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| **(A) Usage Rates of Plant and Machinery** | | | | | | | | |
| **Sl. No.** | | **Description of Machine** | **Activity** | **Output of Machine** | **Output** | | **Unit** | **Rate** |
|
| P&M-001 | | Air Compressor/Air Compressor 170 cfm | General Purpose | capacity in cfm | 170/250 | | hour | 550 |
| P&M-002 | | Batching and Mixing Plant (a) 30 cum capacity | Concrete Mixing | cum/hour | 20 | | hour | 2000 |
| P&M-003 | | Batching and Mixing Plant (b) 15 - 20 cum capacity | Concrete Mixing | cum/hour | 13 | | hour | 1500 |
| P&M-004 | | Bitumen Pressure Distributor | Applying bitumen tack coat | sqm/hour | 1750 | | hour | 200 |
| P&M-005 | | Bitumen Boiler oil fired | Bitumen Spraying | capacity in litre | 1500 | | hour | 150 |
| P&M-006 | | Concrete Paver Finisher with 40 HP Motor | Paving of concrete surface | cum / hour | 20 | | hour | 2000 |
| P&M-007 | | Concrete Pump of 45 & 30 cum capacity | Pumping of concrete | cum / hour | 33 / 22 | | hour | 377 |
| P&M-008 | | Concrete Bucket | For Pouring concrete | capacity in cum | 1 | | hour | 90 |
| P&M-009 | | Concrete Mixer (a) 0.4/0.28 cum | Concrete Mixing | cum/hour | 2.5 | | hour | 250 |
| P&M-010 | | Concrete Mixer (b) 1 cum | Concrete Mixing | cum/hour | 7.5 | | hour | 330 |
| P&M-011 | | Crane (a) 80 tonnes | Lifting Purpose |  |  | | hour | 1410 |
| P&M-012 | | Cranes b) 35 tonnes | Lifting Purpose |  |  | | hour | 1100 |
| P&M-013 | | Cranes c) 3 tonnes | Lifting Purpose |  |  | | hour | 800 |
| P&M-014 | | Dozer D - 80 - A 12/Dozer -80D | Spreading /Cutting / Clearing | cum/hour | 300/ 150/250 | | hour | 500 |
| P&M-015 | | Dozer D - 50 - A 15 | Spreading /Cutting / Clearing | cum/hour | 200/ 120/150 | | hour | 400 |
| P&M-016 | | Emulsion Pressure Distributor | Applying emulsion tack coat | sqm/hour | 1750 | | hour | 200 |
| P&M-017 | | Front End loader 1 cum bucket capacity | Soil loading / Aggregate loading | cum/hour | 60 /25 | | hour | 600 |
| P&M-018 | | Generator (a) 125 KVA | Genration of electric Energy | KVA | 100 | | hour | 800 |
| P&M-019 | | Generator( b) 63 KVA | Genration of electric Energy | KVA | 50 | | hour | 350 |
| P&M-020 | | GSB Plant 50 cum | Producing GSB | cum/hour | 40 | | hour | 1350 |
| P&M-021 | | Hotmix Plant - 120 TPH capacity | DBM/BM/SDC/ Premix | cum/hour | 40 | | hour | 5000 |
| P&M-022 | | Hotmix Plant - 100 TPH capacity | DBM/BM/SDC/ Premix | cum/hour | 30 | | hour | 4000 |
| P&M-023 | | Hotmix Plant - 60 to 90 TPH capacity | DBM/BM/SDC/ Premix | cum/hour | 25 | | hour | 2500 |
| P&M-024 | | Hotmix Plant - 40 to 60 TPH capacity | DBM/BM/SDC/ Premix | cum/hour | 17 | | hour | 2000 |
| P&M-025 | | Hydraulic Chip Spreader | Surface Dressing | sqm/hour | 1500 | | hour | 255 |
| P&M-026 | | Hydraulic Excavator of 1 cum bucket | Soil Ordinary/Soil Marshy / Soil Unsuitable | cum/hour | 60 /60 /60 | | hour | 400 |
| P&M-027 | | Integrated Stone Crusher 100THP | Crushing of Spalls | TPH | 100 | | hour | 8050 |
| P&M-028 | | Integrated Stone Crusher 200 HP | Crushing of Spalls | TPH | 200 | | hour | 16000 |
| P&M-029 | | Kerb Casting Machine | Kerb Making | Rm/hour | 80 | | hour | 60 |
| P&M-030 | | Mastic Cooker | Mastic Wearing coat | capacity in tonne | 1 | | hour | 140 |
| P&M-031 | | Mechanical Broom Hydraulic | Surface Cleaning | sqm/hour | 1250 | | hour | 540 |
| P&M-032 | | Motor Grader 3.35 mtr blade | Clearing /Spreading /GSB /WBM | cum/hour | 200/200/50/50 | | hour | 575 |
| P&M-033 | | Mobile slurry seal equipment | Mixing and laying slurry seal | sqm/hour | 2700 | | hour | 1130 |
| P&M-034 | | Paver Finisher Hydrostatic with sensor control 100 TPH | Paving of DBM/ BM/SDC/ Premix | cum/hour | 40 | | hour | 1500 |
| P&M-035 | | Paver Finisher Mechanical 100 TPH | Paving of WMM /Paving of DLC | cum/hour | 40/30 | | hour | 1000 |
| P&M-036 | | Piling Rig with Bantonite Pump | 0.75 m dia to 1.2 m dia Boring attachment | Rm/hour | 2 to 3 | | hour | 4000 |
| P&M-037 | | Pneumatic Road Roller | Rolling of Asphalt Surface | cum/hour | 25 | | hour | 1050 |
| P&M-038 | | Pneumatic Sinking Plant | Pneumatic Sinking of wells | cum/hour | 1.5 to 2.00 | | hour | 4300 |
| P&M-039 | | Pot Hole Repair Machine | Repair of potholes | cum/hour | 4 | | hour | 3050 |
| P&M-040 | | Prestressing Jack with Pump & access | Stressing of steel wires/stands |  |  | | hour | 200 |
| P&M-041 | | Ripper | Scarifying | cum/hour | 60 | | hour | 2400 |
| P&M-042 | | Rotavator | Scarifying | cum/hour | 25 | | hour | 600 |
| P&M-043 | | Road marking machine | Road marking | Sqm/hour | 100 | | hour | 130 |
| P&M-044 | | Smooth Wheeled Roller 8 tonne | Soil Compaction /BM Compaction | cum/hour | 70/25 | | hour | 1000 |
| P&M-045 | | Tandem vibratory Road Roller(8-10 ) | Rolling of Aspalt Surface | cum/hour | 30 | | hour | 325 |
| P&M-046 | | Tipper - 5 cum | Transportation of soil, GSB, WMM, Hotmix etc. | Capacity in cum | 5.5 | | km | 80 |
| P&M-047 | | Tipper - 5 cum | Transportation of soil, GSB, WMM, Hotmix etc. | Capacity in cum | 5.5 | | tonne.km | 20 |
| P&M-048 | | Tipper - 5 cum | Transportation of soil, GSB, WMM, Hotmix etc. | Capacity in cum | 5.5 | | hour | 120 |
| P&M-049 | | Transit Mixer 4.0/4.5 cum | Transportation of Concrete Mix to site | cum/hour | 4.5 | | hour | 1175 |
| P&M-050 | | Transit Mixer 4/4.5 cum | Transportation of Concrete Mix to site | cum/hour | 4.5 | | tonne.km | 45 |
| P&M-051 | | Transit Mixer 3.0 cum | Transportation of Concrete Mix to site | cum/hour | 3 | | hour | 1000 |
| P&M-052 | | Transit Mixer 3.0 cum | Transportation of Concrete Mix to site | cum/hour | 3 | | tonne.km | 40 |
| P&M-053 | | Tractor/Tractor (FARM) | Pulling | capacity in HP | 50 | | hour | 490 |
| P&M-054 | | Tractor with Rotevator | Rate of Tractor + Rotevator |  |  | | hour | 250 |
| P&M-055 | | Tractor with Ripper | Rate of Tractor 6+ Ripper |  |  | | hour | 250 |
| P&M-056 | | Truck 5.5 cum per 10 tonnes | Material Transport | capacity/cum | 4.5 | | km | 100 |
| P&M-057 | | Truck 5.5 cum per 10 tonnes | Material Transport | capacity/cum | 4.5 | | hour | 600 |
| P&M-058 | | Truck 5.5 cum per 10 tonnes | Material Transport | capacity/cum | 4.5 | | tonne.km | 20 |
| P&M-059 | | Vibratory Roller 8 tonne | Earth or soil / GSB / WBM | cum/hour | 100/60/60 | | hour | 1000 |
| P&M-060 | | Water Tanker | Water Transport | capacity in KL | 6 | | hour | 380 |
| P&M-061 | | Water Tanker | Water Transport | capacity in KL | 6 | | km | 50 |
| P&M-062 | | Wet Mix Plant 60 TPH | Wet Mix | cum/hour | 25 | | hour | 1860 |
| P&M-063 | | Air compressor with pneumatic chisel attachment for cutting hard clay. | | | | | hour | 550 |
| P&M-064 | | Batch type cold mixing plant 100-120 TPH capacity producing an average output of 75 tonne per hour | | | | | hour | input |
| P&M-065 | | Belt conveyor system | | | | | hour | input |
| P&M-066 | | Boat to carry atleast 20 persons | | | | | hour | input |
| P&M-067 | | Cement concrete batch mix plant @ 175 cum per hour (effective output) | | | | | hour | 3590 |
| P&M-068 | | Cement concrete batch mix plant @ 75 cum per hour | | | | | hour | 2500 |
| P&M-069 | | Cold milling machine @ 20 cum per hour | | | | | hour | input |
| P&M-070 | | Crane 5 tonne capacity | | | | | hour | 800 |
| P&M-071 | | Crane 10 tonne capacity | | | | | hour | 800 |
| P&M-072 | | Crane 15 tonne capacity | | | | | hour | 1000 |
| P&M-073 | | Crane 20 tonne capacity | | | | | hour | 1500 |
| P&M-074 | | Crane 40 T capacity | | | | | hour | 1800 |
| P&M-075 | | Crane with grab 0.75 cum capacity | | | | | hour | 565 |
| P&M-076 | | Compressor with guniting equipment along with accessories | | | | | hour | 565 |
| P&M-077 | | Drum mix plant for cold mixes of appropriate capacity but not less than 75 tonnes/hour. | | | | | hour | input |
| P&M-078 | | Epoxy Injection gun | | | | | hour | 220 |
| P&M-079 | | Generator 33 KVA | | | | | hour | 500 |
| P&M-080 | | Generator 100 KVA | | | | | hour | 120 |
| P&M-081 | | Generator 250 KVA | | | | | hour | 1100 |
| P&M-082 | | Induction, deinduction and erection of plant and equipment including all components and accessories for pneumatic method of well sinking. | | | | | hour | 2200 |
| P&M-083 | | Joint Cutting Machine with 2-3 blades (for rigid pavement)/Joint concrete cutting machine | | | | | hour | 70 |
| P&M-084 | | Jack for Lifting 40 tonne lifting capacity. | | | | | day | 13250 |
| P&M-085 | | Piling rig Including double acting pile driving hammer (Hydraulic rig) | | | | | hrs | 6900 |
| P&M-086 | | Plate compactor | | | | | hour | 90 |
| P&M-087 | | Snow blower equipment 140 HP @ 600 cum per hour | | | | | hour | input |
| P&M-088 | | Texturing machine (for rigid pavement)/Texturing machine | | | | | hour | 200 |
| P&M-089 | | Truck Trailor 30 tonne capacity | | | | | hour | 1900 |
| P&M-090 | | Truck Trailor 30 tonne capacity | | | | | t.km | 70 |
| P&M-091 | | Tunnel Boring machine | | | | | hour | input |
| P&M-092 | | Vibrating Pile driving hammer complete with power unit and accessories. | | | | | hour | 1400 |
| P&M-093 | | Wet Mix Plant 100 TPH | | | | | hour | 2500 |
| P&M-094 | | Wet Mix Plant 75 TPH | | | | | hour | 2000 |
| P&M-095 | | 2006 Bomag Provpapver 813 RT | | | | | hour | 900 |
| P&M-096 | | 1999 CEC road Runner | | | | | hour | 1,350 |
| P&M-097 | | CEC road Runner | | | | | hour | 1,725 |
| P&M-098 | | 2001 Gilcrest Propaver 813 RT | | | | | hour | 500 |
| P&M-099 | | 2012 Mauldin 1550D Superpaver | | | | | hour | 1,320 |
| P&M-100 | | 1998 Rayner Roadsaver II | | | | | hour | 2,500 |
| P&M-101 | | 2004 Bomag Propaver 813 RT | | | | | hour | 1,000 |
| P&M-102 | | 2007 BOMAG Propaver 814-2 | | | | | hour | 1,200 |
| P&M-103 | | 2012 CEC Road Runner | | | | | hour | 10,850 |
| P&M-104 | | 2009 CEC Road Runner | | | | | hour | 5,200 |
| P&M-105 | | 2003 CEC Road Runner | | | | | hour | 2,610 |
| P&M-106 | | 2007 Elgin Road Wizard | | | | | hour | 1,350 |
| P&M-107 | | 2010 Getman Road Builder | | | | | hour | 3,300 |
| P&M-108 | | 1999 Gilcrest Propaver 413 | | | | | hour | 95 |
| P&M-109 | | 2004 Gilcrest Propaver 813 RT | | | | | hour | 1,050 |
| P&M-110 | | 2003 Gilcrest Propaver 813 RT | | | | | hour | 460 |
| P&M-111 | | 2002 Gilcrest Propaver 813 RT | | | | | hour | 450 |
| P&M-112 | | 2001 Gilcrest Propaver 813 RT | | | | | hour | 390 |
| P&M-113 | | 1998 Gilcrest Propaver 813 RT | | | | | hour | 345 |
| P&M-114 | | 1996 Gilcrest Propaver 813 RT | | | | | hour | 217 |
| P&M-115 | | Gilcrest Propaver 813 RT | | | | | hour | 425 |
| P&M-116 | | 2014 Gilcrest Propaver 4410 | | | | | hour | 745 |
| P&M-117 | | 1998 Mauldin 1500 Superpaver | | | | | hour | 835 |
| P&M-118 | | 1987 Mauldin 1500 Superpaver | | | | | hour | 220 |
| P&M-119 | | 2012 Mauldin 1550 D Superpaver | | | | | hour | 2,100 |
| P&M-120 | | 2001 Mauldin 1750 Superpaver | | | | | hour | 335 |
| P&M-121 | | 1973 Rincheval Roadsprayer | | | | | hour | 145 |
| **(B) Labour** | | | | | | | |
| **Sl. No.** | **Description of Labour** | | | | | **Unit** | **Rate** |
| L-01 | Blacksmith (IInd class) | | | | | day | 460 |
| L-02 | Blacksmith (Ist class)/ Welder/ Plumber/ Electrician | | | | | day | 515 |
| L-03 | Blaster (Stone cutter) | | | | | day | 460 |
| L-04 | Carpenter I Class | | | | | day | 515 |
| L-05 | Chiseller (Head Mazdoor) | | | | | day | 460 |
| L-06 | Driller (Jumper) | | | | | day | 460 |
| L-07 | Diver | | | | | day | 515 |
| L-08 | Fitter | | | | | day | 515 |
| L-09 | Mali | | | | | day | 399 |
| L-10 | Mason (IInd class) | | | | | day | 460 |
| L-11 | Mason (Ist class) | | | | | day | 557 |
| L-12 | Mate / Supervisor | | | | | day | 399 |
| L-13 | Mazdoor | | | | | day | 460 |
| L-14 | Mazdoor/Dresser (Semi Skilled)/Beldar/Bhisti/Chowkidar(Unskilled) | | | | | day | 399 |
| L-15 | Mazdoor/Dresser/Sinker (Skilled) | | | | | day | 460 |
| L-16 | Medical Officer | | | | | day | 557 |
| L-17 | Operator(grouting) | | | | | day | 460 |
| L-18 | Painter I class | | | | | day | 515 |
| L-19 | Para medical personnel | | | | | day | 557 |

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| **(C) Materials** | | | |
| **Sl. No.** | **Description** | **Unit** | **Rate** |
|
| M-001 | Stone Boulder of size 150 mm and below at Cruser Plant | cum | 1000 |
| M-002 | Supply of quarried stone 150 - 200 mm size for Hand Broken at site/Granitic/basaltic boulders 150-200 mm/Soling stone(Basaltic or granitic) 150-200mm | cum | 770 |
| M-003 | Boulder with minimum size of 300 mm for Pitching at Site | cum | 900 |
| M-004 | Coarse sand at Mixing Plant | cum | 1370 |
| M-005 | Coarse sand at Site/Sand(river/manufactured:Coarse/fine) | cum | 1300 |
| M-006 | Fine sand at Site | cum | 1305 |
| M-007 | Moorum at Site/Murrum | cum | 190 |
| M-008 | Gravel/Quarry spall at Site | Cum | 685 |
| M-009 | Granular Material or hard murrum for GSB works at Site | Cum | 685 |
| M-010 | Granular Material or hard murrum for GSB works at Mixing Plant | Cum | 685 |
| M-011 | Fly ash conforming to IS: 3812 ( Part II & I) atHMP Plant / Batching Plant / Crushing Plant | Cum | 435 |
| M-012 | Filter media/Filter Material as per Table 300-3 (MoRT&H Specification) | Cum | 915 |
| M-013 | Close graded Granular sub-base Material 53 mm to 9.5 mm | cum | 1530 |
| M-014 | Close graded Granular sub-base Material 37.5 mm to 9.5 mm | cum | 1600 |
| M-015 | Close graded Granular sub-base Material 26.5 mm to 9.5 mm | cum | 1600 |
| M-016 | Close graded Granular sub-base Material 9.5 mm to 4.75 mm | cum | 1665 |
| M-017 | Close graded Granular sub-base Material 9.5 mm to 2.36 mm | cum | 1665 |
| M-018 | Close graded Granular sub-base Material 4.75mm to 2.36 mm | cum | 1475 |
| M-019 | Close graded Granular sub-base Material 4.75mm to 75 micron mm |  | 1475 |
| M-020 | Close graded Granular sub-base Material 2.36 mm | cum | 1475 |
| M-021 | Stone crusher dust finer than 3mm with not more than 10% passing 0.075 sieve. | cum | 1030 |
| M-022 | Coarse graded Granular sub-base Material 2.36 mm & below | cum | 1335 |
| M-023 | Coarse graded Granular sub-base Material 4.75mm to 75 micron mm | cum | 1335 |
| M-024 | Coarse graded Granular sub-base Material 4.75 mm to 2.36 mm | cum | 1335 |
| M-025 | Coarse graded Granular sub-base Material 9.5 mm to 4.75 mm | cum | 1335 |
| M-026 | Coarse graded Granular sub-base Material 26.5 mm to 4.75 mm | cum | 1130 |
| M-027 | Coarse graded Granular sub-base Material 26.5 mm to 9.5 mm | cum | 1130 |
| M-028 | Coarse graded Granular sub-base Material 37.5 mm to 9.5 mm | cum | 955 |
| M-029 | Coarse graded Granular sub-base Material 53 mm to 26 .5mm | cum | 955 |
| M-030 | Aggregates below 5.6 mm | cum | 1475 |
| M-031 | Aggregates 22.4 mm to 2.36 mm | cum | 1600 |
| M-032 | Aggregates 22.4 mm to 5.6 mm | cum | 1450 |
| M-033 | Aggregates 45 mm to 2.8 mm | cum | 1500 |
| M-034 | Aggregates 45 mm to 22.4 mm | cum | 1500 |
| M-035 | Aggregates 53 mm to 2.8 mm | cum | 1500 |
| M-036 | Aggregates 53 mm to 22.4 mm | cum | 1500 |
| M-037 | Aggregates 63 mm to 2.8 mm | cum | 955 |
| M-038 | Aggregates 63 mm to 45 mm | cum | 1410 |
| M-039 | Aggregates 90 mm to 45 mm | cum | 1280 |
| M-040 | Aggregates 10 mm to 5 mm | cum | 1540 |
| M-041 | Aggregates 11.2 mm to 0.09 mm | cum | 1665 |
| M-042 | Aggregates 13.2 mm to 0.09 mm | cum | 1665 |
| M-043 | Aggregates 13.2 mm to 5.6 mm | cum | 1665 |
| M-044 | Aggregates 13.2 mm to 10 mm | cum | 1500 |
| M-045 | Aggregates 20 mm to 10 mm | cum | 1665 |
| M-046 | Aggregates 25 mm to 10 mm | cum | 1500 |
| M-047 | Aggregates 19 mm to 6 mm | cum | 1450 |
| M-048 | Aggregates 37.5 mm to 19 mm | cum | 1600 |
| M-049 | Aggregates 37.5 mm to 25 mm | cum | 1410 |
| M-050 | Aggregates 6 mm nominal size | cum | 1475 |
| M-051 | Aggregates 10 mm nominal size | cum | 1400 |
| M-052 | Aggregates 13.2/12.5 mm nominal size | cum | 1665 |
| M-053 | Aggregates 20 mm nominal size | cum | 1400 |
| M-054 | Aggregates 25 mm nominal size | cum | 1450 |
| M-055 | Aggregates 40 mm nominal size | cum | 1300 |
| M-056 | AC pipe 100 mm dia | metre | 177 |
| M-057 | Acrylic polymer bonding coat | litre | 298 |
| M-058 | Alluminium Paint | litre | 246 |
| M-059 | Aluminium alloy plate 2mm Thick | sqm | 46750 |
| M-060 | Aluminium alloy/galvanised steel | tonne | 46750 |
| M-061 | Aluminium sheeting fixed with encapsulated lens type reflective sheeting including 2% towards lettering, cost of angle iron, cost of drilling holes, nuts, bolts etc.and signs as applicable | sqm | 12576 |
| M-062 | Aluminium studs 100 x 100 mm fitted with lense reflectors | nos | 168.00 |
| M-063 | Barbed wire | kg | 140 |
| M-064 | Bearing (Cost of parts) | nos | 850 |
| M-065 | Bearing (Cast steel rocker bearing assembly of 250 tonne ) | nos | 75000 |
| M-066 | Bearing (Elastomeric bearing assembly consisting of 7 internal layers of elastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation,) | nos | 21250 |
| M-067 | Bearing (Forged steel roller bearing of 250 tonne | nos | 100000 |
| M-068 | Bearing (Pot type bearing assembly consisting of a metal piston supported by a disc, PTFE pads providing sliding surfaces against stainless steel mating together with cast steel assemblies/fabricated structural steel assemblies duly painted with all components | nos | 37188 |
| M-069 | Bearing (PTFE sliding plate bearing assembly of 80 tonnes ) | nos | 12800 |
| M-070 | Bearing (Supply of sliding plate bearing of 80 tonne) | nos | 12800 |
| M-071 | Bentonite | kg | 5 |
| M-072 | Binding wire | kg | 85 |
| M-073 | Bitumen ( Cationic Emulsion ) | tonne | 50750 |
| M-074 | Bitumen (60-70 grade) vg30-PACKED | tonne | 60192 |
| M-075 | Bitumen (80-100 grade )-vg 10-BULK | tonne | 55620 |
| M-076 | Bitumen (Cutback ) | tonne | - |
| M-077 | Bitumen (emulsion)/Emulsified bitumen(Cationic) | tonne | 50750 |
| M-078 | Bitumen (modified graded) /crumbed rubber bitumen-CRMB 60-/Bulk(VG30 Base) | tonne | 40954 |
| M-079 | Brick/Brick IInd class | each | 8 |
| M-080 | C.I.shoes for the pile | kg | 40 |
| M-081 | Cement | tonne | 6250 |
| M-082 | Cold twisted bars (HYSD Bars)/HYSD Reinforecement/ TMT Steel reinforcement from secondary producers | tonne | 60000 |
| M-083 | Coller for joints 300 mm dia | nos | 2125 |
| M-084 | Compressible Fibre Board(20mm thick) | sqm | 298 |
| M-085 | Connectors/ Staples | each | 255 |
| M-086 | Copper Plate(12m long x 250mmwide) | kg | 77 |
| M-087 | Corrosion resistant Structural steel | tonne | 77000.00 |
| M-088 | Corrugated sheet, 3 mm thick, "Thrie" beam section railing | kg | 95 |
| M-089 | Credit for excavated rock found suitable for use | cum | 255 |
| M-090 | Curing compound | litre | 170 |
| M-091 | Delineators from ISI certified firm as per the standard drawing given in IRC - 79 | each | 497 |
| M-092 | Earth Cost or compensation for earth taken from private land | cum | 350 |
| M-093 | Elastomeric slab seal expansion joint assembly manufactured by using chloroprene, elastomer for elastomeric slab unit conforming to clause 915.1 of IRC: 83 (part II), | metre | 12000 |
| M-094 | Electric Detonators @ 1 detonator for 1/2 gelatin stick of 125 gms each | each | 12 |
| M-095 | Epoxy compound with accessories for preparing epoxy mortar | kg | 319 |
| M-096 | Epoxy mortar/Epoxy ready made mortar | kg | 65 |
| M-097 | Epoxy primer | kg | 275 |
| M-098 | Epoxy resin-hardner mix for prime coat | kg | 425 |
| M-099 | Flag of red color cloth 600 x 600 mm | each | 21 |
| M-100 | Flowering Plants | each | 43 |
| M-101 | Galvanised MS flat clamp | nos | 9 |
| M-102 | Galvanised steel wire crates of mesh size 100 mm x 100 mm woven with 4mm dia. GI wire in rolls of required size. | sqm | 170 |
| M-103 | Galvanised structural steel plate 200 mm wide, 6 mm thick, 24 m long | kg | 47 |
| M-104 | Gelatin 80% | kg | 73 |
| M-105 | Geo grids | sqm | - |
| M-106 | Geomembrane | sqm | 76 |
| M-107 | Geonets | sqm | 60 |
| M-108 | Geotextile | sqm | 60 |
| M-109 | Geotextile filter fabric | sqm | - |
| M-110 | GI bolt 10 mm Dia | nos | 9 |
| M-111 | Grouting pump with agitator | hour | 425 |
| M-112 | Grass (Doob) | kg | 25 |
| M-113 | Grass (Fine) | kg | 100 |
| M-114 | HDPE pipes 75mm dia | metre | 100 |
| M-115 | HDPE pipes 90mm dia | metre | 340 |
| M-116 | Hedge plants | each | 25 |
| M-117 | Helical pipes 600mm diameter | metre | 5100 |
| M-118 | Hot applied thermoplastic compound | litre | 146 |
| M-119 | HTS strand | tonne | 63750 |
| M-120 | Joint Sealant Compound | kg | 128 |
| M-121 | Jute netting, open weave, 2.5 cm square opening for seeding and Mulching | sqm | 43 |
| M-122 | LDO for steam curing | litre | 80.46 |
| M-123 | M.S. Clamps | nos | 3 |
| M-124 | M.S. Clamps | kg | 3 |
| M-125 | M.S.shoes @ 35 Kg per pile of 15 m | kg | 55 |
| M-126 | Mild Steel bars | tonne | 65000.00 |
| M-127 | Modular strip/box seal expansion joint including anchorage catering to a horizontal movement beyond 70 mm and upto 140mm assembly comprising of edge beams, central beam,2 modules chloroprene seal, anchorage elements, support and control system, all steel sections protected against corrosion and installed by the manufacturer or his authorised representative | metre | 32000 |
| M-128 | Modular strip/box seal expansion joint catering to a horizontal movement beyond 140mm and upto 210mm box/box seal joint assembly containing 3 modules/cells and comprising of edge beams, two central beams, chloroprene seal, anchorage elements, support and control system, all steel sections protected against corrosion and installed by the manufacturer or his authorised representative | metre | 65000 |
| M-129 | Nipples 12mm | nos | 13 |
| M-130 | Nuts and bolts | kg | 120 |
| M-131 | Paint | litre | 300 |
| M-132 | Pavement Marking Paint/Road Marking paint | litre | 268 |
| M-133 | Paving Fabric | sqm | 128 |
| M-134 | Perforated geosynthetic pipe 150 mm dia | metre | 179 |
| M-135 | Perforated pipe of cement concrete, internal dia 100 mm | metre | 177 |
| M-136 | Pesticide | kg | 190 |
| M-137 | Pipes 200 mm dia, 2.5 m long for drainage | metre | 140 |
| M-138 | Plastic sheath, 1.25 mm thick for dowel bars | sqm | 170 |
| M-139 | Plastic tubes 50 cm dia, 1.2 m high | nos | 425 |
| M-140 | Polymer braids | metre | 340 |
| M-141 | Pre moulded Joint filler,25 mm thick for expansion joint. | sqm | 1105 |
| M-142 | Pre-coated stone chips of 13.2 mm nominal size | cum | 1530 |
| M-143 | Preformed continuous chloroprene elastomer or closed cell foam sealing element with high tear strength, vulcanised in a single operation for the full length of a joint to ensure water tightness. | metre | 255 |
| M-144 | Pre-moulded asphalt filler board | sqm | 170 |
| M-145 | Pre-packed cement based polymer concrete of strength 45 Mpa at 28 days | kg | 102 |
| M-146 | Primer | kg | 220 |
| M-147 | Quick setting compound | kg | 170 |
| M-148 | Random Rubble Stone | cum | 25 |
| M-149 | RCC Pipe NP 4 heavy duty non presure pipe 1000 mm dia | metre | 10000 |
| M-150 | RCC Pipe NP 4 heavy duty non presure pipe 1200 mm dia | metre | 12500 |
| M-151 | RCC Pipe NP 4 heavy duty non presure pipe 300 mm dia | metre | 3000 |
| M-152 | Reflectorising glass beads | kg | 65 |
| M-153 | Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Copper Strips) | metre | 264 |
| M-154 | Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Galvanised carbon steel strips) | metre | 119 |
| M-155 | Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Glass reinforced polymer/fibre reinforced polymer/polymeric strips) | metre | 94 |
| M-156 | Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. (Stainless steel strips) | metre | 119 |
| M-157 | Reinforcement strips 60 mm wide 5 mm thick as per clause 3102. Aluminium strips) | metre | 132 |
| M-158 | Rivets | each | 2 |
| M-159 | Sand bags (Cost of sand and Empty cement bag) | nos |  |
| M-160 | Sapling 2 m high 25 mm dia | each | 50 |
| M-161 | Scrap tyres of size 900 x 20 | nos | 128 |
| M-162 | Seeds | kg | 17 |
| M-163 | Selected earth /selected earth for refilling | cum | 223 |
| M-164 | Separation Membrane of impermeable plastic sheeting 125 micron thick | sqm | 77 |
| M-165 | Sheathing duct | metre | 128 |
| M-166 | Shrubs | each | 50 |
| M-167 | Sludge / Farm yard manure @ 0.18 cum per 100 sqm at site of work for turfing/Manure | cum | 1500 |
| M-168 | Sodium vapour lamp | each | 850 |
| M-169 | Square Rubble Coursed Stone | cum | 25 |
| M-170 | Steel circular hollow pole of standard specification for street lighting to mount light at 5 m height above deck level | each | 8500 |
| M-171 | Steel circular hollow pole of standard specification for street lighting to mount light at 9 m height above road level | each | 12750 |
| M-172 | Steel drum 300 mm dia 1.2 m high/empty bitumen drum | nos | 150 |
| M-173 | Steel helmet and cushion block on top of pile head during driving. | kg | 60 |
| M-174 | Steel pipe 25 mm external dia as per IS:1239 | metre | 174 |
| M-175 | Steel pipe 50 mm external dia as per IS:1239 | metre | 197 |
| M-176 | Steel wire rope 20 mm | kg | 77 |
| M-177 | Steel wire rope 40 mm | kg | 77 |
| M-178 | Strip seal expansion join | metre | 4564 |
| M-179 | Structural Steel | tonne | 77000 |
| M-180 | Super plastisizer admixture IS marked as per 9103-1999 | kg | 149 |
| M-181 | Synthetic Geogrids as per clause 3102.8 and approved design and specifications. | sqm | - |
| M-182 | Through and bond stone | each | 19 |
| M-183 | Tie rods 20mm diameter | nos | 85 |
| M-184 | Tiles size 300 x 300 mm and 25 mm thick | each | 40 |
| M-185 | Timber | cum |  |
| M-186 | Traffic cones with 150 mm reflective sleeve | nos | 425 |
| M-187 | Tube anchorage set complete with bearing plate, permanent wedges etc | nos | 425 |
| M-188 | Unslaked lime/Lime filler | tonne | 14280.00 |
| M-189 | Water | KL | 150 |
| M-190 | Water based cement paint | litre | 170 |
| M-191 | Welded steel wire fabric | kg | 107 |
| M-192 | Wire mesh 50mm x 50mm size of 3mm wire | kg | 102 |
| M-193 | Wooden ballies 2" Dia for bracing/Jungle wood ballies 50 mm 2.75 m. long | each | 130 |
| M-194 | Wooden ballies 8" Dia and 9 m long | each | 468 |
| M-195 | Wooden packing | cum | 21250 |
| M-196 | Wooden staff for fastening of flag 25 mm dia, one m long | each | 51 |

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| **CHAPTER-1** | | | |
| **CARRIAGE OF MATERIALS** | | | |
| **Item No.** | **Descriptions** | **Unit** | **Rate** |
| 1.1 | **Loading and unloading of stone boulder / stone aggregates / sand / kanker / moorum.** (Placing tipper at loading point, loading with front end loader, dumping, turning for return trip, excluding time for haulage and return trip) | cum | 52.00 |
|  |  |  |  |
| 1.2 | **Loading and Unloading of Boulders by Manual Means** | cum | 105.00 |
|  |  |  |  |
| 1.3 | **Loading and Unloading of Cement or Steel by Manual Means and stacking.** | tonne | 260.00 |
|  |  |  |  |
| 1.4 | **Cost of Haulage Excluding Loading and Unloading** |  |  |
| (i) | Surfaced Road | tonne.km | 1.00 |
|  |  |  |  |
| (ii) | Unsurfaced Gravelled Road | tonne.km | 1.20 |
|  |  |  |  |
| (iii) | Katcha Track and Track in river bed / nallah bed and choe bed. | tonne.km | 2.00 |
|  |  |  |  |
| 1.5 | **Hand Broken Stone Aggregates 63 mm nominal size** (Supply of quarried stone, hand breaking into coarse aggregate 63 mm nominal size (passing 80 mm and retained on 50 mm sieve) and stacking as directed) | cum | 1889.00 |
|  |  |  |  |
| 1.6 | **Crushing of stone aggregates 13.2 mm nominal size.** (Crushing of stone boulders of 150 mm size in an integrated stone crushing unit of 200 tonnes per hour capacity comprising of primary and secondary crushing units, belt conveyor and vibrating screens to obtain stone aggregates of 13 mm nominal size.) | cum | 1762.00 |
|  |  |  |  |
| 1.7 | **Crushing of stone aggregates 20 mm nominal size** (Crushing of stone boulders of 150 mm size in an integrated stone crushing unit of 200 tonnes per hour capacity comprising of primary and secondary crushing units, belt conveyor and vibrating screens to obtain stone aggregates of 20 mm nominal size.) | cum | 1494.00 |
|  |  |  |  |
| 1.8 | **Crushing of stone aggregates 40 mm nominal size** (Crushing of stone boulders of 150 mm size in an integrated stone crushing unit of 200 tonnes per hour capacity comprising of primary and secondary crushing units, belt conveyor and vibrating screens to obtain stone aggregates of 40 mm nominal size) | cum | 1261.00 |

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| **CHAPTER-2** | | | |
| **SITE CLEARANCE** | | | |
| 2.1 | **Cutting of Trees, including Cutting of Trunks, Branches and Removal** (Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material with all lifts and up to a lead of 1000 mtrs and earth filling in the depression/pit.) |  |  |
| (i) | Girth from 300 mm to 600 mm | each | 403.00 |
| (ii) | Girth from 600 mm to 900 mm | each | 698.00 |
| (iii) | Girth from 900 mm to 1800 mm | each | 1389.00 |
| (iv) | Girth above 1800 mm | each | 2659.00 |
| 2.2 | **Clearing Grass and Removal of Rubbish** | hectare | 28796.00 |
| 2.3 | **Clearing and Grubbing Road Land .**(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) |  |  |
| (i) | By Manual Means:- |  |  |
| A | In area of light jungle | hectare | 86980.00 |
| B | In area of thorny jungle | hectare | 116368.00 |
| (ii) | By Mechanical Means |  |  |
| A | In area of light jungle | hectare | 8947.00 |
| B | In area of thorny jungle | hectare | 11605.00 |
| 2.4 | Dismantling of Structures (Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres) |  |  |
| (i) | Lime /Cement Concrete |  |  |
| I | By Manual Means |  |  |
| A | Lime Concrete, cement concrete grade M-10 and below | cum | 589.00 |
| B | Cement Concrete Grade M-15 & M-20 | cum | 704.00 |
| C | Prestressed / Reinforced cement concrete grade M-20 & above | cum | 1869.00 |
| II | By Mechanical Means for items No. 202( b) & ( c) |  |  |
| A | Cement Concrete Grade M-15 & M-20 | cum | 700.00 |
| B | Prestressed / Reinforced cement concrete grade M-20 & above | cum | 1210.00 |
| (ii) | Dismantling Brick / Tile work |  |  |
| A | In lime mortar | cum | 358.00 |
| B | In cement mortar | cum | 474.00 |
| C | In mud mortar | cum | 312.00 |
| D | Dry brick pitching or brick soling | cum | 289.00 |
| (iii) | Dismantling Stone Masonry |  |  |
| A | Rubble stone masonry in lime mortar | cum | 405.00 |
| B | Rubble stone masonry in cement mortar. | cum | 474.00 |
| C | Rubble Stone Masonry in mud mortar. | cum | 358.00 |
| D | Dry rubble masonry | cum | 335.00 |
| E | Dismantling stone pitching/ dry stone spalls. | cum | 312.00 |
| F | Dismantling boulders laid in wire crates including opening of crates and stacking dismantled materials. | cum | 358.00 |
| (iv) | Wood work wrought framed and fixed in frames of trusses upto a height of 5 m above plinth level | cum | 846.00 |
| (v) | Steel work in all types of sections upto a height of 5 m above plinth level excluding cutting of rivet. |  |  |
| A | Including dismembering | tonne | 2235.00 |
| B | Excluding dismembering. | tonne | 1670.00 |
| C | Extra over item No( V ) A and( V ) B for cutting rivets. | tonne | 16.00 |
| (vi) | Scraping of bricks dismantled from brick work including stacking. |  |  |
| A | In lime/Cement mortar | 1000 numbers | 2016.00 |
| B | In mud mortar | 1000 numbers | 720.00 |
| (vii) | Scraping of Stone from dismantled stone masonry |  |  |
| A | In cement and lime mortar | cum | 808.00 |
| B | In Mud mortar | cum | 172.00 |
| (viii) | Scarping plaster in lime or cement mortar from brick/ stone masonry | sqm | 25.00 |
| (ix) | Removing all type of hume pipes and stacking within a lead of 1000 metres including earthwork and dismantling of masonry works. |  |  |
| A | Up to 600 mm dia | metre | 299.00 |
| B | Above 600 mm to 900 mm dia | metre | 404.00 |
| C | Above 900 mm | metre | 692.00 |
| 2.5 | **Dismantling of Flexible Pavements** (Dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable materials separately) |  |  |
| I | By Manual Means |  |  |
| A | Bituminous courses | cum | 1089.00 |
| B | Granular courses | cum | 772.00 |
| II | By Mechanical Means |  |  |
| A | Bituminous course | cum | 402.00 |
| 2.6 | **Dismantling of Cement Concrete Pavement** (Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable materials separately) | cum | 1522.00 |
| 2.7 | **Dismantling Guard Rails** (Dismantling guard rails by manual means and disposal of dismantled material with all lifts and up to a lead of 1000 metres, stacking serviceable materials and unserviceable materials separately.) | metre | 116.00 |
| 2.8 | **Dismantling Kerb Stone** (Dismantling kerb stone by manual means and disposal of dismantled material with all lifts and up to a lead of 1000 metre) | metre | 21.00 |
| 2.9 | **Dismantling Kerb Stone channel** (Dismantling kerb stone channel by manual means and disposal of dismantled material with all lifts and up to a lead of 1000 metre) | metre | 31.00 |
| 2.10 | **Dismantling Kilometre Stone** (Dismantling of kilometre stone including cutting of earth, foundation and disposal of dismantled material with all lifts and lead upto 1000 m and back filling of pit.) |  |  |
| A | **5th KM stone** | each | 569.00 |
| B | **Ordinary KM Stone** | each | 347.00 |
| C | **Hectometre Stone** | each | 69.00 |
| 2.11 | **Dismantling of Fencing** (Dismantling of barbed wire fencing/ wire mesh fencing including posts, foundation concrete, back filling of pit by manual means including disposal of dismantled material with all lifts and up to a lead of 1000 metres, stacking serviceable material and unserviceable material separately. ) | metre | 77.00 |
| 2.12 | **Dismantling of CI Water Pipe Line** (Dismantling of CI water pipe line 600 mm dia including disposal with all lifts and lead upto 1000 metres and stacking of serviceable material and unserviceable material separately under supervision of concerned department) | metre | 198.00 |
| 2.13 | **Removal of Cement Concrete Pipe of Sewer Gutter** (Removal of cement concrete pipe of sewer gutter 1500 mm dia under the supervision of concerned department including disposal with all lifts and up to a lead of 1000 metres and stacking of serviceable and unserviceable material separately but excluding earth excavation and dismantling of masonry works.) | metre | 246.00 |
| 2.14 | **Removal of Telephone / Electric Poles and Lines** (Removal of telephone / Electric poles including excavation and dismantling of foundation concrete and lines under the supervision of concerned department, disposal with all lifts and up to a lead of 1000 metres and stacking the serviceable and unserviceable material separately) | each | 264.00 |

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| **CHAPTER-3** | | | |
| **EARTH WORK, EROSION CONTROL AND DRAINAGE** | | | |
| 3.1 | **Excavation in Soil by Manual Means.** (Excavation for roadway in soil using manual means including loading in truck for carrying of cut earth to embankment site with all lifts and lead upto1000 metres.) | cum | 276.00 |
| 3.2 | **Excavation in ordinary rock by manual means** (Excavation in ordinary rock using manual means including loading in a truck and carrying of excavated material to embankment site with in all lifts and leads upto 1000 metres ) | cum | 396.00 |
| 3.3 | **Excavation in Soil with Dozer with lead upto 100 metres (**Excavation for road way in soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 metres (average lead50 metres), including trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.) | cum | 27.00 |
| 3.4 | **Excavation in Ordinary Rock with Dozer with lead upto 100 metres** (Excavation for roadway in ordinary rock by deploying a dozer, 80 HP including cutting and pushing the cut earth to site of embankment upto a distance of 100 metres (average lead 50 metres ), trimming bottom and side slopes in accordance with the requirements of lines, grades and cross sections.) | cum | 50.00 |
| 3.5 | **Excavation in Hard Rock (requiring blasting) with disposal upto 1000 metres** (Excavation for roadway in hard rock (requiring blasting) by drilling, blasting and breaking, trimming of bottom and side slopes in accordance with requirements of lines, grades and cross sections, loading and disposal of cut road with in all lifts and leads upto 1000 metres ) | cum | 31.00 |
| 3.6 | **Excavation in Soil using Hydraulic Excavator CK 90 and Tippers with disposal upto 1000 metres.** (Excavation for roadwork in soil with hydraulic excavator of0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000m) | cum | 18.00 |
| 3.7 | **Excavation in Ordinary Rockusing Hydraulic ExcavatorCK-90 and Tippers with disposal upto 1000 metres.** (Excavation for roadway in ordinary rock with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, transporting to embankment site within all lifts and lead upto 1000 m, trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.) | cum | 24.00 |
| 3.8 | **Excavation in Hard Rock (blasting prohibited)** (Excavation for roadway in hard rock (blasting prohibited) with rock breakers including breaking rock, loading in tippers and disposal within all lifts and lead upto 1000 metres, trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.) |  |  |
| A | **Mechanised** | cum | 113.00 |
| B | **Manual Method** | cum | 1352.00 |
| 3.9 | **Excavation in Hard Rock (controlled blasting) with disposal upto 1000 metres** (Excavation for roadway in hard rock with controlled blasting by drilling, blasting and breaking, trimming of bottom and side slopes in accordance with requirements of lines, grades and cross sections, loading and disposal of cut road with in all lifts and leads upto 1000 metres ) | cum | 26.00 |
| 3.10 | **Excavation in Marshy Soil** (Excavation for roadway in marshy soil with hydraulic excavator 0.9 cum bucket capacity including cutting and loading in tippers and disposal with in all lifts and lead upto 1000 metres, trimming of bottom and side slopes in accordance with requirements of lines, grades and cross sections.) | cum | 20.00 |
| 3.11 | **Removal of Unserviceable Soil with Disposal upto 1000 metres** (Removal of unserviceable soil including excavation, loading and disposal upto 1000 metres lead but excluding replacement by suitable soil which shall be paid separately as per clause 305.) | cum | 18.00 |
| 3.12 | **Pre-splitting of Rock Excavation Slopes** (Carrying out excavation in hard rock to achieve a specified slope of the rock face by controlled use of explosives and blasting accessories in properly aligned and spaced drill holes, collection of the excavated rock by a 80 HP dozer, loading in tipper by a front end loader and disposing of the material with all lifts and lead upto 1000 m, all as specified in clause No. 303) | sqm | 61.00 |
| 3.13 | **Excavation for Structures** (Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom, backfilling the excavation earth to the extent required and utilising the remaining earth locally for road work.) |  |  |
| (i) | Ordinary soil |  |  |
| A | Manual Means (Depth upto 3 m) | cum | 461.00 |
| B | Mechanical Means (Depth upto 3 m) | cum | 25.00 |
| (ii) | Ordinary rock (not requiring blasting) |  |  |
| A | Manual Means (Depth upto 3 m) | cum | 576.00 |
| B | Mechanical Means | cum | 29.00 |
| (iii) | Hard rock ( requiring blasting ) |  |  |
| A | Manual Means | cum | 838.00 |
| (iv) | Hard rock ( blasting prohibited ) |  |  |
| A | Mechanical Means | cum | 953.00 |
| (v) | Marshy soil |  |  |
| A | Manual means ( upto 3 m depth) | cum | 869.00 |
| B | Mechanical Means | cum | 265.00 |
| 3.14 | **Scarifying Existing Granular Surface to a Depth of 50 mm by Manual Means** (Scarifying the existing granular road surface to a depth of 50 mm and disposal of scarified material within all lifts and leads upto 1000 metres. ) | sqm | 39.00 |
| 3.15 | **Scarifying existing bituminous surface to a depth of 50 mm by mechanical means** (Scarifying the existing bituminous road surface to a depth of 50 mm and disposal of scarified material with in all lifts and lead upto 1000 metres.) | sqm | 3.00 |
| 3.16 | **Embankment Construction with Material Obtained from Borrow Pits** (Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2) | cum | 734.00 |
| 3.17 | **Construction of Embankment with Material Deposited from Roadway Cutting** (Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of table 300-2) | cum | 87.00 |
| 3.18 | **Construction of Subgrade and Earthen Shoulders** (Construction of subgrade and earthen shoulders with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300-2) | cum | 764.00 |
| 3.19 | **Compacting Original Ground** |  |  |
| Case-I | **Compacting original ground supporting subgrade** (Loosening of the ground upto a level of500 mm below the subgrade level, watered, graded and compacted in layers to meet requirement of table 300-2 for subgrade construction.) | cum | 40.00 |
| Case-II | **:Compacting original ground supporting embankment** | cum | 30.00 |
| 3.20 | **Stripping and Storing Top Soil** (Stripping, storing of top soil by road side at 15 m internal and re-application on embankment slopes, cut slopes and other areas in localities where the available embankment material is not conducive to plant growth) | cum | 294.00 |
| 3.21 | **Stripping, storing and re-laying top soil from borrow areas in agriculture fields.** (Stripping of top soil from borrow areas located in agriculture fields, storing at a suitable place, spreading and re-laying after taking the borrow earth to maintain fertility of the agricultural field, finishing it to the required levels and satisfaction of the farmer.) | cum | 16.00 |
| 3.22 | **Turfing with Sods** (Furnishing and laying of the live sods of perennial turf forming grass on embankment slope, verges or other locations shown on the drawing or as directed by the engineer including preparation of ground, fetching of rods and watering) | sqm | 57.00 |
| 3.23 | **Seeding and Mulching** (Preparation of seed bed on previously laid top soil, furnishing and placing of seeds, fertilizer, mulching material, applying bituminous emulsion at the rate of0.23 litres per sqm and laying and fixing jute netting, including watering for 3 months all as per clause 308) | sqm | 195.00 |
| 3.24 | **Surface Drains in Soil** (Construction of unlined surface drains of average cross sectional area 0.40 sqm in soil to specified lines, grades, levels and dimensions to the requirement of clause 301 and 309. Excavated material to be used in embankment within a lead of50 metres (average lead 25 metres)) |  |  |
| A | **Mechanical means** | metre | 30.00 |
| B | **Manual Means** | metre | 115.00 |
| 3.25 | **Surface Drains in Ordinary Rock** (Construction of unlined surface drain of average cross sectional area 0.4 sqm in ordinary rock to specified lines, grades, levels and dimensions as per approved design and to the requirement of clause 301 to 309. Excavated material to be used in embankment at site.) |  |  |
| A | **Mechanical Means** | metre | 61.00 |
| B | **Manual Means** | metre | 173.00 |
| 3.26 | **Surface Drains in Hard Rock** (Rate per metre may be worked out based on quantity of hard rock as per design.) | metre |  |
| 3.27 | **Sub Surface Drains with Perforated Pipe** (Construction of subsurface drain with perforated pipe of 100 mm internal diameter of metal/ asbestos cement/ cement concrete/PVC, closely jointed, perforations ranging from 3 mm to 6 mm depending upon size of material surrounding the pipe, with 150 mm bedding below the pipe and 300 mm cushion above the pipe, cross section of excavation 450 x 550 mm. Excavated material to be utilised in roadway at site ) | metre | 593.00 |
| 3.28 | **Aggregate Sub- Surface Drains** (Construction of aggregate sub surface drain 300 mm x 450 mm with aggregates conforming to table 300-4, excavated material to be utilised in roadway ) | metre | 234.00 |
| 3.29 | **Underground Drain at Edge of Pavement** (Construction of an underground drain 1 m x 1 m (inside dimensions) lined with RCC-20 cm thick and covered with RCC slab10 cm in thickness on urban roads) | metre | 4962.00 |
| 3.30 | **Preparation and Surface Treatment of formation.** (Preparation and surface treatment of formation by removing mud and slurry, watering to the extent needed to maintain the desired moisture content, trimming to the required line, grade, profile and rolling with 8-10 tonne smooth wheeled roller, complete as per clause 310.) | sqm | 4.00 |
| 3.31 | **Construction of Rock fill Embankment** (Construction of rock fill embankment with broken hard rock fragments of size not exceeding 300 mm laid in layers not exceeding 500 mm thick including filling of surface voids with stone spalls, blinding top layer with granular material, rolled with vibratory road roller, all complete as per clause 313) | cum | 55.00 |
| 3.32 | **Excavation in Hill Area in Soil by Mechanical Means** (Excavation in soil in hilly area by mechanical means including cutting and trimming of side slopes and disposing of excavated earth with all lifts and lead upto 1000 metres) | cum | 51.00 |
| 3.33 | **Excavation in Hilly Area in Ordinary Rock by Mechanical Means not Requiring Blasting.** (Excavation in hilly area in ordinary rock not requiring ballasting by mechanical means including cutting and trimming of slopes and disposal of cut material with all lift and lead upto 1000 metres ) | cum | 84.00 |
| 3.34 | **Excavation in Hilly Areas in Hard Rock Requiring Blasting** (Excavation in hilly areas in hard rock requiring blasting, by mechanical means including trimming of slopes and disposal of cut material with all lifts and lead upto 1000 metres.) | cum | 137.00 |
| 3.35 | **Work in Urban Roads** (The cost of earth work in urban roads inhabited area will be comparatively higher due to following reasons:) |  | To be worked out as per site conditions |
| 3.36 | **Construction of embankment** with Flyash conforming to table 1 of IRC: SP: 58 - 2001 obtained from coal or lignite burning thermal power stations as waste material, spread and compacted in layer of 200mm thickness each at OMC, all as specified in IRC: SP: 58-2001 and as per approved plans. | cum | 850.00 |

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| **CHAPTER-4** | | | |
| **SUB-BASES, BASES ( NON- BITUMINOUS) AND SHOULDERS** | | | |
| 4.1 | **Granular Sub-base with Close Graded Material (Table:- 400-1)** |  |  |
| A | **Plant Mix Method** (Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 ) |  |  |
| (i) | for grading- I Material | cum | 3945.00 |
| (ii) | for grading- II Material | cum | 3990.00 |
| (iii) | for grading-III Material | cum | 3952.00 |
| B | **By Mix in Place Method** (Construction of granular sub-base by providing close graded material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401) |  |  |
| (i) | for grading- I Material | cum | 2469.00 |
| (ii) | for grading- II Material | cum | 2515.00 |
| (iii) | for grading-III Material | cum | 2476.00 |
| 4.2 | **Granular Sub-Base with Coarse Graded Material ( Table:- 400- 2)** (Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401) |  |  |
| (i) | for grading- I Material | cum | 1792.00 |
| (ii) | for grading- II Material | cum | 1902.00 |
| (iii) | for grading-III Material | cum | 2140.00 |
| 4.3 | **Lime Stabilisation for Improving Subgrade** (Laying and spreading available soil in the subgrade on a prepared surface, pulverising, mixing the spread soil in place with rotavator with 3 % slaked lime having minimum content of 70% of CaO, grading with motor grader and compacting with the road roller at OMC to the desired density to form a layer of improved sub grade) |  |  |
| A | By Mechanical Means | cum | 1028.00 |
| B | By Manual Means | cum | 1142.00 |
| 4.4 | **Lime Treated Soil for Sub- Base** (Providing, laying and spreading soil on a prepared sub grade, pulverising, mixing the spread soil in place with rotavator with 3 % slaked lime with minimum content of 70% of CaO, grading with motor grader and compacting with the road roller at OMC to achieve at least 98%of the max dry density to form a layer of sub base.) | cum | 1285.00 |
| 4.5 | **Cement Treated Soil Sub Base/ Base** (Providing, laying and spreading soil on a prepared sub grade, pulverising, adding the designed quantity of cement to the spread soil, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base.) | cum | 907.00 |
| 4.6 | **Cement Treated Crushed Rock or combination as per clause 403.2 and table 400.4in Sub base/ Base** (Providing, laying and spreading Material on a prepared sub grade, adding the designed quantity of cement to the spread Material, mixing in place with rotavator, grading with the motor grader and compacting with the road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base.) |  |  |
| (i) | **For Sub-Base course** | cum | 3077.00 |
| (ii) | **For Base course** | cum | 2606.00 |
| 4.7 | **Making 50 mm x 50 mm Furrows** (Making 50 mm x 50 mm furrows, 25mm deep, 450 to the center line of the road and at one metre interval in the existing thin bituminous wearing coarse including sweeping and disposal of excavated material within 1000 metres lead) | sqm | 1260.00 |
| 4.8 | **Inverted Choke** (Construction of inverted choke by providing, laying, spreading and compacting screening B type/ coarse sand of specified grade in uniform layer on a prepared surface with motor grader and compacting with power roller etc) | cum | 2077.00 |
| 4.9 | **Water Bound Macadam** (Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting to the required density) |  |  |
| A | **By Manual Means** |  |  |
| (i) | Grading- I (Using Screening Crushable type such as Moorum or Gravel) |  |  |
| (a) | Using Screening Crushable type such as Moorum or Gravel | cum | 2470.00 |
| (b) | Using Screening Type-A (13.2mm Agg.) | cum | 2963.00 |
| (ii) | Grading- II (Using Screening Crushable type such as Moorum or Gravel) |  |  |
| (a) | Using Screening Crushable type such as Moorum or Gravel | cum | 2658.00 |
| (b) | Using Screening Type-A (13.2mm Agg.) | cum | 2932.00 |
| (c) | Using Screening Type-B (11.2mm Agg.) | cum | 3016.00 |
| (iii) | Grading- III (Using Screening Crushable type such as Moorum or Gravel) |  |  |
| (a) | Using Screening Crushable type such as Moorum or Gravel | cum | 2790.00 |
| (b) | Using Screening Type-B (11.2mm Agg.) | cum | 3148.00 |
| B | By Mechanical Means: |  |  |
| (i) | Grading- I (Using Screening Crushable type such as Moorum or Gravel) |  |  |
| (a) | Using Screening Crushable type such as Moorum or Gravel | cum | 2108.00 |
| (b) | Using Screening Type-A (13.2mm Agg.) | cum | 2601.00 |
| (ii) | Grading- II (Using Screening Crushable type such as Moorum or Gravel) |  |  |
| (a) | Using Screening Crushable type such as Moorum or Gravel | cum | 2296.00 |
| (b) | Using Screening Type-A (13.2mm Agg.) | cum | 2570.00 |
| (c) | Using Screening Type-B (11.2mm Agg.) | cum | 2654.00 |
| (iii) | Grading- III (Using Screening Crushable type such as Moorum or Gravel) |  |  |
| (a) | Using Screening Crushable type such as Moorum or Gravel | cum | 2428.00 |
| (b) | Using Screening Type-B (11.2mm Agg.) | cum | 2786.00 |
| 4.10 | **Crushed Cement Concrete Sub-base / Base** (Breaking and crushing of material obtained by breaking damaged cement concrete slabs to size range not exceeding 75 mm as specified in table 400.7 transporting the aggregates obtained from breaking of cement concrete slabs at a lead of L km., laying and compacting the same as sub base/ base course, constructed as WBM to clause 404 except the use of screening or binding Material.) | cum | 1593.00 |
| 4.11 | **Penetration Coat Over Top Layer of Crushed Cement Concrete Base** (Spraying of bitumen over cleaned dry surface of crushed cement concrete base at the rate of 25 kg per 10 sqm by a bitumen pressure distributor, spreading of key aggregates at the rate of 0.13 cum per 10 sqm by a mechanical gritter and rolling the surface as per MORT& H Specifications, Fifth Edition. | sqm | 28.00 |
| 4.12 | **Wet Mix Macadam** (Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density) | cum | 4091.00 |
| 4.13 | **Construction of Median and Island with Soil Taken from Roadway Cutting** (Construction of Median and Island above road level with approved material deposited at site from roadway cutting and excavation for drain and foundation of other structures, spread, graded and compacted as per clause 407) | cum | 269.00 |
| 4.14 | **Construction of Median and Island with Soil Taken from Borrow Areas** (Construction of median and Island above road level with approved material brought from borrow pits, spread, sloped and compacted as per clause 407) | cum | 559.00 |
| 4.15 | **Construction of Shoulders** (A. Earthen Shoulders) |  |  |
| 4.16 | **Footpaths and Separators** (Construction of footpath/separator by providing a 150 mm compacted granular sub base as per clause 401 and 25 mm thick cement concrete grade M15, over laid with precast concrete tiles in cement mortar 1:3 including provision of all drainage arrangements but excluding kerb channel) | sqm | 1074.00 |
| 4.17 | **Crusher Run Macadam Base** (Providing crushed stone aggregate, depositing on a prepared surface by hauling vehicles, spreading and mixing with a motor grader, watering and compacting with a vibratory roller to clause 410 to form a layer of sub-base/Base) |  |  |
| A | By Mix in Place Method |  |  |
| (i) | For 53 mm maximum size | cum | 2396.00 |
| (ii) | For 45 mm maximum size | cum | 2425.00 |
| B | By Mixing Plant |  |  |
| (i) | For 53 mm maximum size | cum | 3840.00 |
| (ii) | For 45 mm maximum size | cum | 2428.00 |
|  |  |  |  |
| 4.18 | Supplying and stacking laterite stones of size 150-200 mm(contractor's stone) for soling at site | cum | 1340.72 |
|  |  |  |  |
| 4.19 | Stacking of material like soling of material like soling stone, aggregates, sand boulders, laterite stone etc. for measurements. | cum | 83.42 |
|  |  |  |  |
| 4.20. | Supplying and stacking of (contractor's material) Murrum at site,having P.I. Value not more than 6 | cum | 540.57 |
|  |  |  |  |
| 4.21 | Laying stone soiling including packing with smaller stones and consolidation with road roller including spreading, watering and consolidating of binding material Murrum or earth etc.(payment to be made for quantity of only soling stone used excluding binding material). | cum | 521.62 |
|  |  |  |  |
| 4.22 | Laying and spreading 6 mm thick layer of granular material (gravel or murrum) including watering and rolling with hand roller etc. complete. | cum | 8.01 |
|  |  |  |  |
| 4.23 | Supplying of laterite stone soling of size 150-200 mm size and murrum having P.I. Value not more than 6 and laying including packing with smaller stones and consolidation with power road roller including spreading, watering and consolidation of binding material etc.(Measurements shall be considered on finished item) . | cum | 1848.55 |
|  |  |  |  |
| 4.24 | Supplying and stacking of grantic or basaltic stones of size 150-200 mm size for soling work (contractor's material) at site. | cum | 1910.21 |
|  |  |  |  |
| 4.25 | Supplying of granitic or basaltic stone soling of size 15-20 cm and Murrum having P.I. Value not more than 6 and laying including packing with smaller stones and consolidation with power roller including spreading waters and consolidation of binding material etc. complete. (Measurements shall be considered on finished item and and layer of WBM of 50/75mm thick shall be taken seperately over this sub-base to obtain smooth surface, as per the directives of Engineer in-charge). | cum | 2427.84 |
|  |  |  |  |
| 4.26 | Rubble packing with hard laterite stone under floors including watering, ramming & consolidating etc. complete | cum | 2189.25 |

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| **CHAPTER-5** | | | |
| **BASES AND SURFACE COURSES (BITUMINOUS)** | | | |
| 5.1 | **Prime coat** (Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means.) | sqm | 39.00 |
| 5.2 | **Tack coat** |  |  |
|  | **Providing and applying tack coat with bitumen emulsion** using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom. | sqm | 14.00 |
| 5.3 | **Bituminous Macadam** (Providing and laying bituminous macadam with 100-120 TPH hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading premixed with bituminous binder, transported to site, laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled as per MORT& H Specifications,Fifth Edition. |  |  |
| (i) | for Grading I ( 40 mm nominal size ) | cum | 9710.00 |
| (ii) | for GradingII(19 mm nominal size) | cum | 9741.00 |
| 5.4 | **Bituminous Penetration Macadam** (Construction of penetration macadam over prepared Base by providing a layer of compacted crushed coarse aggregate using chips spreader with alternate applications of bituminous binder and key aggregates and rolling with a smooth wheeled steel roller 8-10 tonne capacity to achieve the desired degree of compaction)as per MORT& H Specifications, Fifth Edition. |  |  |
| A | 50 mm thick | sqm | 507.00 |
| B | 75 mm thick | sqm | 629.00 |
| 5.5 | **Built-Up-Spray Grout** (Providing, laying and rolling of built-up-spray grout layer over prepared base consisting of a two layer composite construction of compacted crushed coarse aggregates using motor grader for aggregates. key stone chips spreader may be used with application of bituminous binder after each layer, and with key aggregates placed on top of the second layer to serve as a Base conforming to the line, grades and cross-section specified, the compacted layer thickness being 75 mm) | sqm | 432.00 |
| 5.6 | **Dense Graded Bituminous Macadam** (Providing and laying dense bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5% by weight of total mix of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 505 complete in all respects.) |  |  |
| (i) | for Grading I ( 40 mm nominal size ) | cum | 12410.00 |
| (ii) | for GradingII(19 mm nominal size) | cum | 12453.00 |
| 5.7 | **Semi - Dense Bituminous Concrete** (Providing and laying semi dense bituminous concrete with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.5 to 5 % of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORT& H Specifications, Fifth Edition. |  |  |
| (i) | for Grading I ( 13 mm nominal size ) | cum | 12872.00 |
| (ii) | for GradingII(10 mm nominal size) | cum | 13711.00 |
| 5.8 | **Bituminous Concrete** (Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6 % of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 507 complete in all respects) |  |  |
| (i) | for Grading-I ( 13 mm nominal size ) | cum | 14079.00 |
| (ii) | for Grading-II(10 mm nominal size) | cum | 13975.00 |
| 5.9 | **Surface Dressing** (Providing and laying surface dressing as wearing course in single coat using crushed stone aggregates of specified size on a layer of bituminous binder laid on prepared surface and rolling with 8-10 tonne smooth wheeled steel roller) as per MORT& H Specifications, Fifth Edition. |  |  |
| Case -1 | 19 mm nominal chipping size | sqm | 116.00 |
| Case - II | 13 mm nominal size chipping | sqm | 96.00 |
| 5.10 | **Open - Graded Premix Surfacing** (Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen or cut-back or emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 tonne capacity, finished to required level and grades.) |  |  |
| (i) | Case - I: Mechanical method using Penetration grade Bitumen and HMP of appropriate capacity not less than 75 tonnes/hour . | sqm | 197.00 |
| (ii) | **Case - II: Open-Graded Premix Surfacing using cationic Bitumen Emulsion** | sqm | 210.00 |
| 5.11 | **Close Graded Premix Surfacing/Mixed Seal Surfacing** (Mechanical means using HMP of appropriate capacity not less than 75 tonnes/hour. Providing, laying and rolling of close-graded premix surfacing material of 20 mm thickness composed of 11.2 mm to 0.09 mm (Type-a) or 13.2 mm to 0.09 mm (Type-b) aggregates using penetration grade bitumen to the required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a Smooth wheeled roller 8-10 tonne capacity, and finishing to required level and grade. ) | sqm | 251.00 |
| 5.12 | **Seal Coat** (Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A and B seal coats) |  |  |
| (i) | **Case - I : Type A** | sqm | 89.00 |
| (ii) | **Case - II : Type B** (Providing and laying of premix sand seal coat with HMP of appropriate capacity not less than 75 tonnes/ hours using crushed stone chipping 6.7 mm size and penetration bitumen of suitable grade.) | sqm | 72.00 |
| 5.13 | **Mastic Asphalt** (Providing and laying 25 mm thick mastic asphalt wearing course with paving grade bitumen meeting the requirements given in table 500-29, prepared by using mastic cooker and laid to required level and slope after cleaning the surface, including providing antiskid surface with bitumen precoated fine-grained hard stone chipping of 13.2 mm nominal size at the rate of 0.005cum per 10 sqm and at an approximate spacing of 10 cm center to center in both directions, pressed into surface when the temperature of surfaces not less than 1000C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 515.) | sqm | 910.00 |
| 5.14 | **Slurry Seal** Providing and laying slurry seal consisting of a mixture of fine aggregates, portland cement filler, bituminous emulsion and water on a road surface including cleaning of surface, mixing of slurry seal in a suitable mobile plant, laying and compacting to provide even riding surface) |  |  |
| (i) | 5 mm thickness | sqm | 92.00 |
| (ii) | 3 mm thickness | sqm | 62.00 |
| (iii) | 1.5 mm thickness | sqm | 38.00 |
| 5.15 | Fog Spray | sqm | 47.00 |
| 5.16 | **1.In case it is decided by the engineer to blind the fog spray, the following may be added** | sqm | 7.00 |
| 5.17 | **Sand Asphalt Base Course** (Providing, laying and rolling sand-asphalt base course composed of sand, mineral filler and bituminous binder on a prepared sub-grade or sub-base to the lines, levels, grades and cross sections as per the drawings including mixing in a plant of suitable type and capacity, transporting, laying, compacting and finishing.) | cum | 12861.00 |
| 5.18 | **Crack Prevention Courses** |  |  |
| (i) | **Stress Absorbing Membrane (SAM) crack width less than 6 mm** (Providing and laying of a stress absorbing membrane over a cracked road surface, with crack width below 6 mm after cleaning with a mechanical broom, using modified binder complying with clause 521, sprayed at the rate of 9 kg per 10 sqm and spreading 5.6 mm crushed stone aggregates @ 0.11 cum per 10 sqm with hydraulic chip spreader, sweeping the surface for uniform spread of aggregates and surface finished as per MORT& H Specifications, Fifth Edition.) | sqm | 65.00 |
| (ii) | **Stress Absorbing Membrane (SAM) with crack width 6 mm to 9 mm** (Providing and laying of a stress absorbing membrane over a cracked road surface, with crack width 6 to 9 mm after cleaning with a mechanical broom, using modified binder complying with clause 521, sprayed at the rate of 11 kg per 10 sqm and spreading 11.2 mm crushed stone aggregates @ 0.12 cum per 10 sqm, sweeping the surface for uniform spread of aggregates and surface finished as per MORT& H Specifications, Fifth Edition.) | sqm | 74.00 |
| (iii) | **Stress Absorbing Membrane (SAM) crack width above 9 mm and cracked area above 50 %** (Providing and laying a single coat of a stress absorbing membrane over a cracked road surface, with crack width above 9 mm and cracked area above 50 % after cleaning with a mechanical broom, using modified binder complying with clause 521, sprayed at the rate of 15 kg per 10 sqm and spreading 11.2 mm crushed stone aggregates @ 0.12 cum per 10 sqm, sweeping the surface for uniform spread of aggregates and surface finished to conform to clause 902.) | sqm | 97.00 |
| **CHAPTER-6** | | | |
| **GEOSYNTHETICS AND REINFORCED EARTH** | | | |
| 6.1 | **Reinforced Earth Retaining Wall** (Reinforced earth retaining walls have four main components as under: a) Excavation for foundation, foundation concrete and cement concrete grooved seating in the foundation for facing elements (facia material). b) Facia material and its placement. c) Assembling, joining with facing elements and laying of the reinforcing elements. d) Earthfill with granular material which is to be retained by the wall.) |  |  |
| (i) | Facing elements of RCC | sqm | 2032.00 |
|  |  |  |  |
| (ii) | Assembling, joining and laying of reinforcing elements. |  |  |
|  |  |  |  |
| A | With reinforcing element of steel / Aluminium strips / polymeric strips. |  |  |
| (a) | Galvanised carbon steel strips | metre | 167.00 |
| (b) | Glass reinforced polymer/fibre reinforced polymer/polymeric strips | metre | 134.00 |

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| **CHAPTER-7** | | | |
| **TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES** | | | |
| 7.1 | **Cast in Situ Cement Concrete M20 kerb** (Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 409) |  |  |
| A | Using Concrete Mixer | metre | 332.00 |
| B | Using Concrete Batching and Mixing Plant | metre | 311.00 |
| 7.2 | **Cast in Situ Cement Concrete M 20 Kerb with Channel** (Construction of cement concrete kerb with channel with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M10 grade foundation 150 mm thick, kerb channel 300 mm wide, 50 mm thick in PCC M20 grade, sloped towards the kerb, kerb stone with channel laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 409) |  |  |
| A | Using Concrete Mixer | metre | 614.00 |
| B | Using Concrete Batching and Mixing Plant | metre | 593.00 |
| 7.3 | **Printing new letter and figures of any shade** (Printing new letter and figures of any shade with synthetic enamel paint black or any other approved colour to give an even shade) |  |  |
| (i) | **Hindi** ( Matras commas and the like not to be measured and paid for Half letter shall be counted as half ) | cm height per letter | 1.00 |
| (ii) | **English and Roman** | cm height per letter | 1.00 |
| 7.4 | **Retro- reflectorised Traffic signs** (Providing and fixing of retro- reflectorised cautionary, mandatory and informatory sign as per IRC :67 2012 made of high intensity Grade sheeting using ASTM sheeting "C' type XI micro prismatic retro reflective material vide clause 801.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing)etc complete as per MORT &H Specifications Fifth Edition. A 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be submitted by the contractor. |  |  |
| ( i ) | 90 cm equilateral triangle | each | 8118.00 |
| ( ii ) | 60 cm equilateral triangle | each | 5166.00 |
| ( iii ) | 60 cm circular | each | 7099.00 |
| ( iv ) | 80 mm x 60 mm rectangular | each | 10096.00 |
| ( v ) | 60 cm x 45 cm rectangular | each | 6901.00 |
| (vi ) | 60 cm x 60 cm square | each | 8270.00 |
| ( vii ) | 90 cm high octagon | each | 13018.00 |
| 7.5 | **Direction and Place Identification signs upto 0.9 sqm size board.** (Providing and erecting direction and place identification retro-reflectorised sign as per IRC :67 2012 made of high intensity Grade sheeting using ASTM sheeting "C' type XI micro prismatic retro reflective material vide clause 801.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing)etc complete as per MORT &H Specifications Fifth Edition. A 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be submitted by the contractor. | sqm | 18295.00 |
| 7.6 | **Direction and Place Identification signs with size more than 0.9 sqm size board.** (Providing and erecting direction and place identification retro-reflectorised sign as per IRC :67 2012 made of high intensity Grade sheeting using ASTM sheeting "C' type XI micro prismatic retro reflective material vide clause 801.3, fixed over aluminium sheeting, 2 mm thick with area exceeding 0.9 sqm supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm, 2 Nos. firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing)etc complete as per MORT &H Specifications Fifth Edition. A 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be submitted by the contractor. | sqm | 18851.00 |
| 7.7 | **Overhead Signs** (Providing and erecting overhead signs with a corrosion resistant aluminium alloy sheet as per IRC :67 2012 made of high intensity Grade sheeting using ASTM sheeting "C' type XI micro prismatic retro reflective material with vertical and lateral clearance given in clause 802.2 and 802.3 and installed as per clause 802.7 over a designed support system of aluminium alloy or galvanised steel trestles and trusses of sections and type as per structural design requirements and approved plans)A 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be submitted by the contractor. |  |  |
| A | **Truss and Vertical Support** | tonne | 75844.00 |
| B | **Aluminium alloy plate for over head sign** | Sqm | 56725.00 |
| 7.8 | **Painting Two Coats on New Concrete Surfaces** (Painting two coats after filling the surface with synthetic enamel paint in all shades on new plastered concrete surfaces) | sqm | 100.00 |
| 7.9 | **Painting on Steel Surfaces** (Providing and applying two coats of ready mix paint of approved brand on steel surface after through cleaning of surface to give an even shade) | sqm | 94.00 |
| 7.10 | **Painting on Wood Surfaces** (Providing and applying two coats of ready mix paint of approved brand on wood surface after through cleaning of surface to give an even shade) | sqm | 104.00 |
| 7.11 | **Painting Lines, Dashes, Arrows etc on Roads in Two Coats on New Work** (Painting lines, dashes, arrows etc on roads in two coats on new work with ready mixed road marking paint conforming to IS:164 on bituminous surface, including cleaning the surface of all dirt, dust and other foreign matter, demarcation at site and traffic control ) |  |  |
| (i) | Over 10 cm in width | sqm | 173.00 |
| (ii) | Up to 10 cm in width | sqm | 148.00 |
| 7.12 | **Painting Lines, Dashes, Arrows etc on Roads in Two Coats on Old Work** (Painting lines, dashes, arrows etc on roads in two coats on old work with ready mixed road marking paint confirming to IS: 164 on bituminous surface, including cleaning the surface of all dirt, dust and other foreign matter, demarcation at site and traffic control ) |  |  |
| (i) | Over 10 cm in width | sqm | 120.00 |
| (ii) | Up to 10 cm in width | sqm | 130.00 |
| 7.13 (i) | **Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface** (Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes.) | sqm | 465.00 |
| 7.13 (ii) | Providing and laying of hot applied thermoplastic compound rumbler strips in two layers 2.5 mm thick each, top layer with reflectorising glass beads @ 250 gms per sqm area, total thickness of 5.00 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes. | sqm |  |
|  |  |  |  |
| 7.14 | **Kilo Metre Stone** (Reinforced cement concrete M15grade kilometre stone of standard design as per IRC:8-1980, fixing in position including painting and printing etc) |  |  |
| (i) | 5th kilometre stone (precast) | each | 4549.00 |
| (ii) | Ordinary Kilometer stone (Precast) | each | 2695.00 |
| (iii) | Hectometer stone (Precast) | each | 781.00 |
| 7.15 | **Road Delineators** (Supplying and installation of delineators (road way indicators, hazard markers, object markers), 80-100 cm high above ground level, painted black and white in 15 cm wide stripes, fitted with 80 x 100 mm rectangular or 75 mm dia circular reflectorised panels at the top, buried or pressed into the ground and confirming toIRC-79 and the drawings.) | each | 681.00 |
| 7.16 | **Boundary pillar** (Reinforced cement concrete M15 grade boundary pillars of standard design as per IRC:25-1967, fixed in position including finishing and lettering but excluding painting) | each | 766.00 |
| 7.17 | **G.I Barbed wire Fencing 1.2 metre high** (Providing and fixing 1.2 metres high GI barbed wire fencing with 1.8 m angle iron posts 40 mm x 40 mm x 6 mm placed every 3 metres center to center founded in M15 grade cement concrete, 0.6 metre below ground level, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with 9 horizontal lines and 2 diagonals interwoven with horizontal wires, fixed with GI staples, turn buckles etc complete as per clause 807) | metre | 486.00 |
| 7.18 | **G.I Barbed wire Fencing 1.8 metre high** (Providing and fixing 1.8 metres high GI barbed wire fencing with 2.4 m angle iron posts 50 mm x 50 mm x 6 mm placed every 3 metres center to center founded in M15 grade cement concrete, 0.6 metre below ground level, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with 12 horizontal lines and 2 diagonals interwoven with horizontal wires, fixed with GI staples, turn buckles etc complete as per clause 807) | metre | 782.00 |
| 7.19 | **Fencing with welded steel wire Fabric 75 mm x 50 mm (Suggestive)** (Providing 1.20 metre high fencing with angle iron posts 50 mm x 50 mm x 6 mm at 3 metre center to center with 0.40 metre embedded in M15 grade cement concrete, corner, end and every 10th post to be strutted, provided with welded steel wire fabric of 75 mm x 50 mm mesh or 75 mm x 25 mm mesh and fixed to iron posts by flat iron 50 x 5 mm and bolts etc. complete in all respects.) | metre | 1148.00 |
| 7.20 | **Tubular Steel Railing on Medium Weight steel channel ( ISMC series) 100 mm x 50 mm** (Providing, fixing and erecting 50 mm dia steel pipe railing in 3 rows duly painted on medium weight steel channels (ISMC series) 100 mm x 50 mm, 1.2 metres high above ground, 2 m centre to centre, complete as per approved drawings) | metre | 2305.00 |
| 7.21 | **Tubular Steel Railing on Precast RCC posts, 1.2 m high above ground level** (Providing, fencing and erecting 50 mm dia painted steel pipe railing in 3 rows on precast M20 grade RCC vertical posts1.8 metres high (1.2 m above GL) with 3 holes 50 mm dia for pipe, fixed 2 metres centre to, complete as per approved drawing) | metre | 1615.00 |
| 7.22 | **Reinforced Cement Concrete Crash Barrier** (Provision of an Reinforced cement concrete crash barrier at the edges of the road, approaches to bridge structures and medians, constructed with M-20 grade concrete with HYSD reinforcement conforming to IRC:21 and dowel bars 25 mm dia, 450 mm long at expansion joints filled with pre-moulded asphalt filler board, keyed to the structure on which it is built and installed as per design given in the enclosure to MOST circular No. RW/NH - 33022/1/94-DO III dated 24 June 1994 as per dimensions in the approved drawing and at locations directed by the Engineer, all as specified) |  |  |
| (i) | M 20 grade concrete | metre | 5522.00 |

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| 7.23 | **Metal Beam Crash Barrier** |  |  |
| A | Providing and erecting a "W" metal beam crash barrier \providing and erecting "W" Beam Crash barrier comprising of following three factory made unites-viz. 1) W Beam 2) Spacer Block 3) Vertical Post. The "W" beam 3mm thick cold roll formed guard rail raw material Conforming to IS-5986-2011 with minimum Grade 255 & with minimum yield stress of 255 Mpa which is fixed by bolted connection to spacer block C-channel of size 150mm\* 75mm & 5mm thick, 33cm height spaced 2meter centre to centre, fixed to Vertical Post C-channel of size 150mm\*75mm&5mm thick cold roll formed section made from HR coils raw material conforming to IS-5986-2011 with minimum Grade 255 & with minimum yield stress of 255MPa, with 70cms free height above road or Ground level, and embedded to 110cms deep in cement concrete block of size 35cm\*35\*115cm or as directed by Engineer Incharge, assembled & fixed as per drawings of MORTH&H Circular No.RW/NH/33022/1/94-DO/III, dated 24/6/1994 & construction operation as per 811 or revevant MORT&H specifications for Roads & Bridge Works (latest edition). All fittings (bolts, nuts, fasteners, washers etc.) shall be conforming to IS:1367 & IS:1364 & galvanished by hot dip zinc coated process @0.55kg/m2 conforming to relevent IS specifications all etc. complete | metre | 4607.00 |
| B | Type - B, Providing and erecting a "Thrie" metal beam crash barrier \providing and erecting "Thrie Beam " Crash barrier comprising of following three factory made unites-viz. 1) Thrie Beam 2) Spacer Block 3) Vertical Post. The Thrie beam 3mm thick cold roll formed guard rail raw material Conforming to IS-5986-2011 with minimum Grade 255 & with minimum yield stress of 255 Mpa which is fixed by bolted connection to spacer block C-channel of size 150mm\* 75mm & 5mm thick, 54.6cm height spaced 2meter centre to centre, fixed to Vertical Post C-channel of size 150mm\*75mm&5mm thick cold roll formed section made from HR coils raw material conforming to IS-5986-2011 with minimum Grade 255 & with minimum yield stress of 255MPa, with 85cms free height above road or Ground level, and embedded to 115cms deep in cement concrete block of size 35cm\*35\*115cm or as directed by Engineer Incharge, assembled & fixed as per drawings of MORTH&H Circular No.RW/NH/33022/1/94-DO/III, dated 24/6/1994 & construction operation as per 811 or revevant MORT&H specifications for Roads & Bridge Works (latest edition). All fittings (bolts, nuts, fasteners, washers etc.) shall be conforming to IS:1367 & IS:1364 & galvanished by hot dip zinc coated process @0.55kg/m2 conforming to relevent IS specifications all etc. complete | metre | 6235.00 |
| 7.24 | **Street Lighting** (Providing and erecting street light mounted on a steel circular hollow pole of standard specifications for street lighting, 9 m high spaced 40 m apart, 1.8 m overhang on both sides if fixed in the median and on one side if fixed on the footpath, fitted with sodium vapour lamp and fixed firmly in concrete foundation.) |  |  |
| (i) | For Fixing in Median | each | 18268.00 |
| (ii) | For fixing in Footpath | each | 18163.00 |
| 7.25 | **Lighting on Bridges** (Providing and fixing lighting on bridges, mounted on steel hollow circular poles of standard specifications, 5 m high fixed on parapets with cement concrete, 20 m apart and fitted with sodium vapour lamp) | each | 12043.00 |
| 7.26 | **Cable Duct Across the Road** (Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings.) |  |  |
| (i) | Single Row for one utility service | metre | 5601.00 |
| (ii) | Double Row for two utility services | metre | 10932.00 |
| (iii) | Triple Row for three utility services | metre | 16286.00 |
| 7.27 | **Highway Patrolling and Traffic Aid Post** (It is proposed to locate one Traffic Aid Post every 50-60 km of the highway. ) |  | As per actuals |
| 7.28 | **Items related to under pass/ subway/ overhead bridge/ overhead foot bridge** (The items involved for underpass/ subway/ overhead bridge/ overhead foot bridge are earthwork, plain cement concrete, plastering, painting, information sign etc. The rates for these items are available in respective chapters which can be adopted for the quantities derived from the approved designs and drawings) |  |  |
| 7.29 | **Gantry Mounted Variable Message Sign board** (Providing and erecting gantry mounted variable message sign board electronically operated capable of flashing the desired message over a designed support system of aluminium alloy or galvanised steel, erected as per approved design and drawings and with lateral clearance as per clause 802.3) |  |  |
| (i) | **Gantry Support System** | tonne | 71419.00 |
| (ii) | **Message Display** (Message display board 6 sqm electronically operated with complete electronic fitments for flashing the pre-determined messages.) |  | As per market rate |
| 7.30 | **Traffic Impact Attenuators at Abutments and Piers** |  |  |
| A | **With Scrap Tyres** (Provision and installation of traffic attenuators at abutment/pier of flyovers bridges using scrap tyres of size 100 x 20 retrieved from trucks laid in 2 rows and 4 tiers, one above the other and tied with 20 mm wire rope as per approved design and drawings.) | sqm | 1466.00 |
| B | **Using Plastic/Steel Barrel, Filled with Sand** (Provision and installation of traffic impact attenuator at abutment/pier of flyovers bridges using plastic/steel barrels 0.60 m dia and 1.0 m in height, filled with sand in three rows and tied with20 mm steel wire rope as per approved design and drawings) | sqm | 1341.00 |
| C | **With HI - DRO cell Sandwich (Patented)** ((In this patented HI - DRO cell system, water gets discharged from plastic tubes on impact over a pre-determined time, thus absorbing the energy)) | sqm | 3570.00 |
| 7.31 | **Road Markers/Road Stud with Lense Reflector** (Providing and fixing of road stud 100x 100 mm, die cast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, installed in concrete or asphaltic surface by drilling hole 30 mm upto a depth of 60 mm and bedded in a suitable bituminous grout or epoxy mortar, all as per BS 873 part 4:1973) | each | 235.00 |
| 7.32 | **Traffic Cone** (Provision of red fluorescent with white reflective sleeve traffic cone made of low density polyethylene (LDPE) material with a square base of 390 x 390 x 35 mm and a height of 770 mm, 4 kg in weight, placed at 1.5 m interval, all as per BS 873) | each | 519.00 |
| 7.33 | **Drum Delineator in Construction Zone** (Provision of metal drum/empty bitumen drum delineator, 300 mm in diameter, 800 mm high, filled with earth for stability, painted in circumferential strips of alternate black and white 100 mm wide fitted with reflectors 3 Nos of 7.5 cm dia, all as per IRC:SP:55-2001) | each | 668.00 |

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| **CHAPTER-8** | | | |
| **PIPE CULVERTS** | | | |
| 8.1 | **PCC 1:3:6 in Foundation** (Plain cement concrete 1:3:6 mix with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days.) | cum | 5129.00 |
| 8.2 | **Laying Reinforced Cement Concrete Pipe NP4/prestrssed concrete pipe on first class bedding in single row .** (Laying Reinforced cement concrete pipe NP4/prestrssed concrete pipe for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets . ) |  |  |
| A | 1000 mm dia | metre | 549.00 |
| B | 1200 mm dia | metre | 717.00 |
| 8.3 | **Laying Reinforced Cement Concrete Pipe NP 4 /prestrssed concrete pipe on first class bedding in double row .** (Laying Reinforced cement concrete pipe NP4 /prestrssed concrete pipe for culverts on first class bedding of granular material in double row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets . ) |  |  |
| A | 1000 mm dia | metre | 1331.00 |
| B | 1200 mm dia | metre | 1683.00 |

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| **CHAPTER-9** | | | |
| **MAINTENANCE OF ROADS** | | | |
| 9.1 | **Restoration of Rain Cuts** (Restoration of rain cuts with soil, moorum, gravel or a mixture of these, clearing the loose soil, benching for 300 mm width, laying fresh material in layers not exceeding 250 mm and compacting with plate compactor or power rammers to restore the original alignment, levels and slopes) | cum | 287.00 |
| 9.2 | **Maintenance of Earthen Shoulder (filling with fresh soil)** (Making up loss of material/ irregularities on shoulder to the design level by adding fresh approved soil and compacting it with appropriate equipment.) | sqm | 72.00 |
| 9.3 | **Maintenance of Earth Shoulder (stripping excess soil)** (Stripping excess soil from the shoulder surface to achieve the approved level and compacting with plate compactor) | sqm | 19.00 |
| 9.4 | **Filling Pot- holes and Patch Repairs with open - graded Premix surfacing, 20mm.** (Removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per clause 503, back filling the pot holes with hot bituminous material as per clause 511, compacting, trimming and finishing the surface to form a smooth continuous surface, all as per clause 3004.2) | sqm | 176.00 |
| 9.5 | **Filling Pot- holes and Patch Repairs with - Bituminous concrete, 40mm. (**Removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per clause 503, back filling the pot holes with hot bituminous material as per clause 504, compacting, trimming and finishing the surface to form a smooth continuous surface, all as per clause 3004.2) |  |  |
| (i) | for grading I Material | sqm | 454.00 |
| (ii) | for grading II Material | sqm | 489.00 |
| 9.6 | **Crack Filling** (Filling of crack using slow - curing bitumen emulsion and applying crusher dust in case crack are wider than 3mm.) | metre | 5.00 |
| 9.7 | **Dusting** (Applying crusher dust to areas of road where bleeding of excess bitumen has occurred.) | sqm | 3.00 |
| 9.8 A | **Fog Seal** (ref item 5.15) | sqm | 47.00 |
| B | **Crack Prevention courses.** (ref item 5.18) |  |  |
| (i) | Stress Absorbing Membrane (SAM) crack width less than 6 mm | sqm | 65.00 |
| (ii) | Stress Absorbing Membrane (SAM) with crack width 6 mm to 9 mm | sqm | 74.00 |
| (iii) | Stress Absorbing Membrane (SAM) crack width above 9 mm and cracked area above 50 % | sqm | 97.00 |
|  |  |  |  |
| C | **Slurry Seal** (ref item 5.14) |  |  |
| (i) | 5 mm thickness | sqm | 92.00 |
| (ii) | 3 mm thickness | sqm | 62.00 |
| (iii) | 1.5 mm thickness | sqm | 38.00 |
| D | **Surface Dressing for maintance works.** (ref item 5.9) |  |  |
| (i) | 19 mm nominal chipping size | sqm | 116.00 |
| (ii) | 13 mm nominal size chipping | sqm | 96.00 |
| 9.9 | **Repair of joint Grooves with Epoxy Mortar** Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete) | metre | 530.00 |
| 9.10 | **Repair of old Joints Sealant** (Removal of existing sealant and re sealing of contraction, longitudinal or expansion joints in concrete pavement with fresh sealant material) | metre | 55.00 |
| 9.11 | **Hill Side Drain Clearance** (Removal of earth from the choked hill side drain and disposing it on the valley side manually) | metre | 60.00 |
| 9.12 | **Land Slide Clearance in soil** (Clearance of land slides in soil and ordinary rock by a bull-dozer D 80 A-12, 180 HP and disposal of the same on the valley side) | cum | 16.00 |
| a | Extra for Emergency clearance during Day time | cum | As per prevailing circulars |
| b | Extra for Emergency clearance during Night time | cum | As per prevailing circulars |
| 9.13 | **Land slide Clearance in Hard Rock Requiring Blasting** (Clearing of land slide in hard rock requiring blasting for 50% of the boulders and disposal of the same on the valley side.) | cum | 56.00 |
| a | Extra for Emergency clearance during Day time | cum | As per prevailing circulars |
| b | Extra for Emergency clearance during Night time | cum | As per prevailing circulars |
| **CHAPTER-10** | | | |
| **HORTICULTURE** | | | |
| 10.1 | **Spreading of Sludge Farm Yard Manure or/and good Earth** (Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm- yard manure or/and good earth to be paid for separately) | cum | 38.00 |
| 10.2 | **Grassing with 'Doobs' Grass** (Grassing with 'Doobs' grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for moving including supplying good earth if needed) |  |  |
| (i) | In rows 15 cm apart in either direction | sqm | 43.00 |
| (ii) | In rows 7.5 cm apart in either direction | sqm | 78.00 |
| 10.3 | **Making Lawns including Ploughing and Dragging with 'Swagha' Breaking of Clod** (Making lawns including ploughing and breaking of clod, removal of rubbish, dressing and supplying doobs grass roots and planting at 15 cm apart, including supplying and spreading of farm yard manure at rate of 0.18 cum per 100 sqm) | sqm | 135.00 |
| 10.4 | **Maintenance of Lawns or Turfing of Slopes** (Maintenance of lawns or Turfing of slopes (rough grassing) for a period of one year including watering etc) | sqm | 281.00 |
| 10.5 | **Turfing Lawns with Fine Grassing including Ploughing, Dressing** (Turfing lawns with fine grassing including ploughing, dressing including breaking of clods, removal of rubbish, dressing and supplying doobs grass roots at 10 cm apart, including supplying and spreading of farm yard manure at rate of0.6 cum per 100 sqm) | sqm | 148.00 |
| 10.6 | **Maintenance of Lawns with Fine Grassing for the First Year** | sqm | 249.00 |
| 10.7 | **a) Planting Permanent Hedges including Digging of Trenches** (Planting permanent hedges including digging of trenches, 60 cm wide and 45 cm deep, refilling the excavated earth mixed with farmyard manure, supplied at the rate of 4.65 cum per 100 metres and supplying and planting hedge plants at 30 cm apart) | metre | 383.00 |
| (b) | Maintenance of Hedge for one year | metre | 317.00 |
| 10.8 | a) Planting Flowering Plants and Shrubs in Central Verge | km | 190979.00 |
| (b) | Maintenance of Flowering Plants and Shrubs in Central Verge for one Year | km | 318967.00 |
| 10.9 | **Planting of Trees and their Maintenance for one Year** (Planting of trees by the road side (Avenue trees) in 0.60 m dia holes, 1 m deep dug in the ground, mixing the soil with decayed farm yard/sludge mannure, planting the saplings, backfilling the trench, watering, fixing the tree guard and maintaining the plants for one year) | each | 1581.00 |
| 10.10 | **Renovation Lawns including, Weeding, Forking the Ground, Top Dressing with Forked Soil** (Renovation lawns including, weeding, forking the ground, top dressing with forked soil, watering and maintenance the lawns, for 30 days or more, till the grass forms a thick lawn, free from weeds, and fit for moving and disposal of rubbish as directed, including supplying good earth, if needed but excluding the cost of well decayed farm yard manure) | sqm | 25.00 |
| 10.11 | **Half Brick Circular Tree Guard, in 2nd class Brick, internal diametre 1.25 metres, and height 1.2 metres, above ground and 0.20 metre below ground** (Half brick circular tree guard, in 2nd class brick, internal diametre 1.25 metres, and height 1.2 metres, above ground and 0.20 metre below ground, bottom two courses laid dry, and top three courses in cement mortar 1:6 ( 1 cement 6 sand) and the intermediate courses being in dry honey comb masonry, as per design complete) | each | 2678.00 |
| 10.12 | **Edging with 2nd class Bricks, laid dry lengthwise (Edging with 2nd class bricks, laid dry lengthwise, including excavation, refilling, consolidation, with a hand packing and spreading nearly surplus earth within a lead of 50 metres)** | metre | 55.00 |
| 10.13 | **Making Tree Guard 53 cm dia and 1.3 m high as per design from empty bitumen drum** (Making tree guard 53 cm dia and 1.3 m high as per design from empty bitumen drum, slit suitably to permit sun and air, (supplied by the department at stock issue rate) including providing and fixing 2 nos MS sheet rings 50 x 0.5 mm with rivets, complete in all respect) | each | 437.00 |
| 10.14 | **Making Tree Guard 53 cm dia and 2 metres high as per design from empty bitumen drums** (Making tree guard 53 cm dia and 2 metres high as per design from empty bitumen drums, slit suitably to permit sun and air, ( supplied by the department at stock issue rate) including providing and fixing four legs 40 cm long of 30 x 3 mm MS riveted to tree guard and providing and fixing 2 nos MS sheet rings 50 x 0.5 mm with rivets complete in all respects) | each | 830.00 |
| 10.15 | **Wrought Iron and Mild Steel Welded Work (Wrought iron and mild steel welded work)** (using angles, square bars, tees and channel grills, grating frames, gates and tree guards of any size and design etc. including cost of screens and welding rods or bolts and nuts complete fixed in position but without the cost of excavation and concrete for fixing which will be paid separately) | quintal | 12964.00 |
| 10.16 | **Tree Guard with MS Iron** (Providing and fixing MS iron tree guard 60 cm dia and 2 metre high above ground level formed of 4 Nos (25 x 6 mm) and 8 Nos (25 x 3 mm) vertical MS riveted to 3 Nos (25 x 6 mm) iron rings in two halves, bolted together with 8 mm dia and 30 mm long bolts including painting two coats with paint of approved brand over a coat of priming, complete in all respects.) | each tree guard | 3192.00 |
| 10.17 | **Tree Guard with MS Angle Iron and Steel Wire** (Providing and fixing tree guard 0.60 metre square, 2.00 metre high fabricated with MS angle iron 30 x 30 x 3 mm, MS iron 25 x 3 mm and steel wire3 mm dia welded and fabricated as per design in two halves bolted together) | each tree guard | 4499.00 |
| 10.18 | **Compensatory Afforestation** (Planting trees as compensatory afforestation at the rate of 290 trees per hectare at a spacing of 6 m by grubbing and leveling the ground upto a depth of 150 mm, digging holes 0.9 m dia, 1 m deep, mixing farm yard/sludge manure with soil, planting of sapling 2 m high with 25 cm dia stem, backfilling the hole and watering) | hectare | 200040.00 |

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| **CHAPTER-11** | | | |
| **FOUNDATIONS** | | | |
| 11.1 | **Excavation for Structures** (Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.) |  |  |
| I | Ordinary soil |  |  |
| A | Manual Means |  |  |
| (i) | upto 3 m depth | cum | 220.00 |
| (ii) | 3 m to 6 m depth | cum | 283.00 |
| (iii) | Above 6 m depth | cum | 377.00 |
| B | Mechanical Means |  |  |
| (i) | Depth upto 3 m | cum | 34.00 |
| (ii) | Depth 3 m to 6 m | cum | 39.00 |
| (iii) | Depth above 6m | cum | 53.00 |
| II | Ordinary rock (not requiring blasting) |  |  |
| A | Manual Means |  |  |
| (i) | Depth upto 3 m | cum | 314.00 |
| B | Mechanical Means | cum | 39.00 |
| III | Hard rock ( requiring blasting ) |  |  |
| A | Manual Means | cum | 656.00 |
| IV | Hard rock ( blasting prohibited ) |  |  |
| A | Mechanical Means | cum | 750.00 |
| V | Marshy soil |  |  |
| (i) | upto 3 m depth |  |  |
| A | Manual means | cum | 801.00 |
| B | Mechanical Means | cum | 142.00 |
| VI | Back Filling in Marshy Foundation Pits | cum | 530.00 |
| 11.2 | **Filling Annular Space Around Footing in Rock** (Lean cement concrete 1:3:6 nominal mix. Rate may be taken as per items 11.4) |  |  |
| 11.3 | **Sand Filling in Foundation Trenches as per Drawing & Technical Specification** | cum | 2255.00 |
| 11.4 | **PCC 1:3:6 in Foundation** (Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days.) | cum | 5593.00 |
| 11.5 | Brick masonry work in cement mortar 1:3 in foundation complete excluding pointing and plastering, as per drawing and technical specifications | cum | 8469.00 |
| 11.6 A | Cement mortar1:3 (1cement :3 sand) | cum | 4982.00 |
| B | Cement mortar1:2 (1cement :2 sand) | cum | 5839.00 |
| C | Cement mortar1:4 (1cement :4 sand) | cum | 4406.00 |
| D | Cement mortar1:6 (1cement :6 sand) | cum | 3968.00 |
| 11.7 | Stone masonry work in cement mortar 1:3 in foundation complete as drawing and Technical Specification |  |  |
| (a) | Square Rubble Coursed rubble masonry( first sort ) | cum | 4450.00 |
| (b) | Random Rubble Masonry | cum | 4291.00 |
| 11.8 | Plain/Reinforced cement concrete in open foundation complete as per drawing and technical specifications |  |  |
| A | PCC Grade M15 | cum | 6100.00 |
| B | PCC Grade M20 | cum | 6797.00 |
| C | RCC Grade M20 |  |  |
| Case I | Using concrete mixer | cum | 6875.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 9948.00 |
| D | PCC Grade M25 |  |  |
| Case I | Using concrete Mixer | cum | 7254.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 10323.00 |
| E | RCC Grade M25 |  |  |
| Case I | Using concrete Mixer | cum | 7337.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 10403.00 |
| F | PCC Grade M30 |  |  |
| Case I | Using Concrete Mixer | cum | 7288.00 |
| Case II | Using Batching Plant, Transit Mixer and Concrete Pump | cum | 10344.00 |
| G | RCC Grade M30 |  |  |
| Case I | Using Concrete Mixer | cum | 7348.00 |
| Case II | Using Batching Plant, Transit Mixer and Concrete Pump | cum | 10408.00 |
| H | RCC Grade M35 |  |  |
| Case I | Using Concrete Mixer | cum | 7443.00 |
| Case II | Using Batching Plant, Transit Mixer and Concrete Pump | cum | 10488.00 |
| 11.9 | Providing and constructing temporary island 16 m diameter for construction of well foundation for 8m dia. Well. |  |  |
| A | Assuming depth of water 1.0 m and height of island to be 1.25m. | each | 155139.00 |
| B | Assuming depth of water 4.0 m and height of island 4.5 m. | each | 686386.00 |
| C | Providing and constructing one span service road to reach island location from one pier location to another pier location | metre | 7916.00 |
| 11.10 | Providing and laying cutting edge of mild steel weighing 40 kg per metre for well foundation complete as per drawing and technical specification. | tonne | 142810.00 |
| 11.11 | Plain/Reinforced cement concrete, in well foundation complete as per drawing and technical specification |  |  |
| A | Well curb |  |  |
| (i) | RCC M20 Grade |  |  |
| Case I | Using concrete mixer | cum | 7933.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11479.00 |
| (ii) | RCC M25 Grade |  |  |
| Case I | Using concrete mixer | cum | 8487.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 12034.00 |
| (iii) | RCC M35 Grade |  |  |
| Case I | Using concrete mixer | cum | 8672.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 12219.00 |
| B | Well steining |  |  |
| (I) | PCC M15 Grade | cum | 6453.00 |
| (ii) | PCC M20 Grade | cum | 7189.00 |
| (iii) | RCC M20 Grade |  |  |
| Case I | Using concrete mixer | cum | 7272.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 10523.00 |
| (iv) | PCC M25 Grade |  |  |
| Case I | Using concrete mixer | cum | 7691.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 10945.00 |
| (v) | RCC M25 Grade |  |  |
| Case I | Using concrete mixer | cum | 7780.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11031.00 |
| (vi) | PCC M30 Grade |  |  |
| Case I | Using concrete mixer | cum | 7746.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 10995.00 |
| (vii) | RCC M30 Grade |  |  |
| Case I | Using concrete mixer | cum | 7810.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11063.00 |
| (viii) | RCC M35 Grade |  |  |
| Case I | Using concrete mixer | cum | 7950.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11201.00 |
| (ix) | RCC M40 Grade | cum | 11645.00 |
| C | Bottom Plug |  |  |
| (i) | PCC Grade M20 |  |  |
| Case I | Using Concrete Mixer | cum | 7747.00 |
| Case II | Using Batching Plant, Transit Mixer and Crane/concrete pump | cum | 10292.00 |
| (ii) | PCC Grade M25 |  |  |
| Case I | Using Concrete Mixer | cum | 8043.00 |
| Case II | Using Batching Plant, Transit Mixer and Crane/concrete pump | cum | 10584.00 |
| (iii) | PCC Grade M30 |  |  |
| Case I | Using Concrete Mixer | cum | 8095.00 |
| Case II | Using Batching Plant, Transit Mixer and Crane/concrete pump | cum | 10639.00 |
| (iv) | PCC Grade M35 |  |  |
| Case I | Using Concrete Mixer | cum | 8216.00 |
| Case II | Using Batching Plant, Transit Mixer and Crane/concrete pump | cum | 10758.00 |
| D | Intermediate plug |  |  |
| (I) | Grade M20 PCC |  |  |
| Case I | Using Concrete Mixer | cum | 7418.00 |
| Case II | Using Batching Plant, Transit Mixer and Crane/concrete pump | cum | 9998.00 |
| (ii) | Grade M25 PCC |  |  |
| Case I | Using Concrete Mixer | cum | 7700.00 |
| Case II | Using Batching Plant, Transit Mixer and Crane/concrete pump | cum | 10276.00 |
| (iii) | Grade M30 PCC |  |  |
| Case I | Using Concrete Mixer | cum | 7748.00 |
| Case II | Using Batching Plant, Transit Mixer and Crane/concrete pump | cum | 10329.00 |
| E | Top plug |  |  |
| (i) | Grade M15 PCC |  |  |
| Case I | Using Concrete Mixer | cum | 5866.00 |
| (ii) | Grade M20 PCC |  |  |
| Case I | Using Concrete Mixer | cum | 6535.00 |
| (iii) | Grade M25 PCC |  |  |
| Case I | Using Concrete Mixer | cum | 6992.00 |
| Case II | Using Batching Plant, Transit Mixer and Crane/concrete pump | cum | 9950.00 |
| (iv) | Grade M30 PCC |  |  |
| Case I | Using Concrete Mixer | cum | 7042.00 |
| Case II | Using Batching Plant, Transit Mixer and Crane/concrete pump | cum | 9995.00 |
| F | Well cap |  |  |
| (i) | RCC Grade M20 |  |  |
| Case I | Using concrete Mixer | cum | 6823.00 |
| Case II | Using Batching Plant, Transit Mixer and Concrete Pump | cum | 9895.00 |
| (ii) | RCC Grade M25 |  |  |
| Case I | Using concrete Mixer | cum | 7337.00 |
| Case II | Using Batching Plant, Transit Mixer and Concrete Pump | cum | 10404.00 |
| (iii) | RCC Grade M30 |  |  |
| Case I | Using Concrete Mixer | cum | 7348.00 |
| Case II | Using Batching Plant, Transit Mixer and Concrete Pump | cum | 10407.00 |
| (iv) | RCC Grade M35 |  |  |
| Case I | Using Concrete Mixer | cum | 7443.00 |
| Case II | Using Batching Plant, Transit Mixer and Concrete Pump | cum | 10488.00 |
| (v) | RCC M40 Grade | cum | 10946.00 |
| 11.12 | **Sinking of 6 m external diameter well** ( other than pneumatic method of sinking ) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level. |  |  |
| A | Sandy soil |  |  |
| (i) | Depth below bed level upto 3.0 M | metre | 3365.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 4616.00 |
| (iii) | **Beyond 10m upto 20m** |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 6096.00 |
| (iv) | **Beyond 20m upto 30 m** |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 11436.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement and Labour . | metre | 13723.00 |
| (v) | **Beyond 30m upto 40 m** |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 27170.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement and Labour . | metre | 32604.00 |
| B | **Clayey soil ( 6m dia. Well )** |  |  |
| (i) | Depth below bed level upto 3.0 M | metre | 4636.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 10869.00 |
| (iii) | Beyond 10 m upto 20 m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 14355.00 |
| b | Add for dewatering @ 5% of cost, if required. | metre | 15072.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 26926.00 |
| b | Add 5% of cost for dewatering of the cost, if required | metre | 33657.00 |
| c | Add 25% of cost for Kentledge including supports, loading arrangement and Labour ). | metre | 35341.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 63972.00 |
| b | Add 5% of cost for dewatering, if required | metre | 76766.00 |
| c | Add 20% of cost for Kentledge including supports, loading arrangement and Labour). | metre | 80605.00 |
| C | Soft rock (6m dia well ) |  |  |
| (i) | Depth of soft rock strata upto 3m | metre | 20219.00 |
| D | Hard rock (6m dia well ) |  |  |
| (i) | Depth of soft rock strata upto 3m | metre | 19702.00 |
| 11.13 | Sinking of 7 m external diameter well ( other than pneumatic method of sinking ) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level. |  |  |
| A | Sandy soil |  |  |
| (i) | Depth below bed level upto 3.0 M | metre | 9496.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 6277.00 |
| (iii) | Beyond 10m upto 20m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 8291.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 15554.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement and Labour) . | metre | 18664.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 36955.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement, and Labour etc. | metre | 44346.00 |
| B | Clayey soil ( 7m dia. Well ) |  |  |
| (I) | Depth below bed level upto 3.0 M | metre | 6277.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 8873.00 |
| (iii) | Beyond 10 m upto 20 m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 11718.00 |
| b | Add for dewatering @ 5% of cost, if required. | metre | 12304.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 21980.00 |
| b | Add 5% of cost for dewatering on the cost, if required | metre | 27475.00 |
| c | Add 25% of cost for Kentledge including supports, loading arrangement and Labour ). | metre | 28848.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 52221.00 |
| b | Add 5% of cost for dewatering, if required | metre | 62665.00 |
| c | Add 20% of cost for Kentledge including supports, loading arrangement and Labour). | metre | 65798.00 |
| C | Soft rock ( 7m dia well ) |  |  |
| (i) | Depth of soft rock strata upto 3m | metre | 15927.00 |
| D | Hard rock ( 7m dia well ) |  |  |
| (i) | Depth upto 3 m | metre | 24307.00 |
| 11.14 | Sinking of 8 m external diameter well ( other than pneumatic method of sinking ) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level. |  |  |
| A | Sandy soil |  |  |
| (i) | Depth below bed level upto 3.0 M | metre | 5867.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 7140.00 |
| (iii) | Beyond 10m upto 20m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 9430.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 17687.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement and Labour . | metre | 21225.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 6217.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement, and Labour etc. | metre | 7460.00 |
| B | Clayey soil ( 8m dia. Well ) |  |  |
| (i) | Depth upto 3.0 M | metre | 7686.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 11774.00 |
| (iii) | Beyond 10 m upto 20 m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 15550.00 |
| b | Add for dewatering @ 5% of cost, if required. | metre | 16328.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 29167.00 |
| b | Add 5% of cost for dewatering on the cost, if required | metre | 36458.00 |
| c | Add 25% of cost for Kentledge including supports, loading arrangement and Labour ). | metre | 38281.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 69296.00 |
| b | Add 5% of cost for dewatering, if required | metre | 83156.00 |
| c | Add 20% of cost for Kentledge including supports, loading arrangement and Labour). | metre | 87313.00 |
| C | Soft rock ( 8m dia well ) |  |  |
| (i) | Depth in soft rock strata upto 3m | metre | 17728.00 |
| D | Hard rock ( 8m dia well ) |  |  |
| (i) | Depth in hard rock strata upto 3 m | metre | 25989.00 |
| 11.15 | **Sinking of 9 m external diameter well (** other than pneumatic method of sinking ) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level. |  |  |
| A | Sandy soil |  |  |
| (i) | Depth below bed level upto 3.0 M | metre | 6004.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 7824.00 |
| (iii) | Beyond 10m upto 20m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 10333.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 19381.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement and Labour . | metre | 23257.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 46046.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement, and Labour etc. | metre | 55255.00 |
| B | Clayey soil ( 9m dia. Well ) |  |  |
| (i) | Depth below bed level upto 3.0 M | metre | 8185.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 12658.00 |
| (iii) | Beyond 10 m upto 20 m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 16718.00 |
| b | Add for dewatering @ 5% of cost, if required. | metre | 17554.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 31360.00 |
| b | Add 5% of cost for dewatering on the cost, if required | metre | 39200.00 |
| c | Add 25% of cost for Kentledge including supports, loading arrangement and Labour ). | metre | 41160.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 74506.00 |
| b | Add 5% of cost for dewatering, if required | metre | 89407.00 |
| c | Add 20% of cost for Kentledge including supports, loading arrangement and Labour). | metre | 93878.00 |
| C | Soft rock ( 9m dia well ) |  |  |
| (i) | Depth upto 3m | metre | 21500.00 |
| D | Hard rock ( 9m dia well ) |  |  |
| (i) | Depth of hard rock strata upto 3 m | metre | 29574.00 |
| 11.16 | Sinking of 10 m external diameter well ( other than pneumatic method of sinking ) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level. |  |  |
| A | Sandy soil |  |  |
| (i) | Depth below bed level upto 3.0 M | metre | 6961.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 8333.00 |
| (iii) | Beyond 10m upto 20m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 11005.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 20641.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement and Labour . | metre | 24769.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 49040.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement, and Labour etc. | metre | 58848.00 |
| B | Clayey soil (10m dia. Well ) |  |  |
| (i) | Depth below bed level upto 3.0 M | metre | 9469.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 13046.00 |
| (iii) | Beyond 10 m upto 20 m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 17230.00 |
| b | Add for dewatering @ 5% of cost, if required. | metre | 18091.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 32319.00 |
| 'b | Add 5% of cost for dewatering on the cost, if required | metre | 40399.00 |
| c | Add 25% of cost for Kentledge including supports, loading arrangement and Labour ). | metre | 42419.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 76787.00 |
| b | Add 5% of cost for dewatering, if required | metre | 92145.00 |
| c | Add 20% of cost for Kentledge including supports, loading arrangement and Labour). | metre | 96752.00 |
| C | Soft rock (10m dia well ) |  |  |
| (i) | Depth of soft rock strata upto 3m | metre | 21854.00 |
| D | Hard rock (10m dia well ) |  |  |
| (i) | Depth of hard rock strata upto 3 m | metre | 31845.00 |
| 11.17 | Sinking of 11 m external diameter well ( other than pneumatic method of sinking ) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level. |  |  |
| A | Sandy soil |  |  |
| (i) | Depth from bed level upto 3.0 M | metre | 15363.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 14069.00 |
| (iii) | Beyond 10m upto 20m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 18581.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 34853.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement and Labour . | metre | 41824.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 82805.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement, and Labour etc. | metre | 99366.00 |
| B | Clayey soil (11 m dia. Well ) |  |  |
| (i) | Depth from bed level upto 3.0 M | metre | 15727.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 27393.00 |
| (iii) | Beyond 10 m upto 20 m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 36177.00 |
| b | Add for dewatering @ 5% of cost, if required. | metre | 37986.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 67859.00 |
| b | Add 5% of cost for dewatering on the cost, if required | metre | 84824.00 |
| c | Add 25% of cost for Kentledge including supports, loading arrangement and Labour ). | metre | 89065.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 161222.00 |
| b | Add 5% of cost for dewatering, if required | metre | 193466.00 |
| c | Add 20% of cost for Kentledge including supports, loading arrangement and Labour). | metre | 203140.00 |
| C | Soft rock (11m dia well ) |  |  |
| (i) | Depth of soft rock strata upto 3m | metre | 48491.00 |
| D | Hard rock (11m dia well ) |  |  |
| (i) | Depth of hard rock upto 3 m | metre | 69971.00 |
| 11.18 | **Sinking of 12 m external diameter well** ( other than pneumatic method of sinking ) through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level. |  |  |
| A | Sandy soil |  |  |
| (i) | I) Depth below bed level upto 3.0 M | metre | 32830.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 38188.00 |
| (iii) | Beyond 10m upto 20m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 50434.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 94600.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement and Labour . | metre | 113520.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 224754.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement, and Labour etc. | metre | 269705.00 |
| B | Clayey soil (12 m dia. Well ) |  |  |
| (i) | Depth below bed level upto 3.0 M | metre | 37908.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 64469.00 |
| (iii) | Beyond 10 m upto 20 m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 85144.00 |
| b | Add for dewatering @ 5% of cost, if required. | metre | 89402.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 159709.00 |
| b | Add 5% of cost for dewatering on the cost, if required | metre | 199637.00 |
| c | Add 25% of cost for Kentledge including supports, loading arrangement and Labour ). | metre | 209619.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 379446.00 |
| b | Add 5% of cost for dewatering, if required | metre | 455335.00 |
| c | Add 20% of cost for Kentledge including supports, loading arrangement and Labour). | metre | 478102.00 |
| C | Soft rock (12m dia well ) |  |  |
| (i) | Depth of soft rock strata upto 3m | metre | 110444.00 |
| D | Hard rock (12m dia well ) |  |  |
| (i) | Depth of hard rock strata upto 3 m | metre | 149353.00 |
| 11.19 | **Sinking of Twin D Type well** (other than pneumatic method of sinking )through all types of strata namely sandy soil, clayey soil and rock as shown against each case, complete as per drawing and technical specifications. Depth of sinking is reckoned from bed level. |  |  |
| A | Sandy soil |  |  |
| (i) | Depth from bed level upto 3.0 M | metre | 7351.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 7999.00 |
| (iii) | Beyond 10m upto 20m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 10564.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 19814.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement and Labour . | metre | 23777.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 47075.00 |
| b | Add 20% of cost for Kentledge including supports, loading arrangement, and Labour etc. | metre | 56490.00 |
| B | Clayey soil (Twin D Type Well ) |  |  |
| (i) | Depth below bed level upto 3.0 M | metre | 8889.00 |
| (ii) | Beyond 3m upto 10m depth | metre | 14436.00 |
| (iii) | Beyond 10 m upto 20 m |  |  |
| a | Add 5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 19066.00 |
| b | Add for dewatering @ 5% of cost, if required. | metre | 20019.00 |
| (iv) | Beyond 20m upto 30 m |  |  |
| a | Add 7.5% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 35762.00 |
| b | Add 5% of cost for dewatering on the cost, if required | metre | 44703.00 |
| c | Add 25% of cost for Kentledge including supports, loading arrangement and Labour ). | metre | 46938.00 |
| (v) | Beyond 30m upto 40 m |  |  |
| a | Add 10% for every additional meter depth of sinking over the rate of sinking for the previous meter | metre | 84965.00 |
| b | Add 5% of cost for dewatering, if required | metre | 101959.00 |
| c | Add 20% of cost for Kentledge including supports, loading arrangement and Labour). | metre | 107057.00 |
| C | Soft rock (Twin D Type well ) |  |  |
| (i) | Depth of soft rock strata upto 3m | metre | 24312.00 |
| D | Hard rock (Twin D Type well ) |  |  |
| (i) | Depth of hard rock strata upto 3 m | metre | 33023.00 |
| 11.20 | Pneumatic sinking of wells with equipment of approved design, drawing and specifications worked by competent and trained personnel and comprising of compression and decompression chambers, reducers, two air locks separately for men and plant & materials, arrangement for supply of fresh air to working chambers, check valves, exhaust valves, shafts made from steel plates of riveted construction not less than 6 mm thick to withstand an air pressure of 0.50 MPa, controlled blasting of hard rock where required, staircases and 1 m wide landing plate forms with railing, arrangement for compression and decompression, electric lighting of 50 V maximum, proper rooms for rest and medical examinations and compliance with safety precautions as per IS:4138, all as per clause1207.6 of MoRTH Specifications. |  | To be derived based on market rate |
| 11.21 | Sand filling in wells complete as per drawing and technical specifications | cum | 2255.00 |
| 11.22 | Providing steel liner 10 mm thick for curbs and 6mm thick for steining of wells including fabricating and setting out as per detailed drawing | tonne | 129297.00 |
| 11.23 | Bored cast-in-situ M35 grade R.C.C. pile excluding reinforcement complete as per drawing and technical specifications and removal of excavated earth with all lifts and lead upto 1000 m. (Pile diameter-750 mm) | metre | 7193.00 |
| 11.24 | Bored cast-in-situ M35 grade R.C.C. pile excluding reinforcement complete as per drawing and technical specifications and removal of excavated earth with all lifts and lead upto 1000 m. (Pile diameter-1000 mm) | metre | 12186.00 |
| 11.25 | Bored cast-in-situ M35 grade R.C.C. pile excluding reinforcement complete as per drawing and technical specifications and removal of excavated earth with all lifts and lead upto 1000 m. (Pile diameter-1200 mm) | metre | 16384.00 |
| 11.26 | Driven cast-in-place vertical M35 grade R.C.C. pile excluding reinforcement complete as per drawing and & Technical Specification (Pile diameter - 750 mm) | metre | 6613.00 |
| 11.27 | Driven cast-in-place vertical M35 grade R.C.C. piles excluding reinforcement complete as per drawing and & Technical Specification (Pile diameter - 1000 mm) | metre | 10969.00 |
| 11.28 | Driven cast-in-place vertical M35 grade R.C.C. piles excluding reinforcement complete as per drawing and & Technical Specification (Pile diameter - 1200 mm) | metre | 15937.00 |
| 11.29 | Driven precast vertical M35 grade R.C.C. piles excluding reinforcement complete as per drawing and & Technical Specification (Pile Diameter=500 mm) | metre | 2886.00 |
| 11.30 | Driven precast vertical M35 grade R.C.C. piles excluding reinforcement complete as per drawing and & Technical Specification (Pile Diameter=750 mm) | metre | 5593.00 |
| 11.31 | Driven precast vertical M35 grade R.C.C. piles excluding reinforcement complete as per drawing and & Technical Specification (Pile Diameter=1000 mm) | metre | 9425.00 |
| 11.32 | Driven precast vertical M35 grade R.C.C. piles excluding reinforcement complete as per drawing and & Technical Specification (Size of pile - 300 mm x 300 mm) | metre | 1663.00 |
| 11.33 | Driven precast vertical M35 grade R.C.C. piles excluding reinforcement complete as per drawing and & Technical Specification (Size of pile - 500 mm x 500 mm) | metre | 3493.00 |
| 11.34 | Driven precast vertical M35 grade R.C.C. piles excluding reinforcement complete as per drawing and & Technical Specification (Size of pile - 750 mm x 750 mm) | metre | 7030.00 |
| 11.35 | Driven vertical steel piles complete as per drawing and & Technical Specification (Section of the pile - H Section steel column 400 x 250 mm (ISHB Series) | metre | 9091.00 |
| 11.36 | Driven vertical steel piles complete as per drawing and & Technical Specification (Section of the pile - H Section steel column 450 x 250 mm (ISHB Series) | metre | 10254.00 |
| 11.37 | Pile load test on single vertical pile in accordance with IS:2911(Part-IV) |  | To be as per design |
| 11.38 | Cement concrete for reinforced concrete in pile cap complete as per drawing and Technical Specification |  |  |
| A | RCC Grade M20 |  |  |
| (i) | Using Concrete Mixer | cum | 6853.00 |
| (ii) | Using Batching Plant, Transit Mixer and Concrete Pump | cum | 9963.00 |
| B | RCC Grade M25 |  |  |
| (i) | Using concrete mixer. | cum | 7351.00 |
| (ii) | Using Batching Plant, Transit Mixer and Concrete Pump | cum | 10507.00 |
| C | RCC Grade M30 |  |  |
| (i) | Using concrete mixer. | cum | 7414.00 |
| (ii) | Using Batching Plant, Transit Mixer and Concrete Pump | cum | 10523.00 |
| D | RCC Grade M35 |  |  |
| (i) | Using concrete mixer. | cum | 7546.00 |
| (ii) | Using Batching Plant, Transit Mixer and Concrete Pump | cum | 10701.00 |
| 11.39 | Levelling course for Pile cap | cum | 5932.00 |
| 11.40 | Supplying, fitting and placing un-coated HYSD bar reinforcement in foundation complete as per drawing and technical specifications | tonne | 89047.00 |
| 11.41 | Supplying, fitting and placing un-coated Mild steel reinforcement complete in foundation as per drawing and technical specification | tonne | 96466.00 |

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| **CHAPTER-12** | | | |
| **SUB-STRUCTURE** | | | |
| 12.1 | Brick masonry work in 1:3 in sub-structure complete excluding pointing and plastering, as per drawing and technical specifications | cum | 8362.00 |
| 12.2 | Pointing with cement mortar (1:3 ) on brick work in substructure as per Technical specifications | sqm | 890.00 |
| 12.3 | Plastering with cement mortar (1:3 ) on brick work in sub-structure as per Technical specifications | sqm | 1639.00 |
| 12.4 | Stone masonry work in cement mortar 1:3 for substructure complete as per drawing and Technical Specifications |  |  |
| A | Random Rubble Masonry | cum | 4244.00 |
| B | Coursed rubble masonry (first sort) | cum | 4475.00 |
| C | Ashlar masonry ( first sort) | cum | 6136.00 |
| 12.5 | Plain/Reinforced cement concrete in sub-structure complete as per drawing and technical specifications |  |  |
| A | PCC Grade M15 |  |  |
| (p) | Height upto 5m | cum | 6453.00 |
| B | PCC Grade M20 |  |  |
| (p) | Height upto 5m | cum | 7189.00 |
| C | PCC Grade M25 |  |  |
| (p) | Height upto 5m |  |  |
| Case I | Using concrete Mixer | cum | 7691.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 10945.00 |
| (q) | Height 5m to 10m |  |  |
| Case I | Using concrete Mixer | cum | 7971.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11343.00 |
| (r) | Height above 10m |  |  |
| Case I | Using concrete Mixer | cum | 8321.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11841.00 |
| D | PCC Grade M30 |  |  |
| (p) | Height upto 5m |  |  |
| Case I | Using concrete Mixer | cum | 7746.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 10995.00 |
| (q) | Height 5m to 10m |  |  |
| Case I | Using concrete Mixer | cum | 8028.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11394.00 |
| (r) | Height above 10m |  |  |
| Case I | Using concrete Mixer | cum | 8380.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11894.00 |
| E | RCC Grade M20 |  |  |
| (p) | Height upto 5m |  |  |
| Case I | Using concrete Mixer | cum | 7272.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 10523.00 |
| (q) | Height 5m to 10m |  |  |
| Case I | Using concrete Mixer | cum | 7536.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 10905.00 |
| (r) | Height above 10m |  |  |
| Case I | Using concrete Mixer | cum | 7867.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11384.00 |
| F | RCC Grade M25 |  |  |
| (p) | Height upto 5m |  |  |
| Case I | Using concrete Mixer | cum | 7780.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11031.00 |
| (q) | Height 5m to 10m |  |  |
| Case I | Using concrete Mixer | cum | 8034.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11392.00 |
| (r) | Height above 10m |  |  |
| Case I | Using concrete Mixer | cum | 8416.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11933.00 |
| G | RCC Grade M30 |  |  |
| (p) | Height upto 5m |  |  |
| Case I | Using concrete Mixer | cum | 7810.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11063.00 |
| (q) | Height 5m to 10m |  |  |
| Case I | Using concrete Mixer | cum | 8030.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11375.00 |
| (r) | Height above 10m |  |  |
| Case I | Using concrete Mixer | cum | 8343.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11817.00 |
| H | RCC Grade M35 |  |  |
| (p) | Height upto 5m |  |  |
| Case I | Using concrete Mixer | cum | 7950.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11201.00 |
| (q) | Height 5m to 10m |  |  |
| Case I | Using concrete Mixer | cum | 8123.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11445.00 |
| (r) | Height above 10m |  |  |
| Case I | Using concrete Mixer | cum | 8383.00 |
| Case II | With Batching Plant, Transit Mixer and Concrete Pump | cum | 11812.00 |
| 12.6 | Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications | tonne | 89319.00 |
| 12.7 | Supplying, fitting and placing Mild steel reinforcement complete in sub-structure as per drawing and technical specification | tonne | 95270.00 |
| 12.8 | Providing weep holes in Brick masonry/Plain/Reinforced concrete abutment, wing wall/return wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V :20H towards drawing foce. Complete as per drawing and Technical specifications | each | 286.00 |
| 12.9 | Back filling behind abutment, wing wall and return wall complete as per drawing and Technical specification |  |  |
| A | Granular material | cum | 1557.00 |
| B | Sandy material | cum | 2540.00 |
| 12.10 | Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and technical specification. | cum | 1955.00 |
| 12.11 | Supplying, fitting and fixing in position true to line and level cast steel rocker bearing conforming to IRC: 83(Pt.-1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications. | tonne capacity | 404.00 |
| 12.12 | Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt.-1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications. | tonne capacity | 537.00 |
| 12.13 | Supplying, fitting and fixing in position true to line and level sliding plate bearing with PTFE surface sliding on stainless steel complete including all accessories as per drawing and Technical Specifications and BS: 5400, section 9.1 & 9.2 (for PTFE) and clause 2004 of MoRTH Specifications. | tonne capacity | 225.00 |
| 12.14 | Supplying, fitting and fixing in position true to line and level elastomeric bearing conforming to IRC: 83 (Part-II) section IX and clause 2005 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications. | cubic centimetre | 2.00 |
| 12.15 | Supplying, fitting and fixing in position true to line and level sliding plate bearing with stainless steel plate sliding on stainless steel plate with mild steel matrix complete including all accessories as per drawing and Technical Specifications. | tonne capacity | 222.00 |
| 12.16 | Supplying, fitting and fixing in position true to line and level POT-PTFE bearing consisting of a metal piston supported by a disc or unreinforced elastomer confined within a metal cylinder, sealing rings, dust seals, PTFE surface sliding against stainless steel mating surface, complete assembly to be of cast steel/fabricated structural steel, metal and elastomer elements to be as per IRC: 83 part-I & II respectively and other parts conforming to BS: 5400, section 9.1 & 9.2 and clause 2006 of MoRTH Specifications complete asper drawing and approved technical specifications. | tonne capacity | 203.00 |

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| **CHAPTER-13** | | | |
| **SUPER-STRUCTURE** | | | |
| 13.1 | Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure as per drawing and Technical Specification |  |  |
| A | RCC Grade M20 |  |  |
| Case I | Using Concrete Mixer |  |  |
| (i) | For solid slab super-structure, 20-30% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 7873.00 |
| (q) | Height 5m to 10m | cum | 8201.00 |
| (r) | Height above 10m | cum | 8529.00 |
| (ii) | For T-beam & slab, 25-35% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 8201.00 |
| (q) | Height 5m to 10m | cum | 8529.00 |
| (r) | Height above 10m | cum | 8857.00 |
| Case II | Using Batching Plant, Transit Mixer and Concrete Pump |  |  |
| (i) | For solid slab super-structure, 20-30% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 11417.00 |
| (q) | Height 5m to 10m | cum | 11893.00 |
| (r) | Height above 10m | cum | 12368.00 |
| (ii) | For T-beam & slab, 25-35% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 11893.00 |
| (q) | Height 5m to 10m | cum | 12368.00 |
| (r) | Height above 10m | cum | 12844.00 |
| B | RCC Grade M25 |  |  |
| Case I | Using Concrete Mixer |  |  |
| (i) | For solid slab super-structure, 20-30% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 8447.00 |
| (q) | Height 5m to 10m | cum | 8799.00 |
| (r) | Height above 10m | cum | 9151.00 |
| (ii) | For T-beam & slab, 25-35% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 8799.00 |
| (q) | Height 5m to 10m | cum | 9151.00 |
| (r) | Height above 10m | cum | 9503.00 |
| Case II | Using Batching Plant, Transit Mixer and Concrete Pump |  |  |
| (i) | For solid slab super-structure, 20-30% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 12001.00 |
| (q) | Height 5m to 10m | cum | 12501.00 |
| (r) | Height above 10m | cum | 13001.00 |
| (ii) | For T-beam & slab, 25-35% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 12501.00 |
| (q) | Height 5m to 10m | cum | 13001.00 |
| (r) | Height above 10m | cum | 13501.00 |
| C | RCC Grade M 30 |  |  |
| Case I | Using Concrete Mixer |  |  |
| (i) | For solid slab super-structure, 20-30% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 8570.00 |
| (q) | Height 5m to 10m | cum | 8927.00 |
| (r) | Height above 10m | cum | 9284.00 |
| (ii) | For T-beam & slab, 25-35% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 8927.00 |
| (q) | Height 5m to 10m | cum | 9284.00 |
| (r) | Height above 10m | cum | 9641.00 |
| Case II | Using Batching Plant, Transit Mixer and Concrete Pump. |  |  |
| (i) | For solid slab super-structure, 20-30% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 12083.00 |
| (q) | Height 5m to 10m | cum | 12587.00 |
| (r) | Height above 10m | cum | 13090.00 |
| (ii) | For T-beam & slab, 25-35% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 12587.00 |
| (q) | Height 5m to 10m | cum | 13090.00 |
| (r) | Height above 10m | cum | 13594.00 |
| D | RCC/PSC Grade M35 |  |  |
| Case 1 | Using concrete mixer. |  |  |
| (i) | For solid slab super-structure, 18-28% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 8576.00 |
| (q) | Height 5m to 10m | cum | 8940.00 |
| (r) | Height above 10m | cum | 9303.00 |
| (ii) | For T-beam & slab, 23-33% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 8940.00 |
| (q) | Height 5m to 10m | cum | 9303.00 |
| (r) | Height above 10m | cum | 9667.00 |
| (iii) | For box girder and balanced cantilever, 38-58% of cost of concrete. |  |  |
| (p) | Height upto 5m | cum | 10030.00 |
| (q) | Height 5m to 10m | cum | 10757.00 |
| (r) | Height above 10m | cum | 11484.00 |
| Case II | Using Batching Plant, Transit Mixer and Concrete Pump |  |  |
| (i) | For solid slab super-structure, 18-28% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 12021.00 |
| (q) | Height 5m to 10m | cum | 12531.00 |
| (r) | Height above 10m | cum | 13040.00 |
| (ii) | For T-beam & slab, 23-33% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 12531.00 |
| (q) | Height 5m to 10m | cum | 13040.00 |
| (r) | Height above 10m | cum | 13550.00 |
| (iii) | For box girder and balanced cantilever, 38-58% of cost of concrete. |  |  |
| (p) | Height upto 5m | cum | 14059.00 |
| (q) | Height 5m to 10m | cum | 15078.00 |
| (r) | Height above 10m | cum | 16096.00 |
| E | PSC Grade M-40 |  |  |
| Case 1 | Using concrete mixer. |  |  |
| (i) | For solid slab super-structure, 20-30% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 9287.00 |
| (q) | Height 5m to 10m | cum | 9674.00 |
| (r) | Height above 10m | cum | 10061.00 |
| (ii) | For T-beam & slab, 25-35% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 9674.00 |
| (q) | Height 5m to 10m | cum | 10061.00 |
| (r) | Height above 10m | cum | 10448.00 |
| Case II | Using Batching Plant, Transit Mixer and Concrete Pump |  |  |
| (i) | For solid slab super-structure, 18-28% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 12109.00 |
| (q) | Height 5m to 10m | cum | 12622.00 |
| (r) | Height above 10m | cum | 13135.00 |
| (ii) | For T-beam & slab, 23-33% of (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 12622.00 |
| (q) | Height 5m to 10m | cum | 13135.00 |
| (r) | Height above 10m | cum | 13649.00 |
| (iii) | For box girder and balanced cantilever, 38-58% of cost of concrete. |  |  |
| (p) | Height upto 5m | cum | 14162.00 |
| (q) | Height 5m to 10m | cum | 15188.00 |
| (r) | Height above 10m | cum | 16214.00 |
| F | PSC Grade M-45 |  |  |
| (i) | For solid slab/voided slab super-structure, 16-26% of cost of concrete (a+b+c) |  |  |
| (p) | Height upto 5m | cum | 12663.00 |
| (q) | Height 5m to 10m | cum | 13209.00 |
| (r) | Height above 10m | cum | 13755.00 |
| (ii) | For I-beam & slab including launching of precast girders by launching truss upto 40 m span, 21-31% of cost of concrete. |  |  |
| (p) | Height upto 5m | cum | 13209.00 |
| (q) | Height 5m to 10m | cum | 13755.00 |
| (r) | Height above 10m | cum | 14301.00 |
| (iii) | For cast-in-situ box girder, segmental construction and balanced cantilever, 36-56% of cost of concrete. |  |  |
| (p) | Height upto 5m | cum | 14847.00 |
| (q) | Height 5m to 10m | cum | 15938.00 |
| (r) | Height above 10m | cum | 17030.00 |
| G | PSC Grade M-50 |  |  |
| (i) | For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55% of cost of concrete |  |  |
| (p) | Height upto 5m | cum | 15042.00 |
| (q) | Height 5m to 10m | cum | 16157.00 |
| (r) | Height above 10m | cum | 17271.00 |
| H | PSC Grade M- 55 |  |  |
| (i) | For cast-in-situ box girder, segmental construction and balanced cantilever, 35-55% of cost of concrete |  |  |
| (p) | Height upto 5m | cum | 15520.00 |
| (q) | Height 5m to 10m | cum | 16670.00 |
| (r) | Height above 10m | cum | 17820.00 |
| 13.2 | a)Supplying, fitting and placing HYSD bar reinforcement in super-structure complete as per drawing and technical specifications | tonne | 91186.00 |
| 13.3 | High tensile steel wires/strands including all accessories for stressing, stressing operations and grouting complete as per drawing and Technical Specifications | tonne | 108398.00 |
| 13.4 | Providing and laying Cement concrete wearing coat M-30 grade including reinforcement complete as per drawing and Technical Specifications | cum | 16999.00 |
| 13.5 | **Mastic Asphalt** (Providing and laying mastic asphalt wearing course on top of deck slab excluding prime coat with paving grade bitumen meeting the requirements given in table 500-29, prepared by using mastic cooker and laid to required level and slope after cleaning the surface, including providing antiskid surface with bitumen precoated fine grained hard stone chipping of 9.5 mm nominal size at the rate of 0.005cum per 10 sqm and at an approximate spacing of 10 cm center to center in both directions, pressed into surface when the temperature of surfaces not less than 100 deg. C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 515.) |  |  |
| a | **12 mm thick** | sqm | 489.00 |
| b | **25 mm thick** | sqm | 978.00 |
| 13.6 | Construction of precast RCC railing of M30 Grade, aggregate size not exceeding 12 mm, true to line and grade, tolurence of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion, complete as per approved drawings and technical specifications. | metre | 2672.00 |
| 13.7 | Construction of RCC railing of M30 Grade in-situ with 20 mm nominal size aggregate, true to line and grade, tolurence of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion, complete as per approved drawings and technical specifications. | metre | 2605.00 |
| 13.8 | Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification | metre | 5194.00 |
| 13.9 | Drainage Spouts complete as per drawing and Technical specification | each | 2177.00 |
| 13.10 | PCC M15 Grade leveling course below approach slab complete as per drawing and Technical specification | cum | 5866.00 |
| 13.11 | Reinforced cement concrete approach slab including reinforcement and formwork complete as per drawing and Technical specification | cum | 14818.00 |
| 13.12 | Providing anti-corrosive treatment to HYSD reinforcement with Fusion Bonded Epoxy Coating (FBEC) (To be taken as per the prevailing market rates.) | tonne | As per market rate |
| 13.13 | **Precast - pretensioned Girders** (Providing, precasting, transportation and placing in position precast pretensioned concrete girders as per drawing and technical specifications) | cum | 36783.00 |
| 13.14 | **Providing and fixing Helical pipes in voided concrete slabs** | metre | 7339.00 |
| 13.15 | **Crash Barriers** (The rate analysis for rigid crash barrier in reinforced cement concrete, semi-rigid crash barrier with metal beam and flexible crash barrier with wire ropes have been made and included in chapter-7 on Traffic and Transportation.) |  |  |
| 13.16 | **Painting on concrete surface** (Providing and applying 2 coats of water based cement paint to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease, efflorescence and applying paint @ of 1 litre for 2 Sq.m. ) | metre | 145.00 |
| 13.17 | **Burried Joint** (Providing and laying a burried expansion joint, expansion gap being 20 mm, covered with 12 mm thick, 200 mm wide galvanised wieldable structural steel plate as per IS: 2062, placed symmetrical to centre line of the joint, resting freely over the top surface of the deck concrete, welding of 8 mm dia. 100 mm long galvanised nails spaced 300 mm c/c along the centre line of the plate, all as specified in clause 2604.) | metre | 1265.00 |
| 13.18 | **Filler joint** |  |  |
| (i) | Providing & fixing 2 mm thick corrugated copper plate in expansion joint complete as per drawing & Technical Specification. | metre | 518.00 |
| (ii) | Providing & fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & Technical Specification. | metre | 109.00 |
| (iii) | Providing and filling joint sealing compound as per drawings and technical specifications with coarse sand and 6% bitumen by weight | metre | 40.00 |
| 13.19 | **Asphaltic Plug joint** (Providing and laying of asphaltic plug joint to provide for horizontal movement of 25 mm and vertical movement of 2 mm, depth of joint varying from 75 mm to 100 mm, width varying from 500 mm to 750 mm (in traffic direction), covered with a closure plate of 200mm x 6mm of wieldable structural steel conforming to IS: 2062, asphaltic plug to consist of polymer modified bitumen binder, carefully selected single size aggregate of 12.5 mm nominal size and a heat resistant foam caulking/backer rod, all as per approved drawings and specifications.) | metre | 1221.00 |
| 13.20 | **Elastomeric Slab Steel Expansion Joint** (Providing and laying of an elastomeric slab steel expansion joint, catering to right or skew (less than 20 deg., moderately curved with maximum horizontal movement upto 50 mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation and clause 2606 of MoRTH specifications for road & bridge works.) | metre | 16711.00 |
| 13.21 | **Strip Seal Expansion Joint** (Providing and laying of a strip seal expansion joint catering to maximum horizontal movement upto 70 mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.) | metre | 6394.00 |
| 13.22 | **Modular Strip / Box Seal Joint** (Providing and laying of a modular strip Box steel expansion joint including anchorage catering to a horizontal movement beyond 70 mm and upto 140mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.) | metre | 42313.00 |
| 13.23 | **Modular Strip / Box Seal Joint** (Providing and laying of a modular strip box seal expansion joint catering to a horizontal movement beyond 140mm and upto 210mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.) | metre | 85892.00 |
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| **CHAPTER-14** | | | |
| **RIVER TRAINING AND PROTECTION WORKS** | | | |
| 14.1 | **Providing and laying boulders apron on river bed for protection against scour with stone boulders weighing not less than 40 kg each complete as per drawing and Technical specification.** |  |  |
| A | **Boulder laid dry without wire crates.** | cum | 2103.00 |
| 14.2 | **Boulder apron laid in wire crates** (Providing and laying of boulder apron laid in wire crates made with 4mm dia GI wire conforming to IS: 280 & IS:4826 in 100mm x 100mm mesh (weaved diagonally) including 10% extra for laps and joints laid with stone boulders weighing not less than 40 kg each.) | cum | 2749.00 |
| 14.3 | **Cement concrete blocks (size 0.5 x 0.5 x 0.5 m)** (Providing and laying of apron with cement concrete blocks of size 0.5x0.5x0.5 m cast in-situ and made with nominal mix of M-15 grade cement concrete with a minimum cement content of 250 kg/cum as per IRC: 21-2000.) | cum | 6222.00 |
| 14.4 | Providing and laying Pitching on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment complete as per drawing and Technical specifications |  |  |
| A | Stone/Boulder | cum | 2103.00 |
| B | Cement Concrete blocks of size 0.3x0.3 x0.3 m cast in cement concrete of Grade M15 | cum | 6222.00 |
| 14.5 | Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification | cum | 2235.00 |
| 14.6 | **Toe protection** (A toe wall for toe protection can either be in dry rubble masonry in case of dry rubble pitching or pitching with stones in wire crates or it can be in PCC M15 nominal mix if cement concrete block have been used for pitching . Rates for toe wall can be adopted from respective clauses depending upon approved design. The rate for excavation for foundation, dry rubble masonry and PCC M15 have been analysed and given in respective chapters.) |  |  |
| 14.7 | Providing and laying Flooring complete as per drawing and Technical specifications laid over cement concrete bedding. |  |  |
| A | Rubble stone laid in cement mortar 1:3 | cum | 6357.00 |
| B | Cement Concrete blocks Grade M15 | cum | 8194.00 |
| 14.8 | Dry rubble Flooring | cum | 2713.00 |
| 14.9 | Curtain wall complete as per drawing and Technical specification |  |  |
| A | Stone masonry in cement mortar (1:3) | cum | 4450.00 |
| B | Cement concrete Grade M15 | cum | 6100.00 |
| 14.10 | Flexible Apron :Construction of flexible apron 1 m thick comprising of loose stone boulders weighing not less than 40 kg beyond curtain wall. | cum | 2208.00 |
| 14.11 | **Gabian Structure for Retaining Earth** (Providing and construction of a gabain structure for retaining earth with segments of wire crates of size 7 m x 3 m x 0.6 m each divided into 1.5 m compartments by cross netting, made from 4 mm galvanised steel wire @ 32 kg per 10 sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be tied with 4 mm galvanised steel wire) | cum | 2804.00 |
| 14.12 | **Gabian Structure for Erosion Control, River Training Works and Protection works** (Providing and constructing gabain structures for erosion control, river training works and protection works with wire crates of size 2 m x 1 m x 0.3 m each divided into 1m compartments by cross netting, made from 4 mm galvanised steel wire @ 32 kg per 10 sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 mm x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be securely tied with 4 mm galvanised steel wire.) | cum | 4166.00 |

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| **CHAPTER-15** | | | |
| **REPAIR AND REHABILITATION** | | | |
| 15.1 | Removal of existing cement concrete wearing coat including its disposal complete as per Technical specification without causing any detrimental effect to any part of the bridge structure and removal of dismantled material with all lifts and lead upto 1000m(Thickness 75 mm) | sqm | 183.00 |
| 15.2 | Removal of existing asphaltic wearing coat comprising of 50 mm thick asphaltic concrete laid over 12 mm thick mastic asphalt including disposal with all lift and lead upto 1000m. | sqm | 138.00 |
| 15.3 | Guniting concrete surface with cement mortar applied with compressor after cleaning surface and spraying with epoxy (MC Dur 1250 & Accelerated compound Torkrethilfe BE of MC Bauchemie or Equivalent)complete as per Technical specification | sqm | 1181.00 |
| 15.4 | Providing and inserting nipples with approved fixing compound MC Fix ST of MC Bauchemie or Equivalent after drilling holes for grouting as per Technical specifications including subsequent cutting/removal and sealing of the hole as necessary of nipples after completion of grouting with Cement/Epoxy | each | 172.00 |
| 15.5 | Sealing of cracks/porous concrete by injection process through nipples/Grouting With Admixture MC Ein preshilf EH of MC Bauchemie or Equivalent)complete as per Technical specification. |  |  |
| A | Cement Grout | kg | 118.00 |
| B | Cement mortar (1:1) Grouting | kg | 245.00 |
|  |  |  |  |
| 15.6 | Patching of damaged concrete surface with polymer concrete (MC Dur 1250 & Accelerated compound Torkrethilfe BE of MC Bauchemie or Equivalent) and curing compounds Emcoril AC, initiator and promoter, available in present formulations, to be applied as per instructions of manufacturer and as approved by the Engineer. | sqm | 4818.00 |
| 15.7 | Sealing of crack / porous concrete with Epoxy Grout (MC Dur 1264 of MC Bauchemie or Equivalent)by injection through nipples complete as per clause 2803.1. | kg | 710.00 |
| 15.8 | Applying epoxy mortar (MC Dur 1250 of MC Bauchemie or Equivalent)over leached, honey combed and spalled concrete surface and exposed steel reinforcement complete as per Technical specification | sqm | 371.00 |
| 15.9 | Removal of defective concrete, cleaning the surface thoroughly, applying the shotcrete mixture mechanically with compressed air under pressure, comprising of cement, sand, coarse aggregates, water and quick setting compound Centrament Rapid 640 of MC Bauchemie or Equivalent)in the proportion as per clause 2807.1., sand and coarse aggregates conforming to IS: 383 and table 1 of IS: 9012 respectively, water cement ratio ranging from 0.35 to 0.50, density of gunite not less than 2000 kg/cum, strength not less than 25 Mpa and workmanship conforming to clause 2807.6. | sqm | 455.00 |
| 15.10 | Applying pre-packed cement based polymer mortar Nafufill BB2 of MC Bauchemie or Equivalent)of strength 45 Mpa at 28 days for replacement of spalled concrete | sqm | 310.00 |
| 15.11 | Eproxy bonding of new concrete to old concrete | sqm | 569.00 |
| 15.12 | Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestessing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical specification | tonne | 443071.00 |
| 15.13 | Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestessing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical specification | tonne | 471244.00 |
| 15.14 | Providing external prestressing with high tensile steel wires/strands including drilling for passage of prestessing steel, all accessories for stressing and stressing operation and grouting complete as per drawing and Technical specification | tonne | 431415.00 |
| 15.15 | Replacement of bearings complete as per Technical specification | each | 131347.00 |
| 15.16 | Rectification of bearings as per Technical specifications | each | 25312.00 |
| 15.17 | Replacement of Expansion Joints complete as per drawings | metre | 4661.00 |
| 15.18 | Replacement of damaged concrete railing. | metre | 410.00 |
| 15.19 | Replacement of crash barrier. | metre | 751.00 |
| 15.20 | Replacement of damaged mild steel railing | metre | 342.00 |
| 15.21 | **Repair of crash barrier** (Repair of concrete crash barrier with cement concrete of M-30 grade by cutting and trimming the damaged portion to a regular shape, cleaning the area to be repaired thoroughly, applying cement concrete after erection of proper form work.) | metre | 343.00 |
| 15.22 | **Repair of RCC Railing** (Carrying out repair of RCC M30 railing to bring it to the original shape.) | metre | 195.00 |
| 15.23 | **Repair of steel Railing** (Repair of steel railing to bring it to the original shape) | metre | 496.00 |

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| **CHAPTER-16** | | | |
| **MISCELENIOUS ITEMS** | | | |
| 16.01 | **Cautionary/Mandatory/Facility Information Sign Board with Definition Plate** |  |  |
|  | Providing & fixing of cautionary sign board of Cautionary/Mandatory/Facility Information sign board with definition plate of size 200mmx900mm made out of retro reflective sheeting conforming to Type XI standards of ASTM D4956-09 & as per IRC-67: 2012 specifications, fully covered over 4mm thick ACP/2mm thick Al supported with back support frame of 35x35x35mm mild steel angle. Board Shall be fixed to a vertical post of 75x75x6mm mild steel angle of 3.6 mtr height and firmly fixed to the ground by means of properly designed foundation with M20 grade cement concrete 45 cm X 45 cm X 60 cm etc, 60 cm below ground level. 10 years warranty & a certified copy of three years outdoor exposure report from an independent lab as per IRC 67-2012 for Type XI retro reflective sheeting shall be submitted by the contractor. |  |  |
| a | 900mm Triangle - Cautionary Sign | Each | 7740 |
| b | 600 mm Triangle - Cautionary Sign | Each | 6834 |
| c | 600 mm Circle - Mandatory Sign | Each | 6947 |
| d | 900mm Octagon - Mandatory Sign | Each | 10340 |
| e | 600mm x 800mm Rectangle - Facility Information Sign | Each | 8790 |
| 16.02 | **Cautionary/Mandatory/Facility Information Sign Board with SS Structure** |  |  |
|  | Providing & fixing of cautionary sign board of Cautionary/Mandatory/Facility Information sign board made out of retro reflective sheeting conforming to Type XI standards of ASTM D4956-09 & as per IRC-67: 2012 specifications, fully covered over 4mm thick ACP/2mm thick Al supported with back support frame of 25x25x3 mm stainless steel angle of 304 grade. Board Shall be fixed to a vertical post of 80mm dia stainless steel pipe of 3.6 mtr height and firmly fixed to the ground by means of properly designed foundation with M20 grade cement concrete 45 cm X 45 cm X 60 cm etc, 60 cm below ground level. 10 years warranty & a certified copy of three years outdoor exposure report from an independent lab as per IRC 67-2012 for Type XI retro reflective sheeting shall be submitted by the contractor. |  |  |
| a | 900mm Triangle - Cautionary Sign | Each | 10773 |
| b | 600 mm Triangle - Cautionary Sign | Each | 9092 |
| c | 600 mm Circle - Mandatory Sign | Each | 9118 |
| d | 900mm Octagon - Mandatory Sign | Each | 13416 |
| e | 600mm x 800mm Rectangle - Facility Information Sign | Each | 11549 |
| f | 300mm x 900mm Rectangle - Hazard Marker Sign | Each | 7161 |
| g | 600mm x 500mm Rectangle - Chevron Sign | Each | 9185 |
|  |  |  |  |
| 16.03 | **Fluorescent Sign Boards** | | |
|  | Providing & fixing of facility information sign board of size 1000mmx900mm rectangle made out of retro reflective sheeting conforming to Type XI standards of ASTM D4956-09 & as per IRC-67: 2012 specifications in Fluorescent Yellow green with cautionary/mandatory/facility sign inscribed in it, fully covered over 4mm thick ACP/2mm thick Al supported with back support frame of 35x35x5 mm mild steel angle. Board Shall be fixed to a vertical post of 75x75x6mm mild steel angle of 3.6 mtr height and firmly fixed to the ground by means of properly designed foundation with M20 grade cement concrete 45 cm X 45 cm X 60 cm etc, 60 cm below ground level. 10 years warranty & a certified copy of three years outdoor exposure report from an independent lab as per IRC 67-2012 for Type XI retro reflective sheeting shall be submitted by the contractor. | Each | 10374 |
|  |  |  |  |
| 16.04 | **Place Identification Sign/Informatory Sign/Adv.Dir Sign/Reassurance Sign with SS Structure** |  |  |
| a | Providing & fixing of Direction & Place Identification sign board **(Less than 0.9 sq.mtr)** made out of retro reflective sheeting conforming to Type XI standards of ASTM D4956-09 & as per IRC-67: 2012 specifications, fully covered over 4mm thick ACP/2mm thick Al supported with back support frame of 35x35x5 mm stainless steel angle, 304 Gradewith areas not exceeding 0.9 sq.mtr and surrounded by 35mm dia stainless steel pipe of 304 Grade. Board Shall be fixed to a vertical posts of 80mm dia stainless steel pipe, 304 grade of 3.6 mtr height and firmly fixed to the ground by means of properly designed foundation with M20 grade cement concrete 45 cm X 45 cm X 60 cm etc, 60 cm below ground level. 10 years warranty & a certified copy of three years outdoor exposure report from an independent lab as per IRC 67-2012 for Type XI retro reflective sheeting shall be submitted by the contractor. | Sqm | 21610 |
|  |  |  |  |
| b | Providing & fixing of Direction & Place Identification sign board **(More than 0.9 sq.mtr)** made out of retro reflective sheeting conforming to Type XI standards of ASTM D4956-09 & as per IRC-67: 2012 specifications, fully covered over 4mm thick ACP/2mm thick Al supported with back support frame of 35x35x5 mm stainless steel angle, 304 grade with areas exceeding 0.9 sq.mtr and surrounded by 35mm dia stainless steel pipe of 304 grade. Board Shall be fixed to 2 nos of vertical posts of 80mm dia stainless steel pipes, 304 grade of 3.6 mtr height and firmly fixed to the ground by means of properly designed foundation with M20 grade cement concrete 45 cm X 45 cm X 60 cm etc, 60 cm below ground level. 10 years warranty & a certified copy of three years outdoor exposure report from an independent lab as per IRC 67-2012 for Type XI retro reflective sheeting shall be submitted by the contractor. | Sqm | 23828 |

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| 16.05 | **Median Marker** | | |
|  | Supply and Fixing of **Median Marker** which shall be made of tough, high impact resistant, injection-molded, thermoplastic body with an isosceles trapezoidal structure of length, width and height not less than 15cm, 10cm and 10cm respectively and thickness not less than 1.8mm, the body structure shall be rounded at its acute angle, all the corners and edges. The plastic used for molding the Median Marker shall have a minimum Notched Izod Impact strength value of 600 J/m at room temperature, when tested in accordance with ASTM D256 and shall retain at least 70% of this value when subjected accelerated weathering for 1000hrs as per ASTM G155 or ISO 180/A. The logo of the manufacturer shall be embossed on either side of the body in the injection molding process. The Median Marker shall have fluorescent yellow color retro-reflective sheeting of size not less than 8.5cm\*8.5cm and with fully reflective Micro prismatic cube corners as its retro-reflective elements and meets type XI of ASTM D 4956-09 specifications. The retro-reflective sheeting shall be one or both sides of the Median Marker and shall be edge protected with no exposed edges which will prevent edge lifting, vandalism, sheeting damage, etc. The Median Marker shall be fixed by a combination of epoxy adhesive and Grouting. | Each | 446.00 |
|  |  |  |  |
| 16.06 | **Aluminium Backed Flexible Prismatic Sheeting** | | |
|  | Supply and fixing of **Aluminum-backed flexible prismatic (‘AFP’)** sheeting for application in bull nose which shall consist of Yellow colored flexible prismatic sheeting with non-metallic prismatic lens as retroreflective elements and conforming to ASTM D 4956-09 Type VI specification for reboundable retroreflective sheeting. The flexible prismatic sheeting shall be of 1 ft width and laminated at the back with a 50 micron Aluminium (Al) foil with pressure sensitive adhesive and liner. The sheeting shall have a screen printed slant line/arrow in black colour.Neither the AFP sheeting nor the flexible prismatic sheeting used it shall when slowly bent in 1 second time around a 1/8th inch mandrel after being conditioned for 24hrs at 0°C and tested as per section S2.2.2. of ASTM D 4956-09. | Each | 5780.00 |
|  |  |  |  |
| 16.07 | **Solar Raised Pavement Marker** | | |
|  | Supply and fixing of **Solar Raised Pavement Markers** made of polycarbonate molded body with circular shape, solar powered, LED self illumination in active mode, 360 degree illumination and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face in passive mode. The marker shall support a load of 20000 kg tested in accordance to ASTM D 4280. The marker should be resistant to dust and water ingress according to IP 65 standards and should withstand temperatures in the range of 0 C to 70 C. Color of lighting could be provided in red or yellow (amber) as per requirement and typical frequency of blinking is 1 Hz. There should be current losses of less than 20 micro-amperes at 2.4 V in sleep-charging mode to enhance the life of the marker and a full charge should provide for a minimum autonomy of 50 hours. The height, width and length of the marker shall not be less than 10 mm x 100 mm x 100 mm. Also, the surface diameter of the marker shall not be less than 100 mm respectively. The weight of the marker shall not exceed 0.5 Kilograms. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturer’s recommendation and complete as directed by the engineer. Pre Qualification warranty for 2 years for the Solar Raised Pavement Marker from manufacturer shall be submitted by the contractor along with the tender for technical qualification in the tender and the contractor shall also submit test reports from government laboratory/independent laboratory for Compressive Strength and Prevention of Dust & Water for technical qualification in the tender. | Each | 2901.00 |
| 16.08 | Providing and fixing of retro- reflectorised cautionary, mandatory and informatory sign as per IRC :67- 2012 made of high intensity ASTM Class C sheetingtype XI microprismatic retro reflective material vide clause 801.3, fixed over aluminium sheeting, 2.5 mm thick , the sign board Fixed directly to concrete/masonary surfaces as per approved drawing |  |  |
| a | 60 cm circular sign Board | Each | 3570.00 |
| b | 60 cm x 45 cm rectangular | Each | 3400.00 |
| c | 60 cm x 60 cm square | Each | 4505.00 |
| d | 80 mm x 60 mm rectangular | Each | 5950.00 |
| 16.09 | Conducting Survey by using Electronic Total Station, taking existing road levels at three locations for every 10 m. interval and preparation of cross sectional drawings in Auto Cad format , Calculation of quantity of Profile corrective layer & submisasion of Cross sectional drawings along with cross sectional Areas.(Rate inclusive of all Taxes applicable) | Per Km | 6800.00 |
|  |  |  |  |
| 16.10 | Conducting Road Survey by using Electronic Total Station, plotting of existing road,tree,Electric poles , compound wall taking cross sectional levels at every 20 m. interval in width of 30 m. at every 5.m plotting of longitudinal 7 cross section along with the Alignment plan and submission of two hard copies & one soft copy on C.D.(Rate inclusive of all Taxes applicable) | Per Km | 17000.00 |
|  |  |  |  |
| 16.11 | Conducting Detail Engineering & topographical Survey by using Electronic Total Station,plotting of Plot boundries, tree,Electric poles , compound wall ,structures ,roads taking spot levels at 5 x 5 m. interval and preparation of Contour plan at 1.00 m. interval & submission of Auto Cad drawing with two hard copies & one soft copy on C.D. (Rate inclusive of all Taxes applicable) | Per sq.m. | 1.00 |
|  |  |  |  |
| 16.12 | Making lawns Using  **Mexican Ready Lawn** , 1 x 2 feet size panels each including finishing the base, breaking of clods, removal of rubbish, dressing , planting lawn at 15 cm apart, including supplying and spreading of farm yard manure at rate of 0.18 cum per 100 sqm | Sq.m. | 274.00 |
|  |  |  |  |
| 16.13 | Making tree guard using RCC Tree guards made up of M30 grade concrete using vibro compaction process using jointless FRP moulds & suitably reinforced to promote long use & to prevent damage during handling , transportation and erection complete in all respect |  |  |
|  | Four panel size 1800 height x 620 wide x 35 thickness |  |  |
|  | Natural Grey colour | Each | 4973.00 |
|  |  |  |  |
| 16.14 | Protective coating -Paint with Emce Colourflex of MC Bauchemie or Equivalent with a priming coat @100 g/m2 & main polymer coating thickness 200-225 microns @400-450 g/m2 for two coats with approved shades including cost of materials,cleaning ,preparing the surface,chipping,removing loose dirt with wire brush & water ,labour for filling holes,cracks,joints etc.with one component polymer modified fine repair & cosmetic mortar,labour for applying above coating,scaffolding charges etc with all taxes complete as per IRC SP:80 Clause 6.5.1 & clause 2808 of MORT& H specifications latest edition. | Sq.m. | 213.00 |
|  |  |  |  |
| 16.15 | Protective coating for steel structures-Providing & applying MC Bauchemie's MC Dur ZKE or Equivalent,a two component solvent containing Zinc enriched epoxy resin based protective coating for steel construction in marine climate & for construction which are heavily strained by atmosperic conditions and industrial atmospere which is resistant against solid & dissolved salts ,diluted acid,alkalis as well as oil & fat.The metal surface shall be treated by short blasting with Quartz-free abrasive,sand blasting etc. complete.the consumption shall be 100-300 gm/ m2 in two coats with approved shades including cost of materials,cleaning ,preparing the surface,chipping,removing loose dirt with wire brush & water ,labour. | Sq.m. | 213.00 |
|  |  |  |  |
| 16.16 | Providing laying and spreading soil/Aggregate on a prepared sub-grade, pulverising, adding the designed quantity of RBI Grade-81 to the spread soil, mixing in place with rotavator, grading with the motor grader and compacting with the Vibratory roller at OMC to achieve the desired unconfined compressive strength and to form a layer of sub-base/base as per Technical Specification Clause 404.Using 2% RBI Grade-81 | Cum. | 1502.00 |
|  |  |  |  |
| 16.17 | Construction of Sub Base layer using JGRS(Jindal global Road Stabilzer ) an inorganic hydration activated soil stabilizer by mixing & compaction at OMC in specified thickness as per construction methodology provided by Jindal Steel & Power Ltd, Raigarh as per Technical Specification Clause 404.Using 1.5% JGRS | Cum. | Not in RA,Rate-2020= 85% of Old GSR rate1709=1453 |
|  |  |  |  |
| 16.18 | Construction of sub surface drain 200 mm dia using geotextiles treated with carbon black with physical properties as given in clause 702.2.3 formed in to a stable network and a planar geocomposite structure, joints wrapped with geotextile to prevent ingress of soil, all as per clause 702 and approved drawings including excavation and backfilling | Meter | 753.00 |
|  |  |  |  |
| 16.19 | Construction of a narrow filter sub- surface drain consisting of porous or perforated pipe laid in narrow trench surrounded by a geotextile filter fabric, with a minimum of 450 mm overlap of fabric and installed as per clause 702.3 and 309.3.5 including excavation and backfilling | Meter | 658.00 |
| 16.20 | Providing and laying paving fabric with physical requirements as per table 704-2 over a tack coat of paving grade Bitumen 80-100 penetration, laid at the rate of 1 kg per sqm over thoroughly cleaned and repaired surface to provide a water resistant membrane and crack retarding layer. Paving fabric to be free of wrinkling and folding and to be laid before cooling of tack coat, brooming and rolling of surface with pneumatic roller to maximise paving fabric contact with pavement surface | Sq.M. | 235.00 |
|  |  |  |  |
| 16.21 | Providing, preparing and laying of geogrid crated apron 1 m x 5 m, 600 mm thick including excavation and backfilling with baffles at 1 metre interval, made with geogrids having characteristics as per clause 704.2, joining sides with connectors/ring staples, top corners to be tie tensioned, placing of suitable cross interval ties in layers of 300 mm connecting opposite side with lateral braces and tied with polymer braids to avoid bulging, constructed as per clause 704.3. filled with stone with minimum size of 200 mm and specific gravity not less than 2.65, packed with stone spalls, keyed to the foundation recess in case of sloping ground and laid over a layer of geotextile to prevent migration of fines, all as per clause 704 and laid as per clause 2503.3 and approved design. | Cum. | 2225.00 |
|  |  |  |  |
| 16.22 | Supply and Fixing of tiger eye road studs in Asphalt/ concrete roads Using portable diamond core drill of 100mm dia to cut cores of 25mm deep & fixed with Epoxy.The tiger eye road studs shall be Made from fully tempered glass, having a weight of 540grams+ 10 grams, diameter shall be 100mm and fixing depth of 25mm.with a oval glass protrusion of 19mm height and 60mm dia above of surface providing reflection from all anglesas per the drawing. The stud base shall be covered with thermal sprayed aluminium layer for reflection. The glass should be either colourless or have an integral yellow color. Use of coloured reflective coating is not permitted.The road stud shall exhibit a safe compression load carrying capacity of exceeding 50Tonnes when tested in a compression testing machine and should not break when 1kg steel ball is dropped from a height of 1.5m.It shall be ensured that the stud surface is maximum 1mm above the road surface | Each | Not in RA, Rates 85% of Old GSR700.00=595.00 |

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| **CHAPTER-17** | | | |
| **CEMENT CONCRETE PAVEMENTS** | | | |
| 17.1 | Dry Lean Cement Concrete Sub- base (Construction of dry lean cement concrete Sub- base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 tonnes vibratory roller, finishing and curing.) | cum | 5204.00 |
| 17.2 | Cement Concrete Pavement (Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per drawing ) | cum | 8407.00 |
| 17.3 | Rolled Cement Concrete Base (Construction of rolled cement concrete base course with coarse and fine aggregate conforming to IS:383, the size of coarse aggregate not exceeding 25 mm with minimum, aggregate cement ratio15:1 and minimum cement content of 200 kg/cum, aggregate gradation to be as per table 600-4 after blending, mixing in batching plant at optimum moisture content, transporting to site, laying with a paver with electronic sensor, compacting with 8-10 tonnes smooth wheeled vibratory roller to achieve, the designed flexural strength, finishing and curing.) | cum | 5585.00 |
| 17.4 | Transition section between rigid and flexible pavement (Due to change in the properties of materials and type of construction, a gradual changeover from rigid pavement to flexible pavement is desirable to avoid any damage at the butting joint. After provision of an expansion joint in the cement concrete slab, the thickness of slab should be tapered to 10 cm over a length of 3 m towards the flexible pavement. The deficiency of thickness caused due to tapering of the slab should be made up by the asphaltic layers.) | cum | Not in RA,rate= 85% of Old GSR rate2900=2465.00 |
| 17.5 | Construction of Base/Sub-base of pavement with lean concrete - fly ash. (Construction of Base/sub-base using cement, sand, fly ash and coarse aggregates proportioned as per table 4 of IRC: 74/1979 and with water content ratio, slump and compressive strength as defined in the said table, mix prepared in a batching and mixing plant and compacted with a vibratory roller 8-10 tonnes capacity within the time limit laid down vide clause 7.6.3 of IRC: 74-1979, construction joints properly formed at the end of day's work, cured for 14 days, all as specified in IRC: 74-1979 and as per approved plans.) | cum | 4672.00 |
| 17.6 | Cement - Fly ash concrete pavement. (Construction reinforced-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, replacing cement by fly ash to the extent of 15% and sand by 10%, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per drawing ) | cum | 10664.00 |

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| **Goa Schedule of Rates – 2023 for Roads & Bridges (Part - II - State Sector)** | | |
| **CHAPTER NO** | **NAME OF CHAPTER** | **ITEM NOS.** |
| I (A) | Basic Rate Labour | 1701 to 1722 |
| I (B) | Basic Rate Materials | 1801 to 1914 |
| II | Hire Charges for plants & Machinery | 2101 to 2145 |
| III | Transportation and carriage of Materials | 3001 to 3434 |
| IV | Earthworks | 4101 to 4138 |
| V | Laterite Masonary Works | 5101 to 5108 |
| VI | Precast Cement Concrete Works | 6101 to 6109 |
| XII | Dismantling, demolishing & Repair Works | 12101 to 12119 |
| XIII | Landscaping and horticulture works | 13101 to 13117 |
| XIV | Road works | 14001 to 14183 |

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| **Chapter - II** | | | | | |
| **I (A) -BASIC RATES OF LABOUR** | | | | | |
| **Sr. No** |  |  | **Description** | **Unit** | **Rate** |
| 1701 | 1 | a) | (Semi-skilled) Bandhani, Mazdoor | Per day | Rs.460 |
|  |  | b) | (Unskilled) Chowkidar, Hedge cutter, Mali, | Per day | Rs.399 |
|  |  | c) | Mate Coolie (ord.) ,Bhisti, Sweeper, Helper, Beldar | Per day | Rs.399 |
|  |  | d) | Hardrock rock or stone cutting |  | Rs.515 |
|  |  | 1 | Stone cutter 1st class (skilled) | Per day | Rs.515 |
|  |  | 2 | Stone cutter 2nd class (semi-skilled),Chiseller, Hole Driller, breaker, Excavator | Per day | Rs.460 |
|  |  |  |  |  |  |
| 1702 | 2 |  | **Driver** |  |  |
|  |  | a) | For road rollers and heavy machinery | Per day | Rs.515 |
|  |  | b) | For truck | Per day | Rs.515 |
|  |  | c) | For light vehicles, jeep etc. | Per day | Rs.515 |
|  |  |  |  |  |  |
| 1703 | 3 |  | Cleaner: For truck, road roller etc. | Per day | Rs.399 |
|  |  |  |  |  |  |
| 1704 | 4 |  | **Operator** |  |  |
|  |  | a) | Pheumatic drill hammer | Per day | Rs.557 |
|  |  | b) | Concrete mixer, Asphalt boiler | Per day | Rs.515 |
|  |  | c) | Pump attendant, Bitumen sprayer | Per day | Rs.460 |
|  |  | d) | Laboratory attendant, specialised machine | Per day | Rs.460 |
|  |  |  |  |  |  |
| 1705 | 5) |  | **Marines** |  |  |
|  |  | a) | Driver | Per day | Rs.515 |
|  |  | b) | Oarsman, Tandel, Sarang | Per day | Rs.460 |
|  |  |  |  |  |  |
| 1706 | 6 |  | **Mason** |  |  |
|  |  | a) | Stone Ornamental work (highly skilled) | Per day | Rs.557 |
|  |  | b) | 1st class (skilled) | Per day | Rs.515 |
|  |  | c) | 2nd class brick layer, stone layer for plaster of paris work | Per day | Rs.460 |
|  |  | d) | Assistant | Per day | Rs.399 |
|  |  |  |  |  |  |
| 1707 | 7) |  | **Carpenter** |  |  |
|  |  | a) | Furniture (highly skilled) | Per day | Rs.557 |
|  |  | b) | 1st class (skilled) | Per day | Rs.515 |
|  |  | c) | 2nd class (semi-skilled) | Per day | Rs.460 |
|  |  | d) | Assistant | Per day | Rs.399 |
|  |  |  |  |  |  |
| 1708 | 8 |  | **Blacksmith:** |  |  |
|  |  | a) | 1st class (skilled) | Per day | Rs.515 |
|  |  | b) | 2nd class (semi-skilled) | Per day | Rs.460 |
|  |  | c) | Assistant | Per day | Rs.399 |
|  |  |  |  |  |  |
| 1709 | 9 |  | **Fitter** |  |  |
|  |  | a) | 1st class (skilled) | Per day | Rs.515 |
|  |  | b) | 2nd class (semi-skilled) | Per day | Rs.460 |
|  |  | c) | Assistant | Per day | Rs.399 |
|  |  |  |  |  |  |
| 1710 | 10 |  | Welder (Highly skilled) | Per day | Rs.557 |
|  |  |  |  |  |  |
| 1711 | 11 |  | **Mechanic** |  |  |
|  |  | a) | 1st class | Per day | Rs.515 |
|  |  | b) | 2nd class | Per day | Rs.460 |
|  |  | c) | Assistant | Per day | Rs.399 |
|  |  |  |  |  |  |
| 1712 | 12 |  | **Painter** |  |  |
|  |  | a) | Artist painter (Highly skilled) | Per day | Rs.557 |
|  |  | b) | Painter (skilled) | Per day | Rs.515 |
|  |  | c) | 2nd class (semi-skilled) | Per day | Rs.460 |
|  |  | d) | White washer | Per day | Rs.460 |
|  |  |  |  |  |  |
| 1713 | 13 |  | **Plumber, Electrician** |  |  |
|  |  | a) | Highly skilled | Per day | Rs.557 |
|  |  | b) | 1st class (skilled) | Per day | Rs.515 |
|  |  | c) | 2nd class | Per day | Rs.460 |
|  |  |  |  |  |  |
| 1714 | 14 |  | Meter reader, gauge reader | Per day | Rs.515 |
|  |  |  |  |  |  |
| 1715 | 15 | a) | **Supervisor** | Per day | Rs.557 |
|  |  | b) | Mistri | Per day | Rs.557 |
|  |  | c) | Typist | Per day | Rs.515 |
|  |  | d) | works assistant, draughtsman | Per day | Rs.515 |
|  |  | e) | Head Surveyor | Per day | Rs.460 |
|  |  |  |  |  |  |
| 1718 | 16 |  | Dozer operator / dumper/poclain operator/ motor grander / crane operator | Per day | Rs.515 |
|  |  |  |  |  |  |
| 1719 | 17 |  | Compressor operator | Per day | Rs.515 |
|  |  |  |  |  |  |
| 1720 | 18 |  | **Tin smith** |  |  |
|  |  | a) | 1st class | Per day | Rs.515 |
|  |  | b) | 2nd class | Per day | Rs.460 |
|  |  | c) | Assistant | Per day | Rs.399 |
|  |  |  |  |  |  |
| 1721 | 19 |  | **Auto Electrician** |  |  |
|  |  | a) | 1st class (skilled) | Per day | Rs.515 |
|  |  | b) | 2nd class (semi-skilled) | Per day | Rs.460 |
|  |  | c) | Assistant | Per day | Rs.399 |
|  |  |  |  |  |  |
| 1722 | 20 |  | **Rig Operator** |  |  |
|  |  | a) | 1st class (skilled) | Per day | Rs.515 |
|  |  | b) | 2nd class (semi-skilled) | Per day | Rs.460 |
|  |  | c) | Assistant | Per day | Rs.399 |
| Note :These rates are exclusive of contractor's profit and overheads and are inclusive of the wages for weekly day of rest. | | | | | |

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| **CHAPTER I(B)** | | | |
| **BASIC RATES OF MATERIALS** | | | |
| **Sr.No** | **Description** | **Unit** | **Rate** |
| 1801 | Gelatine 80% | kg | 73.00 |
| 1802 | Electric Detonator | Each | 12.00 |
| 1803 | Murrum | Cu.m | 190.00 |
|  | Crushed stone aggregate |  |  |
| 1804 | 90-45 mm | Cu.m | 1280.00 |
| 1805 | 63-45mm | Cu.m | 1410.00 |
| 1806 | 37.50-25mm | Cu.m | 1410.00 |
| 1807 | 25-10mm | Cu.m | 1500.00 |
| 1808 | 13.20-10mm | Cu.m | 1500.00 |
| 1809 | 10-5mm | Cu.m | 1540.00 |
| 1810 | 5mm and below | Cu.m | 1550.00 |
| 1811 | Stone crusher dust | Cu.m | 1050.00 |
| 1812 | Soiling Stone ( Lat ) 150-200m | Cu.m | 480.00 |
| 1813 | Soiling Stone ( Basaltic or Granitic )150-200mm | Cu.m | 780.00 |
| 1814 | Bitumen 80/100 packed | M.T. | 62662.00 |
| 1815 | Bitumen 60/70 packed | M.T. | 60192.00 |
| 1816 | Bitumen 80/100 ( Bulk ) | M.T. | 55620.00 |
| 1817 | Bitumen 60/70 (Bulk) | M.T. | 55150.00 |
| 1818 | Bitumen 85/25 or 30/40 mastic asphalt | M.T. | 62662.00 |
| 1819 | Emulsified Bitumen ( Cationic) | M.T. | 50750.00 |
| 1820 | Furnace Oil | lit | 65.19 |
| 1821 | Lubricant oil | lit | 212.28 |
| 1822 | L.D.O | lit | 80.46 |
| 1823 | Road Marking paint | lit | 268.00 |
| 1824 | Reflective tape | sq.m | 120.00 |
| 1825 | Lime filler | M.T. | 14280.00 |
| 1826 | Broom | Each | 300.00 |
| 1827 | Soft Brushes | Each | 150.00 |
| 1828 | Wire Brush | Each | 200.00 |
| 1829 | Antistripping Agent Excl. 10% C.R. | kg | 202.50 |
| 1830 | Empty Bitumen drum | Each | 150.00 |
| 1831 | Doob grass | kg | 25.00 |
| 1832 | Fine grass | kg | 100.00 |
| 1833 | Pesticide | kg | 190.00 |
| 1834 | Mannure | Cu.m | 1500.00 |
| 1835 | Hedge plant | Each | 25.00 |
| 1836 | Sapplings ( upto 2m high ) | Each | 50.00 |
| 1837 | Shrubs | Each | 50.00 |
| 1838 | Flower plant | Each | 43.00 |
| 1839 | Thorn plant | Each | 60.00 |
| 1840 | Neem cake | QTL | 1800.00 |
| 1841 | 100 mm DIA PVC (RIGID) Pipe 4 kg | mts | 286.00 |
| 1842 | 75 mm DIA PVC (RIGID) Pipe 4 kg | mts | 143.00 |
| 1843 | j. Epoxy ready made primer vertical | Kg | 142.00 |
| 1844 | k. Epoxy ready made primer Horizon | Kg | 142.00 |
| 1845 | l. Epoxy ready made mortar | Kg | 65.00 |
| 1846 | m. sealant Bituminious sheet | Kg | 70.00 |
| 1847 | Lime | Tonne | 14280.00 |
| 1848 | Water | KL | 150.00 |
| 1849 | Cement | Tonne | 6250.00 |
| 1850 | Sand | Cu.m | 1300.00 |
|  | Precast cement concrete tiles |  |  |
| 1851 | 300\* 300\* 25mm thick. | No | 40.00 |
| 1852 | R.C.C. pipe 200 mm dia 2.5m | Mts. | 140.00 |
| 1853 | Blasting material | Kg | 63.75 |
| 1854 | Selected earth for refilling | Cu.m | 350.00 |
| 1855 | Slow curing bitumen emulsion | Kg | 34.48 |
| 1856 | Brick II nd class | No | 8.00 |
| 1857 | MS sheet 50\* 0.5 m | Kg | 44.00 |
| 1858 | Rivets 6m dia and 10m in length | Each | 5.95 |
|  | Paint conforming to 803.3 clause |  |  |
| 1859 | (Ready mixed ) | Litres | 170.00 |
| 1860 | Lettering on Km post | Per cm/per letter | 14.45 |
|  | Pre-cast cement concrete kerb. |  |  |
| 1861 | Stone (factory made) m20 |  |  |
| a | 30 cm\* 50 cm\* 15 cm | RM | 518.00 |
| b | 30 cm\* 40 cm\* 15 cm | RM | 555.00 |
| c | 60 cm\* 45 cm\* 15 cm | RM | 720.00 |
| d | 60 cm\* 30 cm\* 10 cm | RM | 330.00 |
| 1862 | R.C.C. kilometer stone ( Factory made) m20 |  |  |
|  | a. 200 mts stone | No | 540.00 |
|  | b. Kilometer stone on ODR and VR | No | 2800.00 |
|  | c.kms stone on SH,NH and MDR | No | 3300.00 |
|  | d. 5 km Stone | No | 3800.00 |
|  | R.C.C. boundary stone circular 150 mm dia |  |  |
|  | top 200 mm dia at base 90 cm length. | Each | 425.00 |
|  | Precast mushroom type road divider (m 20) |  |  |
| 1863 | 30 cm hight with 40 cm thick at base 20 cms. | Each | 240.00 |
| 1864 | RCC drain with M20( Factory made) | RM | 320.00 |
|  | 30\* 30 cm\* 50 cm long 10 cm |  |  |
|  | a. thickness base 10 cm. |  |  |
| 1865 | RCC slab M20 ( Factory made) |  |  |
| a | 900\* 400\* 150 mm - 30T | Each | 1156.25 |
| b | 900\* 400\* 100 mm - 12T | Each | 805.68 |
| c | 750\* 400\* 100 mm - 4.2 kg | Each | 681.73 |
| d | 700\* 500\* 75 mm - 2.8 kg | Each | 527.25 |
| e | 600\* 500\* 75 mm - 2.2 kg | Each | 496.73 |
| f | 1200\* 400\* 150 with reinforcement not less than 9 kg | Each | 1526.25 |
| g | 1500\* 400\* 150 with reinforcement not less than 12 kg | Each | 1817.63 |
| 1866 | Bentonite | KG | 5.00 |
| 1867 | Fire wood. | Qtl | 500.00 |
| 1868 | Diesel | Litres | 77.03 |
| 1869 | G.I. Pipe 40 mm | Mts. | 110.00 |
| 1870 | Oil paint primer | Sq.Mtrs. | 161.50 |
| 1871 | Alumnium paint | Sq.Mtrs. | 240.00 |
| 1872 | White wash | Kg | 4.68 |
| 1873 | MS sheet 16 gauge. | Kg | 44.00 |
| 1874 | Solvent | Litres | 130.00 |
| 1875 | Stone spall | Cu.m | 148.75 |
| 1876 | Thermoplastic compound | Litres | 145.60 |
| 1877 | Reflectorising glass beads | Kg | 65.00 |
| 1878 | Short Blasted - Grey Colour Size: 250mm x 250mm x 28mm | SQM | 700.00 |
| 1879 | Short Blasted - Other Colour Size: 250mm x 250mm x 28mm | SQM | 800.00 |
| 1880 | Short Blasted - Grey ColourSize: 300mm x 300mm x 30mm | SQM | 750.00 |
| 1881 | Short Blasted - Other ColourSize: 300mm x 300mm x 30mm | SQM | 850.00 |
| 1882 | Short Blaster paving Tiles - Grey Colour Size: 250mm x 500mm x 40mm | SQM | 775.00 |
| 1883 | Short Blaster paving Tiles - Other Colour Size: 250mm x 500mm x 40mm | SQM | 975.00 |
| 1884 | Short Blaster - Grey ColourSize: 400mm x 400mm x 40mm | SQM | 800.00 |
| 1885 | Short Blaster - Other ColourSize: 400mm x 400mm x 40mm | SQM | 1000.00 |
| 1886 | Shot Blasted Paver Blocks - Grey Colour 1) Size: 225 mm x 112.5mm x 60mm (Type: Wave Shape) | SQM | 796.43 |
|  | 2) Size: 210mm x 105mm x 60mm (Type: Rectangular Shape) |  |  |
|  | 3) Size: 150mm x 150mm x 60 mm (Type: Square Shape) |  |  |
| 1887 | Shot Blasted Paver Blocks (60mm) - Other Colour 1) Size: 225 mm x 112.5mm x 60mm (Type: Wave Shape) | SQM | 700.00 |
|  | 2) Size: 210mm x 105mm x 60mm (Type: Rectangular Shape) |  |  |
|  | 3) Size: 150mm x 150mm x 60 mm (Type: Square Shape) |  |  |
| 1888 | Shot Blaster Paver Blocks (65mm) - Grey Colour Type: Flexi/ Multi Pavers (Set of 5 Pieces) | SQM | 1112.78 |
|  | Size: 200mm x 275mm x 65mm, |  |  |
|  | Size: 200mm x 225mm x 65mm, |  |  |
|  | Size: 200mm x 175mm x 65mm, |  |  |
|  | Size: 200mm x 125mm x 65mm, |  |  |
|  | Size: 200mm x 100mm x 65mm |  |  |
| 1889 | Shot Blaster Paver Blocks (65mm) - Other Colour Type: Flexi/ Multi Pavers (Set of 5 Pieces) | SQM | 1230.25 |
|  | Size: 200mm x 275mm x 65mm, |  |  |
|  | Size: 200mm x 225mm x 65mm, |  |  |
|  | Size: 200mm x 175mm x 65mm, |  |  |
|  | Size: 200mm x 125mm x 65mm, |  |  |
|  | Size: 200mm x 100mm x 65mm |  |  |
| 1890 | Shot Blasted paver (70mm) - Grey Colour Size: 210mm x 105mm x 70mm thick (Type: Rectangular Type Pavers) | SQM | 750.00 |
| 1891 | Shot Blasted paver (70mm) - Other Colour Size: 210mm x 105mm x 70mm thick (Type: Rectangular Type Pavers) | SQM | 820.00 |
| 1892 | Shot Blasted paver (80mm) - Grey Colour 1) Size: 210mm x 150mm x 80mm thick (Type: Rectangular Type Pavers), | SQM | 840.00 |
|  | 2) Size: 210mm x 150mm x 80mm thick (Type: Square Type Pavers) |  |  |
| 1893 | Shot Blasted paver (80mm) - Other Colour 1) Size: 210mm x 150mm x 80mm thick (Type: Rectangular Type Pavers), | SQM | 900.00 |
|  | 2) Size: 210mm x 150mm x 80mm thick (Type: Square Type Pavers) |  |  |
| 1894 | Shot Blasted paver (100mm) - Grey Colour Size: 200m x 100mm x 100mm (Type: Rectangular Type) | SQM | 950.00 |
| 1895 | Shot Blasted paver (100mm) - Other Colour Size: 200m x 100mm x 100mm (Type: Rectangular Type) | SQM | 1050.00 |
| 1896 | Organo-Silane Antistripping Agent (Zycotherm make or Equivalentat) | KG | 1400.00 |
| 1897 | Steel (reinforcement) | Kg | 74.00 |
| 1898 | Steel (angles and channels) | Qtl | 7700.00 |
| 1899 | Corrugated sheet,3mmthick | kg | 73.67 |
| 1900 | M.S channel,tees and angles | kg | 46.00 |
| 1901 | Retro reflective sheeting of crystal grade(CRG) | sqm | 10710.00 |
| 1902 | Retro reflective sheeting of ultralite grade (high intensity) | sqm | 8160.00 |
| 1903 | Retro reflective sheeting of Engineering grade | sqm | 5100.00 |
| 1904 | flexible rubber delineaters | each | 600.00 |
| 1905 | Filter Media of stone aggregate confirming to clause 2504.2.2 | cuim | 1090.00 |
| 1906 | road stud 290 series | each | 168.00 |
| 1907 | 900 mm dia. Pipe NP3 | RM | 8360.00 |
| 1908 | 600 mm dia. Pipe NP3 | RM | 4640.00 |
| 1909 | 250 mm dia. RCC pipe | RM | 1300.00 |
| 1910 | 100 mm dia. NP2 pip | RM | 755.00 |
| 1911 | Interlocking C.C. paver block (60 mm thick), M 30 gray colour | SQM | 550.00 |
| 1912 | Interlocking C.C. paver block (80mm thick), M 40 gray colour. | SQM | 740.00 |
| 1913 | Interlocking C.C. paver block (100 mm thick), M 50 gray colour. | SQM | 940.00 |
| 1914 | Aluminium sheeting 60 cm equilateral triangle | Each | 12576.00 |

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| **CHAPTER - II** | | | | | | |
| **BASIC RATES OF PLANTS & MACHINERY FOR ROAD AND BRIDGE WORKS** | | | | | | |
|  | **Machine** | **Activity** | **Output of Machine** | | **Usage and Rates** | |
| **Unit** | **Output** | **Unit** | **Rates excluding GST AND taxes** |
| 2101 | Motor Grader 3.35 metre blade BEML | Clearing Spreading GSB WMM | cum/hour cum/hour cum/hour cum/hour | 200 200 50 50 | Per hour | 575.00 |
|  |  |  |  |  |  |  |
| 2102 | Hydraulic Excavator of 1 cum bucket | Soil Ordinary Soil Marshy Soil Unsuitable | cum/hour cum/hour cum/hour | 60 60 60 | Per hour | 400.00 |
|  |  |  |  |  |  |  |
| 2103 | Front end loader 1 cum bucket capacity | Soil loading Aggregate loading | cum/hour cum/hour | 5.00 7.00 | Per hour | 600.00 |
|  |  |  |  |  |  |  |
| 2104 | Tipper -5 cum/7 cum | Transportation of soil, GSB, WMM, hotmix etc. | Capacity in cum | 50 70 | Per hour/cum | 120.00 |
|  |  |  |  |  |  |  |
| 2105 | Tractor(FARM) | Pulling | Capacity in HP | 50 | Per hour | 490.00 |
|  |  |  |  |  |  |  |
| 2106 | Rotavator | Scarifying | Cum/hour | 25 | Per hour | 600.00 |
|  |  |  |  |  |  |  |
| 2107 | Ripper | Scarifying | Cum/hour | 60 | Per hour | 2400.00 |
|  |  |  |  |  |  |  |
| 2108 | Air Compressor 170 cfm | General Purpose | Capacity in cfm | 170/250 | Per hour | 550.00 |
|  |  |  |  |  |  |  |
| 2109 | Wet Mix Plant 60 TPH | Wet Mix | cum/hour | 25 | Per hour | 1860.00 |
|  |  |  |  |  |  |  |
| 2110 | Mechanical Brooom Hydraulic/Road sweeper | Surface Cleaning | sqm/hour | 1250 | Per hour | 540.00 |
|  |  |  |  |  |  |  |
| 2111 | Bitumen Pressure Distributor | Applying bitumen tack coat | sqm/hour | 1750 | Per hour | 200.00 |
|  |  |  |  |  |  |  |
| 2112 | Emulsion Pressure Distributor | Applying bitumen tack coat | sqm/hour | 1750 | Per hour | 200.00 |
|  |  |  |  |  |  |  |
| 2113 | Drum Mix type Hotmix Plant 30 to 50 TPH Drum Mix Type Hotmix Plant 40-60 TPH | DBM/BM/SDC/Premix DBM/BM/SDC/Premix | cum/hour cum/hour |  | Per hour | 2000.00 |
|  |  |  |  |  |  |  |
| 2114 | Paver Finisher Hydrostatic with sensor control 100 TPH | Paving of DBM/BM/SDC/Premix | cum/hour cum/hour | 40 | Per hour Per hour | 1500.00 |
|  |  |  |  |  |  |  |
| 2115 | Paver Finisher Mechanical 100 TPH | Paving of wmm Paving of DLC | cum/hour | 40 30 | Per hour | 1000.00 |
|  |  |  |  |  |  |  |
| 2116 | Hydraulic Chip Spreader | Surface Dressing | sqm/hour | 1500 | Per hour | 255.00 |
|  |  |  |  |  |  |  |
| 2117 | Tandem vibratory Road Roller (8-10) | Rolling of Asphalt Surface Earth work etc | cum/hour | 30 | Per hour | 325.00 |
|  |  |  |  |  |  |  |
| 2118 | Pneumatic Road Roller | Rolling of Asphalt Surface | cum/hour | 25 | Per hour | 1050.00 |
|  |  |  |  |  |  |  |
| 2119 | Pot-Hole Repair Machine or Jet patcher | Repair of pot-holes | cum/hour | 4 | Per hour | 2355.00 |
|  |  |  |  |  |  |  |
| 2120 | Bitumen Boiler Oil Fired | Bitumen Spraying | Capacity in litre | 1500 | Per hour | 150.00 |
|  |  |  |  |  |  |  |
| 2121 | Mastic Cooker | Mastic Wearing Coat | Capacity in tonne | 1 | Per hour | 140.00 |
|  |  |  |  |  |  |  |
| 2122 | Batching and Mixing Plant a) 30 cum capacity b) 15-20 cum capacity c) 175 cum | Concrete Mixing Concrete Mixing Concrete mixing | cum/hour cum/hour cum/hour | 20 13 0 | Per hour Perhour Perhour | 2000 1500 3590 |
|  |  |  |  |  |  |  |
| 2123 | Transit Mixer | Transpotation of Concrete Mix to site | cum/hour cum/hour | 4.5 3.0 | Per hour Per hour | 1175 1000 |
|  |  |  |  |  |  |  |
| 2124 | Concrete Pump of 45 & 30 cum capacity | Pumping of concrete | cum/hour cum/hour | 33 | Per hour | 377.00 |
|  |  |  |  |  |  |  |
| 2125 | Cranes a) 80 tonnes b) 35 tonnes c)3 tonnes | Lifting Purpose Lifting Purpose Lifting Purpose | cum/hour | 25 | Per hour per hour per hour | 1410 1100 800 |
|  |  |  |  |  |  |  |
| 2126 | Concrete Bucket | For Pouring Concrete | capacity in cum | 1 | Per hour | 90.00 |
|  |  |  |  |  |  |  |
| 2127 | Piling Rig with Bantonite Pump | 0.75 m dia to 1.2 m dia Boring Attachement | Rm/hour | 2 to 3 | Per hour | 4000.00 |
|  |  |  |  |  |  |  |
| 2129 | Concrete Paver Finisher with 40 HP Motor | Paving of Concrete Surface | cum/hour | 20 | per hour | 2000.00 |
|  |  |  |  |  |  |  |
| 2130 | Integrated Stone Crusher | Crushing of spalls Crushing of spalls | TPH | 100 200 | Per hour per hour | 8050 16000 |
|  |  |  |  |  |  |  |
| 2131 | Prestressing Jack with Pump & Access | Stressing of Steel Wires/Stands |  |  | Per hour | 200.00 |
|  |  |  |  |  |  |  |
| 2132 | Generator a) 250 KVA b) 100 KVA c) 33 KVA | Generation of Electric Energy | KVA KVA | 250 100 30 | Per hour per hour | 1100 120 500 |
|  |  |  |  |  |  |  |
| 2133 | Road roller (ord) 8-10 tonnes |  |  | 70 | hr | 1000.00 |
|  |  |  |  |  |  |  |
| 2134 | Water tanker |  |  |  | hr | 380.00 |
|  |  |  |  |  |  |  |
| 2135 | Needle vibrator |  |  |  | hr | 100.00 |
|  |  |  |  |  |  |  |
| 2136 | Shovel |  |  |  | hr | 65.00 |
|  |  |  |  |  |  |  |
| 2137 | Dozer-80 D |  |  |  | hr | 500.00 |
|  |  |  |  |  |  |  |
| 2138 | Water Bowser |  |  |  | hr | 1000.00 |
|  |  |  |  |  |  |  |
| 2139 | Plate compactor |  |  |  | hr | 90.00 |
|  |  |  |  |  |  |  |
| 2140 | Concrete mixer |  |  |  |  |  |
| a | 0.40/0.28 cu.m | concrete mixing |  | cum/hrs | hr | 250.00 |
|  |  |  |  |  |  |  |
| 2141 | Concrete Joint cutting machine |  |  |  | hr | 70.00 |
|  |  |  |  |  |  |  |
| 2142 | Texturing machine |  |  |  | hr | 200.00 |
|  |  |  |  |  |  |  |
| 2143 | Pneumatic sinking plant | Pneumatic sinking of wells |  | 1.50 to 2.00 | hr | 4300.00 |
|  |  |  |  |  |  |  |
| 2144 | Road marking machine | Road marking |  | sq.m./hr | hr | 130.00 |
|  |  |  |  |  |  |  |
| 2145 | Mobile slurry seal Equipment | mixing and laying slurry seal |  | sq.m./hr | hr | 1130.00 |
|  |  |  |  |  |  |  |
| Note: The Hire charges for machinery include ownership charges, cost of repair and maintenance including replacement of tyres and running and operating charges which include crew, fuel and lubricants. | | | | | | |

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| **CHAPTER V** | | | | | | | | | | |
| **TRANSPORTATION AND CARRIAGE OF MATERIALS** | | | | | | | | | | |
|  | **(A) By tipper truck including loading, unloading and stacking** |  |  |  |  |  |  |  |  |  |
| **Item nos** | **Materials** | **Unit** | **1 km** | **2km** | **3km** | **4 km** | **5 km** | **Beyond 5 upto 10 km per km** | **Beyond 5 upto 20 km per km** | **Beyond 5 upto 30 km per km** |
|  | (A) Lime,building rubbish, manure sludge, moorum excavated rock |  |  |  |  |  |  |  |  |  |
| 3001- 8 | ( i ) Lime,moorum, building rubbish | Cum | 108.00 | 131.46 | 154.91 | 178.36 | 201.81 | 23.45 | 23.45 | 23.45 |
| 3009- 16 | ( ii ) Earth | Cum | 135.00 | 164.32 | 193.63 | 222.95 | 252.26 | 29.31 | 29.31 | 29.31 |
| 3017 -24 | ( iii ) Manure or sludge | Cum | 117.40 | 142.89 | 168.38 | 193.87 | 219.36 | 25.49 | 25.49 | 25.49 |
| 3025 -32 | (iv ) Excavated rock | Cum | 216.01 | 262.91 | 309.82 | 356.72 | 403.62 | 46.90 | 46.90 | 46.90 |
|  |  |  |  |  |  |  |  |  |  |  |
| 3033 -40 | ( B ) Sand, stone metal and soling |  |  |  |  |  |  |  |  |  |
| 3041 - 48 | ( i ) Sand stone metal below 40 mm | Cum | 129.60 | 157.75 | 185.89 | 214.03 | 242.17 | 28.14 | 28.14 | 28.14 |
| 30-49 - 56 | ( ii ) Stone metal 40 mm & above | Cum | 140.26 | 170.72 | 201.18 | 231.64 | 262.09 | 30.46 | 30.46 | 30.46 |
| 3057 - 64 | ( iii ) Soling stone | Cum | 152.48 | 185.58 | 218.69 | 251.80 | 284.91 | 33.11 | 33.11 | 33.11 |

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| **CARRIAGE OF MATEIALS** | | | | | | | | | | |
|  | **(B) By mechanical transport including loading, unloading and stacking** |  |  |  |  |  |  |  |  |  |
| **Item nos** | **Materials** | **Unit** | **1 km** | **2km** | **3km** | **4 km** | **5 km** | **Beyond 5 upto 10 km per km** | **Beyond 5 upto 20 km per km** | **Beyond 5 upto 30 km per km** |
|  | (A) Lime,building rubbish, manure sludge, moorum excavated rock |  |  |  |  |  |  |  |  |  |
| 3065 - 72 | (i) Lime,moorum, building rubbish | Cum | 195.12 | 220.15 | 244.72 | 268.29 | 290.94 | 20.35 | 16.37 | 13.20 |
| 3073 - 80 | (ii) Earth | Cum | 243.89 | 275.18 | 305.90 | 335.36 | 363.67 | 25.44 | 20.46 | 16.50 |
| 3081 - 88 | (iii) Manure or sludge | Cum | 212.08 | 239.29 | 266.00 | 291.62 | 316.23 | 22.12 | 17.79 | 14.34 |
| 3089 - 96 | (iv) Excavated rock | Cum | 390.23 | 440.29 | 489.43 | 536.57 | 581.87 | 40.70 | 32.73 | 26.39 |
|  | (B) Sand, stone metal and soling |  |  |  |  |  |  |  |  |  |
| 3097 - 04 | (i) Sand stone metal below 40 mm | Cum | 234.14 | 264.17 | 293.66 | 321.94 | 349.12 | 24.42 | 19.64 | 15.84 |
| 3105 - 12 | (ii) Stone metal 40 mm & above | Cum | 253.40 | 285.90 | 317.81 | 348.42 | 377.84 | 26.43 | 21.25 | 17.14 |
| 3113- 20 | (iii) Soling stone | Cum | 275.46 | 310.79 | 345.48 | 378.76 | 410.73 | 28.73 | 23.10 | 18.63 |
| 3121 - 28 | (2) Bricks | 1000 nos | 585.35 | 1001.27 | 1062.15 | 1121.02 | 1178.03 | 61.04 | 49.10 | 39.59 |
| 3129- 36 | (3) Tiles | 1000 nos | 365.84 | 412.77 | 458.84 | 503.04 | 545.50 | 38.15 | 30.69 | 24.74 |
| 3137- 44 | (4) Cement,stone blocks,C.I,A.C & C.C pipes below 100 mm dia and other heavy materials |  |  |  |  |  |  |  |  |  |
|  |  | Tonne | 167.24 | 188.70 | 209.76 | 229.96 | 249.37 | 17.44 | 14.03 | 11.31 |
| 3145 - 52 | (5 ) Steel | Tonne | 167.24 | 188.70 | 209.76 | 229.96 | 249.37 | 17.44 | 14.03 | 11.31 |
| 3153 - 60 | (6) Timber | cum | 234.14 | 264.17 | 293.66 | 321.94 | 349.12 | 24.42 | 19.64 | 15.84 |
| 3161 - 68 | (7) Tar, bitumen | Tonne | 260.15 | 293.53 | 326.29 | 357.71 | 387.91 | 27.13 | 21.82 | 17.60 |
| 3169 - 76 | (8) Steam coal | cum | 212.85 | 240.16 | 266.96 | 292.68 | 317.38 | 22.20 | 17.85 | 14.40 |
| 3177 - 84 | (9) Stoneware pipes |  |  |  |  |  |  |  |  |  |
|  | (a ) 100 mm dia | 100m | 243.89 | 275.18 | 305.90 | 335.36 | 363.67 | 25.44 | 20.46 | 16.50 |
| 3185 - 92 | (b ) 150 mm dia | 100m | 487.79 | 550.36 | 611.79 | 670.72 | 727.34 | 50.87 | 40.91 | 32.99 |
| 3193 - 00 | (c ) 200 mm dia | 100m | 867.18 | 978.42 | 1087.63 | 1192.38 | 1293.05 | 90.44 | 72.74 | 58.65 |
| 3221 - 28 | (d ) 230 mm dia | 100m | 1114.95 | 1257.97 | 1398.38 | 1533.06 | 1662.49 | 116.27 | 93.52 | 75.41 |
| 3229 - 36 | (e ) 250 mm dia | 100m | 1393.69 | 1572.46 | 1747.97 | 1916.33 | 2078.11 | 145.34 | 116.90 | 94.26 |
| 3237 - 44 | (f ) 300 mm dia | 100m | 1773.78 | 2001.32 | 2224.69 | 2438.96 | 2644.87 | 184.98 | 148.78 | 119.97 |
|  | (10) R.CC, P.C Hume steel C.I pipes |  |  |  |  |  |  |  |  |  |
| 3245 - 52 | (a ) 100 mm dia | 100m | 399.83 | 451.12 | 501.47 | 549.77 | 596.18 | 41.70 | 33.54 | 27.04 |
| 3253 - 60 | (b ) 150 mm dia | 100m | 639.72 | 721.79 | 802.35 | 879.63 | 953.89 | 66.72 | 53.66 | 43.27 |
| 3261 - 68 | (c ) 200 mm dia | 100m | 1066.21 | 1202.98 | 1337.25 | 1466.04 | 1589.81 | 111.19 | 89.43 | 72.11 |
| 3269 - 76 | (d ) 250 mm dia | 100m | 1453.92 | 1640.43 | 1823.52 | 1999.15 | 2167.92 | 151.63 | 98.33 | 98.33 |
| 3277 - 84 | (e ) 300 mm dia | 100m | 1881.54 | 2122.90 | 2359.85 | 2587.14 | 2805.55 | 196.22 | 127.26 | 127.26 |
| 3285 - 92 | (f ) 350 mm dia | 100m | 2665.52 | 3007.45 | 3343.12 | 3665.11 | 3974.53 | 277.98 | 180.28 | 180.28 |
| 3293 - 00 | (g) 400 mm dia | 100m | 3554.02 | 4009.93 | 4457.49 | 4886.81 | 5299.37 | 370.64 | 240.37 | 240.37 |
| 3301 - 08 | (h) 450 ,500 mm dia | 100m | 4569.46 | 5155.62 | 5731.06 | 6283.05 | 6813.47 | 476.54 | 309.05 | 225.66 |
| 3309 - 16 | (i ) 600,700,750,800 mm dia | 100m | 6397.24 | 7217.87 | 8023.49 | 8796.26 | 9538.86 | 667.15 | 432.67 | 432.67 |
| 3317 - 24 | (k) 900, 1000, 1100 & 1 1200mm dia | 100m | 7996.55 | 9022.34 | 10029.36 | 10995.33 | 11923.58 | 833.94 | 540.84 | 540.84 |
| 3325 - 32 | (l)1400,1600,1800 mm dia | 100m | 15993.11 | 18044.68 | 20058.72 | 21990.66 | 23847.15 | 1667.88 | 1081.67 | 1081.67 |
|  |  |  |  |  |  |  |  |  |  |  |
| 3333 - 40 | (11) Empty cement bags | 1000 nos | 5.85 | 6.60 | 7.34 | 8.05 | 8.73 | 0.61 | 0.49 | 0.40 |
|  |  |  |  |  |  |  |  |  |  |  |
| 3341 - 48 | (12) Hollow glass block | 100 nos | 5.57 | 6.29 | 6.99 | 7.67 | 8.31 | 0.58 | 0.47 | 0.38 |

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| **C) BY MANUAL LABOUR INCLUDING LOADING, UNLOADING STACKING FOR A LEAD LESS THAN 0.5Kms.** | | | | | | |
| **Item No.** |  |  | **Materials** | **Unit of rates** | **Costof carriage including loading unloading and stacking for first 50 metres** | **Cost for additional 50m or part thereof beyond 1st 50m upto 0.5m (Y)** |
|  |  |  | **Light Material** |  |  |  |
|  | a) |  | Lime, Murrum, building rubbish, earth, manure or sludge and excavated rocks |  |  |  |
| 3349-50 |  | i. | lime, moorum, earth , building materials, rubbish | 1 cu.m | 101.00 | 22.00 |
| 3351-52 |  | ii. | Earth | 1 cu.m | 126.00 | 27.00 |
| 3353-54 |  | iii. | Manure or sludge | 1cu.m | 109.00 | 24.00 |
| 3355-56 |  | iv. | Exacavated rock | cu.m | 201.00 | 44.00 |
|  | b) |  | Sand, stone aggregate and soiling. |  |  |  |
| 3357-58 |  | i. | sand, stone agg below 40mm nominal | 1cu.m | 126.00 | 27.00 |
| 3359-60 |  | ii. | stone aggregate 40mm & above | 1cu.m | 136.00 | 30.00 |
| 3361-62 |  | iii. | soling stone | 1cu.m | 148.00 | 32.00 |
| 3363-64 |  | iv. | bricks | 1000nos | 235.00 | 51.00 |
| 3365-64 |  | v. | Brick tiles, Allahabad mangalore tiles | 1000nos | 147.00 | 32.00 |
| 3367-68 |  | vi. | Steam coal | 1 tonne | 117.00 | 26.00 |
|  |  |  |  |  |  |  |
| Remarks: | This rate is applicable to net quantities after deduction of prescreibed percentage for voids mentioned in the specification under sub-head "Carriage of materials". | | | | | |

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| **C) CARRIAGE OF MATERIALS BY MANUAL LABOUR INCLUDING LOADING, UNLOADING STACKING FOR A LEAD LESS THAN 0.5Kms.** | | | | | |
| **Sr.no** |  | **Materials** | **Unit of rates** | **Costof carriage including loading unloading and stacking for first 50 metres** | **Cost for additional 50m or part thereof beyond 1st 50m upto 0.5m (Y)** |
|  |  | **Heavy Materials** |  |  |  |
| 3369-72 | a) | Stone blocks .G.I.,C.I, pipes below 100mm dia and other heavy materials | 1 tonne | 92.00 | 13.00 |
| 3371-72 | b) | cement | 1 tonne | 73.00 | 11.00 |
| 3372-74 | c) | Steel | 1 tonne | 156.00 | 23.00 |
| 3375-76 |  | Timber | cu.m | 101.00 | 15.00 |
| 3377-78 |  | Tar, bitumen, etc. | 1 tonne | 92.00 | 13.00 |
| 3379-80 |  | S.W. pipes |  |  |  |
| 3381-82 | a) | 100mm | 100m | 184.00 | 27.00 |
| 3383-84 | b) | 150mm | 100m | 302.00 | 44.00 |
| 3385-86 | c) | 200mm | 100m | 423.00 | 62.00 |
| 3387-88 | d) | 230mm | 100m | 541.00 | 79.00 |
| 3389-90 | e) | 250mm | 100m | 704.00 | 103.00 |
| 3391-92 | f) | 300mm | 100m | 1005.00 | 147.00 |
| 3393-94 | g) | 350mm | 100m | 1407.00 | 206.00 |
| 3395-96 | h) | 400mm | 100m | 1759.00 | 258.00 |
| 3397-98 | i) | 450mm | 100m | 2132.00 | 313.00 |
| 3399-00 | j) | 500mm | 100m | 2606.00 | 382.00 |
| 3401-02 | k | 600mm | 100m | 3198.00 | 469.00 |
|  |  | R.C.C. pipes, steel cylinders,R.C. pipes, C.I. pipes, Ununreinforced pipes |  |  |  |
| 3403-05 | a) | 100mm | 100m | 248.00 | 36.00 |
| 3405-06 | b) | 150mm | 100m | 303.00 | 45.00 |
| 3407-08 | c) | 200mm | 100m | 349.00 | 51.00 |
| 3409-10 | d) | 230mm | 100m | 524.00 | 77.00 |
| 3411-12 | e) | 250mm | 100m | 922.00 | 135.00 |
| 3413-14 | f) | 300mm | 100m | 1153.00 | 169.00 |
| 3415-16 | g) | 350mm | 100m | 1649.00 | 242.00 |
| 3417-18 | h) | 400mm | 100m | 1919.00 | 282.00 |
| 3419-20 | i) | 450mm & 500mm dia | 100m | 2558.00 | 375.00 |
| 3421-22 | j) | 600, 700,750 & 800 mm | 100m | 2814.00 | 413.00 |

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| **C) CARRIAGE OF MATERIALS BY MANUAL LABOUR INCLUDING LOADING, UNLOADING STACKING FOR A LEAD LESS THAN 0.5Kms.** | | | | | |
| **Sr.no** |  | **Materials** | **Unit of rates** | **Cost of carriage including loading unloading and stacking for first 50 metres** | **Cost for additional 50m or part thereof beyond 1st 50m upto 0.5m (Y)** |
|  |  | **Asbestos Cement sheets** |  |  |  |
| 3423-24 | a) | 50mm dia | 100m | 42.00 | 6.00 |
| 3424-25 | b) | 80mm dia | 100m | 115.00 | 17.00 |
| 3426-27 | c) | 100 mm dia | 100m | 165.00 | 24.00 |
| 3428-29 | d) | 150mm dia | 100m | 231.00 | 34.00 |
| Remark: | | The length of SW pipes will be measured excluding of the internal depth of sockets. | | | |

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| **MISCELLANEOUS** | | | | |
| **Sr. No** |  | **Description** | **Unit** | **Rate** |
| 3430 |  | Loading in or unloading cement from the railway wagons at siding and caring the same from or into godown adjacent to the siding including stacking the same properly into the rows upto any height as per direction of Engineer - in - charge and sweeping the floors. | Tonne | 24.00 |
| 3431 | a) | Steel | Per M.T. | 33.00 |
| 3432 | b) | C.I., G.I. or C.C. pipes upto 500 mm dia and similar heavy materials (except cement and steel). | Per M.T. | 22.00 |
| 3433 | c) | Heavy materials where each piece or bundle crate, or case weights more than one tonne and R.C.C. C.I., and concrete pipe above 500 mm dia. | Per M.T. | 46.00 |
| 3434 |  | Extra for sorting the steel size wise inside the store yard and stacking the same for measurements within the lead of 100 metres as directed by the Engineer in charge. | Per M.T. | 56.00 |
| Remarks: The rates will be applicable in all whether materials are unloaded on or loaded from railway siding or directly unloaded on or loaded from transport. No deduction shall be made from carriage rates for such direct unloading or loading. | | | | |

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| **CHAPTER IV** | | | | |
| **EARTHWORKS** | | | | |
| **SR.No.** |  | **DESCRIPTION** | **UNIT** | **RATE** |
|  |  | Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material with all lifts and upto a lead of 1000 m and earth filling in the depression/pit as per MORTH specification 201 |  |  |
| 4101 |  | Girth from 300 mm to 600 mm | Each | 407.00 |
| 4102 |  | Girth from 600 mm to 900 mm | Each | 705.00 |
| 4103 |  | Girth from 900 mm to 1800 mm | Each | 1403.00 |
| 4104 |  | Girth above 1800 mm | Each | 2686.00 |
|  |  |  |  |  |
|  |  | Clearing grass and removal of rubbish upto a distance of 50 metres outside the periphery of the area as per MORTH Specification 201 |  |  |
| 4105 |  | By Manual means | Hectare | 29084.00 |
|  |  |  |  |  |
|  |  | Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees grith upto 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, upto a lead of 1000 m including removal and disposal of top organic soil not exceeding 150 mm in thickness as per MORTH SPecification 201 |  |  |
|  |  | By Manual Means |  |  |
| 4106 |  | In area of light jungle | Hectare | 87849.00 |
| 4107 |  | In area of thorny jungle | Hectare | 117532.00 |
|  |  | By Mechanical Means |  |  |
| 4108 |  | In area of light jungle | Hectare | 9036.00 |
| 4109 |  | In area of thorny jungle | Hectare | 11721.00 |
|  |  |  |  |  |
| 4110 |  | Excavation for roadway in soil using manual means including loading in truck for carrying of cut earth to embankement site with all lifts and lead upto 1000 metres as per MORTH Specification 301( for cut and fill sectors necessary deduction for carriage shall be made) | m3 | 230.00 |
|  |  |  |  |  |
| 4111 |  | Excavation for roadway in soil by mechanical means including cutting and pushing the earth to site of embankement upto a distance of 100 metres (average lead 50 metres), including trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.as per MORTH Specification 301 | m3 | 27.00 |
| 4112 |  | Excavation for roadway in ordinary rock by deploying a dozer, 80 HP including cutting and pushing the cut earth to site of embankement upto a distance of 100 metres( average lead 50 metres), trimming bottom and side slopes in accordance with the requirements of lines grades and cross sections as per MORTH Specification 301 | m3 | 50.00 |
|  |  |  |  |  |
| 4113 |  | Excavation for roadway in hardrock (requiring blasting) by drilling, blasting and breaking trimming of bottom and side slopes in accordance with requirements of lines, grades and cross sections, loading and disposal of cut road with in all lifts and leads upto 1000 metres as per MORTH Specification 301 . **(Rate is for total excavation item only. Credit for excavated rock shall be taken up as seperate item in the estimate with 50% quantity of excavated rock)** | m3 | 145.00 |
|  |  |  |  |  |
| 4114 |  | |  | | --- | | Excavation for roadway in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes in accordance with requirements on lines, grades and cross sections, and transporting to the embankement location within all lifts and lead upto 1000 m as per MORTH Specification 301 | | m3 | 18.00 |
|  |  |  |  |  |
| 4115 |  | Excavation for roadway in ordinary rock with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, transporting to embankement site within all lifts and leads upto 1000 m trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections as per MORTH Specification 301 | m3 | 24.00 |
|  |  |  |  |  |
|  |  | Excavation for roadway in hardrock (blasting prohibited) with rock breakers including breaking rock, loading in tippers and disposal within all lifts and lead upto 1000 metres trimming bottom and side slopes in accordance with requirements of lines, grades and cross-sections as per MORTH Specification 301 **(The quality and availability of rock shall be checked before affording credit.Credit for excavated rock found suitable for use @ 50 per cent of excavated quantity )** |  |  |
| 4116 |  | Mechanised | m3 | 114.00 |
| 4117 |  | Manual Method | m3 | 1365.00 |
|  |  |  |  |  |
|  |  | |  | | --- | | Excavation for roadway in hard rock with controlled blasting by drilling, blasting and breaking, triming of bottom and side slopes in accordance with requirements of lines grades and cross sections, loading and disposal of cut road with in all lifts and leads upto 1000 metres as per MORTH Specification 301 (**The quality and availability of rock shall be checked before affording credit .Credit for excavated rock found suitable for use @ 50 per cent of excavated quantity )** | |  |  |
| 4118 |  | Mechanised | m3 | 59.00 |
| 4119 |  | Excavation for roadway in marshy soil with hydraulic excavator 0.9 cum bucket capacity including cutting and loading in tippers and disposal with in all lifts and lead upto 1000 metres, trimming of bottom and side slopes in accordance with requirements of lines, grades and cross-sections as per MORTH Specification 301 | m3 | 20.00 |
|  |  |  |  |  |
| 4120 |  | Removal of unserviceable soil including excavation, loading and disposal upto 1000 metres lead but excluding replacement by suitable soil which shall be paid separately as per Clause 305 of MORTH Specification | m3 | 18.00 |
|  |  |  |  |  |
|  |  | Earthwork in excavation of foundation of structures of culverts,abntments piers, retaining walls etc. as per drawing and technical specification, including setting out construction of shoring and bracing removal of stumps and other deleterious matter, dressing of sides and bottom, back filling the excavation earth to the extent required and utilising the remaning earth locally for road work upto 3.00 m depth as per MORTH Specification 304 |  |  |
|  |  | EXCLUDING DEWATERING |  |  |
|  |  | Ordinary soil |  |  |
| 4121 |  | Manual Means | m3 | 465.00 |
| 4122 |  | Mechanical Means | m3 | 25.00 |
|  |  |  |  |  |
|  |  | Ordinary Rock (not requiring blasting) |  |  |
| 4123 |  | Manual Means | m3 | 582.00 |
|  |  |  |  |  |
| 4124 |  | Mechanical Means | m3 | 30.00 |
|  |  |  |  |  |
| 4125 |  | Hard Rock (requiring blasting) | m3 | 863.00 |
|  |  |  |  |  |
|  |  | Hard Rock (blasting prohibited) |  |  |
| 4126 |  | Mechanical Means | m3 | 963.00 |
|  |  |  |  |  |
|  |  | Marshy soil |  |  |
| 4127 |  | Manual Means | m3 | 955.00 |
| 4128 |  | Mechanical Means | m3 | 361.00 |
|  |  |  |  |  |
|  |  | Earthwork in excavation of foundation of structures of culvert abutments, piers, retaining walls etc.as per drawing and technical specification, including setting out construction of shoring and bracing removal of stumps and other deleterious matter, dressing of sides and bottom, back filling the excavation earth to the extent required and utilising the remaning earth locally for road work upto 3 m depthas per MORTH Specification 304 |  |  |
|  |  | INCLUDING DEWATERING |  |  |
|  |  | Ordinary soil |  |  |
| 4129 |  | Mechanical Means | m3 | 27.00 |
|  |  | Ordinary Rock (not requiring blasting) |  |  |
| 4130 |  | Mechanical Means | m3 | 31.00 |
|  |  | Hard Rock (blasting prohibited) |  |  |
| 4131 |  | Mechanical Means | m3 | 1011.00 |
|  |  |  |  |  |
|  |  | Marshy soil ( without shoring and strutting) |  |  |
| 4132 |  | Manual Means | m3 | 1100.00 |
| 4133 |  | Mechanical Means | m3 | 382.00 |
|  |  |  |  |  |
|  |  | Marshy soil ( with shoring and strutting) |  |  |
| 4134 |  | Manual Means | m3 | 1052.00 |
| 4135 |  | Mechanical Means | m3 | 368.00 |
|  |  |  |  |  |
| 4136 |  | Removal of earth from the choked hill side drain and disposing it on the valley side manually as per MORTH Specification 3000 | m3 | 60.00 |
|  |  |  |  |  |
| 4137 |  | Clearance of landslides in soil and ordinary rock by a bull-dozer D 80 A-12, 180 HP and disposal of the same on the valey side as per MORTH Specification 3000 | m3 | 16.00 |
|  |  |  |  |  |
| 4138 |  | Clearing of landslide in hard rock requiring blasting for 50 per cent of the boulders and disposal of the same on the valley side as per MORTH Specification 3000 | m3 | 66.00 |

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| **CHAPTER - V** | | | | |
| **Laterite Masonary Work** | | | | |
| **Sr. No** |  | **Description** | **Unit** | **Rate** |
| 5101 |  | Dry stone pitching 22.5 cms thick using laterite stone of approved quality including supplying of stone and preparing surface etc. complete. | m2 | 596.00 |
|  |  |  |  |  |
| 5102 |  | Dry stone pitching 22.5 cms thick using stone available from excavation incl. Preparing the surface etc. complete. | m2 | 306.00 |
|  |  |  |  |  |
| 5103 |  | Stone pitching of 22.5 cms thick using laterite stone of approved quality in cement mortar 1:5( 1 cement : 5 coarse sand) including supplying of stone and preparing surface etc. complete. | m2 | 685.00 |
|  |  |  |  |  |
| 5104 |  | Stone pitching of 22.5 cms thick cement mortar 1:5 ( 1 cement : 5 coarse sand) using stones available from excavation including preparing surface etc. complete. | m2 | 396.00 |
|  |  |  |  |  |
| 5105 |  | Laterite boulder masonry in mud mortar in foundation | m3 | 2932.00 |
|  |  |  |  |  |
| 5106 |  | Laterite boulder masonry in cement mortar 1:3 in foundation | m3 | 3997.00 |
|  |  |  |  |  |
| 5107 |  | Laterite boulder masonry in cement concrete1:3:6( 1cement, 3 coarse sand:6 graded stone aggregate of 40mm nominal size) in foundation | m3 | 3806.00 |
|  |  |  |  |  |
| 5108 |  | Extra for laterite boulder masonry in superstructure | m3 | 426.00 |

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| **CHAPTER - VI** | | | | |
| **PRECAST CEMENT CONCRETE WORKS** | | | | |
| **Sr. No** |  | **Description** | **Unit** | **Rate** |
| 6101 |  | Supplying and fixing Pre-cast cement concrete kerb-stones(factory made,the factory should be ISO certified and registered under Dirctorate of Industries, Govt. of India) of M-20 with 20 mm nominal size granitic/basaltic aggregate properly consolidated by mechanical plat-form and vibrators with smooth finish including fixing at site complete as per specification. |  |  |
| a |  | Size 30 cm L x 50 cm H x 15 cm T | R.M. | 654.00 |
| b |  | Size 30 cm L x 40 cm H x 15 cm T | R.M. | 701.00 |
| c |  | Size 60 cm L x45 cm H x 15 cm T | R.M. | 909.00 |
| d |  | Size 60 cm L x30 cm H x 10cm T | R.M. | 417.00 |
|  |  |  |  |  |
| 6102 |  | Supplying and fixing of pre-cast RCC kilometer stones (factory made) confirming to IRC 26-1967 in M-20 grade with 20mm nominal size of granitic/basaltic aggregate compacted by means of mechanical vibrator curing etc. Cost including Reinforcement etc. with a smooth finish (the cost of bed concrete and excavation to be paid separately.) |  |  |
|  | a | 200 mt. stones as per drawing | Each | 690.00 |
|  | b | Kilometer stones or ODR and V.R. | Each | 3577.00 |
|  | c | Kilometer stone on N.H, SH and MD Roads | Each | 4216.00 |
|  | d | 5th km stones on NH SH and MD Roads | Each | 4855.00 |
|  |  |  |  |  |
|  |  | Supplying and fixing in position factory made Pre-cast RCC boundary stones confirming to IRC-25-1967 in concrete grade of M-20 with 20 mm nominal size granitic/basaltic aggregate compacted by means of mechanical vibrator in a smooth form of finish and 6mm dia bars in five no.s. stirrups and two number inverted 'U' size bars etc. complete (Excavation, bed concrete to be paid seperately) |  |  |
| 6103 |  | Circular 150 mm dia at top 200 mm dia at base and 900 m length. | Each | 543.00 |
|  |  |  |  |  |
| 6104 |  | Supplying and fixing in position factory made pre- cast cpncrete mushroom type road dividers in a grade of M-20 mm nom. Size granitic/basaltic aggregate compacted by mechanical vibrator in a form of smooth finish etc. Overall height 36 cm, over all width 40 cm and thickness standing base 20 cm | R.M. | 307.00 |
|  |  |  |  |  |
|  |  | Supplying and fixing in position factory made RCC drain - sections in a grade of concrete M-20 with 20 mm nominal size course aggregate of basaltic/ granitic and compacted by means of mechanical vibrator etc. complete including providing reinforcement with 6mm dia bars@ 15 cm c/c. |  |  |
| 6105 | a | Size-Internal clear channel 30 x30 cm length 50 cm, wall thickness 10 cm and base 10 cms | R.M. | 409.00 |
| 6106 |  | Supplying and fixing of Precast RCC slabs(factory made,the factory should be ISO certified and registered under Dirctorate of Industries, Govt. of India) at site in concrete Grade of M-25 with 20 mm nominal size Granitic or basaltic aggregate, consolidated by means of mechanical platform, vibration etc. with lifting hooks of M.s. 10mm bars and PVC cups including cost of reincforcement, Certificate from manufacturer shall be produced indicating grade of concret and minimum content of steel in the product along with 5 year free replacement warranty in case of breakage complete and as directed by Engineer -in -charge. |  |  |
|  | a | Size 900 x 400 x 150 mm with steel reinforcement not less than 7 kg per unit -30 T capacity. | Each | 1460.00 |
|  | b | Size 900 x 400 x 100 mm with steel reinforcement not less than 5.0 kgs per unit -12 T capacity | Each | 1017.00 |
|  | c | size 750 x 400 x 100 mm cm with reinforcement not less than 4.2 kg perunit | Each | 852.00 |
|  | d | Size 700 x 500 x 75 mm with steel reinforcemnt not less than 3.0 kgs per unit | Each | 666.00 |
|  | e | Size 600 x 500 x 75 mm with steel reinforcement not less than 2.25 kg per unit | Each | 627.00 |
|  | f | Size 1200 x 400 x 150 mm with reinforcement not less than 9 kg | Each | 1850.00 |
|  | g | Size 1500 x 400 x 150 mm with reinforcement not less than 12 kg | Each | 2203.00 |
|  |  |  |  |  |
| 6107 |  | Reinforced cement concrete M 15 grade kilometre stone factory made of standard design as per IRC:8-1980 fixing in position including painting and printing etc as per MORTH Specificatiom 804 |  |  |
|  | a | 5th kilometre stone(precast) | Each | 8668.00 |
|  | b | Ordinary kilometre stone(precast) | Each | 4328.00 |
|  |  |  |  |  |
| 6108 |  | Reinforced cement concrete M 15 grade boundary pillars of (factory made)standard design as per IRC:25-1967 fixed in position including finishing and lettering but excluding painting as per MORTH Specification 806 | Each | 1301.00 |
|  |  |  |  |  |
| 6109 |  | Construction of rolled cement concrete base course with coarse and fine aggragate conforming to IS:383 the size of coarse aggregate not exceeding 25 mm with minimum aggregate cement ratio 15:1 and minimum cement of 200 kg/cum, aggtr. Gradation to be as per Table 600-4 after blending, mixing in batching plant at optimum moisture content, transporting to site laying with a paver with electronic sensor, compacting with 8-10 tonnes smooth wheeled vibratory roller to achieve the designed flexural strength finishing and curing as per MORTH Specification 602 | m3 | 5264.00 |

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| **CHAPTER XII** | | | | |
| **DISMANTLING DEMOLISHING & REPAIRS WORK** | | | | |
| **Sr. No.** |  | **Description** | **Unit** | **Rate** |
| 12101 |  | Cutting water bound macadam road and making good the same including supply of extra quantities of aggregate murum and 6 mm stone chips basaltic. | m2 | 351.00 |
|  |  |  |  |  |
| 12102 |  | Breaking of excavated laterite rock to the required size 9150 mm to 300 mm) | m3 | 70.00 |
|  |  |  |  |  |
| 12103 |  | Breaking of excavated granitic or basaltic rock to the required size 150 mm to 300 mm) | m3 | 187.00 |
|  |  |  |  |  |
| 12104 |  | Breaking of excavated laterite rock of 80 mm size | m3 | 140.00 |
|  |  |  |  |  |
| 12105 |  | Breaking of excavated granitic or basltic rock of 80 mm size | m3 | 374.00 |
|  |  |  |  |  |
| 12106 |  | Breaking of excavated laterite rock of 60 mm size | m3 | 234.00 |
|  |  |  |  |  |
| 12107 |  | Breaking of excavated granitic or basaltic rock of 60 mm size | m3 | 655.00 |
|  |  |  |  |  |
| 12108 |  | Breaking of excavated laterite rock to 40 mm to 50mmsize | m3 | 351.00 |
|  |  |  |  |  |
| 12109 |  | Breaking of excavated granitic or basaltic rock to 40 mm to 50 mm size | m3 | 936.00 |
|  |  |  |  |  |
| 12110 |  | Breaking of excavated laterite rock to less than 40 mm size. | m3 | 398.00 |
|  |  |  |  |  |
| 12111 |  | Breaking of excavated granitic or basaltic rock to less than 40 mm size | m3 | 1077.00 |
|  |  |  |  |  |
| 12112 |  | Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete wood work, steel work, including T & P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metresas per MORTH 202 |  |  |
|  | I | By Manual means |  |  |
|  | a | Lime concrete, cement concrete grade M-10 and below | m3 | 595.00 |
|  | b | Cement concrete grade M-15 & M-20 | m3 | 711.00 |
|  | c | Prestressed/reinforced cement concrete grade M-20 and above | m3 | 1874.00 |
|  | II | By Mechanical Means |  |  |
|  | a | Cement concrete grade M-15 & M-20 | m3 | 722.00 |
|  | b | Prestressed/reinforced cement concrete grade M-20 & above | m3 | 1208.00 |
|  |  |  |  |  |
|  | III | Dismantling Brick/Tile Work |  |  |
|  | a | In lime mortar | m3 | 362.00 |
|  | b | In cement mortar | m3 | 478.00 |
|  | c | In mud mortar | m3 | 315.00 |
|  | d | Dry brick pitching or brick soling | m3 | 292.00 |
|  | IV | Dismantling Stone Masonry |  |  |
|  | a | Rubble stone masonry in lime mortar | m3 | 409.00 |
|  | b | Rubble stone masonry in cement mortar | m3 | 478.00 |
|  | c | Rubble stone masonry in mud mortar | m3 | 362.00 |
|  | V | Dry rubble masonry | m3 | 339.00 |
|  | VI | Dismantling stone pitching/dry stone spalls | m3 | 315.00 |
|  | VII | Dismantling boulders laid in wire crates including opening of crates and stacking dismantled materials | m3 | 362.00 |
|  | VIII | Wood Work Wrought Framed and Fixed in Frames of Trusses upto a Height of 5 m above Plinth Level | m3 | 854.00 |
|  | IX | Steel Work in all types of Sections upto a Height of 5 m above Plinth Level excluding Cutting of Rivet |  |  |
|  | a | Including dismembering | Tonne | 2189.00 |
|  | b | Excluding dismembering | Tonne | 1652.00 |
|  | c | Extra over item No (v) A and (v) B for cutting rivets | Each | 15.00 |
|  | X | Scraping of Bricks Dismantled from Brick Work including Stacking |  |  |
|  | a | In lime/cement mortar | 1000 nos | 2036.00 |
|  | b | In mud mortar | 1000 nos | 731.00 |
|  | XI | Scraping of Stone from Dismantled Stone Masonry |  |  |
|  | a | In cement and lime mortar | m3 | 816.00 |
|  | b | In mud mortar | m3 | 174.00 |
|  | XII | Scraping Plaster in Lime or Cement mortar from Brick/Stone Masonry | m2 | 25.00 |
|  | XIII | Removing all types of Hume Pipes and Stacking within a lead of 1000 metres including Earthwork and Dismantling of Masonry Works as per MORTH specification202 |  |  |
|  | a | Upto 600 mmm dia | m | 302.00 |
|  | b | Above 600 mm to 900 mm dia | m | 408.00 |
|  | c | Above 900 mm | m | 699.00 |
|  |  |  |  |  |
| 12113 |  | Dismantling of flexible pavements and disposal of dismantled materials upto a lead of 1000 metres, stacking serviceable and unserviceable materials separately as per MORTH specification 202 |  |  |
|  | I | By Manual means |  |  |
|  | a | Bituminous Courses | m3 | 1100.00 |
|  | b | Granular courses | m3 | 779.00 |
|  | II | By Mechanical Means |  |  |
|  | a | Bituminious courses | m3 | 461.00 |
| 12114 |  | Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials upto a lead of 1000 metres, stacking serviceable and unserviceable materials separately as per MORTH Specification 202 | m3 | 1646.00 |
|  |  |  |  |  |
| 12115 |  | Dismantling guard rails by manual means and disposal of dismantled material with all lifts and upto a lead of 1000 metres, stacking serviceable materials and unserviceable materials separately as per MORTH Specification 202 | metre | 117.00 |
|  |  |  |  |  |
| 12116 |  | Dismantling kerb stone by manual means and disposal of dismantled material with all lifts upto a lead of 1000 metre per MORTH Specification 202 | metre | 21.00 |
|  |  |  |  |  |
| 12117 |  | Dismantling kerb stone channel by manual means and disposal of dismantled material with all lifts and upto a lead of 1000 metre as per MORTH Specification 202 | metre | 31.00 |
|  |  |  |  |  |
| 12118 |  | Dismantling of kilometre stone including cutting of earth, foundation and disposal of dismantled material with all lifts and lead up to 1000 m and back filling of pit as per MORTH Specification 202 |  |  |
|  |  | 5th km stone | Each | 695.00 |
|  |  | Ordinary km stone | Each | 381.00 |
|  |  |  |  |  |
| 12119 |  | Removal of telephone/electric poles including excavation and dismantling of foundation concrete and lines under the supervision of concerned department, disposal with all lifts and upto a lead of 1000 metres and stacking the serviceable and unserviceable material separately as per MORTH Specification 202 | Each Pole | 214.00 |

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| **CHAPTER XIII** | | | | |
| **LANDSCAPING & HORTICULTURE WORK** | | | | |
| **Sr.No.** |  | **Description** | **Unit** | **Rate** |
| 13101 |  | Spreading of sludge farm yard manure or/and good earth in required thickness (cost of sludge, farm-yard manure or/and good earth to be paid separately) as per MORTH Specification 307 | m3 | 39.00 |
|  |  |  |  |  |
| 13102 |  | Grassing with Doob grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for moving including supplying good earth if needed as per MORTH Specification 307 |  |  |
| a | In rows 15 cm apart in either direction | m2 | 44.00 |
| b | In rows 7.5 cm apart in either direction | m2 | 78.00 |
|  |  |  |  |  |
| 13103 |  | Making lawns including ploughing and breaking of clod, removal of rubbish, dressing and supplying doobs grass roots and planting at 15 cm apart, including supplying and spreading of farm yard manure at rate of 0.18 cum per 100 sqm. as per MORTH Specification 307 | m2 | 136.00 |
|  |  |  |  |  |
| 13104 |  | Maintenance of lawns or Turfing of slopes(rough grassing) for a period of one year including watering etc. as per MORTH Specification 307 | m2 | 283.00 |
|  |  |  |  |  |
|  |  | Turfing lawns with fine grassing including ploughning, dressing including breaking of clods, removal of rubbish, dressing and supplying doob grass roots at 10 cm apart including supplying and spreading of farmyard manure at rate of 0.6 cum per 100 sqm as per MORTH Specification 307 | m2 | 150.00 |
|  |  |  |  |  |
| 13106 |  | Maintenance of lawns with fine grassing for the first year including watering, etc.as per MORTH Specification 307 | m2 | 252.00 |
|  |  |  |  |  |
| 13107 |  | Planting permanent hedges including digging of trenches, 60 cm wide and 45 cm deep, refilling the excavated earth mixed with farmyard manure, supplied at the rate of 4.65 cum per 100 metre and supplying and planting hedge plants at 30 cm apart as per MORTH Specification 307 |  |  |
|  | a | Planting Permanent hedges including digging of Trenches | R.M. | 387.00 |
|  | b | Maintenance of hedge for one year | R.M. | 320.00 |
|  |  |  |  |  |
| 13108 |  | Planting and Maintaing of Flowering Plants and shrubs as per MORTH Specification 307 |  |  |
|  | |  | | --- | | a | | Planting flowering plants and shrubs in central verge | K.M. | 192889 |
|  | b | Maintenance of flowering plants and shrubs in central verge for one year | K.M. | 322157 |
|  |  |  |  |  |
| 13109 |  | Planting of trees by the roadside (Avenue trees) in 0.60 m dia holes, 1 m deep dug in the ground mixing the soil with decayed farmyard/sludge manure, planting the saplings, backfilling the trench, watering, fixing the tree guard and maintaining the plants for one year as per MORTH Specification 307 | Each | 1596.00 |
|  |  |  |  |  |
| 13110 |  | Supply at site of work well decayed farmyard manure, from any available source approved by the engineer-in charge including screening and stacking as per MORTH Specification 308.2 | m3 | 1833.00 |
|  |  |  |  |  |
| 13111 |  | Supply at site of work/store-deoiled neem cake duly packed in used gunny bags as per MORTH Specification 308.2 | Qtls | 2200.00 |
|  |  |  |  |  |
| 13112 |  | Supplying of sludge duly stacked at site/store as per MORTH Specification 308.2 | m3 | 1833.00 |
|  |  |  |  |  |
| 13113 |  | Half brick circular tree guard, in 2nd class brick, internal diametre 1.25 metre, and height 1.2 metre, above ground and 0.20 metre below ground bottom two courses laid dry, and top three courses in cement mortar 1:6 (1 cement 6 sand) and the intermediate courses being in dry honey comb masonry as per design complete. | Each | 3107.00 |
|  |  |  |  |  |
| 13114 |  | Edging with 2nd class bricks, laid dry lengthwise, including excavation, refilling consolidation, with a hand packing and spreading nearly surplus earth within a lead of 50 metre | R.M. | 12.00 |
|  |  |  |  |  |
| 13115 |  | Making tree guard 53 cm dia and 1.3 m high as per design from empty bitumen drum, slit suitably to permit sun and air, (supplied by the department at stock issue rate) including providing and fixing 2 nos. MS sheet rings 50 x 0.5 mm with rivets, complete in all respect | Each | 522.00 |
|  |  |  |  |  |
| 13116 |  | Planting trees as compensatory afforestation at the rate of 290 trees per hectare at a spacing of 6 m by grubbing and levelling the ground upto a deth of 150 mm, digging holes 0.9 m dia, 1m deep, mixing farm yard/sludge manure with soil, planting of sapling 2 m high with 25 cm dia stem, backfilling the hole and watering including maintenance for one year | Hectre | 207161.00 |
|  |  |  |  |  |
| 13117 |  | Preparation of seed bed on previously laid top soil, furnishing and palacing of seeds, fertilizer, mulching material, applying bituminous emulsion at the rate of 0.23 litres per Sq.m. and laying and fixing jute neting, including watering for 3 months all as directed by Enginner -in-charge | m2 | 197.00 |

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| **CHAPTER XIV** | | | | |
| **ROAD WORKS** | | | | |
| **Sub-base Sub-grade and Bituminous courses** | | | | |
| **Item No.** |  | **Description** | **Unit** | **Rate** |
|  |  | Construction of granular sub-base by providing coarse graded granitic or baslitic material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH Specification 401 |  |  |
| 14001 |  | For Grading I Material | m3 | 3425.00 |
| 14002 |  | For Grading II Material | m3 | 3479.00 |
| 14003 |  | For Grading III Material | m3 | 3527.00 |
|  |  |  |  |  |
| 14004 |  | Construction of inverted choke by providing, laying, spreading and compacting screening B type/coarse sand of specified grade in uniform layer on a prepared surface with motor grader and compacting with power roller etc. as per MORTH Specification 404 | m3 | 2969.00 |
|  |  |  |  |  |
| 14005 |  | Construction of embankement with approved material obtained from borrowpits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting with vibratory roller to meet requirement of Table 300-2 as per MORTH specification 305 | m3 | 549.00 |
|  |  |  |  |  |
| 14006 |  | Construction of embankement with approved material obtained from borrowpits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting with Static roller to meet requirement of Table 300-2 as per MORTH specification 305 | m3 | 554.00 |
|  |  |  |  |  |
| 14007 |  | Construction of embankment with approved materials deposited at site from roadway cutting and excavation rom drain and foundation of other structures graded and compacted to meet requirement of Table 300-2 as per MORTH specification 305 | m3 | 88.00 |
|  |  |  |  |  |
| 14008 |  | Construction of embankment with approved materials deposited at site from roadway cutting and excavation rom drain and foundation of other structures graded and compacted with static road roller to meet requirement of Table 300-2 as per MORTH specification 305. | M3 | 93.00 |
|  |  |  |  |  |
| 14009 |  | Construction of subgrade and earthen shoulders with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table 300-2 as per MORTH Specification 305 | m3 | 559.00 |
|  |  |  |  |  |
| 14010 |  | Loosening of the ground upto a level of 500 mm below the subgrade level, watered, graded and compacted in layers to meet requirement of Table 300-2 for subgrade construction as per MORTH Specification 305 | m3 | 89.00 |
| 14011 |  | Loosening levelling and Compacting original ground supporting embankement to facilitate placement of first layer of embankement, scarified to a depth of 150 mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density as given in Table 300-2 for embankement construction as per MORTH Specification 305 | m2 | 63.00 |
|  |  |  |  |  |
| 14012 |  | Preparation of Sub-grade by excavating earthwork in formed embankement/side shoulders to the following average depth of 22.5 cms, dressing to camber and consolidating with power road roller including making good the undulations etc and disposal of surplus earth with leadd upto 50 mts and lift upto 1.5 mts in ordinary or hard soil | m2 | 55.00 |
|  |  |  |  |  |
|  |  | Construction of unlined surface drains of average cross sectional area 0.40 sqm in soil to specified lines, grades, levels and dimensions to the requirement of Clause 301 and 309. Excavated material to be used in embankement within a lead of 50 metres (average lead 25 metres) as per MORTH specification 309 |  |  |
| 14013 |  | Mechanical Means | RM | 31.00 |
| 14014 |  | Manual Means | RM | 116.00 |
|  |  |  |  |  |
|  |  | Constructiom of unlined surface drain of average cross-sectional area 0.4 sqm in ordinary rock to specified lines, grades levels and dimensions as per approved design and to the requirement of Clauses 301 to 309 Excavated material to be used in embankement at site as per Morth specification 309 |  |  |
| 14015 |  | Mechanical Means | RM | 62.00 |
| 14016 |  | Manual Means | RM | 175.00 |
|  |  |  |  |  |
| 14017 |  | Scarifying the existing granular road by manual means surface to a depth of 50 mm and disposal of scarified material within all lifts and leads upto 1000 metres as per MORTH Specification 305 | m2 | 39.00 |
|  |  |  |  |  |
| 14018 |  | Scarifying the existing bituminious road by mechanical means surface to a depth of 50 mm and disposal of scarified material within all lifts and lead upto 1000 metres as per MORTH Specification 305 | m2 | 6.00 |
|  |  |  |  |  |
| 14019 |  | Providing and laying well graded granular material gravel or murrum) passing 4.75 mm sieve for first class granular bedding for R.C.C. pipes culverts as per drawings including watering, ramming and tamping as directed by Engineer-in-charge etc. all complete | m3 | 541.00 |
|  |  |  |  |  |
|  |  | Raising side shoulders with hard murrum including spreading watering and consolidation |  |  |
| 14020 |  | Murrum from borow puit | m3 | 476.00 |
| 14021 |  | using murrum from cut spoils | m3 | 253.00 |
|  |  |  |  |  |
| 14022 |  | Spreading the earth/hard soil in layers not exceeding 250 mm in depth breaking clods, watering rolling each layer with half ton roller or wooden or steel hammers and rolling every third and topmost layer with power toller of minimum 8 tonne and dressing up in embankment for roads, flood banks, marginal and guide banks and filling up of ground dressing etc. complete. | m3 | 194.00 |
|  |  |  |  |  |
| 14023 |  | Supplying and stacking laterite stones of size 150-200 mm(contractor's stone) for soling at site | m3 | 1354.00 |
|  |  |  |  |  |
| 14024 |  | Stacking of material like soling of material like soling stone, aggregates, sand boulders, laterite stone etc. for measurements. | m3 | 84.00 |
|  |  |  |  |  |
| 14025 |  | Supplying and stacking of (contractor's material) Murrum at site,having P.I. Value not more than 6 | m3 | 546.00 |
|  |  |  |  |  |
| 14026 |  | Laying stone soiling including packing with smaller stones and consolidation with road roller including spreading, watering and consolidating of binding material Murrum or earth etc.(payment to be made for quantity of only soling stone used excluding binding material). | m3 | 527.00 |
|  |  |  |  |  |
| 14027 |  | Laying and spreading 6 mm thick layer of granular material(gravel or murrum) including watering and rolling with hand roller etc. complete. | m2 | 8.00 |
|  |  |  |  |  |
| 14028 |  | Supplying of laterite stone soling of size 150-200 mm size and murrum having P.I. Value not more than 6 and laying including packing with smaller stones and consolidation with power road roller including spreading, watering and consolidation of binding material etc.(Measurements shall be considered on finished item) . | m3 | 1867.00 |
|  |  |  |  |  |
| 14029 |  | Supplying and stacking of grantic or basaltic stones of size 150-200 mm size for soling work(contractor's material) at site. | m3 | 1929.00 |
|  |  |  |  |  |
| 14030 |  | Supplying of granitic or basaltic stone soling of size 15-20 cm and Murrum having P.I. Value not more than 6 and laying including packing with smaller stones and consolidation with power roller including spreading waters and consolidation of binding material etc. complete.(Measurements shall be considered on finished item.and and layer of WBM of 50/75mm thick shall be taken seperately over this sub-base to obtain smooth surface, as per the directives of Engineer in-charge). | Cu.m. | 2452.00 |
|  |  |  |  |  |
|  |  | Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with 3-wheeled steel/vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/binding materials to fill-up the interstices of coarse aggregate, watering and compacting to the required density.as per MORTH Specification 404 |  |  |
|  |  | By Manual Means |  |  |
| 14031 |  | Grade - I | m3 | 4255.00 |
| 14032 |  | Grade - II | m3 | 4435.00 |
| 14033 |  | Grade - III | m3 | 4365.00 |
| b |  | By Mechanical Means |  |  |
| 14034 |  | Grade - I | m3 | 3890.00 |
| 14035 |  | Grade - II | m3 | 4070.00 |
| 14036 |  | Grade - III | m3 | 3999.00 |
|  |  |  |  |  |
| 14037 |  | Providing. Laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mix plant carriage of mixed material by tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density as per MORTH Specification 406 | m3 | 3717.00 |
|  |  |  |  |  |
| 14038 |  | Making up loss of material/irregularities on shoulder to the design level by adding fresh approved soil and compacting it with approprite Equipment to an average thickness of 150 mm as per MORTH Specification 3003 | m2 | 45.00 |
| 14039 |  | Filling potholes and patch repairs with open graded premix material and removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat with bitumen emulsion @ 0.24 kg/sq.m on the sides and base of excavation as per Clause 503, back filling the pot-holes with hot bituminious content @ 1.46 kg/m2 as per clause 511, compacting trimming and finishing the surface average thickness of 50mm to form a smooth continous surface all as per MORTH Specification 3004.2 | m2 | 173.00 |
|  |  |  |  |  |
|  |  | Filling of potholes with bituminous concrete and removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat with 0.24 kg/sqm on the sides and base of excavation as per Clause 503, back filling the pot-holes with hot bituminious material @ 4.59 kg/sqm to an average thickness of 40 mm as per clause 504, compacting trimming and finishing the surface to form a smooth continous surface all as per per MORTH Specification 3004.2 |  |  |
| 14040 |  | Grade - I ( 19 mm nominal size) | m2 | 525.00 |
| 14041 |  | Grade - II ( 13 mm nominal size) | m2 | 525.00 |
|  |  |  |  |  |
| 14042 |  | Filling of crack using slow curing bitumen emulsion and applying crusher dust in case cracks are wider than 3 mm as per MORTH Specification 3004.3.3 | RM | 4.00 |
|  |  |  |  |  |
| 14043 |  | Repair of Joint Grooves With Epoxy Mortar Repair of spalled joint of contraction joints, ongitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete. | RM | 184.00 |
|  |  |  |  |  |
| 14044 |  | Cleaning existing WBM road surface including removing of binding material and other foreign matter with wire brushes and small picks, sweeping with brooms or soft brushes and finally dusting with old gunny bags and/or compressed air to receive bituminous treatment etc. complete | m2 | 22.00 |
|  |  |  |  |  |
| 14045 |  | Cleaning of the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and/or compressed air to receive bituminous treatment. etc. complete | m2 | 6.00 |
| 14046 |  | Making 50 mm x 50mm furrows, 25 mm deep,@ 45 degrees to the centre line of the road and at one metre interval in the existing bituminous wearing coarse including sweeping and disposal of excavated material within 1000 metres lead as per MoRT&H Specification clause 404.3.1. | m2 | 6.00 |
|  |  |  |  |  |
|  |  | Providing and applying primer coat with bitumen or bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying primer using mechanical means as per MoRT&H specifications clause 502. |  |  |
| 14047 |  | Bitumen 80/100 @ 0.60 kg/sq.m. | m2 | 48.00 |
| 14048 |  | Bitumen 80/100 @ 1.00 kg/sq.m. | m2 | 77.00 |
| 14049 |  | Bitumen emulsion@ 0.60 kg/sq.m. | m2 | 38.00 |
| 14050 |  | Bitumen emulsion @ 1.00 kg/sq.m. | m2 | 63.00 |
|  |  |  |  |  |
|  |  | Providing and applying tack coat with bitumen grade of 80/100 or bitumen emulsion using pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom as per MoRT&H specifications clause 503. |  |  |
| 14051 |  | Bitumen 80/100 @ 0.20 kg/sq.m | m2 | 17.00 |
| 14052 |  | Bitumen 80/100@ 0.375 kg/sq.m | m2 | 29.00 |
| 14053 |  | Bitumen emulsion @ 0.20 kg/sq.m. | m2 | 13.00 |
| 14054 |  | Bitumen emulsion @ 0.375 kg/sq.m. | m2 | 24.00 |
|  |  |  |  |  |
|  |  | Providing and laying bituminous macadam with 40-60 TPH hot mix plant producing an average output of 50 tonnes per hour using crushed aggregates of specified grading premixed with bituminous binder to the specified percentage of total mix , transported to site, with all leads laid over a previously prepared surface with sensor paver finisher to the required grade, level and alignment and rolled with smoth wheeled roller and vibratory roller to achieve the desired compaction, using antistripping agent complete as per MoRT&H Specifications Clause 504 |  |  |
| 14055 |  | Grade-I (40mm nominal size)@ 4% of Bitumen-Mix |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 10325.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 10368.00 |
| 14056 |  | Grade-II (19mm nominal size)@ 4% of Bitumen-mix |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 9769.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 9811.00 |
| 14057 |  | Grade-I (40mm nominal size)@ 3.3% of Bitumen-Mix |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 9410.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 9420.00 |
| 14058 |  | Grade-II (19mm nominal size)@3.3% of Bitumen-mix |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 9183.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 9193.00 |
|  |  | Providing and laying bituminous macadam with 40-60 TPH hot mix plant producing an average output of 50 tonnes per hour using crushed aggregates of specified grading premixed with bituminous binder to the specified percentage of total mix , transported to site, with all leads laid over a previously prepared surface with Mechanical paved finisher to the required grade, level and alignment and rolled with smoth wheeled roller and vibratory roller to achieve the desired compaction,using antistripping agent complete as per MoRT&H Specifications Clause 504 |  |  |
| 14059 |  | Grade-I (40mm nominal size)@ 4% of Bitumen-Mix |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 10307.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 10350.00 |
| 14060 |  | Grade-II (19mm nominal size)@ 4% of Bitumen-mix |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 9751.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 9794.00 |
| 14061 |  | Providing, laying and rolling of built-up spray grout layer over prepared base consisting of a two layer composite construction of compacted crushed coarse aggregates using motor grader for aggregates. Key stone chips spreader be used with application of bituminious binder after each layer, and with key aggregates placed on top of the second layer to serve as a base conforming to the line, grades and cross-section specified, the compacted layer thickness being 75mm as per MoRT&H specifications clause 506.. |  |  |
|  |  | Bitumen 3 kg per / sq.m @ 1.5 kg/sqm for each layer | m2 | 517.00 |
|  |  |  |  |  |
|  |  | Providing and laying dense graded bituminious macadam with 40-60 TPH Drum Mix type HMP producing an average output of 50 tonne per hour using crushed aggregates of specified grading, premixed with bituminious binder by specified percentage of weight of total mix and filler, transporting the hotmix to work site, with all leads laying with a hydrostatic /hydraulic paver finisher with sensor to control the required grade, level and alignment, rolling with smooth wheeled, vibratory or tandem rollers to achieve the desired compaction using antistripping agent complete as per MoRT&H Specifications Clause 507 |  |  |
| 14062 |  | Grade-I (40mm nominal size)Bitumen @ 5% of weight of mix |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 12915.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 12973.00 |
| 14063 |  | Grade-II (19mm nominal size) Bitumen @ 5% of weight of mix |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 12953.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) |  | 13011.00 |
|  |  |  |  |  |
|  |  | Providing and laying semi-dense bituminious concrete with 40-60 TPH Drum Mix Type HMP producing an average output of 50 tonne per hour using crushed aggregates of specified grading, premixed with bituminious binder by specified percentage of weight of total mix and filler, transporting the hotmix to work site, with all leads laying with hydrostatic/ hydraulic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction using antistripping agent complete as per MoRT&H Specifications Clause 508. |  |  |
| 14064 |  | Grade-I (13mm nominal size) Bitumen @ 4.5% of mix |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 12264.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 12304.00 |
| 14065 |  | Grade-II (10mm nominal size) Bitumen @ 5% of mix |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 13729.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) |  | 13788.00 |
|  |  | Providing and laying surface dressing as wearing course in single coat using crushed stone aggregates of specified size on a layer of bituminious binder laid on prepared surface and rolling with 8-10 tonne smooth wheeled steel roller as per MoRT&H specifications clause 510 . |  |  |
| 14066 |  | Grade-I (19mm nominal size) & Bitumen of grade 80/100 @ 1.20 kg/m2 | m2 | 133.00 |
| 14067 |  | Grade-II (13mm nominal size) & Bitumen of grade 80/100 @ 1.00 kg/m2 | m2 | 105.00 |
|  |  |  |  |  |
|  |  | Providing, laying and rolling of open graded premix with 40-60 TPH Drum Mix type HMP with an average output of 50 tonnes per hour , surfacing of 20 mm thickness composed of 13.2mm to 5.6 mm aggregates either using penetration grade bitumen emilsion to required line, grade and level to serve as wearing course on a previously prepared base, including transportation of material to the site with all leads and using antistripping agent laying with hydraostatic/hyraulic sensor paver finisher and rolling with a smooth wheeled roller 8-10 tonne and vibratory roller finished to required level and grades complete as per MoRT&H the specifications clause 511. |  |  |
| 14068 |  | Case-I Mechanical method using penetration grade bitumen and HMP of appropriate capacity not less than 50 tonne/hr Bitumen of grade 80/100 @ 14.6 kg/10 sq.m |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m2 | 184.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) |  | 185.00 |
| 14069 |  | Case-II Open graded premix surfacing using cationic bitumen emulsion( M.S. or R.S.) @ 21.50 kg/10 sq.m |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m2 | 233.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 234.00 |
|  |  | Providing, laying and rolling close- graded premix/ Mixed Seal Surfacing material of 20 mm thichness composed of 11.2mm to 0.09 mm(Type-A) or 13.2mm to 0.09 mm(Type -B) aggregates using 40-60 TPH hotmix plant producing on an average output of 50 tonnes per/hour with specified grade of bitumen to the required line, grade and level to serve as wearing course on a previously prepared base, including transportation of the material to the site with all leads using antistripping agent and laying with hydraostatic/hyraulic sensor paver finisher and rolling with a smooth wheeled roller 8-10 tonne and vibratory roller finished to required level and grades complete as per MoRT&H the specifications clause 512. |  |  |
| 14070 |  | Type -A Bitumen of grade 60/70 @ 22 kg/10 sq.m |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m2 | 233.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m2 | 234.00 |
| 14071 | a | Type -B Bitumen of grde 60/70 @ 19 kg/10 sq.m. | m2 | 206.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) |  | 205.00 |
|  |  | Providing and laying bituminious concrete with 40-60 TPH Drum Mix type Hot mix plant producing an average output of 50 tonnes per hour using crushed aggregates of specified grading, premixed with bituminious binder to mix with filler, transporting the hotmix to work site, with all leads laying with a hydrostatic/hydraulic paver finisher with sensor control to the required grade, level and alignment, using antistripping agent rolling with smooth wheeled, vibratory or tandem rollers to achieve the desired compaction complete as per MoRT&H Specifications Clause 509 |  |  |
| 14072 |  | Grade-I (19mm nominal size)@ 6.5% Bitumen of grade 60/70 |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 15675.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 15735.00 |
| 14073 |  | Grade-II (13mm nominal size) @ 6.5% Bitumen of grade 60/70 |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 15342.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) |  | 15402.00 |
|  |  | Providing and laying bituminious concrete with 40-60 TPH Drum Mix type Hhot mix plant producing an average output of 50 tonnes per hour using crushed aggregates of specified grading, premixed with bituminious binder to mix with filler, transporting the hotmix to work site, with all leads laying with a hydrostatic/hydraulic paver finisher with sensor control to the required grade, level and alignment, using antistripping agent rolling with smooth wheeled, vibratory or tandem rollers to achieve the desired compaction complete as per MoRT&H Specifications Clause 509 |  |  |
| 14074 |  | Grade-I (19mm nominal size)@ 6.0% Bitumen of grade 60/70 |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 14635.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 14679.00 |
| 14075 |  | Grade-II (13mm nominal size) @ 6.0% Bitumen of grade 60/70 |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 14640.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 14683.00 |
|  |  | Providing and laying bituminious concrete with 40-60 TPH Drum Mix type Hhot mix plant producing an average output of 50 tonnes per hour using crushed aggregates of specified grading, premixed with bituminious binder to mix with filler, transporting the hotmix to work site, with all leads laying with a Mechanical paver finisher to the required grade, level and alignment, using antistripping agent rolling with smooth wheeled, vibratory or tandem rollers to achieve the desired compaction complete as per MoRT&H Specifications Clause 509 |  |  |
| 14076 |  | Grade-I (19mm nominal size)@ 6.5% Bitumen of grade 60/70 |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 15318.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 15378.00 |
| 14077 |  | Grade-II (13mm nominal size) @ 6.5% Bitumen of grade 60/70 |  |  |
|  | a | Antistripping agent @ 0.5% of bitumen content | m3 | 15323.00 |
|  | b | Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 15383.00 |
|  |  | Providing and laying seal coat sealing the voids in a bituminious surface laid with F.E loader with 1 Cu.m. bucket capacity to the specified levels, grade and cross fall using Type A or B seal coats as per MoRT&H specifications clause 513. |  |  |
| 14078 |  | Type-A (bitumen of grade 80/100at 9.8 kg/10sqm) | m2 | 93.00 |
| 14079 |  | Type-B( bnitumen of grade 80/100at 6.8 kgs/10 sqm) | m2 | 60.00 |
|  |  |  |  |  |
|  |  | Construction of penetration macadam over prepared base by providing a layer of compacted crushed coarse aggregate using chips spreader with alternate applications of bituminious binder and key aggregates and rolling with a smooth wheeled steel roller 8-10 tonne capacity to achieve the desired degree of compaction including Providing and laying seal coat sealing the voids in a bituminious surface laid with F.E loader with 1 Cu.m. bucket capacity to the specified levels, grade and cross fall using Type A seal coat as per MoRT&H specifications clause 513 & 505. |  |  |
|  |  | With Type -A Seal coat |  |  |
| 14080 |  | 50mm thick and Bitumen of grade 80/100at 5.98 kg/m2 including seal coat | m2 | 627.00 |
| 14081 |  | 75mm thick and Bitumenof grade 80/100 at 7.78 kg/m2 including Seal coat | m2 | 832.00 |
|  |  |  |  |  |
|  |  | With Type -B Seal coat |  |  |
| 14082 |  | 50mm thick and Bitumen of grade 80/100at 5.68 kg/m2 including Seal Coat | m2 | 594.00 |
| 14083 |  | 75mm thick and Bitumenof grade 80/100 at 7.48 kg/m2 including Seal coat | m2 | 799.00 |
|  |  |  |  |  |
| 14084 | a | Supplying and mixing of Antistripping Agent at appropriate rate to Hot-Mix items at the plant as per the directives of Engineer Incharge | Kg | 236.00 |
|  | b | Supplying and mixing of Organo-Silane Antistripping Agent at appropriate rate to Hot-Mix items at the plant as per the directives of Engineer Incharge | Kg | 1626.00 |
|  |  | Extra for labour for spreading pre coated crushed stone chippings with bitumen including heating and mixing the material and handling the mixed material with all leads to the required grade and level on already prepared surface. |  |  |
| 14085 |  | By Manual Means | m3 | 1377.00 |
|  |  |  |  |  |
| 14086 |  | Providing and laying 50mm(consolidated thickness)full grout using granitic or basaltic stone of specified grading at 6.00 cu.m. per 100 sq.m. grouting with hot bitumen straight run bitumen(or with such bituminous material of grade and type as specified by the Engineer-in-Charge)at 5.0kg. per sq. m. binding with key aggregate of granitic or basaltic stone of specified grading at 1.5 cu.m. per 100 sq.m. including Providing and laying seal coat sealing the voids in a bituminious surface laid with F.E loader with 1 Cu.m. bucket capacity to the specified levels, grade and cross fall using Type A seal coat with 0.98 kg/sqm of bitumen of grade as per MoRT&H specifications clause 513. | m2 | 631.00 |
|  |  |  |  |  |
|  |  | Filling of potholes and depressions using 20mm nominal size granitic or basaltic stone metal precoated with 53.4 kg. of bitumen 80/100 or bitumen emulsion per cu.m. of aggregate including a tack coat of bitumen emulsion at 2.5 kg/10 sq.m. on existing B.T. road surface complete. |  |  |
| 14087 |  | Including supply of bitumen | m3 | 11275.00 |
|  |  |  |  |  |
|  |  | Filling of potholes and depressions using 20mm nominal size granitic or basaltic stone metal precoated with 53.4 kg.of hot bitumen straight run(or with such bituminous material grade and type as specified by the Engineer-in-Charge) per cu.m. of aggregate including a tack coat of hot bitumen emulsion at 2.50 kg/10 sq.m. on existing B.T. road surface complete. |  |  |
| 14088 |  | Including supply of bitumen emulsion | m3 | 10802.00 |
|  |  |  |  |  |
| 14089 |  | Removal of pot holes and depressions by laying granitic or basaltic stone of 20mm/10mm/6mm nominal size in layers as per requirements including grouting each layer with bitumen 80/100 or bitumen emulsion at 68 kg/cu.m. average on existing B.T. road surface including rolling etc complete as specified by the Engineer-in-Charge. | m3 | 7581.82 |
| 14090 |  | Removal of pot holes and depression by laying granitic or basaltic stone of 40mm/20mm/10mm/6mm nominal size in layer as per requirement including 80/100(or such bitumen material of grade and type as specified by the Engineer-in-Charge) at 68 kg/cu.m.(Average) on existing road surface including rolling etc. complete as per specification including cost of bitumen. | m3 | 8392.00 |
| 14091 |  | Removal of pot holes by Bituminouns Macadam/Bituminouns concrete with 40-60 TPH hot mix plant producing an average output of 50 tonnes per hour using crushed aggregates of specified grading premixed with bituminous binder to the specified percentage of total mix , transported to site, with all leads laid over a previously prepared surface to the required grade, level and alignment and rolled with smoth wheeled roller to achieve the desired compaction, using antistripping agent complete, as per MoRT&H Specifications Clause 504 |  |  |
|  |  | a) Antistripping agent @ 0.5% of bitumen content | m3 | 10197.00 |
|  |  | b) Organo-Silane antistripping agent (Zycotherm make or equivalent) | m3 | 10240.00 |
| 14092 |  | Cutting bituminous road and making good the same including supply of extra quantities of aggregate, murrum grit and bitumen required (bitumen shall be straight run bitumen 80/100 or with such bituminous material of grade and type as specified by the Engineer-in-charge)including supplying of bitumen. | m2 | 865.00 |
|  |  |  |  |  |
| 14093 |  | Providing and laying 30 mm thick Bituminious/Asphaltic concrete with 40-60 batch type HMP producing an average output of 50 tonnes per hour using crushed aggregates of specified gradings Premixed with bituminious binder at 6.5 % by weight of total mix and filler using Antistripping agent transporting the hotmix to work site with all leads and applying a tack coat @f 2.00 kg/10sq.m. with hot bitumen of 80/100 and laying with hydrostatic/hydraulic power finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory or tandem rollers to achieve the desired compaction complete as per MORT&H specifications clause 509 and 503 |  |  |
|  |  | a) Antistripping agent @ 0.5% of bitumen content | m2 | 492.00 |
|  |  | b) Organo-Silane antistripping agent (Zycotherm make or equivalent) | m2 | 494.00 |
| 14094 |  | Providing and laying 30 mm thick Bituminious/Asphaltic concrete with 40-60 batch type HMP producing an average output of 50 tonnes per hour using crushed aggregates of specified gradings Premixed with bituminious binder at 6.5 % by weight of total mix and fillerusing Antistripping agent transpoting the hotmix to work site with all leads and applying a tack coat @f 2.00 kg/10sq.m. with hot bitumen of 80/100 and laying with Mechanical Paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory or tandem rollers to achieve the desired compaction as per MORT&H specifications clause 509 and 503 |  |  |
|  |  | a) Antistripping agent @ 0.5% of bitumen content | m2 | 480.00 |
|  |  | b) Organo-Silane antistripping agent (Zycotherm make or equivalent) | m2 | 483.00 |
| 14095 |  | Providing and laying 30 mm thick Bituminious/Asphaltic concrete with 40-60 batch type HMP producing an average output of 50 tonnes per hour using crushed aggregates of specified gradings Premixed with bituminious binder at 6.0 % by weight of total mix and filler incl. Providing Antistripping agent.@ 0.50% of bitumen content of, transpoting the hotmix to work site with all leads and applying a tack coat @f 2.00 kg/10sq.m. with hot bitumen of 80/100 and laying with hydrostatic/hydraulic power finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory or tandem rollers to achieve the desired compaction as per MORT&H specifications clause 509 and 503 |  |  |
|  |  | a) Antistripping agent @ 0.5% of bitumen content | m2 | 440.00 |
|  |  | b) Organo-Silane antistripping agent (Zycotherm make or equivalent) | m2 | 443.00 |
| 14096 |  | Single coat surface dressing with paving bitumen (straight runor with such bituminous materials grade and type as specifed by the Engineer-in-charge)using 11 kg./10 sq.m of bitumen with 1.00 cu.m. of stone aggregate 10 mm nominal size(100 percent passing though 12.30 mm sieve) per 100 sq.m. road surface complete including cost of bitumen on existing. | m2 | 156.00 |
|  |  |  |  |  |
|  |  | Providing and laying 20mm thick premix bituminious carpet surface by using mini hot mix plant at site with 2.7 cu.m. of stone aggregate comprising 65% of 12 mm size (passing 20 mm sieve and retained on 10 mm sieve) 35% of 10 mm size(passing 12.5 mm sieve and retained 6.8 mm) per 100 sq.mt. 53.4 kg (average) of catoinic type emulsion(or such bituminious material of grade and type as specified by the Engineer-in-charge) per cu.m. of stone aggregate including all carriages. |  |  |
| 14097 |  | On new road surface including tack coat of bitumen emulsion of approved quality at 2.50kg/10 sq.m. complete. | m2 | 272.00 |
| 14098 |  | Including tack coat of bitumen emulsion of approved quality @ 3.75 kg/10 sq.m. on new road surface complete. | m2 | 281.00 |
|  |  |  |  |  |
|  |  | Providing 20mm thick premix bituminious carpet surface using mini hotmix plant at site with 2.7 cu.m. of stone aggregate comprising(stone chipping 13.2 mm size, passing 22.4 mm sieve and retained on 11.2 mm sieve@0.18 cu.m./ 10 sq.m.are and stone chipping-11.2 mm size, passing 13.2mm sieve and retained 0n 5.6 mm sieve@ 0.09 cu.m./10 sq.m.)of hot bitumen straight run 80/100 at 14.6kg/10 sq.m. area(or such bituminious material of grade and type as specified by the Engineer-in-charge) per cu.m. of stone aggregate including all carriages. |  |  |
| 14099 |  | On existing black top surface including tack coat of hot bitumen of approved quality at 2.5 kg/10 sq.m. complete. | m2 | 269.00 |
| 14100 |  | Including tack coat of hot bitumen of approved quality @ 3.75 kg/10 sq.m. on new road surface complete. | m2 | 279.00 |
|  |  |  |  |  |
|  |  | Cutting of road surface for trenches and disposing the excavated stuff including barricading and lighting guarding and stacking serviceable and unservicable material in |  |  |
| 14101 |  | WBM road | m2 | 109.00 |
| 14102 |  | Asphalt road | m2 | 230.00 |
|  |  |  |  |  |
|  |  | Provision of Hump type speed breakers for general traffic at preferred crossing speed of 25 km/h and above as per standard having and specification in IRC 99-1998. The speed breakers shall be formed by placing premixed bituminious macadam and a layer of asphaltic concrete carpet (hot mix) after the surface is indented and tack coat applied to the location where required. |  |  |
| 14103 |  | For General traffic of 25 Kmph | R.M | 2344.00 |
| 14104 |  | For Heavy traffic of above 25 Kmph. | R.M | 2892.00 |
|  |  |  |  |  |
| 14105 |  | Plain cement concrete 1:3:6 mix with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days as per MORTH Specification 408 | m3 | 4332.00 |
|  |  |  |  |  |
|  |  | Laying reinforced cement concrete pipe NP3/ prestressed concrete pipe for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling concrete and masonry works in head walls and parapets as per MORTH Specifcation 2900. (Pipes will be supplied by the department free of cost) |  |  |
| 14106 |  | 1000 mm dia | R.M. | 1232.00 |
| 14107 |  | 1200 mm dia | R.M. | 1475.00 |
| 14108 |  | 1400 mm dia | R.M. | 1721.00 |
| 14109 |  | 1600 mm dia | R.M. | 1966.00 |
| 14110 |  | 1800 mm dia | R.M. | 2030.00 |
|  |  | Laying reinforced cement concrete pipe NP4/ prestressed concrete pipe for culverts on first class bedding of granular material in double row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets (Pipe will be supplied by the department free of cost) |  |  |
| 14111 |  | 1000 mm dia | R.M. | 3221.00 |
| 14112 |  | 1200 mm dia | R.M. | 3788.00 |
| 14113 |  | 1400 mm dia | R.M. | 4279.00 |
| 14114 |  | 1600 mm dia | R.M. | 4795.00 |
| 14115 |  | 1800 mm dia | R.M. | 5311.00 |
|  |  |  |  |  |
|  |  | Laying and fixing with collars light duty non-pressure NP 2 class R.C.C. pipes with cement mortar in proportion 1:2 (1 cement : 2 fine sand) in joints including cost of jointing material etc. complete. |  |  |
| 14116 |  | 300 mm dia pipe | Metre | 141.00 |
| 14117 |  | 400 mm dia pipe | Metre | 181.00 |
| 14118 |  | 600 mm dia pipe | Metre | 238.00 |
| 14119 |  | 900 mm dia pipe | Metre | 361.00 |
|  |  |  |  |  |
|  |  | Laying and fixing with flush heavy duty non pressure NP3 class R.C.C. pipe with cement mortar in proportion 1:2 (1 cement : 2 fine sand) in joints including cost of jointing materials etc. complete. |  |  |
| 14120 |  | 600 mm dia pipe | Metre | 355.00 |
| 14121 |  | 900 mm dia pipe | Metre | 626.00 |
| 14122 |  | 1200 mm dia pipe | Metre | 848.00 |
| 14123 |  | 1400 mm dia pipe | Metre | 1099.00 |
| 14124 |  | 1600 mm dia pipe | Metre | 1352.00 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  | **Retro- reflectorised Traffic signs** (Providing and fixing of retro- reflectorised cautionary, mandatory and informatory sign as per IRC :67 2012 made of high intensity Grade sheeting using ASTM sheeting "C' type XI micro prismatic retro reflective material vide clause 801.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing)etc complete as per MORT &H Specifications Fifth Edition. A 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be submitted by the contractor. |  |  |
| 14125 |  | 60 cm equilateral triangle | each | 5173.00 |
| 14126 |  | 60 cm circular | each | 7366.00 |
|  |  | Providing and fixing Informatory/Direction Sign Boards with any shape and size made out of 14 gauge (2.0 mm) thick Aluminium sheet 3mm thick Aluminium Composite panel bonded with white/green/blue (as required) fully covered Retro Reflective sheeting of (CRG)/Ultralite Grade(high intensity) Engineering Grade(EG), having pressure sensitive adhesive and aRetro Reflective cut out border and messages in white pressure sensitive adhesive,fixed on M.S. ANGLE 65x65x6mm 3.65(iron post) painted with one coat of primer and two coats of finish paint having black and white bands.Firmly fixed to ground by means ofproperly designed foundation with M15 grade cement concrete 45cmx45cmx60cm,60 cm below ground level as per approved drawing. |  |  |
| 14127 |  | Retro reflective sheeting of crystal grade(CRG) | m2 | 14963.00 |
| 14128 |  | Ultralite grade (Highe intensity) | m2 | 11846.00 |
| 14129 |  | Engineering Grade ( EG) | m2 | 8107.00 |
|  |  |  |  |  |
|  |  |  |  |  |
| 14130 |  | Providing & fixing of facility information sign board of size 600mmx800mm rectangle made out of retro reflective sheeting conforming to Type XI standards of ASTM D4956-09 & as per IRC-67: 2012 specifications, fully covered over 4mm thick ACP/2mm thick Al supported with back support frame of 35x35x5 mm mild steel angle. Board Shall be fixed to a vertical post of 75x75x6mm mild steel angle of 3.6 mtr height and firmly fixed to the ground by means of properly designed foundation with M20 grade cement concrete 45 cm X 45 cm X 60 cm etc, 60 cm below ground level. 10 years warranty & a certified copy of three years outdoor exposure report from an independent lab as per IRC 67-2012 for Type XI retro reflective sheeting shall be submitted by the contractor. | Each | 10627.00 |
|  |  |  |  |  |
| 14131 |  | Construction of Median and Island above road level with approved material deposited at site from roadway cutting and excavation for drain and foundation of other structures, spread, graded and compacted as per MORTH Specification 407 | m3 | 272.00 |
|  |  |  |  |  |
| 14132 |  | Construction of median and Island above road level with approved material brought from borrowpits, spread, sloped and compacted as per MORTH specification 407 | m3 | 305.00 |
| 14133 |  | Construction of footpath/separator by providing a 150 mm compacted granular sub-base as per clause 401 and 25 mm thick cement concrete grade M15, overlaid with precast concrete tiles in cement motar 1:3 including provision of all drainage arrangements but excluding kerb channel as per MORTH Specification 409 | m2 | 1335.00 |
|  |  |  |  |  |
| 14134 |  | Painting two coats after filling the surface with synthetic enamel paint in all shades on new plastered concrete surfaces as per MORTH Specification 803 | m2 | 75.00 |
|  |  |  |  |  |
| 14135 |  | Providing and applying two coats of ready mix paint of approved brand on steel surface after thorough cleaning of surface to give an even shade as per MORTH Specification 803 | m2 | 67.00 |
|  |  |  |  |  |
|  |  | Painting lines, dashes arrows etc. on roads in two coats on new work with ready mixed road marking paint conforming to IS:164 on bituminous surface, including cleaning the surface of all dirt, dust and other foreign matter demarcation at site and traffic control as per MORTH Specification 803 |  |  |
| 14136 |  | Over 10 cm in width | m2 | 171.00 |
| 14137 |  | Upto 10 cm in width | m2 | 147.00 |
|  |  |  |  |  |
|  |  | Painting lines dashes arrows etc on roads in two coats on old work with ready mixed road marking paint conforming to IS:164 on bituminious surface, including cleaning the surface of all dirt, dust and other foreign matter demarcation at site and traffic control as per MORTH Specification 803 |  |  |
|  |  |  |  |  |
| 14138 |  | Over 10 cm in width | m2 | 120.00 |
| 14139 |  | Upto 10 cm in width | m2 | 128.00 |
|  |  |  |  |  |
| 14140 |  | Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC : 35. The finished surface to be level uniform and free from streaks and holes as per MORTH Specification 803 | m2 | 469.00 |
| 14141 |  | Providing and fixing 40 mm dia G.I. Pipe railing in 3 rows complete with G.I. Fittings incl. Painting of pipes and fittings with white paint of approved quality incl. A priming coat with a ready mixed primer for new works incl. Providing R.C.C. 1:2:4 rail posts of size 0.15 x 0.15 x 1.00 M with base of 0.25 x 0.25 x 0.3 m at every 2 mts intervals and double rail post with a bar drawings inclusive of cost of reinforcement etc. all complete including white wash washing of rail posts etc. all complete. | R.M. | 971.00 |
|  |  | Providing and fixing weepholes with rigid PVC make laid in position with a required slope and level while layingpipes of approved the concrete of retaining wall,wing wall and earth retainig structure complete as directed by the Engineer in charge |  |  |
| 14142 |  | A) 110 mm dia | RM | 363.00 |
| 14143 |  | B) 75 mm dia | RM | 185.00 |
|  |  |  |  |  |
| 14144 |  | Providing and erecting a "Thrie" metal beam crash barrier comprising of following three factory made unites-viz. 1) Thrie Beam 2) Spacer Block 3) Vertical Post. The Thrie beam 3mm thick cold roll formed guard rail raw material Conforming to IS-5986-2011 with minimum Grade 255 & with minimum yield stress of 255 Mpa which is fixed by bolted connection to spacer block C-channel of size 75mmx150mm & 5mm thick, 54.6cm height spaced 2meter centre to centre, fixed to Vertical Post C-channel of size 75mmx150mm &5mm thick cold roll formed section made from HR coils raw material conforming to IS-5986-2011 with minimum Grade 255 & with minimum yield stress of 255MPa, with 85cms free height above road or Ground level, and embedded to 115cms deep in cement concrete block of size 35cm\*35\*115cm of minimum grade M15 (1:2:4) or as directed by Engineer Incharge, assembled & fixed as per drawings of MORTH&H Circular No.RW/NH/33022/1/94-DO/III, dated 24/6/1994 & construction operation as per 811 or relevant MORT&H specifications for Roads & Bridge Works (latest edition). All fittings (bolts,nuts,fasteners,washers etc.) shall be conforming to IS:1367 & IS:1364 & galvanished by hot dip zinc coated process @0.55kg/m2 conforming to relevent IS specifications all etc.complete | RM | 6297.00 |
|  |  |  |  |  |
| 14145 |  | Providing and laying 12 mm thick mastic asphalt wearing course with paving grade bitumen meeting the requirements given in table 500-29, prepared by using mastic cooker and laid to required level and slope after cleaning the surface, including providing antiskid surface with bitumen precoated finegrained hard stone chipping of 9.5 mm nominal size at the rate of 0.005cum per 10 sqm and at an approximate spacing of 10 cm center to center in both directions, pressed into surface when the temperature of surfaces is not less than 100C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 515. | m2 | 446.00 |
|  |  |  |  |  |
| 14146 |  | Road Delineators (Supplying and installation of delineators (road way indicators, hazard markers, object markers), 80-100 cm high above ground level, painted black and white in 15 cm wide stripes, fitted with 80 x 100 mm rectangular or 75 mm dia circular reflectorised panels at the top, buried or pressed into the ground and confirming to IRC-79 and the drawings.) | Each | 826.00 |
|  |  |  |  |  |
|  |  | Providing and laying non-pressure NP2 class (light duty) RCC pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand ) including testing of joints, etc. complete. |  |  |
| 14147 |  | A) 100 mm dia RCC pipe | RM | 1200.00 |
| 14148 |  | B) 250 mm dia RCC pipe | RM | 2034.00 |
| 14149 |  | Providing and alying 60 mm thick factory made cement concrete interlocking paver block of M30 grade made by heavy duty block making machine with strong vibratory compaction using 3 ton roller and of aprpoved size and design / shape laid in 50 mm thick compacted bed of course sand, filling the joints with coarse sand, etc. all complete as per the direction of Engineer. | m2 | 969.00 |
|  |  | Additional cost for coloured paver blocks |  |  |
|  | a | Red / Black | m2 | 25.00 |
|  | b | Brown | m2 | 50.00 |
|  | c | Yellow | m2 | 50.00 |
|  | d | Orange | m2 | 50.00 |
|  |  |  |  |  |
| 14150 |  | Providing and laying 80 mm thick factory made cement concrete interlocking paver block of M40 grade made by heavy duty block making machine with strong vibratory compaction using 3 tonne roller and of approved size and design / shape laid in 50 mm thick compacted bed of course sand, filling the joints with coarse sand, etc. all complete as per the direction of Engineer. | m2 | 1190.00 |
|  |  | Additional cost for coloured paver blocks |  |  |
|  | a | Red / Black | m2 | 25.00 |
|  | b | Brown | m2 | 50.00 |
|  | c | Yellow | m2 | 50.00 |
|  | d | Orange | m2 | 50.00 |
|  |  |  |  |  |
| 14151 |  | Providing and laying 100 mm thick factory made cement concrete interlocking paver block of M 50 grade made by heavy duty block making machine with strong vibratory compaction and of approved size and design / shape laid in 50 mm thick compacted be of course sand. filling the joints with course sand, etc. all complete as per the direction of Engineer. | m2 | 1364.00 |
|  |  |  |  |  |
| 14152 |  | Bored cast-in-situ M35 grade R.C.C. pile excluding reinforcement complete as per drwing and technical specifications and removal of excavated earth with all lifts and lead upto 1000 m. | RM | 195252.00 |
|  |  |  |  |  |
| 14153 |  | Conducting low strain pile integrity test on R.C.C. bored piles foundations using pile integrity tester equpment manufactured by Pile Dynamics Inc. of USA or TOM of Netherlands conforming to ASTHD 5882. | Nos. | 15427.00 |
| 14154 |  | |  | | --- | | Providing and applying an elastic elastomeric membrane forming system with anticarbonation and berathing properties. The system (EMCECOLORFLEX + PRIMEX 250) or equivalent should be based on solvent free acrylic polymers with solid contents of 70 + 3% and should be ultra violet resistant, crack bridging type, water-proofing coating. For anti-carbonation, equivalent Air layer thickness denoted as R or SD CO2 > 50 m and for breathability equivalent Air layer thickness denoted as SD H20 shall be < 4 for vapour transmitting barrier. The system consists of one coat primer at 75-100 g/m2. The consuption of polymer coating to give film thickness of 200-225 microns should be approximately 400-450 gms/m2 per two coats. Polymer coating should be in suitable approved shades, including suitable surface preparation, cost of materials and labour for applying the above coating, and scaffolding charges, all inclusive of taxes. | | m2 | 784.00 |
|  |  |  |  |  |
| 14155 |  | Providing and laying filter media with Granular materials crushed stone Aggregates satisfying the rerquirement As Per Clause 2504.2.2 of MOSRT & H Specification to a thickness of 500 mm laid horizontally in layers of 250mm thick and compacted to firm condition etc. complete as direction by Engineer-in-charge. | m3 | 2596.00 |
|  |  |  |  |  |
| 14156 |  | Steel work welded in built up section and framed work including cutting, hoisting, fixing in position for steel grating of size 2.00 m x 0.90 m with R.S. joists, Tees, angles, flats and channels of TATA/ SAIL/ VIZAG make only with structural steel not less than 163.6 kg. per unit including applying priming coat of red lead paint and two or more coats with superior quality ready mixed paint for steel work of approved brand and Manufacture in all shades on new work to give an even shade as per the approved drawing and direction of the Engineer in-charge. | Each | 14711.00 |
|  |  |  |  |  |
| 14157 |  | Steel work welded in built up section and framed work including cutting, hoisting, fixing in position for steel grating of size 2.00 m x 1.10 m with R.S. joists, Tees, angles, flats and channels of TATA/ SAIL/ VIZAG make onlywith structural steel not less than 191.4 kg. per unit including applying priming coat of red lead paint and two or more coats with superior quality ready mixed paint for steel work of approved brand and manufacture in all shades on new work to give an even shade as per the approved drawing and direction of the Engineer in-charge. | Each | 17256.00 |
|  |  |  |  |  |
| 14158 |  | Road Markers/Road Stud with Lense Reflector (Providing and fixing of road stud 100x 100 mm, die cast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, installed in concrete or asphaltic surface by drilling hole 30 mm upto a depth of 60 mm and bedded in a suitable bituminous grout or epoxy mortar, all as per BS 873 part 4:1973) | Each | 237.00 |
|  |  |  |  |  |
| 14159 |  | Supplying and laying drainage composite for use behind walls having three dimensional composite with thermobonding a draining core having “W” configuration in extruded monofilaments of minimum thickness 6mm as per EN 9863-1, with one filtering UV stabilized polypropylene nonwoven geotextile of minimum thickness of 0.75mm as per EN ISO 9863-1 and tensile strength of 8.0 kN/m as per EN ISO 10319 that will be working as separation or protecting layer, geocomposite having in plane flow capacity of 2.50 L / (m.s) at hydraulic gradient of 1.0 & 20 kPa pressure as per EN ISO 12958 and tensile strength of 12 kN/m as per EN ISO 10319, with mass per unit area of 540 gsm supplied in the form of roll for easy transportation to site of work as per detailed specification all complete as per directions of Engineer in charge. (Reference MoRT&H 700) | SQM | 586.00 |
|  |  |  |  |  |
| 14160 |  | Supplying drainage composite for use behind walls, between two different fills, alongside drains of road, below concrete lining of canals etc. having three dimensional composite with thermobonding a draining core having “W” configuration in extruded monofilaments of minimum thickness 6mm as per EN 9863-1, with two filtering UV stabilized polypropylene nonwoven geotextile of minimum thickness of 0.75mm as per EN ISO 9863-1 and tensile strength of 8.0 kN/m as per EN ISO 10319 that will be working as separation or protecting layer, geocomposite having in plane flow capacity of 2 L / (m.s) at hydraulic gradient of 1.0 & 20 kPa pressure as per EN ISO 12958 and tensile strength of 15 kN/m as per EN ISO 10319, with mass per unit area of 660 gsm supplied in the form of roll for easy transportation to site of work as per detailed specification all complete as per directions of Engineer in charge | SQM | 673.00 |
|  |  |  |  |  |
| 14161 |  | Supply and installation (in dry condition) of Mechanically Woven Double Twisted Hexagonal Shaped Wire Mesh 1m High Gabion Boxes as per IS 16014:2012, MoRTH Clause 2500, of required sizes, Mesh Type 10x12 (D=100mm with tolerance of +/-2%), Zn + PVC coated, Mesh Wire dia. 2.7/3.7mm (ID/OD), mechanically edged / selvedged, with partitions at every 1m interval and shall have minimum 10 numbers of mesh openings per meter of mesh perpendicular to twist, tying with lacing wire of dia 2.2/3.2 mm (ID/OD), supplied @ 5% by weight of gabion boxes(only 5%by weight of gabion boxes will be supplied) ,as per detailed specification conforming to codes in vogue all complete as per directions of engineer-in-charge | CUM | 4169.00 |
|  |  |  |  |  |
| 14162 |  | Supply and installation of Mechanically Woven Double Twisted Hexagonal Shaped Wire Mesh 0.5m High Gabion Boxes as per IS 16014:2012, MoRTH Clause 2500, of required sizes, Mesh Type 10x12 (D=100mm with tolerance of +/-2%), Zn + PVC coated, Mesh Wire dia. 2.7/3.7mm (ID/OD), mechanically edged / selvedged , with partitions at every 1m interval and shall have minimum 10 numbers of mesh openings per meter of mesh perpendicular to twist, tying with lacing wire of dia 2.2/3.2 mm (ID/OD), supplied @ 5% by weight of gabion boxes ,as per detailed specification conforming to codes in vogue all complete as per directions of engineer-in-charge. (For under water installation, the machinery and extra labour cost shall be taken extra as per site condition) | CUM | 4761.00 |
|  |  |  |  |  |
| 14163 |  | Supply and installation of Mechanically Woven Double Twisted Hexagonal Shaped Wire Mesh 0.3m thick Gabion Boxes ,width 2m, of required sizes, Mesh Type 10x12 (D=100mm with tolerance of +/-2%), Zn + PVC coated, Mesh Wire dia. 2.7/3.7mm (ID/OD), mechanically edged / selvedged , with partitions at every 1m interval and shall have minimum 10 numbers of mesh openings per meter of mesh perpendicular to twist, tying with lacing wire of dia 2.2/3.2 mm (ID/OD), supplied @ 5% by weight of gabion boxes ,as per detailed specification conforming to codes in vogue all complete as per directions of engineer-incharge. (For under water installation, the machinery and extra labour cost shall be taken extra as per site condition) | SQM | 1999.00 |
|  |  |  |  |  |
| 14164 |  | Supply and laying of gabion facia with 2m integrated tail as secondary reinforcement for Reinforced soil system as per MoRTH Clause 3100, made of Mechanically Woven Double Twisted Hexagonal Shaped Wire Mesh , Mesh Type 10x12, Zn +PVC coated Mesh Wire dia. 2.7/3.7mm (ID/OD), mechanically edged / selvedged, with partitions at 1m interval and shall have minimum 10 numbers of mesh openings per meter of mesh perpendicular to twist, tying with lacing wire of dia 2.2/3.2 mm (ID/OD), supplied @ 5% by weight of facia unit , as per detailed specification conforming to codes in vogue all complete as per directions of engineer-in-charge. . Size of Unit 3m x 2m x 1m (Backfilling is excluding) | UNIT | 9839.00 |
|  |  |  |  |  |
| 14165 |  | Supplying and laying of high strength flexible geogrids (HSFG) as soil reinforcement / basal reinforcement made of high tenacity polyester core with polyethylene coating with Minimum Long Term Design Strength (LTDS) indicated below for 120 years design life at 20 degreeC. The LTDS should be strictly based on reliable test data and performance data available with the manufacturer from accredited independent agency certifying the Reduction Factor (RF) value for their geogrid for design temperature. The geogrid manufacturer should have creep test data from independent accredited laboratory for period over 5 years and should have minimum roll width of 4.5m with core of MS steel tube convenient for handling and lifting work as per detailed specification all complete as per directions of Engineer in charge. (Reference MoRT&H 3100 & IRC 113). |  |  |
|  | a | High strength geogrid of Long Term Design Strength 59.5 kN/m | SQM | 314.00 |
|  | b | High strength geogrid of Long Term Design Strength 89 kN/m | SQM | 355.00 |
|  | c | High strength geogrid of Long Term Design Strength 119 kN/m | SQM | 379.00 |
|  | d | High strength geogrid of Long Term Design Strength 148.5 kN/m | SQM | 450.00 |
|  | e | High strength geogrid of Long Term Design Strength 192 kN/m | SQM | 477.00 |
|  |  |  |  |  |
| 14166 |  | Providing and laying a bi-axial extruded geogrid of Maccaferri make or equivalent Type-15S manufactured from high density polyethylene polymer as base/sub-base reinforcement (Reference MoRT&H 701). | SQM | 144.00 |
|  |  |  |  |  |
| 14167 |  | Providing and laying a bi-axial extruded geogrid of Maccaferri make or equivalent Type-20S manufactured from high density polyethylene polymer as base/sub-base reinforcement (Reference MoRT&H 701). | SQM | 187.00 |
|  |  |  |  |  |
| 14168 |  | Providing and laying a bi-axial extruded geogrid of Maccaferri make or equivalent Type-30S manufactured from high density polyethylene polymer as base/sub-base reinforcement (Reference MoRT&H 701). | SQM | 235.00 |
|  |  |  |  |  |
| 14169 |  | Providing and laying a bi-axial extruded geogrid of Maccaferri make or equivalent Type-40S manufactured from high density polyethylene polymer as base/sub-base reinforcement (Reference MoRT&H 701). | SQM | 320.00 |
|  |  |  |  |  |
|  |  |  |  |  |
| 14170 |  | Miling of bituminous pavement upon depth of **50 mm** by cold miling machine including all levelling and slope sensors, self-loading of milled material by discharge conveyor onto transport vehicles directed by Engineer in Charge. | SQM | 84.16 |
|  | Miling of bituminous pavement upon depth of **100 mm** by cold miling machine including all levelling and slope sensors, self-loading of milled material by discharge conveyor onto transport vehicles directed by Engineer in Charge. | SQM | 105.18 |
|  |  |  |  |  |
| 14171 |  | Providing & laying of shot Blasted Paving Tiles Basant or Equivalent make manufactured by tile making machine complying with IS:1237: ref: 2005 and manufactured by ISO certified plant. |  |  |
|  | Size: 250mm x 250mm x 28mm (Types: Plain tiles, Transverse pattern tiles) |  |  |
|  | a | Grey Colour | SQM | 1502.00 |
|  | b | Other colours | SQM | 1633.00 |
| 14172 |  | Size: 300mm x 300mm x 30mm (Type: Plain Tiles) |  |  |
|  | a | Grey Colour | SQM | 1567.00 |
|  | b | Other colours | SQM | 1699.00 |
| 14173 | 1 | Size: 250mm x 500mm x 40mm (Type: Bush Hammered tiles,Double Groove tiles, Multi Groove tiles and plain tiles) |  |  |
|  | 2 | Size: 400mm x 400mm x 40mm (Type: Ring Pattern tiles, Tuscan tiles, Bush Hammered tiles and Holland pettern tiles) |  |  |
|  | a | Grey Colour | SQM | 1600.00 |
|  | b | Other colours | SQM | 1863.00 |
|  |  |  |  |  |
| 14174 |  | Providing & laying of minimun 60mm thick factory made Shot blasted cement concrete Interlocking paver blocks of minimum M40 grade made by heavy duty block making machine with strong vibratory compaction and of approved size and design/ shape laid in 50mm thick compacted bed of coarse sand, filling the joints with coarse sand etc. all complete as per the direction of Engineer-incharge. The product should comply with IS 15658: 2006 and manufactured by ISO 9001: 2008 certified plant. |  |  |
|  | 1 | Size: 225 mm x 112.5mm x 60mm (Type: Wave Shape) |  |  |
|  | 2 | Size: 210mm x 105mm x 60mm (Type: Rectangular Shape) |  |  |
|  | 3 | Size: 150mm x 150mm x 60 mm (Type: Square Shape) |  |  |
|  | a | Grey Colour | SQM | 1301.00 |
|  | b | Other Colours | SQM | 1158.00 |
|  |  |  |  |  |
| 14175 |  | Providing & laying of minimun 65mm thick factory made Shot blasted cement concrete Interlocking paver blocks of minimum M40 grade made by heavy duty block making machine with strong vibratory compaction and of approved size and design/ shape laid in 50mm thick compacted bed of coarse sand, filling the joints with coarse sand etc. all completed as per the direction of Engineer-incharge. The product should comply with IS 15658: 2006 and manufactured by ISO 9001: 2008 certified plant. |  |  |
|  |  | Type: Flexi/ Multi Pavers (Set of 5 Pieces) |  |  |
|  |  | Size: 200mm x 275mm x 65mm |  |  |
|  |  | Size: 200mm x 225mm x 65mm |  |  |
|  |  | Size: 200mm x 175mm x 65mm |  |  |
|  |  | Size: 200mm x 125mm x 65mm |  |  |
|  |  | Size: 200mm x 100mm x 65mm |  |  |
|  | a | Grey Colour | SQM | 1772.00 |
|  | b | Other Colours | SQM | 1946.00 |
|  |  |  |  |  |
| 14176 |  | Providing & laying of minimun 70mm thick factory made Shot blasted cement concrete Interlocking paver blocks of minimum M40 and above grade made by heavy duty duty making machine with strong vibratory compaction and approved size and design/ shape laid in 50mm thick compacted bed of coarse sand, filling the joints with coarse sand etc. all completed as per the direction of Engineer-incharge. The product should comply with IS 15658: 2006 and manufactured by ISO 9001: 2008 certified plant. |  |  |
|  |  | Size: 210mm x 105mm x 70mm thick (Type: Rectangular Type Pavers) |  |  |
|  | a | Grey Colour | SQM | 1232.00 |
|  | b | Other Colours | SQM | 1337.00 |
|  |  |  |  |  |
| 14177 |  | Providing & laying of minimun 80mm thick factory made Shot blasted cement concrete Interlocking paver blocks of minimum M40 and above grade made by heavy duty block making machine with strong vibratory compaction and of approved size and design/ shape laid in 50mm thick compacted bed of coarse sand, filling the joints with coarse sand etc. all completed as per the direction of Engineer-incharge. The product should comply with IS 15658: 2006 and manufactured by ISO 9001: 2008 certified plant. |  |  |
|  | 1 | Size: 210mm x 150mm x 80mm thick (Type: Rectangular Type Pavers) |  |  |
|  | 2 | Size: 210mm x 150mm x 80mm thick (Type: Square Type Pavers) |  |  |
|  | a | Grey Colour | SQM | 1366.00 |
|  | b | Other Colours | SQM | 1455.00 |
|  |  |  |  |  |
| 14178 |  | Providing & laying of minimun 100mm thick factory made Shot blasted cement concrete Interlocking paver blocks of minimum M50 grade made by heavy duty block making machine with strong vibratory compaction and of approved size and design/ shape laid in 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all completed as per the direction of Engineer-incharge. The product should comply with IS 15658: 2006 and manufactured by ISO 9001: 2008 certified plant. |  |  |
|  |  | Size: 200m x 100mm x 100mm (Type: Rectangular Type) |  |  |
|  | a | Grey Colour | SQM | 1530.00 |
|  | b | Other Colours | SQM | 1664.00 |
| 14179 |  | Provision of hump type speed breakers in cement concrete for general traffic at preferred crossing speed of 25km/h and above as per standard specification in IRC 99-1998. The speed breaker shall be formed by placing cement concrete 1:1½:3 (1cement:1.5coarse sand :3 graded granite or basaltic stone aggregate of 20mm nominal size)including admixture for rapid setting /early strength gain, finishing to the required shape and curing etc. complete. | m3 | 9583.00 |
|  |  | Provision of Hump type speed breakers for general traffic at preferred crossing speed of 25 km/h and above as per standard having and specification in IRC 99-1998. The speed breakers shall be formed by placing hotmixed dense bituminious macadam and a layer of asphaltic concrete carpet (hot mix) after the surface is indented and tack coat applied to the location where required. |  |  |
| 14180 |  | For General traffic upto 25 Kmph (3.70m wide per Meter) | RM | 4629.00 |
| 14181 |  | For Heavy traffic of above 25 Kmph. (5.00m wide per Meter) | RM | 6135.00 |
| 14182 |  | Providing and Fixing 360 degrees tempered glass studs having compressive strength of atleast 40 ton and having passed drop test using 1.04Kg. Steel ball and 1.5m height with no chipping or breaking of glass ,having diameter 100mm,fixing depth 25mm, retro reflective 360 degree glass protrusion dia 60mm and height 19mm. stud base coated with thermal sprayed aluminium layer, use of coloured reflective coating is not permitted .Conforming to DIN EN 1463- 1, DIN EN 1463-2(R1,S1), CE0086 and CNS 13762 (Reflectance: first grade, impact resistance: A grade). Installed by removing a core of 100mm, 23-25mm depyh from road surface using diamond core drill and fixed with epoxy/bituminous adhesive. | Each | 1369.00 |
| 14183 |  | Repair of Pot holes by a mechanized equipment in seamless and regular shape using cold mix emulsion and stone aggregate of a specified grade. It includes cleaning of dust. Transporating the material to work site by mobile truck mounted with JET PATCHER equipment of minimum 5 cum aggregate capacity. Spraying the rapid setting emulsion Rs-2 @ 1.00 kg. Per Sqm. Area as prime coat. Machine equipped with compressor, cold emulsion container, mechanized hoper for laying of aggregate mixed with 6.5% of RS-2 emulsion and compacting it with vibrating plate compactor to repair the road surface with prior approval of Engineer-in-charge to make required size patch and to achieve the desire compaction of 40mm thickness. As approved by CRRI and as per the direction of Engineer-in-charge. | Sq.m | 1111.00 |