SUMMARY OF BILLS - PACKAGE A

BILL	DESCRIPTION	AMOUNT R
B1	BOQ 1 : PRELIMINARY AND GENERAL	
B2	BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION	
B3	BOQ 3: DEWATERING FACILITY	
B4	BOQ 4: SERVICES (POTABLE WATER AND SECOND CLASS WATER)	
B5	BOQ 5: REACTOR AND OTHER MISCELLANEOUS ITEMS	
SUB TOTAL BILL 1	**BILL1: CIVIL AND STRUCTURAL**	
B2	BOQ 1: ALTERATIONS AND REFURBISHMENT OF ADMIN BUILDING	
B2	BOQ 2: NEW RAW SEWAGE PUMP STATION	
B2	BOQ 3: NEW GUARDHOUSES	
B2	BOQ 4: NEW SLUDGE DEWATERING BUILDING	
SUB TOTAL BILL 2	**BILL 2: BUILDING WORKS**	
B3	BOQ 1 : PRELIMINARY AND GENERAL	
B3	BOQ 2 : COARSE AND FINE SCREENING	
B3	BOQ 3: DEGRITTING	
B3	BOQ 4: PUMP STATION	
B3	BOQ 5: DEWATERING FACILITY	
B3	BOQ 6: CAKE TRANSFER AND STORAGE	
B3	BOQ 7: BIOLOGICAL REACTORS	
B3	BOQ 8: HVAC AND UTILITIES	
B3	BOQ 9: MECHANICAL SUNDRIES	
B3	BOQ 10: SECOND CLASS WATER	
B3	BOQ 11: SECOND CLASS WATER	
SUB TOTAL BILL 3	**BILL 3: MECHANICAL WORK**	
B4	BOQ 1: PRELIMINARY AND GENERAL	
B4	BOQ 2: EMERGENCY GENERATOR SYSTEM	
B4	BOQ 3: DOMESTIC POWER & LIGHTING	
B4	BOQ 4: EARTHING AND LIGHTNING PROTECTION	
B4	BOQ 5: MV WORKS	
B4	BOQ 6: INLET WORKS ELECTRICAL SYSTEM	
B4	BOQ 7: DE-WATERING ELECTRICAL SYSTEM	
B4	BOQ 8: PUMP STATION ELECTRICAL SYSTEM	
B4	BOQ 9: OHS, TESTING, COMMISSIONING, TRAINING, GENERAL - ELECTRICAL	
SUB TOTAL BILL 4	**BILL 4: ELECTRICAL WORK**	
B5	BOQ 1 : PRELIMINARY AND GENERAL	
B5	BOQ 2: INLET WORKS C&I SYSTEM	
B5	BOQ 3: DE-WATERING C&I SYSTEM	
B5	BOQ 4: PUMP STATION C&I SYSTEM	
B5	BOQ 5: NETWORK SYSTEMS	
B5	BOQ 6: SYSTEM INTEGRATION, TESTING, TRAINING, GENERAL CONTROL & INSTRUMENTATION	
SUB TOTAL BILL 5	**BILL 5: CONTROL AND INSTRUMENTATION WORKS**	
SUB TOTAL		
VAT 15%		
GRAND TOTAL [CARRIED FORWARD TO FORM OF OFFER - PACKAGE A]		

BILL 1 BOQ 1: PRELIMINARY AND GENERAL

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
1	SANS 1200 A	SECTION A : PRELIMINARY AND GENERAL				
1.1		FIXED CHARGE ITEMS				
	PSA 8.3	Contractual Requirements				
1.1.1	PSA 8.3.1	Contractor's fixed establishment cost	Sum	1		
	PSA 8.3.5	Contractor's obligation with respect to Health and Safety				
1.1.2		a) Preparation of Project Specific Health and Safety Plan	Sum	1		
1.1.3		b) Carrying out a Hazard Identification and Risk Assessment	Sum	1		
1.1.4		c) Preparation and maintenance of H&S File	Sum	1		
1.1.5		d) Preparation of Method Statements and Safe Work Procedures	Sum	1		
1.1.6		e) Emergency Preparedness and Response plan (this item should include: First Aid, Fire and Explosions, Acts of Nature, Hazardous Chemical Substance and Flammable Substances spillage, Political unrest and violence and/or Terrorism)	Sum	1		
1.1.7		f) Occupational health provisions (Medicals - pre- and post-employment; Physical and Psychological for work at elevated heights; (Medical surveillance for hazardous work; Baseline baseline & audiometric screening tests; HIV and AIDS Programme; etc.)	Sum	1		
1.1.8		g)Compliance with the requirements of the latest COVID-19 Regulations, published in terms of the Disaster Management Act (Act 57 of 2002).	Sum	1		
1.1.9		h) Inoculation of Contractor's personnel for working on Wastewater Treatment Works	Sum	1		
1.1.10		i)Provision of Personal Protective Equipment and clothing, including but not limited to: Overalls, hard-hats, gloves, safety boots, gumboots, ear protection, dust masks, safety goggles, safety harnesses, reflective vests, etc.	Sum	1		
1.1.11		j)Provision of Occupational Health and Safety equipment	Sum	1		
1.1.12		k) Ensuring public health and safety	Sum	1		
Total Carried Forward						

BILL 1 BOQ 1: PRELIMINARY AND GENERAL

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.1.13		l) Occupational health and safety signage, pictograms and notices	Sum	1		
1.1.14		m) All other fixed costs associated with complying with the requirements	Sum	1		
	PSA 8.3.6	Compliance with Environmental Management Specifications				
1.1.15		a) Fixed costs with respect to Environmental Management	Sum	1		
1.1.16		b) Environmental awareness training	Sum	1		
1.1.17	PSA 8.3.7	Producing and submitting Quality Control Programme	Sum	1		
1.2	PSA 8.4	TIME RELATED ITEMS				
	8.4.1	Contractual Requirements				
1.2.1	PSA 8.4.2	Time related establishment	Sum	1		
	PSA 8.4.2.2	Facilities for the contractor				
1.2.2		a) Dealing with water	Sum	1		
1.2.3		b) Search for, record and protect all survey benchmarks	Sum	1		
1.2.4		c) Maintain continuity of flow through works	Sum	1		
1.2.5		d) Provide access for authorised personnel	Sum	1		
1.2.6		e) Nightwatch and security	Sum	1		
	PSA 8.4.6	Compliance with respect to Health and Safety				
1.2.7		a) Provision of Construction Manager and alternate	Sum	1		
1.2.8		b) Provision of Assistant Construction Manager(s)	Sum	1		
1.2.9		c) Provision of Health and Safety Officer	Sum	1		
1.2.10		d) Provision of Construction supervisors and assistant construction supervisors	Sum	1		
1.2.11		e) Maintenance of H&S file	Sum	1		
1.2.12		f) Implementation and Management of the Health and Safety Plan	Sum	1		
1.2.13		g) Enforcing of Hazard Identification and Risk Assessment	Sum	1		
1.2.14		h) Implementation of Method Statements and Safe Work Procedures	Sum	1		
Total Carried Forward						

BILL 1 BOQ 1: PRELIMINARY AND GENERAL

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.2.15		i) Ensuring sub-contractors' compliance with statutory requirements, including compliance with the lastest COVID-19 Regulations and monitoring and auditing of sub-contractors	Sum	1		
1.2.16		j) Occupational health and safety training, promotion and awareness	Sum	1		
1.2.17		k) Ensuring public health and safety	Sum	1		
1.2.18		l) All other time related costs associated with complying with the requirements of the OHS Act, Construction Regulations 2014, all other relevant regulations in terms of the OHS act and the Health and Safety Specifications, for the duration of the Contract.	Sum	1		
1.2.19	PSA 8.4.7	Compliance with Environmental Management Specifications	Sum	1		
1.2.20	PSA 8.4.8	Compliance with the Quality Control Programme	Sum	1		
1.3	PSA 8.8	TEMPORARY WORKS				
1.3.1	PSA 8.8.2	Traffic Accommodation	Sum	1		
1.4		PROVISION FOR POSSIBLE LOAD SHEDDING				
	PSA 8.9	Costs in the event of power cut (provisional)				
1.4.1		a) During working hours	hr	192		
1.4.2		b) During non-working hours	hr	50		
1.5	PA 8.1	MAINTAINING FLOW THROUGH THE WWTW				
1.5.1		a) Dealing with Flow for Construction of new Chamber A and B (as detailed in PA 5.4)	Sum	1		
1.5.2		b) Dealing with Flow for Construction of Overflow Chamber (as detailed in PA 5.4)	Sum	1		
1.5.3		c) Dealing with Flow in the Existing inlet works pipeline when constructing the New Tanker Discharge Manhole (as detailed in PA 5.4)	Sum	1		
1.5.4		d) Dealing with Flow in the Existing maturation pond when constructing the New suction pipe going into the Second Class water Pump Station (as detailed in PA 5.6)	Sum	1		
Total Carried Forward						

BILL 1 BOQ 1: PRELIMINARY AND GENERAL

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.5.5		e)Diverting Flow for Upgrades, inlet Works at Hammarsdale WWTW (as detailed in PA 5.5)	Sum	1		
1.5.6		f)Dealing with Flow in the exisitng potable water pipeline for the construction of the new pipeline (as detailed in PA 5.6)	Sum	1		
1.5.7		g) Dealing with Flow in the exisiting effluent pipe to dam for construction of a new pump station sump overflow manhole (as detailed in PA 5.6)	Sum	1		
1.5.8		h) Dealing with Flow for connection of new rising main to existing rising main (as detailed in PA 5.5)	Sum	1		
Total Carried Forward To Summary						

BILL 1 BOQ 1: PRELIMINARY AND GENERAL

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
2	SANS 1200AB	SECTION AB: ENGINEER'S OFFICE				
2.1	PSAB 8.3	ENGINEERS FACILITIES ON SITE				
	PSAB 8.3.1	Fixed charge and value related items				
2.1.1		a) Employer's Agent's Office (incl. carport)	Sum	1		
2.1.2		b) Cellular phone	No	1		
2.1.3		c) Computer	No	1		
2.1.4		d) Survey Equipment	Sum	1		
2.1.5		e) Nameboards	No	3		
	PSAB 8.3.2	Time related items				
2.1.6		a) Employer's Agent's Office (incl. carport)	Sum	1		
2.1.7		b) Cellular phone	No	1		
2.1.8		c) Computer	No	1		
2.1.9		d) Survey Equipment	Sum	1		
2.1.10		e) Nameboards	No	3		
	PSAB 8.4	Survey and materials assistants				
2.1.11		a) Survey assistants	man.hr	40		
2.1.12		b) Materials assistants	man.hr	40		
2.2		PROVISIONAL COST SUM				
	PSAB 8.6	Cellular Phone Calls				
2.2.1		a) Cellular phone charges	min	12 000		
Total Carried Forward To Summary						

BILL 1 BOQ 1: PRELIMINARY AND GENERAL

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
3	PSA 8.5	PROVISIONAL SUMS				
	PSA 8.5.1	Testing of materials by Engineer				
3.1		a) Testing of Materials	PC Sum	1	15 000.00	15 000.00
3.2		b) Overheads, charges and profit on PSA 8.5.1 (a) above	%	15 000.00		
	PSA 8.5.2	Relocation cost of electrical services by local authority				
3.3		a) Cost of relocating existing electrical services by local authority	PC Sum	1	10 000.00	10 000.00
3.4		b) Overheads, charges and profit on PSA 8.5.2 (a) above	%	10 000.00		
	PSA 8.5.3	Survey by Engineer				
3.5		a) Survey work ordered by Engineer	PC Sum	1	30 000.00	30 000.00
3.6		b) Overheads, charges and profit on PSA 8.5.3 (a) above	%	30 000.00		
Total Carried Forward To Summary						55 000.00

BILL 1 BOQ 1: PRELIMINARY AND GENERAL

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
4	PSA 8.7	DAYWORKS (REMEASUREABLE)				
		Allowance for dayworks (provisional)				
		General dayworks				
		Labour (Provisional)				
4.1		a) Qualified artisan	hr	100		
4.2		b) Skilled labourer	hr	100		
4.3		c) Semi-skilled labourer	hr	300		
4.4		d) Unskilled labourer	hr	300		
4.5		e) Foreman	hr	150		
4.6		f) Technician	hr	150		
		Plant (Provisional)				
		a) Bulldozer				
4.7		..... kW (small)	hr	40		
4.8		..... kW (large)	hr	40		
4.9		b) Grader ..... kW	hr	40		
4.1		c) Wheel loader .....m³ bucket	hr	40		
4.11		d) Crawler excavator .....kW	hr	40		
4.12		e) Tractor - loader- backhoe .....m³ bucket	hr	40		
		f) Rollers and compactors				
4.13		Pneumatic self propelled ..... ton	hr	40		
4.14		Smooth self propelled vibrating roller .....ton	hr	40		
4.15		Plate compactor	hr	40		
		g) Trucks				
4.16		Tipper truck (10 m³ min)	hr	40		
4.17		Tipper truck (5 m³ min)	hr	40		
4.18		Water truck (10kl min)	hr	40		
4.19		Dumptruck .....m³	hr	40		
4.20		h) Compressor (min 10m³/minute), incl hammer and hose	hr	40		
		i) Water pumps				
Total Carried Forward						

BILL 1 BOQ 1: PRELIMINARY AND GENERAL

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
4.21		75mm dia	hr	40		
4.22		150mm dia	hr	40		
		j) Submersible Sewage Pumps				
4.23		75mm dia	hr	40		
4.24		150mm dia	hr	40		
		k) Sewage Handling Tankers				
4.25		10m³ capacity	hr	40		
4.26		15m³ capacity	hr	40		
		Materials:				
4.27		Cement	50kg bag	50		
4.28		Building sand	m³	10		
4.29		19mm crushed stone	m³	10		
4.30		Bricks: ROK's	1000	3		
4.31		a) Supply other material	Prov Sum	1	10 000.00	10 000.00
4.32		b) Contractors overheads, profits, etc on item A.72 above	%			
Total Carried Forward To Summary						10 000.00

BILL 1 BOQ 1: PRELIMINARY AND GENERAL

SUMMARY OF SECTIONS

SECTION	DESCRIPTION			AMOUNT R
1	SECTION A : PRELIMINARY AND GENERAL			
2	SECTION AB: ENGINEER'S OFFICE			
3	PROVISIONAL SUMS			55 000.00
4	DAYWORKS (REMEASUREABLE)			10 000.00
Total Carried Forward To Summary Of Bills				65 000.00

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
1	SABS 1200 C	SECTION C : SITE CLEARANCE				
	8.2.1	Clear and Grub				
1.1		a) Second Class Water Pump Station area	m²	54		
1.2		b) New Inlet Works Area	m²	350		
1.3		c) New Pump station Area	m²	195		
1.4		d) New roadways and walkways at Inlet works	m²	1 535		
1.5		e) New guardhouse	m²	15		
	PSC 8.2.2	Remove and grub large trees of girth				
1.6		a) over 1 m and up to and including 2 m	No.	1		
1.7		b) over 2 m and up to and including 3 m	No.	1		
1.8	8.2.5	Protect / Reinstate fences	m	50		
	PSC 8.2.7	Dismantle and Relocate Pipelines, Electricity Transmission Lines, Handrailing, Cables etc (where necessary)				
1.9		a) Electricity Transmission Lines where the New Inlet Works is located	m	20		
1.10		b) 50mm diameter Class 9 PE potable water pipeline supply at the Inlet works	m	10		
1.11		c) EWS Pipeline 450mm diameter pipeline	m	80		
1.12		d) Second class water 63mm diameter pipe at the existing inlet works structure	m	10		
1.13		e) Electrical cabling at the existing Inlet works area	m	15		
1.14		f) Existing 600mm diameter stormwater pipeline	m	80		
	PSC 8.2.8	Demolish and remove structures / buildings / materials / etc				
1.15		a) Existing reinforced concrete channels and floor slabs at the Existing Inlet works. Slab thickness up to 300mm	m²	27		
1.16		b) Existing Inlet works screens structure (Reinforced concrete wall,roof, etc)	m²	45		
1.17		c) Remove and dispose of existing paving at the existing inlet works	m²	10		
1.18		d) Existing stormwater manhole at the Existing Inlet works	No	2		
1.19		e) Existing 450mm diameter stormwater pipe concrete	m	65		
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.20		f) Existing concrete road at the exisitng tanker discharge area (To be resurfaced)	m³	10		
	PSC 8.2.10	Remove topsoil to nominal depth of 150mm and stockpile				
1.21		a) Second Class Water Pump Station area	m²	54		
1.22		b) New Inlet Works Area	m²	350		
1.23		c) New Pump Station area	m²	195		
1.24		d) New roadways and walkways at Inlet works	m²	1 535		
1.25		e) New guardhouse	m²	15		
	PSC 8.2.11	Dealing with hazardous material				
1.26		a) 110 to 160mm diameter AC pipes	m	5		
1.27		b) 600mm diameter AC pipes	m	5		
1.28		c) 900mm diameter AC pipes	m	32		
	PSC 8.2.12	Break out concrete/brickwork, reinstate, make good edges and dispose of waste				
1.29		a) 900mm diameter raw sewer AC pipeline to make way for an Overflow manhole	m	3		
1.30		b)Existing inlet works for new 900mm diameter HDPE pipeline	m³	1		
1.31		c) 900mm diameter raw sewer AC pipeline to make way for a Tanker discharge manhole	m³	3		
1.32		d)Existing Inlet works channel walls for new 600mm diameter HDPE Overflow bypass pipeline	m³	1		
1.33		e) Existing Stormwater bypass manhole for new 600mm diameter HDPE overflow bypass pipeline	m³	1		
	PSC 8.2.13	Dismantle and remove existing equipment				
		a) Dismantle and remove existing equipment and dispose				
1.34		i) Existing steel bar screens and associated fittings at the Existing Inlet works	Sum	1		
1.35		ii) Existing steel grating over channel at the Existing inlet works	Sum	1		
1.36		iii) Existing steel sluice valve including all asscated fittings	Sum	1		
1.37		iv) Existing handrailing at the Existing inlet works	Sum	1		
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.38		v) Existing structural steel frame in the existing Inlet works	Sum	1		
		b) Dismantle and remove existing equipment and transport to Municipality Store				
1.39		i) Existing handrailing at the Existing inlet works. Length is equal to 40m	Sum	1		
	PSC 8.2.15	Cleaning of existing raw sewage pipelines				
1.40		a) Establishment of pipeline cleaning crew onsite	Sum	1		
		b) Pressure cleaning of pipeline				
1.41		i) Existing 900mm diameter A.C. raw sewer pipeline between Overflow manhole and Tanker discharge manhole	m	50		
1.42		ii) Existing 600mm diameter A.C. final effluent pipeline	m	50		
	PSC 8.2.16	Saw cut through existing surface for trench excavation				
1.43		a) Premix (20mm to 80m deep)	m	10		
	PSC 8.2.17	Removal of existing kerbing, channelling and edging				
		a) Kerbing				
1.44		i) Exisitng Chlorine Building	m	3		
1.45		ii) Existing Pump station No.6	m	5		
		b) Channelling				
1.46		i) Exisitng Chlorine Building	m	3		
1.47		ii) Existing Pump station No.6	m	5		
	PSC 8.2.18	Remove and dispose of existing pavement				
1.48		i) Existing Existing Inlet works area including Pump station No.6 and chlorine building	m³	20		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
2	SABS 1200 D	SECTION D: EARTHWORKS				
	PSD 8.3.3	Restricted Excavation				
2.1		AT INLET WORKS AND SECOND CLASS WATER PUMP STATION				
		a) Excavate in all materials and use for embankment or backfill or dispose, as ordered				
2.1.1		i) Stockpile and Maintain	m³	10		
2.1.2		ii) Spoil to designated dump site (within freehaul distance) and spread	m³	1 550		
2.1.3		iii) Cut to fill	m³	680		
		b) Extra-over payment item 8.3.3 for:				
2.1.4		i) Hard rock excavation	m³	10		
2.1.5		c) Extra-over for item PSD 8.3.3 for importation of approved sand fill from commercial sources	m³	10		
2.1.6		d) Extra-over for item PSD 8.3.3 for 5% cement stabilised sand	m³	10		
2.1.7		e) Extra-over for item PSD 8.3.3 for restricted backfilling against structures	m³	20		
	8.3.4	Importing of Materials				
		a) Importation of materials from commercial sources or from borrow pits, place and compact				
		i) G9-quality material (compacted to 100% of Mod AASHTO density for fill to :				
2.1.8		- New degritters, sump and channels	m³	18		
2.1.9		- New concrete paved areas at inlet works	m³	36		
2.1.10		- New concrete road areas at inlet works	m³	60		
2.1.11		- New concrete slab at the Second Class water pump station	m³	3		
2.1.12		- New concrete road slab at the New Tanker Discharge area	m³	2		
		Extra-over for importation of material from commercial sources				
2.1.13		i) G7-quality material (compacted to 95% of Mod AASHTO density for 100% for sand fill to Paved area	m³	120		
2.1.14		ii) G8-quality material (compacted to 95% of Mod AASHTO density for fill to Paved area	m³	120		
	PSD 8.3.8	Existing services				
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2.1.15	PSD 8.3.8.1	a) Establish service detection crew	Sum	1		
2.1.16		b) The use or hire of specialist equipment for detection	hours	8		
	8.3.8.1	c) Excavate by hand in soft material to expose services				
2.1.17		i) EWS pipe 450mm diameter	m³	10		
2.1.18		ii) Existing second class water pipe (<100mm diameter)	m³	10		
2.1.19		iii) Existing electrical cables	m³	5		
2.1.20		iv) Existing 50mm diameter water main	m³	5		
2.1.21		v) Existing 900mm diameter AC pipeline	m³	10		
2.1.22		vi) Existing 600mm diameter AC pipe	m³	10		
	8.3.8.2	Dealing with services that are at risk because of the construction of earthworks				
		a) Cables				
2.1.23		i) Electrical cables	No.	10		
		c) Temporary protection of services				
2.1.24		i) Existing electrical cables	No.	10		
2.1.25		ii) Existing second class water pipe <160mm pipe	No.	2		
2.1.26		iii) Existing water main < 100mm diameter	No.	2		
2.1.27		iv) 900mm diameter AC pipe	No.	1		
2.1.28		v) Existing stormwater pipe < 350mm diameter	No.	3		
2.1.29	8.3.10	Topsoiling	m²	500		
	PSD 8.3.14	Shoring to protect existing structures				
		a) Depth 0-2.5m				
2.1.30		i) Construction of New rising main	m²	190		
2.1.31		ii) Shoring for New 900mm diameter HDPE pipeline at the Two Borehole wells	m²	25		
2.1.32		iii) Shoring for construction of the New Overflow Manhole at the Existing inlet works	m²	25		
		a) Depth 2.5-3m				
2.1.33		i) For construction of the New Tanker discharge Manhole at the Existing inlet works	m²	25		
		b) Depth 3-6m				
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2.1.34		i) At the Matuaration Pond for construction of new degritters and channels	m²	180		
	PSD 8.3.15	Final grading				
2.1.35		a) Machine grading	m²	65		
		b) Hand trimming				
2.1.36		i) Flat area with slopes less than 1:4	m²	30		
2.1.37		(ii)Areas with slopes steeper than or equal to 1:4	m²	30		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
3	SABS 1200 DB	SECTION DB: EARTHWORKS (PIPE TRENCHES)				
3.1	PSDB 8.3.2	EXCAVATION				
	PSDB 8.3.2 (a)	Trench Excavation (All trenches deeper than 1,0m shall be shored)				
		a) Excavate in all materials for trenches, dewater, backfill, compact, and dispose of surplus or unsuitable material for:				
		i) Pipes up to and including 125mm external diameter for depths:				
3.1.1		- Exceeding 0.0m up to 1.0m	m	20		
3.1.2		- Exceeding 1.0 up to 2.0m	m	20		
3.1.3		- Exceeding 2.0 up to 3.0m	m	5		
		ii) Pipes over 125mm and up to 710mm external diameter for depths:				
3.1.4		- Exceeding 0.0m up to 1.0m	m	10		
3.1.5		- Exceeding 1.0 up to 2.0m	m	400		
3.1.6		- Exceeding 2.0 up to 3.0m	m	130		
		iii) Pipes over 710mm and up to 1000mm external diameter for depths:				
3.1.7		- Exceeding 0.0m up to 1.0m	m	5		
3.1.8		- Exceeding 1.0m up to 2.0m	m	15		
3.1.9		- Exceeding 2.0m up to 3.0m	m	57		
	PSDB 8.3.2 (b)	b) Extra-over Payment Items PSD 8.3.2 for: (Provisonal)				
3.1.10		i) Hard rock excavation	m³	35		
3.1.11		iii) Hand excavation - soft material	m³	293		
3.1.12	8.3.2	c) Excavate and dispose of unsuitable material from the trench bottom (provisional)	m³	10		
	8.3.3	Excavation Ancillaries				
	8.3.3.1	Make up deficiency in backfill material (Provisional)				
3.1.13		a) From other necessarry excavations on site	m³	80		
3.1.14		c) By importation from commercial sources	m³	80		
3.1.15	8.3.3.3	Compaction in Road Reserve	m³	5		
3.2	8.3.4	PARTICULAR ITEMS				
	PSDB 8.3.4 (d)	d) Excavation by hand in all materials to expose pipe for removal and backfill				
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3.2.1		i) Existing 50mm diameter water main	m³	10		
3.2.2		ii) Existing 300mm diameter concrete stormwater pipe	m³	10		
3.2.3		iii) Existing 900mm diameter AC pipeline	m³	30		
	PSDB 8.3.5	Existing services that Intersect or Adjoin a pipe trench				
	8.3.5	a) Services that intersect a trench.				
		i) Pipeline Existing Inlet works				
3.2.4		- Electrical cables	No.	10		
3.2.5		- uPVC 110mm dia. sleeves with cables	No.	10		
3.2.6		- Existing pipes <100mm diameter	No.	3		
3.2.7		- Existing pipes 100-300mm diameter	No.	3		
3.2.8		- Existing pipes 300-750mm diameter	No.	5		
3.2.9		- Existing pipes 750-1000mm diameter	No	5		
3.2.10		- Barrier Kerbs and channels	No.	3		
	8.3.5	b) Services that adjoin a pipe trench.				
		Pipeline Existing Inlet works				
3.2.11		- Electrical cables	No.	15		
3.2.12		- uPVC 110mm dia. sleeves with cables	No.	10		
3.2.13		- Existing pipes <100mm diameter	No.	3		
3.2.14		- Existing pipes 100-300mm diameter	No.	5		
3.2.15		- Existing pipes 300-750mm diameter	No	5		
3.2.16		- Existing pipes 750-1000mm diameter	No	5		
3.3		FINISHING				
	PSDB 8.3.6.1	Reinstate road surface complete with all courses				
3.3.1		a) Asphalt of thickness up to 80mm to roadway	m²	10		
3.3.2		b) Basecourse material stabilised with 5% cement and compacted to 98% mod AASHTO density (2 layers of 150mm thick)	m²	10		
3.3.3		c) Subbase material compacted to 95% mod AASHTO density (2 layers of 150mm thick)	m²	10		
3.3.4		d) Concrete interlocking block paving of thickness 80mm to walkway	m²	10		
3.3.5		e) Precast kerbing	m	2		
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3.3.6		f) class 30MPa/19mm concrete 150mm thick with mesh reinforcement Ref 193	m²	4		
3.3.7	PSD 8.3.8	Shoring of Pipe Trenches (Provisional)	m²	10		
	SABS MM 8.4.1	Reinstate road markings (Provisional)				
3.3.8		a) White lines - unbroken	m	10		
3.3.9		b) Yellow lines - unbroken	m	10		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
4	SABS 1200 DK	SECTION DK: GABIONS AND PITCHING				
	8.2.4	Geotextile				
4.1		a) Type 1 geotextile to underside of stone pitching	m²	15		
	8.2.5	Pitching				
4.2		a) Grouted stone 150mm medium pitching to Hammarsdale Dam	m²	15		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
5	SANS 1200 DM	SECTION DM: EARTHWORKS (ROADS, SUBGRADE)				
	8.3.3	Treatment of Road-bed				
		a) Road-bed preparation and compaction of material to 93% Mod AASHTO (100% for sand)				
5.1		i) Road surfaces at Inlet works	m³	350		
		b)Compact Insitu subgrade				
5.2		i) Base of New concrete paved areas at inlet works to 95% Mod AASHTO density (100% for sand) (200mm deep)	m²	800		
5.3		ii) Base of New concrete road at Tanker discharge area to 95% Mod AASHTO density (100% for sand) (200mm deep)	m²	50		
5.1	8.3.4	CUT TO FILL				
		Compact material to a minimum of 93% of Mod. AASHTO density (100 % for sand):				
5.1.1		i) Road surfaces at Inlet works	m³	90		
5.2	8.3.5	SELECTED LAYERS				
		Construct selected layers with selected material from excavations or stockpiles on site				
5.2.1		a) G7 selected layer compacted to 95% of mod. AASHTO density (100% for sand)	m³	50		
		Extra over for importation of material from commercial sources				
5.2.2		a) G7 Quality material	m³	100		
5.2.3	PSDM 8.3.18	Box Cutting next to Existing Kerbs and Channels	m	10		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
6	SABS 1200 G	SECTION G: CONCRETE (STRUCTURAL)				
6.1		NEW INLET WORKS CHANNEL (SCREENING AREA TO PUMP STATION SUMP)				
		Rates for smooth formwork shall include corner chamfers up to 25 x 25mm as specified				
	8.2	Formwork				
	8.2.1	Rough - Plane				
6.1.1		a) Vertical (0 to 300mm high)	m	228		
6.1.2		b) Vertical (1.0 to 2.0m high)	m²	120		
6.1.3		c) Vertical (2.0 to 4.0m high)	m²	460		
6.1.4		d) Soffit of propped slab (2.0 to 6.0m high)	m²	75		
	8.2.1	Rough - Circular				
6.1.5		a) Vertical (0 to 300mm high)	m	10		
6.1.6		b) Vertical (1m to 2m high)	m²	55		
6.1.7		c) Vertical (2m to 4m high)	m²	100		
6.1.8		d) Sloping as detailed on drawing No.5331-ST-IW-114	m²	22		
	8.2.2	Smooth - plane				
6.1.9		a) 15mm x 15mm chamfer	m	910		
6.1.10		b) Vertical (0 to 300mm high)	m	5		
6.1.11		c) Vertical (1.0 to 2.0m high)	m²	110		
6.1.12		d) Vertical (2.0 to 4.0m high)	m²	709		
6.1.13		e) Vertical columns walls(300mm x 450mm x 8.5m tall)	m²	108		
6.1.14		f) Soffit of propped slab (2.0 to 6.0m high)	m²	125		
6.1.15		g) Beams	m²	76		
	8.2.2	Smooth - Circular				
6.1.16		a) Vertical (1m to 2m high)	m²			
6.1.17		b) Vertical (2000 to 4000mm high)	m²	150		
6.1.18		c) Sloping as detailed on drawing No. No.5331-ST-IW-114	m²	4		
	8.2.6	Box out holes				
		a) Box out holes and pockets for:				
6.1.19		i) 900mm diameter HPDE pipe (with puddle flange)	No.	1		
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.1.20		ii)110mm diameter uPVC pipe	No.	1		
6.1.21		iii)300mm diameter uPVC pipe	No.	1		
	8.3	Reinforcement				
	8.3.1	Steel Bars				
		a) High tensile steel				
6.1.22		i) 8mm up to 16mm diameter	t	32		
6.1.23		ii) 20mm up to 32mm (Provisional)	t	6		
	8.4.1	Concrete				
		a) 10MPa/19mm concrete to:				
6.1.24		i) Blinding layer (horizontal)	m³	19		
	PSG 8.4.1	b) 35 MPa /19mm concrete to:				
6.1.25		i) Walls	m³	177		
6.1.26		ii) Bases and floor slab	m³	41		
6.1.27		iii) Suspended floor slab	m³	15		
6.1.28		iv) Roof slab	m³	27		
6.1.29		v) Beams	m³	17		
6.1.30		vi) Columns	m³	10		
6.1.31		c) 15 MPa structural screed to channel floor	m³	11		
	8.4.4	Unformed surface finishes				
6.1.32		a) Wood float finish to floor slab	m²	206		
		b) Steel float finish to:				
6.1.33		i) Top of walls	m²	70		
6.1.34		ii) Top of propped slab	m²	122		
	8.5	Joints				
6.1.35		a) Construction Joint A complete as shown on Drawing No. 5331-ST-IW-116	m	15		
6.1.36		b) Construction Joint B complete as shown on Drawing No. 5331-ST-IW-116	m	40		
6.1.37		c) Construction Joint C complete as shown on Drawing No. 5331-ST-IW-116	m	180		
	8.7	Grouting				
	PSG 8.7 (d)	Casting in of new pipes into concrete wall				
6.1.38		i) New 900mm diameter HDPE pipe (with puddle flange) from existing inlet works	No.	1		
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
	PSG 8.7 (e)	Casting in of ducts into structure for ducts:				
6.1.39		a)Up to 50mm diameter	m	10		
6.1.40		b) 50mm diameter up to 100mm diameter	m	10		
	PSG 8.12	Application of calcium aluminate corrosion (sewpercoat) protection, or equally approved coating system, on concrete structures				
6.1.41		i) Walls	m²	720		
6.1.42		ii) Floor	m²	243		
6.1.43		iii) suspended floors	m²	15		
6.2		CONCRETE WORK AT THE NEW PUMP STATION Rates for smooth formwork shall include corner chamfers up to 25 x 25mm as specified				
	8.2	Formwork				
	8.2.1	Rough - Plane				
		a) Vertical				
6.2.1		i) To walls,footings and bases (0 to 300mm high)	m	95		
6.2.2		ii) To walls,footings and bases etc (300mm to 1.5m high)	m²	45		
6.2.3		iii) To walls,footings and bases etc (1.5m to 4.0mm high)	m²	145		
6.2.4		b) Sloping of sump slab as detailed on drawing No.5312-ST-A300-P	m²	62		
6.2.5		c) Sloping planes to stairs soffit	m²	10		
	8.2.2	Smooth - Plane				
		a) Vertical				
6.2.6		i) To sides of channels, sumps,walls etc (0mm to 500mm high)	m²	10		
6.2.7		ii) To sides of channels, sumps,walls etc (500mm to 1.5mm high)	m²	90		
6.2.8		iii) To sides of channels, sumps,walls etc (1.5mm to 4.5mm high)	m²	130		
6.2.9		iv) Soffit of slab (3.0m to 6.0m high)	m²	220		
6.2.10		v) Beams	m²	65		
6.2.11		vi) Colunm walls (250mm x 350mm x 3m tall)	m²	7		
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.2.12		b) Sloping of sump slab as detailed on drawing No.5331-ST-IW-115	m²	67		
		c) Narrow widths				
6.2.13		1) Staircase stringers	m	18		
6.2.14		2) Staircase riser (198.5mm) approx. 3.2m height	No.	30		
	8.3	Reinforcement				
	8.3.1	Steel Bars				
		a) High tensile steel				
6.2.15		1) 8mm up to 16mm diameter	t	34		
6.2.16		2) 20mm up to 32mm (Provisional)	t	1		
	8.3.2	High Tensile Welded Mesh				
6.2.17		a) Mesh Ref 193 (Provisional)	m²	1		
6.2.18		b) Mesh Ref 395 (Provisional)	m²	1		
	8.3.2	High Tensile Welded Mesh				
6.2.19		a) Mesh Ref 617	m²	92		
	8.4.1	Concrete				
		a) 15MPa /19mm concrete to base slab				
6.2.20		i) Blinding	m³	20		
	PSG 8.4.1	b) 35MPa /19mm concrete to base slab				
6.2.21		i) Strip Footing	m³	4		
6.2.22		ii) Floor slab	m³	132		
6.2.23		iii) Roof slab	m³	48		
6.2.24		iv) Walls	m³	88		
6.2.25		v) Suspended walkway	m³	4		
6.2.26		vi) Beams	m³	6		
6.2.27		vii) Columns	m³	2		
6.2.28		viii) Suspended Floor slab	m³	5		
6.2.29		ix) Staircase	m³	3		
		c) 15MPa Structural screed to floor slab				
6.2.30		i) To floor slabs	m³	2		
6.2.31		ii) To roof slabs finish to fall	m³	10		
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		e) Extra-over item 8.4.1 for the addition of admix---floor protection (sika 614 or similar)				
6.2.32		i) To floor slabs	m²	6		
	8.4.4	Unformed surface finishes				
6.2.33		a) Wood float finish to floor slab	m²	215		
6.2.34		b) Wood float finish to roof slab	m²	195		
6.2.35		c) Steel Float finish to tops of walls	m²	203		
6.2.36		d) Wood float finish to channel bases	m²	100		
	8.5	Joints				
6.2.37		a) Construction Joint A complete as shown on Drawing No. 5331-ST-IW-116	m	40		
6.2.38		b) Construction Joint B complete as shown on Drawing No. 5331-ST-IW-116	m	40		
6.2.39		c) Construction Joint C complete as shown on Drawing No. 5331-ST-IW-116	m	70		
6.2.40		d) Construction Joint D complete as shown on Drawing No. 5331-ST-IW-116	m	60		
	8.7	Grouting				
	PSG 8.7 (d)	Casting in of new pipes into concrete wall				
6.2.41		i) New 630mm diameter Stainless steel 304 pipe (with puddle flange) into new Overflow sump wall	No.	1		
6.2.42		ii) New 400mm diameter Stainless steel 304 pipe (with puddle flange) into new Pump station wall	No.	7		
6.2.43		iii) New 700mm diameter Stainless steel 304 pipe (with puddle flange) into new Pump station wall	No.	2		
	PSG 8.7 (e)	Casting in of ducts into structure for ducts:				
6.2.44		a)Up to 50mm diameter	m	10		
6.2.45		b) 50mm diameter up to 100mm diameter	m	10		
	PSG 8.12	Application of calcium aluminate corrosion (sewpercoat) protection, or equally approved coating system, on concrete structures				
6.2.46		i) Wall	m²	180		
6.2.47		ii) Floor	m²	80		
6.3		CONCRETE PLINTH FOR GRIT CLASSIFIER				
	8.2	Formwork				
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
	8.2.2	Smooth - Plane				
6.3.1		a) Vertical (0 to 1.5m high)	m	36		
	8.3	Reinforcement				
	8.3.1	Steel Bars				
		a) High tensile steel				
6.3.2		1) 8mm up to 16mm diameter	t	0.5		
6.3.3		2) 20mm up to 32mm (Provisional)	t	0.5		
	8.4.1	Concrete				
		b) 35MPa /19mm concrete to base slab				
6.3.4		i) Plinth	m³	5		
	8.4.4	Unformed surface finishes				
6.3.5		a) Wood float finish to top of plinth	m²	16		
6.4		CONCRETE ROAD AT THE INLET WORKS AND TANKER DISCHARGE AREA				
	8.2	Formwork				
	8.2.2	Rough - Plane				
6.4.1		a) Vertical (0 to 300mm high)	m	200		
	8.3	Reinforcement				
	8.3.1	Steel Bars				
		a) High tensile steel				
6.4.2		1) 8mm up to 16mm diameter (Provisional)	t	0.1		
6.4.3		2) 20mm up to 32mm (Provisional)	t	0.1		
	8.3.2	High Tensile Welded Mesh				
6.4.4		a) Mesh Ref 617	m²	1 050		
	8.4.1	Concrete				
6.4.5		a) 35MPa /19mm concrete to base slab	m³	170		
	8.4.4	Unformed surface finishes				
6.4.6		b) Broom finish	m²	1 050		
	8.5	Joints				
6.4.7		a) Construction Joint A (Max Spacing longitudinal joints, 3.8m transverse joints, - Max spacing transverse joints, 4m) complete as shown on Drawing No. 5312-ST-A500-P	m	310		
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.5		CONCRETE WORK AT THE SECOND CLASS WATER PUMP STATION				
	8.2	Formwork				
	8.2.1	Rough				
		a) Vertical, plane				
6.5.1		i) To sides of sumps etc (0mm to 500mm high)	m²	2		
		b) Narrow widths (0-300 mm high)				
6.5.2		i) Vertical, plane to plinths, slab	m	21		
	8.2.2	Smooth - Plane				
6.5.3		a) Vertical (0 to 300mm high)	m	5		
6.5.4		b) Vertical (300mm to 1.0m high)	m²	15		
		c) Narrow widths (0-300 mm high)				
6.5.5		2) Staircase riser (150mm) approx450m height	No.	2		
	8.3	Reinforcement				
	8.3.1	Steel Bars				
		a) High tensile steel				
6.5.6		1) 8mm up to 16mm diameter	t	0.6		
	8.3.2	High Tensile Welded Mesh				
6.5.7		a) Mesh Ref 617	m²	42		
	8.4.1	Concrete				
		a) 35MPa /19mm concrete to base slab				
6.5.8		i) Walls	m³	5		
6.5.9		ii) Floor slab	m³	15		
6.5.10		iii) Plinth	m³	1		
6.5.11		iv) Steps	m³	1		
		b) 15MPa Structural screed to floor slab				
6.5.12		i) To floor slabs	m³	25		
6.5.13		d) Extra-over item 8.4.1 for the addition of a protection layer of Sika 264 Selflevelling Epoxy or similar	m²	42		
	8.4.4	Unformed surface finishes				
6.5.14		a) Steel float finish to top of slab	m²	8		
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.5.15		b) Wood float finish to floor and plinth slab	m²	42		
	8.5	Joints				
6.5.16		a) Construction Joint A complete as shown on Drawing No. 5331-ST-IW-116	m	11		
6.5.17		b) Construction Joint C complete as shown on Drawing No. 5331-ST-IW-116	m	29		
	PSG 8.7 (e)	Casting in of ducts into structure for ducts:				
6.5.18		b) 50mm diameter up to 100mm diameter	m	40		
6.6	PB 8.3.1	BRICKWORK				
6.7		BRICKWORK FOR WALLS				
		Brickwork of NFP bricks in class II mortar				
6.7.1		a) 110mm brickwork walls	m²	85		
6.8		FACE BRICKWORK				
		Corobrik Tokai Red Rustic or similar approved face bricks pointed with recessed horizontal and flush vertical joints:				
6.8.1		Extra over brickwork in NFX bricks for face brickwork	m²	85		
6.9		BRICKWORK SUNDRIES				
		a) 2.5mm Galvanised brick reinforcement:				
6.9.1		1) 150mm Wide reinforcement built in horizontally	m	390		
		b) Concrete ties				
6.9.2		32 x 1.6 mm Galvanised hoop iron tie 400mm long shot-fixed to concrete at every fourth course, including hole through joint filler if required	No	90		
6.10	PB 3.3.2	PLASTERING				
6.10.1		a) Plastering to structures	m²	85		
6.11		GENERAL CONCRETE WORK				
6.12		MISCELLANEOUS WORK				
		Prestressed Concrete Lintels				
		a) 145 x70 mm				
6.12.1		1) 1.2m long	No	4		
6.12.2		2) 1.5m long	No	2		
6.12.3		3) 2.1 m long	No	6		
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.12.4		4) 3.0 m long	No	4		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
7	SABS 1200 H	SECTION H: STRUCTURAL STEELWORK				
7.1		SECOND CLASS WATER PUMP STATION				
7.2	8.3.1	SUPPLY AND FABRICATION				
7.2.1	8.3.1.1	Preparation of shop detail drawings	Sum	1		
7.2.2	8.3.1.2	Supply and fabrication of steelwork (see Drawing5312-ST-A400-P) complete using steel to SANS 1431 Grade 355JRwith all the necessary cleats, brackets, gussets, packs, etc., as follows:	t	2.5		
7.3		DELIVERY TO SITE				
	8.3.2	Delivery of steelwork inclusive				
7.3.1		a) Normal loads	t	2.5		
7.4	8.3.3	ERECTION				
7.4.1		Offloading, stacking on Site, and erection of steelwork	t	2.5		
7.5	8.3.4	ERECTION BOLTS AND NUTS				
		Supply, deliver to Site and store as follows:				
7.5.1		Grade 4.6 bolts including flat or tapered washers, as appropriate (plain)	t	0.1		
7.5.2		Grade 8.8 bolts including thru' hardened flat or tapered washers, as appropriate	t	0.1		
	8.3.6	HOLDING-DOWN BOLTS AND NUTS Supply, deliver, and stack on Site as directed for building in by civil contractor, as follows:				
7.5.3		25mm diameter	t	0.2		
7.5.4		16mm diameter	t	0.2		
7.5.5		M10 chemical anchors	No	28		
7.5.6		M16 Chemical anchors with 16mm plate	No	28		
	8.3.7	Handrails				
		b) Hand rail assembly complete for:				
		1) Horizontal				
7.5.7		i) New Second class water Pump station as shown on Drawing No.5331-ST-MISC-413	m	5		
		3) Shaped ends				
7.5.8		i) New Second class water Pump station as shown on Drawing No. 5331-ST-MISC-413	No.	4		
7.6		INLET WORKS (SCREENING AND PUMP STATION)				
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
7.7	8.3.1	SUPPLY AND FABRICATION				
7.7.1	8.3.1.1	Preparation of shop detail drawings	Sum	1		
	PSH 8.3.1.2	Supply and fabrication of steelwork (see Drawings) complete with all the necessary cleats, brackets, gussets, packs, etc., as follows:				
		a) Using steel to SANS 1431 Grade 355JR				
7.7.2		i) IPE 200 Crane Rail at the Inlet works Pump Station	t	1.0		
7.7.3		ii) IPE 200 Crane Rail at the Inlet works Screening area	t	1.2		
	8.3.7	Handrails				
		b) Hand rail assembly complete for:				
		1) Horizontal				
7.7.4		i) New Inlet works as shown on Drawing No.5331-ST-IW-113 and 5331-ST-IW-114	m	180		
7.7.5		ii) New Inlet works Pump station as shown on Drawing No. 5331-ST-IW-115	m	20		
		2) Sloping				
7.7.6		i) New Inlet works Pump station as shown on Drawing No.5331-ST-IW-115	m	50		
		3) Shaped ends				
7.7.7		i) New Inlet works Pump station as shown on Drawing No. 5331-ST-IW-115	No.	8		
7.7.8		ii) New Inlet works as shown on Drawing No.5331-ST-IW-113 and 5331-ST-IW-114	No.	24		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
8	SABS 1200 HA	SECTION HA: STRUCTURAL STEELWORK (SUNDRY ITEMS)				
	PSHA 8.3.8	Stainless steel 304 Gratings				
8.1		a) Second class water Pump Station : Over the sump as shown on Drawing No. 5331-ST-MISC-413	m²	5		
8.2		b) New Inlet works Pump Station as shown on Drawing No.5331-ST-IW-115	m²	40		
8.3		c) New Inlet works as shown on Drawing No.5331-ST-IW-113 and 5331-ST-IW-114	m²	12		
8.1		SUNDRIES				
		1) 50x50x5 HDG angles with fishtails cast into floor slab :				
8.1.1		a) Second class water Pump Station as shown on Drawing No.5331-ST-MISC-413	m	2		
8.1.2		b) New Inlet works Pump Station as shown on Drawing No.5331-ST-IW-115	m	60		
8.1.3		c) New Inlet works as shown on Drawing No. 5331-ST-IW-113 and 5331-ST-IW-114	m	60		
8.1.4	PSHA 8.3.11	Design, supply and cast into concrete road skip rail	Sum	1		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
9	SABS 1200 HB	SECTION HB: CLADDING AND SHEETING				
9.1		NEW SECOND CLASS WATER PUMP STATION				
	8.2.2	Supply, deliver to Site, erect and fix galvanised sheeting/cladding, etc., including the supply of all necessary fasteners, etc., and cutting and notching: (See Drawings)				
9.1.1		Approved troughed profile-cladding to sides and gables, 0,6mm	m²	55		
9.1.2		Approved troughed profile-sheeting to roofs, Galvanised steel 0,6mm	m²	52		
	8.2.3	Flashings				
9.1.3		Bullnose flashing 450mm radius finish and profile to match sheeting	m	10		
9.1.4		Corner flashing	m	12		
	8.2.3	Rainwater Goods				
9.1.5		a) 150mm diameter hot dipped galvanised steel gutter fixed to roof	m	6		
9.1.6		b) 110mm diameter uPVC downpipe fixed to sides	m	12		
9.1.7		c) Extra over downpipes for 45 deg elbow bend	No.	2		
9.1.8		d) Extra over downpipes for shoe	No.	2		
	8.2.5	Tests				
9.1.9		a) As specified in Subclause 7.2.1 of SANS 1200 HB	Sum	1		
9.1.10		b) As specified in Subclause 7.2.2 of SANS 1200 HB	Sum	1		
9.1.11		c) As specified in Subclause 7.3.1 of SANS 1200 HB	Sum	1		
9.1.12		d) As specified in Subclause 7.3.2 of SANS 1200 HB	Sum	1		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
10	SABS 1200 HC	SECTION HC: COROSSION PROTECTION OF STRUCTURAL STREELWORK				
10.1	8.2.2	Transportation	t	5.0		
	8.2.3	Surface preparation and coating application				
10.2		Hot-dip galvanising and paintwork of structural steelwork for canopy at the Second class water pump station as shown on Drawing No. 5331-ST-MISC-413	t	5.0		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
11	SABS 1200 L	SECTION L: MEDIUM-PRESSURE PIPE LINES				
11.1		NEW PIPELINE AT THE INLET WORKS				
	PSL 8.2.1	a) Supply and lay Heavy duty HDPE PN 10 (PE80) sewer pipes on Class B bedding:				
11.1.1		i) 25mm diameter.(water pipe)	m	10		
11.1.2		ii) 63mm diameter (water pipe)	m	10		
11.1.3		iii) 90mm diameter (Scour pipe)	m	6		
		b) Supply and lay Heavy duty HDPE PN 10 (PE80) sewer pipes on Class B bedding, Electrofusion welding				
11.1.4		i) 450mm diam EWS pipe	m	150		
11.1.5		ii) 710mm diam rising main	m	212		
		c) Heavy duty HDPE PN 4 (PE80) sewer pipes on Class B bedding, Electrofusion welding				
11.1.6		i) 600mm diam	m	212		
11.1.7		ii) 900mm diam	m	66		
11.2		SPECIALS AND FITTINGS				
		Extra over 8.2.1 for supplying, laying, bedding and testing of specials complete with couplings:				
		a) HDPE fittings to suit PN10 pipe				
11.2.1		ii) 25mm diameter x 90 degree bend	No.	2		
11.2.2		ii) 63mm diameter x 90 degree bend	No.	2		
11.2.3		iii) 63mm diameter x 45 degree bend	No.	2		
11.2.4		iv) 63mm diameter x 22.5 degree bend	No.	1		
		b)Electrofusion welding for fittings to suit HDPE sewer pipes :				
11.2.5		i) 710mm 45 deg bend	No.	3		
11.2.6		ii) 710mm 90 deg bend	No	4		
11.2.7		iii) 710mm SG Iron flange adaptor	No	4		
11.2.8		iv)710mm dia x 90mm dia HDPE moulded scour Tee with HDG backing ring on branch	No	2		
11.2.9		v)VJ Type coupling for Scour	No	4		
		c) STAINLESS STEEL 304				
11.2.10		i) 400mm dia with puddle flange pipe casted into the wall	No.	7		
11.2.11		ii) 710mm diam x 90 degree bend (double flanged)	No.	1		
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
11.2.12		iii) 710mm diam x 1250mm long pipe flanged both end	No.	2		
11.2.13		iv) 710mm diam x 2000mm long pipe flanged both end	No.	1		
11.2.14		v) 710mm diam x 80mm diam	No.	2		
11.2.15		vi) 700mm diam T-piece flanged ends	No.	1		
11.2.16		vii) 700mm dia end plate with gasket bolted	No.	1		
11.2.17		viii) 700mm dia steel flange with puddle flange	No	2.0		
11.3		VALVES				
	8.2.3	Extra over 8.2.1 for the supplying, fixing and bedding of:				
		a) Valves, resilient seal gate type, including electrofusion couplings and flanges to connect into HDPE pipe				
11.3.1		i) 80mm dia flanged scour valve	No.	2		
11.3.2		b) 80mm, ARI D-023 or equal approved air valve with threaded connection, including s/s isolating ball valve and connection pipes	No.	2		
	PSL 8.2.4	Flexible joints at structures				
11.3.3		a) 450mm diameter	No.	4		
11.3.4		b) 600mm diameter	No.	4		
11.3.4		c) 710mm diameter	No.	2		
11.3.4		d) 900mm diameter	No.	2		
	8.2.11	Thrust blocks as detailed on drawing C5331-C-IW-105				
11.3.5		a) Concrete Class 20/19	m³	4		
	8.2.13	Valve and Hydrant Chambers etc				
11.3.6		i) Scour valve chamber complete with Type 3B valve box and thrust block	No.	2		
11.3.7		ii) Type 1 valve chamber for EWS pipe	No	2		
	8.2.15	Wrapping of pipes and flanges with Denso or similar protective wrapping:				
11.3.8		a) 710mm diam. VJ coupling	No.	2		
11.3.9		b) 710mm dia flange adapter	No.	2		
	PSL 8.2.16	Connect to existing pipelines				
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
11.3.10		i) Connection of re-routed uPVC pipework to existing pipework (50mm diameter AC pipeline)	No.	1		
11.3.11		ii) Connection of new 710mm rising main to existing pipework (700mm diameter AC pipeline)	No.	1		
11.3.12	PSL 8.2.20	Markers Posts	No.	20		
11.3.13	PSL8.2.21	Replacement of an existing leaking 600mm dia. gate valve	Prov Sum	1		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
12	SABS 1200 LB	SECTION LB: BEDDING (PIPES)				
	8.2.1	Provision of bedding from trench excavation				
12.1		a) Selected granular material	m³	174		
12.2		b) Selected fill material	m³	288		
	8.2.2.3	Provision of bedding by importation from commercial sources				
12.3		a) Selected granular material	m³	116		
12.4		b) Selected fill material	m³	192		
	8.2.4	Encasing of pipes in 20MPa/19mm concrete (provisional)				
12.5		a) 160mm diameter	m³	3		
12.6		b) 600mm diameter	m³	3		
12.7		c) 710mm diameter	m³	10		
	PSLB 8.2.6	Provision of Bedding in waterlogged conditions				
12.8		a) Single size 19mm stone	m³	10		
12.9		b) Geotextile	m³	10		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
13	SABS 1200 LC	SECTION LC: CABLE DUCTS				
	8.2.2	Excavation				
		a) Excavate in all materials for trenches, backfill, compact, and dispose of surplus material				
13.1		i) 110mm diameter ducts	m	200		
13.2		i i) 160mm diameter ducts	m	200		
	8.2.7	Drawpits/Manholes				
		Construct 600mm x 600mm AJB draw box with 300mm concrete surround to detail, with 230 brickwork, max height 1.2m including ductile iron cover and frame (600mm diameter EN 124 class C250)				
13.3		a) in sidewalk and verge	No.	6		
		Construct 1000mm x 1000mm AJB draw box with 300mm concrete surround to detail, with 230 brickwork, including ductile iron cover and frame (600mm diameter EN 124 class C250)				
13.4		a) in road	No.	6		
13.5	8.2.8	Cable route markers complete, installed, and record submitted	No	20		
	PSLC 8.2.10	Sealing of duct ends				
13.6		a) Electrical ducts	No	10		
13.7		b) Non-electrical ducts (100mm dia)	No	10		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
14	SABS 1200 LD	SECTION LD: SEWERS				
	PSLD 8.2.1	Supply, lay, joint, bed and test pipeline				
		a) Supply and lay uPVC Class 34 uPVC sewer pipes on Class B bedding:				
14.1		i) 160mm diam	m	85		
	PSLD 8.2.2	Extra-over items 8.2.1 for specials				
		a) Fittings to suit uPVC sewer pipes :				
14.2		i) 160mm dia endcap	No.	4		
14.3		ii) 160 x 160 dia plain 45 deg Y-junction	No.	4		
14.4		iii) 160 dia plain 45 deg long radius bend	No.	4		
		b) Stainless steel				
14.5		i) 600mm dia steel flange with puddle flange	No.	4		
14.6		ii) 900mm dia steel flange with puddle flange	No.	2		
	PSLD 8.2.3	Manholes				
		a) Sewer Manholes as detailed on Drawing No.5331-C-IW-109				
		i) For depths:				
14.7		- Over 1.0m up to 2.0m	No.	6		
14.8		- Over 2.0m up to 3.0m	No.	1		
14.9		- Over 3.0m up to 4.0m	No.	1		
	PSLD 8.2.4	Extra-over PSLD 8.2.3 for construction of manholes or chambers on existing pipelines complete:				
14.10		i) Overflow Chamber A and B as shown on Drawing No.5331-C-IW-111	No	1		
14.11		ii) Tanker discharge manhole as shown on Drawing No.5331-C-IW-110	No	1		
14.12		iii) Inlet works pump station sump overflow manhole as shown on Drawing No.5331-C-IW-103	No	1		
14.13		iv) Tie in point between existing and new rising main as shown on Drawing No.5331-C-IW-105	No	1		
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
	PSLD 8.2.7	a) Construction of Discharge chamber complete as shown on drawings				
14.14		i) Tanker washdown as shown Drawing 5331-C-DW-212	No.	4.0		
	8.2.11	Break into and connect to existing manhole including flexible joints as shown on Drawings and make good all benching				
14.15		i) Existing stormwater bypass as shown on Drawing No.5331-C-IW-111	No	1		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
15	SABS 1200 LE	SECTION LE: STORMWATER DRAINAGE				
	PSLE 8.2.1	Supply and lay uPVC pipe, spigot and socket with rubber ring seal, on class B bedding				
15.1		a) 160mm diameter Class 34	m	12		
		Concrete pipe culverts, spigot and socket type with rubber ring seal, on class B bedding				
15.2		i) 375 mm diameter Class 100D	m	15		
15.3		ii) Rerouting of 375mm stormwater	m	150		
	PSLE 8.2.8	Supply and Install Manholes, Catchpits, and Drainage Structures				
		CONCRETE MANHOLES for pipes up to 600mm dia as detailed on the drawing 5331-C-IW-109 for depths:				
15.4		- Up to 1.0m deep	No	1		
15.5		- Over 1.0m up to 2.0m	No	3		
15.6		- Over 2.0m up to 3.0m	No	1		
		a) Single Grid Inlet unit for depths:				
15.7		ii) Over 0.0m up to 1.0m see Drawing No. 5331-C-IW-109	No	1		
15.8		ii) Over 1.0m up to 1.5m	No	1		
		b) Double kerb inlet unit for depths and kerb type:				
15.9		i) Over 1.0m up to 1.5m (BK2)	No	1		
	8.2.10	Accessories for stormwater drainage structures				
15.10		a) Securex Z-600-D or similar approved heavy-duty ductile iron cover and frame conforming to SABS EN D 400 class	No	1		
	PSLE 8.2.14	Subsurface Drains complete as detailed on the drawings				
15.11		a) Subsurface drains	m	20		
15.12		b) Subsurface rodding eyes	No.	1		
15.13		c) Subsurface manhole up to 1.5m deep	No.	1		
15.14		d) Extra-over item (a) above for construction of sand filter in subsurface drains	m	5		
	PSLE 8.2.15	Connections into existing manholes/ catchpit/ Chamber				
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
15.15		i) Break into existing brickwork drop inlet chamber and grout new pipe in place, including cutting of new pipe flush with wall, removal and disposal of rubble, repair of plaster and benching.	Sum	1		
15.16		ii) Connection into existing manhole/catchpit for 375mm diameter pipe	No.	2		
15.17		iii) Connection into existing manhole/catchpit for 375mm diameter pipe	No.	1		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
16	SABS 1200 ME	SECTION ME: SUBBASE				
	8.2.3	Construct G9 quality subbase with material from commercial sources, compacted to 95% of mod. AASHTO maximum density.				
16.1		-Concrete Roads	m³	630		
16.2	8.3.5	Extra over item 8.3.3 to process subbase material by stabilisation (C4)	m³	160		
16.3	8.3.8	Stabilising agent; cement grade CEM II 32.5N for pavement layers	t	250		
16.1		SUNDRIES				
16.1.1	PSMM 8.3.6	Statutory signs Stop sign supplied and erected complete	No.	3		
16.1.2	PSMM 8.4.1	Retro-reflective Road Marking Paint Applied at a Nominal Rate of 0,42 l/m2	m	50		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
17	SABS 1200 MJ	SECTION MJ: SEGMENTED PAVING				
	PSMJ 8.2.2	Construction of paving complete				
17.1		b) Concrete paver blocks, 35 MPa, 60mm thick on 25mm sand bedding on paved walkways	m²	200		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
18	SABS 1200 MK	SECTION MK: KERBING AND CHANNELING				
18.1		CONCRETE KERBS AND CHANNELS				
18.2	8.2.1	PRECAST CONCRETE KERBING				
		Barrier kerbs				
		a) Type BK2				
18.2.1		i) Straights	m	10		
18.2.2		ii) 1m to 4m radius	m	10		
18.2.3		iii) 4m to 20m radius	m	1		
18.2.4		iv) Exceeding 20m radius	m	1		
		a) Type MK4				
18.2.5		i) Straights	m	100		
18.2.6		ii) 1m to 4m radius	m	1		
18.2.7		iv) Exceeding 20m radius	m	1		
		Footpath edging				
		a) Type E3				
18.2.8		i) Straights	m	230		
		Channel				
18.2.9		a) Type C1 channel	m	15		
18.2.10		b) Type C1 double channel	m	23		
		Barrier kerb and channel (Type BK2 & C1)				
18.2.11		i) Straights	m	185		
18.2.12		ii) 1m to 4m radius	m	30		
18.2.13		iii) 4m to 20m radius	m	50		
	PSMK 8.2.14	Lift and reinstate				
		a) Barrier Kerb (BK1)				
18.2.14		i) Striaghts	No	8		
18.3		IN-SITU TRANSITIONS				
	PSMK 8.2.15	Concrete class 25 transition sections, 1m long between:				
18.3.1		a) Kerb and channel to kerb and channel, all types	No	2		
18.3.2		b) Infall channel to outfall channel, all types	No	1		
18.3.3		c) Kerb and channel to double C1 channel	No	2		
Total Carried Forward						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
18.3.4		d) Concrete class 25 transition sharp bends between all types of precast section	No	15		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
19		SECTION PAF: FENCING				
	PAF8.1	Fencing				
19.1	PAF 8.1.1	Supply and install High Security Mesh Fence complete	m	35		
	PAF 8.2	Fencing Additions				
19.2	PAF8.2.2	Supply and install concrete plinth complete	m	35		
	PAF 8.2	Supply and install Gate complete				
19.3		(i) 3m wide and nominal height of 2400mm sliding gate	No	1		
19.4		(ii) 5m wide and nominal height of 2400mm double swing gate	No	1		
Total Carried Forward To Summary						

BILL 1 BOQ 2: INLET WORKS AND SECOND CLASS WATER PUMP STATION

SUMMARY OF SECTIONS

SECTION	DESCRIPTION			AMOUNT R
1	SECTION C : SITE CLEARANCE			
2	SECTION D: EARTHWORKS			
3	SECTION DB: EARTHWORKS PIPE TRENCHES			
4	SECTION DK: GABIONS AND PITCHING			
5	SECTION DM: EARTHWORKS (ROADS, SUBGRADE)			
6	SECTION G: CONCRETE (STRUCTURAL)			
7	SECTION H: STRUCTURAL STEELWORK			
8	SECTION HA: STRUCTURAL STEELWORK (SUNDRY ITEMS)			
9	SECTION HB: CLADDING AND SHEETING			
10	SECTION HC: COROSSION PROTECTION OF STRUCTURAL			
11	SECTION L: MEDIUM-PRESSURE PIPE LINES			
12	SECTION LB: BEDDING (PIPES)			
13	SECTION LC: CABLE DUCTS			
14	SECTION LD: SEWERS			
15	SECTION LE: STORMWATER DRAINAGE			
16	SECTION ME: SUBBASE			
17	SECTION MJ: SEGMENTED PAVING			
18	SECTION MK: KERBING AND CHANNELING			
19	SECTION AF: FENCING			
Total Carried Forward To Summary Of Bills				

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
1	SABS 1200 C	SECTION C : SITE CLEARANCE				
	8.2.1	Clear and Grub				
1.1		a) New Guardhouse	m²	35		
1.2		b) New Dewatering Building Facility (including retaining wall and embankment)	m²	2 150		
1.3		c) New Concrete Road	m²	2 350		
	PSC 8.2.2	Remove and grub large trees of girth				
1.4		a) over 1 m and up to and including 2 m	No.	4		
1.5		b) over 2 m and up to and including 3 m	No.	4		
	PSC 8.2.7	Dismantle and Relocate Pipelines, Electricity Transmission Lines, Handrailing, Cables etc (where necessary)				
1.6		a) Electricity Transmission Lines where the New Dwatering Facility is located	m	50		
1.7		b) Electrical cabling at the existing area	m	50		
1.8		c) Potable water pipe (<100mm diameter) Security Building	m	5		
1.9		d) Sewer pipe (<150mm diameter) Security Building	m	5		
1.10		e) Electrical fittings on the interior and exterior of the Security Building	Sum	1		
1.11		f) All sanitary fittings and office equipment	Sum	1		
1.12		g) Existing 300mm dia pipe at TP A03 to be located at proposed dewatering building vicinity and relocate.	m	100		
1.13		h) Existing pipe outlet (to be relocated and confirmed on site)	m	10		
1.14		i) Existing stainless steel staircase to be dismantled and modified to accomodate the the new retaining wall.	Sum	1		
	PSC 8.2.8	Demolish and remove structures / buildings / materials / etc				
1.15		a) Demolish existing reinforced concrete thickness up to 300mm	m²	5		
1.16		b) Existing Security Building	Sum	1		
	PSC 8.2.10	Remove topsoil to nominal depth of 150mm and stockpile				
1.17		a) At New Dewatering Facility	m²	4 500		
1.18		b) At New Guardhouse Facility	m²	25		
	PSC 8.2.11	Dealing with hazardous material				
Total Carried Forward						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.19		a) 110 to 160mm diameter AC pipes	m	10		
	PSC 8.2.16	Saw cut through existing surface for trench excavation				
1.20		a) Premix (20mm to 80mm deep)	m	55		
1.21		b) Reinforced Concrete (100mm to 200mm thick)	m	5		
	PSC 8.2.17	Removal of existing kerbing, channelling and edging				
		a) Kerbing				
1.22		i) Exisitng kerbing	m	10		
		b) Channelling				
1.23		i) Exisitng C1 infall and outfall	m	10		
	PSC 8.2.18	Remove and dispose of existing pavement				
1.24		i) Existing premix surface at the Existing incoming asphalt road section (Premix 0mm to 80mm deep)	m²	750		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
2	SABS 1200 D	SECTION D: EARTHWORKS				
2.1	PSD 8.3.2	BULK EXCAVATION				
		a)Excavate in all materials and use for embankment or backfill or dispose, as ordered				
2.1.1		i) Stockpile and maintain	m³	1 220		
2.1.2		ii) Spoil to designated dump site (within freehaul distance) and spread	m³	3 250		
2.1.3		iii) Cut to fill	m³	1 230		
2.1.4		iii) Trench for embankment drainage system as shown in drawing 5331-C-DW-222	m³	70.0		
		b) Extra-over payment item 8.3.2 for:				
2.1.5		i) Hard rock excavation	m³	10		
2.2	PSD 8.3.3	RESTRICTED EXCAVATION				
		a) Excavate for restricted foundations, footings and pipe trenches and use for backfill or embankment or dispose as ordered for				
2.2.1		i) Stockpile and maintain	m³	15		
2.2.2		ii) Spoil to designated dump site (within freehaul distance) and spread	m³	5		
2.2.3		iii) Cut to fill	m³	20		
		b) Extra-over payment item 8.3.2				
2.2.4		i) Hard rock excavation	m³	10		
2.2.5		c) Extra over item PSD 8.3.3 for importation of approved sand fill from commercial sources	m³	15		
2.2.6		d) Extra over PSD 8.3.3 for 5% cement stabilised sand	m³	10		
2.2.7		e) Extra over item PSD 8.3.3 for restricted backfilling against structures from stockpile	m³	10		
2.2.8		f) Extra over item PSD 8.3.3 for restricted backfill to fill voids formed by demolition	m³	20		
	8.3.4	Importing of Material (including placing and compacting)				
		a) Extra-over for importation of material from commercial sources				
2.2.9		1) 150mm thick G5 quality material (compacted to 95% of Mod AASHTO density) below NewBuilding floor slab	m³	145		
Total Carried Forward						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
	8.3.8	Existing services				
	8.3.8.1	a) Excavate by hand in soft material to expose services				
2.2.10		i) Existing sewer pipes up to 200mm dia at Existing Guardhouse facility	m³	5		
2.2.11		ii) Existing potable water pipe at Existing Guardhouse Facility	m³	5		
2.2.12		iii) Existing Electrical Cables at Existing Guardhouse facility	m³	5		
2.2.13		iv) Existing pipes up to 200mm dia AC SNL Pipes	m³	10		
2.2.14		v) Existing stormwater Pipe up to 300mm dia at proposed Dewatering Building facility	m³	10		
	8.3.8.2	Dealing with services that are at risk because of the construction of earthworks				
2.2.15		b) Temporary protection of pipes up to 300mm diameter	m	100		
	8.3.10	Topsoiling				
2.2.16		150 mm top soil from stockpile	m²	980		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
3		SECTION DB: EARTHWORKS (PIPE TRENCHES)				
3.1	PSDB 8.3.2	EXCAVATION				
	PSDB 8.3.2 (a)	Trench Excavation (All trenches deeper than 1,0m shall be shored)				
		a) Excavate in all materials for trenches, dewater, backfill, compact, and dispose of surplus or unsuitable material for:				
		i) Pipes up to and including 125mm external diameter for depths:				
3.1.1		- Exceeding 0.0m up to 1.0m	m	30		
3.1.2		- Exceeding 1.0 up to 2.0m	m	250		
3.1.3		- Exceeding 2.0 up to 3.0m	m	50		
		ii) Pipes over 125mm and up to 710mm external diameter for depths:				
3.1.4		- Exceeding 0.0m up to 1.0m	m	5		
3.1.5		- Exceeding 1.0 up to 2.0m	m	10		
3.1.6		- Exceeding 2.0 up to 3.0m	m	10		
	PSDB 8.3.2 (b)	b) Extra-over Payment Items PSD 8.3.2 for: (Provisonal)				
3.1.7		i) Hard rock excavation	m³	5		
3.1.8		iii) Hand excavation - soft material	m³	5		
3.1.9	8.3.2	c) Excavate and dispose of unsuitable material from the trench bottom (provisional)	m³	5		
	8.3.3	Excavation Ancillaries				
	8.3.3.1	Make up deficiency in backfill material (Provisional)				
3.1.10		a) From other necessarry excavations on site	m³	10		
3.1.11		c) By importation from commercial sources	m³	10		
3.1.12	8.3.3.3	Compaction in Road Reserve	m³	10		
3.2	8.3.4	PARTICULAR ITEMS				
	PSDB 8.3.4 (c)	c) Excavate by hand in all materials to verify existing services, or as directed by the Engineer and backfill				
3.2.1		ii) Existing second class water pipe <160mm diameter	m³	5		
3.2.2		ii) Existing drainage pipe <160mm diameter	m³	5		
Total Carried Forward						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3.2.3		iii) Existing electrical cables	m³	5		
3.2.4		iv) Existing water main < 100mm diameter	m³	5		
3.2.5		v) Existing Sludge feed 200mm diameter AC pipeline	m³	5		
3.2.6		vi) Existing SNL 200mm diameter AC pipe	m³	5		
	PSDB 8.3.5	Existing services that Intersect or Adjoin a pipe trench				
	8.3.5	a) Services that intersect a trench.				
		i) Pipeline Existing Main gate entrance and Dewateing facility				
3.2.7		- Electrical cables	No.	10		
3.2.8		- uPVC 110mm dia. sleeves with cables	No.	10		
3.2.9		- Existing pipes <100mm diameter	No.	10		
3.2.10		- Existing pipes 100-300mm diameter	No.	5		
3.2.11		- Barrier Kerbs and channels	No.	15		
	8.3.5	b) Services that adjoin a pipe trench.				
		Pipeline Existing Inlet works				
3.2.12		- Electrical cables	No.	5		
3.2.13		- uPVC 110mm dia. sleeves with cables	No.	5		
3.2.14		- Existing pipes <100mm diameter	No.	5		
3.2.15		- Existing pipes 100-300mm diameter	No.	5		
3.3	PSDB 8.3.6	FINISHING				
	PSDB 8.3.6.1	Reinstate road surface complete with all courses				
3.3.1		a) Asphalt of thickness 30mm to parking area	m²	5		
3.3.2		a) Asphalt of thickness 40mm to roadway	m²	10		
3.3.3		b) Basecourse material stabilised with 5% cement and compacted to 98% mod AASHTO density (2 layers of 150mm thick)	m²	10		
3.3.4		c) Subbase material compacted to 95% mod AASHTO density (2 layers of 150mm thick)	m²	10		
3.3.5		d) Concrete interlocking block paving of thickness 60mm to walkway	m²	10		
3.3.6		e) Precast kerbing	m	10		
Total Carried Forward						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3.3.7		f) class 30MPa/19mm concrete 150mm thick with mesh reinforcement Ref 193	m²	5		
3.3.8	PSD 8.3.14	Shoring to protect existing structures : Pipe Trenches (Provisional)	m²	10		
	SABS MM 8.4.1	Reinstate road markings (Provisional)				
3.3.9		a) White lines - unbroken	m	10		
3.3.10		b) Yellow lines - unbroken	m	10		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
4	SANS 1200 DM	SECTION DM: EARTHWORKS (ROADS, SUBGRADE)				
	8.3.3	Treatment of Road-bed a) Road-bed preparation and compaction of 200mm thick material to 93% Mod AASHTO (100% for sand)				
4.1		(i) Road A (Incoming Road towards Dewatering Building facility)	m³	180		
4.2		(ii) Road B (Ring Road around Dewatering Building facility)	m³	410		
		b) In - Place treatment of road-bed in intermediate material by:				
4.3		(i) Ripping	m³	580		
		c) In - Place treatment of road-bed in hard rock material by:				
4.4		(i) Ripping	m³	200		
	PSDM 8.3.4	Cut to fill G9 quality fill Compacted to at least 93% mod. AASHTO maximum density (100% for sand)				
4.5		(a)Road A (Incoming Road towards Dewatering Building facility)	m³	210		
4.6		(b)Road B (Ring Road around Dewatering Building facility)	m³	4 300		
	PSDM 8.3.4	Borrow to fill (i) Construct imported G7 quality upper selected subgrade layer from commercial source, compacted to 95% mod. AASHTO density (100% for sand);				
4.7		-Road A (Incoming Road towards Dewatering Building facility)	m³	120		
4.8		-Road B (Ring Road around Dewatering Building facility) (ii)Construct 200mm Thick G9 Quality Fill material Compacted to 97% MOD AASHTO Density for lower selected subgrade with material from commercial sources	m³	650.0		
4.9		-Road A (Incoming Road towards Dewatering Building facility)	m³	90		
4.10		-Road B (Ring Road around Dewatering Building facility) (iii)Construct 200mm Thick G9 Quality Fill material Compacted to 97% MOD AASHTO Density for lower selected subgrade. with material from designated excavations.	m³	210		
Total Carried Forward						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
4.11		-Road A (Incoming Road towards Dewatering Building facility)	m³	90		
4.12		-Road B (Ring Road around Dewatering Building facility)	m³	210		
	PSDM 8.3.6	Cut to spoil or stockpile from Stockpile Material with excavations from excavated road prism (Guardhouse and Dewatering Building)				
4.13		(a) Soft Material Excavation - Roadways building paved areas Spoil Material from excavations from road prism including (Guardhouse and Dewatering Building)	m³	1 200		
4.14		b) Soft Material Excavation - Roadways including proposed paved areas	m³	3 300		
4.15		c) Hard Rock Excavation - Roadways including proposed paved areas	m³	10		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
5		SECTION G: CONCRETE (STRUCTURAL)				
5.1		RETAINING WALL				
5.2	8.2	FORMWORK				
		Rates for smooth formwork shall include corner chamfers up to 25 x 25mm as specified				
	8.2.1	Rough				
		a) Vertical, plane				
5.2.1		i) To filled sides of retaning wall (1m to 1.5m high)	m²	180		
	8.2.5	b) Narrow widths (0-200 mm high)				
5.2.2		ii) Vertical, plane to footings and bases	m	115		
	8.2.2	Smooth				
		a) Vertical, plane				
5.2.3		i) To exposed sides of retaning wall (1m to 1.5m high)	m²	180		
5.3	8.3	REINFORCEMENT				
	8.3.1	Steel Bars				
		a) High tensile steel				
5.3.1		i) Not exceeding 8mm dia.	t	0.4		
5.3.2		i) 8mm up to 16mm diameter	t	7.0		
5.4	8.4	CONCRETE				
		a) 15MPa/19mm concrete to:				
5.4.1	8.4.2	i) Blinding layer (horizontal)	m³	8		
		b) 30 MPa/19mm concrete to:				
5.4.2	8.4.1	ii) Strip footings	m³	30		
5.4.3	8.4.1	iii) Retaining wall stem	m³	30		
5.5	8.4.4	UNFORMED SURFACE FINISHES				
5.5.1		c) Wood float finish to top of wall stem	m²	25		
5.5.2		(i) Cuscade drain for dewatering facility embankment See Drawing No.5331-C-DW-222	m²	45		
5.6	8.5	JOINTS				
5.6.1		a) Construction joint detail complete as shown on Drawing No. 5331-C-DW-217	m	20		
Total Carried Forward						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.6.2		b) 10mm Isolation joint with jointex and 10x10mm Polyurethane sealant as shown on Drawing No. 5331-C-DW-219	m	115		
5.7		**EMBANKMENT CHANNEL**				
5.8	8.4.4	UNFORMED SURFACE FINISHES				
5.8.1		d) Class U2 surface finish to cast in situ concrete cutoff channel See Drawing No. 5331-C-DW-222	m²	150		
5.8.2		d) Class U2 surface finish to cast in situ concrete cascade drain See Drawing No. 5331-C-DW-222	m²	50		
5.9		**DEWATERING FACILITY CONCRETE ROAD**				
5.10	8.2	FORMWORK				
		Rates for smooth formwork shall include corner chamfers up to 25 x 25mm as specified				
	8.2.1	Rough				
		a) Narrow widths (0-300 mm high)				
5.10.1		i) Vertical, plane to road side	m	330		
5.11	8.3	REINFORCEMENT				
	8.3.1	Steel Bars				
		a) High tensile steel				
5.11.1		i) Not exceeding 8mm dia.	t	0.1		
5.11.2		i) 8mm up to 16mm diameter	t	0.1		
	8.3.2	High Tensile Welded Mesh				
5.11.3		a) Mesh Ref 193 (Provisional)	m²	5		
5.11.4		b) Mesh Ref 617	m²	3 000		
5.12	8.4.1	CONCRETE				
		a) 15MPa/19mm concrete to:				
5.12.1		i) Blinding layer (horizontal)	m³	150		
		b) 30 MPa/19mm concrete to:				
5.12.2		i) Concrete road	m³	480		
5.13	8.4.4	UNFORMED SURFACE FINISHES				
5.13.1		a) Broom finish to concrete road	m²	3 000		
5.14	8.5	JOINTS				
Total Carried Forward						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.14.1		a) Construction Joint A (Max Spacing longitudinal joints, 3.8m transverse joints, - Max spacing transverse joints, 4m) complete as shown on Drawing No. 5331-ST-IW-116	m	450		
		NEW SLUDGE DEWATERING BUILDING				
5.15	8.2	FORMWORK				
		Rates for smooth formwork shall include corner chamfers up to 25 x 25mm as specified				
		Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described				
	8.2.1	Rough				
		a) Vertical, sides				
5.15.1		i) Edges, risers, ends and reveals not exceeding 300mm high or wide	m²	60		
	8.2.5	b) Soffits				
5.15.2		ii) Slabs propped up exceeding 1.5m and not exceeding 3.5m high	m²	5		
	8.2.2	Smooth				
		a) Vertical, Sides				
5.15.3		i) Outer face of walls of circular silo exceeding 1m radius with a total height exceeding 8m and not exceeding 9.5m above bearing level	m²	283		
5.15.4		ii) Inner face of walls of circular silo exceeding 1m radius with a total height exceeding 8m and not exceeding 9.5m above sloping bearing level	m²	251		
5.15.5		iii) Outer face of walls of conical section of circular silo exceeding 1m radius propped up exceeding 8m and not exceeding 9.5m above bearing level	m²	80		
5.15.6		iv) Rectangular columns in foundations	m²	132		
5.15.7		v) Rectangular columns with total height exceeding 3.5m and not exceeding 5m above bearing level	m²	322		
5.15.8		vi) Rectangular columns with total height exceeding 3.5m and not exceeding 5m above bearing level	m²	220		
5.15.9		vii) Inverted beams circular not exceeding 1m radius	m²	2		
Total Carried Forward						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.15.10		viii) Inverted beams above concrete circular not exceeding 1m radius	m²	1		
5.15.11		ix) Edges exceeding 300mm high	m²	35		
5.15.12		x) Edges, risers, ends and reveals not exceeding 300mm high or wide	m²	320		
5.15.13		xi) Sloping and stepped outer edges of stairs 360mm high extreme	m²	13		
		b) Soffits				
5.15.14		i) Slabs propped up exceeding 3.5m and not exceeding 5m high	m²	304		
5.15.15		ii) Slabs propped up exceeding 8m and not exceeding 9.5m high off sloping surfaces	m²	33		
5.15.16		iii) Landings	m²	5		
5.15.17		iv) Stairs with sloping soffits	m²	8		
		c) Sides and Soffits				
5.15.18		i) Beams propped up exceeding 1.5m and not exceeding 3.5m high	m²	239		
5.15.19		ii) Isolated beams propped up exceeding 1.5m and not exceeding 3.5m high	m²	268		
5.15.20		iii) Isolated beams propped up exceeding 8m and not exceeding 9.5m high	m²	88		
		d) Sloping top surfaces				
5.15.21		i) Inner face of walls of conical section of circular silo exceeding 1m radius	m²	66		
5.15.22		ii) Extra over last for 3mm thick HDPE anchor knob sheet - AKS CPL green or similar approved	m²	66		
		e) Boxing in smooth formwork to form				
5.15.23		i) 25 x 25mm Chamfer along top or bottom edge	m	743		
5.15.24		ii) 25 x 25mm Chamfer along top or bottom edge circular on plan exceeding 1m radius	m	62		
5.15.25		iii) 25 x 25mm Vertical chamfer at corner	m	678		
		f) Boxing out smooth formwork to form				
Total Carried Forward						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.15.26		i) 300 x 400 x 662mm High overall crane rail support with sloping soffit 400mm from top of support on 450mm wide face of column, top of support 1513mm from top of column	No	10		
		g) Smooth formwork to form				
5.15.27		i) Opening exceeding 2m and not exceeding 3m girth through 250mm slab	No	4		
5.16	8.3	REINFORCEMENT				
	8.3.1	Steel Bars				
		a) Mild steel				
5.16.1		i) Various diameters	t	10.0		
		b) High tensile steel				
5.16.2		i) Various diameters	t	95.4		
		c) Fabric Mesh reinforcement				
5.16.3		i) Type ref 395 fabric reinforcement in concrete surface beds, slabs, etc	m²	847.0		
5.17	8.4	CONCRETE UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
		a) 15MPa/19mm concrete to:				
5.17.1	8.4.2	i) Surface blinding under footings and bases	m³	10		
		REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
		b) 30 MPa/19mm concrete to:				
5.17.2	8.4.1	i) Bases	m³	149		
5.17.3	8.4.1	ii) Foundation beams	m³	27		
		REINFORCED CONCRETE c) 30 MPa/19mm concrete to:				
5.17.4	8.4.1	i) Surface beds cast in panels on waterproofing	m³	176		
5.17.5	8.4.1	ii) Ramps on waterproofing	m³	3		
	8.4.1	iii) Bottoms of floor drains on waterproofing	m³	5		
5.17.6	8.4.1	iv) Slabs including beams and inverted beams	m³	122		
Total Carried Forward						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.17.7	8.4.1	v) Raisings on tops of slabs	m³	1		
5.17.8	8.4.1	vi) Plinths	m³	8		
5.17.9	8.4.1	vii) Isolated beams	m³	50		
5.17.10	8.4.1	viii) Stairs including landings, beams and inverted beams	m³	4		
5.17.11	8.4.1	ix) Columns in foundations	m³	18		
5.17.12	8.4.1	x) Columns	m³	85		
5.17.13	8.4.1	xii) Walls of cylindrical silo	m³	80		
5.17.14	8.4.1	xiii) Conical walls of cylindrical silo	m³	22		
5.18	8.4.4	UNFORMED SURFACE FINISHES				
5.18.1		a) Wood float finish to top surfaces of concrete				
5.18.1.1		(i) Surface beds, slabs, etc	m²	359		
5.18.2		b) Wood float finish to top surfaces of concrete with "Dry Shake" hardener added in accordance with the Manufacturer's Instructions				
5.18.2.1		(i) Surface beds, slabs, etc to falls	m²	23		
5.18.3		c) Steel trowel finish to top surfaces of concrete				
5.18.3.1		(i) Tops of beams, walls, etc	m²	177		
5.18.3.2		(ii) Surface beds, slabs, etc to falls	m²	65		
5.18.4		d) Non-shrink epoxy leveling grout				
5.18.4.1		(i) Bedding approximately 5mm thick under 230 x 130mm base plate including chamfered edges all round	No	20		
5.19	8.5	JOINTS				
		"Kilcher bearing" slip joints between horizontal concrete and brick surfaces including cement mortar bed				
5.19.1		a) Not exceeding 300mm wide	m	228		
		Expansion joints with approved joint forming material between vertical concrete and brick surfaces				
5.19.2		b) 6mm Joints not exceeding 300mm high	m	189		
Total Carried Forward						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		Sleeves				
5.19.3		c) 100mm Diameter pipe sleeve through 250mm thick slab	No	4		
5.19.4		d) 150mm Diameter pipe sleeve through 250mm thick slab	No	8		
5.19.5		e) 250mm Diameter pipe sleeve through 250mm thick slab	No	12		
5.19.6		f) 700mm Diameter galvanised pipe not exceeding1000mm long with and including one flanged end, blank flange, bolts and gasket cast through 250mm thick slab	No	2		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
6	SABS 1200 L	SECTION L: MEDIUM-PRESSURE PIPE LINES				
	PSL 8.2.1	Supply, lay and bed HDPE PE80 PN10:				
6.1		i) 200mm diameter.	m	100		
		b)Electrofusion welding for fittings to suit HDPE sewer pipes :				
6.2		i)VJ Type coupling for Scour	No	1		
6.1		SPECIALS AND FITTINGS				
		Extra over 8.2.1 for supplying, laying, bedding and testing of specials complete with couplings:				
6.2		STAINLESS STEEL 304				
6.2.1		i) 200mm diam x 90 degree bend (one side flanged)	No.	1		
6.2.2		ii) 200mm diam x 1000mm long pipe flanged both end	No.	1		
6.3		HDPE PE80 PN10				
6.3.1		i) 200mm diam x 90 degree bend	No.	2		
6.3.2		i) 200mm diam x 11.5 degree bend	No.	1		
6.3.3		iii) 200mm diam x 80mm diam scour tee	No.	2		
6.4		VALVES				
	8.2.3	Extra over 8.2.1 for the supplying, fixing and bedding of:				
		a) Valves, resilient seal gate type, including electrofusion couplings and flanges to connect into HDPE pipe				
6.4.1		i) 80 mm diam. for Scour valve to HDPE conection	No.	1		
	PSL 8.2.4	Flexible joints at structures				
6.4.2		a) 200mm diameter	No.	1		
	8.2.13	Valve and Hydrant Chambers etc				
6.4.3		i) Scour valve chamber complete with Type 3B valve box and thrust block	No.	1		
	8.2.15	Wrapping of pipes and flanges with Denso or similar protective wrapping:				
6.4.4		a) 200mm diam. VJ - type coupling	No.	1		
6.4.5		b) 200mm dia flange adapter	No.	2		
	8.2.11	Thrust blocks as detailed on drawings				
6.4.6		a) Concrete Class 20/19	m³	5		
Total Carried Forward						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
	PSL 8.2.16	Connect to existing pipelines				
6.4.7		i) Connection of re-routed uPVC pipework to existing pipework (50mm diameter AC pipeline)	No.	2		
6.4.8	PSL 8.2.20	Markers Posts	No.	20		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
7		SECTION LB: BEDDING (PIPES)				
	8.2.1	Provision of bedding from trench excavation				
7.1		a) Selected granular material	m³	60		
7.2		b) Selected fill material	m³	120		
	8.2.2.3	Provision of bedding by importation from commercial sources				
7.3		a) Selected granular material	m³	60		
7.4		b) Selected fill material	m³	30		
	8.2.4	Encasing of pipes in 20MPa/19mm concrete (provisional)				
7.5		a) 300mm diameter Class 75D Pipe	m³	5		
7.6		b) 450mm diameter Class 75D Pipe	m³	5		
	PSLB 8.2.6	Provision of Bedding in waterlogged conditions				
7.7		a) Single size 19mm stone	m³	10		
7.8		b) Geotextile	m³	10		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
8	SABS 1200 LC	SECTION LC: CABLE DUCTS				
	8.2.2	Excavation a) Excavate in all materials for trenches, backfill, compact, and dispose of surplus material				
8.1		i) 110mm diameter ducts	m	150		
8.2		i i) 160mm diameter ducts	m	150		
	8.2.7	Drawpits/Manholes Construct 600mm x 600mm AJB draw box with 300mm concrete surround to detail, with 230 brickwork,max height 1.2m including ductile iron cover and frame (600mm diameter EN 124 class C250)				
8.3		a) in sidewalk and verge	No.	6		
		Construct 1000mm x 1000mm AJB draw box with 300mm concrete surround to detail, with 230 brickwork,max height 1.2m including ductile iron cover and frame (600mm diameter EN 124 class C250)				
8.4		a) in road	No.	6		
8.5	8.2.8	Cable route markers complete, installed, and record submitted	No	20		
	PSLC 8.2.10	Sealing of duct ends				
8.6		a) Electrical ducts	No	10		
8.7		b) Non-electrical ducts (100mm dia)	No	10		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
9	SABS 1200 LD	SECTION LD: SEWERS				
	PSLD 8.2.1	Supply, lay, joint, bed and test pipeline				
		a) uPVC Class 34 sewer pipes on Class B bedding				
9.1		i) 160mm diam	m	5		
9.2		ii) 200mm diam	m	10		
9.3		iii) 315mm diam	m	145		
	PSLD 8.2.2	Extra-over items 8.2.1 for specials				
		a) Fittings to suit uPVC sewer pipes :				
9.4		i) 110mm dia endcap	No.	1		
9.5		ii) 160 x 110 dia plain 45 deg Y-junction	No.	1		
9.6		iii) 110 dia plain 45 deg long radius bend	No.	1		
	PSLD 8.2.3	Manholes				
		a) Sewer Manholes as detailed on drawing No.5331-C-DW-212				
		i) For depths:				
9.7		- Over 0.0m up to 1.0m	No.	4		
9.8		- Over 1.0m up to 2.0m	No.	6		
9.9		- Over 2.0m up to 3.0m	No.	1		
9.10		- Over 3.0m up to 4.0m	No.	1		
	PSLD 8.2.4	Extra-over PSLD 8.2.3 for construction of manholes or chambers on existing pipelines				
9.11		i) New SNL Manhole	No.	1		
	PSLD 8.2.7	a) Construction of Discharge chamber complete as shown on drawings				
9.12		i) Tanker washdown as shown Drawing 5331-C-DW-212	No.	2		
9.13	8.2.11	Break into and connect to existing manhole including flexible joints as shown on Drawings and make good all benching	m^3	1		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
10	SABS 1200 LE	SECTION LE: STORMWATER DRAINAGE				
	8.2.1	Concrete pipe culverts, spigot and socket type with rubber ring seal, on flexible bedding				
10.1		i) 300 mm diameter Class 75D	m	120		
		Concrete pipe culverts, spigot and socket type with rubber ring seal, on class B bedding				
10.2		i) 375 mm diameter Class 100D	m	10		
	PSLE 8.2.8	a)Supply and install 1000mm Dia Manhole or similar complete as detailed on the drawings 5331-C-DW-208 and 5331-C-DW-209				
10.3		i) Over 1.0 up to 2.0m	No	3		
10.4		ii) Over 2.0 up to 3.0m	No	3		
10.5		iii) Over 3.0 up to 4.0	No	1		
		b) Single Grid Inlet unit for depths:				
10.6		i) Over 0.5m up to 1.0m	No	2		
		c) Double kerb inlet unit for depths and kerb type:				
	8.2.10	Accessories for stormwater drainage structures				
10.7		a) Securex Z-600-D or similar approved heavy-duty ductile iron cover and frame conforming to SABS EN D 400 class	No	6		
	PSLE 8.2.14	Subsurface Drains complete for reatining wall as detailed on the drawings				
10.8		a) Subsurface drains stystem complete as shown on Drawing No. 5331-C-DW-217	m	200		
	PSLE 8.2.15	Connections into existing manholes/ inlets				
10.9		i) Connection into proposed manhole/grid inlet for 110mm diameter pipe	No.	2		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
11	SABSA 1200 ME	SECTION ME: SUBBASE				
11.1	8.2.3	Construct G5 quality subbase with material from commercial sources, compacted to 95% of mod. AASHTO maximum density.	m³	82		
	8.3.3	Construct 100 mm Cement Stabalized subbase (C4) material with material from commercial sources compacted to 97% Mod. AASHTO Density a) 100mm to roadways at dewatering building facility				
11.2		-Road A (Incoming Road towards Dewatering Building facility)	m³	80		
11.3		-Road B (Ring Road around Dewatering Building facility)	m³	230		
		b) 100 mm Cement Stabalized subbase (C4) Compacted to 97% Mod.AASHTO Density for:				
11.4		- Guardhouse paved area at entrance	m³	8		
11.5		- Dewatering Building paved area	m³	150		
11.1		SUNDRIES				
11.1.1	PSMM 8.3.6	Statutory signs, street names, and the like, supplied and erected complete	No	6		
11.1.2	PSMM 8.4.1	Retro-reflective Road Marking Paint Applied at a Nominal Rate of 0,42 l/m2	m	150		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
12	SABS 1200 MF	SECTION MF: BASE				
	8.3.3	Construct 100 mm Cement Stabalized subbase (C4) compacted to 97% Mod. AASHTO Density				
12.1		-Road A (Incoming Road towards Dewatering Building facility)	m³	80		
12.2		-Road B (Ring Road around Dewatering Building facility)	m³	230		
12.3		b) 100 mm to sidewalks	m³	20		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
13	SABS 1200 MJ	SECTION MJ: SEGMENTED PAVING				
	PSMJ 8.2.2	Construction of paving complete a) 60mm interlocking paving blocks Class 30/2.0 S-C (Colour grey) on 25mm sand, on paved walkways				
13.1		i) Guardhouse Paved area at entrance	m²	25		
13.2		ii) Dewatering Building Facility Paved area	m²	140		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
14	SABS 1200 MK	SECTION MK: KERBING AND CHANNELING				
14.1		CONCRETE KERBS AND CHANNELS				
14.2	8.2.1	PRECAST CONCRETE KERBING				
		Barrier kerbs				
		a) Type BK4				
14.2.1		i) Straights	m	610		
14.2.2		ii) 1m to 4m radius	m	40		
14.2.3		iii) 4m to 20m radius	m	45		
14.2.4		iv) Exceeding 20m radius	m	10		
		Footpath edging				
		a) Type E3				
14.2.5		i) Straights	m	20		
14.2.6		ii) 1m to 4m radius	m	5		
14.2.7		iii) 4m to 20m radius	m	5		
14.2.8		iv) Exceeding 20m radius	m	5		
		Channel				
14.2.9		a) Type C1 channel	m	410		
14.2.10		b) Type C1 double channel	m	30		
	PSMK 8.2.14	Lift and reinstate				
		a) Barrier Kerb (BK1)				
14.2.11		i) Striaghts	No	8		
		Cast in situ mesh reinforced concrete cutoff channel				
	8.2.7	Trimming of excavations for concrete-lined open drains:				
14.2.12		(a) In soft material	m²	90		
14.2.13		(c) In hard material	m²	10		
		Concrete lining for open cut off drains:				
		(a) Cast in situ concrete lining class 20/19				
14.2.14	8.2.8	(i) Cut off channel for dewatering facility embankment See Drawing No. 5331-C-MISC-407 & 5331-C-DW-222	m³	15		
		Class U2 surface finish to cast in situ concrete				
Total Carried Forward						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
14.2.15		(i) Cut off channel for dewatering facility embankment See Drawing No.5331-C-MISC-407 & 5331-C-DW-222	m²	120		
	8.2.9	Formwork to cast in situ concrete cut off drain (Class F1 surface finish):				
14.2.16		(b) To sides with formwork on both internal and external faces (each face measured)	m²	250		
14.2.17		(c) To ends of slabs	m²	6		
	8.2.10	Sealed joints in concrete linings of open cutoff drains:				
14.2.18		(i) Spaced at 10m intervals	m	20		
	8.2.13	Water Proofing				
14.2.19		250 Micron DPM under cast insitu concrete channel See Drawing No. 5331-C-DW-222	m²	120		
		Cast in situ mesh reinforced concrete cascade drain				
	8.2.7	Trimming of excavations for concrete-lined open drains:				
14.2.20		(a) In soft material	m²	25		
14.2.21		(b) In hard material	m²	5		
		Concrete lining for open cascade drains:				
		(a) Cast in situ concrete lining class 20/19				
14.2.22	8.2.8	(i) Cascade drain for dewatering facility embankment See Drawing No. 5331-C-DW-222	m³	5		
	8.2.9	Formwork to cast in situ concrete cuscade drain (Class F2 surface finish):				
14.2.23		(a) To sides with formwork on both internal and external faces (each face measured)	m²	30		
14.2.24		(b) To ends of slabs	m²	10		
14.2.25	8.2.12	Steel Reinforcement Mesh Ref 193 to Cascade drain	t	0.5		
	8.2.13	Water Proofing				
14.2.26		250 Micron DPM under cast insitu concrete channel See Drawing No. 5331-C-DW-222	m²	40		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
15	SABS 1200 MM	SECTION MM: ANCILLARY ROADWORKS				
15.1		SCHEDULED ITEMS FOR GUARDRAILS FOR ROAD A AS PER DRAWINGS 5331-C-DW-216, 217, 218 AND 219				
15.2	8.2.1	GUARDRAIL ON POSTS				
15.2.1		a) Galvanized	m	200		
15.3	8.2.2	EXTRA-OVER FOR ITEM 8.2.1 FOR HORIZONTALLY CURVED GUARDRAIL	m	20		
	8.2.3	End units				
15.3.1		a) End wings (Bullnose)	No	4		
15.3.2	8.2.5	Reflector plates	No	70		
15.4		SCHEDULED ITEMS FOR GUARDRAILS FOR PROTECTION AROUND SILOS				
15.5	8.2.1	GUARDRAIL ON POSTS FOR ROAD B				
15.5.1		a) Galvanized	m	15		
	8.2.3	End units				
15.5.2		a) End wings (Bullnose)	No	4		
15.5.3	8.2.5	Reflector plates	No	10		
15.6	PSMM 8.2.8	Steel base plate and housing for post along road a as per drawings DRAWINGS 5331-C-DW-216 AND 217	No	15		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
16		SECTION PGE: EROSION CONTROL				
	PGE 7.3.1	Supply of erosion control mat				
16.1		Supply of biodegradable jute netting/matting to dewatering facility embankment slope for erosion control. See Drawing 5331-C-DW-222	m²	1 200		
	PGE 7.3.2	Installation of erosion control mat				
16.2		Installation of biodegradable jute netting/matting to dewatering facility embankment slope for erosion control. See Drawing 5331-C-DW-222	m²	1 200		
Total Carried Forward To Summary						

BILL 1 BOQ 3: DEWATERING FACILITY

SUMMARY OF SECTIONS

SECTION	DESCRIPTION				AMOUNT R
1	SECTION C : SITE CLEARANCE				
2	SECTION D: EARTHWORKS				
3	SECTION DB: EARTHWORKS (PIPE TRENCHES)				
4	SECTION DM: EARTHWORKS (ROADS, SUBGRADE)				
5	SECTION G: CONCRETE (STRUCTURAL)				
6	SECTION L: MEDIUM-PRESSURE PIPE LINES				
7	SECTION LB: BEDDING (PIPES)				
8	SECTION LC: CABLE DUCTS				
9	SECTION LD: SEWERS				
10	SECTION LE: STORMWATER DRAINAGE				
11	SECTION ME: SUBBASE				
12	SECTION MF: BASE				
13	SECTION MJ: SEGMENTED PAVING				
14	SECTION MK: KERBING AND CHANNELING				
15	SECTION MM: ANCILLARY ROADWORKS				
16	SECTION PGE: EROSION CONTROL				
Total Carried Forward To Summary Of Bills					

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
1	SANS 1200 C	SECTION C: SITE CLEARANCE				
1.1		CLEAR SITE				
1.1.1	8.2.1	Clear and grub	m²	525		
	8.2.2	Remove and grub large trees of girth:				
1.1.2		a) Less than 1.0m	No	1		
1.1.3		b) Over 1.0m up to 2.0m	No	1		
1.1.4		c) Over 2.0m up to 3.0m	No	1		
	PSC 8.2.16	Saw cut through existing surface for trench excavation				
1.1.5		a) Premix (20mm to 80mm deep)	m	170		
1.1.6		b) Reinforced Concrete (100mm to 200mm thick)	m	40		
	PSC 8.2.17	Removal of existing kerbing, channelling and edging				
1.1.7		c) Lift and remove existing interlocking pavers in the sidewalk (up to 80 mm thick)	m²	368		
1.1.8	PSC 8.2.18	Removal of existing asphalt surfacing	m²	51		
Total Carried Forward To Summary						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
2	SABS 1200 D	SECTION D: EARTHWORKS				
	PSD 8.3.3	Restricted Excavation				
2.1		AT SECOND CLASS WATER PUMP STATION				
		a) Excavate in all materials and use for embankment or backfill or dispose, as ordered				
2.1.1		i) Stockpile and Maintain	m³	10		
2.1.2		iii) Cut to fill	m³	10		
		b) Extra-over payment item 8.3.3 for:				
2.1.3		i) Hard rock excavation	m³	1		
2.1.4		c) Extra-over for item PSD 8.3.3 for importation of approved sand fill from commercial sources	m³	8		
2.1.5		d) Extra-over for item PSD 8.3.3 for 5% cement stabilised sand	m³	2		
2.1.6		e) Extra-over for item PSD 8.3.3 for restricted backfilling against structures	m³	5		
	8.3.4	Importing of Materials				
		a) Importation of materials from commercial sources or from borrow pits, place and compact				
		i) G9-quality material (compacted to 100% of Mod AASHTO density for fill to :				
2.1.7		- New concrete slab at the Second Class water pump station	m³	3		
		Extra-over for importation of material from commercial sources				
2.1.8		i) G7-quality material (compacted to 95% of Mod AASHTO density for 100% for sand fill to Paved area	m³	5		
2.1.9		ii) G8-quality material (compacted to 95% of Mod AASHTO density for fill to Paved area	m³	5		
	8.3.8.1	c) Excavate by hand in soft material to expose services				
Total Carried Forward						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2.1.10		ii) Existing second class water pipe (<100mm diameter)	m³	1		
2.1.11		iii) Existing electrical cables	m³	5		
	8.3.8.2	Dealing with services that are at risk because of the construction of earthworks				
		a) Cables				
2.1.12		i) Electrical cables	No.	2		
		c) Temporary protection of services				
2.1.13		i) Existing electrical cables	No.	2		
2.1.14		ii) Existing second class water pipe <160mm pipe	No.	2		
2.1.15		iii) Existing water main < 100mm diameter	No.	2		
2.1.16		iv) 900mm diameter AC pipe	No.	1		
2.1.17		v) Existing stormwater pipe < 350mm diameter	No.	3		
2.1.18	8.3.10	Topsoiling	m²	25		
Total Carried Forward To Summary						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
3	SANS 1200 DB	SECTION DB: EARTHWORKS (PIPE TRENCHES)				
3.1		REMOVAL OF TOPSOIL				
3.1.1	8.3.1	Remove topsoil to 150mm depth, stockpile and maintain	m²	350		
3.2	8.3.2	EXCAVATION				
	PSDB 8.3.2 a)	a) Excavate by hand all materials for trenches, dewater, backfill, compact, and dispose of surplus or unsuitable material for:				
		1) Pipes up to 150mm diameter and trench depth:				
3.2.1		i) Exceeding 0.0m up to 1.0m	m	630		
3.2.2		ii) Exceeding 1.0m up to 2.0m	m	420		
3.2.3		iii) Exceeding 2.0m up to 3.0m	m	1		
		1) Pipes over 150mm up to 315mm diameter and trench depth:				
3.2.4		i) Exceeding 0.0m up to 1.0m	m	20		
3.2.5		ii) Exceeding 1.0m up to 2.0m	m	20		
3.2.6		iii) Exceeding 2.0m up to 3.0m	m	2		
	PSDB 8.3.2 b)	Extra-over Payment items 8.3.2 for:				
3.2.7		1) Hard rock excavation	m³	1		
3.2.8		2) Hand excavation - soft material	m³	756		
3.2.9	8.3.2	c) Excavate and dispose of unsuitable material from the trench bottom (provisional)	m³	10		
	8.3.3.1	Make up deficiency in backfill material				
3.2.10		a) from stockpile	m³	252		
3.3	8.3.4	PARTICULAR ITEMS				
	PSDB 8.3.4 (c)	Excavate by hand in all material to verify positions of existing services, or as directed by the Engineer and backfill				
3.3.1		1) Existing 63-100mm diameter potable water pipe	m³	5		
3.3.2		2) Existing 150mm diameter second class water pipe	m³	5		
3.3.3		3) Existing 700mm diameter rising main	m³	2		
3.3.4		4) Existing 900mm diameter effluent pipe	m³	2		
3.3.5		5) Existing 160mm-700mm sludge pipes around the aerators	m³	10		
Total Carried Forward						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3.3.6		6) 2 No. Existing 200mm AC pipe around the sludge drying beds	m³	3		
	8.3.5	Existing services that adjoin or intersect trench				
		a) Services that intersect a trench.				
3.3.7		1) Pipes up to 150mm diameter	No	20		
3.3.8		2) Pipes larger than 150mm up to 300mm diameter	No	20		
3.3.9		3) Pipes larger than 300mm up to 1.0m diameter	No	20		
3.3.10		4) Pipes larger than 1.0m diameter	No	20		
3.3.11		5) Telkom or Electrical cables and sleeves	No	20		
	8.3.5(b)	b) Services that adjoin a pipe trench.				
3.3.12		1) Pipes up to 150mm diameter	m	30		
3.3.13		2) Pipes larger than 150mm up to 300mm diameter	m	30		
3.3.14		3) Pipes larger than 300mm up to 1.0m diameter	m	100		
3.3.15		4) Pipes larger than 1.0m diameter	m	30		
3.3.16		5) Telkom or Electrical cables and sleeves	m	30		
3.4	PSDB 8.3.6	FINISHING				
	PSDB 8.3.6.1	Reinstate road surfaces to existing road pavement complete with all courses 150mm thick basecourse				
3.4.1		a) Asphalt of thickness not more than 60mm in roadway	m²	51		
3.4.2		b) Basecourse material stabilised with 5% cement and compacted to 98% mod AASHTO density (2 layers of 150mm thick)	m³	20		
3.4.3		c) 150mm thick G5 quality subbase (from recovered material) compacted to 95% mod. AASHTO	m³	20		
3.4.4		e) Precast kerbing from storage, including laying, bedding and grouting	m	100		
3.4.5		f) Reinforced concrete slab 200mm thickness	m²	15		
Total Carried Forward To Summary						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
4	SABS 1200 G	SECTION G: CONCRETE (STRUCTURAL)				
4.1		CONCRETE WORK AT THE SECOND CLASS WATER PUMP STATION				
	8.2	Formwork				
	8.2.1	Rough				
		a) Vertical, plane				
4.1.1		i) To sides of sumps etc (0mm to 500mm high)	m²	2		
		b) Narrow widths (0-300 mm high)				
4.1.2		i) Vertical, plane to plinths, slab	m	21		
	8.2.2	Smooth - Plane				
4.1.3		a) Vertical (0 to 300mm high)	m	5		
4.1.4		b) Vertical (300mm to 1.0m high)	m²	15		
		c) Narrow widths (0-300 mm high)				
4.1.5		2) Staircase riser (150mm) approx450m height	No.	2		
	8.3	Reinforcement				
	8.3.1	Steel Bars				
		a) High tensile steel				
4.1.6		1) 8mm up to 16mm diameter	t	0.6		
	8.3.2	High Tensile Welded Mesh				
4.1.7		a) Mesh Ref 617	m²	42		
	8.4.1	Concrete				
		a) 35MPa /19mm concrete to base slab				
4.1.8		i) Walls	m³	5		
4.1.9		ii) Floor slab	m³	15		
4.1.10		iii) Plinth	m³	1		
4.1.11		iv) Steps	m³	1		
		b) 15MPa Structural screed to floor slab				
4.1.12		i) To floor slabs	m³	25		
4.1.13		d) Extra-over item 8.4.1 for the addition of a protection layer of Sika 264 Selflevelling Epoxy or similar	m²	42		
	8.4.4	Unformed surface finishes				
4.1.14		a) Steel float finish to top of slab	m²	8		
Total Carried Forward						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
4.1.15		b) Wood float finish to floor and plinth slab	m²	42		
	8.5	Joints				
4.1.16		a) Construction Joint A complete as shown on Drawing No. 5331-ST-IW-116	m	11		
4.1.17		b) Construction Joint C complete as shown on Drawing No. 5331-ST-IW-116	m	29		
	PSG 8.7 (e)	Casting in of ducts into structure for ducts:				
4.1.18		b) 50mm diameter up to 100mm diameter	m	40		
Total Carried Forward To Summary						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
5	SABS 1200 H	SECTION H: STRUCTURAL STEELWORK				
5.1		SECOND CLASS WATER PUMP STATION				
5.2	8.3.1	SUPPLY AND FABRICATION				
5.2.1	8.3.1.1	Preparation of shop detail drawings	Sum	1		
5.2.2	8.3.1.2	Supply and fabrication of steelwork (see Drawing5312-ST-A400-P) complete using steel to SANS 1431 Grade 355JRwith all the necessary cleats, brackets, gussets, packs, etc., as follows:	t	2.5		
5.3		DELIVERY TO SITE				
	8.3.2	Delivery of steelwork inclusive				
5.3.1		a) Normal loads	t	2.5		
5.4	8.3.3	ERECTION				
5.4.1		Offloading, stacking on Site, and erection of steelwork	t	2.5		
5.5	8.3.4	ERECTION BOLTS AND NUTS				
		Supply, deliver to Site and store as follows:				
5.5.1		Grade 4.6 bolts including flat or tapered washers, as appropriate (plain)	t	0.1		
5.5.2		Grade 8.8 bolts including thru' hardened flat or tapered washers, as appropriate	t	0.1		
	8.3.6	HOLDING-DOWN BOLTS AND NUTS Supply, deliver, and stack on Site as directed for building in by civil contractor, as follows:				
5.5.3		25mm diameter	t	0.2		
5.5.4		16mm diameter	t	0.2		
5.5.5		M10 chemical anchors	No	28		
5.5.6		M16 Chemical anchors with 16mm plate	No	28		
	8.3.7	Handrails				
		b) Hand rail assembly complete for:				
		1) Horizontal				
5.5.7		i) New Second class water Pump station as shown on Drawing No.5331-ST-MISC-413	m	5		
		3) Shaped ends				
5.5.8		i) New Second class water Pump station as shown on Drawing No. 5331-ST-MISC-413	No.	4		
Total Carried Forward To Summary						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
6	SABS 1200 HA	SECTION HA: STRUCTURAL STEELWORK (SUNDRY ITEMS)				
	PSHA 8.3.8	Stainless steel 304 Gratings				
6.1		a) Second class water Pump Station : Over the sump as shown on Drawing No. 5331-ST-MISC-413	m²	5		
		SUNDRIES				
		1) 50x50x5 HDG angles with fishtails cast into floor slab :				
6.1.1		a) Second class water Pump Station as shown on Drawing No.5331-ST-MISC-413	m	2		
6.1.2	PSHA 8.3.11	Design, supply and cast into concrete road skip rail	Sum	1		
Total Carried Forward To Summary						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
7	SABS 1200 HB	SECTION HB: CLADDING AND SHEETING				
7.1		NEW SECOND CLASS WATER PUMP STATION				
	8.2.2	Supply, deliver to Site, erect and fix galvanised sheeting/cladding, etc., including the supply of all necessary fasteners, etc., and cutting and notching: (See Drawings)				
7.1.1		Approved troughed profile-cladding to sides and gables, 0,6mm	m²	55		
7.1.2		Approved troughed profile-sheeting to roofs, Galvanised steel 0,6mm	m²	52		
	8.2.3	Flashings				
7.1.3		Bullnose flashing 450mm radius finish and profile to match sheeting	m	10		
7.1.4		Corner flashing	m	12		
	8.2.3	Rainwater Goods				
7.1.5		a) 150mm diameter hot dipped galvanised steel gutter fixed to roof	m	6		
7.1.6		b) 110mm diameter uPVC downpipe fixed to sides	m	12		
7.1.7		c) Extra over downpipes for 45 deg elbow bend	No.	2		
7.1.8		d) Extra over downpipes for shoe	No.	2		
	8.2.5	Tests				
7.1.9		a) As specified in Subclause 7.2.1 of SANS 1200 HB	Sum	1		
7.1.10		b) As specified in Subclause 7.2.2 of SANS 1200 HB	Sum	1		
7.1.11		c) As specified in Subclause 7.3.1 of SANS 1200 HB	Sum	1		
7.1.12		d) As specified in Subclause 7.3.2 of SANS 1200 HB	Sum	1		
Total Carried Forward To Summary						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
8	SABS 1200 HC	SECTION HC: COROSSION PROTECTION OF STRUCTURAL STREELWORK				
8.1	8.2.2	Transportation	t	5.0		
	8.2.3	Surface preparation and coating application				
8.2		Hot-dip galvanising and paintwork of structural steelwork for canopy at the Second class water pump station as shown on Drawing No. 5331-ST-MISC-413	t	5.0		
Total Carried Forward To Summary						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
9	SANS 1200 L	SECTION L: MEDIUM-PRESSURE PIPELINES				
	8.2.1	Supply, handle, lay, bed and test pipes complete with couplings/joints				
		a) HDPE PN10 (PE80) on class B bedding				
9.1		(i) 63mm dia	m	300		
9.2		(ii) 100mm dia	m	100		
9.3		(iii) 150mm dia	m	680		
9.1		SPECIALS AND FITTINGS				
	8.2.3	Extra over 8.2.1 for supplying, laying, bedding and testing of specials complete with couplings:				
		HPDE PN10 fittings to suit pipework				
9.1.1		a) 63mm x 22.5 degree bend	No	2		
9.1.2		b) 63mm x 45 degree bend	No	5		
9.1.3		c) 63mm x 90 degree bend	No.	30		
9.1.4		d) 63mm equal Tee	No.	15		
9.1.5		e) 100x 63 Tee	No.	1		
9.1.6		f) 100mm x 90 degree bend	No.	4		
9.1.7		g) 100mm equal Tee	No.	3		
9.1.8		h) 150mm x 22.5 degree bend	No	5		
9.1.9		i) 150mm x 45 degree bend	No	10		
9.1.10		j) 150mm x 90 degree bend	No	13		
9.1.11		k) 150mm equal Tee	No	30		
		SG Iron Hydrant Tees				
9.1.12		i) 150mm x 80mm Tee	No	3		
		VJ Type Flange Adapter:				
9.1.13		a) 50mm diameter	No	2		
9.1.14		b) 65mm diameter	No	2		
9.1.15		c) 100mm diameter	No.	2		
9.1.16		d) 160mm diameter	No	2		
		VJ Type Coupling:				
9.1.17		a) 150mm diameter	No	2		
		Ductile Iron Saddles:				
9.1.18		b) 150mm diameter	No	2		
Total Carried Forward						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		End Caps:				
9.1.19		b) 150mm diameter	No	1.0		
		Stainless Steel BSP Socket				
9.1.20		a) 80mm dia socket	No	1		
9.2		VALVES				
	8.2.3	Extra over 8.2.1 for the supplying, installation,testing and bedding of:				
		PN16 Flanged Resilient Seal Gate Valve plus all fittings water and second class water reticulation system, as per details drawing				
9.2.1		a) 80mm dia flanged	No	3		
9.2.2		b) 100mm dia flanged	No.	4		
9.2.3		c) 160mm dia flanged	No	18		
9.2.4	8.2.11	Thrust Blocks as per details drawing	m^3	3		
	8.2.13	Valve chambers complete as shown on drawings:				
9.2.5		a) Type 2 valve chamber	No	4		
9.2.6		b) Hydrant chamber	No	2		
9.3		FIRE HYDRANTS				
		a) Supply, install and connection of fire hydrant with new valve				
9.3.1		i) with tamperproof valve	No	2		
9.3.2		b) Installation and connection of fire hydrant	No	2		
9.3.3		c) 110mm x 80mm SG Iron Tees	No	2		
9.3.4		d) 500mm long piece , flanged on both sides	No	2		
	PSL 8.2.20	Markers for Valves and Fire Hydrants				
9.3.5		Markers Posts	No	20		
Total Carried Forward To Summary						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
10	SANS 1200 LB	SECTION LB : BEDDING (PIPES)				
	8.2.1	Provision of bedding from trench excavation				
10.1		(a) Selected granular material	m³	32		
10.2		(b) Selected fill material	m³	128		
	8.2.2.3	Provision of bedding by importation from commercial sources				
10.3		(a) Selected granular material	m³	128		
10.4		(b) Selected fill material	m³	32		
	PSLB 8.2.6	Provision of Bedding in waterlogged conditions				
10.5		(a) Single size 19mm stone	m³	5		
10.6		(b) Bidim A4 or equal approved geotextile	m²	10		
Total Carried Forward To Summary						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
11	SANS 1200 MK	SECTION MK: KERBING AND CHANNELING				
	8.2.1	Concrete kerbing				
		a) Barrier Kerb (Type BK2)				
11.1		i) Straights	m	150		
11.2		ii) 1m to 4m radius	m	5		
11.3		iii) 4m to 20m radius	m	5		
11.4		iii) Exceeding 20m raduis	m	10.0		
		Channel				
11.5		a) Type C1 channel	m	300		
11.6		b) Type C1 double channel	m	10		
	PSMK 8.2.14	Lift and reinstate				
		a) Barrier Kerb (BK2)				
11.7		i) Striaghts	No	20		
Total Carried Forward To Summary						

BILL 1 BOQ 4: SERVICES POTABLE WATER & SECOND CLASS WATER

SUMMARY OF SECTIONS

SECTION	DESCRIPTION			AMOUNT R
1	SECTION C: SITE CLEARANCE			
2	SECTION D: EARTHWORKS			
3	SECTION DB: EARTHWORKS (PIPE TRENCHES)			
4	SECTION G: CONCRETE (STRUCTURAL)			
5	SECTION H: STRUCTURAL STEELWORK			
6	SECTION HA: STRUCTURAL STEELWORK (SUNDRY ITEMS)			
7	SECTION HB: CLADDING AND SHEETING			
8	SECTION HC: COROSSION PROTECTION OF STRUCTURAL STREELWORK			
9	SECTION L: MEDIUM-PRESSURE PIPELINES			
10	SECTION LB : BEDDING (PIPES)			
11	SECTION MK: KERBING AND CHANNELING			
Total Carried Forward To Summary Of Bills				

BILL 1 BOQ 5 : REACTOR AND OTHER MISCELLANEOUS ITEMS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
1	SABS 1200 DA	SECTION DA: EARTHWORKS (SMALL WORKS)				
	8.3.1	Excavation				
		b)Excavate in all materials and use for embankment or backfill or dispose, as ordered:				
1.1		i) For foundation of steel platforms	m³	40		
Total Carried Forward To Summary						

BILL 1 BOQ 5 : REACTOR AND OTHER MISCELLANEOUS ITEMS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
2	SABS 1200 GA	SECTION GA: CONCRETE (SMALL WORKS)				
2.1		STEEL PLATFORM				
2.2	8.2	FORMWORK ITEMS				
	8.2.1	Rough				
		a) Vertical				
2.2.1		i) Foundation of steel platforms	m²	34		
2.3	8.3	REINFORCEMENT ITEMS				
2.3.1	8.3.1	High-Tensile Steel bars	kg	410		
2.4	8.4	CONCRETE ITEMS				
2.4.1	8.4.3	30 MPa / 19 mm Concrete to foundations	m³	6		
	8.4.4	Unformed Surface Finishes				
2.4.2		a) Wood-floated Finish to top of foundation	m²	27		
2.5		REACTOR PLATFORM				
2.6	8.2	FORMWORK ITEMS				
	8.2.2	Smooth				
		a) Vertical				
2.6.1		i) Column bases	m²	6		
2.6.2		ii) Columns	m²	40		
2.6.3		iii) Beams	m²	15		
2.6.4		iv) Wier	m²	32		
2.6.5		v) Stairs	m²	2		
		b) Horizontal				
2.6.6		i) Beams	m²	15		
2.6.7		ii) Floor slab	m²	15		
2.6.8		iii) Wier	m²	6		
2.7	8.3	REINFORCEMENT ITEMS				
	8.3.1	High-Tensile Steel bars				
2.7.1		i) Column bases	kg	290		
2.7.2		ii) Columns	kg	670		
2.7.3		iii) Beams	kg	720		
2.7.4		iv) Floor slab	kg	630		
2.7.5		v) Wier	kg	550		
Total Carried Forward						

BILL 1 BOQ 5 : REACTOR AND OTHER MISCELLANEOUS ITEMS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2.7.6		vi) Stairs	kg	200		
2.8	8.4	CONCRETE ITEMS				
	8.4.3	40 MPa / 19 mm Concrete to:				
2.8.1		i) Column bases	m³	2.0		
2.8.2		ii) Columns	m³	4.0		
2.8.3		iii) Beams	m³	5.0		
2.8.4		iv) Floor slab	m³	4.0		
2.8.5		v) Wier	m³	3.0		
2.8.6		vi) Stairs	m³	1.0		
	8.4.4	Unformed Surface Finishes				
2.8.7		a) Wood-floated Finish to top of column bases	m²	6		
2.8.8		b) Wood-floated Finish to top of floor slab	m²	30		
2.8.9		b) Wood-floated Finish to stairs	m²	2		
2.9	PSG 8.10	DEMOLITION AND REMOVAL OF STRUCTURAL CONCRETE				
2.9.1	PSG 8.10.1	Existing bridge, Columns and Platform	m³	85		
2.10	PSG 8.11	SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
	PSG 8.11.1	Concrete contact surface preparation to:				
2.10.1		i) Existing walls (where required)	m²	10		
	PSG 8.11.2	Corrosion protection coating (Sika top Armatec 110 Epocem or similar approved) to :				
2.10.2		i) Exposed reinforcement	m²	10		
	PSG 8.11.3	Bonding layer (Sika top Armatec 110 Epocem or similar approved) to:				
2.10.3		i) Existing walls (where required)	m²	10		
	PSG 8.11.4	Proprietary Cementitious mortar (Sika mono top 615 HB) to:				
2.10.4		i) Existing walls (where required)	m²	10		
	PSG 8.11.5	Grouting and Crack injection (Sikagrout 212 and Sikadur 31) to:				
2.10.5		i) Existing walls (where required)	m	20		
	PSG 8.11.6	Joint sealant (Polysulphide complete with backing chord):				
Total Carried Forward						

BILL 1 BOQ 5 : REACTOR AND OTHER MISCELLANEOUS ITEMS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2.10.6		a) Existing floor joints	m	380		
2.11	PSG 8.12	PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE				
2.11.1	PSG 8.12.1	Cleaning and preparation of concrete surface	m²	650		
	PSG 8.12.2	Application of protective treatment				
		a) Water repellent (Sewpercoat P625 or similar approved)				
2.11.2		i) To existing concrete	m²	650		
2.11.3		ii) To new concrete (Columns)	m²	10		
Total Carried Forward To Summary						

BILL 1 BOQ 5 : REACTOR AND OTHER MISCELLANEOUS ITEMS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
3	SABS 1200 H	SECTION H: STRUCTURAL STEELWORK				
3.1		STEEL PLATFORM				
	8.3.6	Holding-Down (HD) Bolts to reinforced concrete combined base foundations				
3.1.1		i)Supply and installation of holding-down bolts, complete with washer plates, grouting and short term protection concrete. Refer to Detail 12 and Detail 13 of Drawing 5331-M-R-303.	No	240		
3.1.2		ii)Supply and installation of anchor plates, complete with grouting. Refer to Detail 6 of Drawing 5331-M-R-303.	No	6		
3.1.3	8.3.5	Site welding, welding of the column to the base plate using a 5mm fillet wild.	m	30		
		B. Handrails of the steel platform structure (10 off)				
	8.3.7	Handrails				
3.1.4		a) Handrail assembly complete as per Drawing 5331-M-R-302.	m	95		
		C. Steel platform structure (10 off)				
	8.3.1	Supply and Fabrication				
3.1.5	8.3.1.1	Preparation of shop detail drawings	No	10		
	8.3.1.2	Supply and fabrication of steelwork to steel platform				
3.1.6		i) PC100x50 beams and columns	t	3.9		
3.1.7		ii) 70x70x6 equal leg angle - bracing members	t	1.1		
3.1.8		iii) 150x8 kicker plate	t	1.1		
3.1.9		iv) 80x80x8 equal leg angle - angle cleat (connection)	t	0.3		
3.1.10		v) 50x50x8 equal leg angle - angle cleat (connection)	t	0.1		
3.1.11		vi) Supply and installation of plates as per drawings	t	0.9		
	8.3.9	Flooring				
3.1.12		a) Open grid floors, using Vitagrid VE 30x3.	m²	74		
	8.3.4	Erection bolts				
3.1.13		i) M12 Class 8.8 bolts.	No	1 370		
3.1.14		ii) M12 Adhasive anchor bolts	No	100		
Total Carried Forward						

BILL 1 BOQ 5 : REACTOR AND OTHER MISCELLANEOUS ITEMS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3.1.15	8.3.5	Site welding, welding of flat plates and gusset plates to columns and beams using a 5mm fillet wild.	m	175.0		
	8.3.1	Delivery to site				
3.1.16	8.3.2.1	Normal delivery	t	7.3		
3.1.17	8.3.3	Erection on site	t	7.3		
3.2		REACTOR PLATFORM				
	8.3.7	Handrails				
3.2.1		i) Removal of existing handrails	m	240		
3.2.2		ii) Corrosion protection of existing handrails in accordance to the SIGMA specifications	m	240		
3.2.3		iii) Reinstatement of existing handrails (including fixing of new bracket and anchor bolt)	m	240		
Total Carried Forward To Summary						

BILL 1 BOQ 5 : REACTOR AND OTHER MISCELLANEOUS ITEMS

SUMMARY OF SECTIONS

SECTION	DESCRIPTION			AMOUNT R
1	SECTION DA: EARTHWORKS (SMALL WORKS)			
2	SECTION GA: CONCRETE (SMALL WORKS)			
3	SECTION H: STRUCTURAL STEELWORK			
Total Carried Forward To Summary Of Bills				

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 1				
		PRELIMINARIES				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 190 for Haylett formula purposes				
		Allow for preliminary and general items				
1.1		Fixed	Item	1		
1.2		Time	Item	1		
1.3		Value	Item	1		
Total Carried Forward To Summary: Section 1						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 2				
		ALTERATIONS				
		PREAMBLES For Preambles see "Model preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 102 for Haylett formula purposes				
		SUPPLEMENTARY PREAMBLES				
		Refer to the specification at the beginning of this document for full requirements				
		REMOVAL OF EXISTING WORK				
		Breaking down/up and removing brickwork, concrete, etc				
		Note: breaking of walls deemed to include plaster, tile or paint finishes				
2.1		M90 Block wall or half brick wall	m2	69		
		Take up and remove roofs, ceilings, partitions, floors, etc.				
2.2		Loose stone chip to flat roofs not exceeding 100mm thick, carefully stockpile re-use	m2	236		
2.3		Plasterboard ceilings, including, insulation, cornice and light fittings	m2	16		
2.4		Woodwool/rockwool acoustic ceiling panels and exposed Tee suspension system, affixed directly to concrete soffit, including grinding or scraping off all adhesive	m2	135		
2.5		Rockwool panels as before but suspended not exceeding 1m below concrete soffit, including cornices and minor bulkheads.	m2	61		
2.6		Acrylic or bituminous waterproofing membrane to flat concrete roofs including protective layers, and prepare for new waterproofing (elsewhere)	m2	236		
2.7		Timber or gypsum clad partition walling approximately 90mm thick, including studs and grounds (not exceeding 3m high)	m2	15		
2.8		Existing control equipment enclosure, approximately 2800mm high and 5400mm girth with drywall panelling and cupboard doors including sundry obsolete switchgear and guages	Item	1		
Total Carried Forward						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2.9		Existing control equipment floor duct approximately 3000 x 1200 x 400mm deep, including vastrap flooring and frame and sundry sleeving and cabling and prepare for filling (elsewhere)	Item	1		
2.10		Spiral staircase 2800mm high and approximately 1700mm diameter including precast concrete treads and steel support complete	Item	1		
		Taking out and removing doors, windows, etc including thresholds, sills, etc from brick walls, generally				
2.11		Single hollow core door and steel frame	No	9		
2.12		Double (or one and half) door and frame	No	3		
		Taking out and removing aluminium shopfront style windows, or parts of aluminium shopfront style windows, including fair cutting and repairs to adjacent mullions, cills, etc, and temporary support				
2.13		Louvred fanlight 1600 x 700mm high in two panes	No	1		
2.14		Window 4750 x 1318mm high, in four equal panes	No	2		
2.15		Glazed door and sidelight, 1188 x 2058mm overall	No	6		
		Taking off and removing wall finishes				
2.16		White glazed tile or similar, patch and stone back plaster under and prepare for new finishes	m2	67		
		Taking up and removing floor coverings				
2.17		Quarry Tile floor including timber skirtings including scraping, grinding or otherwise removing all traces of old adhesive and preparing screed for new tiles (elsewhere),	m2	169		
2.18		Carpet and underlay, ditto	m2	93		
		Take out and remove sanitary fittings, including cutting back supply and waste piping and carefully capping/sealing same				
2.19		Toilet pedestal and cistern	No	4		
2.20		Shower enclosure and plinth	No	2		
2.21		Basin or sink	No	6		
2.22		250l Geyser ditto, but carefully set aside for re-use	Item	1		
Total Carried Forward						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		Taking out/off and removing sundry metal or timber fittings				
2.23		Steel balustrade approx 1m high, part curved	m	8		
2.24		Sign, shelf or other minor fitting	No	25		
2.25		Pinboard, whiteboard or similar	No	8		
2.26		Built in cupboard, not exceeding 5m2 on elevation	No	4		
2.27		Reception counter and glazed screen, not exceeding 6m2 on elevation	Item	1		
2.28		Built in shelving to existing admin store, not exceeding 15m2 on elevation	Item	1		
2.29		Built in cupboards to existing tea kitchen, including floor and high level cupboards and counter-tops	Item	1		
2.30		Laboratory tables, built in cupboards and counter tops and fume extractor complete from existing laboratory room	Item	1		
2.31		Obsolete ducted air handling to passage ceilings (approximately 20m long) including high level room outlet vents (approximately 10No, not exceeding 2,5m2), and timber surrounds and prepare for filling (elsewhere)	Item	1		
		BUILDING UP OPENINGS				
		Blockwork in class II mortar in building up openings				
2.32		90mm Blockwork	m2	2		
2.33		150mm Blockwork	m2	5		
		Brickwork in NFP bricks in class II mortar in building up openings				
2.34		One brick wall	m2	4		
		SUNDRIES				
2.35		Cutting toothings and bonding new brick or block-work to existing	m2	12		
		Calci face brick to match existing, or to Architects approval				
2.36		Extra over brickwork for face brickwork in patches	m2	4		
		MAKING GOOD FINISHES, ETC				
		Making good internal cement plaster				
2.37		Walls in patches	m2	12		
		Making good profiled steel roof sheeting to match existing				
2.39		0.8mm IBR profile colour finished, not exceeding 25Deg pitch, in patches	m2	5		
2.40		0.8mm Flashings, not exceeding 400mm girth thrice bent, ditto	m	8		
Total Carried Forward						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		NEW OPENINGS THROUGH EXISTING WALLS ETC				
		Note: walls may have partial openings already from removed windows, etc				
		Breaking out for and forming openings through plasterboard partition walls including new timber grounds and making good plasterboard on both sides and into reveals				
2.41		Opening not exceeding 0,5m2 through one brick wall	No	1		
		Breaking out for and forming openings through brick walls including propping for precast or insitu cast lintels (taken elsewhere) and making good plaster on both sides and into reveals and with screeded concrete thresholds with steel trowelled finish (making good paintwork elsewhere)				
2.42		Opening not exceeding 0,5m2 through one brick wall	No	1		
2.43		Ditto, exceeding 0,5m2 and not exceeding 1,5m2	No	3		
		Breaking out for and forming openings through brick walls for new doors and frames including propping for precast or cast insitu concrete lintels (taken elsewhere) and making good plaster on both sides and into reveals and with rendered concrete thresholds with steel trowelled finish (new doors and frames and making good paintwork elsewhere)				
2.44		Single door through one brick wall	No	1		
		Breaking our for and forming opening through reinforced concrete				
2.45		Opening 2400 x 750mm high through 150mm fluted wall	No	1		
2.46		Opening approximately 2400 x 13000mm wide through slab approximately 200mm thick for stair (elsewhere), including fair cutting all round	No	1		
2.47		Opening for foundation 1500 x 1500 x 300mm deep through existing surface bed and earth sub-base including fair cutting all round and making good damp proof membrane	Item	1		
		BUILDING WORK IN CONNECTION WITH ELECTRICAL AND MECHANICAL				
		Take out and remove				
2.48		Surface mounted electrical conduit, related conductors	m	45		
2.49		light fitting or similar and strip out related conductors	No	35		
2.50		Switch or plug outlet, related conductors and prepare for new	No	28		
2.51		DB Board including breakers, related conductors	No	5		
2.52		Air conditioner unit	No	10		
2.53		Specialist IT and server equipment, plant control equipment relocation	Item	1		
					R	
Total Carried Forward To Summary: Section 2						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 3				
		CONCRETE, FORMWORK AND REINFORCEMENT				
		For preambles see "Model Preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 110 for Haylett formula purposes				
		REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
		25MPa/19mm concrete				
3.1		Strip footings, bases, etc	m3	2		
		REINFORCED CONCRETE				
		25MPa/19mm concrete				
3.2		Filling to steel stairs and landings	m3	1		
3.3		Surface beds on waterproofing	m3	1		
3.4		Walls	m3	1		
		TEST BLOCKS				
3.5		Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	1		
		ROUGH FORMWORK (DEGREE OF ACCURACY II)				
		Rough formwork to sides				
3.6		Walls, not exceeding 3.5m high	m2	12		
		EXTRA ON ROUGH FORMWORK FOR				
3.7		Fluted (IBR) face to match existing walls, including all patching, stoning and dressing to smooth finish	m2	6		
		REINFORCEMENT				
		Steel reinforcement to structural concrete work				
3.8		Bars in diameters not exceeding 25mm	t	5		
		Fabric reinforcement				
3.9		Type 193 fabric reinforcement in concrete surface beds, slabs, etc	m2	2		
					R	
Total Carried Forward To Summary: Section 3						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 4				
		MASONRY				
		For preambles see "Model Preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 116 for Haylett formula purposes				
		SUPERSTRUCTURE				
		Brickwork of NFP bricks in class II mortar				
4.1		Half brick walls	m2	29		
4.2		One brick walls	m2	10		
		BRICKWORK SUNDRIES				
		Brickwork reinforcement				
4.3		75mm Built in horizontally	m	90		
4.4		150mm Ditto	m	30		
		Prestressed fabricated lintels				
4.5		100 x 70mm Lintels in lengths not exceeding 3m	m	12		
		Galvanised hoop iron cramps, ties, etc				
4.6		30 x 1,6mm Cramp 500mm long with one end fixed to window or door frames, etc. and built into brickwork	No	22		
		Expansion joints with 10mm 'Masonite' bitumen impregnated softboard between horizontal and/or vertical brick or concrete surfaces:				
4.7		Joint not exceeding 300mm high or wide.	m	17		
					R	
Total Carried Forward To Summary: Section 4						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 5				
		WATERPROOFING				
		For preambles see "Model Preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 120 for Haylett formula purposes				
		SUPPLEMENTARY PREAMBLES				
		Waterproofing				
		Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
		DAMP-PROOFING OF WALLS AND FLOORS				
		One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
5.1		In walls	m2	2		
		One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
5.2		Under surface beds	m2	5		
		WATERPROOFING TO ROOFS, BASEMENTS, ETC				
		4mm "Derbigum SP" fully bonded waterproofing				
5.3		Flat roofs, upstands, etc	m2	270		
5.4		Additional membrane 150mm girth at internal and external angles	m	105		
5.5		Additional membrane at 100mm diameter outlet	No	2		
		PROTECTIVE ROOFING PAINT, ETC				
		Two coats bituminous aluminium paint				
5.6		On waterproofing to flat roofs	m2	270		
		High density polystyrene foam sheet				
5.7		25mm, laid loose over roof waterproofing	m2	236		
		Stone chip				
5.8		From stock piles on site (supplement where necessary), spread and level in nominal 80mm layer	m2	236		
		JOINT SEALANTS ETC				
		Polysulphide sealing compound including backing cord, bond breaker, primer, etc				
5.9		10 x 10mm In expansion joints	m	17		
					R	
Total Carried Forward To Summary: Section 5						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 6				
		FLOOR COVERINGS, WALL LININGS, ETC				
		For preambles see "Model Preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 130 for Haylett formula purposes				
		FLOOR COVERINGS				
		Van Dyck "FLORPOINT" broadloom carpet tile, 500 x 500mm. (Sample to be provided to client for approval)				
6.1		Floors	m2	77		
		Belgotex "Sylvan" Heavy duty Dry back vinyl plank flooring, including stripping and polishing, (Sample to be provided to client for approval)				
6.2		Floors	m2	61		
		Trims, edging, etc				
6.3		Aluminium cover strip 45mm	m	10		
					R	
Total Carried Forward To Summary: Section 6						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 7				
		CARPENTRY AND JOINERY				
		For preambles see "Model Preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 126 for Haylett formula purposes				
		SKIRTINGS, ETC.				
		Wrought meranti				
7.1		19 x 70mm Skirting plugged, including 30mm quadrant to match existing	m	196		
		DOORS				
		Semi-solid flush panel door with concealed edge strips and timber veneer				
7.2		40mm Single door (D04), 813 x 2032mm high	No	1		
		Solid core flush panel door with concealed edge strips and timber veneer				
7.3		40mm Single door (D05/06), 813 x 2032mm high	No	3		
					R	
Total Carried Forward To Summary: Section 7						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 8				
		CEILINGS, PARTITIONS AND ACCESS FLOORING				
		For preambles see "Model Preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 128 for Haylett formula purposes				
		SUPPLEMENTARY PREAMBLES				
		Rhino-Drywall PartitionSystem				
		Partitioning shall comprise steel framing formed of 52 x 25 x 0,6mm top and bottom tracks and 51 x 35 x 0,6mm vertical studs at maximum 600mm centres, friction fitted or pop-riveted to the top and bottom tracks with similar additional vertical studs as necessary at abutments, ends, etc and covered as described with wallboard screwed to studding with Drywall screws at maximum 220mm centres.				
		Boards are to be bevel edged gypsum plasterboard sheets generally in 1200mm widths and in single lengths to the height. Sheets shall be butt jointed and finished with Rhino tape and Readymix D jointing compound all in accordance with the manufacturer's instructions. Intersections and abutments are measured separately and descriptions shall be deemed to include any additional studs, corner beads, jointing compound, tape, etc.				
		CEILINGS				
		6,4mm gypsum plasterboard with "Rhino M" cover strips				
8.1		Ceilings including 38 x 38mm sawn softwood brandering at 450mm centres	m2	16		
8.2		Extra on ceiling for opening for surface mounted light fitting (elsewhere) including additional support if required	No	2		
8.3		75mm Coved cornices to suit	m	16		
		6.4mm Gypsum plasterboard with skimmed joints and faces, including ground, hangers, etc				
8.4		200mm high vertical bulkhead (at change in ceiling levels) including additional support and trim top and bottom	m	50		
		Gyprex white washable vinyl clad lay in proprietary suspended ceiling system including exposed Tees, hangers, etc				
8.5		600 x 600 x 12,5 Panels, suspended not exceeding 1m from concrete structure	m2	187		
8.6		22mm Shadowline cornice to suit	m	223		
8.7		Extra on ceiling for opening for drop in light fitting, including all additional trim and support if required	No	22		
		INSULATION				
		Isotherm Insulation				
8.8		100mm Thick, to ceilings	m2	16		
Total Carried Forward						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		DRYWALL PARTITIONS ETC				
		Work Group No 138 for Haylett formula purposes				
		Rhino-Drywall steel stud partitioning with 12,5mm Rhino board both sides				
8.9		Partitioning 2800mm high	m	9		
		Extra over Rhino dry-wall partitioning for:				
8.10		Right angle or skew angle (on plan)	No	3		
8.11		Tee intersection or wall intersection	No	3		
8.12		Semi solid flush door (D03), including aluminium frame and ironmongery	No	2		
8.13		Aluminium glazed deadlight (W08) 600 x 1800mm high with 6mm safety glass	No	1		
8.14		Ditto but 675 x 1800mm (W09) high	No	1		
8.15		Ditto but 2000 x 900mm high (W10). ditto	No	1		
		PROPRIETARY PARTITION SYSTEMS				
		Vitrex "Classic" modular toilet partitions including supports and fixings complete				
8.16		1800mm high	m	10		
		Extr over Vitrex toilet partitioning for:				
8.17		Right angle	No	2		
8.18		Tee intersection or wall intersection	No	8		
8.19		Cubicle door, including frame finish and furniture	No	4		
					R	
Total Carried Forward To Summary: Section 8						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 9				
		IRONMONGERY				
		For preambles see "Model Preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 132 for Haylett formula purposes				
		EN-SUITE LOCKS				
9.1		Union "Gower, 3 lever morticed lockset	No	2		
		PUSH PLATES AND HANDLES				
9.2		Union AL5066-06AS, push plate	No	2		
9.3		Union 5D63 Pull handle on 152 x 152mm backplate,	No	2		
		DOOR CLOSERS				
9.4		Dorma TS91B, cam action	No	2		
		BATHROOM				
9.5		Franke HF2400HD stainless steel sensor operated hand dryer	No	2		
9.6		Franke "Rodan" RODx618 soap dispensor	No	2		
9.7		Franke "Rodan" RODX607 wall mounted stainless steel bin	No	2		
9.8		Franke "Medius" MEDX001HP 600mm stainless steel towel rail	No	1		
9.9		Vitraflex TR3 stainless steel lockable toilet paper dispensor	No	4		
		SUNDRY				
9.10		Union AL8730AS stop	No	5		
9.11		Emergency key box (break glass) with key	No	2		
9.12		Union AL5063E-06ASE (male or female) doorsign	No	2		
9.13		300 x 350mm Trox "AGS - T", natural anodised door grille including fitting in timber door (door elsewhere)	No	6		
9.14		Service all existing ironmongery to Admin building; strip locksets (approx 10No), replace worn components, lubricate and re-assemble including provision of new key and master key sets as required	Item	1	R	
Total Carried Forward To Summary: Section 9						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 10				
		METALWORK				
		For preambles see "Model Preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 136 for Haylett formula purposes				
		SUPPLEMENTARY PREAMBLES				
		Note: Aluminium windows to match existing windows. New shopfront windows are generally to be inserted or removed from existing shopfront style aluminium facade, and must match the mullion style and be fitted into existing openings. Rates to include for repairs to all purpose made cills, plinth detail, etc				
		Windows generally are glazed with 5mm safety glass (OEApproved). Tinting, as well as removal of the old existing tint, is taken under the glazing trade				
		Deadlights in partition walls are taken under "Ceilings and Partitions Trade"				
		Aluminium doors and windows are to include for all furniture and ironmongery, as per the Architects schedules 5331-ST-A-14/15 & 16				
		ALUMINIUM				
		Aluminium windows including frames and furniture, glazed				
10.1		Deadlight (W11) 600 x 900mm high, single fixed pane	No	1		
10.2		Ditto (W12) 1500 x 900, ditto	No	1		
10.3		Fanlight (D01) 1600 x 700mm high in two equal fixed panes	No	1		
10.4		Window (W13) 600 x 1800mm high, single fixed pane	No	1		
10.5		Window (W06) 2400 x 750mm high, in two equal side hung pivoting lights	No	1		
10.6		Shopfront window (W01/W03) 1188 x 2058mm high, single fixed pane	No	2		
10.7		Ditto (W02) but 1318mm high, ditto	No	1		
10.8		Ditto (W04) but 1048mm high, ditto	No	1		
10.9		Shopfront window (W07) 4750 x 1318mm high, in four equal panes	No	1		
		Aluminium doors including frames and ironmongery, glazed with clear safety glass				
10.10		Single door and sidelight combination (D02) 1188 x 2058mm high overall	No	1		
Total Carried Forward						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		GALVANISED PRESSED STEEL DOOR FRAMES				
		1,2mm Double rebated frames suitable for half brick walls				
10.11		Frame for door 813 x 2032mm high	No	4		
		SUNDRY METALWORK				
10.12		Purpose built steel stair structure including all welded frames, treads and fixing for concrete infill (elsewhere)	Item	1		
10.13		Balustrading to last	Item	1		
					R	
Total Carried Forward To Summary: Section 10						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 11				
		PLASTERING				
		For preambles see "Model Preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 142 for Haylett formula purposes				
		SCREEDS				
		Cementitious self-levelling screed topping, including preparation/ grinding and primer				
11.1		Nominal 4mm thick to floors	m2	276		
		INTERNAL PLASTER				
		Cement plaster on brickwork				
11.2		On walls	m2	97		
11.3		On narrow widths	m2	8		
Total Carried Forward To Summary: Section 11						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 12				
		TILING				
		For preambles see "Model Preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 144 for Haylett formula purposes				
		WALL TILING				
		300 x 200mm Johnson ceramic (Sample pattern to be provided for Client Approval)				
12.1		In patterns, including adhesive and grouting in coloured grout	m2	77		
12.2		Ditto but in narrow widths, ditto	m2	8		
		Trim, edging, etc				
12.3		uPVC Corner trim	m	18		
12.4		Natural anodised aluminium tile edge strip	m	8		
		FLOOR TILING				
		330 x 330mm Johnson ceramic. (Sample to be provided to client for approval)				
12.5		In patterns, including adhesive and grouting in coloured epoxy grout	m2	138		
12.6		Ditto but in narrow widths including stair treads, ditto	m2	10		
12.7		75mm high Skirting tile	m	5		
		Trim, edging, etc				
12.8		Natural anodised aluminium tile edge strip	m	25		
					R	
Total Carried Forward To Summary: Section 12						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 13				
		PLUMBING AND DRAINAGE				
		For preambles see "Model Preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 146 for Haylett formula purposes				
		SOIL DRAINAGE				
		Note: Rates for piping in trenches to include for all excavation, imported bedding, compaction and carting off				
		uPVC pipes, Class 34				
13.1		110mm Pipes laid in and including trenches not exceeding 1m deep	m	9		
13.2		Ditto but exceeding 1m and not exceeding 2m deep	m	18		
		Extra over uPVC pipes for fittings				
13.3		110mm Bend	No	4		
13.4		110mm Junction	No	7		
13.5		110mm Rod/Inspection eye	No	2		
		uPVC gulleys				
13.6		250mm Gulley not exceeding 600mm deep, including concrete base and half brick surround plastered	No	2		
		Masonry Sumps, catchpits, inspection chambers, etc (gratings and covers elsewhere), including all excavation, reinforced concrete base and slabs				
		Note: All brickwork to be hard burnt engineering brick, brought to fair face				
13.7		Inspection chamber 650 x 650mm and exceeding 1500mm and not exceeding 1750mm deep internally	No	1		
		Gratings, covers, etc				
13.8		450 x 600mm, 68kg Cast iron single seal manhole cover and frame type 8A	No	1		
		Sundries				
		Extra over all soil drainage for:				
13.9		Breaking up hard rock, reinforced concrete and the like	m3	4		
13.10		Search, locate, excavate for and break into existing manhole for new connection	No	2		
Total Carried Forward						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		SANITARY FITTINGS				
		Work Group No 148 for Haylett formula purposes				
13.11		Vaal "Orchid" T1 wall hung WC pan 439100WH including brackets and "Jazz" thermoset seat	No	4		
13.12		Vaal "Hibiscus" wall hung basin 702303WP(single tap hole) including brackets	No	4		
13.13		Vaal "Lavatera" T1 wall hung urinal 705426WH, including brackets, domed grating and spreader	No	1		
13.14		Franke "Cascade" single bowl sink CDX611 925 x 500mm, including basket strainer waste	No	1		
		WASTE UNIONS ETC				
13.15		40mm Basin waste union.	No	4		
		TRAPS ETC				
		Flexitraps				
13.16		50mm trap	No	1		
		Cobra Watertech				
13.17		32mm 350 CP bottle trap	No	5		
		TAPS, VALVES, ETC				
13.18		15mm "Ball-o-stop valve	No	5		
13.19		15mm Cobra "Star" pillar tap 111-15	No	4		
13.20		Ditto but high waist, ditto 113	No	1		
13.21		Cobra "Junior" Top entry toilet flush valve FJ2-210	No	4		
13.22		Ditto but urinal flush valve FJ6-000	No	1		
13.23		20mm Combination pressure reducing valve, stop cock and screen	No	1		
13.24		20mm Non return/ air vent valve	No	2		
Total Carried Forward						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		SANITARY PLUMBING				
		uPVC soil and vent pipe				
13.25		50mm Pipes	m	15		
13.26		110mm Pipes	m	11		
		Extra over uPVC pipes for fittings				
13.27		50mm BSP adaptor	No	5		
13.28		50mm Bend	No	2		
13.29		50mm Access bend	No	5		
13.30		50mm Junction	No	1		
13.31		50mm Vent Valve	No	1		
13.32		110mm Bend	No	2		
13.33		110mm Junction	No	1		
13.34		110mm Pan connector	No	4		
13.35		110mm Access bend	No	4		
13.36		110mm vent valve	No	1		
13.37		110mm reducer	No	1		
		Sundries				
13.38		Testing waste water system	Item	1		
Total Carried Forward						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		WATER SUPPLIES				
		Note: pipes described as "chased" shall include for chasing into brick or block walls, wrapping with densyl tape or similar expansion protection, and patching with mesh scrim				
		Class II copper pipes				
13.39		15mm Pipes	m	35		
13.40		15mm Pipes, chased	m	15		
13.41		22mm Pipes	m	22		
13.42		22mm Pipes, chased	m	10		
13.43		28mm Pipes, including trenches	m	10		
		Extra over copper pipes for capillary fittings				
13.44		15mm Fittings	No	45		
13.45		22mm Fittings	No	22		
		Extra over pipes for compression fittings				
13.46		15mm Fittings	No	8		
13.47		22mm Fittings	No	4		
13.48		28mm Fittings	No	4		
		Copper overflow and service pipes				
13.59		15mm Braided stainless service pipe not exceeding 400mm long including connections	No	5		
		Sundries				
13.60		Testing water pipe system	Item	1		
		ELECTRIC WATER HEATERS				
13.61		7,5Litre Zip hydroboil 307062W, including spout	Item	1		
		FIRE				
13.62		Extinguisher, 4,5kg including wall mount	No	4		
13.63		Ditto but 9kg, ditto	No	1		
		BUILDERS WORK IN CONNECTION				
		Coring, holes, etc				
13.64		Fair cutting through reinforced concrete not exceeding 250mm thick	m	20		
13.65		Drill (diamond core bit or equal) not exceeding 50mm through 250mm reinforced concrete	No	4		
13.66		Ditto but not exceeding 150mm, ditto	No	8		
					R	
Total Carried Forward To Summary: Section 13						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 14				
		GLAZING				
		For preambles see "Model Preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 150 for Haylett formula purposes				
		SOLAR FILM				
		Prepare existing filmed windows by scraping and cleaning all traces of existing adhesive film and apply new "Silver solar tint"				
14.1		Windows	m2	62		
		Remove and replace existing filmed windows and apply new "Silver solar tint"to new glazing				
14.2		Windows	m2	62		
		MIRRORS				
14.3		450 x 600mm Bevel edge mirror, cap screws and grommets	No	4		
					R	
Total Carried Forward To Summary: Section 14						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 15				
		PAINTWORK				
		For preambles see "Model Preambles for Trades"				
		NOTE:Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 152 for Haylett formula purposes				
		PAINTWORK ETC TO NEW WORK				
		ON SMOOTH PLASTER OR CONCRETE				
		Prepare, plaster primer and two coats Plascon "Polvin" PVA				
15.1		Ceilings	m2	10		
		Prepare, prime with Plaster Primer and two coats eggshell pastal enamal (colour swatch to be approved by client)				
15.2		Internal walls	m2	34		
		Prepare, prime with plaster primer and two coats Plascon "non drip" enamel				
15.3		Internal walls	m2	10		
		ON PLASTER BOARD				
		Prepare, undercoat and apply two coats Super acrylic PVA				
15.4		Ceilings and cornices	m2	16		
		Prepare, prime with Plaster Primer and two coats Plascon "double velvet"				
15.5		Partition walls	m2	43		
		ON STEEL				
		Galvkleen, self etching primer and two coats Plascon "universal" enamel paint on galvanised				
15.6		Door frames	m2	5		
		Prepare, prime with self etching primer and two coats Plascon "non-drip" enamel				
15.7		Sundry angle rails, cills or pipes, not exceeding 300mm girth	m	15		
		ON WOOD				
		Prepare and apply three coats of Plascon Polyurethane varnish				
15.8		Doors and frames	m2	23		
15.9		Skirtings, rails, etc not exceeding 300 mm girth	m	196		
Total Carried Forward						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		PAINTWORK ETC TO PREVIOUSLY PAINTED WORK				
		ON PLASTERBOARD				
		Prepare, prime with Plaster Primer and two coats Plascon "double velvet"				
15.10		Drywall partitions	m2	8		
		Prepare and two coats Plascon "Polvin" PVA				
15.11		Ceilings and cornices	m2	35		
		ON FIBRE REINFORCED CEMENT				
		Prepare and apply two coats Plascon universal enamel				
15.12		Fiber cement fascias, barges, and enclosed eaves	m2	25		
		ON OFF SHUTTER CONCRETE				
		Prepare only, clean down with concrete cleaner				
15.13		Fluted walls	m2	45		
15.14		Ceilings and beams	m2	15		
		ON FLOATED PLASTER				
		Prepare, prime with Plaster Primer and two coats Plascon "double velvet"				
15.15		Internal walls	m2	498		
		Prepare, prime with plaster primer and two coats Plascon "non drip" enamel				
15.16		Internal walls	m2	5		
		ON METAL				
		Prepare and apply two coats Plascon "non-drip" enamel				
15.17		Sundry angle rails, cills or pipes, not exceeding 300mm girth	m	25		
		ON WOOD				
		Prepare and Two coats Plascon polyurethane varnish				
15.18		Doors	m2	19		
15.19		Skirtings, rails, cills etc not exceeding 300mm girth	m	5		
					R	
Total Carried Forward To Summary: Section 15						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 16				
		PROVISIONAL SUMS				
		All provisional sums cover supply of material and equipment and installation. Provisional sums are nett and do not include builder's discount (excluding settlement discount) and Value-Added Tax but the Tenderer may allow under "Profit" items any profit he considers necessary				
		SHOPFITTING AND JOINERY				
		Built in Cupboards				
16.1		Provide for built in cupboards to new tea kitchen	Item	1		R 50 000.00
16.2		Allow for profit and attendance if required.	%IT	4		R 2 000.00
16.3		Provide for built in shelving to new cleaners store	Item	1		R 5 000.00
16.4		Allow for profit and attandance if required.	%IT	4		R 200.00
16.5		Provide for built in shelving to admin store	Item	1		R 15 000.00
16.6		Allow for profit and attendance if required	%IT	4		R 600.00
		SUNDRY				
16.7		Provide for "hawk" stainless steel safety shower installation	Item	1		R 10 000.00
16.8		Allow for profit and attendance if required	%IT	4		R 400.00
		BUDGETARY ALLOWANCES				
		The following monetary provisions are to be omitted from the contract sum and used as directed below.				
16.9		Hot water supply	Item	1		R 25 000.00
16.10		Moisture barrier, epoxy or polurethane paint-on barrier to floors to receive vinyl flooring	Item	1		R 5 000.00
Total Carried Forward To Summary: Section 16						

BILL 2 BOQ 1: ALTERATIONS & REFURBISHMENT OF ADMIN BUILDING

SUMMARY OF SECTIONS

SECTION	DESCRIPTION			AMOUNT R
1	PRELIMINARIES			
2	ALTERATIONS			
3	CONCRETE, FORMWORK AND REINFORCEMENT			
4	MASONRY			
5	WATERPROOFING			
6	FLOOR COVERINGS			
7	CARPENTRY AND JOINERY			
8	CEILINGS AND PARTITIONS			
9	IRONMONGERY			
10	METALWORK			
11	PLASTERING			
12	TILING			
13	PLUMBING AND DRAINAGE			
14	GLAZING			
15	PAINTWORK			
16	PROVISIONAL SUMS			
Total Carried Forward To Summary Of Bills				R -

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 1				
		PRELIMINARIES				
		These Bills of Quantities are prepared in accordance with the Standard System of Measuring Building Work 6th edition (Rev2 - 2013) as published by The Association of South African Quantity Surveyors.				
		Note: This document is based on preliminary Engineers Drawings: 5312-ST-A001 Rev 05312-ST-A300 Rev 0Engineer's sketches, schedules, project specifications by engineer and query/assumption lists, being the state of all information available as at 18 June 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 190 for Haylett formula purposes				
		Allow for preliminary and general items				
1.1		Fixed	Item	1.00		
1.2		Time	Item	1.00		
1.3		Value	Item	1.00		
Total Carried Forward To Summary: Section 1						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 2				
		MASONRY				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawings: 5312-ST-A001 Rev 05312-ST-A300 Rev 0Engineer's sketches, schedules, project specifications by engineer and query/assumption lists, being the state of all information available as at 18 June 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 116 for Haylett formula purposes				
		SUPPLEMENTARY PREAMBLES				
		BRICKWORK				
		Sizes in descriptions				
		Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick				
		Face bricks				
		Bricks shall be ordered timeously to obtain uniformity in size and colour				
		SUPERSTRUCTURE				
		Brickwork of NFPE bricks (14 MPa nominal compressive strength) in class I mortar in loadbearing walls etc				
2.1		Half brick walls	m2	7		
2.2		One brick walls	m2	242		
Total Carried Forward						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		BRICKWORK SUNDRIES				
		Chip off projections, fill up crevices, cement wash with 1:6 cement and sand slurry and apply two coats 'Brixeal' bitumen emulsion waterproofing coating:				
2.3		On outer face of inner skin of brick walls including any additional labour required in raising wall in two separate skins and working around wire ties and/or brick reinforcing fabric.	m2	162		
		Fair face to brickwork in horizontal stretcher bond pointed with flush horizontal and vertical joints				
2.4		Extra for fair face	m2	221		
		Brickwork reinforcement				
2.5		75mm Wide reinforcement built in horizontally	m	20		
2.6		150mm Wide reinforcement built in horizontally	m	725		
		Prestressed fabricated lintels				
2.7		100 x 70mm Lintels in lengths not exceeding 3m	m	2		
		Turning pieces				
2.8		220mm Wide turning piece to lintels etc	m	6		
		MOVEMENT JOINTS ETC				
		"Kilcher bearing" slip joints between horizontal concrete and brick surfaces including cement mortar bed				
2.9		Not exceeding 300mm wide	m	101		
		FACE BRICKWORK				
		"Calci" face bricks pointed with ruled horizontal and vertical joints				
2.10		Extra over brickwork for face brickwork	m2	167		
2.11		Extra over brickwork for brick-on-edge header course lintel	m	6		
		Brick-on-edge header course copings, sills, etc of "Calci" face bricks pointed with recessed joints on all exposed faces				
2.12		220mm Wide sill set sloping and slightly projecting	m	4		
Total Carried Forward To Summary: Section 2						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 3				
		WATERPROOFING				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawings: 5312-ST-A001 Rev 05312-ST-A300 Rev 0Engineer's sketches, schedules, project specifications by engineer and query/assumption lists, being the state of all information available as at 18 June 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 120 for Haylett formula purposes				
		SUPPLEMENTARY PREAMBLES				
		Waterproofing				
		Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
		DAMP-PROOFING OF WALLS AND FLOORS				
		One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
3.1		In walls	m2	20		
		WATERPROOFING TO ROOFS, BASEMENTS, ETC				
		4mm "Derbigum SP" fully bonded waterproofing				
3.2		On flat roofs	m2	203		
3.3		Sealing edges to brickwork or concrete	m	81		
		PROTECTIVE ROOFING PAINT				
		Two coats "Silvakote" bituminous aluminium paint				
3.4		On waterproofing to roofs	m2	195		
		JOINT SEALANTS ETC				
		Silicone sealing compound				
3.5		Sealing between sanitary fitting and wall tiling	m	4		
		Approved tinted silicone sealing compound				
3.6		Sealing around aluminium windows / doors and face brick wall.	m	15		
Total Carried Forward To Summary: Section 3						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 4				
		CARPENTRY AND JOINERY				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawings: 5312-ST-A001 Rev 05312-ST-A300 Rev 0Engineer's sketches, schedules, project specifications by engineer and query/assumption lists, being the state of all information available as at 18 June 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 126 for Haylett formula purposes				
		DOORS ETC				
		Wrought meranti doors hung to steel frames				
4.1		40mm Framed and ledged and braced batten door 813 x 2 032mm high of 40 x 144mm top rail, 20 x 104mm middle ledge, braces and stiles and 40 x 220mm bottom rail filled in with 20 x 75mm tounge and groove battens V jointed one side	No	3		
		Wrought iroko doors hung to steel or timber frames				
4.2		40mm Framed and ledged and braced batten double door 1 610 x 2 032mm high of 40 x 144mm top rails, 20 x 104mm middle ledges, braces and stiles and 40 x 220mm bottom rails filled in with 20 x 75mm tounge and groove battens V jointed one side in two equal leaves with rebated meeting stiles	No	2		
4.3		40mm Framed and ledged and braced batten double door 1 610 x 2 468mm high of 40 x 144mm top rails, 20 x 104mm middle ledges, braces and stiles and 40 x 220mm bottom rails filled in with 20 x 75mm tounge and groove battens V jointed one side in two equal leaves with rebated meeting stiles and cut-out at top meeting edge size 125mm wide x 250mm deep on each leaf	No	1		
		Semi-solid flush doors with commercial veneer hung to steel frames				
4.4		40mm Door 813 x 2032mm high	No	1		
		FRAMED FRAMES ETC				
		Wrought iroko				
4.5		114 x 76mm Rebated frames plugged	m	7		
Total Carried Forward To Summary: Section 4						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 5				
		IRONMONGERY				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawings: 5312-ST-A001 Rev 05312-ST-A300 Rev 0Engineer's sketches, schedules, project specifications by engineer and query/assumption lists, being the state of all information available as at 18 June 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 132 for Haylett formula purposes				
		HINGES, BOLTS, ETC				
5.1		100mm Brass parliament hinge (3 hinges / leaf) (2 hinges upper leaf and 1 hinge lower leaf)	No	4		
		"Union"				
5.2		150mm Type 8052 flush bolt with keep fixed to metal	No	3		
5.3		150mm Type 8052 flush bolt with keep let into concrete	No	3		
5.4		Heavy duty cabin hook, mounted on timber block	|No	8		
		LOCKS				
		"Union"				
5.5		"Gower CZ6822495" three lever lockset with striking plate fixed to metal	No	1		
5.6		"Gower CZ6833452" three lever lockset with striking plate fixed to metal	No	3		
5.7		"Gower CZ6833452" three lever rebated lockset with and including rebate conversion set	No	3		
		BATHROOM FITTINGS				
5.8		Vitraflex TR3 stainless steel lockable toilet paper dispensor	No	1		
		"Franke"				
5.9		"Rodan RODX618" stainless steel soap dispenser plugged and screwed to wall	No	1		
5.1		"Rodan RODX600" stainless steel paper towel dispenser plugged and screwed to wall	No	1		
5.11		"Rodan RODX607" stainless steel wall mounted bin plugged and screwed to wall	No	1		
		SUNDRIES				
		"Union"				
5.12		CZ 8731SC door stop plugged	No	7		
5.13		8025SS Hat and coat hook with rubber buffer	No	1		
Total Carried Forward To Summary: Section 5						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 6				
		METALWORK				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawings: 5312-ST-A001 Rev 05312-ST-A300 Rev 0Engineer's sketches, schedules, project specifications by engineer and query/assumption lists, being the state of all information available as at 18 June 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 149 for Haylett formula purposes				
		GALVANIZED STEEL HANDRAILS, BALUSTRADES, ETC				
		"Matlock" patent handrailing and balustrading to concrete				
6.1		Type HS two rail tubular series complete with equal sized hand, kneerails and bends to suit both	m	11		
6.2		Extra over hand & kneerail for 90 degree bend	No	2		
6.3		Extra over hand & kneerail for 140 degree ramp	No	2		
6.4		Extra over hand & kneerail for 40 degree angle closure	No	2		
6.5		Extra over hand & kneerail for tube wall end plate	No	2		
6.6		Type B90 stanchion 1000mm long	No	4		
6.7		Type BTA40 stanchion 1000mm long	No	8		
6.8		75mm M16 expansion bolt	No	28		
		GRADE 316 STAINLESS STEEL HANDRAILS, BALUSTRADES, ETC				
		"Matlock" patent handrailing and balustrading to concrete				
6.9		Type HS two rail tubular series complete with equal sized hand, kneerails and bends to suit both	m	10		
6.10		Extra over hand & kneerail for 90 degree bend	No	2		
6.11		Extra over hand & kneerail for 140 degree ramp	No	2		
6.12		Extra over hand & kneerail for 40 degree angle closure	No	1		
6.13		Extra over hand & kneerail for tube wall end plate	No	2		
6.14		Type B90 stanchion 1000mm long	No	5		
6.15		Type BTA40 stanchion 1000mm long	No	5		
6.16		75mm M16 expansion bolt	No	24		
Total Carried Forward						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		SUNDRY GALVANIZED STEELWORK				
		Floor duct gratings, etc				
6.17		40 x 3mm "Rectagrid by Andrew Mentis" or similar approved fully banded duct gratings in approximately 500mm widths and suitable lengths laid loose in framing	m2	3		
6.18		40 x 3mm "Rectagrid by Andrew Mentis" or similar approved fully banded duct gratings in approximately 800mm widths and suitable lengths laid loose in framing	m2	19		
6.19		45 x 45 x 5mm Angle section framing with 50 x 3mm flat section lugs with fishtailed end each 200mm girth welded on at 500mm centres including embedding in concrete	m	73		
6.20		Extra over 45 x 45 x 5mm angle section for mitred L-intersection	No	32		
		GALVANIZED PRESSED STEEL DOOR FRAMES				
		1,6mm Rebated frames suitable for half brick walls				
6.21		Frame for door 813 x 2032mm high	No	1		
		1,6mm Rebated frames suitable for one brick walls				
6.22		Frame for door 813 x 2032mm high	No	3		
6.23		Frame for double door 1610 x 2032mm high	No	2		
		ALUMINIUM WINDOWS, DOORS, ETC				
		"Wispeco type - 36 Casement Window System" Natural anodised aluminium windows glazed with 4mm obscure glass and plugged to brickwork or concrete				
6.24		Window 600 x 900mm high with one top hung opening out light and one fixed light	No	1		
6.25		Window 1200 x 1200mm high with two side hung opening out lights	No	1		
		"Wispeco type - 36 Casement Window System" Natural anodised aluminium windows glazed with 6,38mm toughened safety glass with silver reflective solar tint and plugged to brickwork or concrete				
6.26		Window 2400 x 1200mm high with four equal fixed lights	No	1		
Total Carried Forward To Summary: Section 6						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 7				
		PLASTERING				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
		These Bills of Quantities are prepared in accordance with the Standard System of Measuring Building Work 6th edition (Rev2 - 2013) as published by The Association of South African Quantity Surveyors.				
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		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 142 for Haylett formula purposes				
		SCREEDS				
		Screeds wood floated on concrete				
7.1		30mm Thick on floors and landings	m2	26		
7.2		Average 60mm thick on floors to falls and currents	m2	147		
7.3		Average 60mm thick on roofs to falls and currents to receive waterproofing membrane (elsewhere measured)	m2	194		
7.4		30mm Thick on treads and risers of stairs including reedings	m2	13		
7.5		50 x 50mm Triangular fillet in angle with upstand	m	10		
		INTERNAL PLASTER				
		Cement plaster on brickwork				
7.6		On walls	m2	53		
7.7		On narrow widths	m2	2		
		Cement plaster on concrete				
7.8		On soffits of slabs	m2	20		
		SPECIALIST SCREED FLOOR COVERINGS				
		All specialist screed floor coverings are to be executed in strict accordance with the manufacturer's instructions				
		6-9mm Thick "Flowfresh RT" heavy duty chemical resistant antimicrobial treated polyurethane resin floor coating manufactured by "Flowcrete" on screed				
7.9		On floors	m2	147		
Total Carried Forward To Summary: Section 7						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 8				
		TILING				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawings: 5312-ST-A001 Rev 05312-ST-A300 Rev 0Engineer's sketches, schedules, project specifications by engineer and query/assumption lists, being the state of all information available as at 18 June 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 144 for Haylett formula purposes				
		WALL TILING				
		300 x 200mm Johnson ceramic				
8.1		On walls	m2	13		
8.2		On walls in isolated panels, splashbacks, etc	m2	1		
8.3		On narrow widths	m2	1		
		FLOOR TILING				
		330 x 330mm "Johnson" ceramic floor tiles fixed with adhesive and flush pointed with tinted waterproof jointing compound				
8.4		On floors and landings	m2	20		
8.5		Skirting 75mm high of cut tiles	m	17		
		Trim, edging, etc				
8.6		Natural anodised aluminium tile edge strip	m	27		
Total Carried Forward To Summary: Section 8						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 9 **PLUMBING AND DRAINAGE** For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors These Bills of Quantities are prepared in accordance with the Standard System of Measuring Building Work 6th edition (Rev2 - 2013) as published by The Association of South African Quantity Surveyors. Note: This document is based on preliminary Engineers Drawings: 5312-ST-A001 Rev 05312-ST-A300 Rev 0Engineer's sketches, schedules, project specifications by engineer and query/assumption lists, being the state of all information available as at 18 June 2021 Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 148 for Haylett formula purposes **SUPPLEMENTARY PREAMBLES** uPVC pipes and fittings: Soil, waste and vent pipes and fittings shall be solvent weld jointed Copper pipes: Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground Fixing of pipes Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls etc, casting in, building in or suspending not exceeding 1m below suspension level Reducing fittings Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained				
Total Carried Forward						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		SANITARY FITTINGS				
		Work Group No 148 for Haylett formula purposes				
		"Franke" stainless steel				
9.1		Drop-on sink and drainer 900 x 535mm wide with one bowl	No	1		
		"Vaal"				
9.2		455 x 290mm "Bantam 7030" or similar approved single hole cloakroom basin	No	1		
9.3		"Orchid 439100" top inlet wall hung wc pan with double flap "Jazz Thermoset 8531Z0" seat and "8082Z0" floor bracket (flushing valve elsewhere)	No	1		
		WASTE UNIONS ETC				
		"Cobra Watertech"				
9.4		32mm "301" Basin waste union	No	1		
9.5		38mm "316" Sink waste union	No	1		
		TRAPS ETC				
		"Cobra Watertech"				
9.6		32mm "345/50" CP bottle trap	No	1		
9.7		38mm "365/50" CP bottle trap	No	1		
		TAPS, VALVES, ETC				
		"Cobra Watertech"				
9.8		15mm "Ball-o-stop" valve	No	2		
9.9		15mm Cobra "Star" pillar tap 111-15	No	1		
9.10		15mm Cobra "Star" pillar tap 113	No	1		
9.11		20mm 121RB stopcock	No	1		
9.12		FJ2.210CP "Flushmaster Junior" toilet flush valve	No	1		
Total Carried Forward						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		SANITARY PLUMBING				
		uPVC pipes				
9.13		50mm Pipes	m	10		
9.14		110mm Pipes	m	8		
		Extra over uPVC pipes for fittings				
9.15		50mm BSP adaptor	No	2		
9.16		50mm Bend	No	4		
9.17		50mm IE bend	No	3		
9.18		110mm Reducer	No	2		
9.19		110mm Bend	No	2		
9.20		110mm IE junction	No	2		
9.21		110mm Pan connector	No	1		
9.22		110mm "GI Two-way" vent valve	No	1		
		Sundries				
9.23		Testing waste pipe system	Item	1.00		
Total Carried Forward						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		WATER SUPPLIES				
		Note: Pipes described as "chased" shall include for chasing into brick walls, wrapping with densyl tape or similar expansion protection, and patching with mesh scrim				
		Class II copper pipes				
9.24		15mm Pipes chased into brick walls	m	16		
9.25		20mm Pipes chased into brick walls	m	8		
		Extra over class II copper pipes for brass compression fittings				
9.26		15mm Fittings	No	16		
9.27		20mm Fittings	No	8		
		Service pipes				
9.28		15mm Braided stainless service pipe not exceeding 400mm long including connections	No	2		
		Sundries				
9.29		Testing water pipe system	Item	1.00		
		ELECTRIC WATER HEATERS, ETC				
		"Franke"				
9.30		7.5 litre "Franke Zip Hydroboil" water boiler with brushed stainless steel casing screwed to and including plugs in plastered wall with connection to 15mm copper pipe including necessary connector.	No	1		
		FIRE APPLIANCES ETC				
		"Chubb"				
9.31		9kg Foam fire extinguisher	No	4		
9.32		4,5kg Dry carbon powder fire extinguisher	No	4		
Total Carried Forward To Summary: Section 9						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 10				
		PAINTWORK				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
		These Bills of Quantities are prepared in accordance with the Standard System of Measuring Building Work 6th edition (Rev2 - 2013) as published by The Association of South African Quantity Surveyors.				
		Note: This document is based on preliminary Engineers Drawings: 5312-ST-A001 Rev 05312-ST-A300 Rev 0Engineer's sketches, schedules, project specifications by engineer and query/assumption lists, being the state of all information available as at 18 June 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 152 for Haylett formula purposes				
		PAINTWORK ETC TO NEW WORK				
		ON FLOATED PLASTER OR CONCRETE				
		Prepare, one universal undercoat and and two coats Plascon acrylic PVA				
10.1		On ceilings	m2	20		
		Prepare, prime with Plaster Primer and two coats Plascon "Double Velvet"				
10.2		On internal walls	m2	41		
		ON METAL				
		One coat universal undercoat and two coats "Plascon" non-drip enamel on galvanised steel				
10.3		On door frames	m2	10		
		ON WOOD				
		Two coats wood primer				
10.4		On backs of frames, linings, etc not exceeding 300mm wide	m2	1		
		Two coats "Plascon" clear polyurethane varnish				
10.5		On doors	m2	33		
10.6		On door frames, etc	m2	2		
		One coat wood primer, one undercoat and two coats alkyd enamel paint				
10.7		On doors	m2	4		
Total Carried Forward To Summary: Section 10						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 11				
		PROVISIONAL SUMS				
		SUPPLEMENTARY PREAMBLES				
		All provisional sums cover supply of material and equipment and installation. Provisional sums are nett and do not include builder's discount (excluding settlement discount) and Value-Added Tax but the Tenderer may allow under "Profit" items any profit he considers necessary				
		JOINERY FITTINGS				
11.1		Post-formed desk top installation and kitchen sink cupboard complete	Item		4,400.00	4,400.00
11.2		Allow for profit if required	%			
11.3		Allow for attendance if required	Item			
Total Carried Forward To Summary: Section 11						

BILL 2 BOQ 2: NEW RAW SEWAGE PUMP STATION

SUMMARY OF SECTIONS

SECTION	DESCRIPTION				AMOUNT R
1	PRELIMINARIES				
2	MASONRY				
3	WATERPROOFING				
4	CARPENTRY AND JOINERY				
5	IRONMONGERY				
6	METALWORK				
7	PLASTERING				
8	TILING				
9	PLUMBING AND DRAINAGE				
10	PAINTWORK				
11	PROVISIONAL SUMS				
Total Carried Forward To Summary Of Bills					

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		THE FOLLOWING IN NO 2 GUARD HOUSES				
		SECTION 1				
		PRELIMINARIES				
		These Bills of Quantities are prepared in accordance with the Standard System of Measuring Building Work 6th edition (Rev2 - 2013) as published by The Association of South African Quantity Surveyors.				
		Note: This document is based on preliminary Engineers Drawing 60463-9 Sheet 3 Rev A, Engineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 11 May 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 190 for Haylett formula purposes				
		Allow for preliminary and general items				
1.1		Fixed	Item			
1.2		Time	Item			
1.3		Value	Item			
Total Carried Forward To Summary: Section 1						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 2				
		EARTHWORKS				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawing 60463-9 Sheet 3 Rev A, Engineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 11 May 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 104 for Haylett formula purposes				
		Nature of ground				
		The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"				
		Carting away of excavated material				
		Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site				
		SITE CLEARANCE				
		Site clearance				
2.1		Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m2	133		
		EXCAVATION, FILLING, ETC OTHER THAN BULK				
		EXCAVATIONS ETC				
		Excavation in earth not exceeding 2m deep				
2.2		Trenches	m3	12		
		Extra over trench and hole excavations in earth for excavation in				
2.3		Soft rock	m3	1		
2.4		Hard rock	m3	0.1		
		Extra over all excavations for carting away				
2.5		Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	7		
		Risk of collapse of excavations				
2.6		Sides of trench and hole excavations not exceeding 1,5m deep	m2	33		
		Keeping excavations free of water				
2.7		Keeping excavations free of all water other than subterranean water	Item			
Total Carried Forward						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		FILLING ETC				
		Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 95% Mod AASHTO density				
2.7		Backfilling to trenches, holes, etc	m3	5		
2.9		Under floors, steps, pavings, etc	m3	1		
		Coarse river sand filling supplied by the contractor				
2.1		Under floors etc	m3	0.5		
		Compaction of ground surfaces				
2.11		Compaction of natural or excavated ground surface under floors etc, including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	15		
		WEED KILLERS, INSECTICIDES, ETC				
		Soil insecticide in accordance with SANS 5859				
2.12		Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	15		
2.13		To bottoms and sides of trenches etc	m2	49		
Total Carried Forward To Summary: Section 2						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 3				
		CONCRETE, FORMWORK AND REINFORCEMENT				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawing 60463-9 Sheet 3 Rev A, Engineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 11 May 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 110 for Haylett formula purposes				
		SUPPLEMENTARY PREAMBLES				
		Cost of tests				
		The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the engineer. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the architect. (Test cubes are measured separately)				
		Formwork				
		Descriptions of formwork shall be deemed to include use and waste only (except where described as "left in" or "permanent"), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use				
		Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described				
		UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
		25MPa/19mm concrete				
3.1		Strip footings	m3	4		
		REINFORCED CONCRETE CAST ON/IN FORMWORK				
		30MPa/19mm concrete				
3.2		Surface beds on waterproofing	m3	2		
3.3		Slabs including beams and inverted beams	m3	5		
		TEST CUBES				
3.4		Making and testing 150 x 150 x 150mm concrete strength test cube	No	6		
Total Carried Forward						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		CONCRETE SUNDRIES				
		Finishing top surfaces of concrete smooth with a wood float				
3.5		Surface beds, slabs, etc	m2	15		
3.6		Surface beds, slabs, etc to falls	m2	37		
		Finishing top surfaces of concrete smooth with a steel trowel				
3.7		Tops of beams, walls, etc	m2	3		
		FORMWORK				
		Haylett Formula Work Group No. 111				
		SMOOTH FORMWORK (DEGREE OF ACCURACY I)				
		Smooth formwork to sides				
3.8		Inverted beams	m2	7		
3.9		Inverted beams above concrete	m2	3		
3.10		Edges, risers, ends and reveals not exceeding 300mm high or wide	m	7		
		Smooth formwork to soffits				
3.11		Slabs propped up exceeding 1.5m and not exceeding 3m high	m2	34		
		Boxing in smooth formwork to form				
3.12		20 x 20mm Chamfer along top or bottom edge	m	85		
3.13		20 x 20mm Vertical chamfer at corner	m	4		
3.14		15mm Diameter half round drip groove in soffit	m	31		
		MOVEMENT JOINTS ETC				
		"Kilcher bearing" slip joints between horizontal concrete and brick surfaces including cement mortar bed				
3.15		Not exceeding 300mm wide	m	22		
		REINFORCEMENT				
		Haylett Formula Work Group No. 114				
		Mild steel reinforcement to structural concrete work				
3.16		8mm Diameter bars	t	0.02		
		High tensile steel reinforcement to structural concrete work				
3.17		10mm Diameter bars	t	0.01		
		Fabric reinforcement				
3.18		Type ref 395 fabric reinforcement in concrete surface beds, slabs, etc	m2	93		
Total Carried Forward To Summary: Section 3						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 4				
		MASONRY				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
		These Bills of Quantities are prepared in accordance with the Standard System of Measuring Building Work 6th edition (Rev2 - 2013) as published by The Association of South African Quantity Surveyors.				
		Note: This document is based on preliminary Engineers Drawing 60463-9 Sheet 3 Rev A, Engineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 11 May 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 116 for Haylett formula purposes				
		SUPPLEMENTARY PREAMBLES				
		BRICKWORK				
		Sizes in descriptions				
		Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick				
		Face bricks				
		Bricks shall be ordered timeously to obtain uniformity in size and colour				
		FOUNDATIONS				
		Brickwork of NFX bricks (14 MPa nominal compressive strength) in class I mortar				
4.1		Half brick walls	m2	1		
4.2		One brick walls	m2	13		
		Brickwork reinforcement				
4.3		75mm Wide reinforcement built in horizontally	m	3		
4.4		150mm Wide reinforcement built in horizontally	m	39		
		SUPERSTRUCTURE				
		Brickwork of NFP bricks in class II mortar				
4.5		Half brick walls	m2	8		
		Brickwork of NFX bricks (14 MPa nominal compressive strength) in class I mortar				
4.6		One brick walls	m2	44		
Total Carried Forward						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		BRICKWORK SUNDRIES				
		Chip off projections, fill up crevices, cement wash with 1:6 cement and sand slurry and apply two coats 'Brixeal' bitumen emulsion waterproofing coating:				
4.7		On outer face of inner skin of brick walls including any additional labour required in raising wall in two separate skins and working around wire ties and/or brick reinforcing fabric.	m2	44		
		Brickwork reinforcement				
4.8		75mm Wide reinforcement built in horizontally	m	22		
4.9		150mm Wide reinforcement built in horizontally	m	169		
		Prestressed fabricated lintels				
4.10		100 x 70mm Lintels in lengths not exceeding 3m	m	2		
		Turning pieces				
4.11		220mm Wide turning piece to lintels etc	m	10		
		FACE BRICKWORK				
		"Corobrik Firelight Satin" face bricks pointed with ruled horizontal and vertical joints				
4.12		Extra over brickwork for face brickwork	m2	51		
4.13		Extra over brickwork for face brickwork in foundations	m2	2		
4.14		Extra over brickwork for brick-on-flat header course band	m	24		
4.15		Extra over brickwork for brick-on-edge header course lintel	m	10		
		Brick-on-edge header course copings, sills, etc of "Corobrik Firelight Satin" face bricks pointed with recessed joints on all exposed faces				
4.16		220mm Wide sill set sloping and slightly projecting	m	8		
		NUTEC-CEMENT/FIBRE-CEMENT WINDOW SILLS				
		Natural grey sills in single lengths bedded in class I mortar including metal fixing lugs etc				
4.17		15 x 150mm Wide sills set flat and slightly projecting	m	8		
Total Carried Forward To Summary: Section 4						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 5				
		WATERPROOFING				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
		These Bills of Quantities are prepared in accordance with the Standard System of Measuring Building Work 6th edition (Rev2 - 2013) as published by The Association of South African Quantity Surveyors.				
		Note: This document is based on preliminary Engineers Drawing 60463-9 Sheet 3 Rev A, Engineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 11 May 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 120 for Haylett formula purposes				
		SUPPLEMENTARY PREAMBLES				
		Waterproofing				
		Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
		DAMP-PROOFING OF WALLS AND FLOORS				
		One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
5.1		In walls	m2	12		
		One layer 375 micron orange polyethylene waterproof sheeting (SANS 952-1985 type A) sealed at laps with PVC self-adhesive tape				
5.2		Under surface beds	m2	15		
		WATERPROOFING TO ROOFS, BASEMENTS, ETC				
		4mm "Derbigum SP" fully bonded waterproofing				
5.3		On flat roofs	m2	43		
		PROTECTIVE ROOFING PAINT				
		Two coats "Silvakote" bituminous aluminium paint				
5.4		On waterproofing to roofs	m2	43		
		JOINT SEALANTS ETC				
		Silicone sealing compound				
5.5		Sealing between sanitary fitting and wall tiling	m	1		
		Approved tinted silicone sealing compound				
5.6		Sealing around aluminium windows / doors and face brick wall.	m	44		
Total Carried Forward To Summary: Section 5						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 6				
		CARPENTRY AND JOINERY				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawing 60463-9 Sheet 3 Rev A, Engineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 11 May 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 126 for Haylett formula purposes				
		DOORS ETC				
		Semi-solid flush doors with commercial veneer				
6.1		40mm Door 813 x 2032mm high	No	2		
		FRAMED FRAMES ETC				
		Wrought meranti				
6.2		68 x 68mm Rebated frames plugged	m	10		
Total Carried Forward To Summary: Section 6						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 7				
		IRONMONGERY				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawing 60463-9 Sheet 3 Rev A, Engineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 11 May 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 132 for Haylett formula purposes				
		HINGES, BOLTS, ETC				
7.1		100mm Brass hinge	No	4		
		LOCKS				
		"Union"				
7.2		2247-78 Four lever lockset with pair of "Swallow - AL 681" handles or similar approved with striking plate fixed to timber frame	No	2		
		BATHROOM FITTINGS				
7.3		19mm Diameter chromium plated towel rail 600mm long including end brackets	No	2		
7.4		Vitraflex TR3 stainless steel lockable toilet paper dispensor	No	2		
		SUNDRIES				
		"Union"				
7.5		CZ 8731SC door stop plugged	No	2		
Total Carried Forward To Summary: Section 7						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 8				
		METALWORK				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
		These Bills of Quantities are prepared in accordance with the Standard System of Measuring Building Work 6th edition (Rev2 - 2013) as published by The Association of South African Quantity Surveyors.				
		Note: This document is based on preliminary Engineers Drawing 60463-9 Sheet 3 Rev A, Engineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 11 May 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 149 for Haylett formula purposes				
		ALUMINIUM WINDOWS, DOORS, ETC				
		"Wispeco type - 36 Casement Window System" Natural anodised aluminium windows glazed with 4mm obscure glass and plugged to brickwork or concrete				
8.1		Window 600 x 600mm high with one top hung opening out light	No	2		
		"Wispeco type - 36 Casement Window System" Natural anodised aluminium windows glazed with 6,38mm toughened safety glass with silver reflective solar tint and plugged to brickwork or concrete				
8.2		Window 640 x 1200mm high with one fixed light	No	2		
		"Wispeco type - Palace Window System" Natural anodised aluminium windows glazed with 6,38mm toughened safety glass with silver reflective solar tint and plugged to brickwork or concrete				
8.3		Window 1500 x 1200mm high with one horizontal sliding light and one fixed light of equal sizes	No	4		
		"Wispeco type - CLIP44 Shopfront System" Natural anodised aluminium doors, sidelights and fanlights glazed with 6,38mm toughened clear safety glass with silver reflective solar film tint and plugged to brickwork or concrete				
8.4		Door 900 x 2100mm high with one transome and two glazed panels, suitable approved four lever lockset and three suitable hinges	No	2		
Total Carried Forward To Summary: Section 8						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 9				
		PLASTERING				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
		These Bills of Quantities are prepared in accordance with the Standard System of Measuring Building Work 6th edition (Rev2 - 2013) as published by The Association of South African Quantity Surveyors.				
		Note: This document is based on preliminary Engineers Drawing 60463-9 Sheet 3 Rev A, Engineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 11 May 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 142 for Haylett formula purposes				
		SCREEDS				
		Non-shrink grout on concrete				
9.1		75 x 75mm Triangular fillet in angle	m	26		
		INTERNAL PLASTER				
		Cement plaster on brickwork				
9.2		On walls	m2	58		
9.3		On narrow widths	m2	2		
Total Carried Forward To Summary: Section 9						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 10				
		TILING				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawing 60463-9 Sheet 3 Rev A, Engineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 11 May 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 144 for Haylett formula purposes				
		WALL TILING				
		300 x 200mm Johnson ceramic				
10.1		On walls in isolated panels, splashbacks, etc	m2	1		
		Trim, edging, etc				
10.2		uPVC Corner trim	m	4		
		FLOOR TILING				
		330 x 330mm "Johnson" ceramic floor tiles fixed with adhesive and flush pointed with tinted waterproof jointing compound				
10.3		On floors and landings	m2	13		
10.4		Skirting 100mm high of cut tiles	m	29		
		Trim, edging, etc				
10.5		Natural anodised aluminium tile edge strip	m	31		
Total Carried Forward To Summary: Section 10						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 11				
		PLUMBING AND DRAINAGE				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawing 60463-9 Sheet 3 Rev A, Engineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 11 May 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 148 for Haylett formula purposes				
		SUPPLEMENTARY PREAMBLES				
		uPVC pipes and fittings:				
		Soil, waste and vent pipes and fittings shall be solvent weld jointed				
		Copper pipes:				
		Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground				
		Fixing of pipes				
		Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls etc, casting in, building in or suspending not exceeding 1m below suspension level				
		SANITARY FITTINGS				
		Work Group No 148 for Haylett formula purposes				
		"Vaal"				
11.1		455 x 290mm "Bantam" or similar approved cloakroom basin	No	2		
11.2		Low level wc suite comprising "Afsan" low level pan (code 750100) with double flap plastic seat and "Aquasave" low level cistern (code 7120LL) with flush pipe	No	2		
		WASTE UNIONS ETC				
11.3		32mm Basin waste union	No	2		
		TRAPS ETC				
		Chromium plated				
11.4		75 x 40mm Bottle trap	No	2		
Total Carried Forward						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		TAPS, VALVES, ETC				
		"Cobra Watertech"				
11.5		15mm "Ball-o-stop" valve	No	4		
11.6		15mm Cobra "Star" pillar tap 111-15	No	2		
		SANITARY PLUMBING				
		uPVC pipes				
11.7		50mm Pipes	m	4		
11.8		110mm Pipes	m	6		
		Extra over uPVC pipes for fittings				
11.9		50mm BSP adaptor	No	2		
11.10		50mm Bend	No	2		
11.11		50mm IE bend	No	2		
11.12		110mm Reducer	No	2		
11.13		110mm IE junction	No	2		
11.14		110mm Pan connector	No	2		
11.15		110mm "GI Two-way" vent valve	No	2		
		Sundries				
11.16		Testing waste pipe system	Item			
		WATER SUPPLIES				
		Note: Pipes described as "chased" shall include for chasing into brick walls, wrapping with densyl tape or similar expansion protection, and patching with mesh scrim				
		Class II copper pipes				
11.17		15mm Pipes chased into brick walls	m	10		
		Extra over class II copper pipes for brass compression fittings				
11.18		15mm Fittings	No	18		
		Service pipes				
11.19		15mm Braided stainless service pipe not exceeding 400mm long including connections	No	4		
		Sundries				
11.20		Testing water pipe system	Item			
Total Carried Forward To Summary: Section 11						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 12				
		PAINTWORK				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawing 60463-9 Sheet 3 Rev A, Engineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 11 May 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 152 for Haylett formula purposes				
		PAINTWORK ETC TO NEW WORK				
		ON FLOATED PLASTER OR CONCRETE				
		Prepare, prime with Plaster Primer and two coats Plascon "wall and all"				
12.1		On internal walls	m2	58		
12.2		On ceilings	m2	12		
		ON WOOD				
		Two coats wood primer				
12.3		On backs of frames, linings, etc not exceeding 300mm wide	m2	1		
		One coat wood primer, one undercoat and two coats alkyd enamel paint				
12.4		On doors	m2	7		
12.5		On door frames etc	m2	2		
Total Carried Forward To Summary: Section 12						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 13				
		EXTERNAL WORKS				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawing 60463-9 Sheet 3 Rev A, Engineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 11 May 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 154 for Haylett formula purposes				
		ROADWORK, PARKING AREAS AND PAVING				
		Excavation in earth				
13.1		100mm Deep over site to remove top soil and dispose in prescribed stock piles on site	m2	37		
		Compaction of surfaces				
13.2		Compaction of ground surfaces under pavings etc, including scarifying for a depth of 100mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod AASHTO density	m2	37		
		Filling supplied by the contractor under parking areas, roadways, etc				
13.3		Subbase course of natural gravel material, compacted to 95% Mod AASHTO density	m3	6		
		Soil insecticide in accordance with SANS 5859				
13.4		Under interlocking pavings	m2	37		
		60mm Thick precast concrete interlocking block paving of grey or other approved colour paving blocks in accordance with SANS 1058, laid to falls on and including 20mm thick sand layer with joints filled in with sand, compacted with a vibration compactor				
13.5		Paving to sidewalks etc to falls, including necessary straight edge blocks	m2	37		
		Precast concrete finished smooth on exposed surfaces, including bedding, jointing and pointing				
13.6		75 x 110mm High kerbs (SANS 927 "Bester Mini") on 20mm thick mortar bedding with 75 x 75 x 300mm unreinforced concrete haunching at front of each joint, 150 x 75mm thick 20mPa footing including excavation, backfilling, etc	m	33		
13.7		125 x 230mm High kerbs (SANS 927 fig 6) on 20mm thick mortar bedding with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint, 275 x 75mm thick 20 mPa footing including excavation, backfilling, etc	m	9		
Total Carried Forward To Summary: Section 13						

BILL 2 BOQ 3: NEW GUARDHOUSES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 14				
		PROVISIONAL SUMS				
		SUPPLEMENTARY PREAMBLES				
		All provisional sums cover supply of material and equipment and installation. Provisional sums are nett and do not include builder's discount (excluding settlement discount) and Value-Added Tax but the Tenderer may allow under "Profit" items any profit he considers necessary				
		JOINERY FITTINGS				
14.1		Post-formed desk top installation, complete	Item			R 3 000.00
14.2		Allow for profit if required	%			
14.3		Allow for attendance if required	Item			
Total Carried Forward To Summary: Section 14						

BILL 2 BOQ 3: NEW GUARDHOUSES

SUMMARY OF SECTIONS

SECTION	DESCRIPTION				AMOUNT R
1	PRELIMINARIES				
2	EARTHWORKS				
3	CONCRETE, FORMWORK AND REINFORCEMENT				
4	MASONRY				
5	WATERPROOFING				
6	CARPENTRY AND JOINERY				
7	IRONMONGERY				
8	METALWORK				
9	PLASTERING				
10	TILING				
11	PLUMBING AND DRAINAGE				
12	PAINTWORK				
13	EXTERNAL WORKS				
14	PROVISIONAL SUMS				
Total Carried Forward To Summary Of Bills					

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 1				
		PRELIMINARIES				
		These Bills of Quantities are prepared in accordance with the Standard System of Measuring Building Work 6th edition (Rev2 - 2013) as published by The Association of South African Quantity Surveyors.				
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		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 190 for Haylett formula purposes				
		Allow for preliminary and general items				
1.1		Fixed	Item			
1.2		Time	Item			
1.3		Value	Item			
Total Carried Forward To Summary: Section 1						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 2 **EARTHWORKS** For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors These Bills of Quantities are prepared in accordance with the Standard System of Measuring Building Work 6th edition (Rev2 - 2013) as published by The Association of South African Quantity Surveyors. Note: This document is based on preliminary Engineers Drawings: 5495-ST-A-02 to 13 Rev A5495-ST-CO-01 to 16 Rev A5495 -ST-SS-01 to 02 Rev AEngineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 14 June 2021 Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 104 for Haylett formula purposes Nature of ground The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "soft rock" or "hard rock" Carting away of excavated material Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site **SITE CLEARANCE** Site clearance				
2.1		Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m2	1094		
Total Carried Forward						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		EXCAVATION, FILLING, ETC OTHER THAN BULK				
		EXCAVATIONS ETC				
		Excavation in earth not exceeding 2m deep				
2.2		Trenches	m3	62		
2.3		Holes	m3	349		
		Excavation in earth exceeding 2m and not exceeding 4m deep				
2.4		Holes	m3	48		
		Excavation in earth exceeding 4m and not exceeding 6m deep				
2.5		Holes	m3	1		
		Back excavation of vertical sides of excavation in earth for working space including backfilling compacted to 95% Mod AASHTO density				
2.6		Exceeding 500mm and not exceeding 1.5m deep for placing and removing formwork to walls etc 525mm away from excavated face	m2	14		
2.7		Exceeding 1.5m and not exceeding 3m deep for placing and removing formwork to walls etc 450mm away from excavated face	m2	12		
2.8		Exceeding 1.5m and not exceeding 3m deep for placing and removing formwork to walls etc 525mm away from excavated face	m2	25		
2.9		Exceeding 3m and not exceeding 4.5m deep for placing and removing formwork to walls etc 450mm away from excavated face	m2	16		
2.10		Exceeding 3m and not exceeding 4.5m deep for placing and removing formwork to walls etc 525mm away from excavated face	m2	32		
		Extra over trench and hole excavations in earth for excavation in				
2.11		Soft rock	m3	42		
2.12		Hard rock	m3	21		
		Extra over all excavations for carting away				
2.13		Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	228		
		Risk of collapse of excavations				
2.14		Sides of trench and hole excavations not exceeding 1,5m deep	m2	350		
2.15		Sides of trench and hole excavations exceeding 1,5m deep	m2	459		
		Keeping excavations free of water				
2.16		Keeping excavations free of all water other than subterranean water	Item			
Total Carried Forward						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		FILLING ETC				
		Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 95% Mod AASHTO density				
2.17		Backfilling to trenches, holes, etc	m3	225		
		Filling of gravel-soil material G7 supplied by the contractor, compacted to 95% Mod AASHTO density				
2.18		Under floors, steps, pavings, etc	m3	83		
		Compaction of ground surfaces				
2.19		Compaction of natural or excavated ground surface under floors etc, including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	833		
		WEED KILLERS, INSECTICIDES, ETC				
		Soil insecticide in accordance with SANS 5859				
2.20		Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	833		
2.21		To bottoms and sides of trenches etc	m2	954		
		SHORING				
2.22		Allow for shoring up deep foundation excavations and remove on completion of foundation work	Item			
Total Carried Forward To Summary: Section 2						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 3				
		MASONRY				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 116 for Haylett formula purposes				
		SUPPLEMENTARY PREAMBLES				
		BRICKWORK				
		Sizes in descriptions				
		Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick				
		Face bricks				
		Bricks shall be ordered timeously to obtain uniformity in size and colour				
		FOUNDATIONS				
		Brickwork of NFX bricks (14 MPa nominal compressive strength) in class I mortar				
3.1		Half brick walls in sides of floor drains	m2	42		
3.2		One brick walls in sides of floor drains	m2	3		
3.3		One brick walls	m2	56		
		Brickwork reinforcement				
3.4		75mm Wide reinforcement built in horizontally	m	121		
3.5		150mm Wide reinforcement built in horizontally	m	667		
		SUPERSTRUCTURE				
		Brickwork of NFP bricks in class II mortar				
3.6		Half brick walls	m2	2		
3.7		One brick walls	m2	845		
		Brickwork of NFX bricks (14 MPa nominal compressive strength) in class I mortar				
3.8		One brick walls	m2	8		
Total Carried Forward						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		BRICKWORK SUNDRIES				
		Chip off projections, fill up crevices, cement wash with 1:6 cement and sand slurry and apply two coats 'Brixeal' bitumen emulsion waterproofing coating:				
3.9		On outer face of inner skin of brick walls including any additional labour required in raising wall in two separate skins and working around wire ties and/or brick reinforcing fabric.	m2	518		
		Fair face to brickwork in horizontal stretcher bond pointed with flush horizontal and vertical joints				
3.1		Extra for fair face	m2	1082		
		Joint forming material in movement joints				
3.11		10mm Cross linked closed cell expanded polyethylene joint former built in vertically between brick and concrete columns	m2	69		
		Brickwork reinforcement				
3.12		75mm Wide reinforcement built in horizontally	m	6		
3.13		150mm Wide reinforcement built in horizontally	m	2621		
		Prestressed fabricated lintels				
3.14		100 x 70mm Lintels in lengths not exceeding 3m	m	32		
		Turning pieces				
3.15		220mm Wide turning piece to lintels etc	m	27		
		Galvanised hoop iron cramps, ties, etc				
3.16		40 x 1,5mm Wall tie 550mm long with one end shot pinned to concrete and other end built into brickwork	No	1224		
		FACE BRICKWORK				
		"Calci" face bricks pointed with ruled horizontal and vertical joints				
3.17		Extra over brickwork for face brickwork	m2	520		
3.18		Extra over brickwork for face brickwork in foundations	m2	19		
3.19		Extra over brickwork for brick-on-edge header course lintel	m	5		
3.2		Fair raking cutting	m	32		
		Brick-on-edge header course copings, sills, etc of "Calci" face bricks pointed with recessed joints on all exposed faces				
3.21		220mm Wide sill set sloping and slightly projecting	m	59		
Total Carried Forward To Summary: Section 3						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 4				
		WATERPROOFING				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 120 for Haylett formula purposes				
		SUPPLEMENTARY PREAMBLES				
		Waterproofing				
		Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
		DAMP-PROOFING OF WALLS AND FLOORS				
		One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
4.1		In walls	m2	73		
		One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
4.2		Under surface beds	m2	833		
		WATERPROOFING TO ROOFS, BASEMENTS, ETC				
		4mm "Derbigum SP" fully bonded waterproofing				
4.3		On flat roofs	m2	42		
		PROTECTIVE ROOFING PAINT				
		Two coats "Silvakote" bituminous aluminium paint				
4.4		On waterproofing to roofs	m2	42		
Total Carried Forward						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		JOINT SEALANTS ETC				
		Two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc				
4.5		6 x 10mm In expansion joints in floors including raking out expansion joint filler as necessary	m	189		
4.6		10 x 10mm In vertical expansion joints including raking out expansion joint filler as necessary	m	624		
		Silicone sealing compound				
4.7		Sealing between sanitary fitting and wall tiling	m	2		
		Approved tinted silicone sealing compound				
4.8		Sealing around aluminium windows / doors and face brick wall.	m	139		
Total Carried Forward To Summary: Section 4						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 5				
		ROOF COVERINGS				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 124 for Haylett formula purposes				
		PROFILED METAL SHEETING AND ACCESSORIES				
		Global Roofing Solutions 762mm cover Nu-Rib profile roll-formed in continuous lengths from 0.8mm thick Galvanised steel, Z200 spelter ISQ550 Chromadek® approved colour finish top coat and Pebble Grey backing coat roof sheeting, fixed to steel Hex Flange Head + EPDM Seal self drilling No. 3 drill point, No. 12-14 x 65mm long fasteners. Purlin fixed to second, fourth and sixth crest of each sheet and at all crests at sheet ends, all in accordance with the manufacturer's specifications by a GRS approved contractor				
5.1		Roof covering with pitch not exceeding 25 degrees	m2	520		
5.2		Radius sheet ridge	m	31		
5.3		Gable trim 462mm girth once bent	m	34		
5.4		Narrow and broad flute closers	m	61		
5.5		Moulded narrow and broad rib polyethelene filler blocks	m	61		
5.6		Bullnose eaves as detailed on drawing 60325-C-SD-726 incluidng provision of bird proofing	m	61		
		ROOF VENTILATORS				
		"Windmaster"				
5.7		"Tornado" 350mm diameter aluminium turbine roof ventilator fixed in accordance with the manufacturer's instructions including hole through roof sheeting and all necessary flashings, etc	No	7		
		ROOF AND WALL INSULATION				
		"Sisalation FA 405" fire retardant heavy industrial grade aluminium foil based insulation				
5.8		Insulation laid taut over purlins (at approximately 1500mm centres) and fixed concurrent with roof covering including galvanised steel straining wires	m2	510		
Total Carried Forward To Summary: Section 5						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 6				
		CARPENTRY AND JOINERY				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 126 for Haylett formula purposes				
		DOORS ETC				
		Wrought meranti doors hung to steel frames				
6.1		40mm Framed and ledged and braced batten door 813 x 2 032mm high of 40 x 144mm top rail, 20 x 104mm middle ledge, braces and stiles and 40 x 220mm bottom rail filled in with 20 x 75mm tounge and groove battens V jointed one side	No	8		
6.2		40mm Framed and ledged and braced batten double door 1 610 x 2 032mm high of 40 x 144mm top rails, 20 x 104mm middle ledges, braces and stiles and 40 x 220mm bottom rails filled in with 20 x 75mm tounge and groove battens V jointed one side in two equal leaves with rebated meeting stiles	No	1		
		Semi-solid flush doors with commercial veneer hung to steel frames				
6.3		40mm Door 813 x 2032mm high	No	1		
Total Carried Forward To Summary: Section 6						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 7				
		CEILINGS, PARTITIONS AND ACCESS FLOORING				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: This document is based on preliminary Engineers Drawings: 5495-ST-A-02 to 13 Rev A5495-ST-CO-01 to 16 Rev A5495 -ST-SS-01 to 02 Rev AEngineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 14 June 2021				
		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 129 for Haylett formula purposes				
		SUSPENDED CEILINGS				
		Proprietary suspended ceilings				
		Note:				
		Electrical light fittings, diffusers, panels, etc generally are "lay in" units of the same dimensions as the suspension grid described and allowance must be made accordingly for their support inclusive of any flexibility in setting out that may be required (ceiling panels have not been deducted and pricing is to take cognisance thereof)				
		Glasswool vinyl faced 1195 x 595 x 25mm "Isover Soundlite" acoustic panels on "Donn" pre-painted exposed tee suspension system including main and cross tees, necessary hangers, grids, etc				
7.1		Ceilings suspended exceeding 2m and not exceeding 3m below steel purlins at 1656mm centres (trusses at 5m centres)	m2	40		
		"Donn" cornices to suspended ceilings				
7.2		"Donn SM25" shadowline pre-painted cornices plugged	m	26		
Total Carried Forward To Summary: Section 7						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 8				
		IRONMONGERY				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 132 for Haylett formula purposes				
		HINGES, BOLTS, ETC				
		"Union"				
8.1		150mm Type 8052 flush bolt with keep fixed to metal	No	1		
8.2		150mm Type 8052 flush bolt with keep let into concrete	No	1		
		LOCKS				
		"Union"				
8.3		"Gower CZ6822495" three lever lockset with striking plate fixed to metal	No	1		
8.4		"Gower CZ6833452" three lever lockset with striking plate fixed to metal	No	8		
8.5		"Gower CZ6833452" three lever rebated lockset with and including rebate conversion set	No	1		
		BATHROOM FITTINGS				
8.6		Vitraflex TR3 stainless steel lockable toilet paper dispensor	No	1		
		"Franke"				
8.7		"Rodan RODX618" stainless steel soap dispenser plugged and screwed to wall	No	1		
8.8		"Rodan RODX600" stainless steel paper towel dispenser plugged and screwed to wall	No	1		
8.9		"Rodan RODX607" stainless steel wall mounted bin plugged and screwed to wall	No	1		
		SUNDRIES				
		"Union"				
8.1		CZ 8731SC door stop plugged	No	5		
8.11		8025SS Hat and coat hook with rubber buffer	No	1		
Total Carried Forward To Summary: Section 8						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 9				
		STRUCTURAL STEELWORK				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 134 for Haylett formula purposes				
		SUPPLEMENTARY PREAMBLES				
		Descriptions				
		Descriptions including bolts shall be deemed to be Grade 8.8 bolts.				
		Descriptions of bolts shall be deemed to include nuts and washers				
		Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete				
		GALVANIZED STEEL TRUSSES, ETC				
		Bolted roof trusses of angle section rails, struts, braces, cleats, etc and flat section bearer, gusset and connection plates bolted to steel				
9.1		7 No double pitched trusses 16.85 x 1.7m high extreme	t	7.76		
		GALVANIZED PURLINS, GIRTS, BRACING, ETC				
		Purlins and girts bolted to steel				
9.2		Lipped channel section purlins	t	2.93		
		Welded bracing etc with flat section connection plates bolted to steel				
9.3		Angle section bracing	t	4.99		
Total Carried Forward						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		THE FOLLOWING IN STEEL CRAWL-BEAM GIRDER				
		Welded girder with connection plates and L-section cleats bolted to concrete				
9.4		Two (2No) crawl-beams of 533 x 210mm x 122kg/m I-section parallel flange girders and angle section cleats.	t	4.99		
9.5		88kg/m Heavy crane rail	t	3.55		
9.6		230 x 130 x 10mm Thick backing plate with two (2No) 24mm diameter holes and machined recess 100 x 80 x 2.5mm deep in face for and including 5mm thick PTFE pad of same size bonded into recess using a bonding agent approved by the PTFE supplier.	No	10		
9.7		120 x 100 x 3mm Thick stainless steel plate welded to underside of girder, polished to semi-reflective B finish on sliding surface face, welded to underside of girder	No	10		
		Bolts to girder beams, etc				
9.8		20mm Diameter U-shaped anchor bolt 900mm girth embedded in top of concrete.	No	20		
9.9		100mm M20 expansion bolt	No	40		
Total Carried Forward To Summary: Section 9						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 10				
		METALWORK				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 149 for Haylett formula purposes				
		GALVANIZED STEEL HANDRAILS, BALUSTRADES, ETC				
		"Matlock" patent handrailing and balustrading to concrete				
10.1		Type HS two rail tubular series complete with equal sized hand, kneerails and bends to suit both	m	12		
10.2		Extra over hand & kneerail for 90 degree bend	No	8		
10.3		Type G90 stanchion 1150mm long	No	12		
		SUNDRY GALVANIZED STEELWORK				
		Floor duct gratings, etc				
10.4		40 x 3mm "Rectagrid by Andrew Mentis" or similar approved fully banded duct gratings in approximately 380mm widths and suitable lengths laid loose in framing	m2	49		
10.5		40 x 3mm "Rectagrid by Andrew Mentis" or similar approved fully banded sump gratings in approximately 1000mm widths and suitable lengths laid loose in framing	m2	1		
10.6		45 x 45 x 5mm Angle section framing with 50 x 3mm flat section lugs with fishtailed end each 200mm girth welded on at 500mm centres including embedding in concrete	m	262		
10.7		Extra over 45 x 45 x 5mm angle section for mitred L-intersection	No	54		
10.8		Extra over 45 x 45 x 5mm angle section for T-intersection	No	6		
		GALVANIZED PRESSED STEEL DOOR FRAMES				
		1,6mm Rebated frames suitable for one brick walls				
10.9		Frame for door 813 x 2032mm high	No	9		
10.1		Frame for double door 1610 x 2032mm high	No	1		
Total Carried Forward						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		GALVANIZED PRESSED STEEL TRANSFORMER ROOM DOORS AND FRAMES				
		"Amdoor" or other approved doors				
10.11		Type YV double door 1626 x 2450mm high with rebated frame suitable for one brick wall	No	1		
		NATURAL ANODISED ALUMINIUM LOUVRE UNITS				
		"Trox" type AGS-T louvre units fixed through timber door including forming opening through door				
10.12		Louvre unit size 300 x 350mm high	No	8		
		"Trox" weather resistant louvre units fixed into brickwork openings including all necessary fixings and sealing all round in accordance with the manufacturer's instructions				
10.13		Louvre unit for 1200 x 1100mm high opening	No	19		
		ALUMINIUM WINDOWS, DOORS, ETC				
		"Wispeco type - 36 Casement Window System" Natural anodised aluminium windows glazed with 4mm obscure glass and plugged to brickwork or concrete				
10.14		Window 600 x 900mm high with one top hung opening out light and one fixed light	No	1		
10.15		Window 2000 x 1200mm high with two top hung opening out lights and one fixed light	No	2		
		"Wispeco type - 36 Casement Window System" Natural anodised aluminium windows glazed with 6,38mm toughened safety glass with silver reflective solar tint and plugged to brickwork or concrete				
10.16		Window 4550 x 600mm high with four equal fixed lights	No	12		
		STEEL ROLLER SHUTTERS ETC				
		"Xpanda" galvanised roller shutters fixed to brickwork or concrete				
10.17		Chain operated slatted roller shutter for 3000 x 3400mm high opening	No	1		
10.18		Chain operated slatted roller shutter for 4000 x 3400mm high opening	No	2		
Total Carried Forward To Summary: Section 10						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 11				
		PLASTERING				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 142 for Haylett formula purposes				
		SCREEDS				
		Screeds wood floated on concrete				
11.1		30mm Thick on floors and landings	m2	45		
11.2		Average 60mm thick on floors to falls and currents	m2	734		
11.3		Average 60mm thick on roofs to falls and currents to receive waterproofing membrane (elsewhere measured)	m2	42		
11.4		30mm Thick on treads and risers of stairs including reedings	m2	11		
11.5		50 x 50mm Triangular fillet in angle with upstand	m	10		
11.6		50 x 50mm Triangular fillet in angle with upstand circular on plan	m	29		
		INTERNAL PLASTER				
		Cement plaster on brickwork				
11.7		On walls	m2	116		
11.8		On narrow widths	m2	2		
11.9		On narrow widths to walls of floor drains	m2	42		
		Cement plaster on concrete				
11.1		On soffits of slabs	m2	2		
Total Carried Forward						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		SPECIALIST APPLIED WALL COVERINGS				
		25mm Thick "Sewpercoat PG25" wall lining applied in accordance with the manufacturers instructions on smooth concrete				
11.11		On internal circular walls of silos	m2	251		
11.12		On concrete ceilings of silos	m2	33		
		SPECIALIST SCREED FLOOR COVERINGS				
		All specialist screed floor coverings are to be executed in strict accordance with the manufacturer's instructions				
		6-9mm Thick "Flowfresh RT" heavy duty chemical resistant antimicrobial treated polyurethane resin floor coating manufactured by "Flowcrete" on screed				
11.13		On floors	m2	734		
Total Carried Forward To Summary: Section 11						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 12				
		TILING				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 144 for Haylett formula purposes				
		WALL TILING				
		300 x 200mm Johnson ceramic				
12.1		On walls	m2	14		
12.2		On narrow widths	m2	1		
		FLOOR TILING				
		330 x 330mm "Johnson" ceramic floor tiles fixed with adhesive and flush pointed with tinted waterproof jointing compound				
12.3		On floors and landings	m2	40		
12.4		Skirting 75mm high of cut tiles	m	32		
		Trim, edging, etc				
12.5		Natural anodised aluminium tile edge strip	m	43		
Total Carried Forward To Summary: Section 12						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 13 **PLUMBING AND DRAINAGE** For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors These Bills of Quantities are prepared in accordance with the Standard System of Measuring Building Work 6th edition (Rev2 - 2013) as published by The Association of South African Quantity Surveyors. Note: This document is based on preliminary Engineers Drawings: 5495-ST-A-02 to 13 Rev A5495-ST-CO-01 to 16 Rev A5495 -ST-SS-01 to 02 Rev AEngineer's sketches, project specifications by engineer and query/assumption lists, being the state of all information available as at 14 June 2021 Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 148 for Haylett formula purposes **SUPPLEMENTARY PREAMBLES** uPVC pipes and fittings: Soil, waste and vent pipes and fittings shall be solvent weld jointed Copper pipes: Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground Fixing of pipes Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls etc, casting in, building in or suspending not exceeding 1m below suspension level				
Total Carried Forward						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		Reducing fittings Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained Excavations No claim for rock excavation will be entertained unless the contractor has timeously notified the engineer/quantity surveyor thereof prior to backfilling "Soft rock" and "hard rock" shall be as defined in "Earthworks" Laying, backfilling, bedding, etc. of pipes Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions **STORMWATER DRAINAGE** uPVC pipes				
13.1		110mm Pipes laid in and including trenches not exceeding 1m deep	m	97		
13.2		150mm Pipes laid in and including trenches not exceeding 1m deep	m	30		
		Extra over uPVC pipes for fittings				
13.3		110mm Bend	No	13		
13.4		110mm Junction	No	13		
13.5		150mm Bend	No	4		
13.6		150mm Junction	No	4		
		Sumps, catchpits, inspection chambers, etc (gratings and covers elsewhere)				
13.7		Rainwater sump 450 x 450mm and not exceeding 500mm deep internally	No	16		
		Gratings, covers, etc				
13.8		300 x 300mm x 9kg Type LD cast iron dished grating and frame	No	16		
		Sundries				
13.9		110mm Cleaning eye	No	3		
Total Carried Forward						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		SOIL DRAINAGE				
		Work Group No 146 for Haylett formula purposes				
		uPVC pipes				
13.1		110mm Pipes vertically or ramped to cleaning eyes etc (no excavation)	m	2		
13.11		110mm Pipes laid in and including trenches not exceeding 1m deep	m	17		
		Extra over uPVC pipes for fittings				
13.12		110mm Bend	No	4		
13.13		110 mm Access bend	No	1		
13.14		110mm Access junction	No	1		
		Sundries				
13.15		110mm Cleaning eye	No	1		
		RAINWATER DISPOSAL				
		Work Group No 146 for Haylett formula purposes				
		"Long Span" aluminium with baked enamel finish				
13.16		150 x 125 x 150mm VHV ogee eaves gutters	m	61		
13.17		Extra over eaves gutter for stopped end	No	4		
13.18		Extra over eaves gutter for outlet for 100 x 75mm pipe	No	12		
13.19		100 x 75mm Rainwater pipes	m	107		
13.2		Extra over 100 x 75mm rainwater pipe for shoe	No	12		
13.21		Extra over 100 x 75mm rainwater pipe for eaves offset 500mm projection	No	12		
13.22		75mm Diameter rainwater pipes	m	35		
13.23		Extra over 75mm diameter rainwater pipe for bend	No	6		
13.24		Extra over 75mm diameter rainwater pipe for shoe	No	2		
		SANITARY FITTINGS				
		Work Group No 148 for Haylett formula purposes				
		"Vaal"				
13.25		455 x 290mm "Bantam 7030" or similar approved single hole cloakroom basin	No	1		
13.26		"Orchid 439100" top inlet wall hung wc pan with double flap "Jazz Thermoset 8531Z0" seat and "8082Z0" floor bracket (flushing valve elsewhere)	No	1		
Total Carried Forward						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		WASTE UNIONS ETC				
		"Cobra Watertech"				
13.27		32mm "301" Basin waste union	No	1		
		TRAPS ETC				
		"Cobra Watertech"				
13.28		32mm "345/50" CP bottle trap	No	1		
		TAPS, VALVES, ETC				
		"Cobra Watertech"				
13.29		15mm "Ball-o-stop" valve	No	1		
13.3		15mm Cobra "Star" pillar tap 111-15	No	1		
13.31		20mm 121RB stopcock	No	1		
13.32		FJ2.210CP "Flushmaster Junior" toilet flush valve	No	1		
		SANITARY PLUMBING				
		uPVC pipes				
13.33		50mm Pipes	m	2		
13.34		110mm Pipes	m	8		
		Extra over uPVC pipes for fittings				
13.35		50mm BSP adaptor	No	1		
13.36		50mm Bend	No	1		
13.37		50mm IE bend	No	1		
13.38		110mm Reducer	No	1		
13.39		110mm Bend	No	2		
13.4		110mm IE junction	No	2		
13.41		110mm Pan connector	No	1		
13.42		110mm "GI Two-way" vent valve	No	1		
		Sundries				
13.43		Testing waste pipe system	Item			
Total Carried Forward						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		WATER SUPPLIES				
		Note: Pipes described as "chased" shall include for chasing into brick walls, wrapping with densyl tape or similar expansion protection, and patching with mesh scrim				
		Class II copper pipes				
13.44		15mm Pipes chased into brick walls	m	8		
13.45		20mm Pipes chased into brick walls	m	8		
13.46		20mm Pipes laid in and including trenches	m	5		
		Extra over class II copper pipes for brass compression fittings				
13.47		15mm Fittings	No	8		
13.48		20mm Fittings	No	8		
		Service pipes				
13.49		15mm Braided stainless service pipe not exceeding 400mm long including connections	No	1		
		Sundries				
13.5		Testing water pipe system	Item			
		FIRE APPLIANCES ETC				
		"Chubb"				
13.51		9kg Foam fire extinguisher	No	2		
13.52		4,5kg Dry carbon powder fire extinguisher	No	9		
Total Carried Forward To Summary: Section 13						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 14				
		PAINTWORK				
		For preambles see "Model Preambles for Trades 2008" as published by The Association of South African Quantity Surveyors				
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		Note: Unless otherwise stated herein, all items in this Bill shall be deemed to fall into Work Group No 152 for Haylett formula purposes				
		PAINTWORK ETC TO NEW WORK				
		ON FLOATED PLASTER OR CONCRETE				
		Prepare, one universal undercoat and and two coats Plascon acrylic PVA				
14.1		On ceilings	m2	2		
		Prepare, prime with Plaster Primer and two coats Plascon "Double Velvet"				
14.2		On internal walls	m2	103		
		ON METAL				
		One coat universal undercoat and two coats "Plascon" non-drip enamel on galvanised steel				
14.3		On door frames	m2	17		
14.4		On transformer room doors and frames	m2	10		
		Two coats calcium plumbate chromate primer, one coat universal undercoat and two coats gloss enamel structural paint on galvanised steel				
14.5		On members of roof trusses	m2	213		
14.6		On members of roof truss bracing	m2	136		
14.7		On lipped channel purlins	m2	231		
14.8		On I-section girders	m2	79		
		ON WOOD				
		Two coats "Plascon" clear polyurethane varnish				
14.9		On doors	m2	35		
		One coat wood primer, one undercoat and two coats alkyd enamel paint				
14.1		On doors	m2	4		
Total Carried Forward To Summary: Section 14						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 15				
		PROVISIONAL SUMS				
		SUPPLEMENTARY PREAMBLES				
		All provisional sums cover supply of material and equipment and installation. Provisional sums are nett and do not include builder's discount (excluding settlement discount) and Value-Added Tax but the Tenderer may allow under "Profit" items any profit he considers necessary				
		JOINERY FITTINGS				
15.7		Post-formed desk top installation complete	Item			R 2 500.00
15.8		Allow for profit if required	%			
15.9		Allow for attendance if required	Item			
		GALVANISED STEEL CATWALK, CATLADDERS, PLATFORMS, ETC.				
15.1		Provide for supply and installation of catwalk banded gratings, platforms including support steelwork below, catladders, hand-railing, balustrades, stairs. etc installation, complete	Item			R 560 000.00
15.11		Allow for profit if required	%			
15.12		Allow for attendance if required	Item			
Total Carried Forward To Summary: Section 15						

BILL 2 BOQ 4: NEW SLUDGE DEWATERING BUILDING

SUMMARY OF SECTIONS

SECTION	DESCRIPTION				AMOUNT R
1	PRELIMINARIES				
2	EARTHWORKS				
3	MASONRY				
4	WATERPROOFING				
5	ROOF COVERINGS				
6	CARPENTRY AND JOINERY				
7	CEILINGS, PARTITIONS AND ACCESS FLOORING				
8	IRONMONGERY				
9	STRUCTURAL STEEL				
10	METALWORK				
11	PLASTERING				
12	TILING				
13	PLUMBING AND DRAINAGE				
14	PAINTWORK				
15	PROVISIONAL SUMS				
Total Carried Forward To Summary Of Bills					R -

BILL 3 BOQ 1: PRELIMINARY AND GENERAL

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
1		**SCHEDULE NO. 1** **General Requirements and Conditions** *Allow for all costs and expenses in connection with the following:-*				
1.1		Providing Performance Security (Demand Guarantee under URDG 758).	Sum	1		
1.2		Providing Insurances including professional indemnity	Sum	1		
1.3		Providing advance payment guarantee's as per the contract document.	Sum	1		
1.4		Design of the Works and submission of Contractor's Documents	Sum	1		
1.5		Establishment on site (M&E) including setting up of office space, storage space, ablution/canteen facilities and any another amenities deemed fit by the Contractor. Item to include costs associated with vacating the Site at the end of the contract	Sum	1		
1.6		Chairing and minuting a HAZOP	Sum	1		
1.7		Site security including any fencing	Sum	1		
1.8		Operation and Maintenance of facilities on Site for duration of the Contract.	Sum	1		
1.9		General expenses incurred in complying with the requirements of T1.2 Tender Data, not included above.	Sum	1		
1.10		General expenses incurred in complying with the requirements of C1.2 Contract Data, not included above.	Sum	1		
1.11		All costs associated with the design, procurement, erection and maintenance of a project signboard at the entrance to the works, details as to be specified by the Engineer	Sum	1		
1.12		Other General expenses incurred in complying with the requirements of the Scope of Work not included above (Specify):-				
1.12.1		1)	Sum	1		
1.12.2		2)	Sum	1		
1.12.3		3)	Sum	1		
Total Carried Forward To Summary Of Bills						

BILL 3 BOQ 2: COARSE AND FINE SCREENING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SCHEDULE NO. 2 - INLET WORKS				
2		**COARSE AND FINE SCREENING**				
		P&ID Ref: W1859-45003				
		Allow for all costs and expenses in connection with the design, manufacture, quality management, painting, testing, supply, delivery, offloading and storage of the following materials and equipment, including quality assurance, setting out of the works and checking work carried out by others:-				
2.1		***Screens***				
2.1.1	M5	Bar screen rack with 25 mm bar spacing (MSR01A/B) complete with frame, sole plate, automatic rake mechanism, motor operating on variable speed drive (VSD), gearbox, scraper mechanism and discharge chute all contained within an enclosure	No.	2		
2.1.2	M5	Bar screen rack with 6 mm bar spacing (MSR02A/B) complete with frame, sole plate, automatic rake mechanism, motor operating on variable speed drive (VSD), gearbox, scraper mechanism and discharge chute all contained within an enclosure	No.	2		
2.1.3	M5	Bar screen with 25 mm bar spacing (MSR04) complete with manual rake, lifting device, cable and winch system, supports and fasteners	No.	1		
		Piping				
2.1.4	M5	2nd class water supply piping, fittings, isolation and pressure reducing valves, supports and fasteners from the 2nd class water bulk supply manifold to each point of the hydraulic launder and hose connection points	Sum	1		
	M5	DN65, butterfly valve with motorized actuator (XV01, XV37, XV38)	No.	3		
		Hydraulic Launders				
2.1.5	M11	Hydraulic launder conveyor (HLC01) network, fittings, supports and fasteners, and outlet chute for conveying coarse and fine screenings from automated screens to each washer/compactor	Sum	1		
		Penstocks				
2.1.6	M5.8	Rising spindle penstock complete with gate, handwheel, shaft, seals, supports and fasteners at the inlet to the 25 mm coarse screens	No.	3		
2.1.7	M5.8	Rising spindle penstock complete with gate, handwheel, shaft, seals, supports and fasteners at the outlet of the 6 mm fine screens	No.	3		
Total Carried Forward						

BILL 3 BOQ 2: COARSE AND FINE SCREENING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2.2		***Washer/Compactors***				
2.2.1	M6	Washer/compactor (WHC01/02) hopper body with screenings washing system complete with agitator, motor, gearbox, shaft, supports and fasteners	No.	2		
2.2.2	M6	Washer/compactor (WHC01/02) screw press body complete with screw, motor, gearbox, shaft, outlet chute, supports and fasteners	No.	2		
		Piping				
2.2.3	M6	2nd class water supply piping, fittings, isolation and pressure reducing valves, supports and fasteners from the tie-in to the 2nd class water bulk supply manifold to each washer/compactor body, screw, and hose connection points	Sum	1		
2.2.4	M6	Overflow and drain water piping, fittings, isolation valves, supports and fasteners from each washer/compactor to upstream of the screens	Sum	1		
2.2.5	M6	DN300, knifegate valve with motorized actuator (XV02, XV03)	No.	2		
2.2.6	M6	DN25, diaphragm valve with solenoid actuator (XV04, XV05)	No.	2		
2.2.7	M6	DN100, ball valve with motorized actuator (XV06, XV07)	No.	2		
2.2.8	M6	DN25, diaphragm valve with solenoid actuator (XV35, XV36)	No.	2		
2.2.9	M10	Skip Dolly (DO01A/B) suitable for three skips complete with gear motor and cable drum system	Sum	1		
2.3		All other plant and equipment items not included above which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify): -				
2.3.1		1).....	Sum	1		
2.3.2		2).....	Sum	1		
2.3.3		3).....	Sum	1		
2.3.4		4).....	Sum	1		
2.40		*Allow for all costs and expenses, including double handling (if stored) and final painting (if applicable), in connection with the Site installation, testing, relocation, commissioning and upholding during the Trial Operation Period and Defects Notification Period of the following :-*				
2.4.1		All Screening equipment and ancillaries as described under items 2.1 and 2.3	Sum	1		
2.4.2		All Washer/Compactors equipment and ancillaries as described in under items 2.2 and 2.3	Sum	1		
2.4.3		Carrying out and documenting the results of performance tests on the installed equipment	Sum	1		
Total Carried Forward						

BILL 3 BOQ 2: COARSE AND FINE SCREENING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2.5		All other site installation and general items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-				
2.5.1		1).....	Sum	1		
2.5.2		2).....	Sum	1		
2.5.3		3).....	Sum	1		
2.5.4		4).....	Sum	1		
Total Carried Forward To Summary Of Bills						

BILL 3 BOQ 3: DEGRITTING SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SCHEDULE NO. 3 - INLET WORKS				
3		**DEGRITTING SYSTEM**				
		P&ID Ref: W1859-45004				
		Allow for all costs and expenses in connection with the design, manufacture, quality management, painting, testing, supply, delivery, offloading and storage of the following materials and equipment, including quality assurance, setting out of the works and checking work carried out by others:-				
3.1		***Induced Vortex Grit Traps (GTR01/GTR02)***				
3.1.1	M8	Fixed speed stirrer complete with motor, gearbox, shaft, paddles, supports and fasteners	No.	2		
3.1.2	M8	Upper chamber floor plate complete with supports and fasteners	No.	2		
3.1.3	M8	Self priming centrifugal pump (abrasion resistant) complete with motor, shaft, impeller, baseplate, supports and fasteners (PMP05A/B)	No.	2		
		Piping				
3.1.4	M8	2nd class water supply piping, fittings, isolation and pressure reducing valves, supports and fasteners from the bulk supply manifold to each grit trap and grit slurry line respectively	Sum	1		
3.1.5	M8	Grit slurry piping, fittings, isolation valves, supports and fasteners from each induced vortex grit trap to each grit classifier inlet flange	Sum	1		
3.1.6	M8	DN50, butterfly valve with motorized actuator (XV19, XV20)	No.	2		
3.1.7	M8	DN25, butterfly valve with solenoid actuator (XV21, XV22)	No.	2		
3.1.8	M8	DN100, knifegate valve with motorized actuator (XV23, XV24)	No.	2		
		Penstocks				
3.1.9	M8.5	Rising spindle stem penstock complete with gate, handwheel, shaft, seals, supports and fasteners at the inlet to the grit traps	No.	3		
3.2		***Grit Classifiers (GWR01/GWR02)***				
3.2.1	M9	Grit classifier body with grit washing system complete with stirrer, motor, gearbox, shaft, supports and fasteners	No.	2		
Total Carried Forward						

BILL 3 BOQ 3: DEGRITTING SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3.2.2	M9	Grit classifier inclined grit removal screw conveyor complete with enclosed trough, motor, gearbox, shaft, discharge chute, supports and fasteners	No.	2		
		Piping				
3.2.3	M9	Overflow and organics discharge piping, fittings, isolation valves, supports and fasteners from each grit classifier to the grit traps' combined inlet channel. Include drain valves, piping fittings, supports and fasteners from each grit classifier to drain point	Sum	1		
3.2.4	M9	2nd class water supply piping, fittings, isolation and check valves, supports and fasteners from the degritting system 2nd class water supply manifold to each grit classifier body, screw conveyor and hose connection points	Sum	1		
3.2.5	M9	DN100, knifegate valve with motorized actuator (XV25, XV26)	No.	2		
3.2.6	M9	DN100, knifegate valve with motorized actuator (XV29, XV30)	No.	2		
3.3	M10	Skip Dolly (DO02A/B) suitable for three skips complete with gear motor and cable drum system	Sum	1		
3.4		All other plant and equipment items not included above which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify): -				
3.4.1		1).....	Sum	1		
3.4.2		2).....	Sum	1		
3.4.3		3).....	Sum	1		
3.4.4		4).....	Sum	1		
3.5		*Allow for all costs and expenses, including double handling (if stored) and final painting (if applicable), in connection with the Site installation, testing, relocation, commissioning and upholding during the Trial Operation Period and Defects Notification Period of the following* ***:-***				
3.5.1		All Induced Vortex Grit Traps equipment and ancillaries as described under items 3.1 and 3.4	Sum	1		
3.5.2		All Grit Classifiers equipment and ancillaries as described in under items 3.2 and 3.4	Sum	1		
3.5.3		All Combined Grit/Screenings Conveyors equipment and ancillaries as described in under items 3.3 and 3.4	Sum	1		
3.5.4		Carrying out and documenting the results of performance tests on the installed equipment	Sum	1		
Total Carried Forward						

BILL 3 BOQ 3: DEGRITTING SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3.6		All other site installation and general items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-				
3.6.1		1).....	Sum	1		
3.6.2		2).....	Sum	1		
3.6.3		3).....	Sum	1		
3.6.4		4).....	Sum	1		
Total Carried Forward To Summary Of Bills						

BILL 3 BOQ 4: PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SCHEDULE NO. 4 - INLET WORKS				
4		**REACTOR FEED PUMP STATION**				
		P&ID Ref: W1859-45005				
		Allow for all costs and expenses in connection with the design, manufacture, quality management, painting, testing, supply, delivery, offloading and storage of the following materials and equipment, including quality assurance, setting out of the works and checking work carried out by others:-				
4.1		***Dry Well Sump Pump***				
4.1.1	M12	Immersible sump pump (PMP04) complete with motor, supports and fasteners	No.	1		
		Piping				
4.1.2	M12	Screened wastewater piping, fittings, isolation and check valves, supports and fasteners from the dry well sump to the screened wastewater sump	Sum	1		
		Penstocks				
4.1.3	M5.8	Rising spindle stem penstock complete with gate, handwheel, shaft, seals, supports and fasteners at the inlet to the screened wastewater sump	No.	3		
4.2		***Bioreactor Feed Pumps***				
4.2.1	M12	Centrifugal pump (vertical dry pit installation) operating on variable speed drive (VSD) complete with motor, baseplate, shaft, impeller, supports, fasteners and intergral hardwired monitoring of bearing temperature, motor housing leak detection, thermal winding and mechanical seal integrity (PMP01A/B/C/D)	No.	4		
		Piping				
4.2.2	M12	Screened wastewater piping, fittings, isolation valves, supports and fasteners from the screened wastewater sump to the tie-in at the existing rising main supplying the existing bioreactors. Refer to layout drawing W1859-85002. This must include the suction piping, valves and blank flanges for the future pumps as indicated on P&ID W1859-45005	Sum	1		
4.2.3	M12	Rising main drain piping, fittings, isolation valves, supports and fasteners from the rising main back to the screened wastewater sump	Sum	1		
4.2.4	M12	2nd class water piping fittings, isolation valves, nozzles, supports and fasteners from the main 2nd class water supply header to the bottom of the Screened Wastewater Sump	Sum	1		
Total Carried Forward						

BILL 3 BOQ 4: PUMP STATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
					Brought forward	
4.2.5	M12	DN25, diaphragm valve with solenoid actuator (XV31, XV32, XV33, XV34)	No.	4		
		Lifting Gear				
4.2.6	M12	Bioreactor feed pump gantry and lifting gear	Sum	1		
4.3		All other plant and equipment items not included above which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify): -				
4.3.1		1).....	Sum	1		
4.3.2		2).....	Sum	1		
4.3.3		3).....	Sum	1		
4.3.4		4).....	Sum	1		
4.40		*Allow for all costs and expenses, including double handling (if stored) and final painting (if applicable), in connection with the Site installation, testing, relocation, commissioning and upholding during the Trial Operation Period and Defects Notification Period of the following :-*				
4.4.1		All Dry Well Sump Pump equipment and ancillaries as described in under items 4.1 and 4.3	Sum	1		
4.4.2		All Bioreactor Feed Pumps equipment and ancillaries as described in under items 4.2 and 4.3	Sum	1		
4.4.3		Carrying out and documenting the results of performance tests on the installed equipment	Sum	1		
4.5		All other site installation and general items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-				
4.4.1		1).....	Sum	1		
4.4.2		2).....	Sum	1		
4.4.3		3).....	Sum	1		
4.4.4		4).....	Sum	1		
Total Carried Forward To Summary Of Bills						

BILL 3 BOQ 5: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SCHEDULE NO. 5				
5		**DEWATERING FACILITY**				
		P&ID Ref: W1859-45001 and W1859-45002				
		Allow for all costs and expenses in connection with the design, manufacture, quality management, painting, testing, supply, delivery, offloading and storage of the following materials and equipment, including quality assurance, setting out of the works and checking work carried out by others:-				
5.1		***WAS Transfer Pumps (PMP04A/B)***				
5.1.1	M13	Self priming centrifugal pump operating on variable speed drive (VSD) complete with motor, shaft, impeller, baseplate, cover plate, wear plate, supports and fasteners	No.	2		
		Piping				
5.1.2	M13	WAS transfer and spillback piping, fittings, isolation and check valves, supports and fasteners from the existing WAS sump to the new inline macerator and heavy solids separator	Sum	1		
5.1.3		Removal of existing valve on the inlet line of the supply to the WAS sump	Sum	1		
5.1.4	M13	New WAS sump inlet knifegate valve with motorized actuator (XV33)	No.	1		
5.2		***WAS Macerator (MAC01A/B)***				
5.2.1	M13	Inline macerator and heavy solids separator complete with motor operating on variable speed drive (VSD), gearbox, inlet and outlet flange connection, shaft, cutting screen, blades, baseplate, supports and fasteners. Supplied with control panel as a package unit.	No.	2		
		Spares				
5.2.2	M13	Full set of knife blades for each macerator and heavy solids separator	No.	2		
5.2.3	M13	Cutting screen	No.	1		
		Piping				
5.2.2	M13	WAS transfer piping, fittings, isolation valves, supports and fasteners from the inline macerator and heavy solids separator to the centrifuge feed tank inlet	Sum	1		
5.3		***Centrifuge Feed Tank Mixers (MIX01/02)***				
5.3.1	M14	Submersible mixer complete with motor, shaft, non clogging impeller, lifting davit, cable and winch system, baseplate, supports and fasteners	No.	2		
Total Carried Forward						

BILL 3 BOQ 5: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.4		***Centrifuge Feed Pumps (PMP01A/B)***				
5.4.1	M15	Progressive cavity pump operating on variable speed drive (VSD) complete with motor, drive shaft, baseplate, supports and fasteners	No.	2		
		Piping				
5.4.2	M15	WAS feed piping, fittings, isolation, pressure safety and check valves, supports and fasteners from the centrifuge feed tank oulet to each centrifuge centrifuge unit	Sum	1		
5.4.3	M15	DN100, knifegate valve with motorized actuator (XV28, XV29)	No.	2		
5.4.4	M15	DN50, butterfly valve with motorized actuator (XV01, XV02, XV04, XV05)	No.	4		
5.5		***Centrifuge Feed Tank (TNK01)***				
		Piping				
5.5.1	M14	WAS overflow and drain piping, fittings, isolation valves, supports and fasteners from the centrifuge feed tank to new underground drain lines back to the existing detritus tank	Sum	1		
5.5.2	M14	2nd class water supply piping, fittings, isolation valves, supports and fasteners from the bulk supply manifold up to the the supply puddle flange on the centrifuge tank	Sum	1		
5.5.3	M14	Steel cat ladders, platforms, handrailing, supports and fasteners around the centrifuge feed tank	Sum	1		
5.6		***Centrifuges***				
5.6.1	M15	High efficiency horizontal decanter centrifuge (CEN01/CEN02) complete with feed pipe, cylindrical bowl, scroll conveyor, base frame, scroll and bowl drive systems supplied as a package unit, with local control panel and PLC	No.	2		
5.6.2	M15	Discharge chute complete with compensator	No.	2		
		Accessories				
5.6.3	M15	Initial fill of scroll conveyor drive and bearings lubricant	No.	2		
5.6.4	M15	Spray can of touch up paint	No.	2		
		Piping				
5.6.5	M15	Centrate discharge piping, fittings, supports and fasteners from each centrifuge feed end to the drain sump	Sum	1		
5.6.6	M15	Sludge cake discharge piping fittings, isolation valves, supports and fasteners from each centrifuge to each centrifuge cake conveyor	Sum	1		
Total Carried Forward						

BILL 3 BOQ 5: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.6.7	M15	2nd class water supply piping, fittings, isolation valves, pressure regulating devices, supports and fasteners from the bulk supply manifold up to the flushing points (feed line and cake chute) and poly dilution points of each centrifuge. Include all valves and connections to hose connection points	Sum	1		
5.6.8	M15	DN600, knifgate valve with motorized actuator (XV03, XV06)	No.	2		
5.6.9	M15	DN250, knifegate valve with motorized actuator (XV10, XV11, XV12, XV13)	No.	4		
5.6.10	M15	DN50, knifegate valve with motorized actuator (XV14, XV15)	No.	2		
5.6.11	M15	DN50, butterfly valve with motorized actuator (XV16, XV17)	No.	2		
		Lifting equipment				
5.6.12	M15	Traveling gantry crane in centrifuge hall	Sum	1		
5.7		***Poly Make Up Systems***				
5.7.1	M16	Powder polyelectrolyte make-up system (PMT01/02) complete with hopper, agitators, heated metering screw, screw motor, two-chamber mixing system, all supplied as a package unit with local control panel and PLC	No.	2		
		Piping				
5.7.2	M16	Poly solution discharge piping, fittings, isolation valves, supports and fasteners from each polymer make-up system outlet to the common manifold supplying each poly dosing and lubrication pump	Sum	1		
5.7.3	M16	Poly overflow and drain piping, fittings, isolation valves, supports and fasteners from each make-up/dosing tank to contained floor drains	Sum	1		
5.7.4	M16	Potable water piping, fittings, isolation valves, pressure reducing valve, supports and fasteners from the main potable water supply point to the inlet of each polymer make up system	Sum	1		
5.7.5	M16	Poly make up system access staircase, platforms, handrailing and fasteners	Sum	1		
5.8		***Poly Dosing System***				
5.8.1	M15	Progressive cavity pump (PMP02A/B) operating on variable speed drive (VSD) complete with motor, drive shaft, baseplate, supports and fasteners	No.	2		
		Piping				
5.8.2	M15, M16	Poly dosing piping, fittings, isolation, pressure safety and check valves, supports and fasteners from the polymer make-up system outlet to the poly injection point of each centrifuge unit	Sum	1		
Total Carried Forward						

BILL 3 BOQ 5: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.8.3	M15	DN25, Diaphragm valve with modulating motorized actuator (FCV01, FCV02)	No.	2		
5.8.4	M15	Inline static mixer (MIX03, MIX04)	No.	2		
5.8.5	M15	2nd class water supply piping, fittings, isolation valves, pressure relief devices, supports and fasteners from the bulk supply manifold up to the flushing point of each of the poly dosing pumps	Sum	1		
5.9		***Poly Lubrication System***				
5.9.1	M17	Progressive cavity pump (PMP06A/B) operating on variable speed drive (VSD) complete with motor, drive shaft, baseplate, supports and fasteners	No.	2		
		Piping				
5.9.2	M16, M17	Poly lubrication piping, fittings, isolation, pressure safety and check valves, supports and fasteners from the polymer make-up system outlet to the poly lubrication injection point at the discharge of each cake pump	Sum	1		
5.9.3	M17	2nd class water supply piping, fittings, isolation valves, pressure regulating devices, supports and fasteners from the bulk supply manifold up to the flushing point of each of the poly lubrication pumps	Sum	1		
5.9.4	M17	DN20, diaphragm valve with solenoid actuator (XV26, XV27)	No.	2		
5.10		***Centrifuge Cake Conveyors***				
5.10.1	M17	Horizontal centreless spiral screw conveyor (SCC01A/B) complete with motor, gearbox, enclosed trough, discharge chute, supports and fasteners	No.	2		
		Spares				
5.10.2	M17	Trough liner	No.	2		
5.10.3	M17	Complete set screw bearings	No.	2		
5.11		All other plant and equipment items not included above which are				
5.11.1		Submersible domestic sewage sump pump	Sum	1		
5.11.2		1).....	Sum	1		
5.11.3		2).....	Sum	1		
5.11.4		3).....	Sum	1		
Total Carried Forward						

BILL 3 BOQ 5: DEWATERING FACILITY

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.12		*Allow for all costs and expenses, including double handling (if stored) and final painting (if applicable), in connection with the Site installation, testing, relocation, commissioning and upholding during the Trial Operation Period and Defects Notification Period of the following* ***:-***				
5.12.1		All WAS Transfer Pumps equipment and ancillaries as described under items 5.1 and 5.11	Sum	1		
5.12.2		All Macerator and Heavy Solids Separators equipment and ancillaries as described under items 5.2 and 5.11	Sum	1		
5.12.3		All Centrifuge Feed Tank Mixers equipment and ancillaries as described under items 5.3 and 5.11	Sum	1		
5.12.4		All Centrifuge Feed Pumps equipment and ancillaries as described under items 5.4 and 5.11	Sum	1		
5.12.5		All Centrifuge Feed Tank equipment and ancillaries as described under items 5.5 and 5.11	Sum	1		
5.12.6		All Centrifuge equipment and ancillaries as described under items 5.6 and 5.11	Sum	1		
5.12.7		All Poly Make-up Systems equipment and ancillaries as described under items 5.7 and 5.11	Sum	1		
5.12.8		All Poly Dosing Pumps equipment and ancillaries as described under items 5.8 and 5.11	Sum	1		
5.12.9		All Poly Lubrication Pump equipment and ancillaries as described under items 5.9 and 5.11				
5.12.10		All Centrifuge Cake Conveyors equipment and ancillaries as described under items 5.10 and 5.11	Sum	1		
5.12.11		Carrying out and documenting the results of performance tests on the installed equipment	Sum	1		
5.13		All other site installation and general items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-				
5.13.1		1).....	Sum	1		
5.13.2		2).....	Sum	1		
5.13.3		3).....	Sum	1		
5.13.4		4).....	Sum	1		
Total Carried Forward To Summary Of Bills						

BILL 3 BOQ 6: CAKE TRANSFER AND STORAGE

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SCHEDULE NO. 6				
6		**CAKE TRANSFER AND STORAGE**				
		P&ID Ref: W1859-45002				
		Allow for all costs and expenses in connection with the design, manufacture, quality management, painting, testing, supply, delivery, offloading and storage of the following materials and equipment, including quality assurance, setting out of the works and checking work carried out by others:-				
6.1		***Cake Hopper***				
6.1.1	M17	Common hopper (HP01) complete with manual diverting flap, motorized bridge breaker, supports and fasteners, two-compartment system each flanged directly onto each cake pump feed screw	Sum	1		
		Piping				
6.1.2	M17	2nd class water supply piping, fittings, isolation valves, pressure regulating devices, supports and fasteners from the bulk supply manifold up to the flushing point of each compartment of the cake hopper. Include all valves and connections to hose connection points	Sum	1		
6.2		***Cake Pumps***				
6.2.1	M17	Progressive cavity cake pump (PMP03A/B) operating on variable speed drive (VSD) complete with motor, gearbox, feed screw, baseplate, supports and fasteners	No.	2		
		Piping				
6.2.2	M17	Cake discharge piping, fittings, isolation valves, pressure safety devices, supports and fasteners from each cake pump to the inlet of each sludge cake silo. Including water drain/dumping piping	Sum	1		
6.3		***Cake Silos***				
6.3.1	M18	2nd class water supply piping, fittings, isolation, pressure regulating devices, supports and fasteners from the bulk supply manifold up to each cake silo	Sum	1		
6.3.2	M18	DN350, Knifegate valve with modulating motorized actuator (FCV04, FCV05)	No.	2		
6.3.3	M18	DN250, Knifegate valve with motorized actuator (XV10, XV11, XV12, XV13)	No.	4		
6.3.4	M18	DN50, Knifegate valve with motorized actuator (XV14, XV15)	No.	2		
Total Carried Forward						

BILL 3 BOQ 6: CAKE TRANSFER AND STORAGE

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.3.5	M18	DN50, butterfly valves with motorized actuator (XV16, XV17)	No.	2		
6.4		All other plant and equipment items not included above which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify): -				
6.4.1		1).....	Sum	1		
6.4.2		2).....	Sum	1		
6.4.3		3).....	Sum	1		
6.4.4		4).....	Sum	1		
6.5		*Allow for all costs and expenses, including double handling (if stored) and final painting (if applicable), in connection with the Site installation, testing, relocation, commissioning and upholding during the Trial Operation Period and Defects Notification Period of the following :-*				
6.5.1		All Cake Hopper equipment and ancillaries as described under items 6.1 and 6.4	Sum	1		
6.5.2		All Cake Pumps equipment and ancillaries as described under items 6.2 and 6.4	Sum	1		
6.5.3		All cake silo equipment and ancillaries as described under items 6.3 and 6.4	Sum	1		
6.5.5		Carrying out and documenting the results of performance tests on the installed equipment	Sum	1		
6.6		All other site installation and general items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-				
6.6.1		1).....	Sum	1		
6.6.2		2).....	Sum	1		
6.6.3		3).....	Sum	1		
6.6.4		4).....	Sum	1		
Total Carried Forward To Summary Of Bills						

BILL 3 BOQ 7: BIOLOGICAL REACTORS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SCHEDULE NO. 7				
7		**BIOLOGICAL REACTORS**				
		P&ID Ref: W1859-45006				
		Allow for all costs and expenses in connection with the design, manufacture, quality management, painting, testing, supply, delivery, offloading and storage of the following materials and equipment, including quality assurance, setting out of the works and checking work carried out by others:-				
7.1		***Surface Aerators***				
7.1.1	M20	11 kW low speed turbine surface aerator operating on variable speed drive (VSD) complete with motor, gearbox, impeller, shaft, draft tube, supports and anchors mounted to the existing concrete platform of the re-aeration zone of bioreactor 1 to 6	No.	6		
7.1.2	M20	37 kW low speed turbine surface aerator operating on variable speed drive (VSD) complete with motor, gearbox, impeller, shaft, draft tube, supports and anchors mounted to the existing concrete platform of aerobic zone of bioreactor 1 and 3 to 6	No.	20		
		Spares				
7.1.3	M20	Complete set of mechanical seals (11 kW)	No.	1		
7.1.4	M20	Complete set of mechanical seals (37 kW)	No.	3		
7.1.5	M20	Complete set of bearing seals (11 kW)	No.	1		
7.1.6	M20	Complete set of bearing seals (37 kW)	No.	3		
7.2		***DO Probe Accessories***				
7.2.1	M20	DO probe mounting arms (12 + 1 spare)	No.	13		
		Allow for all costs and expenses in connection with the preparation of the site for the design, supply and installaion of the new equipment:-				
7.3		***Surface Aerators***				
7.3.1	M20	Removal of the 11 kW low speed turbine surface aerator complete with cabling and switchgear mounted to the existing concrete platform of the re-aeration zone of bioreactor 1 to 6	No.	6		
7.3.2	M20	Removal of the 37 kW low speed turbine surface aerator complete with cabling and switchgear mounted to the existing concrete platform of the aerobic zone of bioreactor 1 and 3 to 6	No.	10		
7.3.3	M20	Removal of the 30 kW low speed turbine surface aerator complete with cabling and switchgear mounted to the existing concrete platform of the aerobic zone of bioreactor 1 and 3 to 6	No.	10		
Total Carried Forward						

BILL 3 BOQ 7: BIOLOGICAL REACTORS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
7.4		***Anoxic Mixers***				
7.4.1	M21	Removal of the submerisble mixers, guiderails and supports from the anoxic zone of bioreactor 1 and 3 to 6	No.	10		
7.5	M21	Conduct a detailed dimensional survey of existing reactor civil infrastructure before finalising the design of the aerator and mixers	Sum	1		
7.6	M21	Minor civil repair work (make good) to concrete structures around the supports of the surface aerators and mixers as required.	Sum	1		
7.7		All other plant and equipment items not included above which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-				
7.7.1		1).....	Sum	1		
7.7.2		2).....	Sum	1		
7.7.3		3).....	Sum	1		
7.7.4		4).....	Sum	1		
7.8		*Allow for all costs and expenses, including double handling (if stored) and final painting (if applicable), in connection with the Site installation, testing, relocation, commissioning and upholding during the Trial Operation Period and Defects Notification Period of the following :-*				
7.8.1		All surface aerators equipment and ancillaries as described under items 7.1 and 7.7	Sum	1		
7.8.2		All DO probe accessories as described under items 7.2 and 7.7	Sum	1		
7.8.3		Submersible mixer (free issue) complete with motor, gearbox, impeller, lifting davit arm, guiderail, supports and fasteners in the primary anoxic zone of bioreactor 1 and 3 to 6	Sum	1		
7.8.4		Submersible mixer (free issue) complete with motor, gearbox, impeller, lifting davit arm, guiderail, supports and fasteners in the secondary anoxic zone of bioreactor 1 and 3 to 6	Sum	1		
7.8.5		Carrying out and documenting the results of performance tests on the installed equipment	Sum	1		
Total Carried Forward						

BILL 3 BOQ 7: BIOLOGICAL REACTORS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
7.9		All other site installation and general items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-				
7.9.1		1).....	Sum	1		
7.9.2		2).....	Sum	1		
7.9.3		3).....	Sum	1		
7.9.4		4).....	Sum	1		
Total Carried Forward To Summary Of Bills						

BILL 3 BOQ 8: HVAC AND UTILITIES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SCHEDULE NO. 8				
8		**HVAC AND UTILITIES**				
		Allow for all costs and expenses in connection with the design, manufacture, quality management, painting, testing, supply, delivery, offloading and storage of the following materials and equipment, including quality assurance, setting out of the works and checking work carried out by others:-				
		Dewatering Building HVAC				
8.1	M19	Air conditioning wall mounted split unit for the office	Sum	1		
		Inlet Works HVAC				
8.2	M19	Air conditioning wall mounted split unit for the office	Sum	1		
8.3		All spares and tools necessary to meet the Scope of Work and/or required for the proper, safe and effective operation of the plant (Specify):-				
		1)		1		
		2).....				
		3).....				
		4).....				
8.4		All other plant and equipment items not included above which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify): -				
		1).....				
		2).....				
		3).....				
		4).....				
8.5		*Allow for all costs and expenses, including double handling (if stored) and final painting (if applicable), in connection with the Site installation, testing, commissioning and upholding during the Trial Operation Period and Defects Notification Period of the following :-*				
8.5.1		All office air conditioning equipment and ancillaries as described in the items under 8.1 and 8.2	Sum	1		
8.5.2		Carrying out and documenting the results of performance tests on the installed equipment	Sum	1		
Total Carried Forward						

BILL 3 BOQ 8: HVAC AND UTILITIES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
8.6		All other plant and equipment items not included above which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify): - 1)..... 2)..... 3)..... 4).....				
Total Carried Forward To Summary Of Bills						

BILL 3 BOQ 9: MECHANICAL SUNDRIES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SCHEDULE NO. 9				
9		**SUNDRIES**				
		Allow for all costs and expenses in connection with the following:-				
9.1		Providing "as built" drawings	Sum	1		
9.2		Providing 3 draft copies of the Installation, Operation and Maintenance Manual prior to commissioning of the Works	Sum	1		
9.3		Providing 3 final hard copies & 1 soft copy (in Ebook format) of the Installation, Operation and Maintenance Manual prior to the issue of the Taking -Over Certificate.	Sum	1		
9.4		Standard Operating Procedures,Signage and training manuals as stated in contract document and specifications	Sum	1		
9.5	M23	Witnessing of Inspections, tests, FAT etc. of equipment by the employers representatives and engineering team representatives outside of the eThekwini Metropolitan Area but within the Republic of South Africa as specified in the particular specifications	Sum	1		
9.6	M23	Witnessing of Inspections, tests, FAT etc. of equipment by the employers representatives and engineering team representatives outside of the eThekwini Metropolitan Area and outside Republic of South Africa as specified in the detailed specifications	Sum	1		
9.7		Trial Operation Period obligations. Allow for all costs, including labour, chemicals, all consumables, spare parts and the like for running the operations 24/7 for 28 days as defined in the particular specification	Sum	1		
9.8	M24	Operational and maintenance training of the Employer's staff as defined in the particular specification. (Training over multiple shifts for running the operations 24/7)	Sum	1		
9.9	M26	Contractor's obligations to O&M during the defects notification period.	Provisional Sum			R 4 400 000.00
9.10		Sufficient provision to cover all costs associated with extending the manufacturer's warranty, for all equipment, until the end of the Defects Notification Period.	Sum	1		
Total Carried Forward						

BILL 3 BOQ 9: MECHANICAL SUNDRIES

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		All other items required for the completion of the Contract as specified but not specifically mentioned above. Specify:-				
9.11		1).....	Sum	1		
9.12		2).....	Sum	1		
9.13		3).....	Sum	1		
9.14		4).....	Sum	1		
Total Carried Forward To Summary Of Bills						

BILL 3 BOQ 10: SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	QTY	RATE	AMOUNT R
1		**SCHEDULE NO. 10.1**			
		NEW SECOND CLASS WATER FILTER SYSTEM			
		Allow for all costs and expenses in connection with the design, manufacture, corrosion protection, testing, supply, delivery, offloading and storage of the following materials and equipment:-			
1.1	M22	150mm NB self cleaning filter with 250micron diameter filtration	2		
1.2		Pressure vessel	1		
1.3	M22	Associated Pipework	1		
1.4		Design & Drawings	1		
1.5		Quality Management	1		
1.6		All other items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-			
		Allow for all costs and expenses in connection with the Site installation of the following:-			
1.10		Self-cleaning filter system	2		
1.11		Pressure vessel	1		
		Allow for all costs and expenses in connection with checking, starting up, testing and commissioning of the following:-			
1.12		Self-cleaning filter system	2		
1.13		Pressure vessel	1		
Total Carried Forward					

BILL 3 BOQ 10: SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	QTY	RATE	AMOUNT R
Brought Forward					
2		**SCHEDULE NO. 10.2** **FLOWMETER AND MISCELLANEOUS ITEMS** **Allow for all costs and expenses in connection with the design, manufacture, corrosion protection, testing, supply, delivery, offloading and storage of the following materials and equipment:-**			
2.1		Electromagnetic flowmeter DN 65mm	1		
2.2		Electromagnetic flowmeter DN 150mm	1		
2.3		Design & Drawings	1		
2.4		Quality Management	1		
2.5		All other items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-	Item		
		Allow for all costs and expenses in connection with the Site installation of the following:-			
2.6		Electromagnetic flowmeter DN 65mm	1		
2.7		Electromagnetic flowmeter DN 150mm	1		
		Allow for all costs and expenses in connection with checking, starting up, testing and commissioning of the following:-			
2.8		Electromagnetic flowmeter DN 65mm	1		
2.9		Electromagnetic flowmeter DN 150mm	1		
Total Carried Forward					

BILL 3 BOQ 10: SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	QTY	RATE	AMOUNT R
Brought Forward					
3		**SCHEDULE NO. 10.3**			
		VALVES			
		Allow for all costs and expenses in connection with the design, manufacture, corrosion protection, testing, supply, delivery, offloading and storage of the following materials and equipment:-			
3.1		65mm DN 304 S/S Resilient Seal Gate valve flanged	2		
3.2		65mm DN Ball valve flanged	2		
3.3		65mm Swing check valve flanged	1		
3.4		150mm Swing check valve flanged	6		
3.5		PN16 Flanged Air release Valve	4		
3.6		150mm DN 304 S/S Resilient Seal Gate valve flanged	15		
3.7		All other items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-	1		
3.8		Design & Drawings	1		
3.9		Quality Management	1		
		Allow for all costs and expenses in connection with the Site installation of the following:-			
3.10		65mm DN 304 S/S Resilient Seal Gate valve flanged	2		
3.11		65mm DN Ball valve flanged	2		
3.12		65mm Swing check valve flanged	1		
3.13		150mm Swing check valve flanged	6		
3.14		PN16 Flanged Air release Valve	4		
3.15		150mm DN 304 S/S Resilient Seal Gate valve flanged	15		
Total Carried Forward					

BILL 3 BOQ 10: SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	QTY	RATE	AMOUNT R
Brought Forward					
3		**Brought forward**			
		Allow for all costs and expenses in connection with checking, starting up, testing and commissioning of the following:-			
3.16		65mm DN 304 S/S Resilient Seal Gate valve flanged	2		
3.17		65mm DN Ball valve flanged	2		
3.18		65mm Swing check valve flanged	1		
3.19		150mm Swing check valve flanged	6		
3.20		PN16 Flanged Air release Valve	4		
3.21		150mm DN 304 S/S Resilient Seal Gate valve flanged	15		
Total Carried Forward					

BILL 3 BOQ 10: SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	QTY	RATE	AMOUNT R
Brought Forward					
4		**SCHEDULE NO. 10.4**			
		PUMPS			
4.1	M22	Second class water Centrifugal Pumps 22kW	4		
4.2		Quality Management	1		
4.3		Design & Drawings	1		
4.4		All other items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-	Item		
		Allow for all costs and expenses in connection with the site installation of the following:-			
4.5		Second class water Centrifugal Pumps 22kW	4		
		Allow for all costs and expenses in connection with checking, starting up, testing and commissioning of the following:-			
4.6		Second class water Centrifugal Pumps 22kW	4		
Total Carried Forward					

BILL 3 BOQ 10: SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	QTY	RATE	AMOUNT R
Brought Forward					
5		**SCHEDULE NO. 10.5** **MISCELLANEOUS WORK** **Allow for all costs and expenses in connection with the design, manufacture, corrosion protection, testing, supply, delivery, offloading and storage of the following materials and equipment:-**			
5.1		New PN16 65mm Y Strainer	1		
5.2		Reducers: 150mm- 80mm (stainless steel to HDPE)	2		
5.3		Associated 150mm ss 304 pipe in the second water pump station	1		
5.4		Design & Drawings	1		
5.5		Quality Management	1		
5.6		All other items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-	Item		
		Allow for all costs and expenses in connection with the Site installation of the following:-			
5.7		New PN16 65mm Y Strainer	1		
5.8		Reducers: 150mm- 80mm (stainless steel to HDPE)	2		
5.10		Associated 150mm ss 304 pipe in the second water pump station	1		
		Allow for all costs and expenses in connection with checking, starting up, testing and commissioning of the following:-			
5.11		New PN16 65mm Y Strainer	1		
5.12		Reducers: 150mm- 80mm (stainless steel to HDPE)	2		
5.13		Associated 150mm ss 304 pipe in the second water pump station	1		
Total Carried Forward					

BILL 3 BOQ 10: SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	QTY	RATE	AMOUNT R
Brought Forward					
6		**SCHEDULE NO. 10.6** **HEALTH AND SAFETY** **Allow for all costs and expenses in connection with the following:-**			
6.1		Compliance with the requirements of the Occupational Health and Safety Act 1993 and Construction Regulations 2014, including appointment of all Competent Persons required by the Construction Regulations (for Health and Safety Plan see separate Item).	Item		
6.2		Carrying out of Hazard Idnetification and provision of and adherence to a Health and Safety Plan	Item		
6.3		Compliance with the Health and Safety Specification in the Works Information, complete.	Item		
		Liaison, co-ordination and chairing of meetings in respect of Health and Safety requirements.	Item		
6.4		Other expenses incurred in complying with the requirements of the Scope of Work not included above (Specify):-	Item		
Total Carried Forward					

BILL 3 BOQ 10: SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	QTY	RATE	AMOUNT R
Brought Forward					
7		**SCHEDULE NO. 10.7** **ENVIRONMENTAL MANAGEMENT** **Allow for all costs and expenses in connection with the following:-**			
7.1		Compliance with the Environmental Management Specification in the Works Information.	Item		
Total Carried Forward					

BILL 3 BOQ 10: SECOND CLASS WATER

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	QTY	RATE	AMOUNT R
Brought Forward					
8		**SCHEDULE NO. 10.8** **SUNDRIES** **Allow for all costs and expenses in connection with the following:-**			
8.1		Providing "as built" drawings.	Item		
8.2		Providing 2 draft copies of the Installation, Operation and Maintenance Manual prior to commissioning of the Works.	Item		
8.3		Providing 6 final copies of the Installation, Operation and Maintenance Manual prior to the issue of the Defects Certficate.	Item		
8.4		Operating Instructions and Signage, as per OHSA.	Item		
8.5		Inspections, tests, etc. of equipment outside of Cape Town	Item		
8.6		Provision of all Test Certificates and Certificate of Compliance in terms of the Code of Practice for Wiring of Premises.	Item		
8.7		Checking, starting up, testing and commissioning of the complete Works.	Item		
8.8		Operational Acceptance Testing.	Item		
8.9		Operational and Maintenance Training as per Particular Mechanical Specification and Particular Electrical Specification	Item		
8.10		Trial Operation Period.	Item		
8.11		Maintaining the Works until the Defects Date and issues of Defects Certifcate	Item		
8.12		Maintenance inspection in accordance with Partiular Mechanical Specification	Item		
Total Carried Forward To Summary Of Bills					

BILL 3 BOQ 11: ULTRAFINE SCREENINGS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SCHEDULE NO. 11				
11		**ULTRAFINE SCREENINGS**				
		P&ID Ref: W1859-45005				
		Allow for all costs and expenses in connection with the design, manufacture, quality management, painting, testing, supply, delivery, offloading and storage of the following materials and equipment, including quality assurance, setting out of the works and checking work carried out by others:-				
11.1		***Ultrafine Screens***				
11.1.1	M5	Automatically cleaned band screen with a 1 mm perforated plate screening element (MSR03A/B) complete with frame, sole plate, automatic high and low pressure sprayball cleaning manifold (drive unit included), main drive motor operating on variable speed drive (VSD), gearbox, bursh cleaning mechanism (drive unit inlcuded) and discharge chute all contained within an enclosure	No.	2		
11.1.2	M5	High pressure booster pump (PMP03A/B) including motor, baseplate and supports	No.	2		
		Piping				
11.1.3	M22	2nd class water supply piping, fittings, isolation and pressure reducing valves, supports and fasteners from the 2nd class water bulk supply manifold to each Uultrafine screen LP washwater manifold and to the hydraulic launder	Sum	1		
11.1.4	M22	2nd class water supply piping, fittings, isolation and pressure reducing valves, supports and fasteners from the 2nd class water bulk supply manifold to HP booster pump suction and from the discharge of each HP booster pump up to the HP washwater manifold on each ultrafine screen	Sum	1		
11.1.5		DN25, diaphragm valve with solenoid actuator (XV08, XV09)	No.	2		
11.1.6		DN15, diaphragm valve with solenoid actuator (XV10, XV11)	No.	2		
		Hydraulic Launder				
11.1.7	M11	Hydraulic launder conveyor (HLC02) network, fittings, supports and fasteners, and outlet chute for conveying ultrafine screenings from automated band screens to each microstrainer.	Sum	1		
Total Carried Forward						

BILL 3 BOQ 11: ULTRAFINE SCREENINGS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
11.2		***Ultrafine screenings microstrainer and compactor***				
11.2.1	M7	Microstrainer and compactor unit (WHC03/WHC04) consisting of a perforated plate basket strainer, screw compactor, gearbox, shaft and motor, steel hopper body with an intregrated screenings washing system and all supports and fasteners	No.	2		
		Piping				
11.2.2	M7	2nd class water supply piping, fittings, isolation and pressure reducing valves, supports and fasteners from the tie-in to the 2nd class water bulk supply manifold to each microstrainer unit	Sum	1		
11.2.3	M7	Microstrainer discharge piping, fittings, supports and fasteners from each washer/compactor up to the connection to the underground drain pipe back upstream of the degritters	Sum	1		
11.2.4	M7	DN25, diaphragm valve with solenoid actuator (XV14, XV15, XV17, XV18)	No.	4		
11.2.5	M7	DN300, knifgate valve with motorized actuator (XV16, XV13)	No.	2		
11.3		***Screenings Conveyor***				
11.3.1	M7	Screenings divert flap including chute and connecting flange to each ultrafine screenings conveyor	No.	2		
11.3.2	M7	Horizontal centreless spiral screw conveyor complete with motor, gearbox, enclosed trough, discharge chute, supports and fasteners	No.	2		
		Spares				
11.3.3		Trough liner	No.	2		
11.3.4		Complete set screw bearings	No.	2		
11.4		All other plant and equipment items not included above which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify): -				
11.4.1		1).....	Sum	1		
11.4.2		2).....	Sum	1		
11.4.3		3).....	Sum	1		
Total Carried Forward						

BILL 3 BOQ 11: ULTRAFINE SCREENINGS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
11.5		*Allow for all costs and expenses, including double handling (if stored) and final painting (if applicable), in connection with the Site installation, testing, relocation, commissioning and upholding during the Trial Operation Period and Defects Notification Period of the following:-*				
11.5.1		All Screening equipment and ancillaries as described under items 11.1 and 11.4	Sum	1		
11.5.2		All Strainer/Compacting equipment and ancillaries as described under items 11.2 and 11.4	Sum	1		
11.5.3		All screenings conveying equipment and ancillaries as described under items 11.3 and 11.4				
11.5.4		Carrying out and documenting the results of performance tests on the installed equipment	Sum	1		
11.6		All other site installation and general items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-				
11.6.1		1).....	Sum	1		
11.6.2		2).....	Sum	1		
11.6.3		3).....	Sum	1		
11.6.4		4).....	Sum	1		
Total Carried Forward To Summary Of Bills						

BILL 4 BOQ 1: PRELIMINARY AND GENERAL

PACKAGE A : SECTION 1: PRELIMINARIES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 1				
		PRELIMINARIES				
		Allow for preliminary and general items				
1.1		Fixed	Item	1		
1.2		Time	Item	1		
1.3		Value	Item	1		
Total Carried Forward To Summary of Bills						

BILL 4 BOQ 2: EMERGENCY GENERATOR SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		(Refer to Electrical Specification: Annexure E)				
1	Pl. 1.1.	**COPPER XLPE/SWA/PVC CABLES**				
		Supply and installation of copper XLPE/SWA/PVC/ECC cables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required. All cables are Copper XLPE/SWA/PVC/ECC cables per SANS 1507.				
1.1		185sq mm 4-C XLPE/SWA/PVC/ECC				
1.1.1		Supply	m	1800		
1.1.2		Install	m	1800		
1.2		25sq mm 4-C XLPE/SWA/PVC/ECC				
1.2.1		Supply	m	15		
1.2.2		Install	m	15		
1.3		6sq mm 4-C XLPE/SWA/PVC/ECC				
1.3.1		Supply	m	80		
1.3.2		Install	m	80		
1.4		4sq mm 2-C XLPE/SWA/PVC/ECC				
1.4.1		Supply	m	100		
1.4.2		Install	m	100		
1.5		4 mm² 12-C + Earth (Generator Control Cabling)				
1.5.1		Supply	m	100		
1.5.2		Install	m	100		
	Pl. 1.2.	**Termination of copper XLPE/SWA/PVC/ECC cables in DB's, Kiosks and metering panel. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.**				
1.6		185sq mm 4-C XLPE/SWA/PVC/ECC				
1.6.1		Supply	No	36		
1.6.2		Install	No	36		
1.7		25sq mm 4-C XLPE/SWA/PVC/ECC				
1.7.1		Supply	No	2		
1.7.2		Install	No	2		
1.8		6sq mm 4-C XLPE/SWA/PVC/ECC				
1.8.1		Supply	No	4		
1.8.2		Install	No	4		
1.9		4sq mm 2-C XLPE/SWA/PVC/ECC				
1.9.1		Supply	No	4		
1.9.2		Install	No	4		
1.10		4 mm² 12-C + Earth (Generator Control Cabling)				
1.10.1		Supply	No	12		
1.10.2		Install	No	12		
Total Carried Forward						

BILL 4 BOQ 2: EMERGENCY GENERATOR SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2	Pl. 2.1.	**DISTRIBUTION BOARDS** *(Refer to Schematic for layout and equipment requirements)* **Supply and Install Distribution boards complete with doors, frames, sub-frames, chassis fixtures, switchgear, terminations, bus-bars and wiring, labelling and line diagrams as specified. Minimum 30% spare space to be allowed in each DB.**				
2.1		GENERATOR SYNC PANEL Local floor standing Distribution board complete with all wiring and circuit breakers per specifications and Generator schematic				
2.1.1		Supply	No	1		
2.1.2		Install	No	1		
2.2		EMERGENCY DISTRIBUTION PANEL Local floor standing Distribution board complete with all wiring and circuit breakers per specifications and Generator schematic				
2.2.1		Supply	No	1		
2.2.2		Install	No	1		
2.3		Change over Panels - Pump Station 1 C/O 1, Pump Station 1 C/O 2, Pump Station 2 C/O Panel, Dewatering Building C/O Panel, Inlet Works C/O Panel. Local surface mounted change-over panels complete with all wiring and circuit breakers per specifications and Generator schematic				
2.3.1		Supply	No	5		
2.3.2		Install	No	5		
2.4		Generator Auxillary Main DB. Local surface mounted distribution panel complete with all wiring and circuit breakers per specifications and Generator schematic				
2.4.1		Supply	No	1		
2.4.2		Install	No	1		
2.5		BULK TANK CONTROL PANEL. Local surface mounted distribution panel complete with all wiring and circuit breakers per specifications and Generator schematic				
2.5.1		Supply	No	1		
2.5.2		Install	No	1		
2.6		MANUAL BULK FILL CONTROL PANEL. Local surface mounted distribution panel complete with all wiring and circuit breakers per specifications and Generator schematic				
2.6.1		Supply	No	1		
2.6.2		Install	No	1		
Total Carried Forward						

BILL 4 BOQ 2: EMERGENCY GENERATOR SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3	Pl. 5.1.	**STANDBY GENERATOR SYSTEM** **Supply and install outdoor generator set including all equipment and materials as specified and as indicated on the drawings.**				
3.1		**OUTDOOR STANDBY GENERATOR**				
3.1.1		1100 kVA Outdoor standby generator in sound proof enclosure, complete with smart controller, exhaust, 1000L day fuel tank and accessories. *As per technical data sheet EB1, included in the Volume C3.6.1 - Annex 1.*				
3.1.1.1		Supply	No	2		
3.1.1.2		Install	No	2		
3.1.2		3000L Bulk Diesel Self-Bunded Tank *As per technical data sheet EB2, included in the Volume C3.6.1 - Annex 1.*				
3.1.2.1		Supply	No	1		
3.1.2.2		Install	No	1		
3.1.3		Pump System for Bulk Diesel Tank				
3.1.3.1		Supply	No	1		
3.1.3.2		Install	No	1		
3.2		**GENERAL:**				
3.2.1		Supply & Fill Diesel Fuel for full tank at time of handover:	Ltrs	5000		
3.2.2		Rate of diesel fuel at time of closing of tender: _____	Ltrs	5000		
3.2.3		Supply & Fill Diesel Fuel for maintenance period:	Ltrs	20000		
3.2.4		Rate of diesel fuel at time of closing of tender: _____ **Note: Based on fuel rate at the time that fuel is required, Litres will be adjusted to suite total cost amount tendered.**	Ltrs	20000		
3.2.5		Site acceptance tests (SAT's) of full system. Attendance by Contract, Client and Engineering team	Item	1		
3.2.6		Generator load test be conducted over a 6 hour period on site using the correct load bank and results documented. All diesel and load bank costs to be included.	Item	1		
Total Carried Forward						

BILL 4 BOQ 2: EMERGENCY GENERATOR SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
4	Pl. 6.1.	**SLEEVES** **Supply and installation of HDPE sleeves buried in ground as specified for Electrical,& data services, including couplings in accordance with non-metallic sleeves and accessories as per SANS 61386-24. Tenderers to note that all sleeves under buildings will be encased in concrete by the building contractor.**				
4.1		110mm Flexible double walled black corrugated sleeves including 6mm pilot string as draw wire in each sleeve				
4.1.1		Supply	m	878		
4.1.2		Install	m	878		
4.2		50mm Flexible double walled black corrugated sleeves including 6mm pilot string as draw wire in each sleeve				
4.2.1		Supply	m	100		
4.2.2		Install	m	100		
5	Pl. 6.2.	**MANHOLES** **Construction of watertight manholes in ground as specified for Electrical & data services, including, lockable cover, seals ,bushes, sleeve entries and end caps. Inclusive of cover and frame (Cover and frame - colour: GREY) including engraving on cover to read : "DATA" for data manholes and "ELECTRICAL" for electrical manholes** **To include:** **- 300 x 300mm bidem bag with 19mm stone for soak away.** **- Plinth, brickwork, frame cover, waterproofing, drainage, sleeve stubs and end caps for spare pipes.** **- All sleeves to be foam sealed after cable installation to prevent water ingress into manholes.**				
5.1		800mm x800 x 800mm deep (Internal dimensions) manhole - Electrical / (15kg) - Lockable				
5.1.1		Supply	No	14		
5.1.2		Install	No	14		
Total Carried Forward						

BILL 4 BOQ 2: EMERGENCY GENERATOR SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6	Pl. 6.3.	**EXCAVATIONS & BACKFILL**				
		Excavate for cables and sleeves including temporary support of sides, keeping excavation dry, bedding material, backfilling, compacting and testing as specified. All backfill material to be suitable as per SANS codes and engineers approval. Backfill material to be imported if necessary.				
6.1		In soft or pickable soil (60%)				
6.1.1		Supply	m³	327		
6.1.2		Install	m³	327		
6.2		In medium rock (20%)				
6.2.1		Supply	m³	115		
6.2.2		Install	m³	115		
6.3		In hard rock (20%)				
6.3.1		Supply	m³	115		
6.3.2		Install	m³	115		
Total Carried Forward To Summary Of Bills						

BILL 4 BOQ 3: DOMESTIC POWER & LIGHTING
PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		(Refer to Electrical Specification: Annexure E)				
1	PI. 1.1.	**COPPER XLPE/SWA/PVC CABLES**				
		Supply and installation of copper XLPE/SWA/PVC/ECC cables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required. All cables are Copper XLPE/SWA/PVC/ECC cables per SANS 1507.				
1.1		25sq mm 4-C XLPE/SWA/PVC/ECC				
1.1.1		Supply	m	90		
1.1.2		Install	m	90		
1.2		10sq mm 4-C XLPE/SWA/PVC/ECC				
1.2.1		Supply	m	420		
1.2.2		Install	m	420		
1.3		16sq mm 2-C XLPE/SWA/PVC/ECC				
1.3.1		Supply	m	100		
1.3.2		Install	m	100		
1.4		4sq mm 2-C XLPE/SWA/PVC/ECC				
1.4.1		Supply	m	710		
1.4.2		Install	m	710		
	PI. 1.2.	**Termination of copper XLPE/SWA/PVC/ECC cables in DB's, Kiosks and metering panel. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.**				
1.5		25sq mm 4-C XLPE/SWA/PVC/ECC				
1.5.1		Supply	No	6		
1.5.2		Install	No	6		
1.6		10sq mm 4-C XLPE/SWA/PVC/ECC				
1.6.1		Supply	No	25		
1.6.2		Install	No	25		
1.7		16sq mm 2-C XLPE/SWA/PVC/ECC				
1.7.1		Supply	No	5		
1.7.2		Install	No	5		
1.8		4sq mm 2-C XLPE/SWA/PVC/ECC				
1.8.1		Supply	No	25		
1.8.2		Install	No	25		
Total Carried Forward						

BILL 4 BOQ 3: DOMESTIC POWER & LIGHTING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2	Pl. 2.1.	**DISTRIBUTION BOARDS** *(Refer to Schematic for layout and equipment requirements)* **Supply and Install Distribution boards complete with doors, frames, sub-frames, chassis fixtures, switchgear, terminations, bus-bars and wiring, labelling and line diagrams as specified. Minimum 30% spare space to be allowed in each DB.**				
2.1		DB-10 Local flush mounted Distribution board complete with all wiring and circuit breakers per specifications and Admin Building schematic				
2.1.1		Supply	No	1		
2.1.2		Install	No	1		
2.2		DB-DW Local flush mounted Distribution board complete with all wiring and circuit breakers per specifications and DEWATERING LOCAL DB schematic				
2.2.1		Supply	No	1		
2.2.2		Install	No	1		
2.3		DB-Inlet Works Local Surface mounted Distribution board complete with all wiring and circuit breakers per specifications and Inlet Works LOCAL DB schematic				
2.3.1		Supply	No	1		
2.3.2		Install	No	1		
2.40		DB-O. Local Surface mounted Distribution board complete with all wiring and circuit breakers per specifications and Inlet Works LOCAL DB schematic				
2.4.1		Supply	No	1		
2.4.2		Install	No	1		
2.5		DB-SCPS. Local Surface mounted Distribution board complete with all wiring and circuit breakers per specifications and SECOND CLASS WATER PUMP STATION ELECTRICAL LAYOUT				
2.5.1		Supply	No	1		
2.5.2		Install	No	1		
2.6		DB-GH. Local Surface mounted Distribution board complete with all wiring and circuit breakers per specifications and GUARD HOUSE ELECTRICAL LAYOUT				
2.6.1		Supply	No	2		
2.6.2		Install	No	2		
Total Carried Forward						

BILL 4 BOQ 3: DOMESTIC POWER & LIGHTING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3	Pl. 2.2.	**CONDUITS & CONDUIT BOXES**				
		Supply and installation of conduit and boxes as specified for lighting, power and auxiliary outlets, including couplings, bushes, locknuts, bending, drawboxes and fixing,etc in accordance with metallic conduit and accessories as per SANS 60614 and non-metallic conduit and accessories as per SANS 950				
3.1		**PLAIN ENDED METALLIC GALVANISED BOSAL CONDUIT**				
3.1.1		20 mm on surface of brickwork or concrete				
3.1.1.1		Supply	m	170		
3.1.1.2		Install	m	170		
3.1.2		20mm Round boxes surface mounted.				
3.1.2.1		Supply	No	70		
3.1.2.2		Install	No	70		
3.2		**NON-METALLIC PVC CONDUIT** **Built into brickwork or laid in concrete**				
3.2.1		20mm				
3.2.1.1		Supply	m	1730		
3.2.1.2		Install	m	1730		
3.2.2		25mm				
3.2.2.1		Supply	m	2260		
3.2.2.2		Install	m	2260		
3.2.3		50mm Diam x 20mm Round boxes				
3.2.3.1		Supply	No	240		
3.2.3.2		Install	No	240		
3.2.4		50mm Diam x 25mm Round boxes				
3.2.4.1		Supply	No	155		
3.2.4.2		Install	No	155		
3.3		**PRESSED GALVANISED STEEL BOX**				
3.3.1		100 x 50 x 50mm deep galvanised boxes built into brick or concrete				
3.3.1.1		Supply	No	61		
3.3.1.2		Install	No	61		
3.3.2		100 x 100 x 50mm deep galvanised boxes built into brick or concrete				
3.3.2.1		Supply	No	69		
3.3.2.2		Install	No	69		
3.3.3		100 x 100 PVC blank covers for data/telephone outlets				
3.3.3.1		Supply	No	14		
3.3.3.2		Install	No	14		
Total Carried Forward						

BILL 4 BOQ 3: DOMESTIC POWER & LIGHTING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
4	Pl. 2.3.	**POWER SKIRTING**				
		Power skirting - Supply and installation of surface mounted power skirting as specified in the detail specification, complete with cover plates - plug assemblies not included.				
4.1		2-Compartment power skirting (PVC, grey)				
4.1.1		Supply	m	75		
4.1.2		Install	m	75		
4.2		Supply and installation power skirting end caps				
4.2.1		Supply	No	28		
4.2.2		Install	No	28		
5	Pl. 2.3.	**Trunking**				
		Trunking - Supply and installation of surface mounted Trunking as specified in the detail specification.				
5.1		40mm X 16mm Cable Trunking (PVC, WHITE)				
5.1.1		Supply	m	150		
5.1.2		Install	m	150		
6		**CIRCUIT WIRING & OUTLET POINTS**				
6.1	Pl. 2.4.	**PVC CONDUCTORS**				
		Supply and drawn in of copper PVC insulated conductors in conduit or trunking system in floor or in roof space for lights, plugs and power points, including connection to switches and equipment. For Live, Neutral and Earth.				
6.1.1		1,5 mm² Live				
6.1.1.1		Supply	m	1830		
6.1.1.2		Install	m	1830		
6.1.2		1,5 mm² Neutral				
6.1.2.1		Supply	m	1830		
6.1.2.2		Install	m	1830		
6.1.3		2,5 mm² Live				
6.1.3.1		Supply	m	1810		
6.1.3.2		Install	m	1810		
6.1.4		2,5 mm² Neutral				
6.1.4.1		Supply	m	1810		
6.1.4.2		Install	m	1810		
6.1.5		2,5 mm² Earth				
6.1.5.1		Supply	m	3640		
6.1.5.2		Install	m	3640		
Total Carried Forward						

BILL 4 BOQ 3: DOMESTIC POWER & LIGHTING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.2	Pl. 2.5.	**LIGHT SWITCHES**				
		Supply, installation and connection of 16 Amp light switches in flush 50 x 100 x 50mm boxes, including white coloured cover plates.				
6.2.1		Single lever				
6.2.1.1		Supply	No	31		
6.2.1.2		Install	No	31		
6.2.2		Two lever				
6.2.2.1		Supply	No	2		
6.2.2.2		Install	No	2		
6.2.3		Single lever, Two-way				
6.2.3.1		Supply	No	6		
6.2.3.2		Install	No	6		
6.2.4		Single lever, in IP65 Weather- Proof Enclosure				
6.2.4.1		Supply	No	4		
6.2.4.2		Install	No	4		
6.2.5		Occpancy Sensor				
6.2.5.1		Supply	No	2		
6.2.5.2		Install	No	2		
6.3	Pl. 2.6.	**SWITCHED SOCKET OUTLETS**				
		Supply, installation and connection of 16Amp switched socket outlets in 100 x 100 x 50mm boxes with white coloured cover plates				
6.3.1		16A, 3-pin double SSO, with two type M wall mounted at 300mm AFFL Unless otherwise stated. (Type A)				
6.3.1.1		Supply	No	16		
6.3.1.2		Install	No	16		
6.3.2		16A, 3-pin double SSO with one type M and two Type N Sockets (ZA plug) wall mounted at 300mm AFFL Unless otherwise stated (Type B)				
6.3.2.1		Supply	No	12		
6.3.2.2		Install	No	12		
6.3.3		16A, 3-pin single SSO with one Type M and two Type N sockets (ZA Plug) and two USB outlets. Mounted ON WALL 300mm AFFL (Type E)				
6.3.3.1		Supply	No	22		
6.3.3.2		Install	No	22		
Total Carried Forward						

BILL 4 BOQ 3: DOMESTIC POWER & LIGHTING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.3.4		16A, 3-pin single SSO in IP65 rated weather proof york box. Mounted ON WALL 1200mm AFFL. (Type F)				
6.3.4.1		Supply	No	24		
6.3.4.2		Install	No	24		
6.3.5		63A, 5-pin single industrial socket in IP65 rated weatherproof enclosure. Mounted ON WALL 1200mm AFFL. (Type G)				
6.3.5.1		Supply	No	17		
6.3.5.2		Install	No	17		
6.3.6		16A, 3-pin single SSO with one type M and one Type N sockets (ZA plug). Mounted in power skirting.				
6.3.6.1		Supply	No	39		
6.3.6.2		Install	No	39		
6.3.7		Telephone RJ45 outlet points				
6.3.7.1		Supply	No	10		
6.3.7.2		Install	No	10		
6.3.8		Data RJ11 outlet points				
6.3.8.1		Supply	No	27		
6.3.8.2		Install	No	27		
6.3.9		Cradles and Blank covers for telephone / data outlet points				
6.3.9.1		Supply	No	14		
6.3.9.2		Install	No	14		
6.3.10		5 Amp plugs in round boxes in ceilings or roof spaces				
6.3.10.1		Supply	No	189		
6.3.10.2		Install	No	189		
Total Carried Forward						

BILL 4 BOQ 3: DOMESTIC POWER & LIGHTING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.4	Pl. 2.7.	**ISOLATORS** **Supply, installation and connection of isolator in Polypropylene extension box**				
6.4.1		15 Amp, 2 Pole Isolator				
6.4.1.1		Supply	No	13		
6.4.1.2		Install	No	13		
6.4.2		20 Amp, 2 Pole Isolator				
6.4.2.1		Supply	No	19		
		Install	No	19		
6.4.3		30 Amp, 2 Pole Isolator				
6.4.3.1		Supply	No	3		
6.4.3.2		Install	No	3		
6.5	Pl. 3.1.	**LIGHTING** **Supply, Installation and Commissioning of Luminaires. Note that all luminaires are subject to approval by the Engineer prior to purchase.** *(Refer to Luminaire Schedule for Details)* **To provide specified, similar or equivalent fittings subject to approval by the Engineer.** **Alternate fittings proposed will only be considered if cost saving, better quality and longer guarantee is provided and subject to approval by the engineer, architect and client.**				
6.5.1		Type L1 - 2x28W 1200mm Open channel Flourescent Luminaires				
6.5.1.1		Supply	No	14		
6.5.1.2		Install	No	14		
6.5.2		Type L1 Emergency- 2x28W 1200mm Open channel Flourescent Luminaires with 30 minutes emergency back-up battery				
6.5.2.1		Supply	No	3		
6.5.2.2		Install	No	3		
6.5.3		Type L2 - 2x28W 1200mm Flourescent tube luminaires in IP65 rated Enclosure				
6.5.3.1		Supply	No	6		
6.5.3.2		Install	No	6		
Total Carried Forward						

BILL 4 BOQ 3: DOMESTIC POWER & LIGHTING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.5.4		Type L2 Emergency- 2x28W 1200mm Flourescent tube luminaires in IP65 rated Enclosure with 30 minutes emergency back-up battery				
6.5.4.1		Supply	No	3		
6.5.4.2		Install	No	3		
6.5.5		Type L3 - 3 x 36W 1200x600mm recessed Flourescent tube panel Luminaire				
6.5.5.1		Supply	No	21		
6.5.5.2		Install	No	21		
6.5.6		Type L3 Emergency - 3 x 36W 1200x600mm recessed Flourescent tube panel Luminaire with 30 minutes emergency back-up battery				
6.5.6.1		Supply	No	10		
6.5.6.2		Install	No	10		
6.5.7		Type L4 2x26W CFL Round Recessed downlight luminaires				
6.5.7.1		Supply	No	13		
6.5.7.2		Install	No	13		
6.5.8		Type L4 Emergency - 2x26W CFL Round Recessed downlight luminaires with 30 minutes emergency back-up battery				
6.5.8.1		Supply	No	8		
6.5.8.2		Install	No	8		
6.5.9		Type L5 - 15W, IP65, wall mounted, bulkhead Flourescent Luminaire				
6.5.9.1		Supply	No	32		
6.5.9.2		Install	No	32		
6.5.10		Type L5 Emergency - 15W, IP65, wall mounted, bulkhead Flourescent Luminaire with 30 minutes emergency back-up battery				
6.5.10.1		Supply	No	6		
6.5.10.2		Install	No	6		
6.5.11		Type L6 - 2x36W 1200mm Flourescent tube luminaires in IP65 rated Enclosure				
6.5.11.1		Supply	No	89		
6.5.11.2		Install	No	89		
6.5.12		Type L6 Emergency- 2x36W 1200mm Flourescent tube luminaires in IP65 rated Enclosure with 30 minutes emergency back-up battery				
6.5.12.1		Supply	No	19		
6.5.12.2		Install	No	19		
6.5.13		1.2m Galvanised steel poles - for mounting of Type L7 to include all brackets as neccesary				
6.5.13.1		Supply	No	39		
6.5.13.2		Install	No	39		
Total Carried Forward						

BILL 4 BOQ 3: DOMESTIC POWER & LIGHTING

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
7	Pl. 6.1.	**SLEEVES**				
		Supply and installation of HDPE sleeves buried in ground as specified for Electrical,& data services, including couplings in accordance with non-metallic sleeves and accessories as per SANS 61386-24. Tenderers to note that all sleeves under buildings will be encased in concrete by the building contractor.				
7.1		50mm Flexible double walled black corrugated sleeves including 6mm pilot string as draw wire in each sleeve				
7.1.1		Supply	m	80		
7.1.2		Install	m	80		
8	Pl. 6.3.	**EXCAVATIONS & BACKFILL**				
		Excavate for cables and sleeves including temporary support of sides, keeping excavation dry, bedding material, backfilling, compacting and testing as specified. All backfill material to be suitable as per SANS codes and engineers approval. Backfill material to be imported if necessary.				
8.1		In soft or pickable soil (60%)				
8.1.1		Supply	m^3	45		
8.1.2		Install	m^3	45		
8.2		In medium rock (20%)				
8.2.1		Supply	m^3	20		
8.2.2		Install	m^3	20		
8.3		In hard rock (20%)				
8.3.1		Supply	m^3	20		
8.3.2		Install	m^3	20		
9.1	Pl. 8.1.	**Removal of Existing Equipment**				
9.1.1		Disconnect and removal of existing infrastructure in the Administration Building as indicated on Demolishment Plan	Sum	1		
9.1.2		Disconnect and removal of existing infrastructure in the Generator Room, Existing , Distribution Panel and Manual Change-over Panels.	Sum	1		
9.2	Pl. 8.2	**Air-conditioning**				
9.2.1		Provisional sum for Specialist Condition Assessment of all split-unit Air-conditioners in Administration Building	Sum	1		
9.2.2		Provisional sum for replacement or repair of all existing Split-units in Administration Building.				
9.2.2.1		Supply	No.	11		
9.2.2.2		Install	No.	11		
9.2.3		Provisional sum for new Split-units to be installed.				
9.2.3.1		Supply	No.	4		
9.2.3.2		Install	No.	4		
Total Carried Forward To Summary Of Bills						

BILL 4 BOQ 4: EARTHING AND LIGHTNING PROTECTION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		(Refer to Electrical Specification: Annexure E)				
1		**EARTHING AND LIGHTNING PROTECTION** *(Refer to Electrical Specification: Annexure Q)* **Supply and Installation of Earthing & Lightning Protection per SANS 10313, 62305 and 10142. To be undertaken by specialist earthing and lightning contractor.**				
1.1	Pl. 4.1.	**SOIL RESISTIVITY TESTS**				
1.1.1		Conduct a complete soil resistivity survey for the Hammarsdale Waste Water Treatment Works area. Resistivity measurements shall be taken at, at least 5 locations and at the supply points. It shall include a certificate and recommendation regarding the soil conditions.	Sum	1		
1.2	Pl. 4.2.	**EARTH CONDUCTORS**				
		Copper earth conductors installed in trenches, sleeves and in earth trench. Terminations to include drilling, bolting, connections, sealing and testing. Only cadweld joints will be allowed.				
1.2.1		70 mm^2 bare Copper Earth Wire (BCEW)				
1.2.1.1		Supply	m	365		
1.2.1.2		Install	m	365		
1.2.2		70 mm^2 PVC covered Copper Earth Wire (CEW)				
1.2.2.1		Supply	m	Rate Only		
1.2.2.2		Install	m	Rate Only		
1.2.3		50 mm^2 bare Copper Earth Wire (BCEW) for bonding of re-bar				
1.2.3.1		Supply	m	130		
1.2.3.2		Install	m	130		
1.2.4		50 mm^2 covered Copper Earth Wire (CEW) for bond to columns,metal downpipes and roof sheeting				
1.2.4.1		Supply	m	Rate Only		
1.2.4.2		Install	m	Rate Only		
1.2.5		Terminate Earth Wire in test joint box using lugs and brass bolt.				
1.2.5.1		Supply	No	22		
1.2.5.2		Install	No	22		
1.2.6		Terminate steel reinforcing using purpose made stainless steel terminals				
1.2.6.1		Supply	No	22		
1.2.6.2		Install	No	22		
Total Carried Forward						

BILL 4 BOQ 4: EARTHING AND LIGHTNING PROTECTION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.2.7		Terminate steel roof structure to flush terminals at top of columns using 50mm^2 PVC conductor, including lugs and fixings	No	13		
1.2.8		Bond metal roof and down pipes down with 50mm^2 insulated to earth loop in ground.				
1.2.8.1		Supply	No	11		
1.2.8.2		Install	No	11		
1.2.9		8mm Aerial conductor on roof for lightning protection. To include all holding down clamps, down conductors, bonding conductors and lightning Rods				
1.2.9.1		Supply	m	260		
1.2.9.2		Install	m	260		
1.3	Pl. 4.3.	**EARTH BARS**				
1.3.1		Provide Copper earth bars as per drawings and specifications.				
1.3.1.1		Supply	No	6		
1.3.1.2		Install	No	6		
1.4	Pl. 4.4.	**ENCLOSURES**				
1.4.1		173(w)x130(h)x88mm(d) PVC Allbro surface extension box (PSO-2). To be installed on surface in front of flush terminal.				
1.4.1.1		Supply	No	10		
1.4.1.2		Install	No	10		
1.4.2		Labels for test joint box				
1.4.2.1		Supply	No	10		
1.4.2.2		Install	No	10		
1.5	Pl. 4.5.	**EARTH ELECTRODES**				
		Supply and install 'Cadweld' 16 mm diameter copper earth electrodes driven in ground, including 'Cadweld' joining sleeves as required				
1.5.1		1000 mm long electrodes				
1.5.1.1		Supply	No	40		
1.5.1.2		Install	No	40		
1.5.2		Bond 70mm^2 bare copper to earth rod				
1.5.2.1		Supply	No	40		
1.5.2.2		Install	No	40		
Total Carried Forward						

BILL 4 BOQ 4: EARTHING AND LIGHTNING PROTECTION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.6	Pl. 4.6.	**EARTHING OF EQUIPMENT**				
		Earth equipment as per drawings and specification to achieve earth resistivity values as per SANS and NRS requirements				
1.6.1		Earthing of indoor equipment (DB's, Server Racks)				
1.6.1.1		Supply	No	5		
1.6.1.2		Install	No	5		
1.7	Pl. 4.7.	**TRENCH EXCAVATIONS:**				
		Excavate for Earthing including temporary support of sides, keeping excavation dry, bedding material, backfilling, compacting and testing as specified. All backfill material to be suitable as per SANS codes and engineers approval. Backfill material to be imported if necessary.				
1.7.1		In soft or pickable soil (60%)				
1.7.1.1		Supply	m³	175		
1.7.1.2		Install	m³	175		
1.7.2		In soft rock (40%)				
1.7.2.1		Supply	m³	115		
1.7.2.2		Install	m³	115		
1.7.3		PVC warning tape installed in cable trench				
1.7.3.1		Supply	m	385		
1.7.3.2		Install	m	385		
Total Carried Forward To Summary Of Bills						

BILL 4 BOQ 5: MV WORKS
PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		(Refer to Electrical Specification: Annexure E)				
1		**MAIN SUBSTATION UPGRADE**				
1.1		Manufacture, supply, off loading, installation, testing and commissioning of 12kV Metal-clad MV Switchgear Boards. 1 x Incomers, 2 Txf Feeder, 25kA, 400A, as detailed in the specifications. *As per technical data sheet EB3, included in the Volume C3.6.1 - Annex 1.*				
1.1.1		Supply	Sum	1		
1.1.2		Install	Sum	1		
1.2		Manufacture, supply, off loading, installation, testing and commissioning of 110VDC Battery Tripping unit as detailed in specfications. Includes the LV cabling required for the power supply and connection to the MV switchgear. *As per technical data sheet EB5, included in the Volume C3.6.1 - Annex 1*				
1.2.1		Supply	No	1		
1.2.2		Install	No	1		
1.3		Supply of Tools as required for Switchgear Operation	Set	1		
1.4		Tool storage rack, mounted on substation wall	No	1		
1.5		Disconnection and removal of the existing oil filled MV switchgear, transport to site laydown area.	Sum	1		
1.6		Disconnection and removal of the existing MV Supply cable installed from the Eskom metering point to the incomer, transport to site laydown area.	Sum	1		
1.7		MV Cabling MV Cable				
		Supply and installation of copper XLPE/PVC/SWA/PVC 6.35/11kV Type A cable as per SANS 1339, laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the stainless steel cable strapping as required.				
1.7.1		3 Core 50mm^2				
1.7.1.1		Supply	m	20		
1.7.1.2		Install	m	20		
		Termination of copper XLPE/PVC/SWA/PVC 6.35/11kV Type A cable.				
1.7.2		3 Core 50mm^2				
1.7.2.1		Supply	No	2		
1.7.2.2		Install	No	2		
		Jointing of copper XLPE/PVC/SWA/PVC 6.35/11kV Type A cable.				
1.7.3		3 Core 50mm^2				
1.7.2.1		Supply	No	1		
1.7.2.2		Install	No	1		
Total Carried Forward						

BILL 4 BOQ 5: MV WORKS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2		MINI-SUBSTATION UPGRADE				
2.1		Manufacture, supply, off loading, installation, testing and commissioning of 500kVA Mini-Substation Units, as detailed in the specifications. *As per technical data sheet EB4, included in the Volume C3.6.1 - Annex 1.*				
2.1.1		Supply	No	5		
2.1.2		Install	No	5		
2.2		MV Cabling				
2.2.1		Supply and installation of copper XLPE/PVC/SWA/PVC 6.35/11kV Type A cable as per SANS 1339, laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the stainless steel cable strapping as required. 3 Core 35mm^2				
2.2.1.1		Supply	m	100		
2.2.1.2		Install	m	100		
2.2.2		Termination of copper XLPE/PVC/SWA/PVC 6.35/11kV Type A cable. 3 Core 35mm^2				
2.2.2.1		Supply	No	5		
2.2.2.2		Install	No	5		
2.2.3		Joint of copper XLPE/PVC/SWA/PVC 6.35/11kV Type A cable. 3 Core 35mm^2				
2.2.3.1		Supply	No	5		
2.2.3.2		Install	No	5		
2.2.4		Removal of Existing Equipment Disconnection and removal of the existing 500kVA MSU's, transport to site laydown area.	No	5		
2.3		LV CABLE				
		Supply and installation of copper PVC/PVC/SWA/PVCcables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required. All cables are Copper PVC/PVC/SWA/PVC cables per SANS 1507.				
2.3.1		185 mm² x 4 core				
2.3.1.1		Supply	m	50		
2.3.1.2		Install	m	50		
2.3.2		150 mm² x 4 core				
2.3.2.1		Supply	m	50		
2.3.2.2		Install	m	50		
2.3.3		120 mm² x 4 core				
2.3.3.1		Supply	m	50		
2.3.3.2		Install	m	50		
2.3.4		95 mm² x 4 core				
2.3.4.1		Supply	m	50		
2.3.4.2		Install	m	50		
Total Carried Forward						

BILL 4 BOQ 5: MV WORKS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		Termination of copper PVC/PVC/SWA/PVC cables in Mini-substations. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.				
2.3.5		185 mm² x 4 core				
2.3.5.1		Supply	No	5		
2.3.5.2		Install	No	5		
2.3.6		150 mm² x 4 core				
2.3.6.1		Supply	No	5		
2.3.6.2		Install	No	5		
2.3.7		120 mm² x 4 core				
2.3.7.1		Supply	No	5		
2.3.7.2		Install	No	5		
2.3.8		95 mm² x 4 core				
2.3.8.1		Supply	No	5		
2.3.8.2		Install	No	5		
2.3.9		70 mm² BCEW				
2.3.9.1		Supply	m	5		
2.3.9.2		Install	m	5		
		Jointing of copper PVC/PVC/SWA/PVC cables.				
2.3.10		185 mm² x 4 core				
2.3.10.1		Supply	No	5		
2.3.10.2		Install	No	5		
2.3.11		150 mm² x 4 core				
2.3.11.1		Supply	No	5		
2.3.11.2		Install	No	5		
2.3.12		120 mm² x 4 core				
2.3.12.1		Supply	No	5		
2.3.12.2		Install	No	5		
2.3.13		95 mm² x 4 core				
2.3.13.1		Supply	No	5		
2.3.13.2		Install	No	5		
2.3.14		70 mm² BCEW				
2.3.14.1		Supply	No	5		
2.3.14.2		Install	No	5		
Total Carried Forward						

BILL 4 BOQ 5: MV WORKS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3	Pl. 6.1.	**SLEEVES**				
		Supply and installation of HDPE sleeves buried in ground as specified for Electrical,& data services, including couplings in accordance with non-metallic sleeves and accessories as per SANS 61386-24. Tenderers to note that all sleeves under buildings will be encased in concrete by the building contractor.				
3.1		110mm Flexible double walled black corrugated sleeves including 6mm pilot string as draw wire in each sleeve				
3.1.1		Supply	m	200		
3.1.2		Install	m	200		
4	Pl. 6.3.	**EXCAVATIONS & BACKFILL**				
		Excavate for cables and sleeves including temporary support of sides, keeping excavation dry, bedding material, backfilling, compacting and testing as specified. All backfill material to be suitable as per SANS codes and engineers approval. Backfill material to be imported if necessary.				
4.1		In soft or pickable soil (60%)				
4.1.1		Supply	m^3	160		
4.1.2		Install	m^3	160		
4.2		In medium rock (20%)				
4.2.1		Supply	m^3	53		
4.2.2		Install	m^3	53		
4.3		In hard rock (20%)				
4.3.1		Supply	m^3	53		
4.3.2		Install	m^3	53		
Total Carried Forward To Summary Of Bills						

BILL 4 BOQ 6: INLET WORKS ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION		UNIT	QTY	RATE	AMOUNT R
		(Refer to Electrical Specification: Annexure E)					
1		**Inlet Works Electrical System**					
1.1		MCC panel					
		Manufacture, supply, off loading and installation of the Inlet Works MCC Panel, and commissioning as detailed in the specifications and drawings. *60325-E-LI-100: Single line diagram* *60325-E-LI-101: GA*					
1.1.1		Supply		No	1		
1.1.2		Install		No	1		
1.2		Manufacture, supply, off loading and installation of the Second Class Water MCC Panel, and commissioning as detailed in the specifications and drawings. *60325-E-LI-100: Single line diagram* *60325-E-LI-101: GA*					
1.2.1		Supply		No	1		
1.2.2		Install		No	1		
1.3		Local Control Stations					
1.3.1		Surface mounted IP65 emergency stop push buttons.					
1.3.1.1		Supply		No	27		
1.3.1.2		Install		No	27		
1.3.2		3CR12 support stands for the above item.					
1.3.2.1		Supply		No	27		
1.3.2.2		Install		No	27		
1.3.3		Screen & compactor forward/ reverse local control station IP65, complete with emergency stop push button.					
1.3.3.1		Supply		No	13		
1.3.3.2		Install		No	13		
1.3.4		3CR12 support stands for the above item.					
1.3.4.1		Supply		No	13		
1.3.4.2		Install		No	13		
		LV Cabling LV CABLE					
1.4		Supply and installation of copper PVC/PVC/SWA/PVCcables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required. All cables are Copper PVC/PVC/SWA/PVC cables per SANS 1507.					
1.4.1		185 mm² x 4 core					
1.4.1.1		Supply		m	300		
1.4.1.2		Install		m	300		
1.4.2		95 mm² x 4 core					
1.4.2.1		Supply		m	Rate Only		
1.4.2.2		Install		m	Rate Only		
Total Carried Forward							

BILL 4 BOQ 6: INLET WORKS ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION		UNIT	QTY	RATE	AMOUNT R
Brought Forward							
1.4.3		50 mm² x 4 core					
1.4.3.1		Supply		m	35		
1.4.3.2		Install		m	35		
1.4.4		25 mm² x 4 core					
1.4.4.1		Supply		m	40		
1.4.4.2		Install		m	40		
1.4.5		16 mm² x 4 core					
1.4.5.1		Supply		m	185		
1.4.5.2		Install		m	185		
1.4.6		10 mm² x 4 core					
1.4.6.1		Supply		m	40		
1.4.6.2		Install		m	40		
1.4.7		6 mm² x 4 core					
1.4.7.1		Supply		m	Rate Only		
1.4.7.2		Install		m	Rate Only		
1.4.8		4 mm² x 4 core					
1.4.8.1		Supply		m	80		
1.4.8.2		Install		m	80		
1.4.9		2.5 mm² x 4 core					
1.4.9.1		Supply		m	280		
1.4.9.2		Install		m	280		
1.4.10		1.5 mm² x 7 core					
1.4.10.1		Supply		m	400		
1.4.10.2		Install		m	400		
1.4.11		1.5 mm² x 4 core					
1.4.11.1		Supply		m	3140		
1.4.11.2		Install		m	3140		
1.4.12		70 mm² BCEW					
1.4.12.1		Supply		m	300		
1.4.12.2		Install		m	300		
1.4.13		95 mm² x 3 core (VFD Cable)					
1.4.13.1		Supply		m	100		
1.4.13.2		Install		m	100		
1.4.14		10 mm² x 3 core (VFD Cable)					
1.4.14.1		Supply		m	240		
1.4.14.2		Install		m	240		
1.4.15		1.5 mm² x 3 core (VFD Cable)		m	400		
1.4.15.1		Supply		m	400		
1.4.15.2		Install		m	400		
1.4.16		95 mm² ICEW					
1.4.16.1		Supply		m	100		
1.4.16.2		Install		m	100		
1.4.17		10 mm² ICEW					
1.4.17.1		Supply		m	240		
1.4.17.2		Install		m	240		
1.4.18		1.5 mm² ICEW					
1.4.18.1		Supply		m	400		
1.4.18.2		Install		m	400		
Total Carried Forward							

BILL 4 BOQ 6: INLET WORKS ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION		UNIT	QTY	RATE	AMOUNT R
Brought Forward							
1.5		Termination of copper PVC/PVC/SWA/PVC cables in MCC's, Field Isolators, Mini-substations, Motors and Junction Boxes. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.					
1.5.1		185 mm² x 4 core					
1.5.1.1		Supply		No	4		
1.5.1.2		Install		No	4		
1.5.2		95 mm² x 4 core					
1.5.2.1		Supply		No	Rate Only		
1.5.2.2		Install		No	Rate Only		
1.5.3		50 mm² x 4 core					
1.5.3.1		Supply		No	2		
1.5.3.2		Install		No	2		
1.5.4		25 mm² x 4 core					
1.5.4.1		Supply		No	4		
1.5.4.2		Install		No	4		
1.5.5		16 mm² x 4 core					
1.5.5.1		Supply		No	6		
1.5.5.2		Install		No	6		
1.5.6		10 mm² x 4 core					
1.5.6.1		Supply		No	2		
1.5.6.2		Install		No	2		
1.5.7		6 mm² x 4 core					
1.5.7.1		Supply		No	Rate Only		
1.5.7.2		Install		No	Rate Only		
1.5.8		4 mm² x 4 core					
1.5.8.1		Supply		No	4		
1.5.8.2		Install		No	4		
1.5.9		2.5 mm² x 4 core					
1.5.9.1		Supply		No	12		
1.5.9.2		Install		No	12		
1.5.10		1.5 mm² x 7 core		No	10		
1.5.10.1		Supply		No	10		
1.5.10.2		Install					
1.5.11		1.5 mm² x 4 core					
1.5.11.1		Supply		No	120		
1.5.11.2		Install		No	120		
1.5.12		70 mm² BCEW					
1.5.12.1		Supply		No	2		
1.5.12.2		Install		No	2		
1.5.13		95 mm² x 3 core (VFD Cable)					
1.5.13.1		Supply		No	16		
1.5.13.1		Install		No	16		
Total Carried Forward							

BILL 4 BOQ 6: INLET WORKS ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION		UNIT	QTY	RATE	AMOUNT R
Brought Forward							
1.5.14		10 mm² x 3 core (VFD Cable)		No			
1.5.14.1		Supply		No	8		
1.5.14.2		Install		No	8		
1.5.15		1.5 mm² x 3 core (VFD Cable)					
1.5.15.1		Supply		No	8		
1.5.15.2		Install		No	8		
1.5.16		95 mm² ICEW					
1.5.16.1		Supply		No	Rate Only		
1.5.16.2		Install		No	Rate Only		
1.5.17		10 mm² ICEW					
1.5.17.1		Supply		No	8		
1.5.17.2		Install		No	8		
1.5.18		1.5 mm² ICEW					
1.5.18.1		Supply		No	8		
1.5.18.2		Install		No	8		
		CABLE LADDER AND TRAY					
1.6		3CR12 cable ladder including all accessories (Earth continuity jumpers16mm2, 10mm2, P1000 3CR12 Unistrut, splice kits) mounted to concrete slabs / walls.					
1.6.1		1000 mm cable ladder					
1.6.1.1		Supply		m	47		
1.6.1.2		Install		m	47		
1.6.2		1000mm 90° bends					
1.6.2.1		Supply		No	3		
1.6.2.2		Install		No	3		
1.6.3		1000mm Riser/Dropper					
1.6.3.1		Supply		No	4		
1.6.3.2		Install		No	4		
1.6.4		1000mm Tee Piece					
1.6.4.1		Supply		No	Rate Only		
1.6.4.2		Install		No	Rate Only		
1.6.5		1000mm - 800mm Reducer					
1.6.5.1		Supply		No	1		
1.6.5.2		Install		No	1		
1.6.6		800 mm cable ladder					
1.6.6.1		Supply		m	Rate Only		
1.6.6.2		Install		m	Rate Only		
1.6.7		800mm 90° bends					
1.6.7.1		Supply		No	Rate Only		
1.6.7.2		Install		No	Rate Only		
1.6.8		800mm Riser/Dropper					
1.6.8.1		Supply		No	Rate Only		
1.6.8.2		Install		No	Rate Only		
1.6.9		800mm Tee Piece					
1.6.9.1		Supply		No	Rate Only		
1.6.9.2		Install		No	Rate Only		
Total Carried Forward							

BILL 4 BOQ 6: INLET WORKS ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION		UNIT	QTY	RATE	AMOUNT R
Brought Forward							
1.6.10		800mm - 500mm Reducer					
1.6.10.1		Supply		No	Rate Only		
1.6.10.2		Install		No	Rate Only		
1.6.11		500 mm cable ladder					
1.6.11.1		Supply		m	110		
1.6.11.2		Install		m	110		
1.6.12		500mm 90° bends					
1.6.12.1		Supply		No	4		
1.6.12.2		Install		No	4		
1.6.13		500mm Riser/Dropper					
1.6.13.1		Supply		No	8		
1.6.13.2		Install		No	8		
1.6.14		500mm Tee Piece					
1.6.14.1		Supply		No	Rate Only		
1.6.14.2		Install		No	Rate Only		
1.6.15		500mm - 300mm Reducer					
1.6.15.1		Supply		No	Rate Only		
1.6.15.2		Install		No	Rate Only		
1.6.16		300 mm cable ladder					
1.6.16.1		Supply		m	24		
1.6.16.2		Install		m	24		
1.6.17		300mm 90° bends					
1.6.17.1		Supply		No	2		
1.6.17.2		Install		No	2		
1.6.18		300mm Riser/Dropper					
1.6.18.1		Supply		No	2		
1.6.18.2		Install		No	2		
1.6.19		300mm Tee Piece					
1.6.19.1		Supply		No	Rate Only		
1.6.19.2		Install		No	Rate Only		
1.6.20		200 mm cable ladder					
1.6.20.1		Supply		m	60		
1.6.20.2		Install		m	60		
1.6.21		200mm 90° bends					
1.6.21.1		Supply		No	8		
1.6.21.2		Install		No	8		
1.6.22		200mm Riser/Dropper					
1.6.22.1		Supply		No	4		
1.6.22.3		Install		No	4		
1.6.23		200mm Tee Piece					
1.6.23.1		Supply		No	Rate Only		
1.6.23.2		Install		No	Rate Only		
1.6.24		100 mm cable ladder					
1.6.24.1		Supply		m	40		
1.6.24.2		Install		m	40		
Total Carried Forward							

BILL 4 BOQ 6: INLET WORKS ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION		UNIT	QTY	RATE	AMOUNT R
Brought Forward							
1.6.25		100mm 90° bends					
1.6.25.1		Supply		No	8		
1.6.25.2		Install		No	8		
1.6.26		100mm Riser/Dropper					
1.6.26.1		Supply		No	6		
1.6.26.2		Install		No	6		
1.6.27		100mm Tee Piece					
1.6.27.1		Supply		No	Rate Only		
1.6.27.2		Install		No	Rate Only		
1.7		Installation Accessories					
1.7.1		P1000 - 3CR12 Unistrut					
1.7.1.1		Supply		m	40		
1.7.1.2		Install		m	40		
1.7.2		Angle Steel 3CR12 30mmx30mmx3mm					
1.7.2.1		Supply		m	50		
1.7.2.2		Install		m	50		
1.7.3		Channel Steel 3CR12 100mmx50mmx6mm					
1.7.3.1		Supply		m	35		
1.7.3.2		Install		m	35		
1.7.4		Welding Plug Socket					
1.7.4.1		Supply		No	2		
1.7.4.2		Install		No	2		
1.8		Removal of Existing Equipment					
1.8.1		Disconnection and removal of the existing screened sewage pump station MCC panel, placement at the site laydown area.	Lot	No	1		
Total Carried Forward To Summary Of Bills							

BILL 4 BOQ 7: DE-WATERING ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION		UNIT	QTY	RATE	AMOUNT R
		(Refer to Electrical Specification: Annexure E)					
1		**De-watering Electrical System**					
1.1		Manufacture, supply, off loading, installation, testing and commissioning of 500kVA Mini-Substation Units, as detailed in the specifications. *As per technical data sheet EB4, included in the Volume C3.6.1 - Annex 1.*					
1.1.1		Supply		No	1		
1.1.2		Install		No	1		
1.2		Manufacture, supply, off loading and installation of precast concrete plinth for the Mini-substation installation. Preparation of the ground including excavation and compaction to be included.					
1.2.1		Supply		No	1		
1.2.2		Install		No	1		
1.3		MV Cabling					
		Supply and installation of copper XLPE/PVC/SWA/PVC 6.35/11kV Type A cable as per SANS 1339, laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the stainless steel cable strapping as required. 3 Core 35mm^2					
1.3.1		Supply		m	185		
1.3.2		Install		m	185		
1.4		Termination of copper XLPE/PVC/SWA/PVC 6.35/11kV Type A cable. 3 Core 35mm^2					
1.4.1		Supply		No	2		
1.4.2		Install		No	2		
		MCC panels					
1.5		Manufacture, supply, off loading and installation of the De-watering MCC Panel, and commissioning as detailed in the specifications and drawings. *60325-E-SD-700: Single line diagram* *60325-E-SD-702: GA*		No	1		
1.5.1		Supply					
1.5.2		Install		No	1		
1.6		Manufacture, supply, off loading and installation of the Sludge Transfer MCC Panel, and commissioning as detailed in the specifications and drawings. *60325-E-SD-701: Single line diagram* *60325-E-SD-703: GA*					
1.6.1		Supply		No	1		
1.6.2		Install		No	1		
1.7		Local Control Stations					
Total Carried Forward							

BILL 4 BOQ 7: DE-WATERING ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION		UNIT	QTY	RATE	AMOUNT R
Brought Forward							
1.7.1		Surface mounted IP65 emergency stop push buttons.					
1.7.1.1		Supply		No	21		
1.7.1.2		Install		No	21		
1.7.2		3CR12 support stands for the above item.					
1.7.2.1		Supply		No	21		
1.7.2.2		Install		No	21		
		LV CABLE					
1.8		Supply and installation of copper PVC/PVC/SWA/PVCcables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required. All cables are Copper PVC/PVC/SWA/PVC cables per SANS 1507.					
1.8.1		120 mm² x 4 core					
1.8.1.1		Supply		m	100		
1.8.1.2		Install		m	100		
1.8.2		50 mm² x 4 core					
1.8.2.1		Supply		m	126		
1.8.2.2		Install		m	126		
1.8.3		25 mm² x 4 core					
1.8.3.1		Supply		m	11		
1.8.3.2		Install		m	11		
1.8.4		16 mm² x 4 core					
1.8.4.1		Supply		m	98		
1.8.4.2		Install		m	98		
1.8.5		10 mm² x 4 core					
1.8.5.1		Supply		m	40		
1.8.5.2		Install		m	40		
1.8.6		2.5 mm² x 4 core					
1.8.6.1		Supply		m	85		
1.8.6.2		Install		m	85		
1.8.7		1.5 mm² x 4 core					
1.8.7.1		Supply		m	1143		
1.8.7.2		Install		m	1143		
1.8.8		70 mm² BCEW					
1.8.8.1		Supply		m	50		
1.8.8.2		Install		m	50		
1.8.9		50 mm² x 3 core (VFD Cable)					
1.8.9.1		Supply		m	72		
1.8.9.2		Install		m	72		
1.8.10		10 mm² x 3 core (VFD Cable)					
1.8.10.1		Supply		m	132		
1.8.10.2		Install		m	132		
Total Carried Forward							

BILL 4 BOQ 7: DE-WATERING ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION		UNIT	QTY	RATE	AMOUNT R
Brought Forward							
1.8.11		2.5 mm² x 3 core (VFD Cable)					
1.8.11.1		Supply		m	50		
1.8.11.2		Install		m	50		
1.8.12		1.5 mm² x 3 core (VFD Cable)					
1.8.12.1		Supply		m	96		
1.8.12.2		Install		m	96		
1.8.13		50 mm² ICEW					
1.8.13.1		Supply		m	Rate Only		
1.8.13.2		Install		m	Rate Only		
1.8.14		10 mm² ICEW					
1.8.14.1		Supply		m	Rate Only		
1.8.14.2		Install		m	Rate Only		
1.8.15		2.5 mm² ICEW					
1.8.15.1		Supply		m	Rate Only		
1.8.15.2		Install		m	Rate Only		
1.8.16		1.5 mm² ICEW					
1.8.16.1		Supply		m	Rate Only		
1.8.16.2		Install		m	Rate Only		
1.9		Termination of copper PVC/PVC/SWA/PVC cables in MCC's, Field Isolators, Mini-substations, Motors and Junction Boxes. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.					
1.9.1		120 mm² x 4 core					
1.9.1.1		Supply		No	4		
1.9.1.2		Install		No	4		
1.9.2		50 mm² x 4 core					
1.9.2.1		Supply		No	4		
1.9.2.2		Install		No	4		
1.9.3		25 mm² x 4 core					
1.9.3.1		Supply		No	2		
1.9.3.2		Install		No	2		
1.9.4		16 mm² x 4 core					
1.9.4.1		Supply		No	6		
1.9.4.2		Install		No	6		
1.9.5		10 mm² x 4 core					
1.9.5.1		Supply		No	2		
1.9.5.2		Install		No	2		
1.9.6		2.5 mm² x 4 core					
1.9.6.1		Supply		No	10		
1.9.6.2		Install		No	10		
1.9.7		1.5 mm² x 4 core					
1.9.7.1		Supply		No	76		
1.9.7.2		Install		No	76		
Total Carried Forward							

BILL 4 BOQ 7: DE-WATERING ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION		UNIT	QTY	RATE	AMOUNT R
Brought Forward							
1.9.8		70 mm² BCEW					
1.9.8.1		Supply		No	2		
1.9.8.2		Install		No	2		
1.9.9		50 mm² x 3 core (VFD Cable)					
1.9.9.1		Supply		No	4		
1.9.9.2		Install		No	4		
1.9.10		10 mm² x 3 core (VFD Cable)					
1.9.10.1		Supply		No	8		
1.9.10.2		Install		No	8		
1.9.11		2.5 mm² x 3 core (VFD Cable)					
1.9.11.1		Supply		No	2		
1.9.11.1		Install		No	2		
1.9.12		1.5 mm² x 3 core (VFD Cable)					
1.9.12.1		Supply		No	8		
1.9.12.2		Install		No	8		
1.9.13		50 mm² ICEW					
1.9.13.1		Supply		No	Rate Only		
1.9.13.2		Install		No	Rate Only		
1.9.14		10 mm² ICEW					
1.9.14.1		Supply		No	Rate Only		
1.9.14.2		Install		No	Rate Only		
1.9.15		1.2 mm² ICEW					
1.9.15.1		Supply		No	Rate Only		
1.9.15.2		Install		No	Rate Only		
1.9.16		1.5 mm² ICEW					
1.9.16.1		Supply		No	Rate Only		
1.9.16.2		Install		No	Rate Only		
		CABLE LADDER AND TRAY					
1.10		3CR12 cable ladder including all accessories (Earth continuity jumpers16mm2, 10mm2, P1000 3CR12 Unistrut, splice kits) mounted to concrete slabs / walls.					
1.10.1		1000 mm cable ladder					
1.10.1.1		Supply		m	18		
1.10.1.2		Install		m	18		
1.10.2		1000mm 90° bends					
1.10.2.1		Supply		No	1		
1.10.2.2		Install		No	1		
1.10.3		1000mm Riser/Dropper					
1.10.3.1		Supply		No	3		
1.10.3.2		Install		No	3		
1.10.4		1000mm Tee Piece					
1.10.4.1		Supply		No	Rate Only		
1.10.4.2		Install		No	Rate Only		
Total Carried Forward							

BILL 4 BOQ 7: DE-WATERING ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION		UNIT	QTY	RATE	AMOUNT R
Brought Forward							
1.10.5		1000mm - 800mm Reducer					
1.10.5.1		Supply		No	2		
1.10.5.1		Install		No	2		
1.10.6		800 mm cable ladder					
1.10.6.1		Supply		m	12		
1.10.6.2		Install		m	12		
1.10.7		800mm 90° bends					
1.10.7.1		Supply		No	Rate Only		
1.10.7.2		Install		No	Rate Only		
1.10.8		800mm Riser/Dropper					
1.10.8.1		Supply		No	2		
1.10.8.2		Install		No	2		
1.10.9		800mm Tee Piece					
1.10.9.1		Supply		No	Rate Only		
1.10.9.2		Install		No	Rate Only		
1.10.10		800mm - 500mm Reducer					
1.10.10.1		Supply		No	1		
1.10.10.2		Install		No	1		
1.10.11		500 mm cable ladder					
1.10.11.1		Supply		m	14		
1.10.11.2		Install		m	14		
1.10.12		500mm 90° bends					
1.10.12.1		Supply		No	1		
1.10.12.2		Install		No	1		
1.10.13		500mm Riser/Dropper					
1.10.13.1		Supply		No	2		
1.10.13.2		Install		No	2		
1.10.14		500mm Tee Piece					
1.10.14.1		Supply		No	Rate Only		
1.10.14.2		Install		No	Rate Only		
1.10.15		500mm - 300mm Reducer					
1.10.15.1		Supply		No	Rate Only		
1.10.15.2		Install		No	Rate Only		
1.10.16		300 mm cable ladder					
1.10.16.1		Supply		m	20		
1.10.16.2		Install		m	20		
1.10.17		300mm 90° bends					
1.10.17.1		Supply		No	2		
1.10.17.2		Install		No	2		
1.10.18		300mm Riser/Dropper					
1.10.18.1		Supply		No	2		
1.10.18.2		Install		No	2		
1.10.19		300mm Tee Piece					
1.10.19.1		Supply		No	Rate Only		
1.10.19.2		Install		No	Rate Only		
Total Carried Forward							

BILL 4 BOQ 7: DE-WATERING ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION		UNIT	QTY	RATE	AMOUNT R
Brought Forward							
1.10.20		200 mm cable ladder					
1.10.20.1		Supply		m	70		
1.10.20.2		Install		m	70		
1.10.21		200mm 90° bends					
1.10.21.1		Supply		No	6		
1.10.21.2		Install		No	6		
1.10.22		200mm Riser/Dropper					
1.10.22.1		Supply		No	6		
1.10.22.2		Install		No	6		
1.10.23		200mm Tee Piece					
1.10.23.1		Supply		No	Rate Only		
1.10.23.2		Install		No	Rate Only		
1.10.24		100 mm cable ladder					
1.10.24.1		Supply		No	100		
1.10.24.2		Install		No	100		
1.10.25		100mm 90° bends					
1.10.25.1		Supply		No	12		
1.10.25.2		Install		No	12		
1.10.26		100mm Riser/Dropper					
1.10.26.1		Supply		No	10		
1.10.26.2		Install		No	10		
1.10.27		100mm Tee Piece					
1.10.27.1		Supply		No	Rate Only		
		Install		No	Rate Only		
1.11		**Installation Accessories**					
1.11.1		P1000 - 3CR12 Unistrut					
1.11.1.1		Supply		m	35		
1.11.1.2		Install		m	35		
1.11.2		Angle Steel 3CR12 30mmx30mmx3mm					
1.11.2.1		Supply		m	40		
1.11.2.2		Install		m	40		
1.11.3		Channel Steel 3CR12 100mmx50mmx6mm					
1.11.3.1		Supply		m	30		
1.11.3.2		Install		m	30		
1.11.4		Welding Plug Socket					
1.11.4.1		Supply		No	2		
1.11.4.2		Install		No	2		
Total Carried Forward							

BILL 4 BOQ 7: DE-WATERING ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION		UNIT	QTY	RATE	AMOUNT R
Brought Forward							
2	Pl. 6.1.	**SLEEVES**					
		Supply and installation of HDPE sleeves buried in ground as specified for Electrical,& data services, including couplings in accordance with non-metallic sleeves and accessories as per SANS 61386-24. Tenderers to note that all sleeves under buildings will be encased in concrete by the building contractor.					
2.1		110mm Flexible double walled black corrugated sleeves including 6mm pilot string as draw wire in each sleeve					
2.1.1		Supply		m	200		
2.1.2		Install		m	200		
3	Pl. 6.3.	**EXCAVATIONS & BACKFILL**					
		Excavate for cables and sleeves including temporary support of sides, keeping excavation dry, bedding material, backfilling, compacting and testing as specified. All backfill material to be suitable as per SANS codes and engineers approval. Backfill material to be imported if necessary.					
3.1		In soft or pickable soil (60%)					
3.1.1		Supply		m^3	80		
3.1.2		Install		m^3	80		
3.2		In medium rock (20%)					
3.2.1		Supply		m^3	25		
3.2.2		Install		m^3	25		
3.3		In hard rock (20%)					
3.3.1		Supply		m^3	25		
3.3.2		Install		m^3	25		
Total Carried Forward To Summary Of Bills							

BILL 4 BOQ 8: PUMP STATION ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		(Refer to Electrical Specification: Annexure E)				
1		**Pump Station Electrical System**				
		MCC panel				
1.1		Manufacture, supply, off loading and installation of Pump Station No. 1 MCC Panel, and commissioning as detailed in the specifications and drawings. *60325-E-LS-300: Single line diagram* *60325-E-LS-304: GA*				
1.1.1		Supply	No	1		
1.1.2		Install	No	1		
1.2		Manufacture, supply, off loading and installation of Pump Station No. 2 MCC Panel, and commissioning as detailed in the specifications and drawings. *60325-E-LS-301: Single line diagram* *60325-E-LS-305: GA*				
1.2.1		Supply	No	1		
1.2.2		Install	No	1		
1.3		Manufacture, supply, off loading and installation of Pump Station No. 3 MCC Panel, and commissioning as detailed in the specifications and drawings. *60325-E-LS-302: Single line diagram* *60325-E-LS-306: GA*				
1.3.1		Supply	No	1		
1.3.2		Install	No	1		
1.4		Manufacture, supply, off loading and installation of Pump Station No. 4 MCC Panel, and commissioning as detailed in the specifications and drawings. *60325-E-LS-303: Single line diagram* *60325-E-LS-307: GA*				
1.4.1		Supply	No	1		
1.4.2		Install	No	1		
1.5		**Local Control Stations**				
1.5.1		Surface mounted IP65 emergency stop push buttons.				
1.5.1.1		Supply	No	54		
1.5.1.2		Install	No	54		
1.5.2		3CR12 support stands for the above item.				
1.5.2.1		Supply	No	54		
1.5.2.2		Install	No	54		
Total Carried Forward						

BILL 4 BOQ 8: PUMP STATION ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		LV CABLE				
1.6		Supply and installation of copper PVC/PVC/SWA/PVCcables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required. All cables are Copper PVC/PVC/SWA/PVC cables per SANS 1507.				
1.6.1		150 mm² x 4 core				
1.6.1.1		Supply	m	800		
1.6.1.2		Install	m	800		
1.6.2		50 mm² x 4 core				
1.6.2.1		Supply	m	100		
1.6.2.2		Install	m	100		
1.6.3		25 mm² x 4 core				
1.6.3.1		Supply	m	Rate Only		
1.6.3.2		Install	m	Rate Only		
1.6.4		16 mm² x 4 core				
1.6.4.1		Supply	m	Rate Only		
1.6.4.2		Install	m	Rate Only		
1.6.5		10 mm² x 4 core				
1.6.5.1		Supply	m	480		
1.6.5.2		Install	m	480		
1.6.6		6 mm² x 4 core				
1.6.6.1		Supply	m	942		
1.6.6.2		Install	m	942		
1.6.7		4 mm² x 4 core				
1.6.7.1		Supply	m	Rate Only		
1.6.7.2		Install	m	Rate Only		
1.6.8		2.5 mm² x 4 core				
1.6.8.1		Supply	m	80		
1.6.8.2		Install	m	80		
1.6.9		1.5 mm² x 4 core				
1.6.9.1		Supply	m	4503		
1.6.9.2		Install	m	4503		
1.6.10		70 mm² BCEW				
1.6.10.1		Supply	m	320		
1.6.10.2		Install	m	320		
1.6.11		25 mm² x 3 core (VFD Cable)				
1.6.11.1		Supply	m	2658		
1.6.11.2		Install	m	2658		
1.6.12		4 mm² x 3 core (VFD Cable)				
1.6.12.1		Supply	m	423		
1.6.12.2		Install	m	423		
Total Carried Forward						

BILL 4 BOQ 8: PUMP STATION ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.6.13		25 mm² ICEW				
1.6.13.1		Supply	m	2658		
1.6.13.2		Install	m	2658		
1.6.14		4 mm² ICEW				
1.6.14.1		Supply	m	423		
1.6.14.2		Install	m	423		
1.7		Termination of copper PVC/PVC/SWA/PVC cables in MCC's, Field Isolators, Mini-substations, Motors and Junction Boxes. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.				
1.7.1		150 mm² x 4 core				
1.7.1.1		Supply	No	20		
1.7.1.2		Install	No	20		
1.7.2		50 mm² x 4 core				
1.7.2.1		Supply	No	2		
1.7.2.2		Install	No	2		
1.7.3		25 mm² x 4 core				
1.7.3.1		Supply	No	Rate Only		
1.7.3.2		Install	No	Rate Only		
1.7.4		16 mm² x 4 core				
1.7.4.1		Supply	No	8		
1.7.4.2		Install	No	8		
1.7.5		10 mm² x 4 core				
1.7.5.1		Supply	No	24		
1.7.5.2		Install	No	24		
1.7.6		6 mm² x 4 core				
1.7.6.1		Supply	No	24		
1.7.6.2		Install	No	24		
1.7.7		4 mm² x 4 core				
1.7.7.1		Supply	No	Rate Only		
1.7.7.2		Install	No	Rate Only		
1.7.8		2.5 mm² x 4 core				
1.7.8.1		Supply	No	8		
1.7.8.2		Install	No	8		
1.7.9		1.5 mm² x 4 core				
1.7.9.1		Supply	No	108		
1.7.9.2		Install	No	108		
1.7.10		70 mm² BCEW				
1.7.10.1		Supply	No	8		
1.7.10.2		Install	No	8		
1.7.11		25 mm² x 3 core (VFD Cable)				
1.7.11.1		Supply	m	48		
1.7.11.2		Install	m	48		
Total Carried Forward						

BILL 4 BOQ 8: PUMP STATION ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.7.12		4 mm² x 3 core (VFD Cable)				
1.7.12.1		Supply	m	12		
1.7.12.2		Install	m	12		
1.7.13		25 mm² ICEW				
1.7.13.1		Supply	m	48		
1.7.13.2		Install	m	48		
1.7.14		4 mm² ICEW				
1.7.14.1		Supply	m	12		
1.7.14.2		Install	m	12		
		CABLE LADDER AND TRAY				
1.8		3CR12 cable ladder including all accessories (Earth continuity jumpers16mm2, 10mm2, P1000 3CR12 Unistrut, splice kits) mounted to concrete slabs / walls.				
1.8.1		300 mm cable ladder				
1.8.1.1		Supply	m	40		
1.8.1.2		Install	m	40		
1.8.2		300mm 90° bends				
1.8.2.1		Supply	No	8		
1.8.2.2		Install	No	8		
1.8.3		300mm Riser/Dropper				
1.8.3.1		Supply	No	8		
1.8.3.1		Install	No	8		
1.8.4		300mm Tee Piece				
1.8.4.1		Supply	No	Rate Only		
1.8.4.2		Install	No	Rate Only		
1.8.5		100 mm cable ladder				
1.8.5.1		Supply	m	80		
1.8.5.2		Install	m	80		
1.8.6		100mm 90° bends				
1.8.6.1		Supply	No	Rate Only		
1.8.6.2		Install	No	Rate Only		
1.8.7		100mm Riser/Dropper				
1.8.7.1		Supply	No	Rate Only		
1.8.7.2		Install	No	Rate Only		
1.8.8		100mm Tee Piece				
1.8.8.1		Supply	No	Rate Only		
1.8.8.2		Install	No	Rate Only		
1.9		Installation Accessories				
1.9.1		P1000 - 3CR12 Unistrut				
1.9.1.1		Supply	m	10		
1.9.1.2		Install	m	10		
1.9.2		Angle Steel 3CR12 30mmx30mmx3mm				
1.9.2.1		Supply	m	10		
1.9.2.2		Install	m	10		
Total Carried Forward						

BILL 4 BOQ 8: PUMP STATION ELECTRICAL SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.9.3		Channel Steel 3CR12 100mmx50mmx6mm				
1.9.3.1		Supply	m	20		
1.9.3.2		Install	m	20		
1.10		Removal of Existing Equipment				
1.10.1		Disconnection and removal of the existing Pump Station No. 1 MCC panel, placement at the site laydown area.	Lot	1		
1.10.2		Disconnection and removal of the existing Pump Station No. 2 MCC panel, placement at the site laydown area.	Lot	1		
1.10.3		Disconnection and removal of the existing Pump Station No. 3 MCC panel, placement at the site laydown area.	Lot	1		
1.10.4		Disconnection and removal of the existing Pump Station No. 4 MCC panel, placement at the site laydown area.	Lot	1		
Total Carried Forward To Summary Of Bills						

BILL 4 BOQ 9: OHS, TESTING, COMMISSIONING, TRAINING, GENERAL - ELECTRICAL

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		(Refer to Electrical Specification: Annexure E)				
1	Pl. 7.2.	**OHS Signage & Labelling**				
1.1		Supply and install all signage as per OHS Act and Ethekwini Electricity requirements.	Sum	6		
1.2		Labelling of all cables, switches, and equipment as specified.	Sum	6		
2		**TESTING COMISSIONING & HANDOVER**				
2.1	Pl. 9.1.	**TESTING AND COMMISSIONING:**				
2.1.1		Test and commission complete installation per SANS 10142-1 and as specified.	Sum	6		
2.2	Pl. 9.2.	**DOCUMENTATION**				
2.2.1		Submit As-built drawings to the Engineers satisfaction. 1 x full set "red line" drawings (hard copy)	Sum	6		
2.2.2		Submit Operation & Maintenance Manuals to the Engineers satisfaction 3 x sets manufacturers and supplier schedules, operation and maintenance manuals and drawings (hard copy + CD)	Sum	6		
2.2.3		Issue Certificate of Compliance (CoC): - 1 for each DB - 1 overall CoC	Sum	6		
Total Carried Forward						

BILL 4 BOQ 9: OHS, TESTING, COMMISSIONING, TRAINING, GENERAL - ELECTRICAL

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2.2.4		Issue Earth certificate for the complete earth installation	Sum	6		
2.3	PI. 9.3.	**TRAINING**				
2.3.1		MV Switchgear, RMU's & Mini-substations (Training to cater for 5 operational and 5 engineering staff, unless noted otherwise)				
2.3.1.1		Detailed training on MV switchgear, operation to component level	Sum	1		
2.3.1.2		Overview training on 11kV protection and switchgear settings, including RTU.	Sum	1		
2.3.1.3		Comprehensive training on 11kV protection and switchgear settings (For 2 x engineers. 2 x technicians. All costs to be borne by the tenderer if training is offered out of Durban)	Sum	1		
2.3.1.4		MV switchgear maintenance requirements	Sum	1		
2.3.1.5		MV switchgear safety in operation and maintenance	Sum	1		
2.3.2		Generator Systems (Training to cater for 5 operational and 5 engineering staff, unless noted otherwise)				
2.3.2.1		Detailed training on generator and critical components	Sum	1		
2.3.2.2		Detailed training on generator operation, including engine management systems and electrical control	Sum	1		
2.3.2.3		Simple overview of protection systems	Sum	1		
2.3.3		Motor Control Centres (Training to cater for 5 operational and 5 engineering staff, unless noted otherwise)				
2.3.3.1		Detailed training on MCC and critical components	Sum	1		
2.3.3.2		Detailed training on operational systems, including interlocks, control system interface and intelligent relay/VFD/ softstarter configuration	Sum	1		
2.3.3.3		Safety in operations and maintenance	Sum	1		
2.3.4		Provide Training Manuals for critical operation and maintenance of the complete system.	Sum	1		
Total Carried Forward						

BILL 4 BOQ 9: OHS, TESTING, COMMISSIONING, TRAINING, GENERAL - ELECTRICAL

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
2.4		**FACTORY ACCEPTANCE TESTS**				
2.4.1		Witnessing of Inspections, tests, FAT etc. of equipment by the employers representatives and engineering team representatives outside of the eThekwini Metropolitan Area but within the Republic of South Africa as specified in the detailed specifications. Provision of 4 Pax.	Sum	1		
2.4.2		Witnessing of Inspections, tests, FAT etc. of equipment by the employers representatives and engineering team representatives outside of the eThekwini Metropolitan Area but outside the borders of the Republic of South Africa as specified in the detailed specifications. Provision for 4 Pax.	Sum	1		
2.5	Pl. 9.4.	**GENERAL**				
2.5.1		Guarantee and full maintenance of the complete electrical system for 12 months after handover to the client. Full list of material and maintenance plan to be provided	Mnts	12		
2.5.2		Guarantee and full maintenance of the complete Generator system for 12 months after handover to the client. To include all spares and replacement items for generator. Based on running time of 20Hrs per month. Full list of material and maintenance plan to be provided	Mnts	12		
2.5.3		Seal all cable entries in buildings and kiosks with foam seal to prevent ingress of water.	Sum	1		
2.5.4		Detection and re-loaction of existing services for electrical and ICT. All detection to be by hand excavations only.	Sum	1		
Total Carried Forward To Summary Of Bills						

BILL 5 BOQ 1: PRELIMINARY AND GENERAL

PACKAGE A : SECTION 1: PRELIMINARIES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		SECTION 1				
		PRELIMINARIES				
		Allow for preliminary and general items				
1.1		Fixed	Item	1		
1.2		Time	Item	1		
1.3		Value	Item	1		
Total Carried Forward To Summary Of Bills						

BILL 5 BOQ 2: INLET WORKS C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		(Refer to Control & Instrumentation Specification: Annexure F)				
1		**INLET WORKS C&I SYSTEM**				
		PLC System				
1.1		Manufacture, supply, off loading and installation of the Inlet Works PLC system (panel integral to the MCC panel), and commissioning as detailed in the specifications and drawings. *60325-I-GW-904: Typical PLC GA*				
1.1.1		Supply	No	1		
1.1.2		Install	No	1		
1.2		Manufacture, supply, off loading and installation of the Second Class Water PLC system (panel integral to the MCC panel), and commissioning as detailed in the specifications and drawings.				
1.2.1		Supply	No	1		
1.2.2		Install	No	1		
1.3		**Field Junction Boxes**				
1.3.1	PI.2.2.	Manufacture, supply, off loading and installation of 304 SS Instrument Junction Boxes as detailed in the specifications and drawings. (Drawing Number 60325-I-GW-905)				
1.3.1.1		Supply	No	10		
1.3.1.2		Install	No	10		
1.3.2		3CR12 support stands for the above item.				
1.3.2.1		Supply	No	10		
1.3.2.2		Install	No	10		
1.3.3	PI.2.1.	Manufacture, supply, off loading and installation of 304 SS Junction Boxes Type A, as detailed in the specifications and drawings. (Drawing Number 60325-I-GW-902)				
1.3.3.1		Supply	No	3		
1.3.3.2		Install	No	3		
1.3.4		3CR12 support stands for the above item.				
1.3.4.1		Supply	No	3		
1.3.4.2		Install	No	3		
1.3.5	PI.2.1.	Manufacture, supply, off loading and installation of 304 SS Junction Boxes Type B, as detailed in the specifications and drawings. (Drawing Number 60325-I-GW-903)				
1.3.5.1		Supply	No	6		
1.3.5.2		Install	No	6		
Carried Forward						

BILL 5 BOQ 2: INLET WORKS C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.3.6		3CR12 support stands for the above item.				
1.3.6.1		Supply	No	6		
1.3.6.2		Install	No	6		
1.3.7		Industrial 4 -way junction boxes, glass reinforced polyester				
1.3.7.1		Supply	No	23		
1.3.7.2		Install	No	23		
		Control & Instrumentation Cabling				
1.4	PI.1.3.	Supply and installation of copper Dekabon armoured individual & overall screened 1.0mm^2 cables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required.				
1.4.1		2 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.4.1.1		Supply	m	1330		
1.4.1.2		Install	m	1330		
1.4.2		4 Triad 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.4.2.1		Supply	m	60		
1.4.2.2		Install	m	60		
1.4.3		4 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.4.3.1		Supply	m	60		
1.4.3.2		Install	m	60		
1.4.4		8 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.4.4.1		Supply	m	320		
1.4.4.2		Install	m	320		
1.4.5		12 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.4.5.1		Supply	m	200		
1.4.5.2		Install	m	200		
1.4.6		16 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.4.6.1		Supply	m	60		
1.4.6.2		Install	m	60		
1.5	PI.1.4.	Termination of copper copper Dekabon armoured individual & overall screened 1.0mm^2 cables. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.				
1.5.1		2 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC	No	180		
1.5.1.1		Supply	No	180		
1.5.1.2		Install				
1.5.2		4 Triad 1.0mm^2 IAOS/PVC/Dekabon/PVC	No	8		
1.5.2.1		Supply	No	8		
1.5.2.2		Install				
Carried Forward						

BILL 5 BOQ 2: INLET WORKS C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.5.3		4 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.5.3.1		Supply	No	2		
1.5.3.2		Install	No	2		
1.5.4		8 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.5.4.1		Supply	No	12		
1.5.4.2		Install	No	12		
1.5.5		12 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.5.5.1		Supply	No	10		
1.5.5.2		Install	No	10		
1.5.6		16 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.5.6.1		Supply	No	4		
1.5.6.2		Install	No	4		
		LV Cable				
1.6	PI.1.1.	Supply and installation of copper PVC/PVC/SWA/PVC cables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required. All cables are Copper PVC/PVC/SWA/PVC cables per SANS 1507.				
1.6.1		4 mm² x 4 core				
1.6.1.1		Supply	m	200		
1.6.1.2		Install	m	200		
1.6.2		2.5 mm² x 3 core				
1.6.2.1		Supply	m	140		
1.6.2.2		Install	m	140		
1.6.3		1.5 mm² x 4 core				
1.6.3.1		Supply	m	255		
1.6.3.1		Install	m	255		
1.6.4		1.5 mm² x 3 core				
1.6.4.1		Supply	m	150		
1.6.4.2		Install	m	150		
1.7	PI.1.2.	Termination of copper PVC/PVC/SWA/PVC cables. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.				
1.7.1		4 mm² x 4 core				
1.7.1.1		Supply	No	6		
1.7.1.2		Install	No	6		
1.7.2		2.5 mm² x 3 core				
1.7.2.1		Supply	No	4		
1.7.2.2		Install	No	4		
Carried Forward						

BILL 5 BOQ 2: INLET WORKS C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.7.3		1.5 mm² x 4 core				
1.7.3.1		Supply	No	34		
1.7.3.2		Install	No	34		
1.7.4		1.5 mm² x 3 core				
1.7.4.1		Supply	No	20		
1.7.4.2		Install	No	20		
		Communication Cable				
1.8		Supply and installation of Communication cables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required.				
1.8.1		CAT6 STP - SWA				
1.8.1.1		Supply	m	255		
1.8.1.2		Install	m	255		
1.8.2		8 Core Multimode Fibre Optic Cabling, SWA				
1.8.2.1		Supply	m	200		
1.8.2.2		Install	m	200		
1.9		Termination of Communication cables. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.				
1.9.1		CAT6 STP - SWA				
1.9.1.1		Supply	No	34		
1.9.1.2		Install	No	34		
1.9.2		8 Core Multimode Fibre Optic Cabling, SWA				
1.9.2.1		Supply	No	6		
1.9.2.2		Install	No	6		
1.10		**Splicing and OTDR Testing of the Fibre Cabling**				
1.10.1		Splicing - Per 8 FO End	No	6		
1.10.2		OTDR Testing - Per 8 FO End	No	6		
		Field Instrumentation				
1.11	PI.3.1.	Field Instrumentation: Includes the supply and installation of the field instrumenation as detailed in the specfication and data sheets, including all installation accessories and mounting brackets.				
1.12		Open Channel Flow Transmitter - (Data Sheet B7.7.1-1)				
1.12.1		Supply	No	1		
1.12.2		Install	No	1		
Carried Forward						

BILL 5 BOQ 2: INLET WORKS C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.13		Open Channel Flow Transmitter - (Data Sheet B7.7.1-2)				
1.13.1		Supply	No	1		
1.13.2		Install	No	1		
1.14		Screen Differential Level Transmitter - (Data Sheet B7.7.2-1)				
1.14.1		Supply	No	6		
1.14.2		Install	No	6		
1.15		Washer Compactor Level Transmitter - (Data Sheet B7.7.4-2)				
1.15.1		Supply	No	2		
1.15.2		Install	No	2		
1.16		Skip Position Proximity Switch - (Data Sheet B7.7.3-1)				
1.16.1		Supply	No	6		
1.16.2		Install	No	6		
1.17		Slurry Pump Flow Switch - (Data Sheet B7.7.6-1)				
1.17.1		Supply	No	2		
1.17.2		Install	No	2		
1.18		Grit Classifier Pressure Transmitter - (Data Sheet B7.7.4-1)				
1.18.1		Supply	No	2		
1.18.2		Install	No	2		
1.19		HP Booster Pump Pressure Switch - (Data Sheet B7.7.7-1)				
1.19.1		Supply	No	2		
1.19.2		Install	No	2		
1.20		Screened Sewage Pump Vibration Transmitter - (Data Sheet B7.7.9-1)	No	16		
1.20.1		Supply	No	16		
1.20.2		Install	No	16		
1.21		Screened Sewage Pump Bearing Temp Transmitter - (Data Sheet B7.7.8-1)				
1.21.1		Supply	No	8		
1.21.2		Install	No	8		
1.22		Motor Winding Temp Transmitter - (Data Sheet B7.7.8-2)				
1.22.1		Supply	No	12		
1.22.2		Install	No	12		
1.23		Screened Sump Level Transmitter - (Data Sheet B7.7.5-1)				
1.23.1		Supply	No	1		
1.23.2		Install	No	1		
Carried Forward						

BILL 5 BOQ 2: INLET WORKS C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.24		Bio-reactor Feed Line Pressure Transmitter - (Data Sheet B7.7.4-3)				
1.24.1		Supply	No	1		
1.24.2		Install	No	1		
1.25		Sceened Sewage Pump Flow Switch - (Data Sheet B7.7.6-2)				
1.25.1		Supply	No	4		
1.25.2		Install	No	4		
1.26		Dry Well Sump Level Switch - (Data Sheet B7.7.10-1)				
1.26.1		Supply	No	1		
1.26.2		Install	No	1		
1.27		Screened Sump Level Switch - (Data Sheet B7.7.10-2)				
1.27.1		Supply	No	1		
1.27.2		Install	No	1		
1.28		Second Class Water Pressure Transmitter - (Data Sheet B7.7.4-4)				
1.28.1		Supply	No	1		
1.28.2		Install	No	1		
1.29		Second Class Water Pump Flow Switch - (Data Sheet B7.7.6-3)				
1.29.1		Supply	No	4		
1.29.2		Install	No	4		
1.30		Ultrafine Screenings Conveyor Selector Position Limit - (Data Sheet B7.7.3-4)				
1.30.1		Supply	No	4		
1.30.2		Install	No	4		
1.31		Ultrafine Screenings Conveyor Cover Proximity Switch - (Data Sheet B7.7.3-5)				
1.31.1		Supply	No	2		
1.31.2		Install	No	2		
		Cable Ladder and Tray				
1.32	PI.4.1	3CR12 cable ladder including all accessories (Earth continuity jumpers16mm^2, 10mm^2, P1000 3CR12 Unistrut, splice kits) mounted to concrete slabs / walls.				
1.32.1		300 mm cable ladder				
1.32.1.1		Supply	m	150		
1.32.1.2		Install	m	150		
1.33.2		300mm 90° bends				
1.33.2.1		Supply	No	10		
1.33.2.2		Install	No	10		
1.32.3		300mm Riser/Dropper				
1.32.3.1		Supply	No	10		
1.32.3.2		Install	No	10		
1.32.4		300mm Tee Piece				
1.32.4.1		Supply	No	1		
1.32.4.2		Install	No	1		
Carried Forward						

BILL 5 BOQ 2: INLET WORKS C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.32.5		100 mm cable ladder				
1.32.5.1		Supply	m	75		
1.32.5.2		Install	m	75		
1.32.6		100mm 90° bends				
1.32.6.1		Supply	No	6		
1.32.6.2		Install	No	6		
1.32.7		100mm Riser/Dropper				
1.32.7.1		Supply	No	5		
1.32.7.1		Install	No	5		
1.32.8		100mm Tee Piece				
1.32.8.1		Supply	No	Rate Only		
1.32.8.2		Install	No	Rate Only		
1.33		Installation Accessories				
1.33.1		P1000 - 3CR12 Unistrut				
1.33.1.1		Supply	m	40		
1.33.1.2		Install	m	40		
1.33.2		Angle Steel 3CR12 30mmx30mmx3mm				
1.33.2.1		Supply	m	50		
1.33.2.2		Install	m	50		
1.33.3		Channel Steel 3CR12 100mmx50mmx6mm				
1.33.3.1		Supply	m	30		
1.33.3.2		Install	m	30		
Total Carried Forward To Summary Of Bills						

BILL 5 BOQ 3: DE-WATERING C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		(Refer to Control & Instrumentation Specification: Annexure F)				
1		**DE-WATERING PLANT C&I SYSTEM**				
		PLC System				
1.1		Manufacture, supply, off loading and installation of the De-watering Plant PLC system (panel integral to the MCC panel), and commissioning as detailed in the specifications and drawings. *60325-I-GW-904: Typical PLC GA*				
1.1.1		Supply	No	1		
1.1.2		Install	No	1		
1.2		Manufacture, supply, off loading and installation of the Sludge Transfer PLC system (panel integral to the MCC panel), and commissioning as detailed in the specifications and drawings.				
1.2.1		Supply	No	1		
1.2.2		Install	No	1		
1.3		**Field Junction Boxes**				
1.3.1	PI.2.2.	Manufacture, supply, off loading and installation of 304 SS Instrument Junction Boxes as detailed in the specifications and drawings. (Drawing Number 60325-I-GW-905)				
1.3.1.1		Supply	No	15		
1.3.1.2		Install	No	15		
1.3.2		3CR12 support stands for the above item.				
1.3.2.1		Supply	No	15		
1.3.2.2		Install	No	15		
1.3.3	PI2.1.	Manufacture, supply, off loading and installation of 304 SS Junction Boxes Type A, as detailed in the specifications and drawings. (Drawing Number 60325-I-GW-902)				
1.3.3.1		Supply	No	3		
1.3.3.2		Install	No	3		
Total Carried Forward						

BILL 5 BOQ 3: DE-WATERING C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.3.4		3CR12 support stands for the above item.				
1.3.4.1		Supply	No	3		
1.3.4.2		Install	No	3		
1.3.5		Industrial 4 -way junction boxes, glass reinforced polyester				
1.3.5.1		Supply	No	12		
1.3.5.2		Install	No	12		
		Control & Instrumentation Cabling				
1.4	PI.1.3.	Supply and installation of copper Dekabon armoured individual & overall screened 1.0mm^2 cables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required.				
1.4.1		2 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.4.1.1		Supply	m	660		
1.4.1.2		Install	m	660		
1.4.2		4 Triad 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.4.2.1		Supply	m	Rate Only		
1.4.2.2		Install	m	Rate Only		
1.4.3		4 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.4.3.1		Supply	m	Rate Only		
1.4.3.2		Install	m	Rate Only		
1.4.4		8 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC	m	119		
1.4.4.1		Supply	m	119		
1.4.4.2		Install				
1.4.5		12 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.4.5.1		Supply	m	62		
1.4.5.2		Install	m	62		
1.4.6		16 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.4.6.1		Supply	m	19		
1.4.6.2		Install	m	19		
1.5	PI.1.4.	Termination of copper copper Dekabon armoured individual & overall screened 1.0mm^2 cables. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.				
1.5.1		2 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.5.1.1		Supply	No	84		
1.5.1.2		Install	No	84		
1.5.2		4 Triad 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.5.2.1		Supply	No	Rate Only		
1.5.2.2		Install	No	Rate Only		
Total Carried Forward						

BILL 5 BOQ 3: DE-WATERING C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.5.3		4 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.5.3.1		Supply	No	Rate Only		
1.5.3.2		Install	No	Rate Only		
1.5.4		8 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.5.4.1		Supply	No	6		
1.5.4.2		Install	No	6		
1.5.5		12 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.5.5.1		Supply	No	4		
1.5.5.2		Install	No	4		
1.5.6		16 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.5.6.1		Supply	No	2		
1.5.6.2		Install	No	2		
		LV Cable				
1.6	PI.1.1.	Supply and installation of copper PVC/PVC/SWA/PVC cables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required. All cables are Copper PVC/PVC/SWA/PVC cables per SANS 1507.				
1.6.1		4 mm² x 4 core				
1.6.1.1		Supply	m	100		
1.6.1.2		Install	m	100		
1.6.2		2.5 mm² x 3 core				
1.6.2.1		Supply	m	100		
1.6.2.1		Install	m	100		
1.6.3		1.5 mm² x 4 core				
1.6.3.1		Supply	m	405		
1.6.32		Install	m	405		
1.6.4		1.5 mm² x 3 core				
1.6.4.1		Supply	m	315		
1.6.4.2		Install	m	315		
1.7	PI.1.2.	Termination of copper PVC/PVC/SWA/PVC cables. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.				
1.7.1		4 mm² x 4 core				
1.7.1.1		Supply	No	6		
1.7.1.2		Install	No	6		
1.7.2		2.5 mm² x 3 core				
1.7.2.1		Supply	No	6		
1.7.2.2		Install	No	6		
1.7.3		1.5 mm² x 4 core				
1.7.3.1		Supply	No	42		
1.7.3.2		Install	No	42		
Total Carried Forward						

BILL 5 BOQ 3: DE-WATERING C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.7.4		1.5 mm² x 3 core				
1.7.4.1		Supply	No	38		
1.7.4.2		Install	No	38		
		Communication Cable				
1.8		Supply and installation of Communication cables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required.				
1.8.1		CAT6 STP - SWA				
1.8.1.1		Supply	m	405		
1.8.1.2		Install	m	405		
1.8.2		8 Core Multimode Fibre Optic Cabling, SWA				
1.8.2.1		Supply	m	100		
1.8.2.2		Install	m	100		
1.9		Termination of Communication cables. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.				
1.9.1		CAT6 STP - SWA				
1.9.1.1		Supply	No	42		
1.9.1.2		Install	No	42		
1.9.2		8 Core Multimode Fibre Optic Cabling, SWA				
1.9.2.1		Supply	No	6		
1.9.2.2		Install	No	6		
1.1		Splicing and OTDR Testing of the Fibre Cabling				
1.10.1		Splicing - Per 8 FO End - Supply	No	6		
1.10.2		OTDR Testing - Per 8 FO End - Supply	No	6		
		Field Instrumentation				
1.11	PI.3.1.	Field Instrumentation: Includes the supply and installation of the field instrumenation as detailed in the specfication and data sheets, including all installation accessories and mounting brackets.				
1.12		Feed Solids Transmitter - (Data Sheet B7.7.13-1)				
1.12.1		Supply	No	2		
1.12.2		Install	No	2		
1.13.1		Centrifuge Feed Magflo Transmitter - (Data Sheet B7.7.11-1)				
1.13.1.1		Supply	No	2		
1.13.1.2		Install	No	2		
Total Carried Forward						

BILL 5 BOQ 3: DE-WATERING C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.14		Centrifuge Dilution Water Magflo Transmitter - (Data Sheet B7.7.11-2)				
1.14.1		Supply	No	2		
1.14.2		Install	No	2		
1.15		Polyelectrolyte Magflo Transmitter - (Data Sheet B7.7.11-3)				
1.15.1		Supply	No	2		
1.15.2		Install	No	2		
1.16		Polyelectrolyte Lubrication Magflo Transmitter - (Data Sheet B7.7.11-4)				
1.16.1		Supply	No	1		
1.16.2		Install	No	1		
1.17		Poly Make-up Water Magflo Transmitter - (Data Sheet B7.7.11-5)				
1.17.1		Supply	No	1		
1.17.2		Install	No	1		
1.18		Centrifuge Feed Pump Pressure Transmitter - (Data Sheet B7.7.4-6)				
1.18.1		Supply	No	2		
1.18.2		Install	No	2		
1.19		Centrifuge Feed Tank Level Transmitter - (Data Sheet B7.7.4-5)				
1.19.1		Supply	No	1		
1.19.2		Install	No	1		
1.20		Centrifuge Feed Tank Level Switch - (Data Sheet B7.7.10-3)				
1.20.1		Supply	No	2		
1.20.2		Install	No	2		
1.21		Poly Dosing Pump Pressure Transmitter - (Data Sheet B7.7.4-7)				
1.21.1		Supply	No	2		
1.21.2		Install	No	2		
1.22		Poly Lubrication Pump Pressure Transmitter - (Data Sheet B7.7.4-9)				
1.22.1		Supply	No	2		
1.22.2		Install	No	2		
1.23		Cake Pump Pressure Transmitter - (Data Sheet B7.7.4-8)				
1.23.1		Supply	No	2		
1.23.2		Install	No	2		
1.24		Cake Pump Hopper Level -(Data Sheet B7.7.5-2)				
1.24.1		Supply	No	2		
1.24.2		Install	No	2		
Total Carried Forward						

BILL 5 BOQ 3: DE-WATERING C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.25		Sludge Cake Silo Level -(Data Sheet B7.7.5-3)				
1.25.1		Supply	No	2		
1.25.2		Install	No	2		
1.26		Hopper Flap Proximity Switch - (Data Sheet B7.7.3-2)				
1.26.1		Supply	No	2		
1.26.2		Install	No	2		
1.27		Sludge Conveyor Cover Proximity Switch - (Data Sheet B7.7.3-2)				
1.27.1		Supply	No	2		
1.27.2		Install	No	2		
1.28		Existing WAS Sump Level Transmitter - (Data Sheet B7.7.5-4)				
1.28.1		Supply	No	1		
1.28.2		Install	No	1		
1.29		WAS Transfer Pump Flow Switch - (Data Sheet B7.7.6-4)				
1.29.1		Supply	No	2		
1.29.2		Install	No	2		
		Cable Ladder and Tray				
1.30	PI.4.1.	3CR12 cable ladder including all accessories (Earth continuity jumpers16mm^2, 10mm^2, P1000 3CR12 Unistrut, splice kits) mounted to concrete slabs / walls.				
1.30.1		300 mm cable ladder				
1.30.1.1		Supply	m	50		
1.30.1.2		Install	m	50		
1.30.2		300mm 90° bends				
1.30.2.1		Supply	No	3		
1.30.2.2		Install	No	3		
1.30.3		300mm Riser/Dropper				
1.30.3.1		Supply	No	3		
1.30.3.2		Install	No	3		
1.30.4		300mm Tee Piece				
1.30.4.1		Supply	No	Rate Only		
1.30.4.2		Install	No	Rate Only		
1.30.5		100 mm cable ladder				
1.30.5.1		Supply	m	60		
1.30.5.2		Install	m	60		
1.30.6		100mm 90° bends				
1.30.6.1		Supply	No	6		
1.30.6.2		Install	No	6		
1.30.7		100mm Riser/Dropper				
1.30.7.1		Supply	No	4		
1.30.7.2		Install	No	4		
Total Carried Forward						

BILL 5 BOQ 3: DE-WATERING C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.30.8		100mm Tee Piece				
1.30.8.1		Supply	No	1		
1.30.8.2		Install	No	1		
1.30.9		Installation Accessories				
1.30.9.1		P1000 - 3CR12 Unistrut				
1.30.9.1.1		Supply	m	25		
1.30.9.1.2		Install	m	25		
1.30.9.2		Angle Steel 3CR12 30mmx30mmx3mm				
1.30.9.2.1		Supply	m	30		
1.30.9.2.2		Install	m	30		
1.30.9.3		Channel Steel 3CR12 100mmx50mmx6mm				
1.30.9.3.1		Supply	m	20		
1.30.9.3.2		Install	m	20		
Total Carried Forward To Summary Of Bills						

BILL 5 BOQ 4: PUMP STATION C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		(Refer to Control & Instrumentation Specification: Annexure F)				
1		**PUMP STATION C&I SYSTEMS**				
1.1		**PLC System**				
		Manufacture, supply, off loading and installation of the Pump Station PLC system (panel integral to the MCC panel), and commissioning as detailed in the specifications and drawings.				
1.1.1		Supply	No	4		
1.1.2		Install	No	4		
1.2		**Field Junction Boxes**				
1.2.1	PI.2.2.	Manufacture, supply, off loading and installation of 304 SS Instrument Junction Boxes as detailed in the specifications and drawings. (Drawing Number 60325-I-GW-905)				
1.2.1.1		Supply	No	12		
1.2.1.2		Install	No	12		
1.2.2		3CR12 support stands for the above item.				
1.2.2.1		Supply	No	12		
1.2.2.2		Install	No	12		
		Control & Instrumentation Cabling				
1.3	PI.1.3.	Supply and installation of copper Dekabon armoured individual & overall screened 1.0mm^2 cables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required.				
1.3.1		2 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.3.1.1		Supply	m	1400		
1.3.1.2		Install	m	1400		
1.4	PI.1.4.	Termination of copper copper Dekabon armoured individual & overall screened 1.0mm^2 cables. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.				
1.4.1		2 Pair 1.0mm^2 IAOS/PVC/Dekabon/PVC				
1.4.1.1		Supply	No	24		
1.4.1.2		Install	No	24		
Total Carried Forward						

BILL 5 BOQ 4: PUMP STATION C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		LV Cable				
1.5	PI.1.1.	Supply and installation of copper PVC/PVC/SWA/PVC cables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required. All cables are Copper PVC/PVC/SWA/PVC cables per SANS 1507.				
1.5.1		1.5 mm² x 3 core				
1.5.1.1		Supply	m	1400		
1.5.1.2		Install	m	1400		
1.6	PI.1.2.	Termination of copper PVC/PVC/SWA/PVC cables. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.				
1.6.1		1.5 mm² x 3 core				
1.6.1.1		Supply	No	24		
1.6.1.2		Install	No	24		
		Field Instrumentation				
1.7	PI.3.1.	Field Instrumentation: Includes the supply and installation of the field instrumenation as detailed in the specfication and data sheets, including all installation accessories and mounting brackets.				
1.7.1		Dissolved Oxygen Transmitter - (Data Sheet B7.7.12-1)				
1.7.1.1		Supply	No	12		
1.7.1.2		Install	No	12		
		Cable Ladder and Tray				
1.8	PI.4.1.	3CR12 cable ladder including all accessories (Earth continuity jumpers16mm^2, 10mm^2, P1000 3CR12 Unistrut, splice kits) mounted to concrete slabs / walls.				
1.8.1		100 mm cable ladder				
1.8.1.1		Supply	m	60		
1.8.1.2		Install	m	60		
Total Carried Forward						

BILL 5 BOQ 4: PUMP STATION C&I SYSTEM

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.8.2		100mm 90° bends				
1.8.2.1		Supply	No	6		
1.8.2.2		Install	No	6		
1.8.3		100mm Riser/Dropper				
1.8.3.1		Supply	No	4		
1.8.3.2		Install	No	4		
1.8.4		100mm Tee Piece				
1.8.4.1		Supply	No	1		
1.8.4.2		Install	No	1		
1.9		**Installation Accessories**				
1.9.1		P1000 - 3CR12 Unistrut				
1.9.1.1		Supply	m	25		
1.9.1.2		Install	m	25		
1.9.2		Angle Steel 3CR12 30mmx30mmx3mm				
1.9.2.1		Supply	m	30		
1.9.2.2		Install	m	30		
1.9.3		Channel Steel 3CR12 100mmx50mmx6mm				
1.9.3.1		Supply	m	20		
1.9.3.2		Install	m	20		
Total Carried Forward To Summary Of Bills						

BILL 5 BOQ 5: NETWORK SYSTEMS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		(Refer to Control & Instrumentation Specification: Annexure F)				
1		**NETWORK SYSTEM**				
		Fibre Cable				
1.1		Supply and installation of 8 Core Multi-Mode cables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required.				
1.1.1		8 Core Multimode Fibre Optic Cabling, SWA				
1.1.1.1		Supply	m	2015		
1.1.1.2		Install	m	2015		
1.2		Termination of Fibre Optic cables. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.				
1.2.1		8 Core Multimode Fibre Optic Cabling, SWA				
1.2.1.1		Supply	No	38		
1.2.1.2		Install	No	38		
1.3		Splicing and OTDR Testing of the Fibre Cabling				
1.3.1		Splicing - Per 8 FO End - Supply	No	38		
1.3.2		OTDR Testing - Per 8 FO End - Supply	No	38		
		NETWORK EQUIPMENT				
1.4		Network Equipment: Includes the supply and installation of the network hardware as detailed in the specfication and data sheets, including all installation accessories and mounting brackets.				
1.4.1		Control room network panel, Ethernet Switch, Hardware Firewall, 32 way patch panel, patch leads and all required accessories.				
1.4.1.1		Supply	Sum	1		
1.4.1.2		Install	Sum	1		
1.4.2		Minisubstation Unit - Network Equipment. Includes Ethernet Switch, 2 x 8 way patch panels, patch leads and all required accessories.	Sum	6		
1.4.2.1		Supply	Sum	6		
1.4.2.2		Install				
Total Carried Forward						

BILL 5 BOQ 5: NETWORK SYSTEMS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.4.3		Generator - Network Equipment. Includes Ethernet Switch, 2 x 8 way patch panels, patch leads and all required accessories.				
1.4.3.1		Supply	Sum	1		
1.4.3.2		Install	Sum	1		
1.4.4		Main Substation - Network Equipment. Includes Ethernet Switch, 2 x 8 way patch panels, patch leads and all required accessories.				
1.4.4.1		Supply	Sum	1		
1.4.4.2		Install	Sum	1		
2	Pl. 5.1.	**SLEEVES**				
		Supply and installation of HDPE sleeves buried in ground as specified for C&I services, including couplings in accordance with non-metallic sleeves and accessories as per SANS 61386-24. Tenderers to note that all sleeves under buildings will be encased in concrete by the building contractor.				
2.1		110mm Flexible double walled black corrugated sleeves including 6mm pilot string as draw wire in each sleeve				
2.1.1		Supply	m	1250		
2.1.2		Install	m	1250		
3	Pl. 5.2.	**MANHOLES**				
		Construction of watertight manholes in ground as specified for Electrical & data services, including, lockable cover, seals ,bushes, sleeve entries and end caps. Inclusive of cover and frame (Cover and frame - colour: GREY) including engraving on cover to read : "DATA" for data manholes and "ELECTRICAL" for electrical manholes **To include:** **- 300 x 300mm bidem bag with 19mm stone for soak away.** **- Plinth, brickwork, frame cover, waterproofing, drainage, sleeve stubs and end caps for spare pipes.** **- All sleeves to be foam sealed after cable installation to prevent water ingress into manholes.**				
3.1		800mm x800 x 800mm deep (Internal dimensions) manhole - Electrical / (15kg) - Lockable				
3.1.1		Supply	No	16		
3.1.2		Install	No	16		
Total Carried Forward						

BILL 5 BOQ 5: NETWORK SYSTEMS

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
4	PI.5.3.	**EXCAVATIONS & BACKFILL** **Excavate for cables and sleeves including temporary support of sides, keeping excavation dry, bedding material, backfilling, compacting and testing as specified. All backfill material to be suitable as per SANS codes and engineers approval. Backfill material to be imported if necessary.**				
4.1		In soft or pickable soil (60%)				
4.1.1		Supply	m³	577.5		
4.1.2		Install	m³	577.5		
4.2		In medium rock (20%)				
4.2.1		Supply	m³	192.5		
4.2.2		Install	m³	192.5		
4.3		In hard rock (20%)				
4.3.1		Supply	m³	192.5		
4.3.2		Install	m³	192.5		
Total Carried Forward To Summary Of Bills						

BILL 5 BOQ 6: SYSTEM INTEGRATION, TESTING, TRAINING, GENERAL CONTROL & INSTRUMENTATION

PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		(Refer to Control & Instrumentation Specification: Annexure F)				
1		**SYSTEM INTEGRATION**				
		A provsional sum has been included for a specialist company to perform the system integration of the site control system, which includes; system design, software development, factory acceptance testing, site acceptance testing, commissioning, supply and installation of the requried SCADA and reporting hardware, provision of the required licenses. This will include the following:				
1.1		Software Development PLC Software Development SCADA System Software Development HMI Screens Development	Prov Sum	1	1 500 000	R 1 500 000.00
1.2		Software Licenses SCADA Runtime License Historian License Reporting License PLC Engineering License SCADA Development Lincense Network Monitoring Software	Prov Sum	1	500 000	R 500 000.00
1.3		PC Hardware Requirements Redundant Servers - Historian - Reporting - SCADA Operator Stations Engineering Station	Prov Sum	1	1 250 000	R 1 250 000.00
1.4		Testing and Commissioning Factory Acceptance Testing Site Acceptance Testing Cold Commissioning Hot Commissioning	Prov Sum	1	1 000 000	R 1 000 000.00
Total Carried Forward						4250 000.00

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ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						4250 000.00
2		**TESTING COMISSIONING & HANDOVER**				
2.1	Pl. 6.1.	**TESTING AND COMMISSIONING:**				
2.1.1		Test and commission complete installation per SANS 10142-1 and as specified.	Sum	1		
2.2	Pl. 6.2.	**DOCUMENTATION**				
2.2.1		Submit As-built drawings to the Engineers satisfaction. 1 x full set "red line" drawings (hard copy)	Sum	1		
2.2.2		Submit Operation & Maintenance Manuals to the Engineers satisfaction 3 x sets manufacturers and supplier schedules, operation and maintenance manuals and drawings (hard copy + CD)	Sum	1		
2.3	Pl. 6.3.	**TRAINING**				
		Control, Instrumentation and SCADA Equipment (Training to cater for 5 operational and 5 engineering staff, unless noted otherwise)				
2.3.1		Detailed training on the specific PLC, Instrumentation, control and SCADA equipment supplied.	Sum	1		
2.3.2		Detailed training on process operations with regards to control philosophy understanding. Common PLC, Instrumentation, control and SCADA faults and what action is needed	Sum	1		
2.3.3		Detailed training on PLC, Instrumentation, control and SCADA settings, programming - (For 2 x engineers. 2 x technicians. All costs to be borne by the tenderer if training is offered out of Durban)	Sum	1		
2.3.4		Maintenance training, installation of common spare parts	Sum	1		
2.3.5		Safety in operations and maintenance	Sum	1		
2.3.6		Provision of Training Manuals for critical operation and maintenance of the complete system.	Sum	1		
Total Carried Forward						4250 000.00

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PACKAGE A

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						4250 000.00
2.4		**FACTORY ACCEPTANCE TESTS**				
2.4.1		Witnessing of Inspections, tests, FAT etc. of equipment by the employers representatives and engineering team representatives outside of the eThekwini Metropolitan Area but within the Republic of South Africa as specified in the detailed specifications.	Sum	1		
2.4.2		Witnessing of Inspections, tests, FAT etc. of equipment by the employers representatives and engineering team representatives outside of the eThekwini Metropolitan Area but within the Republic of South Africa as specified in the detailed specifications.	Sum	1		
2.5	Pl. 6.4.	**GENERAL**				
2.5.1		Guarantee and full maintenance of the complete C&I system for 12 months after handover to the client. Full list of material and maintenance plan to be provided	Mnts	12		
2.5.2		Seal all cable entries in buildings and kiosks with foam seal to prevent ingress of water.	Sum	1		
2.5.3		Detection and re-loaction of existing services for electrical and ICT. All detection to be by hand excavations only.	Sum	1		
Total Carried Forward To Summary Of Bills						4250 000.00