

SECTION-7: BILL OF QUANTITIES

BILL OF QUANTITIES

A: PREAMBLE

1. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, General and Particular Conditions of Contract, Technical Specifications, and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Project Manager and valued at the rates and prices bid in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Project Manager may fix within the terms of the Contract.
3. The rates and prices bid in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Constructional Plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.
4. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
5. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bill of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.
6. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the contract documentation shall be made before entering prices against each item in the priced Bill of Quantities.
7. Day work included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Project Manager in accordance with Clause 50 of the General Conditions of Contract.
8. The method of measurement of completed work for payment shall be in accordance with the Technical Specifications (Section 6 of Volume I).

9. Errors will be corrected by the Employer for any arithmetic errors in computation or summation in accordance with sub-clause 31.1 of Instruction to Bidders reproduced below:
 - (a) only for unit price contracts, if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;
 - (b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
 - (c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.
10. Rock is defined as all materials which, in the opinion of the Project Manager, require blasting, or the use of the metal wedges and sledge hammers, or the use of compressed air drilling for their removal, and which cannot be extracted by ripping with a tractor of at least 150 brake hp with a single, rear-mounted, heavy-duty ripper.

B: ABBREVIATIONS

| Abbreviation | For |
|-----------------------|---|
| Rs | Indian Rupees |
| LS or SUM | Lump Sum |
| Nr or No. | Number |
| Lm or m | Linear metre |
| KM or km | Kilometre |
| Hct or ha | Hectare |
| m ² | Square metre |
| m ³ or Cum | Cubic metre |
| KG or kg | Kilogram |
| T or MT | Tonne or Metric Tonne |
| HP | Horse Power |
| PS | Provisional Sum |
| IRC | Indian Roads Congress |
| MORTH Specification | Specifications for Road and Bridge Works (4th revision) issued by the Ministry of Roads Transport & Highways, Government of India |
| BIS | Bureau of India Standards |
| Prov. | Provisional |
| Eqpt. Hrs | Equipment hours |
| P.O.L. | Petroleum, Oil and Lubricants |
| Veh. Day | Vehicle Day |
| Cu cm – cucm | Cubic Centimetres |
| Mtr | Metre |

C: WORK ITEMS

1. The Bill of Quantities contains the following part Bills

- GSHP-II/NCB/02A

Widening and Strengthening to Two Lanes with Hard Shoulders of Bayad – Dhoridungri State Highway-69 in North Gujarat Region (from km 0+000 to 17+961)

| Bill No. 1 | GENERAL ITEMS | AMOUNT |
|-------------|--|--------|
| Bill No. 2 | SITE CLEARANCE | |
| Bill No. 3 | EARTH WORKS | |
| Bill No. 4 | SUB-BASE, BASES AND SURFACE COURSES (NON BITUMINOUS) AND SHOULDERS | |
| Bill No. 5 | BASE AND SURFACE COURSES (BITUMINOUS) | |
| Bill No. 6 | CULVERTS AND BRIDGES (& RETAINING WALLS) | |
| Bill No. 7 | DRAINAGE AND PROTECTION WORKS | |
| Bill No. 8 | MISCELLANEOUS ITEMS | |
| Bill No. 9 | SAFETY IN ROAD CONSTRUCTION ZONE | |
| Bill No. 10 | EMP COST | |
| Bill No. 11 | DAY WORKS | |
| GRAND TOTAL | | |

- Page Collection
- Summary
- Grand Summary

2. Bidders shall price the Bill of Quantities in local currency only and shall indicate in Contract Data the percentage of expected payment in foreign currency or currencies.

BOQ : BAYAD – DHORIDUNGARI - SH 69

| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|--|------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| 1 | GENERAL ITEMS | | | | | |
| 1.02 | Supply of master CD / DVD's of important site activities with four copies complete as per Technical Specifications clause 126 | Set | 12 | | | |
| 1.03 | Construction of temporary diversion for passage of traffic, complete as per Technical Specifications Section Clause 112.3. (separate items are given for CD/ bridge work diversions) | Lm | 2500 | | | |
| | Total General Items carried to Grand Summary | | | | | |
| 2 | SITE CLEARANCE AND DISMANTLING | | | | | |
| 2.01 | 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 complete as per technical specification clause 201 or as directed by the Engineer. | ha | 26 | | | |
| 2.02 | 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, disposal of unserviceable as well serviceable material with all leads and lifts beyond the ROW complete as per technical specification clause 202. | | | | | |
| | a) Plain cement concrete | Cum | 10 | | | |
| | b) Reinforced cement concrete | Cum | 10 | | | |
| | c) Stone / Brick masonry structures | Cum | 10 | | | |
| | d) Guide/Hand rails / Fencing / kerb / NP3 Pipes / NP4 Pipes | Lm | 50 | | | |
| | e) Kilometre stone | Nr | 14 | | | |
| | f) 5 km stone | Nr | 4 | | | |
| | g) Hectometre / Boundary stones | Nr | 71 | | | |
| | h) Utilities | Nr | 10 | | | |

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| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|-------------|--|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | i) | Bituminous Pavement | Cum | 9569 | | |
| | j) | Non- Bituminous Pavement | Cum | 16939 | | |
| 2.03 | | Cutting of trees from 300mm and above girth size, the work shall consist of cutting of all such trees as per the direction of the Engineer and further as per duly approved plan by the Forest Department. This shall include duly approved stacking, transport and final handing over to Forest Department with all leads and lifts. Work to comply strictly in accordance with Technical Specifications Clause 201 | | | | |
| | a) | above 300mm to 600mm girth | Nr | 135 | | |
| | b) | above 600mm to 900mm girth | Nr | 37 | | |
| | c) | above 900mm to 1800mm girth | Nr | 65 | | |
| | d) | above 1800m | Nr | 33 | | |
| 2.04 | | Removal of tree stumps and roots, disposal and filling of pits complete as per Technical Specifications Clause 201. The work shall follow the directions of the Engineer and further approval of plan by the Forest Department, where necessary. This shall include all leads and lifts. | | | | |
| | a) | above 300mm to 600mm girth | Nr | 135 | | |
| | b) | above 600mm to 900mm girth | Nr | 37 | | |
| | c) | above 900mm to 1800mm girth | Nr | 65 | | |
| | d) | above 1800mm | Nr | 33 | | |
| | | Total Site Clearance and Dismantling carried to Grand Summary | | | | |
| 3 | | EARTH WORKS | | | | |
| 3.01 | | Roadway excavation necessary for construction of roadway 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 leads and lifts upto 1000 m complete as per technical specification clause 301 and 305. | | | | |
| | b) | Ordinary soil / Hard soil | Cum | 54603 | | |
| | e) | Loosening and re-compacting the original ground/ sub-grade up to the required depths as directed by the Engineer and as | Cum | 6000 | | |

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| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|---|-------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | per Technical Specifications Clause 301 & 305 | | | | | |
| 3.02 | Construction of embankment with approved material obtained from borrow area with all lifts and leads, transporting to site, spreading, grading to required slope and compacting complete as per drawings and technical specification clause 305. | Cum | 25365 | | | |
| 3.03 | Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted complete as per drawings and technical specification clause 305. | Cum | 18257 | | | |
| 3.04 | Construction of subgrade and Earthen shoulder with approved material obtained from borrow area with all lifts & leads, transporting to site, spreading, grading to required slope and compacted complete as per drawings and technical specification clause 305. | Cum | 126241 | | | |
| 3.08 | 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 complete as per drawings and technical specification clause 407. | Cum | 1220 | | | |
| | Total Earth Works carried to Grand Summary | | | | | |
| 4 | SUB-BASE, BASE COURSES (NON-BITUMINOUS) AND SHOULDERS | | | | | |
| 4.01 | Constructing Hard shoulder with Granular sub-base (GSB) complete as per drawings and Technical Specification Clause 401 (Grading I, Table 400-1), with PI 6-8 | Cu.m. | 23076 | | | |
| 4.02 | Construction of granular sub-base from naturally available granular material, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface (including profile corrective course where applicable) and compacting with vibratory power roller to achieve the desired density, complete as per technical specification clause 401 | | | | | |
| | b) As per Table 400-2, Coarse- Graded Grading I | Cum | 55665 | | | |
| 4.03 | Providing, laying, spreading and compacting graded stone | | | | | |

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| Item No. | | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|----|---|------|----------|-----------|-------|--------|
| | | | | | Figures | Words | |
| | | 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 complete as per drawing and technical specification clause 406. | | | | | |
| | a) | Mechanically laid base (Spread by motor grader) including profile corrective course and access roads if applicable | Cum | 12677 | | | |
| | b) | Mechanically laid base (laid by Electronic Sensor Paver) | Cum | 26531 | | | |
| | | Total Sub-Base, Base Courses (Non-Bituminous) and Shoulders carried to Grand Summary | | | | | |
| 5 | | BASE AND SURFACE COURSES (BITUMINOUS) | | | | | |
| 5.01 | | 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 complete as per drawings and technical specification clause 502. | Sqm | 150065 | | | |
| 5.02 | | Providing surface dressing with aggregate using Bitumen over primed water bound macadam/ wet mix macadam complete as per Technical Specifications Clause 510 | | | | | |
| | b) | Second Coat Surface Dressing | Sqm | 8000 | | | |
| 5.03 | | Providing and applying tack coat with bitumen complete as per drawings and Technical Specification clause 503. | | | | | |
| | a) | @ 2.0 to 2.5 kg/10m2 on bituminous surface | Sqm | 183175 | | | |
| | b) | @ 2.5 to 3.0 kg/10m2 on granular surface treated with primer/hungry bituminous surface. | Sqm | 152915 | | | |
| 5.06 | | 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 as per the approved mixed design, 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, | Cum | 11439 | | | |

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| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|---|------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | vibratory and tandem rollers to achieve the desired compaction complete as per drawings and technical specification clause 507. | | | | | |
| 5.08 | 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 as per approved mixed design, 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 complete as per drawings and Technical Specification clause 508. | Cum | 4674 | | | |
| 5.10 | Variation of quantity of VG 30 grade bitumen in bituminous courses as per Technical Specification Clause 507.9 and 509.9 | MT | 104 | | | |
| 5.11 | Variation of quantity of rapid emulsion in Tack coat as per Technical Specification Clause 503. | | | | | |
| | a) 0.5 kg extra for normal bituminous surface | MT | 9 | | | |
| | b) 0.5 kg extra for Granular Surface | MT | 8 | | | |
| 5.12 | Variation of quantity of slow emulsion for prime coat as per Technical Specification clause 502. | MT | 15 | | | |
| 5.13 | 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 of grading I as per clause 504, compacting, trimming and finishing the surface to form a smooth continuous surface, all as per clause 3004.2 | sqm | 1187 | | | |
| 5.14 | Providing and applying low viscosity bitumen emulsion for sealing cracks less than 3 mm wide or incipient fretting or disintegration in an existing bituminous surfacing. | sqm | 2375 | | | |
| 5.15 | 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 | sqm | 3562 | | | |

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| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|---|------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | compacting to provide even riding surface | | | | | |
| 5.16 | Full depth repair of section in case of poor pavement complete as per drawings or as directed by the engineer | sqm | 712 | | | |
| | Total Base and Surface Courses (Bituminous) carried to Grand Summary | | | | | |
| 6 | STRUCTURES | | | | | |
| 6A | CULVERTS: | | | | | |
| 6A02 | Excavation of foundation for culverts including preparation of foundation bed complete as per drawing and Technical Specifications Clause 304 in the following strata | | | | | |
| | a) Ordinary soil / Hard soil | Cum | 1371 | | | |
| | b) Ordinary rock / Soft rock | Cum | 366 | | | |
| | c) Hard Rock (Blasting Prohibited) | Cum | 91 | | | |
| 6A03 | Providing and laying granular material for pipe bedding of Hume Pipe culverts and replacement of soft and loose patches in the bearing area of the Box structure with layers not exceeding 300 mm as per drawing and Technical Specifications Clause 2904 | Cum | 399 | | | |
| 6A04 | Plain cement concrete in levelling course in open foundation, concrete pipe bedding and apron complete as per drawing and Technical Specifications Section 1500 and 1700 | | | | | |
| | a) M15 grade | Cum | 100 | | | |
| 6A05 | Structural concrete, for foundation slab, walls, deck slab, wing walls (single/Multiple), complete as per drawings and Technical Specifications section 1500 and 1700 | | | | | |
| | c) M30 grade | Cum | 143 | | | |
| 6A06 | Plain cement concrete M20 grade in Wing wall complete as per drawing and Technical Specifications Section 1500 and 1700 | Cum | 131 | | | |
| 6A08 | Providing and laying concrete M-15 in levelling course below approach slab as per section 1700 of Technical specifications. | Cum | 23 | | | |
| 6A09 | Structural concrete M-30 in approach slab as per section 1700 and 2700 of Technical specifications | Cum | 46 | | | |
| 6A10 | Providing and fixing in position Thermo mechanically treated | | | | | |

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| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|--|------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | (TMT) Fe-500 grade reinforcement bars as per drawings and Technical Specification Section 1000 and 1600. | | | | | |
| a) | Foundation | MT | 7 | | | |
| b) | Substructure | MT | 4 | | | |
| c) | Superstructure | MT | 2 | | | |
| 6A13 | Providing and fixing filler type expansion joint with 2mm thick copper plate, 20mm thick compressible fiber board, 20mm thick premoulded joint filler in expansion joint and filling joint sealant compound complete as per drawings and Technical specification section 2600. | Lm | 443 | | | |
| 6A14 | Back filling behind abutments, wing walls and return walls with selected granular material of approved quality complete as per drawing and Technical Specifications Clause 305 | Cum | 40 | | | |
| 6A15 | Filter material behind abutment, wing walls and return walls complete as per drawing and Technical Specifications Clause 305 | Cum | 100 | | | |
| 6A16 | Providing, laying and jointing RCC. NP-4 Hume Pipes for culverts or equivalent pipes under IS:458-1988, approved by the Engineer complete as per Technical Specifications section 2900 | | | | | |
| c) | Diameter 900mm | Lm | 40 | | | |
| e) | Diameter 1200mm | Lm | 380 | | | |
| 6A17 | Plain cement concrete grade M-20 in Headwall of Access Road Culverts complete as per drawing and Technical Specifications Clause 1500 and 1700 | Cum | 368 | | | |
| 6A18 | Painting of culvert reference number complete as per Technical Specifications section 800 or as directed by the Engineer. | Nr | 24 | | | |
| 6A20 | Providing 25 mm thick mastic asphalt over the top of the deck after applying prime coat underneath wearing course complete as per Technical Specifications Clause 2702, 503 and 515 (Cost of Prime Coat Included) | Sqm | 275 | | | |
| 6A21 | Providing 40 mm thick Bituminous concrete in one layer in wearing course complete as directed by the Engineer and as | Cu m | 11 | | | |

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| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|-----------|---|------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | per Technical Specifications Clause 2702/509 (Cost of Tack Coat Included) | | | | | |
| 6A22 | Geo textiles filter membrane underneath pitching complete as per drawings and technical specification clause 2504 and as directed by the Engineer. | Sqm | 255 | | | |
| 6A23 | Filter media beneath the pitching/revetment on slopes for protection of embankment as per drawings and Technical Specifications clause 2504 and as directed by the Engineer | cum | 38 | | | |
| 6A24 | Pitching/revetment on slopes with Cement Concrete blocks in M15 grade conforming to Section 1700 complete as per drawings Technical Specifications 2504 and as directed by the Engineer. | Cum | 77 | | | |
| 6A25 | Providing weep holes in brick masonry / plain / reinforced concrete abutments, wing walls / return walls etc. with 100mm dia A.C. pipe, extending through the full width of structure with slope of IV:20H towards draining face including porous concrete blocks complete as per drawing and Technical Specifications clause 2706. | Nr | 76 | | | |
| 6A27 | 750 thick flexible stone apron as per Clause No. 2503.1 of Technical Specification and as directed by the Engineer | Cum | 294 | | | |
| 6A28 | Curtain wall of M15 grade Plain Cement Concrete complete as per drawings and Technical Specifications section 1500 & 1700 or as directed by the Engineer | Cum | 86 | | | |
| 6A29 | Construction and fixing of PCC Pillar with M15 grade of concrete of size 400 x 400 x 1000 mm for inscribing Structure Number as per drawing and Technical Specification section 1500, 1700 or as directed by the Engineer | Nr | 40 | | | |
| 6A30 | Providing cement concrete crash barrier in M-40 grade including safety kerb, reinforcement and G.I. pipe complete as per drawing and Technical Specifications sections 1500, 1600, 1700, 2200 & clause 809. | Lm | 12 | | | |
| | Total Culverts carried to Grand Summary | | | | | |
| 6B | BRIDGES | | | | | |
| | Foundation | | | | | |

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| Item No. | | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|----|---|------|----------|-----------|-------|--------|
| | | | | | Figures | Words | |
| 6B03 | | Earthwork in excavation of foundations for structures including all leads and lifts complete as per drawings and Technical specifications clause 304. | | | | | |
| | a) | In all types of soil | Cum | 497 | | | |
| | b) | In soft/ordinary rock | Cum | 133 | | | |
| | c) | In hard rock (Blasting Prohibited) | Cum | 33 | | | |
| 6B05 | | Providing & laying Plain cement concrete levelling course in foundation and fill around foundation to protect from erosion including form work but excluding the cost of reinforcement complete as per drawing and Technical Specifications sections 1500, 1700 and 2100. | | | | | |
| | a) | M-15 grade | Cum | 67 | | | |
| | b) | M-20 grade | Cum | 56 | | | |
| 6B06 | | Providing & laying Reinforced Cement Concrete in foundations including form work but excluding the cost of reinforcement complete as per drawing and Technical Specifications sections 1500, 1700 and 2100. | | | | | |
| | b) | M-30 grade | Cum | 95 | | | |
| 6B17 | | Supplying, placing and fixing TMT Fe 500 bar reinforcement complete as per drg. and Technical specifications section 1600. | | | | | |
| | a) | For Foundation | MT | 8 | | | |
| | b) | For sub-structure | MT | 3 | | | |
| | c) | For super-structure | MT | 3 | | | |
| | | Sub-Structure | | | | | |
| 6B19 | | Providing & laying Reinforced Cement Concrete in sub-structure including form work but excluding the cost of reinforcement complete as per drg. and Technical specifications sections 1500, 1700 & 2200. | | | | | |
| | c) | M-30 grade | Cum | 29 | | | |
| | | Bearing | | | | | |
| 6B22 | | Providing & fixing of expansion joints complete as per drg. and Technical specifications section 2600 | | | | | |
| | a) | Providing and fixing filler type expansion joint with 2mm | Lm | 117 | | | |

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| Item No. | | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|-----|---|------|----------|-----------|-------|--------|
| | | | | | Figures | Words | |
| | | thick copper plate, 20mm thick compressible fiber board, 20mm thick premoulded joint filler in expansion joint and filling joint sealant compound complete as per drawings and Technical specification section 2600. | | | | | |
| | | Super Structure | | | | | |
| 6B23 | | Providing & laying Reinforced Cement Concrete in super-structure including form work but excluding the cost of reinforcement complete as per drg. and Technical specifications sections 1500, 1700 & 2300. | | | | | |
| | a) | Solid slab | | | | | |
| | ii) | M-30 grade | Cum | 36 | | | |
| 6B26 | | Providing 25 mm thick mastic asphalt over the top of the deck after applying prime coat underneath wearing course complete as per Technical Specifications Clause 2702, 503 and 515 (Cost of Prime Coat Included) | Sqm | 202 | | | |
| 6B27 | | Providing 40 mm thick Bituminous concrete in one layer in wearing course complete as directed by the Engineer and as per Technical Specifications Clause 2702/509 (Cost of Tack Coat Included) | Cum | 8 | | | |
| 6B29 | | Providing cement concrete crash barrier in M-40 grade including safety kerb, reinforcement and G.I. pipe complete as per drawing & Technical Specifications sections 1500, 1600, 1700, 2200 & clause 809. | Lm | 12 | | | |
| | | Misc. Items | | | | | |
| 6B31 | | Providing weep holes in brick masonry / plain / reinforced concrete abutments, wing walls / return walls etc. with 100mm dia A.C. pipe, extending through the full width of structure with slope of IV:20H towards draining face including porous concrete blocks complete as per drawing and Technical Specifications clause 2706. | Nr | 44 | | | |
| 6B32 | | Providing & fixing drainage Spouts complete as per drawing and Technical Specifications Clause 2705. | Nr | 3 | | | |
| 6B33 | | Back filling behind abutment with selected granular material of approved quality as per Technical Specifications Clause | Cum | 29 | | | |

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| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|---|------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | 305 | | | | | |
| 6B34 | Filter media behind abutments, wing walls, & return walls, including all material, labour, equipment carriage etc. all complete as per drawing and Technical Specification Clauses 305, 309 & 2504. | Cum | 55 | | | |
| 6B36 | Providing & laying reinforced cement concrete M-30 grade in approach slab including form work and reinforcement complete as per drg. and Technical specifications sections 1500, 1600, 1700 & 2100 and clause 2704. | Cum | 23 | | | |
| 6B41 | Painting of Bridge No. and span arrangement as per drg., IRC:7-1971 and Technical specifications section 800. | Nr | 2 | | | |
| 6B47 | Plain cement concrete M-15 grade for curtain wall including centering and shuttering complete as per drawing and technical specification section 1500, 1700,. | Cum | 68 | | | |
| 6B48 | Flexible Stone boulder apron 750 mm thick complete as per drawing and Technical Specifications, Clause 2507. | Cum | 127 | | | |
| | Total Bridges carried to Grand Summary | | | | | |
| 6C | REPAIR & REHABILITATION | | | | | |
| 6C01 | Construction of temporary diversion, including across waterway, for passage of traffic, complete as per drawings and Technical Specifications Section Clause 112.3, including temporary cross drainage | Lm | 700 | | | |
| 6C02 | Dismantle of various items of structures complete as per Technical specification clause 202 or as directed by the Engineer. | | | | | |
| | a) RCC | Cum | 42 | | | |
| | b) PCC | Cum | 80 | | | |
| | c) Existing Wearing coat | sqm | 551 | | | |
| | d) Stone/Brick masonry | Cum | 306 | | | |
| | e) Bed Protection | Sqm | 0 | | | |
| | f) NP4 Pipe | Lm | 209 | | | |
| 6C09 | Replacement of drainage spout wherever broken including necessary gratings and drainage assembly complete as per drawing and Technical Specification clause 2705 as directed | Nr | 12 | | | |

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| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|---|------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | by the Engineer | | | | | |
| 6C10 | Cleaning of the Weep holes of Abutment and wing wall as per Technical specification section 200 or as directed by the Engineer. | Nr | 60 | | | |
| 6C11 | Cleaning and removal of vegetation growth from structures channel and protective works complete as per Technical specification clause 202 or as directed by the Engineer. | Sqm | 2164 | | | |
| 6C12 | Replacement of RCC railing including reinforcement as per Technical Specifications Section 1500, 1600, 1700, 2200, 2815 and Clause 2703. | | | | | |
| | a) Railing in M30 grade | Lm | 24 | | | |
| 6C13 | Reconstruction of damaged pitching and Floor protection by Cement Concrete blocks in M15 grade conforming to Section 1700 as per Technical Specifications Section 2500. | Cum | 19 | | | |
| 6C22 | Providing 25 mm thick mastic asphalt over the top of the deck after applying prime coat underneath wearing course complete as per Technical Specifications Clause 2702, 503 and 515 (Cost of Prime Coat Included) | Sqm | 551 | | | |
| 6C23 | Providing 40 mm thick asphaltic concrete in one layer in wearing course complete as directed by the Engineer and as per Technical Specifications Clause 2702/509 (Cost of Tack Coat Included) | Cum | 22 | | | |
| 6C29 | Dismantling and removal of existing damaged expansion joint and providing and fixing buried type expansion joint as per MORTH Modified Interim Specification for expansion joint, drawing and Technical specification clause 202. | Nr | 24 | | | |
| 6C36 | Repair of spalling and patches by PMC mortar 50 to 70mm thick at soffit of slab as per clause 2804 of specification and additional specification A-3 and as directed by the Engineer | Sqm | 143 | | | |
| 6C48 | Plain cement concrete grade M-20 in Headwall of Access Road Culverts complete as per drawing and Technical Specifications Clause 1500 and 1700 | Cum | 44 | | | |
| 6C49 | Cement plaster 12mm thick in cement mortar 1:3 complete as per drawing and Technical Specifications Section 1000 and | Sqm | 275 | | | |

Section 7 - Bill of Quantities

| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|--|------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | 1300 and as directed by the Engineer | | | | | |
| 6C51 | Removal of accumulated debris in Pipe Culverts complete as per Technical Specification clause 202. | Lm | 203 | | | |
| | Total Repair & Rehabilitation carried to Grand Summary | | | | | |
| 7 | DRAINAGE AND PROTECTION WORK | | | | | |
| 7.01 | Earthwork in excavation in all types of soil including rock complete as per Technical Specification Clauses 304 & 309. | Cum | 650 | | | |
| 7.02 | Plain Cement concrete M-15 grade in levelling course in drain including centering and shuttering all complete as per drawing and Technical Specification Sections 309, 1500 & 1700. | Cum | 25 | | | |
| 7.03 | Construction of open unlined drains as per proper slope and dimension as shown in drawing and technical specification clause 309. | Lm | 35582 | | | |
| 7.10 | Providing, laying and jointing RCC. NP-4 hume pipes under IS:458-1988, Hume Pipes to discharge storm water from catch basins as per drawings and complete as per Technical Specifications section 2900 | Lm | | | | |
| | a) 450 mm diameter | Lm | 252 | | | |
| | b) 900 mm diameter | Lm | 266 | | | |
| 7.11 | Providing and laying granular material for pipe bedding of Hume Pipe culverts and replacement of soft and loose patches in the bearing area of the Box structure with layers not exceeding 300 mm as per drawing and Technical Specifications Clause 2904 | Cum | 180 | | | |
| 7.12 | Plain cement concrete grade M-20 in Headwall of Access Road Culverts complete as per drawing and Technical Specifications Clause 1500 and 1700 | Cum | 227 | | | |
| 7.13 | Providing and laying interlocking paver blocks of high density 65 mm thick M-25 grade in pedestrian pathway and in Island of major intersections areas as shown in the drawing, as per Additional Technical Specification A 15 or as directed by the Engineer. | sqm | 1405 | | | |
| 7.15 | Providing and laying Grade M15 Concrete perforated erosion protection scour blocks laid on the slopes and bed of the river | cum | 80 | | | |

Section 7 - Bill of Quantities

| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|--|------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | including the rebar, trimming of earth to required lines and levels, including capping with concrete on the tops of slopes as per drawings and Specifications | | | | | |
| 7.16 | Providing and laying plain cement concrete in medians and in sidewalks, foundations complete as per respective drawings, Technical Specifications section 1500 and 1700 and as directed by the Engineer | | | | | |
| | b) Construction of median kerb and island kerb Type B grade M20 (including base preparation, foundation and haunch concrete) | Lm | 3188 | | | |
| 7.18 | Pitching/revetment on slopes with Cement Concrete blocks in M15 grade conforming to Section 1700 complete as per drawings, technical Specifications 2504 and as directed by the Engineer | Cum | 50 | | | |
| 7.20 | Geo textile filters membrane as per Technical Specifications Clause 2504 and as directed by the Engineer. | Sqm | 167 | | | |
| 7.21 | Filter media beneath the pitching/revetment on slopes for protection of embankment as per drawings and Technical Specifications clause 2504 and as directed by the Engineer | | | | | |
| | b) Granular Material | Cum | 25 | | | |
| 7.23 | Providing and fixing of man hole including excavation, concrete, C.I. Cover, C.I. Steps complete as per drawing and Technical Specifications sections 300, 1500, 1600, 1700 and manufacture specification approved by the Engineer. | Nr | 3 | | | |
| | Total Drainage and Protection Work rates carried to Grand Summary | | | | | |
| 8 | TRAFFIC SIGNAGE AND ROAD APPURTENANCES | | | | | |
| 8.01 | Providing and erecting a "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 70 cm above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m centre to centre, 1.8 m high, 1.1 m below ground/road level, all steel parts and fitments to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a spacer of channel section 150 x 75 | Lm | 2580 | | | |

Section 7 - Bill of Quantities

| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|--|---|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | x 5 mm, 330 mm long complete as per clause 810 | | | | | |
| 8.02 | Providing and fixing of retro-reflectorised cautionary, mandatory and inforatory sign made of 1.5mm thick Aluminium Sheet/3mm Aluminium Composite Material , face to be fully covered with Class B Type-IV High Intensity Micro Prismatic Grade Sheeting as defined in IRC: 67-2010 having approved messages e.g. letter, numerals,symbols/legend/arrow etc. in Regional and/or Hindi and /or English as per drawing and Technical Specifications for Road and Bridge works (Fourth Revision). The sign plate will be fixed with minimum 6 mm dia aluminium rivets back supported on a mild steel angle iron frame 35x35x5 mm and one vertical Mild Steel post of NB65 Dia Pipe (height from crown level of the road and bottom of the sign board shall not be less than 2.10 m.) firmly fixed to the ground by means of properly designed foundation with M -15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing including painting of vertical post as per specification. | | | | | |
| | a) | Informatory Signs | | | | |
| | i) | Facility information 800 mm x 600 mm complete as per drawings and Technical Specifications Clause 801 | Nr | 44 | | |
| | ii) | Advance direction sign complete as per drawings and Technical Specifications Clause 801 | Sq m | 157 | | |
| | iii) | Route marker sign 450mm x 600 mm complete as per drawings and Technical Specifications Clause 801 | Nr | 15 | | |
| | b) | Cautionary Signs | | | | |
| | i) | Triangular 900 mm side complete as per drawings and Technical Specifications Clause 801 | Nr | 115 | | |
| | ii) | Hazard marker 180 x 1200 mm complete as per drawings and Technical Specifications Clause 801 | Nr | 4 | | |
| | iii) | Hazard marker 300 x 900 mm complete as per drawings and Technical Specifications Clause 801 | Nr | 5 | | |
| | c) | Mandatory Signs | | | | |

Section 7 - Bill of Quantities

| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|--|------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | i) Triangular 900 mm side (for "GIVE WAY" sign) complete as per drawings and Technical Specifications Clause 801 | Nr | 28 | | | |
| | ii) Stop sign - Octagon of size 900 mm complete as per drawings and Technical Specifications Clause 801 | Nr | 100 | | | |
| | iii) Speed limit compulsory keep left 600 mm dia meter complete as per drawings and Technical Specifications Clause 801 | Nr | 33 | | | |
| 8.03 | 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 complete as per drawings and technical specification clause 803. | | | | | |
| | a) Lane/centerline/edge marking or any other marking | Sqm | 7534 | | | |
| | b) Directional arrows, lettering etc | | | | | |
| | i) Straight (nr) RM13 | Nr | 98 | | | |
| | ii) Left/right (nr) RM14 & 15 | Nr | 70 | | | |
| | iii) Comb (nr) RM 16& 17 | Nr | 350 | | | |
| | iv) Lettering | Nr | 30 | | | |
| | v) Chevron Marking | Sqm | 409 | | | |
| | vii) Pedestrian Crossing | Sqm | 1050 | | | |
| 8.04 | Reinforced cement concrete M15 grade kilometre stone of standard design as per IRC:8-1980, fixing in position including painting and printing etc complete as per drawings and technical specification clause 804. | | | | | |
| | a) Hectometer Stone | Nr | 71 | | | |
| | b) Kilometer Stone | Nr | 14 | | | |
| | c) 5th kilometer stone | Nr | 4 | | | |
| 8.05 | Supplying and fixing of boundary stones of M15 grade concrete complete as per drawing and Technical Specifications clause 806 | Nr | 89 | | | |
| 8.06 | Providing and fixing retro-reflectorised road delineators complete as per drawing and Technical Specification Clause 805. | | | | | |
| | b) Road way delineators. | Nr | 1193 | | | |

Section 7 - Bill of Quantities

| Item No. | | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|--|---|------|----------|-----------|-------|--------|
| | | | | | Figures | Words | |
| 8.08 | | Supply and install single guide rails (crash barriers) as approved by the Engineer as per drawings and Additional Specifications A-12 | Lm | 803 | | | |
| 8.09 | | Providing and fixing Raised Pavement Marker (Cats Eye, Road Stud), made of high strength engineering Plastic Body having at least 13 tons load bearing capacity of pneumatic tyre. Size of marker 9 cms x 10 cms x 1.6 cm having shape so that no water penetration or dust accumulation takes place on reflective surface, fitted with electronically welded tough polycarbonate micro prismatic reflective panels having 16 sq.cms surface area of each side having long distance visibility at night and in wet weather condition. The body of the marker having finger grip for easy and accurate placement fitted with two number polymer shanks to anchor the marker with the road for avoiding dislocation of the marker where the road is bleeding or made with softer grade of bitumen and application with adhesive on Bituminous road complete as per Additional Technical Specification Clause A-16 | Nr | 2763 | | | |
| 8.10 | | Solar Powered Traffic Blinkers LED based 300 mm/200 mm dia signal head with In built blinker unit having battery & battery charger unit with photo electric switch complete as per technical specification clause 112 and as directed by the Engineer. | Nr | 2 | | | |
| 8.11 | | Construction of bus shelters for commuters including all building and furnishing works, etc. complete as per drawings and additional Technical Specifications A-17 or as directed by the Engineer. | Nr | 9 | | | |
| 8.13 | | Providing and fixing of liter bins complete as per Manufacturer drawing and specification and approved by the Engineer. | Nr | 10 | | | |
| 8.20 | | Plantation of shrubs in central median including planting with manure, gardening and maintenance complete as per Technical Specifications Clause 308. | Nr | 70 | | | |
| 8.25 | | Providing and Construction of Rain water Harvesting complete as per drawings and Technical Specification section | Nr | 36 | | | |

Section 7 - Bill of Quantities

| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|---|-------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | 300, 1300, 1500, 1700 or as directed by the Engineer. | | | | | |
| 8.26 | Providing and construction of Raised Pedestrian Crossing / Speed Hump across the road of 150 mm height and width of 2.5 m with M25 grade concrete considering side slope in 1:10. 100mm dia steel bollard to be fixed on sides. The surface to be painted with brick red colour complete as per drawings and Additional Technical Specification clause A15 or as directed by the Engineer. | sqm | 154 | | | |
| 8.27 | Providing and laying Tactile Block of yellow colour conforming to IS 13801:1993 (Reaffirmed 1998) of size 250 x 250 x 65 mm on pedestrian pathway as shown in drawing and directed by The Engineer as per Additional Technical Specification A18. | sqm | 208 | | | |
| 8.29 | Providing and Construction of raised Rumble strip complete as per drawings and technical specifications section 500 and 800 or as directed by the Engineer. | Lin.m | 4270 | | | |
| 8.30 | Providing and fixing Aluminum backed flexible prismatic sheeting , consisting of yellow/black colored flexible prismatic sheet with non-mettalic prismatic lens as retro reflective elements and confirming to ASTM D4946 Type VI specifications for reboundable retro reflective sheeting. The prismatic sheet shall be laminated at the back with 50micron aluminum Foil sensitive adhesive and liner with screen printed arrow/slant pattern in yellow/black color. The AFP shall be applied with adhesive , the edge of the sheeting shall be sealed all around with epoxy based structural adhesive and shall be extremely resistant to pill-off complete as per manufacturer drawings approved by the Engineer. | sqm | 34 | | | |
| 8.31 | Providing and applying Geru paint of approved brand on Trees withing ROW complete as per drawings and Technical Specification section 800 or as directed by the Engineer | Nr | 546 | | | |
| 8.32 | Providing and Constructing Welcome Sign at Start and End of Project corridor complete as drawings and Technical Specification 300, 800, 1500, 1700 and 1900 or as directed by the Engineer. | Nr | 2 | | | |

Section 7 - Bill of Quantities

| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|---|------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| 8.33 | Street Lighting in urban areas | | | | | |
| xxix) | Solar Street Light | | | | | |
| | a) Supply, Installation and Commissioning of 60W LED Standalone Solar Street Light mounted on Octagonal Epoxy coated Pole 7.5 m height above ground, foundation of 1.5 m below ground level. As per IS 1944 A1 Classification with a manufactures guarantee for LED for 10 years with IP 66 with surge protection 10 KV etc complete as per specification. | | | | | |
| | Single Luminaire (at Busbays) | Ea. | 200 | | | |
| | Double Luminaire (at Major Junctions and Settlement) | Ea | 140 | | | |
| | Total Traffic Signage and Road Appurtenances carried to Grand Summary | | | | | |
| 9 | SAFETY IN ROAD CONSTRUCTION ZONE | | | | | |
| 9.01 | Supplying and fixing sign boards including the cost of posts, fixtures, foundation, fitting and fixing. Sheeting will be made of encapsulated lens type of Retro-reflective type and messages/ borders will be screen printed complete as per Technical Specification clause 801 and as directed by Engineer. | | | | | |
| | a) Speed Limit sign (600mm dia) | Nr | 8 | | | |
| | b) Overtaking Prohibited (900 mm dia) | Nr | 8 | | | |
| | c) Diversion Board (450mm x 600mm) | Nr | 24 | | | |
| | d) Men at Work Sign (900mm triangular) | Nr | 16 | | | |
| | Direction Sign (Right / Left) (600 mm Circular) | Nr | 8 | | | |
| 9.02 | Providing of red fluorescent with white reflective sleeve traffic cone made of low density polyethylene(LDPE) material with a square base of 390x390x35mm and a height of 770mm, 4Kg in weight, placed at 1.5m interval, all as per BS 873 including cost of all materials, labour, loading, unloading, lead, lift, transporting etc complete Technical Specification section & IRC SP 55-2001. | Nr | 1184 | | | |
| 9.03 | Installation of a steel portable barricade with horizontal rail 300mm wide,2.5m in length fitted on a frame made with | Nr | 1184 | | | |

Section 7 - Bill of Quantities

| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|--|------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | 45X45X5 mm angle iron section, 1.5m in height, horizontal rail painted(2coat) with yellow and white strips,150mm in width at angle of 45degree, A frame painted with 2 coats of yellow paint, complete as per IRC:SP:55-2001 including cost of all materials, labour, loading, unloading, lead, lift, transporting etc complete as per drawings or as directed by the Engineer. | | | | | |
| 9.04 | Solar Street Light | | | | | |
| | i) Supplying and erecting MNES certified SOLAR STREET LIGHT fitting made from M.S. Body powder coated / painted with corrosion resistant paint with gasket & transparent cover with following CFL non retro lamp with choke, holder & accessories. Fitting shall be mounted on 75/80 mm B class G.I. pipe pole up to 5.5 mtr load complete erected with C.C. Foundation duly painted with two coats of red oxide and corrosive resistant paint. Complete with tubular battery, inverter, charge controller with photo sensor switch & necessary wiring complete erected connected & commissioned in approved manner. | | | | | |
| | a) 1 x 11 w CFL PV Module : 74 W Battery Capacity : 12V, 75 AH | Ea. | 32 | | | |
| | ii) Supplying & erecting Solar Home light system with structure as per MNES specification consisting of following non retrofit CFL fitting complete with following CFL lamps & battery capacity dully connected with built in inverter & commissioned as per directed with necessary wiring & fittings. | | | | | |
| | (a) One No CFL 11 watt non retrofit ceiling / wall mounting features with battery capacity 12 watt, 20 AH | Ea. | 32 | | | |
| 9.05 | Construction of a permanent type barricade made of steel components, 1.5 m high from road level, fitted with 3 horizontal rails 200 mm wide and 4 m long on 50 x 50 x 5 mm angle iron vertical support, painted with yellow and white strips, 150 mm in width at an angle of 45, complete as per IRC:SP:55-2001 | Nr. | 8 | | | |

Section 7 - Bill of Quantities

| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|--|------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | Total of Safety in Road Construction Zone carried to Grand Summary | | | | | |
| 10 | Implementation of Environmental Management Action Plan to be executed under Civil Works Contract | | | | | |
| 10.03 | Periodic air quality monitoring during construction stage at construction camp sites, bitumen hot mix plants, crusher plants (if specifically established for Project), at major settlement areas along project road. The parameters to be monitored are SPM, RPM, SO ₂ , NO _x and CO, Lead. Each monitoring schedule shall be over a duration of 24 hours (in 8 hour shifts) for three seasons per year. (as per the Environmental monitoring plan referred in the EMP) | | | | | |
| | a) Construction Phase | Nr | 18 | | | |
| | b) Operation Phase | Nr | 6 | | | |
| 10.04 | Water quality monitoring during construction phase at locations . The sampling shall be carried out for three seasons per year and cover all parameters as per IS10500 including heavy metals . (as per the Environmental monitoring plan referred in the EMP). | | | | | |
| | a) Construction Phase | Nr | 12 | | | |
| 10.05 | Noise quality monitoring at specified silent receptors along Project Road, at construction camp sites, bitumen hot mix plants, crusher plants(if specifically established for Project), and at major settlement areas along project road. – Each monitoring schedule shall be over a duration of 12hours (6Am to 6PM) for three seasons per year. (as per the Environmental monitoring plan referred in the EMP)The monitoring shall be carried out in accordance with CPCB norms at locations given . | | | | | |
| | a) Construction Phase | Nr | 18 | | | |
| | b) Operation Phase | Nr | 6 | | | |
| 10.06 | Soil quality monitoring at construction camp sites, work shop areas, oil/lubricant handling areas, bitumen hot mix plants, at all parking lay byes, vehicle servicing stations along Project Road. Parameters shall include N, P, oil and grease, heavy | | | | | |

Section 7 - Bill of Quantities

| Item No. | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|--|--------------------------------|----------|-----------|-------|--------|
| | | | | Figures | Words | |
| | metals, C/N ratio, pH, organic matter to be monitored for three seasons per year.(as per the Environmental monitoring plan refered in the EMP) | | | | | |
| | a) Construction Phase | Nr | 4 | | | |
| 10.12 | Enhancement of Cultural Properties (bill no 10.18) | | | | | |
| | a) Shiv Temple (4+200), Bayad | Nr. | 1 | | | |
| | b) Public well (9+200), Sattamba | Nr. | 1 | | | |
| | c) Sanskar Education Trust (Primary School) at 11+650, Sattamba | Nr. | 1 | | | |
| 10.13 | HIV prevention / alleviation programme comprising of conduction information, Education and communication (IEC) campaigns at least every other month, providing condoms, providing STI and HIV / AIDS screening, diagnosis and referral to dedicated national STI and HIV / AIDS programme and programme management support throughout the contract period (including the defect notification period). | | | | | |
| | a) IEC materials - printing, publishing | Nr | 24 | | | |
| | b) Healthcare clinic | Nr. | 8 | | | |
| | c) Condom vending machines | Nr. | 3 | | | |
| | d) Condom supplies | Nr. | 24 | | | |
| | e) Testing | Nr. | 500 | | | |
| | f) Signages and hoardings | Nr. | 15 | | | |
| | Total Implementation of Environmental Management Action Plan to be executed under Civil Works Contract carried to Grand Summary | | | | | |
| 11 | DAY WORKS | | | | | |
| 11.01 | Providing labour at site supplied with all necessary hand tools inclusive of all costs, overheads and profit margin complete as directed by the Engineer | As per details in Schedule "A" | 1 | | | |
| 11.02 | Providing equipment at site with operators, P.O.L. etc. complete in good working condition including all types of maintenance during contract period | As per details in Schedule "B" | 1 | | | |

Section 7 - Bill of Quantities

| Item No. | | | DESCRIPTION | Unit | Quantity | Unit Rate | | Amount |
|----------|--|--|---|--------------------------------|----------|-----------|-------|--------|
| | | | | | | Figures | Words | |
| 11.03 | | | Providing material at site inclusive of all costs, overheads and profit margin complete as directed by the Engineer | As per details in Schedule "C" | 1 | | | |
| | | | Total Day work rates carried to Grand Summary | | | | | |
| 12 | | | MAINTENANCE | | | | | |
| 12.01 | | | Maintenance of project road for first year of maintenance period after completion of defect liability period as directed by the Engineers | per km | 18 | | | |
| 12.02 | | | Maintenance of project road for 2nd year of maintenance period after completion of defect liability period as directed by the Engineers | per km | 18 | | | |
| | | | Total for maintenance cost | | | | | |

**BILL OF QUANTITIES CONTRACT PACKAGE –GSHPII/
SUMMARY OF DAY WORKS**

| Sl. No. | Item | Amount Rs. |
|----------------|--|-------------------|
| 1 | Schedule of Day works, Labour | |
| 2 | Schedule of Day works, Materials | |
| 3 | Schedule of Day works, Construction Plant | |
| | Total Day work rates carried to Grand Summary | |

SCHEDULE OF DAY WORKS RATES

LABOUR

| Sl. No. | Description | Unit | Nominal Quantity | Rate Rs. | Amount Rs. |
|----------------|--|-------------|-------------------------|-----------------|-------------------|
| 1 | Mazdoor | Day | 30 | | |
| 2 | Mason | Day | 15 | | |
| 3 | Carpenter | Day | 6 | | |
| 4 | Fabricator/Blacksmith/Welder | Day | 6 | | |
| 5 | Operator for Tractor | Day | 6 | | |
| 6 | Electrician | Day | 3 | | |
| 7 | Operator for Dozer | Day | 3 | | |
| 8 | Operator for Roller | Day | 3 | | |
| 9 | Driver LMV | Day | 90 | | |
| 10 | Driver HMV | Day | 3 | | |
| 11 | Operator for Excavator/Crane | Day | 3 | | |
| 12 | Computer Operator | Day | 480 | | |
| 13 | Watchman | Day | 480 | | |
| | Sub total | | | | |
| | Allow % Contracotor's Overhead and Profits etc. | | | | |
| | Total For Day works: Labour | | | | |

SCHEDULE OF DAY WORKS

RATES MATERIALS

| Sl. No. | Description | Unit | Nominal | Rate | Amount |
|---------|--|------|---------|------|--------|
| 1 | Bitumen 60/70 grade (bulk) | T | 1 | | |
| 2 | Cement | T | 3 | | |
| 3 | M 15 Concrete | Cu.m | 7 | | |
| 4 | M 20 Concrete | Cu.m | 7 | | |
| 5 | M 25 Concrete | Cu.m | 3 | | |
| 6 | TMT Bars | T | 3 | | |
| 7 | Sand | Cu.m | 7 | | |
| 8 | Aggregate 40 mm down size | Cu.m | 7 | | |
| 9 | Aggregate 20 mm down size | Cu.m | 7 | | |
| 10 | Aggregate 10 mm down size | Cu.m | 7 | | |
| 11 | Granite Stone of size 15 to 20 | No. | 1,000 | | |
| | solid concrete block size 400 x | | | | |
| | Hume pipe (NP 4) 900 mm dia | | | | |
| 14 | Boulders | Cu.m | 90 | | |
| 15 | Selected Earth | Cu.m | 230 | | |
| | Sub total | | | | |
| | Allow % Contracotor's Overhead and Profits etc. | | | | |
| | Total For Day works: Materials | | | | |

SCHEDULE OF DAY WORKS RATES CONSTRUCTION PLANT

| Sl. No. | Description | Unit | Nominal Quantity | Rate Rs. | Amount Rs. |
|----------------|---|-------------|-------------------------|-----------------|-------------------|
| 1 | Bull Dozer Size up to 200KW | Hour | 30 | | |
| 2 | Front End Loader back hoe | Hour | 30 | | |
| 3 | Motor Grader | Hour | 12 | | |
| 4 | Pneumatic Tyred Roller (20 tonne) | Hour | 12 | | |
| 5 | Tractor with trailer | Hour | 12 | | |
| 6 | Bull dozer (D7 or equivalent) | Hour | 10 | | |
| 7 | Roller Static (8-10 tonne) | Hour | 3 | | |
| 8 | Roller Vibratory (8-10 tonne static) | Hour | 3 | | |
| 9 | Truck (10/12 tonne) | Hour | 30 | | |
| 10 | Truck mounted water tanker (10 | Hour | 15 | | |
| 11 | DG set (125 KVA) | Hour | 15 | | |
| 12 | Concrete Mixer (mobile) | Hour | 3 | | |
| 13 | Drilling equipment with compressor | Hour | 3 | | |
| | Sub total | | | | |
| | Allow % Contractor's Overhead and Profits etc. | | | | |
| | Total For Day works: Construction Plant | | | | |

BILL OF QUANTITIES

C. Day work Schedule

General

1. Reference should be made to Sub-Clause 50 of the General Conditions of Contract.

Work shall not be executed on a Day work basis except by written order of the Project Manager. Bidders shall enter basic rates for Day work items in the Schedules, which rates shall apply to any quantity of Day work ordered by the Project Manager. Nominal quantities have been indicated against each item of Day work, and the extended total for Day work shall be carried forward to the Summary Total Bid Amount (for items priced competitively). Unless otherwise adjusted, payments for Day work shall be subject to price adjustment in accordance with the provisions in the Conditions of Contract.

Day work Labour

2. In calculating payments due to the Contractor for the execution of Day work, the hours for labour will be reckoned from the time of arrival of the labour at the job site to execute the particular item of Day work to the time of return to the original place of departure, but excluding meal breaks and rest periods. Only the time of classes of labour directly doing work ordered by the Project Manager and for which they are competent to perform will be measured. The time of gangers (charge hands) actually doing work with the gangs will also be measured but not the time of foremen or other supervisory personnel.
3. The Contractor shall be entitled to payment in respect of the total time that labour is employed on Day work, calculated at the basic rates entered by him in the SCHEDULE OF DAYWORK RATES: LABOUR, together with an additional percentage payment on basic rates representing the Contractor's profit, overheads, etc., as described below:
 - (a) The basic rates for labour shall cover all direct costs to the Contractor, including (but not limited to) the amount of wages paid to such labour, transportation time, overtime, subsistence allowances, and any sums paid to or on behalf of such labour for social benefits in accordance with Indian law. The basic rates will be payable in local currency only;
 - (b) The additional percentage payment to be quoted by the Bidder and applied to costs incurred under (a) above shall be deemed to cover the Contractor's profit, overheads, superintendence, liabilities, and insurances and allowances to labour, timekeeping, and clerical and office work, the use of consumable stores, water, lighting, and

power; the use and repair of staging's, scaffolding, workshops and stores, portable power tools, manual plant, and tools; supervision by the Contractor's staff, foremen, and other supervisory personnel; and charges incidental to the foregoing. Payments under this item shall be made in the following currency:

- (i) Local: _____percent *[to be stated by Bidder]*

Day work Materials

4. The Contractor shall be entitled to payment in respect of materials used for Day work (except for materials for which the cost is included in the percentage addition to labour costs as detailed heretofore), at the basic rates entered by him in the SAMPLE SCHEDULE OF DAYWORK RATES: MATERIALS, together with an additional percentage payment on the basic rates to cover overhead charges and profit, as follows:

(a) The basic rates for materials shall be calculated on the basis of the invoiced price, freight, insurance, handling expenses, damage, losses, etc., and shall provide for delivery to store for stockpiling at the Site. The basic rates shall be stated in local currency, but payment will be made in the currency or currencies expended upon presentation of supporting documentation.

(b) The additional percentage payment shall be quoted by the Bidder and applied to the equivalent local currency payments made under (a) above. Payments under this item will be made in the following currency:

- (i) Local: _____per cent *[to be stated by Bidder]*

(c) The cost of hauling materials for use on work ordered to be carried out as Day work from the store or stockpile on the Site to the place where it is to be used will be paid in accordance with the terms for Labour and Constructional Plant in this schedule.

Day work Constructional Plant

5. The Contractor shall be entitled to payments in respect of Constructional Plant already on Site and employed on Day work at the basic rental rates entered by him in the SAMPLE SCHEDULE OF DAYWORK RATES: CONSTRUCTIONAL EQUIPMENT. Said rates shall be deemed to include due and complete allowance for depreciation, interest, indemnity, and insurance, repairs, maintenance, supplies, fuel, lubricants, and other consumables, and all overhead, profit, and administrative costs related to the use of such equipment, The cost of drivers, operators, and assistants will be paid for separately as described under the section on Day work Labour.

6. In calculating the payment due to the Contractor for Constructional Plant employed in Day work, only the actual number of working hours will be eligible for payment, except that where applicable and agreed with the Engineer, the travelling time from the part of the Site where the Constructional Plant was located when ordered by the Project Manager to be employed on Day work and the time for return journey thereto shall be included for payment.

7. The basic rental rates for Constructional Plant employed on Daywork shall be stated in local currency, but payments to the Contractor will be made in currency, as follows:

- (i) Local: ____percent *[to be stated by Bidder]*