

KENYA PORTS AUTHORITY

CONSTRUCTION OF INTEGRATED STORM WATER DRAINAGE WITHIN THE PORT OF MOMBASA

Summary Bill of Quantities

Bill No	Description	Bill amount (KShs.)
1	Preliminaries and General	-
4	Site Clearance and Top Soil Stripping	-
5	Earthworks	-
7	Excavation and Filling for structures	-
8	Culverts and Drainage Works	-
9	Passage of Traffic	-
12	Natural material base and sub base	-
13	Graded crushed Stone (GCS)	-
15	Bituminous Surface Treatment	-
16	Bituminous Mix Bases, Binder Courses and Wearing Courses	-
17	Concrete works	-
19	Structural steel works	-
20	Road Furniture	-
22	Dayworks	-
24	Landscaping and Environmental and Social Safeguards	-
25	Hiv/ Aids Awareness and prevention	-
I	Sub - Total I (Bill No 1 to Bill No 25)	-
II	Add 10% contingencies	-
III	Add the sum of 5% for variations of price in accordance with Clause 70 of the Conditions of Contract.	-
IV	Sub - Total 2 (I+II+III)	-
V	PPRA Levy 0.03%	-
VI	Add 16% of Sub-Total 2 for Value Added Tax	-
VII	Grand Total carried forward to Form of Bid (IV+V)	-

BILL OF QUANTITIES: No. 1 Preliminary and General

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE	TOTAL
1.1	Allow for provision of As-Built Drawings in accordance with the Specifications. The drawings to be in A1 and in Pdf and editable softcopy be handed over to the client on inspection and verification that all works are included.	LS	1		-
1.2	Allow for a provisional sum of Kshs 1,000,000 for setting out works, including establishing reference lines, bench marks, grid lines, site control points, and alignment of all structures as per datum aligning with employer datum .	LS	1		
1.3	Allow for provision of Performance Security in accordance with the Conditions of Contract	LS	1		-
1.4	Allow for provision of Insurance of Works, Materials and Contractor's Equipment in accordance with the Conditions of Contract	LS	1		-
1.5	Allow for provision of insurance for Workmen Injury Benefits	LS	1		-
1.6	Allow for provision of Third Party Insurance (including Employer's Property) all in accordance with the Conditions of Contract	LS	1		-
1.7	Progress Photographs				
1.7a	Allow for sum ksh 250,000 on progress photographs and video to capture and printing then documentation, Site progress photos for key construction stages for Monthly reports with captions and GPRS locations	LS	1		-
1.8	Signboards				
1.8a	Provide, erect and maintain two (2) publicity signboards as directed by the Engineer.	No.	2		-
1.9	Engineer's Staff Houses				
1.9a	Provide and maintain accommodation for the Supervisor's Representative staff for the duration of the Contract including DLP in accordance with the specifications as follows: Ownership to revert to the Contractor.				
	(i) House Type I - 1 No. Month	Months	28		-
	(ii) House Type II - 4 No	Months	112		-
1.10	Engineer's Staff Offices and Laboratories				
1.10a	Allow for the establishment of engineer's office for the full duration of the construction period to be maintained in safe, clean, and functional condition throughout the construction phase.	Items	1		-
1.10b	Provide and maintain furniture and surveying equipment for the Engineer's office as specified for the entire Contract period	LS	1		-
1.10c	Include a percentage of item 1.10b for contractor's overheads and profit	%	10		-
1.11	Attendance upon the Engineer and his Staff				
1.11a	Allow a sum of Kshs 1,500,000 for the site supervision, quality monitoring, inspections, progress reporting, and attendance as directed by the Engineer against receipts.	LS	1		-
1.11b	Allow for support staff for the Engineer (5No.)	LS	1		-
1.11c	Include a percentage of item 1.11a and b for contractor's overheads and profit	%	10		-
Total Carried Forward to Next Page					-

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE	TOTAL
Total Brought Forward from Previous Page					-
1.12	Provision of Vehicles				
1.12 a	Provide, fuel, and maintain for the duration of the contract including DLP, complete with drivers and comprehensive insurance, two (2) new 4WD double cabin pickups of minimum 2800cc Turbo diesel engine capacity complete with weather shields, stainless steel nudge bar, tonneau cover; hard sports type, lockable all as per Clause 138 of special specifications and approved by the Engineer, inclusive of the first 4000km per vehicle month. The vehicles to revert back to the Employer at the end of the Contract	Items	2		-
1.12b	Extra over Item 1.12 a for mileage over 4000km per month per vehicle.	Km	96,000		-
1.13	Relocation of services				
1.13a	Allow for a sum of Ksh 25,000,000 for relocation of existing services as may be required during the execution of the works, to be expended as directed by the Engineer	LS	1		-
1.13b	Include a percentage of item 1.13a for contractor's overheads and profit	%	10		-
1.14	Confirmatory Testing				
1.14a	Allow for a provisional sum of Kshs 10,000,000 for Geotechnical investigation, ground investigation to ascertain underground existing services using trial pits, trenches, or a subsurface scanning machine, with a minimum depth of 0.5-1 m. as instructed by the Engineer	LS	1		-
1.14b	Include a percentage of item 1.14a for contractor's overheads and profit	%	10		-
1.15	Training of Employer's staff				
1.15a	Allow for sum ksh 10,000,000 for the knowledge transfer of Employer's staff for the entire duration of the project.	LS	1		-
1.15b	Include a percentage of items 1.15a for contractor's overheads and profit	%	10		-
1.16	Project Management				
1.16a	Allow for sum of ksh 12,000,000 factory visits to inspect material sources and assess quality.	LS	1		-
1.16b	Allow for sum of ksh 5,000,000 for Provision for the Dispute Resolution Committee for the entire duration of the project.	LS	1		-
1.16c	Include a percentage of items 1.16a & b for contractor's overheads and profit	%	10		-
Total of Bill No.1 carried forward to summary page					-

BILL OF QUANTITIES: No. 4 SITE CLEARANCE AND TOP SOIL STRIPPING					
ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
4.01	Site clearance				
	Note: No separate payments shall be made for hauling to spoil unsuitable excavation materials and the cost of such shall be included in the rates and prices				
4.01 a	Clear site including removal of trees (girth less than 300 mm), hedges, bushes and other vegetation and other deleterious materials, grub up roots and backfilling of holes left by removal of stumps and roots in accordance with the Specifications, as shown on the drawings and as instructed by Engineer.	Ha.	0.4578		-
4.01 b	Cutting of trees of all girth above 300 mm including cutting of trunks, branches, uprooting and removal of all materials and complete with filling of depressions/pits by earth including liaison with concerned authorities for obtaining permissions.				-
	(i) REMOVAL OF TREES (Provisional)				
	Trees of girth: 500 mm - 1 m., locally disposed.	nr	12		-
	(ii) REMOVAL OF STUMPS (Provisional)				
	Stumps of diameter: less than 1m.,locally disposed.	nr	124		-
4.02	Topsoil stripping				
4.02a	Removal of top soil to a maximum depth of 200 mm including excavation, loading and disposal	m ³	179.40		-
4.03	Removal of structure and obstructions on drain wayleve including sorting out the dismantled material, disposal of unserviceable material and utilizing the serviceable material free of cost in permanent works .				
4.03a	Demolish existing rigid pavement platform slab , base and subbase to pave way for drainage construction, including saw cutting of edges where required, breaking, loading, hauling, and disposal of debris to an approved spoil site.	m ³	1,518.00		-
4.03c	Scarify and remove existing bituminous pavement WC ,Base and Subbase , to pave way for drainage construction, including saw cutting of edges where required, breaking, loading, hauling, and disposal of arisings to an approved spoil site.	m ³	289.00		-
4.03e	Reinstate existing inspection manholes and chambers disturbed during the works, including rebuilding walls where necessary, benching, plastering, replacing covers and frames, reconnection to existing pipes, and making good surrounding surfaces.	nr	114		-
4.03g	Clear and remove existing grassland and lawns to pave way for drainage construction, including stripping of turf, removal of organic matter, loading, hauling, and disposal to an approved spoil area, complete.	m	193.66		-
4.03h	Permanent reinstatement of Item 4.03g to original condition, including supply of materials, placement, compaction, finishing, and matching existing levels, thickness and surface finish as specified..	m	10		-
4.03i	Allow for sum of ksh 3,000,000 for Temporary removal of containers and reinstatement to facilitate drainage construction and rehabilitation at the Port Police Holding Area and G-Section Area.	LS	1		-
Total of Bill No.4 carried forward to summary page					-

BILL OF QUANTITIES: No.5 EARTH WORKS

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
	No separate payments shall be made for the overhaul of the material and the cost of such haulage shall be included in the rates and or prices.				
5.01	Cut to spoil in soft material	m ³	4,276		-
5.02	As Item 5.01 but in hard material	m ³	1,069		-
5.03	Prepare original ground for attenuation pond embankments by scarifying to 200 mm depth, leveling, and compacting by rolling to achieve the specified dry density.		150		-
5.04	Provide, spread, water, process and compact 300 mm improved subgrade to 100% MDD (AASHTO T99) in two layers of 150 mm thickness.	m ³	204		-
5.05	Provide and fill in hard material as shown in the drawing and as directed by the Engineer.	m ³	188		-
5.06	Provide, Spread and compact rockfill in swampy areas	m ³	430		-
Total of Bill No.5 carried forward to summary page					-

BILL OF QUANTITIES:No.7 EXCAVATION AND FILLING FOR STRUCTURES					
ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
	NOTE: No separate payment shall be made for the haulage for these items as they shall be deemed to have been included in the Contractor's rates.				
7.01	Excavate in soft material for structures such as culverts, Box culverts, wing walls, gabions as directed by the engineer.	m ³	1313		-
7.02	As for item 7.01 but in hard material	m ³	1312		-
7.03	Providing, placing selected granular backfill material behind wing walls to any depth and compaction complete as per the drawings and Technical Specifications and as instructed by Engineer.	m ³	1,500		-
7.1 Excavation To Be Kept Dry					
7.10a	Allow for sum of Ksh 1,000,000 for temporary river diversion and/or dewatering during construction of the attenuation pond and box culvert at Berth 19B Outfall, including provision of pumps, diversion channels, cofferdams, sandbags, temporary pipes, fuel, labour, maintenance, monitoring, and removal after completion, all necessary to keep the works dry.	LS	1		-
7.11 Stone Pitching					
7.11a	Provide and place grouted stone pitching using hard, durable stones, roughly dressed with dimensions not less than 200 mm and volume not less than 0.01 m ³ . Rounded boulders shall not be used. Stones shall be properly bedded, wedged, and compacted to form a stable foundation. All interstices shall be wetted and grouted with 1:4 cement:sand mortar, thoroughly rammed into the joints and finished flush with the pitched face. Rate to include supply of materials, transport, placing, wedging, grouting, and finishing.	m ²	450		-
7.13 Rip Rap					
7.13a	Provide well-shaped, hard, dense and durable stone, laid in close joints from the bottom to the top of embankment slopes, carefully packed, embedded and tightly set to form riprap slope protection, complete as shown on drawings and as directed by the Engineer.	m ²	270		-
Total of Bill No.7 carried forward to summary page					-

BILL OF QUANTITIES: NO.8 CULVERTS AND DRAINAGE WORKS.

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
	No separate payment shall be made for the haulage of surplus or unsuitable excavated material and the cost of such haulage shall be included in the rates and/or prices				
	8 Excavation for Culvert and Drainage Works				
8.01	Excavate in soft material for pipe culverts, rectangular U drains, subsoil drains, headwalls, wing walls, aprons, toe walls, drop inlets, mitre drains, catch water drains and median drains including support of trench sides, backfilling and compacting as specified or as instructed by the Engineer.	m ³	964		-
8.02	As Item 8.01 but in hard material	m ³	584		-
8.03	Allow for hacking in existing concrete drain for junction connections	m ³	143		-
8.04	Excavate/ desilt, grade to shape inlets outfalls, side drains to free flow conditons including cart to spoil any excess grass debris and soils as and where directed by the Engineer.	m ³	120		-
8.05	Provide, fix, maintain and remove temporary timber supports (shoring) to trench sides as required, depending on trench depth and soil conditions, including struts, walers, poling boards and all necessary bracing to prevent collapse and ensure safety during excavation works.	m	70		-
	8.1 Concrete Pipes				
8.11	Provide, lay and joint 450 mm Internal Diameter (I. D.) Reinforced Cement Concrete pipes. The rate to include backfilling and compaction to drain formation level	m	538		-
8.12	Ditto item 8.06 above but 300mm I.D. Reinforced Cement Concrete pipes	m	153.00		-
8.13	Ditto item 8.06 above but 150mm I.D. Reinforced Cement Concrete pipes	m	278.00		-
	8.2 Concrete Beds ,Surrounds and Haunches				
8.21	Provide place and compact class 25/20 concrete to headwalls, wingwalls, aprons and toe walls to pipe culverts.	m ³	160		-
8.22	Provide place and compact 150mm class 15/20 concrete to beds and surround to 450mm diameter pipes (0.4059m ³ /m)	m ³	150		-
8.23	Ditto item 8.11 above but 300mm I.D. Reinforced Cement Concrete pipes (0.289 m ³ /m)	m ³	100		-
8.24	Ditto item 8.11 above but 150mm I.D. Reinforced Cement Concrete pipes (0.185 m ³ /m)	m ³	37		-
8.25	Provide all materials lay and joint shallow IBD as directed by the Engineer to form mitre drains. Rate to include provision of 100mm well compacted bed and jointed by 1:3 cement mortar	m	374		-
	8.3 Mitre Drain , Cut-Off Drain, Catchwater Drains, Side Drains , Culvert Outfall Drains and Earth Dams				
8.31	Supply and install gully pots complete with gratings, including excavation, bedding, concrete surround, connection to drainage pipe, backfilling, and reinstatement of surrounding surfaces.	nr	14		-
8.32	Provide and install 1200mm dia reinforced concrete manhole rings, step irons, and heavy-duty cast iron triangular access cover complete with backdrop. The cover shall have anti-breaking properties with impact toughness resistance greater than 8, tensile strength of 55 MPa, adequate compressive strength, modulus of elasticity as specified, and cold and hot resistance with water absorption not exceeding 0.4%, complete.	No.	31		-
Total Carried Forward to Next Page					-
ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
Total Brought Forward from Previous Page					-
8.33	Provide, lay, fix and set in position Grade A heavy-duty manhole cover and frame ,size 600 mm × 600 mm, including bedding in cement mortar, alignment to finished surface level, anchoring, and all necessary labour and materials.	No.	44		-

8.34	Provide, lay and joint 225mm × 600mm × 75mm IBD concrete side slabs, laid to line and level and jointed with 1:3 cement:sand mortar, including preparation of bed, alignment, finishing of joints and curing,	m	90		-
Total of Bill No. 8 carried forward to summary					-

BILL OF QUANTITIES: NO.9 PASSAGE OF TRAFFIC

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
9.06	Passge of traffic through the works				
9.06a	Allow for sum of Ksh 2,500,000 the safe passage of traffic through the works by providing temporary diversion routes, traffic management with flagmen, signs, barriers, and cones, and by creating alternative paths for non-motorized traffic, including temporary crossings over excavations where necessary, to ensure continuous and safe movement during construction.	LS	1		
9.07	Signs , Barriers and Lights				
9.07a	Provide, install, and maintain approved traffic signs, barriers, and safety devices to ensure safe passage of vehicles and pedestrians during construction, including relocation, adjustment, and removal upon (i) signages (ii) Barricades - drum type (iii) Barricades - steel portable (iv) Red Lanterns	Nos Nos m Nos	30 25 100 20		- - - -
Total of Bill No. 9 carried forward to summary					-

BILL OF QUANTITIES: NO.12 NATURAL MATERIAL BASE AND SUBBASE

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
	Measurements and payment by method 'A' as defined in the standard specifications. No separate payments shall be made for the overhaul of material and the cost of such haulage shall be included in the rates and or prices				
12.04	Laying and Compacting				
12.04a	Provide, place, grade, and compact approved natural gravel material as road base for new roads, junctions, and access points. Compaction shall follow the road alignment and smooth curves, ensuring uniform density. Material shall comply with LAA, ACV, Plasticity Index (PI), and soaked CBR \geq 4 days at 95% Maximum Dry Density (MDD). Rate to include supply of gravel, spreading, grading, compaction, watering, rolling, and finishing to required levels and lines.	m³	577		-
Total of Bill No. 12 carried forward to summary					-

BILL OF QUANTITIES: NO.13 GRADED CRUSHED STONE SUBBASE AND BASE

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
	Measurements and payment by method 'A' as defined in the standard specifications. No separate payments shall be made for the overhaul of material and the cost of such haulage shall be included in the rates and or prices				
13.06	Laying and Compacting Graded Crushed Subbase and Base				
13.06a	Provide, spread, compact, and level 200 mm thick crushed stone / weathered rock, ensuring a minimum CBR of 30, in accordance with the existing pavement structure specifications, including grading, compaction to required density, watering, and finishing to the required levels and alignment	m ³	136		0.00
13.06b	Provide, spread, and level Graded Crushed Stone (GCS 25–40 mm) for railway track reinstatement, ensuring no damage to existing sleepers. Works to include supply of approved GCS, careful placement, levelling to correct profile, compaction where required, and cleanup. GCS shall be transported damp and in such a way that no segregation occurs	m ³	30		-
Total of Bill No. 13 carried forward to summary					-

BILL OF QUANTITIES: No. 15 BITUMINOUS SURFACE TREATMENTS AND SURFACE DRESSING

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
15.02B	Part B-Prime Coat and Tack Coat				
15.02B-1	Surface Preparation and MC-30 Bitumen Prime Coat: Prepare the surface of carriageway, accesses, and junctions by cleaning, removing loose debris, dust, and standing water. Heat and spray MC-30 cut-back bitumen uniformly at a rate of 1.0 litre/m ² , ensuring full penetration into the surface. The work includes provision of heating equipment, sprayers, labour, and all ancillary works required for complete and proper application.	Lt	1,434		-
15.02B-2	Surface Preparation and K1-60 Bitumen Emulsion Tack Coat: Clean and prepare surfaces by removing dust, loose particles, and moisture, then spray K1-60 bitumen emulsion as a tack coat at a rate of 0.3 litre/m ² . Ensure uniform coverage and that the emulsion forms a tacky surface to bond subsequent asphalt layers. Rate includes labour, equipment, emulsion supply, and all ancillary works required for full compliance with specifications.	Lt	1,434		-
Total of Bill No. 15 carried forward to summary					-

BILL OF QUANTITIES: No. 16 BITUMINOUS MIX BASES BINDER COURSES AND WEARING COURSES

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
	Note: No haulage will be paid for bitumen or chippings and this should be included in the rates tendered.				
	PART B Asphalt Concrete for Surfacing				
16.01-7B	Provide, lay, and compact Asphalt Concrete (AC) using modified bitumen and 0/14 mm aggregates on a prepared asphalt base layer, including spreading, leveling, compaction with vibratory roller, and finishing to the required thickness, levels, and smoothness	m ³	71		-
	PART C Dense Bitumen Macadam for Base				
16.01-8C	Provide, lay, and compact Dense Bituminous Macadam (DBM) using modified bitumen and 0/30 mm aggregates on a prepared granular base layer, including spreading, leveling, compaction with vibratory roller, and finishing to the required thickness, levels, and smoothness.	m ³	25		-
Total of Bill No. 16 carried forward to summary					-

BILL OF QUANTITIES NO.17 CONCRETE WORKS

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
	Note: No overhaul will be paid for seperately under this item and the cost of hauling will be deemed to have been included in the rates.				
17.1	Provide, lay, and compact 225mm thick Class 40/20 pavement quality concrete to the carriageway to attain the required flexural and compressive strength at 7 days and 28 days; complete with compliance testing; all in accordance	m ³	38.7		-
17.2	Provide and fix on the carriageway and parking interlocking concrete paved unishaped blocks (monolithic single layer precast concrete blocks) of any specified colour/size & shape, with approved pattern of 80 mm thick having average crushing strength of 50 N/mm ² on average thickness of 50 mm complete with uniformly graded river sand cushioning properly compacted with a mechanical compactor to required level, grade and camber as instructed by Engineer. Rate to include bedding sand and that to fill the joints, ties and edge restraints	m ²	960		-
17.3	Provide place and compact 150mm class 15/20 concrete to beds for structures	m ³	567		-
17.4	Provide place and compact class 30/20 concrete to bottom slabs, top slabs, side walls, wing walls and trapezoidal drains	m ³	1044		-
17.5 Surface Finishes					
	Provide, erection and dismantling formwork and falsework shall be so constructed that they will support the loads imposed on them by the fresh concrete together with additional stresses imposed by vibrating equipment and by construction traffic.				
	Class F2 or F3 finish				
17.5a	Plane and trim vertical surfaces to a width not exceeding 0.2–0.4 m, including removal of loose material, smoothing, and preparation for subsequent works (e.g., jointing, surfacing, or finishing)	m ²	651		-
17.5b	Plane and trim horizontal surfaces to a width not exceeding 0.2–0.4 m, including removal of loose or uneven material, smoothing, and preparation for subsequent works (e.g., surfacing, jointing, or finishing),	m ²	510		-
17.31 Fixing for Reinforcement					
17.31a	Provide, cut, bend, and fix high tensile steel reinforcement bars of any diameter, in accordance with BS 4461, including all necessary binding, supports, and placement as per approved drawings and specifications, complete.	KG	86,210		-
17.31b	Supply and fix A142 BRC welded steel mesh reinforcement (6mm diameter wires at 200mm × 200mm spacing, 142mm ² /m each way) in accordance with BS 4483, including cutting, lapping, tying with binding wire, supporting on approved spacers/chairs, maintaining specified concrete cover, and placing in position for trapezoidal drains	KG	342		-
17.32 Precast Concrete					
17.32a	Provide, precast, supply and install precast concrete marker posts at connections or intersections of drains or chambers, and at intervals of 200m where applicable. The rate shall include concrete surrounds, backfilling and tagging/naming.	nr	17		-
Total of Bill No. 17 carried forward to summary					-

BILL OF QUANTITIES NO.19 STRUCTURAL STEELWORK

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
	BS 4360 WELDABLE STRUCTURAL STEELS				
19.05	FABRICATION				
19.05A	Supply, fabricate and install heavy-duty mild steel screen security grill to drain outfall, comprising vertical steel bars welded to horizontal steel frames, complete with lifting eye, anchor bolts, cutting, welding, fixing, corrosion protection, and all necessary accessories, ot befully installed .	m2	3.84		-
19.05B	Provide a fabricated drainage grating with frame, accurately fixed and aligned to match the size of the drainage channel. The grating shall include an opening mechanism and be made of anti-corrosion material, level with adjoining platforms. The grating shall be labeled with proper nomenclature. Acceptable products include Gatic Drainage Grate (cast iron or fabricated equivalent), compliant with EN 124 (European standard for manhole covers and gully tops), Load Class F900 (supports up to 900 kN, suitable for very heavy-duty industrial, dockside, or port areas). Anti-corrosion materials shall include galvanized steel, stainless steel (Grade 304/316), or cast iron with protective coating.	m	151		-
19.06	Prepare steel surfaces and apply anti-corrosion protection by either hot-dip galvanizing or application of red oxide primer followed by bituminous or epoxy paint system, as specified. Surface preparation shall include cleaning, removal of rust, scale, grease, and loose material by wire brushing, sand blasting, or approved method prior to coating. Rate to include all materials, labour, equipment, and finishing.	m2	3.84		-
Total of Bill No. 19 carried forward to summary					-

BILL OF QUANTITIES: No.20 ROAD FURNITURE

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
20.07	Kerbs				
20.07a	Provide, lay and joint 125mm x 250mm half- battered kerbs to straight and radius greater than 12m laid on a 100mmx225mm concrete class 15 bed and haunch.	m	210		0.00
20.07b	E.O. item 20.07a but to radii less than 12m	m	50		0.00
Total of Bill No. 20 carried forward to summary					-

BILL OF QUANTITIES: No.22 DAY WORKS

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
22	DAYWORK				
A	LABOUR				
	The rates inserted herein include for all costs such as insurance, travelling time, overtime, accomodation, use and maintanance of small tools of trade, supervision, overheads and profit. Only time engaged upon work will be paid for				
22.1	Unskilled Labour	Hrs	15		-
22.2	Timberman	Hrs	15		-
22.3	Stone Mason	Hrs	25		-
22.4	Carpenter	Hrs	15		-
22.5	Blaster (Certified)	Hrs	1.5		-
22.6	Pipelayer	Hrs	25		-
22.7	Painter	Hrs	25		-
22.8	Surveyor	Hrs	25		-
22.9	Foreman	Hrs	15		-
22.10	Watchman (Including use of firewood, lights, day, night, Sunday and public holiday watching)	Hrs	15		-
B	MATERIALS				
	All materials are to comply with the specifications. The rates inserted herein are to include for delivery to site, storage, handling, overheads and profits				
22.11	Ordinary Portland Cement	Tonne	3		-
22.12	Mild steel (Any size from 6mm to 25mm dia)	kg	5		-
22.13	High tensile steel (Any size from 8mm to 25mm dia.)	kg	5		-
22.14	Fine aggregate for concrete	m ³	1		-
22.15	Coarse aggregates for concrete	m ³	1		-
22.16	Use of shuttering Timber	m ²	5		-
22.17	Use of timbering for trenches	m ²	5		-
22.18	Gelgnite	kg	5		-
22.19	Fuse (Including detonators)	m	5		-
22.20	Murram	m ³	25		-
22.3	Concrete block Type 'A'	m	500		-
22.31	Concrete block Type 'B'	m	500		-
22.32	Hardcore	m ³	150		-
22.34	Concrete Class 15/20	m ³	5		-
22.35	Concrete Class 20/20	m ³	5		-
22.36	Concrete Class 25/20	m ³	5		-
22.37	Concrete Class 35/20	m ³	5		-
22.8	Allow for 500,000 barricading of site and provisional of safety measures in entire project period	P.c	1		
22.9	Allow for ksh 500,000 for Supply other kinds of materials than above and ordered by the Engineer	P.c	1		
Total Carried Forward to Next Page					-

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
Total Brought Forward from Previous Page					-
C	PLANT				
	The rates inserted herein should include for all operational and maintenance costs, fuel, oil, grease, operators, turnboys, supervision, overheads and profits. Only the time actually employed for the works will be paid for and the rates should include for idle, travelling and overtime.				
22.38	Compressor	Hrs	2		-
22.39	Trencher / Excavator	Hrs	2		-
22.4	Concrete vibrator (Petrol or Diesel)	Hrs	2		-
22.41	Concrete mixer 14/10 (Including batch weighing gear and drag feed shovel)	Hrs	5		-
22.42	Excavator Breaker	Hrs	2		-
22.43	Dumper 0.38 m ³	Hrs	2		-
22.44	Mobile crane - 3Mg	Hrs	5		-
22.45	Pipe Jacking / Microtunneling Assembly	Hrs	5		-
22.46	10 Tonne lorry (Tipper)	Hrs	2		-
22.47	Portable water pump 50mm diameter inclusive of hoses, couplings etc)	Hrs	15		-
22.48	Oxy-Acetylene cutting and welding set including oxygen and acetylene	Hrs	5		-
22.49	Electric welding set including electrodes	Hrs	2		-
Total of Bill No.22 carried forward to summary page					-

BILL OF QUANTITIES NO: 24 LANDSCAPING AND ENVIRONMENTAL & SOCIAL SAFEGUARDS

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
24.01	Landscaping				
24.01a	Allow for sum of ksh 1,000,000 for compensatory Plantation of approved species of trees on green buffers , watering, manure, maintenance during construction period defect liability period.	LS	1		
24.02	Environmental Mitigating Measures and social safegurds				
24.02a	Allow for sum of ksh 500,000 monitoring of Air quality for SPM, PM10, SO2, NOX, CO & HC in each season i.e. summer, winter & post monsoon with a frequency of 24 hr/day for two consecutive working days per week for two weeks during construction period at three locations	LS	1		
24.02b	Allow for sum of ksh 500,000 monitoring of Noise levels once in every season for two non consecutive days per week for 2 weeks with an interval of 10 minutes for 24 hr at three locations.	LS	1		
24.02c	Allow for sum of ksh 1,000,000 ,Testing of water quality at two locations along the project for pH, BOD, TSS, TDS, DO, turbidity and O&G once in each season i.e. summer, winter & post monsoon season.	LS	1		
24.02d	Allow for sum of Ksh 1,000,000 on ESMP Monitoring , Reporting and implementation.	LS	1		
24.02e	Allow for sum of 1,000,000 on Climate Impact Mitigation (GHG Reduction initiatives)	LS	1		
24.02f	Allow for sum ksh 1,000,000 on water quality protection and prevetion of contamination of marine and freshwater bodies	LS	1		
24.02g	Allow for sum of ksh 600,000 for training on ESMP AND GHG awareness for entire period of project	LS	1		
24.02h	Allow for sum of ksh1,000,000 for annual statutory audits including Health & Safety, Fire, and Workplace compliance inspections.	LS	1		
24.02i	Allow for sum of ksh 1,000,000 for statutory trainings for staff, including Fire Safety and First Aid, as required by law.	LS	1		
24.02j	Allow for sum of ksh 1,000,000 for stakeholder engagements, including community liaison, consultation meetings, and reporting.	LS	1		
24.02k	Allow for sum of ksh 1,100,000 for Grievance Redress mechanism, including investigation, reporting, and follow-up actions.	LS	1		
Total of Bill No. 25 carried forward to summary					-

BILL OF QUANTITIES NO: 25 HIV/AIDS Awareness and prevention Campaign

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT RATE (Kshs)	TOTAL
25.01	HIV /AIDS				
25.01a	Allow a Provisional Sum of Kshs.2,050,000 to Institute a HIV/AIDS and COVID-19 Awareness campaign and Training	Provisio nal Sum	1.00		
25.02a	Contractor's overheads and profits as a percentage of item 25.03B	%	10.00		-
Total of Bill No. 25 carried forward to summary					-

APPENDIX TO BILL ITEM 1.10(b)

(All items are provisional and contractor shall obtain engineer's approval before placing orders)

Item No.	Description	Unit	Quantity	Rate	Amount (KShs)
	FURNITURE AND EQUIPMENT FOR THE ENGINEER'S OFFICE				
1.04A-01	Allow for 2 high-performance 16" laptop features up to an Intel® Core™ i9-14900HX processor (5.8 GHz with Turbo Boost), up to 145W TGP NVIDIA® GeForce RTX™ 4080 GPU (12 GB GDDR6), a QHD 240 Hz IPS display with 3 ms response time, and OMEN Tempest Cooling for optimal thermal performance for client and engineers office	No.	2.00		-
1.04A-02	Tower desktop computers, Desktop Intel Core i9 12th Generation, 16 Cores / 20Threads, 32GB RAM, 1TB SSD, NVIDIA RTX 3070 8GB	No.	1.00		-
1.04A-03	Allow for 2 user licences for Autodesk Architecture, Engineering & Construction (AEC) Collection for 12months	No.	2.00		-
1.04A-04	Supply, deliver, install, and commission Konica Minolta Bizhub C554 digital multifunctional colour printer (print, copy, scan), complete with standard accessories and network connectivity	No.	1.00		-
1.04A-05	Electronic Scientific calculator 12 figures (Casio JR250 or similar)	No.	2.00		-
1.04A-06	Digital planimeter:OTT 30010 or similar	No.	1.00		-
1.04A-07	Heavy duty, dual purpose punching and binding machine as IBICOK or equivalent	No.	1.00		-
1.04A-08	Heavy duty stapling machine Ofrex size 66 or similar with 5000 staples	No.	1.00		-
1.04A-09	Stapling machine Ofrex size 50 or similar with 5000 staples	No.	4.00		-
1.04A-10	Heavy duty paper punch	No.	1.00		-
1.04A-11	Ordinary paper punch	No.	5.00		-
1.04A-17	Filing tray	No.	6.00		-
1.04A-18	First aid kit	No.	3.00		-
1.04A-19	Fire extinguisher	No.	4.00		-
1.04A-20	Supply and deliver 213 Litres Double Door Direct Cool Refrigerator, Blue (Model RE/249) complete with delivery, installation, and manufacturer's warranty	No.	4.00		-
1.04A-21	Hot and cold water dispenser, top-loading for 18.9 litre bottle	No.	4.00		-
1.04A-22	Portable table top electric fan, variable speed	No.	4.00		-
Subtotal carried over to next page					-

Item No.	Description	Unit	Quantity	Rate	Amount (KShs)
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Appendix to Bill Item No. 1.10(b)

	Brought forward from previous page				-
	OFFICE FURNITURE				
1.04A-23	Stationary cupboard, 1.2m ³ lockable	No.	1.00		-
1.04A-24	Steel filing cabinet, 4drawers, lockable	No.	4.00		-
1.04A-25	Conference table for 10 persons	No.	1.00		-
1.04A-26	Chairs for conference table	No.	10.00		-
1.04A-27	Desk 2.2 x 0.9m with lock -up drawers	No.	10.00		-
1.04A-28	Office table (2x1.2m)	No.	8.00		-
1.04A-29	Orthopaedic swivel chair with arms	No.	4.00		-
1.04A-30	Office chairs (standard)	No.	8.00		-
1.04A-31	Typist's desk	No.	1.00		-
1.04A-32	Typist's chair	No.	1.00		-
1.04A-33	Drawing table with 3 plan drawers under	No.	1.00		-
1.04A-34	Bookshelf,3 shelves 1.5m long to hold box files	No.	8.00		-
1.04A-35	Electric kettle 4 litres capacity and Thermos flasks 1.8 litre	Set	4.00		-
1.04A-36	Tea set for 12 persons, including cups, saucers, side plates, spoons, glasses	Set	2.00		-
	SURVEY EQUIPMENT				
1.04A-37	Supply, deliver, and commission Leica FlexLine TS03 R500 5" Total Station (Brand New), complete with tripod, prism, data collector, batteries, charger, carrying case, and 1-year manufacturer's warranty. and manufacturer's warranty.	No.	1.00		-
1.04A-38	Tribrach with optical plummet for total station, Leica GST/20 or equivalent	No.	1.00		-
Subtotal carried over to next page					-

Appendix to Bill Item No. 1.04(a)

ITEM NO.	DESCRIPTION	UNIT	QTY	Rate	AMOUNT (KShs)
	Brought forward from previous page				-
1.04A-39	Standard reflector with circular prism and metal holder, Leica GPR121 or similar complete with telescopic reflector pole GLS 11 or similar extendable to 2m height.	No.	2.00		-
1.04A-40	Heavy duty tripod for total station, Leica GST/20 or equivalent	No.	1.00		-
1.04A-41	Engineer's automatic level WildNAK2 or similar including tripod	No.	2.00		-
1.04A-42	Levelling staff 5m with levelling bubble (Wild iNLe 3 or similar	No.	2.00		-
1.04A-43	Survey umbrella	No.	6.00		-
1.04A-44	2.5m ranging rod (metallic)	No.	12.00		-
1.04A-45	Trumeter or equivalent road measuring wheel with trigger brake	No.	2.00		-
1.04A-46	1m stainless steel straight edge	No.	3.00		-
1.04A-47	3m aluminium straight edge	No.	3.00		-
1.04A-48	30m steel white face tape	No.	6.00		-
1.04A-49	100m steel band tape	No.	3.00		-
1.04A-50	3m tape measure	No.	20.00		-
1.04A-51	2kg hammer	No.	3.00		-
1.04A-52	Pangas 16" straight	No.	12.00		-
1.04A-53	Supply, deliver, and commission South G2 RTK GPS/GNSS Survey System (1 Base + 2 Rover), brand new, complete with controllers, radio modules, batteries, chargers, tripods, carrying cases, and 1-year manufacturer's warranty.	No.	1.00		-
TOTAL CARRIED TO ITEM 1.34(a)					-