



MINISTRY OF ROADS AND TRANSPORT  
STATE DEPARTMENT FOR ROADS

# COST ESTIMATION MANUAL 2025

## FOR ROAD CONSTRUCTION AND MAINTENANCE WORKS



FIFTH EDITION

## POPULAR EDITION





# **Cost Estimation Manual**

## **for Road Construction and Maintenance Works**

### **Popular Edition**

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**COST ESTIMATION MANUAL  
FOR ROAD CONSTRUCTION AND MAINTENANCE WORKS**

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# Foreword

Kenya's long-term development blueprint, Vision 2030, aims to transform the country into a newly industrializing, middle-income nation providing a high quality of life to all its citizens. A critical enabler in this transformation journey is the development and maintenance of a robust and efficient road network.

One of the key initiatives contributing to Vision 2030 is the containment of escalating costs in road construction and maintenance. In response, the Government initiated the development of a standardized framework for accurate cost estimation in the Roads Sub-Sector. This led to the formulation and initial publication of the Cost Estimation Manual (CEM) for road maintenance works in 2011 by the Ministry responsible for roads, with technical support from the Japan International Cooperation Agency (JICA). The manual guides Road Agencies in preparing reliable cost estimates during project planning and provides a reference point for Contractors and Practitioners in generating unit rates during project bidding.

Since its first publication in 2011, the CEM has evolved through multiple revisions — 2017, 2019, and 2022/2023 — to reflect advancements in construction technology and changing economic dynamics. In 2020, Kenya Roads Board (KRB) was officially appointed as the administrator of the cost estimation system, with the responsibility of ensuring the manual's timely revision and alignment with evolving fiscal, technical, and sectoral conditions. In line with this mandate, the Board has developed the Cost Estimation Manual 2025.

Notably, earlier versions of the manual provided rates under two broad geographical categories: cities and other areas. However, growing recognition of regional cost disparities led to a breakthrough in the 4th edition with the introduction of eight (8) region-specific manuals and a concise popular version for broader use. Building on these achievements, the CEM 2025 marks a significant leap forward. The manual has been updated to include ten (10) regional manuals, offering even more refined and location-sensitive cost estimates.

The CEM is a dynamic document, subject to biennial updates to incorporate changing work methodologies, market trends, and policy priorities. This 2025 edition was prepared through a collaborative and consultative process involving a wide range of stakeholders, including the Ministry of Roads and Transport (State Department for Roads), Kenya National Highways Authority (KeNHA), Kenya Rural Roads Authority (KeRRA), Kenya Urban Roads Authority (KURA), Kenya Wildlife Service (KWS), National Construction Authority (NCA), Public Procurement Regulatory Authority (PPRA), Kenya Institute of Highways & Building Technology (KIHBT), Materials Testing & Research Division (MTRD), County Governments, and the consultant (ITEC Engineering Limited).

It is my hope that the effective use of this manual will foster greater cost-effectiveness in the maintenance, rehabilitation, and development of our road network and accelerate Kenya's progress toward achieving the aspirations of Vision 2030.

Rashid Mohamed, MBS  
**DIRECTOR GENERAL**



# Acknowledgement

The Kenya Roads Board (KRB), through the Director General, Mr. Rashid Mohamed, MBS, wishes to express its sincere appreciation to the Inter-Agency Cost Estimation Task Force for its initiative and commitment towards the update and publication of the Cost Estimation Manual (CEM) 2025.

We especially acknowledge the efforts of the KRB Project Implementation Team, led by the Director Policy and Planning, Eng. Tom Omai, supported by the Project Manager, Eng. Victor Odula; Deputy Project Manager, Mr. Thomas Bundi; and team members Eng. Billy Kimko, Mr. Joseph Kolani, and Eng. Tabitha Kariuki.

We further extend our gratitude to the various Road Agencies and partner organisations that actively participated in the CEM 2025 validation workshop. These include:

- Chief Engineer Roads, State Department for Roads
- Chief Engineer, Material Testing and Research Division
- Chief Mechanical Engineer, Mechanical and Transport Division
- Council of Governors - County Governments
- Kenya National Highways Authority (KeNHA)
- Kenya Urban Roads Authority (KURA)
- Kenya Rural Roads Authority (KeRRA)
- Kenya Wildlife Service (KWS)
- Kenya Roads Board (KRB) Regional Offices
- Kenya Institute of Highways and Building Technology (KIHBT)
- Public Procurement Regulatory Authority (PPRA)
- Kenya National Bureau of Statistics (KNBS)

Finally, this Manual would not have been realised without the dedication and technical expertise provided by the Consultant, M/s ITEC Engineering Ltd. Their valuable support throughout the process is appreciated.



# Abbreviations and Acronyms

<b>AASHTO</b>	American Association of State Highway and Transportation Officials
<b>AC</b>	Asphalt Concrete
<b>CBR</b>	California Bearing Ratio
<b>CEM</b>	Cost Estimation Manual
<b>CES</b>	Cost Estimation System
<b>IWC</b>	Indirect Work Cost
<b>JICA</b>	Japan International Cooperation Authority
<b>KeNHA</b>	Kenya National Highways Authority
<b>KeRRA</b>	Kenya Rural Roads Authority
<b>KIHBT</b>	Kenya Institute of Highways and Building Technology
<b>KNBS</b>	Kenya National Bureau of Statistics
<b>KRB</b>	Kenya Roads Board
<b>KURA</b>	Kenya Urban Roads Authority
<b>KWS</b>	Kenya Wildlife Service
<b>MDD</b>	Maximum Dry Density
<b>MoRT</b>	Ministry of Roads and Transport
<b>MTD</b>	Mechanical and Transport Division
<b>MTRD</b>	Materials Testing and Research Department
<b>PPRA</b>	Public Procurement Regulatory Authority
<b>PVC</b>	Polyvinyl Chloride
<b>RAs</b>	Road Agencies / Authorities
<b>RMS</b>	Road Management System
<b>VAT</b>	Value-added Tax





# Glossary of Terms

<b>Abutment</b>	Structure support to bridge deck and retains the road embankment.
<b>Adhesion</b>	Sticking quality, for example, holding aggregate to the binder in chip sealing.
<b>Aggregate</b>	Crushed local rock or stone.
<b>Apron</b>	Floor of concrete, masonry or stone at the inlet or outlet of a culvert or waterway to prevent scour.
<b>Asphalt Concrete</b>	Road construction material usually comprising a mixture of bitumen and aggregate, also known as hot-mix or hot-rolled asphalt.
<b>Base Course</b>	The main structural element of the pavement, between the surface course and subbase.
<b>Benching</b>	A stepped platform cut in an embankment to prevent earth slipping and improve slope stability. Can also be used as a stepping to provide a level base for additional fill material.
<b>Berm</b>	A low ridge or bund of soil to collect or redirect surface water.
<b>Binder</b>	An adhesive material, usually bitumen or bitumen emulsion, used to seal the road surface, also providing a waterproof layer to receive and hold aggregate. The most common binders are bitumen based. A binder is also used to hold aggregate together in bituminous mixtures.
<b>Binder Course</b>	The layer forms part of the bituminous surfacing immediately below the wearing course.
<b>Bitumen</b>	Bitumen (called asphalt cement in the US) is a black to dark brown sticky material composed principally of high-molecular-weight hydrocarbons. Most bitumen is derived from the distillation of crude oil. Bitumen is a thermoplastic material that gradually liquefies when heated.
<b>Borrow Pit</b>	An excavation outside the road limits from which suitable material is obtained, usually for earthwork or re-gravelling operations.
<b>Box Culvert</b>	A culvert of rectangular cross-section, usually constructed in reinforced concrete.
<b>Bridge</b>	A structure with a span of 6 metres or more providing a means of transit above land and/or water or above an obstruction, whether natural or artificial.
<b>Camber (Cross Fall)</b>	The transverse slope applied to the carriageway on a section of straight alignment.
<b>Carriageway</b>	The part of the road used by vehicular traffic.
<b>Catch pit</b>	A covered, accessible chamber with a sump for collection of silt forming part of the drainage system and permitting inspection and maintenance of

	underground drainage pipes.
<b>Catchment Area</b>	The area from which water runs off by gravity to a collecting point.
<b>Causeway</b>	Low-level structure constructed across streams or rivers with openings to permit water to pass below road level.
<b>Centre-line</b>	The middle of the carriageway, normally marked with a yellow dashed line on a paved road.
<b>Compaction</b>	Compacting embankment by roller to increase the density of soil what composes embankment body. It causes to improve mechanical properties of soil.
<b>Cross-fall</b>	The transverse gradient or fall across a formation or pavement.
<b>Cross-section</b>	Section through the road construction at right angles to the centre-line.
<b>Crown</b>	The highest part of a cambered surface, usually on or near the centre-line.
<b>Culvert</b>	A duct, usually rectangular or circular, for carrying surface water under the road.
<b>Cut (Cutting)</b>	Excavation in natural ground usually with graded slopes.
<b>Cut Slope</b>	A soil plane constructed at an angle to the horizontal.
<b>Cut-off Drain</b>	A drain cut to intercept surface water flowing from adjacent land and to prevent it reaching a pavement or other prepared surface.
<b>Cycleway</b>	The track which is mainly used for bicycle traffic. The track is separated with other parts of road by kerb stone or its similar structures.
<b>Direct Cost</b>	Actual input costs required for the execution of each activity, including materials, labour, and equipment.
<b>Ditch (Drain)</b>	A long narrow excavation designed or intended to collect and drain off surface water.
<b>Drainage</b>	The interception and removal of ground and surface water by artificial or natural means.
<b>Drainage Channel</b>	A waterway or gutter to carry away surface water.
<b>Drift or Ford</b>	A stream or river crossing at bed level over which the stream or river water can flow.
<b>Earthworks</b>	General term of construction works involving soil and rocks (e.g. excavation, loading, hauling, spreading and compaction).
<b>Embankment Slope</b>	An artificially constructed soil plane at an angle to the horizontal.

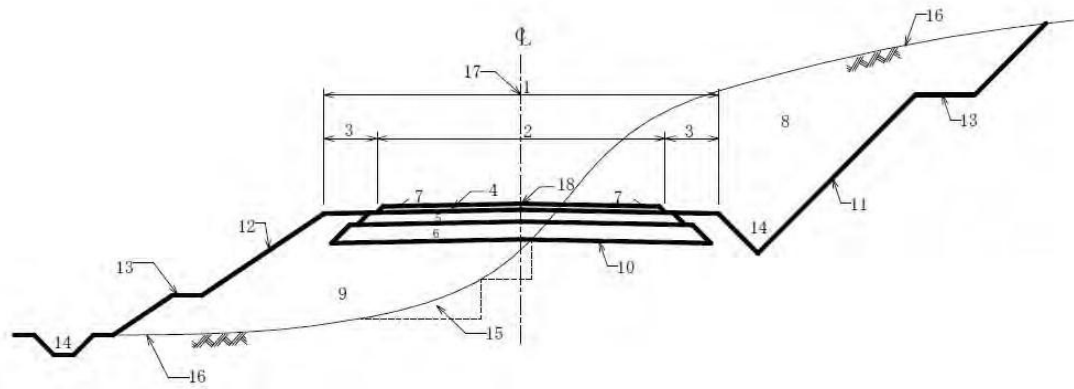
<b>Fill (Embankment)</b>	Earthworks constructed below the pavement raising the road above the surrounding natural ground level.
<b>Footbridge</b>	The overpass bridge crossing carriageway/railway to ensure the safety of pedestrian and smooth vehicle traffic.
<b>Footpath</b>	The track which is mainly used for pedestrian. The track is separated with other parts of road by kerb stone or its similar structures.
<b>Gabion</b>	The steel mesh cage filled with cobble stone or crushed stone. This is mainly used for revetment and foot protection.
<b>Gravel</b>	A non-cohesive, coarse granular material, resulting from natural disintegration of rock with or without finer material. In general, the particles are irregular or flaky. It is used as material of surface course and to correct loss of shape, ruts, potholes and erosion gullies.
<b>Guardrail</b>	A safety barrier on embankment or river crossing
<b>Gutter</b>	A shallow waterway provided at the edge of the road to carry surface water longitudinally.
<b>Headwalls</b>	The walls located on the top of outlet/inlet of culvert. The walls of inlet direct the flow into the culvert, while the walls of outlet provide a transition from the culvert to the outlet channel. Headwalls also protect the embankment from erosion by flood waters.
<b>Indirect Cost</b>	Administration, management, and logistical support cost required to execute a unit of work.
<b>Inlet</b>	The point at which surface water enters a pipe culvert or box culvert.
<b>Invert</b>	The lowest point of the internal cross section of a ditch or culvert.
<b>Lane</b>	The width of carriageway required to accommodate one line of traffic.
<b>Manhole</b>	Accessible chamber with a cover forming part of the drainage system and permitting inspection and maintenance of underground drainage pipes.
<b>Mitre Drain</b>	Short, open, skew ditches used to remove water from the roadside ditches or gutters. Use of this reduces the necessary size of the side ditches and minimizes the velocity of water and thereby the risk of erosion.
<b>Original Ground Level</b>	Line of natural ground.
<b>Outfall</b>	The point at which water discharges from a pipe or box culvert.
<b>Paved Road</b>	For the purpose of this manual a paved road is a road with a concrete surface, concrete block, bituminous surface or surface dressing.
<b>Pavement</b>	The road structure above the formation, designed to spread the loading over the base and subbase.
<b>Pipe Culvert</b>	A culvert of circular cross-section, usually constructed in pre-cast concrete.

<b>Premix</b>	Premix is a paving material manufactured by mixing aggregates, filler and bitumen. Most premix is mixed and placed hot. Premix is used in the construction of wearing course, binder courses and base courses.
<b>Prime Coat</b>	A coating of low viscosity binder applied to a surface of stabilised or naturally compacted soil before sealing or paving.
<b>Road Furniture</b>	Road or street furniture e.g., traffic sign, traffic board, traffic signal, lane marking, guardrail, street light, etc.
<b>Road Reserve (Right-of-way)</b>	The area within the road limits over which members of the public have the right to pass and re-pass.
<b>Roadway</b>	The portion of a road including shoulders for vehicular use.
<b>Scour Checks</b>	The structures to prevent scouring of drains. Simple scour checks may be constructed of wood pegs or stones. All scour checks should have an apron downstream built of stones or grass turves pinned to the ditch invert with wooden pegs.
<b>Shoulder</b>	Paved or unpaved part of the road next to the outer edge of the pavement. The shoulder provides side support for the pavement and allows vehicles to stop or pass in an emergency.
<b>Side Drain</b>	Drain beyond the shoulders, parallel to the centre-line, to take the run-off from the road surface.
<b>Slope</b>	A natural or artificially constructed soil plane at an angle to the horizontal.
<b>Sub-base</b>	The layer of material between the base course and the subgrade.
<b>Subgrade</b>	Upper layer of the soil that supports the pavement
<b>Superelevation</b>	Raising outside edge level of the road above the inner edge level on curves to reduce the effect of centrifugal forces and minimize sliding, skidding, tipping and rolling over of vehicles through curves.
<b>Surface Dressing</b>	A sprayed or hand-applied film of bitumen followed by the application of a layer of stone chippings, which is then rolled.
<b>Surfacing</b>	Top layer of the pavement. Consists of wearing course, and sometimes a base course or binder course.
<b>Tack Coat</b>	Asphalt material to bond lower layer (asphalt material or cement) and upper layer (asphalt mixture). It is sprayed on surface of lower layer.
<b>Traffic Lane</b>	The portion of the carriageway defined by road marking for the movement of a single line of vehicles.
<b>Transverse Joint</b>	Joint at right angles to the road centre-line.
<b>Transverse Joint Taper</b>	Slope or ramp of asphalt mix at the end of a freshly laid asphalt course.
<b>Unit Cost</b>	Total expense to produce a single, measurable unit of work, combining all

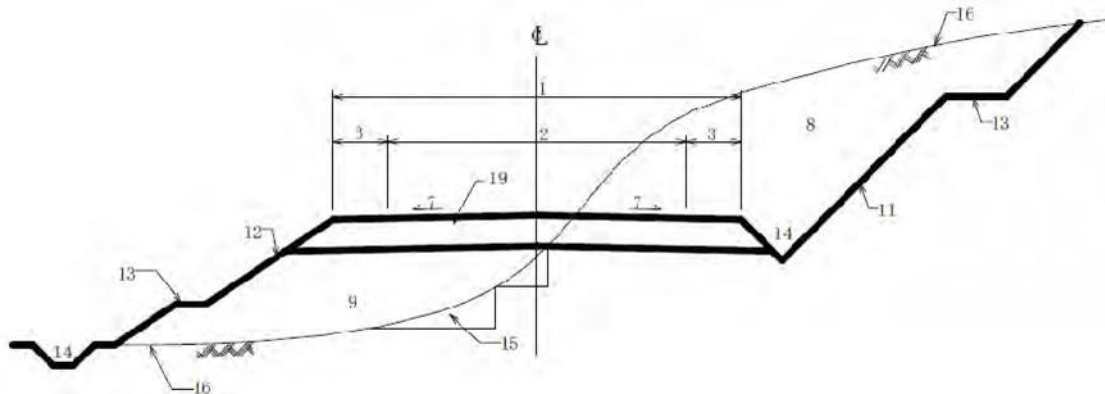
	direct and indirect costs.
<b>Unpaved Road</b>	For the purpose of this manual an unpaved road is a road with a gravel or earth surface.
<b>Wearing Course</b>	The part of the road surface in contact with traffic wheels.
<b>Wing-wall</b>	Retaining wall at a bridge abutment to retain and protect the embankment fill behind the abutment.
<b>Work Category</b>	Grouping of construction activities defined by their shared requirements for materials, equipment, labour, and technological processes
<b>Work Item</b>	A measurable task that serves as the basis for payment.

## Cross Section

The typical cross sections of paved, unpaved and urban roads are as follows:



**Paved Road**



**Unpaved Road**

1. Roadway	2. Carriageway	3. Shoulder	4. Surfacing	5. Base
6. Sub-base	7. Camber (Cross Fall)	8. Cut	9. Embankment	10. Subgrade
11. Cut Slope	12. Embankment Slope	13. Berm	14. Side Ditch	15. Benching
16. Natural Ground Level	17. Centre-line	18. Marking	19. Gravel	20. Footpath
21. Road Reserve	22. Pavement	23. Side Ditch	24. Boundary Stone	

# I. Introduction

The Kenya Vision 2030 is the long-term vision which aspires that Kenya becomes a globally competitive and prosperous country by the year 2030. The plan is anchored on three pillars: The Economic, the Social and the Political. Infrastructure is considered one of the foundations and enablers of macroeconomic stability to support the three main pillars. The 2025 edition of the Cost Estimation Manual (CEM) for Road Maintenance Works builds upon Kenya's commitment to sustainable infrastructure development as outlined in the Kenya Vision 2030 and the ongoing Fourth Medium Term Plan (MTP IV) 2023–2027. As infrastructure continues to serve as a key enabler of economic growth and social transformation, the roads sub-sector plays a central role.

Originally developed in 2011 by the Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works (MoTIHUD&PW) with support from the Japan International Cooperation Agency (JICA), the CEM has undergone several revisions—in 2017, 2019, and most recently in 2022—to align with technological advancements, market trends, and evolving construction practices. The 2025 edition consolidates these updates and introduces refinements to ensure the manual remains responsive to current industry needs, while promoting transparency, efficiency, and value for money in road maintenance investments.

## I.1. Purpose of the Manual

The 2025 CEM is intended to provide a standardized, transparent, and data-driven approach to estimating the cost of road maintenance works in Kenya. By promoting consistency and predictability in cost estimation, the manual helps improve accountability and decision-making in the roads sector. It serves as a practical guide for engineers, contractors, road agencies, and procurement entities by:

1. Defining cost elements and unit rates based on realistic inputs and methodologies.
2. Supporting the preparation of consistent, accurate, and defensible estimates.
3. Facilitating fair competition during procurement through reliable benchmarking.
4. Informing the planning and budgeting of maintenance works at national and county levels.

## I.2. Application of the Manual

The manual is to be used throughout the project cycle, with specific application in the following areas:

1. Preparation of Engineer's Estimates for tendering by procurement entities, serving as a baseline for evaluating bids.
2. Development of annual and medium-term maintenance plans by Road Agencies and County Governments.
3. Project auditing and monitoring using benchmarking costs for ongoing and completed works to assess value for money and compliance.
4. Bidding support for contractors and consultants to prepare competitive bids aligned with sector-wide cost standards.





## 2. Contents of the Manual

### 2.1. Work items and coding

The work items covered in this manual are listed in Appendix I. These represent the common categories of activities frequently encountered in road maintenance works across Kenya. Each work item has been structured to reflect standardised practices and operational realities in the sector.

The coding of work items follows the Road Management System (RMS) and is aligned with the classification in the Standard Specifications for Road and Bridge Construction (1986).

### 2.2. Cost configuration

Road works consist of a combination of individual work items that are aggregated into work packages. The total cost of any work package is structured in the formula shown in Figure 2-1 below which incorporates all direct and indirect cost elements.

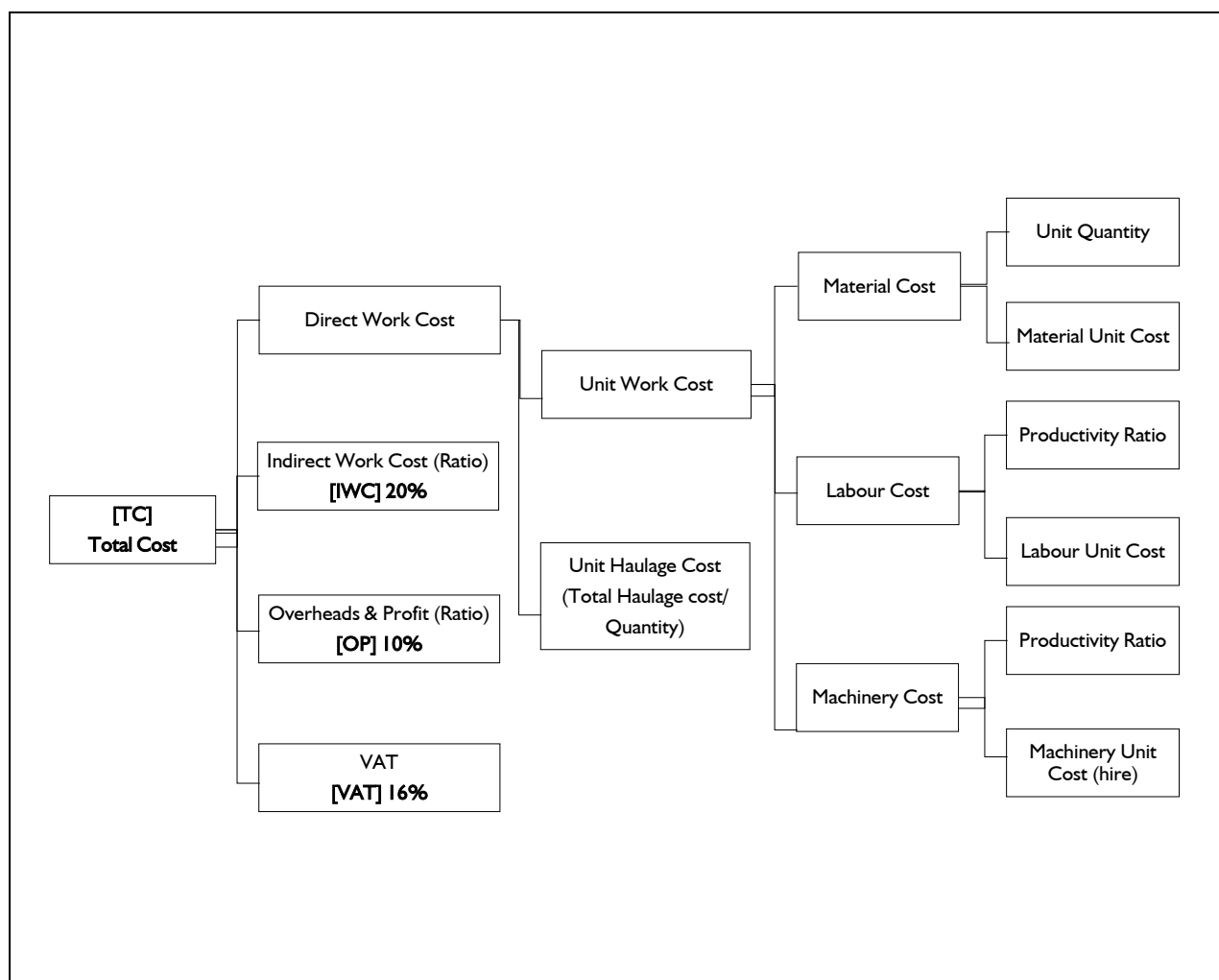


Figure 2-1 Cost configuration

$$TC = \sum (Q \times UP) \times (1 + IWC) \times (1 + OP) \times (1 + VAT)$$

Where:

Q = Quantity of each work item

UP = Unit Price (combination of Unit Work Price and Unit Haulage Price)

IWC = Indirect Work Cost ratio (%)

OP = Overheads and Profit ratio (%)

VAT = Value Added Tax as per prevailing tax laws (%)

Direct Work Costs represent the actual input costs required for the execution of each activity, including materials, labour, and equipment. These are computed as the product of the quantity and the unit cost. Unit Price comprises the Unit Work Price (assuming all resources are on-site) and the Unit Haulage Price, which accounts for transportation.

Indirect Work Costs cover the administration, management, and logistical support required to execute the works and are applied as a percentage of Direct Work Costs.

Overheads and Profits are also expressed as a ratio of Direct Work Costs, while VAT is applied as per prevailing statutory rates.

## 2.3. Input Prices

Input prices for materials, labour, and machinery were determined via a market survey supplemented by official government prices. They are reflective of regional average market conditions. These are regularly reviewed and made publicly accessible. The key sources include:

1. Material Prices: Prices from market surveys supplemented with data from Kenya National Bureau of Statistics.
2. Labour Rates: Prices from market surveys and government regulations on wages
3. Machinery Hire Costs: Prices from market surveys and equipment hire prices issued by the Mechanical and Transport Division (MTD) under the Ministry of Roads and Transport (MoRT)

In this 2025 CEM revision, work unit prices were regionally disaggregated into ten (10) geographical zones to account for cost variations across the country.

Official prices are updated periodically, and ad-hoc adjustments may be made in response to significant market shifts such as inflation spikes, supply disruptions, or policy changes. In cases where official prices are outdated or unavailable, market surveys or comparable benchmarks may be used to derive provisional estimates. These are to be revised as soon as official data becomes available.

All prices and rate components are codified using the RMS coding system to ensure uniformity in cost estimation and project reporting. Details of current unit prices and their respective sources are provided in the appendices.

## Market Survey Locations

For the development of the 2025 Cost Estimation Manual (CEM), survey areas were strategically selected to ensure comprehensive national coverage and representation of diverse geographic, economic, and infrastructural conditions. A total of ten (10) regions were identified jointly by the Consultant and the Kenya Roads Board (KRB) team.

These regions reflect Kenya's key road maintenance zones and were used to capture variations in material availability, labour costs, equipment access, terrain, and climatic conditions.

In total, seventy (70) towns and cities across the ten regions were surveyed. This broad and balanced selection provides a reliable data foundation for deriving regionalised unit rates, ensuring that the manual reflects actual market conditions and supports realistic and equitable budgeting.

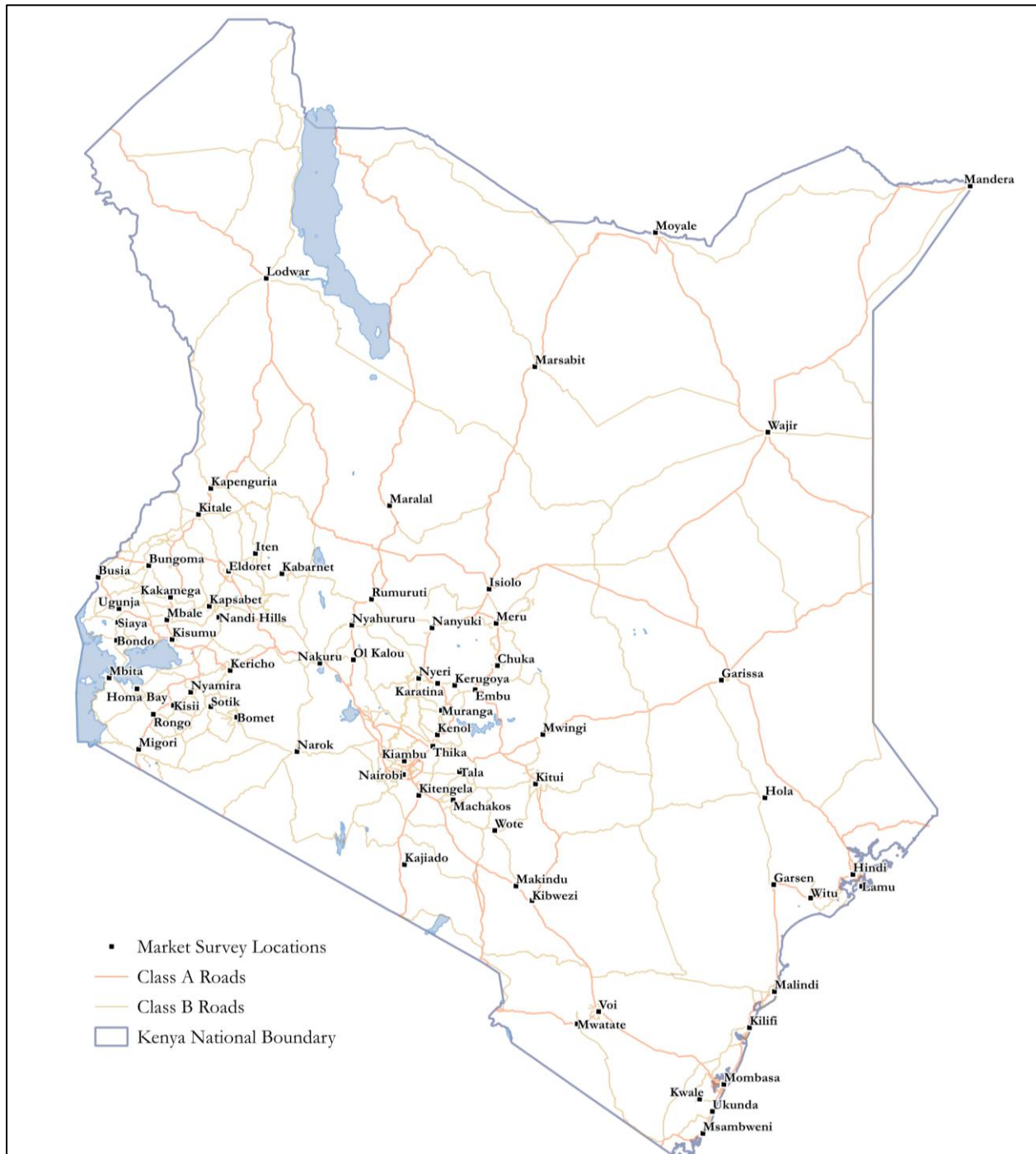


Figure 2-2 Figure 2 2: Market Survey Locations

## Survey Methods

To ensure the reliability and accuracy of the 2025 Cost Estimation Manual (CEM), both primary and secondary data collection methods were employed. The approach was designed to capture prevailing market conditions while incorporating official benchmarks for national consistency.

### Primary Data Collection

In each of the selected cities/towns, information was gathered through visits to: wholesale suppliers, major hardware shops, warehouses, road contractors, items manufacturers etc.

Additionally, online market surveys were carried out using publicly available price lists. These were verified during field visits to ensure consistency with actual market prices.

### Secondary Data Collection

Recognised official sources were used to supplement and validate the field data. These sources provided baseline rates to be used where market data was inconsistent, outdated, or unavailable.

## Unit Price Analysis

### Labour

Contractors were selected based on prior road agency project experience. Labour unit rates were primarily obtained from these contractors. However, where market rates were lower than the government-mandated minimums, the Regulation of Wages (General) (Amendment) Order, 2024 was applied to ensure compliance.

Priority	Survey Data Source	Target Trade
1.	Contractor	Road Construction
2.	Documented Labour Law	Building and Construction

### Material

Suppliers were selected randomly, based on material availability and accessibility. Data collection was conducted through field visits, phone interviews, emails, internet research, and recommendations from contractors and Road Agencies.

The procedure to determine the unit price is as follows:

1. Market survey prices were prioritised.
2. Prices were collected from at least three suppliers and averaged.
3. Outlier prices (too low or too high) were excluded from the average.
4. If the item was unavailable in the current market, the 2022 rate was adjusted and used.

Priority	Source of Data
1.	Market Survey
2.	Kenya National Bureau of Statistics (KNBS)
3.	Road Authorities e.g. KeNHA, KURA, KeRRA

## Equipment

Suppliers of equipment hire services were identified through online research and recommendations from Road Agency regional offices and contractors. Market survey rates were prioritised, but official rates from the Mechanical and Transport Division (MTD) were used where necessary.

Priority	Source of Data
1.	Market Survey
2.	Mechanical and Transport Division (MTD)

## 2.4. Haulage cost

The location of a project site significantly influences the unit cost of work due to transportation expenses. Accordingly, haulage costs must be carefully estimated as they form a key component of the total cost.

In this manual, haulage costs are calculated using a standardized approach as outlined in Table 2-1, which considers the operating costs of transport vehicles (both dry hire and fuel), driver and turn boy wages, distance, and number of trips.

The total haulage cost is divided by the quantity of the material or equipment transported and added to the unit work price, forming the complete unit cost of the work item. Where a verifiable and current haulage quotation is available, it may be used in place of the manual's estimation formula.

*Table 2-1: Estimation of Haulage Price*

Type of Vehicle:	(specify)	
Vehicle price per hour (or dry hire rate) = A		Ksh/hr
Fuel price per hour, $B = C/D * E$		Ksh/hr
Fuel cost per litre = C		Ksh/litre
Fuel consumption rate = D		km/litre
Average speed during transport = E		km/hr
Driver wage per hour, $F = G/8hr$		Ksh/hr
Wage per day = G		Ksh/day
Turn boy wage per hour, $H = I/8hr$		Ksh/hr
Wage per day = I		Ksh/day
Total price per hour of transport, $J = A+B+F+H$		Ksh/hr
Distance of transport (one way) = K		km
Frequency of transport (no. of round trip) = L		times
Distance of transport (by round trip), $M = 2*K$		km
Total Distance of transport, $N = L*M$		km
Total time of Transport, $O = N/E$		hr
Total Haulage Price, $P = J*O$		Ksh

## 2.5. Unit quantity and productivity

To compute accurate cost estimates, unit quantities and productivity rates for materials, labour, and machinery must be clearly defined:

- Unit quantity refers to the amount of material required per unit of work.
- Labour productivity is the amount of labour effort (e.g., person-hours) needed per unit of work.
- Machinery productivity is the operational time (e.g., machine-hours or days) required per unit of work.

The sources used to determine these quantities and productivity benchmarks include:

- The Standard Specifications for Road and Bridge Construction (1986) by the Ministry of Transport and Communications;
- Official standard drawings; and,
- Average rates obtained from site surveys and past engineering experience.

## 2.6. Indirect work costs

Indirect work costs represent expenses that are not directly attributable to specific work items but are essential to project execution. These include:

- Human Resource Management costs (recruitment, welfare, insurance, transport, uniforms);
- Site staff allowances;
- Site-level management and administration (office setup, utilities, communication);
- Implementation of occupational safety and health measures; and,
- Social charges (local taxes, public fees, staff welfare costs).

These costs are incorporated as a ratio of direct work costs in the cost configuration model.

## 2.7. Overheads and Profit

Overheads and profit reflect costs incurred at the organizational level, as well as the contractor's expected return. These include:

- Head office salaries and allowances;
- Corporate administration and support services;
- Company-level social charges (insurance, taxes, and staff welfare);
- Research, development, and innovation;
- Marketing and publicity activities;
- Depreciation of company assets and facilities; and,
- Profit margin (bonuses, shareholder dividends, and retained earnings).

Given the variability and complexity in estimating these figures precisely, a standardised ratio to the total direct work cost is applied to account for these elements in the overall cost estimation.

## 2.8. Revision Highlights

2011	
	<ol style="list-style-type: none"> <li>1. Developed and published using Japanese productivity rates for labour, machinery and materials multiplied by a factor.</li> <li>2. Unit rates used are for only two regions i.e. Nairobi, Mombasa and Kisumu as one region and “all other areas” as the other.</li> <li>3. Unit prices were obtained from the Kenyan market.</li> </ol>
2017	
	<ol style="list-style-type: none"> <li>1. Update of Unit prices for Nairobi, Mombasa and Kisumu and All other areas.</li> <li>2. Update of quantities for the following work items: <ul style="list-style-type: none"> <li>– Gabion Installation; and,</li> <li>– Pothole Repair.</li> </ul> </li> <li>3. Miscellaneous costs are adjusted as follows: <ul style="list-style-type: none"> <li>– 20% for Concrete works, Structural Works and complicated street furniture works reduced to 10%; and,</li> <li>– 10% for Clearing, cleaning, earthwork, base and surfacing works and simple street furniture works reduced to 5%.</li> </ul> </li> </ol>
2019	
	<ol style="list-style-type: none"> <li>1. Update of unit prices for Nairobi, Mombasa and Kisumu.</li> <li>2. Update of unit rate calculation tables for the following: <ul style="list-style-type: none"> <li>– Labour-based works: Ditch cleaning (Manual) and culvert cleaning;</li> <li>– On-carriageway works including pothole repair, headwall repair, re-gravelling and road marking; and,</li> <li>– Cement/ lime mixing.</li> </ul> </li> <li>3. Addition of guardrail repair.</li> <li>4. Indirect costs were reduced from 30% to 20%.</li> </ol>
2022	
	<ol style="list-style-type: none"> <li>1. Update of unit prices collected from eight (8) regions (19 towns and 3 cities) i.e. Nairobi/ Central, Coast, Nyanza/Western, North Rift, South Rift, Upper Eastern, Lower Eastern and North Eastern.</li> <li>2. Update of productivity rates for the following equipment: <ul style="list-style-type: none"> <li>– Water tanker;</li> <li>– Motor grader; and,</li> <li>– Pneumatic roller.</li> </ul> </li> </ol>
2025	
	<ol style="list-style-type: none"> <li>1. Update of unit prices collected from ten (10) regions (5 cities and 65 towns) i.e. Nairobi, Central, Coast, Nyanza, Western, North Rift, South Rift, Upper Eastern, Lower Eastern and North Eastern.</li> </ol>



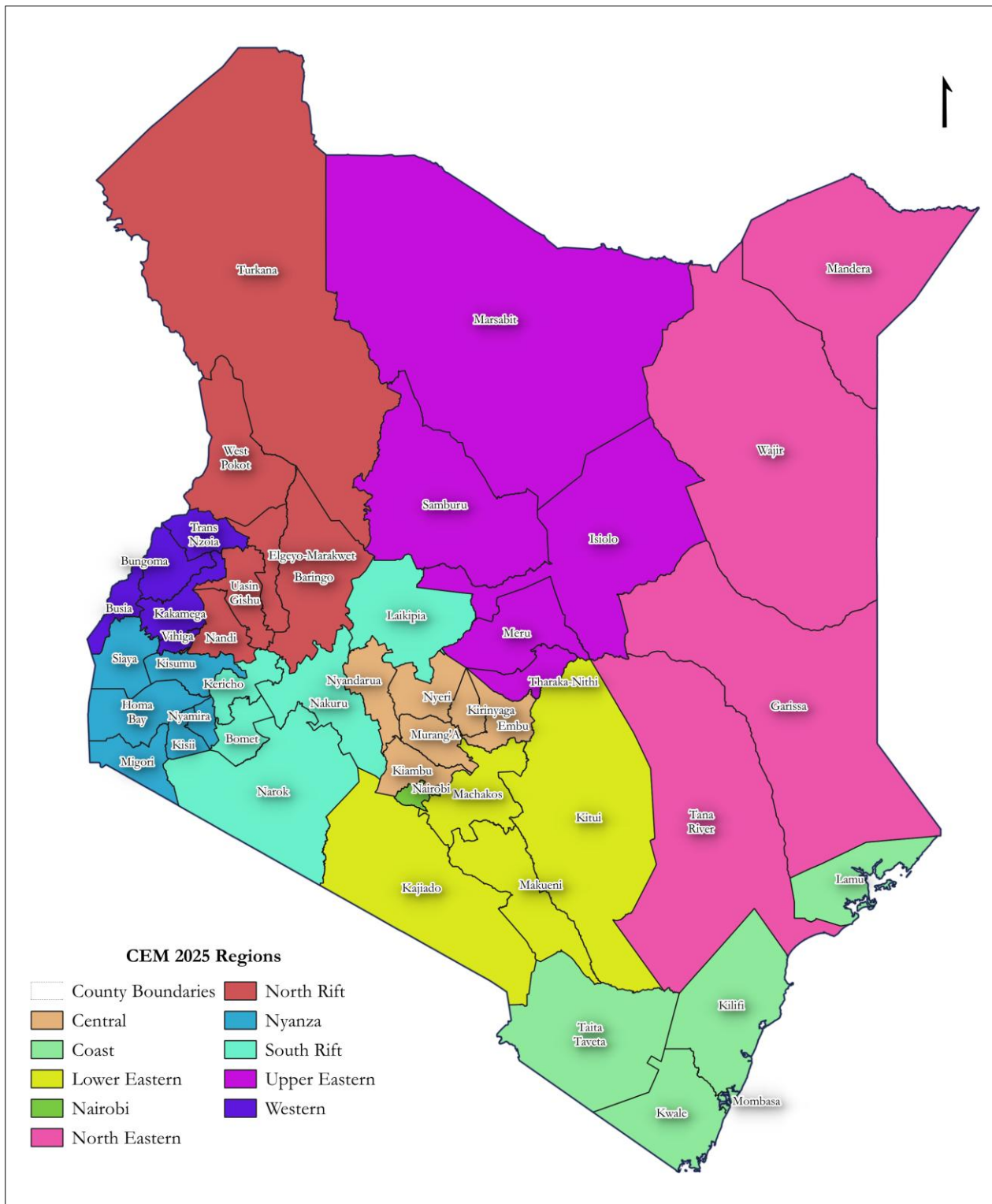


Figure 2-3 CEM 2025 Regions



### **3. List of Unit Rates and Work Descriptions**



## Central Region

### 3.1. Central Region

#### 4. SITE CLEARANCE AND TOPSOIL STRIPPING

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
1	Bush Clearing	04.50.001	Mechanical mowing	Cut grass by machine along the side of the road or on slopes.	m <sup>2</sup>	5	6
2		04.50.002	Grass cutting (manual)	Cut grass manually along the side of the road or on slopes.	m <sup>2</sup>	4	5
3		04.50.003	Heavy bush clearing	Cut, remove and dispose bushes along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	18	23
4		04.50.004	Light bush clearing	Cut grass by hand from shoulders, slopes, inlet ditches, and side ditches including back slopes, turnouts and culvert outlet.	m <sup>2</sup>	10	13
5		04.50.005	Pruning of tree branches	Cut, remove and dispose branches of trees along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	97	128
6		04.50.006	Tree cutting and stump removal (200 -450 mm)	Cut, remove and dispose whole trees of 200 - 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	215	284
7		04.50.007	Tree cutting and stump removal (>450 mm)	Cut, remove and dispose whole trees of above 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	1,118	1,476
8	Site Clearing and Backfill	04.50.008	Clearing obstructions (mechanical)	Mechanically clear any obstruction including boulders and debris out of road reserve.	m <sup>2</sup>	39	51
9		04.50.008a	Clearing obstructions (manual)	Manually clear any obstruction including boulders and debris out of road reserve.	m <sup>3</sup>	263	347

**4. SITE CLEARANCE AND TOPSOIL STRIPPING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
10		04.50.009	Stripping and grubbing (mechanical)	Clear site on road reserve mechanically by stripping and grubbing roots.	m <sup>2</sup>	109	144
11		04.50.009a	Stripping and grubbing (manual)	Clear site on road reserve manually by stripping and grubbing roots.	m <sup>2</sup>	178	235
12		04.60.001	Clearing trees, hedges, bushes, vegetation and deleterious materials (mechanical)	Clear site on road reserve mechanically by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	84	111
13		04.60.001a	Clearing trees, hedges, bushes, vegetation and deleterious materials (manual)	Clear site on road reserve manually by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	80	106
14	Concrete Demolition	04.50.010	Excavate remove & disposal of concrete structures	Demolish reinforced or mass concrete structures and cart to spoil or stockpile for re-use.	m <sup>3</sup>	1,020	1,346
15	Top Soil Stripping	04.80.002	Removal of overburden	Remove topsoil to a maximum depth of 200mm.	m <sup>3</sup>	277	366
16	Pipe Culvert Removal	04.60.005	Removal of cracked small pipe culverts below 600mm	Excavate, remove and dispose cracked pipe culverts below 600mm in diameter.	m	380	502
17		04.60.005a	Removal of cracked large pipe culverts above 600mm	Excavate, remove and dispose cracked pipe culverts above 600mm in diameter.	m	572	755

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
18	Material Filling	05.50.006	Fill in soft material and compact	Provide, place and compact soft patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	508	671
19		05.50.006a	Fill in soft material and compact (soil purchased)	Provide, place and compact soft purchased patching material to surface defects or gravel road.	m <sup>3</sup>	2,243	2,961
20		05.50.007	Fill in hard material and compact	Provide, place and compact hard patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	609	804
21		05.50.007a	Fill in hard material and compact (soil purchased)	Provide, place and compact hard purchased patching material to surface defects or gravel road.	m <sup>3</sup>	2,445	3,227
22	Material Cutting	05.50.008	Cut to spoil in soft	Cut manually soft material to spoil	m <sup>3</sup>	478	631
23		05.50.008a	Cut to spoil in soft (mechanical)	Cut mechanically soft material to spoil	m <sup>3</sup>	230	304
24		05.50.009	Cut to spoil in hard	Cut manually hard material to spoil	m <sup>3</sup>	966	1,275
25		05.50.009a	Cut to spoil in hard (mechanical)	Cut mechanically hard material to spoil	m <sup>3</sup>	461	609
26	Concrete Demolition	05.50.012	Rock fill to swamp	Manually provide and place rock fill to swamp	m <sup>3</sup>	2,795	3,689
27		05.50.125	Rock fill to embankment construction	Manually provide and place rock fill to construct embankment.	m <sup>3</sup>	3,071	4,054
28	Planting	05.50.014	Grassing	Plant grass on the slope and inverts of ditches to reduce scour effects, or on slopes to reduce soil erosion and to improve stability.	m <sup>2</sup>	906	1,196
29	Pipe Culvert Replacement	05.60.012	Compaction of subgrade in cut	Trim and compact.	m <sup>2</sup>	38	50
30		05.60.014	Compaction of subgrade in fill	Compaction of subgrade in fill.	m <sup>3</sup>	3,023	3,990

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
31		05.60.016	Compaction of original ground level	Compact the top 150 mm layer of existing ground below fills and cuts to 95% MDD (AASHTO T99)	m <sup>3</sup>	42	55
31a		05.60.016a	Compaction of the 300 mm below formation level in cutting to 100% MDD (AASHTO T99)	Compaction of the top 300mm below formation level in cuts and fills (subgrade) to 100% MDD	m <sup>3</sup>	1,467	1,936

**7. EXCAVATION AND FILLING FOR STRUCTURE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
32	<b>Material Excavation for Structures</b>	07.50.001	Excavate for structure in soft material (manual)	Excavate manually soft material for structures.	m <sup>3</sup>	478	631
33		07.50.001a	Excavate for structure in soft material (mechanical)	Excavate mechanically soft material for structures.	m <sup>3</sup>	230	304
34		07.50.002	Excavate for structure in hard material (manual)	Excavate manually in hard material for structures.	m <sup>3</sup>	966	1,275
35		07.50.002a	Excavate for structure in hard material (mechanical)	Excavate mechanically in hard material for structures.	m <sup>3</sup>	461	609
36	<b>Gabion</b>	07.70.004	Gabion Installation	Provide and place Macaferri or equivalent gabion boxes (2m * 1m * 1m).	m <sup>2</sup>	398	525
37		07.70.005	Rock fill to Gabions	Provide and place rock fill to gabions.	m <sup>3</sup>	6,107	8,061
38	<b>Stone Pitching</b>	07.70.001	Stone pitching	Provide stone pitching including grouting of ratio 1:4 cement to mortar.	m <sup>2</sup>	2,419	3,193



**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
39	Ditch Cleaning	08.50.002a	Ditch cleaning - mechanical	Mechanically desilt, shape inlets outfalls, side drains to free flow conditions	m	26	34
40		08.50.002	Ditch cleaning - manual	Manually desilt, shape inlets outfalls, side drains to free flow conditions.	m	17	23
41	Culvert Cleaning	08.60.002	Small culvert cleaning-partially blocked-below 450mm	Clean culverts of below 450mm in diameter to free flow conditions	m	426	562
42		08.60.003	Medium culvert cleaning-partially blocked-600mm	Clean culverts of 600mm in diameter to free flow conditions	m	324	428
43		08.60.004	Large culvert cleaning-partially blocked-900 mm and above	Clean culverts of 900mm and above in diameter to free flow conditions	m	223	294
44		08.50.025	Manhole cleaning	Remove all silt and debris and wash out manhole to free flow conditions.	No	723	954
45		08.50.016	Gulley pot cleaning	Clean siltation and debris from gulley pot to good impoundment conditions.	No	144	190
46		08.50.009	Covered (slotted) lined drain cleaning	Remove all silt and debris and wash out covered lined drain to free flow conditions	m	88	116
47		08.50.005a	Ditch/mitre drain excavation in soft (mechanical)	Excavate mechanically for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	261	345
48		08.50.005	Ditch/mitre drain excavation in soft (manual)	Excavate manually for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	280	370
49		08.50.005b	Ditch/mitre drain excavation in hard (mechanical)	Excavate mechanically in hard material for inlet, outfall, mitre and catchwater drains.	m <sup>3</sup>	473	624
50		08.50.005c	Ditch/mitre drain excavation in hard (manual)	Excavate manually in hard material for inlet, outfall, mitre and catchwater drains	m <sup>3</sup>	1,371	1,810
51	Pipe Culvert Installation	08.60.021	Culvert installation-300mm with surround	Provide, lay and joint pipe culvert of 300mm in diameter with surround	m	6,014	7,938

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
52		08.60.020	Culvert installation-300mm without surround	Provide, lay and joint unhounded pipe culvert of 300mm in diameter without surround	m	2,153	2,842
53		08.60.023	Culvert installation-450mm with surround	Provide, lay and joint pipe culvert of 450mm in diameter with surround.	m	8,522	11,249
54		08.60.022	Culvert installation-450mm without surround	Provide, lay and joint pipe culvert of 450mm in diameter without surround.	m	3,012	3,976
55		08.60.025	Culvert installation-600mm with surround	Provide, lay and joint pipe culvert of 600mm in diameter with surround	m	13,229	17,462
56		08.60.024	Culvert installation-600mm without surround	Provide, lay and joint pipe culvert of 600mm in diameter without surround	m	3,794	5,008
57		08.60.027	Culvert installation-900mm with surround	Provide, lay and joint pipe culvert of 900mm in diameter with surround.	m	16,446	21,709
58		08.60.026	Culvert installation-900mm without surround	Provide, lay and joint pipe culvert of 900mm in diameter without surround	m	5,964	7,872
59		08.60.028	Culvert installation-1200mm with surround	Provide, lay and joint pipe culvert of 1200mm in diameter with surround	m	29,282	38,652
60		08.60.029	Culvert installation-1200mm without surround	Provide, lay and joint culvert of 1200mm in diameter without surround	m	12,203	16,108
61		08.60.030	Excavate in soft material for culverts	Excavation manually in soft material for culvert in any size.	m <sup>3</sup>	280	370
62		08.60.031	Excavate in hard material for culverts	Excavation manually in hard material for culvert in any size.	m <sup>3</sup>	1,371	1,810
63	Headwall Construction	08.60.019	Headwall construction for 450mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 450mm pipe culvert to prevent the collapse and the potential	No	22,066	29,127

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
				slippage of the material and pavement above the culvert.			
64		08.60.019a	Headwall construction for 600mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 600mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	25,785	34,037
65		08.60.019b	Headwall construction for 900mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 900mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	33,722	44,513
66		08.60.019c	Headwall construction for 1200mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 1200mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	45,210	59,677
67	Manhole installation	08.50.024	Manhole construction less than 1m	Install new small manhole of less than 1m in depth (900-1200mm in inner diameter)	No	31,051	40,987
68		08.50.024a	Manhole construction more than 1m	Install new large manhole of more than 1m in depth (900-1200mm in inner diameter)	No	51,373	67,812
69	Gulley Pot installation	08.50.015	Gulley pot construction	Provide and place gulley pots including grating (H=900mm) for inlet structures as directed by the Engineer.	No	10,651	14,059
70	Drain Lining	08.50.032	Lay drain lining with concrete	Place concrete lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,191	2,892

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
71		08.50.022a	Laying of dressed stones	Place dressed stone lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	3,265	4,310
72		08.50.022	Laying of side slabs	Place side slab lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,836	3,744
73		08.70.036	Laying of 300mm invert block drain	Provide, lay and joint invert block drain of 300mm in diameter	m	1,466	1,935
74		08.70.037	Laying of 750mm invert block drain	Provide, lay and joint invert block drain of 750mm in width	m	1,683	2,222

**9. PASSAGE OF TRAFFIC**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
75	Traffic Control	09.50.004	Traffic Control	Place warning signs, barriers and cones around the working lane on the carriageway and guide the passage of traffic through the works	Day	1,895	2,501
76		09.50.005	Watchman	Provide watchman for all round surveillance.	No	1,826	2,410
77		09.50.006	Watering	Sprinkle water to control dust for passage of traffic through the works or compaction at earth works	m <sup>2</sup>	12	16

**10. GRADING AND GRAVELLING WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
78	Grading	10.50.001	Heavy grading without watering or compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches without providing watering and compaction	m <sup>2</sup>	6	7
79		10.50.002	Heavy grading with watering and compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches providing watering and compaction	m <sup>2</sup>	9	12
80		10.50.003	Light grading	Trim with motor grader existing carriageway to camber, including slopes and ditches.	m <sup>2</sup>	4	6
81		10.50.004	Reshaping	Restore manually the camber on earth or gravel roads by returning material from road sides and shoulder toward road centre.	m <sup>2</sup>	15	19
82		10.50.005	Dragging	Remove manually loose material from the surface to delay the formation of corrugations	m <sup>2</sup>	15	19
83	Gravelling	10.60.001	Regravelling	Prepare for road formation and provide, place spread, shape and compact with watering gravel of not less than CBR 20%	m <sup>3</sup>	3,179	4,196
84		10.60.001a	Regravelling without watering	Prepare for road formation and provide, place spread, shape and compact without watering gravel of not less than CBR 20%	m <sup>3</sup>	3,166	4,179

**11. PAVED ROADS - SHOULDER MAINTENANCE AND REPAIRS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
86	Shoulder Rebuilding	11.50.002	Shoulder repairing	Prepare surface of existing shoulders, accesses and bus bays, water process and compact	m <sup>2</sup>	3	4
87	Shoulder Gravelling	11.50.003	Shoulder gravelling with natural gravel	Provide, place, spread, shape and compact 150mm of natural gravel of CBR 30% to shoulders, accesses and bus bays	m <sup>3</sup>	3,202	4,227
88		11.50.003a	Shoulder gravelling with quarry waste	Provide, place and compact quarry waste material to shoulders, accesses and bus bays	m <sup>3</sup>	1,893	2,499

**12. NATURAL MATERIAL BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
89	Pavement Removal	12.70.001	Scarify existing pavement to form subbase	Break or scarify mechanically the existing pavement layer, and compact.	m <sup>3</sup>	943	1,245
90	Subbase/Base Rebuilding	12.50.001	Handpacked stone paving	Provide, lay, and compact hand packed stone material including filling of voids with stone dust	m <sup>3</sup>	3,933	5,192
91		12.50.002	Provide, place and compact quarry waste	Provide, spread, shape and compact approved quarry waste of CBR 30% and above for 5cm in thickness.	m <sup>3</sup>	5,242	6,919
92		12.50.003	Provide, place, spread and compact natural gravel	Provide, spread, shape and compact approved natural gravel of CBR 30% and above for 15cm in thickness.	m <sup>3</sup>	3,200	4,224



**13. GRADED CRUSHED STONE BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
93	Graded Crushed Stone	13.50.001	Graded Crushed Stone for subbase	Provide, place and spread approved graded crushed stone for subbase.	m <sup>3</sup>	3,048	4,023
94		13.60.001	Graded Crushed Stone for base	Provide, place and spread approved graded crushed stone for base.	m <sup>3</sup>	3,048	4,023

**14. CEMENT AND LIME TREATED SUBGRADE, SUBBASE AND BASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
95	Cement/Lime Stabilization	14.50.001	Provision of Cement for treatment of material	Provide, spread cement on natural gravel or graded crushed stone	ton	14,807	19,545
96		14.50.002	Provision of Lime for treatment of material	Provide, spread lime on natural gravel or graded crushed stone	ton	28,695	37,877
97		14.50.003	Cement/lime mixing	Mixing in cement/lime into natural gravel or graded crushed stone	m <sup>3</sup>	87	115
98		14.50.004	Curing and protection of treated layers	Cure and protect layers treated with cement or lime stabilizers	m <sup>2</sup>	200	264

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
99	Prime Coat	15.50.002	Prime Coat (MC-30 cutback bitumen)	Prepare surface of carriageway, bus bays and repair areas, provide and spray MC-30 cutback bitumen at a rate of 0.8-1.2 litre/m <sup>2</sup> as prime coat	litre	187	247
100	Tack Coat	15.50.003	Tack Coat (grade bitumen cutback)	Prepare surface of carriageway and bus bays, provide and spray 80/100 penetration grade bitumen cut back using 5-15% kerosene as tack coat for asphalt concrete wearing course at a spray rate of 0.5-0.7 litre/m <sup>2</sup>	litre	184	243
101		15.50.003a	Tack Coat (bitumen emulsion)	Prepare surface of repair areas provide and spray KI-60 bitumen emulsion as tack coat or seal to repair areas at a spray rate of 0.8-1.0 litre/m <sup>2</sup>	litre	157	207
102	Surface Dressing	15.70.001	Resealing	Reseal a bituminous surface dressed or an asphaltic concrete carriageway or shoulder using chippings and bitumen emulsion to improve skid resistance and eliminate the effects of wear, oxidation, ravelling, fretting, stripping and bleeding.	m <sup>2</sup>	152	201
103		15.60.002	Construct surface dressing using 3/6 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 3 to 6mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	102	135
104		15.60.003	Construct surface dressing using 6/10 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 6 to 10mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	165	218

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
105		15.60.004	Construct surface dressing using 10/14 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 10 to 14mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	219	289
106		15.60.005	Construct surface dressing using 14/20 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 14 to 20mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	241	318

**16. BITUMINOUS MIXES**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
107a	<b>Pavement Repairing</b>	16.50.001a	Pothole Cutting and Cleaning	Trim, cut and clean failed bituminous surface	m <sup>3</sup>	2,453	3,238
107		16.50.001	Pothole patching - hot mix	Provide, place and compact asphaltic concrete to repair areas and for regulation to carriageway	m <sup>3</sup>	40,873	53,952
108		16.50.002	Pothole patching - cold mix	Repair defects on bituminous surface by cold bituminous mixture	m <sup>3</sup>	72,871	96,190
109		16.50.004	Crack sealing	Repair transverse or longitudinal cracking on surface dressed or asphalt concrete	m	203	268
110		16.60.001	Asphalt concrete for surfacing - hot mix.	Overlay or continuously repave surface by hot bituminous mixture	m <sup>3</sup>	41,684	55,023
111		16.70.001	Base repair - Dense Bitumen Macadam (DBM)	Place dense bitumen macadam for base material and roll	m <sup>3</sup>	41,740	55,097
112	<b>Milling and Paving</b>	16.80.010	Milling the existing bituminous layer to spoil	Mill mechanically the existing bituminous layer to spoil	m <sup>3</sup>	3,403	4,492
113		16.80.015	Milling the existing bituminous layer for reuse	Mill mechanically the existing bituminous layer and stockpile for reuse or recycle	m <sup>3</sup>	13,386	17,670

**17. CONCRETE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
114	Concrete Work	17.60.001	Concrete work (class 15/20)	Provide, place and compact class 15/20 concrete mixture for blinding.	m <sup>3</sup>	14,385	18,988
115		17.60.002	Concrete work (class 20/20)	Provide, place and compact class 20/20 concrete mixture.	m <sup>3</sup>	15,369	20,287
116		17.60.002a	Concrete work (class 25/20)	Provide, place and compact class 25/20 concrete mixture.	m <sup>3</sup>	16,795	22,169
117	Formwork	17.60.003	Vertical formwork class F2 finish	Provide and erect formwork of class F2 finish to the vertical direction	m <sup>2</sup>	1,259	1,662
118		17.60.004	Horizontal formwork class F2 finish	Provide and erect formwork of class F2 finish to the horizontal direction	m <sup>2</sup>	1,180	1,558
119	Reinforcement	17.80.004	Reinforcement work (below 16mm)	Provide, cut bend and fix into position high yield reinforcement bar below 16mm	ton	140,414	185,346
120		17.80.005	Reinforcement work (above 16mm)	Provide, cut bend and fix into position high yield reinforcement bar above 16mm	ton	143,806	189,824

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
121	Boundary posts	20.50.001	Road reserve boundary posts	Provide and erect road reserve boundary posts (size 1.2 x 0.2 x 0.2)	No	2,704	3,569
122		20.50.004	Edge marker posts	Provide and erect edge marker posts	No	3,718	4,908
123	Road Marking	20.50.007	Roads markings - white paint	Provide reflectorized white paint for road markings (w = 10cm)	m <sup>2</sup>	1,098	1,449
124		20.70.011	Road markings - white thermoplastic material	Renew faded or missing white road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	1,380	1,822
124a		20.70.011a	Road markings on surface dressed pavement- white thermoplastic material	Renew faded or missing white road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	1,527	2,016
125		20.50.006	Road markings - yellow paint	Provide reflectorized yellow paint for road markings (w = 10cm)	m <sup>2</sup>	1,098	1,449
126		20.70.010	Road markings - yellow thermoplastic material	Upgrade faded or missing yellow road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	1,404	1,853
126a		20.70.010a	Road markings on surface dressed pavement- yellow thermoplastic material	Renew faded or missing yellow road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	1,561	2,061
127		20.50.107	Road marking black paint	Provide reflectorized black paint for road markings (w = 10cm)	m <sup>2</sup>	1,087	1,435
128		20.70.002	Warning signs	Provide and erect priority, prohibitory or mandatory signs	No	3,715	4,904
129	Road Sign Erection	20.70.005	Priority, prohibitory or mandatory signs	Priority, prohibitory or mandatory signs	No	18,810	24,829
130		20.70.004	Standard informatory signs	Provide and erect informatory signs	No	23,165	30,578
131		20.70.006	Non-standard informatory signs	Provide and erect non-standard informatoty signs < 2m <sup>2</sup>	No	35,101	46,333

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
131b		20.70.006b	Non-standard informatory signs (2-5m <sup>2</sup> )	Provide and erect non-standard informatoty signs (2-5m <sup>2</sup> )	No	69,604	91,877
131c		20.70.006c	Non-standard informatory signs (5-8m <sup>2</sup> )	Provide and erect non-standard informatoty signs (5-8m <sup>2</sup> )	No	132,203	174,508
132	Kerb Installation	20.50.012	Kerbs	Provide lay and joint concrete class 20/20 kerbs in support to carriageway, bus bays and junctions	m	1,705	2,251
133	Kilometre marker post Installation	20.50.013	Kilometre marker posts	Kilometre marker post Installation.	No	8,475	11,187
134	Bollard Installation	20.50.017	Concrete bollards	Concrete bollard Installation (diameter 0.2m, length 0.9m, embedded depth 0.45m)	No	3,193	4,215
135		20.50.021	Steel bollards	Place and provide gauge 16 steel pipe Bollards of diameter 150 mm and 1.05m above above the ground embedded to a depth of 0.45m at place	No	1,957	2,583
136	Reflective Stud Installation	20.50.019	Reflective studs	Install reflective studs along the centre line	No	1,362	1,798
137	Microtunneling	20.60.002	Microtunneling for a 150mm diameter PVC (polyvinyl chloride) duct	Conduct microtunneling with a 150mm dia PVC duct (under silt or sand condition)	m	64,425	85,041
138		20.60.002a	Horizontal drilling	Conduct horizontal drilling for 150mm hole in diameter (under gravel condtion)	m	31,703	41,848
139	Street light Installation	20.60.017	Street lighting pole (7.6m)	Provide and install 7.6m street lighting pole including cables accessories and lamp.	No	57,140	75,425
140		20.60.018	Street lighting pole (10m)	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	120,339	158,847



**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
141		20.60.016	Street lighting control panel	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	58,284	76,935
142		20.60.315	Electric cable	Provide and install supply cables between the street lighting poles.	m	352	465
143	Guardrail Repair	20.70.023a	Guardrail Repair Level 1	Removal of damaged guardrail and replacement with straightened beam	m	1,240	1,636
144		20.70.023b	Guardrail Repair Level 2	Removal of damaged guardrail, replacement with a straightened beam and realignment of posts	m	2,162	2,854
145		20.70.023c	Guardrail Repair Level 3	Complete removal of damaged guardrail beam and installation with new beam, posts and spacers	m	10,296	13,591

**23. CONCRETE PAVING BLOCKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
146	<b>Concrete Paving Blocks</b>	23.70.001	Interlocking - Heavy duty - plain (Deformed) 60mm	Provide and lay 60mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,325	1,749
147		23.70.002	Interlocking - Heavy duty - plain (Deformed) 80mm	Provide and lay 80mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,623	2,142

**Coast Region**

### 3.2. Coast Region

#### 4. SITE CLEARANCE AND TOPSOIL STRIPPING

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
1	Bush Clearing	04.50.001	Mechanical mowing	Cut grass by machine along the side of the road or on slopes.	m <sup>2</sup>	5	6
2		04.50.002	Grass cutting (manual)	Cut grass manually along the side of the road or on slopes.	m <sup>2</sup>	4	5
3		04.50.003	Heavy bush clearing	Cut, remove and dispose bushes along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	19	25
4		04.50.004	Light bush clearing	Cut grass by hand from shoulders, slopes, inlet ditches, and side ditches including back slopes, turnouts and culvert outlet.	m <sup>2</sup>	11	14
5		04.50.005	Pruning of tree branches	Cut, remove and dispose branches of trees along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	105	139
6		04.50.006	Tree cutting and stump removal (200 -450 mm)	Cut, remove and dispose whole trees of 200 - 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	233	308
7		04.50.007	Tree cutting and stump removal (>450 mm)	Cut, remove and dispose whole trees of above 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	1,287	1,699
8	Site Clearing and Backfill	04.50.008	Clearing obstructions (mechanical)	Mechanically clear any obstruction including boulders and debris out of road reserve.	m <sup>2</sup>	37	49
9		04.50.008a	Clearing obstructions (manual)	Manually clear any obstruction including boulders and debris out of road reserve.	m <sup>3</sup>	274	362

**4. SITE CLEARANCE AND TOPSOIL STRIPPING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
10		04.50.009	Stripping and grubbing (mechanical)	Clear site on road reserve mechanically by stripping and grubbing roots.	m <sup>2</sup>	107	141
11		04.50.009a	Stripping and grubbing (manual)	Clear site on road reserve manually by stripping and grubbing roots.	m <sup>2</sup>	186	246
12		04.60.001	Clearing trees, hedges, bushes, vegetation and deleterious materials (mechanical)	Clear site on road reserve mechanically by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	80	106
13		04.60.001a	Clearing trees, hedges, bushes, vegetation and deleterious materials (manual)	Clear site on road reserve manually by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	89	117
14	Concrete Demolition	04.50.010	Excavate remove & disposal of concrete structures	Demolish reinforced or mass concrete structures and cart to spoil or stockpile for re-use.	m <sup>3</sup>	1,068	1,410
15	Top Soil Stripping	04.80.002	Removal of overburden	Remove topsoil to a maximum depth of 200mm.	m <sup>3</sup>	265	350
16	Pipe Culvert Removal	04.60.005	Removal of cracked small pipe culverts below 600mm	Excavate, remove and dispose cracked pipe culverts below 600mm in diameter.	m	396	523
17		04.60.005a	Removal of cracked large pipe culverts above 600mm	Excavate, remove and dispose cracked pipe culverts above 600mm in diameter.	m	595	785

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
18	Material Filling	05.50.006	Fill in soft material and compact	Provide, place and compact soft patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	556	734
19		05.50.006a	Fill in soft material and compact (soil purchased)	Provide, place and compact soft purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,409	1,860
20		05.50.007	Fill in hard material and compact	Provide, place and compact hard patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	669	883
21		05.50.007a	Fill in hard material and compact (soil purchased)	Provide, place and compact hard purchased patching material to surface defects or gravel road.	m <sup>3</sup>	2,298	3,033
22	Material Cutting	05.50.008	Cut to spoil in soft	Cut manually soft material to spoil	m <sup>3</sup>	562	742
23		05.50.008a	Cut to spoil in soft (mechanical)	Cut mechanically soft material to spoil	m <sup>3</sup>	240	317
24		05.50.009	Cut to spoil in hard	Cut manually hard material to spoil	m <sup>3</sup>	1,050	1,386
25		05.50.009a	Cut to spoil in hard (mechanical)	Cut mechanically hard material to spoil	m <sup>3</sup>	480	634
26	Concrete Demolition	05.50.012	Rock fill to swamp	Manually provide and place rock fill to swamp	m <sup>3</sup>	3,185	4,204
27		05.50.125	Rock fill to embankment construction	Manually provide and place rock fill to construct embankment.	m <sup>3</sup>	3,461	4,569
28	Planting	05.50.014	Grassing	Plant grass on the slope and inverts of ditches to reduce scour effects, or on slopes to reduce soil erosion and to improve stability.	m <sup>2</sup>	650	858
29	Pipe Culvert Replacement	05.60.012	Compaction of subgrade in cut	Trim and compact.	m <sup>2</sup>	39	51
30		05.60.014	Compaction of subgrade in fill	Compaction of subgrade in fill.	m <sup>3</sup>	2,324	3,068

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
31		05.60.016	Compaction of original ground level	Compact the top 150 mm layer of existing ground below fills and cuts to 95% MDD (AASHTO T99)	m <sup>3</sup>	48	63
31a		05.60.016a	Compaction of the 300 mm below formation level in cutting to 100% MDD (AASHTO T99)	Compaction of the top 300mm below formation level in cuts and fills (subgrade) to 100% MDD	m <sup>3</sup>	1,661	2,193

**7. EXCAVATION AND FILLING FOR STRUCTURE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
32	<b>Material Excavation for Structures</b>	07.50.001	Excavate for structure in soft material (manual)	Excavate manually soft material for structures.	m <sup>3</sup>	562	742
33		07.50.001a	Excavate for structure in soft material (mechanical)	Excavate mechanically soft material for structures.	m <sup>3</sup>	240	317
34		07.50.002	Excavate for structure in hard material (manual)	Excavate manually in hard material for structures.	m <sup>3</sup>	1,050	1,386
35		07.50.002a	Excavate for structure in hard material (mechanical)	Excavate mechanically in hard material for structures.	m <sup>3</sup>	480	634
36	<b>Gabion</b>	07.70.004	Gabion Installation	Provide and place Macaferri or equivalent gabion boxes (2m * 1m * 1m).	m <sup>2</sup>	444	586
37		07.70.005	Rock fill to Gabions	Provide and place rock fill to gabions.	m <sup>3</sup>	3,991	5,268
38	<b>Stone Pitching</b>	07.70.001	Stone pitching	Provide stone pitching including grouting of ratio 1:4 cement to mortar.	m <sup>2</sup>	2,077	2,742



**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
39	Ditch Cleaning	08.50.002a	Ditch cleaning - mechanical	Mechanically desilt, shape inlets outfalls, side drains to free flow conditions	m	30	40
40		08.50.002	Ditch cleaning - manual	Manually desilt, shape inlets outfalls, side drains to free flow conditions.	m	19	25
41	Culvert Cleaning	08.60.002	Small culvert cleaning-partially blocked-below 450mm	Clean culverts of below 450mm in diameter to free flow conditions	m	437	577
42		08.60.003	Medium culvert cleaning-partially blocked-600mm	Clean culverts of 600mm in diameter to free flow conditions	m	335	442
43		08.60.004	Large culvert cleaning-partially blocked-900 mm and above	Clean culverts of 900mm and above in diameter to free flow conditions	m	233	308
44		08.50.025	Manhole cleaning	Remove all silt and debris and wash out manhole to free flow conditions.	No	824	1,088
45		08.50.016	Gulley pot cleaning	Clean siltation and debris from gulley pot to good impoundment conditions.	No	157	207
46		08.50.009	Covered (slotted) lined drain cleaning	Remove all silt and debris and wash out covered lined drain to free flow conditions	m	92	121
47		08.50.005a	Ditch/mitre drain excavation in soft (mechanical)	Excavate mechanically for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	305	403
48		08.50.005	Ditch/mitre drain excavation in soft (manual)	Excavate manually for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	322	425
49		08.50.005b	Ditch/mitre drain excavation in hard (mechanical)	Excavate mechanically in hard material for inlet, outfall, mitre and catchwater drains.	m <sup>3</sup>	492	649
50		08.50.005c	Ditch/mitre drain excavation in hard (manual)	Excavate manually in hard material for inlet, outfall, mitre and catchwater drains	m <sup>3</sup>	1,792	2,365
51	Pipe Culvert Installation	08.60.021	Culvert installation-300mm with surround	Provide, lay and joint pipe culvert of 300mm in diameter with surround	m	7,726	10,198

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
52		08.60.020	Culvert installation-300mm without surround	Provide, lay and joint unhoused pipe culvert of 300mm in diameter without surround	m	3,481	4,595
53		08.60.023	Culvert installation-450mm with surround	Provide, lay and joint pipe culvert of 450mm in diameter with surround.	m	10,190	13,451
54		08.60.022	Culvert installation-450mm without surround	Provide, lay and joint pipe culvert of 450mm in diameter without surround.	m	4,100	5,412
55		08.60.025	Culvert installation-600mm with surround	Provide, lay and joint pipe culvert of 600mm in diameter with surround	m	15,642	20,647
56		08.60.024	Culvert installation-600mm without surround	Provide, lay and joint pipe culvert of 600mm in diameter without surround	m	5,114	6,750
57		08.60.027	Culvert installation-900mm with surround	Provide, lay and joint pipe culvert of 900mm in diameter with surround.	m	18,863	24,899
58		08.60.026	Culvert installation-900mm without surround	Provide, lay and joint pipe culvert of 900mm in diameter without surround	m	7,150	9,438
59		08.60.028	Culvert installation-1200mm with surround	Provide, lay and joint pipe culvert of 1200mm in diameter with surround	m	31,633	41,756
60		08.60.029	Culvert installation-1200mm without surround	Provide, lay and joint culvert of 1200mm in diameter without surround	m	12,377	16,338
61		08.60.030	Excavate in soft material for culverts	Excavation manually in soft material for culvert in any size.	m <sup>3</sup>	322	425
62		08.60.031	Excavate in hard material for culverts	Excavation manually in hard material for culvert in any size.	m <sup>3</sup>	1,792	2,365
63	Headwall Construction	08.60.019	Headwall construction for 450mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 450mm pipe culvert to prevent the collapse and the potential	No	23,624	31,184

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
				slippage of the material and pavement above the culvert.			
64		08.60.019a	Headwall construction for 600mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 600mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	27,599	36,431
65		08.60.019b	Headwall construction for 900mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 900mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	36,087	47,635
66		08.60.019c	Headwall construction for 1200mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 1200mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	48,216	63,645
67	Manhole installation	08.50.024	Manhole construction less than 1m	Install new small manhole of less than 1m in depth (900-1200mm in inner diameter)	No	33,889	44,733
68		08.50.024a	Manhole construction more than 1m	Install new large manhole of more than 1m in depth (900-1200mm in inner diameter)	No	55,903	73,792
69	Gulley Pot installation	08.50.015	Gulley pot construction	Provide and place gulley pots including grating (H=900mm) for inlet structures as directed by the Engineer.	No	10,663	14,075
70	Drain Lining	08.50.032	Lay drain lining with concrete	Place concrete lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,354	3,107

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
71		08.50.022a	Laying of dressed stones	Place dressed stone lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,641	3,486
72		08.50.022	Laying of side slabs	Place side slab lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	3,002	3,963
73		08.70.036	Laying of 300mm invert block drain	Provide, lay and joint invert block drain of 300mm in diameter	m	1,645	2,171
74		08.70.037	Laying of 750mm invert block drain	Provide, lay and joint invert block drain of 750mm in width	m	2,130	2,812

**9. PASSAGE OF TRAFFIC**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
75	Traffic Control	09.50.004	Traffic Control	Place warning signs, barriers and cones around the working lane on the carriageway and guide the passage of traffic through the works	Day	2,005	2,647
76		09.50.005	Watchman	Provide watchman for all round surveillance.	No	1,935	2,554
77		09.50.006	Watering	Sprinkle water to control dust for passage of traffic through the works or compaction at earth works	m <sup>2</sup>	14	18

**10. GRADING AND GRAVELLING WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
78	Grading	10.50.001	Heavy grading without watering or compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches without providing watering and compaction	m <sup>2</sup>	6	8
79		10.50.002	Heavy grading with watering and compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches providing watering and compaction	m <sup>2</sup>	11	14
80		10.50.003	Light grading	Trim with motor grader existing carriageway to camber, including slopes and ditches.	m <sup>2</sup>	5	7
81		10.50.004	Reshaping	Restore manually the camber on earth or gravel roads by returning material from road sides and shoulder toward road centre.	m <sup>2</sup>	16	21
82		10.50.005	Dragging	Remove manually loose material from the surface to delay the formation of corrugations	m <sup>2</sup>	16	21
83	Gravelling	10.60.001	Regravelling	Prepare for road formation and provide, place spread, shape and compact with watering gravel of not less than CBR 20%	m <sup>3</sup>	2,506	3,308
84		10.60.001a	Regravelling without watering	Prepare for road formation and provide, place spread, shape and compact without watering gravel of not less than CBR 20%	m <sup>3</sup>	2,490	3,287

**11. PAVED ROADS - SHOULDER MAINTENANCE AND REPAIRS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
85	Shoulder Rebuilding	11.50.001	Shoulder grading		m <sup>2</sup>	3	4
86		11.50.002	Shoulder repairing	Prepare surface of existing shoulders, accesses and bus bays, water process and compact	m <sup>2</sup>	3	4
87	Shoulder Gravelling	11.50.003	Shoulder gravelling with natural gravel	Provide, place, spread, shape and compact 150mm of natural gravel of CBR 30% to shoulders, accesses and bus bays	m <sup>3</sup>	2,529	3,338
88		11.50.003a	Shoulder gravelling with quarry waste	Provide, place and compact quarry waste material to shoulders, accesses and bus bays	m <sup>3</sup>	2,458	3,245

**12. NATURAL MATERIAL BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
89	Pavement Removal	12.70.001	Scarify existing pavement to form subbase	Break or scarify mechanically the existing pavement layer, and compact.	m <sup>3</sup>	1,006	1,328
90	Subbase/Base Rebuilding	12.50.001	Handpacked stone paving	Provide, lay, and compact hand packed stone material including filling of voids with stone dust	m <sup>3</sup>	4,354	5,747
91		12.50.002	Provide, place and compact quarry waste	Provide, spread, shape and compact approved quarry waste of CBR 30% and above for 5cm in thickness.	m <sup>3</sup>	6,066	8,007
92		12.50.003	Provide, place, spread and compact natural gravel	Provide, spread, shape and compact approved natural gravel of CBR 30% and above for 15cm in thickness.	m <sup>3</sup>	2,527	3,336



**13. GRADED CRUSHED STONE BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
93	Graded Crushed Stone	13.50.001	Graded Crushed Stone for subbase	Provide, place and spread approved graded crushed stone for subbase.	m <sup>3</sup>	3,504	4,625
94		13.60.001	Graded Crushed Stone for base	Provide, place and spread approved graded crushed stone for base.	m <sup>3</sup>	3,504	4,625

**14. CEMENT AND LIME TREATED SUBGRADE, SUBBASE AND BASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
95	Cement/Lime Stabilization	14.50.001	Provision of Cement for treatment of material	Provide, spread cement on natural gravel or graded crushed stone	ton	16,987	22,423
96		14.50.002	Provision of Lime for treatment of material	Provide, spread lime on natural gravel or graded crushed stone	ton	26,434	34,893
97		14.50.003	Cement/lime mixing	Mixing in cement/lime into natural gravel or graded crushed stone	m <sup>3</sup>	93	123
98		14.50.004	Curing and protection of treated layers	Cure and protect layers treated with cement or lime stabilizers	m <sup>2</sup>	224	295

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
99	Prime Coat	15.50.002	Prime Coat (MC-30 cutback bitumen)	Prepare surface of carriageway, bus bays and repair areas, provide and spray MC-30 cutback bitumen at a rate of 0.8-1.2 litre/m <sup>2</sup> as prime coat	litre	245	323
100	Tack Coat	15.50.003	Tack Coat (grade bitumen cutback)	Prepare surface of carriageway and bus bays, provide and spray 80/100 penetration grade bitumen cut back using 5-15% kerosene as tack coat for asphalt concrete wearing course at a spray rate of 0.5-0.7 litre/m <sup>2</sup>	litre	188	248
101		15.50.003a	Tack Coat (bitumen emulsion)	Prepare surface of repair areas provide and spray KI-60 bitumen emulsion as tack coat or seal to repair areas at a spray rate of 0.8-1.0 litre/m <sup>2</sup>	litre	155	205
102	Surface Dressing	15.70.001	Resealing	Reseal a bituminous surface dressed or an asphaltic concrete carriageway or shoulder using chippings and bitumen emulsion to improve skid resistance and eliminate the effects of wear, oxidation, ravelling, fretting, stripping and bleeding.	m <sup>2</sup>	149	197
103		15.60.002	Construct surface dressing using 3/6 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 3 to 6mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	99	131
104		15.60.003	Construct surface dressing using 6/10 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 6 to 10mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	163	215

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
105		15.60.004	Construct surface dressing using 10/14 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 10 to 14mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	211	279
106		15.60.005	Construct surface dressing using 14/20 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 14 to 20mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	224	296

**16. BITUMINOUS MIXES**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
107a	<b>Pavement Repairing</b>	16.50.001a	Pothole Cutting and Cleaning	Trim, cut and clean failed bituminous surface	m <sup>3</sup>	2,048	2,703
107		16.50.001	Pothole patching - hot mix	Provide, place and compact asphaltic concrete to repair areas and for regulation to carriageway	m <sup>3</sup>	32,488	42,884
108		16.50.002	Pothole patching - cold mix	Repair defects on bituminous surface by cold bituminous mixture	m <sup>3</sup>	63,356	83,630
109		16.50.004	Crack sealing	Repair transverse or longitudinal cracking on surface dressed or asphalt concrete	m	202	267
110		16.60.001	Asphalt concrete for surfacing - hot mix.	Overlay or continuously repave surface by hot bituminous mixture	m <sup>3</sup>	34,455	45,481
111		16.70.001	Base repair - Dense Bitumen Macadam (DBM)	Place dense bitumen macadam for base material and roll	m <sup>3</sup>	36,897	48,704
112	<b>Milling and Paving</b>	16.80.010	Milling the existing bituminous layer to spoil	Mill mechanically the existing bituminous layer to spoil	m <sup>3</sup>	3,551	4,687
113		16.80.015	Milling the existing bituminous layer for reuse	Mill mechanically the existing bituminous layer and stockpile for reuse or recycle	m <sup>3</sup>	14,724	19,436

**17. CONCRETE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
114	Concrete Work	17.60.001	Concrete work (class 15/20)	Provide, place and compact class 15/20 concrete mixture for blinding.	m <sup>3</sup>	16,488	21,764
115		17.60.002	Concrete work (class 20/20)	Provide, place and compact class 20/20 concrete mixture.	m <sup>3</sup>	17,415	22,988
116		17.60.002a	Concrete work (class 25/20)	Provide, place and compact class 25/20 concrete mixture.	m <sup>3</sup>	18,846	24,877
117	Formwork	17.60.003	Vertical formwork class F2 finish	Provide and erect formwork of class F2 finish to the vertical direction	m <sup>2</sup>	1,289	1,701
118		17.60.004	Horizontal formwork class F2 finish	Provide and erect formwork of class F2 finish to the horizontal direction	m <sup>2</sup>	1,202	1,587
119	Reinforcement	17.80.004	Reinforcement work (below 16mm)	Provide, cut bend and fix into position high yield reinforcement bar below 16mm	ton	144,642	190,927
120		17.80.005	Reinforcement work (above 16mm)	Provide, cut bend and fix into position high yield reinforcement bar above 16mm	ton	142,760	188,443

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
121	Boundary posts	20.50.001	Road reserve boundary posts	Provide and erect road reserve boundary posts (size 1.2 x 0.2 x 0.2)	No	2,954	3,899
122		20.50.004	Edge marker posts	Provide and erect edge marker posts	No	5,825	7,689
123	Road Marking	20.50.007	Roads markings - white paint	Provide reflectorized white paint for road markings (w = 10cm)	m <sup>2</sup>	1,371	1,810
124		20.70.011	Road markings - white thermoplastic material	Renew faded or missing white road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,054	4,031
124a		20.70.011a	Road markings on surface dressed pavement- white thermoplastic material	Renew faded or missing white road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,356	4,430
125		20.50.006	Road markings - yellow paint	Provide reflectorized yellow paint for road markings (w = 10cm)	m <sup>2</sup>	1,371	1,810
126		20.70.010	Road markings - yellow thermoplastic material	Upgrade faded or missing yellow road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,246	4,285
126a		20.70.010a	Road markings on surface dressed pavement- yellow thermoplastic material	Renew faded or missing yellow road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,573	4,716
127		20.50.107	Road marking black paint	Provide reflectorized black paint for road markings (w = 10cm)	m <sup>2</sup>	1,221	1,612
128	Road Sign Erection	20.70.002	Warning signs	Provide and erect priority, prohibitory or mandatory signs	No	19,112	25,228
129		20.70.005	Priority, prohibitory or mandatory signs	Priority, prohibitory or mandatory signs	No	19,153	25,282
130		20.70.004	Standard informatory signs	Provide and erect informatory signs	No	23,508	31,031
131		20.70.006	Non-standard informatory signs	Provide and erect non-standard informatoty signs < 2m <sup>2</sup>	No	35,569	46,951

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
131b		20.70.006b	Non-standard informatory signs (2-5m <sup>2</sup> )	Provide and erect non-standard informatoty signs (2-5m <sup>2</sup> )	No	70,541	93,114
131c		20.70.006c	Non-standard informatory signs (5-8m <sup>2</sup> )	Provide and erect non-standard informatoty signs (5-8m <sup>2</sup> )	No	133,139	175,743
132	Kerb Installation	20.50.012	Kerbs	Provide lay and joint concrete class 20/20 kerbs in support to carriageway, bus bays and junctions	m	1,852	2,445
133	Kilometre marker post Installation	20.50.013	Kilometre marker posts	Kilometre marker post Installation.	No	9,132	12,054
134	Bollard Installation	20.50.017	Concrete bollards	Concrete bollard Installation (diameter 0.2m, length 0.9m, embedded depth 0.45m)	No	3,476	4,588
135		20.50.021	Steel bollards	Place and provide gauge 16 steel pipe Bollards of diameter 150 mm and 1.05m above above the ground embedded to a depth of 0.45m at place	No	2,084	2,751
136	Reflective Stud Installation	20.50.019	Reflective studs	Install reflective studs along the centre line	No	1,146	1,513
137	Microtunneling	20.60.002	Microtunneling for a 150mm diameter PVC (polyvinyl chloride) duct	Conduct microtunneling with a 150mm dia PVC duct (under silt or sand condition)	m	69,759	92,082
138		20.60.002a	Horizontal drilling	Conduct horizontal drilling for 150mm hole in diameter (under gravel condtion)	m	43,927	57,984
139	Street light Installation	20.60.017	Street lighting pole (7.6m)	Provide and install 7.6m street lighting pole including cables accessories and lamp.	No	80,017	105,622
140		20.60.018	Street lighting pole (10m)	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	68,513	90,437



**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
141		20.60.016	Street lighting control panel	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	86,675	114,411
142		20.60.315	Electric cable	Provide and install supply cables between the street lighting poles.	m	1,718	2,268
143	Guardrail Repair	20.70.023a	Guardrail Repair Level 1	Removal of damaged guardrail and replacement with straightened beam	m	1,495	1,973
144		20.70.023b	Guardrail Repair Level 2	Removal of damaged guardrail, replacement with a straightened beam and realignment of posts	m	2,303	3,040
145		20.70.023c	Guardrail Repair Level 3	Complete removal of damaged guardrail beam and installation with new beam, posts and spacers	m	10,287	13,578

**23. CONCRETE PAVING BLOCKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
146	<b>Concrete Paving Blocks</b>	23.70.001	Interlocking - Heavy duty - plain (Deformed) 60mm	Provide and lay 60mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,422	1,877
147		23.70.002	Interlocking - Heavy duty - plain (Deformed) 80mm	Provide and lay 80mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,566	2,067

## Lower Eastern Region

### 3.3. Lower Eastern Region

#### 4. SITE CLEARANCE AND TOPSOIL STRIPPING

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
1	Bush Clearing	04.50.001	Mechanical mowing	Cut grass by machine along the side of the road or on slopes.	m <sup>2</sup>	5	6
2		04.50.002	Grass cutting (manual)	Cut grass manually along the side of the road or on slopes.	m <sup>2</sup>	4	5
3		04.50.003	Heavy bush clearing	Cut, remove and dispose bushes along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	19	24
4		04.50.004	Light bush clearing	Cut grass by hand from shoulders, slopes, inlet ditches, and side ditches including back slopes, turnouts and culvert outlet.	m <sup>2</sup>	10	14
5		04.50.005	Pruning of tree branches	Cut, remove and dispose branches of trees along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	104	137
6		04.50.006	Tree cutting and stump removal (200 -450 mm)	Cut, remove and dispose whole trees of 200 - 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	231	305
7		04.50.007	Tree cutting and stump removal (>450 mm)	Cut, remove and dispose whole trees of above 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	1,260	1,663
8	Site Clearing and Backfill	04.50.008	Clearing obstructions (mechanical)	Mechanically clear any obstruction including boulders and debris out of road reserve.	m <sup>2</sup>	38	50
9		04.50.008a	Clearing obstructions (manual)	Manually clear any obstruction including boulders and debris out of road reserve.	m <sup>3</sup>	272	359

**4. SITE CLEARANCE AND TOPSOIL STRIPPING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
10		04.50.009	Stripping and grubbing (mechanical)	Clear site on road reserve mechanically by stripping and grubbing roots.	m <sup>2</sup>	108	143
11		04.50.009a	Stripping and grubbing (manual)	Clear site on road reserve manually by stripping and grubbing roots.	m <sup>2</sup>	185	244
12		04.60.001	Clearing trees, hedges, bushes, vegetation and deleterious materials (mechanical)	Clear site on road reserve mechanically by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	83	110
13		04.60.001a	Clearing trees, hedges, bushes, vegetation and deleterious materials (manual)	Clear site on road reserve manually by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	87	115
14	Concrete Demolition	04.50.010	Excavate remove & disposal of concrete structures	Demolish reinforced or mass concrete structures and cart to spoil or stockpile for re-use.	m <sup>3</sup>	1,025	1,353
15	Top Soil Stripping	04.80.002	Removal of overburden	Remove topsoil to a maximum depth of 200mm.	m <sup>3</sup>	274	362
16	Pipe Culvert Removal	04.60.005	Removal of cracked small pipe culverts below 600mm	Excavate, remove and dispose cracked pipe culverts below 600mm in diameter.	m	383	506
17		04.60.005a	Removal of cracked large pipe culverts above 600mm	Excavate, remove and dispose cracked pipe culverts above 600mm in diameter.	m	575	759

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
18	Material Filling	05.50.006	Fill in soft material and compact	Provide, place and compact soft patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	555	733
19		05.50.006a	Fill in soft material and compact (soil purchased)	Provide, place and compact soft purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,183	1,562
20		05.50.007	Fill in hard material and compact	Provide, place and compact hard patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	664	876
21		05.50.007a	Fill in hard material and compact (soil purchased)	Provide, place and compact hard purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,890	2,495
22	Material Cutting	05.50.008	Cut to spoil in soft	Cut manually soft material to spoil	m <sup>3</sup>	549	725
23		05.50.008a	Cut to spoil in soft (mechanical)	Cut mechanically soft material to spoil	m <sup>3</sup>	232	306
24		05.50.009	Cut to spoil in hard	Cut manually hard material to spoil	m <sup>3</sup>	1,037	1,369
25		05.50.009a	Cut to spoil in hard (mechanical)	Cut mechanically hard material to spoil	m <sup>3</sup>	464	612
26	Concrete Demolition	05.50.012	Rock fill to swamp	Manually provide and place rock fill to swamp	m <sup>3</sup>	3,246	4,285
27		05.50.125	Rock fill to embankment construction	Manually provide and place rock fill to construct embankment.	m <sup>3</sup>	3,522	4,649
28	Planting	05.50.014	Grassing	Plant grass on the slope and inverts of ditches to reduce scour effects, or on slopes to reduce soil erosion and to improve stability.	m <sup>2</sup>	946	1,249
29	Pipe Culvert Replacement	05.60.012	Compaction of subgrade in cut	Trim and compact.	m <sup>2</sup>	39	51
30		05.60.014	Compaction of subgrade in fill	Compaction of subgrade in fill.	m <sup>3</sup>	2,327	3,072

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
31		05.60.016	Compaction of original ground level	Compact the top 150 mm layer of existing ground below fills and cuts to 95% MDD (AASHTO T99)	m <sup>3</sup>	50	66
31a		05.60.016a	Compaction of the 300 mm below formation level in cutting to 100% MDD (AASHTO T99)	Compaction of the top 300mm below formation level in cuts and fills (subgrade) to 100% MDD	m <sup>3</sup>	1,706	2,252

**7. EXCAVATION AND FILLING FOR STRUCTURE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
32	<b>Material Excavation for Structures</b>	07.50.001	Excavate for structure in soft material (manual)	Excavate manually soft material for structures.	m <sup>3</sup>	549	725
33		07.50.001a	Excavate for structure in soft material (mechanical)	Excavate mechanically soft material for structures.	m <sup>3</sup>	232	306
34		07.50.002	Excavate for structure in hard material (manual)	Excavate manually in hard material for structures.	m <sup>3</sup>	1,037	1,369
35		07.50.002a	Excavate for structure in hard material (mechanical)	Excavate mechanically in hard material for structures.	m <sup>3</sup>	464	612
36	<b>Gabion</b>	07.70.004	Gabion Installation	Provide and place Macaferri or equivalent gabion boxes (2m * 1m * 1m).	m <sup>2</sup>	480	634
37		07.70.005	Rock fill to Gabions	Provide and place rock fill to gabions.	m <sup>3</sup>	2,893	3,819
38	<b>Stone Pitching</b>	07.70.001	Stone pitching	Provide stone pitching including grouting of ratio 1:4 cement to mortar.	m <sup>2</sup>	1,814	2,394



**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
39	Ditch Cleaning	08.50.002a	Ditch cleaning - mechanical	Mechanically desilt, shape inlets outfalls, side drains to free flow conditions	m	32	42
40		08.50.002	Ditch cleaning - manual	Manually desilt, shape inlets outfalls, side drains to free flow conditions.	m	19	24
41	Culvert Cleaning	08.60.002	Small culvert cleaning-partially blocked-below 450mm	Clean culverts of below 450mm in diameter to free flow conditions	m	435	574
42		08.60.003	Medium culvert cleaning-partially blocked-600mm	Clean culverts of 600mm in diameter to free flow conditions	m	333	440
43		08.60.004	Large culvert cleaning-partially blocked-900 mm and above	Clean culverts of 900mm and above in diameter to free flow conditions	m	231	305
44		08.50.025	Manhole cleaning	Remove all silt and debris and wash out manhole to free flow conditions.	No	808	1,067
45		08.50.016	Gulley pot cleaning	Clean siltation and debris from gulley pot to good impoundment conditions.	No	155	205
46		08.50.009	Covered (slotted) lined drain cleaning	Remove all silt and debris and wash out covered lined drain to free flow conditions	m	92	121
47		08.50.005a	Ditch/mitre drain excavation in soft (mechanical)	Excavate mechanically for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	285	376
48		08.50.005	Ditch/mitre drain excavation in soft (manual)	Excavate manually for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	315	416
49		08.50.005b	Ditch/mitre drain excavation in hard (mechanical)	Excavate mechanically in hard material for inlet, outfall, mitre and catchwater drains.	m <sup>3</sup>	476	628
50		08.50.005c	Ditch/mitre drain excavation in hard (manual)	Excavate manually in hard material for inlet, outfall, mitre and catchwater drains	m <sup>3</sup>	1,726	2,278
51	Pipe Culvert Installation	08.60.021	Culvert installation-300mm with surround	Provide, lay and joint pipe culvert of 300mm in diameter with surround	m	6,404	8,453

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
52		08.60.020	Culvert installation-300mm without surround	Provide, lay and joint unhounded pipe culvert of 300mm in diameter without surround	m	2,694	3,556
53		08.60.023	Culvert installation-450mm with surround	Provide, lay and joint pipe culvert of 450mm in diameter with surround.	m	9,081	11,987
54		08.60.022	Culvert installation-450mm without surround	Provide, lay and joint pipe culvert of 450mm in diameter without surround.	m	3,808	5,027
55		08.60.025	Culvert installation-600mm with surround	Provide, lay and joint pipe culvert of 600mm in diameter with surround	m	13,082	17,268
56		08.60.024	Culvert installation-600mm without surround	Provide, lay and joint pipe culvert of 600mm in diameter without surround	m	4,117	5,434
57		08.60.027	Culvert installation-900mm with surround	Provide, lay and joint pipe culvert of 900mm in diameter with surround.	m	14,904	19,673
58		08.60.026	Culvert installation-900mm without surround	Provide, lay and joint pipe culvert of 900mm in diameter without surround	m	5,719	7,549
59		08.60.028	Culvert installation-1200mm with surround	Provide, lay and joint pipe culvert of 1200mm in diameter with surround	m	25,215	33,284
60		08.60.029	Culvert installation-1200mm without surround	Provide, lay and joint culvert of 1200mm in diameter without surround	m	10,356	13,670
61		08.60.030	Excavate in soft material for culverts	Excavation manually in soft material for culvert in any size.	m <sup>3</sup>	315	416
62		08.60.031	Excavate in hard material for culverts	Excavation manually in hard material for culvert in any size.	m <sup>3</sup>	1,726	2,278
63	Headwall Construction	08.60.019	Headwall construction for 450mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 450mm pipe culvert to prevent the collapse and the potential	No	20,916	27,609

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
				slippage of the material and pavement above the culvert.			
64		08.60.019a	Headwall construction for 600mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 600mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	24,470	32,301
65		08.60.019b	Headwall construction for 900mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 900mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	32,044	42,298
66		08.60.019c	Headwall construction for 1200mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 1200mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	43,190	57,011
67	Manhole installation	08.50.024	Manhole construction less than 1m	Install new small manhole of less than 1m in depth (900-1200mm in inner diameter)	No	31,934	42,153
68		08.50.024a	Manhole construction more than 1m	Install new large manhole of more than 1m in depth (900-1200mm in inner diameter)	No	52,000	68,640
69	Gulley Pot installation	08.50.015	Gulley pot construction	Provide and place gulley pots including grating (H=900mm) for inlet structures as directed by the Engineer.	No	10,669	14,083
70	Drain Lining	08.50.032	Lay drain lining with concrete	Place concrete lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,096	2,767

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
71		08.50.022a	Laying of dressed stones	Place dressed stone lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,247	2,966
72		08.50.022	Laying of side slabs	Place side slab lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	3,255	4,297
73		08.70.036	Laying of 300mm invert block drain	Provide, lay and joint invert block drain of 300mm in diameter	m	1,598	2,109
74		08.70.037	Laying of 750mm invert block drain	Provide, lay and joint invert block drain of 750mm in width	m	2,475	3,267

**9. PASSAGE OF TRAFFIC**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
75	Traffic Control	09.50.004	Traffic Control	Place warning signs, barriers and cones around the working lane on the carriageway and guide the passage of traffic through the works	Day	1,987	2,623
76		09.50.005	Watchman	Provide watchman for all round surveillance.	No	1,918	2,532
77		09.50.006	Watering	Sprinkle water to control dust for passage of traffic through the works or compaction at earth works	m <sup>2</sup>	15	20

**10. GRADING AND GRAVELLING WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
78	Grading	10.50.001	Heavy grading without watering or compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches without providing watering and compaction	m <sup>2</sup>	6	8
79		10.50.002	Heavy grading with watering and compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches providing watering and compaction	m <sup>2</sup>	11	14
80		10.50.003	Light grading	Trim with motor grader existing carriageway to camber, including slopes and ditches.	m <sup>2</sup>	5	6
81		10.50.004	Reshaping	Restore manually the camber on earth or gravel roads by returning material from road sides and shoulder toward road centre.	m <sup>2</sup>	16	21
82		10.50.005	Dragging	Remove manually loose material from the surface to delay the formation of corrugations	m <sup>2</sup>	16	21
83	Gravelling	10.60.001	Regravelling	Prepare for road formation and provide, place spread, shape and compact with watering gravel of not less than CBR 20%	m <sup>3</sup>	2,507	3,309
84		10.60.001a	Regravelling without watering	Prepare for road formation and provide, place spread, shape and compact without watering gravel of not less than CBR 20%	m <sup>3</sup>	2,489	3,285

**11. PAVED ROADS - SHOULDER MAINTENANCE AND REPAIRS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
86	Shoulder Rebuilding	11.50.002	Shoulder repairing	Prepare surface of existing shoulders, accesses and bus bays, water process and compact	m <sup>2</sup>	3	4
87	Shoulder Gravelling	11.50.003	Shoulder gravelling with natural gravel	Provide, place, spread, shape and compact 150mm of natural gravel of CBR 30% to shoulders, accesses and bus bays	m <sup>3</sup>	2,538	3,350
88		11.50.003a	Shoulder gravelling with quarry waste	Provide, place and compact quarry waste material to shoulders, accesses and bus bays	m <sup>3</sup>	2,235	2,950

**12. NATURAL MATERIAL BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
89	Pavement Removal	12.70.001	Scarify existing pavement to form subbase	Break or scarify mechanically the existing pavement layer, and compact.	m <sup>3</sup>	976	1,288
90	Subbase/Base Rebuilding	12.50.001	Handpacked stone paving	Provide, lay, and compact hand packed stone material including filling of voids with stone dust	m <sup>3</sup>	4,514	5,958
91		12.50.002	Provide, place and compact quarry waste	Provide, spread, shape and compact approved quarry waste of CBR 30% and above for 5cm in thickness.	m <sup>3</sup>	5,737	7,573
92		12.50.003	Provide, place, spread and compact natural gravel	Provide, spread, shape and compact approved natural gravel of CBR 30% and above for 15cm in thickness.	m <sup>3</sup>	2,535	3,346



**13. GRADED CRUSHED STONE BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
93	Graded Crushed Stone	13.50.001	Graded Crushed Stone for subbase	Provide, place and spread approved graded crushed stone for subbase.	m <sup>3</sup>	2,590	3,419
94		13.60.001	Graded Crushed Stone for base	Provide, place and spread approved graded crushed stone for base.	m <sup>3</sup>	2,590	3,419

**14. CEMENT AND LIME TREATED SUBGRADE, SUBBASE AND BASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
95	Cement/Lime Stabilization	14.50.001	Provision of Cement for treatment of material	Provide, spread cement on natural gravel or graded crushed stone	ton	15,478	20,431
96		14.50.002	Provision of Lime for treatment of material	Provide, spread lime on natural gravel or graded crushed stone	ton	29,473	38,904
97		14.50.003	Cement/lime mixing	Mixing in cement/lime into natural gravel or graded crushed stone	m <sup>3</sup>	93	123
98		14.50.004	Curing and protection of treated layers	Cure and protect layers treated with cement or lime stabilizers	m <sup>2</sup>	275	364

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
99	Prime Coat	15.50.002	Prime Coat (MC-30 cutback bitumen)	Prepare surface of carriageway, bus bays and repair areas, provide and spray MC-30 cutback bitumen at a rate of 0.8-1.2 litre/m <sup>2</sup> as prime coat	litre	188	248
100	Tack Coat	15.50.003	Tack Coat (grade bitumen cutback)	Prepare surface of carriageway and bus bays, provide and spray 80/100 penetration grade bitumen cut back using 5-15% kerosene as tack coat for asphalt concrete wearing course at a spray rate of 0.5-0.7 litre/m <sup>2</sup>	litre	187	247
101		15.50.003a	Tack Coat (bitumen emulsion)	Prepare surface of repair areas provide and spray KI-60 bitumen emulsion as tack coat or seal to repair areas at a spray rate of 0.8-1.0 litre/m <sup>2</sup>	litre	158	209
102	Surface Dressing	15.70.001	Resealing	Reseal a bituminous surface dressed or an asphaltic concrete carriageway or shoulder using chippings and bitumen emulsion to improve skid resistance and eliminate the effects of wear, oxidation, ravelling, fretting, stripping and bleeding.	m <sup>2</sup>	243	321
103		15.60.002	Construct surface dressing using 3/6 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 3 to 6mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	155	205
104		15.60.003	Construct surface dressing using 6/10 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 6 to 10mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	256	338

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
105		15.60.004	Construct surface dressing using 10/14 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 10 to 14mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	335	442
106		15.60.005	Construct surface dressing using 14/20 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 14 to 20mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	364	480

**16. BITUMINOUS MIXES**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
107a	<b>Pavement Repairing</b>	16.50.001a	Pothole Cutting and Cleaning	Trim, cut and clean failed bituminous surface	m <sup>3</sup>	2,598	3,429
107		16.50.001	Pothole patching - hot mix	Provide, place and compact asphaltic concrete to repair areas and for regulation to carriageway	m <sup>3</sup>	31,008	40,931
108		16.50.002	Pothole patching - cold mix	Repair defects on bituminous surface by cold bituminous mixture	m <sup>3</sup>	55,218	72,888
109		16.50.004	Crack sealing	Repair transverse or longitudinal cracking on surface dressed or asphalt concrete	m	216	285
110		16.60.001	Asphalt concrete for surfacing - hot mix.	Overlay or continuously repave surface by hot bituminous mixture	m <sup>3</sup>	31,878	42,079
111		16.70.001	Base repair - Dense Bitumen Macadam (DBM)	Place dense bitumen macadam for base material and roll	m <sup>3</sup>	31,920	42,134
112	<b>Milling and Paving</b>	16.80.010	Milling the existing bituminous layer to spoil	Mill mechanically the existing bituminous layer to spoil	m <sup>3</sup>	3,336	4,404
113		16.80.015	Milling the existing bituminous layer for reuse	Mill mechanically the existing bituminous layer and stockpile for reuse or recycle	m <sup>3</sup>	12,905	17,035

**17. CONCRETE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
114	Concrete Work	17.60.001	Concrete work (class 15/20)	Provide, place and compact class 15/20 concrete mixture for blinding.	m <sup>3</sup>	13,388	17,672
115		17.60.002	Concrete work (class 20/20)	Provide, place and compact class 20/20 concrete mixture.	m <sup>3</sup>	14,728	19,441
116		17.60.002a	Concrete work (class 25/20)	Provide, place and compact class 25/20 concrete mixture.	m <sup>3</sup>	16,327	21,552
117	Formwork	17.60.003	Vertical formwork class F2 finish	Provide and erect formwork of class F2 finish to the vertical direction	m <sup>2</sup>	1,281	1,691
118		17.60.004	Horizontal formwork class F2 finish	Provide and erect formwork of class F2 finish to the horizontal direction	m <sup>2</sup>	1,195	1,577
119	Reinforcement	17.80.004	Reinforcement work (below 16mm)	Provide, cut bend and fix into position high yield reinforcement bar below 16mm	ton	141,631	186,953
120		17.80.005	Reinforcement work (above 16mm)	Provide, cut bend and fix into position high yield reinforcement bar above 16mm	ton	142,629	188,270

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
121	Boundary posts	20.50.001	Road reserve boundary posts	Provide and erect road reserve boundary posts (size 1.2 x 0.2 x 0.2)	No	2,627	3,468
122		20.50.004	Edge marker posts	Provide and erect edge marker posts	No	3,606	4,760
123	Road Marking	20.50.007	Roads markings - white paint	Provide reflectorized white paint for road markings (w = 10cm)	m <sup>2</sup>	1,217	1,606
124		20.70.011	Road markings - white thermoplastic material	Renew faded or missing white road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,037	4,009
124a		20.70.011a	Road markings on surface dressed pavement- white thermoplastic material	Renew faded or missing white road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,361	4,437
125		20.50.006	Road markings - yellow paint	Provide reflectorized yellow paint for road markings (w = 10cm)	m <sup>2</sup>	1,217	1,606
126		20.70.010	Road markings - yellow thermoplastic material	Upgrade faded or missing yellow road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,228	4,261
126a		20.70.010a	Road markings on surface dressed pavement- yellow thermoplastic material	Renew faded or missing yellow road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,578	4,723
127		20.50.107	Road marking black paint	Provide reflectorized black paint for road markings (w = 10cm)	m <sup>2</sup>	1,260	1,663
128		20.70.002	Warning signs	Provide and erect priority, prohibitory or mandatory signs	No	18,438	24,338
129	Road Sign Erection	20.70.005	Priority, prohibitory or mandatory signs	Priority, prohibitory or mandatory signs	No	18,478	24,391
130		20.70.004	Standard informatory signs	Provide and erect informatory signs	No	22,832	30,138
131		20.70.006	Non-standard informatory signs	Provide and erect non-standard informatoty signs < 2m <sup>2</sup>	No	34,871	46,030

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
131b		20.70.006b	Non-standard informatory signs (2-5m <sup>2</sup> )	Provide and erect non-standard informatoty signs (2-5m <sup>2</sup> )	No	69,145	91,271
131c		20.70.006c	Non-standard informatory signs (5-8m <sup>2</sup> )	Provide and erect non-standard informatoty signs (5-8m <sup>2</sup> )	No	131,728	173,881
132	Kerb Installation	20.50.012	Kerbs	Provide lay and joint concrete class 20/20 kerbs in support to carriageway, bus bays and junctions	m	1,650	2,178
133	Kilometre marker post Installation	20.50.013	Kilometre marker posts	Kilometre marker post Installation.	No	9,149	12,077
134	Bollard Installation	20.50.017	Concrete bollards	Concrete bollard Installation (diameter 0.2m, length 0.9m, embedded depth 0.45m)	No	3,073	4,056
135		20.50.021	Steel bollards	Place and provide gauge 16 steel pipe Bollards of diameter 150 mm and 1.05m above the ground embedded to a depth of 0.45m at place	No	1,901	2,509
136	Reflective Stud Installation	20.50.019	Reflective studs	Install reflective studs along the centre line	No	1,181	1,559
137	Microtunneling	20.60.002	Microtunneling for a 150mm diameter PVC (polyvinyl chloride) duct	Conduct microtunneling with a 150mm dia PVC duct (under silt or sand condition)	m	69,223	91,374
138		20.60.002a	Horizontal drilling	Conduct horizontal drilling for 150mm hole in diameter (under gravel condtion)	m	43,589	57,537
139	Street light Installation	20.60.017	Street lighting pole (7.6m)	Provide and install 7.6m street lighting pole including cables accessories and lamp.	No	72,821	96,124
140		20.60.018	Street lighting pole (10m)	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	135,715	179,144



**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
141		20.60.016	Street lighting control panel	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	96,250	127,050
142		20.60.315	Electric cable	Provide and install supply cables between the street lighting poles.	m	1,490	1,967
143	Guardrail Repair	20.70.023a	Guardrail Repair Level 1	Removal of damaged guardrail and replacement with straightened beam	m	1,405	1,855
144		20.70.023b	Guardrail Repair Level 2	Removal of damaged guardrail, replacement with a straightened beam and realignment of posts	m	2,616	3,454
145		20.70.023c	Guardrail Repair Level 3	Complete removal of damaged guardrail beam and installation with new beam, posts and spacers	m	11,053	14,590

**23. CONCRETE PAVING BLOCKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
146	<b>Concrete Paving Blocks</b>	23.70.001	Interlocking - Heavy duty - plain (Deformed) 60mm	Provide and lay 60mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,503	1,984
147		23.70.002	Interlocking - Heavy duty - plain (Deformed) 80mm	Provide and lay 80mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,582	2,088

## Nairobi Region

### 3.4. Nairobi Region

#### 4. SITE CLEARANCE AND TOPSOIL STRIPPING

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
1	Bush Clearing	04.50.001	Mechanical mowing	Cut grass by machine along the side of the road or on slopes.	m <sup>2</sup>	5	6
2		04.50.002	Grass cutting (manual)	Cut grass manually along the side of the road or on slopes.	m <sup>2</sup>	4	5
3		04.50.003	Heavy bush clearing	Cut, remove and dispose bushes along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	18	23
4		04.50.004	Light bush clearing	Cut grass by hand from shoulders, slopes, inlet ditches, and side ditches including back slopes, turnouts and culvert outlet.	m <sup>2</sup>	10	13
5		04.50.005	Pruning of tree branches	Cut, remove and dispose branches of trees along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	97	128
6		04.50.006	Tree cutting and stump removal (200 -450 mm)	Cut, remove and dispose whole trees of 200 - 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	215	284
7		04.50.007	Tree cutting and stump removal (>450 mm)	Cut, remove and dispose whole trees of above 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	1,118	1,476
8	Site Clearing and Backfill	04.50.008	Clearing obstructions (mechanical)	Mechanically clear any obstruction including boulders and debris out of road reserve.	m <sup>2</sup>	37	49
9		04.50.008a	Clearing obstructions (manual)	Manually clear any obstruction including boulders and debris out of road reserve.	m <sup>3</sup>	263	347

**4. SITE CLEARANCE AND TOPSOIL STRIPPING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
10		04.50.009	Stripping and grubbing (mechanical)	Clear site on road reserve mechanically by stripping and grubbing roots.	m <sup>2</sup>	104	137
11		04.50.009a	Stripping and grubbing (manual)	Clear site on road reserve manually by stripping and grubbing roots.	m <sup>2</sup>	178	235
12		04.60.001	Clearing trees, hedges, bushes, vegetation and deleterious materials (mechanical)	Clear site on road reserve mechanically by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	80	106
13		04.60.001a	Clearing trees, hedges, bushes, vegetation and deleterious materials (manual)	Clear site on road reserve manually by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	80	106
14	Concrete Demolition	04.50.010	Excavate remove & disposal of concrete structures	Demolish reinforced or mass concrete structures and cart to spoil or stockpile for re-use.	m <sup>3</sup>	986	1,302
15	Top Soil Stripping	04.80.002	Removal of overburden	Remove topsoil to a maximum depth of 200mm.	m <sup>3</sup>	264	348
16	Pipe Culvert Removal	04.60.005	Removal of cracked small pipe culverts below 600mm	Excavate, remove and dispose cracked pipe culverts below 600mm in diameter.	m	368	486
17		04.60.005a	Removal of cracked large pipe culverts above 600mm	Excavate, remove and dispose cracked pipe culverts above 600mm in diameter.	m	555	733

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
18	Material Filling	05.50.006	Fill in soft material and compact	Provide, place and compact soft patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	464	612
19		05.50.006a	Fill in soft material and compact (soil purchased)	Provide, place and compact soft purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,514	1,998
20		05.50.007	Fill in hard material and compact	Provide, place and compact hard patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	544	718
21		05.50.007a	Fill in hard material and compact (soil purchased)	Provide, place and compact hard purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,694	2,236
22	Material Cutting	05.50.008	Cut to spoil in soft	Cut manually soft material to spoil	m <sup>3</sup>	478	631
23		05.50.008a	Cut to spoil in soft (mechanical)	Cut mechanically soft material to spoil	m <sup>3</sup>	223	294
24		05.50.009	Cut to spoil in hard	Cut manually hard material to spoil	m <sup>3</sup>	966	1,275
25		05.50.009a	Cut to spoil in hard (mechanical)	Cut mechanically hard material to spoil	m <sup>3</sup>	446	589
26	Concrete Demolition	05.50.012	Rock fill to swamp	Manually provide and place rock fill to swamp	m <sup>3</sup>	2,404	3,173
27		05.50.125	Rock fill to embankment construction	Manually provide and place rock fill to construct embankment.	m <sup>3</sup>	2,680	3,538
28	Planting	05.50.014	Grassing	Plant grass on the slope and inverts of ditches to reduce scour effects, or on slopes to reduce soil erosion and to improve stability.	m <sup>2</sup>	1,046	1,381
29	Pipe Culvert Replacement	05.60.012	Compaction of subgrade in cut	Trim and compact.	m <sup>2</sup>	37	49
30		05.60.014	Compaction of subgrade in fill	Compaction of subgrade in fill.	m <sup>3</sup>	1,908	2,519

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
31		05.60.016	Compaction of original ground level	Compact the top 150 mm layer of existing ground below fills and cuts to 95% MDD (AASHTO T99)	m <sup>3</sup>	39	51
31a		05.60.016a	Compaction of the 300 mm below formation level in cutting to 100% MDD (AASHTO T99)	Compaction of the top 300mm below formation level in cuts and fills (subgrade) to 100% MDD	m <sup>3</sup>	1,383	1,826

**7. EXCAVATION AND FILLING FOR STRUCTURE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
32	<b>Material Excavation for Structures</b>	07.50.001	Excavate for structure in soft material (manual)	Excavate manually soft material for structures.	m <sup>3</sup>	478	631
33		07.50.001a	Excavate for structure in soft material (mechanical)	Excavate mechanically soft material for structures.	m <sup>3</sup>	223	294
34		07.50.002	Excavate for structure in hard material (manual)	Excavate manually in hard material for structures.	m <sup>3</sup>	966	1,275
35		07.50.002a	Excavate for structure in hard material (mechanical)	Excavate mechanically in hard material for structures.	m <sup>3</sup>	446	589
36	<b>Gabion</b>	07.70.004	Gabion Installation	Provide and place Macaferri or equivalent gabion boxes (2m * 1m * 1m).	m <sup>2</sup>	424	560
37		07.70.005	Rock fill to Gabions	Provide and place rock fill to gabions.	m <sup>3</sup>	2,144	2,830
38	<b>Stone Pitching</b>	07.70.001	Stone pitching	Provide stone pitching including grouting of ratio 1:4 cement to mortar.	m <sup>2</sup>	1,608	2,123



**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
39	Ditch Cleaning	08.50.002a	Ditch cleaning - mechanical	Mechanically desilt, shape inlets outfalls, side drains to free flow conditions	m	25	33
40		08.50.002	Ditch cleaning - manual	Manually desilt, shape inlets outfalls, side drains to free flow conditions.	m	17	23
41	Culvert Cleaning	08.60.002	Small culvert cleaning-partially blocked-below 450mm	Clean culverts of below 450mm in diameter to free flow conditions	m	426	562
42		08.60.003	Medium culvert cleaning-partially blocked-600mm	Clean culverts of 600mm in diameter to free flow conditions	m	324	428
43		08.60.004	Large culvert cleaning-partially blocked-900 mm and above	Clean culverts of 900mm and above in diameter to free flow conditions	m	223	294
44		08.50.025	Manhole cleaning	Remove all silt and debris and wash out manhole to free flow conditions.	No	723	954
45		08.50.016	Gulley pot cleaning	Clean siltation and debris from gulley pot to good impoundment conditions.	No	144	190
46		08.50.009	Covered (slotted) lined drain cleaning	Remove all silt and debris and wash out covered lined drain to free flow conditions	m	88	116
47		08.50.005a	Ditch/mitre drain excavation in soft (mechanical)	Excavate mechanically for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	239	315
48		08.50.005	Ditch/mitre drain excavation in soft (manual)	Excavate manually for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	280	370
49		08.50.005b	Ditch/mitre drain excavation in hard (mechanical)	Excavate mechanically in hard material for inlet, outfall, mitre and catchwater drains.	m <sup>3</sup>	458	605
50		08.50.005c	Ditch/mitre drain excavation in hard (manual)	Excavate manually in hard material for inlet, outfall, mitre and catchwater drains	m <sup>3</sup>	1,371	1,810
51	Pipe Culvert Installation	08.60.021	Culvert installation-300mm with surround	Provide, lay and joint pipe culvert of 300mm in diameter with surround	m	5,598	7,389

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
52		08.60.020	Culvert installation-300mm without surround	Provide, lay and joint unhounded pipe culvert of 300mm in diameter without surround	m	2,003	2,644
53		08.60.023	Culvert installation-450mm with surround	Provide, lay and joint pipe culvert of 450mm in diameter with surround.	m	7,958	10,505
54		08.60.022	Culvert installation-450mm without surround	Provide, lay and joint pipe culvert of 450mm in diameter without surround.	m	2,824	3,728
55		08.60.025	Culvert installation-600mm with surround	Provide, lay and joint pipe culvert of 600mm in diameter with surround	m	12,559	16,578
56		08.60.024	Culvert installation-600mm without surround	Provide, lay and joint pipe culvert of 600mm in diameter without surround	m	3,754	4,955
57		08.60.027	Culvert installation-900mm with surround	Provide, lay and joint pipe culvert of 900mm in diameter with surround.	m	15,693	20,715
58		08.60.026	Culvert installation-900mm without surround	Provide, lay and joint pipe culvert of 900mm in diameter without surround	m	6,241	8,238
59		08.60.028	Culvert installation-1200mm with surround	Provide, lay and joint pipe culvert of 1200mm in diameter with surround	m	25,409	33,540
60		08.60.029	Culvert installation-1200mm without surround	Provide, lay and joint culvert of 1200mm in diameter without surround	m	9,933	13,112
61		08.60.030	Excavate in soft material for culverts	Excavation manually in soft material for culvert in any size.	m <sup>3</sup>	280	370
62		08.60.031	Excavate in hard material for culverts	Excavation manually in hard material for culvert in any size.	m <sup>3</sup>	1,371	1,810
63	Headwall Construction	08.60.019	Headwall construction for 450mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 450mm pipe culvert to prevent the collapse and the potential	No	20,437	26,977

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
				slippage of the material and pavement above the culvert.			
64		08.60.019a	Headwall construction for 600mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 600mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	23,891	31,536
65		08.60.019b	Headwall construction for 900mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 900mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	31,261	41,265
66		08.60.019c	Headwall construction for 1200mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 1200mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	41,905	55,315
67	Manhole installation	08.50.024	Manhole construction less than 1m	Install new small manhole of less than 1m in depth (900-1200mm in inner diameter)	No	29,528	38,977
68		08.50.024a	Manhole construction more than 1m	Install new large manhole of more than 1m in depth (900-1200mm in inner diameter)	No	48,753	64,354
69	Gulley Pot installation	08.50.015	Gulley pot construction	Provide and place gulley pots including grating (H=900mm) for inlet structures as directed by the Engineer.	No	10,595	13,985
70	Drain Lining	08.50.032	Lay drain lining with concrete	Place concrete lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	1,994	2,632

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
71		08.50.022a	Laying of dressed stones	Place dressed stone lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	1,811	2,391
72		08.50.022	Laying of side slabs	Place side slab lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,761	3,645
73		08.70.036	Laying of 300mm invert block drain	Provide, lay and joint invert block drain of 300mm in diameter	m	1,471	1,942
74		08.70.037	Laying of 750mm invert block drain	Provide, lay and joint invert block drain of 750mm in width	m	2,320	3,062

**9. PASSAGE OF TRAFFIC**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
75	Traffic Control	09.50.004	Traffic Control	Place warning signs, barriers and cones around the working lane on the carriageway and guide the passage of traffic through the works	Day	1,895	2,501
76		09.50.005	Watchman	Provide watchman for all round surveillance.	No	1,826	2,410
77		09.50.006	Watering	Sprinkle water to control dust for passage of traffic through the works or compaction at earth works	m <sup>2</sup>	12	16

**10. GRADING AND GRAVELLING WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
78	Grading	10.50.001	Heavy grading without watering or compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches without providing watering and compaction	m <sup>2</sup>	5	7
79		10.50.002	Heavy grading with watering and compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches providing watering and compaction	m <sup>2</sup>	9	11
80		10.50.003	Light grading	Trim with motor grader existing carriageway to camber, including slopes and ditches.	m <sup>2</sup>	4	5
81		10.50.004	Reshaping	Restore manually the camber on earth or gravel roads by returning material from road sides and shoulder toward road centre.	m <sup>2</sup>	15	19
82		10.50.005	Dragging	Remove manually loose material from the surface to delay the formation of corrugations	m <sup>2</sup>	15	19
83	Gravelling	10.60.001	Regravelling	Prepare for road formation and provide, place spread, shape and compact with watering gravel of not less than CBR 20%	m <sup>3</sup>	2,055	2,713
84		10.60.001a	Regravelling without watering	Prepare for road formation and provide, place spread, shape and compact without watering gravel of not less than CBR 20%	m <sup>3</sup>	2,042	2,695

**11. PAVED ROADS - SHOULDER MAINTENANCE AND REPAIRS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
86	Shoulder Rebuilding	11.50.002	Shoulder repairing	Prepare surface of existing shoulders, accesses and bus bays, water process and compact	m <sup>2</sup>	3	4
87	Shoulder Gravelling	11.50.003	Shoulder gravelling with natural gravel	Provide, place, spread, shape and compact 150mm of natural gravel of CBR 30% to shoulders, accesses and bus bays	m <sup>3</sup>	2,080	2,746
88		11.50.003a	Shoulder gravelling with quarry waste	Provide, place and compact quarry waste material to shoulders, accesses and bus bays	m <sup>3</sup>	3,018	3,984

**12. NATURAL MATERIAL BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
89	Pavement Removal	12.70.001	Scarify existing pavement to form subbase	Break or scarify mechanically the existing pavement layer, and compact.	m <sup>3</sup>	915	1,208
90	Subbase/Base Rebuilding	12.50.001	Handpacked stone paving	Provide, lay, and compact hand packed stone material including filling of voids with stone dust	m <sup>3</sup>	3,441	4,542
91		12.50.002	Provide, place and compact quarry waste	Provide, spread, shape and compact approved quarry waste of CBR 30% and above for 5cm in thickness.	m <sup>3</sup>	5,785	7,636
92		12.50.003	Provide, place, spread and compact natural gravel	Provide, spread, shape and compact approved natural gravel of CBR 30% and above for 15cm in thickness.	m <sup>3</sup>	2,078	2,743



**13. GRADED CRUSHED STONE BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
93	Graded Crushed Stone	13.50.001	Graded Crushed Stone for subbase	Provide, place and spread approved graded crushed stone for subbase.	m <sup>3</sup>	2,725	3,597
94		13.60.001	Graded Crushed Stone for base	Provide, place and spread approved graded crushed stone for base.	m <sup>3</sup>	2,725	3,597

**14. CEMENT AND LIME TREATED SUBGRADE, SUBBASE AND BASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
95	Cement/Lime Stabilization	14.50.001	Provision of Cement for treatment of material	Provide, spread cement on natural gravel or graded crushed stone	ton	15,254	20,135
96		14.50.002	Provision of Lime for treatment of material	Provide, spread lime on natural gravel or graded crushed stone	ton	28,754	37,955
97		14.50.003	Cement/lime mixing	Mixing in cement/lime into natural gravel or graded crushed stone	m <sup>3</sup>	89	117
98		14.50.004	Curing and protection of treated layers	Cure and protect layers treated with cement or lime stabilizers	m <sup>2</sup>	195	258

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
99	Prime Coat	15.50.002	Prime Coat (MC-30 cutback bitumen)	Prepare surface of carriageway, bus bays and repair areas, provide and spray MC-30 cutback bitumen at a rate of 0.8-1.2 litre/m <sup>2</sup> as prime coat	litre	181	239
100	Tack Coat	15.50.003	Tack Coat (grade bitumen cutback)	Prepare surface of carriageway and bus bays, provide and spray 80/100 penetration grade bitumen cut back using 5-15% kerosene as tack coat for asphalt concrete wearing course at a spray rate of 0.5-0.7 litre/m <sup>2</sup>	litre	176	232
101		15.50.003a	Tack Coat (bitumen emulsion)	Prepare surface of repair areas provide and spray KI-60 bitumen emulsion as tack coat or seal to repair areas at a spray rate of 0.8-1.0 litre/m <sup>2</sup>	litre	150	198
102	Surface Dressing	15.70.001	Resealing	Reseal a bituminous surface dressed or an asphaltic concrete carriageway or shoulder using chippings and bitumen emulsion to improve skid resistance and eliminate the effects of wear, oxidation, ravelling, fretting, stripping and bleeding.	m <sup>2</sup>	148	195
103		15.60.002	Construct surface dressing using 3/6 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 3 to 6mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	98	129
104		15.60.003	Construct surface dressing using 6/10 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 6 to 10mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	161	213

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
105		15.60.004	Construct surface dressing using 10/14 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 10 to 14mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	211	279
106		15.60.005	Construct surface dressing using 14/20 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 14 to 20mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	227	300

**16. BITUMINOUS MIXES**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
107a	<b>Pavement Repairing</b>	16.50.001a	Pothole Cutting and Cleaning	Trim, cut and clean failed bituminous surface	m <sup>3</sup>	2,443	3,225
107		16.50.001	Pothole patching - hot mix	Provide, place and compact asphaltic concrete to repair areas and for regulation to carriageway	m <sup>3</sup>	29,015	38,300
108		16.50.002	Pothole patching - cold mix	Repair defects on bituminous surface by cold bituminous mixture	m <sup>3</sup>	51,800	68,376
109		16.50.004	Crack sealing	Repair transverse or longitudinal cracking on surface dressed or asphalt concrete	m	211	279
110		16.60.001	Asphalt concrete for surfacing - hot mix.	Overlay or continuously repave surface by hot bituminous mixture	m <sup>3</sup>	29,879	39,440
111		16.70.001	Base repair - Dense Bitumen Macadam (DBM)	Place dense bitumen macadam for base material and roll	m <sup>3</sup>	29,918	39,492
112	<b>Milling and Paving</b>	16.80.010	Milling the existing bituminous layer to spoil	Mill mechanically the existing bituminous layer to spoil	m <sup>3</sup>	3,239	4,275
113		16.80.015	Milling the existing bituminous layer for reuse	Mill mechanically the existing bituminous layer and stockpile for reuse or recycle	m <sup>3</sup>	13,100	17,292

**17. CONCRETE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
114	Concrete Work	17.60.001	Concrete work (class 15/20)	Provide, place and compact class 15/20 concrete mixture for blinding.	m <sup>3</sup>	13,483	17,798
115		17.60.002	Concrete work (class 20/20)	Provide, place and compact class 20/20 concrete mixture.	m <sup>3</sup>	14,626	19,306
116		17.60.002a	Concrete work (class 25/20)	Provide, place and compact class 25/20 concrete mixture.	m <sup>3</sup>	16,137	21,301
117	Formwork	17.60.003	Vertical formwork class F2 finish	Provide and erect formwork of class F2 finish to the vertical direction	m <sup>2</sup>	1,165	1,538
118		17.60.004	Horizontal formwork class F2 finish	Provide and erect formwork of class F2 finish to the horizontal direction	m <sup>2</sup>	1,086	1,434
119	Reinforcement	17.80.004	Reinforcement work (below 16mm)	Provide, cut bend and fix into position high yield reinforcement bar below 16mm	ton	134,978	178,171
120		17.80.005	Reinforcement work (above 16mm)	Provide, cut bend and fix into position high yield reinforcement bar above 16mm	ton	139,672	184,367

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
121	Boundary posts	20.50.001	Road reserve boundary posts	Provide and erect road reserve boundary posts (size 1.2 x 0.2 x 0.2)	No	2,548	3,363
122		20.50.004	Edge marker posts	Provide and erect edge marker posts	No	3,713	4,901
123	Road Marking	20.50.007	Roads markings - white paint	Provide reflectorized white paint for road markings (w = 10cm)	m <sup>2</sup>	1,383	1,826
124		20.70.011	Road markings - white thermoplastic material	Renew faded or missing white road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,021	3,988
124a		20.70.011a	Road markings on surface dressed pavement- white thermoplastic material	Renew faded or missing white road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,337	4,405
125		20.50.006	Road markings - yellow paint	Provide reflectorized yellow paint for road markings (w = 10cm)	m <sup>2</sup>	1,383	1,826
126		20.70.010	Road markings - yellow thermoplastic material	Upgrade faded or missing yellow road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,211	4,239
126a		20.70.010a	Road markings on surface dressed pavement- yellow thermoplastic material	Renew faded or missing yellow road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,554	4,691
127		20.50.107	Road marking black paint	Provide reflectorized black paint for road markings (w = 10cm)	m <sup>2</sup>	1,335	1,762
128		20.70.002	Warning signs	Provide and erect priority, prohibitory or mandatory signs	No	18,562	24,502
129	Road Sign Erection	20.70.005	Priority, prohibitory or mandatory signs	Priority, prohibitory or mandatory signs	No	18,603	24,556
130		20.70.004	Standard informatory signs	Provide and erect informatory signs	No	22,956	30,302
131		20.70.006	Non-standard informatory signs	Provide and erect non-standard informatoty signs < 2m <sup>2</sup>	No	34,889	46,053

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
131b		20.70.006b	Non-standard informatory signs (2-5m <sup>2</sup> )	Provide and erect non-standard informatoty signs (2-5m <sup>2</sup> )	No	69,181	91,319
131c		20.70.006c	Non-standard informatory signs (5-8m <sup>2</sup> )	Provide and erect non-standard informatoty signs (5-8m <sup>2</sup> )	No	131,757	173,919
132	Kerb Installation	20.50.012	Kerbs	Provide lay and joint concrete class 20/20 kerbs in support to carriageway, bus bays and junctions	m	1,648	2,175
133	Kilometre marker post Installation	20.50.013	Kilometre marker posts	Kilometre marker post Installation.	No	7,633	10,076
134	Bollard Installation	20.50.017	Concrete bollards	Concrete bollard Installation (diameter 0.2m, length 0.9m, embedded depth 0.45m)	No	2,976	3,928
135		20.50.021	Steel bollards	Place and provide gauge 16 steel pipe Bollards of diameter 150 mm and 1.05m above above the ground embedded to a depth of 0.45m at place	No	1,826	2,410
136	Reflective Stud Installation	20.50.019	Reflective studs	Install reflective studs along the centre line	No	1,139	1,503
137	Microtunneling	20.60.002	Microtunneling for a 150mm diameter PVC (polyvinyl chloride) duct	Conduct microtunneling with a 150mm dia PVC duct (under silt or sand condition)	m	65,414	86,346
138		20.60.002a	Horizontal drilling	Conduct horizontal drilling for 150mm hole in diameter (under gravel condtion)	m	42,252	55,773
139	Street light Installation	20.60.017	Street lighting pole (7.6m)	Provide and install 7.6m street lighting pole including cables accessories and lamp.	No	71,505	94,387
140		20.60.018	Street lighting pole (10m)	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	134,414	177,426



**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
141		20.60.016	Street lighting control panel	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	96,059	126,798
142		20.60.315	Electric cable	Provide and install supply cables between the street lighting poles.	m	1,478	1,951
143	Guardrail Repair	20.70.023a	Guardrail Repair Level 1	Removal of damaged guardrail and replacement with straightened beam	m	1,338	1,767
144		20.70.023b	Guardrail Repair Level 2	Removal of damaged guardrail, replacement with a straightened beam and realignment of posts	m	2,119	2,798
145		20.70.023c	Guardrail Repair Level 3	Complete removal of damaged guardrail beam and installation with new beam, posts and spacers	m	10,005	13,207

**23. CONCRETE PAVING BLOCKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
146	<b>Concrete Paving Blocks</b>	23.70.001	Interlocking - Heavy duty - plain (Deformed) 60mm	Provide and lay 60mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,346	1,777
147		23.70.002	Interlocking - Heavy duty - plain (Deformed) 80mm	Provide and lay 80mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,868	2,466

## **North Eastern Region**

### 3.5. North Eastern Region

#### 4. SITE CLEARANCE AND TOPSOIL STRIPPING

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
1	Bush Clearing	04.50.001	Mechanical mowing	Cut grass by machine along the side of the road or on slopes.	m <sup>2</sup>	6	8
2		04.50.002	Grass cutting (manual)	Cut grass manually along the side of the road or on slopes.	m <sup>2</sup>	5	6
3		04.50.003	Heavy bush clearing	Cut, remove and dispose bushes along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	23	30
4		04.50.004	Light bush clearing	Cut grass by hand from shoulders, slopes, inlet ditches, and side ditches including back slopes, turnouts and culvert outlet.	m <sup>2</sup>	12	16
5		04.50.005	Pruning of tree branches	Cut, remove and dispose branches of trees along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	124	164
6		04.50.006	Tree cutting and stump removal (200 -450 mm)	Cut, remove and dispose whole trees of 200 - 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	275	363
7		04.50.007	Tree cutting and stump removal (>450 mm)	Cut, remove and dispose whole trees of above 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	1,422	1,877
8	Site Clearing and Backfill	04.50.008	Clearing obstructions (mechanical)	Mechanically clear any obstruction including boulders and debris out of road reserve.	m <sup>2</sup>	41	54
9		04.50.008a	Clearing obstructions (manual)	Manually clear any obstruction including boulders and debris out of road reserve.	m <sup>3</sup>	338	446

**4. SITE CLEARANCE AND TOPSOIL STRIPPING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
10		04.50.009	Stripping and grubbing (mechanical)	Clear site on road reserve mechanically by stripping and grubbing roots.	m <sup>2</sup>	117	154
11		04.50.009a	Stripping and grubbing (manual)	Clear site on road reserve manually by stripping and grubbing roots.	m <sup>2</sup>	229	302
12		04.60.001	Clearing trees, hedges, bushes, vegetation and deleterious materials (mechanical)	Clear site on road reserve mechanically by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	87	115
13		04.60.001a	Clearing trees, hedges, bushes, vegetation and deleterious materials (manual)	Clear site on road reserve manually by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	103	136
14	Concrete Demolition	04.50.010	Excavate remove & disposal of concrete structures	Demolish reinforced or mass concrete structures and cart to spoil or stockpile for re-use.	m <sup>3</sup>	1,174	1,550
15	Top Soil Stripping	04.80.002	Removal of overburden	Remove topsoil to a maximum depth of 200mm.	m <sup>3</sup>	287	379
16	Pipe Culvert Removal	04.60.005	Removal of cracked small pipe culverts below 600mm	Excavate, remove and dispose cracked pipe culverts below 600mm in diameter.	m	434	573
17		04.60.005a	Removal of cracked large pipe culverts above 600mm	Excavate, remove and dispose cracked pipe culverts above 600mm in diameter.	m	654	863

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
18	Material Filling	05.50.006	Fill in soft material and compact	Provide, place and compact soft patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	580	766
19		05.50.006a	Fill in soft material and compact (soil purchased)	Provide, place and compact soft purchased patching material to surface defects or gravel road.	m <sup>3</sup>	3,260	4,303
20		05.50.007	Fill in hard material and compact	Provide, place and compact hard patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	670	884
21		05.50.007a	Fill in hard material and compact (soil purchased)	Provide, place and compact hard purchased patching material to surface defects or gravel road.	m <sup>3</sup>	3,494	4,612
22	Material Cutting	05.50.008	Cut to spoil in soft	Cut manually soft material to spoil	m <sup>3</sup>	606	800
23		05.50.008a	Cut to spoil in soft (mechanical)	Cut mechanically soft material to spoil	m <sup>3</sup>	263	347
24		05.50.009	Cut to spoil in hard	Cut manually hard material to spoil	m <sup>3</sup>	1,236	1,632
25		05.50.009a	Cut to spoil in hard (mechanical)	Cut mechanically hard material to spoil	m <sup>3</sup>	527	696
26	Concrete Demolition	05.50.012	Rock fill to swamp	Manually provide and place rock fill to swamp	m <sup>3</sup>	4,530	5,980
27		05.50.125	Rock fill to embankment construction	Manually provide and place rock fill to construct embankment.	m <sup>3</sup>	4,880	6,442
28	Planting	05.50.014	Grassing	Plant grass on the slope and inverts of ditches to reduce scour effects, or on slopes to reduce soil erosion and to improve stability.	m <sup>2</sup>	1,404	1,853
29	Pipe Culvert Replacement	05.60.012	Compaction of subgrade in cut	Trim and compact.	m <sup>2</sup>	47	62
30		05.60.014	Compaction of subgrade in fill	Compaction of subgrade in fill.	m <sup>3</sup>	1,684	2,223

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
31		05.60.016	Compaction of original ground level	Compact the top 150 mm layer of existing ground below fills and cuts to 95% MDD (AASHTO T99)	m <sup>3</sup>	53	70
31a		05.60.016a	Compaction of the 300 mm below formation level in cutting to 100% MDD (AASHTO T99)	Compaction of the top 300mm below formation level in cuts and fills (subgrade) to 100% MDD	m <sup>3</sup>	1,850	2,442

**7. EXCAVATION AND FILLING FOR STRUCTURE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
32	<b>Material Excavation for Structures</b>	07.50.001	Excavate for structure in soft material (manual)	Excavate manually soft material for structures.	m <sup>3</sup>	606	800
33		07.50.001a	Excavate for structure in soft material (mechanical)	Excavate mechanically soft material for structures.	m <sup>3</sup>	263	347
34		07.50.002	Excavate for structure in hard material (manual)	Excavate manually in hard material for structures.	m <sup>3</sup>	1,236	1,632
35		07.50.002a	Excavate for structure in hard material (mechanical)	Excavate mechanically in hard material for structures.	m <sup>3</sup>	527	696
36	<b>Gabion</b>	07.70.004	Gabion Installation	Provide and place Macaferri or equivalent gabion boxes (2m * 1m * 1m).	m <sup>2</sup>	555	733
37		07.70.005	Rock fill to Gabions	Provide and place rock fill to gabions.	m <sup>3</sup>	4,222	5,573
38	<b>Stone Pitching</b>	07.70.001	Stone pitching	Provide stone pitching including grouting of ratio 1:4 cement to mortar.	m <sup>2</sup>	2,265	2,990



**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
39	Ditch Cleaning	08.50.002a	Ditch cleaning - mechanical	Mechanically desilt, shape inlets outfalls, side drains to free flow conditions	m	37	49
40		08.50.002	Ditch cleaning - manual	Manually desilt, shape inlets outfalls, side drains to free flow conditions.	m	22	29
41	Culvert Cleaning	08.60.002	Small culvert cleaning-partially blocked-below 450mm	Clean culverts of below 450mm in diameter to free flow conditions	m	548	723
42		08.60.003	Medium culvert cleaning-partially blocked-600mm	Clean culverts of 600mm in diameter to free flow conditions	m	417	550
43		08.60.004	Large culvert cleaning-partially blocked-900 mm and above	Clean culverts of 900mm and above in diameter to free flow conditions	m	286	378
44		08.50.025	Manhole cleaning	Remove all silt and debris and wash out manhole to free flow conditions.	No	920	1,214
45		08.50.016	Gulley pot cleaning	Clean siltation and debris from gulley pot to good impoundment conditions.	No	184	243
46		08.50.009	Covered (slotted) lined drain cleaning	Remove all silt and debris and wash out covered lined drain to free flow conditions	m	113	149
47		08.50.005a	Ditch/mitre drain excavation in soft (mechanical)	Excavate mechanically for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	334	441
48		08.50.005	Ditch/mitre drain excavation in soft (manual)	Excavate manually for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	355	469
49		08.50.005b	Ditch/mitre drain excavation in hard (mechanical)	Excavate mechanically in hard material for inlet, outfall, mitre and catchwater drains.	m <sup>3</sup>	542	715
50		08.50.005c	Ditch/mitre drain excavation in hard (manual)	Excavate manually in hard material for inlet, outfall, mitre and catchwater drains	m <sup>3</sup>	1,717	2,266
51	Pipe Culvert Installation	08.60.021	Culvert installation-300mm with surround	Provide, lay and joint pipe culvert of 300mm in diameter with surround	m	9,381	12,383

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
52		08.60.020	Culvert installation-300mm without surround	Provide, lay and joint unhoused pipe culvert of 300mm in diameter without surround	m	4,482	5,916
53		08.60.023	Culvert installation-450mm with surround	Provide, lay and joint pipe culvert of 450mm in diameter with surround.	m	10,709	14,136
54		08.60.022	Culvert installation-450mm without surround	Provide, lay and joint pipe culvert of 450mm in diameter without surround.	m	3,678	4,855
55		08.60.025	Culvert installation-600mm with surround	Provide, lay and joint pipe culvert of 600mm in diameter with surround	m	18,975	25,047
56		08.60.024	Culvert installation-600mm without surround	Provide, lay and joint pipe culvert of 600mm in diameter without surround	m	6,809	8,988
57		08.60.027	Culvert installation-900mm with surround	Provide, lay and joint pipe culvert of 900mm in diameter with surround.	m	23,251	30,691
58		08.60.026	Culvert installation-900mm without surround	Provide, lay and joint pipe culvert of 900mm in diameter without surround	m	9,568	12,630
59		08.60.028	Culvert installation-1200mm with surround	Provide, lay and joint pipe culvert of 1200mm in diameter with surround	m	33,482	44,196
60		08.60.029	Culvert installation-1200mm without surround	Provide, lay and joint culvert of 1200mm in diameter without surround	m	10,849	14,321
61		08.60.030	Excavate in soft material for culverts	Excavation manually in soft material for culvert in any size.	m <sup>3</sup>	355	469
62		08.60.031	Excavate in hard material for culverts	Excavation manually in hard material for culvert in any size.	m <sup>3</sup>	1,717	2,266
63	Headwall Construction	08.60.019	Headwall construction for 450mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 450mm pipe culvert to prevent the collapse and the potential	No	27,436	36,216

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
				slippage of the material and pavement above the culvert.			
64		08.60.019a	Headwall construction for 600mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 600mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	32,059	42,318
65		08.60.019b	Headwall construction for 900mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 900mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	41,935	55,354
66		08.60.019c	Headwall construction for 1200mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 1200mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	55,990	73,907
67	Manhole installation	08.50.024	Manhole construction less than 1m	Install new small manhole of less than 1m in depth (900-1200mm in inner diameter)	No	37,466	49,455
68		08.50.024a	Manhole construction more than 1m	Install new large manhole of more than 1m in depth (900-1200mm in inner diameter)	No	62,916	83,049
69	Gulley Pot installation	08.50.015	Gulley pot construction	Provide and place gulley pots including grating (H=900mm) for inlet structures as directed by the Engineer.	No	10,699	14,123
70	Drain Lining	08.50.032	Lay drain lining with concrete	Place concrete lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,591	3,420

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
71		08.50.022a	Laying of dressed stones	Place dressed stone lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,702	3,567
72		08.50.022	Laying of side slabs	Place side slab lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	3,864	5,100
73		08.70.036	Laying of 300mm invert block drain	Provide, lay and joint invert block drain of 300mm in diameter	m	1,527	2,016
74		08.70.037	Laying of 750mm invert block drain	Provide, lay and joint invert block drain of 750mm in width	m	1,914	2,526

**9. PASSAGE OF TRAFFIC**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
75	Traffic Control	09.50.004	Traffic Control	Place warning signs, barriers and cones around the working lane on the carriageway and guide the passage of traffic through the works	Day	2,429	3,206
76		09.50.005	Watchman	Provide watchman for all round surveillance.	No	2,202	2,907
77		09.50.006	Watering	Sprinkle water to control dust for passage of traffic through the works or compaction at earth works	m <sup>2</sup>	16	21

**10. GRADING AND GRAVELLING WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
78	Grading	10.50.001	Heavy grading without watering or compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches without providing watering and compaction	m <sup>2</sup>	7	9
79		10.50.002	Heavy grading with watering and compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches providing watering and compaction	m <sup>2</sup>	12	15
80		10.50.003	Light grading	Trim with motor grader existing carriageway to camber, including slopes and ditches.	m <sup>2</sup>	6	8
81		10.50.004	Reshaping	Restore manually the camber on earth or gravel roads by returning material from road sides and shoulder toward road centre.	m <sup>2</sup>	19	24
82		10.50.005	Dragging	Remove manually loose material from the surface to delay the formation of corrugations	m <sup>2</sup>	19	24
83	Gravelling	10.60.001	Regravelling	Prepare for road formation and provide, place spread, shape and compact with watering gravel of not less than CBR 20%	m <sup>3</sup>	1,890	2,495
84		10.60.001a	Regravelling without watering	Prepare for road formation and provide, place spread, shape and compact without watering gravel of not less than CBR 20%	m <sup>3</sup>	1,870	2,468

**11. PAVED ROADS - SHOULDER MAINTENANCE AND REPAIRS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
86	Shoulder Rebuilding	11.50.002	Shoulder repairing	Prepare surface of existing shoulders, accesses and bus bays, water process and compact	m <sup>2</sup>	4	5
87	Shoulder Gravelling	11.50.003	Shoulder gravelling with natural gravel	Provide, place, spread, shape and compact 150mm of natural gravel of CBR 30% to shoulders, accesses and bus bays	m <sup>3</sup>	1,917	2,530
88		11.50.003a	Shoulder gravelling with quarry waste	Provide, place and compact quarry waste material to shoulders, accesses and bus bays	m <sup>3</sup>	3,714	4,902

**12. NATURAL MATERIAL BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
89	Pavement Removal	12.70.001	Scarify existing pavement to form subbase	Break or scarify mechanically the existing pavement layer, and compact.	m <sup>3</sup>	1,093	1,443
90	Subbase/Base Rebuilding	12.50.001	Handpacked stone paving	Provide, lay, and compact hand packed stone material including filling of voids with stone dust	m <sup>3</sup>	6,016	7,941
91		12.50.002	Provide, place and compact quarry waste	Provide, spread, shape and compact approved quarry waste of CBR 30% and above for 5cm in thickness.	m <sup>3</sup>	6,969	9,199
92		12.50.003	Provide, place, spread and compact natural gravel	Provide, spread, shape and compact approved natural gravel of CBR 30% and above for 15cm in thickness.	m <sup>3</sup>	1,915	2,528



**13. GRADED CRUSHED STONE BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
93	Graded Crushed Stone	13.50.001	Graded Crushed Stone for subbase	Provide, place and spread approved graded crushed stone for subbase.	m <sup>3</sup>	3,922	5,177
94		13.60.001	Graded Crushed Stone for base	Provide, place and spread approved graded crushed stone for base.	m <sup>3</sup>	3,922	5,177

**14. CEMENT AND LIME TREATED SUBGRADE, SUBBASE AND BASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
95	Cement/Lime Stabilization	14.50.001	Provision of Cement for treatment of material	Provide, spread cement on natural gravel or graded crushed stone	ton	18,393	24,279
96		14.50.002	Provision of Lime for treatment of material	Provide, spread lime on natural gravel or graded crushed stone	ton	34,173	45,108
97		14.50.003	Cement/lime mixing	Mixing in cement/lime into natural gravel or graded crushed stone	m <sup>3</sup>	87	115
98		14.50.004	Curing and protection of treated layers	Cure and protect layers treated with cement or lime stabilizers	m <sup>2</sup>	626	826

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
99	Prime Coat	15.50.002	Prime Coat (MC-30 cutback bitumen)	Prepare surface of carriageway, bus bays and repair areas, provide and spray MC-30 cutback bitumen at a rate of 0.8-1.2 litre/m <sup>2</sup> as prime coat	litre	237	313
100	Tack Coat	15.50.003	Tack Coat (grade bitumen cutback)	Prepare surface of carriageway and bus bays, provide and spray 80/100 penetration grade bitumen cut back using 5-15% kerosene as tack coat for asphalt concrete wearing course at a spray rate of 0.5-0.7 litre/m <sup>2</sup>	litre	233	308
101		15.50.003a	Tack Coat (bitumen emulsion)	Prepare surface of repair areas provide and spray KI-60 bitumen emulsion as tack coat or seal to repair areas at a spray rate of 0.8-1.0 litre/m <sup>2</sup>	litre	165	218
102	Surface Dressing	15.70.001	Resealing	Reseal a bituminous surface dressed or an asphaltic concrete carriageway or shoulder using chippings and bitumen emulsion to improve skid resistance and eliminate the effects of wear, oxidation, ravelling, fretting, stripping and bleeding.	m <sup>2</sup>	173	228
103		15.60.002	Construct surface dressing using 3/6 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 3 to 6mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	131	173
104		15.60.003	Construct surface dressing using 6/10 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 6 to 10mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	223	294

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
105		15.60.004	Construct surface dressing using 10/14 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 10 to 14mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	291	384
106		15.60.005	Construct surface dressing using 14/20 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 14 to 20mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	314	414

**16. BITUMINOUS MIXES**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
107a	<b>Pavement Repairing</b>	16.50.001a	Pothole Cutting and Cleaning	Trim, cut and clean failed bituminous surface	m <sup>3</sup>	3,142	4,147
107		16.50.001	Pothole patching - hot mix	Provide, place and compact asphaltic concrete to repair areas and for regulation to carriageway	m <sup>3</sup>	45,073	59,496
108		16.50.002	Pothole patching - cold mix	Repair defects on bituminous surface by cold bituminous mixture	m <sup>3</sup>	63,695	84,077
109		16.50.004	Crack sealing	Repair transverse or longitudinal cracking on surface dressed or asphalt concrete	m	226	298
110		16.60.001	Asphalt concrete for surfacing - hot mix.	Overlay or continuously repave surface by hot bituminous mixture	m <sup>3</sup>	46,624	61,544
111		16.70.001	Base repair - Dense Bitumen Macadam (DBM)	Place dense bitumen macadam for base material and roll	m <sup>3</sup>	32,824	43,328
112	<b>Milling and Paving</b>	16.80.010	Milling the existing bituminous layer to spoil	Mill mechanically the existing bituminous layer to spoil	m <sup>3</sup>	3,975	5,247
113		16.80.015	Milling the existing bituminous layer for reuse	Mill mechanically the existing bituminous layer and stockpile for reuse or recycle	m <sup>3</sup>	15,063	19,883

**17. CONCRETE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
114	Concrete Work	17.60.001	Concrete work (class 15/20)	Provide, place and compact class 15/20 concrete mixture for blinding.	m <sup>3</sup>	19,104	25,217
115		17.60.002	Concrete work (class 20/20)	Provide, place and compact class 20/20 concrete mixture.	m <sup>3</sup>	20,163	26,615
116		17.60.002a	Concrete work (class 25/20)	Provide, place and compact class 25/20 concrete mixture.	m <sup>3</sup>	21,925	28,941
117	Formwork	17.60.003	Vertical formwork class F2 finish	Provide and erect formwork of class F2 finish to the vertical direction	m <sup>2</sup>	1,476	1,948
118		17.60.004	Horizontal formwork class F2 finish	Provide and erect formwork of class F2 finish to the horizontal direction	m <sup>2</sup>	1,376	1,816
119	Reinforcement	17.80.004	Reinforcement work (below 16mm)	Provide, cut bend and fix into position high yield reinforcement bar below 16mm	ton	156,007	205,929
120		17.80.005	Reinforcement work (above 16mm)	Provide, cut bend and fix into position high yield reinforcement bar above 16mm	ton	163,300	215,556

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
121	Boundary posts	20.50.001	Road reserve boundary posts	Provide and erect road reserve boundary posts (size 1.2 x 0.2 x 0.2)	No	3,370	4,448
122		20.50.004	Edge marker posts	Provide and erect edge marker posts	No	1,583	2,090
123	Road Marking	20.50.007	Roads markings - white paint	Provide reflectorized white paint for road markings (w = 10cm)	m <sup>2</sup>	1,461	1,929
124		20.70.011	Road markings - white thermoplastic material	Renew faded or missing white road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,056	4,034
124a		20.70.011a	Road markings on surface dressed pavement- white thermoplastic material	Renew faded or missing white road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,354	4,427
125		20.50.006	Road markings - yellow paint	Provide reflectorized yellow paint for road markings (w = 10cm)	m <sup>2</sup>	1,461	1,929
126		20.70.010	Road markings - yellow thermoplastic material	Upgrade faded or missing yellow road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,244	4,282
126a		20.70.010a	Road markings on surface dressed pavement- yellow thermoplastic material	Renew faded or missing yellow road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,571	4,714
127		20.50.107	Road marking black paint	Provide reflectorized black paint for road markings (w = 10cm)	m <sup>2</sup>	1,414	1,866
128		20.70.002	Warning signs	Provide and erect priority, prohibitory or mandatory signs	No	19,727	26,040
129	Road Sign Erection	20.70.005	Priority, prohibitory or mandatory signs	Priority, prohibitory or mandatory signs	No	19,778	26,107
130		20.70.004	Standard informatory signs	Provide and erect informatory signs	No	24,133	31,856
131		20.70.006	Non-standard informatory signs	Provide and erect non-standard informatoty signs < 2m <sup>2</sup>	No	36,325	47,949

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
131b		20.70.006b	Non-standard informatory signs (2-5m <sup>2</sup> )	Provide and erect non-standard informatoty signs (2-5m <sup>2</sup> )	No	71,880	94,882
131c		20.70.006c	Non-standard informatory signs (5-8m <sup>2</sup> )	Provide and erect non-standard informatoty signs (5-8m <sup>2</sup> )	No	134,479	177,512
132	Kerb Installation	20.50.012	Kerbs	Provide lay and joint concrete class 20/20 kerbs in support to carriageway, bus bays and junctions	m	2,260	2,983
133	Kilometre marker post Installation	20.50.013	Kilometre marker posts	Kilometre marker post Installation.	No	10,330	13,636
134	Bollard Installation	20.50.017	Concrete bollards	Concrete bollard Installation (diameter 0.2m, length 0.9m, embedded depth 0.45m)	No	3,940	5,201
135		20.50.021	Steel bollards	Place and provide gauge 16 steel pipe Bollards of diameter 150 mm and 1.05m above above the ground embedded to a depth of 0.45m at place	No	2,344	3,094
136	Reflective Stud Installation	20.50.019	Reflective studs	Install reflective studs along the centre line	No	1,156	1,526
137	Microtunneling	20.60.002	Microtunneling for a 150mm diameter PVC (polyvinyl chloride) duct	Conduct microtunneling with a 150mm dia PVC duct (under silt or sand condition)	m	77,507	102,309
138		20.60.002a	Horizontal drilling	Conduct horizontal drilling for 150mm hole in diameter (under gravel condtion)	m	45,858	60,533
139	Street light Installation	20.60.017	Street lighting pole (7.6m)	Provide and install 7.6m street lighting pole including cables accessories and lamp.	No	81,765	107,930
140		20.60.018	Street lighting pole (10m)	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	147,029	194,078



**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
141		20.60.016	Street lighting control panel	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	94,526	124,774
142		20.60.315	Electric cable	Provide and install supply cables between the street lighting poles.	m	1,750	2,310
143	Guardrail Repair	20.70.023a	Guardrail Repair Level 1	Removal of damaged guardrail and replacement with straightened beam	m	1,537	2,029
144		20.70.023b	Guardrail Repair Level 2	Removal of damaged guardrail, replacement with a straightened beam and realignment of posts	m	2,524	3,332
145		20.70.023c	Guardrail Repair Level 3	Complete removal of damaged guardrail beam and installation with new beam, posts and spacers	m	10,655	14,065

**23. CONCRETE PAVING BLOCKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
146	<b>Concrete Paving Blocks</b>	23.70.001	Interlocking - Heavy duty - plain (Deformed) 60mm	Provide and lay 60mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,768	2,334
147		23.70.002	Interlocking - Heavy duty - plain (Deformed) 80mm	Provide and lay 80mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,800	2,376

## North Rift Region

### 3.6. North Rift Region

#### 4. SITE CLEARANCE AND TOPSOIL STRIPPING

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
1	Bush Clearing	04.50.001	Mechanical mowing	Cut grass by machine along the side of the road or on slopes.	m <sup>2</sup>	6	7
2		04.50.002	Grass cutting (manual)	Cut grass manually along the side of the road or on slopes.	m <sup>2</sup>	6	7
3		04.50.003	Heavy bush clearing	Cut, remove and dispose bushes along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	27	35
4		04.50.004	Light bush clearing	Cut grass by hand from shoulders, slopes, inlet ditches, and side ditches including back slopes, turnouts and culvert outlet.	m <sup>2</sup>	14	19
5		04.50.005	Pruning of tree branches	Cut, remove and dispose branches of trees along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	144	190
6		04.50.006	Tree cutting and stump removal (200 -450 mm)	Cut, remove and dispose whole trees of 200 - 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	319	421
7		04.50.007	Tree cutting and stump removal (>450 mm)	Cut, remove and dispose whole trees of above 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	1,645	2,171
8	Site Clearing and Backfill	04.50.008	Clearing obstructions (mechanical)	Mechanically clear any obstruction including boulders and debris out of road reserve.	m <sup>2</sup>	39	51
9		04.50.008a	Clearing obstructions (manual)	Manually clear any obstruction including boulders and debris out of road reserve.	m <sup>3</sup>	394	520

**4. SITE CLEARANCE AND TOPSOIL STRIPPING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
10		04.50.009	Stripping and grubbing (mechanical)	Clear site on road reserve mechanically by stripping and grubbing roots.	m <sup>2</sup>	107	141
11		04.50.009a	Stripping and grubbing (manual)	Clear site on road reserve manually by stripping and grubbing roots.	m <sup>2</sup>	266	351
12		04.60.001	Clearing trees, hedges, bushes, vegetation and deleterious materials (mechanical)	Clear site on road reserve mechanically by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	82	108
13		04.60.001a	Clearing trees, hedges, bushes, vegetation and deleterious materials (manual)	Clear site on road reserve manually by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	119	157
14	Concrete Demolition	04.50.010	Excavate remove & disposal of concrete structures	Demolish reinforced or mass concrete structures and cart to spoil or stockpile for re-use.	m <sup>3</sup>	1,008	1,331
15	Top Soil Stripping	04.80.002	Removal of overburden	Remove topsoil to a maximum depth of 200mm.	m <sup>3</sup>	271	358
16	Pipe Culvert Removal	04.60.005	Removal of cracked small pipe culverts below 600mm	Excavate, remove and dispose cracked pipe culverts below 600mm in diameter.	m	378	499
17		04.60.005a	Removal of cracked large pipe culverts above 600mm	Excavate, remove and dispose cracked pipe culverts above 600mm in diameter.	m	568	750

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
18	Material Filling	05.50.006	Fill in soft material and compact	Provide, place and compact soft patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	645	851
19		05.50.006a	Fill in soft material and compact (soil purchased)	Provide, place and compact soft purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,487	1,963
20		05.50.007	Fill in hard material and compact	Provide, place and compact hard patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	744	982
21		05.50.007a	Fill in hard material and compact (soil purchased)	Provide, place and compact hard purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,776	2,344
22	Material Cutting	05.50.008	Cut to spoil in soft	Cut manually soft material to spoil	m <sup>3</sup>	700	924
23		05.50.008a	Cut to spoil in soft (mechanical)	Cut mechanically soft material to spoil	m <sup>3</sup>	229	302
24		05.50.009	Cut to spoil in hard	Cut manually hard material to spoil	m <sup>3</sup>	1,435	1,894
25		05.50.009a	Cut to spoil in hard (mechanical)	Cut mechanically hard material to spoil	m <sup>3</sup>	458	605
26	Concrete Demolition	05.50.012	Rock fill to swamp	Manually provide and place rock fill to swamp	m <sup>3</sup>	3,488	4,604
27		05.50.125	Rock fill to embankment construction	Manually provide and place rock fill to construct embankment.	m <sup>3</sup>	3,813	5,033
28	Planting	05.50.014	Grassing	Plant grass on the slope and inverts of ditches to reduce scour effects, or on slopes to reduce soil erosion and to improve stability.	m <sup>2</sup>	1,293	1,707
29		05.60.012	Compaction of subgrade in cut	Trim and compact.	m <sup>2</sup>	55	73

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
30	Pipe Culvert Replacement	05.60.014	Compaction of subgrade in fill	Compaction of subgrade in fill.	m <sup>3</sup>	1,577	2,082
31		05.60.016	Compaction of original ground level	Compact the top 150 mm layer of existing ground below fills and cuts to 95% MDD (AASHTO T99)	m <sup>3</sup>	53	70
31a		05.60.016a	Compaction of the 300 mm below formation level in cutting to 100% MDD (AASHTO T99)	Compaction of the top 300mm below formation level in cuts and fills (subgrade) to 100% MDD	m <sup>3</sup>	1,882	2,484

**7. EXCAVATION AND FILLING FOR STRUCTURE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
32	Material Excavation for Structures	07.50.001	Excavate for structure in soft material (manual)	Excavate manually soft material for structures.	m <sup>3</sup>	700	924
33		07.50.001a	Excavate for structure in soft material (mechanical)	Excavate mechanically soft material for structures.	m <sup>3</sup>	229	302
34		07.50.002	Excavate for structure in hard material (manual)	Excavate manually in hard material for structures.	m <sup>3</sup>	1,435	1,894
35		07.50.002a	Excavate for structure in hard material (mechanical)	Excavate mechanically in hard material for structures.	m <sup>3</sup>	458	605
36	Gabion	07.70.004	Gabion Installation	Provide and place Macaferri or equivalent gabion boxes (2m * 1m * 1m).	m <sup>2</sup>	522	689
37		07.70.005	Rock fill to Gabions	Provide and place rock fill to gabions.	m <sup>3</sup>	3,104	4,097
38	Stone Pitching	07.70.001	Stone pitching	Provide stone pitching including grouting of ratio 1:4 cement to mortar.	m <sup>2</sup>	2,042	2,695



**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
39	Ditch Cleaning	08.50.002a	Ditch cleaning - mechanical	Mechanically desilt, shape inlets outfalls, side drains to free flow conditions	m	27	36
40		08.50.002	Ditch cleaning - manual	Manually desilt, shape inlets outfalls, side drains to free flow conditions.	m	26	34
41	Culvert Cleaning	08.60.002	Small culvert cleaning-partially blocked-below 450mm	Clean culverts of below 450mm in diameter to free flow conditions	m	639	843
42		08.60.003	Medium culvert cleaning-partially blocked-600mm	Clean culverts of 600mm in diameter to free flow conditions	m	486	642
43		08.60.004	Large culvert cleaning-partially blocked-900 mm and above	Clean culverts of 900mm and above in diameter to free flow conditions	m	333	440
44		08.50.025	Manhole cleaning	Remove all silt and debris and wash out manhole to free flow conditions.	No	1,065	1,406
45		08.50.016	Gulley pot cleaning	Clean siltation and debris from gulley pot to good impoundment conditions.	No	214	282
46		08.50.009	Covered (slotted) lined drain cleaning	Remove all silt and debris and wash out covered lined drain to free flow conditions	m	132	174
47		08.50.005a	Ditch/mitre drain excavation in soft (mechanical)	Excavate mechanically for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	305	403
48		08.50.005	Ditch/mitre drain excavation in soft (manual)	Excavate manually for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	411	543
49		08.50.005b	Ditch/mitre drain excavation in hard (mechanical)	Excavate mechanically in hard material for inlet, outfall, mitre and catchwater drains.	m <sup>3</sup>	476	628
50		08.50.005c	Ditch/mitre drain excavation in hard (manual)	Excavate manually in hard material for inlet, outfall, mitre and catchwater drains	m <sup>3</sup>	1,969	2,599
51	Pipe Culvert Installation	08.60.021	Culvert installation-300mm with surround	Provide, lay and joint pipe culvert of 300mm in diameter with surround	m	6,485	8,560

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
52		08.60.020	Culvert installation-300mm without surround	Provide, lay and joint unhounded pipe culvert of 300mm in diameter without surround	m	2,408	3,179
53		08.60.023	Culvert installation-450mm with surround	Provide, lay and joint pipe culvert of 450mm in diameter with surround.	m	9,749	12,869
54		08.60.022	Culvert installation-450mm without surround	Provide, lay and joint pipe culvert of 450mm in diameter without surround.	m	3,927	5,184
55		08.60.025	Culvert installation-600mm with surround	Provide, lay and joint pipe culvert of 600mm in diameter with surround	m	15,340	20,249
56		08.60.024	Culvert installation-600mm without surround	Provide, lay and joint pipe culvert of 600mm in diameter without surround	m	5,358	7,073
57		08.60.027	Culvert installation-900mm with surround	Provide, lay and joint pipe culvert of 900mm in diameter with surround.	m	18,271	24,118
58		08.60.026	Culvert installation-900mm without surround	Provide, lay and joint pipe culvert of 900mm in diameter without surround	m	8,271	10,918
59		08.60.028	Culvert installation-1200mm with surround	Provide, lay and joint pipe culvert of 1200mm in diameter with surround	m	27,475	36,267
60		08.60.029	Culvert installation-1200mm without surround	Provide, lay and joint culvert of 1200mm in diameter without surround	m	10,955	14,461
61		08.60.030	Excavate in soft material for culverts	Excavation manually in soft material for culvert in any size.	m <sup>3</sup>	411	543
62		08.60.031	Excavate in hard material for culverts	Excavation manually in hard material for culvert in any size.	m <sup>3</sup>	1,969	2,599
63	Headwall Construction	08.60.019	Headwall construction for 450mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 450mm pipe culvert to prevent the collapse and the potential	No	22,655	29,905

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
				slippage of the material and pavement above the culvert.			
64		08.60.019a	Headwall construction for 600mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 600mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	26,501	34,981
65		08.60.019b	Headwall construction for 900mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 900mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	34,698	45,801
66		08.60.019c	Headwall construction for 1200mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 1200mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	46,608	61,522
67	Manhole installation	08.50.024	Manhole construction less than 1m	Install new small manhole of less than 1m in depth (900-1200mm in inner diameter)	No	33,427	44,124
68		08.50.024a	Manhole construction more than 1m	Install new large manhole of more than 1m in depth (900-1200mm in inner diameter)	No	55,403	73,132
69	Gulley Pot installation	08.50.015	Gulley pot construction	Provide and place gulley pots including grating (H=900mm) for inlet structures as directed by the Engineer.	No	10,733	14,168
70	Drain Lining	08.50.032	Lay drain lining with concrete	Place concrete lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,260	2,983

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
71		08.50.022a	Laying of dressed stones	Place dressed stone lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,414	3,186
72		08.50.022	Laying of side slabs	Place side slab lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,963	3,911
73		08.70.036	Laying of 300mm invert block drain	Provide, lay and joint invert block drain of 300mm in diameter	m	1,939	2,559
74		08.70.037	Laying of 750mm invert block drain	Provide, lay and joint invert block drain of 750mm in width	m	2,115	2,792

**9. PASSAGE OF TRAFFIC**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
75	Traffic Control	09.50.004	Traffic Control	Place warning signs, barriers and cones around the working lane on the carriageway and guide the passage of traffic through the works	Day	2,804	3,701
76		09.50.005	Watchman	Provide watchman for all round surveillance.	No	2,443	3,225
77		09.50.006	Watering	Sprinkle water to control dust for passage of traffic through the works or compaction at earth works	m <sup>2</sup>	16	21

**10. GRADING AND GRAVELLING WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
78	Grading	10.50.001	Heavy grading without watering or compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches without providing watering and compaction	m <sup>2</sup>	6	8
79		10.50.002	Heavy grading with watering and compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches providing watering and compaction	m <sup>2</sup>	12	15
80		10.50.003	Light grading	Trim with motor grader existing carriageway to camber, including slopes and ditches.	m <sup>2</sup>	5	7
81		10.50.004	Reshaping	Restore manually the camber on earth or gravel roads by returning material from road sides and shoulder toward road centre.	m <sup>2</sup>	22	28
82		10.50.005	Dragging	Remove manually loose material from the surface to delay the formation of corrugations	m <sup>2</sup>	22	28
83	Gravelling	10.60.001	Regravelling	Prepare for road formation and provide, place spread, shape and compact with watering gravel of not less than CBR 20%	m <sup>3</sup>	1,771	2,338
84		10.60.001a	Regravelling without watering	Prepare for road formation and provide, place spread, shape and compact without watering gravel of not less than CBR 20%	m <sup>3</sup>	1,751	2,311

**11. PAVED ROADS - SHOULDER MAINTENANCE AND REPAIRS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
86	Shoulder Rebuilding	11.50.002	Shoulder repairing	Prepare surface of existing shoulders, accesses and bus bays, water process and compact	m <sup>2</sup>	4	5
87	Shoulder Gravelling	11.50.003	Shoulder gravelling with natural gravel	Provide, place, spread, shape and compact 150mm of natural gravel of CBR 30% to shoulders, accesses and bus bays	m <sup>3</sup>	1,812	2,392
88		11.50.003a	Shoulder gravelling with quarry waste	Provide, place and compact quarry waste material to shoulders, accesses and bus bays	m <sup>3</sup>	1,907	2,517

**12. NATURAL MATERIAL BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
89	Pavement Removal	12.70.001	Scarify existing pavement to form subbase	Break or scarify mechanically the existing pavement layer, and compact.	m <sup>3</sup>	983	1,298
90	Subbase/Base Rebuilding	12.50.001	Handpacked stone paving	Provide, lay, and compact hand packed stone material including filling of voids with stone dust	m <sup>3</sup>	4,691	6,192
91		12.50.002	Provide, place and compact quarry waste	Provide, spread, shape and compact approved quarry waste of CBR 30% and above for 5cm in thickness.	m <sup>3</sup>	5,582	7,368
92		12.50.003	Provide, place, spread and compact natural gravel	Provide, spread, shape and compact approved natural gravel of CBR 30% and above for 15cm in thickness.	m <sup>3</sup>	1,811	2,391



**I3. GRADED CRUSHED STONE BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
93	Graded Crushed Stone	13.50.001	Graded Crushed Stone for subbase	Provide, place and spread approved graded crushed stone for subbase.	m <sup>3</sup>	2,442	3,223
94		13.60.001	Graded Crushed Stone for base	Provide, place and spread approved graded crushed stone for base.	m <sup>3</sup>	2,442	3,223

**14. CEMENT AND LIME TREATED SUBGRADE, SUBBASE AND BASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
95	Cement/Lime Stabilization	14.50.001	Provision of Cement for treatment of material	Provide, spread cement on natural gravel or graded crushed stone	ton	16,927	22,344
96		14.50.002	Provision of Lime for treatment of material	Provide, spread lime on natural gravel or graded crushed stone	ton	31,377	41,418
97		14.50.003	Cement/lime mixing	Mixing in cement/lime into natural gravel or graded crushed stone	m <sup>3</sup>	86	114
98		14.50.004	Curing and protection of treated layers	Cure and protect layers treated with cement or lime stabilizers	m <sup>2</sup>	210	277

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
99	Prime Coat	15.50.002	Prime Coat (MC-30 cutback bitumen)	Prepare surface of carriageway, bus bays and repair areas, provide and spray MC-30 cutback bitumen at a rate of 0.8-1.2 litre/m <sup>2</sup> as prime coat	litre	206	272
100	Tack Coat	15.50.003	Tack Coat (grade bitumen cutback)	Prepare surface of carriageway and bus bays, provide and spray 80/100 penetration grade bitumen cut back using 5-15% kerosene as tack coat for asphalt concrete wearing course at a spray rate of 0.5-0.7 litre/m <sup>2</sup>	litre	219	289
101		15.50.003a	Tack Coat (bitumen emulsion)	Prepare surface of repair areas provide and spray KI-60 bitumen emulsion as tack coat or seal to repair areas at a spray rate of 0.8-1.0 litre/m <sup>2</sup>	litre	174	230
102	Surface Dressing	15.70.001	Resealing	Reseal a bituminous surface dressed or an asphaltic concrete carriageway or shoulder using chippings and bitumen emulsion to improve skid resistance and eliminate the effects of wear, oxidation, ravelling, fretting, stripping and bleeding.	m <sup>2</sup>	155	205
103		15.60.002	Construct surface dressing using 3/6 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 3 to 6mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	109	144
104		15.60.003	Construct surface dressing using 6/10 mm precoated	Treat worn surface with graded aggregates of 6 to 10mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	178	235

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
			chippings and 80/100 penetration grade bitumen.				
105		15.60.004	Construct surface dressing using 10/14 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 10 to 14mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	235	310
106		15.60.005	Construct surface dressing using 14/20 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 14 to 20mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	253	334

**16. BITUMINOUS MIXES**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
107a	<b>Pavement Repairing</b>	16.50.001a	Pothole Cutting and Cleaning	Trim, cut and clean failed bituminous surface	m <sup>3</sup>	3,266	4,311
107		16.50.001	Pothole patching - hot mix	Provide, place and compact asphaltic concrete to repair areas and for regulation to carriageway	m <sup>3</sup>	33,096	43,687
108		16.50.002	Pothole patching - cold mix	Repair defects on bituminous surface by cold bituminous mixture	m <sup>3</sup>	63,166	83,379
109		16.50.004	Crack sealing	Repair transverse or longitudinal cracking on surface dressed or asphalt concrete	m	237	313
110		16.60.001	Asphalt concrete for surfacing - hot mix.	Overlay or continuously repave surface by hot bituminous mixture	m <sup>3</sup>	33,858	44,693
111		16.70.001	Base repair - Dense Bitumen Macadam (DBM)	Place dense bitumen macadam for base material and roll	m <sup>3</sup>	30,640	40,445
112	<b>Milling and Paving</b>	16.80.010	Milling the existing bituminous layer to spoil	Mill mechanically the existing bituminous layer to spoil	m <sup>3</sup>	3,732	4,926
113		16.80.015	Milling the existing bituminous layer for reuse	Mill mechanically the existing bituminous layer and stockpile for reuse or recycle	m <sup>3</sup>	13,318	17,580

**17. CONCRETE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
114	Concrete Work	17.60.001	Concrete work (class 15/20)	Provide, place and compact class 15/20 concrete mixture for blinding.	m <sup>3</sup>	15,274	20,162
115		17.60.002	Concrete work (class 20/20)	Provide, place and compact class 20/20 concrete mixture.	m <sup>3</sup>	16,678	22,015
116		17.60.002a	Concrete work (class 25/20)	Provide, place and compact class 25/20 concrete mixture.	m <sup>3</sup>	18,515	24,440
117	Formwork	17.60.003	Vertical formwork class F2 finish	Provide and erect formwork of class F2 finish to the vertical direction	m <sup>2</sup>	1,342	1,771
118		17.60.004	Horizontal formwork class F2 finish	Provide and erect formwork of class F2 finish to the horizontal direction	m <sup>2</sup>	1,234	1,629
119	Reinforcement	17.80.004	Reinforcement work (below 16mm)	Provide, cut bend and fix into position high yield reinforcement bar below 16mm	ton	150,844	199,114
120		17.80.005	Reinforcement work (above 16mm)	Provide, cut bend and fix into position high yield reinforcement bar above 16mm	ton	156,203	206,188

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
121	Boundary posts	20.50.001	Road reserve boundary posts	Provide and erect road reserve boundary posts (size 1.2 x 0.2 x 0.2)	No	2,886	3,810
122		20.50.004	Edge marker posts	Provide and erect edge marker posts	No	5,841	7,710
123	Road Marking	20.50.007	Roads markings - white paint	Provide reflectorized white paint for road markings (w = 10cm)	m <sup>2</sup>	1,308	1,727
124		20.70.011	Road markings - white thermoplastic material	Renew faded or missing white road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,074	4,058
124a		20.70.011a	Road markings on surface dressed pavement- white thermoplastic material	Renew faded or missing white road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,383	4,466
125		20.50.006	Road markings - yellow paint	Provide reflectorized yellow paint for road markings (w = 10cm)	m <sup>2</sup>	1,308	1,727
126		20.70.010	Road markings - yellow thermoplastic material	Upgrade faded or missing yellow road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,260	4,303
126a		20.70.010a	Road markings on surface dressed pavement- yellow thermoplastic material	Renew faded or missing yellow road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,600	4,752
127		20.50.107	Road marking black paint	Provide reflectorized black paint for road markings (w = 10cm)	m <sup>2</sup>	1,228	1,621
128		20.70.002	Warning signs	Provide and erect priority, prohibitory or mandatory signs	No	19,016	25,101
129	Road Sign Erection	20.70.005	Priority, prohibitory or mandatory signs	Priority, prohibitory or mandatory signs	No	19,063	25,163
130		20.70.004	Standard informatory signs	Provide and erect informatory signs	No	23,418	30,912

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
131		20.70.006	Non-standard informatory signs	Provide and erect non-standard informatoty signs < 2m <sup>2</sup>	No	35,600	46,992
131b		20.70.006b	Non-standard informatory signs (2-5m <sup>2</sup> )	Provide and erect non-standard informatoty signs (2-5m <sup>2</sup> )	No	70,302	92,799
131c		20.70.006c	Non-standard informatory signs (5-8m <sup>2</sup> )	Provide and erect non-standard informatoty signs (5-8m <sup>2</sup> )	No	132,901	175,429
132	Kerb Installation	20.50.012	Kerbs	Provide lay and joint concrete class 20/20 kerbs in support to carriageway, bus bays and junctions	m	1,968	2,598
133	Kilometre marker post Installation	20.50.013	Kilometre marker posts	Kilometre marker post Installation.	No	10,778	14,227
134	Bollard Installation	20.50.017	Concrete bollards	Concrete bollard Installation (diameter 0.2m, length 0.9m, embedded depth 0.45m)	No	3,355	4,429
135		20.50.021	Steel bollards	Place and provide gauge 16 steel pipe Bollards of diameter 150 mm and 1.05m above above the ground embedded to a depth of 0.45m at place	No	2,032	2,682
136	Reflective Stud Installation	20.50.019	Reflective studs	Install reflective studs along the centre line	No	1,046	1,381
137	Microtunneling	20.60.002	Microtunneling for a 150mm diameter PVC (polyvinyl chloride) duct	Conduct microtunneling with a 150mm dia PVC duct (under silt or sand condition)	m	79,559	105,018
138		20.60.002a	Horizontal drilling	Conduct horizontal drilling for 150mm hole in diameter (under gravel condtion)	m	46,280	61,090
139	Street light Installation	20.60.017	Street lighting pole (7.6m)	Provide and install 7.6m street lighting pole including cables accessories and lamp.	No	76,580	101,086



**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
140		20.60.018	Street lighting pole (10m)	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	140,802	185,859
141		20.60.016	Street lighting control panel	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	59,020	77,906
142		20.60.315	Electric cable	Provide and install supply cables between the street lighting poles.	m	709	936
143	Guardrail Repair	20.70.023a	Guardrail Repair Level 1	Removal of damaged guardrail and replacement with straightened beam	m	1,599	2,110
144		20.70.023b	Guardrail Repair Level 2	Removal of damaged guardrail, replacement with a straightened beam and realignment of posts	m	2,383	3,146
145		20.70.023c	Guardrail Repair Level 3	Complete removal of damaged guardrail beam and installation with new beam, posts and spacers	m	10,470	13,821

**23. CONCRETE PAVING BLOCKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
146	<b>Concrete Paving Blocks</b>	23.70.001	Interlocking - Heavy duty - plain (Deformed) 60mm	Provide and lay 60mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,289	1,701
147		23.70.002	Interlocking - Heavy duty - plain (Deformed) 80mm	Provide and lay 80mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,592	2,101

## Nyanza Region

### 3.7. Nyanza Region

#### 4. SITE CLEARANCE AND TOPSOIL STRIPPING

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
1	Bush Clearing	04.50.001	Mechanical mowing	Cut grass by machine along the side of the road or on slopes.	m <sup>2</sup>	5	6
2		04.50.002	Grass cutting (manual)	Cut grass manually along the side of the road or on slopes.	m <sup>2</sup>	4	5
3		04.50.003	Heavy bush clearing	Cut, remove and dispose bushes along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	18	24
4		04.50.004	Light bush clearing	Cut grass by hand from shoulders, slopes, inlet ditches, and side ditches including back slopes, turnouts and culvert outlet.	m <sup>2</sup>	10	13
5		04.50.005	Pruning of tree branches	Cut, remove and dispose branches of trees along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	100	132
6		04.50.006	Tree cutting and stump removal (200 -450 mm)	Cut, remove and dispose whole trees of 200 - 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	223	294
7		04.50.007	Tree cutting and stump removal (>450 mm)	Cut, remove and dispose whole trees of above 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	1,189	1,569
8	Site Clearing and Backfill	04.50.008	Clearing obstructions (mechanical)	Mechanically clear any obstruction including boulders and debris out of road reserve.	m <sup>2</sup>	37	49
9		04.50.008a	Clearing obstructions (manual)	Manually clear any obstruction including boulders and debris out of road reserve.	m <sup>3</sup>	268	354

**4. SITE CLEARANCE AND TOPSOIL STRIPPING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
10		04.50.009	Stripping and grubbing (mechanical)	Clear site on road reserve mechanically by stripping and grubbing roots.	m <sup>2</sup>	105	139
11		04.50.009a	Stripping and grubbing (manual)	Clear site on road reserve manually by stripping and grubbing roots.	m <sup>2</sup>	182	240
12		04.60.001	Clearing trees, hedges, bushes, vegetation and deleterious materials (mechanical)	Clear site on road reserve mechanically by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	80	106
13		04.60.001a	Clearing trees, hedges, bushes, vegetation and deleterious materials (manual)	Clear site on road reserve manually by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	84	111
14	Concrete Demolition	04.50.010	Excavate remove & disposal of concrete structures	Demolish reinforced or mass concrete structures and cart to spoil or stockpile for re-use.	m <sup>3</sup>	989	1,305
15	Top Soil Stripping	04.80.002	Removal of overburden	Remove topsoil to a maximum depth of 200mm.	m <sup>3</sup>	265	350
16	Pipe Culvert Removal	04.60.005	Removal of cracked small pipe culverts below 600mm	Excavate, remove and dispose cracked pipe culverts below 600mm in diameter.	m	370	488
17		04.60.005a	Removal of cracked large pipe culverts above 600mm	Excavate, remove and dispose cracked pipe culverts above 600mm in diameter.	m	556	734

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
18	Material Filling	05.50.006	Fill in soft material and compact	Provide, place and compact soft patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	520	686
19		05.50.006a	Fill in soft material and compact (soil purchased)	Provide, place and compact soft purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,070	1,412
20		05.50.007	Fill in hard material and compact	Provide, place and compact hard patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	620	818
21		05.50.007a	Fill in hard material and compact (soil purchased)	Provide, place and compact hard purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,224	1,616
22	Material Cutting	05.50.008	Cut to spoil in soft	Cut manually soft material to spoil	m <sup>3</sup>	513	677
23		05.50.008a	Cut to spoil in soft (mechanical)	Cut mechanically soft material to spoil	m <sup>3</sup>	224	296
24		05.50.009	Cut to spoil in hard	Cut manually hard material to spoil	m <sup>3</sup>	1,002	1,323
25		05.50.009a	Cut to spoil in hard (mechanical)	Cut mechanically hard material to spoil	m <sup>3</sup>	448	591
26	Concrete Demolition	05.50.012	Rock fill to swamp	Manually provide and place rock fill to swamp	m <sup>3</sup>	2,890	3,815
27		05.50.125	Rock fill to embankment construction	Manually provide and place rock fill to construct embankment.	m <sup>3</sup>	3,167	4,180
28	Planting	05.50.014	Grassing	Plant grass on the slope and inverts of ditches to reduce scour effects, or on slopes to reduce soil erosion and to improve stability.	m <sup>2</sup>	833	1,100
29	Pipe Culvert Replacement	05.60.012	Compaction of subgrade in cut	Trim and compact.	m <sup>2</sup>	38	50
30		05.60.014	Compaction of subgrade in fill	Compaction of subgrade in fill.	m <sup>3</sup>	2,066	2,727

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
31		05.60.016	Compaction of original ground level	Compact the top 150 mm layer of existing ground below fills and cuts to 95% MDD (AASHTO T99)	m <sup>3</sup>	47	62
31a		05.60.016a	Compaction of the 300 mm below formation level in cutting to 100% MDD (AASHTO T99)	Compaction of the top 300mm below formation level in cuts and fills (subgrade) to 100% MDD	m <sup>3</sup>	1,624	2,144

**7. EXCAVATION AND FILLING FOR STRUCTURE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
32	<b>Material Excavation for Structures</b>	07.50.001	Excavate for structure in soft material (manual)	Excavate manually soft material for structures.	m <sup>3</sup>	513	677
33		07.50.001a	Excavate for structure in soft material (mechanical)	Excavate mechanically soft material for structures.	m <sup>3</sup>	224	296
34		07.50.002	Excavate for structure in hard material (manual)	Excavate manually in hard material for structures.	m <sup>3</sup>	1,002	1,323
35		07.50.002a	Excavate for structure in hard material (mechanical)	Excavate mechanically in hard material for structures.	m <sup>3</sup>	448	591
36	<b>Gabion</b>	07.70.004	Gabion Installation	Provide and place Macaferri or equivalent gabion boxes (2m * 1m * 1m).	m <sup>2</sup>	435	574
37		07.70.005	Rock fill to Gabions	Provide and place rock fill to gabions.	m <sup>3</sup>	5,883	7,766
38	<b>Stone Pitching</b>	07.70.001	Stone pitching	Provide stone pitching including grouting of ratio 1:4 cement to mortar.	m <sup>2</sup>	2,415	3,188



**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
39	Ditch Cleaning	08.50.002a	Ditch cleaning - mechanical	Mechanically desilt, shape inlets outfalls, side drains to free flow conditions	m	28	37
40		08.50.002	Ditch cleaning - manual	Manually desilt, shape inlets outfalls, side drains to free flow conditions.	m	18	23
41	Culvert Cleaning	08.60.002	Small culvert cleaning-partially blocked-below 450mm	Clean culverts of below 450mm in diameter to free flow conditions	m	431	569
42		08.60.003	Medium culvert cleaning-partially blocked-600mm	Clean culverts of 600mm in diameter to free flow conditions	m	329	434
43		08.60.004	Large culvert cleaning-partially blocked-900 mm and above	Clean culverts of 900mm and above in diameter to free flow conditions	m	227	300
44		08.50.025	Manhole cleaning	Remove all silt and debris and wash out manhole to free flow conditions.	No	765	1,010
45		08.50.016	Gulley pot cleaning	Clean siltation and debris from gulley pot to good impoundment conditions.	No	150	198
46		08.50.009	Covered (slotted) lined drain cleaning	Remove all silt and debris and wash out covered lined drain to free flow conditions	m	90	119
47		08.50.005a	Ditch/mitre drain excavation in soft (mechanical)	Excavate mechanically for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	280	370
48		08.50.005	Ditch/mitre drain excavation in soft (manual)	Excavate manually for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	297	392
49		08.50.005b	Ditch/mitre drain excavation in hard (mechanical)	Excavate mechanically in hard material for inlet, outfall, mitre and catchwater drains.	m <sup>3</sup>	461	609
50		08.50.005c	Ditch/mitre drain excavation in hard (manual)	Excavate manually in hard material for inlet, outfall, mitre and catchwater drains	m <sup>3</sup>	1,548	2,043
51	Pipe Culvert Installation	08.60.021	Culvert installation-300mm with surround	Provide, lay and joint pipe culvert of 300mm in diameter with surround	m	6,582	8,688

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
52		08.60.020	Culvert installation-300mm without surround	Provide, lay and joint unhoused pipe culvert of 300mm in diameter without surround	m	2,661	3,513
53		08.60.023	Culvert installation-450mm with surround	Provide, lay and joint pipe culvert of 450mm in diameter with surround.	m	9,075	11,979
54		08.60.022	Culvert installation-450mm without surround	Provide, lay and joint pipe culvert of 450mm in diameter without surround.	m	3,475	4,587
55		08.60.025	Culvert installation-600mm with surround	Provide, lay and joint pipe culvert of 600mm in diameter with surround	m	14,140	18,665
56		08.60.024	Culvert installation-600mm without surround	Provide, lay and joint pipe culvert of 600mm in diameter without surround	m	4,535	5,986
57		08.60.027	Culvert installation-900mm with surround	Provide, lay and joint pipe culvert of 900mm in diameter with surround.	m	16,683	22,022
58		08.60.026	Culvert installation-900mm without surround	Provide, lay and joint pipe culvert of 900mm in diameter without surround	m	6,158	8,129
59		08.60.028	Culvert installation-1200mm with surround	Provide, lay and joint pipe culvert of 1200mm in diameter with surround	m	26,623	35,142
60		08.60.029	Culvert installation-1200mm without surround	Provide, lay and joint culvert of 1200mm in diameter without surround	m	9,452	12,477
61		08.60.030	Excavate in soft material for culverts	Excavation manually in soft material for culvert in any size.	m <sup>3</sup>	297	392
62		08.60.031	Excavate in hard material for culverts	Excavation manually in hard material for culvert in any size.	m <sup>3</sup>	1,548	2,043
63	Headwall Construction	08.60.019	Headwall construction for 450mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 450mm pipe culvert to prevent the collapse and the potential	No	22,457	29,643

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
				slippage of the material and pavement above the culvert.			
64		08.60.019a	Headwall construction for 600mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 600mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	26,249	34,649
65		08.60.019b	Headwall construction for 900mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 900mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	34,342	45,332
66		08.60.019c	Headwall construction for 1200mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 1200mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	46,006	60,728
67	Manhole installation	08.50.024	Manhole construction less than 1m	Install new small manhole of less than 1m in depth (900-1200mm in inner diameter)	No	32,225	42,537
68		08.50.024a	Manhole construction more than 1m	Install new large manhole of more than 1m in depth (900-1200mm in inner diameter)	No	53,151	70,159
69	Gulley Pot installation	08.50.015	Gulley pot construction	Provide and place gulley pots including grating (H=900mm) for inlet structures as directed by the Engineer.	No	10,633	14,036
70	Drain Lining	08.50.032	Lay drain lining with concrete	Place concrete lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,178	2,875

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
71		08.50.022a	Laying of dressed stones	Place dressed stone lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	3,153	4,162
72		08.50.022	Laying of side slabs	Place side slab lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	3,260	4,303
73		08.70.036	Laying of 300mm invert block drain	Provide, lay and joint invert block drain of 300mm in diameter	m	2,187	2,887
74		08.70.037	Laying of 750mm invert block drain	Provide, lay and joint invert block drain of 750mm in width	m	2,064	2,724

**9. PASSAGE OF TRAFFIC**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
75	Traffic Control	09.50.004	Traffic Control	Place warning signs, barriers and cones around the working lane on the carriageway and guide the passage of traffic through the works	Day	1,941	2,562
76		09.50.005	Watchman	Provide watchman for all round surveillance.	No	1,872	2,471
77		09.50.006	Watering	Sprinkle water to control dust for passage of traffic through the works or compaction at earth works	m <sup>2</sup>	13	17

**10. GRADING AND GRAVELLING WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
78	Grading	10.50.001	Heavy grading without watering or compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches without providing watering and compaction	m <sup>2</sup>	6	8
79		10.50.002	Heavy grading with watering and compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches providing watering and compaction	m <sup>2</sup>	10	14
80		10.50.003	Light grading	Trim with motor grader existing carriageway to camber, including slopes and ditches.	m <sup>2</sup>	5	6
81		10.50.004	Reshaping	Restore manually the camber on earth or gravel roads by returning material from road sides and shoulder toward road centre.	m <sup>2</sup>	15	20
82		10.50.005	Dragging	Remove manually loose material from the surface to delay the formation of corrugations	m <sup>2</sup>	15	20
83	Gravelling	10.60.001	Regravelling	Prepare for road formation and provide, place spread, shape and compact with watering gravel of not less than CBR 20%	m <sup>3</sup>	2,242	2,959
84		10.60.001a	Regravelling without watering	Prepare for road formation and provide, place spread, shape and compact without watering gravel of not less than CBR 20%	m <sup>3</sup>	2,226	2,938

**11. PAVED ROADS - SHOULDER MAINTENANCE AND REPAIRS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
86	Shoulder Rebuilding	11.50.002	Shoulder repairing	Prepare surface of existing shoulders, accesses and bus bays, water process and compact	m <sup>2</sup>	3	4
87	Shoulder Gravelling	11.50.003	Shoulder gravelling with natural gravel	Provide, place, spread, shape and compact 150mm of natural gravel of CBR 30% to shoulders, accesses and bus bays	m <sup>3</sup>	2,267	2,992
88		11.50.003a	Shoulder gravelling with quarry waste	Provide, place and compact quarry waste material to shoulders, accesses and bus bays	m <sup>3</sup>	1,847	2,438

**12. NATURAL MATERIAL BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
89	Pavement Removal	12.70.001	Scarify existing pavement to form subbase	Break or scarify mechanically the existing pavement layer, and compact.	m <sup>3</sup>	934	1,233
90	Subbase/Base Rebuilding	12.50.001	Handpacked stone paving	Provide, lay, and compact hand packed stone material including filling of voids with stone dust	m <sup>3</sup>	4,351	5,743
91		12.50.002	Provide, place and compact quarry waste	Provide, spread, shape and compact approved quarry waste of CBR 30% and above for 5cm in thickness.	m <sup>3</sup>	5,153	6,802
92		12.50.003	Provide, place, spread and compact natural gravel	Provide, spread, shape and compact approved natural gravel of CBR 30% and above for 15cm in thickness.	m <sup>3</sup>	2,265	2,990



**13. GRADED CRUSHED STONE BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
93	Graded Crushed Stone	13.50.001	Graded Crushed Stone for subbase	Provide, place and spread approved graded crushed stone for subbase.	m <sup>3</sup>	2,913	3,845
94		13.60.001	Graded Crushed Stone for base	Provide, place and spread approved graded crushed stone for base.	m <sup>3</sup>	2,913	3,845

**14. CEMENT AND LIME TREATED SUBGRADE, SUBBASE AND BASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
95	Cement/Lime Stabilization	14.50.001	Provision of Cement for treatment of material	Provide, spread cement on natural gravel or graded crushed stone	ton	16,721	22,072
96		14.50.002	Provision of Lime for treatment of material	Provide, spread lime on natural gravel or graded crushed stone	ton	32,069	42,331
97		14.50.003	Cement/lime mixing	Mixing in cement/lime into natural gravel or graded crushed stone	m <sup>3</sup>	78	103
98		14.50.004	Curing and protection of treated layers	Cure and protect layers treated with cement or lime stabilizers	m <sup>2</sup>	405	534

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
99	Prime Coat	15.50.002	Prime Coat (MC-30 cutback bitumen)	Prepare surface of carriageway, bus bays and repair areas, provide and spray MC-30 cutback bitumen at a rate of 0.8-1.2 litre/m <sup>2</sup> as prime coat	litre	189	249
100	Tack Coat	15.50.003	Tack Coat (grade bitumen cutback)	Prepare surface of carriageway and bus bays, provide and spray 80/100 penetration grade bitumen cut back using 5-15% kerosene as tack coat for asphalt concrete wearing course at a spray rate of 0.5-0.7 litre/m <sup>2</sup>	litre	163	215
101		15.50.003a	Tack Coat (bitumen emulsion)	Prepare surface of repair areas provide and spray KI-60 bitumen emulsion as tack coat or seal to repair areas at a spray rate of 0.8-1.0 litre/m <sup>2</sup>	litre	149	197
102	Surface Dressing	15.70.001	Resealing	Reseal a bituminous surface dressed or an asphaltic concrete carriageway or shoulder using chippings and bitumen emulsion to improve skid resistance and eliminate the effects of wear, oxidation, ravelling, fretting, stripping and bleeding.	m <sup>2</sup>	140	185
103		15.60.002	Construct surface dressing using 3/6 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 3 to 6mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	83	110
104		15.60.003	Construct surface dressing using 6/10 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 6 to 10mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	138	182

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
105		15.60.004	Construct surface dressing using 10/14 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 10 to 14mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	185	244
106		15.60.005	Construct surface dressing using 14/20 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 14 to 20mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	202	267

**16. BITUMINOUS MIXES**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
107a	<b>Pavement Repairing</b>	16.50.001a	Pothole Cutting and Cleaning	Trim, cut and clean failed bituminous surface	m <sup>3</sup>	2,538	3,350
107		16.50.001	Pothole patching - hot mix	Provide, place and compact asphaltic concrete to repair areas and for regulation to carriageway	m <sup>3</sup>	30,636	40,440
108		16.50.002	Pothole patching - cold mix	Repair defects on bituminous surface by cold bituminous mixture	m <sup>3</sup>	59,537	78,589
109		16.50.004	Crack sealing	Repair transverse or longitudinal cracking on surface dressed or asphalt concrete	m	239	315
110		16.60.001	Asphalt concrete for surfacing - hot mix.	Overlay or continuously repave surface by hot bituminous mixture	m <sup>3</sup>	31,729	41,882
111		16.70.001	Base repair - Dense Bitumen Macadam (DBM)	Place dense bitumen macadam for base material and roll	m <sup>3</sup>	26,278	34,687
112	<b>Milling and Paving</b>	16.80.010	Milling the existing bituminous layer to spoil	Mill mechanically the existing bituminous layer to spoil	m <sup>3</sup>	3,502	4,623
113		16.80.015	Milling the existing bituminous layer for reuse	Mill mechanically the existing bituminous layer and stockpile for reuse or recycle	m <sup>3</sup>	13,314	17,574

**17. CONCRETE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
114	Concrete Work	17.60.001	Concrete work (class 15/20)	Provide, place and compact class 15/20 concrete mixture for blinding.	m <sup>3</sup>	14,715	19,424
115		17.60.002	Concrete work (class 20/20)	Provide, place and compact class 20/20 concrete mixture.	m <sup>3</sup>	15,944	21,046
116		17.60.002a	Concrete work (class 25/20)	Provide, place and compact class 25/20 concrete mixture.	m <sup>3</sup>	17,573	23,196
117	Formwork	17.60.003	Vertical formwork class F2 finish	Provide and erect formwork of class F2 finish to the vertical direction	m <sup>2</sup>	1,266	1,671
118		17.60.004	Horizontal formwork class F2 finish	Provide and erect formwork of class F2 finish to the horizontal direction	m <sup>2</sup>	1,183	1,562
119	Reinforcement	17.80.004	Reinforcement work (below 16mm)	Provide, cut bend and fix into position high yield reinforcement bar below 16mm	ton	139,623	184,302
120		17.80.005	Reinforcement work (above 16mm)	Provide, cut bend and fix into position high yield reinforcement bar above 16mm	ton	141,969	187,399

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
121	Boundary posts	20.50.001	Road reserve boundary posts	Provide and erect road reserve boundary posts (size 1.2 x 0.2 x 0.2)	No	2,750	3,630
122		20.50.004	Edge marker posts	Provide and erect edge marker posts	No	2,867	3,784
123	Road Marking	20.50.007	Roads markings - white paint	Provide reflectorized white paint for road markings (w = 10cm)	m <sup>2</sup>	1,326	1,750
124		20.70.011	Road markings - white thermoplastic material	Renew faded or missing white road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,050	4,026
124a		20.70.011a	Road markings on surface dressed pavement- white thermoplastic material	Renew faded or missing white road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,380	4,462
125		20.50.006	Road markings - yellow paint	Provide reflectorized yellow paint for road markings (w = 10cm)	m <sup>2</sup>	1,326	1,750
126		20.70.010	Road markings - yellow thermoplastic material	Upgrade faded or missing yellow road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,241	4,278
126a		20.70.010a	Road markings on surface dressed pavement- yellow thermoplastic material	Renew faded or missing yellow road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,597	4,748
127		20.50.107	Road marking black paint	Provide reflectorized black paint for road markings (w = 10cm)	m <sup>2</sup>	1,339	1,767
128	Road Sign Erection	20.70.002	Warning signs	Provide and erect priority, prohibitory or mandatory signs	No	18,789	24,801
129		20.70.005	Priority, prohibitory or mandatory signs	Priority, prohibitory or mandatory signs	No	18,829	24,854
130		20.70.004	Standard informatory signs	Provide and erect informatory signs	No	23,183	30,602
131		20.70.006	Non-standard informatory signs	Provide and erect non-standard informatoty signs < 2m <sup>2</sup>	No	35,171	46,426

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
131b		20.70.006b	Non-standard informatory signs (2-5m <sup>2</sup> )	Provide and erect non-standard informatoty signs (2-5m <sup>2</sup> )	No	69,745	92,063
131c		20.70.006c	Non-standard informatory signs (5-8m <sup>2</sup> )	Provide and erect non-standard informatoty signs (5-8m <sup>2</sup> )	No	132,338	174,686
132	Kerb Installation	20.50.012	Kerbs	Provide lay and joint concrete class 20/20 kerbs in support to carriageway, bus bays and junctions	m	1,871	2,470
133	Kilometre marker post Installation	20.50.013	Kilometre marker posts	Kilometre marker post Installation.	No	11,320	14,942
134	Bollard Installation	20.50.017	Concrete bollards	Concrete bollard Installation (diameter 0.2m, length 0.9m, embedded depth 0.45m)	No	3,219	4,249
135		20.50.021	Steel bollards	Place and provide gauge 16 steel pipe Bollards of diameter 150 mm and 1.05m above above the ground embedded to a depth of 0.45m at place	No	1,966	2,595
136	Reflective Stud Installation	20.50.019	Reflective studs	Install reflective studs along the centre line	No	1,142	1,507
137	Microtunneling	20.60.002	Microtunneling for a 150mm diameter PVC (polyvinyl chloride) duct	Conduct microtunneling with a 150mm dia PVC duct (under silt or sand condition)	m	64,797	85,532
138		20.60.002a	Horizontal drilling	Conduct horizontal drilling for 150mm hole in diameter (under gravel condtion)	m	43,152	56,961
139	Street light Installation	20.60.017	Street lighting pole (7.6m)	Provide and install 7.6m street lighting pole including cables accessories and lamp.	No	70,087	92,515
140		20.60.018	Street lighting pole (10m)	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	133,467	176,176



**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
141		20.60.016	Street lighting control panel	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	96,536	127,428
142		20.60.315	Electric cable	Provide and install supply cables between the street lighting poles.	m	1,652	2,181
143	Guardrail Repair	20.70.023a	Guardrail Repair Level 1	Removal of damaged guardrail and replacement with straightened beam	m	1,449	1,913
144		20.70.023b	Guardrail Repair Level 2	Removal of damaged guardrail, replacement with a straightened beam and realignment of posts	m	2,768	3,653
145		20.70.023c	Guardrail Repair Level 3	Complete removal of damaged guardrail beam and installation with new beam, posts and spacers	m	10,677	14,093

**23. CONCRETE PAVING BLOCKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
146	<b>Concrete Paving Blocks</b>	23.70.001	Interlocking - Heavy duty - plain (Deformed) 60mm	Provide and lay 60mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,300	1,716
147		23.70.002	Interlocking - Heavy duty - plain (Deformed) 80mm	Provide and lay 80mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,474	1,946

## **South Rift Region**

### 3.8. South Rift Region

#### 4. SITE CLEARANCE AND TOPSOIL STRIPPING

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
1	Bush Clearing	04.50.001	Mechanical mowing	Cut grass by machine along the side of the road or on slopes.	m <sup>2</sup>	5	6
2		04.50.002	Grass cutting (manual)	Cut grass manually along the side of the road or on slopes.	m <sup>2</sup>	4	5
3		04.50.003	Heavy bush clearing	Cut, remove and dispose bushes along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	19	25
4		04.50.004	Light bush clearing	Cut grass by hand from shoulders, slopes, inlet ditches, and side ditches including back slopes, turnouts and culvert outlet.	m <sup>2</sup>	10	14
5		04.50.005	Pruning of tree branches	Cut, remove and dispose branches of trees along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	103	136
6		04.50.006	Tree cutting and stump removal (200 -450 mm)	Cut, remove and dispose whole trees of 200 - 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	230	304
7		04.50.007	Tree cutting and stump removal (>450 mm)	Cut, remove and dispose whole trees of above 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	1,186	1,566
8	Site Clearing and Backfill	04.50.008	Clearing obstructions (mechanical)	Mechanically clear any obstruction including boulders and debris out of road reserve.	m <sup>2</sup>	40	53
9		04.50.008a	Clearing obstructions (manual)	Manually clear any obstruction including boulders and debris out of road reserve.	m <sup>3</sup>	284	375

**4. SITE CLEARANCE AND TOPSOIL STRIPPING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
10		04.50.009	Stripping and grubbing (mechanical)	Clear site on road reserve mechanically by stripping and grubbing roots.	m <sup>2</sup>	112	148
11		04.50.009a	Stripping and grubbing (manual)	Clear site on road reserve manually by stripping and grubbing roots.	m <sup>2</sup>	192	253
12		04.60.001	Clearing trees, hedges, bushes, vegetation and deleterious materials (mechanical)	Clear site on road reserve mechanically by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	86	114
13		04.60.001a	Clearing trees, hedges, bushes, vegetation and deleterious materials (manual)	Clear site on road reserve manually by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	86	114
14	Concrete Demolition	04.50.010	Excavate remove & disposal of concrete structures	Demolish reinforced or mass concrete structures and cart to spoil or stockpile for re-use.	m <sup>3</sup>	1,044	1,378
15	Top Soil Stripping	04.80.002	Removal of overburden	Remove topsoil to a maximum depth of 200mm.	m <sup>3</sup>	286	378
16	Pipe Culvert Removal	04.60.005	Removal of cracked small pipe culverts below 600mm	Excavate, remove and dispose cracked pipe culverts below 600mm in diameter.	m	388	512
17		04.60.005a	Removal of cracked large pipe culverts above 600mm	Excavate, remove and dispose cracked pipe culverts above 600mm in diameter.	m	584	771

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
18	Material Filling	05.50.006	Fill in soft material and compact	Provide, place and compact soft patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	537	709
19		05.50.006a	Fill in soft material and compact (soil purchased)	Provide, place and compact soft purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,254	1,655
20		05.50.007	Fill in hard material and compact	Provide, place and compact hard patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	642	847
21		05.50.007a	Fill in hard material and compact (soil purchased)	Provide, place and compact hard purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,432	1,890
22	Material Cutting	05.50.008	Cut to spoil in soft	Cut manually soft material to spoil	m <sup>3</sup>	505	667
23		05.50.008a	Cut to spoil in soft (mechanical)	Cut mechanically soft material to spoil	m <sup>3</sup>	235	310
24		05.50.009	Cut to spoil in hard	Cut manually hard material to spoil	m <sup>3</sup>	1,034	1,365
25		05.50.009a	Cut to spoil in hard (mechanical)	Cut mechanically hard material to spoil	m <sup>3</sup>	470	620
26	Concrete Demolition	05.50.012	Rock fill to swamp	Manually provide and place rock fill to swamp	m <sup>3</sup>	3,103	4,096
27		05.50.125	Rock fill to embankment construction	Manually provide and place rock fill to construct embankment.	m <sup>3</sup>	3,379	4,460
28	Planting	05.50.014	Grassing	Plant grass on the slope and inverts of ditches to reduce scour effects, or on slopes to reduce soil erosion and to improve stability.	m <sup>2</sup>	604	797
29	Pipe Culvert Replacement	05.60.012	Compaction of subgrade in cut	Trim and compact.	m <sup>2</sup>	41	54
30		05.60.014	Compaction of subgrade in fill	Compaction of subgrade in fill.	m <sup>3</sup>	2,515	3,320

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
31		05.60.016	Compaction of original ground level	Compact the top 150 mm layer of existing ground below fills and cuts to 95% MDD (AASHTO T99)	m <sup>3</sup>	46	61
31a		05.60.016a	Compaction of the 300 mm below formation level in cutting to 100% MDD (AASHTO T99)	Compaction of the top 300mm below formation level in cuts and fills (subgrade) to 100% MDD	m <sup>3</sup>	1,606	2,120

**7. EXCAVATION AND FILLING FOR STRUCTURE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
32	<b>Material Excavation for Structures</b>	07.50.001	Excavate for structure in soft material (manual)	Excavate manually soft material for structures.	m <sup>3</sup>	505	667
33		07.50.001a	Excavate for structure in soft material (mechanical)	Excavate mechanically soft material for structures.	m <sup>3</sup>	235	310
34		07.50.002	Excavate for structure in hard material (manual)	Excavate manually in hard material for structures.	m <sup>3</sup>	1,034	1,365
35		07.50.002a	Excavate for structure in hard material (mechanical)	Excavate mechanically in hard material for structures.	m <sup>3</sup>	470	620
36	<b>Gabion</b>	07.70.004	Gabion Installation	Provide and place Macaferri or equivalent gabion boxes (2m * 1m * 1m).	m <sup>2</sup>	422	557
37		07.70.005	Rock fill to Gabions	Provide and place rock fill to gabions.	m <sup>3</sup>	2,778	3,667
38	<b>Stone Pitching</b>	07.70.001	Stone pitching	Provide stone pitching including grouting of ratio 1:4 cement to mortar.	m <sup>2</sup>	1,753	2,314



**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
39	Ditch Cleaning	08.50.002a	Ditch cleaning - mechanical	Mechanically desilt, shape inlets outfalls, side drains to free flow conditions	m	32	42
40		08.50.002	Ditch cleaning - manual	Manually desilt, shape inlets outfalls, side drains to free flow conditions.	m	18	24
41	Culvert Cleaning	08.60.002	Small culvert cleaning-partially blocked-below 450mm	Clean culverts of below 450mm in diameter to free flow conditions	m	460	607
42		08.60.003	Medium culvert cleaning-partially blocked-600mm	Clean culverts of 600mm in diameter to free flow conditions	m	350	462
43		08.60.004	Large culvert cleaning-partially blocked-900 mm and above	Clean culverts of 900mm and above in diameter to free flow conditions	m	240	317
44		08.50.025	Manhole cleaning	Remove all silt and debris and wash out manhole to free flow conditions.	No	768	1,014
45		08.50.016	Gulley pot cleaning	Clean siltation and debris from gulley pot to good impoundment conditions.	No	154	203
46		08.50.009	Covered (slotted) lined drain cleaning	Remove all silt and debris and wash out covered lined drain to free flow conditions	m	95	125
47		08.50.005a	Ditch/mitre drain excavation in soft (mechanical)	Excavate mechanically for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	274	362
48		08.50.005	Ditch/mitre drain excavation in soft (manual)	Excavate manually for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	297	392
49		08.50.005b	Ditch/mitre drain excavation in hard (mechanical)	Excavate mechanically in hard material for inlet, outfall, mitre and catchwater drains.	m <sup>3</sup>	483	638
50		08.50.005c	Ditch/mitre drain excavation in hard (manual)	Excavate manually in hard material for inlet, outfall, mitre and catchwater drains	m <sup>3</sup>	1,422	1,877
51	Pipe Culvert Installation	08.60.021	Culvert installation-300mm with surround	Provide, lay and joint pipe culvert of 300mm in diameter with surround	m	5,971	7,882

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
52		08.60.020	Culvert installation-300mm without surround	Provide, lay and joint unhoused pipe culvert of 300mm in diameter without surround	m	2,279	3,008
53		08.60.023	Culvert installation-450mm with surround	Provide, lay and joint pipe culvert of 450mm in diameter with surround.	m	8,161	10,773
54		08.60.022	Culvert installation-450mm without surround	Provide, lay and joint pipe culvert of 450mm in diameter without surround.	m	2,925	3,861
55		08.60.025	Culvert installation-600mm with surround	Provide, lay and joint pipe culvert of 600mm in diameter with surround	m	12,562	16,582
56		08.60.024	Culvert installation-600mm without surround	Provide, lay and joint pipe culvert of 600mm in diameter without surround	m	3,698	4,881
57		08.60.027	Culvert installation-900mm with surround	Provide, lay and joint pipe culvert of 900mm in diameter with surround.	m	15,201	20,065
58		08.60.026	Culvert installation-900mm without surround	Provide, lay and joint pipe culvert of 900mm in diameter without surround	m	5,782	7,632
59		08.60.028	Culvert installation-1200mm with surround	Provide, lay and joint pipe culvert of 1200mm in diameter with surround	m	25,762	34,006
60		08.60.029	Culvert installation-1200mm without surround	Provide, lay and joint culvert of 1200mm in diameter without surround	m	10,534	13,905
61		08.60.030	Excavate in soft material for culverts	Excavation manually in soft material for culvert in any size.	m <sup>3</sup>	297	392
62		08.60.031	Excavate in hard material for culverts	Excavation manually in hard material for culvert in any size.	m <sup>3</sup>	1,422	1,877
63	Headwall Construction	08.60.019	Headwall construction for 450mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 450mm pipe culvert to prevent the collapse and the potential	No	21,292	28,106

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
				slippage of the material and pavement above the culvert.			
64		08.60.019a	Headwall construction for 600mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 600mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	24,911	32,882
65		08.60.019b	Headwall construction for 900mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 900mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	32,623	43,062
66		08.60.019c	Headwall construction for 1200mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 1200mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	43,994	58,072
67	Manhole installation	08.50.024	Manhole construction less than 1m	Install new small manhole of less than 1m in depth (900-1200mm in inner diameter)	No	30,482	40,236
68		08.50.024a	Manhole construction more than 1m	Install new large manhole of more than 1m in depth (900-1200mm in inner diameter)	No	50,424	66,560
69	Gulley Pot installation	08.50.015	Gulley pot construction	Provide and place gulley pots including grating (H=900mm) for inlet structures as directed by the Engineer.	No	10,642	14,047
70	Drain Lining	08.50.032	Lay drain lining with concrete	Place concrete lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,059	2,718

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
71		08.50.022a	Laying of dressed stones	Place dressed stone lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,134	2,817
72		08.50.022	Laying of side slabs	Place side slab lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,930	3,868
73		08.70.036	Laying of 300mm invert block drain	Provide, lay and joint invert block drain of 300mm in diameter	m	2,353	3,106
74		08.70.037	Laying of 750mm invert block drain	Provide, lay and joint invert block drain of 750mm in width	m	2,424	3,200

**9. PASSAGE OF TRAFFIC**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
75	Traffic Control	09.50.004	Traffic Control	Place warning signs, barriers and cones around the working lane on the carriageway and guide the passage of traffic through the works	Day	2,031	2,681
76		09.50.005	Watchman	Provide watchman for all round surveillance.	No	1,826	2,410
77		09.50.006	Watering	Sprinkle water to control dust for passage of traffic through the works or compaction at earth works	m <sup>2</sup>	12	16

**10. GRADING AND GRAVELLING WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
78	Grading	10.50.001	Heavy grading without watering or compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches without providing watering and compaction	m <sup>2</sup>	6	8
79		10.50.002	Heavy grading with watering and compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches providing watering and compaction	m <sup>2</sup>	10	13
80		10.50.003	Light grading	Trim with motor grader existing carriageway to camber, including slopes and ditches.	m <sup>2</sup>	5	6
81		10.50.004	Reshaping	Restore manually the camber on earth or gravel roads by returning material from road sides and shoulder toward road centre.	m <sup>2</sup>	16	20
82		10.50.005	Dragging	Remove manually loose material from the surface to delay the formation of corrugations	m <sup>2</sup>	16	20
83	Gravelling	10.60.001	Regravelling	Prepare for road formation and provide, place spread, shape and compact with watering gravel of not less than CBR 20%	m <sup>3</sup>	2,686	3,546
84		10.60.001a	Regravelling without watering	Prepare for road formation and provide, place spread, shape and compact without watering gravel of not less than CBR 20%	m <sup>3</sup>	2,671	3,526

**11. PAVED ROADS - SHOULDER MAINTENANCE AND REPAIRS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
86	Shoulder Rebuilding	11.50.002	Shoulder repairing	Prepare surface of existing shoulders, accesses and bus bays, water process and compact	m <sup>2</sup>	3	4
87	Shoulder Gravelling	11.50.003	Shoulder gravelling with natural gravel	Provide, place, spread, shape and compact 150mm of natural gravel of CBR 30% to shoulders, accesses and bus bays	m <sup>3</sup>	2,711	3,579
88		11.50.003a	Shoulder gravelling with quarry waste	Provide, place and compact quarry waste material to shoulders, accesses and bus bays	m <sup>3</sup>	2,734	3,609

**12. NATURAL MATERIAL BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
89	Pavement Removal	12.70.001	Scarify existing pavement to form subbase	Break or scarify mechanically the existing pavement layer, and compact.	m <sup>3</sup>	966	1,275
90	Subbase/Base Rebuilding	12.50.001	Handpacked stone paving	Provide, lay, and compact hand packed stone material including filling of voids with stone dust	m <sup>3</sup>	4,378	5,779
91		12.50.002	Provide, place and compact quarry waste	Provide, spread, shape and compact approved quarry waste of CBR 30% and above for 5cm in thickness.	m <sup>3</sup>	6,185	8,164
92		12.50.003	Provide, place, spread and compact natural gravel	Provide, spread, shape and compact approved natural gravel of CBR 30% and above for 15cm in thickness.	m <sup>3</sup>	2,709	3,576



**13. GRADED CRUSHED STONE BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
93	Graded Crushed Stone	13.50.001	Graded Crushed Stone for subbase	Provide, place and spread approved graded crushed stone for subbase.	m <sup>3</sup>	3,011	3,975
94		13.60.001	Graded Crushed Stone for base	Provide, place and spread approved graded crushed stone for base.	m <sup>3</sup>	3,011	3,975

**14. CEMENT AND LIME TREATED SUBGRADE, SUBBASE AND BASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
95	Cement/Lime Stabilization	14.50.001	Provision of Cement for treatment of material	Provide, spread cement on natural gravel or graded crushed stone	ton	15,639	20,643
96		14.50.002	Provision of Lime for treatment of material	Provide, spread lime on natural gravel or graded crushed stone	ton	31,054	40,991
97		14.50.003	Cement/lime mixing	Mixing in cement/lime into natural gravel or graded crushed stone	m <sup>3</sup>	77	102
98		14.50.004	Curing and protection of treated layers	Cure and protect layers treated with cement or lime stabilizers	m <sup>2</sup>	224	296

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
99	Prime Coat	15.50.002	Prime Coat (MC-30 cutback bitumen)	Prepare surface of carriageway, bus bays and repair areas, provide and spray MC-30 cutback bitumen at a rate of 0.8-1.2 litre/m <sup>2</sup> as prime coat	litre	191	252
100	Tack Coat	15.50.003	Tack Coat (grade bitumen cutback)	Prepare surface of carriageway and bus bays, provide and spray 80/100 penetration grade bitumen cut back using 5-15% kerosene as tack coat for asphalt concrete wearing course at a spray rate of 0.5-0.7 litre/m <sup>2</sup>	litre	193	255
101		15.50.003a	Tack Coat (bitumen emulsion)	Prepare surface of repair areas provide and spray KI-60 bitumen emulsion as tack coat or seal to repair areas at a spray rate of 0.8-1.0 litre/m <sup>2</sup>	litre	163	215
102	Surface Dressing	15.70.001	Resealing	Reseal a bituminous surface dressed or an asphaltic concrete carriageway or shoulder using chippings and bitumen emulsion to improve skid resistance and eliminate the effects of wear, oxidation, ravelling, fretting, stripping and bleeding.	m <sup>2</sup>	146	193
103		15.60.002	Construct surface dressing using 3/6 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 3 to 6mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	99	131
104		15.60.003	Construct surface dressing using 6/10 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 6 to 10mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	159	210

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
105		15.60.004	Construct surface dressing using 10/14 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 10 to 14mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	211	279
106		15.60.005	Construct surface dressing using 14/20 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 14 to 20mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	229	302

**16. BITUMINOUS MIXES**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
107a	<b>Pavement Repairing</b>	16.50.001a	Pothole Cutting and Cleaning	Trim, cut and clean failed bituminous surface	m <sup>3</sup>	2,519	3,325
107		16.50.001	Pothole patching - hot mix	Provide, place and compact asphaltic concrete to repair areas and for regulation to carriageway	m <sup>3</sup>	31,746	41,905
108		16.50.002	Pothole patching - cold mix	Repair defects on bituminous surface by cold bituminous mixture	m <sup>3</sup>	55,302	72,999
109		16.50.004	Crack sealing	Repair transverse or longitudinal cracking on surface dressed or asphalt concrete	m	238	314
110		16.60.001	Asphalt concrete for surfacing - hot mix.	Overlay or continuously repave surface by hot bituminous mixture	m <sup>3</sup>	32,492	42,889
111		16.70.001	Base repair - Dense Bitumen Macadam (DBM)	Place dense bitumen macadam for base material and roll	m <sup>3</sup>	29,752	39,273
112	<b>Milling and Paving</b>	16.80.010	Milling the existing bituminous layer to spoil	Mill mechanically the existing bituminous layer to spoil	m <sup>3</sup>	3,546	4,681
113		16.80.015	Milling the existing bituminous layer for reuse	Mill mechanically the existing bituminous layer and stockpile for reuse or recycle	m <sup>3</sup>	12,973	17,124

**17. CONCRETE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
114	Concrete Work	17.60.001	Concrete work (class 15/20)	Provide, place and compact class 15/20 concrete mixture for blinding.	m <sup>3</sup>	13,073	17,256
115		17.60.002	Concrete work (class 20/20)	Provide, place and compact class 20/20 concrete mixture.	m <sup>3</sup>	14,319	18,901
116		17.60.002a	Concrete work (class 25/20)	Provide, place and compact class 25/20 concrete mixture.	m <sup>3</sup>	15,908	20,999
117	Formwork	17.60.003	Vertical formwork class F2 finish	Provide and erect formwork of class F2 finish to the vertical direction	m <sup>2</sup>	1,307	1,725
118		17.60.004	Horizontal formwork class F2 finish	Provide and erect formwork of class F2 finish to the horizontal direction	m <sup>2</sup>	1,225	1,617
119	Reinforcement	17.80.004	Reinforcement work (below 16mm)	Provide, cut bend and fix into position high yield reinforcement bar below 16mm	ton	143,564	189,504
120		17.80.005	Reinforcement work (above 16mm)	Provide, cut bend and fix into position high yield reinforcement bar above 16mm	ton	147,122	194,201

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
121	Boundary posts	20.50.001	Road reserve boundary posts	Provide and erect road reserve boundary posts (size 1.2 x 0.2 x 0.2)	No	2,611	3,447
122		20.50.004	Edge marker posts	Provide and erect edge marker posts	No	1,668	2,202
123	Road Marking	20.50.007	Roads markings - white paint	Provide reflectorized white paint for road markings (w = 10cm)	m <sup>2</sup>	1,252	1,653
124		20.70.011	Road markings - white thermoplastic material	Renew faded or missing white road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,057	4,035
124a		20.70.011a	Road markings on surface dressed pavement- white thermoplastic material	Renew faded or missing white road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,370	4,448
125		20.50.006	Road markings - yellow paint	Provide reflectorized yellow paint for road markings (w = 10cm)	m <sup>2</sup>	1,252	1,653
126		20.70.010	Road markings - yellow thermoplastic material	Upgrade faded or missing yellow road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,246	4,285
126a		20.70.010a	Road markings on surface dressed pavement- yellow thermoplastic material	Renew faded or missing yellow road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,587	4,735
127		20.50.107	Road marking black paint	Provide reflectorized black paint for road markings (w = 10cm)	m <sup>2</sup>	1,263	1,667
128	Road Sign Erection	20.70.002	Warning signs	Provide and erect priority, prohibitory or mandatory signs	No	18,517	24,442
129		20.70.005	Priority, prohibitory or mandatory signs	Priority, prohibitory or mandatory signs	No	18,557	24,495
130		20.70.004	Standard informatory signs	Provide and erect informatory signs	No	22,911	30,243
131		20.70.006	Non-standard informatory signs	Provide and erect non-standard informatoty signs < 2m <sup>2</sup>	No	34,851	46,003

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
131b		20.70.006b	Non-standard informatory signs (2-5m <sup>2</sup> )	Provide and erect non-standard informatoty signs (2-5m <sup>2</sup> )	No	69,054	91,151
131c		20.70.006c	Non-standard informatory signs (5-8m <sup>2</sup> )	Provide and erect non-standard informatoty signs (5-8m <sup>2</sup> )	No	131,638	173,762
132	Kerb Installation	20.50.012	Kerbs	Provide lay and joint concrete class 20/20 kerbs in support to carriageway, bus bays and junctions	m	1,748	2,307
133	Kilometre marker post Installation	20.50.013	Kilometre marker posts	Kilometre marker post Installation.	No	12,248	16,167
134	Bollard Installation	20.50.017	Concrete bollards	Concrete bollard Installation (diameter 0.2m, length 0.9m, embedded depth 0.45m)	No	3,050	4,026
135		20.50.021	Steel bollards	Place and provide gauge 16 steel pipe Bollards of diameter 150 mm and 1.05m above above the ground embedded to a depth of 0.45m at place	No	1,901	2,509
136	Reflective Stud Installation	20.50.019	Reflective studs	Install reflective studs along the centre line	No	1,089	1,437
137	Microtunneling	20.60.002	Microtunneling for a 150mm diameter PVC (polyvinyl chloride) duct	Conduct microtunneling with a 150mm dia PVC duct (under silt or sand condition)	m	71,004	93,725
138		20.60.002a	Horizontal drilling	Conduct horizontal drilling for 150mm hole in diameter (under gravel condtion)	m	43,777	57,786
139	Street light Installation	20.60.017	Street lighting pole (7.6m)	Provide and install 7.6m street lighting pole including cables accessories and lamp.	No	71,726	94,678
140		20.60.018	Street lighting pole (10m)	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	134,534	177,585



**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
141		20.60.016	Street lighting control panel	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	98,105	129,499
142		20.60.315	Electric cable	Provide and install supply cables between the street lighting poles.	m	2,803	3,700
143		20.70.023a	Guardrail Repair Level 1	Removal of damaged guardrail and replacement with straightened beam	m	1,425	1,881
144	Guardrail Repair	20.70.023b	Guardrail Repair Level 2	Removal of damaged guardrail, replacement with a straightened beam and realignment of posts	m	2,293	3,027
145		20.70.023c	Guardrail Repair Level 3	Complete removal of damaged guardrail beam and installation with new beam, posts and spacers	m	12,732	16,806

**23. CONCRETE PAVING BLOCKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
146	<b>Concrete Paving Blocks</b>	23.70.001	Interlocking - Heavy duty - plain (Deformed) 60mm	Provide and lay 60mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,509	1,992
147		23.70.002	Interlocking - Heavy duty - plain (Deformed) 80mm	Provide and lay 80mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,677	2,214

## Upper Eastern Region

### 3.9. Upper Eastern Region

#### 4. SITE CLEARANCE AND TOPSOIL STRIPPING

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
1	Bush Clearing	04.50.001	Mechanical mowing	Cut grass by machine along the side of the road or on slopes.	m <sup>2</sup>	6	7
2		04.50.002	Grass cutting (manual)	Cut grass manually along the side of the road or on slopes.	m <sup>2</sup>	4	5
3		04.50.003	Heavy bush clearing	Cut, remove and dispose bushes along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	19	25
4		04.50.004	Light bush clearing	Cut grass by hand from shoulders, slopes, inlet ditches, and side ditches including back slopes, turnouts and culvert outlet.	m <sup>2</sup>	11	14
5		04.50.005	Pruning of tree branches	Cut, remove and dispose branches of trees along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	106	140
6		04.50.006	Tree cutting and stump removal (200 -450 mm)	Cut, remove and dispose whole trees of 200 - 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	235	310
7		04.50.007	Tree cutting and stump removal (>450 mm)	Cut, remove and dispose whole trees of above 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	1,304	1,721
8	Site Clearing and Backfill	04.50.008	Clearing obstructions (mechanical)	Mechanically clear any obstruction including boulders and debris out of road reserve.	m <sup>2</sup>	38	50
9		04.50.008a	Clearing obstructions (manual)	Manually clear any obstruction including boulders and debris out of road reserve.	m <sup>3</sup>	275	363

**4. SITE CLEARANCE AND TOPSOIL STRIPPING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
10		04.50.009	Stripping and grubbing (mechanical)	Clear site on road reserve mechanically by stripping and grubbing roots.	m <sup>2</sup>	115	152
11		04.50.009a	Stripping and grubbing (manual)	Clear site on road reserve manually by stripping and grubbing roots.	m <sup>2</sup>	187	247
12		04.60.001	Clearing trees, hedges, bushes, vegetation and deleterious materials (mechanical)	Clear site on road reserve mechanically by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	83	110
13		04.60.001a	Clearing trees, hedges, bushes, vegetation and deleterious materials (manual)	Clear site on road reserve manually by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	90	119
14	Concrete Demolition	04.50.010	Excavate remove & disposal of concrete structures	Demolish reinforced or mass concrete structures and cart to spoil or stockpile for re-use.	m <sup>3</sup>	1,199	1,583
15	Top Soil Stripping	04.80.002	Removal of overburden	Remove topsoil to a maximum depth of 200mm.	m <sup>3</sup>	275	363
16	Pipe Culvert Removal	04.60.005	Removal of cracked small pipe culverts below 600mm	Excavate, remove and dispose cracked pipe culverts below 600mm in diameter.	m	442	583
17		04.60.005a	Removal of cracked large pipe culverts above 600mm	Excavate, remove and dispose cracked pipe culverts above 600mm in diameter.	m	665	878

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
18	Material Filling	05.50.006	Fill in soft material and compact	Provide, place and compact soft patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	494	652
19		05.50.006a	Fill in soft material and compact (soil purchased)	Provide, place and compact soft purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,424	1,880
20		05.50.007	Fill in hard material and compact	Provide, place and compact hard patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	580	766
21		05.50.007a	Fill in hard material and compact (soil purchased)	Provide, place and compact hard purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,534	2,025
22	Material Cutting	05.50.008	Cut to spoil in soft	Cut manually soft material to spoil	m <sup>3</sup>	570	752
23		05.50.008a	Cut to spoil in soft (mechanical)	Cut mechanically soft material to spoil	m <sup>3</sup>	268	354
24		05.50.009	Cut to spoil in hard	Cut manually hard material to spoil	m <sup>3</sup>	1,059	1,398
25		05.50.009a	Cut to spoil in hard (mechanical)	Cut mechanically hard material to spoil	m <sup>3</sup>	536	708
26	Concrete Demolition	05.50.012	Rock fill to swamp	Manually provide and place rock fill to swamp	m <sup>3</sup>	3,082	4,068
27		05.50.125	Rock fill to embankment construction	Manually provide and place rock fill to construct embankment.	m <sup>3</sup>	3,444	4,546
28	Planting	05.50.014	Grassing	Plant grass on the slope and inverts of ditches to reduce scour effects, or on slopes to reduce soil erosion and to improve stability.	m <sup>2</sup>	1,386	1,830
29	Pipe Culvert Replacement	05.60.012	Compaction of subgrade in cut	Trim and compact.	m <sup>2</sup>	38	50
30		05.60.014	Compaction of subgrade in fill	Compaction of subgrade in fill.	m <sup>3</sup>	2,023	2,670

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
31		05.60.016	Compaction of original ground level	Compact the top 150 mm layer of existing ground below fills and cuts to 95% MDD (AASHTO T99)	m <sup>3</sup>	49	65
31a		05.60.016a	Compaction of the 300 mm below formation level in cutting to 100% MDD (AASHTO T99)	Compaction of the top 300mm below formation level in cuts and fills (subgrade) to 100% MDD	m <sup>3</sup>	1,668	2,202

**7. EXCAVATION AND FILLING FOR STRUCTURE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
32	<b>Material Excavation for Structures</b>	07.50.001	Excavate for structure in soft material (manual)	Excavate manually soft material for structures.	m <sup>3</sup>	570	752
33		07.50.001a	Excavate for structure in soft material (mechanical)	Excavate mechanically soft material for structures.	m <sup>3</sup>	268	354
34		07.50.002	Excavate for structure in hard material (manual)	Excavate manually in hard material for structures.	m <sup>3</sup>	1,059	1,398
35		07.50.002a	Excavate for structure in hard material (mechanical)	Excavate mechanically in hard material for structures.	m <sup>3</sup>	536	708
36	<b>Gabion</b>	07.70.004	Gabion Installation	Provide and place Macaferri or equivalent gabion boxes (2m * 1m * 1m).	m <sup>2</sup>	486	642
37		07.70.005	Rock fill to Gabions	Provide and place rock fill to gabions.	m <sup>3</sup>	2,807	3,705
38	<b>Stone Pitching</b>	07.70.001	Stone pitching	Provide stone pitching including grouting of ratio 1:4 cement to mortar.	m <sup>2</sup>	1,881	2,483



**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
39	Ditch Cleaning	08.50.002a	Ditch cleaning - mechanical	Mechanically desilt, shape inlets outfalls, side drains to free flow conditions	m	31	41
40		08.50.002	Ditch cleaning - manual	Manually desilt, shape inlets outfalls, side drains to free flow conditions.	m	19	25
41	Culvert Cleaning	08.60.002	Small culvert cleaning-partially blocked-below 450mm	Clean culverts of below 450mm in diameter to free flow conditions	m	438	578
42		08.60.003	Medium culvert cleaning-partially blocked-600mm	Clean culverts of 600mm in diameter to free flow conditions	m	336	444
43		08.60.004	Large culvert cleaning-partially blocked-900 mm and above	Clean culverts of 900mm and above in diameter to free flow conditions	m	234	309
44		08.50.025	Manhole cleaning	Remove all silt and debris and wash out manhole to free flow conditions.	No	834	1,101
45		08.50.016	Gulley pot cleaning	Clean siltation and debris from gulley pot to good impoundment conditions.	No	158	209
46		08.50.009	Covered (slotted) lined drain cleaning	Remove all silt and debris and wash out covered lined drain to free flow conditions	m	93	123
47		08.50.005a	Ditch/mitre drain excavation in soft (mechanical)	Excavate mechanically for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	328	433
48		08.50.005	Ditch/mitre drain excavation in soft (manual)	Excavate manually for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	326	430
49		08.50.005b	Ditch/mitre drain excavation in hard (mechanical)	Excavate mechanically in hard material for inlet, outfall, mitre and catchwater drains.	m <sup>3</sup>	548	723
50		08.50.005c	Ditch/mitre drain excavation in hard (manual)	Excavate manually in hard material for inlet, outfall, mitre and catchwater drains	m <sup>3</sup>	1,834	2,421
51	Pipe Culvert Installation	08.60.021	Culvert installation-300mm with surround	Provide, lay and joint pipe culvert of 300mm in diameter with surround	m	6,685	8,824

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
52		08.60.020	Culvert installation-300mm without surround	Provide, lay and joint unhounded pipe culvert of 300mm in diameter without surround	m	2,653	3,502
53		08.60.023	Culvert installation-450mm with surround	Provide, lay and joint pipe culvert of 450mm in diameter with surround.	m	9,045	11,939
54		08.60.022	Culvert installation-450mm without surround	Provide, lay and joint pipe culvert of 450mm in diameter without surround.	m	3,284	4,335
55		08.60.025	Culvert installation-600mm with surround	Provide, lay and joint pipe culvert of 600mm in diameter with surround	m	14,394	19,000
56		08.60.024	Culvert installation-600mm without surround	Provide, lay and joint pipe culvert of 600mm in diameter without surround	m	4,504	5,945
57		08.60.027	Culvert installation-900mm with surround	Provide, lay and joint pipe culvert of 900mm in diameter with surround.	m	16,104	21,257
58		08.60.026	Culvert installation-900mm without surround	Provide, lay and joint pipe culvert of 900mm in diameter without surround	m	6,413	8,465
59		08.60.028	Culvert installation-1200mm with surround	Provide, lay and joint pipe culvert of 1200mm in diameter with surround	m	26,272	34,679
60		08.60.029	Culvert installation-1200mm without surround	Provide, lay and joint culvert of 1200mm in diameter without surround	m	10,516	13,881
61		08.60.030	Excavate in soft material for culverts	Excavation manually in soft material for culvert in any size.	m <sup>3</sup>	326	430
62		08.60.031	Excavate in hard material for culverts	Excavation manually in hard material for culvert in any size.	m <sup>3</sup>	1,834	2,421
63	Headwall Construction	08.60.019	Headwall construction for 450mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 450mm pipe culvert to prevent the collapse and the potential	No	21,795	28,769

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
				slippage of the material and pavement above the culvert.			
64		08.60.019a	Headwall construction for 600mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 600mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	25,493	33,651
65		08.60.019b	Headwall construction for 900mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 900mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	33,376	44,057
66		08.60.019c	Headwall construction for 1200mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 1200mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	44,885	59,249
67	Manhole installation	08.50.024	Manhole construction less than 1m	Install new small manhole of less than 1m in depth (900-1200mm in inner diameter)	No	33,271	43,918
68		08.50.024a	Manhole construction more than 1m	Install new large manhole of more than 1m in depth (900-1200mm in inner diameter)	No	54,962	72,550
69	Gulley Pot installation	08.50.015	Gulley pot construction	Provide and place gulley pots including grating (H=900mm) for inlet structures as directed by the Engineer.	No	10,709	14,136
70	Drain Lining	08.50.032	Lay drain lining with concrete	Place concrete lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,264	2,988

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
71		08.50.022a	Laying of dressed stones	Place dressed stone lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,266	2,991
72		08.50.022	Laying of side slabs	Place side slab lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,945	3,887
73		08.70.036	Laying of 300mm invert block drain	Provide, lay and joint invert block drain of 300mm in diameter	m	1,892	2,497
74		08.70.037	Laying of 750mm invert block drain	Provide, lay and joint invert block drain of 750mm in width	m	2,196	2,899

**9. PASSAGE OF TRAFFIC**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
75	Traffic Control	09.50.004	Traffic Control	Place warning signs, barriers and cones around the working lane on the carriageway and guide the passage of traffic through the works	Day	2,037	2,689
76		09.50.005	Watchman	Provide watchman for all round surveillance.	No	1,946	2,569
77		09.50.006	Watering	Sprinkle water to control dust for passage of traffic through the works or compaction at earth works	m <sup>2</sup>	13	17

**10. GRADING AND GRAVELLING WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
78	Grading	10.50.001	Heavy grading without watering or compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches without providing watering and compaction	m <sup>2</sup>	7	9
79		10.50.002	Heavy grading with watering and compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches providing watering and compaction	m <sup>2</sup>	11	15
80		10.50.003	Light grading	Trim with motor grader existing carriageway to camber, including slopes and ditches.	m <sup>2</sup>	6	7
81		10.50.004	Reshaping	Restore manually the camber on earth or gravel roads by returning material from road sides and shoulder toward road centre.	m <sup>2</sup>	16	21
82		10.50.005	Dragging	Remove manually loose material from the surface to delay the formation of corrugations	m <sup>2</sup>	16	21
83	Gravelling	10.60.001	Regravelling	Prepare for road formation and provide, place spread, shape and compact with watering gravel of not less than CBR 20%	m <sup>3</sup>	2,219	2,929
84		10.60.001a	Regravelling without watering	Prepare for road formation and provide, place spread, shape and compact without watering gravel of not less than CBR 20%	m <sup>3</sup>	2,204	2,909

**11. PAVED ROADS - SHOULDER MAINTENANCE AND REPAIRS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
86	Shoulder Rebuilding	11.50.002	Shoulder repairing	Prepare surface of existing shoulders, accesses and bus bays, water process and compact	m <sup>2</sup>	3	4
87	Shoulder Gravelling	11.50.003	Shoulder gravelling with natural gravel	Provide, place, spread, shape and compact 150mm of natural gravel of CBR 30% to shoulders, accesses and bus bays	m <sup>3</sup>	2,238	2,954
88		11.50.003a	Shoulder gravelling with quarry waste	Provide, place and compact quarry waste material to shoulders, accesses and bus bays	m <sup>3</sup>	2,715	3,584

**12. NATURAL MATERIAL BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
89	Pavement Removal	12.70.001	Scarify existing pavement to form subbase	Break or scarify mechanically the existing pavement layer, and compact.	m <sup>3</sup>	1,109	1,464
90	Subbase/Base Rebuilding	12.50.001	Handpacked stone paving	Provide, lay, and compact hand packed stone material including filling of voids with stone dust	m <sup>3</sup>	4,267	5,632
91		12.50.002	Provide, place and compact quarry waste	Provide, spread, shape and compact approved quarry waste of CBR 30% and above for 5cm in thickness.	m <sup>3</sup>	5,736	7,572
92		12.50.003	Provide, place, spread and compact natural gravel	Provide, spread, shape and compact approved natural gravel of CBR 30% and above for 15cm in thickness.	m <sup>3</sup>	2,235	2,950



**13. GRADED CRUSHED STONE BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
93	Graded Crushed Stone	13.50.001	Graded Crushed Stone for subbase	Provide, place and spread approved graded crushed stone for subbase.	m <sup>3</sup>	2,977	3,930
94		13.60.001	Graded Crushed Stone for base	Provide, place and spread approved graded crushed stone for base.	m <sup>3</sup>	2,977	3,930

**14. CEMENT AND LIME TREATED SUBGRADE, SUBBASE AND BASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
95	Cement/Lime Stabilization	14.50.001	Provision of Cement for treatment of material	Provide, spread cement on natural gravel or graded crushed stone	ton	16,393	21,639
96		14.50.002	Provision of Lime for treatment of material	Provide, spread lime on natural gravel or graded crushed stone	ton	31,489	41,565
97		14.50.003	Cement/lime mixing	Mixing in cement/lime into natural gravel or graded crushed stone	m <sup>3</sup>	76	100
98		14.50.004	Curing and protection of treated layers	Cure and protect layers treated with cement or lime stabilizers	m <sup>2</sup>	245	324

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
99	Prime Coat	15.50.002	Prime Coat (MC-30 cutback bitumen)	Prepare surface of carriageway, bus bays and repair areas, provide and spray MC-30 cutback bitumen at a rate of 0.8-1.2 litre/m <sup>2</sup> as prime coat	litre	182	240
100	Tack Coat	15.50.003	Tack Coat (grade bitumen cutback)	Prepare surface of carriageway and bus bays, provide and spray 80/100 penetration grade bitumen cut back using 5-15% kerosene as tack coat for asphalt concrete wearing course at a spray rate of 0.5-0.7 litre/m <sup>2</sup>	litre	223	294
101		15.50.003a	Tack Coat (bitumen emulsion)	Prepare surface of repair areas provide and spray KI-60 bitumen emulsion as tack coat or seal to repair areas at a spray rate of 0.8-1.0 litre/m <sup>2</sup>	litre	176	232
102	Surface Dressing	15.70.001	Resealing	Reseal a bituminous surface dressed or an asphaltic concrete carriageway or shoulder using chippings and bitumen emulsion to improve skid resistance and eliminate the effects of wear, oxidation, ravelling, fretting, stripping and bleeding.	m <sup>2</sup>	165	218
103		15.60.002	Construct surface dressing using 3/6 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 3 to 6mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	118	156
104		15.60.003	Construct surface dressing using 6/10 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 6 to 10mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	193	255

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
105		15.60.004	Construct surface dressing using 10/14 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 10 to 14mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	252	333
106		15.60.005	Construct surface dressing using 14/20 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 14 to 20mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	272	359

**16. BITUMINOUS MIXES**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
107a	<b>Pavement Repairing</b>	16.50.001a	Pothole Cutting and Cleaning	Trim, cut and clean failed bituminous surface	m <sup>3</sup>	2,625	3,465
107		16.50.001	Pothole patching - hot mix	Provide, place and compact asphaltic concrete to repair areas and for regulation to carriageway	m <sup>3</sup>	33,194	43,816
108		16.50.002	Pothole patching - cold mix	Repair defects on bituminous surface by cold bituminous mixture	m <sup>3</sup>	58,263	76,907
109		16.50.004	Crack sealing	Repair transverse or longitudinal cracking on surface dressed or asphalt concrete	m	235	310
110		16.60.001	Asphalt concrete for surfacing - hot mix.	Overlay or continuously repave surface by hot bituminous mixture	m <sup>3</sup>	33,652	44,421
111		16.70.001	Base repair - Dense Bitumen Macadam (DBM)	Place dense bitumen macadam for base material and roll	m <sup>3</sup>	29,858	39,413
112	<b>Milling and Paving</b>	16.80.010	Milling the existing bituminous layer to spoil	Mill mechanically the existing bituminous layer to spoil	m <sup>3</sup>	3,929	5,186
113		16.80.015	Milling the existing bituminous layer for reuse	Mill mechanically the existing bituminous layer and stockpile for reuse or recycle	m <sup>3</sup>	12,948	17,091

**17. CONCRETE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
114	Concrete Work	17.60.001	Concrete work (class 15/20)	Provide, place and compact class 15/20 concrete mixture for blinding.	m <sup>3</sup>	15,190	20,051
115		17.60.002	Concrete work (class 20/20)	Provide, place and compact class 20/20 concrete mixture.	m <sup>3</sup>	16,648	21,975
116		17.60.002a	Concrete work (class 25/20)	Provide, place and compact class 25/20 concrete mixture.	m <sup>3</sup>	18,380	24,262
117	Formwork	17.60.003	Vertical formwork class F2 finish	Provide and erect formwork of class F2 finish to the vertical direction	m <sup>2</sup>	1,306	1,724
118		17.60.004	Horizontal formwork class F2 finish	Provide and erect formwork of class F2 finish to the horizontal direction	m <sup>2</sup>	1,208	1,595
119	Reinforcement	17.80.004	Reinforcement work (below 16mm)	Provide, cut bend and fix into position high yield reinforcement bar below 16mm	ton	138,374	182,654
120		17.80.005	Reinforcement work (above 16mm)	Provide, cut bend and fix into position high yield reinforcement bar above 16mm	ton	143,790	189,803

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
121	Boundary posts	20.50.001	Road reserve boundary posts	Provide and erect road reserve boundary posts (size 1.2 x 0.2 x 0.2)	No	2,820	3,722
122		20.50.004	Edge marker posts	Provide and erect edge marker posts	No	3,649	4,817
123	Road Marking	20.50.007	Roads markings - white paint	Provide reflectorized white paint for road markings (w = 10cm)	m <sup>2</sup>	1,138	1,502
124		20.70.011	Road markings - white thermoplastic material	Renew faded or missing white road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,064	4,044
124a		20.70.011a	Road markings on surface dressed pavement- white thermoplastic material	Renew faded or missing white road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,377	4,458
125		20.50.006	Road markings - yellow paint	Provide reflectorized yellow paint for road markings (w = 10cm)	m <sup>2</sup>	1,138	1,502
126		20.70.010	Road markings - yellow thermoplastic material	Upgrade faded or missing yellow road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,255	4,297
126a		20.70.010a	Road markings on surface dressed pavement- yellow thermoplastic material	Renew faded or missing yellow road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,594	4,744
127		20.50.107	Road marking black paint	Provide reflectorized black paint for road markings (w = 10cm)	m <sup>2</sup>	1,185	1,564
128		20.70.002	Warning signs	Provide and erect priority, prohibitory or mandatory signs	No	18,580	24,526
129	Road Sign Erection	20.70.005	Priority, prohibitory or mandatory signs	Priority, prohibitory or mandatory signs	No	18,633	24,596
130		20.70.004	Standard informatory signs	Provide and erect informatory signs	No	21,599	28,511
131		20.70.006	Non-standard informatory signs <2m <sup>2</sup>	Provide and erect non-standard informatoty signs < 2m <sup>2</sup>	No	22,946	30,289

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
131b		20.70.006b	Non-standard informatory signs (2-5m <sup>2</sup> )	Provide and erect non-standard informatoty signs (2-5m <sup>2</sup> )	No	45,295	59,789
131c		20.70.006c	Non-standard informatory signs (5-8m <sup>2</sup> )	Provide and erect non-standard informatoty signs (5-8m <sup>2</sup> )	No	83,226	109,858
132	Kerb Installation	20.50.012	Kerbs	Provide lay and joint concrete class 20/20 kerbs in support to carriageway, bus bays and junctions	m	1,993	2,631
133	Kilometre marker post Installation	20.50.013	Kilometre marker posts	Kilometre marker post Installation.	No	11,703	15,448
134	Bollard Installation	20.50.017	Concrete bollards	Concrete bollard Installation (diameter 0.2m, length 0.9m, embedded depth 0.45m)	No	3,296	4,351
135		20.50.021	Steel bollards	Place and provide gauge 16 steel pipe Bollards of diameter 150 mm and 1.05m above above the ground embedded to a depth of 0.45m at place	No	2,010	2,653
136	Reflective Stud Installation	20.50.019	Reflective studs	Install reflective studs along the centre line	No	1,148	1,515
137	Microtunneling	20.60.002	Microtunneling for a 150mm diameter PVC (polyvinyl chloride) duct	Conduct microtunneling with a 150mm dia PVC duct (under silt or sand condition)	m	72,116	95,193
138		20.60.002a	Horizontal drilling	Conduct horizontal drilling for 150mm hole in diameter (under gravel condtion)	m	45,802	60,459
139	Street light Installation	20.60.017	Street lighting pole (7.6m)	Provide and install 7.6m street lighting pole including cables accessories and lamp.	No	72,874	96,194
140		20.60.018	Street lighting pole (10m)	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	136,214	179,802



**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
141		20.60.016	Street lighting control panel	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	94,922	125,297
142		20.60.315	Electric cable	Provide and install supply cables between the street lighting poles.	m	1,581	2,087
143	Guardrail Repair	20.70.023a	Guardrail Repair Level 1	Removal of damaged guardrail and replacement with straightened beam	m	1,422	1,877
144		20.70.023b	Guardrail Repair Level 2	Removal of damaged guardrail, replacement with a straightened beam and realignment of posts	m	2,314	3,055
145		20.70.023c	Guardrail Repair Level 3	Complete removal of damaged guardrail beam and installation with new beam, posts and spacers	m	10,249	13,528

**23. CONCRETE PAVING BLOCKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
146	<b>Concrete Paving Blocks</b>	23.70.001	Interlocking - Heavy duty - plain (Deformed) 60mm	Provide and lay 60mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,218	1,608
147		23.70.002	Interlocking - Heavy duty - plain (Deformed) 80mm	Provide and lay 80mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,557	2,055

## Western Region

### 3.10. Western Region

#### 4. SITE CLEARANCE AND TOPSOIL STRIPPING

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
1	Bush Clearing	04.50.001	Mechanical mowing	Cut grass by machine along the side of the road or on slopes.	m <sup>2</sup>	6	8
2		04.50.002	Grass cutting (manual)	Cut grass manually along the side of the road or on slopes.	m <sup>2</sup>	4	5
3		04.50.003	Heavy bush clearing	Cut, remove and dispose bushes along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	19	25
4		04.50.004	Light bush clearing	Cut grass by hand from shoulders, slopes, inlet ditches, and side ditches including back slopes, turnouts and culvert outlet.	m <sup>2</sup>	11	14
5		04.50.005	Pruning of tree branches	Cut, remove and dispose branches of trees along the side of the road, slopes or alongside ditches.	m <sup>2</sup>	106	140
6		04.50.006	Tree cutting and stump removal (200 -450 mm)	Cut, remove and dispose whole trees of 200 - 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	236	312
7		04.50.007	Tree cutting and stump removal (>450 mm)	Cut, remove and dispose whole trees of above 450mm in girth including their stumps along the side of the road, slopes or alongside ditches.	No	1,313	1,733
8	Site Clearing and Backfill	04.50.008	Clearing obstructions (mechanical)	Mechanically clear any obstruction including boulders and debris out of road reserve.	m <sup>2</sup>	38	50
9		04.50.008a	Clearing obstructions (manual)	Manually clear any obstruction including boulders and debris out of road reserve.	m <sup>3</sup>	275	363

**4. SITE CLEARANCE AND TOPSOIL STRIPPING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
10		04.50.009	Stripping and grubbing (mechanical)	Clear site on road reserve mechanically by stripping and grubbing roots.	m <sup>2</sup>	106	140
11		04.50.009a	Stripping and grubbing (manual)	Clear site on road reserve manually by stripping and grubbing roots.	m <sup>2</sup>	188	248
12		04.60.001	Clearing trees, hedges, bushes, vegetation and deleterious materials (mechanical)	Clear site on road reserve mechanically by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	82	108
13		04.60.001a	Clearing trees, hedges, bushes, vegetation and deleterious materials (manual)	Clear site on road reserve manually by removal of trees, hedges, bushes, vegetation and other deleterious materials.	m <sup>2</sup>	90	119
14	Concrete Demolition	04.50.010	Excavate remove & disposal of concrete structures	Demolish reinforced or mass concrete structures and cart to spoil or stockpile for re-use.	m <sup>3</sup>	1,007	1,329
15	Top Soil Stripping	04.80.002	Removal of overburden	Remove topsoil to a maximum depth of 200mm.	m <sup>3</sup>	270	356
16	Pipe Culvert Removal	04.60.005	Removal of cracked small pipe culverts below 600mm	Excavate, remove and dispose cracked pipe culverts below 600mm in diameter.	m	377	498
17		04.60.005a	Removal of cracked large pipe culverts above 600mm	Excavate, remove and dispose cracked pipe culverts above 600mm in diameter.	m	566	747

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
18	Material Filling	05.50.006	Fill in soft material and compact	Provide, place and compact soft patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	499	659
19		05.50.006a	Fill in soft material and compact (soil purchased)	Provide, place and compact soft purchased patching material to surface defects or gravel road.	m <sup>3</sup>	1,199	1,583
20		05.50.007	Fill in hard material and compact	Provide, place and compact hard patching material to surface defects or gravel road. It is assumed that soil to be filled is on the site or provided from cut area.	m <sup>3</sup>	588	776
21		05.50.007a	Fill in hard material and compact (soil purchased)	Provide, place and compact hard purchased patching material to surface defects or gravel road.	m <sup>3</sup>	3,217	4,246
22	Material Cutting	05.50.008	Cut to spoil in soft	Cut manually soft material to spoil	m <sup>3</sup>	575	759
23		05.50.008a	Cut to spoil in soft (mechanical)	Cut mechanically soft material to spoil	m <sup>3</sup>	229	302
24		05.50.009	Cut to spoil in hard	Cut manually hard material to spoil	m <sup>3</sup>	1,064	1,404
25		05.50.009a	Cut to spoil in hard (mechanical)	Cut mechanically hard material to spoil	m <sup>3</sup>	457	603
26	Concrete Demolition	05.50.012	Rock fill to swamp	Manually provide and place rock fill to swamp	m <sup>3</sup>	3,173	4,188
27		05.50.125	Rock fill to embankment construction	Manually provide and place rock fill to construct embankment.	m <sup>3</sup>	3,449	4,553
28	Planting	05.50.014	Grassing	Plant grass on the slope and inverts of ditches to reduce scour effects, or on slopes to reduce soil erosion and to improve stability.	m <sup>2</sup>	887	1,171
29	Pipe Culvert Replacement	05.60.012	Compaction of subgrade in cut	Trim and compact.	m <sup>2</sup>	38	50
30		05.60.014	Compaction of subgrade in fill	Compaction of subgrade in fill.	m <sup>3</sup>	1,575	2,079

**5. EARTH WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
31		05.60.016	Compaction of original ground level	Compact the top 150 mm layer of existing ground below fills and cuts to 95% MDD (AASHTO T99)	m <sup>3</sup>	47	62
31a		05.60.016a	Compaction of the 300 mm below formation level in cutting to 100% MDD (AASHTO T99)	Compaction of the top 300mm below formation level in cuts and fills (subgrade) to 100% MDD	m <sup>3</sup>	1,629	2,150

**7. EXCAVATION AND FILLING FOR STRUCTURE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
32	<b>Material Excavation for Structures</b>	07.50.001	Excavate for structure in soft material (manual)	Excavate manually soft material for structures.	m <sup>3</sup>	575	759
33		07.50.001a	Excavate for structure in soft material (mechanical)	Excavate mechanically soft material for structures.	m <sup>3</sup>	229	302
34		07.50.002	Excavate for structure in hard material (manual)	Excavate manually in hard material for structures.	m <sup>3</sup>	1,064	1,404
35		07.50.002a	Excavate for structure in hard material (mechanical)	Excavate mechanically in hard material for structures.	m <sup>3</sup>	457	603
36	<b>Gabion</b>	07.70.004	Gabion Installation	Provide and place Macaferri or equivalent gabion boxes (2m * 1m * 1m).	m <sup>2</sup>	487	643
37		07.70.005	Rock fill to Gabions	Provide and place rock fill to gabions.	m <sup>3</sup>	2,846	3,757
38	<b>Stone Pitching</b>	07.70.001	Stone pitching	Provide stone pitching including grouting of ratio 1:4 cement to mortar.	m <sup>2</sup>	1,853	2,446



**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
39	Ditch Cleaning	08.50.002a	Ditch cleaning - mechanical	Mechanically desilt, shape inlets outfalls, side drains to free flow conditions	m	29	38
40		08.50.002	Ditch cleaning - manual	Manually desilt, shape inlets outfalls, side drains to free flow conditions.	m	19	25
41	Culvert Cleaning	08.60.002	Small culvert cleaning-partially blocked-below 450mm	Clean culverts of below 450mm in diameter to free flow conditions	m	438	578
42		08.60.003	Medium culvert cleaning-partially blocked-600mm	Clean culverts of 600mm in diameter to free flow conditions	m	336	444
43		08.60.004	Large culvert cleaning-partially blocked-900 mm and above	Clean culverts of 900mm and above in diameter to free flow conditions	m	235	310
44		08.50.025	Manhole cleaning	Remove all silt and debris and wash out manhole to free flow conditions.	No	840	1,109
45		08.50.016	Gulley pot cleaning	Clean siltation and debris from gulley pot to good impoundment conditions.	No	159	210
46		08.50.009	Covered (slotted) lined drain cleaning	Remove all silt and debris and wash out covered lined drain to free flow conditions	m	93	123
47		08.50.005a	Ditch/mitre drain excavation in soft (mechanical)	Excavate mechanically for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	292	385
48		08.50.005	Ditch/mitre drain excavation in soft (manual)	Excavate manually for inlet, outfall, mitre and catchwater drains in soft material	m <sup>3</sup>	328	433
49		08.50.005b	Ditch/mitre drain excavation in hard (mechanical)	Excavate mechanically in hard material for inlet, outfall, mitre and catchwater drains.	m <sup>3</sup>	469	619
50		08.50.005c	Ditch/mitre drain excavation in hard (manual)	Excavate manually in hard material for inlet, outfall, mitre and catchwater drains	m <sup>3</sup>	1,857	2,451
51	Pipe Culvert Installation	08.60.021	Culvert installation-300mm with surround	Provide, lay and joint pipe culvert of 300mm in diameter with surround	m	6,625	8,745

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
52		08.60.020	Culvert installation-300mm without surround	Provide, lay and joint unhoused pipe culvert of 300mm in diameter without surround	m	2,353	3,106
53		08.60.023	Culvert installation-450mm with surround	Provide, lay and joint pipe culvert of 450mm in diameter with surround.	m	9,127	12,048
54		08.60.022	Culvert installation-450mm without surround	Provide, lay and joint pipe culvert of 450mm in diameter without surround.	m	3,024	3,992
55		08.60.025	Culvert installation-600mm with surround	Provide, lay and joint pipe culvert of 600mm in diameter with surround	m	14,481	19,115
56		08.60.024	Culvert installation-600mm without surround	Provide, lay and joint pipe culvert of 600mm in diameter without surround	m	4,010	5,293
57		08.60.027	Culvert installation-900mm with surround	Provide, lay and joint pipe culvert of 900mm in diameter with surround.	m	17,452	23,037
58		08.60.026	Culvert installation-900mm without surround	Provide, lay and joint pipe culvert of 900mm in diameter without surround	m	5,897	7,784
59		08.60.028	Culvert installation-1200mm with surround	Provide, lay and joint pipe culvert of 1200mm in diameter with surround	m	28,103	37,096
60		08.60.029	Culvert installation-1200mm without surround	Provide, lay and joint culvert of 1200mm in diameter without surround	m	9,318	12,300
61		08.60.030	Excavate in soft material for culverts	Excavation manually in soft material for culvert in any size.	m <sup>3</sup>	328	433
62		08.60.031	Excavate in hard material for culverts	Excavation manually in hard material for culvert in any size.	m <sup>3</sup>	1,857	2,451
63	Headwall Construction	08.60.019	Headwall construction for 450mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 450mm pipe culvert to prevent the collapse and the potential	No	24,083	31,790

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
				slippage of the material and pavement above the culvert.			
64		08.60.019a	Headwall construction for 600mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 600mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	28,162	37,174
65		08.60.019b	Headwall construction for 900mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 900mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	36,867	48,664
66		08.60.019c	Headwall construction for 1200mm pipe culvert	Reconstruct or repair damaged headwall (wingwall and apron) for 1200mm pipe culvert to prevent the collapse and the potential slip of the material and pavement above the culvert.	No	49,446	65,268
67	Manhole installation	08.50.024	Manhole construction less than 1m	Install new small manhole of less than 1m in depth (900-1200mm in inner diameter)	No	33,967	44,836
68		08.50.024a	Manhole construction more than 1m	Install new large manhole of more than 1m in depth (900-1200mm in inner diameter)	No	56,568	74,670
69	Gulley Pot installation	08.50.015	Gulley pot construction	Provide and place gulley pots including grating (H=900mm) for inlet structures as directed by the Engineer.	No	10,640	14,045
70	Drain Lining	08.50.032	Lay drain lining with concrete	Place concrete lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,271	2,998

**8. CULVERTS AND DRAINAGE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
71		08.50.022a	Laying of dressed stones	Place dressed stone lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	2,183	2,882
72		08.50.022	Laying of side slabs	Place side slab lining to the slopes and invert of the ditch to prevent the scour.	m <sup>2</sup>	3,121	4,120
73		08.70.036	Laying of 300mm invert block drain	Provide, lay and joint invert block drain of 300mm in diameter	m	1,524	2,012
74		08.70.037	Laying of 750mm invert block drain	Provide, lay and joint invert block drain of 750mm in width	m	2,382	3,144

**9. PASSAGE OF TRAFFIC**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
75	Traffic Control	09.50.004	Traffic Control	Place warning signs, barriers and cones around the working lane on the carriageway and guide the passage of traffic through the works	Day	2,022	2,669
76		09.50.005	Watchman	Provide watchman for all round surveillance.	No	1,953	2,578
77		09.50.006	Watering	Sprinkle water to control dust for passage of traffic through the works or compaction at earth works	m <sup>2</sup>	12	16

**10. GRADING AND GRAVELLING WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
78	Grading	10.50.001	Heavy grading without watering or compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches without providing watering and compaction	m <sup>2</sup>	6	8
79		10.50.002	Heavy grading with watering and compaction	Trim with Motor Grader or heavy towed grader existing carriageway surface to camber, including slopes and ditches providing watering and compaction	m <sup>2</sup>	11	14
80		10.50.003	Light grading	Trim with motor grader existing carriageway to camber, including slopes and ditches.	m <sup>2</sup>	5	7
81		10.50.004	Reshaping	Restore manually the camber on earth or gravel roads by returning material from road sides and shoulder toward road centre.	m <sup>2</sup>	16	21
82		10.50.005	Dragging	Remove manually loose material from the surface to delay the formation of corrugations	m <sup>2</sup>	16	21
83	Gravelling	10.60.001	Regravelling	Prepare for road formation and provide, place spread, shape and compact with watering gravel of not less than CBR 20%	m <sup>3</sup>	1,757	2,319
84		10.60.001a	Regravelling without watering	Prepare for road formation and provide, place spread, shape and compact without watering gravel of not less than CBR 20%	m <sup>3</sup>	1,742	2,299

**11. PAVED ROADS - SHOULDER MAINTENANCE AND REPAIRS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
86	Shoulder Rebuilding	11.50.002	Shoulder repairing	Prepare surface of existing shoulders, accesses and bus bays, water process and compact	m <sup>2</sup>	3	4
87	Shoulder Gravelling	11.50.003	Shoulder gravelling with natural gravel	Provide, place, spread, shape and compact 150mm of natural gravel of CBR 30% to shoulders, accesses and bus bays	m <sup>3</sup>	1,784	2,355
88		11.50.003a	Shoulder gravelling with quarry waste	Provide, place and compact quarry waste material to shoulders, accesses and bus bays	m <sup>3</sup>	3,609	4,764

**12. NATURAL MATERIAL BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
89	Pavement Removal	12.70.001	Scarify existing pavement to form subbase	Break or scarify mechanically the existing pavement layer, and compact.	m <sup>3</sup>	969	1,279
90	Subbase/Base Rebuilding	12.50.001	Handpacked stone paving	Provide, lay, and compact hand packed stone material including filling of voids with stone dust	m <sup>3</sup>	4,455	5,881
91		12.50.002	Provide, place and compact quarry waste	Provide, spread, shape and compact approved quarry waste of CBR 30% and above for 5cm in thickness.	m <sup>3</sup>	6,551	8,647
92		12.50.003	Provide, place, spread and compact natural gravel	Provide, spread, shape and compact approved natural gravel of CBR 30% and above for 15cm in thickness.	m <sup>3</sup>	1,782	2,352



**13. GRADED CRUSHED STONE BASE AND SUBBASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
93	Graded Crushed Stone	13.50.001	Graded Crushed Stone for subbase	Provide, place and spread approved graded crushed stone for subbase.	m <sup>3</sup>	3,704	4,889
94		13.60.001	Graded Crushed Stone for base	Provide, place and spread approved graded crushed stone for base.	m <sup>3</sup>	3,704	4,889

**14. CEMENT AND LIME TREATED SUBGRADE, SUBBASE AND BASE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
95	Cement/Lime Stabilization	14.50.001	Provision of Cement for treatment of material	Provide, spread cement on natural gravel or graded crushed stone	ton	16,984	22,419
96		14.50.002	Provision of Lime for treatment of material	Provide, spread lime on natural gravel or graded crushed stone	ton	32,686	43,146
97		14.50.003	Cement/lime mixing	Mixing in cement/lime into natural gravel or graded crushed stone	m <sup>3</sup>	93	123
98		14.50.004	Curing and protection of treated layers	Cure and protect layers treated with cement or lime stabilizers	m <sup>2</sup>	207	273

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
99	Prime Coat	15.50.002	Prime Coat (MC-30 cutback bitumen)	Prepare surface of carriageway, bus bays and repair areas, provide and spray MC-30 cutback bitumen at a rate of 0.8-1.2 litre/m <sup>2</sup> as prime coat	litre	197	260
100	Tack Coat	15.50.003	Tack Coat (grade bitumen cutback)	Prepare surface of carriageway and bus bays, provide and spray 80/100 penetration grade bitumen cut back using 5-15% kerosene as tack coat for asphalt concrete wearing course at a spray rate of 0.5-0.7 litre/m <sup>2</sup>	litre	201	265
101		15.50.003a	Tack Coat (bitumen emulsion)	Prepare surface of repair areas provide and spray KI-60 bitumen emulsion as tack coat or seal to repair areas at a spray rate of 0.8-1.0 litre/m <sup>2</sup>	litre	167	220
102	Surface Dressing	15.70.001	Resealing	Reseal a bituminous surface dressed or an asphaltic concrete carriageway or shoulder using chippings and bitumen emulsion to improve skid resistance and eliminate the effects of wear, oxidation, ravelling, fretting, stripping and bleeding.	m <sup>2</sup>	162	214
103		15.60.002	Construct surface dressing using 3/6 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 3 to 6mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	107	141
104		15.60.003	Construct surface dressing using 6/10 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 6 to 10mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	175	231

**15. BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
105		15.60.004	Construct surface dressing using 10/14 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 10 to 14mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	230	304
106		15.60.005	Construct surface dressing using 14/20 mm precoated chippings and 80/100 penetration grade bitumen.	Treat worn surface with graded aggregates of 14 to 20mm precoated with bitumen to recover adequate surface texture	m <sup>2</sup>	241	318

**16. BITUMINOUS MIXES**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
107a	<b>Pavement Repairing</b>	16.50.001a	Pothole Cutting and Cleaning	Trim, cut and clean failed bituminous surface	m <sup>3</sup>	2,606	3,440
107		16.50.001	Pothole patching - hot mix	Provide, place and compact asphaltic concrete to repair areas and for regulation to carriageway	m <sup>3</sup>	33,550	44,286
108		16.50.002	Pothole patching - cold mix	Repair defects on bituminous surface by cold bituminous mixture	m <sup>3</sup>	60,757	80,199
109		16.50.004	Crack sealing	Repair transverse or longitudinal cracking on surface dressed or asphalt concrete	m	215	284
110		16.60.001	Asphalt concrete for surfacing - hot mix.	Overlay or continuously repave surface by hot bituminous mixture	m <sup>3</sup>	34,342	45,331
111		16.70.001	Base repair - Dense Bitumen Macadam (DBM)	Place dense bitumen macadam for base material and roll	m <sup>3</sup>	35,595	46,985
112	<b>Milling and Paving</b>	16.80.010	Milling the existing bituminous layer to spoil	Mill mechanically the existing bituminous layer to spoil	m <sup>3</sup>	3,561	4,701
113		16.80.015	Milling the existing bituminous layer for reuse	Mill mechanically the existing bituminous layer and stockpile for reuse or recycle	m <sup>3</sup>	13,616	17,973

**17. CONCRETE WORKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
114	Concrete Work	17.60.001	Concrete work (class 15/20)	Provide, place and compact class 15/20 concrete mixture for blinding.	m <sup>3</sup>	16,059	21,198
115		17.60.002	Concrete work (class 20/20)	Provide, place and compact class 20/20 concrete mixture.	m <sup>3</sup>	17,282	22,812
116		17.60.002a	Concrete work (class 25/20)	Provide, place and compact class 25/20 concrete mixture.	m <sup>3</sup>	18,939	24,999
117	Formwork	17.60.003	Vertical formwork class F2 finish	Provide and erect formwork of class F2 finish to the vertical direction	m <sup>2</sup>	1,374	1,814
118		17.60.004	Horizontal formwork class F2 finish	Provide and erect formwork of class F2 finish to the horizontal direction	m <sup>2</sup>	1,285	1,696
119	Reinforcement	17.80.004	Reinforcement work (below 16mm)	Provide, cut bend and fix into position high yield reinforcement bar below 16mm	ton	140,993	186,111
120		17.80.005	Reinforcement work (above 16mm)	Provide, cut bend and fix into position high yield reinforcement bar above 16mm	ton	141,098	186,249

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
121	Boundary posts	20.50.001	Road reserve boundary posts	Provide and erect road reserve boundary posts (size 1.2 x 0.2 x 0.2)	No	2,950	3,894
122		20.50.004	Edge marker posts	Provide and erect edge marker posts	No	3,626	4,786
123	Road Marking	20.50.007	Roads markings - white paint	Provide reflectorized white paint for road markings (w = 10cm)	m <sup>2</sup>	1,530	2,020
124		20.70.011	Road markings - white thermoplastic material	Renew faded or missing white road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,063	4,043
124a		20.70.011a	Road markings on surface dressed pavement- white thermoplastic material	Renew faded or missing white road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,374	4,454
125		20.50.006	Road markings - yellow paint	Provide reflectorized yellow paint for road markings (w = 10cm)	m <sup>2</sup>	1,530	2,020
126		20.70.010	Road markings - yellow thermoplastic material	Upgrade faded or missing yellow road markings (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,255	4,297
126a		20.70.010a	Road markings on surface dressed pavement- yellow thermoplastic material	Renew faded or missing yellow road markings on surface dressed pavement (w = 10cm) with thermoplastic material	m <sup>2</sup>	3,591	4,740
127		20.50.107	Road marking black paint	Provide reflectorized black paint for road markings (w = 10cm)	m <sup>2</sup>	1,482	1,956
128		20.70.002	Warning signs	Provide and erect priority, prohibitory or mandatory signs	No	18,997	25,076
129	Road Sign Erection	20.70.005	Priority, prohibitory or mandatory signs	Priority, prohibitory or mandatory signs	No	19,038	25,130
130		20.70.004	Standard informatory signs	Provide and erect informatory signs	No	23,392	30,877
131		20.70.006	Non-standard informatory signs	Provide and erect non-standard informatoty signs < 2m <sup>2</sup>	No	35,473	46,824

**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
131b		20.70.006b	Non-standard informatory signs (2-5m <sup>2</sup> )	Provide and erect non-standard informatoty signs (2-5m <sup>2</sup> )	No	70,348	92,859
131c		20.70.006c	Non-standard informatory signs (5-8m <sup>2</sup> )	Provide and erect non-standard informatoty signs (5-8m <sup>2</sup> )	No	132,945	175,487
132	Kerb Installation	20.50.012	Kerbs	Provide lay and joint concrete class 20/20 kerbs in support to carriageway, bus bays and junctions	m	1,845	2,435
133	Kilometre marker post Installation	20.50.013	Kilometre marker posts	Kilometre marker post Installation.	No	11,922	15,737
134	Bollard Installation	20.50.017	Concrete bollards	Concrete bollard Installation (diameter 0.2m, length 0.9m, embedded depth 0.45m)	No	3,437	4,537
135		20.50.021	Steel bollards	Place and provide gauge 16 steel pipe Bollards of diameter 150 mm and 1.05m above above the ground embedded to a depth of 0.45m at place	No	2,102	2,775
136	Reflective Stud Installation	20.50.019	Reflective studs	Install reflective studs along the centre line	No	1,140	1,505
137	Microtunneling	20.60.002	Microtunneling for a 150mm diameter PVC (polyvinyl chloride) duct	Conduct microtunneling with a 150mm dia PVC duct (under silt or sand condition)	m	70,145	92,591
138		20.60.002a	Horizontal drilling	Conduct horizontal drilling for 150mm hole in diameter (under gravel condtion)	m	44,021	58,108
139	Street light Installation	20.60.017	Street lighting pole (7.6m)	Provide and install 7.6m street lighting pole including cables accessories and lamp.	No	74,300	98,076
140		20.60.018	Street lighting pole (10m)	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	139,447	184,070



**20. ROAD FURNITURE REPAIR AND MAINTENANCE**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
141		20.60.016	Street lighting control panel	Provide and install 10.0m street lighting pole including cables accessories and lamp.	No	96,960	127,987
142		20.60.315	Electric cable	Provide and install supply cables between the street lighting poles.	m	1,588	2,096
143	Guardrail Repair	20.70.023a	Guardrail Repair Level 1	Removal of damaged guardrail and replacement with straightened beam	m	1,570	2,072
144		20.70.023b	Guardrail Repair Level 2	Removal of damaged guardrail, replacement with a straightened beam and realignment of posts	m	2,418	3,192
145		20.70.023c	Guardrail Repair Level 3	Complete removal of damaged guardrail beam and installation with new beam, posts and spacers	m	10,603	13,996

**23. CONCRETE PAVING BLOCKS**

No	Work Category	Code	Work Items		Unit	Unit Rate	
			Work Item	Work Description		Direct Cost	+ Indirect Costs (Profits & Overheads)
146	<b>Concrete Paving Blocks</b>	23.70.001	Interlocking - Heavy duty - plain (Deformed) 60mm	Provide and lay 60mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,238	1,634
147		23.70.002	Interlocking - Heavy duty - plain (Deformed) 80mm	Provide and lay 80mm Interlocking - Heavy duty - plain (Deformed) paving blocks	m <sup>2</sup>	1,540	2,033

## **Appendix I: Price List - Labour, Machinery, Material**



## Central Region



# Appendix I - I: Price List – Labour, Machinery and Material (Central Region)

Item	Code	Name	Type	Unit	Unit Price 2025
Labour	22.50.001	Support Staff		Person Day	775
	22.50.002	Unskilled labour		Person Day	775
	22.50.005	Artisans G2		Person Day	1,316
	22.50.007	Skilled Labour: Overseer		Person Day	1,448
	22.50.101	Skilled Labour: Operator		Person Day	1,838
Machinery	22.61.101	Truck Flat bed : 2.5 - 5 Tonnes		Hour	1,990
	22.61.102	Truck with crane	4t	Hour	2,500
	22.62.015	Water Tanker : 6000 - 8000 Lt.		Hour	1,828
	22.63.012	Motor Grader (e.g. CAT 112F): 100 - 130 HP		Hour	4,891
	22.63.101	Bulldozer	BD65EX	Hour	8,000
	22.63.102	Excavator	130-150hp	Hour	6,828
	22.63.103	Backhoe loader	130-150hp	Hour	4,063
	22.64.001	Pedestrian Roller : 700 - 1000 Kg.		Hour	1,542
	22.64.004	Single drum steel Vibrator roller: 9-10T, 130 HP		Hour	3,013
	22.64.005	Pneumatic Roller: 10T, 130HP		Hour	2,700
	22.65.008	Road Marking Machine		Hour	1,000
	22.65.101	Melting pod (for paint)	200 - 350kg	Hour	1,975
	22.67.001	Grass cutter	150cm, 35hp	Hour	150
	22.67.004	Bitumen Sprayer H/Operated	200L	Hour	749
	22.67.004b	Bitumen Distributor	7000 litres	Hour	5,000
	22.67.005	Vibrator P/Tamper		Hour	450
	22.67.005a	Plate compactor		Hour	300
	22.67.005b	Block cutter		Hour	100
	22.67.101	Milling machine	197hp	Hour	2,594
	22.67.102	Resurface machine	120hp	Hour	33,264
	22.67.103	Road heater	63hp	Hour	28,281
	22.67.104	Asphalt finisher	37H	Hour	6,566
	22.67.105	Power suction car	4t	Hour	6,931
	22.67.106	Muddy water processing machine		Day	53,224
	22.67.107	Boring machine	81kw	Day	55,466
	22.67.108	Air compressor	150CFM, 4250LPM	Day	9,120

Item	Code	Name	Type	Unit	Unit Price 2025
	22.67.109	Asphalt/Bitumen cutter		Hour	1,564
	22.67.110	Chip spreader		Hour	250
Material	22.69.009	Fine aggregates(sand)		m <sup>3</sup>	3,048
	22.70.001	Fine aggregates(stone dust)		m <sup>3</sup>	2,995
	22.70.002	Graded aggregates (ballast)		m <sup>3</sup>	3,159
	22.70.003	water		m <sup>3</sup>	260
	22.70.004	Cement (ordinary portland)		Kg	13
	22.70.006	Hydrated lime		Kg	26
	22.71.012	Square twisted bars 16mm		t	107,752
	22.71.012b	Deformed reinforcement bar 12mm		t	108,182
	22.72.001	Precast concrete culvert - 450mm		m	2,036
	22.72.002	Precast concrete culvert - 600mm		m	2,578
	22.72.003	Precast concrete culvert - 900mm		m	4,224
	22.72.004	Precast concrete culvert - 1200mm		m	9,559
	22.72.016	Coarse aggregates(chippings) - 3/6mm		m <sup>3</sup>	2,391
	22.72.017	Coarse aggregates(chippings) - 6/10mm		m <sup>3</sup>	2,386
	22.72.018	Coarse aggregates(chippings) - 10/14mm		m <sup>3</sup>	2,823
	22.72.019	Coarse aggregates(chippings) - 14/20mm		m <sup>3</sup>	3,152
	22.72.020	Stone dust		m <sup>3</sup>	2,433
	22.72.021	Gravel material (murrum)		m <sup>3</sup>	2,373
	22.72.022	Hardcore		m <sup>3</sup>	1,550
	22.72.023	Crusher run material (Graded crushed stone)		m <sup>3</sup>	2,252
	22.72.024	Quarry waste material		m <sup>3</sup>	1,261
	22.72.101	Precast concrete culvert - 300mm		m	1,354
	22.72.102	Stone		m <sup>3</sup>	4,418
	22.72.103	Gully pot with grating		Set	12,868
	22.72.104	Invert block drain	600*330*355	No.	466
	22.72.105	Invert block drain	600*760*190	No.	466
	22.72.106	Side Slab concrete block	3'*9"*24"	No.	226
	22.72.107	Manhole cover slab	1220*150	No.	5,690
	22.72.108	Soil (soft)		m <sup>3</sup>	1,376



Item	Code	Name	Type	Unit	Unit Price 2025
	22.72.109	Soil (hard)		m <sup>3</sup>	1,457
	22.73.002	Premix - AC Type I (cold)		m <sup>3</sup>	59,783
	22.73.003	Premix - AC Type I (hot)		m <sup>3</sup>	32,608
	22.73.004	Dense Bitumen Macadam		m <sup>3</sup>	32,657
	22.73.006	Bituminous sealant (K-160)		m <sup>3</sup>	147,647
	22.73.012	MC 30 Bitumen		litre	135
	22.73.013	80/100 Pen grade bitumen		litre	114
	22.74.002	Fuel	Diesel	litre	142
	22.77.001	Mesh wire 8' x 4' gauge 18		m <sup>2</sup>	256
	22.77.101	Gabion mesh	2m*1m = 2m <sup>2</sup>	No.	3,134
	22.77.102	Gabion Mattress	10mm	m <sup>2</sup>	3,275
	22.77.103	Flat metal plate	1/16-1/18	m <sup>2</sup>	1,005
	22.77.104	Steel pipe	2inch	m	799
	22.77.105	Bolts with nuts	8cm	Set	145
	22.77.106	Brackets		No	250
	22.77.107	Steel angle	125*5mm	kg	340
	22.77.108	Steel plate	450*3mm	kg	146
	22.77.109	Steel bollard	SGP. 5B. 125A	kg	5,172
	22.77.110	Mesh wire	A142	m <sup>2</sup>	284
	22.77.111	Cast iron manhole cover	600*450 heavy duty with frame	No.	3,147
	22.78.101	Cypress	for fixed deck	m <sup>3</sup>	77,227
	22.78.102	Wooden formwork panel		m <sup>2</sup>	834
	22.79.003	Road marking paint yellow		litre	872
	22.79.004	Road marking paint white		litre	867
	22.79.005	Thermoplastic paint yellow	premixed with primer and glass beads	Kg	191
	22.79.006	Thermoplastic paint white	premixed with primer and glass beads	Kg	187
	22.79.012	Reflective 'cat' eyes		No	1,039
	22.79.013	Reflective mark posts	White PVC post 1400	No.	3,254
	22.79.101	Road marking paint black		litre	839
	22.79.104	Reflective paint		litre	891
	22.79.105	White paint		litre	692
	22.79.106	Black paint		litre	692
	22.79.107	Road Kerb	12.25*24.5	No.	387
	22.79.108	Road channel	9.8*12.25	No.	247
	22.79.109	Duct Pipe (PVC150)		m	395
	22.79.110	Equipment for lead pipe jacking	196kN	Day	16,400

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.111	Equipment for lead pipe jacking (fixing part)		Day	1,100
	22.79.112	Equipment for lead pipe jacking (moving part)		m	176
	22.79.113	Equipment for Underground pipe jacking	196kN	Day	15,750
	22.79.114	Equipment for Underground pipe jacking (fixing part)		Day	15,250
	22.79.115	Equipment for Underground pipe jacking (moving part)		m	9,503
	22.79.116	Water stopper		No.	450
	22.79.117	Concrete anchor		No.	275
	22.79.118	Water stop cement		Kg	154
	22.79.119	Aggregation(jacking)		kg	13
	22.79.120	Aggregation(washing)		kg	13
	22.79.121	Shank-rod	90mm	No.	297,340
	22.79.122	Driving-adapter		No.	431
	22.79.123	drilling-pipe		No.	51,658
	22.79.124	Ring-bit		No.	101,733
	22.79.125	Water-swivel		No.	3,850
	22.79.126	Cutter-set		No.	46,567
	22.79.127	Core-tube		No.	46,628
	22.79.128	Magnifying-bit		No.	1,000
	22.79.129	Earth bar	10*1500mm	No.	428
	22.79.130	Lighting pole	7.6m	No.	27,168
	22.79.131	Lighting pole	10.0m	No.	78,484
	22.79.132	Cable	for light	m	216
	22.79.133	Accessories	for light	Set	7,008
	22.79.134	Lamp		No.	1,822
	22.79.135	Control panel		No.	37,788
	22.79.136	Cable	for control panel	m	216
	22.79.137	Accessories	for control panel	Set	7,023
	22.79.138	Meter		No.	5,548
	22.79.139	Grass		m <sup>2</sup>	632
	22.79.140	Red soil		m <sup>3</sup>	981
	22.79.141	Manure		m <sup>3</sup>	2,595
	22.79.142	Warning triangular sign	600mm	No.	862
	22.79.143	Priority triangular sign	600mm	No.	14,548
	22.79.144	Standard informatory sign		No.	18,507
	22.79.145	Non-standard informatory sign	less than 1m <sup>2</sup>	No.	28,454
	22.79.150	Guardrail Beam	4m	No.	11,776

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.151	Guardrail Post	140 mm dia, 6 gauge	m	4,825
	22.79.152	Bolts with nuts and washers (short)		No.	153
	22.79.153	Bolts with nuts and washers (long)		No.	318
	22.79.154	Fuel	Petrol	litre	150
	22.79.155	Pick up truck		day	7,000
	22.79.156	Truck	2 ton	day	10,500
	22.79.157	Thinner		litre	391
	22.79.158	Cement (OPC)		kg	13
	22.79.159	Pulveriser		Hour	6,250
	22.79.160	Hessian cloth		m <sup>2</sup>	180
	22.79.161	K-160		litre	105
	22.79.162	Reflecting Glass Beads		kg	160
	22.79.163	Electricity		Kw/h	28
	22.79.164	Beam Straightener		Hour	10,000
	New	Geotextiles		m <sup>2</sup>	200
	New	Reflective 'cat' eyes	Adhesive glue	No.	66
	23.70.001	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 60mm	m <sup>2</sup>	922
	23.70.002	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 80mm	m <sup>2</sup>	1138



**Coast Region**



## Appendix I-2: Price List – Labour, Machinery and Material (Coast Region)

Item	Code	Name	Type	Unit	Unit Price 2025
Labour	22.50.001	Support Staff		Person Day	775
	22.50.002	Unskilled labour		Person Day	775
	22.50.005	Artisans G2		Person Day	1,316
	22.50.007	Skilled Labour: Overseer		Person Day	2,250
	22.50.101	Skilled Labour: Operator		Person Day	1,751
Machinery	22.61.101	Truck Flat bed : 2.5 - 5 Tonnes		Hour	1,990
	22.61.102	Truck with crane	4t	Hour	3,064
	22.62.015	Water Tanker : 6000 - 8000 Lt.		Hour	2,588
	22.63.012	Motor Grader (e.g. CAT 112F): 100 - 130 HP		Hour	6,522
	22.63.101	Bulldozer	BD65EX	Hour	7,440
	22.63.102	Excavator	130-150hp	Hour	7,313
	22.63.103	Backhoe loader	130-150hp	Hour	5,380
	22.64.001	Pedestrian Roller : 700 - 1000 Kg.		Hour	1,791
	22.64.004	Single drum steel Vibrator roller: 9-10T, 130 HP		Hour	3,525
	22.64.005	Pneumatic Roller: 10T, 130HP		Hour	4,238
	22.65.008	Road Marking Machine		Hour	1,307
	22.65.101	Melting pod (for paint)	200 - 350kg	Hour	2,813
	22.67.001	Grass cutter	150cm, 35hp	Hour	120
	22.67.004	Bitumen Sprayer H/Operated	200L	Hour	749
	22.67.004b	Bitumen Distributor	7000 litres	Hour	5,000
	22.67.005	Vibrator P/Tamper		Hour	400
	22.67.005a	Plate compactor		Hour	300
	22.67.005b	Block cutter		Hour	100
	22.67.101	Milling machine	197hp	Hour	3,125
	22.67.102	Resurface machine	120hp	Hour	34,272
	22.67.103	Road heater	63hp	Hour	28,281
	22.67.104	Asphalt finisher	37H	Hour	6,566
	22.67.105	Power suction car	4t	Hour	6,931
	22.67.106	Muddy water processing machine		Day	55,008
	22.67.107	Boring machine	81kw	Day	57,322
	22.67.108	Air compressor	150CFM, 4250LPM	Day	6,500

Item	Code	Name	Type	Unit	Unit Price 2025
	22.67.109	Asphalt/Bitumen cutter		Hour	1,000
	22.67.110	Chip spreader		Hour	250
Material	22.69.009	Fine aggregates(sand)		m <sup>3</sup>	3,230
	22.70.001	Fine aggregates(stone dust)		m <sup>3</sup>	3,218
	22.70.002	Graded aggregates (ballast)		m <sup>3</sup>	4,307
	22.70.003	water		m <sup>3</sup>	266
	22.70.004	Cement (ordinary portland)		Kg	13
	22.70.006	Hydrated lime		Kg	24
	22.71.012	Square twisted bars 16mm		t	106,029
	22.71.012b	Deformed reinforcement bar 12mm		t	110,765
	22.72.001	Precast concrete culvert - 450mm		m	3,000
	22.72.002	Precast concrete culvert - 600mm		m	3,743
	22.72.003	Precast concrete culvert - 900mm		m	5,266
	22.72.004	Precast concrete culvert - 1200mm		m	9,655
	22.72.016	Coarse aggregates(chippings) - 3/6mm		m <sup>3</sup>	2,508
	22.72.017	Coarse aggregates(chippings) - 6/10mm		m <sup>3</sup>	2,829
	22.72.018	Coarse aggregates(chippings) - 10/14mm		m <sup>3</sup>	2,892
	22.72.019	Coarse aggregates(chippings) - 14/20mm		m <sup>3</sup>	2,683
	22.72.020	Stone dust		m <sup>3</sup>	2,172
	22.72.021	Gravel material (murrum)		m <sup>3</sup>	1,814
	22.72.022	Hardcore		m <sup>3</sup>	1,773
	22.72.023	Crusher run material (Graded crushed stone)		m <sup>3</sup>	2,589
	22.72.024	Quarry waste material		m <sup>3</sup>	1,660
	22.72.101	Precast concrete culvert - 300mm		m	2,529
	22.72.102	Stone		m <sup>3</sup>	2,706
	22.72.103	Gully pot with grating		Set	12,868
	22.72.104	Invert block drain	600*330*355	No.	550
	22.72.105	Invert block drain	600*760*190	No.	690
	22.72.106	Side Slab concrete block	3'*9"*24"	No.	241
	22.72.107	Manhole cover slab	1220*150	No.	6,388
	22.72.108	Soil (soft)		m <sup>3</sup>	677



Item	Code	Name	Type	Unit	Unit Price 2025
	22.72.109	Soil (hard)		m <sup>3</sup>	1,293
	22.73.002	Premix - AC Type I (cold)		m <sup>3</sup>	50,692
	22.73.003	Premix - AC Type I (hot)		m <sup>3</sup>	25,431
	22.73.004	Dense Bitumen Macadam		m <sup>3</sup>	27,546
	22.73.006	Bituminous sealant (K-160)		m <sup>3</sup>	97,608
	22.73.012	MC 30 Bitumen		litre	179
	22.73.013	80/100 Pen grade bitumen		litre	108
	22.74.002	Fuel	Diesel	litre	138
	22.77.001	Mesh wire 8' x 4' gauge 18		m <sup>2</sup>	1,409
	22.77.101	Gabion mesh	2m*1m = 2m <sup>2</sup>	No.	3,500
	22.77.102	Gabion Mattress	10mm	m <sup>2</sup>	3,380
	22.77.103	Flat metal plate	1/16-1/18	m <sup>2</sup>	914
	22.77.104	Steel pipe	2inch	m	647
	22.77.105	Bolts with nuts	8cm	Set	124
	22.77.106	Brackets		No	259
	22.77.107	Steel angle	125*5mm	kg	338
	22.77.108	Steel plate	450*3mm	kg	208
	22.77.109	Steel bollard	SGP. 5B. 125A	kg	381
	22.77.110	Mesh wire	A142	m <sup>2</sup>	275
	22.77.111	Cast iron manhole cover	600*450 heavy duty with frame	No.	7,909
	22.78.101	Cypress	for fixed deck	m <sup>3</sup>	56,411
	22.78.102	Wooden formwork panel		m <sup>2</sup>	844
	22.79.003	Road marking paint yellow		litre	1,085
	22.79.004	Road marking paint white		litre	1,145
	22.79.005	Thermoplastic paint yellow	premixed with primer and glass beads	Kg	455
	22.79.006	Thermoplastic paint white	premixed with primer and glass beads	Kg	427
	22.79.012	Reflective 'cat' eyes		No	828
	22.79.013	Reflective mark posts	White PVC post 1400	No.	5,208
	22.79.101	Road marking paint black		litre	964
	22.79.104	Reflective paint		litre	1,459
	22.79.105	White paint		litre	875
	22.79.106	Black paint		litre	778
	22.79.107	Road Kerb	12.25*24.5	No.	414
	22.79.108	Road channel	9.8*12.25	No.	234
	22.79.109	Duct Pipe (PVC 150)		m	424
	22.79.110	Equipment for lead pipe jacking	196kN	Day	31,766

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.111	Equipment for lead pipe jacking (fixing part)		Day	1,412
	22.79.112	Equipment for lead pipe jacking (moving part)		m	176
	22.79.113	Equipment for Underground pipe jacking	196kN	Day	19,770
	22.79.114	Equipment for Underground pipe jacking (fixing part)		Day	12,728
	22.79.115	Equipment for Underground pipe jacking (moving part)		m	9,503
	22.79.116	Water stopper		No.	2,424
	22.79.117	Concrete anchor		No.	259
	22.79.118	Water stop cement		Kg	194
	22.79.119	Aggregation(jacking)		kg	13
	22.79.120	Aggregation(washing)		kg	13
	22.79.121	Shank-rod	90mm	No.	297,340
	22.79.122	Driving-adapter		No.	1,605
	22.79.123	drilling-pipe		No.	51,658
	22.79.124	Ring-bit		No.	101,733
	22.79.125	Water-swivel		No.	95,806
	22.79.126	Cutter-set		No.	46,567
	22.79.127	Core-tube		No.	46,628
	22.79.128	Magnifying-bit		No.	507,269
	22.79.129	Earth bar	10*1500mm	No.	500
	22.79.130	Lighting pole	7.6m	No.	27,050
	22.79.131	Lighting pole	10.0m	No.	9,052
	22.79.132	Cable	for light	m	496
	22.79.133	Accessories	for light	Set	11,097
	22.79.134	Lamp		No.	14,943
	22.79.135	Control panel		No.	29,310
	22.79.136	Cable	for control panel	m	1,344
	22.79.137	Accessories	for control panel	Set	41,211
	22.79.138	Meter		No.	4,406
	22.79.139	Grass		m <sup>2</sup>	259
	22.79.140	Red soil		m <sup>3</sup>	991
	22.79.141	Manure		m <sup>3</sup>	7,455
	22.79.142	Warning triangular sign	600mm	No.	14,548
	22.79.143	Priority triangular sign	600mm	No.	14,548
	22.79.144	Standard informatory sign		No.	18,507
	22.79.145	Non-standard informatory sign	less than 1m <sup>2</sup>	No.	28,454
	22.79.150	Guardrail Beam	4m	No.	11,776

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.151	Guardrail Post	140 mm dia, 6 gauge	m	4,825
	22.79.152	Bolts with nuts and washers (short)		No.	110
	22.79.153	Bolts with nuts and washers (long)		No.	143
	22.79.154	Fuel	Petrol	litre	146
	22.79.155	Pick up truck		day	8,729
	22.79.156	Truck	2 ton	day	17,167
	22.79.157	Thinner		litre	421
	22.79.158	Cement (OPC)		kg	15
	22.79.159	Pulveriser		Hour	6,875
	22.79.160	Hessian cloth		m <sup>2</sup>	202
	22.79.161	K-160		litre	98
	22.79.162	Reflecting Glass Beads		kg	137
	22.79.163	Electricity		Kw/h	26
	22.79.164	Beam Straightener		Hour	12,690
	New	Geotextiles		m <sup>2</sup>	200
	New	Reflective 'cat' eyes	Adhesive glue	No.	66
	23.70.001	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 60mm	m <sup>2</sup>	991
	23.70.002	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 80mm	m <sup>2</sup>	1,078



## Lower Eastern Region



## Appendix I-3: Price List – Labour, Machinery and Material (Lower Eastern Region)

Item	Code	Name	Type	Unit	Unit Price 2025
Labour	22.50.001	Support Staff		Person Day	775
	22.50.002	Unskilled labour		Person Day	775
	22.50.005	Artisans G2		Person Day	1,316
	22.50.007	Skilled Labour: Overseer		Person Day	2,125
	22.50.101	Skilled Labour: Operator		Person Day	1,751
Machinery	22.61.101	Truck Flat bed : 2.5 - 5 Tonnes		Hour	2,155
	22.61.102	Truck with crane	4t	Hour	2,675
	22.62.015	Water Tanker : 6000 - 8000 Lt.		Hour	2,995
	22.63.012	Motor Grader (e.g. CAT 112F): 100 - 130 HP		Hour	5,733
	22.63.101	Bulldozer	BD65EX	Hour	7,801
	22.63.102	Excavator	130-150hp	Hour	6,856
	22.63.103	Backhoe loader	130-150hp	Hour	5,892
	22.64.001	Pedestrian Roller : 700 - 1000 Kg.		Hour	1,703
	22.64.004	Single drum steel Vibrator roller: 9-10T, 130 HP		Hour	4,325
	22.64.005	Pneumatic Roller: 10T, 130HP		Hour	3,868
	22.65.008	Road Marking Machine		Hour	1,379
	22.65.101	Melting pod (for paint)	200 - 350kg	Hour	2,442
	22.67.001	Grass cutter	150cm, 35hp	Hour	120
	22.67.004	Bitumen Sprayer H/Operated	200L	Hour	749
	22.67.004b	Bitumen Distributor	7000 litres	Hour	6,000
	22.67.005	Vibrator P/Tamper		Hour	918
	22.67.005a	Plate compactor		Hour	300
	22.67.005b	Block cutter		Hour	100
	22.67.101	Milling machine	197hp	Hour	2,240
	22.67.102	Resurface machine	120hp	Hour	34,593
	22.67.103	Road heater	63hp	Hour	26,019
	22.67.104	Asphalt finisher	37H	Hour	6,893
	22.67.105	Power suction car	4t	Hour	7,272
	22.67.106	Muddy water processing machine		Day	53,778
	22.67.107	Boring machine	81kw	Day	56,043
	22.67.108	Air compressor	150CFM, 4250LPM	Day	9,120

Item	Code	Name	Type	Unit	Unit Price 2025
	22.67.109	Asphalt/Bitumen cutter		Hour	1,705
	22.67.110	Chip spreader		Hour	250
Material	22.69.009	Fine aggregates(sand)		m <sup>3</sup>	2,643
	22.70.001	Fine aggregates(stone dust)		m <sup>3</sup>	1,878
	22.70.002	Graded aggregates (ballast)		m <sup>3</sup>	1,807
	22.70.003	water		m <sup>3</sup>	257
	22.70.004	Cement (ordinary portland)		Kg	14
	22.70.006	Hydrated lime		Kg	27
	22.71.012	Square twisted bars 16mm		t	106,062
	22.71.012b	Deformed reinforcement bar 12mm		t	108,419
	22.72.001	Precast concrete culvert - 450mm		m	2,746
	22.72.002	Precast concrete culvert - 600mm		m	2,853
	22.72.003	Precast concrete culvert - 900mm		m	3,987
	22.72.004	Precast concrete culvert - 1200mm		m	7,847
	22.72.016	Coarse aggregates(chippings) - 3/6mm		m <sup>3</sup>	11,112
	22.72.017	Coarse aggregates(chippings) - 6/10mm		m <sup>3</sup>	11,112
	22.72.018	Coarse aggregates(chippings) - 10/14mm		m <sup>3</sup>	11,260
	22.72.019	Coarse aggregates(chippings) - 14/20mm		m <sup>3</sup>	11,260
	22.72.020	Stone dust		m <sup>3</sup>	1,636
	22.72.021	Gravel material (murrum)		m <sup>3</sup>	1,817
	22.72.022	Hardcore		m <sup>3</sup>	1,839
	22.72.023	Crusher run material (Graded crushed stone)		m <sup>3</sup>	1,861
	22.72.024	Quarry waste material		m <sup>3</sup>	1,490
	22.72.101	Precast concrete culvert - 300mm		m	1,825
	22.72.102	Stone		m <sup>3</sup>	1,839
	22.72.103	Gully pot with grating		Set	13,171
	22.72.104	Invert block drain	600*330*355	No.	531
	22.72.105	Invert block drain	600*760*190	No.	866
	22.72.106	Side Slab concrete block	3'*9"*24"	No.	275
	22.72.107	Manhole cover slab	1220*150	No.	6,810
	22.72.108	Soil (soft)		m <sup>3</sup>	498



Item	Code	Name	Type	Unit	Unit Price 2025
	22.72.109	Soil (hard)		m <sup>3</sup>	973
	22.73.002	Premix - AC Type I (cold)		m <sup>3</sup>	44,423
	22.73.003	Premix - AC Type I (hot)		m <sup>3</sup>	23,985
	22.73.004	Dense Bitumen Macadam		m <sup>3</sup>	24,022
	22.73.006	Bituminous sealant (K-160)		m <sup>3</sup>	110,506
	22.73.012	MC 30 Bitumen		litre	133
	22.73.013	80/100 Pen grade bitumen		litre	113
	22.74.002	Fuel	Diesel	litre	141
	22.77.001	Mesh wire 8' x 4' gauge 18		m <sup>2</sup>	832
	22.77.101	Gabion mesh	2m*1m = 2m <sup>2</sup>	No.	3,855
	22.77.102	Gabion Mattress	10mm	m <sup>2</sup>	3,324
	22.77.103	Flat metal plate	1/16-1/18	m <sup>2</sup>	1,066
	22.77.104	Steel pipe	2inch	m	855
	22.77.105	Bolts with nuts	8cm	Set	379
	22.77.106	Brackets		No	216
	22.77.107	Steel angle	125*5mm	kg	345
	22.77.108	Steel plate	450*3mm	kg	230
	22.77.109	Steel bollard	SGP. 5B. 125A	kg	378
	22.77.110	Mesh wire	A142	m <sup>2</sup>	271
	22.77.111	Cast iron manhole cover	600*450 heavy duty with frame	No.	12,202
	22.78.101	Cypress	for fixed deck	m <sup>3</sup>	52,802
	22.78.102	Wooden formwork panel		m <sup>2</sup>	839
	22.79.003	Road marking paint yellow		litre	1,017
	22.79.004	Road marking paint white		litre	957
	22.79.005	Thermoplastic paint yellow	premixed with primer and glass beads	Kg	453
	22.79.006	Thermoplastic paint white	premixed with primer and glass beads	Kg	424
	22.79.012	Reflective 'cat' eyes		No	862
	22.79.013	Reflective mark posts	White PVC post 1400	No.	3,103
	22.79.101	Road marking paint black		litre	991
	22.79.104	Reflective paint		litre	293
	22.79.105	White paint		litre	891
	22.79.106	Black paint		litre	923
	22.79.107	Road Kerb	12.25*24.5	No.	356
	22.79.108	Road channel	9.8*12.25	No.	237
	22.79.109	Duct Pipe (PVC 150)		m	718
	22.79.110	Equipment for lead pipe jacking	196kN	Day	31,376

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.111	Equipment for lead pipe jacking (fixing part)		Day	1,371
	22.79.112	Equipment for lead pipe jacking (moving part)		m	126
	22.79.113	Equipment for Underground pipe jacking	196kN	Day	19,518
	22.79.114	Equipment for Underground pipe jacking (fixing part)		Day	12,729
	22.79.115	Equipment for Underground pipe jacking (moving part)		m	9,505
	22.79.116	Water stopper		No.	1,336
	22.79.117	Concrete anchor		No.	516
	22.79.118	Water stop cement		Kg	198
	22.79.119	Aggregation(jacking)		kg	11
	22.79.120	Aggregation(washing)		kg	11
	22.79.121	Shank-rod	90mm	No.	295,691
	22.79.122	Driving-adapter		No.	1,033
	22.79.123	drilling-pipe		No.	51,362
	22.79.124	Ring-bit		No.	101,290
	22.79.125	Water-swivel		No.	96,190
	22.79.126	Cutter-set		No.	46,034
	22.79.127	Core-tube		No.	46,360
	22.79.128	Magnifying-bit		No.	503,078
	22.79.129	Earth bar	10*1500mm	No.	1,121
	22.79.130	Lighting pole	7.6m	No.	26,972
	22.79.131	Lighting pole	10.0m	No.	78,158
	22.79.132	Cable	for light	m	260
	22.79.133	Accessories	for light	Set	7,786
	22.79.134	Lamp		No.	14,993
	22.79.135	Control panel		No.	37,524
	22.79.136	Cable	for control panel	m	1,156
	22.79.137	Accessories	for control panel	Set	40,818
	22.79.138	Meter		No.	5,497
	22.79.139	Grass		m <sup>2</sup>	613
	22.79.140	Red soil		m <sup>3</sup>	684
	22.79.141	Manure		m <sup>3</sup>	5,506
	22.79.142	Warning triangular sign	600mm	No.	14,544
	22.79.143	Priority triangular sign	600mm	No.	14,544
	22.79.144	Standard informatory sign		No.	18,502
	22.79.145	Non-standard informatory sign	less than 1m <sup>2</sup>	No.	28,447
	22.79.150	Guardrail Beam	4m	No.	13,534

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.151	Guardrail Post	140 mm dia, 6 gauge	m	4,828
	22.79.152	Bolts with nuts and washers (short)		No.	302
	22.79.153	Bolts with nuts and washers (long)		No.	379
	22.79.154	Fuel	Petrol	litre	149
	22.79.155	Pick up truck		day	10,397
	22.79.156	Truck	2 ton	day	10,397
	22.79.157	Thinner		litre	476
	22.79.158	Cement (OPC)		kg	14
	22.79.159	Pulveriser		Hour	6,825
	22.79.160	Hessian cloth		m <sup>2</sup>	251
	22.79.161	K-160		litre	104
	22.79.162	Reflecting Glass Beads		kg	293
	22.79.163	Electricity		Kw/h	26
	22.79.164	Beam Straightener		Hour	11,588
	New	Geotextiles		m <sup>2</sup>	200
	New	Reflective 'cat' eyes	Adhesive glue	No.	66
	23.70.001	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 60mm	m <sup>2</sup>	1,082
	23.70.002	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 80mm	m <sup>2</sup>	1,121



## Nairobi Region



## Appendix I-4: Price List – Labour, Machinery and Material (Nairobi Region)

Item	Code	Name	Type	Unit	Unit Price 2025
Labour	22.50.001	Support Staff		Person Day	775
	22.50.002	Unskilled labour		Person Day	775
	22.50.005	Artisans G2		Person Day	1,316
	22.50.007	Skilled Labour: Overseer		Person Day	1,448
	22.50.101	Skilled Labour: Operator		Person Day	1,751
Machinery	22.61.101	Truck Flat bed : 2.5 - 5 Tonnes		Hour	1,990
	22.61.102	Truck with crane	4t	Hour	2,500
	22.62.015	Water Tanker : 6000 - 8000 Lt.		Hour	1,780
	22.63.012	Motor Grader (e.g. CAT 112F): 100 - 130 HP		Hour	4,180
	22.63.101	Bulldozer	BD65EX	Hour	7,440
	22.63.102	Excavator	130-150hp	Hour	6,530
	22.63.103	Backhoe loader	130-150hp	Hour	3,673
	22.64.001	Pedestrian Roller : 700 - 1000 Kg.		Hour	1,150
	22.64.004	Single drum steel Vibrator roller: 9-10T, 130 HP		Hour	2,607
	22.64.005	Pneumatic Roller: 10T, 130HP		Hour	3,650
	22.65.008	Road Marking Machine		Hour	570
	22.65.101	Melting pod (for paint)	200 - 350kg	Hour	2,276
	22.67.001	Grass cutter	150cm, 35hp	Hour	120
	22.67.004	Bitumen Sprayer H/Operated	200L	Hour	749
	22.67.004b	Bitumen Distributor	7000 litres	Hour	5,000
	22.67.005	Vibrator P/Tamper		Hour	400
	22.67.005a	Plate compactor		Hour	300
	22.67.005b	Block cutter		Hour	100
	22.67.101	Milling machine	197hp	Hour	2,080
	22.67.102	Resurface machine	120hp	Hour	33,264
	22.67.103	Road heater	63hp	Hour	26,000
	22.67.104	Asphalt finisher	37H	Hour	6,566
	22.67.105	Power suction car	4t	Hour	6,931
	22.67.106	Muddy water processing machine		Day	53,224
	22.67.107	Boring machine	81kw	Day	55,466
	22.67.108	Air compressor	150CFM, 4250LPM	Day	9,120

Item	Code	Name	Type	Unit	Unit Price 2025
	22.67.109	Asphalt/Bitumen cutter		Hour	1,564
	22.67.110	Chip spreader		Hour	250
Material	22.69.009	Fine aggregates(sand)		m <sup>3</sup>	2,674
	22.70.001	Fine aggregates(stone dust)		m <sup>3</sup>	2,733
	22.70.002	Graded aggregates (ballast)		m <sup>3</sup>	2,440
	22.70.003	water		m <sup>3</sup>	242
	22.70.004	Cement (ordinary portland)		Kg	14
	22.70.006	Hydrated lime		Kg	26
	22.71.012	Square twisted bars 16mm		t	104,435
	22.71.012b	Deformed reinforcement bar 12mm		t	103,689
	22.72.001	Precast concrete culvert - 450mm		m	1,954
	22.72.002	Precast concrete culvert - 600mm		m	2,661
	22.72.003	Precast concrete culvert - 900mm		m	4,643
	22.72.004	Precast concrete culvert - 1200mm		m	7,699
	22.72.016	Coarse aggregates(chippings) - 3/6mm		m <sup>3</sup>	2,001
	22.72.017	Coarse aggregates(chippings) - 6/10mm		m <sup>3</sup>	2,149
	22.72.018	Coarse aggregates(chippings) - 10/14mm		m <sup>3</sup>	2,444
	22.72.019	Coarse aggregates(chippings) - 14/20mm		m <sup>3</sup>	2,422
	22.72.020	Stone dust		m <sup>3</sup>	2,091
	22.72.021	Gravel material (murrum)		m <sup>3</sup>	1,492
	22.72.022	Hardcore		m <sup>3</sup>	1,273
	22.72.023	Crusher run material (Graded crushed stone)		m <sup>3</sup>	2,005
	22.72.024	Quarry waste material		m <sup>3</sup>	2,114
	22.72.101	Precast concrete culvert - 300mm		m	1,289
	22.72.102	Stone		m <sup>3</sup>	1,273
	22.72.103	Gully pot with grating		Set	12,724
	22.72.104	Invert block drain	600*330*355	No.	511
	22.72.105	Invert block drain	600*760*190	No.	843
	22.72.106	Side Slab concrete block	3'*9"*24"	No.	233
	22.72.107	Manhole cover slab	1220*150	No.	5,634
	22.72.108	Soil (soft)		m <sup>3</sup>	833



Item	Code	Name	Type	Unit	Unit Price 2025
	22.72.109	Soil (hard)		m <sup>3</sup>	913
	22.73.002	Premix - AC Type I (cold)		m <sup>3</sup>	41,600
	22.73.003	Premix - AC Type I (hot)		m <sup>3</sup>	22,400
	22.73.004	Dense Bitumen Macadam		m <sup>3</sup>	22,434
	22.73.006	Bituminous sealant (K-160)		m <sup>3</sup>	103,678
	22.73.012	MC 30 Bitumen		litre	133
	22.73.013	80/100 Pen grade bitumen		litre	113
	22.74.002	Fuel	Diesel	litre	140
	22.77.001	Mesh wire 8' x 4' gauge 18		m <sup>2</sup>	780
	22.77.101	Gabion mesh	2m*1m = 2m <sup>2</sup>	No.	3,385
	22.77.102	Gabion Mattress	10mm	m <sup>2</sup>	2,967
	22.77.103	Flat metal plate	1/16-1/18	m <sup>2</sup>	968
	22.77.104	Steel pipe	2inch	m	629
	22.77.105	Bolts with nuts	8cm	Set	251
	22.77.106	Brackets		No	126
	22.77.107	Steel angle	125*5mm	kg	271
	22.77.108	Steel plate	450*3mm	kg	190
	22.77.109	Steel bollard	SGP. 5B. 125A	kg	378
	22.77.110	Mesh wire	A142	m <sup>2</sup>	277
	22.77.111	Cast iron manhole cover	600*450 heavy duty with frame	No.	11,783
	22.78.101	Cypress	for fixed deck	m <sup>3</sup>	49,045
	22.78.102	Wooden formwork panel		m <sup>2</sup>	763
	22.79.003	Road marking paint yellow		litre	1,189
	22.79.004	Road marking paint white		litre	1,214
	22.79.005	Thermoplastic paint yellow	premixed with primer and glass beads	Kg	452
	22.79.006	Thermoplastic paint white	premixed with primer and glass beads	Kg	424
	22.79.012	Reflective 'cat' eyes		No	827
	22.79.013	Reflective mark posts	White PVC post 1400	No.	3,250
	22.79.101	Road marking paint black		litre	1,146
	22.79.104	Reflective paint		litre	1,458
	22.79.105	White paint		litre	771
	22.79.106	Black paint		litre	824
	22.79.107	Road Kerb	12.25*24.5	No.	410
	22.79.108	Road channel	9.8*12.25	No.	221
	22.79.109	Duct Pipe (PVC 150)		m	401
	22.79.110	Equipment for lead pipe jacking	196kN	Day	31,200

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.111	Equipment for lead pipe jacking (fixing part)		Day	1,352
	22.79.112	Equipment for lead pipe jacking (moving part)		m	104
	22.79.113	Equipment for Underground pipe jacking	196kN	Day	19,404
	22.79.114	Equipment for Underground pipe jacking (fixing part)		Day	12,480
	22.79.115	Equipment for Underground pipe jacking (moving part)		m	9,148
	22.79.116	Water stopper		No.	2,417
	22.79.117	Concrete anchor		No.	237
	22.79.118	Water stop cement		Kg	194
	22.79.119	Aggregation(jacking)		kg	10
	22.79.120	Aggregation(washing)		kg	10
	22.79.121	Shank-rod	90mm	No.	294,948
	22.79.122	Driving-adapter		No.	1,575
	22.79.123	drilling-pipe		No.	51,228
	22.79.124	Ring-bit		No.	100,903
	22.79.125	Water-swivel		No.	95,023
	22.79.126	Cutter-set		No.	45,794
	22.79.127	Core-tube		No.	46,238
	22.79.128	Magnifying-bit		No.	501,191
	22.79.129	Earth bar	10*1500mm	No.	342
	22.79.130	Lighting pole	7.6m	No.	26,933
	22.79.131	Lighting pole	10.0m	No.	78,000
	22.79.132	Cable	for light	m	346
	22.79.133	Accessories	for light	Set	6,935
	22.79.134	Lamp		No.	14,942
	22.79.135	Control panel		No.	37,406
	22.79.136	Cable	for control panel	m	1,146
	22.79.137	Accessories	for control panel	Set	40,796
	22.79.138	Meter		No.	5,474
	22.79.139	Grass		m <sup>2</sup>	697
	22.79.140	Red soil		m <sup>3</sup>	1,228
	22.79.141	Manure		m <sup>3</sup>	4,629
	22.79.142	Warning triangular sign	600mm	No.	14,542
	22.79.143	Priority triangular sign	600mm	No.	14,542
	22.79.144	Standard informatory sign		No.	18,500
	22.79.145	Non-standard informatory sign	less than 1m <sup>2</sup>	No.	28,444
	22.79.150	Guardrail Beam	4m	No.	11,609

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.151	Guardrail Post	140 mm dia, 6 gauge	m	4,741
	22.79.152	Bolts with nuts and washers (short)		No.	140
	22.79.153	Bolts with nuts and washers (long)		No.	190
	22.79.154	Fuel	Petrol	litre	148
	22.79.155	Pick up truck		day	9,943
	22.79.156	Truck	2 ton	day	9,943
	22.79.157	Thinner		litre	471
	22.79.158	Cement (OPC)		kg	14
	22.79.159	Pulveriser		Hour	6,500
	22.79.160	Hessian cloth		m <sup>2</sup>	176
	22.79.161	K-160		litre	104
	22.79.162	Reflecting Glass Beads		kg	167
	22.79.163	Electricity		Kw/h	26
	22.79.164	Beam Straightener		Hour	11,088
	New	Geotextiles		m <sup>2</sup>	200
	New	Reflective 'cat' eyes	Adhesive glue	No.	66
	23.70.001	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 60mm	m <sup>2</sup>	954
	23.70.002	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 80mm	m <sup>2</sup>	1359



## **North Eastern Region**



## Appendix I-5: Price List – Labour, Machinery and Material (North Eastern Region)

Item	Code	Name	Type	Unit	Unit Price 2025
Labour	22.50.001	Support Staff		Person Day	933
	22.50.002	Unskilled labour		Person Day	1,000
	22.50.005	Artisans G2		Person Day	1,667
	22.50.007	Skilled Labour: Overseer		Person Day	1,770
	22.50.101	Skilled Labour: Operator		Person Day	2,500
Machinery	22.61.101	Truck Flat bed : 2.5 - 5 Tonnes		Hour	2,000
	22.61.102	Truck with crane	4t	Hour	2,727
	22.62.015	Water Tanker : 6000 - 8000 Lt.		Hour	2,875
	22.63.012	Motor Grader (e.g. CAT 112F): 100 - 130 HP		Hour	7,000
	22.63.101	Bulldozer	BD65EX	Hour	8,000
	22.63.102	Excavator	130-150hp	Hour	8,000
	22.63.103	Backhoe loader	130-150hp	Hour	7,000
	22.64.001	Pedestrian Roller : 700 - 1000 Kg.		Hour	1,250
	22.64.004	Single drum steel Vibrator roller: 9-10T, 130 HP		Hour	3,333
	22.64.005	Pneumatic Roller: 10T, 130HP		Hour	4,063
	22.65.008	Road Marking Machine		Hour	1,300
	22.65.101	Melting pod (for paint)	200 - 350kg	Hour	3,002
	22.67.001	Grass cutter	150cm, 35hp	Hour	120
	22.67.004	Bitumen Sprayer H/Operated	200L	Hour	749
	22.67.004b	Bitumen Distributor	7000 litres	Hour	7,000
	22.67.005	Vibrator P/Tamper		Hour	438
	22.67.005a	Plate compactor		Hour	300
	22.67.005b	Block cutter		Hour	100
	22.67.101	Milling machine	197hp	Hour	3,500
	22.67.102	Resurface machine	120hp	Hour	45,816
	22.67.103	Road heater	63hp	Hour	28,397
	22.67.104	Asphalt finisher	37H	Hour	5,897
	22.67.105	Power suction car	4t	Hour	10,095
	22.67.106	Muddy water processing machine		Day	55,071
	22.67.107	Boring machine	81kw	Day	60,636
	22.67.108	Air compressor	150CFM, 4250LPM	Day	5,833

Item	Code	Name	Type	Unit	Unit Price 2025
	22.67.109	Asphalt/Bitumen cutter		Hour	2,032
	22.67.110	Chip spreader		Hour	250
Material	22.69.009	Fine aggregates(sand)		m <sup>3</sup>	2,690
	22.70.001	Fine aggregates(stone dust)		m <sup>3</sup>	4,690
	22.70.002	Graded aggregates (ballast)		m <sup>3</sup>	5,496
	22.70.003	water		m <sup>3</sup>	420
	22.70.004	Cement (ordinary portland)		Kg	17
	22.70.006	Hydrated lime		Kg	31
	22.71.012	Square twisted bars 16mm		t	121,352
	22.71.012b	Deformed reinforcement bar 12mm		t	118,966
	22.72.001	Precast concrete culvert - 450mm		m	2,625
	22.72.002	Precast concrete culvert - 600mm		m	5,316
	22.72.003	Precast concrete culvert - 900mm		m	7,500
	22.72.004	Precast concrete culvert - 1200mm		m	8,309
	22.72.016	Coarse aggregates(chippings) - 3/6mm		m <sup>3</sup>	3,125
	22.72.017	Coarse aggregates(chippings) - 6/10mm		m <sup>3</sup>	4,138
	22.72.018	Coarse aggregates(chippings) - 10/14mm		m <sup>3</sup>	4,400
	22.72.019	Coarse aggregates(chippings) - 14/20mm		m <sup>3</sup>	4,400
	22.72.020	Stone dust		m <sup>3</sup>	3,925
	22.72.021	Gravel material (murrum)		m <sup>3</sup>	1,310
	22.72.022	Hardcore		m <sup>3</sup>	2,805
	22.72.023	Crusher run material (Graded crushed stone)		m <sup>3</sup>	2,904
	22.72.024	Quarry waste material		m <sup>3</sup>	2,586
	22.72.101	Precast concrete culvert - 300mm		m	3,448
	22.72.102	Stone		m <sup>3</sup>	2,805
	22.72.103	Gully pot with grating		Set	12,873
	22.72.104	Invert block drain	600*330*355	No.	509
	22.72.105	Invert block drain	600*760*190	No.	600
	22.72.106	Side Slab concrete block	3'*9"*24"	No.	351
	22.72.107	Manhole cover slab	1220*150	No.	6,024
	22.72.108	Soil (soft)		m <sup>3</sup>	2,127



Item	Code	Name	Type	Unit	Unit Price 2025
	22.72.109	Soil (hard)		m <sup>3</sup>	2,241
	22.73.002	Premix - AC Type I (cold)		m <sup>3</sup>	51,012
	22.73.003	Premix - AC Type I (hot)		m <sup>3</sup>	36,087
	22.73.004	Dense Bitumen Macadam		m <sup>3</sup>	24,138
	22.73.006	Bituminous sealant (K-160)		m <sup>3</sup>	146,552
	22.73.012	MC 30 Bitumen		litre	172
	22.73.013	80/100 Pen grade bitumen		litre	147
	22.74.002	Fuel	Diesel	litre	152
	22.77.001	Mesh wire 8' x 4' gauge 18		m <sup>2</sup>	901
	22.77.101	Gabion mesh	2m*1m = 2m <sup>2</sup>	No.	4,454
	22.77.102	Gabion Mattress	10mm	m <sup>2</sup>	4,310
	22.77.103	Flat metal plate	1/16-1/18	m <sup>2</sup>	1,167
	22.77.104	Steel pipe	2inch	m	836
	22.77.105	Bolts with nuts	8cm	Set	253
	22.77.106	Brackets		No	241
	22.77.107	Steel angle	125*5mm	kg	425
	22.77.108	Steel plate	450*3mm	kg	256
	22.77.109	Steel bollard	SGP. 5B. 125A	kg	381
	22.77.110	Mesh wire	A142	m <sup>2</sup>	293
	22.77.111	Cast iron manhole cover	600*450 heavy duty with frame	No.	11,899
	22.78.101	Cypress	for fixed deck	m <sup>3</sup>	60,637
	22.78.102	Wooden formwork panel		m <sup>2</sup>	967
	22.79.003	Road marking paint yellow		litre	1,191
	22.79.004	Road marking paint white		litre	1,215
	22.79.005	Thermoplastic paint yellow	premixed with primer and glass beads	Kg	454
	22.79.006	Thermoplastic paint white	premixed with primer and glass beads	Kg	425
	22.79.012	Reflective 'cat' eyes		No	828
	22.79.013	Reflective mark posts	White PVC post 1400	No.	1,146
	22.79.101	Road marking paint black		litre	1,148
	22.79.104	Reflective paint		litre	1,460
	22.79.105	White paint		litre	323
	22.79.106	Black paint		litre	323
	22.79.107	Road Kerb	12.25*24.5	No.	531
	22.79.108	Road channel	9.8*12.25	No.	345
	22.79.109	Duct Pipe (PVC 150)		m	455
	22.79.110	Equipment for lead pipe jacking	196kN	Day	32,355

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.111	Equipment for lead pipe jacking (fixing part)		Day	1,469
	22.79.112	Equipment for lead pipe jacking (moving part)		m	241
	22.79.113	Equipment for Underground pipe jacking	196kN	Day	20,149
	22.79.114	Equipment for Underground pipe jacking (fixing part)		Day	12,984
	22.79.115	Equipment for Underground pipe jacking (moving part)		m	9,871
	22.79.116	Water stopper		No.	2,455
	22.79.117	Concrete anchor		No.	257
	22.79.118	Water stop cement		Kg	145
	22.79.119	Aggregation(jacking)		kg	14
	22.79.120	Aggregation(washing)		kg	14
	22.79.121	Shank-rod	90mm	No.	299,334
	22.79.122	Driving-adapter		No.	1,606
	22.79.123	drilling-pipe		No.	51,673
	22.79.124	Ring-bit		No.	101,762
	22.79.125	Water-swivel		No.	95,833
	22.79.126	Cutter-set		No.	46,594
	22.79.127	Core-tube		No.	46,642
	22.79.128	Magnifying-bit		No.	511,850
	22.79.129	Earth bar	10*1500mm	No.	848
	22.79.130	Lighting pole	7.6m	No.	27,061
	22.79.131	Lighting pole	10.0m	No.	78,527
	22.79.132	Cable	for light	m	259
	22.79.133	Accessories	for light	Set	11,853
	22.79.134	Lamp		No.	14,956
	22.79.135	Control panel		No.	37,962
	22.79.136	Cable	for control panel	m	1,351
	22.79.137	Accessories	for control panel	Set	37,962
	22.79.138	Meter		No.	5,482
	22.79.139	Grass		m <sup>2</sup>	708
	22.79.140	Red soil		m <sup>3</sup>	4,310
	22.79.141	Manure		m <sup>3</sup>	7,554
	22.79.142	Warning triangular sign	600mm	No.	14,548
	22.79.143	Priority triangular sign	600mm	No.	14,548
	22.79.144	Standard informatory sign		No.	18,507
	22.79.145	Non-standard informatory sign	less than 1m <sup>2</sup>	No.	28,454
	22.79.150	Guardrail Beam	4m	No.	11,781

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.151	Guardrail Post	140 mm dia, 6 gauge	m	4,828
	22.79.152	Bolts with nuts and washers (short)		No.	142
	22.79.153	Bolts with nuts and washers (long)		No.	192
	22.79.154	Fuel	Petrol	litre	160
	22.79.155	Pick up truck		day	8,000
	22.79.156	Truck	2 ton	day	21,500
	22.79.157	Thinner		litre	539
	22.79.158	Cement (OPC)		kg	17
	22.79.159	Pulveriser		Hour	6,000
	22.79.160	Hessian cloth		m <sup>2</sup>	582
	22.79.161	K-160		litre	106
	22.79.162	Reflecting Glass Beads		kg	169
	22.79.163	Electricity		Kw/h	26
	22.79.164	Beam Straightener		Hour	12,746
	New	Geotextiles		m <sup>2</sup>	200
	New	Reflective 'cat' eyes	Adhesive glue	No.	66
	23.70.001	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 60mm	m <sup>2</sup>	1,293
	23.70.002	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 80mm	m <sup>2</sup>	1,293



## North Rift Region



## Appendix I-6: Price List – Labour, Machinery and Material (North Rift Region)

Item	Code	Name	Type	Unit	Unit Price 2025
Labour	22.50.001	Support Staff		Person Day	1,033
	22.50.002	Unskilled labour		Person Day	1,167
	22.50.005	Artisans G2		Person Day	1,550
	22.50.007	Skilled Labour: Overseer		Person Day	2,000
	22.50.101	Skilled Labour: Operator		Person Day	2,583
Machinery	22.61.101	Truck Flat bed : 2.5 - 5 Tonnes		Hour	2,667
	22.61.102	Truck with crane	4t	Hour	3,075
	22.62.015	Water Tanker : 6000 - 8000 Lt.		Hour	3,161
	22.63.012	Motor Grader (e.g. CAT 112F): 100 - 130 HP		Hour	6,112
	22.63.101	Bulldozer	BD65EX	Hour	7,440
	22.63.102	Excavator	130-150hp	Hour	6,530
	22.63.103	Backhoe loader	130-150hp	Hour	4,059
	22.64.001	Pedestrian Roller : 700 - 1000 Kg.		Hour	1,401
	22.64.004	Single drum steel Vibrator roller: 9-10T, 130 HP		Hour	4,005
	22.64.005	Pneumatic Roller: 10T, 130HP		Hour	4,256
	22.65.008	Road Marking Machine		Hour	1,724
	22.65.101	Melting pod (for paint)	200 - 350kg	Hour	2,586
	22.67.001	Grass cutter	150cm, 35hp	Hour	120
	22.67.004	Bitumen Sprayer H/Operated	200L	Hour	749
	22.67.004b	Bitumen Distributor	7000 litres	Hour	7,000
	22.67.005	Vibrator P/Tamper		Hour	485
	22.67.005a	Plate compactor		Hour	300
	22.67.005b	Block cutter		Hour	100
	22.67.101	Milling machine	197hp	Hour	3,507
	22.67.102	Resurface machine	120hp	Hour	45,807
	22.67.103	Road heater	63hp	Hour	28,388
	22.67.104	Asphalt finisher	37H	Hour	6,566
	22.67.105	Power suction car	4t	Hour	10,086
	22.67.106	Muddy water processing machine		Day	55,068
	22.67.107	Boring machine	81kw	Day	60,633
	22.67.108	Air compressor	150CFM, 4250LPM	Day	9,871

Item	Code	Name	Type	Unit	Unit Price 2025
	22.67.109	Asphalt/Bitumen cutter		Hour	2,023
	22.67.110	Chip spreader		Hour	250
Material	22.69.009	Fine aggregates(sand)		m <sup>3</sup>	2,560
	22.70.001	Fine aggregates(stone dust)		m <sup>3</sup>	2,317
	22.70.002	Graded aggregates (ballast)		m <sup>3</sup>	2,352
	22.70.003	water		m <sup>3</sup>	378
	22.70.004	Cement (ordinary portland)		Kg	15
	22.70.006	Hydrated lime		Kg	28
	22.71.012	Square twisted bars 16mm		t	114,900
	22.71.012b	Deformed reinforcement bar 12mm		t	113,918
	22.72.001	Precast concrete culvert - 450mm		m	2,800
	22.72.002	Precast concrete culvert - 600mm		m	3,943
	22.72.003	Precast concrete culvert - 900mm		m	6,243
	22.72.004	Precast concrete culvert - 1200mm		m	8,304
	22.72.016	Coarse aggregates(chippings) - 3/6mm		m <sup>3</sup>	2,000
	22.72.017	Coarse aggregates(chippings) - 6/10mm		m <sup>3</sup>	2,224
	22.72.018	Coarse aggregates(chippings) - 10/14mm		m <sup>3</sup>	2,602
	22.72.019	Coarse aggregates(chippings) - 14/20mm		m <sup>3</sup>	2,602
	22.72.020	Stone dust		m <sup>3</sup>	1,767
	22.72.021	Gravel material (murrum)		m <sup>3</sup>	1,223
	22.72.022	Hardcore		m <sup>3</sup>	1,862
	22.72.023	Crusher run material (Graded crushed stone)		m <sup>3</sup>	1,724
	22.72.024	Quarry waste material		m <sup>3</sup>	1,227
	22.72.101	Precast concrete culvert - 300mm		m	1,520
	22.72.102	Stone		m <sup>3</sup>	1,862
	22.72.103	Gully pot with grating		Set	12,798
	22.72.104	Invert block drain	600*330*355	No.	700
	22.72.105	Invert block drain	600*760*190	No.	678
	22.72.106	Side Slab concrete block	3'*9"*24"	No.	236
	22.72.107	Manhole cover slab	1220*150	No.	6,021
	22.72.108	Soil (soft)		m <sup>3</sup>	668



Item	Code	Name	Type	Unit	Unit Price 2025
	22.72.109	Soil (hard)		m <sup>3</sup>	819
	22.73.002	Premix - AC Type I (cold)		m <sup>3</sup>	50,996
	22.73.003	Premix - AC Type I (hot)		m <sup>3</sup>	25,534
	22.73.004	Dense Bitumen Macadam		m <sup>3</sup>	22,748
	22.73.006	Bituminous sealant (K-160)		m <sup>3</sup>	107,759
	22.73.012	MC 30 Bitumen		litre	139
	22.73.013	80/100 Pen grade bitumen		litre	125
	22.74.002	Fuel	Diesel	litre	144
	22.77.001	Mesh wire 8' x 4' gauge 18		m <sup>2</sup>	861
	22.77.101	Gabion mesh	2m*1m = 2m <sup>2</sup>	No.	4,080
	22.77.102	Gabion Mattress	10mm	m <sup>2</sup>	3,879
	22.77.103	Flat metal plate	1/16-1/18	m <sup>2</sup>	1,166
	22.77.104	Steel pipe	2inch	m	915
	22.77.105	Bolts with nuts	8cm	Set	274
	22.77.106	Brackets		No	345
	22.77.107	Steel angle	125*5mm	kg	436
	22.77.108	Steel plate	450*3mm	kg	286
	22.77.109	Steel bollard	SGP. 5B. 125A	kg	379
	22.77.110	Mesh wire	A142	m <sup>2</sup>	281
	22.77.111	Cast iron manhole cover	600*450 heavy duty with frame	No.	13,171
	22.78.101	Cypress	for fixed deck	m <sup>3</sup>	52,956
	22.78.102	Wooden formwork panel		m <sup>2</sup>	854
	22.79.003	Road marking paint yellow		litre	1,009
	22.79.004	Road marking paint white		litre	963
	22.79.005	Thermoplastic paint yellow	premixed with primer and glass beads	Kg	455
	22.79.006	Thermoplastic paint white	premixed with primer and glass beads	Kg	427
	22.79.012	Reflective 'cat' eyes		No	711
	22.79.013	Reflective mark posts	White PVC post 1400	No.	5,172
	22.79.101	Road marking paint black		litre	859
	22.79.104	Reflective paint		litre	214
	22.79.105	White paint		litre	754
	22.79.106	Black paint		litre	831
	22.79.107	Road Kerb	12.25*24.5	No.	518
	22.79.108	Road channel	9.8*12.25	No.	230
	22.79.109	Duct Pipe (PVC 150)		m	653
	22.79.110	Equipment for lead pipe jacking	196kN	Day	32,354

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.111	Equipment for lead pipe jacking (fixing part)		Day	1,467
	22.79.112	Equipment for lead pipe jacking (moving part)		m	238
	22.79.113	Equipment for Underground pipe jacking	196kN	Day	20,148
	22.79.114	Equipment for Underground pipe jacking (fixing part)		Day	12,983
	22.79.115	Equipment for Underground pipe jacking (moving part)		m	9,869
	22.79.116	Water stopper		No.	2,424
	22.79.117	Concrete anchor		No.	216
	22.79.118	Water stop cement		Kg	194
	22.79.119	Aggregation(jacking)		kg	14
	22.79.120	Aggregation(washing)		kg	14
	22.79.121	Shank-rod	90mm	No.	299,833
	22.79.122	Driving-adapter		No.	1,605
	22.79.123	drilling-pipe		No.	51,673
	22.79.124	Ring-bit		No.	101,761
	22.79.125	Water-swivel		No.	95,833
	22.79.126	Cutter-set		No.	46,593
	22.79.127	Core-tube		No.	46,641
	22.79.128	Magnifying-bit		No.	511,849
	22.79.129	Earth bar	10*1500mm	No.	1,293
	22.79.130	Lighting pole	7.6m	No.	27,061
	22.79.131	Lighting pole	10.0m	No.	78,527
	22.79.132	Cable	for light	m	373
	22.79.133	Accessories	for light	Set	7,847
	22.79.134	Lamp		No.	15,027
	22.79.135	Control panel		No.	37,961
	22.79.136	Cable	for control panel	m	497
	22.79.137	Accessories	for control panel	Set	7,025
	22.79.138	Meter		No.	5,086
	22.79.139	Grass		m <sup>2</sup>	707
	22.79.140	Red soil		m <sup>3</sup>	2,660
	22.79.141	Manure		m <sup>3</sup>	7,523
	22.79.142	Warning triangular sign	600mm	No.	14,548
	22.79.143	Priority triangular sign	600mm	No.	14,548
	22.79.144	Standard informatory sign		No.	18,507
	22.79.145	Non-standard informatory sign	less than 1m <sup>2</sup>	No.	28,454
	22.79.150	Guardrail Beam	4m	No.	11,781

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.151	Guardrail Post	140 mm dia, 6 gauge	m	4,827
	22.79.152	Bolts with nuts and washers (short)		No.	142
	22.79.153	Bolts with nuts and washers (long)		No.	192
	22.79.154	Fuel	Petrol	litre	152
	22.79.155	Pick up truck		day	9,986
	22.79.156	Truck	2 ton	day	14,655
	22.79.157	Thinner		litre	551
	22.79.158	Cement (OPC)		kg	15
	22.79.159	Pulveriser		Hour	5,888
	22.79.160	Hessian cloth		m <sup>2</sup>	184
	22.79.161	K-160		litre	108
	22.79.162	Reflecting Glass Beads		kg	214
	22.79.163	Electricity		Kw/h	25
	22.79.164	Beam Straightener		Hour	12,737
	New	Geotextiles		m <sup>2</sup>	200
	New	Reflective 'cat' eyes	Adhesive glue	No.	66
	23.70.001	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 60mm	m <sup>2</sup>	900
	23.70.002	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 80mm	m <sup>2</sup>	1,125



## Nyanza Region



## Appendix I-7: Price List – Labour, Machinery and Material (Nyanza Region)

Item	Code	Name	Type	Unit	Unit Price 2025
Labour	22.50.001	Support Staff		Person Day	775
	22.50.002	Unskilled labour		Person Day	775
	22.50.005	Artisans G2		Person Day	1,316
	22.50.007	Skilled Labour: Overseer		Person Day	1,786
	22.50.101	Skilled Labour: Operator		Person Day	1,751
Machinery	22.61.101	Truck Flat bed : 2.5 - 5 Tonnes		Hour	1,990
	22.61.102	Truck with crane	4t	Hour	2,500
	22.62.015	Water Tanker : 6000 - 8000 Lt.		Hour	2,357
	22.63.012	Motor Grader (e.g. CAT 112F): 100 - 130 HP		Hour	5,600
	22.63.101	Bulldozer	BD65EX	Hour	7,440
	22.63.102	Excavator	130-150hp	Hour	6,530
	22.63.103	Backhoe loader	130-150hp	Hour	4,644
	22.64.001	Pedestrian Roller : 700 - 1000 Kg.		Hour	1,532
	22.64.004	Single drum steel Vibrator roller: 9-10T, 130 HP		Hour	4,129
	22.64.005	Pneumatic Roller: 10T, 130HP		Hour	3,254
	22.65.008	Road Marking Machine		Hour	1,583
	22.65.101	Melting pod (for paint)	200 - 350kg	Hour	2,665
	22.67.001	Grass cutter	150cm, 35hp	Hour	120
	22.67.004	Bitumen Sprayer H/Operated	200L	Hour	749
	22.67.004b	Bitumen Distributor	7000 litres	Hour	6,000
	22.67.005	Vibrator P/Tamper		Hour	781
	22.67.005a	Plate compactor		Hour	300
	22.67.005b	Block cutter		Hour	100
	22.67.101	Milling machine	197hp	Hour	3,275
	22.67.102	Resurface machine	120hp	Hour	36,365
	22.67.103	Road heater	63hp	Hour	27,378
	22.67.104	Asphalt finisher	37H	Hour	7,400
	22.67.105	Power suction car	4t	Hour	6,000
	22.67.106	Muddy water processing machine		Day	54,517
	22.67.107	Boring machine	81kw	Day	56,811
	22.67.108	Air compressor	150CFM, 4250LPM	Day	15,650

Item	Code	Name	Type	Unit	Unit Price 2025
	22.67.109	Asphalt/Bitumen cutter		Hour	1,656
	22.67.110	Chip spreader		Hour	250
Material	22.69.009	Fine aggregates(sand)		m <sup>3</sup>	2,658
	22.70.001	Fine aggregates(stone dust)		m <sup>3</sup>	2,839
	22.70.002	Graded aggregates (ballast)		m <sup>3</sup>	2,988
	22.70.003	water		m <sup>3</sup>	244
	22.70.004	Cement (ordinary portland)		Kg	15
	22.70.006	Hydrated lime		Kg	29
	22.71.012	Square twisted bars 16mm		t	105,906
	22.71.012b	Deformed reinforcement bar 12mm		t	107,145
	22.72.001	Precast concrete culvert - 450mm		m	2,495
	22.72.002	Precast concrete culvert - 600mm		m	3,303
	22.72.003	Precast concrete culvert - 900mm		m	4,476
	22.72.004	Precast concrete culvert - 1200mm		m	7,144
	22.72.016	Coarse aggregates(chippings) - 3/6mm		m <sup>3</sup>	1,865
	22.72.017	Coarse aggregates(chippings) - 6/10mm		m <sup>3</sup>	2,304
	22.72.018	Coarse aggregates(chippings) - 10/14mm		m <sup>3</sup>	2,852
	22.72.019	Coarse aggregates(chippings) - 14/20mm		m <sup>3</sup>	3,053
	22.72.020	Stone dust		m <sup>3</sup>	3,008
	22.72.021	Gravel material (murrum)		m <sup>3</sup>	1,612
	22.72.022	Hardcore		m <sup>3</sup>	1,599
	22.72.023	Crusher run material (Graded crushed stone)		m <sup>3</sup>	2,126
	22.72.024	Quarry waste material		m <sup>3</sup>	1,208
	22.72.101	Precast concrete culvert - 300mm		m	1,842
	22.72.102	Stone		m <sup>3</sup>	4,227
	22.72.103	Gully pot with grating		Set	12,811
	22.72.104	Invert block drain	600*330*355	No.	845
	22.72.105	Invert block drain	600*760*190	No.	690
	22.72.106	Side Slab concrete block	3'*9"*24"	No.	284
	22.72.107	Manhole cover slab	1220*150	No.	6,180
	22.72.108	Soil (soft)		m <sup>3</sup>	436



Item	Code	Name	Type	Unit	Unit Price 2025
	22.72.109	Soil (hard)		m <sup>3</sup>	480
	22.73.002	Premix - AC Type I (cold)		m <sup>3</sup>	48,188
	22.73.003	Premix - AC Type I (hot)		m <sup>3</sup>	23,866
	22.73.004	Dense Bitumen Macadam		m <sup>3</sup>	19,146
	22.73.006	Bituminous sealant (K-160)		m <sup>3</sup>	94,828
	22.73.012	MC 30 Bitumen		litre	134
	22.73.013	80/100 Pen grade bitumen		litre	91
	22.74.002	Fuel	Diesel	litre	141
	22.77.001	Mesh wire 8' x 4' gauge 18		m <sup>2</sup>	788
	22.77.101	Gabion mesh	2m*1m = 2m <sup>2</sup>	No.	3,463
	22.77.102	Gabion Mattress	10mm	m <sup>2</sup>	3,800
	22.77.103	Flat metal plate	1/16-1/18	m <sup>2</sup>	1,064
	22.77.104	Steel pipe	2inch	m	869
	22.77.105	Bolts with nuts	8cm	Set	505
	22.77.106	Brackets		No	126
	22.77.107	Steel angle	125*5mm	kg	490
	22.77.108	Steel plate	450*3mm	kg	255
	22.77.109	Steel bollard	SGP. 5B. 125A	kg	500
	22.77.110	Mesh wire	A142	m <sup>2</sup>	279
	22.77.111	Cast iron manhole cover	600*450 heavy duty with frame	No.	5,675
	22.78.101	Cypress	for fixed deck	m <sup>3</sup>	52,258
	22.78.102	Wooden formwork panel		m <sup>2</sup>	834
	22.79.003	Road marking paint yellow		litre	1,075
	22.79.004	Road marking paint white		litre	1,078
	22.79.005	Thermoplastic paint yellow	premixed with primer and glass beads	Kg	454
	22.79.006	Thermoplastic paint white	premixed with primer and glass beads	Kg	426
	22.79.012	Reflective 'cat' eyes		No	827
	22.79.013	Reflective mark posts	White PVC post 1400	No.	2,422
	22.79.101	Road marking paint black		litre	1,078
	22.79.104	Reflective paint		litre	948
	22.79.105	White paint		litre	774
	22.79.106	Black paint		litre	881
	22.79.107	Road Kerb	12.25*24.5	No.	448
	22.79.108	Road channel	9.8*12.25	No.	302
	22.79.109	Duct Pipe (PVC 150)		m	461
	22.79.110	Equipment for lead pipe jacking	196kN	Day	31,979

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.111	Equipment for lead pipe jacking (fixing part)		Day	1,434
	22.79.112	Equipment for lead pipe jacking (moving part)		m	202
	22.79.113	Equipment for Underground pipe jacking	196kN	Day	19,908
	22.79.114	Equipment for Underground pipe jacking (fixing part)		Day	12,000
	22.79.115	Equipment for Underground pipe jacking (moving part)		m	9,637
	22.79.116	Water stopper		No.	2,422
	22.79.117	Concrete anchor		No.	120
	22.79.118	Water stop cement		Kg	123
	22.79.119	Aggregation(jacking)		kg	12
	22.79.120	Aggregation(washing)		kg	12
	22.79.121	Shank-rod	90mm	No.	296,681
	22.79.122	Driving-adapter		No.	1,596
	22.79.123	drilling-pipe		No.	51,540
	22.79.124	Ring-bit		No.	101,504
	22.79.125	Water-swivel		No.	95,590
	22.79.126	Cutter-set		No.	46,354
	22.79.127	Core-tube		No.	46,074
	22.79.128	Magnifying-bit		No.	505,595
	22.79.129	Earth bar	10*1500mm	No.	648
	22.79.130	Lighting pole	7.6m	No.	27,023
	22.79.131	Lighting pole	10.0m	No.	78,369
	22.79.132	Cable	for light	m	228
	22.79.133	Accessories	for light	Set	5,341
	22.79.134	Lamp		No.	14,954
	22.79.135	Control panel		No.	37,683
	22.79.136	Cable	for control panel	m	1,290
	22.79.137	Accessories	for control panel	Set	41,097
	22.79.138	Meter		No.	5,172
	22.79.139	Grass		m <sup>2</sup>	500
	22.79.140	Red soil		m <sup>3</sup>	1,333
	22.79.141	Manure		m <sup>3</sup>	3,905
	22.79.142	Warning triangular sign	600mm	No.	14,546
	22.79.143	Priority triangular sign	600mm	No.	14,546
	22.79.144	Standard informatory sign		No.	18,505
	22.79.145	Non-standard informatory sign	less than 1m <sup>2</sup>	No.	28,451
	22.79.150	Guardrail Beam	4m	No.	11,730

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.151	Guardrail Post	140 mm dia, 6 gauge	m	4,802
	22.79.152	Bolts with nuts and washers (short)		No.	318
	22.79.153	Bolts with nuts and washers (long)		No.	367
	22.79.154	Fuel	Petrol	litre	148
	22.79.155	Pick up truck		day	7,783
	22.79.156	Truck	2 ton	day	16,000
	22.79.157	Thinner		litre	394
	22.79.158	Cement (OPC)		kg	15
	22.79.159	Pulveriser		Hour	5,425
	22.79.160	Hessian cloth		m <sup>2</sup>	375
	22.79.161	K-160		litre	95
	22.79.162	Reflecting Glass Beads		kg	168
	22.79.163	Electricity		Kw/h	26
	22.79.164	Beam Straightener		Hour	12,249
	New	Geotextiles		m <sup>2</sup>	200
	New	Reflective 'cat' eyes	Adhesive glue	No.	66
	23.70.001	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 60mm	m <sup>2</sup>	915
	23.70.002	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 80mm	m <sup>2</sup>	1,032



## **South Rift Region**



## Appendix I-8: Price List – Labour, Machinery and Material (South Rift Region)

Item	Code	Name	Type	Unit	Unit Price 2025
Labour	22.50.001	Support Staff		Person Day	775
	22.50.002	Unskilled labour		Person Day	840
	22.50.005	Artisans G2		Person Day	1,316
	22.50.007	Skilled Labour: Overseer		Person Day	1,448
	22.50.101	Skilled Labour: Operator		Person Day	2,000
Machinery	22.61.101	Truck Flat bed : 2.5 - 5 Tonnes		Hour	2,914
	22.61.102	Truck with crane	4t	Hour	2,550
	22.62.015	Water Tanker : 6000 - 8000 Lt.		Hour	1,998
	22.63.012	Motor Grader (e.g. CAT 112F): 100 - 130 HP		Hour	5,318
	22.63.101	Bulldozer	BD65EX	Hour	8,422
	22.63.102	Excavator	130-150hp	Hour	7,043
	22.63.103	Backhoe loader	130-150hp	Hour	5,875
	22.64.001	Pedestrian Roller : 700 - 1000 Kg.		Hour	1,604
	22.64.004	Single drum steel Vibrator roller: 9-10T, 130 HP		Hour	4,253
	22.64.005	Pneumatic Roller: 10T, 130HP		Hour	3,763
	22.65.008	Road Marking Machine		Hour	1,800
	22.65.101	Melting pod (for paint)	200 - 350kg	Hour	2,789
	22.67.001	Grass cutter	150cm, 35hp	Hour	120
	22.67.004	Bitumen Sprayer H/Operated	200L	Hour	749
	22.67.004b	Bitumen Distributor	7000 litres	Hour	5,000
	22.67.005	Vibrator P/Tamper		Hour	456
	22.67.005a	Plate compactor		Hour	300
	22.67.005b	Block cutter		Hour	100
	22.67.101	Milling machine	197hp	Hour	3,073
	22.67.102	Resurface machine	120hp	Hour	42,084
	22.67.103	Road heater	63hp	Hour	26,019
	22.67.104	Asphalt finisher	37H	Hour	6,566
	22.67.105	Power suction car	4t	Hour	9,141
	22.67.106	Muddy water processing machine		Day	53,778
	22.67.107	Boring machine	81kw	Day	59,218
	22.67.108	Air compressor	150CFM, 4250LPM	Day	13,200

Item	Code	Name	Type	Unit	Unit Price 2025
	22.67.109	Asphalt/Bitumen cutter		Hour	1,564
	22.67.110	Chip spreader		Hour	250
Material	22.69.009	Fine aggregates(sand)		m <sup>3</sup>	2,531
	22.70.001	Fine aggregates(stone dust)		m <sup>3</sup>	2,177
	22.70.002	Graded aggregates (ballast)		m <sup>3</sup>	1,993
	22.70.003	water		m <sup>3</sup>	233
	22.70.004	Cement (ordinary portland)		Kg	14
	22.70.006	Hydrated lime		Kg	28
	22.71.012	Square twisted bars 16mm		t	110,128
	22.71.012b	Deformed reinforcement bar 12mm		t	110,491
	22.72.001	Precast concrete culvert - 450mm		m	1,971
	22.72.002	Precast concrete culvert - 600mm		m	2,515
	22.72.003	Precast concrete culvert - 900mm		m	4,092
	22.72.004	Precast concrete culvert - 1200mm		m	8,082
	22.72.016	Coarse aggregates(chippings) - 3/6mm		m <sup>3</sup>	1,748
	22.72.017	Coarse aggregates(chippings) - 6/10mm		m <sup>3</sup>	1,688
	22.72.018	Coarse aggregates(chippings) - 10/14mm		m <sup>3</sup>	2,170
	22.72.019	Coarse aggregates(chippings) - 14/20mm		m <sup>3</sup>	2,299
	22.72.020	Stone dust		m <sup>3</sup>	1,786
	22.72.021	Gravel material (murrum)		m <sup>3</sup>	1,968
	22.72.022	Hardcore		m <sup>3</sup>	1,755
	22.72.023	Crusher run material (Graded crushed stone)		m <sup>3</sup>	2,207
	22.72.024	Quarry waste material		m <sup>3</sup>	1,876
	22.72.101	Precast concrete culvert - 300mm		m	1,480
	22.72.102	Stone		m <sup>3</sup>	1,755
	22.72.103	Gully pot with grating		Set	17,963
	22.72.104	Invert block drain	600*330*355	No.	918
	22.72.105	Invert block drain	600*760*190	No.	848
	22.72.106	Side Slab concrete block	3'*9"*24"	No.	241
	22.72.107	Manhole cover slab	1220*150	No.	5,751
	22.72.108	Soil (soft)		m <sup>3</sup>	569



Item	Code	Name	Type	Unit	Unit Price 2025
	22.72.109	Soil (hard)		m <sup>3</sup>	627
	22.73.002	Premix - AC Type I (cold)		m <sup>3</sup>	44,423
	22.73.003	Premix - AC Type I (hot)		m <sup>3</sup>	24,528
	22.73.004	Dense Bitumen Macadam		m <sup>3</sup>	22,156
	22.73.006	Bituminous sealant (K-160)		m <sup>3</sup>	106,034
	22.73.012	MC 30 Bitumen		litre	134
	22.73.013	80/100 Pen grade bitumen		litre	114
	22.74.002	Fuel	Diesel	litre	141
	22.77.001	Mesh wire 8' x 4' gauge 18		m <sup>2</sup>	993
	22.77.101	Gabion mesh	2m*1m = 2m <sup>2</sup>	No.	3,346
	22.77.102	Gabion Mattress	10mm	m <sup>2</sup>	3,191
	22.77.103	Flat metal plate	1/16-1/18	m <sup>2</sup>	1,110
	22.77.104	Steel pipe	2inch	m	864
	22.77.105	Bolts with nuts	8cm	Set	216
	22.77.106	Brackets		No	314
	22.77.107	Steel angle	125*5mm	kg	550
	22.77.108	Steel plate	450*3mm	kg	266
	22.77.109	Steel bollard	SGP. 5B. 125A	kg	827
	22.77.110	Mesh wire	A142	m <sup>2</sup>	280
	22.77.111	Cast iron manhole cover	600*450 heavy duty with frame	No.	11,940
	22.78.101	Cypress	for fixed deck	m <sup>3</sup>	66,767
	22.78.102	Wooden formwork panel		m <sup>2</sup>	866
	22.79.003	Road marking paint yellow		litre	942
	22.79.004	Road marking paint white		litre	913
	22.79.005	Thermoplastic paint yellow	premixed with primer and glass beads	Kg	453
	22.79.006	Thermoplastic paint white	premixed with primer and glass beads	Kg	425
	22.79.012	Reflective 'cat' eyes		No	776
	22.79.013	Reflective mark posts	White PVC post 1400	No.	1,293
	22.79.101	Road marking paint black		litre	911
	22.79.104	Reflective paint		litre	1,114
	22.79.105	White paint		litre	861
	22.79.106	Black paint		litre	847
	22.79.107	Road Kerb	12.25*24.5	No.	431
	22.79.108	Road channel	9.8*12.25	No.	275
	22.79.109	Duct Pipe (PVC 150)		m	411
	22.79.110	Equipment for lead pipe jacking	196kN	Day	31,938

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.111	Equipment for lead pipe jacking (fixing part)		Day	1,425
	22.79.112	Equipment for lead pipe jacking (moving part)		m	187
	22.79.113	Equipment for Underground pipe jacking	196kN	Day	19,880
	22.79.114	Equipment for Underground pipe jacking (fixing part)		Day	12,801
	22.79.115	Equipment for Underground pipe jacking (moving part)		m	9,606
	22.79.116	Water stopper		No.	3,664
	22.79.117	Concrete anchor		No.	243
	22.79.118	Water stop cement		Kg	185
	22.79.119	Aggregation(jacking)		kg	13
	22.79.120	Aggregation(washing)		kg	12
	22.79.121	Shank-rod	90mm	No.	297,712
	22.79.122	Driving-adapter		No.	1,579
	22.79.123	drilling-pipe		No.	51,295
	22.79.124	Ring-bit		No.	101,032
	22.79.125	Water-swivel		No.	95,145
	22.79.126	Cutter-set		No.	45,914
	22.79.127	Core-tube		No.	46,299
	22.79.128	Magnifying-bit		No.	506,456
	22.79.129	Earth bar	10*1500mm	No.	891
	22.79.130	Lighting pole	7.6m	No.	26,972
	22.79.131	Lighting pole	10.0m	No.	78,158
	22.79.132	Cable	for light	m	255
	22.79.133	Accessories	for light	Set	7,181
	22.79.134	Lamp		No.	14,943
	22.79.135	Control panel		No.	37,660
	22.79.136	Cable	for control panel	m	2,241
	22.79.137	Accessories	for control panel	Set	40,796
	22.79.138	Meter		No.	5,819
	22.79.139	Grass		m <sup>2</sup>	259
	22.79.140	Red soil		m <sup>3</sup>	1,667
	22.79.141	Manure		m <sup>3</sup>	3,715
	22.79.142	Warning triangular sign	600mm	No.	14,544
	22.79.143	Priority triangular sign	600mm	No.	14,544
	22.79.144	Standard informatory sign		No.	18,502
	22.79.145	Non-standard informatory sign	less than 1m <sup>2</sup>	No.	28,447
	22.79.150	Guardrail Beam	4m	No.	10,991

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.151	Guardrail Post	140 mm dia, 6 gauge	m	9,289
	22.79.152	Bolts with nuts and washers (short)		No.	195
	22.79.153	Bolts with nuts and washers (long)		No.	227
	22.79.154	Fuel	Petrol	litre	149
	22.79.155	Pick up truck		day	11,716
	22.79.156	Truck	2 ton	day	16,000
	22.79.157	Thinner		litre	398
	22.79.158	Cement (OPC)		kg	14
	22.79.159	Pulveriser		Hour	5,269
	22.79.160	Hessian cloth		m <sup>2</sup>	203
	22.79.161	K-160		litre	106
	22.79.162	Reflecting Glass Beads		kg	139
	22.79.163	Electricity		Kw/h	27
	22.79.164	Beam Straightener		Hour	11,128
	New	Geotextiles		m <sup>2</sup>	200
	New	Reflective 'cat' eyes	Adhesive glue	No.	66
	23.70.001	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 60mm	m <sup>2</sup>	1,094
	23.70.002	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 80mm	m <sup>2</sup>	1,207



## Upper Eastern Region



## Appendix I-9: Price List – Labour, Machinery and Material (Upper Eastern Region)

Item	Code	Name	Type	Unit	Unit Price 2025
Labour	22.50.001	Support Staff		Person Day	775
	22.50.002	Unskilled labour		Person Day	775
	22.50.005	Artisans G2		Person Day	1,725
	22.50.007	Skilled Labour: Overseer		Person Day	2,331
	22.50.101	Skilled Labour: Operator		Person Day	2,385
Machinery	22.61.101	Truck Flat bed : 2.5 - 5 Tonnes		Hour	1,990
	22.61.102	Truck with crane	4t	Hour	2,723
	22.62.015	Water Tanker : 6000 - 8000 Lt.		Hour	1,980
	22.63.012	Motor Grader (e.g. CAT 112F): 100 - 130 HP		Hour	6,912
	22.63.101	Bulldozer	BD65EX	Hour	7,515
	22.63.102	Excavator	130-150hp	Hour	8,298
	22.63.103	Backhoe loader	130-150hp	Hour	5,343
	22.64.001	Pedestrian Roller : 700 - 1000 Kg.		Hour	1,175
	22.64.004	Single drum steel Vibrator roller: 9-10T, 130 HP		Hour	3,126
	22.64.005	Pneumatic Roller: 10T, 130HP		Hour	3,669
	22.65.008	Road Marking Machine		Hour	2,043
	22.65.101	Melting pod (for paint)	200 - 350kg	Hour	3,168
	22.67.001	Grass cutter	150cm, 35hp	Hour	120
	22.67.004	Bitumen Sprayer H/Operated	200L	Hour	749
	22.67.004b	Bitumen Distributor	7000 litres	Hour	7,000
	22.67.005	Vibrator P/Tamper		Hour	633
	22.67.005a	Plate compactor		Hour	300
	22.67.005b	Block cutter		Hour	100
	22.67.101	Milling machine	197hp	Hour	3,489
	22.67.102	Resurface machine	120hp	Hour	33,264
	22.67.103	Road heater	63hp	Hour	27,038
	22.67.104	Asphalt finisher	37H	Hour	7,198
	22.67.105	Power suction car	4t	Hour	7,613
	22.67.106	Muddy water processing machine		Day	53,778
	22.67.107	Boring machine	81kw	Day	60,000
	22.67.108	Air compressor	150CFM, 4250LPM	Day	10,073

Item	Code	Name	Type	Unit	Unit Price 2025
	22.67.109	Asphalt/Bitumen cutter		Hour	1,564
	22.67.110	Chip spreader		Hour	250
Material	22.69.009	Fine aggregates(sand)		m <sup>3</sup>	2,135
	22.70.001	Fine aggregates(stone dust)		m <sup>3</sup>	2,493
	22.70.002	Graded aggregates (ballast)		m <sup>3</sup>	2,351
	22.70.003	water		m <sup>3</sup>	311
	22.70.004	Cement (ordinary portland)		Kg	15
	22.70.006	Hydrated lime		Kg	28
	22.71.012	Square twisted bars 16mm		t	105,955
	22.71.012b	Deformed reinforcement bar 12mm		t	104,657
	22.72.001	Precast concrete culvert - 450mm		m	2,256
	22.72.002	Precast concrete culvert - 600mm		m	3,186
	22.72.003	Precast concrete culvert - 900mm		m	4,599
	22.72.004	Precast concrete culvert - 1200mm		m	7,957
	22.72.016	Coarse aggregates(chippings) - 3/6mm		m <sup>3</sup>	2,003
	22.72.017	Coarse aggregates(chippings) - 6/10mm		m <sup>3</sup>	2,315
	22.72.018	Coarse aggregates(chippings) - 10/14mm		m <sup>3</sup>	2,502
	22.72.019	Coarse aggregates(chippings) - 14/20mm		m <sup>3</sup>	2,588
	22.72.020	Stone dust		m <sup>3</sup>	1,939
	22.72.021	Gravel material (murrum)		m <sup>3</sup>	1,580
	22.72.022	Hardcore		m <sup>3</sup>	1,728
	22.72.023	Crusher run material (Graded crushed stone)		m <sup>3</sup>	2,169
	22.72.024	Quarry waste material		m <sup>3</sup>	1,851
	22.72.101	Precast concrete culvert - 300mm		m	1,767
	22.72.102	Stone		m <sup>3</sup>	1,728
	22.72.103	Gully pot with grating		Set	12,814
	22.72.104	Invert block drain	600*330*355	No.	675
	22.72.105	Invert block drain	600*760*190	No.	733
	22.72.106	Side Slab concrete block	3'*9"*24"	No.	234
	22.72.107	Manhole cover slab	1220*150	No.	6,102
	22.72.108	Soil (soft)		m <sup>3</sup>	738



Item	Code	Name	Type	Unit	Unit Price 2025
	22.72.109	Soil (hard)		m <sup>3</sup>	757
	22.73.002	Premix - AC Type I (cold)		m <sup>3</sup>	47,247
	22.73.003	Premix - AC Type I (hot)		m <sup>3</sup>	25,699
	22.73.004	Dense Bitumen Macadam		m <sup>3</sup>	22,414
	22.73.006	Bituminous sealant (K-160)		m <sup>3</sup>	115,661
	22.73.012	MC 30 Bitumen		litre	124
	22.73.013	80/100 Pen grade bitumen		litre	138
	22.74.002	Fuel	Diesel	litre	147
	22.77.001	Mesh wire 8' x 4' gauge 18		m <sup>2</sup>	959
	22.77.101	Gabion mesh	2m*1m = 2m <sup>2</sup>	No.	3,819
	22.77.102	Gabion Mattress	10mm	m <sup>2</sup>	3,725
	22.77.103	Flat metal plate	1/16-1/18	m <sup>2</sup>	1,166
	22.77.104	Steel pipe	2inch	m	766
	22.77.105	Bolts with nuts	8cm	Set	291
	22.77.106	Brackets		No	196
	22.77.107	Steel angle	125*5mm	kg	534
	22.77.108	Steel plate	450*3mm	kg	214
	22.77.109	Steel bollard	SGP. 5B. 125A	kg	667
	22.77.110	Mesh wire	A142	m <sup>2</sup>	282
	22.77.111	Cast iron manhole cover	600*450 heavy duty with frame	No.	4,504
	22.78.101	Cypress	for fixed deck	m <sup>3</sup>	71,452
	22.78.102	Wooden formwork panel		m <sup>2</sup>	841
	22.79.003	Road marking paint yellow		litre	833
	22.79.004	Road marking paint white		litre	817
	22.79.005	Thermoplastic paint yellow	premixed with primer and glass beads	Kg	454
	22.79.006	Thermoplastic paint white	premixed with primer and glass beads	Kg	426
	22.79.012	Reflective 'cat' eyes		No	830
	22.79.013	Reflective mark posts	White PVC post 1400	No.	3,103
	22.79.101	Road marking paint black		litre	854
	22.79.104	Reflective paint		litre	862
	22.79.105	White paint		litre	655
	22.79.106	Black paint		litre	670
	22.79.107	Road Kerb	12.25*24.5	No.	477
	22.79.108	Road channel	9.8*12.25	No.	333
	22.79.109	Duct Pipe (PVC 150)		m	592
	22.79.110	Equipment for lead pipe jacking	196kN	Day	31,551

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.111	Equipment for lead pipe jacking (fixing part)		Day	1,389
	22.79.112	Equipment for lead pipe jacking (moving part)		m	148
	22.79.113	Equipment for Underground pipe jacking	196kN	Day	19,631
	22.79.114	Equipment for Underground pipe jacking (fixing part)		Day	12,634
	22.79.115	Equipment for Underground pipe jacking (moving part)		m	9,369
	22.79.116	Water stopper		No.	2,421
	22.79.117	Concrete anchor		No.	249
	22.79.118	Water stop cement		Kg	180
	22.79.119	Aggregation(jacking)		kg	11
	22.79.120	Aggregation(washing)		kg	11
	22.79.121	Shank-rod	90mm	No.	295,730
	22.79.122	Driving-adapter		No.	1,593
	22.79.123	drilling-pipe		No.	51,495
	22.79.124	Ring-bit		No.	101,418
	22.79.125	Water-swivel		No.	95,412
	22.79.126	Cutter-set		No.	45,798
	22.79.127	Core-tube		No.	46,480
	22.79.128	Magnifying-bit		No.	503,707
	22.79.129	Earth bar	10*1500mm	No.	803
	22.79.130	Lighting pole	7.6m	No.	27,087
	22.79.131	Lighting pole	10.0m	No.	78,169
	22.79.132	Cable	for light	m	243
	22.79.133	Accessories	for light	Set	6,716
	22.79.134	Lamp		No.	14,944
	22.79.135	Control panel		No.	37,412
	22.79.136	Cable	for control panel	m	1,208
	22.79.137	Accessories	for control panel	Set	40,861
	22.79.138	Meter		No.	3,772
	22.79.139	Grass		m <sup>2</sup>	862
	22.79.140	Red soil		m <sup>3</sup>	2,637
	22.79.141	Manure		m <sup>3</sup>	6,384
	22.79.142	Warning triangular sign	600mm	No.	14,546
	22.79.143	Priority triangular sign	600mm	No.	14,546
	22.79.144	Standard informatory sign		No.	17,241
	22.79.145	Non-standard informatory sign	less than 1m <sup>2</sup>	No.	17,241
	22.79.150	Guardrail Beam	4m	No.	11,713

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.151	Guardrail Post	140 mm dia, 6 gauge	m	4,793
	22.79.152	Bolts with nuts and washers (short)		No.	173
	22.79.153	Bolts with nuts and washers (long)		No.	258
	22.79.154	Fuel	Petrol	litre	155
	22.79.155	Pick up truck		day	10,880
	22.79.156	Truck	2 ton	day	17,737
	22.79.157	Thinner		litre	434
	22.79.158	Cement (OPC)		kg	15
	22.79.159	Pulveriser		Hour	5,022
	22.79.160	Hessian cloth		m <sup>2</sup>	222
	22.79.161	K-160		litre	116
	22.79.162	Reflecting Glass Beads		kg	214
	22.79.163	Electricity		Kw/h	29
	22.79.164	Beam Straightener		Hour	11,586
	New	Geotextiles		m <sup>2</sup>	200
	New	Reflective 'cat' eyes	Adhesive glue	No.	66
	23.70.001	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 60mm	m <sup>2</sup>	862
	23.70.002	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 80mm	m <sup>2</sup>	1,121



## Western Region



# Appendix I-10: Price List – Labour, Machinery and Material (Western Region)

Item	Code	Name	Type	Unit	Unit Price 2025
Labour	22.50.001	Support Staff		Person Day	775
	22.50.002	Unskilled labour		Person Day	775
	22.50.005	Artisans G2		Person Day	1,316
	22.50.007	Skilled Labour: Overseer		Person Day	2,375
	22.50.101	Skilled Labour: Operator		Person Day	2,786
Machinery	22.61.101	Truck Flat bed : 2.5 - 5 Tonnes		Hour	2,761
	22.61.102	Truck with crane	4t	Hour	3,000
	22.62.015	Water Tanker : 6000 - 8000 Lt.		Hour	1,922
	22.63.012	Motor Grader (e.g. CAT 112F): 100 - 130 HP		Hour	5,700
	22.63.101	Bulldozer	BD65EX	Hour	7,440
	22.63.102	Excavator	130-150hp	Hour	6,530
	22.63.103	Backhoe loader	130-150hp	Hour	4,775
	22.64.001	Pedestrian Roller : 700 - 1000 Kg.		Hour	1,196
	22.64.004	Single drum steel Vibrator roller: 9-10T, 130 HP		Hour	3,963
	22.64.005	Pneumatic Roller: 10T, 130HP		Hour	3,650
	22.65.008	Road Marking Machine		Hour	1,792
	22.65.101	Melting pod (for paint)	200 - 350kg	Hour	2,968
	22.67.001	Grass cutter	150cm, 35hp	Hour	250
	22.67.004	Bitumen Sprayer H/Operated	200L	Hour	749
	22.67.004b	Bitumen Distributor	7000 litres	Hour	6,000
	22.67.005	Vibrator P/Tamper		Hour	509
	22.67.005a	Plate compactor		Hour	300
	22.67.005b	Block cutter		Hour	100
	22.67.101	Milling machine	197hp	Hour	3,250
	22.67.102	Resurface machine	120hp	Hour	33,264
	22.67.103	Road heater	63hp	Hour	26,000
	22.67.104	Asphalt finisher	37H	Hour	6,566
	22.67.105	Power suction car	4t	Hour	6,931
	22.67.106	Muddy water processing machine		Day	53,224
	22.67.107	Boring machine	81kw	Day	55,466
	22.67.108	Air compressor	150CFM, 4250LPM	Day	10,333

Item	Code	Name	Type	Unit	Unit Price 2025
	22.67.109	Asphalt/Bitumen cutter		Hour	1,564
	22.67.110	Chip spreader		Hour	250
Material	22.69.009	Fine aggregates(sand)		m <sup>3</sup>	2,576
	22.70.001	Fine aggregates(stone dust)		m <sup>3</sup>	2,910
	22.70.002	Graded aggregates (ballast)		m <sup>3</sup>	3,734
	22.70.003	water		m <sup>3</sup>	287
	22.70.004	Cement (ordinary portland)		Kg	15
	22.70.006	Hydrated lime		Kg	30
	22.71.012	Square twisted bars 16mm		t	104,558
	22.71.012b	Deformed reinforcement bar 12mm		t	107,607
	22.72.001	Precast concrete culvert - 450mm		m	2,078
	22.72.002	Precast concrete culvert - 600mm		m	2,815
	22.72.003	Precast concrete culvert - 900mm		m	4,234
	22.72.004	Precast concrete culvert - 1200mm		m	7,000
	22.72.016	Coarse aggregates(chippings) - 3/6mm		m <sup>3</sup>	2,929
	22.72.017	Coarse aggregates(chippings) - 6/10mm		m <sup>3</sup>	3,200
	22.72.018	Coarse aggregates(chippings) - 10/14mm		m <sup>3</sup>	3,500
	22.72.019	Coarse aggregates(chippings) - 14/20mm		m <sup>3</sup>	3,032
	22.72.020	Stone dust		m <sup>3</sup>	1,775
	22.72.021	Gravel material (murrum)		m <sup>3</sup>	1,224
	22.72.022	Hardcore		m <sup>3</sup>	1,792
	22.72.023	Crusher run material (Graded crushed stone)		m <sup>3</sup>	2,750
	22.72.024	Quarry waste material		m <sup>3</sup>	2,525
	22.72.101	Precast concrete culvert - 300mm		m	1,546
	22.72.102	Stone		m <sup>3</sup>	1,792
	22.72.103	Gully pot with grating		Set	12,808
	22.72.104	Invert block drain	600*330*355	No.	517
	22.72.105	Invert block drain	600*760*190	No.	857
	22.72.106	Side Slab concrete block	3'*9"*24"	No.	266
	22.72.107	Manhole cover slab	1220*150	No.	5,983
	22.72.108	Soil (soft)		m <sup>3</sup>	556



Item	Code	Name	Type	Unit	Unit Price 2025
	22.72.109	Soil (hard)		m <sup>3</sup>	2,087
	22.73.002	Premix - AC Type I (cold)		m <sup>3</sup>	49,120
	22.73.003	Premix - AC Type I (hot)		m <sup>3</sup>	26,100
	22.73.004	Dense Bitumen Macadam		m <sup>3</sup>	27,186
	22.73.006	Bituminous sealant (K-160)		m <sup>3</sup>	124,150
	22.73.012	MC 30 Bitumen		litre	135
	22.73.013	80/100 Pen grade bitumen		litre	115
	22.74.002	Fuel	Diesel	litre	141
	22.77.001	Mesh wire 8' x 4' gauge 18		m <sup>2</sup>	670
	22.77.101	Gabion mesh	2m*1m = 2m <sup>2</sup>	No.	3,900
	22.77.102	Gabion Mattress	10mm	m <sup>2</sup>	3,005
	22.77.103	Flat metal plate	1/16-1/18	m <sup>2</sup>	1,027
	22.77.104	Steel pipe	2inch	m	806
	22.77.105	Bolts with nuts	8cm	Set	169
	22.77.106	Brackets		No	172
	22.77.107	Steel angle	125*5mm	kg	521
	22.77.108	Steel plate	450*3mm	kg	277
	22.77.109	Steel bollard	SGP. 5B. 125A	kg	379
	22.77.110	Mesh wire	A142	m <sup>2</sup>	287
	22.77.111	Cast iron manhole cover	600*450 heavy duty with frame	No.	11,845
	22.78.101	Cypress	for fixed deck	m <sup>3</sup>	61,638
	22.78.102	Wooden formwork panel		m <sup>2</sup>	906
	22.79.003	Road marking paint yellow		litre	1,034
	22.79.004	Road marking paint white		litre	1,215
	22.79.005	Thermoplastic paint yellow	premixed with primer and glass beads	Kg	454
	22.79.006	Thermoplastic paint white	premixed with primer and glass beads	Kg	425
	22.79.012	Reflective 'cat' eyes		No	821
	22.79.013	Reflective mark posts	White PVC post 1400	No.	3,106
	22.79.101	Road marking paint black		litre	1,148
	22.79.104	Reflective paint		litre	1,459
	22.79.105	White paint		litre	664
	22.79.106	Black paint		litre	633
	22.79.107	Road Kerb	12.25*24.5	No.	405
	22.79.108	Road channel	9.8*12.25	No.	239
	22.79.109	Duct Pipe (PVC 150)		m	488
	22.79.110	Equipment for lead pipe jacking	196kN	Day	32,295

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.111	Equipment for lead pipe jacking (fixing part)		Day	1,462
	22.79.112	Equipment for lead pipe jacking (moving part)		m	231
	22.79.113	Equipment for Underground pipe jacking	196kN	Day	20,423
	22.79.114	Equipment for Underground pipe jacking (fixing part)		Day	13,147
	22.79.115	Equipment for Underground pipe jacking (moving part)		m	9,832
	22.79.116	Water stopper		No.	2,437
	22.79.117	Concrete anchor		No.	99
	22.79.118	Water stop cement		Kg	131
	22.79.119	Aggregation(jacking)		kg	14
	22.79.120	Aggregation(washing)		kg	14
	22.79.121	Shank-rod	90mm	No.	299,583
	22.79.122	Driving-adapter		No.	1,602
	22.79.123	drilling-pipe		No.	51,628
	22.79.124	Ring-bit		No.	101,676
	22.79.125	Water-swivel		No.	95,752
	22.79.126	Cutter-set		No.	46,513
	22.79.127	Core-tube		No.	46,601
	22.79.128	Magnifying-bit		No.	511,215
	22.79.129	Earth bar	10*1500mm	No.	343
	22.79.130	Lighting pole	7.6m	No.	27,048
	22.79.131	Lighting pole	10.0m	No.	78,474
	22.79.132	Cable	for light	m	604
	22.79.133	Accessories	for light	Set	5,341
	22.79.134	Lamp		No.	14,949
	22.79.135	Control panel		No.	37,928
	22.79.136	Cable	for control panel	m	1,237
	22.79.137	Accessories	for control panel	Set	40,989
	22.79.138	Meter		No.	5,478
	22.79.139	Grass		m <sup>2</sup>	500
	22.79.140	Red soil		m <sup>3</sup>	833
	22.79.141	Manure		m <sup>3</sup>	7,241
	22.79.142	Warning triangular sign	600mm	No.	14,547
	22.79.143	Priority triangular sign	600mm	No.	14,547
	22.79.144	Standard informatory sign		No.	18,506
	22.79.145	Non-standard informatory sign	less than 1m <sup>2</sup>	No.	28,453
	22.79.150	Guardrail Beam	4m	No.	11,764

Item	Code	Name	Type	Unit	Unit Price 2025
	22.79.151	Guardrail Post	140 mm dia, 6 gauge	m	4,819
	22.79.152	Bolts with nuts and washers (short)		No.	141
	22.79.153	Bolts with nuts and washers (long)		No.	191
	22.79.154	Fuel	Petrol	litre	149
	22.79.155	Pick up truck		day	6,875
	22.79.156	Truck	2 ton	day	18,875
	22.79.157	Thinner		litre	371
	22.79.158	Cement (OPC)		kg	15
	22.79.159	Pulveriser		Hour	6,667
	22.79.160	Hessian cloth		m <sup>2</sup>	186
	22.79.161	K-160		litre	105
	22.79.162	Reflecting Glass Beads		kg	182
	22.79.163	Electricity		Kw/h	26
	22.79.164	Beam Straightener		Hour	12,574
	New	Geotextiles		m <sup>2</sup>	200
	New	Reflective 'cat' eyes	Adhesive glue	No.	66
	23.70.001	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 60mm	m <sup>2</sup>	865
	23.70.002	Paving blocks	Interlocking - Heavy duty - plain (Deformed) 80mm	m <sup>2</sup>	1,088







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