

CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****BILL No. 1 - PRELIMINARIES AND GENERAL ITEMS**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<u>CLASS A - GENERAL ITEMS</u>				
	<u>Contractual Requirements</u>				
A110.1	Performance Security (Clause 4.2 of Particular Conditions)	Item	L.S		
A110.2	Environmental, Social, Health and Safety (ESHS) Performance Security (Clause 4.2 of Particular Conditions)	Item	L.S		
A120.1	Insurance for Works and Contractor's Equipment (Clause 18.2 of General Conditions)	Item	L.S		
A120.2	Insurance against Injury to Third Party Persons and Damage to Property (Clause 18.3 of General Conditions)	Item	L.S		
A120.3	Insurance for Contractor's Personnel (Clause 18.4 of General Conditions)	Item	L.S		
	<u>Specified Requirements</u>				
A211.3	Maintenance and Attendance to the Resident Engineer's Office as per Clause 101(a) of Technical Specifications including supply of provisions and consumables (stationery, refreshments, cleaning materials, etc) and payment of bills (water, electricity, day and night security, etc).	month	26		
A221	Provide temporary Supervision Vehicles for use by Resident Engineer's Staff whilst the Project Vehicles under items A422.1 and A422.2 are being procured. The temporary vehicles to be of equivalent specifications to the Vehicles being procured.	km	10,000		
A233.1	Provision of Survey Equipment for sole use by the Resident Engineer for the duration of the Contract (1Nr Total Station, 1 Nr. RTK Machine, 2Nr Automatic Levels, 4Nr Metric Levelling Staffs, 15Nr 3m Ranging Rods and other equipment as per Specifications). All equipment shall be new and with carry cases, tripods, reflectors as necessary. All manuals in English Language and metric units. Equipment to revert to Contractor at the end of the Contract.	month	26		
A233.2	Maintenance of Survey Equipment provided above.	month	26		
A233.3	Test Running of the Works: Contractor to Test-run the newly constructed facilities for a period of 4 weeks upon completion of the Works. Test Running to be carried out in close liaison with the Water Services Provider's Staff. The Contractor to allow for 'on job' training of Operation and Maintenance Staff, Tools, etc, and ensure that the operations are carried out full time on a 24 hour basis.	Item	L.S		
A233.4	Allow for provision of As-Built Drawings in accordance with Clause 147 of Technical Specifications.	Item	L.S		
A233.5	Allow for provision of Operation and Maintenance (O&M) Manuals in accordance with Clause 139 of Technical Specifications.	Item	L.S		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<u>Attendance upon Resident Engineer's Staff</u>				
A241	<u>Staff for Resident Engineer (salaries for staff under this item will be based on the latest Job Group Salary Scales for the Government of Kenya's Civil Service including Basic pay, overtime, hardship allowance, house allowance, per diems and other allowances). The Bidder should allow for annual increments in his rates. The rates for the following staff shall consider Nairobi County as a primary place of work.</u>				
A241.1	Drivers (Government of Kenya Job Group 'J') - 2Nr Persons	Month	26		
A241.2	Secretary (Government of Kenya Job Group 'N') - 1Nr Person	Month	26		
A241.3	Office Assistant (Government of Kenya Job Group 'H') - 1Nr. Person	Month	26		
A242.1	Surveyors (Government of Kenya Job Group 'P') - 2Nr. Persons	Month	26		
A242.2	Chainmen (Government of Kenya Job Group 'G') - 2Nr. Persons	Month	26		
A242.3	ACAD Technician (Government of Kenya Job Group 'M') - 1Nr. Person	Month	26		
A242.4	Environment / Social Assistant (Government of Kenya Job Group 'P') - 1Nr. Person	Month	26		
	<u>Testing of Materials and Works</u>				
A250.1	Allow for testing of materials as per Specifications	Item	L.S		
A260.1	Allow for testing of the Works as per Specifications	Item	L.S		
	<u>Project Signboards</u>				
A279	Provision, fixing, maintaining and removal of Project Signboards.	Nr	4		
	<u>Surveying and Setting Out</u>				
	Allow for Establishment of Level Datum, Topographical Survey, preparation of an updated Layout Plans with Contours at 1m interval, submission of Survey Drawings to the Resident Engineer and Setting Out of proposed Structures and Pipelines.				
A290.1	Pipeline Routes	m	9,500		
	<u>Contractor's Camps, Offices, Stores, etc.</u>				
A310	Establish, maintain and remove Contractor's Camp(s) including offices, stores, laboratories, cabins, canteens etc as the Contractor may require and all services including electricity, water, security, transport, staff welfare etc (NB- The Employer has no land available for these Contractor's facilities. Identification and acquisition of suitable locations will be responsibility of the Contractor subject to the Engineer's Approval).	Item	L.S		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
A4	<u>Provisional Sums</u>				
A41	<u>Daywork</u>				
A410.1	Provisional Sum for undertaking works on Daywork Basis as instructed by the Engineer (Bidder to insert total of Daywork Bill from the Dayworks Summary).	Item	P.S		
A410.2	% Adjustment to the provisional sum for Item A410.1 (Bidder to insert a percentage under column "Quantity")	%		-	-
A421	<u>Provision and Equipping of the Resident Engineer's Office</u>				
A421.1	Provisional Sum for provision of Rented Office for the Resident Engineer and his Staff as specified.	Item	P.S		5,500,000.00
A421.2	Provisional Sum for furnishing and equipping the R.E's office to include furniture, computers, printers etc. (List of items to be provided by the Resident Engineer).	Item	P.S		4,000,000.00
A421.3	% Adjustment to the provisional sum for Items A421.1 and A421.2 above (Bidder to insert a percentage under column "Quantity")	%		9,500,000.00	-
A422	<u>Project Supervision Vehicles</u>				
A422.1	Provisional Sum for purchase of 2Nr. Double Cabin Pick-up Vehicles (2800cc) for use by Resident Engineer's Staff. Specifications to be approved by the Engineer. Vehicles to revert to the Employer at the end of the Contract.	Item	P.S		22,000,000.00
A422.2	Provisional Sum for purchase of 2Nr Station Wagon Vehicles (2800cc) for use by the Resident Engineer (1Nr) and Employer's Staff (1Nr). Vehicles to revert to the Employer at the end of the Contract.	Item	P.S		22,000,000.00
A422.3	Provisional Sum for provision of Comprehensive Insurance Cover for the Project Vehicles above for 3 years up to end of Defects Liability Period.	Item	P.S		5,000,000.00
A422.4	Provisional Sum for Running and Maintenance costs of the Project Vehicles including costs of transfer to the Employer at the end of the Contract.	Item	P.S		10,000,000.00
A422.5	% Adjustment to the provisional sum for Items A422.1 to A422.4 (Bidder to insert a percentage under column "Quantity")	%		59,000,000.00	-
A423	<u>Accommodation for the Supervision Staff</u>				
A423.1	Provisional Sum for provision of fully furnished rented accommodation for the Resident Engineer and his Staff, including provision of water, electricity, security, etc.	Item	P.S		15,000,000.00
A423.2	% Adjustment to the provisional sum for Item A423.1	%		15,000,000.00	-
A429	<u>Other Provisional Sums</u>				
A429.1	Provisional Sum for fees charged by various authorities, road agencies, etc for permits and relocation of services.	Item	P.S		10,000,000.00
A429.2	% Adjustment to the provisional sum for Item A429.1 (Bidder to insert a percentage under column "Quantity")	%		10,000,000.00	-
A429.3	Provisional Sum for communication costs (telephone, email, postal, courier services, etc) for the Resident Engineer's Office and Staff.	Item	P.S		1,000,000.00
A429.4	% Adjustment to the provisional sum for Item A429.3 (Bidder to insert a percentage under column "Quantity")	%		1,000,000.00	-
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
A429.5	Provisional Sum for Inspection and Witness Testing of Pipes, Fittings and other Equipment at manufacturer's premises by the Employer, Engineer and their representatives to be expended as directed by the Engineer.	Item	P.S		5,000,000.00
A429.6	Provisional Sum to cover costs for Training, Capacity Building and Internship to be expended by the Employer / Engineer	Item	P.S		9,000,000.00
A429.7	Provisional Sum to cover costs for Community Sensitization for Household Connections and other Public Sensitization activities for the Project	Item	P.S		2,000,000.00
A429.8	% Adjustment to the provisional sum Items A429.5 to A429.7 (Bidder to insert a percentage under column "Quantity")	%		16,000,000.00	-
A9	<u>Method Related Charges, Other Items, Works /</u>				
A911	In addition to the items listed above, tenderer may insert such items as he may require to cover items of work relating to his intended method of executing the works, other obligations as mentioned in the Conditions of Contract, Specifications, etc., costs of which are not to be considered as allowed in the rates and prices for the other items. Full description of such Items and Works should be made. If no separate charge is made hereunder, the rates in the Bills of Quantities will be deemed as covering expenses for all such Items and Works.				
	<i>(Tenderer can include additional sheets of paper if necessary)</i>				
i)					
ii)					
iii)					
iv)					
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
ESHS	<u>Environmental, Social, Health and Safety (ESHS) Cost Schedule</u>				
ESHS 1	Resources allocated to ESHS Management (Ref. Clause 4 of ESHS Specifications).	Item	L.S		
ESHS 2	Drafting and updating the ESHS Documentation, Reporting, Inspections (Ref. Clauses 1, 2, 3, 5, 6, 7 and 9 of ESHS Specifications). <i>[Note: Cost of ESHS 1 should exclude all or part of the costs of these Tasks]</i>	Item	L.S		
ESHS 3	Implementation of the Health and Safety Plan: Meetings, health care centre, medical check-ups, emergencies and evacuations, safety protective equipment, hygiene (Ref. Clauses 1, 9, 21 to 25, 27 to 35, 37 and 38 of ESHS Specifications). <i>[Note: Cost of ESHS 1 should exclude all or part of the costs of these Tasks]</i>	Item	L.S		
ESHS 4	Accommodation, Drinking Water, Meals and Transportation of Staff. (Ref. Clauses 36, 40 and 41 of ESHS Specifications). <i>[Note: The Bidder shall detail the financial conditions of the supply of accommodation, meals and transport to its staff. The cost for "Site Mobilization" should exclude all or part of the costs of these Tasks]</i>				
ESHS 4.1	Accommodation	Item	L.S		
ESHS 4.2	Meals	Item	L.S		
ESHS 4.3	Transport	Item	L.S		
ESHS 5	Training and Local Recruitment Management Costs (Ref. Clauses 8 and 39 of ESHS Specifications) <i>[Note: Cost of ESHS 1 should exclude all or part of the costs of these Tasks]</i>	Item	L.S		
ESHS 6	Protection of Adjacent Areas, Biodiversity, Prevention of Erosion and Wastewater Management (Ref. Clauses 10, 11, 12, 17 and 18 of ESHS Specifications).	Item	L.S		
ESHS 7	Traffic, Noise and Atmospheric Emissions Management, Land Take (Ref. Clauses 13, 14, 42, 43 and 44 of ESHS Specifications).	Item	L.S		
ESHS 8	Waste Management (Ref. Clause 15 of ESHS Specifications).	Item	L.S		
ESHS 9	Vegetation Clearing and Site Rehabilitation (Ref. Clauses 16, 19 and 20 of ESHS Specifications). <i>[Note: The cost for "Site Mobilization" should exclude all or part of the costs associated to these Tasks]</i>	Item	L.S		
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CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT

BID No. AWWDA/AFD/NWSP/W-02B/2023

BILL No. 1 - PRELIMINARIES AND GENERAL ITEMS

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
Security	<u>Security Cost Schedule</u>				
Security 1	Security Organisation (Ref. Security Specifications, Article 4.1).	Item	L.S		
Security 2	Travel within the country and to the relevant area (Ref. Security Specifications, Article 4.2).	Item	L.S		
Security 3	Accommodation during assignments (Ref. Security Specifications, Article 4.3).	Item	L.S		
Security 4	Accommodation and security on project sites and worksites (Ref. Security Specifications, Article 4.4).	Item	L.S		
Security 5	Communication (Ref. Security Specifications, Article 4.5).	Item	L.S		
Other	This price may remunerate all the other services described in Articles 1 to 3 of the Security Specifications (Ref. Security Specifications, Articles 1 to 3, and 5 to 6).	Item	L.S		
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CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT

BID No. AWWDA/AFD/NWSP/W-02B/2023

SCHEDULE OF DAYWORK RATES

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KShs.)	AMOUNT (KShs.)
1	<u>LABOUR</u>				
	The rates inserted herein should include for all costs such as insurance, travelling time, overtime, accommodation, use and maintenance of small tools of trade and supervision. Only time engaged upon work will be paid for:				
1.1	Unskilled Labourer	Hrs	75		
1.2	Timberman	Hrs	50		
1.3	Stone Mason	Hrs	75		
1.4	Carpenter	Hrs	50		
1.5	Concreter	Hrs	25		
1.6	Blaster (Certified)	Hrs	10		
1.7	Plant Operator	Hrs	75		
1.8	Pipe Fitter	Hrs	75		
1.9	Electrician	Hrs	75		
1.10	Painter	Hrs	10		
1.11	Welder	Hrs	50		
1.12	Surveyor	Hrs	50		
1.13	Chainman	Hrs	50		
1.14	Foreman	Hrs	75		
1.11	Watchman (including use of firewood, lights, day, night, Sunday and Public Holiday watching)	Hrs	50		
TOTAL FOR DAYWORK: LABOUR CARRIED FORWARD TO DAYWORK SUMMARY					

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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KShs.)	AMOUNT (KShs.)
2	<u>PLANT</u>				
	The rates inserted herein should include for all operational and maintenance costs, fuel, oil, grease, operators, turnboys and supervision. Only the time actually employed on works will be paid for and the rates should include for idle, travelling and overtime				
2.1	Compressor (3.0 m ³ /minute)	Hrs	75		
2.2	Generator (15 KVA)	Hrs	75		
2.3	Backhoe Excavator	Hrs	75		
2.4	Excavator (0.75m ³ bucket) with 1.5 Tonne Hammer	Hrs	75		
2.5	Concrete Vibrator (Petrol or Diesel) - 40mm	Hrs	75		
2.6	Concrete Mixer - 1.0m ³	Hrs	75		
2.7	Dumper 0.75m ³	Hrs	25		
2.8	D7 Bulldozer	Hrs	75		
2.9	Tandem 3 wheels roller. Dead weight 9 tonnes	Hrs	50		
2.10	Mobile Crane - 30T	Hrs	75		
2.11	5 Tonne Lorry (Tipper)	Hrs	25		
2.12	10 Tonne Lorry (Tipper)	Hrs	25		
2.13	Portable water pump 100mm diameter (inclusive of hoses, couplings, etc.)	Hrs	50		
2.14	Oxy-Acetylene cutting and welding set, including oxygen and acetylene	Hrs	20		
2.15	Electric welding set including electrodes	Hrs	10		
TOTAL FOR DAYWORK: PLANT CARRIED FORWARD TO DAYWORK SUMMARY					

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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KShs.)	AMOUNT (KShs.)
3	<u>MATERIALS</u>				
	All materials are to comply with the specifications. The rates inserted herein are to include for delivery to site, storage and handling.				
3.1	Ordinary Portland Cement	Tonne	1		
3.2	Mild steel (any size from 8mm to 25mm dia.)	Kg	50		
3.3	High tensile steel (any size from 8mm to 25mm dia.)	Kg	50		
3.4	Fine aggregate for concrete	m ³	20		
3.5	Coarse aggregate for concrete	m ³	20		
3.6	Shuttering timber	m ²	10		
3.7	Hardcore	m ³	50		
3.8	Murram / Gravel	m ³	50		
3.9	150mm thick Stone / Concrete Blocks	Nr	250		
3.10	225mm thick Stone / Concrete Blocks	m	250		
3.11	300mm dia. Concrete Ogee Pipe	m	20		
3.12	Concrete Class 15/20	m ³	5		
3.13	Concrete Class 20/20	m ³	5		
3.14	Concrete Class 25/20	m ³	5		
TOTAL FOR DAYWORK: MATERIALS CARRIED FORWARD TO DAYWORK SUMMARY					

DAYWORK SUMMARY

Description	Amount in Kshs.
1 Total For Daywork: Labour	
2 Total For Daywork: Plant	
3 Total for Daywork: Materials	
Total for Daywork (Provisional Sum) carried to Bill No. 1 (Preliminaries and General), Item No. A410.1	

BILL No. 1 COLLECTION SHEET

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CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT

BID No. AWWDA/AFD/NWSP/W-02B/2023

BILL No. 1 - PRELIMINARIES AND GENERAL ITEMS

	Amount (Kshs.)
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Page Total, Page 5 of 6	
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Bill No. 1 Total (Exclusive of Value Added Tax - VAT) carried to the Bills of Quantities Grand Summary	

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BILL No. 2 - GIGIRI-KARURA PIPELINE

INSTRUCTIONS TO BIDDERS

IMPORTANT:

THE BIDDER TO QUOTE FOR ANY ONE OF THE FOLLOWING OPTIONS FOR PIPES AND FITTINGS MATERIALS AND JOINTING. THE SELECTED OPTION TO BE TICKED IN THE SPACE PROVIDED.

OPTION	DESCRIPTION	INDICATE SELECTED OPTION BY TICKING ONE BOX BELOW
1	<u>Ductile Iron</u> Socket and Spigot Pipes and Fittings with mostly Standard Push-on Joints and provision for some <u>Self Anchored Joints</u> as specified	
2	<u>Steel</u> Pipes and Fittings with provision for <u>Field Butt Welded Joints</u> as specified.	

ONLY ONE BOX SHOULD BE TICKED

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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	NOTES:				
1.	THIS BILL ONLY COVERS RATES FOR PROCUREMENT OF PIPES AND FITTINGS, TRANSPORT TO CONTRACTOR'S SITE STORE AND STORAGE. INCLUDING SUPPLY OF JOINTING MATERIALS, BOLTS, NUTS, GASKETS, ETC.				
2.	RATES FOR TRANSPORT FROM SITE STORE AND INSTALLATION TO BE INCLUDED IN BILL No. 2.2				
3.	BIDDER TO PRICE EITHER FOR STEEL PIPES AND FITTINGS WITH PROVISION FOR FIELD BUTT-WELDED JOINTS AS SPECIFIED OR DUCTILE IRON SOCKET AND SPIGOT PIPES AND FITTINGS WITH STANDARD PUSH-ON JOINTS AS SPECIFIED				
4.	ALL RATES TO BE INCLUSIVE OF RELEVANT GOVERNMENT OF KENYA DUTIES AND TAXES, EXCEPT VALUE ADDED TAX (VAT) WHICH IS TO BE ADDED SEPARATELY IN THE GRAND SUMMARY.				
5.	ALL PIPES AND FITTINGS TO PRESSURE RATING PN16				
6.	FOR STEEL PIPELINES, STEEL GRADE AND THICKNESS AS SPECIFIED				
7.	PIPELINE EXTERNAL COATING AND INTERNAL LINING AS SPECIFIED FOR THE SELECTED PIPELINE MATERIAL				
8.	BIDDERS QUOTING FOR DUCTILE IRON PIPES AND FITTINGS TO PRICE FOR SERIES X ITEMS : OTHER PRICES FOR DUCTILE IRON PIPES AND FITTINGS				
9.	IN VIEW OF THE LARGE PIPE DIAMETERS INVOLVED, BIDDERS TO ALLOW FOR REINFORCEMENT OF FITTINGS AS MAYBE REQUIRED, ALL AS PER THE AWWA MANUAL OF WATER SUPPLY PRACTICES (AWWA M11); REINFORCEMENT OF PIPE FITTINGS EITHER BY COLLAR PLATE, WRAPPER PLATE OR BY CROTCH-PLATE, AS MAY BE REQUIRED. BIDDER TO INCLUDE RATE FOR REINFORCEMENT OF FITTINGS IN THEIR RATES FOR RESPECTIVE FITTINGS				
	CLASS I: PIPE WORK - PIPES				
14	Ductile Iron Pipes or Steel Pipes; Joints as specified				
	Ductile Iron Socket and Spigot Pipes with Standard Push-On Joints (class as specified, cement mortar lining, zinc-aluminium coating) OR Steel Pipes with provision for Field Lap-Welded Joints (minimum yield strength 235 Mpa, minimum wall thickness as specified, Fusion Bonded Epoxy Lining as specified, 3-layer polyethylene coating) to PN 16				
146.1	DN 1400 mm, DI (class 25) OR Steel (Min. wall thickness 12.5mm) - to PN 16	m	4,522		
17	High Density Polyethylene Pipes (HDPE)				
	Butt-fusion weld jointed HDPE Pipes - PN 16				
171.1	Nominal Bore 110 mm (provisional length) for Chamber Drainage	m	100		
172.1	Nominal Bore 250 mm (provisional length) for Washout Drainage	m	100		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	CLASS J: PIPE WORK - FITTINGS AND VALVES				
J3	Ductile Iron Fittings or Steel Fittings; Joints as specified				
J31	Bends				
J314.1	Nominal Bore 800mm; Double Flanged Bend				
J314.1.1	90° DN 800, PN 16	Nr	5		
J314.2	Nominal Bore 800mm; Flanged Spigot Bend				
J314.2.1	90° DN 800, PN 16	Nr	3		
J315.1	Nominal bore 1000mm; Double Flanged Bend				
J315.1.1	45° DN 1000, PN 16	Nr	4		
J315.1.2	90° DN 1000, PN 16	Nr	3		
J315.2	Nominal bore 1200mm; Double Flanged Bend				
J315.2.1	45° DN 1200, PN 16	Nr	4		
J316.1	Nominal Bore 1400mm; Ductile Iron Socket and Spigot Bends with Standard Push-On Joints OR Steel plain ended Bends with provision for field butt-welded Joints				
J316.1.1	11.25° DN 1400, PN 16	Nr	9		
J316.1.2	22.5° DN 1400, PN 16	Nr	5		
J316.1.3	30° DN 1400, PN 16	Nr	3		
J316.1.4	45° DN 1400, PN 16	Nr	3		
J316.1.5	90° DN 1400, PN 16	Nr	1		
J32	Junctions and Branches				
	All Flanged Tee				
J325.1	DN 1000 x DN 200, PN 16 all Flanged Tee for Air Valves	Nr	1		
J325.2	DN 1200 x DN 800, PN 16 all Flanged Tee for Air Valves	Nr	3		
J326.1	DN 1400 x DN 200, PN 16 all Flanged Tee for Air Valves	Nr	1		
J326.2	DN 1400 x DN 600, PN 16 all Flanged Tee for offtakes	Nr	1		
J326.3	DN 1400 x DN 800, PN 16 all Flanged Tee for Air Valves	Nr	6		
	All Flanged Level Invert Tee				
J326.4	DN 1400 x DN 250, PN 16 all Flanged Tee for Washouts	Nr	7		
	Plain Ended Tee				
J325.3	DN 1000 x DN 1000, PN 16 all Flanged Tee for offtakes	Nr	1		
J33	Tapers				
	All Flanged Concentric Taper				
J336.1	DN 1400 x DN 1000, PN 16	Nr	1		
J336.2	DN 1400 x DN 1200, PN 16	Nr	1		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 2: GIGIRI-KARURA WATER TRANSMISSION PIPELINE****BILL NO. 2.1: GIGIRI-KARURA PIPELINE SECTION (LINE GK) (SUPPLY OF PIPES, FITTINGS, VALVES AND ANCILLARIES; DN 1400, TOTAL LENGTH 4.42 KM)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
J34	Ferrous Couplings				
J342.1	DN 250, PN 16- Ranger Coupling	Nr	7		
J344.1	DN 800, PN 16- Straight Coupling	Nr	7		
J345.1	DN 1000, PN 16- Straight Coupling	Nr	6		
J345.2	DN 1200, PN 16- Straight Coupling	Nr	2		
J346.1	DN 1400, PN 16- Straight Coupling (Provisional)	Nr	2		
J35	Ferrous Flange Adaptor				
J352.1	DN 250, PN 16	Nr	8		
J354.1	DN 800, PN 16	Nr	3		
J355.1	DN 1000, PN 16	Nr	1		
J356.1	DN 1400, PN 16 (Provisional)	Nr	2		
J38	Straight Specials				
	<u>Plain Ended Pipes without Puddle Flanges</u>				
J382.1	DN 250, PN 16, 1.2m long	Nr	7		
J384.1	DN 800, PN 16, 15m long (With Couplings)	Nr	3		
J385.1	DN 1000, PN 16, 15m long (With Couplings)	Nr	1		
	<u>Flanged Spigot Pipes without Puddle Flanges</u>				
J384.2	DN 800, PN 16, 1.5m long	Nr	5		
J384.3	DN 800, PN 16, 6m long	Nr	3		
J385.2	DN 1000, PN 16, 1.5m long	Nr	1		
J385.3	DN 1000, PN 16, 6m long	Nr	3		
J385.4	DN 1200, PN 16, 1.5m long	Nr	3		
J386.1	DN 1400, PN 16, 1.5m long	Nr	20		
	<u>Flanged Spigot Pipes with Puddle Flanges (location of Puddle Flange as specified in Drawings)</u>				
J383.1	DN 600, PN 16, 1.5m long with puddle flange	Nr	1		
J384.4	DN 800, PN 16, 1.5m long with puddle flange	Nr	5		
J385.5	DN 1000, PN 16, 1.5m long with puddle flange	Nr	1		
J386.2	DN 1400, PN 16, 1.5m long with puddle flange	Nr	21		
	<u>Double Flanged Pipes with puddle flanges (location of Puddle Flange as specified in Drawings)</u>				
J383.2	DN 600, PN 16, 1.5m long with puddle flange	Nr	1		
J384.5	DN 800, PN 16, 1.5m long with puddle flange	Nr	4		
J385.6	DN 1000, PN 16, 1.5m long with puddle flange	Nr	1		
J385.7	DN 1000, PN 16, 5m long with puddle flange	Nr	1		
J385.8	DN 1000, PN 16, 10m long with puddle flange	Nr	1		
J385.9	DN 1200, PN 16, 6m long with puddle flange	Nr	1		
J385.10	DN 1200, PN 16, 12m long with puddle flange	Nr	1		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 2: GIGIRI-KARURA WATER TRANSMISSION PIPELINE****BILL NO. 2.1: GIGIRI-KARURA PIPELINE SECTION (LINE GK) (SUPPLY OF PIPES, FITTINGS, VALVES AND ANCILLARIES; DN 1400, TOTAL LENGTH 4.42 KM)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	Special Fittings				
J381.1	DN 200, PN 16, special double flanged pipe 325mm long with flange to suit 800mm dia. tee on one end and 200mm dia flange on the other end as per Dwg Nr M455/W-03/W/GK/02 (Detail 1)	Nr	6		
J383.3	DN 600 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 300mm or approved equivalent)	Nr	2		
J384.6	DN 800 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 300mm or approved equivalent)	Nr	3		
J385.11	DN 1000 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 307mm or approved equivalent)	Nr	3		
J385.12	DN 1200 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 320mm or approved equivalent)	Nr	1		
J386.3	DN 1400 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 320mm or approved equivalent)	Nr	2		
J39.1	End Cap				
J393.1.1	DN 600, PN 16	Nr	1		
J39.2	Blank Flange				
J395.1.2	DN 1200, PN 16	Nr	1		
J8	Valves and Penstocks				
J81	Flanged Gate Valve				
J811.1	DN 200, PN 16, with handwheel (for offtakes and Air Valves)	Nr	8		
J812.1	DN 250, PN 16, with Extension Spindle, length n.e. 5.0m without handwheel (for washouts)	Nr	7		
J84	Flanged Butterfly Valve complete with Gear Mechanism designed to slow down flow reduction at end of closure as specified and Hand Wheel as specified				
J843.1	DN 600, PN 16	Nr	1		
J844.1	DN 800, PN 16	Nr	3		
J845.1	DN 1000, PN 16	Nr	1		
J846.1	DN 1400, PN 16	Nr	1		
J86	Air Valve				
J861	Flanged Double Acting Non-Slam (Anti-Surge) Air Valve (DAV) as specified				
J861.1	DN 200, PN 16	Nr	8		
J89	All flanged flow control valve with an integrated altitude valve function as specified				
J894.1	DN 800, PN 16	Nr	3		
J9	Water Meters				
	Electromagnetic Water Meters				
J995.1	DN 1000 All Flanged Battery Powered Electromagnetic Water Meter to PN 16 complete with accessories as specified; Minimum Battery Life 6 Years.	Nr	1		
J995.2	DN 1200 All Flanged Battery Powered Electromagnetic Water Meter to PN 16 complete with accessories as specified; Minimum Battery Life 6 Years.	Nr	1		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT

CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT

BID No. AWWDA/AFD/NWSP/W-02B/2023

SECTION 2: GIGIRI-KARURA WATER TRANSMISSION PIPELINE

BILL NO. 2.1: GIGIRI-KARURA PIPELINE SECTION (LINE GK) (SUPPLY OF PIPES, FITTINGS, VALVES AND ANCILLARIES; DN 1400, TOTAL LENGTH 4.42 KM)

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<u>CLASS X: OTHER COSTS FOR DUCTILE IRON PIPES & FITTINGS</u>				
	<u>Note: This item is only to be priced if the Bidder has quoted for Ductile Iron Pipes & Fittings. Bidders quoting for Steel Pipes and Fittings should not price this item.</u>				
X999	Extra-over cost on top of Items I4 and J31 for the supply of Ductile Iron Pipes and Bends with Self-Anchored Joints				
X999.1	DN 1400mm Pipes with Self Anchored Joints	m	420		
X999.2	DN 1400mm Bends (Angle Size varies from 11.25 deg to 45 deg) with Self Anchored Joints	Nr	10		
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BILL No. 2.1 COLLECTION SHEET

<u>CKE1135 - NAIROBI WATER AND SANITATION PROJECT</u>	
<u>CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT</u>	
<u>BID No. AWWDA/AFD/NWSP/W-02B/2023</u>	
<u>SECTION 2: GIGIRI-KARURA WATER TRANSMISSION PIPELINE</u>	
<u>BILL NO. 2.1: GIGIRI-KARURA PIPELINE SECTION (LINE GK) (SUPPLY OF PIPES, FITTINGS, VALVES AND ANCILLARIES; DN 1400, TOTAL LENGTH 4.42 KM)</u>	
	Amount (Kshs.)
Page Total, Page 1 of 5	
Page Total, Page 2 of 5	
Page Total, Page 3 of 5	
Page Total, Page 4 of 5	
Page Total, Page 5 of 5	
Bill No. 2.1 Total (Exclusive of Value Added Tax - VAT) carried to Grand Summary Sheet	

CKE1135 - NAIROBI WATER AND SANITATION PROJECT

CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT

BID No. AWWDA/AFD/NWSP/W-02B/2023

SECTION 2: GIGIRI - KARURA WATER TRANSMISSION PIPELINE

BILL NO. 2.2: GIGIRI - KARURA PIPELINE SECTION (LINE GK) (Pipeline Construction; DN 1400, Total length 4.42 km)

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	NOTES:				
1.	<p>A 1.5 KM section of the Gigiri-Karura Water Transmission Pipeline traverses through Urban Built-up areas which are densely developed, with limited working space and limited access for mechanical excavation equipment. A 3 KM section of the pipeline is to be laid within the Karura Forest, a protected area of high environmental and social significance. Some sections pass through congested areas, with Road and Stream Crossings. Some sections of the Pipeline are to be laid along and across busy roads such as the United Nation Avenue and Kiambu Road.</p> <p>The Pipeline is to be laid in Areas with numerous active Existing Services, both surface and buried; and along busy Streets/ Roads in Commercial and Residential areas spread over the entire length. The section of the pipeline from the Gigiri Reservoir Site is to be laid along the United Nations Avenue in the vicinity of the UNEP Headquarters and the United States of America Embassy which are key security installations.</p> <p>Specific conditions in execution of these works are deemed to be included in the Contractor's Rates. The Contractor will be required to submit Method Statement for execution of works under these specific conditions for approval prior to execution of the works. These include, but are not limited to the following;</p> <p>i) No blasting will be permitted ii) The contractor to maintain uninterrupted continuity of Water Supply in existing Mains</p>				
2.	<p>The Contractor shall carry out pilot excavations along the pipeline route to establish locations and alignment of existing Water Mains, Telecommunication and Fibre Optic Cables and other buried services, if any, prior to actual trench excavation, all in close liaison with service providers. It shall be deemed that any costs for crossing existing Water Mains, Telecommunication and Fibre Optic Cables is included in the Contractor's Rates. Any claims thereof SHALL NOT be paid and damages caused on the same as a result of execution of the works shall be the Contractor's liability. These will be duly repaired at the Contractor's cost.</p> <p>The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access road to work site, liaison with the relevant Authorities and local residents, payment of any required statutory charges, security arrangements etc. The costs for compliance shall be deemed to be covered by the Contractor's Rates.</p>				
4.	All Rates to include for Government of Kenya Duties and Taxes, Except Value Added Tax (VAT).				
5.	Value Added Tax (VAT) to be added separately in the Grand Summary.				
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 2: GIGIRI - KARURA WATER TRANSMISSION PIPELINE****BILL NO. 2.2: GIGIRI - KARURA PIPELINE SECTION (LINE GK) (Pipeline Construction; DN 1400, Total length 4.42 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	CLASS A: GENERAL ITEM				
A260	Testing of Works				
	Pipeline Testing and Commissioning, including provision of all Equipment, Materials and works necessary for Testing, such as but not limited to thrust blocks, anchor blocks, provision, transportation and use of water, requisite pipe fittings, etc., successful testing to specified pressure and safe disposal of used water.				
	NOTE: Any additional fittings that may be necessitated by the Contractor's Methodology for testing shall be supplied and installed at the Contractor's own cost.				
A260.1	DN 1400mm	m	4,522		
	Disinfection of Pipe lines: Flushing with clear water, filling with water containing 0.05 g/l calcium hypochlorite, left for 24 hours. This includes supply of all necessary equipment, materials, chemicals and water, measurement of residual chlorine, all as specified and safe disposal of disinfecting water to Engineer's approval.				
A260.2	DN 1400mm	m	4,522		
A3	Method Related Charges				
A35	Temporary Works				
A35.1	Working within available limited wayleave, include costs for double / multiple handling of excavated materials if required, as well as provision of alternative access to private property during execution of the works.	Item	L.S		
A35.2	Working within marshy areas with weak soil formation	Item	L.S		
A35.3	Keeping trenches free of excessive groundwater, seepage or water from whatever source	Item	L.S		
A35.4	Allow Provisional Sum for Liaison, facilitation with local residents	Item	P.S		2,000,000
A35.5	Allow for carrying out Pilot Excavation, exposing and identification of existing UNDERGROUND SERVICES (water lines, sewer lines, storm water drains, telephone/electricity ducts, fibre optic cables, etc.) prior to setting out and excavation of the pipeline. Pilot excavation n.e. 4m depth on approx. 5m wide corridor, estimate No. of pilot holes along the Pipeline route is 100Nr.	Item	L.S		
A35.6	Allow for crossing existing UNDERGROUND SERVICES (water lines, sewer lines, storm water drains, telephone/electricity ducts, fibre optic cables (including cables for security cameras), etc.), including reinstatement to original states and liaison with the relevant body for the inspection/ approval during execution of the works. Nominal bore up to - 1800mm. Estimated Number of crossings is 200Nr	Item	LS		
A35.7	Allow a Provisional Sum of Kshs. 1,500,000/= for re-alignment of existing services, both buried and above ground, as may be required and directed on site, to create space for laying of proposed Transmission Mains. This item covers re-alignment/re-routing of existing water mains, Telecommunication cables, buried and overhead power lines where appropriate.	Item	P.S		1,500,000
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 2: GIGIRI - KARURA WATER TRANSMISSION PIPELINE****BILL NO. 2.2: GIGIRI - KARURA PIPELINE SECTION (LINE GK) (Pipeline Construction; DN 1400, Total length 4.42 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
A35.8	Allow for any other method related charges the Bidder feels may be required. These should be indicated below with pricing of each item (Bidder may attach additional sheets if necessary):				
	i)	Item	L.S		
	ii)	Item	L.S		
	<u>CLASS D: DEMOLITION AND SITE CLEARANCE</u>				
D100.1	General site clearance along easement	ha	2.70		
D2	Tree Cutting				
	Cut down trees, grub up roots and cart away to tips				
D210	Girth: 0.5 m - 1.0 m	Nr	185		
D220	Girth: 1.0 m - 2 m	Nr	246		
D230	Girth 2.0 m - 3 m	Nr	123		
D240	Girth 3.0 m - 5 m	Nr	62		
D320	Remove stump dia. 0.5 - 1m	Nr	37		
D330	Remove stump dia. exceeding 1m	Nr	25		
D4	Demolition of Structures				
	Rate to include for demolition of structures, breaking of plinths and carting away demolition debris to tips identified by the Contractor in liaison with local Authorities.				
D463	Allow for demolition of Concrete Structures (including Inverted Block Drains, concrete slabs, etc.) along the pipeline alignment. Rate to include requisite reinstatement Works (Provisional)	m ³	30		
D563	Allow for demolition of Masonry Structures along the pipeline alignment (including Stone-pitched Drains). Rate to include requisite reinstatement Works.	m ²	100		
	<u>CLASS E: EARTHWORKS</u>				
E220	Mass Excavation in selected areas to level localized high points and to remove imported deposited material on pipeline alignment to original ground level as directed by the Engineer prior to excavation of pipeline trenches. Include for transportation and disposal of excavated material to approved tips identified by the Contractor in liaison with Local Authorities. (Provisional)	m ³	400		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 2: GIGIRI - KARURA WATER TRANSMISSION PIPELINE****BILL NO. 2.2: GIGIRI - KARURA PIPELINE SECTION (LINE GK) (Pipeline Construction; DN 1400, Total length 4.42 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	CLASS I: PIPE WORK - PIPES				
	Transport from Site Store, Lay and Joint Pipes in Trench, Include for Excavation, Preparation of Surfaces, Disposal of Excavated Material, Shoring Sides of Excavation and Backfilling.				
	Note: Trench width and minimum cover to pipes is as per the Specification. The cost shall include for strutting, shuttering, stabilizing the earth faces of trenches and keeping the trenches free of water from whatever source by pumping or other means and cost of use of selected soil from the excavated material for compaction in bed and surround to backfilling of trenches, etc., all as specified.				
I4	Ductile Iron Fittings OR Steel Fittings; Joints as specified				
	Ductile Iron Socket and Spigot Pipes with Standard Push-On Joints OR Steel Pipes with provision for Field Butt-welded Joints				
	NOTE: Rate for laying of Steel Pipes to include cost of supply of all requisite equipment and materials and jointing by Field Butt Welding to Specifications. Rate for laying of Ductile Iron Pipes to include for jointing by push-on joints, all to specifications				
I46	Nominal Bore 1400mm in trenches				
I463	Depth 1.5 m - 2.0 m	m	10		
I464	Depth 2.0 m - 2.5 m	m	202		
I465	Depth 2.5 m -3.0 m	m	1683		
I466	Depth 3.0 m - 3.5 m	m	2066		
I467	Depth 3.5m - 4.0 m	m	525		
I468	Depth exceeding 4.0m	m	36		
I7	High Density Polyethylene Pipes (HDPE)				
I71	Butt-fusion weld jointed HDPE Pipes - PN 16 Nominal Bore 110mm in trenches for chamber drainage				
I712	Depth not exceeding 1.5 m	m	10		
I713	Depth 1.5m - 2.0 m	m	18		
I714	Depth 2m - 2.5m	m	12		
I715	Depth 2.5m - 3m	m	10		
I716	Depth 3m - 3.5m	m	10		
I717	Depth 3.5m - 4m	m	20		
I718	Depth exceeding 4.0m	m	20		
I72	Butt-fusion weld jointed HDPE Pipes - PN 16 Nominal Bore 250mm in trenches for washout drainage				
I722	Depth not exceeding 1.5m	m	10		
I723	Depth 2.0m - 2.5m	m	10		
I724	Depth 2.0m - 2.5m	m	10		
I725	Depth 2.5m - 3.0m	m	10		
I726	Depth 3.0m - 3.5m	m	10		
I727	Depth 3.5m - 4m	m	38		
I728	Depth exceeding 4m	m	38		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 2: GIGIRI - KARURA WATER TRANSMISSION PIPELINE****BILL NO. 2.2: GIGIRI - KARURA PIPELINE SECTION (LINE GK) (Pipeline Construction; DN 1400, Total length 4.42 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
CLASS J: PIPE WORK - FITTINGS AND VALVES					
	Transport from Site Store, Lay and Joint Pipe Fittings in Trench/ on Aerial Crossings, Include for Excavation, Preparation of Surfaces, Disposal of Excess Material, Shoring Sides of Excavation and Backfilling. Rate to include for Transport to Site and Installation of all Jointing Materials, Bolts, Nuts, Gaskets, etc.				
J3	Ductile Iron Fittings OR Steel Fittings; Joints as specified				
J31	Bends				
J314.1	Nominal Bore 800mm; Double Flanged Bend				
J314.1.1	90° DN 800, PN 16	Nr	5		
J314.2	Nominal Bore 800mm; Flanged Spigot Bend				
J314.2.1	90° DN 800, PN 16	Nr	3		
J315.1	Nominal bore 1000mm; Double Flanged Bend				
J315.1.1	45° DN 1000, PN 16	Nr	4		
J315.1.2	90° DN 1000, PN 16	Nr	3		
J315.2	Nominal bore 1200mm; Double Flanged Bend				
J315.2.1	45° DN 1200, PN 16	Nr	4		
J316.1	Nominal Bore 1400mm; Ductile Iron Socket and Spigot Bends with Standard Push-On Joints OR Steel plain ended Bends with provision for field butt-welded Joints				
J316.1.1	11.25° DN 1400, PN 16	Nr	9		
J316.1.2	22.5° DN 1400, PN 16	Nr	5		
J316.1.3	30° DN 1400, PN 16	Nr	3		
J316.1.4	45° DN 1400, PN 16	Nr	3		
J316.1.5	90° DN 1400, PN 16	Nr	1		
J32	Junctions and Branches				
	All Flanged Tee				
J325.1	DN 1000 x DN 200, PN 16 all Flanged Tee for Air Valves	Nr	1		
J325.2	DN 1200 x DN 800, PN 16 all Flanged Tee for Air Valves	Nr	3		
J326.1	DN 1400 x DN 200, PN 16 all Flanged Tee for Air Valves	Nr	1		
J326.2	DN 1400 x DN 600, PN 16 all Flanged Tee for offtakes	Nr	1		
J326.3	DN 1400 x DN 800, PN 16 all Flanged Tee for Air Valves	Nr	8		
	All Flanged Level Invert Tee				
J326.4	DN 1400 x DN 250, PN 16 all Flanged Tee for Washouts	Nr	7		
	Plain Ended Tee				
J325.3	DN 1000 x DN 1000, PN 16 all Flanged Tee for offtakes	Nr	1		
J33	Tapers				
	All Flanged Concentric Taper				
J336.1	DN 1400 x DN 1000, PN 16	Nr	1		
J336.2	DN 1400 x DN 1200, PN 16	Nr	1		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 2: GIGIRI - KARURA WATER TRANSMISSION PIPELINE****BILL NO. 2.2: GIGIRI - KARURA PIPELINE SECTION (LINE GK) (Pipeline Construction; DN 1400, Total length 4.42 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
J34	Ferrous Couplings				
J342.1	DN 250, PN 16- Ranger Coupling	Nr	7		
J344.1	DN 800, PN 16- Straight Coupling	Nr	7		
J345.1	DN 1000, PN 16- Straight Coupling	Nr	6		
J345.2	DN 1200, PN 16- Straight Coupling	Nr	2		
J346.1	DN 1400, PN 16- Straight Coupling (Provisional)	Nr	2		
J35	Ferrous Flange Adaptor				
J352.1	DN 250, PN 16	Nr	7		
J354.1	DN 800, PN 16	Nr	3		
J355.1	DN 1000, PN 16	Nr	1		
J356.1	DN 1400, PN 16 - (Provisional)	Nr	2		
J38	Straight Specials				
	<u>Plain Ended Pipes without Puddle Flanges</u>				
J382.1	DN 250, PN 16, 1.2m long	Nr	7		
J384.1	DN 800, PN 16, 15m long (With Couplings)	Nr	3		
J385.1	DN 1000, PN 16, 15m long (With Couplings)	Nr	1		
	<u>Flanged Spigot Pipes without Puddle Flanges</u>				
J384.2	DN 800, PN 16, 1.5m long	Nr	5		
J384.3	DN 800, PN 16, 6m long	Nr	3		
J385.2	DN 1000, PN 16, 1.5m long	Nr	1		
J385.3	DN 1000, PN 16, 6m long	Nr	3		
J385.4	DN 1200, PN 16, 1.5m long	Nr	3		
J386.1	DN 1400, PN 16, 1.5m long	Nr	20		
	<u>Flanged Spigot Pipes with Puddle Flanges (location of Puddle Flange as specified in Drawings)</u>				
J383.1	DN 600, PN 16, 1.5m long with puddle flange	Nr	1		
J384.4	DN 800, PN 16, 1.5m long with puddle flange	Nr	5		
J385.5	DN 1000, PN 16, 1.5m long with puddle flange	Nr	1		
J386.2	DN 1400, PN 16, 1.5m long with puddle flange	Nr	21		
	<u>Double Flanged Pipes with puddle flanges (location of Puddle Flange as specified in Drawings)</u>				
J383.2	DN 600, PN 16, 1.5m long with puddle flange	Nr	1		
J384.5	DN 800, PN 16, 1.5m long with puddle flange	Nr	3		
J385.6	DN 1000, PN 16, 1.5m long with puddle flange	Nr	1		
J385.7	DN 1000, PN 16, 5m long with puddle flange	Nr	1		
J385.8	DN 1000, PN 16, 10m long with puddle flange	Nr	1		
J385.9	DN 1200, PN 16, 6m long with puddle flange	Nr	1		
J385.10	DN 1200, PN 16, 12m long with puddle flange	Nr	1		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 2: GIGIRI - KARURA WATER TRANSMISSION PIPELINE****BILL NO. 2.2: GIGIRI - KARURA PIPELINE SECTION (LINE GK) (Pipeline Construction; DN 1400, Total length 4.42 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	Special Fittings				
J381.1	DN 200, PN 16, special double flanged pipe 325mm long with flange to suit 800mm dia. tee on one end and 200mm dia flange on the other end as per Dwg Nr M455/W-02B/W/GK/02 (Detail 1).	Nr	6		
J383.3	DN 600 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 300mm or approved equivalent)	Nr	2		
J384.6	DN 800 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 300mm or approved equivalent)	Nr	3		
J385.11	DN 1000 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 307mm or approved equivalent)	Nr	3		
J385.12	DN 1200 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 320mm or approved equivalent)	Nr	1		
J386.3	DN 1400 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 320mm or approved equivalent)	Nr	2		
J39.1	End Cap				
J393.1.1	DN 600, PN 16	Nr	1		
J39.2	Blank Flange				
J395.1.2	DN 1200, PN 16	Nr	1		
J8	Valves and Penstocks				
J81	Flanged Gate Valve				
J811.1	DN 200, PN 16, with handwheel (for offtakes and Air Valves)	Nr	8		
J812.1	DN 250, PN 16, with Extension Spindle, length n.e. 5.0m without handwheel (for washouts)	Nr	7		
J84	Flanged Butterfly Valve complete with Gear Mechanism designed to slow down flow reduction at end of closure as specified and Hand Wheel as specified				
J843.1	DN 600, PN 16	Nr	1		
J844.1	DN 800, PN 16	Nr	3		
J845.1	DN 1000, PN 16	Nr	1		
J846.1	DN 1400, PN 16	Nr	1		
J86	Air Valve				
J861	Flanged Double Acting Non-Slam (Anti-Surge) Air Valve (DAV) as specified				
J861.1	DN 200, PN 16	Nr	8		
J89	All flanged flow control valve with an integrated altitude valve function as specified				
J894.1	DN 800, PN 16	Nr	3		
J9	Water Meters				
	Electromagnetic Water Meters				
J995.1	DN 1000 All Flanged Battery Powered Electromagnetic Water Meter to PN 16 complete with accessories as specified; Minimum Battery Life 6 Years.	Nr	1		
J995.2	DN 1200 All Flanged Battery Powered Electromagnetic Water Meter to PN 16 complete with accessories as specified; Minimum Battery Life 6 Years.	Nr	1		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 2: GIGIRI - KARURA WATER TRANSMISSION PIPELINE****BILL NO. 2.2: GIGIRI - KARURA PIPELINE SECTION (LINE GK) (Pipeline Construction; DN 1400, Total length 4.42 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<u>CLASS K: PIPE WORK - CHAMBERS AND PIPE WORK ANCILLARIES</u>				
	Chambers, ducts, culverts, crossings, thrust and anchor blocks, reinstatement and other pipework and ancillaries.				
	Note:- Items for Work in this class shall include:- - Excavation, dewatering, preparation of surfaces, disposal of excess excavated material, shoring sides of excavation, backfilling and removal of redundant services. - Concrete, reinforcement, formwork, joints and finishes. - Tips for disposal of excavated material or debris to be identified by the Contractor in liaison with the Local Authorities. - Rate to include for placing and compaction of pipe embedment material below the chamber and filling around pipe before construction of chamber - All Chambers to be fitted with adequate drainage system and permanent ventilation as per details or as directed by Engineer in Site. - Chambers to be fitted with plastic coated step irons or Access ladders as specified; and lockable covers to access manholes, to detail.				
K23	IN SITU CONCRETE CHAMBERS				
K232	Depth 1.5 - 2 m				
K232.1	Provide all materials and construct Reinforced Concrete AIR VALVE Chambers internal dimensions 2400mm x 2200mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/02	Nr	5		
K233	Depth 2-2.5 m				
K233.1	Provide all materials and construct Reinforced Concrete AIR VALVE Chambers internal dimensions 2400mm x 2200mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/02	Nr	1		
K234	Depth 2.5-3 m				
K234.1	Provide all materials and construct Reinforced Concrete AIR VALVE Chambers internal dimensions 2400mm x 2200mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/02	Nr	1		
K236	Depth 3.5-4 m				
K236.1	Provide all materials and construct Reinforced Concrete LINE VALVE Chambers internal dimensions not exceeding 2200mm x 2400mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/05	Nr	1		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
K236.2	Provide all materials and construct Reinforced Concrete ELECTROMAGNETIC FLOW METER Chambers internal dimensions 2400mm x 2800mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, vents, drainage system, etc . All as specified and as detailed Drawing No. M455/W-02B/SD/07	Nr	1		
K236.3	Provide all materials and construct Reinforced Concrete ELECTROMAGNETIC FLOW METER Chambers internal dimensions 2600mm x 3000mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, vents, drainage system, etc . All as specified and as detailed Drawing No. M455/W-02B/SD/07	Nr	1		
K236.4	Provide all materials and construct Reinforced Concrete GATE VALVE Chambers internal dimensions not exceeding 4200mm x 4200mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/05	Nr	1		
K237	Depth exceeding 4 m				
K237.1	Provide all materials and construct Reinforced Concrete LINE VALVE Chambers internal dimensions not exceeding 2600mm x 2800mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/05	Nr	1		
K25	PRECAST CONCRETE CHAMBERS				
K255	Depth 3-3.5m				
K256	Depth 3.5-4m				
K256.1	Provide all materials and construct precast concrete WASHOUT VALVE Surface Box. Include for supply and fixing of Class 30 PCC unit, MS surface box and lockable cover, compacted granular fill, OD 160mm uPVC pipe sleeve, length not exceeding 4m, etc. all as specified and as detailed Drawing . No. M455/W-02B/SD/04	Nr	3		
K257	Depth exceeding 4m				
K257.1	Provide all materials and construct precast concrete WASHOUT VALVE Surface Box. Include for supply and fixing of Class 30 PCC unit, MS surface box and lockable cover, compacted granular fill, OD 160mm uPVC pipe sleeve, length exceeding 4m, etc. all as specified and as detailed Drawing . No. M455/W-02B/SD/04	Nr	4		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
K6	CROSSINGS				
K63	Under-River Crossings, Width exceeding 10m				
	Details as per Dwg No. M455/W-02B/SD/11				
	Note: Items for work shall include: Excavation trench in river/stream beds depth n.e 4.0m, preparation of surfaces, disposal of excavated material, upholding sides of excavation, backfilling and removal of redundant services, all as per Dwg No. M455/W-02B/SD/11				
K633.1	Under River Crossing on Pipe Nominal Bore 900mm - 1800mm	m	60		
K633.2	Extra over item K633.1 for excavation in rock, depth n.e. 4.0m including preparation of trenches (No blasting permitted) (Provisional)				
K633.2.1	Class 'A'	m ³	60		
K633.2.2	Class 'B'	m ³	85		
K633.2.3	Class 'C'	m ³	140		
K633.3	Transport from Site Store, Install, Test and Commission ferrous pipes on under-river Crossings, jointing to specifications, Pipe nominal bore 900mm - 1800mm	m	50		
K633.4	Supply 'Denso Tape' wrapping or approved equivalent. Bidder to include for wrapping/jointing on the ferrous pipe in two layers as directed by the Engineer. Nominal Bore 900mm - 1800mm	m ²	220		
K633.5	Backfill the trench with concrete Class 15/20 surround, include for vibrating as directed by the Engineer all as per Dwg No. M455/W-02B/SD/11. Pipe nominal bore 900mm - 1800mm	m ³	110		
K633.6	Backfill the trench with approved selected excavated material compacted in 300mm layers. Pipe nominal bore 900mm - 1800mm	m ³	60		
K633.7	Backfill trench with approved imported compacted granular material compacted in 300mm layers. Pipe nominal bore 900mm - 1800mm	m ³	65		
	Gabion Works				
K633.8	Provide all materials and carry out laying of 2m x 1m x 1m Gabion Boxes, wire minimum size 5mm or as specified. Gabion boxes to be laid in stretches with 0.5m overlap, mesh wire to be galvanised and minimum diameter 5mm. Include for tying of adjacent Gabions with approved wire and 16mm dia anchor rods to suit site conditions (Provisional)	Nr	80		
K633.9	Provide all materials and carry out laying of 0.23 - 0.5m thick Gabion Mattresses, mesh wire to be galvanised and of minimum diameter 5mm. Include for tying of adjacent gabions with approved wire and 16mm dia anchor rods to suit site conditions (Provisional)	m ²	150		
K633.10	Provide and place rockfill to gabions and mattresses	m ³	150		
K633.11	Extra over for provision of all materials and infilling of gabions with Class 15 mass concrete	m ³	20		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
K633.12	Method Related Charges				
K633.12.1	Allow for diverting River/Stream including construction of cofferdam etc., for river crossing works and reinstate after construction. The River/Stream to be kept operational during construction, width exceeding 10m	Nr	1		
K633.12.2	Allow for keeping excavation free of water which may occur through ground water seepage, rain or other means.	Item	L.S		
K633.13.3	Allow for any other method related charges the Bidder feels may be required. These should be indicated below with pricing of each item.				
	i)	Item	L.S		
	ii)	Item	L.S		
K7	Reinstatement				
	Breaking up, temporary and permanent reinstatement of TARMAc road with suitable selected excavated material and 300mm thick well graded stabilised gravel with 3% cement content base, compacted in 150mm thick layers using an 8-10 tonne roller, 150mm deep approved compacted hardcore and at-least 50mm thick bitumen macadam, all to the satisfaction of the Engineer. Contractor to include for road cutting, excavation of compacted hardcore / murrum, and any other associated works. Nominal pipe bore n.e. 1800mm, all as per details in Dwg No. M455/W-02B/SD/12 and M455/W-02B/SD/13. Rates quoted shall be deemed to include for costs incurred on traffic control, signage and safety measures during execution of the works.				
K733.1	Temporary and Permanent Reinstatement of Tarmac Road crossings, Pipe Nominal Bore 900mm - 1800mm	m	500		
K733.2	- Ditto - but for CONCRETE BLOCK PAVED road, Nominal Bore 900mm - 1800mm	m	50		
K733.3	Breaking up, temporary and permanent reinstatement of MURRAM road with 300mm thick well graded stabilised gravel with 3% cement base compacted in 150mm thick layers using an 8-10 tonne roller and 150mm deep approved compacted hardcore to the satisfaction of the Engineer. Nominal pipe bore n.e. 1800mm. all as per Dwg No. M455/W-02B/SD/13. Rates quoted shall be deemed to include for costs incurred on traffic control, signage and safety measures during execution of the works.; Pipe nominal bore 900mm - 1800mm	m	60		
K743.1	Breaking up temporary and permanent reinstatement of PAVED FOOTPATHS (concrete, cabro, tarmac, etc.). Pipe bore 900mm - 1800mm all as per Dwg No.M455/W-02B/SD/12 and M455/W-02B/SD/13	m	600		
K743.2	Breaking up temporary and permanent reinstatement of UNPAVED FOOTPATHS. Pipe bore 900mm - 1800mm all as per Dwg No. M455/W-02B/SD/13	m	300		
K8	Other Pipework Ancillaries				
K821	Marker Posts on Pipeline Alignment				
K821.1	Supply and fix marker posts for water main route, road crossings, change of direction, air valves, washouts, and valve chambers. All in accordance with drawings and specifications	Nr	60		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	Wash-out Outfall Rising Pipe				
K87	Provide all materials, fabricate and install washout chamber outfall rising pipe as detailed in drg. No. M455/W-02B/SD/03. Rate to include for supply of all fittings, jointing, installation and connection to washout tee and valve.	Nr.	8		
K88	Removal and Reinstatement of Existing Hedges, Fences, Walls and Drains				
K88.1	Allow for removal of existing HEDGES and reinstating these after laying of the water mains is completed.	m	400		
K88.2	Allow for breaking up of existing masonry perimeter WALLS approx. 2.5m high, with concrete columns at approx. 3m intervals, and reinstatement after laying of water mains is completed.	m	100		
K88.3	Allow for breaking up of existing FENCES, including but not limited to chain link fence, barbed wire fence, timber, iron sheet, electric fence, etc., and reinstating these after construction of the water mains is completed.	m	100		
K88.4.1	Allow for breaking up of existing UNLINED EARTH DRAINS and reinstating these after construction of the water mains is completed. Include for provision of diverting the drains or water ways and keeping them operational during construction. Depth of Drain n.e. 3m (See Drg. No. M455/W-02B/SD/17)	m	50		
K88.4.2	-Ditto - but for existing STONE-PITCHED OPEN DRAINS, depth n.e. 3.0m (See Drg. No. M455/W-02B/SD/17)	m	150		
K88.4.3	-Ditto - but for existing INVERT BLOCK DRAINS. (See Drg. No. M455/W-02B/SD/17)	m	500		
K88.4.4	-Ditto - but for existing INVERT BLOCK DRAINS + 2 COURSES.	m	100		
K88.4.5	-Ditto - but for existing INVERT BLOCK DRAINS + 4 COURSES.	m	50		
K88.4.6	-Ditto - but for existing INVERT BLOCK DRAINS + 6 COURSES.	m	50		
K9	Interconnection To Existing Pipelines				
	Allow for locating, exposing and cutting of existing pipework to suit Interconnection pipework and fittings supplied and installed under other items. Item to include for trench excavation, draining of the existing pipe where necessary, dewatering of trench, etc. and reinstatement after installation of Interconnection pipework; all as directed by the Engineer.				
K990	To pipes nominal bore: 900 - 1200 mm	Nr.	1		
	CLASS L:- PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				
L1	Extras to excavation and backfilling (Provisional)				
L11	In pipe trench and chambers				
L111.1	Excavation in trench for rock class "A"	m ³	3,800		
L111.2	Excavation in trench for rock class "B"	m ³	3,800		
L111.3	Excavation in trench for rock class "C"	m ³	7,500		
	Note:- Blasting is NOT permitted for Item L11				
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
L5	Surrounds				
L52	Provide, transport to site and place selected excavated granular fill and compact in bed and surround to pipes as specified and where directed by the Engineer				
L526	To pipes nominal bore: 1200 - 1500 mm	m	2,715		
L53	Provide, transport to site and place imported granular fill and compact in bed and surround to pipes as specified and where directed by the Engineer				
L536	To pipes nominal bore: 1200 - 1500 mm	m	1,810		
L54	Provide all materials, transport to site and place mass concrete class 15/20 in bed and surround to pipes under road crossings and on shallow pipeline sections as directed by the Engineer. Include for provision, fixing and dismantling of all formwork, vibration of concrete etc. all as per Dwg No. M455/W-02B/SD/11				
L546	To pipes nominal bore: 1200 - 1500 mm	m	150		
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks Details as per Dwg No. M455/W-02B/SD/09 (Provisional)				
	Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc.				
	Class 20/20 Mass Concrete				
	NOTE:- The work includes pipe and fitting fixing				
L75	Volume:- 1 - 2 m³				
L755	To pipes nominal bore: 900 -1200mm	Nr	1		
L76	Volume:- 2 - 4 m³				
L766	To pipes nominal bore: 1200 -1500mm	Nr	10		
L77	Volume:- 4 - 6 m³				
L774	To pipes nominal bore: 600 -900mm	Nr	1		
L78.1	Volume:- 6- 10 m³				
L786.1	To pipes nominal bore: 1200 -1500mm	Nr	30		
L78.2	Volume:- exceeding 10m³				
L784.2	To pipes nominal bore: 600 -900mm	Nr	8		
L785.2	To pipes nominal bore: 900 -1200mm	Nr	15		
L786.2	To pipes nominal bore: 1200 -1500mm	Nr	60		
	CLASS V: PAINTING				
V310	Allow for cleaning and painting with 3 coats of approved epoxy paint all exposed pipework, fittings, valves, etc.	m ²	250		
	CLASS X:-MISCELLANEOUS WORKS				
X4	Gabion Works				
X411	Supply and Install approved Gabion Boxes, size 2m x 1m x 1m mesh wire minimum size 5mm diameter laid in cascading stacks around R.C. piers on aerial crossings, and or as specified, Gabion boxes to be instructed by the Engineer on site, all as directed. Rate to include for supply and packing of approved hardcore into gabion boxes, all to Engineer's approval, as shown on Drg. No. M455/W-02B/SD/11.	Nr	50		
X421	Ditto - but Gabion Mattresses, thickness 500mm mesh wire 5mm diameter	m ²	40		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
X990	<u>EROSION CONTROL AND PROTECTION MEASURES (PROVISIONAL)</u>				
X990.1	Provide all materials and construct mass concrete EROSION CHECKS on steep slopes as specified and according to details given in Drg. No. M455/W-02B/SD/17.	Nr.	50		
X990.2	Supply and plant approved grass on slopes and maintenance until it takes root to the satisfaction of the Engineer. Rate to include for excavation of cut-off drains to divert run-off water from pipe trench alignment.	m ²	400		
X991	<u>HEADWALLS, CASCADES AND OUTFALL CHAMBERS</u>				
	Details as per Dwg No. M455/W-02B/SD/04 (Provisional Quantities)				
X991.1	<u>Excavation</u>				
	The rates shall include for all strutting, shuttering, stabilising the excavation and preparation of excavated surfaces to receive permanent work.				
	Excavate for pier footings, part backfill after construction and remainder, cart away to tips or use as fill on site, all as directed by the Engineer. Tips to be identified by the Contractor in liaison with the Local Authority.				
X991.1.1	Maximum depth n.e. 1.0m	m ³	23		
X991.1.2	-Ditto - depth 1.0 to 1.5m	m ³	37		
X991.1.3	-Ditto - depth exceeding 1.5m	m ³	15		
X991.1.4	E.O. excavation items for excavation in rock Class 'A' (Provisional)	m ³	8		
X991.1.5	-Ditto - for excavation in rock Class 'B' (Provisional)	m ³	12		
X991.1.6	-Ditto - for excavation in rock Class 'C' (Provisional)	m ³	19		
X991.2	<u>Concrete Works</u>				
	Provide, mix and place concrete as directed				
X991.2.1	Plain concrete Class 15/20 in 50mm blinding layer under bases/treads.	m ²	60		
X991.2.2	<u>Vibrated, Reinforced Concrete Class 25/20 in:-</u>				
X991.2.2.1	Footings	m ³	2		
X991.2.2.2	Bases	m ³	8		
X991.2.2.3	Walls	m ³	8		
X991.2.2.4	Treads	m ³	2		
X991.2.2.5	Risers	m ³	2		
X991.2.2.6	Roof Slabs	m ³	3		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
X991.3	Reinforcement				
	Provide and fix high tensile steel reinforcement to SRN 127 including cutting, bending, propping, with spacers and tying as specified.				
X991.3.1	All diameters	kg	3,250		
X991.4	Formwork				
	Provide and fix shuttering including propping, strutting and striking all as specified.				
	(i) Vertical Formwork - Class F1 Finish				
X991.4.1	Sides of 200mm treads/ bases/ risers	m	75		
X991.4.2	Sides of footings - width n.e. 0.2m	m	8		
X991.4.3	Sides of footings - width exceeding 0.2m	m ²	4		
X991.4.4	External faces of chamber walls/ headwalls - width exceeding 0.2m	m ²	6		
	(ii) Vertical Formwork - Class F2 Finish				
X991.4.5	Sides of 200mm roof slabs and walls	m	62		
X991.4.6	Internal faces of chamber walls/ headwalls etc	m ²	79		
	(iii) Horizontal Formwork - Class F2 Finish				
X991.4.7	Soffits of roof slabs and walls	m ²	10		
X991.5	Walling				
	Natural Stone Block Walling, Medium Chisel Dressed, Reinforced with 20 swag Hoop Iron at Every Alternate Course, and Bedded, Jointed and Pointed in Cement Mortar (1:4):-				
X991.5.1	200 mm Walling	m ²	30		
X991.6	Plastering				
	12.5mm Thick Gauged Cement Plaster as per specifications.				
X991.6.1	Natural stone block walling and other surfaces	m ²	50		
X991.7	Miscellaneous Works				
X991.7.1	Provide for and fix plastic coated step irons in rising outfall chambers for Washouts as specified by the Engineer. Details of chamber are in Dwg Nr. M455/W-02B/SD/03	Nr	30		
X991.7.2	Provide Precast Reinforced Concrete Covers size 600 x 600 x 50mm thick to the rising outlet Chambers.	Nr	4		
X991.8	Method Related Charges for Construction of Outfall Structures				
X991.8.1	Allow for River diversion, for construction of W.O outfall structures including construction of cofferdam etc., for River crossing works and reinstate after construction. The River / Waterway to be kept operational during construction. The Bidder to submit method statement with Bid for execution of these works.	Item	L.S		
X991.8.2	Method related charges for keeping excavation free of water which may occur through ground water seepage, rain or other means.	Item	L.S		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 2: GIGIRI - KARURA WATER TRANSMISSION PIPELINE****BILL NO. 2.2: GIGIRI - KARURA PIPELINE SECTION (LINE GK) (Pipeline Construction; DN 1400, Total length 4.42 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
X991.8.3	Allow for any other method related charges the Bidder feels may be required. These should be indicated below with pricing of each item.				
	i)	Item	L.S		
	ii)	Item	L.S		
X992	TRENCHLESS ROAD CROSSINGS				
	Provide all equipment and materials, tunnel below road surface in common material (soil/murram), including any requisite shoring and strutting during tunnelling, provide and install precast Reinforced Concrete lining segments to tunnel faces, blanking of tunnel ends with mass concrete/masonry walls upon pipework installation, all as detailed in drg. No. M455/W-02B/SD/12 or using any other Trenchless method, subject to Engineer's approval and in accordance to specifications. Rate to include for all necessary grouting. All works to be executed in close liaison with relevant road authorities. Rates to include for facilitation of the same. The Bidder to submit Method Statement with Bid for execution of these Works. The bidder may quote for alternative method of Trenchless Road/Railway Crossing. Details of alternative method to be submitted with the Bid. Nominal pipe bore not exceeding 1400mm.				
X992.1.1	United Nations Avenue Crossing, Pipe nominal bore 1400mm	m	70		
X992.1.2	Kiambu Road Crossing, Pipe Nominal Bore 1400mm	m	50		
X992.2.1	Extra over the Road Crossing, items X992.1.1 to X992.1.6 for tunnelling in rock, all classes (Provisional)	m ³	480		
X992.3.1	Transport from site store, install and joint ferrous pipework in tunnel, including all fixing and jointing as specified, nominal bore 1200 - 1500mm	m	120		
X992.4.1	Allow for any Method Related Charges for Trenchless pipe crossing under roads/ railway tracks for item X992.1.1 to X992.2 above that the Bidder feels may be required. These should be indicated below with pricing of each item. (Bidder may add Additional items here below if required).	Item	L.S		
	i)				
	ii)				
X993	Installation of New Inlet Pipework to Existing Karura Tank				
X993.1	Allow for installation of new DN 800 inlet pipework to existing R.C Karura Tank. Rate to include for supply of all materials (supply of pipes and fittings measured separately under class J), cutting and reinstatement of existing R.C. structure, provision of R.C. stools and thrust blocks; all as directed by the Engineer.	Item	L.S		
X994	Miscellaneous Works (Provisional)				
X994.1	Provisional Sum for other Miscellaneous Works that may be required on site to be carried out as directed by the Engineer.	Item	P.S		2,500,000
X994.2	Provisional Sum for disposal of material that may be found on site and which requires specialized handling and safe disposal by the Contractor or a licenced Waste Handler e.g. Industrial Waste	Item	P.S		2,500,000
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BILL No. 2.2 COLLECTION SHEET

CKE1135 - NAIROBI WATER AND SANITATION PROJECT

CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT

BID No. AWWDA/AFD/NWSP/W-02B/2023

SECTION 2: GIGIRI - KARURA WATER TRANSMISSION PIPELINE

BILL NO. 2.2: GIGIRI - KARURA PIPELINE SECTION (LINE GK) (Pipeline Construction; DN 1400, Total length 4.42 km)

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CKE1135 - NAIROBI WATER AND SANITATION PROJECT

CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT

BID No. AWWDA/AFD/NWSP/W-02B/2023

BILL No. 3 - KARURA - OUTER-RING ROAD PIPELINE

INSTRUCTIONS TO BIDDERS

IMPORTANT:

THE BIDDER TO QUOTE FOR ANY ONE OF THE FOLLOWING OPTIONS FOR PIPES AND FITTINGS MATERIALS AND JOINTING. THE SELECTED OPTION TO BE TICKED IN THE SPACE PROVIDED.

OPTION	DESCRIPTION	INDICATE SELECTED OPTION BY TICKING ONE BOX BELOW
1	<u>Ductile Iron</u> Socket and Spigot Pipes and Fittings with mostly Standard Push-on Joints and provision for some <u>Self Anchored Joints</u> as specified	
2	<u>Steel</u> Pipes and Fittings with provision for <u>Field Butt Welded Joints</u> as specified.	

ONLY ONE BOX SHOULD BE TICKED

CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA - OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.1: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (SUPPLY OF PIPES, FITTINGS, VALVES AND ANCILLARIES; DN 1400, TOTAL LENGTH 4 KM)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	NOTES:				
1.	THIS BILL ONLY COVERS RATES FOR PROCUREMENT OF PIPES AND FITTINGS, TRANSPORT TO CONTRACTOR'S SITE STORE AND STORAGE. INCLUDING SUPPLY OF JOINTING MATERIALS, BOLTS, NUTS, GASKETS, ETC.				
2.	RATES FOR TRANSPORT FROM SITE STORE AND INSTALLATION TO BE INCLUDED IN BILL No. 3.2				
3.	BIDDER TO PRICE <u>EITHER FOR STEEL PIPES AND FITTINGS WITH PROVISION FOR FIELD BUTT-WELDED JOINTS AS SPECIFIED OR DUCTILE IRON SOCKET AND SPIGOT PIPES AND FITTINGS WITH STANDARD PUSH-ON JOINTS AS SPECIFIED</u>				
4.	ALL RATES TO BE INCLUSIVE OF RELEVANT GOVERNMENT OF KENYA DUTIES AND TAXES, EXCEPT VALUE ADDED TAX (VAT) WHICH IS TO BE ADDED SEPARATELY IN THE GRAND SUMMARY.				
5.	<u>ALL PIPES AND FITTINGS TO PRESSURE RATING PN16</u>				
6.	<u>FOR STEEL PIPELINES, STEEL GRADE AND THICKNESS AS SPECIFIED</u>				
7.	<u>PIPELINE EXTERNAL COATING AND INTERNAL LINING AS SPECIFIED FOR THE SELECTED PIPELINE MATERIAL</u>				
8.	<u>BIDDERS QUOTING FOR DUCTILE IRON PIPES AND FITTINGS TO PRICE FOR SERIES X ITEMS : OTHER PRICES FOR DUCTILE IRON PIPES AND FITTINGS</u>				
9.	<u>IN VIEW OF THE LARGE PIPE DIAMETERS INVOLVED, BIDDERS TO ALLOW FOR REINFORCEMENT OF FITTINGS AS MAYBE REQUIRED, ALL AS PER THE AWWA MANUAL OF WATER SUPPLY PRACTICES (AWWA M11); REINFORCEMENT OF PIPE FITTINGS EITHER BY COLLAR PLATE, WRAPPER PLATE OR BY CROTCH-PLATE, AS MAY BE REQUIRED. BIDDER TO INCLUDE RATE FOR REINFORCEMENT OF FITTINGS IN THEIR RATES FOR RESPECTIVE FITTINGS</u>				
	CLASS I: PIPE WORK - PIPES				
14	Ductile Iron Pipes or Steel Pipes; Joints as specified Ductile Iron Socket and Spigot Pipes with Standard Push-On Joints (class as specified, cement mortar lining, zinc-aluminium coating) OR Steel Pipes with provision for Field Lap-Welded Joints (minimum yield strength 235 Mpa, minimum wall thickness as specified, Fusion Bonded Epoxy Lining as specified, 3-layer polyethylene coating)				
146.1	DN 1400 mm, DI (class 16) OR Steel (Min. wall thickness 12.5mm)	m	4,018		
17	High Density Polyethylene Pipes (HDPE) Butt-fusion weld jointed HDPE Pipes - PN 16				
171.1	Nominal Bore 110 mm (provisional length) for Chamber Drainage	m	80		
172.1	Nominal Bore 250 mm (provisional length) for Washout Drainage	m	80		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA - OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.1: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (SUPPLY OF PIPES, FITTINGS, VALVES AND ANCILLARIES; DN 1400, TOTAL LENGTH 4 KM)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	CLASS J: PIPE WORK - FITTINGS AND VALVES				
J3	Ductile Iron Fittings or Steel Fittings; Joints as specified				
J31	Bends				
J313.1	Nominal bore 600mm; Double Flanged Bend				
J313.1.1	45° DN 600, PN 16	Nr	5		
J313.1.2	90° DN 600, PN 16	Nr	1		
J315.1	Nominal bore 1200mm; Double Flanged Bend				
J315.1.1	45° DN 1200, PN 16	Nr	4		
J316.1	Nominal Bore 1400mm; Ductile Iron Socket and Spigot Bends with Standard Push-On Joints OR Steel plain ended Bends with provision for field butt-welded Joints				
J316.1.1	11.25° DN 1400, PN 16	Nr	17		
J316.1.2	22.5° DN 1400, PN 16	Nr	12		
J316.1.3	30° DN 1400, PN 16	Nr	5		
J316.1.4	45° DN 1400, PN 16	Nr	5		
J316.1.5	90° DN 1400, PN 16	Nr	1		
J32	Junctions and Branches				
	All Flanged Tee				
J323.1	DN 600 x DN 600, PN 16 all Flanged Tee	Nr	3		
J326.1	DN 1400 x DN 200, PN 16 all Flanged Tee for Air Valves	Nr	3		
J326.2	DN 1400 x DN 600, PN 16 all Flanged Tee for offtakes	Nr	1		
J326.3	DN 1400 x DN 800, PN 16 all Flanged Tee for offtakes	Nr	3		
J326.4	DN 1400 x DN 800, PN 16 all Flanged Tee for Air Valves	Nr	6		
	All Flanged Level Invert Tee				
J326.5	DN 1400 x DN 250, PN 16 all Flanged Tee for Washouts	Nr	6		
J33	Tapers				
	All Flanged Concentric Taper				
J336.1	DN 1400 x DN 1200, PN 16	Nr	4		
J34	Ferrous Couplings				
J342.1	DN 250, PN 16- Ranger Coupling	Nr	6		
J343.1	DN 600, PN 16- Straight Coupling	Nr	6		
J344.1	DN 800, PN 16- Straight Coupling	Nr	7		
J346.1	DN 1400, PN 16- Straight Coupling (Provisional)	Nr	2		
J35	Ferrous Flange Adaptor				
J352.1	DN 250, PN 16	Nr	6		
J353.1	DN 600, PN 16	Nr	2		
J356.1	DN 1400, PN 16 - (Provisional)	Nr	2		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA - OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.1: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (SUPPLY OF PIPES, FITTINGS, VALVES AND ANCILLARIES; DN 1400, TOTAL LENGTH 4 KM)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
J37	Bell mouths				
J374.1	DN 800, PN 16	Nr	3		
J38	Straight Specials				
	Plain Ended Pipes without Puddle Flanges				
J382.1	DN 250, PN 16, 1.2m long	Nr	6		
J383.1	DN 600, PN 16, 60m long (With Couplings)	Nr	1		
J384.1	DN 800, PN 16, 15m long (With Couplings)	Nr	3		
	Flanged Spigot Pipes without Puddle Flanges				
J383.2	DN 600, PN 16, 1.5m long	Nr	4		
J383.3	DN 600, PN 16, 5m long	Nr	4		
J384.2	DN 800, PN 16, 6m long	Nr	5		
J386.1	DN 1400, PN 16, 1.5m long	Nr	17		
	Flanged Spigot Pipes with Puddle Flanges (location of Puddle Flange as specified in Drawings)				
J383.4	DN 600, PN 16, 1.5m long with puddle flange	Nr	1		
J384.3	DN 800, PN 16, 1.5m long with puddle flange	Nr	5		
J386.2	DN 1400, PN 16, 1.5m long with puddle flange	Nr	15		
	Double Flanged Pipes without puddle flanges				
J383.5	DN 600, PN 16, 1.5m long	Nr	1		
	Double Flanged Pipes with puddle flanges (location of Puddle Flange as specified in Drawings)				
J383.6	DN 600, PN 16, 1.5m long with puddle flange	Nr	1		
J383.7	DN 600, PN 16, 3m long with puddle flange	Nr	1		
J383.8	DN 600, PN 16, 6m long with puddle flange	Nr	1		
J384.4	DN 800, PN 16, 1.5m long with puddle flange	Nr	3		
J385.1	DN 1200, PN 16, 6m long with puddle flange	Nr	1		
J385.2	DN 1200, PN 16, 12m long with puddle flange	Nr	1		
	Special Fittings				
J381.1	DN 200, PN 16, special double flanged pipe 325mm long with flange to suit 800mm dia. tee on one end and 200mm dia flange on the other end as per Dwg Nr M455/W-02B/SD/02 (Detail 1).	Nr	6		
J383.9	DN 600 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 300mm or approved equivalent)	Nr	3		
J384.5	DN 800 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 300mm or approved equivalent)	Nr	3		
J385.3	DN 1200 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 320mm or approved equivalent)	Nr	2		
J386.3	DN 1400 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 320mm or approved equivalent)	Nr	3		
J39	Blank Flange				
J393.1	DN 600, PN 16	Nr	1		
J396.1	DN 1400, PN 16	Nr	1		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA - OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.1: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (SUPPLY OF PIPES, FITTINGS, VALVES AND ANCILLARIES; DN 1400, TOTAL LENGTH 4 KM)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
J8	Valves and Penstocks				
J81	Flanged Gate Valve				
J811.1	DN 200, PN 16, with handwheel (for offtakes and Air Valves)	Nr	8		
J812.1	DN 250, PN 16, with Extension Spindle, length n.e. 5.0m without handwheel (for washouts)	Nr	6		
J83	Flanged Non Return Valve				
J833.1	DN 600, PN 16	Nr	1		
J834.1	DN 800, PN 16	Nr	3		
J84	Flanged Butterfly Valve complete with Gear Mechanism designed to slow down flow reduction at end of closure as specified and Hand Wheel as specified				
J843.1	DN 600, PN 16	Nr	1		
J844.1	DN 800, PN 16	Nr	3		
J846.1	DN 1400, PN 16	Nr	3		
J86	Air Valve				
J861	Flanged Double Acting Non-Slam (Anti-Surge) Air Valve (DAV) as specified				
J861.1	DN 200, PN 16	Nr	8		
J9	Water Meters				
	Electromagnetic Water Meters				
J993.1	DN 600 All Flanged Battery Powered Electromagnetic Water Meter to PN 16 complete with accessories as specified; Minimum Battery Life 6 Years.	Nr	1		
J995.1	DN 1200 All Flanged Battery Powered Electromagnetic Water Meter to PN 16 complete with accessories as specified; Minimum Battery Life 6 Years.	Nr	1		
	<u>CLASS X: OTHER COSTS FOR DUCTILE IRON PIPES & FITTINGS</u>				
	<u>Note: This item is only to be priced if the Bidder has quoted for Ductile Iron Pipes & Fittings. Bidders quoting for Steel Pipes and Fittings should not price this item.</u>				
X999	Extra-over cost on top of Items I4 and J31 for the supply of Ductile Iron Pipes and Bends with Self-Anchored Joints				
X999.1	DN 1400mm Pipes with Self Anchored Joints	m	390		
X999.2	DN 1400mm Bends (Angle Size varies from 11.25 deg to 45 deg) with Self Anchored Joints	Nr	10		
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<u>CKE1135 - NAIROBI WATER AND SANITATION PROJECT</u>	
<u>CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT</u>	
<u>BID No. AWWDA/AFD/NWSP/W-02B/2023</u>	
<u>SECTION 3: KARURA - OUTER-RING ROAD WATER TRANSMISSION PIPELINE</u>	
<u>BILL NO. 3.1: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (SUPPLY OF PIPES, FITTINGS, VALVES AND ANCILLARIES; DN 1400, TOTAL LENGTH 4 KM)</u>	
	Amount (Kshs.)
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA-OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.2: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (Pipeline Construction; DN 1400, Total length 4 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	NOTES:				
1.	<p>The Karura-Outer-Ring Road Water Transmission Pipeline traverses through Urban Built-up areas which are densely developed, with limited working space and limited access for mechanical excavation equipment. Some sections pass through congested areas, with Road and Stream Crossings. Some sections of the Pipeline are to be laid along and across busy roads such as Thika Super-Highway and Outer-Ring Road.</p> <p>The Pipeline is to be laid in Areas with numerous active Existing Services, both surface and buried; and along Busy Streets/ Roads in Commercial and Residential areas spread over the entire length. A section of the pipeline is to be laid along Pipeline Estate Road in the vicinity of the National Intelligence Service Headquarters which is a key security installation.</p> <p>Specific conditions in execution of these works are deemed to be included in the Contractor's Rates. The Contractor will be required to submit Method Statement for execution of works under these specific conditions for approval prior to execution of the works. These include, but are not limited to the following;</p> <p>i) No blasting will be permitted ii) The contractor to maintain uninterrupted continuity of Water Supply in existing Mains iii) Pedestrians and Vehicular access to institutions/ individual Shops/ Plots, Houses, etc. to be maintained at all times. Where necessary, alternative temporary access to be availed iv) Safety hoarding, lighting, bands, warning signs, etc. to be maintained at all times. v)</p>				
2.	<p>The Contractor shall carry out pilot excavations along the pipeline route to establish locations and alignment of existing Water Mains, Telecommunication and Fibre Optic Cables and other buried services, if any, prior to actual trench excavation, all in close liaison with service providers. It shall be deemed that any costs for crossing existing Water Mains, Telecommunication and Fibre Optic Cables is included in the Contractor's Rates. Any claims thereof SHALL NOT be paid and damages caused on the same as a result of execution of the works shall be the Contractor's liability. These will be duly repaired at the Contractor's cost.</p> <p>The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access road to work site, liaison with the relevant Authorities and local residents, payment of any required statutory charges, security arrangements etc. The costs for compliance shall be deemed to be covered by the Contractor's Rates.</p>				
4.	All Rates to include for Government of Kenya Duties and Taxes, Except Value Added Tax (VAT).				
5.	Value Added Tax (VAT) to be added separately in the Grand Summary.				
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA-OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.2: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (Pipeline Construction; DN 1400, Total length 4 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	CLASS A: GENERAL ITEM				
A260	Testing of Works				
	Pipeline Testing and Commissioning, including provision of all Equipment, Materials and works necessary for Testing, such as but not limited to thrust blocks, anchor blocks, provision, transportation and use of water, requisite pipe fittings, etc., successful testing to specified pressure and safe disposal of used water.				
	NOTE: Any additional fittings that may be necessitated by the Contractor's Methodology for testing shall be supplied and installed at the Contractor's own cost.				
A260.1	DN 1400mm	m	4,018		
	Disinfection of Pipe lines: Flushing with clear water, filling with water containing 0.05 g/l calcium hypochlorite, left for 24 hours. This includes supply of all necessary equipment, materials, chemicals and water, measurement of residual chlorine, all as specified and safe disposal of disinfecting water to Engineer's approval.				
A260.2	DN 1400mm	m	4,018		
A3	Method Related Charges				
A35	Temporary Works				
A35.1	Working within available limited wayleave, include costs for double / multiple handling of excavated materials if required, as well as provision of alternative access to private property during execution of the works.	Item	L.S		
A35.2	Working within marshy areas with weak soil formation	Item	L.S		
A35.3	Keeping trenches free of excessive groundwater, seepage or water from whatever source	Item	L.S		
A35.4	Allow Provisional Sum for Liaison, facilitation with local residents	Item	P.S		2,000,000
A35.5	Allow for carrying out Pilot Excavation, exposing and identification of existing UNDERGROUND SERVICES (water lines, sewer lines, storm water drains, telephone/electricity ducts, fibre optic cables, etc.) prior to setting out and excavation of the pipeline. Pilot excavation n.e. 4m depth on approx. 5m wide corridor, estimate No. of pilot holes along the Pipeline route is 100Nr.	Item	L.S		
A35.6	Allow for crossing existing UNDERGROUND SERVICES (water lines, sewer lines, storm water drains, telephone/electricity ducts, fibre optic cables (including cables for security cameras), etc.), including reinstatement to original states and liaison with the relevant body for the inspection/ approval during execution of the works. Nominal bore up to - 1800mm. Estimated Number of crossings is 200Nr	Item	LS		
A35.7	Allow a Provisional Sum of Kshs. 1,500,000/= for re-alignment of existing services, both buried and above ground, as may be required and directed on site, to create space for laying of proposed Transmission Mains. This item covers re-alignment/re-routing of existing water mains, Telecommunication cables, buried and overhead power lines where appropriate.	Item	P.S		1,500,000
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA-OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.2: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (Pipeline Construction; DN 1400, Total length 4 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
A35.8	Allow for any other method related charges the Bidder feels may be required. These should be indicated below with pricing of each item (Bidder may attach additional sheets if necessary):				
	i)	Item	L.S		
	ii)	Item	L.S		
	<u>CLASS D: DEMOLITION AND SITE CLEARANCE</u>				
D100.1	General site clearance along easement	ha	2.41		
D2	Tree Cutting				
	Cut down trees, grub up roots and cart away to tips				
D210	Girth: 0.5 m - 1.0 m	Nr	16		
D220	Girth: 1.0 m - 2 m	Nr	12		
D230	Girth 2.0 m - 3 m	Nr	8		
D240	Girth 3.0 m - 5 m	Nr	4		
D320	Remove stump dia. 0.5 - 1m	Nr	2		
D330	Remove stump dia. exceeding 1m	Nr	2		
D4	Demolition of Structures				
	Rate to include for demolition of structures, breaking of plinths and carting away demolition debris to tips identified by the Contractor in liaison with local Authorities.				
D463	Allow for demolition of Concrete Structures (including Inverted Block Drains, concrete slabs, etc.) along the pipeline alignment. Rate to include requisite reinstatement Works (Provisional)	m ³	30		
D563	Allow for demolition of Masonry Structures along the pipeline alignment (including Stone-pitched Drains). Rate to include requisite reinstatement Works.	m ²	100		
	<u>CLASS E: EARTHWORKS</u>				
E220	Mass Excavation in selected areas to level localized high points and to remove imported deposited material on pipeline alignment to original ground level as directed by the Engineer prior to excavation of pipeline trenches. Include for transportation and disposal of excavated material to approved tips identified by the Contractor in liaison with Local Authorities. (Provisional)	m ³	400		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA-OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.2: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (Pipeline Construction; DN 1400, Total length 4 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<u>CLASS I: PIPE WORK - PIPES</u>				
	Transport from Site Store, Lay and Joint Pipes in Trench, Include for Excavation, Preparation of Surfaces, Disposal of Excavated Material, Shoring Sides of Excavation and Backfilling.				
	Note: Trench width and minimum cover to pipes is as per the Specification. The cost shall include for strutting, shuttering, stabilizing the earth faces of trenches and keeping the trenches free of water from whatever source by pumping or other means and cost of use of selected soil from the excavated material for compaction in bed and surround to backfilling of trenches, etc., all as specified.				
14	Ductile Iron Fittings OR Steel Fittings; Joints as specified				
	Ductile Iron Socket and Spigot Pipes with Standard Push-On Joints OR Steel Pipes with provision for Field Butt-welded Joints				
	NOTE: Rate for laying of Steel Pipes to include cost of supply of all requisite equipment and materials and jointing by Field Butt Welding to Specifications. Rate for laying of Ductile Iron Pipes to include for jointing by push-on joints, all to specifications				
146	Nominal Bore 1400mm in trenches				
1461	Nominal Bore 1400mm not in trenches (For aerial crossings)	m	40		
1462	Depth not exceeding 1.5 m	m	39		
1463	Depth 1.5 m - 2.0 m	m	40		
1464	Depth 2.0 m - 2.5 m	m	205		
1465	Depth 2.5 m -3.0 m	m	1453		
1466	Depth 3.0 m - 3.5 m	m	1000		
1467	Depth 3.5m - 4.0 m	m	426		
1468	Depth exceeding 4.0m	m	815		
17	High Density Polyethylene Pipes (HDPE)				
171	Butt-fusion weld jointed HDPE Pipes - PN 16 Nominal Bore 110mm in trenches for chamber drainage				
1712	Depth not exceeding 1.5 m	m	10		
1713	Depth 1.5m - 2.0 m	m	15		
1714	Depth 2m - 2.5m	m	10		
1715	Depth 2.5m - 3m	m	10		
1716	Depth 3m - 3.5m	m	10		
1717	Depth 3.5m - 4m	m	10		
1718	Depth exceeding 4.0m	m	15		
172	Butt-fusion weld jointed HDPE Pipes - PN 16 Nominal Bore 250mm in trenches for washout drainage				
1722	Depth not exceeding 1.5m	m	10		
1723	Depth 2.0m - 2.5m	m	10		
1724	Depth 2.0m - 2.5m	m	10		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
I725	Depth 2.5m - 3.0m	m	10		
I726	Depth 3.0m - 3.5m	m	10		
I727	Depth 3.5m - 4m	m	15		
I728	Depth exceeding 4m	m	15		
	CLASS J: PIPE WORK - FITTINGS AND VALVES				
	Transport from Site Store, Lay and Joint Pipe Fittings in Trench/ on Aerial Crossings, Include for Excavation, Preparation of Surfaces, Disposal of Excess Material, Shoring Sides of Excavation and Backfilling. Rate to include for Transport to Site and Installation of all Jointing Materials, Bolts, Nuts, Gaskets, etc.				
J3	Ductile Iron Fittings OR Steel Fittings; Joints as specified				
J31	Bends				
J313.1	Nominal bore 600mm; Double Flanged Bend				
J313.1.1	45° DN 600, PN 16	Nr	5		
J313.1.2	90° DN 600, PN 16	Nr	1		
J315.1	Nominal bore 1200mm; Double Flanged Bend				
J315.1.1	45° DN 1200, PN 16	Nr	4		
J316.1	Nominal Bore 1400mm; Ductile Iron Socket and Spigot Bends with Standard Push-On Joints OR Steel plain ended Bends with provision for field butt-welded Joints				
J316.1.1	11.25° DN 1400, PN 16	Nr	17		
J316.1.2	22.5° DN 1400, PN 16	Nr	12		
J316.1.3	30° DN 1400, PN 16	Nr	5		
J316.1.4	45° DN 1400, PN 16	Nr	5		
J316.1.5	90° DN 1400, PN 16	Nr	1		
J32	Junctions and Branches				
	All Flanged Tee				
J323.1	DN 600 x DN 600, PN 16 all Flanged Tee	Nr	3		
J326.1	DN 1400 x DN 200, PN 16 all Flanged Tee for Air Valves	Nr	3		
J326.2	DN 1400 x DN 600, PN 16 all Flanged Tee for offtakes	Nr	1		
J326.3	DN 1400 x DN 800, PN 16 all Flanged Tee for offtakes	Nr	3		
J326.4	DN 1400 x DN 800, PN 16 all Flanged Tee for Air Valves	Nr	6		
	All Flanged Level Invert Tee				
J326.5	DN 1400 x DN 250, PN 16 all Flanged Tee for Washouts	Nr	6		
J33	Tapers				
	All Flanged Concentric Taper				
J336.1	DN 1400 x DN 1200, PN 16	Nr	4		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
J34	Ferrous Couplings				
J342.1	DN 250, PN 16- Ranger Coupling	Nr	6		
J343.1	DN 600, PN 16- Straight Coupling	Nr	6		
J344.1	DN 800, PN 16- Straight Coupling	Nr	7		
J346.1	DN 1400, PN 16- Straight Coupling (Provisional)	Nr	2		
J35	Ferrous Flange Adaptor				
J352.1	DN 250, PN 16	Nr	6		
J353.1	DN 600, PN 16	Nr	2		
J356.1	DN 1400, PN 16 - (Provisional)	Nr	2		
J37	Bell mouths				
J374.1	DN 800, PN 16	Nr	3		
J38	Straight Specials				
	<u>Plain Ended Pipes without Puddle Flanges</u>				
J382.1	DN 250, PN 16, 1.2m long	Nr	6		
J383.1	DN 600, PN 16, 60m long (With Couplings)	Nr	1		
J384.1	DN 800, PN 16, 15m long (With Couplings)	Nr	3		
	<u>Flanged Spigot Pipes without Puddle Flanges</u>				
J383.2	DN 600, PN 16, 1.5m long	Nr	4		
J383.3	DN 600, PN 16, 5m long	Nr	4		
J384.2	DN 800, PN 16, 6m long	Nr	5		
J386.1	DN 1400, PN 16, 1.5m long	Nr	17		
	<u>Flanged Spigot Pipes with Puddle Flanges (location of Puddle Flange as specified in Drawings)</u>				
J383.4	DN 600, PN 16, 1.5m long with puddle flange	Nr	1		
J384.3	DN 800, PN 16, 1.5m long with puddle flange	Nr	5		
J386.2	DN 1400, PN 16, 1.5m long with puddle flange	Nr	15		
	<u>Double Flanged Pipes without puddle flanges</u>				
J383.5	DN 600, PN 16, 1.5m long	Nr	1		
	<u>Flanged Spigot Pipes with Puddle Flanges (location of Puddle Flange as specified in Drawings)</u>				
J383.4	DN 600, PN 16, 1.5m long with puddle flange	Nr	1		
J384.3	DN 800, PN 16, 1.5m long with puddle flange	Nr	5		
J386.2	DN 1400, PN 16, 1.5m long with puddle flange	Nr	15		
	<u>Double Flanged Pipes without puddle flanges</u>				
J383.5	DN 600, PN 16, 1.5m long	Nr	1		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
	<u>Double Flanged Pipes with puddle flanges (location of Puddle Flange as specified in Drawings)</u>				
J383.6	DN 600, PN 16, 1.5m long with puddle flange	Nr	1		
J383.7	DN 600, PN 16, 3m long with puddle flange	Nr	1		
J383.8	DN 600, PN 16, 6m long with puddle flange	Nr	1		
J384.4	DN 800, PN 16, 1.5m long with puddle flange	Nr	3		
J385.1	DN 1200, PN 16, 6m long with puddle flange	Nr	1		
J385.2	DN 1200, PN 16, 12m long with puddle flange	Nr	1		
	<u>Special Fittings</u>				
J381.1	DN 200, PN 16, special double flanged pipe 325mm long with flange to suit 800mm dia. tee on one end and 200mm dia flange on the other end as per Dwg Nr M430/SD/02 (Detail 1).	Nr	6		
J383.9	DN 600 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 300mm or approved equivalent)	Nr	3		
J384.5	DN 800 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 300mm or approved equivalent)	Nr	3		
J385.3	DN 1200 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 320mm or approved equivalent)	Nr	1		
J386.3	DN 1400 PN 16 Dismantling Joint (Viking Johnson dismantling joint, nominal length 320mm or approved equivalent)	Nr	3		
J39	Blank Flange				
J393.1	DN 600, PN 16	Nr	1		
J396.1	DN 1400, PN 16	Nr	1		
J8	Valves and Penstocks				
J81	Flanged Gate Valve				
J811.1	DN 200, PN 16, with handwheel (for offtakes and Air Valves)	Nr	8		
J812.1	DN 250, PN 16, with Extension Spindle, length n.e. 5.0m without handwheel (for washouts)	Nr	6		
J83	Flanged Non Return Valve				
J833.1	DN 600, PN 16	Nr	1		
J834.1	DN 600, PN 16	Nr	3		
J84	Flanged Butterfly Valve complete with Gear Mechanism designed to slow down flow reduction at end of closure as specified and Hand Wheel as specified				
J843.1	DN 600, PN 16	Nr	1		
J844.1	DN 800, PN 16	Nr	3		
J846.1	DN 1400, PN 16	Nr	3		
J86	Air Valve				
J861	Flanged Double Acting Non-Slam (Anti-Surge) Air Valve (DAV) as specified				
J861.1	DN 200, PN 16	Nr	8		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
J9	Water Meters				
	Electromagnetic Water Meters				
J993.1	DN 600 All Flanged Battery Powered Electromagnetic Water Meter to PN 16 complete with accessories as specified; Minimum Battery Life 6 Years.	Nr	1		
J995.1	DN 1200 All Flanged Battery Powered Electromagnetic Water Meter to PN 16 complete with accessories as specified; Minimum Battery Life 6 Years.	Nr	1		
	<u>CLASS K: PIPE WORK - CHAMBERS AND PIPE WORK ANCILLARIES</u>				
	Chambers, ducts, culverts, crossings, thrust and anchor blocks, reinstatement and other pipework and ancillaries.				
	Note:- Items for Work in this class shall include:- - Excavation, dewatering, preparation of surfaces, disposal of excess excavated material, shoring sides of excavation, backfilling and removal of redundant services. - Concrete, reinforcement, formwork, joints and finishes. - Tips for disposal of excavated material or debris to be identified by the Contractor in liaison with the Local Authorities. - Rate to include for placing and compaction of pipe embedment material below the chamber and filling around pipe before construction of chamber - All Chambers to be fitted with adequate drainage system and permanent ventilation as per details or as directed by Engineer in Site. Chambers to be fitted with plastic coated step irons or Access ladders as specified; and lockable covers to access manholes, to detail.				
K23	IN SITU CONCRETE CHAMBERS				
K232	Depth 1.5 - 2 m				
K232.1	Provide all materials and construct Reinforced Concrete AIR VALVE Chambers internal dimensions 2400mm x 2200mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/02	Nr	3		
K234	Depth 2.5-3 m				
K234.1	Provide all materials and construct Reinforced Concrete AIR VALVE Chambers internal dimensions 2400mm x 2200mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/02	Nr	1		
K236	Depth 3.5-4 m				
K236.1	Provide all materials and construct Reinforced Concrete AIR VALVE Chambers internal dimensions 2400mm x 2200mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/02	Nr	1		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
K236.2	Provide all materials and construct Reinforced Concrete LINE VALVE Chambers internal dimensions not exceeding 2600mm x 2800mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/05	Nr	1		
K236.3	Provide all materials and construct Reinforced Concrete ELECTROMAGNETIC FLOW METER Chambers internal dimensions 2200mm x 2400mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, vents, drainage system, etc . All as specified and as detailed Drawing No. M455/W-02B/SD/07	Nr	1		
K236.4	Provide all materials and construct Reinforced Concrete GATE VALVE Chambers internal dimensions not exceeding 1600mm x 2400mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/05	Nr	1		
K236.3	Provide all materials and construct Reinforced Concrete ELECTROMAGNETIC FLOW METER Chambers internal dimensions 2200mm x 2400mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, vents, drainage system, etc . All as specified and as detailed Drawing No. M455/W-02B/SD/07	Nr	1		
K236.4	Provide all materials and construct Reinforced Concrete GATE VALVE Chambers internal dimensions not exceeding 1600mm x 2400mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/05	Nr	1		
K237	Depth exceeding 4 m				
K237.1	Provide all materials and construct Reinforced Concrete ELECTROMAGNETIC FLOW METER Chambers internal dimensions 2600mm x 3000mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, vents, drainage system, etc . All as specified and as detailed Drawing No. M455/W-02B/SD/07	Nr	1		
K237.2	Provide all materials and construct Reinforced Concrete LINE VALVE Chambers internal dimensions not exceeding 2600mm x 2800mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/05	Nr	1		
K237.3	Provide all materials and construct Reinforced Concrete GATE VALVE Chambers internal dimensions not exceeding 3000mm x 4200mm. Include for supply and fixing of removable Reinforced Concrete cover, mild steel frame, lifting / opening mechanism, mild steel CAT Ladder, Vents, drainage system etc . All as specified and as detailed Drawing No. M455/W-02B/SD/05	Nr	1		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
K25	PRECAST CONCRETE CHAMBERS				
K254	Depth 2.5-3.0m				
K254.1	Provide all materials and construct precast concrete WASHOUT VALVE Surface Box. Include for supply and fixing of Class 30 PCC unit, MS surface box and lockable cover, compacted granular fill, OD 160mm uPVC pipe sleeve, length not exceeding 4m, etc. all as specified and as detailed Drawing . No. M455/W-02B/SD/04	Nr	1		
K256	Depth 3.5-4m				
K256.1	Provide all materials and construct precast concrete WASHOUT VALVE Surface Box. Include for supply and fixing of Class 30 PCC unit, MS surface box and lockable cover, compacted granular fill, OD 160mm uPVC pipe sleeve, length not exceeding 4m, etc. all as specified and as detailed Drawing . No. M455/W-02B/SD/04	Nr	3		
K257	Depth exceeding 4m				
K257.1	Provide all materials and construct precast concrete WASHOUT VALVE Surface Box. Include for supply and fixing of Class 30 PCC unit, MS surface box and lockable cover, compacted granular fill, OD 160mm uPVC pipe sleeve, length exceeding 4m, etc. all as specified and as detailed Drawing . No. M455/W-02B/SD/04	Nr	1		
K6	CROSSINGS				
K63	Under-River Crossings, Width exceeding 10m				
	Details as per Dwg No. M455/W-02B/SD/11				
	Note: Items for work shall include: Excavation trench in river/stream beds depth n.e 4.0m, preparation of surfaces, disposal of excavated material, upholding sides of excavation, backfilling and removal of redundant services, all as per Dwg No. M455/W-02B/SD/11				
K633.1	Under River Crossing on Pipe Nominal Bore 900mm - 1800mm	m	50		
K633.2	Extra over item K633.1 for excavation in rock, depth n.e. 4.0m including preparation of trenches (No blasting permitted) (Provisional)				
K633.2.1	Class 'A'	m ³	60		
K633.2.2	Class 'B'	m ³	85		
K633.2.3	Class 'C'	m ³	140		
K633.3	Transport from Site Store, Install, Test and Commission ferrous pipes on under-river Crossings, jointing to specifications, Pipe nominal bore 900mm - 1800mm	m	50		
K633.4	Supply 'Denso Tape' wrapping or approved equivalent. Bidder to include for wrapping/jointing on the ferrous pipe in two layers as directed by the Engineer. Nominal Bore 900mm - 1800mm	m ²	220		
K633.5	Backfill the trench with concrete Class 15/20 surround, include for vibrating as directed by the Engineer all as per Dwg No. M455/W-02B/SD/11. Pipe nominal bore 900mm - 1800mm	m ³	110		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
K633.6	Backfill the trench with approved selected excavated material compacted in 300mm layers. Pipe nominal bore 900mm - 1800mm	m ³	60		
K633.7	Backfill trench with approved imported compacted granular material compacted in 300mm layers. Pipe nominal bore 900mm - 1800mm	m ³	65		
	Gabion Works				
K633.8	Provide all materials and carry out laying of 2m x 1m x 1m Gabion Boxes, wire minimum size 5mm or as specified. Gabion boxes to be laid in stretches with 0.5m overlap, mesh wire to be galvanised and minimum diameter 5mm. Include for tying of adjacent Gabions with approved wire and 16mm dia anchor rods to suit site conditions (Provisional)	Nr	50		
K633.9	Provide all materials and carry out laying of 0.23 - 0.5m thick Gabion Mattresses, mesh wire to be galvanised and of minimum diameter 5mm. Include for tying of adjacent gabions with approved wire and 16mm dia anchor rods to suit site conditions (Provisional)	m ²	150		
K633.10	Provide and place rockfill to gabions and mattresses	m ³	150		
K633.11	Extra over for provision of all materials and infilling of gabions with Class 15 mass concrete	m ³	20		
K633.12	Method Related Charges				
K633.12.1	Allow for diverting River/Stream including construction of cofferdam etc., for river crossing works and reinstate after construction. The River/Stream to be kept operational during construction, width exceeding 10m	Nr	1		
K633.12.2	Allow for keeping excavation free of water which may occur through ground water seepage, rain or other means.	Item	L.S		
K633.13.3	Allow for any other method related charges the Bidder feels may be required. These should be indicated below with pricing of each item.				
	i)	Item	L.S		
	ii)	Item	L.S		
K7	Reinstatement				
	Breaking up, temporary and permanent reinstatement of TARMAC road with suitable selected excavated material and 300mm thick well graded stabilised gravel with 3% cement content base, compacted in 150mm thick layers using an 8-10 tonne roller, 150mm deep approved compacted hardcore and at-least 50mm thick bitumen macadam, all to the satisfaction of the Engineer. Contractor to include for road cutting, excavation of compacted hardcore / murrum, and any other associated works. Nominal pipe bore n.e. 1800mm, all as per details in Dwg No. M455/W-02B/SD/12 and M455/W-02B/SD/13. Rates quoted shall be deemed to include for costs incurred on traffic control, signage and safety measures during execution of the works.				
K733.1	Temporary and Permanent Reinstatement of Tarmac Road crossings, Pipe Nominal Bore 900mm - 1800mm	m	500		
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ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
K733.2	- Ditto - but for CONCRETE BLOCK PAVED road, Nominal Bore 900mm - 1800mm	m	50		
K733.3	Breaking up, temporary and permanent reinstatement of MURRAM road with 300mm thick well graded stabilised gravel with 3% cement base compacted in 150mm thick layers using an 8-10 tonne roller and 150mm deep approved compacted hardcore to the satisfaction of the Engineer. Nominal pipe bore n.e. 1800mm. all as per Dwg No. M455/W-02B/SD/13. Rates quoted shall be deemed to include for costs incurred on traffic control, signage and safety measures during execution of the works.; Pipe nominal bore 900mm - 1800mm	m	50		
K743.1	Breaking up temporary and permanent reinstatement of PAVED FOOTPATHS (concrete, cabro, tarmac, etc.). Pipe bore 900mm - 1800mm all as per Dwg No.M455/W-02B/SD/12 and M455/W-02B/SD/13	m	1,500		
K743.2	Breaking up temporary and permanent reinstatement of UNPAVED FOOTPATHS. Pipe bore 900mm - 1800mm all as per Dwg No. M455/W-02B/SD/13	m	400		
K8	Other Pipework Ancillaries				
K821	Marker Posts on Pipeline Alignment				
K821.1	Supply and fix marker posts for water main route, road crossings, change of direction, air valves, washouts, and valve chambers. All in accordance with drawings and specifications	Nr	50		
	Wash-out Outfall Rising Pipe				
K87	Provide all materials, fabricate and install washout chamber outfall rising pipe as detailed in drg. No. M455/W-02B/SD/03. Rate to include for supply of all fittings, jointing, installation and connection to washout tee and valve.	Nr.	4		
K88	Removal and Reinstatement of Existing Hedges, Fences, Walls and Drains				
K88.1	Allow for removal of existing HEDGES and reinstating these after laying of the water mains is completed.	m	800		
K88.2	Allow for breaking up of existing masonry perimeter WALLS approx. 2.5m high, with concrete columns at approx. 3m intervals, and reinstatement after laying of water mains is completed.	m	200		
K88.3	Allow for breaking up of existing FENCES, including but not limited to chain link fence, barbed wire fence, timber, iron sheet, electric fence, etc., and reinstating these after construction of the water mains is completed.	m	200		
K88.4.1	Allow for breaking up of existing UNLINED EARTH DRAINS and reinstating these after construction of the water mains is completed. Include for provision of diverting the drains or water ways and keeping them operational during construction. Depth of Drain n.e. 3m (See Drg. No. M455/W-02B/SD/17)	m	600		
K88.4.2	-Ditto - but for existing STONE-PITCHED OPEN DRAINS, depth n.e. 3.0m (See Drg. No. M455/W-02B/SD/17)	m	600		
K88.4.3	-Ditto - but for existing INVERT BLOCK DRAINS. (See Drg. No. M455/W-02B/SD/17)	m	200		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA-OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.2: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (Pipeline Construction; DN 1400, Total length 4 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
K88.4.4	-Ditto - but for existing INVERT BLOCK DRAINS + 2 COURSES.	m	200		
K88.4.5	-Ditto - but for existing INVERT BLOCK DRAINS + 4 COURSES.	m	400		
K88.4.6	-Ditto - but for existing INVERT BLOCK DRAINS + 6 COURSES.	m	200		
K9	Interconnection To Existing Pipelines				
	Allow for locating, exposing and cutting of existing pipework to suit Interconnection pipework and fittings supplied and installed under other items. Item to include for trench excavation, draining of the existing pipe where necessary, dewatering of trench, etc. and reinstatement after installation of Interconnection pipework; all as directed by the Engineer.				
K990	To pipes nominal bore: 300 - 600 mm	Nr.	1		
	<u>CLASS L:- PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</u>				
L1	Extras to excavation and backfilling (Provisional)				
L11	In pipe trench and chambers				
L111.1	Excavation in trench for rock class "A"	m ³	3,300		
L111.2	Excavation in trench for rock class "B"	m ³	4,950		
L111.3	Excavation in trench for rock class "C"	m ³	8,250		
	Note:- Blasting is NOT permitted for Item L11				
L5	Surrounds				
L52	Provide, transport to site and place selected excavated granular fill and compact in bed and surround to pipes as specified and where directed by the Engineer				
L526	To pipes nominal bore: 1200 - 1500 mm	m	2,410		
L53	Provide, transport to site and place imported granular fill and compact in bed and surround to pipes as specified and where directed by the Engineer				
L536	To pipes nominal bore: 1200 - 1500 mm	m	1,608		
L54	Provide all materials, transport to site and place mass concrete class 15/20 in bed and surround to pipes under road crossings and on shallow pipeline sections as directed by the Engineer. Include for provision, fixing and dismantling of all formwork, vibration of concrete etc. all as per Dwg No. M455/W-02B/SD/11				
L546	To pipes nominal bore: 1200 - 1500 mm	m	175		
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks Details as per Dwg No. M455/W-02B/SD/09 (Provisional)				
	Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc.				
	Class 20/20 Mass Concrete				
	NOTE:- The work includes pipe and fitting fixing				
L75	Volume:- 1 - 2 m³				
L755	To pipes nominal bore: 900 -1200mm	Nr	2		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA-OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.2: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (Pipeline Construction; DN 1400, Total length 4 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
L76	Volume:- 2 - 4 m³				
L766	To pipes nominal bore: 1200 -1500mm	Nr	2		
L77	Volume:- 4 - 6 m³				
L774	To pipes nominal bore: 600 -900mm	Nr	10		
L78.1	Volume:- 6- 10 m³				
L786.1	To pipes nominal bore: 1200 -1500mm	Nr	17		
L78.2	Volume:- exceeding 10m³				
L784.2	To pipes nominal bore: 600 -900mm	Nr	2		
L785.2	To pipes nominal bore: 900 -1200mm	Nr	2		
L786.2	To pipes nominal bore: 1200 -1500mm	Nr	19		
	<u>CLASS V: PAINTING</u>				
V310	Allow for cleaning and painting with 3 coats of approved epoxy paint all exposed pipework, fittings, valves, etc.	m ²	440		
	<u>CLASS X:-MISCELLANEOUS WORKS</u>				
X4	<u>Gabion Works</u>				
X411	Supply and Install approved Gabion Boxes, size 2m x 1m x 1m mesh wire minimum size 5mm diameter laid in cascading stacks around R.C. piers on aerial crossings, and or as specified, Gabion boxes to be instructed by the Engineer on site, all as directed. Rate to include for supply and packing of approved hardcore into gabion boxes, all to Engineer's approval, as shown on Drg. No. M455/W-02B/SD/11.	Nr	25		
X421	Ditto - but Gabion Mattresses, thickness 500mm mesh wire 5mm diameter	m ²	20		
X990	<u>EROSION CONTROL AND PROTECTION MEASURES (PROVISIONAL)</u>				
X990.1	Provide all materials and construct mass concrete EROSION CHECKS on steep slopes as specified and according to details given in Drg. No. M455/W-02B/SD/17.	Nr.	50		
X990.2	Supply and plant approved grass on slopes and maintenance until it takes root to the satisfaction of the Engineer. Rate to include for excavation of cut-off drains to divert run-off water from pipe trench alignment.	m ²	400		
X991	<u>HEADWALLS, CASCADES AND OUTFALL CHAMBERS</u>				
	Details as per Dwg No. M455/W-02B/SD/04 (Provisional Quantities)				
X991.1	<u>Excavation</u>				
	The rates shall include for all strutting, shuttering, stabilising the excavation and preparation of excavated surfaces to receive permanent work.				
	Excavate for pier footings, part backfill after construction and remainder, cart away to tips or use as fill on site, all as directed by the Engineer. Tips to be identified by the Contractor in liaison with the Local Authority.				
X991.1.1	Maximum depth n.e. 1.0m	m ³	14		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA-OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.2: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (Pipeline Construction; DN 1400, Total length 4 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
X991.1.2	-Ditto - depth 1.0 to 1.5m	m ³	22		
X991.1.3	-Ditto - depth exceeding 1.5m	m ³	9		
X991.1.4	E.O. excavation items for excavation in rock Class 'A' (Provisional)	m ³	5		
X991.1.5	-Ditto - for excavation in rock Class 'B' (Provisional)	m ³	7		
X991.1.6	-Ditto - for excavation in rock Class 'C' (Provisional)	m ³	11		
X991.2	Concrete Works				
	Provide, mix and place concrete as directed				
X991.2.1	Plain concrete Class 15/20 in 50mm blinding layer under bases/treads.	m ²	40		
X991.2.2	Vibrated, Reinforced Concrete Class 25/20 in:-				
X991.2.2.1	Footings	m ³	1		
X991.2.2.2	Bases	m ³	5		
X991.2.2.3	Walls	m ³	5		
X991.2.2.4	Treads	m ³	2		
X991.2.2.5	Risers	m ³	1		
X991.2.2.6	Roof Slabs	m ³	2		
X991.3	Reinforcement				
	Provide and fix high tensile steel reinforcement to SRN 127 including cutting, bending, propping, with spacers and tying as specified.				
X991.3.1	All diameters	kg	2,080		
X991.4	Formwork				
	Provide and fix shuttering including propping, strutting and striking all as specified.				
	(i) Vertical Formwork - Class F1 Finish				
X991.4.1	Sides of 200mm treads/ bases/ risers	m	74		
X991.4.2	Sides of footings - width n.e. 0.2m	m	5		
X991.4.3	Sides of footings - width exceeding 0.2m	m ²	3		
X991.4.4	External faces of chamber walls/ headwalls - width exceeding 0.2m	m ²	3		
	(ii) Vertical Formwork - Class F2 Finish				
X991.4.5	Sides of 200mm roof slabs and walls	m	39		
X991.4.6	Internal faces of chamber walls/ headwalls etc	m ²	47		
	(iii) Horizontal Formwork - Class F2 Finish				
X991.4.7	Soffits of roof slabs and walls	m ²	6		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT

CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT

BID No. AWWDA/AFD/NWSP/W-02B/2023

SECTION 3: KARURA-OUTER-RING ROAD WATER TRANSMISSION PIPELINE

BILL NO. 3.2: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (Pipeline Construction; DN 1400, Total length 4 km)

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
X991.5	<u>Walling</u>				
	<u>Natural Stone Block Walling, Medium Chisel Dressed, Reinforced with 20 swag Hoop Iron at Every Alternate Course, and Bedded, Jointed and Pointed in Cement Mortar (1:4):-</u>				
X991.5.1	200 mm Walling	m ²	50		
X991.6	<u>Plastering</u>				
	<u>12.5mm Thick Gauged Cement Plaster as per specifications on:-</u>				
X991.6.1	Natural stone block walling and other surfaces	m ²	50		
X991.7	<u>Miscellaneous Works</u>				
X991.7.1	Provide for and fix plastic coated step irons in rising outfall chambers for Washouts as specified by the Engineer. Details of chamber are in Dwg Nr. M455/W-02B/SD/03	Nr	20		
X991.7.2	Provide Precast Reinforced Concrete Covers size 600 x 600 x 50mm thick to the rising outlet Chambers.	Nr	4		
X991.8	<u>Method Related Charges for Construction of Outfall Structures</u>				
X991.8.1	Allow for River diversion, for construction of W.O outfall structures including construction of cofferdam etc., for River crossing works and reinstate after construction. The River / Waterway to be kept operational during construction. The Bidder to submit method statement with Bid for execution of these works.	Item	L.S		
X991.8.2	Method related charges for keeping excavation free of water which may occur through ground water seepage, rain or other means.	Item	L.S		
X991.8.3	Allow for any other method related charges the Bidder feels may be required. These should be indicated below with pricing of each item.				
	i)	Item	L.S		
	ii)	Item	L.S		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA-OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.2: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (Pipeline Construction; DN 1400, Total length 4 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
X992	<u>TRENCHLESS ROAD CROSSINGS</u>				
	Provide all equipment and materials, tunnel below road surface in common material (soil/murram), including any requisite shoring and strutting during tunnelling, provide and install precast Reinforced Concrete lining segments to tunnel faces, blanking of tunnel ends with mass concrete/masonry walls upon pipework installation, all as detailed in drg. No. M455/W-02B/SD/12 or using any other Trenchless method, subject to Engineer's approval and in accordance to specifications. Rate to include for all necessary grouting. All works to be executed in close liaison with relevant road authorities. Rates to include for facilitation of the same. The Bidder to submit Method Statement with Bid for execution of these Works. The bidder may quote for alternative method of Trenchless Road/Railway Crossing. Details of alternative method to be submitted with the Bid. Nominal pipe bore not exceeding 1400mm.				
X992.1.1	Muthaiga North Estate Access Road Crossing, Pipe nominal bore 1400mm	m	40		
X992.1.2	Pipeline Estate Road Crossing, Pipe nominal bore 1400mm	m	40		
X992.1.3	Thika Road Crossing, Pipe nominal bore 1400mm	m	100		
X992.1.4	Mathare North Road Crossing, Pipe nominal bore 1400mm	m	25		
X992.1.5	Outer-ring Road Crossing, Pipe nominal bore 600mm	m	80		
X992.2.1	Extra over the Road Crossing, items X992.1.1 to X992.1.6 for tunnelling in rock, all classes (Provisional)	m ³	1,380		
X992.4.1	Transport from site store, install and joint ferrous pipework in tunnel, including all fixing and jointing as specified, nominal bore 300 - 600mm	m	80		
X992.4.2	-Ditto- but for pipes nominal bore 1200-1500mm	m	165		
X992.5.1	Allow for any Method Related Charges for Trenchless pipe crossing under roads/ railway tracks for item X992.1.1 to X992.2 above that the Bidder feels may be required. These should be indicated below with pricing of each item. (Bidder may add Additional items here below if required).	Item	L.S		
	i)				
	ii)				
X993	<u>AERIAL CROSSINGS ON PIERS - 1N</u>				
	Details as per Dwg No. M455/W-02B/SD/14				
	Pipe Bore n.e 1800mm				
X993.1	<u>Excavation</u>				
	The rates shall include for all strutting, shuttering, stabilising the excavation faces and preparation of excavated surfaces to receive permanent work.				
	Excavate for pier footings on aerial Crossings, part backfill after construction and remainder, cart away to approved tips or use as fill on site, all as directed by the Engineer. Tips to be identified by the Contractor in liaison with the Local Authority.				
X993.1.1	Maximum depth n.e. 1.5m	m ³	30		
X993.1.2	-Ditto - depth 1.5 to 2.0m	m ³	10		
X993.1.3	-Ditto - depth exceeding 2.0m	m ³	30		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA-OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.2: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (Pipeline Construction; DN 1400, Total length 4 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
X993.1.4	E.O. excavation items for excavation in rock Class 'A' (Provisional) - Blasting not permitted	m ³	9		
X993.1.5	-Ditto - for excavation in rock Class 'B' (Provisional) - Blasting not permitted	m ³	9		
X993.1.6	-Ditto - for excavation in rock Class 'C' (Provisional) - Blasting not permitted	m ³	18		
X993.2	<u>Concrete Works</u>				
	Provide, mix and place concrete as directed				
X993.2.1	Plain concrete Class 15/20 in 75mm blinding layer under pier footings.	m ²	25		
X993.2.2	-Ditto- but 75mm thick, on exposed surface of gabions	m ²	25		
X993.2.3	<u>Vibrated, Reinforced Concrete Class 25/20 in:-</u>				
X993.2.3.1	Footings	m ³	18		
X993.2.3.2	Piers	m ³	50		
X993.3	<u>Reinforcement</u>				
	Provide and fix high tensile steel reinforcement to SRN 127 including cutting, bending, propping, with spacers and tying as specified.				
X993.3.1	12mm and under	kg	3,264		
X993.3.2	16mm and over	kg	4,896		
X993.4	<u>Formwork</u>				
	Provide and fix shuttering including propping, strutting and striking all as specified.				
	(i) Vertical Formwork - Class F1 Finish				
X993.4.1	Sides of 500mm footings	m ²	18		
X993.4.2	Sides of piers in foundations	m ²	60		
X993.4.3	Outer faces of column piers - width 1.0m - 3.0m	m ²	54		
	(iii) Sloping Formwork - Class F2 Finish				
X993.4.4	Sloping face of column head	m ²	54		
X993.5	<u>Pipe Support Details</u>				
	Provide all materials, fabricate and install 75mm wide x 15mm thick flat GMS Strap on pipes on piers at Aerial Crossings; Rate to include for supply and installation of Rag Bolts, Ruberoid layers, etc. all as detailed in Drg. No. M430/W-02B/SD/14 to Engineer's approval.				
X993.5.1	DN 1400	Nr	5		
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CKE1135 - NAIROBI WATER AND SANITATION PROJECT**CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT****BID No. AWWDA/AFD/NWSP/W-02B/2023****SECTION 3: KARURA-OUTER-RING ROAD WATER TRANSMISSION PIPELINE****BILL NO. 3.2: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (Pipeline Construction; DN 1400, Total length 4 km)**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (Kshs)
X993.6	Method Related Charges (Applicable to all River Crossings)				
X993.6.1	Allow for River Diversion Works, including construction of cofferdams etc., for river crossing works and reinstate after construction. The Rivers / Waterways to be kept operational during construction. Bidder to submit method statement with Bid for execution of these works.	Item	L.S		
X993.6.2	Method related charges for keeping excavations free of water which may occur through ground water seepage, rain or other means.	Item	L.S		
X993.6.3	Allow for any other method related charges the Bidder feels may be required. These should be indicated below with pricing of each item.				
	i)	Item	L.S		
	ii)	Item	L.S		
X994	Installation of New Outlet Pipework to Existing Karura Tank				
X994.1	Allow for installation of new DN 800 outlet pipework from existing R.C Karura Tank. Rate to include for supply of all materials (supply of pipes and fittings measured separately under class J), cutting and reinstatement of existing R.C. structure, provision of R.C. stools and thrust blocks; all as directed by the Engineer.	Item	L.S		
X995	Miscellaneous Works (Provisional)				
X995.1	Provisional Sum for other Miscellaneous Works that may be required on site to be carried out as directed by the Engineer.	Item	P.S		2,500,000
X995.2	Provisional Sum for disposal of material that may be found on site and which requires specialized handling and safe disposal by the Contractor or a licenced Waste Handler e.g. Industrial Waste	Item	P.S		2,500,000
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BILL No. 3.2 COLLECTION SHEET

CKE1135 - NAIROBI WATER AND SANITATION PROJECT

CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING ROAD TRANSMISSION PIPELINE PROJECT

BID No. AWWDA/AFD/NWSP/W-02B/2023

SECTION 3: KARURA-OUTER-RING ROAD WATER TRANSMISSION PIPELINE

BILL NO. 3.2: KARURA - OUTER-RING ROAD PIPELINE SECTION (LINE KO) (Pipeline Construction; DN 1400, Total length 4 km)

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CKE1135 - NAIROBI WATER AND SANITATION PROJECT

CONSTRUCTION WORKS FOR GIGIRI-KARURA-OUTER RING TRANSMISSION PIPELINE PROJECT

BID No. AWWDA/AFD/NWSP/W-02B/2023

GRAND SUMMARY

Bill	BILL DESCRIPTION	AMOUNT
Section 1	P & G	
Section 1 Total (A)		
Section 2	Gigiri-Karura Transmission Pipeline	
Bill No. 2.1	Gigiri-Karura Pipeline Section (Line GK) (Supply of pipes, fittings, valves and ancillaries; DN 1400, Total length 4.42 km)	
Bill No. 2.2	Gigiri - Karura Pipeline Section(Line GK) (Pipeline Construction; DN 1400, Total length 4.42 km)	
Section 2 Total (B)		
Section 3	Karura-Outer Ring Road Transmission Pipeline	
Bill No. 3.1	Karura - Outer Ring Road Pipeline Section (Line KO) (Supply of pipes, fittings, valves and ancillaries; DN 1400, Total Length 4 km)	
Bill No. 3.2	Karura - Outer Ring Road Pipeline Section (Line KO) (pipeline construction; DN 1400, Total Length 4 km)	
Section 3 Total (C)		
Sub-Total [Excl. VAT]; (D = A+B+C)		
Add 10% Contingencies (E)		
Total [Excl. VAT]; (F = D+E)		
Add 16% VAT (G= 16% of F)		
Grand Summary [Incl. 16% VAT]; (H = F+G)		