**Transportation Analysis of Construction Materials**

|  |  |  |
| --- | --- | --- |
| **Tipper rate per Hr:** |  | 1375.000 |
| **Fuel rate:** |  | 155.000 |
| **Labour** |  | **Rate** |
| Skilled |  | 1166 |
| Unskilled |  | 856 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Speed of loaded truck** | | | |
|  | **ER** | **GR** | **BT** |
| **Terai** | **20** | **30** | **40** |
| **Mountain** | **10** | **15** | **20** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Material Type | Unit | Coefficient | | Mountain Region | | | Terai Region | | | Total Travel Time (T) | Labour Loading | | Labour unLoading | | Load Time | | | Unload Time |  | Total Transportation Cost per unit | Remarks |
| Fuel | Truck | Earthen | Gravel | Blacktop | Earthen | Gravel | Blacktop | Unskilled | Skilled | Unskilled | Skilled | Truck/Tripper | Crane | Loader | Truck/Tripper | Loader |
| 1) Excavated earth work |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| a) Soil Material | cum | 3.2 | 0.4 | 1 | 9 | 0 |  |  |  | 0.7 |  |  |  |  | 0.06 |  | 0.06 | 0 |  | 413.48 |  |
| b) Rock Material | cum | 4 | 0.5 | 1 | 9 | 0 |  |  |  | 0.7 |  |  |  |  | 0.06 |  | 0.06 | 0 |  | 516.85 |  |
| 2) Sand | cum | 3 | 0.37 | 1 | 9 | 0 |  |  |  | 0.7 |  |  |  |  | 0.06 |  | 0.06 | 0 |  | 386.809 |  |
| 3) Gravel, river shingle, broken stone aggregates, and bats. |  |  |  |  |  |  |  |  |  | 0 |  |  |  |  | 0.06 |  | 0.06 | 0 |  | 0 |  |
| a) Gravel | cum | 3.4 | 0.43 | 1 | 10 | 5 |  |  |  | 1.016666667 |  |  |  |  | 0.06 |  | 0.06 | 0 |  | 607.1705 |  |
| b) River shingle | cum | 3.4 | 0.43 | 1 | 10 | 0 |  |  |  | 0.7666666667 |  |  |  |  | 0.06 |  | 0.06 | 0 |  | 475.313 |  |
| c) Broken stone aggregates | cum | 3.4 | 0.43 | 1 | 0 | 5 |  |  |  | 0.35 |  |  |  |  | 0.06 |  | 0.06 | 0 |  | 255.5505 |  |
| d) Brick bats | cum | 3.4 | 0.43 | 1 | 0 | 5 |  |  |  | 0.35 |  |  |  |  | 0.06 |  | 0.06 | 0 |  | 255.5505 |  |
| 4) Boulder, Cobbles, quarry stone | cum | 4.5 | 0.57 | 1 | 9 | 0 |  |  |  | 0.7 |  |  |  |  | 0.06 |  | 0.06 | 0 |  | 582.699 |  |
| 5) Dressed Stone | cum | 4.2 | 0.53 | 1 | 9 | 5 |  |  |  | 0.95 |  |  |  |  | 0.06 |  | 0.06 | 0 |  | 706.4035 |  |
| 6) Bricks | 1000 nos | 6.6 | 0.83 | 2 | 10 | 30 |  |  |  | 2.366666667 | 0.19 |  |  |  | 0.38 |  |  |  |  | 3019.379333 |  |
| 7) Cement | mt | 2.6 | 0.33 | 2 | 10 | 97 |  |  |  | 5.716666667 | 0.2 | 0 |  |  | 0.2 |  | 0 |  |  | 2567.653167 |  |
| 8) Reinforcement Steel and gabion wire | mt | 2.6 | 0.33 | 2 | 10 | 25 |  |  |  | 2.116666667 | 0.2 | 0 |  |  | 0.2 |  | 0 |  |  | 1115.665167 |  |
| 9) Bitumen | 1000 lit | 3 | 0.4 | 2 | 10 | 25 |  |  |  | 2.116666667 | 0.15 | 0 |  |  | 0.15 |  | 0 |  |  | 1195.996667 |  |
| 10) GI, CI, Pipe and fittings | mt | 2.6 | 0.33 | 2 | 10 | 25 |  |  |  | 2.116666667 |  |  |  |  |  |  |  |  |  | 853.7151667 |  |
| 11) Timber for temporary works | cum | 2.4 | 0.3 | 2 | 5 | 0 |  |  |  | 0.5333333333 | 0.27 | 0.03 |  |  | 0.2 |  | 0 |  |  | 547.16 |  |
| 12) Fabricated Structural Timber |  | 3.2 | 0.4 |  |  |  |  |  |  | 0 |  |  |  |  |  |  |  |  |  | 0 |  |
| 13) Fabricated Structural Steel |  | 3.2 | 0.4 |  |  |  |  |  |  | 0 |  |  |  |  |  |  |  |  |  | 0 |  |
| 14)RCC Precast Element |  | 2.6 | 0.33 |  |  |  |  |  |  | 0 |  |  |  |  |  |  |  |  |  | 0 |  |
| 15) Equiptment & accessoriesetc. requiring careful handling | truck | 8 | 1 | 2 | 10 | 97 |  |  |  | 5.716666667 |  |  |  |  |  |  |  |  |  | 7094.383333 |  |
| 16) RCC hume pipe |  |  |  | 0 |  | 97 |  |  |  | 4.85 |  |  |  |  |  |  |  |  |  | 0 |  |
| a) 900/1200/1000 mm dia | rm | 1.6 | 0.2 | 2 | 10 | 97 |  |  |  | 5.716666667 | 0.13 | 0.03 | 0.07 | 0.01 | 0.07 | 0.07 | 0 | 0.03 | 0.07 | 1702.716667 |  |
| b) 600 mm dia | rm | 1.3 | 0.16 | 2 | 10 | 97 |  |  |  | 5.716666667 | 0.08 | 0.02 | 0.04 | 0.02 | 0.04 | 0.04 | 0 | 0.02 | 0.02 | 1328.583 |  |
| e) 450mm dia | rm | 1 | 0.13 | 2 | 10 | 97 |  |  |  | 5.716666667 | 0.05 | 0.01 | 0.03 | 0 | 0.03 | 0.03 | 0 | 0.01 | 0.01 | 981.2665 |  |
| c) 300mm dia | rm | 2.6 | 0.33 | 2 | 10 | 97 |  |  |  | 5.716666667 | 0.05 | 0.01 | 0.03 | 0 | 0.03 | 0.03 | 1 | 0.01 | 0.01 | 2875.893167 |  |
| 17) Water | 1000 lit | 2.6 | 0.33 | 0.3 |  |  |  |  |  | 0.03 |  |  |  |  |  |  |  |  |  | 12.0999 |  |

Note:

Fuel =Total Travel Time (T)\*Fuel Coefficient

Truck, Hr.=Truck Coefficient \*(Total Travel Time (T)+Load / Unload Time)

Total Transportation Cost per unit = Labour, md. \* Labour Rate + Fuel, Ltr.\* Fuel Rate + Truck, Hr.\* Truck Rate

**Equipment Hire Rate**

|  |  |  |  |
| --- | --- | --- | --- |
| Fuel Prices | | | |
| Diesel | Lt | 151.00 | 133.63 |
| Kerosene | Lt | 151.00 | 133.63 |
| Electricity | unit | 12.00 | 12.00 |
| Petrol | Lt | 162.00 | 143.36 |

|  |  |
| --- | --- |
| Labour | |
| Skilled | 1166.00 |
| Unskilled | 856.00 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Equipment Hire Rate (DoR)** | | | | | | | | | | | | | |
|  |
| **SN** | **Equipments** | **Activity / Usage** | **Hire Rate per Hour (Nrs)** | **Ownership Cost (Nrs/Hr)** | **Servicing (NRs/Hr)** | **Maintenance (NRs/Hr)** | **Total Fuel Cost per Hour** | **Total Crew Cost per Hour** | **Fuel / Electricity Demand** | | | **Crew, Hr** | |  |
| **Fuel (L/Hr)** | **Electricity (Units/Hr)** | **Fuel Oil (Heating) (L/Hr)** | **Skilled** | **Helper / Unskilled** |  |
| 1 | Air compressor /compressor with pneumatic breaker | General | 1217.87 | 192 | 42 | 50 | 765.70 | 168.17 | 5.73 |  |  | 168.17 |  |  |
| 2 | Asphalt Plant (Batch mix HMP/Drum mix plant/Hot Mix Plant ) | Asphalt/DBM Production | 29095.02 | 693 | 108 | 173 | 27829.38 | 291.63 | 6.91 | 15.00 | 200.00 | 168.17 | 123.46 |  |
| 3 | Batching Plant | Concrete Production | 1896.12 | 352 | 44 | 88 | 1120.49 | 291.63 | 6.14 | 25.00 |  | 168.17 | 123.46 |  |
| 4 | Bentonite pump | Drilled Hole Stabilization | 61.00 | 26 | 3 | 8 | 24.00 | 0.00 |  | 2 |  |  |  |  |
| 5 | Bitumen boiler | Bitumen Heating | 981.06 | 40 | 3 | 8 | 930.06 | 0.00 | 1.96 |  | 5.00 |  |  |  |
| 6 | Bitumen pressure distributor/Bitumen Distributor/ Bitumen Sprayer | Bitumen Spray | 2742.90 | 443 | 63 | 176 | 1769.26 | 291.63 | 10.24 |  | 3.00 | 168.17 | 123.46 |  |
| 7 | Chip spreader | Surface Dressing/Chips Seal/Otta Seal | 1525.06 | 196 | 30 | 64 | 943.43 | 291.63 | 7.06 |  |  | 168.17 | 123.46 |  |
| 8 | Cold mix plant | Cold Mix Asphalt/Premix | 1427.99 | 375 | 50 | 75 | 759.82 | 168.17 | 3.89 | 20.00 |  | 168.17 |  |  |
| 9 | Concrete Pump | Concreting | 795.54 | 80 | 5 | 10 | 408.91 | 291.63 | 3.06 |  |  | 168.17 | 123.46 |  |
| 10 | Crane | Lifting | 2948.31 | 820 | 145 | 338 | 1353.67 | 291.63 | 10.13 |  |  | 168.17 | 123.46 |  |
| 11 | Crane (3 T) | Lifting | 2068.64 | 599 | 106 | 170 | 902.00 | 291.63 | 6.75 |  |  | 168.17 | 123.46 |  |
| 12 | Crane 15 t capacity | Lifting | 3987.64 | 1,147 | 163 | 431 | 1955.01 | 291.63 | 14.63 |  |  | 168.17 | 123.46 |  |
| 13 | Crane with grab bucket/dredger crane | Dredging | 2808.96 | 1,000 | 120 | 200 | 1197.32 | 291.63 | 8.96 |  |  | 168.17 | 123.46 |  |
| 14 | Dozer | Earthwork | 4237.70 | 1300 | 330 | 550 | 1889.53 | 168.17 | 14.14 |  |  | 168.17 |  |  |
| 15 | Drilling machine with bit and accessories | Earth Hole Drilling | 651.35 | 126 | 24 | 36 | 173.72 | 291.63 | 1.30 |  |  | 168.17 | 123.46 |  |
| 16 | Electric generator | Electricity | 878.85 | 77 | 10 | 17 | 606.68 | 168.17 | 4.54 |  |  | 168.17 |  |  |
| 17 | Electric hand driller (HDEP work) | Hole Drilling | 127.00 | 105 | 0 | 10 | 12.00 | 0.00 |  | 1.00 |  |  |  |  |
| 18 | Electric heating plate | Connection work | 93.00 | 63 | 6 | 12 | 12.00 | 0.00 |  | 1.00 |  |  |  |  |
| 19 | Emulsion pressure distributor | Emulsion distribution | 379.85 | 46 | 4 | 8 | 153.67 | 168.17 | 1.15 |  |  | 168.17 |  |  |
| 20 | Excavator | Excavation/Earthwork | 3152.45 | 620 | 165 | 275 | 1924.27 | 168.17 | 14.40 |  |  | 168.17 |  |  |
| 21 | Grout lnjection Equipment | Crack Repair | 284.17 | 68 | 12 | 24 | 12.00 | 168.17 |  | 1.00 |  | 168.17 |  |  |
| 22 | Grouting pump with agitator | PSC Bridge construction related | 423.17 | 147 | 28 | 56 | 24.00 | 168.17 |  | 2.00 |  | 168.17 |  |  |
| 23 | Hacking Machine | Jacketing purpose | 407.89 | 42 | 8 | 16 | 173.72 | 168.17 | 1.30 |  |  | 168.17 |  |  |
| 24 | Hydraulic Jack ( 40 tonne capacity) | Bearing Installation/Repair | 165.00 | 105 | 20 | 40 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |
| 25 | Hydraulic Jack ( required capacity normally 200 tonne) | Bearing Installation/Repair | 405.00 | 256 | 33 | 56 | 60.00 | 0.00 |  | 5.00 |  |  |  |  |
| 26 | Jack hammer /Rock drill / Portable rock driller | Earthwork | 246.48 | 22 | 3 | 5 | 216.48 | 0.00 | 1.62 |  |  |  |  |  |
| 27 | Loader | Material Loading | 2382.41 | 543 | 136 | 227 | 1308.24 | 168.17 | 9.79 |  |  | 168.17 |  |  |
| 28 | Mastic cooker | Mastic Asphalt Production | 778.49 | 69 | 5 | 16 | 396.85 | 291.63 |  | 1.00 | 2.88 | 168.17 | 123.46 |  |
| 29 | Mixture machine/Concrete Mixture Machine | Concrete Production | 301.57 | 31 | 3 | 11 | 256.57 | 0.00 | 1.92 |  |  |  |  |  |
| 30 | Mobile slurry seal equipment | Maintenance | 1431.77 | 211 | 32 | 86 | 811.13 | 291.63 | 6.07 |  |  | 168.17 | 123.46 |  |
| 31 | Motor grader | Levelling | 2949.75 | 1,016 | 256 | 351 | 1158.57 | 168.17 | 8.67 |  |  | 168.17 |  |  |
| 32 | Paver finisher | Asphalt | 2411.03 | 775 | 119 | 298 | 927.39 | 291.63 | 6.94 |  |  | 168.17 | 123.46 |  |
| 33 | Piling rig ( with all accessories) | Pile Construction upto 1.2m | 3206.29 | 1,600 | 267· | 267 | 1047.66 | 291.63 | 7.84 |  |  | 168.17 | 123.46 |  |
| 34 | Plate compactor/power rammer | Light Compaction | 445.27 | 54 | 9 | 19 | 195.10 | 168.17 | 1.46 |  |  | 168.17 |  |  |
| 35 | Pneumatic roller/Pneumatic tired roller | Compaction | 2154.60 | 539 | 57 | 296 | 1094.43 | 168.17 | 8.19 |  |  | 168.17 |  |  |
| 36 | Premix Mixer | Premix Production | 3697.16 | 115 | 25 | 25 | 3240.53 | 291.63 | 4.25 |  | 20 | 168.17 | 123.46 |  |
| 37 | Road marking machine | Thermoplastic Painting | 294.72 | 92 | 8 | 21 | 173.72 | 0.00 | 1.30 |  |  |  |  |  |
| 38 | Road sweeper/Mechanical broom | Sweeping | 1422.41 | 297 | 34 | 68 | 855.23 | 168.17 | 6.40 |  |  | 168.17 |  |  |
| 39 | Premix Mixer | Premix Production | 3079.23 | 115 | 0 | 0 | 2672.60 | 291.63 |  |  | 20.00 | 168.17 | 123.46 |  |
| 40 | Smooth wheeled roller/Smooth 3 wheeled steel roller | Compaction | 1115.78 | 173 | 13 | 40 | 721.60 | 168.17 | 5.4 |  |  | 168.17 |  |  |
| 41 | Stressing jack with pump | Prestressing | 144.00 | 104 | 8 | 20 | 12.00 | 0.00 |  | 1 |  |  |  |  |
| 42 | Tipper | Transportation/Carry | 1420.97 | 148 | 23 | 55 | 903.34 | 291.63 | 6.76 |  |  | 168.17 | 123.46 |  |
| 43 | Tractor with ripper attachment/Tractor Trolly | Ripping/Carry | 1021.97 | 83 | 13 | 33 | 601.34 | 291.63 | 4.5 |  |  | 168.17 | 123.46 |  |
| 44 | Truck flat body/Trailer | Carry | 2456.84 | 532 | 37 | 153 | 1443.20 | 291.63 | 10.8 |  |  | 168.17 | 123.46 |  |
| 45 | Vibratory roller | Compaction | 1827.00 | 461 | 66 | 159 | 972.83 | 168.17 | 7.28 |  |  | 168.17 |  |  |
| 46 | Water Tanker | Watering | 1163.45 | 270 | 38 | 110 | 577.28 | 168.17 | 4.32 |  |  | 168.17 |  |  |
| 47 | Wet mix plant | Base Production | 1251.63 | 433 | 67 | 100 | 360.00 | 291.63 |  | 30 |  | 168.17 | 123.46 |  |
| 48 | Cutter (Bitumen Pavement/RCC Cutter) | Cutting | 351.03 | 168 | 8 | 12 | 163.03 | 0.00 | 1.22 |  |  |  |  |  |

Note:   
1) District Rate Crew/hr =30x Daily Rate/(8\*26) District Rate Assistant/hr =30x Daily Rate/(8\*26)  
2) Fuel Cost = Fuel Demand x Fuel Cost per liter at site / 1.13  
3) Electricity Cost = Electricity Demand x Electricity Unit Cost  
4) Crew/Assistant Cost= (Crew,hr x District Rate of Crew/hr) + (Assistant, hr x District Rate of Assistant/hr  
5) Rate of Plant & Machinery= Ownership Cost + Operational Cost (Servicing Cost + Maintenance Cost + Crew/Assistant Cost + Fuel/Electricity Cost)

**Rate Analysis**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Description of works:** | | **Providing and Laying Reinforced cement concrete NP3 Flush jointed pipe for culverts including fixing with cement mortar 1:2 as per Drawing and Technical [600 mm internal diameter]** | | | | | | | | | | | | | **Unit : 12.5 m** |
| Spec Cl. No.: | 701 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 7.2 D | Skilled | md | 1.00 | 1166.00 | 1166.00 | sand | cum | 0.12 | 3186.81 | 382.41 | Other T & P |  | 3.0% | LC | 240.42 |
|  | Unskilled | md | 8.00 | 856.00 | 6848.00 | cement | mt | 0.09 | 19066.45 | 1715.98 |  | | | | |
|  | | | | | | RCC Pipe 600mm | m | 12.50 | 6200.00 | 77500.00 |
| Sub total of A = | | | | | 8014.00 | Sub total of B = | | | | 79598.39 | Sub total of C = | | | | 240.42 |
| Sub total of A +B + C = | | | | | 87852.81 | Contractor's overhead expenses 15% = | | | | | 13177.92 | Rate for 12.5 m | | | 101030.73 |
|  | | | | | | | | | | | | **Unit Rate (1 m)** | | | **8082.45** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Description of works:** | | **Providing and Laying Reinforced cement concrete NP3 Flush jointed pipe for culverts including fixing with cement mortar 1:2 as per Drawing and Technical [900 mm internal diameter]** | | | | | | | | | | | | | **Unit : 12.5 m** |
| Spec Cl. No.: | 701 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 7.2 D | Skilled | md | 1.00 | 1166.00 | 1166.00 | sand | cum | 0.12 | 3186.81 | 382.41 | Other T & P |  | 3.0% | LC | 240.42 |
|  | Unskilled | md | 8.00 | 856.00 | 6848.00 | cement | mt | 0.09 | 19066.45 | 1715.98 |  | | | | |
|  | | | | | | RCC Pipe 900mm | m | 12.50 | 12172.00 | 152150.00 |
| Sub total of A = | | | | | 8014.00 | Sub total of B = | | | | 154248.39 | Sub total of C = | | | | 240.42 |
| Sub total of A +B + C = | | | | | 162502.81 | Contractor's overhead expenses 15% = | | | | | 24375.42 | Rate for 12.5 m | | | 186878.23 |
|  | | | | | | | | | | | | **Unit Rate (1 m)** | | | **14950.25** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Description of works:** | | **Road way excavation in all types of soil including removal of stumps and other deleterious matter and disposal upto relevant lift and lead all complete as per drawing and technical specification. [Mechanical Mean]** | | | | | | | | | | | | | | | | | **Unit : 360 m3** | |
| Spec. cl. No | 905 |
| **Norms No.** | **Labour (A)** | | | | | | **Material (B)** | | | | | | | **Equipment (C)** | | | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | | **Amount** | | **Type** | **Unit** | **Qty.** | **Rate** | | **Amount** | | **Type** | | **Unit** | **Qty.** | **Rate** | **Amount** |
| 9.1 I B | Skilled | md | 1.00 | 1166.00 | | 1166.00 | |  | | | | | | | Hydraulic Excavator | | hr | 6.00 | 3148.67 | 18892.02 |
|  | Unskilled | md | 3.00 | 856.00 | | 2568.00 | |  | | | | | |
| Sub total of A = | | | | | 3734.00 | | Sub total of B = | | | | | 0.00 | | Sub total of C = | | | | | 18892.02 | |
| Sub total of A +B + C = | | | | | 22626.02 | | Contractor's overhead expenses 15% = | | | | | | | 3393.90 | | Rate for 360 m3 | | | 26019.92 | |
|  | | | | | | | | | | | | | | | | **Unit Rate (1 m3)** | | | **72.27** | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Description of works:** | | **Providing, laying, spreading and compacting embankment with roadway cutting material and compact to the required density as per Drawing and Technical Specifications. [Mechanical Means]** | | | | | | | | | | | | | **Unit : 300 Cum** |
| Spec. cl. No: | 909, 910 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 9.9 B | Skilled | md | 1.00 | 1166.00 | 1166.00 | Water | ltr | 72000.00 | 0.40 | 28800.00 | Dozer | hr | 6.00 | 4233.93 | 25403.58 |
|  | Unskilled | md | 10.00 | 856.00 | 8560.00 |  | | | | | Moter Grader | hr | 6.00 | 2945.98 | 17675.88 |
|  |  | | | | | Vibratory Roller | hr | 6.00 | 1823.24 | 10939.44 |
| Sub total of A = | | | | | 9726.00 | Sub total of B = | | | | 28800.00 | Sub total of C = | | | | 54018.90 |
| Sub total of A +B + C = | | | | | 92544.90 | Contractor's overhead expenses 15% = | | | | | 13881.73 | Rate for 300 Cum | | | 106426.63 |
|  | | | | | | | | | | | | **Unit Rate (1 Cum)** | | | **354.75** |

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| **Description of works:** | | **Loosening, leveling and Compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150 mm, mixed with water at OMC and then compacted by rolling so as to achieve dry density as per Drawing and Technical Specifications.** | | | | | | | | | | | | | **Unit : 600 cum** |
| Spec. cl. No: | 1003 , 1005 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 10.4 | Skilled | md | 1.00 | 1166.00 | 1166.00 | Water | ltr | 72000.00 | 0.40 | 28800.00 | Tractor with Ripper | hr | 6.00 | 1021.67 | 6130.02 |
|  | Unskilled | md | 4.00 | 856.00 | 3424.00 |  |  |  |  |  | Vibratory Roller | hr | 12.00 | 1823.24 | 21878.88 |
| Sub total of A = | | | | | 4590.00 | Sub total of B = | | | | 28800.00 | Sub total of C = | | | | 28008.90 |
| Sub total of A +B + C = | | | | | 61398.90 | Contractor's overhead expenses 15% = | | | | | 9209.83 | Rate for 600 cum | | | 70608.73 |
|  | | | | | | | | | | | | **Unit Rate (1 cum)** | | | **117.68** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Description of works:** | | **Providing and laying granular sub-base on prepared surface, mixing at OMC, and compacting to achieve the desired density, complete as per Drawing and Technical Specifications. [Mechanical Means]** | | | | | | | | | | | | | **Unit : 300 Cum** |
| Spec. cl. No: | 1201 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 12.1 A | Skilled | md | 2.00 | 1166.00 | 2332.00 | Subbase material S1 or S2 | cum | 384.00 | 2507.17 | 962753.47 | Motor Grader | hr | 6.00 | 2945.98 | 17675.88 |
|  | Unskilled | md | 12.00 | 856.00 | 10272.00 | Water | ltr | 18000.00 | 0.40 | 7200.00 | Vibratory Roller | hr | 12.00 | 1823.24 | 21878.88 |
|  |  |  |  |  |  |  |  |  |  |  | Tractor / Loader | hr | 12.00 | 2378.64 | 28543.68 |
| Sub total of A = | | | | | 12604.00 | Sub total of B = | | | | 969953.47 | Sub total of C = | | | | 68098.44 |
| Sub total of A +B + C = | | | | | 1050655.91 | Contractor's overhead expenses 15% = | | | | | 157598.38 | Rate for 300 Cum | | | 1208254.29 |
|  | | | | | | | | | | | | **Unit Rate (1 Cum)** | | | **4027.51** |

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| **Description of works:** | | **Providing, laying, spreading and compacting Water bound macadam including brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting to the required density as per Drawing and Technical Specifications. [Mechanical Means]** | | | | | | | | | | | | | **Unit : 360 Cum** |
| Spec. cl. No: | 1203 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 12.1 A | Skilled | md | 2.00 | 1166.00 | 2332.00 | Aggregate (Grading as per specification) | cum | 435.00 | 2605.55 | 1133414.46 | Vibratory Roller | hr | 6.00 | 1823.24 | 10939.44 |
|  | Unskilled | md | 12.00 | 856.00 | 10272.00 | Stone Screening | cum | 57.60 | 1255.55 | 72319.70 | Motor Grader | hr | 6.00 | 2945.98 | 17675.88 |
|  |  |  |  |  |  | Water | ltr | 144000.00 | 0.40 | 57600.00 |  |  |  |  |  |
| Sub total of A = | | | | | 12604.00 | Sub total of B = | | | | 1263334.16 | Sub total of C = | | | | 28615.32 |
| Sub total of A +B + C = | | | | | 1304553.48 | Contractor's overhead expenses 15% = | | | | | 195683.02 | Rate for 360 Cum | | | 1500236.50 |
|  | | | | | | | | | | | | **Unit Rate (1 Cum)** | | | **4167.32** |

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| **Description of works:** | | **Providing and laying Crusher Run Macadam on a prepared surface, spreading and mixing, watering and compacting to form a layer of Base Course as per Drawing and Technical Specifications. [Mix in place method, 45 mm down]** | | | | | | | | | | | | | **Unit : 360 Cum** |
| Spec. cl. No: | 1204 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 12.7 A | Skilled | md | 3.00 | 1166.00 | 3498.00 | Aggregates 45 to 22.5 mm | cum | 24.12 | 2605.55 | 62845.87 | Motor Grader | hr | 6.00 | 2945.98 | 17675.88 |
|  | Unskilled | md | 14.00 | 856.00 | 11984.00 | Aggregates 22.5 to 5.6 mm | cum | 237.60 | 2605.55 | 619078.79 | Vibratory Roller | hr | 6.00 | 1823.24 | 10939.44 |
|  |  |  |  |  |  | Aggregates below 5.6 mm | cum | 213.48 | 3405.55 | 727016.92 |  |  |  |  |  |
|  |  |  |  |  |  | Water | ltr | 36000.00 | 0.40 | 14400.00 |  |  |  |  |  |
| Sub total of A = | | | | | 15482.00 | Sub total of B = | | | | 1423341.58 | Sub total of C = | | | | 28615.32 |
| Sub total of A +B + C = | | | | | 1467438.90 | Contractor's overhead expenses 15% = | | | | | 220115.83 | Rate for 360 Cum | | | 1687554.73 |
|  | | | | | | | | | | | | **Unit Rate (1 Cum)** | | | **4687.65** |

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| **Description of works:** | | **Providing and applying tack coat with hot bitumen at specified rate on the prepared non-bituminous surfaces including cleaning as per Technical Speciation. [Mechanical Means]** | | | | | | | | | | | | | **Unit : 5000 Ltr** |
| Spec. cl. No: | 1302 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 13.2 A | Skilled | md | 3.00 | 1166.00 | 3498.00 | Bitumen (Paving grade) | ton | 5.25 | 111196.00 | 583778.98 | Air Compressor | hr | 6.00 | 1214.11 | 7284.66 |
|  | Unskilled | md | 20.00 | 856.00 | 17120.00 |  | | | | | Bitumen Distributer | hr | 6.00 | 2742.59 | 16455.54 |
|  | | | | | | Boiler | hr | 6.00 | 981.05 | 5886.30 |
| Generator | hr | 6.00 | 875.10 | 5250.60 |
| Sub total of A = | | | | | 20618.00 | Sub total of B = | | | | 583778.98 | Sub total of C = | | | | 34877.10 |
| Sub total of A +B + C = | | | | | 639274.08 | Contractor's overhead expenses 15% = | | | | | 95891.11 | Rate for 5000 Ltr | | | 735165.19 |
|  | | | | | | | | | | | | **Unit Rate (1 Ltr)** | | | **147.03** |

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| **Description of works:** | | **Providing and applying prime coat with hot bitumen (including cutter) on prepared surface of granular base including cleaning of road surface and spraying at specified rate as per Technical Specification. [Mechanical Means]** | | | | | | | | | | | | | **Unit : 5000 Ltr** |
| Spec. cl. No: | 1302 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 13.1 A | Skilled | md | 3.00 | 1166.00 | 3498.00 | Bitumen [MC 30 for WBM or MC 70 for CRM] | ton | 5.25 | 111196.00 | 583778.98 | Mechanical Broom | hr | 8.00 | 1418.64 | 11349.12 |
|  | Unskilled | md | 50.00 | 856.00 | 42800.00 | Water | ltr | 10000.00 | 0.40 | 4000.00 | Air Compressor | hr | 8.00 | 1214.11 | 9712.88 |
|  | | | | | |  | | | | | Bitumen Distributer | hr | 6.00 | 2742.59 | 16455.54 |
| Boiler | hr | 8.00 | 981.05 | 7848.40 |
| Generator | hr | 8.00 | 875.10 | 7000.80 |
| Sub total of A = | | | | | 46298.00 | Sub total of B = | | | | 587778.98 | Sub total of C = | | | | 52366.74 |
| Sub total of A +B + C = | | | | | 686443.72 | Contractor's overhead expenses 15% = | | | | | 102966.55 | Rate for 5000 Ltr | | | 789410.27 |
|  | | | | | | | | | | | | **Unit Rate (1 Ltr)** | | | **157.88** |

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| **Description of works:** | | **Providing and laying Bituminous concrete/ Asphalt concrete using crushed aggregates of specified grading, premixed with bituminous binder and filler as per Drawing and Technical Specifications. [Grading I 19 mm nominal size]** | | | | | | | | | | | | | **Unit : 95.5 Cum** |
| Spec. cl. No: | 1309 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 13.6 | Skilled | md | 5.00 | 1166.00 | 5830.00 | Bitumen | ton | 12.94 | 111196.00 | 1438876.19 | Batch Mix HEMP | hr | 6.00 | 29094.38 | 174566.28 |
|  | Unskilled | md | 15.00 | 856.00 | 12840.00 | agg 20 - 10 mm | cum | 49.48 | 2605.55 | 128922.63 | Paver Finisher | hr | 6.00 | 2410.73 | 14464.38 |
|  | | | | | | agg 10 - 5 mm | cum | 32.52 | 2605.55 | 84732.50 | Generator | hr | 6.00 | 875.10 | 5250.60 |
| agg 5 mm and below | cum | 56.55 | 3405.55 | 192583.88 | Pneumatic Roller | hr | 6.00 | 2150.84 | 12905.04 |
| Filler | ton | 2.83 | 2605.55 | 7373.70 | Smooth Wheeled Roller | hr | 12.00 | 1112.02 | 13344.24 |
| Sub total of A = | | | | | 18670.00 | Sub total of B = | | | | 1852488.90 | Sub total of C = | | | | 220530.54 |
| Sub total of A +B + C = | | | | | 2091689.44 | Contractor's overhead expenses 15% = | | | | | 313753.41 | Rate for 95.5 Cum | | | 2405442.85 |
|  | | | | | | | | | | | | **Unit Rate (1 Cum)** | | | **25187.88** |

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| **Description of works:** | | **Providing and laying of Plain/Reinforced Cement Concrete in Foundation complete as per Drawing and Technical Specifications. [RCC grade M30]** | | | | | | | | | | | | | **Unit : 15 m3** |
| Spec. cl. No: | 2000 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 20.2.G | Skilled | md | 3.00 | 1166.00 | 3498.00 | cement | mt | 6.10 | 19066.45 | 116305.36 | Concrete mixer | hr | 6.00 | 301.57 | 1809.42 |
|  | Unskilled | md | 30.00 | 856.00 | 25680.00 | aggregate 10-20mm | m3 | 8.10 | 2605.55 | 21104.95 | Generator | hr | 6.00 | 875.10 | 5250.60 |
|  | | | | | | aggregate 10mm & down | m3 | 5.40 | 2605.55 | 14069.97 | Formwork @ 3.5 per cent on cost of concrete i.e. cost of Material, Labour and Equipment | | | | |
| coarse sand | m3 | 6.75 | 2586.81 | 17460.96 |
| water | lit | 3000.00 | 0.40 | 1200.00 |
| Admixture 0.4% of cement | kg | 24.40 | 500.00 | 12200.00 |
| Sub total of A = | | | | | 29178.00 | Sub total of B = | | | | 182341.24 | Sub total of C = | | | | 7060.02 |
| Sub total of A +B + C = | | | | | 226229.53 | Contractor's overhead expenses 15% = | | | | | 33934.43 | Rate for 15 m3 | | | 260163.96 |
|  | | | | | | | | | | | | **Unit Rate (1 m3)** | | | **17344.26** |

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| **Description of works:** | | **Providing and laying , fitting and placing un-coated Mild steel / HYSD reinforcement complete in foundation as per drawing and technical specification** | | | | | | | | | | | | | **Unit : 1 mt** |
| Spec. cl. No: | 2014 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 20.3 | Skilled | md | 4.00 | 1166.00 | 4664.00 | MS bars | mt | 1.100 | 95000.00 | 104500.00 |  | | | | |
|  | Unskilled | md | 9.00 | 856.00 | 7704.00 | Binding wire | kg | 8.000 | 123.00 | 984.00 |
| Sub total of A = | | | | | 12368.00 | Sub total of B = | | | | 105484.00 | Sub total of C = | | | | 0.00 |
| Sub total of A +B + C = | | | | | 117852.00 | Contractor's overhead expenses 15% = | | | | | 17677.80 | Rate for 1 mt | | | 135529.80 |
|  | | | | | | | | | | | | **Unit Rate (1 mt)** | | | **135529.80** |

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| **Description of works:** | | **Providing, laying and levelling of dry stone soling works in the foundation all complete. (Old Norms)** | | | | | | | | | | | | | **Unit : 1 Cum** |
| Spec. cl. No: | Norms 2041 (1st ammendment 2050) |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 10.8 | Skilled | md | 0.25 | 1166.00 | 291.50 | Stone | cum | 1.10 | 2766.85 | 3043.53 |  | | | | |
|  | Unskilled | md | 0.75 | 856.00 | 642.00 |  | | | | |
| Sub total of A = | | | | | 933.50 | Sub total of B = | | | | 3043.53 | Sub total of C = | | | | 0.00 |
| Sub total of A +B + C = | | | | | 3977.03 | Contractor's overhead expenses 15% = | | | | | 596.55 | Rate for 1 Cum | | | 4573.58 |
|  | | | | | | | | | | | | **Unit Rate (1 Cum)** | | | **4573.58** |

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| **Description of works:** | | **Providing and laying of plain cement concrete M10 (or 1:3:6 for nominal mix) in Foundation complete as per Drawing and Technical Specifications.** | | | | | | | | | | | | | **Unit : 15 Cum** |
| Spec. cl. No: | 2000 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 20.1 | Skilled | md | 2.00 | 1166.00 | 2332.00 | cement | mt | 3.45 | 19066.45 | 65779.26 | Concrete mixer | hr | 6.00 | 301.57 | 1809.42 |
|  | Unskilled | md | 22.00 | 856.00 | 18832.00 | 40 mm aggregate | m3 | 13.50 | 2605.55 | 35174.93 | Generator | hr | 6.00 | 875.10 | 5250.60 |
|  | | | | | | coarse sand | m3 | 6.75 | 2586.81 | 17460.96 |  | | | | |
| water | lit | 2000.00 | 0.40 | 800.00 |
| Sub total of A = | | | | | 21164.00 | Sub total of B = | | | | 119215.15 | Sub total of C = | | | | 7060.02 |
| Sub total of A +B + C = | | | | | 147439.17 | Contractor's overhead expenses 15% = | | | | | 22115.87 | Rate for 15 Cum | | | 169555.04 |
|  | | | | | | | | | | | | **Unit Rate (1 Cum)** | | | **11303.66** |

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| **Description of works:** | | **Mesh wire- 10 Swg(0.0615 kg/m), Selvedge Wire 8 Swg ( /m), binding wire 12 Swg (0.0409 kg/m) Hexagonal mesh Type 80 mm X 100 mm. [ 2 X 1 X 1 m ( 11 sqm)]** | | | | | | | | | | | | | **Unit : 6 Cum** |
| Spec. cl. No: | 2401,2402 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 24.2B | **Providing mechanically woven double twisted box/mattress** | | | | | | | | | | | | | | |
|  |  | | | | | Gabion Box/Mattress 11sqm | Box | 1.00 | 7062.00 | 7062.00 |  | | | | |
| 24.4 | **Providing and filling stone/boulder in gabion box/mattress** | | | | | | | | | | | | | | |
|  | Skilled | md | 1.20 | 1166.00 | 1399.20 | Boulder / Stone | cum | 6.60 | 2500.00 | 16500.00 |  | | | | |
|  | Unskilled | md | 4.80 | 856.00 | 4108.80 |  | | | | |
| Sub total of A = | | | | | 5508.00 | Sub total of B = | | | | 23562.00 | Sub total of C = | | | | 0.00 |
| Sub total of A +B + C = | | | | | 29070.00 | Contractor's overhead expenses 15% = | | | | | 4360.50 | **Rate =** | | | **33430.50** |
|  | | | | | | | | | | | | **Unit Rate (1 Cum)** | | | **5571.75** |

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| **Description of works:** | | **Providing and laying of a Geotextile filter between pitching and embankment slopes as per Drawing and Technical Specifications.** | | | | | | | | | | | | | **Unit : 300 Sqm** |
| Spec. cl. No: | 2404 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 24.5 | Skilled | md | 1.00 | 1166.00 | 1166.00 | Geotextile | Sqm | 360.00 | 126.00 | 45360.00 |  |  |  |  |  |
|  | Unskilled | md | 2.00 | 856.00 | 1712.00 |  |  |  |  |  |  |  |  |  |  |
| Sub total of A = | | | | | 2878.00 | Sub total of B = | | | | 45360.00 | Sub total of C = | | | | 0.00 |
| Sub total of A +B + C = | | | | | 48238.00 | Contractor's overhead expenses 15% = | | | | | 7235.70 | Rate for 300 Sqm | | | 55473.70 |
|  | | | | | | | | | | | | **Unit Rate (1 Sqm)** | | | **184.91** |

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| **Description of works:** | | **Providing and laying Plum concrete ( Boulder mixed concrete) as per Drawing and Specifications 60% M 15 concrete and 40% boulders/stones (USING MECHANICAL AIDS)** | | | | | | | | | | | | | **Unit : 10 Cum** |
| Spec. cl. No: | 2421 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 24.21 A | Skilled | md | 3.00 | 1166.00 | 3498.00 | cement | mt | 1.70 | 19066.45 | 32412.97 | Concrete mixer | hr | 6 | 301.57 | 1809.42 |
|  | Unskilled | md | 15.00 | 856.00 | 12840.00 | boulder | m3 | 4.40 | 2632.70 | 11583.87 | Generator | hr | 6 | 875.10 | 5250.60 |
|  | | | | | | aggregate 20-40mm | m3 | 3.45 | 2605.55 | 8989.14 | concrete vibrator | hr | 6 | 651.00 | 3906.00 |
| aggregate 10-20mm | m3 | 1.56 | 2605.55 | 4064.65 | d) Formwork @ 4 per cent on cost of concrete i.e. cost of Material, Labour and Equipment | | | | |
| aggregate 10mm & down | m3 | 0.72 | 2605.55 | 1875.99 |
| coarse sand | m3 | 3.00 | 2586.81 | 7760.42 |
| water | lit | 2000 | 0.40 | 800.00 |
| Sub total of A = | | | | | 16338.00 | Sub total of B = | | | | 67487.04 | Sub total of C = | | | | 10966.02 |
| Sub total of A +B + C = | | | | | 98582.7024 | Contractor's overhead expenses 15% = | | | | | 14787.40536 | Rate for 10 | | | 113370.1078 |
|  | | | | | | | | | | | | **Unit Rate (1 Cum)** | | | **11337.01078** |

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| **Description of works:** | | **Providing and laying of Stone Masonry Work in Cement Mortar 1:4 in Foundation complete as per Drawing and Technical Specifications. [Random Rubble Masonry / in Foundation / CS 1:6 Mortar]** | | | | | | | | | | | | | **Unit : 5 Cum** |
| Spec. cl. No: | 2602, 2603, 2607 |
| **Norms No.** | **Labour (A)** | | | | | **Material (B)** | | | | | **Equipment (C)** | | | | |
| **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** | **Type** | **Unit** | **Qty.** | **Rate** | **Amount** |
| 26.3 B | Skilled | md | 7.00 | 1166.00 | 8162.00 | Stone | cum | 5.75 | 2766.85 | 15909.38 |  | | | | |
|  | Unskilled | md | 14.00 | 856.00 | 11984.00 | cement | ton | 0.45 | 19066.45 | 8579.90 |
|  | | | | | | Sand | cum | 2.08 | 3186.81 | 6628.56 |
|  | | | | | | Water | ltr | 1000.00 | 0.40 | 400.00 |
| Sub total of A = | | | | | 20146.00 | Sub total of B = | | | | 31517.84 | Sub total of C = | | | | 0.00 |
| Sub total of A +B + C = | | | | | 51663.84 | Contractor's overhead expenses 15% = | | | | | 7749.57 | Rate for 5 Cum | | | 59413.41 |
|  | | | | | | | | | | | | **Unit Rate (1 Cum)** | | | **11882.68** |