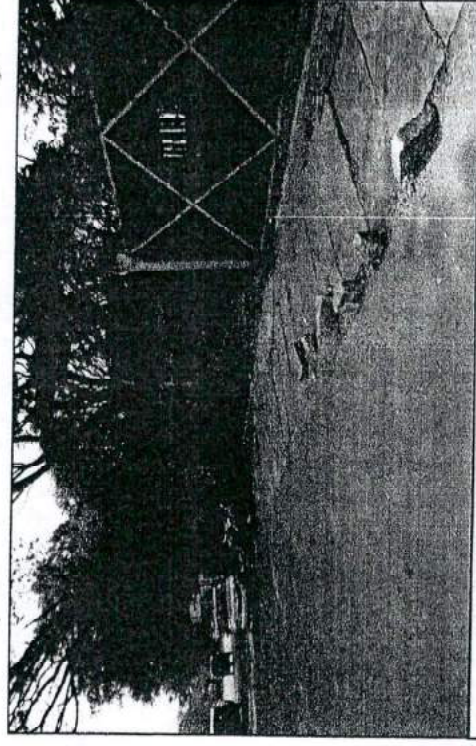
Jayamahahal 5th Main Road Junction between
Ch: 1925m and 1975m



Western Side between Ch: 1500m and 1525m



Jayamahahal 1st Main Road Junction between
Ch: 2125m and 2175m



Western Side between Ch: 1600m and 1625m

“ಮಾಹಿತಿ ಹಕ್ಕು ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ”

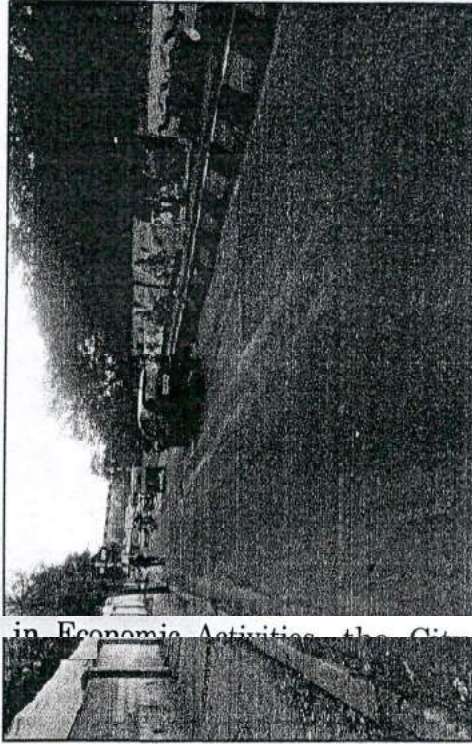
Dr. S. S. S.



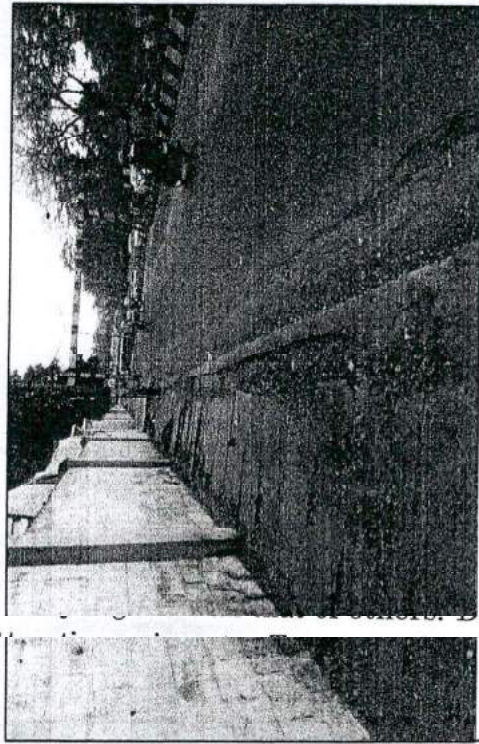
Existing Views

Project Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

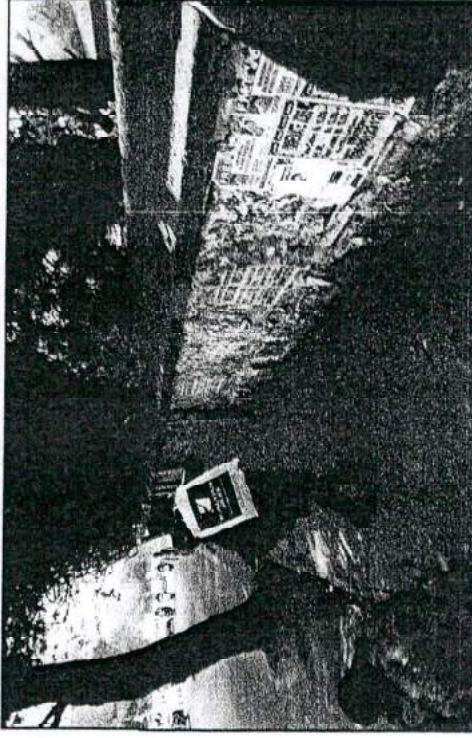
Name of Road: Jayamahahal Road



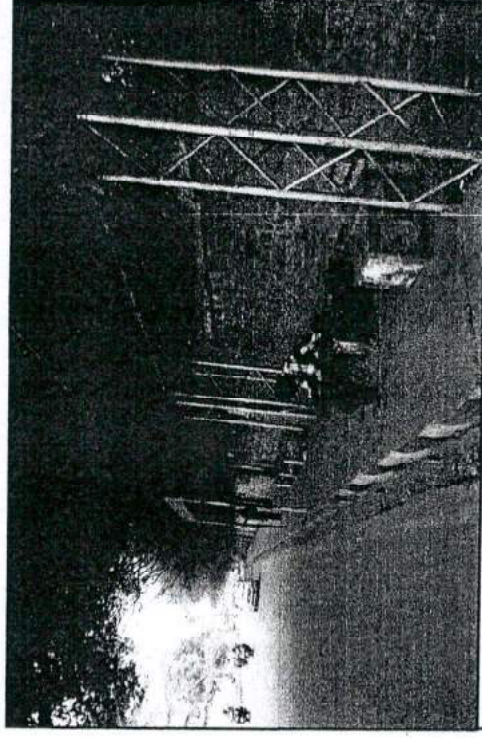
Eastern Side between Ch: 2300m and 2325m



Eastern Side between Ch: 2450m and 2475m



Western Side between Ch: 1750 and 1775m



Western Side between Ch: 2050m and 2075m

“ಮಾಹಿತಿ ಹಕ್ಕು ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ”

Qstg



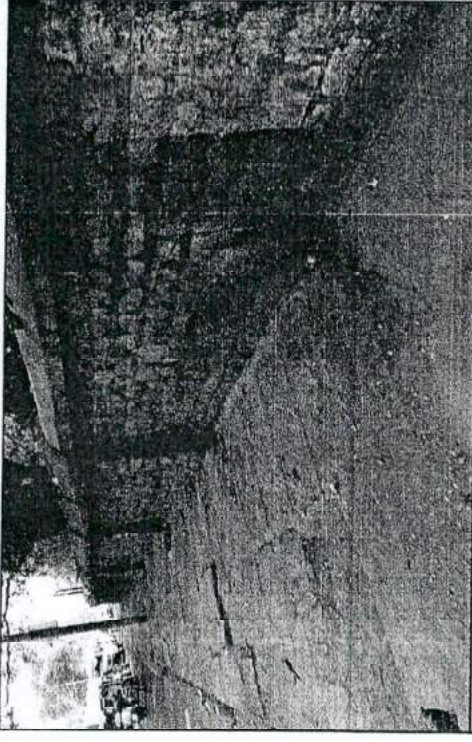
Existing Views

Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

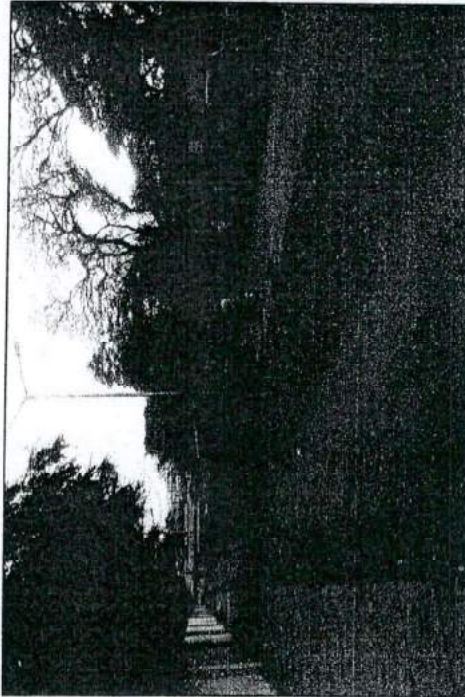
Name of Road: Jayamahahal Road



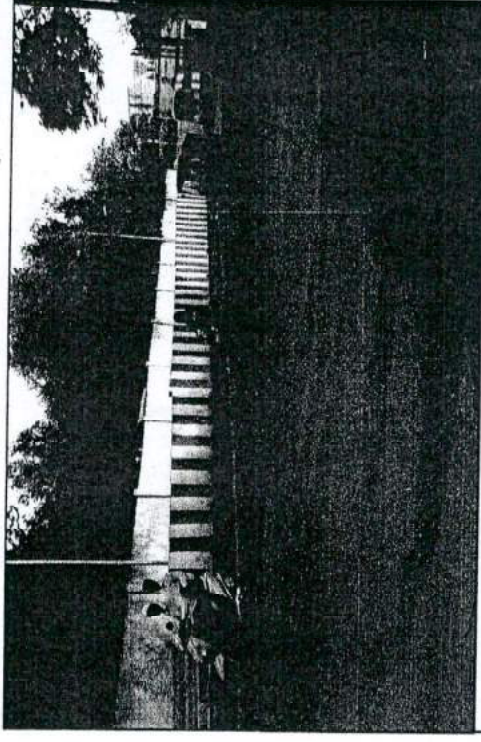
Eastern Side between Ch: 2525m and 2550m



Western Side between Ch: 2350m and 2375m



Eastern Side between Ch: 2600m and 2625m



Western Side between Ch: 2575m and 2600m

“ಮಾಹಿತಿ ಪಟ್ಟಿ ಸಿದ್ಧಿಸಿದ ಲೆಕ್ಕಾಚಾರವು ವಿತರಿಸಲಾಗಿದೆ”

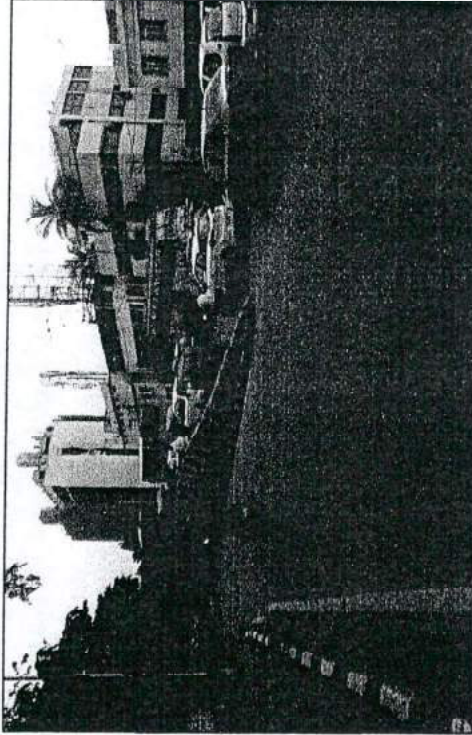
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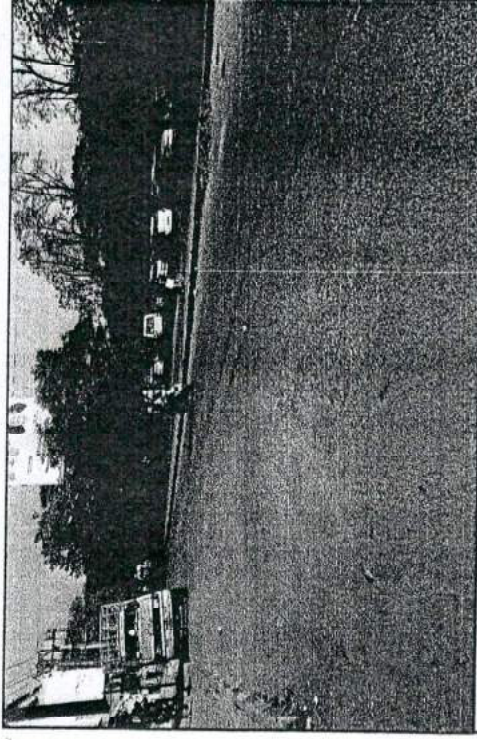
Existing Views

Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Name of Road: Bellary Road



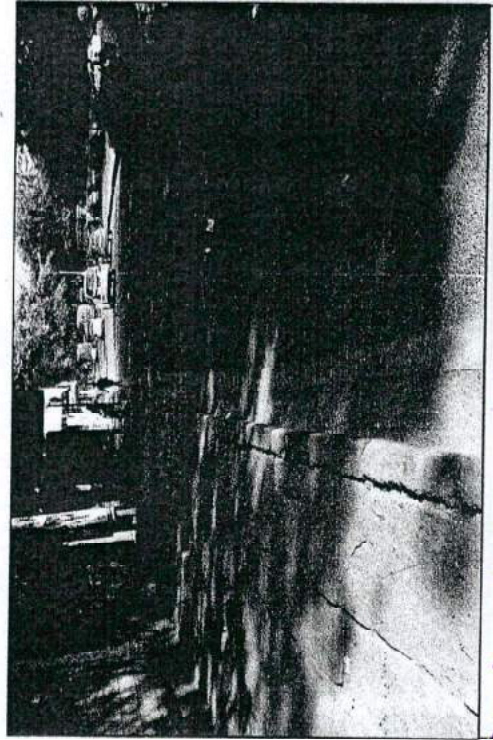
B. D. A. Junction between Ch: 0m and 100m



Western Side between Ch: 100m and 125m



Eastern Side between Ch: 150m and 175m



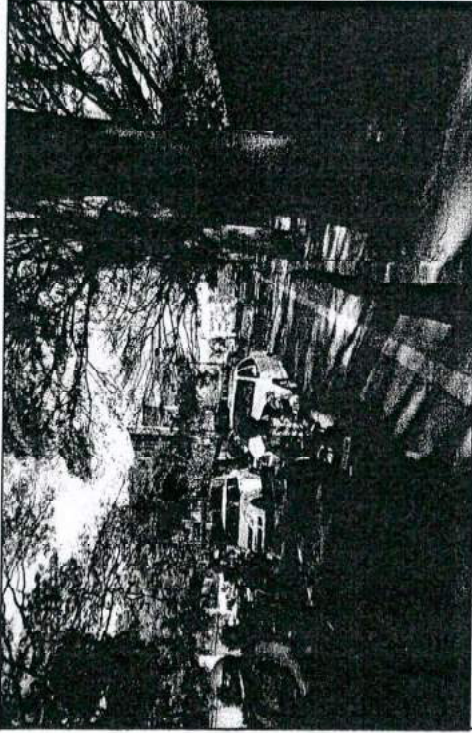
“ಮಾಹಿತಿ ಹಕ್ಕು ಕಾಯ್ದೆ”ನಡಿ ಸಿದ್ಧಪಡಿಸಿದ ಚಿತ್ರ Ch: 200m and 225m



Existing Views

Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

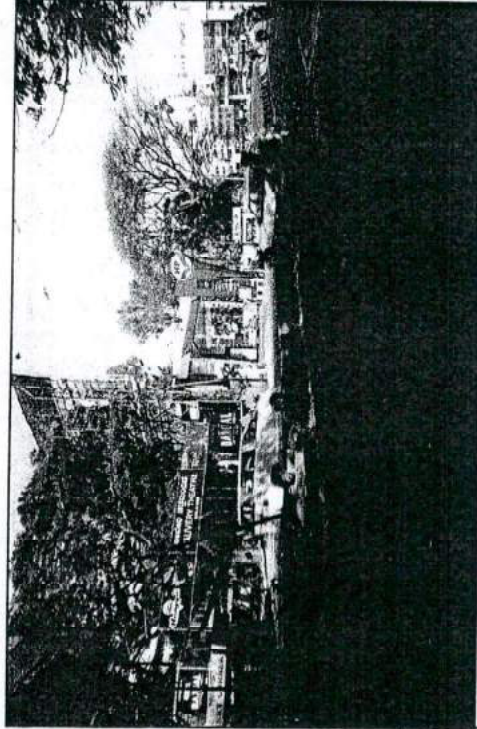
Name of Road: Bellary Road



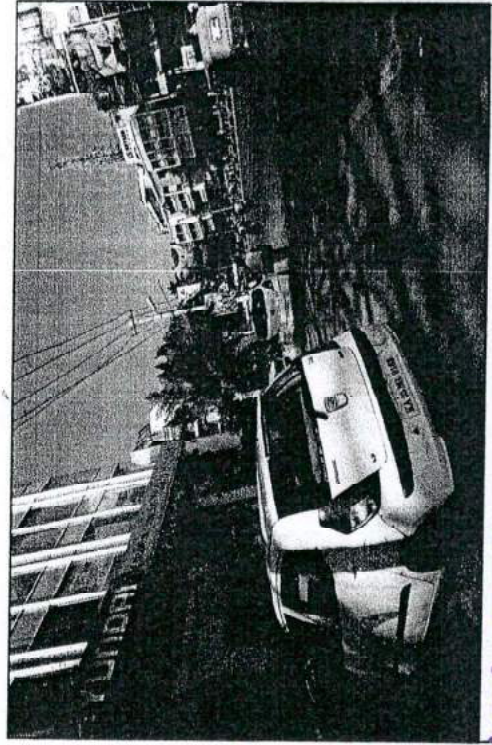
Eastern Side between Ch: 275m and 300m



Western Side between Ch: 300m and 325m



Eastern Side between Ch: 450m and 475m



Western Side between Ch: 450m and 475m

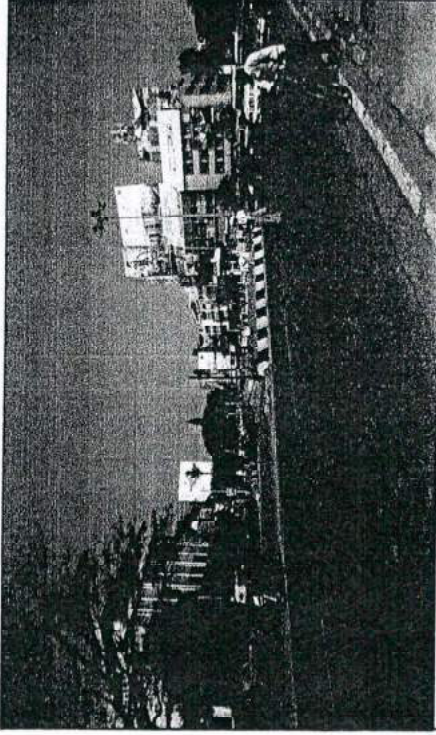


Handwritten signature in blue ink.

Existing Views

Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

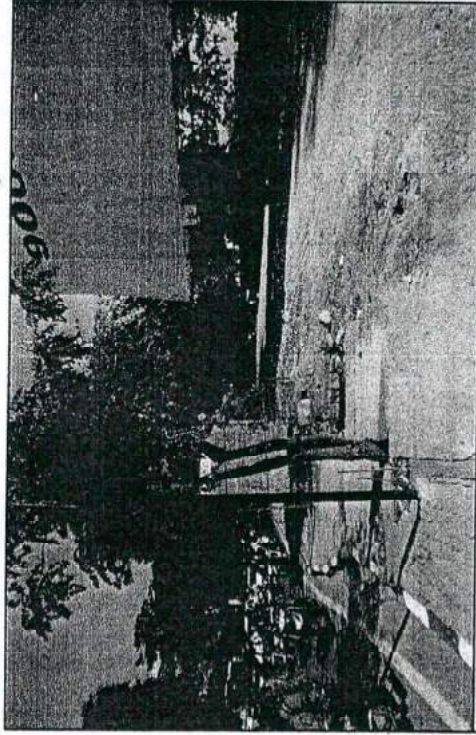
Name of Road: Bellary Road



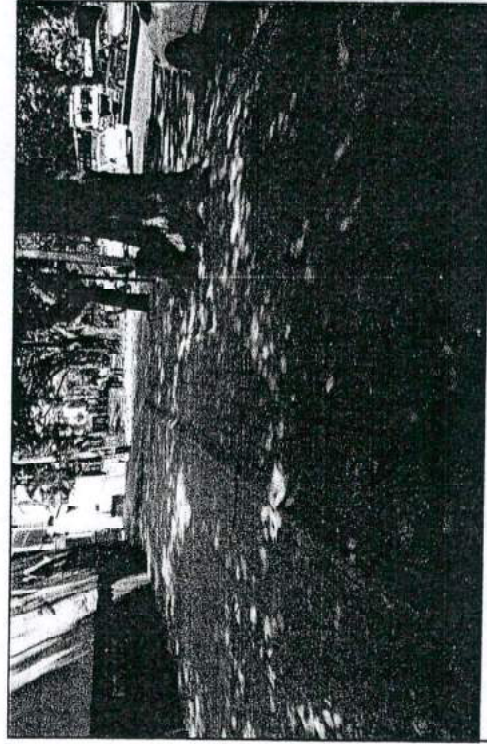
Cauvery Theatre Junction between
Ch: 550m and 650m



Western Side between Ch: 625m and 650m



Eastern Side between Ch: 800m and 825m



Western Side between Ch: 900m and 925m

“ಮಾಹಿತಿ ಹಕ್ಕು ಕಾಯ್ದೆ ಅಡಿಯಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ”

(Signature)



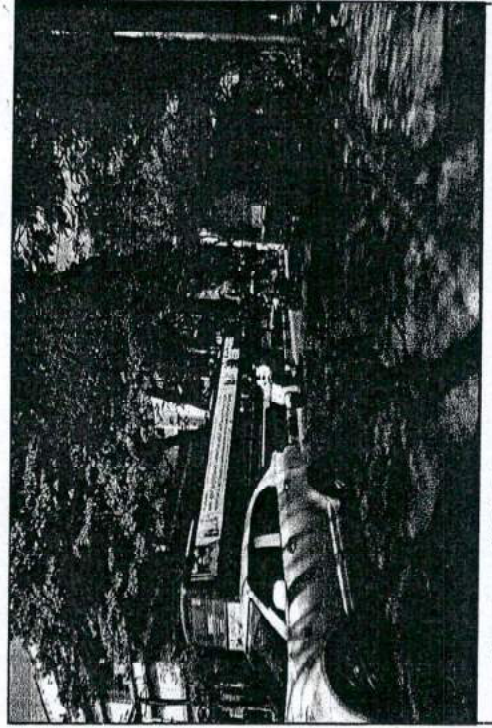
Existing Views

Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

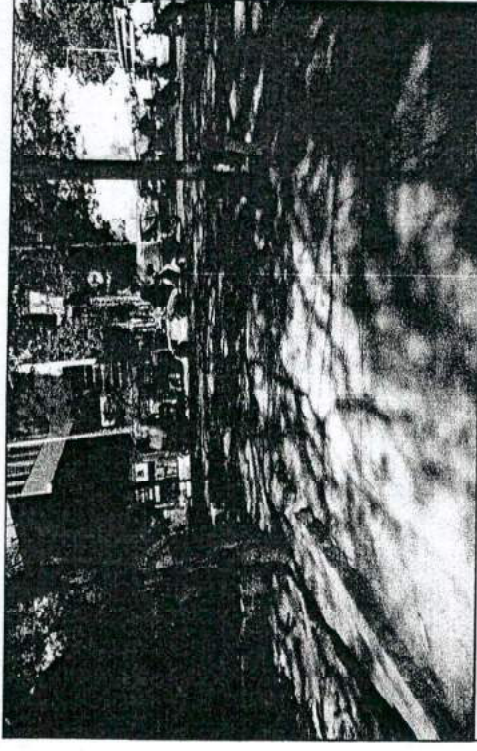
Name of Road: Bellary Road



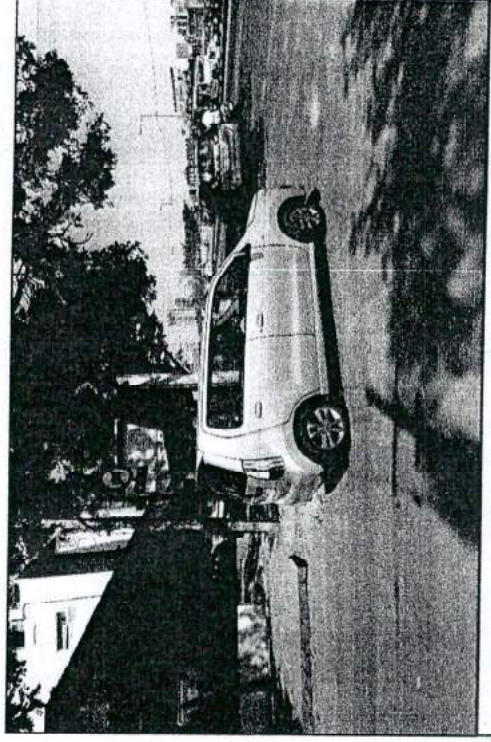
Eastern Side between Ch: 900m and 925m



Eastern Side between Ch: 1000m and 1025m



Western Side between Ch: 1150m and 1175m



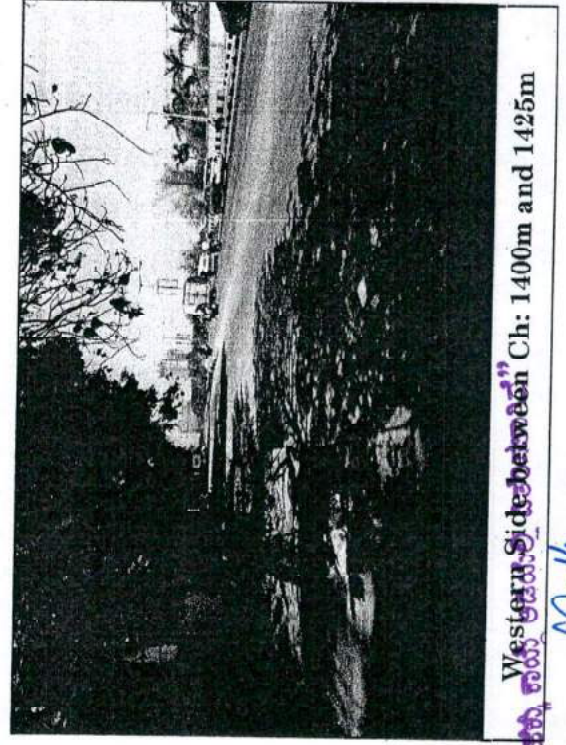
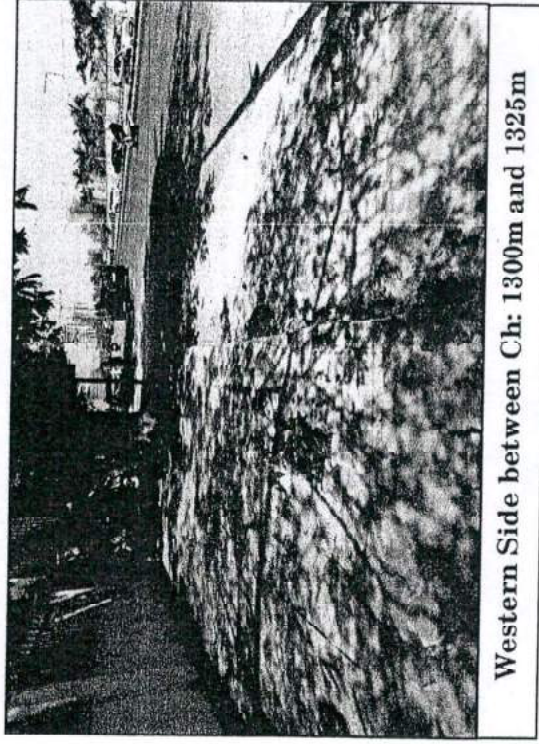
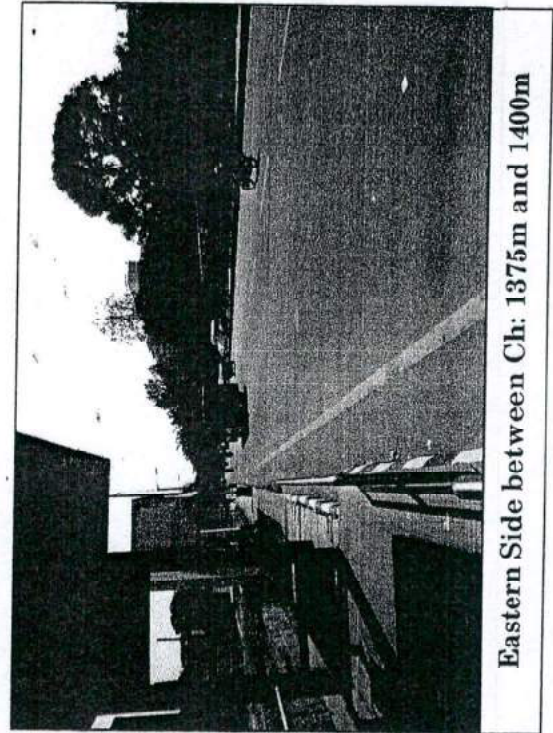
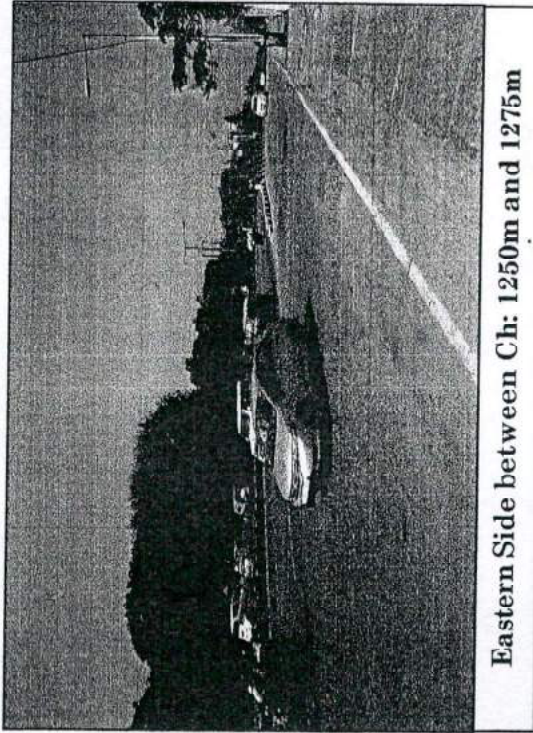
Western Side between Ch: 1250m and 1275m


ಮಾಹಿತಿ ಪಕ್ಕ ನಾಲ್ಕು ಅಡಿಮೆಲ್ಲಿ ವಿತರಿಸಲಾಗಿದೆ
Oshy

Existing Views

Project: Widening of Jayamahahal Road (from Mehkri Circle to Jayamahahal Palace Hotel) and Bellary Road (from B. D. A. Junction to Mehkri Circle) in Bengaluru City

Name of Road: Bellary Road






“ಮಾಹಿತಿ ಸಹಿ, ಸಂಖ್ಯೆ 92333”
Western Side between Ch: 1400m and 1425m

