

PROPOSED NEW NATIONAL SCHOOL AT KADURUWELA, POLONNARUWA (BLOCK 01)

BILL OF QUANTITIES

MAIN SUMMARY

Bill No	DESCRIPTION	AMOUNT	
		Rs	Cts
1	PRELIMINARIES		
2	CIVIL WORKS - SUBSTRUCTURE		
3	CIVIL WORKS - SUPERSTRUCTURE		
4	WATER SUPPLY AND DRAINAGE WORKS		
5	ELECTRICAL WORKS		
6	Misselenious Provisional Sum (MPS)	26,993,396.00	
	Sub Total - I		
	Less Provisional Sums and MPS		
	Sub Total - II		
	Less Discount If Any		
	Sub Total - III		
	Add Provisional Sums and MPS		
	Total Sum Carried to Form of Bid (Sub Total - IV)		
	Add 15% VAT		
	Grand Total (Inclusive of VAT)		

VAT Amount:

Total tender sum(Excluding VAT and including PS and MPS) in words:-Rupees.....

.....

.....only.

Tenderer's VAT Registration Number :-.....

.....

Signature of Tenderer

Name & Address of Tenderer

.....

.....

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PROPOSED NEW NATIONAL SCHOOL AT KADURUWELA, POLONNARUWA (BLOCK 01)

BILL OF QUANTITIES

BILL NO. 01- PRELIMINARIES

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	<u>A - PRELIMINARIES</u>				
	<i>All cost for preliminary work except items given below shall be distributed the rates of other items of the BOQ.</i>	<i>Note</i>			
	<i>Arrangements shall be made by the Bidder to dismantle all temporary and false constructions and fabrications and remove all rubbish and debris away from the work site.</i>	<i>Note</i>			
	MODE OF PAYMENTS				
(i)	Reimbursement of actual cost on submission of the relevant documents including originals of receipt notes and acceptable to the Engineer plus 5% of the actual cost obtaining the Insurance Policies and Securities : 1A -1 to 1A-4	<i>Note</i>			
(ii)	60% on completion of temporary buildings or structures. 30% in equal installments over the contract period and balance 10% on dismantling and removal on completion. 1A-5, 1A-08, 1A-09,1A-10	<i>Note</i>			
(iii)	Paid on satisfactorily completion of the item. 1A-6,1A-14,1A-18	<i>Note</i>			
(iv)	In equal installments over the contract period. 1A-7,1A-13,1A-15,1A-16,1A-17,1A-19,1A-20,1A-21,1A-22,1A-23	<i>Note</i>			
(v)	Paid in installment over the contract based on the % of financial progress of the project upto the maximum of quoted price. 1A-11	<i>Note</i>			
(vi)	50% will be paid after completion of setting out in Ground floor, 25% will be paid after completion of setting out of first floor.Balance will be paid when structure is completed.1A-12	<i>Note</i>			

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	<i>Insurance and Securities</i>				
1A -1	Allow Provisional sum for providing Performance Bond for the contract.	Pro. Sum			710,000.00
1A -2	Allow Provisional sum for providing Mobilization Advance bond.	Pro. Sum			1,420,000.00
1A -3	Allow Provisional sum for insurance of works, Machinery and Equipment, Plant, materials, third party persons and properties and Employer's personnel and property at site as per the contract.	Pro. Sum			500,000.00
1A -4	Allow Provisional sum for Insurance against accidents and injury to contractor's personnel.	Pro. Sum			500,000.00
	<i>Engineer's Facilities</i>				
1A -5	Allow lump sum for construction, maintaining, dismantling and removal on completion of the works a temporary building for Engineer's office with 20.0 Sq.m floor area and Toilet facilities with necessary lockable doors , windows etc. including following facilities. wall plywood sheets and upto 1m block work, cement rendered floor, metal roof with heat insulation foil. 1).Lockable steel cupboard (approx. 900mm x 450mm x 5000mm) 2). 2 No Table with Lockable drawers with 2No arm chairs 3). 1 No Conference Table 4). 6 No of Chairs 5). 1 No Computer with printer with computer table	L.Sum			
1A -6	Allow lump sum for providing telephone, facsimile facilities,electricity and water services including drinking water for the Engineer's site office for their use in connection with the works.	L.Sum			

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
1A-7	<p>Allow lump sum for maintenance, rental, consumption charges etc. for telephone and facsimile facilities, electricity and water services including portable water for the Engineer's site office for their use in connection with the works.</p> <p><i>Contractor's Facilities</i></p>	L.Sum			
1A-8	<p>Allow lump sum for constructing, maintaining, dismantling and removal on completion of the Works, a temporary site office of adequate size including staff rest room and toilets and other facilities for the Contractor's site management staff in accordance with the plans prepared by the Contractor and concurred by the Engineer. Contractor shall submit rate analysis comply with the amount of lump sum.</p>	L. Sum			
1A-9	<p>Allow lump sum for constructing, maintaining, dismantling and removal on completion of the Works, buildings to be used as workshops and stores for perishable materials. Buildings shall be constructed in accordance with the drawings prepared by the Contractor and concurred by the Engineer. The lump sum shall also include for altering, modifying or dismantling and re-erecting within the site at all temporary buildings/structures if required. Contractor shall submit rate analysis comply with the amount of lump sum.</p>	L. Sum			
1A-10	<p>Allow lump sum for providing accommodation including sanitary facilities for contractors staff and workmen off site.</p>	L. Sum			

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	<p>Construction Management and Supervision</p> <p>All details CV's should be provided by the Contractor for prior approval.</p> <p>If the contractor fails to employ qualified personnel as per clause No.4.2 of bidding data irrespective of amount quoted by the contractor for this item, following amount will be deducted up to a maximum period equivalent to the Contract period.</p> <p>Project Manager (Civil) - Rs.80,000 per month (Maximum 18 month) Site Engineer (Civil) - Rs.60,000 per month (Maximum 18 month) Technical officer (Civil) - Rs.45,000.00 per month (Maximum 18 month) Technical officer (Mechanical) - Rs.45,000.00 per month (Maximum 02 month) Technical officer (Electrical) - Rs.45,000.00 per month (Maximum 02 month)</p>				
		<i>Note</i>			
1A-11	Allow lump sum for employing one Project Manager (BSc or equivalent) with 8 years experience, one Civil Engineer (BSc or equivalent) with 5 years experience and one Technical Officer (NDT, NDES, HNDE Civil Engineering or equivalent qualified with minimum 3 years experience) in building construction on full time basis for construction management services at the site. All details, CV's with originals of certificates should be provided by the Contractor for prior approval. Payments will be made on their daily attendance basis.				
1A-11a	Project Manager (Civil) - (One person) (For maximum 18 months - On full time basis)	Month	18.00		
1A-11b	Site Engineer (Civil) (One person) (For maximum 18 months - On full time basis)	Month	18.00		

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
1A-11c	Technical Officer (Civil) (One person) (For maximum 18 months - On full time basis)	Month	18.00		
1A-11d	Technical Officer (Electrical) (One person) (For 02 months - Part time basis)	Month	2.00		
1A-11e	Technical Officer (Mechanical) (One person) (For 02 months - Part time basis)	Month	2.00		
	Setting Out				
1A-12	Allow lump sum for setting out of Works in accordance with drawings and other written information given by the Engineer. Quality, Standards and Progress	L. Sum			
1A-13	Allow lump sum for provision of progress reports including photographic records and other schedules included in the ICTAD publication - Guidelines for Effective Construction Management. (ICTAD/CM/01), relevant to contract administration as directed by the Engineer.	L. Sum			
1A-14	Allow lump sum for provision of 3 sets of (hard copies and soft copies) as-built drawings of following services, for Engineer's approval. (a). Architectural (b). Electrical power supply (c). Water supply (Hard Copy- Colour Laminated) (d). Sewerage and waste water lines (Hard Copy- Colour Laminated) (e). Mechanical (Hard Copy- Colour Laminated)	L. Sum			
1A-15	Allow lump sum for all cost in connection with preparing samples for testing, making arrangements for testing of Materials , Goods etc, as stipulated in the specification, obtaining test reports and submitting the same to the Engineer.	L. Sum			

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	<i>Health, Safety and Environment</i>				
1A -16	Allow lump sum for providing and maintaining first aid box and regular supply of medicine and linen etc,	L. Sum			
1A -17	Allow lump sum for maintaining the site in clean and orderly manner at all times and during the entire Contract period	L. Sum			
1A -18	Allow lump sum for demobilization, removal of all rubbish & debris and clearing up site on completion, leaving all in good order and handing over.	L. Sum			
1A -19	Allow lump sum for providing following necessary safety measures to workmen and to Engineering staff at site conforming to the latest industrial a) Gum boots b) Safety helmets c) Eye protectors (Eye goggles)	L. Sum			
	<i>Security and Protection</i>				
1A -20	Allow lump sum for employing an adequate number of security personnel on full time basis throughout the period of construction and provide for necessary security lighting,	L. Sum			
1A -21	Allow lump sum for providing and maintaining necessary fencing around the working area , hording and gates for safeguard the works, materials and plants and safety nets to minimize the disturbance to the public and Hospital Authority as directed by the Engineer	L. Sum			
	<i>Services and Facilities</i>				
1A -22	Allow lump sum for supply of water for the works and paying all charges and other expenses in connection with the supply from water mains or any other alternative method of water supply, storage and reticulation.	L. Sum			

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
1A -23	Allow lump sum for supplying temporary electricity for the works including connection, distribution system for the works, internal arrangements and all payments to the authorities for consumption and illumination.	L. Sum			
	Sub Total Bill No 01 carried to Grand summary				

PROPOSED NEW NATIONAL SCHOOL AT KADURUWELA, POLONNARUWA (BLOCK 01)

BILL OF QUANTITIES

BILL NO. 02- CIVIL WORKS - SUBSTRUCTURE

SUB SUMMARY

ITEM	DESCRIPTION	AMOUNT	
		Rs.	Cts.
	<u>SUBSTRUCTURE</u>		
2B	EXCAVATION AND EARTH WORK		
2C	CONCRETE WORKS		
2D	MASONRY WORKS		
2E	PLASTERING		
SUB TOTAL CARRIED TO MAIN SUMMARY			

PROPOSED NEW NATIONAL SCHOOL AT KADURUWELA, POLONNARUWA (BLOCK 01)

BILL OF QUANTITIES

BILL NO 02- CIVIL WORKS - SUBSTRUCTURE

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	<p>2B - EXCAVATION AND EARTH WORK</p> <p><i>As excavation measured net unless otherwise specified in item description.</i></p> <p><i>Excavation shall be done as instructed by the Engineer and with close supervision of the Engineer's representative. Foundation depth may have varied according to site condition.</i></p> <p><u>Rate include unless otherwise stated</u></p> <p><i>Trimming sides, keeping clean and consolidating bottom of bases and trenches etc. levelling and consolidation where required. leveling and compacting where required under slabs or sub floor layers.</i></p> <p><i>Back filling with selected excavated materials from site as specified and directed.</i></p> <p><u>Any necessary additional excavation for working space, planking and strutting, shoring or any other form of supporting earth, formwork etc.</u></p> <p>Excavation</p>	Note			
2B-1	Excavation for wall & column foundation to a depth not exceeding 1.5m in any material except rock requiring blasting, part return fill in and rammed and surplus spreading within the site as directed.	m ³	2,600		
2B-2	Excavation for wall & column foundation to a depth not exceeding 1.5-2.5m in any material except rock requiring blasting, part return fill in and rammed and surplus spreading within the site as directed.	m ³	550		
	Filling				
2B-3	Back Filling with available material for filling under floors including watering and well ramming using Whacker or other similar machine in 75mm layers as directed	m ³	650		

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
2B-4	Supplying and filling under floors & excavated pits with gravel or other filling material approved by the Engineer including spreading, watering and well ramming using Whacker or other similar machine in 75mm layers as directed	m ³	1,850		
2B-5	Allow provisional sum for dewatering	P.S		Allow	200,000.00
	Surface Treatment				
2B-6	Anti termite treatment by specialist sub contractor possessing registration of pesticide controller including 10 years warrantee. (Warrantee should address directly to the employer)The chemical to be used should be approved by the pesticide controller. Work should be carried out through a reputed sub contractor and method statement shall be submitted to the Engineer for prior approval. (Approximate Ground floor area - 3200 m ²)	m ²	3,200.00		
Sub Total of Excavation and Earth work Carried to Sub Summary of Bill No.02					
2C - CONCRETE WORKS					
	<i>Unless otherwise stated all concrete shall be of grade as per Specifications/Drawings.</i>	Note			
	<i>Rates for concrete shall include for forming construction joints, expansion joints or contraction joints as necessary.</i>	Note			
	<i>Concrete will be measured as the net area/volume, as shown on the drawings.</i>	Note			
	<i>Rate for concrete shall include for :</i>				
	<i>supply, handling at site, mixing, depositing, compacting, vibrating, curing and making good after removal of formwork.</i>	Note			
	<i>preparation of surfaces, roughening/chipping to the approval of the Engineer.</i>	Note			
	<i>Reinforcement and Formwork paid separately unless specified in the Item.</i>	Note			

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	<p><i>All major structural concrete works (Slabs, beams, columns, footings etc) shall be 'Ready mix' concrete of relevant grade</i></p> <p><i>Rate shall include for carryout cube test (approximately three cubes per 5m³ of concrete) and slump tests at site.</i></p> <p><i>Rate shall include for necessary tests including cube tests as per the BS 1881 and SCA/4/1.</i></p> <p><i>Rate for formwork shall include for all necessary boarding, supports, erecting, framing, cutting angles, cleaning, apply approved foam oil, wetting before placing concrete, removal etc.</i></p> <p><i>Formwork is measured as the net contact surface measurement between formwork and concrete.</i></p> <p><i>Film coated Plywood or other equivalent quality approved type of shuttering should be used. Mould oil should be applied to formwork surfaces before using.</i></p> <p><i>Rate for form work shall include for all necessary measures to provide fair face finish.</i></p> <p><i>All reinforcement shall be as per relevant British Standards having minimum characteristic strength of 460 N/mm² for High Yield steel and 250 N/mm² for mild steel.</i></p> <p><i>Rate shall include for necessary tests as per BS4449 and SLS 375.</i></p> <p><i>All reinforcement shall be free from mill scale, dirt, oil, paint, grease or loose rust before fixing in position and shall be brushed with a stiff wire brush as directed.</i></p> <p><i>All cement type to be Ordinary Portland Cement (OPC)</i></p> <p><i>Rate for reinforcement shall include for supplying, cleaning, cutting, bending, fabricating, binding, placing in position, binding wires, ties, supporting bars, spaces, chairs, wastage etc.</i></p>	<p>Note</p> <p>Note</p> <p>Note</p> <p>Note</p> <p>Note</p> <p>Note</p> <p>Note</p> <p>Note</p> <p>Note</p> <p>Note</p> <p>Note</p> <p>Note</p>			
2C-1	<p>C15(15) Concrete</p> <p>C15(25) cement concrete under column & wall Random rubble masonry foundation</p>	m ³	108		

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	C20(20) Concrete				
2C-2	75mm thick C20(20) floor concrete & disable ramps reinforced with 6mm dia BRC mesh 150mm C/C, Levelling with power trowelling. Rate to include for Gauge 1000 polythene.	m ²	2630		
	Grade 25(20) Concrete				
2C-3	In column base & shafts up to DPC	m ³	235		
2C-4	Tie Beams	m ³	163		
2C-5	Wall foundations	m ³	120		
	FORMWORK				
2C-6	Formwork for sides of column foundation	m ²	1400		
2C-7	Tie Beams	m ²	1180		
2C-8	Wall foundations	m ²	398		
	REINFORCEMENT				
	High Yield Steel Reinforcement				
2C-9	In column base & shafts up to DPC	kg	23,500		
2C-10	Tie Beams	kg	19,000		
2C-11	Wall foundations	kg	5,500		
	Mild steel				
2C-12	Mild steel in columns & beams	kg	1000		
Sub Total of Concrete Work Carried to Sub Summary of Bill No.02					
	2D - MASONRY WORKS				
	<i>Rate include for all joggles, cramps, dowels, ties, templates, rough and fair cutting, forming splays, angles, reveals and setting, joining, fixing in position and pointing, protecting and cleaning down</i>	Note			
2D-1	150x225mm Random rubble masonry for foundation in 1:5 cement sand mortar.	m ³	480		
Sub Total of Masonry Carried to Sub Summary of Bill No.02					

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
2E-1	2E - PLASTERING 20mm thick 1:3 cement sand rendering for plinth plaster including finishing smooth with Grey cement floating coat.	m ²	310		
2E-2	20mm thick D.P.C. in cement sand 1:2 finished with 2 coats of D.P.C. tar and blinded with sand.	m ²	120		
<i>Sub Total of Plastering Carried to Sub Summary of Bill No.02</i>					

PROPOSED NEW NATIONAL SCHOOL AT KADURUWELA, POLONNARUWA (BLOCK 01)

BILL OF QUANTITIES

BILL NO. 03 - CIVIL WORKS -SUPER STRUCTURE

SUB SUMMARY

ITEM	DESCRIPTION	AMOUNT	
		Rs	Cts
3	<u>SUPER STRUCTURE</u>		
3C	CONCRETE		
3D	BRICK WORK		
3E	WATER PROOFING		
3F	WALL FINISHES		
3G	FLOOR FINISHES		
3H	CEILING FINISHES		
3J	PAINTING		
3K	DOORS & WINDOWS		
3L	WOOD WORK		
3M	ROOFER		
3N	MISCELLANEOUS WORKS		
SUB TOTAL CARRIED TO MAIN SUMMARY			

PROPOSED NEW NATIONAL SCHOOL AT KADURUWELA, POLONNARUWA

BILL OF QUANTITIES FOR BLOCK-1

BILL NO.03 - SUPER STRUCTURE

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	<p>3C- CONCRETE WORK</p>				
	<p><i>Unless otherwise stated all concrete shall be of grade as per Specifications/Drawings.</i></p>	<p>Note</p>			
	<p><i>Rates for concrete shall include for construction joints, expansion joints or contraction joints as necessary.</i></p>	<p>Note</p>			
	<p><i>Concrete will be measured as the net area/volume, as shown on the drawings.</i></p>	<p>Note</p>			
	<p><i>Rate for concrete shall include for : supply, handling at site, depositing, compacting, vibrating, curing and making good after removal of formwork.</i></p>	<p>Note</p>			
	<p><i>preparation of surfaces, roughening/chipping to the approval of the Engineer.</i></p>	<p>Note</p>			
	<p><i>Reinforcement and Formwork paid separately unless specified in the Item.</i></p>	<p>Note</p>			
	<p><i>All concrete shall be so cast as to receive fair face finish on it's exposed faces suitable to receive paint/sealer directly.</i></p>	<p>Note</p>			
	<p><i>All major structural concrete works (Slabs, beams, columns, footings etc) shall be '<u>Ready mix</u>' concrete of relevant grade and other minor concrete works (lintels, worktops, floor Concretes etc) shall be machine mixing concrete of relevant mix ratios.</i></p>	<p>Note</p>			
	<p><i>Rate shall include for necessary tests including cube tests as per the BS 1881 and SCA/4/1.</i></p>	<p>Note</p>			
	<p><i>Rate for formwork shall include for all necessary boarding, supports, erecting, framing, cutting angles, cleaning, apply approved foam oil, wetting before placing concrete, removal etc.</i></p>	<p>Note</p>			
	<p><i>Formwork is measured as the net contact surface measurement between formwork and concrete.</i></p>	<p>Note</p>			

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	<i>Film coated Plywood or other equivalent quality approved type of shuttering to produced to have fair faced concrete finish. Mould oil should be applied to formwork surfaces before using.</i>	Note			
	<i>Rate for form work shall include for all necessary measures to provide fair face finish.(Concrete faces should be finished such a way to finish only with cement base putty. If not additional work involved to level the surface should be born by the Contractor)</i>	Note			
	<i>All reinforcement shall be as per relevant British Standards having minimum characteristic strength of 460 N/mm² for ribbed tor steel and 250 N/mm² for mild steel.</i>	Note			
	<i>Rate shall include for necessary tests as per BS4449 and SLS 375.</i>	Note			
	<i>All reinforcement shall be free from mill scale, dirt, oil, paint, grease or loose rust before fixing in position and shall be brushed with a stiff wire brush as directed.</i>	Note			
	<i>Rate for reinforcement shall include for supplying, cleaning, cutting, bending, fabricating, binding, placing in position, binding wires, ties, supporting bars, spaces, chairs, wastage etc.</i>	Note			
	Grade 25 (20) cement concrete for column shafts.				
3C-1	Ground floor level to First floor level	m ³	130		
3C-2	First floor level to roof level	m ³	78		
	Grade 25(20) cement concrete for floor slab.				
3C-3	Ground Floor	m ³	418		
	Grade 25 (20) cement concrete for beams.				
3C-4	Ground Floor	m ³	190		
3C-5	Roof beams , slabs & sun shades	m ³	120		
	Grade 25 (20) cement concrete for Staircase including steps, waist, beams and landing.				
3C-6	Ground Floor to First Floor level	m ³	20		

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	225mmx150mm lintols in 1:2:4 (20mm) concrete including formwork and 3 nr 10mm H/Y steel bars.				
3C-7	Ground Floor	m	380		
3C-8	First Floor	m	380		
	112mmx150mm lintols in 1:2:4 (20mm) concrete including formwork and 2 nr 10mm H/Y steel bars.				
3C-9	Ground Floor	m	15		
3C-10	First Floor	m	15		
3C-11	In 225x75mm beam at window sill level. Rate to include for form work & reinforcement,02 Nos 10mm dia. High yield steel reinforcement & 6mm dia. Mild steel stirrup @ 150mm c/c spacing	m	325		
	<u>FORMWORK</u>				
	Form work for sides of column shaft				
3C-12	Ground floor level to First floor level	m ²	1480		
3C-13	First floor level to roof level	m ²	1680		
	Form work for soffit of slab				
3C-14	Ground Floor	m ²	2735		
	Form work for sides and soffit of beams				
3C-15	Ground Floor	m ²	1650		
3C-16	Roof beams , slabs & sun shades	m ²	985		
	Form work for Staircase including soffit of sloping flight, steps, waist, beams and landing.				
3C-17	Ground Floor to First Floor level	m ²	400		

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	REINFORCEMENT				
	High Yield steel reinforcement for column shaft				
3C-18	Ground floor level to First floor level	kg	19600		
3C-19	First floor level to roof level	kg	7200		
	High Yield steel reinforcement for slab				
3C-20	Ground Floor	kg	37750		
	High Yield steel reinforcement for beams				
3C-21	Ground Floor	kg	27600		
3C-22	Roof beams , slabs & sun shades	kg	9710		
	High Yield steel reinforcement for Staircase including steps, waist, beams and landing.				
3C-23	Ground Floor to First Floor level	kg	2000		
	Mild steel reinforcement for columns & beams				
3C-24	Ground Floor	kg	1800		
3C-25	First Floor	kg	2700		
3C-26	Roof beams	kg	1735		
3C-27	Staircase	kg	200		
Sub Total of Concrete Work Carried to Sub Summary of Bill No.03					
	3D- BRICK WORK				
	<i>Rate shall include for lifting, handling, wetting, all rough and fair cuttings, plumbing, reveals, rough arches, raking out all joints for pointing plastering, cutting chases, making good at the completion.</i>	Note			
	<i>All Bricks shall be well burnt standard size brick with specified strength.</i>	Note			
	<i>Reinforced concrete vertical and horizontal stiffeners for all 112mm thick wall exceeding 3m length.</i>	Note			
	<i>Rate shall include for erecting scaffolding and dismantling after completion of work</i>	Note			

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
3D-1	225mm thick Brick Work in 1:5 Cement sand mortar in English bond in, Ground Floor	m ³	425		
3D-2	225mm thick Brick Work in 1:5 Cement sand mortar in English bond in, First Floor	m ³	540		
3D-3	112mm thick Brick Work in 1:5 Cement sand mortar in stretcher bond in, Ground Floor	m ²	190		
3D-4	112mm thick Brick Work in 1:5 Cement sand mortar in stretcher bond in, First Floor	m ²	75		
Sub Total of Brick Work Carried to Sub Summary of Bill No.03					
<u>3E - WATER PROOFING WORK</u>					
For Toilets Base & Walls					
Applying XYPEX or other approved waterproofing material in two coats on surfaces of concrete slabs at toilets as per manufacturer's specification (Minimum coverage per each layer at 0.8 Kg/m ²). Rate to include for cleaning existing concrete surfaces to be free from dust, cement laitance, grout deposits and repair honey combs, P-cone holes, construction joints with approved non shrink, high strength repair grout, 25mm x 25mm angle fillet with 1:3 cement sand mortar and curing the application for 3 days.					
3E-1	Ground Floor	m ²	400		
3E-2	First Floor	m ²	345		
3E-3	Application of approved type water proofing agent (Torch on Membrane type) & heat insulation layer (25mm thick insulation layer with non wooven geo- textile polyster matt or equivalent) and 50 mm thick screed concrete with 50x50mm GI mesh over the concrete roof slab As per manufacture's specification.	m ²	60		
Sub Total of water Proofing Work Carried to Sub Summary of Bill					

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	<p>3F - WALL FINISHES</p> <p><i>Rate shall include to</i></p> <p><i>(a) Fair joints</i></p> <p><i>(b) Outlets, working over and around obstructions, pipes, and the like into recesses and shaped inserts.</i></p> <p><i>(c) Bonding agents where included with the work.</i></p> <p><i>(d) Patterned work is deemed to included all extra work involved.</i></p> <p><i>(e) Bedding mortars</i></p> <p><i>(f) Grouting</i></p> <p><i>(g) Working over and polishing</i></p> <p><i>(h) Plastic corner beadings</i></p> <p><i>(j) Supplying and Fixing</i></p> <p><i>Samples shall be forwarded by the contractor for prior approval of the Engineer.</i></p> <p><i>Note</i></p> <p><i>If Contractor proposed to use sea sand for the work, Cost for the following test shall be include for the rates of respective work items;</i></p> <p><i>1. tested for Chlorine content in each batch of sea sand brought to site.</i></p> <p><i>2. tested for Gradation for each batch of sea sand brought to site</i></p> <p><i>3. submit Mix design according to the gradation for our approval</i></p> <p><i>(sample is selected by Engineer)</i></p> <p>15mm thick, cement sand 1:5 plaster finished semi rough with wood float on brick walls and concrete faces flush with walls on external surfaces including reveals.</p>				
3F-1	Ground Floor	m ²	1380		
3F-2	First Floor	m ²	1500		
	15mm thick, cement sand 1:5 plaster finished smooth with skim coat or equivalent on walls and concrete surfaces concrete faces flush with walls on internal faces including reveals.				
3F-3	Ground Floor	m ²	2900		
3F-4	First Floor	m ²	3450		

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	<u>15mm thick 1:5 cement and sand plaster finished smooth with skim coat to isolated concrete columns</u>				
3F-5	Ground floor	m ²	765		
3F-6	First floor	m ²	735		
3F-7	Finishing column heads as per architectural drawing 200mm x 300mm size, locally manufactured glazed tiles to walls including all angles and corner beadings set and bedding in 20mm thick, 1:3 cement mortar up to door height and finished with coloured grout to match with the tile.(Prime Cost Rs. 90.00 -100.00 per tile)	nr	155		
3F-8	Ground Floor	m ²	220		
3F-9	First Floor	m ²	220		
Sub Total of Wall Finishes Carried to Sub Summary of Bill No.03					
	<p>3G - FLOOR FINISHES</p> <p><i>Rate shall include to,</i></p> <p><i>(a) All extra work involved to patterned work.</i></p> <p><i>(b) Fair edges, internal angles for Treads and risers</i></p> <p><i>(c) Ends angles, ramped and wreathed covers for strings and aprons.</i></p> <p><i>(d) Fair edges, rounded edges, covered junctions, angles, and the like for skirting curbs and edges or floors</i></p> <p><i>(e) Plastic corner beadings</i></p> <p><i>(f) Supplying and Fixing of materials</i></p> <p>Floor Tiling</p> <p><i>At the beginning Contractor shall lay floor and wall tiles section by sections for Engineers inspection and checking neatness, quality and for approval to continue tiling. Rate shall include for such costs.</i></p> <p><i>cut pieces of tiles smaller than half of a tile shall not be used.</i></p> <p><i>Floor tiles shall be homogeneous, locally manufactured, non skid ceramic type and approved colour by the Engineer.</i></p>				
		Note			
		Note			
		Note			

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	<p><i>Water absorption of floor tiles should be less than 0.5% and Modulus of rupture to be over 27N/mm².</i></p> <p>Supplying and laying of locally manufactured semi glazed non skid homogeneous floor tiles size 400mm x 400mm in toilets bedding on 12mm thick, 1:3 cement rendering (F38) finished with colour grout to match. (Prime Cost of Rs. 350.00-400.00 per tile)</p>	Note			
3G-1	Ground Floor	m ²	160		
3G-2	First Floor	m ²	150		
	100mm high skirting in cement sand 1:3 finished smooth with coloured cement including forming groove.				
3G-3	Ground Floor	m	1075		
3G-4	First Floor	m	1035		
	20mm thick cement rendered floor finish with machine cut grey cement float.				
3G-5	Ground Floor	m ²	2650		
3G-6	First Floor	m ²	2630		
Sub Total of Floor Finishes Carried to Sub Summary of Bill No.03					
	<p>3H - CEILING FINISHES</p> <p><i>Rate shall include to,</i></p> <p><i>(a) Working over and around obstructions</i></p> <p><i>(b) Support work and accessories for fittings</i></p> <p><i>(c) Suspension and framed members</i></p> <p><i>(d) Cutting</i></p> <p><i>(e) Additional hangers, framing and the like</i></p> <p><i>(f) Supplying and Fixing of materials</i></p> <p>15mm thick, cement sand 1:3 plaster finished smooth with skim coat or equivalent of soffit of slab, soffit and sides of isolated beams. including reveals.</p>				
3H-1	Ground Floor	m ²	3450		
	Supplying and fixing of 12mm thick Acoustic panel flat ceiling with GI , T bar grid System. Rate to include all other accessories.				
3H-2	First Floor	m ²	290		

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
3H-3	First Floor Supplying & fixing 3.5mm thick cement fibre board slope ceiling fixed to roof frame work. Rate to include for one coat of primer and two coats of emulsion paint. Refer detail drawing.	m ²	1530		
3H-4	First Floor Supplying & fixing 3.5mm thick cement fibre board flat ceiling with 150x20mm timber beading at ceiling joints. Rate to include for necessary timber frame work & one coat of primer and two coats of emulsion paint. Refer detail drawing. Timber beading finished with water base paint.	m ²	1625		
Sub Total of Ceiling Carried to Sub Summary of Bill No.03					
	3J- PAINTING <i>Rates shall include for, The prices shall include for preparation of surface, cleaning down, use of wall fillers and primary paint coats to obtain neat surface., sand papering etc.</i> <i>Protection of floors and fittings, removing door and window furniture, and cleaning window etc. upon completion.</i> <i>Reveal, Column Projections, undersides of lintels and wall ends less than 300mm shall not be measured and shall be incorporated in other measurements. Isolated columns shall be measured for payments.</i> <i>All weathershield/ floor paints, primer shall be of approved make with non lead pigment.</i> <i>Rate to include for the cost for the scaffoldings.</i> Prepare and apply one primer coat and two coats of weathershield paint of approved colour and quality to external rough plastered face of walls and reveals.	Note Note Note Note Note			
3J-1	Ground Floor	m ²	1380		
3J-2	First Floor	m ²	1500		

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
3J-3	Prepare and apply one primer coat and two coats of Emulsion paint of approved colour and quality to internal smooth plastered faces of walls and reveals. Ground Floor	m ²	2900		
3J-4	First Floor	m ²	3450		
3J-5	Supply and application of one coat of primer and two coats of emulsion paint for soffit of slab, soffit and sides of beams including preparation of surface. Ground Floor	m ²	3450		
Sub Total for Painting Carried to Sub Summary of Bill No.03					
	<p><u>3K- DOORS & WINDOWS</u></p> <p>The frames shall be wrought, framed and fixed in position as specified in drawings. The scantling specified timber, shall planed smooth and accurate to dimension shown in drawings. Rebates, roundings and mouldings shall be made before assembly patching or plugging of any kind not be permitted except as specified.</p> <p>Timber Frames shall be 95x70mm (finished sizes)</p> <p>Timber sashes shall be 28mm (finished thickness)</p> <p>Door frames <u>treated Kempus/ Teak</u> & sashes shall be <u>treated Mahogani / Teak</u> or approved equivalent (Class 1 timber)</p> <p>All doors , window frames (CCB Treated) & sashes to stain & water based paint.</p> <p>All the meterial samples shall be approved by the Architect or Engineer before fabrication.</p> <p>Glass thickness shall be 5mm thick clear glass.</p> <p>All the rates shall be include for all necessary approved heavy quality locks (Union/ Yale or equivalent), iron mongery (Brass oxidized / Brass/Stainless steel.)</p>				

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	Supplying and fixing door type D1, size 1350x2100mm, Timber framed glazed double sash door. Rate to include brass hinges, door locks and door handles.				
3K-1	Ground Floor (07nrs)	m ²	20		
3K-2	First Floor (10 nrs)	m ²	30		
	Supplying and fixing door type D2, size 900x2100mm, Timber framed glazed double sash door. Rate to include brass hinges, door locks and door handles.				
3K-3	Ground Floor (32nrs)	m ²	61		
3K-4	First Floor (27nrs)	m ²	52		
	Supplying and fixing door type D3 , size 750x2100 mm fibre glass framed single sash fibre glass louvered door.				
3K-5	Ground Floor (11nrs)	m ²	18		
3K-6	First Floor (10nrs)	m ²	16		
	Supplying and fixing door type D5 , size 1100x2100 mm fibre glass framed single sash fibre glass louvered door for disable toilet.				
3K-7	Ground Floor (01nrs)	m ²	2.5		
	Supplying and fixing door type FD, size 3000x2100mm, Timber framed glazed french door. Rate to include brass hinges, door locks and door handles.				
3K-8	Ground Floor (01 nrs)	m ²	7		
	Supply and fixing of window type W1 size 1500x1350mm, timber framed glazed window. Rate to include for brass hinges, casement fastners, stays, rings etc.				
3K-9	Ground Floor (42 nrs)	m ²	86		
3K-10	First Floor (04 nrs)	m ²	9		
	Wall opeining with type W01 size 4000x1650mm, with vertical timber sticky.				
3K-11	Ground Floor (26 nrs)	m ²	172		
3K-12	First Floor (26nrs)	m ²	172		

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
3K-13	Wall opening with type W02 size 4000x1650mm, with vertical timber sticky. Ground Floor (03 nrs)	m ²	14		
3K-14	First Floor (17nrs)	m ²	115		
3K-15	Wall opening with type W03 size 4000x1650mm, with vertical timber sticky. Ground Floor (08 nrs)	m ²	93		
3K-16	First Floor (08 nrs)	m ²	93		
3K-17	Wall opening with type FL1 size 5475x600mm, with vertical timber sticky. Ground Floor (04nrs)	m ²	15		
3K-18	First Floor (04 nrs)	m ²	15		
3K-19	Wall opening with type FL2 size 4000x675mm, with vertical timber sticky. Ground Floor (08 nrs)	m ²	22		
3K-20	First Floor (08nrs)	m ²	22		
3K-21	Wall opening with type FL3 size 1275x675mm, with vertical timber sticky. Ground Floor (02)	m ²	3		
3K-22	Fanlight type FL size, 675x750mm, with vertical timber sticky. Ground Floor (01 nrs)	m ²	1		
3K-23	Supplying & fixing Powder coated alumimium composite partitions. As per drawings.	m ²	70		
Sub Total for Doors & Windows Work Carried Sub Summary of Bill No.03					

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	3L- WOOD WORK				
	Timber Hand Rails				
	Refer Architectural Drawing: D50/ARU/AR/DE-01				
	Supplying & fixing of 100x100mm timber top rail fixed to half walls along the staircases. All timber to be painted with one coat of sanding sealer, sand paering & one coat of primner & two coats of water base paint.				
3L-1	Ground floor level to First floor level	m	100		
	Supplying & fixing of timber handrail for balcony. Refer Architectural drawing. Rate to include for one coat of sanding sealer, sand paering & one coat of primner & two coats of water base paint.				
3L-2	First Floor level	m	480		
Sub Total for Wood Work Carried Sub Summary of Bill No.03					
	3M- ROOFER				
	<i>All steel used in the work shall comply with the relevant British Standards and to the specifications.</i>	Note			
	<i>All steel shall be new and each member shall be free from any built- weld or other forms of splice for the full length between joints shown in or indicated in the drawings unless such splice shall have been shown in the approved drawings.</i>	Note			
	<i>The Bidder shall submit the specification for the steel which he proposed to use and obtain prior approval from the Engineer before commencement of ordering of steel and fabrication.</i>	Note			
	Drawings <i>Before any steel work is fabricated the contractor shall obtain the Engineer's approval of the proposed details of fabrications. For this purpose, two copies of each drawings shall be submitted to the Engineer not less than 14 days before commencement of fabrication.</i>	Note			

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	<p>Inspections All steel work shall be subjected for inspection by the Engineer. The steel works shall not be moved from the place of fabrication nor primed or painted until the approval of the Engineer has been obtained for the fabrication of steel work.</p> <p>Welding No welding shall be done until approval of the prepared surface has been obtained. All welding shall be carried out under the supervision of qualified persons.</p> <p>Base plate, Sole plate, gussets plate, splice etc. have not been measured separately but the weights of such attachments have been included in weight of respective items indicated in item description.</p> <p>Refer drawings for fabrication and fixing details of trusses, purlin etc.</p> <p>Rate shall include for all necessary cuttings, drillings, bolting, reverting, welding, grinding, delivering, unloading, hoisting, erecting and fixing in position, levelling, plumbing and submission and getting approval of all shop drawings.</p> <p>All steel works should be applied two coats of coloured anticorrosive paints (two different colours for two coats)</p> <p><u>Timber Frame work</u> All sample shall be provided for approval by the Consultant prior to purchase of materials.</p> <p>All exposed timber frame & ceiling will be finished with <u>water based paint</u>.</p> <p>All timber used for roof frame work shall be treated with copper chromium Boric (CCB) treatment.</p> <p>Roof Structure</p>	Note			
3M1	Supplying & fixing steel truss (T1) span ~ 12.00m (approx weight 505kg). Rate to include base plate, cleat, riverts, nut, washers & painting with two coats of anticorrosive primer & two coats of enamel paint etc.	nr	11		

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
3M2	Supplying & fixing steel truss (T2) span ~ 12.00m (approx weight 480kg). Rate to include base plate, cleat, riverts, nut, washers & painting with two coats of anticorrosive primer & two coats of enamel paint etc.	nr	2		
3M3	Supplying & fixing steel truss (T3) span ~ 7.50m (approx weight 295kg). Rate to include base plate, cleat, riverts, nut, washers & painting with two coats of anticorrosive primer & two coats of enamel paint etc.	nr	13		
3M4	Supplying & fixing steel truss (T4) span ~ 7.50m (approx weight 285kg). Rate to include base plate, cleat, riverts, nut, washers & painting with two coats of anticorrosive primer & two coats of enamel paint etc.	nr	2		
3M5	Supplying & fixing steel truss (T5) span ~ 7.50m (approx weight 350kg). Rate to include base plate, cleat, riverts, nut, washers & painting with two coats of anticorrosive primer & two coats of enamel paint etc.	nr	6		
3M6	Supplying & fixing steel truss (T6) span ~ 10.50m (approx weight 480kg). Rate to include base plate, cleat, riverts, nut, washers & painting with two coats of anticorrosive primer & two coats of enamel paint etc.	nr	4		
3M7	Supplying & fixing steel truss (T7) span ~ 6.00m (approx weight 280kg). Rate to include base plate, cleat, riverts, nut, washers & painting with two coats of anticorrosive primer & two coats of enamel paint etc.	nr	4		
3M8	Supplying & fixing steel truss (T8) span ~ 4.50m (approx weight 205kg). Rate to include base plate, cleat, riverts, nut, washers & painting with two coats of anticorrosive primer & two coats of enamel paint etc.	nr	8		
3M9	Supplying & fixing steel truss (T9) span ~ 8.50m (approx weight 385kg). Rate to include base plate, cleat, riverts, nut, washers & painting with two coats of anticorrosive primer & two coats of enamel paint etc.	nr	4		

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
3M10	Supplying & fixing steel truss (T10) span ~ 4.30m (approx weight 195kg). Rate to include base plate, cleat, riverts, nut, washers & painting with two coats of anticorrosive primer & two coats of enamel paint etc.	nr	4		
3M11	Supplying & fixing steel truss (T11) span ~ 7.50m (approx weight 350kg). Rate to include base plate, cleat, riverts, nut, washers & painting with two coats of anticorrosive primer & two coats of enamel paint etc.	nr	4		
3M12	Supplying & fixing steel truss (T12) span ~ 6.10m (approx weight 280kg). Rate to include base plate, cleat, riverts, nut, washers & painting with two coats of anticorrosive primer & two coats of enamel paint etc.	nr	2		
Roof Covering					
3M13	Supplying & laying " DSI" roofing tile or approved equivalent on timber frame work. (timber frame work measured separately) Rate to include for ridge tile.	m ²	4150		
3M14	18 B.W.G.(1.2 mm) galvanised iron sheet valley gutter 3'-0" girth overall once bent with end laps not less than 9" width including 3/4" tongued and grooved planks laid to slope and fixing as per drawing.	m	100		
3M15	Supplying & laying 25mm thick glass wool with the density of 20kg/m ³ & single sided Al foil sound and heat insulation foil with 75x75mm (gauge 17) wire netting. (only flat Ceiling Area)	m ²	1625		
<u>Timber frame work</u>					
3M16	Supplying and fixing of 100x50mm (4"x2") imported treated Kempus timber rafters. Rate to include for planning timber, stain & water based paint. (Exposed rafters)	m	4500		
3M17	Supplying and fixing of 100x50mm (4"x2") imported treated Kempus timber rafters for roof. Rate to include for planning timber as required. (Rafters need not to be painted, due to flat ceiling will be fixed)	m	4400		
3M18	Supplying and fixing of 100x75mm (4"x3") imported treated Kempus timber for wall plate. Rate to include for planning timber, stain & water based paint.	m	970		

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
3M19	Supplying and fixing of 150x100mm (6"x4") imported treated Kempus timber for purlins. Rate to include for planning timber, stain & water based paint.	m	300		
3M20	Supplying and fixing of 150x75mm (6"x3") imported treated Kempus timber for Ridge plate & hip rafters. Rate to include for planning timber, stain & water based paint.	m	345		
3M21	Supplying and fixing of 50x25mm (2"x1") size CCB treated Kempus timber reepers. Rate to include for planning timber.	m	14500		
<i>Sub Total for Roof Covering Carried to Sub Summary of Bill No.03</i>					
	<u>3N- MISCELLANEOUS WORKS</u>				
3N-1	Allow Provisional Sum for supply & fixing of plaque as directed	Pro. Sum			500,000.00
<i>Sub Total for Miscellaneous Carried to Sub Summary of Bill No.03</i>					

PROPOSED NEW NATIONAL SCHOOL AT KADURUWELA, POLONNARUWA(BLOCK-1)

BILL OF QUANTITIES

BILL NO. 04 - WATER SUPPLY AND DRAINAGE WORKS

SUB SUMMARY

ITEM	DESCRIPTION	AMOUNT	
		Rs	Cts
4A	WATER SUPPLY SYSTEM		
4B	SANITARY FITTINGS & FIXTURES		
4C	SEWAGE AND WASTE WATER DISPOSAL SYSTEMS		
SUB TOTAL CARRIED TO MAIN SUMMARY			

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				Rs.	Cts.	Rs.	Cts.
	<p><i>(h) All Samples should be approved by the Engineer</i></p> <p><i>(j) Sanitary fitting should be Rocel, American standard or approved equivalent</i></p> <p>Supply, installation and completion of low level close coupled 'S' or 'P' trap Water Closet in white vitreous china, syphonic system, hinged acrylic soft closing seat and lid complete with dual flush 6/4.5 liter capacity cistern with PVC flexible hose in all toilets. Rate to include for necessary fixtures and special connection to water supply line and sewer lines. Angle valve measured separately. (Prime cost of Water Closet including cistern Rs.25,000.00)</p>	Note					
4B-1	Ground Floor	nr	6				
4B-2	First Floor	nr	4				
	<p>Furnishing & installing ceramic squatting pan (with high level cistern) (standard size) complete with foot rest and all other necessary connections (Indian or approved equivalent). Approximate price per fitting~ Rs. 7500.00</p>						
4B-3	Ground Floor	nr	8				
4B-4	First Floor	nr	6				
	<p>Supply and installation of 510x420mm vanity type Wash Basin in overall white vitreous china including 40mm (1 1/4") dia. plastic bottle trap, 20mm (1/2") dia. 01 nr. plastic pillar tap of approved quality, 40mm (1 1/4") dia. waste plug and chain, PVC flexible hose, brackets with all other accessories and special connection to complete work in order in all toilets. Rate to include for fixtures. Angle valve measured separately. (Prime cost Rs.14,300.00, Chromium plated Pillar tap Rs. 2500.00)</p>						
4B-5	Ground Floor	nr	14				
4B-6	First Floor	nr	12				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				Rs.	Cts.	Rs.	Cts.
	Supply and installation of 510x420mm Pedestal type Wash Basin in overall white vitreous china including 40mm (1 1/4") dia. plastic bottle trap, 20mm (1/2") dia. 01 nr. plastic pillar tap of approved quality, 40mm (1 1/4") dia. waste plug and chain, PVC flexible hose, brackets with all other accessories and special connection to complete work in order in all toilets. Rate to include for fixtures. Angle valve measured separately. (Prime cost Rs.9000.00, Chromium plated Pillar tap Rs. 2500.00)						
4B-7	Ground Floor	nr	2				
	Supply and fixing of Plastic Hand Bidet Shower (Watertech or approved equivalent) with flexible hose including wall mounted brackets in toilets. Rate to include for all fixtures and special connection to water supply line. Angle valve measured separately. (Prime cost of bidet shower Rs. 850.00)						
4B-8	Ground Floor	nr	4				
4B-9	First Floor	nr	4				
	Supplying & fixing of Urinals with Flush Valve & other accessories (Indian or approved equivalent). Prime cost per fitting ~ Rs. 12000.00						
4B-10	Ground Floor	nr	6				
4B-11	First Floor	nr	6				
	Supply and installation of plastic angle valve (watertec or approved equivalent) (Prime cost of angle valve is Rs.400.00).						
4B-12	Ground Floor	nr	40				
4B-13	First Floor	nr	40				
	Supply and fixing of 600x400mm anti-fog large plain Glass Mirror with stainless steel clips and plugs to be fixed to wall. Rate to include for fixtures (prime cost Rs.1,345.00).						
4B-14	Ground Floor	nr	2				
4B-15	First Floor	nr	2				

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	Supply and installation of chromium plated Soap holder . Rate shall include all fixtures. (Prime cost Rs.2200.00)				
4B-16	Ground Floor	nr	2		
4B-17	First Floor	nr	2		
	Supply and fixing of plastic Bib Taps (Watertec or equivalent) in toilets. Rate to include for all fixtures. (Prime cost Rs. 850.00)				
4B-18	Ground Floor	nr	8		
4B-19	First Floor	nr	6		
4B-20	Supply and fixing of plastic Garden Taps in outside the building at ground floor. Rate to include for all fixtures. (Prime cost Rs.850.00)	nr	6		
4B-21	Supply and installation of stainless steel wall grab bar in toilet 600mm long (2mm wall thick, 38mm diameter bended tube welded with haunch to 3mm thick, 60mm x 100mm plate) mounted on wall in toilets with Stainless steel screw. Rate to include for fixtures. (refer drawing).	nr	3		
4B-22	Supply and installation of stainless steel double Coat Hooks . Rate to include for fixtures. (Prime cost Rs.1,000.00)	nr	8		
	Supply and fixing of 150x150mm molded uPVC Floor Trap Gully and stainless steel cover plate in all toilets . Rate shall include for all fixtures (Prime Cost Rs.1,100.00).				
4B-23	Ground Floor	nr	17		
4B-24	First Floor	nr	17		
4B-25	Allow for all inspection, testing and commissioning of the sanitary fittings, including all off-site and factory testing; inspections to demonstrate compliance with relevant specifications and standards; operating the completed installation; submitting all relevant test record sheets during the construction phase.	Item			
Sub Total of Sanitary Fittings & Fixtures Carried Sub Summary of Bill No 04					

ITEM	DESCRIPTION	UNIT	QTY	RATE Rs. Cts.	AMOUNT Rs. Cts.
	4C -SEWAGE AND WASTE WATER DISPOSAL SYSTEMS				
	<i>All Type 600 unplasticized polyvinyl chloride (uPVC) pipes used in the plumbing installation must conform in every respect to the requirements of the SLS 147 of 1993 or BS 4514.</i>	Note			
	Unless otherwise measured separately, Rates shall include for:				
	<i>(a) Laying of pipes to falls.</i>	Note			
	<i>(b) Excavation, backfilling, disposal of surplus soil.</i>	Note			
	<i>(c) All pipe specials such as bends, junctions, elbows, tees, end caps etc. unless separately given in the BOQ.</i>	Note			
	<i>(d) Necessary jointing materials i.e rubber rings, solvent cement etc, specified fillings for pipe beddings etc.</i>	Note			
	<i>(e) All costs associated with provision of all holes (cutting or forming), mortises, openings, Chasing of brick, cement block or concrete walls, columns, beams etc. and necessary hangers and clips, for fixing to soffits etc. and making good all works disturbed.</i>	Note			
	<i>(f) Necessary screws, nails, sockets, connection back nuts standard pipe fixing or supporting clips, saddles, brackets, holder bats, straps.</i>	Note			
	<i>(g) Connecting different types of pipes.</i>	Note			
	<i>(h) Testing, commissioning and disinfection after completion.</i>				
	<i>(i) Connection to sides of manholes etc.</i>	Note			
	<i>(j) Providing sleeves etc., when pipes pass through walls, foundations etc.</i>	Note			
	<i>(k) Giving notices, obtaining permits, paying fees, liaison with local authorities (Central Environmental Authority etc). (all legitimate payments will be paid by the Client)</i>	Note			
	<i>(l) Protecting the works, all necessary hoardings, barricades.</i>	Note			

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				Rs.	Cts.	Rs.	Cts.
	<u>INTERNAL ARRANGEMENT</u>						
	<u>INTERNAL SEWAGE DISPOSAL</u>						
	<u>Pipe Work</u>						
	Pipes embedded to wall, through Secondary concrete wall, through Secondary stage Concrete floor, Vertical Sewer stacks fixed along the ducts & under Ground						
	<u>Ground Floor</u>						
4C-1	110 mm dia. uPVC pipes	m	100				
4C-2	90 mm dia. uPVC pipes	m	75				
4C-3	75 mm dia. uPVC pipes	m	125				
4C-4	63 mm dia. uPVC pipes	m	150				
4C-5	50mm dia. uPVC pipes	m	120				
4C-6	40mm dia. uPVC pipes	m	40				
	<u>First Floor</u>						
4C-7	110 mm dia. uPVC pipes	m	90				
4C-8	63 mm dia. uPVC pipes	m	100				
4C-9	50mm dia. uPVC pipes	m	100				
4C-10	40mm dia. uPVC pipes	m	40				
	<u>Man Hole</u>						
	Supply all material and construct Sewer Manhole in grade 25(20) concrete for 125mm thick base, walls and top slab consisting of all necessary form work, reinforcement (T8 @ 150 mm c/c single net), benching, internal plastering, Cast Iron cover and all necessary pipe work complete to working order as shown in the drawing and directed by Engineer. Rate shall include for excavation, shoring, dewatering, compacting and preparing surface, backfilling, disposal of surplus excavated material from site, 50mm thick Gr15(25) screed concreting, polythene etc.						
4C-11	For size of internal 600x600mm sized (depth min 0.6 m)	nr	6				
4C-12	For size of internal 750 x 750mm (depth up to 0.9 m)	nr	2				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				Rs.	Cts.	Rs.	Cts.
4C-13	Construction of Brick septic tanks of size 4.0x .9m (internal size), 225mm thick brick walls, C25(20) 150mm thick base and 125mm thick RCC top slab and concisisting of necessary form work & reinforcement (T10 @ 150mm C/C spacing Single net) internal plastering, cast iron cover(600 mm dia) as per drawing and directed by Engineer. Rate shall include for excavation, shoring, dewatering, compacting and preparing surface, backfilling, disposal of surplus excavated material from site, 50mm thick Gr15(25) screed concreting, polythene etc.	nr	4				
4C-14	Construction of Brick sockage pit of size 1800mm dia (internal size), 225mm thick brick walls in 1: 8 cement sand mortar, invert depth from ground level 3.0m , on 225x225mm ring beam C20(20) mix, including 1:3 cement sand plaster finished smooth with neat gray cement & cocrete ring pad above ground level. consisting of necessary form work & reinforcement as per drawing and directed by Engineer. Rate shall include for excavation, shoring, dewatering, compacting and preparing surface, backfilling, disposal of surplus excavated material from site, 50mm thick Gr15(25) screed concreting, polythene etc.	nr	8				
4C-15	Allow Provisional Sum for construction of 160mm dia type 600 PVC perforated pipes for soakage trench.	P.S		Allow		1,000,000.00	
4C-16	100mm thick RCC Storm Water drains along the pavement as per detail drawing.	m	600				
4C-17	Allow for all inspection, testing and commissioning of the sewage and waste water disposal system, including all off-site and factory testing; inspections to demonstrate compliance with relevant specifications and standards; operating the completed installation; submitting all relevant test record sheets during the construction phase.	Item		Allow		100,000.00	
<i>Sub Total of Sewage and Waste Water Disposal Systems Carried to Sub Summary of Bill No 04</i>							

PROPOSED NEW NATIONAL SCHOOL AT KADURUWELA, POLONNARUWA (BLOCK 01)

BILL OF QUANTITIES

BILL NO. 05- ELECTRICAL WORKS

Item	Description	Unit	Qty.	Rate Rs.Cts.	Amount Rs.Cts.
	<p>Rates in Bill of Quantities shall include all necessary materials (Cables, conduits, PVC sunk box, bulbs, switches etc.) and labour required to complete the electrical installation to good working order.</p> <p>Except where specifically stated, all costs associated with provision of all holes, openings, chases, ducts and other builders' work required for installation and make them good, shall be included in the rates.</p> <p>Where reference is made to certain manufactures' products and items identified by registered trade marks, has been done for the sole purpose of defining and establishing standards of quality and performance and not with the intention of restricting the procurement of material or fitting to a particular manufacturer. However all equipment and material should meet the BS or an equivalent standard.</p> <p>Testing and commissioning of the electrical installation is to be carried out by the contractor and inspection report submitted according to the requirements of the power supply Authority.</p> <p>Electrical Items (MCB,RCCB etc.) should be of European/Japanese origin or to the BS or equivalent and items without an accredited agent in Sri Lanka shall not be accepted. Guarantee cards(Fans etc.) should be provided from accredited agent before installation.</p> <p>All the quantities given here are approximated values and Quantities may change with the actual installation at the site.</p> <p>All types of fittings, materials, painting and finishes shall be approved by the Engineer prior to installation.</p> <p>All panel boards and consumer units should have wire numbering and a laminated circuit diagram should be pasted on the inside surface of the door.</p>				

Item	Description	Unit	Qty.	Rate Rs.Cts.	Amount Rs.Cts.
5P-1	Associated works for obtaining electrical connections from CEB (Client shall obtain 70kVA (100A) Three Phase Electrical Connection from authority's) All Switch gear Cubical shall be of wall mounted switch gear with steel enclosure to the approval of the engineer with equipment as specified in each board.	PS			25,000.00
5P-2	MDB Supply and installation of switch gear cubicle 01 No 100A, 4P MCCB 02 No. 40A 4P MCB 10kA Breaking Capacity 01 No. 63A 4P MCB 10kA Breaking Capacity 03 No. 32A 2P MCB 10kA Breaking Capacity Class I Surge diverter of I(max) >= 60kA, Ir >=30kA, Up <=1.0kV , Uc >= 330V Set of LED Indicator Light with Protection Digital Volt meter with Ammeter with CT and all other recurred accessories Internal Connection Equipment to be to the BS and European/Japanese make	nr	1		
5P-3	GFDB Supply and installation of switch gear cubicle 01 No. 40A 4P MCB 10kA Breaking Capacity 03 No. 32A 4P MCB 10kA Breaking Capacity 02 No. 32A 2P MCB 10kA Breaking Capacity Class II Surge diverter of I(max) >= 20kA, Ir >=10kA, Up <=1.0kV , Uc >= 330V protected with HRC fuse Set of LED Indicator Light with Protection Internal Connection Equipment to be to the BS and European/Japanese make	nr	1		

Item	Description	Unit	Qty.	Rate Rs.Cts.	Amount Rs.Cts.
5P-4	<p><u>1FDB</u> Supply and installation of switch gear cubicle 01 No. 63A 4P MCB 10kA Breaking Capacity 02 No. 40A 4P MCB 10kA Breaking Capacity 02 No. 32 A 4P MCB 10kA Breaking Capacity 02 No. 32A 2P MCB 10kA Breaking Capacity Class II Surge diverter of I(max) >= 20kA, Ir >=10kA, Up <=1.0kV , Uc >= 330V protected with HRC fuse Set of LED Indicator Light with Protection Internal Connection Equipment to be to the BS and European/Japanese make</p>	nr	1		
5P-5	<p><u>GTCU 1/2</u> Supply and installation of switch gear cubicle 01 No, 40A 4P Isolator 03 No 32 2P MCB of 10kA 03 No 40 2P RCCB of 30mA Sensitivity 25 No 6A- 20A 1P MCB 10kA Breaking capacity 04 No Earth Bar 01 No Earth Bar All internal connections. Equipment to be to the BS and European/Japanese make</p>	nr	2		
5P-6	<p><u>GTCU-ELU/1TCU-ELU-1/2</u> Supply and installation of switch gear cubicle 01 No, 40A 4P Isolator 06 No 40 2P RCCB of 30mA Sensitivity 06 No 32A 2P MCB 10kA Breaking capacity 25 No 6A- 20A 1P MCB 10kA Breaking capacity 07 No Neutral Bar 01 No Earth Bar large All internal connections. Equipment to be to the BS and European/Japanese make</p>	nr	1		
5P-7	<p><u>GCU-ADMIN</u> Supply and installation of switch gear cubicle 01 No, 40A 2P Isolator 03 No 40 2P RCCB of 30mA Sensitivity 07 No 6A- 20A 1P MCB 10kA Breaking capacity 01 Set of 50A Cu Bus bars for 3P, N 01 No Earth Bar All internal connections. Equipment to be to the BS and European/Japanese make</p>	nr	1		

Item	Description	Unit	Qty.	Rate Rs.Cts.	Amount Rs.Cts.
	<p><u>Cables</u> Supply and installation, in cable tray, of 600/1000 V, XLPE/PVC insulated, PVC sheathed, copper conductor cable. Rate shall be included the cost for supply and installation of cable terminals at both ends, and all other accessories required and exclude the cost for the cable trays, cable trunking.</p>				
5P-8	35mm ² , 1x4C , Cu/XLPE/PVC cables from CEB Meter Board to MDB	m	30		
5P-9	16mm ² , 1C Cu/PVC/PVC Yellow/Green Earth cable from Main Earth to MDB	m	20		
5P-10	16mm ² , 4x1C Cu/PVC/PVC Cable with 10mm ² , 1C Cu/PVC Yellow/Green Earth cable from MDB to GTCU	m	10		
5P-11	16mm ² , 4x1C Cu/PVC/PVC Cable with 10mm ² , 1C Cu/PVC Yellow/Green Earth cable from MDB to FTCU	m	20		
5P-12	10mm ² , 4x1C Cu/PVC/PVC Cable with 6mm ² , 1C Cu/PVC Yellow/Green Earth cable from GFDB to GTCU1/2, GTCU-ELU-1	m	100		
5P-13	10mm ² , 4x1C Cu/PVC/PVC Cable with 6mm ² , 1C Cu/PVC Yellow/Green Earth cable from 1FDB to 1TCU1/2, 1TCU-ELU 1/2 , 1 TCU AUD	m	150		
5P-14	10mm ² , 2x1C Cu/PVC/PVC Cable with 6mm ² , 1C Cu/PVC Yellow/Green Earth cable from GFDB to GCU-ADMIN	m	25		
	<p><u>Cable Management System</u> Supply and installation of 150mm x 50mm Powder coated Cable Tray made out of 1.5mm thick Zn/Al Sheets with cover plates hanging Brackets ect...</p>				
5P-15	Ground Floor	m	70		
5P-16	First Floor	m	75		

Item	Description	Unit	Qty.	Rate Rs.Cts.	Amount Rs.Cts.
	Fans Supply & installation of 56" sweep ceiling fan (European/Japanese make), complete with regulator, fan hook, extension rod & attachment - Guarantee cards should be provided from accredited agent.				
5P-17	Ground Floor	nr	56		
5P-18	First Floor	nr	55		
	Wiring of Ceiling fans Wiring of Ceiling fans (including supply of all material, earth wire & switch) of the above ceiling fans using approved type 1mm ² , PVC/PVC copper cable & 2.5 mm ² earth wire drawn through securely fixed concealed PVC conduits.				
5P-19	Ground Floor	nr	56		
5P-20	First Floor	nr	55		
	Socket Outlets 13A Socket Outlet Supply & installation of 13A shuttered switched single socket outlet to comply with BS 1363.				
5P-21	Ground Floor	nr	80		
5P-22	First Floor	nr	80		
	Socket Outlet Wiring 13A Socket Outlet Wiring Wiring (including supply of all material required) of 13A socket outlets using approved type 2.5 mm ² Cu/PVC/PVC, 2C cable & 2.5 mm ² earth cable drawn through securely fixed concealed PVC conduit / PVC trunking.				
5P-23	Ground Floor	nr	80		
5P-24	First Floor	nr	80		

Item	Description	Unit	Qty.	Rate Rs.Cts.	Amount Rs.Cts.
	<u>Light Fittings</u>				
	Note: All light fittings shall be forward to the engineer approval prior to install				
	Supply and installation of Surface Down light Fitting with 20W CFL Inside (Bulb Osrem or philips, Fitting Malaysian or Equivalent.)				
5P-25	Ground Floor	nr	40		
5P-26	First Floor	nr	10		
	Supply and installation of 1200mm 20W T8 LED Tube Fixture with opal defuse P.F> 0.9(Lamp Philips or equivalent Fitting Malaysian or Equivalent				
5P-27	Ground Floor	nr	140		
5P-28	First Floor	nr	140		
	Supply and installation of 1200mm 40W T8 LED Tube Fixture with opal defuse P.F> 0.9 (Lamp Philips or equivalent Fitting Malaysian or Equivalent				
5P-29	Ground Floor	nr	12		
5P-30	First Floor	nr	12		
	Supply and installation of wall mounted, outdoor/Indoor type decorative light fitting with 2x18W CFL. Bulb Osram, Phillips or Equivalent.				
5P-31	Ground Floor	nr	73		
5P-32	First Floor	nr	90		
	<u>Light Point Wiring</u>				
	Wiring (including supply of all materials) of the above light points using approved type PVC insulated PVC sheathed 1 mm ² copper cable drawn through securely fixed concealed PVC conduit with 2.5 mm ² earth cable.				
5P-33	Ground Floor	nr	265		
5P-34	First Floor	nr	252		

Item	Description	Unit	Qty.	Rate Rs.Cts.	Amount Rs.Cts.
	<u>Main Earth System</u>				
5P-35	Supply & Installation of minimum 16 mm diameter & 2.5 m long (if required) hard drawn bare copper rod for earth electrode with a pre cast (or insitu) inspection pit of 350 x 350 x 350 mm earth pit using rod to tape clamp. (10 ohm earth resistance should be achieved).	nr	1		
	<u>Inspection and Testing - Electrical installation</u>				
5P-36	Testing the installation and rectify any defects and submit a certificate by a Chartered Electrical Engineer.	Item			
	<u>Air Conditioners</u>				
	Supply and Installation of an air cooled condensate out door unit in combination with a direct expansion Split type wall mounting fan coil unit,The total cooling capacity shall not be less than 24,000 Btu/hr				
5P-37	Ground Floor	nr	2		
5P-38	First Floor	nr	4		
5P-39	Supply and installation of Extra PVC casing including CU pipe with insulation power cable and drain line where exceeding indoor and outdoor unit splits more than 5m in ground floor	PS			200,000.00
5P-40	Supply and installation of Extra PVC casing including CU pipe with insulation power cable and ect...	m			Rate Only
5P-41	Supply and installation of Extra drain line	m			Rate Only
	<u>Public Address System</u>				
5P-42	Supply and installation of 360W PA Mixing Amplifier with 5 Zone , 2 Hand held microphone with Stands, DVD Player with USB Support, Cables, Floor standing rack with power bar ect...	Item	1		
5P-43	Supply and installation of Ceiling mount/ Wall Mount PA Column Speaker 10W	nr	30		
5P-44	Wiring of PA Speaker using Insulated 0.7mm Twisted pare cable securely fixed inside conduit	nr	30		

Item	Description	Unit	Qty.	Rate Rs.Cts.	Amount Rs.Cts.
	<u>PA System for Auditorium</u>				
5P-45	Supply and installation of 240W PA Amplifier with 6 microphone inputs , two Speaker outs(100V , 8Ohm , 4 Ohm) 2 Hand held microphone with Stands, DVD Player with USB Support, Cables, Floor standing rack with power bar ect...	Item	1		
5P-46	Supply and installation of 120W Line array Speaker Including wiring and fixing bracket ect...	Nos.	4		
	<u>Data Telephone System</u>				
	<u>PABX System</u>				
5P-47	Supply and install of PABX with switching network system enclosed in a Surface mount powder coated or plastic enclosure with a key phone (4 Direct Lines and 40 Extensions)	nr	1		
	<u>Main Distribution Frame (MDF)</u>				
5P-48	Supply and Installation of MDF with 40 pair crone set with surge protection	nr	1		
	<u>Telephone Junction Boxes (TJB 1/2)</u>				
5P-49	Supply and Installation of telephone junction box with 20 pair crone set with surge protection	nr	2		
	<u>Telephone Cables</u>				
5P-50	Supply and installation of 20 pair telephone cable from MDF to TJB 1/2	m	60		
	<u>Telephone Socket Outlets</u>				
5P-51	Supply and installation of RJ(11)single, shuttered, sunken wall mounted telephone socket outlet with modular insert and face plate comprising all other accessories required complying with relevant BS/IEC standards.	nr	19		

Item	Description	Unit	Qty.	Rate Rs.Cts.	Amount Rs.Cts.
5P-52	<p>Telephone Point Wiring Wiring up to the telephone socket outlets from the respective floor junction box using approved type 2 pair UTP (Unshielded Twisted Pair) telephone cable drawn through securely fixed concealed PVC conduits comprising all other accessories required.</p>	nr	19		
	<p><u>DATA NETWORK SYSTEM</u></p> <p>DATA AND POWER WIRING IN E-LEARNING UNITS (For 03 Units)</p>				
5P-53	Supply and installation of DATA network wiring including switchers network outlet power outlet with all required accessories	PS			3,900,000.00
5P-54	<p><u>Data Rack (GDC-ADMIN)</u> Supply and installation of 19" Powder coated with front glass framed, Wall Mountable Enclosure 5U data rack with 4 Way (with 13A sockets) Power Panel, with all other accessories. Supply and installation of 24 auto-negotiating 10/100/1000 ports(IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) plus 2 (ISO - layer 3 Supported) Web Manageable Switch. Supply and installation of 24 port patch panel frame including Cat 6 Tool-less Keystone Jacks 1/2m Patch leads - Cat 5e, Unshielded</p>	nr	1		
5P-55	<p><u>Uninterruptible Power Supplies (UPSs)</u> Supply and installation of UPS (650VA) with 20 Minutes Backup time</p>	nr	1		
5P-56	<p><u>Wiring of Back Bone</u> Supply and Installation of 2 Nos of aggregated 4 Pair UTP Cable (CAT 6) securely fixed inside 1" PVC conduit</p>	m	75		
5P-57	<p><u>Fixing of Data Point</u> Supply and installation of RJ 45 Face plate with Keystone jack and</p>	nr	12		
5P-58	<p><u>Wiring of Data Point</u> Supply and Install 4 Pair UTP Cable (CAT 6) securely fixed inside 1" PVC conduit</p>	nr	12		

Item	Description	Unit	Qty.	Rate Rs.Cts.	Amount Rs.Cts.
	<u>Testing And commissioning of Data System</u>				
5P-59	Provide a FLUKE Testing report and rectify any defects and submit a certificate by a Electrical Engineer.	Item			
5P-60	Provide three sets of 'As Built Drawings' (A3 size) to cover all the systems under electrical works binded as books.	Item			
	<u>Direct Lightning Protection System</u>				
	NOTE: Lightning protection system to be according to the IEC 62305-1 to 4				
	<u>Air termination system</u>				
	Supply and Installation of a complete lightning protection system including 25mm x 2.5 mm annealed Cu strips and copper finial as per the drawing complete with all required accessories or fixing and termination as per specifications.	Note.			
5P-61	25 mm x 2.5 mm annealed Cu tapes.	m	600		
5P-62	Equipotential bonding of LPS for mechanical equipment's at roof top.	PS			50,000.00
5P-63	Copper finial of 1m height, shaft diameter 12mm, multy point	nr	12		
	<u>Down conductor system</u>				
	Supply and Installation of a complete lightning protection system including 25 mm x2.5 mm annealed Cu strips, a as per the drawing complete with all required accessories or fixing and termination as per specifications.	Note.			
5P-64	25 mm x 2.5 mm annealed Cu tapes clipped along columns (used as down conductor) from roof slab level to ground level. (Rate shall include required joints, clamps, bonds and fixing accessories.)	m	150		

Item	Description	Unit	Qty.	Rate Rs.Cts.	Amount Rs.Cts.
	<u>Earth termination</u>				
5P-65	Supply & Installation of test joint mounted in a yellow PVC enclosure to down conductor at 1m above ground level.	nr	15		
5P-66	Supply & Installation of minimum 16 mm diameter & 2.5 m long (if required) hard drawn bare copper rod for earth electrode with a pre cast (or insitu) inspection pit of 350 x 350 x 350 mm and 25 mm x2.5 mm Cu tapes from test joint to earth pit using rod to tape clamp. (10 ohm earth resistance should be achieved).	nr	15		
5P-67	Supply & Installation of additional earth electrodes of minimum 12 mm diameter & 2.5 m long (with an inspection pit for each) if necessary to achieve 10 ohm resistance	PS			60,000.00
5P-68	Bonding of extraneous metal parts to Lightning protection system.	PS			20,000.00
	<u>Street Lighting system</u>				
5P-69	Supply and installation of Street lighting System with all required accessories	PS			2,500,000.00
SUB TOTAL CARRIED TO MAIN SUMMARY					