



Project Director
(CDB - PRP1)
Road Development Authority

DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF HIGHWAYS, PORTS & SHIPPING
ROAD DEVELOPMENT AUTHORITY

**CHINA DEVELOPMENT BANK FUNDED IMPROVEMENT
AND REHABILITATION OF
PRIORITY ROAD PROJECT 3 (PRP3), PHASE-1 (LOT 2)**

CIVIL WORK CONTRACT NO: RDA/RNIP/PRP3/PHASE-1 (LOT 2)/PACKAGE C12

Contract No.	Description
RDA/RNIP/PRP3/Phase1 (Lot 2)/Package C12	Ayagama - Egaloya Road (0.00 - 23.00 km)

CONTRACTOR
**CHINA NATIONAL AERO - TECHNOLOGY INTERNATIONAL
ENGINEERING CORPORATION (CATIC - ENG)**

VOLUME 5
Scope of Work
Preamble to the Bill of Quantities
Priced Bill of Quantities

JANUARY 2014

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- (b) The Letter of Acceptance
- (c) The Letter of Tender
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SCOPE OF WORK

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SCOPE OF WORKS

- 1.1 The works involve the rehabilitation of the existing road with improvement to the road geometry together with improvement to longitudinal drainage, the widening, repairing or reconstruction of existing culverts & bridges and construction of new culverts, bridges and flyovers as required.

The contractor is required to carry out the design of all components of the work in the contract.

The contractor is required to carry out improvements to the geometry of the road within the existing Right of Way (ROW) unless otherwise specified. The topographical survey, level survey and cross section survey necessary for this work is also required to be carried out by the contractor. The proposed improvements to the geometry require the approval of the Engineer.

A road condition investigation consisting of visual inspection, DCP testing & trial pits with materials testing is required to be done by the contractor. Based on this investigation, sections of road that require rehabilitation over and above the pavement thickness shown in the bid documents is to be identified by the contractor. The additional thickness of condition proposed (if any) require the approval of the Engineer.

The contractor will design bridges and culverts identified for widening and reconstruction. The contractor will also design all protection works in the form of gabion walls, retaining walls, toe walls, etc. These designs require the approval of the Engineer.

The contractor will prepare the working drawings resulting from the above and submit same to the Engineer for approval. The contractor will set out the centre line in accordance with the approved drawings.

The Work will be carried out within the existing ROW unless otherwise specified and will include, inter alia, the following :

- Rehabilitation works will generally consist of raising the flooding sections, widening the carriageway to the required standard where possible within the ROW, rebuilding the shoulders to the required width on either side, strengthening the base and constructing hot mix asphalt concrete overlays comprising profile correction course where required and a wearing course.
- In the case of heavily distressed or deformed sections of the existing road, rehabilitation will involve the reconstruction of the pavement from sub-grade level or any other level as per the instructions of the Engineer.
- Shoulders will be rehabilitated with granular material and in urban areas the shoulder will be constructed as raised pedestrian walks or covered drains as directed by the Engineer.
- Longitudinal drainage works will involve the provision/rehabilitation of lined drains in either masonry or concrete in hilly sections, where erosion is a concern; unlined longitudinal drains will generally be constructed/rehabilitated in rural sections.
- Transverse drainage improvements will involve the extension of existing culverts; replacement of existing damaged culverts; the provision of new culverts as per the Engineers instruction.
- Similarly, narrow structurally sound bridge will be widened to the required width and damaged bridges will be reconstructed.

- Both longitudinal and transverse subsoil drainage will be introduced in areas of high water table affecting sub grade support.
 - Protection works in the form of gabion, masonry or concrete retaining walls or toe walls may also be required to stabilize cut slopes or embankments where localized earthworks are involved.
- 1.2 The scope of the works will also address the following issues:
- Provision and maintenance of facilities for the Engineer including office accommodation, vehicles, fully equipped materials testing laboratory for the works etc.
 - Provision & maintenance of facilities for the employer including office accommodation and vehicles.
 - Implementing and managing site safety
 - Implementing and maintaining traffic management along the project.
 - Protection of the environment and mitigating potential hazards.
 - Maintaining access to adjacent properties.
 - Locating and removing of mines and UXO (if applicable).
- 1.3 The contractor will be required to generally maintain the road section covered by the Contract during construction of the Works to ensure the safety of the public and residents along the road and minimum disruption to flow of traffic to the satisfaction of the Engineer.
- If the Contractor fails to maintain the road to ensure the safety of road users, the public and residents along the road and minimum disruption to flow of traffic to the satisfaction of the Engineer, the Engineer shall be entitled to employ a sub-contractor to carry out the required works and pay for such work done and recover the cost from the Contractor. The Engineer may, without prejudice to any other method of recovery, deduct such cost from any money due or which may become due to the Contractor and such deduction shall not relieve the Contractor of any of his obligations under the Contract.
- 1.4 The scope of work is deemed to include any other item of work that may be required to be carried out for the proper completion of the Works in all respects in accordance with the provisions of the Contract.
- 1.5 The quality control in the contract will be required to be carried out in accordance with the technical specifications.

PREAMBLE TO THE BILL OF QUANTITIES

W. A.

PREAMBLE TO BILL OF QUANTITIES

1. General

The Contractor's attention is specifically directed to the Conditions of Contract, the Special Conditions and Specification and the Drawings, which are to be read in conjunction with the Bill of Quantities and the Preamble.

2. Application of Preamble to Subsequent Work

The relevant clause of this Preamble shall be deemed to apply equally to work subsequently ordered for execution by the Contractor, either under Provisional Sum orders or variation orders, except where specifically varied therein.

3. Method of Measurement

The Works as executed will be measured for payment in accordance with the method adopted in the Bill of Quantities and under the item as therein set forth. The net measurement or weight of the finished work in place will always be taken, and except where otherwise stated or where separate items are provided, no allowance will be made for cutting, waste, laps, circular work, etc., and no deductions will be made for grout nicks, joggle holes, rounded arises or for shrinkage for fitting ironwork and the like.

Payment will be made for only those materials, which are specified and permanently installed in the works to the approval of the Engineer. Construction materials supplied and delivered to the site by the Contractor which become surplus to the requirements of the works shall become the property of the Contractor who shall reimburse the Employer any money that was paid to the Contractor for the supply and delivery to site of the surplus materials.

4. Units and Extension of Bills of Quantities

All sizes and quantities have been entered in the Bills of Quantities in Metric Units. Figures involving decimals, including sums of money are written in the British tradition, namely, with a full stop in the decimal position and commas between each successive group of three digits to the left of the decimal position.

The Bidder shall indicate the total amount for each item (i.e. the quantity multiplied by the rate) to the nearest cent when inserting the figures in the BOQ.

5. Rates and Sums to be for Work Complete

Notwithstanding any limits which may be implied by the wording of the individual items and/or explanation in this preamble it is to be clearly understood by the Contractor that the rates and sums which he enters in the Bills of Quantities shall be for the work finished complete in every respect, he shall be deemed to have taken full account of all requirements and obligations, whether expressed or implied, covered by all parts of the Contract, and to have priced the items herein accordingly. The rates and sums must therefore include for all incidental and contingent expenses and risks of every kind necessary to construct, complete and maintain the whole of the Works in accordance with the Contract. Full allowance shall be made in the rates and/or sums against the various items in the Bills of Quantities for all costs involved in the following *inter-alia*, which are referred to and/or specified herein except where separate items are provided.

- (1) All site investigations, which may be necessary;
- (2) All setting out and survey work;
- (3) Temporary fencing, watching, and lighting;
- (4) Paying fees and giving notice to authorities;
- (5) Payment of all patent rights and royalties;
- (6) Reinstatement of the site;
- (7) Safety precautions and all measures to prevent and suppress fire and other hazards;
- (8) Interference to the works by persons, vehicles, and the like using the existing facilities;
- (9) Works in connection with the protection and safety of adjacent structures;
- (10) Supplying, maintaining and removing on completion Contractor's own accommodation, offices, stores, workshops, transport, welfare services and all charge in connection therewith; except those for which a separate BOQ item is provided;
- (11) Working in the dry except where otherwise permitted by the specification;
- (12) Maintaining access roads;
- (13) The supply, inspection, sampling and testing of materials and of the Works under construction, including the provision and use of equipment;
- (14) Except where separate items are provided for bringing plant to the site and removing on completion, for providing, transporting to site, setting to work operating (including all fuel and consumable stores), maintaining and removing from the site upon completion all construction plant and equipment necessary for the execution of the work, including the cost of all tests and other requirements in respect to such plant and equipment;
- (15) The recruitment, bringing to and from the site, accommodating and feeding and all incidental costs and expenses involved in the provision of all necessary skilled and unskilled labour and supervision, except for whom a separate BOQ item is provided;
- (16) All statutory taxes and levy, surcharges etc. including stamp duty payable on the contract, which will have to be borne by the Contractor.

No claim will be considered for further payment in respect of any work or method of execution, which may be described in the Contract or is inherent in the construction of the work and detailed on the drawings on account of

- (1) any omission from the wording of the items or from a clause in the Preamble or
- (2) no mention of such work or method of execution having been in the Preamble

Items against which no rates or sum is entered by the Contractor, whether quantities are stated or not, will not be paid for when executed, but will be regarded as covered by other rates in the Bills of Quantities.

The quantities set out in the Bills of Quantities are the estimated quantities of the work and they shall not be taken as the actual and correct quantities of the works to be executed by the contractor in fulfillment of his obligation under the contract.

The Contractor shall be deemed to have taken into account all recognized holidays, festivals, religious and other customs in his Bid Prices and his Construction Programmes.

6. Rates and Sums to Bear Proper Relation to Work Described

The rates and sums entered by the Contractor against all items in the Bills of Quantities must bear a proper relationship to the cost of carrying out the work described in the Contract; all on costs and similar charges which are applicable to the Contract as a whole are to be spread over all the rates in the Bills of Quantities, whilst those which are applicable only to particular sections of the Contract are only to be spread over items to which these sections refer.

However, the Contractor shall ascertain the exact nature and extent of work to be performed by reference to the Drawings, Specifications and Conditions of Contract as the case may be.

7. Provisional Sum Items

Provisional Sums will be dealt with as provided for in the Conditions of Contract.

Provisional Sums are represented by the words "Provisional Sum" or "PS" entered under the description.

The total payment to the Contractor under this BOQ item will be assessed by applying the percentage rate indicated in the specifications as overhead cost and profit on the actual total amount of Provisional Sums spent in the Contract.

8. Provisional Quantity Items

Certain items in the Bills of Quantities are designated "Provisional Quantity" in the description column to indicate that the quantities for the work covered by such items are provisional, or that the provision of such facilities as are described in the items may not in the event be required under the contract. All items so designated will be used only at the direction and discretion of the Engineer, and if not used either wholly or in part shall, as to the amount not used, be deducted from the Contract Price. Where such items consist of a sum, the Contractor shall enter a lump sum, which shall be the price for the work if executed, as distinct from a "Provisional Sum" as defined herein.

No claim will be entertained in respect of overhead charges or any other costs, which may allegedly result from the omission of all, or part of the work covered by such "Provisional Quantity" Items.

9. Payment of Items in a Monthly Basis

Payment under items, which are measured on a monthly basis, will not be commenced until the facilities described in the items and the Specification has been provided to the satisfaction of the Engineer. Payment will continue until such time as the Engineer shall signify that facilities are no longer required.

Certain manpower inputs by the Contractor for certain specific positions will be paid under the BOQ items provided for this purpose. Any other manpower inputs by the Contractor will not be paid under these items.

10. Payment of Lump Sums for General Items

Lump Sum items stipulated in Bill No-1, which are related to specific work will be paid on the basis of the proportion of actual work done to the total work of that specific item as assessed by the Engineer.

Items with quantities and units will be paid against number of units used and/or incorporated in the works.

11. Protection of Work and Cleaning up on Completion

The Contractor shall allow, in his rates, for protecting completed work from subsequent operations, making good all damage to complete work, for clearing away all rubbish as it accumulates, and leaving the site in a tidy condition to the satisfaction of the Engineer.

12. Demolition

The rates and prices for demolition shall include for;

- (1) The activities prior to the demolition, including further surveys, investigations.
- (2) Providing adequate supports to the adjacent structures and the structure to be demolished, including the shoring, propping needling etc.
- (3) Removal of all debris as directed, and recover the salvaged material.
- (4) Making good of all works disturbed or damaged.
- (5) Diverging or disconnecting any existing service lines which could be affected.

13. Site Clearance

Rates for site clearance shall include (if not separately allowed) for the removal of all trees, shrubs, boulders or other debris from the area of the site and disposal of same in an approved location, spreading at least 100mm of topsoil over the site upon completion.

14. Earthworks**(1) Excavation in all Material except Rock**

The rates and prices for excavations shall be for all types of material encountered except rock including ground conditions above or below water level. The Contractor must make due allowance for the possibility of permission not being granted to the use of explosives for blasting and other operations.

- (a) For structures, volume of material excavated measured as the product of the horizontal area of the base of permanent work to be constructed and the mean depth below ground level, or measured as the volume to be occupied by permanent work below ground level, whichever is the greater.

In no case shall any of the following quantities be included in the measurement for payment.

- (1) Quantity outside the vertical planes of neat outline of foundation structures unless shown otherwise on the drawings.
 - (2) Quantity of excavation and/or backfill for water supply pipe lines, sewer pipelines, and storm drainage except as allowed for in pipeline construction as specified.
 - (3) Quantity of any excavation performed prior to the taking of measurements of the undisturbed natural ground.
 - (4) Quantity of any material re-handled, except where the drawings indicate or the Engineer directs the excavation after embankment has been placed.
 - (5) Removal of slides, cave-ins, siting or filling due to the action of the elements or weather and/or carelessness of the Contractor.
- (b) For unsuitable material, volume of excavated material shall be measured as volume of material (below base of the permanent works) directed to be removed by the Engineer. However, this does not include removal of material rendered unsuitable due to contractor's method of excavation.

No allowance is made for bulking or for any extra transport required due to bulking. The rates shall include, if separate items are not provided but not by way of limitation, for:

- (1) excavation to the correct depth and preserving the bottoms of excavations in a state suitable for the reception of concrete or other foundation work, and no payment will be made for any concrete or any bedding required for filling over-excavated volumes or disturbed areas to the net dimensions as indicated on the Drawings,

- (2) any additional excavation required for shuttering, working space, temporary or permanent shoring, and subsequent refilling and ramming and disposal of surplus and back fills behind structures,
- (3) provision of storage areas for the temporary storage of any material required for back filling which cannot be stored alongside the excavation for any reason, together with the cost of transporting, loading including disposal of surplus and unloading such material and all other charges incurred in this respect,
- (4) trimming the bottoms of excavations including bottoming to falls, and trimming to sloping surfaces where required or indicated on the Drawings,
- (5) taking all precautions by supporting faces of excavation to ensure the safety of the workmen and to prevent damage to adjacent walls, building and all other structures and services, including permanent and/or temporary shoring of trenches,
- (6) keeping the site and trenches and all other excavations free from water from whatever cause arising,
- (7) for clearing any scrub or other vegetable growth including all trees and for disposing of the whole of the cleared material to tip provided by the Contractor,
- (8) all temporary and permanent measures required to protect and support all existing pipes, cables and services, including all chambers, gullies and foundations thereto, or repair or replace them should they become damaged due to the Contractor's activities,
- (9) all barriers, lighting, warning signs and any other measures necessary to ensure complete safety around the area of the works,
- (10) reinstatement except where separate items are included.

(2) Excavation in Rock

Excavation in rock, which shall, in all cases, be measured extra over measurement under 1(a) or 1(b) above by volume from the level at which rock is encountered. For work described under 1(a) and 1(b), measurement shall be as specified therein.

(3) Fill

Fill shall be measured as the net volume above ground level of the permanent earthwork to the dimensions shown on the Drawings or ordered by the Engineer, irrespective of source of material. The rate shall include for selection, handling, placing, compaction of excavated or imported material and cost of control and material selecting tests (field and laboratory). Costs incurred in connection with the remedial work ordered by the Engineer consequent to the results of control tests falling below the minimum specified shall be borne by the Contractor.

15. Concrete

The rates for concrete are to include for

- (1) all costs incurred in determining the mixes to satisfy the Specification (including any admixtures);
- (2) supplying all material (including any admixtures), storing, mixing, transporting, placing and compaction (whether by hand or vibration);
- (3) excavation as required below previously filled levels and back filling (except where separate items are provided);
- (4) roughening the surface of previously executed work as required in order to provide the necessary bond with new concrete;
- (5) achieving specified tolerance;

- (6) forming sloping, falls and the like;
- (7) forming holes or boxing out for pipes, bolts, frames for covers and other steel work;
- (8) building in cable conduit, pipes, junction boxes etc;
- (9) forming 25mm chamfers on all external arises to exposed concrete;
- (10) forming all construction joints, keys, stop ends, temporary stops and shuttering of other than permanently exposed faces (except where separate items are provided);
- (11) curing the concrete and all measures to protect freshly poured concrete from direct sunlight and wave action;
- (12) troweling, rubbing down etc. and making good the concrete surfaces to provide the specified finishes;
- (13) the cost of control testing throughout the period of concreting and for the testing of concrete and remedial work ordered by the Engineer consequent to the results of control tests falling below the minimum specified;
- (14) overtime working to maintain continuity of casting;
- (15) a daily return to the Engineer showing the quantities of cement and the volume of concrete placed and compacted in position, of each class of concrete in each section of the works and temporary works.

The measurement of concrete shall be by cubic metre, square metre or linear metre of completed structure. Where volumetric measure is used, no deductions will be made for channels, recesses or rebates less than 600mm girth, for splays or chamfers less than 300mm measured on the splay nor for holes or ducts formed in the concrete less than 1m girth. Fillets less than 300mm on the splay will be measured.

16. Form Work

Rates and prices for the formwork shall include for

- (1) general formwork, working in narrow spaces and small quantities, for setting up, strutting and supporting at any height, together with any necessary strutting and supporting through lower floors, applying mould oil, use of polythene, easing, striking and removing, cleaning preparing for reuse, and removal, including all props, stays, struts, wedges, bolts etc;
- (2) all fillets to form grooves, rebates, throats, splays or chamfers, raking, circular cutting, cutting around all pipes, sleeves, conduits etc;
- (3) Providing samples to the Engineer for approval.

17. Steel Reinforcement

The rates for steel bar and steel fabric reinforcement shall include for supplying, transporting, storing, cleaning, cutting bending, all labour in working, distribution to the various parts of the works, fixing in position and supporting and for the use of binding wire and for welding where indicated.

The unit of measurement for steel reinforcement is the Kilogram (kg.) and the weight of steel has been calculated net with no allowance made for wastage or laps and the cost of these will be deemed to be covered in the rates.

The weight of steel supports, spacer bars and ties, but including stirrups and binders, used to locate and hold the reinforcement in place is not included in the quantity and the cost of these will be deemed to be covered in the rates.

18. Timber

The rates for timber shall include for all handling, labour and waste, for all chamfers and nosing and for protective treatment except where otherwise provided. The rates for timber for permanent works are to allow for the use of new properly seasoned new timber.

19. Brickwork

The basis of measurement for brickwork walls shall be the overall area of the walls measured in plane elevation, no allowance being made for setbacks, recesses and nibs.

Rates for brickwork shall include for bricks of the thickness stated bounded in cement mortar, damp proof course, finishing around all openings vertical expansion joints as required, building in electrical conduit and small pipes and tubes, galvanized wire ties to steel work and concrete.

20. Hand Railing

Rates and prices for hand railing shall be for handrail materials and forged standards as specified including all bends, removable sections, wall hooks, fixings and painting.

21. Painting and Protective Coatings

The rate for painting and protective coatings, whether measured separately or included in other items, is to include for all temporary staging ladders and the like, covering the adjacent works to prevent splashing providing adequate protection to the work being painted or coated against dust, spray and other foreign matter, for all preparation and priming, carrying out the work in materials and colours to the requirements of the Engineer, curling in edges, washing off stains, and leaving the whole of the work perfect on completion. The rates for painting are to allow the applying of the final coat of paint immediately prior to handing over any section of the work.

22. Fences and Boundary Walls

Rates for fences and boundary walls shall include but not limited to, excavation, refilling and ramming, disposal of surplus, materials for construction of fences and boundary walls, and all painting.

23. Unit of Measurement

Metric units are used throughout the Bill of Quantities for measurement purposes unless otherwise indicated. The following abbreviations are used in this Contract.

<i>Unit</i>	<i>Abbreviation</i>
Millimetre	mm
Metre	m
Square metre	m ² or sq m
Cubic metre	m ³ or cu m
Kilometre	km
Kilo gram	kg
Tonne	t
Litre	ltr
Number	nr
Provisional Sum	PS
Lump Sum	LS
Hour	h
Week	wk
Month	mon
Labour day	L.day
Man Month	MM
Sri Lanka Rupees	Rs.
Cents.	Cts.

24. DAYWORK SCHEDULE

General

Reference should be made to Clause 13.6 of the Conditions of Contract. Work shall not be executed on a day work basis except by written order of the Engineer. Contractors shall enter rates for day work items in schedules, which rates shall apply to any quantity of day work ordered by the Engineer.

The Contractors shall price all items in the day work schedule for Labour, Constructional Plant and Material.

Labour

The contractor is to enter hereunder the individual rates for labour for skilled and unskilled workers and gangers employed on dayworks solely on the direction of the Engineer. The quantities given below are all provisional and these rates shall include to cover all costs of the Contractor including the amount of wages paid to such labour, transportation time, overtime, subsistence allowance, and any sums paid to or on behalf of such labour for social benefits in accordance with law of the country, as well as Contractor's profit, overheads, superintendence, liabilities and insurance and allowance to labour, timekeeping and clerical and office work, the use of consumable stores, water, lighting and power use and repair of staging, 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.

Constructional Plant

The Contractor shall be entitled to payments in respect of Constructional Plant already on Site and employed on daywork at the rental rates entered by him in the "Schedule of Daywork Rates: Constructional Plant".

The rates shall be deemed to include due and complete allowance for depreciation, interest, indemnity and insurance, repairs, maintenance, supplies, fuel, lubricants, and other consumable, and all overhead profit and administrative costs related to the use of such plant. The cost of drivers, operators and assistants will be paid for separately as described under the section on Daywork Labour.

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

Materials

The contractor shall be entitled to payments in respect of materials used for daywork at the rates entered by him in the "Schedule of Daywork Rates: Materials" together with an additional percentage payment on the basic rate 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, damages, losses, etc., and shall provide for delivery to store for stock piling at the Site as directed by the Engineer.

The contractor may allow an additional percentage payment on the actual cost of materials to allow for his handling and storage costs, overhead profit. The percentage mark up cost shall be inserted by the Contractor in the appropriate item in the Daywork Schedule.

(b) the cost of hauling materials for use on work ordered to be carried out as daywork 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.

THE PRICED BILL OF QUANTITIES

PRP3/C12

W. J.

Improvement and Rehabilitation of Priority Road Project

Ayagama-Egaloya Road

Section from 0.00 to 23.00 km

Length of Section 23 km

Grand Summary

Bill No.	Description	Contract Value (Rs)
1	Preliminary and General 1 A	303,530,000.00
	Preliminary and General 1 B	15,000,000.00
2	Site Clearing	47,385,430.00
3	Earthworks	913,022,096.25
4	Sub Base, Base & Shoulders	542,783,768.00
5	Surface Application	562,856,618.20
6	Bridges and Culverts	772,869,063.50
7	Drainage Construction	144,678,038.00
8	Incidental Construction	137,033,621.25
10	Maintenance of Roads	35,305,500.00
11	PS -Items	13,000,000.00
	Day works -Labour	176,715.00
12	Day works -Equipment	1,241,025.00
	Day Works - Material	2,496,950.00
	Sub Total - 1	3,491,378,825.20
	Provision for Price Escalation - 10% of Sub Total 1	349,137,882.52
	Contingencies at 5% of Sub Total 1	174,568,941.26
	GRAND TOTAL (TENDER PRICE)	4,015,085,648.98

BILL No.1A : PRELIMINARY GENERAL

ITEM NO		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
Bill	Pay					
1	108.1(1)	Allow for cost of providing Performance Security	LS	Item	Allow	16,000,000.00
2	108.2(1)	Allow for the cost of providing Insurances	LS	Item	Allow	20,000,000.00
3	108.3(1)	Mobilization of Contractor's facilities and Plant / Equipment	LS	Item	Allow	20,000,000.00
4	108.3(2)	De-Mobilization of Contractor's facilities & Plant / Equipment	LS	Item	Allow	12,000,000.00
5	108.7(1)	Provide and maintain Project sign board	nr	2	160,000.00	320,000.00
6	108.7(2)	Provide and maintain Project Plaques	nr	2	180,000.00	360,000.00
7	118.4(1)	Provide Main office for the Engineer. (1 No)	PS	Item	Allow	9,000,000.00
8	118.4(2)	Provide office for the Employer	PS	Item	Allow	4,500,000.00
9	118.6(1)	Provide Housing for the Employer	PS	Item	Allow	4,000,000.00
10	118.6(2)	Provide Housing for the Engineer	PS	Item	Allow	4,000,000.00
		<u>Vehicles for the Engineer</u>				
11	118.8(1)	Provide Vehicle Type 1A as specified in appendix 4 of Volume 2	PS	Item	Allow	14,000,000.00
12	118.8(2)	Provide Vehicle Type 1B as specified in appendix 4 of Volume 2	PS	Item	Allow	7,000,000.00
13	118.8(3)	Provide Vehicle Type 3 as specified in appendix 4 of Volume 2	PS	Item	Allow	6,000,000.00
14	118.8(4)	Provide Vehicle Type 4 as specified in appendix 4 of Volume 2	PS	Item	Allow	1,000,000.00
15	118.8(5,6)	Over heads and profit for supply of vehicle Type 1A & B	%	21,000,000.00	15.00%	3,150,000.00
16	118.8(8)	Over heads and profit for supply of vehicle Type 3	%	6,000,000.00	15.00%	900,000.00
17	118.8(8)	Over heads and profit for supply of vehicle Type 4	%	1,000,000.00	15.00%	150,000.00
		<u>Vehicles for the Employer</u>				
18	118.8(13)	Provide Vehicle Type 1A as specified in appendix 4 of Volume 2	PS	Item	Allow	7,000,000.00
19	118.8(14)	Provide Vehicle Type 2 as specified in appendix 4 of Volume 2	PS	Item	Allow	10,000,000.00
20	118.8(16)	Over heads and profit for supply of vehicle Type 1A	%	7,000,000.00	15.00%	1,050,000.00
21	118.8(16)	Over heads and profit for supply of vehicle Type 2	%	10,000,000.00	15.00%	1,500,000.00
22	118.9(1)	Provide Main Laboratory	PS	Item	Allow	4,000,000.00
23	118.9(2)	Provide field Laboratory	PS	Item	Allow	2,000,000.00
24	118.9(3)	Provide Equipment for the Main Laboratory	PS	Item	Allow	25,000,000.00
25	118.9(4)	Provide Equipment for the field Laboratory	PS	Item	Allow	20,000,000.00
26	118.10(1)	Provide and maintain Survey equipment (2 sets)	PS	Item	Allow	7,000,000.00
27	119(1)	Longitudinal and Cross sectional detailing of full pavement width	km	23	1,200,000.00	27,600,000.00
28	118(1)	Supplying & Maintaining all facilities for Engineer & Employer including 15% overhead charges	PS	Item	Allow	68,000,000.00
29	120(1)	Administrative costs for the Project Management Unit	PS	Item	Allow	8,000,000.00
Bill No. 1A Carried to Summary						303,530,000.00

BILL No.1B : PRELIMINARY GENERAL

ITEM NO		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
Bill	Pay					
1	103(1)	Management, Safety and Control and Temporary Diversion of Traffic, including provision of a general traffic management plan in accordance with technical specifications clause 112.8 of the general items.	mon	30	480,000.00	14,400,000.00
2	108.4(1)	Progress Photographs	mon	30	20,000.00	600,000.00
Bill No. 1B Carried to Summary						15,000,000.00

BILL No.2 : SITE CLEARING

ITEM		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
Bill	Pay					
		CLEARING AND GRUBBING				
1	201(1)	Clearing and grubbing	m ²	164,500	95.20	15,660,400.00
		<i>Remove trees :</i>				
2	201(2)	- Girth 300 to 600 mm	nr	500	4,150.00	2,075,000.00
3	201(2)	- Girth 600 to 1,200 mm	nr	250	6,545.00	1,636,250.00
4	201(3)	- Girth 1,200 to 2,000 mm	nr	100	11,900.00	1,190,000.00
5	201(4)	- Girth over 2000 mm	nr	20	23,800.00	476,000.00
		<i>Remove Branches :</i>				-
6	201(5)	- Girth 300 to 600 mm	nr	600	1,071.00	642,600.00
7	201(6)	- Girth 600 to 1,200 mm	nr	40	1,666.00	66,640.00
8	201(7)	- Girth over 1,200 mm	nr	20	2,142.00	42,840.00
		<i>Remove Stumps :</i>				-
9	201(8)	- Girth 300 to 600 mm	nr	25	4,950.00	123,750.00
10	201(9)	- Girth 600 to 1,200 mm	nr	30	5,176.50	155,295.00
2.2		REMOVAL OF STRUCTURES & OBSTRUCTIONS				-
11	202(1)	Dismantle & remove brick masonry structures (Provisional)	m ³	880	3,927.00	3,455,760.00
12	202(2)	Dismantle & remove Random Rubble masonry structures (Provisional)	m ³	490	3,570.00	1,749,300.00
13	202(3)	Dismantle & remove concrete structures (Provisional)	m ³	2,346	6,545.00	15,354,570.00
14	202(4)	Dismantle & remove Dress stone masonry structures (Provisional)	m ³	525	4,165.00	2,186,625.00
15	202(5)	Remove fencing (Provisional Quantity)	m ³	1,800	1,428.00	2,570,400.00
Bill No.2 Carried to Summary						47,385,430.00

BILL No.3 : EARTH WORKS

ITEM		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
Bill	Pay					
3.1		ROADWAY EXCAVATION				
1	301(1)	Roadway excavation , soil suitable for fill	m ³	750	1,428.00	1,071,000.00
2	301(8)	Roadway excavation , soft rock (Provisional Quantity)	m ³	1,315	3,120.00	4,102,800.00
3	301(2)	Roadway excavation , boulders (Provisional Quantity)	m ³	1,000	5,000.00	5,000,000.00
4	301(3)	Roadway excavation, hard rock Normal Blasting. (Provisional Quantity)	m ³	70,000	5,995.75	419,702,500.00
5	301(4)	Roadway excavation with Unclassified Soil	m ³	58,570	2,200.00	128,854,000.00
6	301(9)	Roadway excavation, hard rock Control Blasting. (Provisional Quantity)	m ³	200	12,000.00	2,400,000.00
7	301(4)	Roadway excavation, unsuitable soil	m ³	78,500	2,000.00	157,000,000.00
8	301(6)	Road Pavement Excavation	m ³	530	1,500.00	795,000.00
3.2		STRUCTURE EXCAVATION AND BACKFILL				-
9	302(1)	Excavation for structures & backfill in suitable soil	m ³	25	2,499.00	62,475.00
10	302(2)	Excavation for structures, unsuitable soil and backfill with suitable material	m ³	4,525	3,064.25	13,865,731.25
3.3		EMBANKMENT CONSTRUCTION				-
11	304(1)	Trim, level and compact Original gravel	m ²	17,550	142.80	2,506,140.00
12	304(5)	Embankment construction, Type 1 with available	m ³	950	2,700.00	2,565,000.00
13	304(6)	Embankment construction, Type 2, with available suitable	m ³	19,020	2,700.00	51,354,000.00
14	304 (4)	Boulder packing for soft ground treatment including geofabric	m ³	18,350	6,500.00	119,275,000.00
3.4		CHANNEL EXCAVATION				-
15	307(1)	Channel excavation, suitable soil	m ³	50	1,428.00	71,400.00
16	307(3)	Channel excavation, hard rock (Provisional Quantity)	m ³	170	6,545.00	1,112,650.00
17	307(4)	Channel excavation, unsuitable soil	m ³	2,000	1,642.20	3,284,400.00
Bill No.3 Carried to Summary :						913,022,096.25

BILL No.4 : SUB BASE, BASES AND SHOULDERS

ITEM		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
Bill	Pay					
4.1		GRANULAR PAVEMENT				
1	401(1)	Sub base as compacted in position	m ³	17,500.00	3300	57,750,000.00
2	405(1)	Dense graded aggregate base	m ³	45,000.00	9758	439,110,000.00
3	408(1)	Scarify and Remove existing bitumen layer	m ²	47,000.00	214.2	10,067,400.00
4.2		SHOULDERS				
4	409(1)	Earthen shoulder as compacted in position	m ³	10,400.00	3371.27	35,061,208.00
5	409(2)	Dense graded aggregate shoulder as compacted in position	m ³	50.00	9758	487,900.00
6	409(3)	Trench excavation for cross shoulder drain	m ³	20.00	4275	85,500.00
7	1710(1)	Geotextile for cross shoulder drain	m ²	140.00	1584	221,760.00
Bill No. 4 Carried to Summary						542,783,768.00

BILL No.5 : SURFACE APPLICATION AND SURFACINGS						
5.1		PRIME COAT AND TACK COAT				
1	501(1)	Bituminous Prime Coat using M30 at 1 litre per m ²	m ²	165,566.00	333.20	55,166,591.20
2	501(3)	Bituminous Tack Coat (Cationic Emulsion grade	m ²	33,000.00	160.00	5,280,000.00
5.2		BITUMINOUS SURFACING				
3	506(1)	Asphalt concrete in wearing course 50mm compacted thickness	m ²	165,566.00	3,034.50	502,410,027.00
4	506(2)	Asphalt concrete in binder/ Correction course	MT			
Bill No. 5 Carried to Summary						562,856,618.20

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BILL No.5 : BRIDGES, CULVERTS AND OTHER STRUCTURES

ITEM		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
Bill	Pay					
6.1		STRUCTURES-Widening of Bridge				
		Excavation&backfill				
1	302(2)	Excavation&backfill in Unsuitable soil	m ³	4	3,064.25	12,257.00
		Concrete for Structures				
2	1001(1)	Grade Gr 15	m ³	10	27,000.00	270,000.00
3	1001(3)	Grade Gr 25	m ³	12	38,080.00	456,960.00
4	1001(4)	Grade Gr 30	m ³	5	47,600.00	238,000.00
5	1001(5)	Grade Gr 40	m ³	4	50,000.00	200,000.00
		Reinforcement				
6	1002(1)	Tor Steel reinforcement	kg	1,100	333.20	366,520.00
7	1002(3)	Mild Steel reinforcement	kg	125	333.20	41,650.00
		Rubble Work				
8	1006(1)	Random rubble masonry	m ³	5	17,850.00	89,250.00
		Prestressed Concrete				
9	1003(1)a	Supply of PSC beams(7m long-)	nr	7	273,600.00	1,915,200.00
10	1003(2)a	Launching of beams(7m)	nr	7	68,400.00	478,800.00
11	1003(1)b	Supply of PSC beams(10.5m long-T/B506)	nr	-	-	-
12	1003(2)b	Launching of beams(10.5m)	nr	-	-	-
		Formwork				
13	1008(1)	Formwork smooth finish	m ²	23	2,975.00	68,425.00
14	1008(2)	Formwork rough finish	m ²	-	-	-
		Weephole				
15	705(1)	100mm crushed stone back fill material	m ³	40	5,200.00	208,000.00
16	705(2)	37.5mm maximum size crushed stone - filter material	m ³	8	4,915.00	39,320.00
17	706(1)	Weep hole, 100mm dia. PVC pipe (Type 600)	m	90	2,915.00	262,350.00
		Drain pipes				
18	706(2)	Rainwater outlet/Duts 160mm dia PVC pipe (Type 600)	m	4	4,218.00	16,872.00
19	706(3)	50mm dia PVC Drain Pipes	m	4	1,938.00	7,752.00
		Expansion joint				
20	1009(1)	Mild Steel Hard rubber expansion joints	m	9	11,172.00	100,548.00
		Dowels				
21	1002(3)	20mm Dia 400m long stain less Steel Dowels	nr	6	6,500.00	39,000.00
22	1002(3)	20mm Dia 200m long hot rolled mild steel Dowels driven into bed rock for abutment and wing walls supplied fixed and grouted as	m	-	-	-
		Bridge Bearings				
23	1001(1)	75*12mm hard rubber bearing pad	m	9	47,880.00	430,920.00
		Miscellaneous				
24	1016(1)	Servise duct size 350*200 formed in deck	m	12	1,773.00	21,276.00
25	1017(1)	Cover slab (500*400*75mm)	nr	60	4,727.00	283,620.00
26	1013(1)	Bituminous sealing felt under beams	m	9	570.00	5,130.00
27	1014(1)	Bituminous sealing felt under approachslab	m	8	570.00	4,560.00
		Sub-Total Carried Forward				
						5,555,410.00

BILL No.6 : BRIDGES, CULVERTS AND OTHER STRUCTURES

ITEM		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
Bill	Pay					
Sub - Total Brought Forward						5,556,410.00
		Kerbs				
28	807(4)	Bridge Kerbs	m	12	3,876.00	46,512.00
29	807(5)	Lower Kerbs	m	12	1,824.00	21,888.00
		Railing				
30	814(2)	End pilasters	Nos.	2	142,505.00	285,010.00
31	808(1)	Guard stone	Nos.	6	6,545.00	39,270.00
32	814(1)	Hand Rails and uprights	m	8	9,877.00	79,016.00
6.2		RECONSTRUCTION/WIDENNING OF CULVERTS				
33	707(3)a	Suppling, Laying and jointing of pipes,900mm dia. (single row)	m	29.28	95,000.00	2,781,600.00
34	707(3)b	Suppling, Laying and jointing of pipes,900mm dia. (double row)	m	19.52	250,000.00	4,880,000.00
35	1001(2)a	Class B cement concrete nominal mix 1:3:6(37.5mm)	m ³	6,350	27,000.00	171,450,000.00
36	1001(2)b	Class B cement concrete Grade 20(19mm)	m ³	2,000	33,320.00	66,640,000.00
37	1002(1)	Tor Steel reinforcement	kg	58,500	333.20	19,492,200.00
38		Mild Steel reinforcement	kg	1,900	333.20	633,080.00
39	1006(1)	Random rubble masonry	m ³	25	17,850.00	446,250.00
40	1006(2)	Plastering, 1:3 cement sand mix , 16mm thick	m ²	50	1,689.80	84,490.00
41	1008(1)	Formwork smooth finish	m ²	13,000	2,975.00	38,675,000.00
42	1008(2)	Formwork rough finish	m ²	3,000	2,618.00	7,854,000.00
43	705(1)	Aggregate back fill material 50-200mm	m ³	4,000	8,925.00	35,700,000.00
44	705(2)	37.5mm Filter Material Crushed stone	m ³	280	7,437.50	2,082,500.00
45	708(1)	Weep hole, 75mm dia. PVC pipe (Type 600)	m	1,125	2,915.50	3,279,937.50
46	707(11)	Precast culvert 1m*1m	m	90	140,225.00	12,620,250.00
47	707(12)	Precast culvert 1.5m*1m	m	90	210,000.00	18,900,000.00
6.3		COSTRUCTION OF RETAINING WALL				
48	301(4)	Excavation in unclassified soil for foundtion and backfilling	m3	5,225	3,065.00	16,014,625.00
49	1008(2)	supplying & fixing 25mm thick planks and struts of class II timber as formwork rough finish,in foundation including	m ²	1,800	2,618.00	4,712,400.00
50	1008(1)	supplying&fixing smoothing shuttering of class II timber as formwork complete with props etc. for concrete retaining	m ²	11,050	2,975.00	32,873,750.00
51	1001(1)	Class B cement concrete nominal mix 1:3:6(37.5mm)	m ³	6,825	27,000.00	184,275,000.00
52	1001(3)	Class B cement concrete grade 25(19mm)	m ³	2,100	38,080.00	79,968,000.00
53	1006(2)	Plastering 19mm thick with cement sand moter 1:3 mix (smooth finish) in exposed surface of retaining walls/toewalls.	m ²	50	1,689.80	84,490.00
54	706(1)	Forming weep holes in retainig walls using P.V.C. pipes of int. dia. Not less than 75mm complete with dripledge and surround	L.m.	2,725	2,915.00	7,943,375.00
55	705(1)	50-200mm aggregate backfilling behind retaining wall/toewalls	m ³	4,000	6,200.00	24,800,000.00
56	705(2)	Supplying & packing 75mm thick 40mm stone filter layer behind dry stone lining.	m ³	450	2,915.00	1,311,750.00
57	1002(1)	Tor as reinforcement	kg	88,050	333.20	29,338,260.00
Bill No.6 Carried to Summary:						772,869,063.50

BILL NO: 7 - SUB - DRAINAGE CONSTRUCTIONS

ITEM		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
Bill	Pay					
7.1		Concrete				
1	1001(1)	Grade C 15	m ³	205	27,000.00	5,535,000.00
2	1001 (2)	Grade C 20	m ³	1,620	33,320.00	53,978,400.00
3	1001 (3)	Grade C 25	m ³	50	38,080.00	1,904,000.00
4	1006 (1)	Random rubble masonry	m ²	25	17,850.00	446,250.00
5	1006 (2)	plastering 1:3 cement sand mix ,16mm thick	m ²	100	1,716.00	171,600.00
6	701(9)	0.45*0.45*1.5 for Precast drain	m	75	17,843.00	1,338,225.00
7	701(10)	0.60*0.60*1.5 for Precast drain	m	75	22,900.00	1,717,500.00
8	701(11)	1.0x0.8x1.5 Precast drain for Precast drain	m	75	42,400.00	3,180,000.00
7.2		Precast Concrete cover slab				
9	701 (3)	800 x 600 x100mm for drain	m ²	240	8,237.00	1,976,880.00
10	701 (4)	900 x600 x 150mm for drain	m ²	405	13,900.00	5,629,500.00
11	1002 (1)	Tor - Steel reaiforcement	kg	70,000	333.20	23,324,000.00
12	1008 (1)	Formwork smoth finish	m ²	15,000	2,975.00	44,625,000.00
13	1008 (2)	Formwork rough finish	m ²	50	2,618.00	130,900.00
7.3		Clearing and Repairing Culverts and Drains				
14	1301(1)	Clearing and reshaping of earth drains	m	150	666.40	99,960.00
15	1303(1)	Clearing and Desilting culverts	nr	10	62,082.30	620,823.00
TOTAL FOR BILL NO 7 CARRIED FORWARD TO MAIN SUMMARY						144,678,038.00

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BILL No.8 : INCIDENTAL WORKS

ITEM		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
Bill	Pay					
8.1		TOP SOILING				
1	801(1)	Furnish, Spread and compact top soil	m ²	21,000	595.00	12,495,000.00
8.2		GRASSING				
2	802(1)	Grass sodding	m ²	21,000	797.30	16,743,300.00
8.3		RIP RAP PROTECTION FOR EMBANKMENT SLOPES				
3	804(1)	Dumped Rip Rap	m ³	800	8,350.00	6,680,000.00
		GABIONS WALLS AND MATTRESSES USING WIRE BASKETS				
4	805(1)	Gabions	m ³	400	23,800.00	9,520,000.00
8.4		PAVED SIDE WALKS				
5	409(1)	Supplying, spreading and compacting approved soil	m ³	100	5,908.00	590,800.00
6		Preparation of sand bed	m ³	25	7,679.00	191,975.00
7	806(1)	Precast concrete slab (450x450x50mm) paving	m ²	500	4,664.80	2,332,400.00
8.5		PRE CAST CONCRETE KERBS AND CHANNELS				
8	807(1)	Standard kerb	m	2,900	4,300.00	12,470,000.00
9	808(1)	Guard stones	nr	5,020	6,545.00	32,855,900.00
10	808(3)	Guard rails for foot walk	m	400	2,500.00	1,000,000.00
8.6		ROAD MARKING				
		<i>Center line :</i>				
11	810(1)	Continuous	m ²	625	3,570.00	2,231,250.00
12	810(2)	Intermittent	m ²	625	3,570.00	2,231,250.00
		<i>Edge line :</i>				
13	810(3)	Continuous	m ²	2,600	3,570.00	9,282,000.00
14	810(4)	Pedestrian crossing	m ²	935	6,693.75	6,258,656.25
15	810(5)	Road Studs	nr	50	5,355.00	267,750.00
8.7		ROAD SIGNS				
		<i>Reflective road sign :</i>				
16	811(1)	Single pole, sign area up to 0.5m ²	nr	300	21,420.00	6,426,000.00
17	811(2)	Double pole, sign area up to 2.0m ²	nr	200	41,564.00	8,312,800.00
18	811(3)	Chevron warning sign	nr	60	8,925.00	535,500.00
19	811(4)	Flag Type Sign	nr	10	11,994.00	119,940.00
8.8		CONCRETE KERB INLETS				
20	813(1)	Kerb inlet k1/l1	nr	0		
8.9		KILOMETRE POSTS				
21	815(1)	Provide, Install and paint new kilometre post	nr	13	35,700.00	464,100.00
8.10		SAFETY MEASURES				
22	808(2)	W-Beams (Length and Locations are decided by the Engineer.	m	200	30,125.00	6,025,000.00
Bill No. 8 Carried to Summary						137,033,621.25

BILL No. 10: MAINTENANCE OF ROAD

ITEM		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
Bill	Pay					
		MAINTENANCE OF CAGGIAGEWAY				
1	1101(1)	filling pot-holes and patch repairs with Asphalt concrete cold mix (Mc30), 20mm & less in depth	m ²	11,500	1,476.00	16,974,000.00
2	1101(2)	filling pot-holes and patch repairs with Asphalt concrete cold mix (Mc30), 75mm & less in depth	m ²	2,900	3,855.00	11,179,500.00
3	1101(3)	filling pot-holes and patch repairs with Asphalt concrete cold mix (Mc30), deeper than 75mm	m ²	1,500	4,155.00	6,232,500.00
4	410(1)	filling pot holes and patch repairs with gravel	m ³	150	6,130.00	919,500.00
Bill No.10 Carried to summary:						35,305,500.00

BILL No.11 : PROVISIONAL SUMS

ITEM		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
Bill	Pay					
1	103(2)	Temporary by-passes for culverts, bridges and other structures	PS	Item	Allow	1,000,000.00
2	113.1(1)	Repairs to damages of existing services	PS	Item	Allow	1,000,000.00
3	113.1(2)	Demolition / Rebuilding of property	PS	Item	Allow	1,000,000.00
4	117.1(1)	Diversion, protection or removal of electrical services	PS	Item	Allow	2,000,000.00
5	117.1(2)	Diversion, protection or removal of water services	PS	Item	Allow	2,000,000.00
6	117.1(3)	Diversion, protection or removal of telecommunication services	PS	Item	Allow	2,000,000.00
7	703(1)	Grade adjustment of existing manholes	PS	Item	Allow	1,000,000.00
8		Allow for Contractor's overheads and profit for above Provisional Sum items.	%	Item	30%	3,000,000.00
Bill No. 11 Carried to Summary						13,000,000.00

BILL No.12 : SCHEDULE OF DAY WORKS RATES**12.1 : LABOUR DAY WORKS**

All Quantities are Provisional

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
1	Surveyor	Hr	60.00	1,356.60	81,396.00
2	Laboratory Technician (skilled)	Hr	60.00	714.00	42,840.00
3	Carpenter	Hr	30.00	285.60	8,568.00
4	Mason	Hr	30.00	285.60	8,568.00
5	Steel Fixer	Hr	30.00	285.60	8,568.00
6	Semi-skilled workman	Hr	30.00	249.90	7,497.00
7	Unskilled workman (labourer)	Hr	90.00	214.20	19,278.00
Labour Day works Carried to Summary					176,715.00

BILL No.12 : SCHEDULE OF DAY WORKS RATES**12.2 : EQUIPMENT DAY WORKS**

All Quantities are Provisional

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
1	Bowser, water, up to 6,000 litres with Spray Bar	Hr	30	1,428.00	42,840.00
2	Backhoe, wheeled, 50 - 100 HP	Hr	30	3,570.00	107,100.00
3	Backhoe, tracked, 50 - 100 HP	Hr	30	3,570.00	107,100.00
4	Motor grader, 120 to 140 HP	Hr	15	4,998.00	74,970.00
5	Mobile Crane 25 tonnes	Hr	30	14,280.00	428,400.00
6	Water pump with hoses, 50 to 100 mm outlet	Hr	30	1,428.00	42,840.00
7	Concrete mixer, over 0.50 cu.m.	Hr	15	1,428.00	21,420.00
8	Generator, 10 to 50 KVA	Hr	30	7,140.00	214,200.00
9	Poker Vibrator, petrol driven	Hr	15	357.00	5,355.00
10	Steel-wheeled roller 8 to 10 tonnes	Hr	15	3,850.00	57,750.00
11	Pneumatic-tyred roller, vibratory, 8 to 10 tonnes	Hr	15	6,520.00	97,800.00
12	Hand roller vibratory, 1/2-1 tone	Hr	15	1,210.00	18,150.00
13	Plate compactor, vibratory over 90 kg	Hr	15	715.00	10,725.00
14	Rammer, mechanical, over 60 kg	Hr	15	825.00	12,375.00
Equipment Day works Carried to forward :					1,241,025.00

12.3 : MATERIAL DAY WORKS

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (Rs)
1	Aggregate base, dense graded (37.5mm)	m ³	10	6,745.00	67,450.00
2	Asphalt concrete, cold mix	mt	10	16,000.00	160,000.00
3	Asphalt concrete, hot mix	mt	10	20,000.00	200,000.00
4	Bitumen emulsion, (CRS 1, CRS 2, CSS 1)	ltr	10	200.00	2,000.00
5	Bitumen prime coat, cutback MC	ltr	10	200.00	2,000.00
6	Bitumen, sraight run, 60/70 penetration	ltr	10	200.00	2,000.00
7	Block, cement, 400*200*100mm	nr	10	500.00	5,000.00
8	Cement, ordinary Portland	mt	10	24,000.00	240,000.00
9	Concrete pipe, reinforced 600mm diameter	m	10	8,300.00	83,000.00
10	Concrete pipe, reinforced 900mm diameter	m	10	14,250.00	142,500.00
11	Concrete pipe, reinforced 1,200mm diameter	m	10	19,000.00	190,000.00
12	Concrete, Grade 15/20	m ³	10	25,000.00	250,000.00
13	Concrete, Grade 20/20	m ³	10	33,000.00	330,000.00
14	Formwork, timber (smooth)	m ²	10	2,600.00	26,000.00
15	Pipe, PVC, 100mm diameter (Type 600)	m	10	3,234.00	32,340.00
16	Reinforcement, high-yield steel, Grade 460/425	kg	10	338.00	3,380.00
17	Reinforcement, mild steel, Grade 250	kg	10	338.00	3,380.00
18	Rubble, 100 - 150 mm	m ³	10	5,000.00	50,000.00
19	Rubble, 150 - 250 mm	m ³	10	5,000.00	50,000.00
20	River Sand	m ³	10	5,030.00	50,300.00
21	Timber, Class 2, Sri Lanka Timber Corporation	m ³	10	60,000.00	600,000.00
22	Auto diesel	ltr	10	200.00	2,000.00
23	Petrol	ltr	10	260.00	2,600.00
24	Kerosene Oil	ltr	10	300.00	3,000.00
Material Day works Carried to forward :					2,496,950.00