

NAIROBI WATER AND SANITATION PROJECT					
Water and Sanitation Works in the Nairobi Informal Settlements					
MATOPENI SETTLEMENT					
Bill 3.2: SANITATION COMPONENT					
BILL No 3.2.1: SEWERLINES					
ITEM	DESCRIPTION	UNIT	QTY	Rate	Amount
	<p>These works are to be carried out along narrow wayleaves where there may be some existing active services (electrical, water, e.t.c). This should be considered in the Contractor's rates. The quoted rates shall allow for Setting Out of the Works in accordance with the Specifications. This shall include staking out of sites for structures, setting permanent benchmarks etc, and allow for preparation and submission of Construction Drawings and Setting out Report to the Engineer for approval. Include Traffic Diversions, Traffic regulation; establishment, operation and removal for works</p> <p><b>CLASS A - GENERAL ITEMS</b></p> <p><b>Testing of the Works</b></p>				
A260.1	Carrying out test on DN300mm pipeline as specified or directed by the Engineer. Include provision of all equipment and materials	m	1680		-
	<p><b>CLASS B - SITE INVESTIGATION</b></p>				
B111	Trial holes where ordered to prove location, construction size etc, of pipelines, services or existing structures (Provisional)	nr	10		-
	<p><b>CLASS D - DEMOLITION AND SITE CLEARANCE</b></p>				
D110	General site clearance through undeveloped land over the wayleave, include for any additional clearance required	ha	0.2016		-
D210	Removal of trees and stumps girth 0.1-0.3m	nr	3		-
D220	Removal of trees and stumps girth exceeding 0.3m	nr	1		-
D461	Buildings of indeterminate construction Volume not exceeding 50m <sup>3</sup>	nr	5		-
D561	Other structures of indeterminate construction Volume not exceeding 50m <sup>3</sup>	nr	5		-
	<p><b>CLASS I: PIPEWORK - PIPES</b></p> <p><b>A - SUPPLY OF PIPES</b></p> <p>Supply, Transport to Site and Store Precast Concrete pipes in accordance to Technical Specifications Sockets and spigots for PCC as directed by the Engineer.</p>				
I523.1	<b>SOCKET AND SPIGOT PRECAST CONCRETE PIPES</b> Supply DN 300mm PCC	m	1680		-
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ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KShs)	AMOUNT (KShs)
	<b>B - PIPE LAYING</b>  The rate quoted shall be deemed to include excavation and backfilling with selected excavated material, of pipe trenches. The rates shall also include disposal of surplus material to approved tips, transport of material from site store to working areas, laying and jointing of pipes. The quoted rates shall allow for Setting Out of the Works in accordance with the Specifications. This shall include staking out of the all Pipeline Routes, setting permanent benchmarks etc, and allow for preparation and submission of Construction Drawings and Setting out Report to the Engineer for approval. Include Traffic Diversions, Traffic regulation; establishment, operation and removal for works  Nominal bore 300mm in trenches				
I532	Depth not exceeding 1.5m	m	588		-
I533	Depth 1.5m - 2.0m	m	336		-
I534	Depth 2.0 m - 2.5m	m	252		-
I535	Depth 2.5 m - 3.0m	m	168		-
I536	Depth 3.0 m - 3.5m	m	134.4		-
I537	Depth 3.5 m - 4.0m	m	117.6		-
I538	Exceeding 4.0m	m	84		-
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ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KShs)	AMOUNT (KShs)
	<b>CLASS K: PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</b>  The rates entered shall include excavation in material other than rock, construction of the manhole, reinforced concrete cover slab, and MH covers and frames, step irons, backdrop and fittings where necessary, excavation for working, trimming the base of the excavation, shuttering where necessary, backfilling and compaction around the finished manhole and disposing of surplus soil , spreading and making good. <b>Manholes</b>  Reinforced Manhole size 1050mm, including reinforced concrete cover slab and 40 ton load bearing capacity GRP/Composite MH frame and cover with clear opening 600mm x 600mm. Provide backdrop and fittings where necessary.				
K151	Depth n.e 1.5m	nr	10		-
K152	Ditto but Depth 1.5 - 2.0 m	nr	5		-
K153	Ditto but Depth 2.0 - 2.5 m	nr	4		-
K154	Ditto but Depth 2.5 - 3.0 m	nr	3		-
K155	Ditto but Depth 3.0 - 4.0 m	nr	2		-
K156	Ditto but Depth exceeding 4.0 m	nr	2		-
	<b>Reinstatement of existing Manholes</b> Provide openable reinforced concrete Manhole cover slab with clear opening of 600mm x 600mm. Provide backdrop and fittings where necessary. The works shall also include removal and disposal of solid waste and flushing of the system	nr	200		-
	<b>Crossings, Tunnelling and Reinstatements</b>  <b><u>Include for all work associated with the crossings</u></b>  Include for all work associated with the crossings Pipe nominal bore 300mm				
K641	Hedge crossing and reinstatement;	nr	1		-
K651	Wall crossing and reinstatement;	nr	6		-
K681	Allow for connection to existing trunk and associated works	nr	3		-
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BILL No 3.2.1: SEWERLINES					
ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KShs)	AMOUNT (KShs)
K731.1	Breaking up, temporary and permanent reinstatement of murram roads as per drawing	m	100		-
K731.1	Breaking up, temporary and permanent reinstatement of cabro paved roads	m	30		-
	<b>CLASS L: SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</b>				
	<b>Extras to Excavation and Backfilling</b> ( Note: Blasting not allowed for any rock excavation)				
	<i>In Pipe Trenches</i>				
L111.1	Excavation in rock Class A	m3	168		-
L111.2	-Ditto- but rock Class B	m3	252		-
L111.3	-Ditto- but rock Class C	m3	336		-
	<i>In manholes and Other Chambers</i> ( Note: Blasting not allowed for any rock excavation)				
L121.1	Excavation in rock Class A	m3	50		-
L121.2	-Ditto- but rock Class B	m3	75		-
L121.3	-Ditto- but rock Class C	m3	100		-
	<b>Bed, Haunches and Surrounds</b> <i>Granular Material</i> <u>Pipeline nominal bore 300mm</u>				
L33	Imported granular material as per specifications for sidefill Beds 150 mm thick. Also this shall include 200mm compacted fill from the crown of the pipeline	m	100.00		-
	<b>CLASS Y: EXISTING SEWER RENOVATION AND ANCILLARY WORKS</b>				
	<u><b>Cleaning and repair of existing sewerage systems in the project area shall be done where directed by the Engineer</b></u> <u>The rates should include all ancillary works related to cleaning and repair of existing sewerage and storm systems such as flow diversion, over pumping, maintaining house connection flows, restoration of surfaces, traffic diversion, etc</u>				
Y110	Cleaning debris and flushing of existing sewers with diameters ranging between DN 100mm and DN 600mm, manholes, inlets, outlets, catch basins, gullies and inspection chambers and survey of condition status. All debris should be disposed to an approved dumping area.	m	5000		-
Y220	Upgrade defective sewer and house connections by replacement in the area as directed by the Engineer	m	1000		-
Y634	Replacement of deteriorated existing manholes and inspection chambers according to the direction of the Engineer.	nr	30		-
Y720	Repair of deteriorated manholes and inspection chambers according to the direction of the Engineer.	nr	20		-
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	<b>Bill 3.2.1 COLLECTION PAGE</b>  From Page 1  From Page 2  From Page 3  From Page 4				-  -  -  -
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Water and Sanitation Works in the Nairobi Informal Settlements					
MATOPENI SETTLEMENT					
Bill 3.2: SANITATION COMPONENT					
Bill 3.2.2 - CUSTOMER CONNECTIONS (TYPE A)					
ITEM	DESCRIPTION	UNIT	QTY	RATE (KShs)	AMOUNT (KShs)
	<p><b>FOR PLOTS WITHIN EXISTING POUR PLUSH FACILITIES BUT NOT CONNECTED TO SEWER</b>  <b>Approximate No. of Connections is 150</b></p> <p>The connection works are to be carried out in liason with with the respective Water Service Provider, who will receive, process and approve the applications for connections as per technical specification.  The Contractor to confirm with Resident Engineer the exact number of connections and their locations before ordering materials and carrying out any works under this Bill.</p> <p>Consumer Connection Works will commence during the Construction Period and minimal works can extend to the Defects Liability Period (DLP). The connections will be carried out as soon as the sewers are commissioned. Taking Over will be on completion of the Connections. The Contractor should allow for this in their rates. There will be no extra cost of carrying out the Connection Works during DLP.</p> <p><b><u>CLASS A: GENERAL ITEMS</u></b></p> <p><b>A2 Specified Requirements</b></p> <p>A260 Allow for water testing of the sewer connection including sewer pipes and inspection chambers as specified including all requisite Materials, Personnel, Testing Equipment etc.</p> <p>A277 Allow for keeping trenches and other excavation free of water which may have entered through ground seepage, rain or by other means as directed by the Engineer.</p> <p><b><u>CLASS I - PIPEWORK</u></b></p> <p><b>A - Supply of Pipes</b>  The rate to include jointing materials, bolts, gaskets, rubber rings, etc.</p> <p>I511 DN 150 mm DWC sewer pipe SN 8</p>				
		m	20.0		-
		Item	LS		-
		m	20.0		-
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Bill 3.2: SANITATION COMPONENT					
Bill 3.2.2 - CUSTOMER CONNECTIONS (TYPE A)					
ITEM	DESCRIPTION	UNIT	QTY	RATE (KShs)	AMOUNT (KShs)
	<b>B - Pipe Laying</b> The rate quoted shall be deemed to include excavation and backfilling with selected excavated material, of pipe trenches. The rates shall also include disposal of surplus material to approved tips, transport of material from site store to working areas, laying and jointing of pipes. The quoted rates shall allow for Setting Out of the Works in accordance with the Specifications. This shall include staking out of the all Pipeline Routes, setting permanent benchmarks etc, and allow for preparation and submission of Construction Drawings and Setting out Report to the Engineer for approval. Include Traffic Diversions, Traffic regulation; establishment, operation and removal for works				
I512	Depth not exceeding 2m	m	20.0		-
	<b><u>CLASS J: PIPE FITTINGS</u></b>				
	<b>45° DWC Y-Junctions</b> Supply, transport, lay, joint and test, 45° DWC Y junctions. The rate to include lean concrete plug, jointing material, rubber rings etc.				
J423.1	DN 150 mm branch off DN 300 mm Mainline	Nr	1		-
	<b><u>CLASS K: MANHOLES AND PIPEWORK ANCILLARIES</u></b>				
K21	<b><u>Masonry Inspection Chambers</u></b>				
K211	Excavate for, provide all materials and construct 600 x 450mm Masonry Inspection Chamber, in accordance with drawings. Include for provision and fixing of light duty rectangular GRP frame and cover. The rate should be inclusive of two flexible joints adjacent to the Inspection Chamber as detailed. and provision of boxout and sealing for all pipes. Depth not exceeding 1.5m	Nr	1.0		-
K6	<b><u>Crossings</u></b>				
K651	Allow for crossing existing boundary wall/ fence, including reinstatement to original state. Pipe nominal bore not exceeding 150mm (Provisional)	Nr	1.0		-
K671	Allow for crossing existing lined drains and reinstate after construction of sewer. Pipe nominal bore n.e. 150mm (Provisional)	Nr	1.0		-
	<b><u>CLASS L: PIPEWORK - ANCILLARIES TO LAYING AND EXCAVATION</u></b>				
	<b><u>Extras to excavation and backfilling in pipe trenches</u></b>				
L111.1	Excavation in rock Class A	m3	1.0		-
L111.2	-Ditto- but rock Class B	m3	1.0		-
L111.3	-Ditto- but rock Class C	m3	1.0		-
	<b><u>CLASS X: MISCELLANEOUS WORKS</u></b>				
	<b><u>Final Connection to Inspection Chamber</u></b>				
X51	Allow for provisional sum for individual connection to provided inspection chamber. Rate to include all pipes and fittings	Nr	1.0		-

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Bill 3.2.2 - CUSTOMER CONNECTIONS (TYPE A)					
ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KShs)	AMOUNT (KShs)
	<b>Bill 3.2.2 Collection Page</b>  From Page 1  From Page 2				-  -
	<b>COST FOR ONE (1) CONSUMER CONNECTION</b>				-
	<b>COST FOR 50 CONNECTIONS</b>	Nr	50	0	-
<b>Bill 3.2.2 TOTAL CARRIED TO Bill 3 SUMMARY PAGE</b>					-



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**MATOPENI SETTLEMENT**

**Bill 3.2: SANITATION COMPONENT**

**Bio-centres**

**Construction Works**

**Bill NO. 3.2.3: PROPOSED BIO-CENTRE DEVELOPMENT**

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<b>SUBSTRUCTURES</b>				
	<b>CLASS B: SITE INVESTIGATION</b>				
<b>B111</b>	Trial Holes where ordered to prove location, construction size etc of pipelines, services or existing structures, ground conditions. 1.2-3m (Provisional)	nr	3		
	<b>CLASS D - DEMOLITION AND SITE CLEARANCE</b>				
<b>D100</b>	Clear area within the site of all grass, bushes, shrubs, hedges, grub up roots and cart away to tips as directed by the Engineer	m <sup>2</sup>	60		
<b>D210</b>	Cut down trees and removal of trees and stumps, girth 0.5-1m (Provisional)	Nr	1		
<b>D461</b>	Demolition and relocation of existing structures (Provisional)	m <sup>2</sup>	60		
	<b>CLASS E: EARTHWORKS</b>				
<b>E411</b>	Excavate over site for buildings, roads, etc. average 150mm deep to remove vegetable soil and stack part of material for use as and where directed by the Engineer, cart away surplus to tips	m <sup>2</sup>	60		
	<b>The rates shall include for all strutting, shuttering, stabilising the excavation faces, Disposal and keeping the excavation free of water by pumping, bailing or other means</b>				
<b>E211.1</b>	Excavate below stripped level to formation level in common material, part backfill after construction and remainder, cart away to tips or use as fill on site, all as directed by the Engineer. Maximum depth n.e. 1.0 m	m <sup>3</sup>	45		
<b>E211.2</b>	-Ditto- but maximum depth 1.0 m to 2.0 m	m <sup>3</sup>	45		
<b>E211.3</b>	-Ditto- but maximum depth 2.0 m to 3.0 m	m <sup>3</sup>	45		
<b>E211.4</b>	-Ditto- but maximum depth 3.0 m to 4.0 m		45		
<b>E211.5</b>	-Ditto- but maximum depth exceeding 4.0 m	m <sup>3</sup>	25		
<b>E211.6</b>	Foundations and bases of isolated piers and walls 0.00 - 1.50 metres deep	m <sup>3</sup>	60		
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**MATOPENI SETTLEMENT**

**Bill 3.2: SANITATION COMPONENT**

**Bill NO. 3.2.3 PROPOSED BIO-CENTRE DEVELOPMENT**

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<b><u>Extra Over Excavation in any Position For:- (Provisional)</u></b>				
E233	Excavation in rock Class A	m3	2		-
E234	-Ditto- but rock Class B	m3	4		-
E235	-Ditto- but rock Class C	m3	4		-
	<b>Filling</b>				
	Includes placing and compacting as specified.				
E635	Fill and ram selected excavated materials around foundations and buildings	m <sup>3</sup>	20		
	<b>Approved Hardcore Filling as Described:-</b>				
E636	300mm thick selected hardcore fill to make - up levels, well rolled smooth and compacted to receive polythene Dpm.	m <sup>2</sup>	60		
E637	Provide, lay and level out fine crushed stone, sand or gravel blinding 50mm thick to surface of filling, including watering and rolling to achieve satisfactory compaction	m <sup>2</sup>	60		
	<b>CLASS W: WATERPROOFING</b>				
	<b>Damp-proof Membrane</b>				
W153	Supply and lay 1000 gauge polythene sheet DPM sheet over hardcore	m <sup>2</sup>	65		
	<b>Anti-Termite Treatment</b>				
X9.2	Supply and application of Termidor 25EC pesticide treatment for the control of termites to the soil beneath the foundations, executed by a Pesticides Control Products Board licenced professional pest control operator, with a ten year guarantee to surfaces of excavations	m <sup>2</sup>	65		
	<b>CLASS F: CONCRETE WORK</b>				
	<b>Mass Concrete Class 15/20mm Maximum Aggregate as Described in:-</b>				
F511	50mm Thick blinding under foundation concrete, column bases or over hardcore	m <sup>3</sup>	4		
	<b>Reinforced Concrete Class 25/20mm Maximum Aggregate as Described in:-</b>				
F621	Foundation trenches, column bases and entrance steps	m <sup>3</sup>	10		
F622	150mm Thick foundation and ground floor bed	m <sup>3</sup>	18		
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**MATOPENI SETTLEMENT**

**Bill 3.2: SANITATION COMPONENT**

**Bill NO. 3.2.3 PROPOSED BIO-CENTRE DEVELOPMENT**

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
F623	Ground level beam and foundation beams	m <sup>3</sup>	4		
F624	150mm Thick ramp laid to slope not exceeding 15 degrees from horizontal at entrance	m <sup>2</sup>	4		
F625	Extra over concrete for tamping whilst still green to make ribbed finish	m <sup>2</sup>	4		
	<b>Reinforced Concrete Class 25/20mm Maximum aggregate as Described in:-</b>				
F626	Isolated columns and piers in foundations <b>CLASS G: CONCRETE ANCILLARIES</b> <b>Fabric Reinforcement No. A142 Mesh Size 200 x 200mm Weighing 3.95 kgs Per m<sup>2</sup>, Including Bends, Tying Wire and Distance Blocks:-</b>	m <sup>3</sup>	4		
G562	Fabric reinforcement with minimum 200mm wide side and end laps, laid in bed	m <sup>2</sup>	50		
	<b>Provide and Fix High Tensile Steel Reinforcement to SRN 127 including Cutting, Bending, Propping with Spacers and Tying as Specified :-</b>				
G522	Reinforcement, all diameters	Kg	2,170		
	<b>Formwork</b>				
	<b>Provide and Fix Shuttering Including Propping, Strutting and Striking, all as Specified</b> <b>Sawn Formwork - Class F1 Finish:-</b>				
G242.1	Vertical sides of column bases, columns, sides of foundations and steps in foundations	m <sup>2</sup>	140		
	<b>Wrot Formwork - Class F3 Finish:-</b>				
G242.2	Edges of beds, pavings, plinths and risers of steps not exceeding 300mm wide	m <sup>2</sup>	10		
	<b>CLASS U: MASONRY</b>				
	<b>Walling. Supply, jointing with Cement Mortar (1:3) or otherwise specified, including reinforcing with 20 swg Hoop Iron at alternate course.</b>				
	<b>Foundation/ Sub structure walling-</b> Supply, joint with sand cement motar 200mm thick Load bearing Natural Stone masonry walling as specified in the drawings. Stone dressing to be specified and approved by the Engineer. Minimum compressive strength of 10N/mm <sup>2</sup>	m <sup>2</sup>	150		
U821	<b>Solid Concrete Block Walling With Concrete Blocks to BS 2028, Type "A" with Minimum Crushing Strength of 3.7N/mm<sup>2</sup> at 28 Days, Reinforced with 20 swg Hoop Iron at alternate course, and Bedded, Jointed and Pointed in Cement Mortar (1:4):-</b>				
U822	200 mm Walling	m <sup>2</sup>	30		
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**Bill 3.2: SANITATION COMPONENT**

**Bill NO. 3.2.3 PROPOSED BIO-CENTRE DEVELOPMENT**

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<b>Wall finishes</b>				
<b>G812.1</b>	Supply and place sand cement motar mix ratio 1:3, 12mm thick for all internal wall plastering to detail.	m <sup>2</sup>	100		
<b>G812.2</b>	Supply, prepare and apply three coats of bituminous paint as instructed rendered to ground floor soffit plinths and internal walls	m <sup>2</sup>	150		
	<b>CLASS W: WATERPROOFING</b>				
	<b>Damp-proof course:</b>				
	<b>Bituminous felt damp-proof course as described:-</b>				
<b>W153</b>	Supply and install approved bituminous felt damp proof course 200mm Wide under walls. 150 mm laps ; horizontal, 1 no. layer, bedded in cement sand (1:3)mortar	m	60		
<b>W193</b>	Ditto 100mm Wide under walls	m	20		
	<b><u>DOME</u></b>				
	<b>CLASS F: CONCRETE WORK</b>				
	<b>Supply and Place</b>				
	<b>Reinforced Concrete Class 25/20mm Maximum Aggregate as Described in:-</b>				
<b>F523</b>	Curved surfaces.	m <sup>3</sup>	22		
	<b>Solid Concrete Block Walling With Concrete Blocks for dome to BS 2028, Type "A" with Minimum Crushing Strength of 3.7N/mm<sup>2</sup> at 28 Days, Reinforced with 20 swg Hoop Iron at alternate course, and Bedded, Jointed and Pointed in Cement Mortar (1:4):-</b>				
	<b><u>CLASS U: MASONRY</u></b>				
<b>U823</b>	100 mm Walling	m <sup>2</sup>	110		
	<b>Wall finishes</b>				
<b>G812.1</b>	Supply and place sand cement motar mix ratio 1:3, 12.5mm thick for all wall plastering to detail.	m <sup>2</sup>	220		
	<b><u>CLASS G: CONCRETE ANCILLARIES</u></b>				
	<b>Wrot Formwork - Class F3 Finish:-</b>				
<b>G211</b>	For all concrete works	m <sup>2</sup>	210		
	<b>Provide and Fix High Tensile Steel Reinforcement to SRN 127 Including Cutting, Bending, Propping with Spacers and Tying as Specified :-</b>				
<b>G242</b>	Reinforcement, all diameters	Kg	200		

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**Bill 3.2: SANITATION COMPONENT**

**Bill NO. 3.2.3. PROPOSED BIO-CENTRE DEVELOPMENT**

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<b>CLASS I: PIPEWORK - PIPES</b> <b>Pipework. Supply and install</b>				
<b>I512</b>	Supply and fix 20mmø GI pipes with coupling units including gas valve. Allow for installation through concrete to dome	m	30		-
	<b>SUPERSTRUCTURE</b>				
	<b>CLASS F: CONCRETE WORK</b>				
	<b>Reinforced Concrete Class 25/20mm as Described in:</b>				
<b>F651</b>	First floor slab, stair case and tank plinth	m <sup>3</sup>	10		
<b>F652</b>	Columns and beams including support members to tank plinth	m <sup>3</sup>	10		
<b>F653</b>	75mm thick, 500mm x1000mm wide, 900mm high raised plinth in shower units for supported on masonry walling support at ends and center I washrooms and dressing area. Finishing with 200mm x 300mm ceramic tiles on top and front face (measured separately)	m <sup>3</sup>	6		
	<b>CLASS G: CONCRETE ANCILLARIES</b>				
	<b>Provide and Fix Shuttering Including Propping, Strutting and Striking, all as Specified</b>				
	<b>Wrot Formwork - Class F3 Finish :-</b>				
<b>G261</b>	Vertical sides of columns	m <sup>2</sup>	30		
<b>G262</b>	Sides and soffits of beams	m <sup>2</sup>	110		
<b>G263</b>	Edges of beds, pavings, plinths and risers of steps not exceeding 300mm wide	m <sup>2</sup>	10		
	<b>Reinforcement</b>				
	<b>Provide and Fix High Tensile Steel Reinforcement to SRN 127 Including Cutting, Bending, Propping with Spacers and Tying as Specified :-</b>				
	Supply and fixing of all assorted reinforcement bars in roof slab, staircase, columns, beams, Bucket placing bay, tank base slab and floor slab				
<b>G527</b>	Reinforcement, all diameters	Kg	2,630		
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**Bill 3.2: SANITATION COMPONENT**

**Bill NO. 3.2.3. PROPOSED BIO-CENTRE DEVELOPMENT**

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<b>CLASS U: MASONRY</b>				
	<b>External Walls</b>				
	<b>Solid Concrete Block Walling With Concrete Blocks to BS 2028, Type "A" with Minimum Crushing Strength of 3.7N/mm<sup>2</sup> at 28 Days, Reinforced with 20 swg Hoop Iron at alternate course, and Bedded, Jointed and Pointed in Cement Mortar (1:4):-</b>				
U821	200mm Thick walling	m <sup>2</sup>	130		
	<b>Labours</b>				
U822	Extra over walling for ruled horizontal and flush vertical joints	m <sup>2</sup>	140		
	<b>Precast Concrete Louvre Block Walling :-</b>				
	<b>Internal Walls</b>				
	<b>Solid Concrete Block Walling With Concrete Blocks to BS 2028, Type "A" with Minimum Crushing Strength of 3.7N/mm<sup>2</sup> at 28 Days, Reinforced with 20 swg Hoop Iron at alternate course, and Bedded, Jointed and Pointed in Cement Mortar (1:4):-</b>				
U823	200mm Thick walling	m <sup>2</sup>	30		
U824	100mm Thick walling	m <sup>2</sup>	90		
	<b>CLASS W: ROOF COVERINGS</b>				
	<b>Pre-painted Gauge 24 IT5 Roofing Sheets Laid at 22.5° on: Timber Trusses. Supply and install</b>				
W371.1	Roofing Sheets. 28 gauge pre-painted iron sheets	m <sup>2</sup>	60		
W371.2	Polycarbonate Transparent Roofing sheets or approved equivalent	m <sup>2</sup>	50		
	<b>Extra Over Roofing Sheets For:-</b>				
W371.3	Ridge and hip cappings	m	20		
	<b>CLASS O: TIMBER</b>				
	<b>Roof Trusses, Other Members- Hip and valley rafters, struts ties purlins, king posts</b>				
	<i>Supply and fix as per drawings</i>				
	<b>Double Pitch Roof Truss With 600mm Eaves Projection, in 150 x 50mm Rafters, Ceiling Joists, Struts and Ties in Sawn Cypress Grade II Seasoned and Pressure Impregnated with Wood Preservative and Timber Joints With Bolted and Nailed Connections to the Engineer's Approval :-</b>				



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4.40	Equal truss 3250mm clear span and 800mm high	Nr	0		
4.50	Equal truss 4500mm clear span and 1100mm high	Nr	0		
	Other Roof Members				
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**Bill NO. 3.2.3. PROPOSED BIO-CENTRE DEVELOPMENT**

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<b>Sawn Cypress Grade II Maximum Moisture Content 12% Seasoned and Pressure Impregnated with Wood Preservative and Timber Joints with Bolted and Nailed Connections to the Engineer's Approval:-</b>				
O811	150 x 50mm rafters	m	50		
O812	150 x 50mm bottom, ends and top chords	m	100		
O814	75 x 50mm internals	m	170		
O815	150 x 50mm kingpost	m	10		
O816	50 x 50mm purlins	m	70		
	<b>ACCESSORIES</b>				
O817.1	100 x 50mm Wall plate tied to wall with 20 s.w.g. hoop iron at 900mm centres and bedded in cement mortar (1:4) on top of wall	m	10		
	<b>Sundries</b>				
O817.2	Bed wall plate in cement mortar (1:4)	m	10		
	<b>Joinery</b>				
	<b>General Timbers</b>				
	<i>Supply and install</i>				
	<b>Wrot Prime Grade Cypress, Including Finishing With Three Coats First Quality Gloss Paint :-</b>				
O818	250 x 40mm Fascia board	m	30		
O819	Tongue & Groove (T&G) Boarding on underside of roof overhang, including provision of roof venting holes with gauze.	m <sup>2</sup>	30		
	<b>ACCESSORIES</b>				
	<b>Extras Supply and fix</b>				
O820.1	150 x 150mm gutter fixed to fascia board and barge boards with holder bats, including painting	m	30		
O820.2	Extraover gutter for pipe outlet	nr	2		
O820.3	Ditto closed ends	nr	4		
O820.4	100mm diameter down pipes fixed to wall with clips	m	15		
O820.5	Extra over pipe for swan neck bend	nr	2		
O820.6	Ditto horse shoe bend	nr	2		
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**Bill NO. 3.2.3. PROPOSED BIO-CENTRE DEVELOPMENT**

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<b>CLASS N: METALWORK</b>  <i>Supply and Fix</i>  <b>Steel Doors</b>  <b>Pressed Metal Louvre Doors</b>  <b>Supply and Fix the following Pressed Metal Louvre Doors with 100 x 50mm Stiles and Top Rails, 150 x 50mm Middle and Bottom Rails With Pressed Metal Infill Louvres and 100 x 50mm Pressed Metal Frames, Including Hinges, Pad Bolts and Tower Bolts, All To Manufacturer's Details, with three coats gloss paint complete with Opening Accessories Including Bedding and Pointing Around Frames in Cement Mortar:-</b>				
N190	Single door size 900 x 2400mm high (D2)	Nr	6		
	<b>Staircase</b>  25 x 3mm CHS handrail welded to 300mm horizontal CHS (3No.on each side of staircase) and bolted to wall bolted to wall;spray painted.	m	30		
	<b>CLASS Z; SIMPLE WORKS INCIDENTAL TO CIVIL ENGINEERING WORKS</b>  <b>DOORS AND WINDOWS</b> <b>Doors and Door Frames</b>  <b>Supply and Fix 50mm Thick Prime Grade Cypress Panelled Door With 50 x 100mm Stiles and Top Rails,50 x 150mm Middle and Bottom Rails and Infill Panels in 50 x 100mm T &amp; G battens. Rate to include for 3 Nr 100mm steel heavy duty washered butt hinges, three lever mortice lock as 'Union Ref:2237' with a set of aluminium lever handles as "Union" Ref.681-06-02 and rubber door stop and three coats of gloss paint complete with bedding and pointing around frames in cement mortar.</b>  <i>Door Frames -Wrot Cypress Door Frames size 100 x 50mm with a suitable rebate to receive hinged door panel, including suitable mild steel clamps fixed to back of frame and fixing to door opening size and all necessary woodwork finishes (prepare, knot, prime, stop and apply two undercoats and one finishing coat hard gloss paint to woodwork):-</i>				
Z581	900mm wide x 2100mm high Door	Nr	11		
Z582	Double leaf full swing door size 1200 x 2400mm high	Nr	2		
Z583	Door size 900 x 2400 mm high with 990 x 140mm Georgian wired clear glass view panel- Entrance to hall area	Nr	1		

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ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
<b>Z584</b>	Supply and fix Stainless steel buffer coat hooks	Nr	14		
<b>Z585</b>	Supply and fix 100mm D-pull handles	Nr	1		
<b>Z586</b>	50x25mm architrave	m	98		
<b>Z587</b>	15mm rounded quadrant	m	98		
	<b>PVC windows</b>				
	<b>Supply and Fix the Following Standard Section PVC Casement Windows, Including 4mm Thick Clear Sheet Glass Secured with Casement Screw-less Push-in Mechanism, Complete with Locking and Opening Accessories and Water Proofing Around Opening; fixing framing to concrete, window cills-all to Engineer's Approval.</b>				
<b>Z514</b>	Window size 1597 x 1197mm high in 3 equal panels, with upper part having 2 No. fixed and 1 No. top-hung ventilator, and lower half having 2No. Side-hung panels opening outwards, and 1No. Fixed panel	Nr	5		
<b>Z515</b>	Window size 1897 x 597mm high in 3 equal panels, with upper part having 1 No. fixed and 2 No. top-hung opening outside	Nr	5		
	<b>Burglar proofing comprising 25 x 3mm thick vertical and horizontal mild steel members at 150mm centres, including one coat chemical resistant paint and fixing on the following windows:-</b>				
<b>Z523</b>	Gauze size 1597 x 1197mm high	Nr	5		
<b>Z524</b>	Gauze size 1897 x 597mm high	Nr	5		
	<b>CEILING</b>				
	<b>12mm Thick Approved Plasterboard in Sheets Size 2400 x 1200mm Fixed to and Including 50 x 50mm Sawn Cypress Grade 2 Battens at 600mm Centres in Both Directions Complete with Gauge Jointing Material</b>				
<b>Z503</b>	Horizontal ceiling fixed to underside of trusses	m <sup>2</sup>	60		
<b>Z504</b>	12mm Cornice 50mm high, plugged	m	110		
<b>Z505</b>	Extra over ceiling lining for forming removable access trap door size 600 x 600mm with 100 x 38 mm sawn treated cypress trimming joists between tie beams, 120 x 20mm (finished ) wrot cypress frame all round and 20mm blockboard removable panel set loose on top of framing	Nr	2		

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**Bill NO. 3.2.3. PROPOSED BIO-CENTRE DEVELOPMENT**

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<b>CONCRETE ACCESSORIES</b>				
	<b>RENDERING</b>				
	<b>12.5mm Thick Cement and Sand Render as Described Externally on :-</b>				
<b>G813.1</b>	Blockwork and concrete surfaces	m <sup>2</sup>	120		
	<b>Screeds</b>				
	<b>Bonded cement and sand (1:4) screed bed in one coat, well bonded to concrete base as described:-</b>				
<b>G812.1</b>	25mm Thick screed laid level to receive floor tiling (measured separately)	m <sup>2</sup>	50		
<b>G812.2</b>	12mm (minimum) Thick Cement and sand backing (1:4) with approved plasticiser to receive granito floor laid to skirtings, treads and risers (measured separately)	m <sup>2</sup>	30		
	<b>Bonded cement and sand (1:4) screed bed in one coat with approved hardener incorporated in the mix, well bonded to concrete base as described:-</b>				
<b>G813</b>	12mm (minimum) Thick screed laid level to receive ceramic wall tiles (measured separately)	m <sup>2</sup>	180		
	<b>PLASTERING</b>				
	<b>12.5mm Thick Gauged Cement Plaster as Described Internally on :-</b>				
<b>G814</b>	Blockwork and concrete surfaces	m <sup>2</sup>	460		
	<b>CLASS V: PAINTING</b>				
	<b>Prepare and Apply Three Coats Exterior Quality Plastic Emulsion Paint:-</b>				
	<b>Externally on:-</b>				
<b>V523</b>	Fair-faced concrete surfaces	m <sup>2</sup>	120		
	<b>Internally on:-</b>				
<b>V524</b>	Plastered walls and surfaces	m <sup>2</sup>	348		
	<b>CLASS Z; SIMPLE WORKS INCIDENTAL TO CIVIL ENGINEERING WORKS</b>				
	<b>Wall Tiles</b>				
	<b>Approved Coloured Ceramic Floor Tiles as supplied by M/s Tile &amp; Carpet Centre, or other equal and approved</b>				
<b>Z452</b>	200 x 300mm Thick coloured wall tiles laid on backing (measured separately) and joints filled in approved filler to match colour of tiles	m <sup>2</sup>	170		

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ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<b>Sundries</b>				
<b>Z453</b>	PVC tiling edge to external corners of tiles (Provisional)	m	75		
	<b>FLOOR FINISHES</b>				
	<b>Ceramic Floor Tiling</b>				
	<b>Approved Coloured Ceramic Floor Tiles as supplied by M/s Tile &amp; Carpet Centre, or other equal and approved</b>				
<b>Z454.1</b>	300 x 300mm Non-slip Tiles laid on screed (measured separately) and joints filled in approved filler to match colour of tiles	m <sup>2</sup>	100		
<b>Z454.2</b>	Ditto but laid as skirting 100mm high	m	200		
	<b>PLUMBING AND DRAINAGE</b>				
	<i>Supply and install</i>				
	<b>Builders Work in Connection with Sanitary Fittings</b>				
	<b>Allow for cutting and leaving all necessary holes, notches, mortices, sinkings and chases both in the structure and its finishes and for all making good in connection with the following (All Provisional): -</b>				
	<i>All sanitary appliances shall be supplied and installed as complete units with all fittings, fixtures, pipework to manholes, waste grits &amp; traps and shall be as specified or approved equal. Rate to include for all 25 - 50mm dia pipework (PPR and GI pipes), Gate Valves and Taps (Pegler type, English) and connection to water supply and connection to foul water drainage System.</i>				
<b>Z530.1</b>	White vitreous china squatting level wash down Water Closet suit complete with high level 6 litre cistern and flush pipe.	Nr	6		-
<b>Z530.2</b>	Ditto but Water Closet (W.C) western type complete with Cistern	Nr	2		-
<b>Z530.3</b>	White vitreous china 1000mm x 1000mm basin washbasin complete with taps and waste water traps	Nr	4		-
<b>Z530.4</b>	Shower unit complete with shower head and all taps and connections to water tank and connection to foul water drainage	Nr	5		-
<b>Z530.5</b>	Mirror size 3000 x 600mm plugged and screwed to wall with chromium plated domed screws complete with 5mm thick foam back rest.	Nr	2		-
<b>Z530.6</b>	Toilet roll holder	Nr	8		-

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ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
Z530.7	Recessed soap tray	Nr	5		-
Z530.8	Chrome plated shower rail size 25mm diameter x 900mm long complete with fixtures	Nr	5		-
Z530.9	Supply and fix 12mmø GI water pipes with coupling units	Nr	10		-
Z530.10	Urinal bowl with urinal automatic flushing system complete with cistern and flush pipes	Nr	3		
11.91	Wall mounted washbasin as "Twyford's Entice 575" with one tap & 32mm waste. *basin mixer as "Europath Astra" with aerator & pop-up waste. *32mm CP bottle trap with tail pipe, cap-nut & wall flange as "Cobra" 340 & C-342/1/2/3	Nr			
	<b>Foul/Waste drainage</b>				
Z540.1	Excavate pipe trench in ordinary ground for 160mm diameter pipe between 0 - 2m and 600mm wide	m	30		
Z540.2	Provide lay and joint uPVC pipes golden brown Class 41 160mm diameter. Include for all fittings and connections to inspection chambers.	m	30		
	<b>Inspection Chambers</b>				
Z540	Excavate for, provide all materials, special shuttering e.t.c and construct 600 x 450mm internal dimensions in situ concrete inspection chambers on sewers diameter 160mm. Include for building in pipes, forming benching to falls, medium duty fibre reinforced frame and cover, depth n.e. 1.5m.	Nr	5		
	<b>WATER SUPPLY AND STORAGE</b>				
Z550	Allow a Provisional Sum of Kshs. 30,000 for Connection of Ablution Block to existing water supply system including provision of meters etc.	Item	P.S		
Z551	Allow for provision all materials and instal pipework as directed by the Engineer to provide a water selling point with requisite water meters (DN 25 mm cold water meter (Multijet, as specified in the specifications), stand pipes and taps.	Nr	1		
Z552	Provide and install an approved 1 Nr 10000 litres capacity plastic water tank complete with provisions for inlet pipe, outlet pipe, overflow pipe and drain pipe to site drainage and requisite chambers. The rate to also include for ball valve 32mm diameter medium pressure ball valve as approved by Engineer with brass stem and plastic float, screwed to threaded socket of tank including union. Provide and install burglar proofing with mild steel frame around the tank.	Nr	1		
	<b>ELECTRICAL WORKS</b>				

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Z561	Allow a Provisional Sum of Kshs. 150,000 for connection to nearest KPLC power.	Item	P.S		
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ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
<b>Z562</b>	Allow a Provisional Sum of Kshs. 200,000 for provision and installation of electric fittings and fixtures to the ablution block including all wiring, cabling, security lights, sockets, switches, Consumer Unit, Meters, lighting fixtures etc as directed by the Engineer.	Item	P.S		
	<b>SITE AND ANCILLARY WORKS</b>				
	<b>FOOTPATHS</b>				
<b>Z521</b>	Provide, lay and compact 150mm thick approved murram base to footpaths (Provisional)	m <sup>2</sup>	9		
<b>Z522</b>	Provide and apply approved weed killer to murram base for footpaths (Provisional)	m <sup>2</sup>	9		
<b>Z523</b>	Precast concrete paving in 600mm x 600mm x 60mm slabs jointed and grouted up in lime and sand (1:3)	m <sup>2</sup>	9		
	<b>FENCING AND GATES</b>				
<b>14.50</b>	Excavate for post holes, provide all materials and construct Barbed Wire Fence on wattle posts posts at 3m centre to centre including straining posts at every 10th post and additional posts at corners	m	60		
<b>14.60</b>	Provide all materials and construct metal gate 2.0m wide including 2 Nr. Pillars, footings, etc.	Nr	1		
	<b>SURFACE WATER DRAINAGE &amp; GRASSING</b>				
	<b>Earth Drains</b>				
<b>Z512</b>	Excavate trapezoidal earth drains to the lines and levels directed by the Engineer. Allow for trimming of sides to correct slopes and cart excavated material to tips. Depth to invert n.e. 2.0m	m <sup>3</sup>	14		
	<b>Culvert Pipes</b>				
<b>14.11</b>	Excavate trench depth n.e. 2.5 m, supply, lay and joint for 900mm diameter precast concrete ogee pipes including 200mm Class 20/20 concrete surround, backfill after laying of pipes, compact and cart away surplus material to tips	m	7		
	<b>Headwalls</b>				
<b>14.12</b>	Excavate for, provide all materials and construct 225 mm thick masonry headwalls including concrete Class 15/20 footings, all in accordance with standard drawings	Nr	2		
	<b>Grassing</b>				

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<b>Z515</b>	Spread Top Soil stacked on site (under item 1.12) in 100mm layers as directed, level and compact (light compaction) and prepare ready for grassing. Provide and plant approved grass and maintain until it takes root. The rate to include provision of manure approximate 0.01 kg per metre squared and spreading as directed by the Engineer	m <sup>2</sup>	24		
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ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<b>COLLECTION</b>				
1.00	From page 1				-
2.00	From page 2				-
3.00	From page 3				-
4.00	From page 4				-
5.00	From page 5				-
6.00	From page 6				-
7.00	From page 7				-
8.00	From page 8				-
9.00	From page 9				-
10.00	From page 10				-
11.00	From page 11				-
12.00	From page 12				-
13.00	From page 13				-
	<b>TOTAL FOR 1No. Biocentre</b>				-
	No. of Biocentres		1		
	<b>TOTAL FOR 1No. Biocenters Carried to Bill Summary</b>				-

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BILL 3.2.3.- COLLECTION PAGE		
ITEM	DESCRIPTION	AMOUNT (KShs)
	BILL 3.3.3 COLLECTION PAGE	
	TOTAL Bill 3.2.1 - SEWERS	-
	TOTAL Bill 3.2.2 - CUSTOMER CONNECTIONS (TYPE A)	-
	TOTAL Bill 3.2.3 - BIO CENTRE	-
Bill 3.2 TOTAL CARRIED TO Bill 3 SUMMARY PAGE		0.00