

SECTION 1: PRELIMINARY & GENERAL

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		SECTION 1: PRELIMINARY & GENERAL				
1.1	SANS 1200 A	SCHEDULED FIXED-CHARGE AND VALUE RELATED ITEMS				
1.1.1	PSA 8.3.1	Contractual Requirements	Sum	1		
	8.3.2	Establishment of Facilities on the Site:				
	SANS 1200AB	Facilities for the Engineer:				
1.1.2	PSAB 3.1	Contract Name boards (Refer to Figure 1)	No	2		
1.1.3	PSAB 3.2	Furnished office and Accommodation, as specified	P.Sum	1	R 15 000.00	R 15 000.00
1.1.4	PSAB 3.3	Car port	No	1		
1.1.5	PSAB 4.3	Computer	No	1		
	SANS 1200 A	Facilities for the Contractor:				
1.1.7	8.3.2.2 (a)	Site Offices	Sum	1		
1.1.8	8.3.2.2 (b)	Workshops & Storage Sheds	Sum	1		
1.1.9	8.3.2.2 (d)	Living accommodation	Sum	1		
1.1.10	8.3.2.2 (e)	Ablution and latrine facilities with wash hand basins and taps	Sum	1		
1.1.11	8.3.2.2 (f)	Tools and equipment	Sum	1		
1.1.12	8.3.2.2 (g)	Water supplies, electrical power and communications	Sum	1		
1.1.13	8.3.2.2 (i)	Access	Sum	1		
1.1.14	8.3.2.2 (j)	Plant	Sum	1		
1.1.15	PSA8.3.2.2 (k)	Rain gauge	Sum	1		
1.1.16	8.3.3	Other Fixed-charge obligations not included (To be specified, if any): <i>Note: No payment shall be made if Item 1.1.16 is priced, but not specified.</i>	Sum	1		
1.1.17	8.3.4	Removal, clean and rehabilitate of Contractor's camp and site establishment, including offices, container facilities, fencing, materials, ablutions, fuel supply, etc.	Sum	1		
1.2	SANS 1200 A, AB	SCHEDULED TIME-RELATED ITEMS				
1.2.1	PSA 8.4.1	Contractual Requirements	Month	8		
	PSA 8.4.2	Operation and Maintenance of Facilities on Site for:				
	8.4.2.1	Facilities for Engineer:				
1.2.2	PSAB 3.1	Contract Name boards	Month	8		
1.2.3	PSAB 3.2	Furnished office and Accommodation, as specified	P.Sum / Month	8	R 6 500.00	R 52 000.00
1.2.4	PSAB 3.3	Car Port	Month	8		
1.2.5	PSAB 4.3	Computer	Month	8		
	8.4.2.2	Facilities for Contractor:				
1.2.7	8.4.2.2 (a)	Site Offices	Month	8		
1.2.8	8.4.2.2 (b)	Workshops and Storage Sheds	Month	8		
1.2.9	8.4.2.2 (d)	Living Accommodation	Month	8		
1.2.10	8.4.2.2 (e)	Ablution and Latrine Facilities	Month	8		
TOTAL CARRIED FORWARD						

HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

SECTION 1: PRELIMINARY & GENERAL

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
	8.4.2.2	Facilities for Contractor (continue) :				
1.2.11	8.4.2.2 (f)	Tools and Equipment	Month	8		
1.2.12	8.4.2.2 (g)	Water, Electricity, Communications	Month	8		
1.2.13	8.4.2.2 (i)	Access	Month	8		
1.2.14	8.4.2.2 (j)	Plant	Month	8		
1.2.15	PSA8.3.2.2 (k)	Rain gauge	Month	8		
1.2.16	PSA 8.4.3	Supervision for Duration of Construction (Refer to Min Requirements in Clause F2.1.4.3) :				
	F2.1.4.3	a) Full Time Construction Manager	Month	8		
	F2.1.4.3	b) Full Time Site Agent - Civil or Structural	Month	8		
	F2.1.4.3	c) Part-Time Site Agent - Electrical	Month	3		
	F2.1.4.7	d) Full Time SMME Manager	Month	8		
1.2.17	8.4.4	Company and Head Office overhead costs for the Duration of the Contract.	Month	8		
1.2.18	PSA 8.4.5.1	Provision of Security Personnel.	Month	8		
		Other Time-related obligations not included (To be specified, if any):				
1.2.19	PSA 8.4.5.2		Month	8		
		Note: No payment shall be made if Item 1.2.19 is priced, but not specified.				
		Note: The combined amounts for Fixed and Time-Related charges tendered, in accordance with Clauses PSA 8.3.1 and PSA 8.4.1 may not exceed twenty percent (20%) of the total tendered contract sum excluding contingencies and VAT.				
1.4	PSA 8.5	SUMS STATED PROVISIONALLY BY THE EMPLOYER				
1.4.1	PSA 8.5.1	Community Liaison Officer (CLO) remuneration.	Months	8		
1.4.2	PSA 8.5.2	Attendance and profit on Item 1.4.1	%	5%		
1.4.3		Repair and / or relocate damaged unknown sewer, water, stormwater, etc. services (Provisional).	Prov Sum	1		
1.4.4	PSA 8.5.3	Provide <u>formal</u> training to targeted local labour	Prov Sum	1		
1.4.5	PSA 8.5.4	Overhead charges, profit etc. on above item 1.4.4	%	5%		
1.4.6	PSA 8.5.5	Transportation and accommodation of targeted labour for training.	Prov Sum	1		
1.4.7	PSA 8.5.6	Overhead charges, Profit etc. on above item 1.4.6	%	5%		
1.5	PSA 8.7	DAYWORKS				
		No Dayworks shall be paid unless pre-approved by Engineer in writing :				
		Rates to include all employment costs and profit for:				
		a) Labour:				
1.5.1	(LI)	Unskilled General Worker (Task Grade 1)	hr	80		
1.5.2	(LI)	Semi-skilled (Task Grade 3)	hr	60		
1.5.3	(LI)	Operators (Task Grade 4)	hr	40		
1.5.4	(LI)	Artisan (Task Grade 5)	hr	40		
1.5.5	(LI)	Construction foreman (Task Grade 7)	hr	24		
TOTAL CARRIED FORWARD						

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BROUGHT FORWARD						
1.5	PSA 8.7	DAYWORKS (Continue) : No Dayworks shall be paid unless pre-approved by Engineer in writing :				
		b) Plant:				
1.5.6		Large Tipper trucks > 10m³	hr	8		
1.5.7		Small Tipper Trucks < 10m³	hr	24		
1.5.8		Tractor Loader Backhoe	hr	24		
1.5.9		Min 7000 litre water cart	hr	8		
1.5.10		Min 1 ton pedestrian Bomag roller	hr	24		
1.5.11		Standard LDV	hr	80		
1.5.12		Generator set, incl diesel supply	hr	60		
1.5.13		Jack hammer / pneumatic driller	hr	18		
1.5.14		Drain water from manholes or any other structure identified by the Employer's Agent using submersible pump/s.	hr	48		
		c) Travelling :				
1.5.13		Low bed	km	300		
1.5.14		Large trucks > 22 ton	km	120		
1.5.15		Small trucks < 22 ton	km	240		
1.5.16		3t Delivery vehicle	km	240		
1.5.17		Standard LDV	km	800		
1.6		OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 AND THE CONSTRUCTION REGULATIONS, 2014 (REFER SECTION C3.5 FOR MORE INFORMATION)				
		Compliance with the OHS Act 1993 and Construction Regulations, 2014. The Contractor's rate shall include full compensation for complying, amongst other, with the following provisions:				
1.7.1	PSA 8.8.3	Accommodation of Traffic	Month	8		
1.7.2	PSA 8.9	Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations 2014	Sum	1		
1.7.3	PSA 8.10	Contractor's time related obligations in respect of the Occupational Health & Safety Act and Construction Regulations	Month	8		
1.7.4	PSA 8.11	Provision of <u>full time</u> Construction Safety Officer	Month	8		
		<i>The list of OH&S Obligations scheduled above are not necessarily complete and shall not limit the Contractor's obligation in terms of the Construction Regulations, 2014 and Section C3.5: H&S Requirements and Procedures.</i>				
1.9		QUALITY ASSURANCE PLAN				
1.9.1	PSA 8.13	Provision for the development of a Quality Assurance Plan	Sum	1		
1.9.2	PSA 8.14	Provision for the implementation and management of the Quality Assurance Plan for the duration of the Contract.	Month	8		
1.10		ENVIRONMENTAL AWARENESS				
1.10.1	PSA 8.15	Attend Environmental awareness training and Inductions	Sum	1		
1.10.2	PSA 8.16	Compliance with environmental management specification, for the duration of the Contract.	Month	8		
TOTAL CARRIED FORWARD TO SUMMARY						

WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 2 : SITE CLEARANCE

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
2		<u>SECTION 2 : SITE CLEARANCE</u>				
2.1	SANS 1200C	<u>SITE CLEARANCE</u>				
	8.2.1 (LI)	Clear and grub vegetation and bushes, rubble & stockpiles for areas:				
2.1.1	a)	Along river embankments for new sewer Pump Station, including Emergency Overflow Pond	m²	1200		
2.1.2	b)	Pump Station access road	m²	620		
2.2	8.2.2	<u>REMOVE AND GRUB LARGE TREES AND TREE STUMPS OF GIRTH</u>				
2.2.1	(LI)	Smaller than 0.5m	No.off	4		
2.2.2		Over 0.5m up to and including 1m	No.off	6		
2.2.3		Over 1m up to and including 2m	No.off	---		Rate Only
2.3	SANS 1200 D	<u>EXISTING SERVICES (See 5.1.2.2)</u>				
2.3.1	PSBD 8.3.4 (c) (LI)	Carefully excavate by hand to search and locate, expose, safely barricade, record services (type, size & levels for As-built) and protect existing services as identified on drawings or instructed by Engineer on site.	m³	8		
2.4		<u>PROTECTION OF UNDERGROUND SERVICES</u>				
2.4.1	PSDB 8.3.5	a) Services & Infrastructure that intersect a trench:				
2.4.1.1		(ii) Overhead Electrical or Telkom cables	No.off	2		
2.4.1.2		(iv) Water Supply Pipes	No.off	3		
2.4.1.3		(vi) Water valves or hydrants	No.off	2		
2.4.2		b) Services & Infrastructure that adjoin a trench:				
2.4.2.1		(iv) Water Supply Pipes	m	40		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 3 : EARTHWORKS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3	SANS 1200 DB	<u>SECTION 3 : EARTHWORKS</u> (Refer to SANS DB 8.3.2 and SANS Drw DB-2)				
3.1	8.3.1	<u>SITE PREPARATION</u>				
3.1.1	8.3.1.2	Remove topsoil to nominal depth 150 mm, stock-pile, and maintain	m ²	1800		
3.2	8.3.2	<u>BULK EXCAVATION</u>				
	PSD 8.3.2(a)	Excavate in all materials and use for embankment or backfill or dispose as ordered:				
3.2.1		a) Leveling of site (cut to fill)	m ³	50		
3.2.2		b) Remove excess or unsuitable material, where so ordered, and dispose of off site	m ³	50		
3.2.3		c) Excavate pump station dry well and wet well and spread and compact on site	m ³	325		
	8.3.2(b)	Extra over Item 3.2, for:				
3.2.4		Hard rock excavation	m ³	6		
3.2.5		Boulder excavation: Class A or B	m ³	6		
3.3	8.3.4	<u>IMPORTING OF MATERIALS</u>				
3.3.1		Importation of approved G5 fill from commercial sources or selected stockpile on site.	m ³	108		
3.4	8.3.6	<u>OVERHAUL</u>				
3.4.1		a) Limited overhaul	m ³	350		
3.4.2		b) Long overhaul	m ³ .km	7000		
3.5		<u>BACKFILL AGAINST STRUCTURES</u>				
3.5.1	8.3.9	a) Extra over Item 3.3 for backfilling below drywell floor with G5 material classification from commercial sources, compacted to 93% ModAashto, in layers not exceeding 250mm	m ³	188		
3.6		<u>FINISHINGS</u>				
3.6.1	8.3.15	Final shaping and trimming of site	m ²	500		
3.6.2	8.3.10	Topsoiling	m ²	500		
3.6.3	8.3.11	Grassing	m ²	500		
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SECTION 4 : CONCRETE WORKS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
4	SANS 1200G	<u>SECTION 4 : CONCRETE WORKS</u>				
		<u>PUMP STATION SUMP AND SUB-STRUCTURE</u>				
4.1		<u>FORMWORK</u>				
4.1.1	8.2.1	Rough Formwork, below NGL				
		Vertical, plane up to 250 mm high:				
4.1.1.1		a) Base of sump	m	24		
4.1.1.2		b) Base of dry well	m	30		
		Vertical, plane:				
4.1.1.3		a) External Walls below ground level	m²	80		
4.1.2	8.2.2	Smooth Formwork, above NGL				
		Vertical, plane up to 300 mm high:				
4.1.2.1		a) edge of sump roof slab	m	31		
		Vertical, plane up to 810 mm high:				
4.1.2.2		a) edge of RC beams	m	21		
		Vertical, plane:				
4.1.2.3		a) Sump walls (inside and outside face)	m²	120		
4.1.2.4		b) Top Structure Columns (outside face)	m²	26		
	8.2.2	Smooth, horizontal, plane				
4.1.2.5		a) Sump roof soffit (Prop Height approx 4.4m)	m²	12		
4.1.2.6		b) Drywell roof soffit (Prop Height approx 3.0m)	m²	45		
4.1.2.7		c) Top Structure beams (Prop Height approx 3.0m)	m²	4		
4.1.2.8		d) Inlet Manhole Roof Soffit (Prop Height approx 4.4m)	m²	4		
4.1.3	8.2.5	Chamfers & grooves				
4.1.3.1		i) Chamfers 30mm x 30mm (Roof upstands)	m	59.5		
4.1.3.2		ii) Chamfers 30mm x 30mm (Wet Sump Top Slab)	m	13.8		
4.1.3.3		iii) Chamfers 25mm x 25mm (columns)	m	84.0		
4.1.3.4		iv) Roof Drip groove 10mm x 10mm	m	29.8		
4.1.3.5		v) Floor Slab drainage channel (50mm x 50mm)	m	6.5		
4.1.3.6		vi) Chamfers 25mm x 25mm (plints)	m	19.6		
4.1.4	8.2.6	Box out holes				
		a) Box out holes and pockets for:				
4.1.4.1		i) 1000 x 1000mm manhole opening in Sump roof slab	No.off	3		
4.1.4.2		ii) Small circular up to 200mm ø	No.off	10		
4.1.4.3		iii) Square or Circular between 200 to 500mm ø	No.off	20		
4.1.4.4		iv) 500 x 500mm sump in floor slab	No.off	1		
4.2	PSG 8.1.2	<u>REINFORCEMENT</u>				
	8.3.2	Steel Bars				
4.2.1		a) High tensile steel	kg	8860		
4.2.2		b) Mild Steel	kg	210		
4.2.3		c) High tensile welded mesh Ref. 193 in apron slabs	m²	35.0		
4.3	8.1.3	<u>CONCRETE</u>				
4.3.1	8.4.2	BLINDING				
4.3.1.1		Blinding layer in 15MPa/19mm concrete by 50mm thick using Ordinary Portland Cement concrete.	m²	130		
TOTAL CARRIED FORWARD						

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WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 4 : CONCRETE WORKS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
4.3.2	PSG 8.4.3	STRENGTH CONCRETE				
4.3.2.1		10MPa/40mm, using ordinary Portland Cement, for mass filling of foundations of structures where ordered by the Employer's Agent.	m³	2		
4.3.2.2		15MPa/9.5mm using Sulphate Resisting Cement for Benching to wet well sumps and inlet manhole.	m³	6		
	PSG 8.4.3	30MPa/19 mm for water retaining structures, <u>using sulphate resisting cement, with Penetron admixture as specified</u> , for:				
4.3.2.3		a) Base Floor slab for the wet well and inlet manhole	m³	7.0		
4.3.2.4		b) Internal and external wall of the wet well up to wet well roof level, including inlet manhole.	m³	31.5		
4.3.2.5		c) Roof slab for the wet well and inlet manhole	m³	6.0		
		30MPa/19 mm, using Ordinary Portland Cement, for Pump Station Dry-Well structure :				
4.3.2.6		a) Floor slabs	m³	14.5		
4.3.2.7		b) Roof slab including upstands	m³	14.0		
4.3.2.8		c) Beams, plinths, columns, etc	m³	6.0		
4.4		<u>FINISHES</u>				
	8.4.4	Unformed surface finish, for :				
4.4.1		a) Broom finish as directed by the Employer's Agent for Roof Slab	m²	70		
		b) Steel-Float finish as directed by the Employer's Agent for:				
4.4.2		i) Benching in the inlet chamber	m²	5		
4.4.3		ii) Benching in the wet wells	m²	10		
4.4.4		c) Power floated finish as directed by the Employer's Agent for floor slabs.	m²	90		
4.5	PSG 8.5	<u>JOINTS</u>				
		Form joints supply and install complete as shown on drawings, including formwork, waterstops, joint filler, sealant etc. as per drawing 20-058/30-03 :				
4.5.1		Form Typical Slab-to-Wall Horizontal Joint - See Detail 1	m	22.4		
4.5.2		Form Typical Slab-to-Wall Vertical Joint - See Detail 2	m	6.5		
4.5.3		Supply and install 350mm wide Combi-flex joint for all submersible floor-to-wall joints, with only rigid edges epoxied to concrete surface, as per manufacturers installation guidelines.	m	23		
4.6		<u>GROUTING</u>				
		Refer to Structural Drawings 20-058/30-03 : Typical details.				
	PSG 8.9	Setting the following pipes or fittings into or through concrete work, incl. for formwork around the pipes and fixing the pipes to the designated lines and levels using a Non-Shrink Grout, complete with Waterstop and slurry application to inside of void and internal vertical face as detailed - See Detail 5.				
4.6.1		Pipes not exceeding 150mm diameter	No.off	6		
4.6.2		Pipes greater than 150mm diameter but up to and incl. 300mm diameter	No.off	4		
4.6.3		Pipes greater than 300mm diameter but up to and incl. 400mm diameter	No.off	2		
4.6.4	8.7 (b)	Grouting of bolts	No.off	20		
4.6.5	8.7 (b)	Grouting of machine bases incl. S/S bolts as per PSG 5.5.13.3	No.off	10		
TOTAL CARRIED FORWARD						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 4 : CONCRETE WORKS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
4.7		<u>SLEEVES</u>				
4.7.1	PSG 8.10	Casting of pipes/specials through walls or slabs:				
4.7.1.1		Pipes not exceeding 150mm diameter	No.off	5		
4.7.1.2		Pipes greater than 150mm diameter but up to and incl. 300mm diameter	No.off	2		
4.7.1.3		Pipes greater than 300mm diameter but up to and incl. 400mm diameter	No.off	2		
4.8		<u>CORNER PROTECTIONS</u>				
		Supply, manufacture and install, complete with cast-in lugs at every 500mm c/c as detailed :				
4.8.1	a)	GMS - 50 x 50 x 5mm Angle Iron	m	30.8		
4.9		<u>WATERPROOFING</u>				
4.9.1	PSG 5.5.11	Apply Derbigum CG2 & CG4 with manufactures specified laps and sealers to external reinforced wall below ground level	m²	80		
4.10		<u>TESTING FOR WATERTIGHTNESS</u>				
4.10.1	PSG 8.11	Testing pump station sump and inlet structure for watertightness and taking all precautions to ensure soundness of the structure in this respect up to the grating floor level above the inlet channel in the wet well.	Sum	1		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
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NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 5 : STRUCTURAL STEEL WORK

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
5	SANS 1200H	<u>SECTION 5 : STRUCTURAL STEEL WORK</u>				
5.1	8.3.1	<u>CRAWL BEAMS, HOIST AND TROLLEY</u>				
		Supply, manufacture and install - HDG crawl beam complete with all brackets, bolts, grouting, etc as detailed on drw 20-58/30-03:				
5.1.1		I-profile Beam : 256 x 146 x 37 kg/m - 9,835m long, with end plates	Sum	1		
5.1.2		Supply and install an electric Yale type chain hoist with motorised trolley for crawl beam Type A EXCLUDING ALL CABLING. The hoist shall be of the type supplied by Haggie Rand Distribution, or similar approved and must comply with the OHS ACT and include all testing & signage required. Furthermore the hoist must be capable of lifting 1 tonne with an electric motor to operate the chain and move horizontally along the crawl beam. The reach of the chain must be 3m.	Sum	1		
5.2	8.3.1.2	<u>STAIRS</u>				
		Supply, fabricate and install Fibre Reinforced Plastic (FRP) stairs, as detailed on drw 5024-PH3-C301-T, for:				
5.2.1		Stairs to Wet well exterior access: from level 16.20m to 17.20m (excluding handrails)	Sum	1		
5.3	1200 LD	<u>MANHOLE COVERS</u>				
5.3.1	8.2.4	1m x 1m Concrete manhole cover and frame, complete with locking bar and heavy duty lock.	No.off	3		
5.4	1200 H	<u>HANDRAILING</u>				
	8.3.7	FRP handrails, <u>top mounted</u> type installed in the following positions complete:				
5.4.1		Inclined stairs (measured on slope)	m	1.5		
5.4.2		FRP handrails, <u>side mounted</u> type installed in the following positions complete:				
		Horizontal floors	m	13		
5.5		<u>BEAMS & ANGLE IRONS</u>				
5.5.1		Supply, fabricate, deliver and install the following as per drawing 20-058/30-03::	Sum	1		
5.6		<u>DOORS</u>				
	8.3.1.2	Supply, fabricate, deliver and install the following doors, as detailed on drw 5024-PH3-C500-T:				
5.6.1		Access double Transformer doors Type D	No.off	1		
5.7		<u>MISCELLANEOUS</u>				
	8.3.1.2	Supply, fabricate, deliver and install pedestal Stainless Steel straps as detailed on dwg 5024-PH3-C500-T:				
5.7.1		100mm diameter	No.off	2		
5.7.2		150mm diameter	No.off	10		
5.7.3	8.3.1.2	Supply, fabricate, deliver and install stainless steel brackets to support 100mm ø suction lines, as detailed on dwg 5024-PH3-C500-T.	No.off	24		
5.8		<u>FENCING</u>				
5.8.1		Betafence / ClearVu or similar to be approved by the Employer's Agent, complete with security spokes 2,4m High, enclosing entire Pump Station and Emergency Over-flow Pond.	m	150		
5.8.2		Betafence / ClearVu or similar to be approved by the Employer's Agent, complete 4m double gate (2,4m High), with 180° hinges, with ground locking pin and padlock enclosure.	Sum	1		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 6 : BUILDING WORK

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
6	SANS 1200XB	<u>SECTION 6 : BUILDING WORK</u>				
6.1		<u>BRICKWORK AND MASONRY</u>				
	PA 6.1	Brickwork for the Pump Station top structure :				
6.1.1		Supply and construct 300mm thick cavity walls to the height of 3m, complete with cavity wall ties at 300mm c/c all directions.	m²	90		
6.1.2		Extra over for constructing outer face with tan rustic facebrick with a smooth outer finish, as approved by the Engineer	m²	90		
6.1.3	PA 6.2	Supply and build in brickforce in 300mm walls at every fourth layer built horizontally	m	203		
6.2		<u>PLASTER AND FLOOR FINISHES</u>				
		Plasterwork :				
6.2.1	PA 6.3	Interior plastering 13mm thick for walls	m²	90		
6.2.2	PA 6.3	Supply and apply granolithic screed 25mm thick to floors	m²	60		
6.3		<u>PAINTING</u>				
	PA 6.7	Supply and apply paint system including the preparation of all surfaces to the manufacturers requirements:				
6.3.1	PA 6.7	Plastered walls shall receive at least 3 coats of exterior quality PVA paint	m²	90		
6.3.2	PA 6.7	Concrete surfaces shall receive at least 2 coats of exterior quality PVA paint	m²	60		
6.4		<u>PLUMBING, DRAINAGE AND SANITARY WARE</u>				
6.4.1		<u>Basins</u>				
6.4.1.1	PA 6.9	Supply and install completely white ceramic wall hung wash-hand basin or similar approved by Employer's Agent.	No.off	1		
6.4.2		<u>Taps</u>				
6.4.2.1	PA 6.10	Supply and install completely the followings water taps: 15mm diameter chrome	No.off	1		
6.4.3		<u>Water pipes and associated fittings</u>				
		Supply, handle and install the following miscellaneous pipes and fittings:				
6.4.3.1	a)	3/4 Thermoplastic bibtap with wall plate & threaded off-take"	No.off	2		
6.4.3.2	b)	Supply 20m of 22mm flexible reinforced hosepipe with couplings and adjustable nozzle	No.off	1		
6.4.3.3	c)	Supply, handle and install Polycop class 16 pipe	m	50		
6.4.3.4	d)	Supply and install 3/4 90 degree bend conex type copper fittings"	No.off	10		
6.4.3.5	e)	Supply and install complete 3/4 water stop tap complete"	No.off	1		
6.4.3.6	f)	Supply 25mm HDPE pipe (Class PE80 / PN10) and connect to existing water reticulation system complete with 160mm Saddle, bends and fittings, including excavation.	m	80		
6.5		<u>SLIP JOINT</u>				
6.5.1		Supply and lay 2 layers of 5 ply Malthoid 300mm wide on smoothed brickwork to form slip joint between brickwork and concrete roof slab. Refer to detail 3 on Drw20-058/30-03.	m	29.0		
6.5.2		Supply and install brick to concrete joints as per Detail on drawing 20-058/30-03, complete with Polyurethane sealant.	m	27		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 7 : DETENTION POND

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
7		<u>SECTION 7 : DETENTION POND</u>				
7.1	SANS 1200 D 8.3.2	<u>BULK EXCAVATION</u>				
	PSD 8.3.2(a)	Excavate in all materials and use for embankment or backfill or dispose-off at Municipal Waste Site in Hankey, for detention pond:				
7.1.1		0m to 3.5m deep	m³	870		
7.1.2		Prepare and shape the 60-degree embankment using suitable material from excavations, compacted to 95% of mod. AASHTO maximum density.	m³	70		
7.1.3		Prepare and shape the 60-degree embankment using imported G7 quality material from commercial sources, compacted to 95% of mod. AASHTO maximum density.	m³	450		
7.1.4	8.3.2(b)	Extra - over for item 7.1.1 for excavation in: Hard rock material	m³	44		
7.2	SANS 1200 GA	<u>CONCRETE (SMALL WORKS)</u>				
7.2.1	8.2	<u>FORMWORK</u>				
7.2.1.1	8.2.3	Narrow widths to sides of 100mm thick bottom slab	m	180		
7.2.1.2	8.2.3	Narrow widths to sides of 100mm thick embankment slab	m	320		
7.2.1.3	8.2.3	Narrow widths to sides of edges, risers, runs, ends, etc for the staircases up to a height of 200mm	m	20		
7.2.2	8.3	<u>REINFORCEMENT</u>				
7.2.2.1	8.3.1	High tensile steel bars (Provisional)	kg	980		
7.2.2.2	8.3.2	High tensile welded mesh 617	m²	900		
7.2.3	8.1.3	<u>CONCRETE</u>				
	PSG 8.4.3	20MPa/19 mm for water retaining structures, <u>using sulphate resisting cement with Penetron admixture</u> , 100mm thick, for:				
7.2.3.1	a)	Emergency Pond floor	m³	25		
7.2.3.2	b)	Embankment slopes of the pond	m³	43		
7.2.4		<u>JOINTS</u>				
	8.5	Expansion joint as detailed in the drawing 5024-PH3-C310-T (or similar to be approved) :				
7.2.4.1	a)	Sikaflex PRO-3	m	70		
7.2.4.2	b)	CP flat water stop	m	70		
7.2.4.3	c)	SPX 80 Polyethylene foam	m	70		
	8.5	Construction joint as detailed in the drawing 5024-PH3-C310-T:				
7.2.4.4		Penetron rapid water stop (Penebar SW55)	m	380		
7.3		<u>ANCILLARY WORK</u>				
7.3.1		Manufacture, Transport, Supply and install Fibre Reinforced Plastic (FRP) Outlet Grid (450mm W x 350mm H), with top hinges to open 180°, complete with anchors bolted into concrete. Refer to detail on Drw 5024-PH3-C310.	Sum	1		
7.3.2		Extra over pipework, to cut, position, install and cast 350mm (CI34) Sewer pipe to Emergency Pond side slope. Refer to detail on Drw 5024-PH3-C310.	Sum	1		
7.3.3		Supply, Transport, handle and lay 2x layers of Polypropylene liners (250 micron) to compacted earthworks, and anchor to embankment slope, before casting concrete.	m²	680		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 8 : CONCRETE BLOCK PAVING

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
8	SANS 1200 DM	<u>SECTION 8 : CONCRETE BLOCK PAVING</u>				
8.1	SANS 1200 DM	<u>EARTHWORKS (ROADS, SUBGRADE)</u>				
8.1.1	8.3.3. (a)	Road-bed treatment : rip 200mm deep, shape and compaction of material for the access road and Pump Station yard parking areas, to a minimum of 93% of mod. AASHTO maximum density (100% for sand).	m³	225		
8.1.2	8.3.4	a) Cut to fill, borrow to fill, compacted to a minimum of 93% mod. AASHTO density (100% for sand).	m³	30		
8.2	SANS 1200 ME	<u>SUBBASE</u>				
	8.3.3	Construct the subbase course with material from commercial sources (G5 material) to a minimum of 95% Mod AASHTO maximum density for:				
8.2.1		a) 150mm thick layer for the access road	m³	65		
8.2.2		b) 100mm thick layer for the areas to be paved	m³	54		
8.3	SANS 1200 MF	<u>BASE</u>				
8.3.1	PSMF 8.3.3	Construct base with material from commercial sources (G3 material), 100mm depth and minimum of 98% Mod AASHTO maximum density.	m³	43		
8.4	SANS 1200 MK	<u>KERBING AND CHANNELING</u>				
	8.2.1	<u>Concrete kerbing</u>				
		a) Pre-cast Mountable Kerb (SANS Fig 8B) :				
8.4.1		i) Curved kerbing	m	20		
8.4.2		ii) Straight kerbing	m	150		
8.4.3		iii) 19/20MPa insitu-cast concrete edge beam to infill "zig-zag" edges on block packing perimeter, and smooth off (min 100mm wide, 60mm thick).	m	135		
8.5	SANS 1200 MJ	<u>SEGMENTED PAVING</u>				
	8.2.2	Construction of Block paving areas complete:				
8.5.1	a)	Supply, spread and level 20mm thick river sand for bedding, after completion and approval of road layerworks.	m²	535		
8.5.2	b)	Supply, transport, load, handle and lay 60mm fully interlocking paver (diagonal pattern mixture of grey and red), on the bedding sand, including cutting units to fit edge restraints, complete.	m²	535		
8.5.3	c)	Supply and broom in dry fine sieved plaster sand, mixed with cement 1:12 ratio, in all block paving voids, and slightly moist spray, on completion.	m²	535		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 9 : PIPE WORK AND SPECIAL FITTINGS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
9	SANS 1200 DM	<u>SECTION 9 : PIPE WORK AND SPECIAL FITTINGS</u>				
9.1	DS 11	Supply and deliver stainless steel pipework as per Drawings 5024-PH3-C304-T including all necessary brackets, bolts, nuts, washers, gaskets, etc. Complete for:				
9.1.1		ID No 1: 200mm Ø Flange Adaptor	No.off	1		
9.1.2		ID No 2: 200mm Ø Straight pipe flanged at one end and fitted with puddle flange (520mm)	No.off	2		
9.1.3		ID No 4: 350mm Ø Straight pipe flanged at one end and fitted with puddle flange (525mm, cut to suit on site)	No.off	1		
9.1.4		ID No 5: 350mm Ø Flange Adaptor	No.off	2		
9.1.5		ID No 6: 350mm Ø flanged Straight pipe, fitted with puddle flange (750mm)	No.off	2		
9.1.6		ID No 8: 100mm Ø Straight pipe flanged at one end and fitted with 100 to 200mm Ø concentric reducer. (3340mm)	No.off	3		
9.1.7		ID No 9: 100mm Ø Flanged pipe special fitted with 1x30° and 1x60° Medium radius bends (1300mm)	No.off	3		
9.1.8		ID No 10: 100mm Ø flanged rubber bellow compensator	No.off	3		
9.1.9		ID No 11: 100mm Ø flanged Straight pipe (890mm)	No.off	3		
9.1.10		ID No 12: 150mm Ø x 80mm Ø flanged eccentric taper reducer (155mm) fitted with 22mm Ø threaded stainless steel nipple	No.off	3		
9.1.11		ID No 13: 150mm Ø flanged 90° bend (Medium Radius)	No.off	5		
9.1.12		ID No 16: 150mm Ø Straight Pipe Flanged at one end and fitted with 50mm Ø Female screwed NPT stub at the centre; measured along the length of pipe.	No.off	3		
9.1.13		ID No 17: 150mm Ø flange adaptor.	No.off	8		
9.1.14		ID No 18: 150mm Ø flanged sweep tee (Medium Radius)	No.off	3		
9.1.15		ID No 19: 150mm Ø Straight pipe flanged at one end (1600mm, cut to suit on site)	No.off	1		
9.1.16		ID No 20: 150mm Ø Straight pipe flanged at one end (1120mm, cut to suit on site)	No.off	1		
9.1.17		ID No 21: 150mm Ø Straight pipe flanged at one end (600mm, cut to suit on site)	No.off	1		
9.1.18		ID No 23: 150mm Ø Straight pipe flanged at one end (840mm, cut to suit on site)	No.off	1		
9.1.19		ID No 24: 150mm Ø Straight pipe flanged at one end (2000mm, cut to suit on site)	No.off	1		
9.1.20		ID No 25: 150mm Ø flange adaptor	No.off	1		
9.1.21		ID No 26: 150mm Ø x 100mm Ø flanged eccentric taper reducer (155mm)	No.off	1		
9.1.23		ID No 28: 100mm Ø Straight pipe flanged at one end (760mm, cut to suit on site)	No.off	1		
9.1.24		ID No 29: 100mm Ø flange adaptor.	No.off	1		
9.1.25		ID No 30: 100mm Ø flanged 90° Bend (Medium Radius)	No.off	2		
9.1.26		ID No 31: 100mm Ø flanged Straight pipe (400mm)	No.off	1		
9.1.27		ID No 32: 100mm Ø flanged 90° bend fitted with puddle flange (200mm x 700mm)	No.off	1		
9.1.28		ID No 33: 100mm Ø Straight pipe flanged at one end (3500mm)	No.off	1		
9.1.29		ID No 34: 80mm Ø Straight pipe flanged at one end and fitted with puddle flange (cut to suit on site)	No.off	1		
9.1.30	DS 11	Erection and installation of equipment supplied under item 2.7 complete as per specification	Sum	1		
9.1.31	DS 11	Commission and testing of all equipment under item 2.7. Refer to Clause DS 10.0 of the specification.	Sum	1		
9.1.32	DS 11	Testing of suction pipe including gate valve	No.off	3		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 10 : VALVES AND METERS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
10	SANS 1200 DM	<u>SECTION 10 : VALVES AND METERS</u>				
10.1		The following Items to be supplied with reference to Drawings 5024-PH3-C304-T and the relevant project specifications, for Class 16 pressure rating unless advised otherwise.				
10.1.1	DS 11	ID No 3: 200mm Ø Knife Edge Gate Valve complete with stainless steel gate or similar approved including all necessary nuts, bolts complete to operate with actuator and stainless steel drive shaft	No.off	1		
10.1.2	DS 11	ID No 7: 350mm Ø Knife Edge Gate Valve complete with stainless steel gate or similar approved including all necessary nuts, bolts complete to operate with actuator and stainless steel drive shaft	No.off	1		
10.1.3	DS 11	ID No 14: 150mm Ø Flanged Ball Check Valve or similar approved including all necessary nuts, bolts complete.	No.off	3		
10.1.4	DS 11	ID No 15: 150mm Ø Knife Edge Gate Valve complete with stainless steel gate or similar approved including all necessary nuts, bolts complete to operate with actuator and stainless steel drive shaft	No.off	3		
10.1.5	DS 11	ID No 27: 100mm Ø Knife Edge Gate Valve complete with stainless steel gate or similar approved including all necessary nuts, bolts complete to operate with actuator and stainless steel drive shaft	No.off	1		
10.1.6	DS 11	ID No 35: 80mm Ø Knife Edge Gate Valve complete with stainless steel gate or similar approved including all necessary nuts, bolts complete to operate with actuator and stainless steel drive shaft	No.off	1		
10.1.7	DS 11	ID No 22: 150mm Ø Flanged Electronic Flow meter	No.off	1		
10.1.8	DS 11	Supply and install Glycerin type pressure gauge complete with ball valve and nipple on suction pipe work which is capable of dealing with sewage. Diaphragm or similar gauges are preferred.	No.off	3		
10.1.9	DS 11	Supply and install pressure gauge complete with ball valve and nipple on delivery pipe work.	No.off	3		
10.1.10	DS 11	Supply and install 50mm ND Vent-o-Mat RGX air valve or similar approved, complete with total of 14m HDPE pipe and required bends, purging to the wet sump.	No.off	3		
10.1.11	DS 11	Supply and install 25mm Automatic air release valve or similar approved, complete with total of 14m HDPE pipe and required bends, purging to the wet sump.	No.off	3		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 11 : WASTEWATER GRINDER (MACERATOR)

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
11	SANS 1200 DM	<u>SECTION 11 : WASTEWATER GRINDER (MACERATOR)</u> The following Items to be supplied with reference to Drawings 5024-PH3-C102-T and the relevant project specifications.				
11.1.1	DS 11	Supply only, of an in-channel wastewater grinder (macerator) with a nominal diameter of not less than 200mm. To be completely installed within a FRP pre-mould Manhole, and fitted with a Submersible motor (IP68), control panel and configuration no longer than 3m in-line, to be verified by the Engineer.	Sum	1		
11.1.2	DS 11	Erection and installation of plant and equipment supplied under item 11.1.1 complete, as per specification of manufacturer.	Sum	1		
11.1.3	GS 9.2.4 / DS10.0	Commissioning, testing of plant and all equipment under item 11.1.1, and issue CoC certification. Refer to Clause DS 10.0 of the Project Specifications.	Sum	1		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 12 : SEWAGE CONSERVANCY TANK

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
12		SECTION 12 : SEWAGE CONSERVANCY TANK (Refer to Drw 5024-PH3-C311)				
12.1	SANS 1200C	SITE CLEARANCE				
12.1.1	8.2.1 (LI)	Clear and grub vegetation and bushes, rubble & stockpiles form area as indicated.	m²	65		
12.1.2	8.2.1 (LI)	Clear and grub vegetation and grass, rubble & stockpiles in road reserves for new sewer pipe - 4m wide.	m	200		
12.2	8.2.2	REMOVE AND GRUB LARGE TREES AND TREE STUMPS OF GIRTH				
12.2.1	(LI)	Smaller than 0.5m	No.off	2		
12.3	SANS 1200 D	EXISTING SERVICES (See 5.1.2.2)				
12.3.1	PSBD 8.3.4 (c) (LI)	Carefully excavate by hand to search and locate, expose, safely barricade, record services (type, size & levels for As-built) and protect existing services as identified on drawings or instructed by Engineer on site.	m³	5		
12.4		PROTECTION OF UNDERGROUND SERVICES				
12.4.1	PSDB 8.3.5	a) Services & Infrastructure that intersect a trench:				
12.4.1.1		(ii) Water house Connection - HDPE pipes	No.off	5		
12.4.1.2		(iv) Water Supply PVC Pipes	No.off	4		
12.4.1.3		(vi) Water valves or hydrants	No.off	2		
12.4.2		b) Services & Infrastructure that adjoin a trench:				
12.4.2.1		(iv) Water Supply Pipes	m	180		
12.5	SANS 1200 D	BULK EXCAVATION				
	PSD 8.3.2(a)	Excavate in all materials and use for backfill or dispose-off at Municipal Waste Site in Hankley, as ordered, for Conservancy Tank :				
12.5.1		i) 0m to 3.0m deep	m³	76		
12.6		TRENCH EXCAVATION				
	PSDB 8.3.2 (LI)	Excavate only, BY HAND in all materials for sewerage pipe trenches, and stockpile material on site for backfill.				
		a) 700mm wide for up to 100mm dia pipes, for trench depths:				
		Over and Up to				
12.6.1	(LI)	0,0m 1,0m	m	70		
12.6.2	(LI)	1,01m 1,5m	m	110		
	8.3.2(b)	Extra - over for items 7.1.1 for excavation in:				
12.6.3	PSDB 8.3.2, PSD 3.1.2	Hard rock excavation, using 20t or larger excavator, or jack hammers / pneumatic hand tools, as required.	m³	34		
12.6.4	PSDB 8.3.2 (LI)	Backfill only , all BY HAND all trenches from stockpile material on site, and compact 95% ModAashto density, after Bedding and Blanket was completed, and inspected by Engineer for approval.	m³	117		
	8.3.3	Excavation Ancillaries				
	8.3.3.1 (a)	Make up deficiency in trench backfill material from excavations on / near site.	m³	25		
12.6.5	8.3.3.1	Make up deficiency in road layers backfill material by import : Selected G5 material	m³	6		
12.6.6	PSDB 8.3.3.3	b) Compaction in road reserves : Compaction of Selected layers to 93% Mod. AASHTO density.	m³	40		
12.7	SANS 1200 GA	CONCRETE (SMALL WORKS)				
12.7.1	8.2	FORMWORK				
12.7.1.1	8.2.1	Rough Formwork, below NGL				
		Vertical, plane up to 300 mm high :				
12.7.1.1.1		a) Base of Conservancy Tank	m	31.4		
		Vertical, plane up to 500 mm high :				
12.7.1.1.2		a) External walls of Sump	m	3.9		
		Vertical, plane:				
12.7.1.1.3		a) External Walls of Conservancy Tank, below ground level	m²	43.8		
TOTAL CARRIED FORWARD						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 12 : SEWAGE CONSERVANCY TANK

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
12.7.1.2	8.2.2	Smooth Formwork, above NGL Vertical, plane up to 300 mm high:				
12.7.1.2.1		a) Edge of sump roof slab	m	21		
		Vertical, plane up to 500 mm high:				
12.7.1.2.2		a) Internal walls of Sump	m	3.5		
		Vertical, plane:				
12.7.1.2.3		a) Conservancy Tank Internal Walls	m²	38.9		
	8.2.2	Smooth, horizontal, plane				
12.7.1.2.4		a) Sump roof soffit (Prop Height approx 2.2m)	m²	16.8		
12.7.1.3	8.2.5	Chamfers & grooves				
12.7.1.3.1		i) Chamfers 30mm x 30mm (Roof top edge)	m	18.4		
12.7.1.4	8.2.6	Box out holes				
		a) Box out holes and pockets for:				
12.7.1.4.1		i) 1000 x 1000mm manhole opening in Roof slab	No.off	1		
12.7.1.4.2		ii) Small circular up to 200mm ø	No.off	3		
12.7.2	PSG 8.1.2	REINFORCEMENT				
	8.3.2	Steel Bars				
12.7.2.1		a) High tensile steel	kg	2122		
12.7.2.2		b) Mild Steel	kg	318		
12.7.2.3		c) High tensile welded mesh Ref. 617 in floor slab	m²	60.5		
12.7.3	8.1.3	CONCRETE				
12.7.3.1	8.4.2	BLINDING				
12.7.3.1.1		Blinding layer in 15MPa/19mm concrete by 50mm thick using Ordinary Portland Cement concrete.	m²	31.4		
12.7.3.2	PSG 8.4.3	STRENGTH CONCRETE				
12.7.3.2.1		10MPa/19mm using Sulphate Resisting Cement for Benching to wet well sumps.	m³	0.41		
		25MPa/19 mm for water retaining structures, <u>using sulphate resisting cement with Penetron admixture</u> , for:				
12.7.3.2.2		a) Base Floor slab for the Conservancy Tank	m³	9.7		
12.7.3.2.3		b) Internal and external walls of the Conservancy Tank up to roof level.	m³	10.8		
		30MPa/19 mm, using Ordinary Portland Cement, for Pump Station Dry-Well structure :				
12.7.3.2.4		a) Roof slab for the Conservancy tank.	m³	4.4		
12.7.4		FINISHES				
	8.4.4	Unformed surface finish, for :				
12.7.4.1		a) Broom finish as directed by the Employer's Agent for Roof Slab	m²	21.2		
		b) Steel-Floated finish as directed by the Employer's Agent for:				
12.7.4.2		i) Benching in the sump	m²	3.1		
12.7.4.3		ii) Floor slabs of Conservancy tank.	m²	16.8		
12.7.4.4		iii) Top of Walls	m²	4.6		
12.7.5	8.5	JOINTS				
		Construction joint as detailed in the drawing 5024-PH3-C311-T:				
12.7.5.1		a) 2x layers of 250micron PRC sheets to top of walls, below roof slab.	m	18.4		
12.7.5.2		b) Supply and install 350mm wide Combi-flex joint for all submersible floor-to-wall joints, with only rigid edges epoxied to concrete surface, as per manufacturers installation guidelines.	m	23.4		
TOTAL CARRIED FORWARD						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 12 : SEWAGE CONSERVANCY TANK

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
12.8	1200 LD	<u>MANHOLE COVERS</u>				
12.8.1	8.2.4	1m x 1m GMS Concrete manhole cover and cast-in frame, complete with locking bar and heavy duty lock.	No.off	2		
12.9		<u>PUMPS AND MOTORS</u>				
12.9.1		Supply, transport, handle and install complete Submersible Sewage Pumps, Grundfos Model DPK.V.65.80.22.2.5.0D (with Duty Point Q=1,69l/s @ 15,74m H), complete with 2,2kW Electric Motor (IP68) and Padfoot with "Quick-Release (Perrot)" coupling, or similar to be approved by Engineer.	No.off	2		
12.10	SANS 1200L	<u>MEDIUM PRESSURE PIPELINES</u>				
12.10.1		<u>PIPE LAYING</u>				
	PSL 8.2.1	Supply, lay, bed (flexible pipe bedding) joint, test, and survey pipes for As-Built purposes, complete with couplings: a) uPVC - Class 9 i) 75mm diam.	m	180		
12.10.2		<u>BENDS AND SPECIALS</u>				
	DS 11	Supply, deliver and install <u>stainless steel pipework</u> as per Drawings 5024-PH3-C311 including all necessary brackets, bolts, nuts, washers, gaskets, etc. Complete for:				
12.10.2.1		a) 80mmøND - 90° bend, one end flanged, with Socketed-end to fit "Quick-Release" coupling.	No.off	2		
12.10.2.2		b) 80mmøND - double flanged, straight pipe section. (L=1300mm).	No.off	2		
12.10.2.3		c) 80mmøND - double flanged, long-legged 90° bend (L=150 & 600mm), with puddle flange, complete with Penebar waterstop and Denso-tape wrapped.	No.off	2		
12.10.2.4		d) 80mmøND - double flanged, straight pipe section. (L=1300mm).	No.off	2		
12.10.2.5		e) 80mmøND - VJ Flange adaptor	No.off	2		
		Suppl, deliver and install 75mmø uPVC Bends and fittings, Class 12, for :				
12.10.6		a) Spigot and Socket 90° Bend	No.off	3		
12.10.7		b) Spigot and Socket 45° Bend	No.off	2		
12.10.8		b) Equal T-piece	No.off	1		
12.11	SANS 1200 LB	<u>PROVISION OF BEDDING MATERIAL</u>				
		Provision of bedding for flexible PVC sewerage pipes.				
12.11.1	8.2.2.3	Provision of imported bedding material, compacted to 93% of MOD AASHTO density with material from commercial sources :				
12.11.1.1		Selected granular bedding material - min 100mm below & above pipe	m³	41		
12.11.1.2		Selected blanket material - min 200mm thick	m³	---		Rate Only
12.11.2	8.2.2.3	Provision of selected bedding material to 93% of MOD AASHTO density with material from trench excavations :				
12.11.2.1		Selected granular bedding material - min 100mm below & above pipe	m³	---		Rate Only
12.11.2.2		Selected blanket material - min 200mm thick	m³	27		
12.12		<u>ANCHILLARY WORKS</u>				
12.12.1		Supply and install 50mmø S/S - "Eye-Lid" hook to inside top wall of Conservancy Tank, with heavy duty nylon rope, tied to submersible sewage pump, as detailed.	No.	2		
TOTAL CARRIED FORWARD TO SUMMARY						

WORK SCOPE PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 13 : SITE CLEARANCE						
ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
13		<u>SECTION 13 : SITE CLEARANCE</u>				
13.1	SANS 1200C	<u>SITE CLEARANCE</u>				
	8.2.1 (LI)	Clear and grub vegetation and bushes, rubble & stockpiles for areas :				
13.1.1	a)	Along existing detention pond embankments for new sewer Pump Station.	m²	450		
13.1.2	b)	Pump Station access road (Vumazonke Street)	m²	300		
13.2	8.2.2	<u>REMOVE AND GRUB LARGE TREES AND TREE STUMPS OF GIRTH</u>				
13.2.1	(LI)	Smaller than 0.5m	No.	1		
13.2.2		Over 0.5m up to and including 1m	No.	---		Rate Only
13.3	SANS 1200 D	<u>EXISTING SERVICES (See 5.1.2.2)</u>				
13.3.1	PSBD 8.3.4 (c) (LI)	Carefully excavate by hand to search and locate, expose, safely barricade, record services (type, size & levels for As-built) and protect existing services as identified on drawings or instructed by Engineer on site.	m³	4		
13.4		<u>PROTECTION OF UNDERGROUND SERVICES</u>				
13.4.1	PSDB 8.3.5	a) Services & Infrastructure that intersect a trench:				
13.4.1.1		(ii) Overhead Electrical or Telkom cables	No	2		
13.4.1.2		(iv) Water Supply Pipes	No	3		
13.4.1.3		(vi) Water valves or hydrants	No	2		
13.4.2		b) Services & Infrastructure that adjoin a trench:				
13.4.2.1		(iv) Water Supply Pipes	m	40		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 14 : EARTHWORKS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
14	SANS 1200 DB	<u>SECTION 14 : EARTHWORKS</u> (Refer to SANS DB 8.3.2 and SANS Drw DB-2)				
14.1	8.3.1	<u>SITE PREPARATION</u>				
14.1.1	8.3.1.2	Remove topsoil to nominal depth 150 mm, stock-pile, and maintain	m ²	520		
14.2	8.3.2	<u>BULK EXCAVATION</u>				
	PSD 8.3.2(a)	Excavate in all materials and use for embankment or backfill or dispose as ordered:				
14.2.1		a) Leveling of site (cut to fill)	m ³	50		
14.2.2		b) Remove excess or unsuitable material, where so ordered, and dispose of off site	m ³	50		
14.2.3		c) Excavate pump station dry well and wet well and spread and compact on site	m ³	325		
	8.3.2(b)	Extra over Item 3.2, for:				
14.2.4		Hard rock excavation	m ³	6		
14.2.5		Boulder excavation: Class A or B	m ³	6		
14.3	8.3.4	<u>IMPORTING OF MATERIALS</u>				
14.3.1		Importation of approved G5 fill from commercial sources or selected stockpile on site.	m ³	108		
14.4	8.3.6	<u>OVERHAUL</u>				
14.4.1		a) Limited overhaul	m ³	350		
14.4.2		b) Long overhaul	m ³ .km	7000		
14.5		<u>BACKFILL AGAINST STRUCTURES</u>				
14.5.1	8.3.9	a) Extra over Item 3.3 for backfilling below drywell floor with G5 material classification from commercial sources, compacted to 93% ModAashto, in layers not exceeding 250mm	m ³	188		
14.6		<u>FINISHINGS</u>				
14.6.1	8.3.15	Final shaping and trimming of site	m ²	320		
14.6.2	8.3.10	Topsoiling	m ²	320		
14.6.3	8.3.11	Grassing	m ²	320		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 15 : CONCRETE WORKS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
15	SANS 1200G	<u>SECTION 15 : CONCRETE WORKS</u>				
		<u>PUMP STATION SUMP AND SUB-STRUCTURE</u>				
15.1		<u>FORMWORK</u>				
15.1.1	8.2.1	Rough Formwork, below NGL				
		Vertical, plane up to 250 mm high:				
15.1.1.1		a) Base of sump	m	24		
15.1.1.2		b) Base of dry well	m	30		
		Vertical, plane:				
15.1.1.3		a) External Walls below ground level	m²	80		
15.1.2	8.2.2	Smooth Formwork, above NGL				
		Vertical, plane up to 300 mm high:				
15.1.2.1		a) edge of sump roof slab	m	31		
		Vertical, plane up to 810 mm high:				
15.1.2.2		a) edge of RC beams	m	21		
		Vertical, plane:				
15.1.2.3		a) Sump walls (inside and outside face)	m²	120		
15.1.2.4		b) Top Structure Columns (outside face)	m²	26		
	8.2.2	Smooth, horizontal, plane				
15.1.2.5		a) Sump roof soffit (Prop Height approx 4.4m)	m²	12		
15.1.2.6		b) Drywell roof soffit (Prop Height approx 3.0m)	m²	45		
15.1.2.7		c) Top Structure beams (Prop Height approx 3.0m)	m²	4		
15.1.2.8		d) Inlet Manhole Roof Soffit (Prop Height approx 4.4m)	m²	4		
15.1.3	8.2.5	Chamfers & grooves				
15.1.3.1		i) Chamfers 30mm x 30mm (Roof upstands)	m	59.5		
15.1.3.2		ii) Chamfers 30mm x 30mm (Wet Sump Top Slab)	m	13.8		
15.1.3.3		iii) Chamfers 25mm x 25mm (columns)	m	84.0		
15.1.3.4		iv) Roof Drip groove 10mm x 10mm	m	29.8		
15.1.3.5		v) Floor Slab drainage channel (50mm x 50mm)	m	6.5		
15.1.3.6		vi) Chamfers 25mm x 25mm (plints)	m	19.6		
15.1.4	8.2.6	Box out holes				
		a) Box out holes and pockets for:				
15.1.4.1		i) 1000 x 1000mm manhole opening in Sump roof slab	No	3		
15.1.4.2		ii) Small circular up to 200mm ø	No	10		
15.1.4.3		iii) Square or Circular between 200 to 500mm ø	No	20		
15.1.4.4		iv) 500 x 500mm sump in floor slab	No	1		
15.2	PSG 8.1.2	<u>REINFORCEMENT</u>				
	8.3.2	Steel Bars				
15.2.1		a) High tensile steel	kg	8860		
15.2.2		b) Mild Steel	kg	210		
15.2.3		c) High tensile welded mesh Ref. 193 in apron slabs	m²	35.0		
15.3	8.1.3	<u>CONCRETE</u>				
15.3.1	8.4.2	BLINDING				
15.3.1.1		Blinding layer in 15MPa/19mm concrete by 50mm thick using Ordinary Portland Cement concrete.	m²	130		
TOTAL CARRIED FORWARD						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 15 : CONCRETE WORKS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
15.3.2	PSG 8.4.3	STRENGTH CONCRETE				
15.3.2.1		10MPa/40mm, using ordinary Portland Cement, for mass filling of foundations of structures where ordered by the Employer's Agent.	m³	2		
15.3.2.2		15MPa/9.5mm using Sulphate Resisting Cement for Benching to wet well sumps and inlet manhole.	m³	6		
	PSG 8.4.3	30MPa/19 mm for water retaining structures, <u>using sulphate resisting cement with Penetron admixture as specified</u> , for:				
15.3.2.3		a) Base Floor slab for the wet well and inlet manhole	m³	7.0		
15.3.2.4		b) Internal and external wall of the wet well up to wet well roof level, including inlet manhole.	m³	31.5		
15.3.2.5		c) Roof slab for the wet well and inlet manhole	m³	6.0		
		30MPa/19 mm, using Ordinary Portland Cement, for Pump Station Dry-Well structure :				
15.3.2.6		a) Floor slabs	m³	14.5		
15.3.2.7		b) Roof slab including upstands	m³	14.0		
15.3.2.8		c) Beams, plinths, columns, etc	m³	6.0		
15.4		<u>FINISHES</u>				
	8.4.4	Unformed surface finish, for :				
15.4.1		a) Broom finish as directed by the Employer's Agent for Roof Slab	m²	70		
		b) Steel-Floated finish as directed by the Employer's Agent for:				
15.4.2		i) Benching in the inlet chamber	m²	5		
15.4.3		ii) Benching in the wet wells	m²	10		
15.4.4		c) Power floated finish as directed by the Employer's Agent for floor slabs.	m²	90		
15.5	PSG 8.5	<u>JOINTS</u>				
		Form joints supply and install complete as shown on drawings, including formwork, waterstops, joint filler, sealant etc. as per drawing 20-058/30-03 :				
15.5.1		Form Typical Slab-to-Wall Horizontal Joint - See Detail 1	m	22.4		
15.5.2		Form Typical Slab-to-Wall Vertical Joint - See Detail 2	m	6.5		
15.5.3		Supply and install 350mm wide Combi-flex joint for all submersible floor-to-wall joints, with only rigid edges epoxied to concrete surface, as per manufacturers installation guidelines.	m	23		
15.6		<u>GROUTING</u>				
		Refer to Structural Drawings 20-058/30-03 : Typical details.				
	PSG 8.9	Setting the following pipes or fittings into or through concrete work, incl. for formwork around the pipes and fixing the pipes to the designated lines and levels using a Non-Shrink Grout, complete with Waterstop and slurry application to inside of void and internal vertical face as detailed - See Detail 5.				
15.6.1		Pipes not exceeding 150mm diameter	No	6		
15.6.2		Pipes greater than 150mm diameter but up to and incl. 300mm diameter	No	4		
15.6.3		Pipes greater than 300mm diameter but up to and incl. 400mm diameter	No	2		
15.6.4	8.7 (b)	Grouting of bolts	No	20		
15.6.5	8.7 (b)	Grouting of machine bases incl. S/S bolts as per PSG 5.5.13.3	No	10		
TOTAL CARRIED FORWARD						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 15 : CONCRETE WORKS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
15.7		<u>SLEEVES</u>				
15.7.1	PSG 8.10	Casting of pipes/specials through walls or slabs:				
15.7.1.1		Pipes not exceeding 150mm diameter	No	5		
15.7.1.2		Pipes greater than 150mm diameter but up to and incl. 300mm diameter	No	2		
15.7.1.3		Pipes greater than 300mm diameter but up to and incl. 400mm diameter	No	2		
15.8		<u>CORNER PROTECTIONS</u>				
		Supply, manufacture and install, complete with cast-in lugs at every 500mm c/c as detailed :				
15.8.1	a)	GMS - 50 x 50 x 5mm Angle Iron	m	30.8		
15.9		<u>WATERPROOFING</u>				
15.9.1	PSG 5.5.11	Apply Derbigum CG2 & CG4 with manufactures specified laps and sealers to external reinforced wall below ground level	m²	80		
15.10		<u>TESTING FOR WATERTIGHTNESS</u>				
15.10.1	PSG 8.11	Testing pump station sump and inlet structure for watertightness and taking all precautions to ensure soundness of the structure in this respect up to the grating floor level above the inlet channel in the wet well.	Sum	1		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 16 : STRUCTURAL STEEL WORK

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
16	SANS 1200H	<u>SECTION 16 : STRUCTURAL STEEL WORK</u>				
16.1	8.3.1	<u>CRAWL BEAMS, HOIST AND TROLLEY</u>				
		Supply, manufacture and install - HDG crawl beam complete with all brackets, bolts, grouting, etc as detailed on drw 20-58/30-03:				
16.1.1		I-profile Beam : 256 x 146 x 37 kg/m - 9,835m long, with end plates	Sum	1		
		Supply and install an electric Yale type chain hoist with motorised trolley for crawl beam Type A EXCLUDING ALL CABLING. The hoist shall be of the type supplied by Haggie Rand Distribution, or similar approved and must comply with the OHS ACT and include all testing & signage required. Furthermore the hoist must be capable of lifting	Sum	1		
16.1.2		1 tonne with an electric motor to operate the chain and move horizontally along the crawl beam. The reach of the chain must be 3m.				
16.2	8.3.1.2	<u>STAIRS</u>				
		Supply, fabricate and install Fibre Reinforced Plastic (FRP) stairs, as detailed on drw 5024-PH3-C301-T, for:				
16.2.1		Stairs to Wet well exterior access: from level 16.20m to 17.20m (excluding handrails)	Sum	1		
16.3	1200 LD	<u>MANHOLE COVERS</u>				
16.3.1	8.2.4	1m x 1m Concrete manhole cover and frame, complete with locking bar and heavy duty lock.	No	3		
16.4	1200 H	<u>HANDRAILING</u>				
	8.3.7	FRP handrails, <u>top mounted</u> type installed in the following positions complete:				
16.4.1		Inclined stairs (measured on slope)	m	1.5		
		FRP handrails, <u>side mounted</u> type installed in the following positions complete:				
16.4.2		Horizontal floors	m	13		
16.5		<u>BEAMS & ANGLE IRONS</u>				
		Supply, fabricate, deliver and install the following as per drawing 20-058/30-03::	Sum	1		
16.6		<u>DOORS</u>				
	8.3.1.2	Supply, fabricate, deliver and install the following doors, as detailed on drw 5024-PH3-C500-T:				
16.6.1		Access double Transformer doors Type D	No	1		
16.7		<u>MISCELLANEOUS</u>				
	8.3.1.2	Supply, fabricate, deliver and install pedestal Stainless Steel straps as detailed on dwg 5024-PH3-C500-T:				
16.7.1		100mm diameter	No	2		
16.7.2		150mm diameter	No	10		
16.7.3	8.3.1.2	Supply, fabricate, deliver and install stainless steel brackets to support 100mm ø suction lines, as detailed on dwg 5024-PH3-C500-T.	No	24		
16.8		<u>FENCING</u>				
		Betafence / ClearVu or similar to be approved by the Employer's Agent, complete with security spokes 2,4m High, enclosing entire Pump Station and Emergency Over-flow Pond.	m	150		
16.8.2		Betafence / ClearVu or similar to be approved by the Employer's Agent, complete 4m double gate, 2,4m High, with 180° hinges, with ground locking pin and padlock enclosure.	Sum	1		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 17 : BUILDING WORK

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
17	SANS 1200XB	<u>SECTION 17 : BUILDING WORK</u>				
17.1		<u>BRICKWORK AND MASONRY</u>				
	PA 6.1	Brickwork for the Pump Station top structure :				
17.1.1		Supply and construct 300mm thick cavity walls to the height of 3m, complete with cavity wall ties at 300mm c/c all directions.	m ²	90		
17.1.2		Extra over for constructing outer face with tan rustic facebrick with a smooth outer finish, as approved by the Engineer	m ²	90		
17.1.3	PA 6.2	Supply and build in brickforce in 300mm walls at every fourth layer built horizontally	m	203		
17.2		<u>PLASTER AND FLOOR FINISHES</u>				
		Plasterwork :				
17.2.1	PA 6.3	Interior plastering 13mm thick for walls	m ²	90		
17.2.2	PA 6.3	Supply and apply granolithic screed 25mm thick to floors	m ²	60		
17.3		<u>PAINTING</u>				
	PA 6.7	Supply and apply paint system including the preparation of all surfaces to the manufacturers requirements:				
17.3.1	PA 6.7	Plastered walls shall receive at least 3 coats of exterior quality PVA paint	m ²	90		
17.3.2	PA 6.7	Concrete surfaces shall receive at least 2 coats of exterior quality PVA paint	m ²	60		
17.4		<u>PLUMBING, DRAINAGE AND SANITORY WARE</u>				
17.4.1		<u>Basins</u>				
17.4.1.1	PA 6.9	Supply and install completely white ceramic wall hung wash-hand basin or similar approved by Employer's Agent.	No	1		
17.4.2		<u>Taps</u>				
17.4.2.1	PA 6.10	Supply and install completely the followings water taps: 15mm diameter chrome	No	1		
17.4.3		<u>Water pipes and associated fittings</u>				
		Supply, handle and install the following miscellaneous pipes and fittings:				
17.4.3.1	a)	3/4 Thermoplastic bibtap with wall plate & threaded off-take"	No	2		
17.4.3.2	b)	Supply 20m or 22mm flexible reinforced hosepipe with couplings and adjustable nozzle	No	1		
17.4.3.3	c)	Supply, handle and install Polycop class 16 pipe	m	50		
17.4.3.4	d)	Supply and install 3/4 90 degree bend conex type copper fittings"	No	10		
17.4.3.5	e)	Supply and install complete 3/4 water stop tap complete"	No	1		
17.4.3.6	f)	Supply 25mm HDPe pipe (Class PE80 / PN10) and connect to existing water reticulation system complete with 160mm Saddle, bends and fittings, including excavation.	m	80		
17.5		<u>SLIP JOINT</u>				
17.5.1		Supply and lay 2 layers of 5 ply Malthoid 300mm wide on smoothed brickwork to form slip joint between brickwork and concrete roof slab. Refer to detail 3 on Drw20-058/30-03.	m	29.0		
17.5.2		Supply and install brick to concrete joints as per Detail on drawing 20-058/30-03, complete with Polyurethane sealant.	m	27		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 18 : DETENTION POND

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
18		<u>SECTION 18 : DETENTION POND</u>				
18.1	SANS 1200 D	<u>BULK EXCAVATION</u>				
	8.3.2					
	PSD 8.3.2(a)	Excavate in all materials and use for embankment or backfill or dispose-off at Municipal Waste Site in Hankey, for detention pond:				
18.1.1		0m to 3.5m deep	m³	1450		
18.1.2		Prepare and shape the 45-degree embankment using suitable material from excavations, compacted to 95% of mod. AASHTO maximum density.	m³	120		
18.1.3		Prepare and shape the 45-degree embankment using imported G5 quality material from commercial sources, compacted to 95% of mod. AASHTO maximum density.	m³	600		
18.1.4	8.3.2(b)	Extra - over for item 7.1.1 for excavation in: Hard rock material	m³	73		
18.2	SANS 1200 GA	<u>CONCRETE (SMALL WORKS)</u>				
18.2.1	8.2	<u>FORMWORK</u>				
18.2.1.1	8.2.3	Narrow widths to sides of 100mm thick bottom slab	m	400		
18.2.1.2	8.2.3	Narrow widths to sides of 100mm thick embankment slab	m	520		
18.2.1.3	8.2.3	Narrow widths to sides of edges, risers, runs, ends, etc for the staircases up to a height of 200mm	m	20		
18.2.2	8.3	<u>REINFORCEMENT</u>				
18.2.2.1	8.3.1	High tensile steel bars (Provisional)	kg	980		
18.2.2.2	8.3.2	High tensile welded mesh 617	m²	1050		
18.2.3	8.1.3	<u>CONCRETE</u>				
	PSG 8.4.3	20MPa/19 mm for water retaining structures, <u>using sulphate resisting cement, with Penetron admixture</u> , 100mm thick, for:				
18.2.3.1	a)	Emergency Pond floor	m³	45		
18.2.3.2	b)	Embankment slopes of the pond	m³	70		
18.2.4		<u>JOINTS</u>				
	8.5	Expansion joint as detailed in the drawing 5024-PH3-C310-T (or similar to be approved) :				
18.2.4.1	a)	Sikaflex PRO-3	m	105		
18.2.4.2	b)	CP flat water stop	m	105		
18.2.4.3	c)	SPX 80 Polyethylene foam	m	105		
18.2.4.4	8.5	Construction joint as detailed in the drawing 5024-PH3-C310-T: Penetron rapid water stop (Penebar SW55)	m	730		
18.3		<u>ANCILLARY WORK</u>				
18.3.1		Manufacture, Transport, Supply and install Fibre Reinforced Plastic (FRP) Outlet Grid (450mm W x 350mm H), with top hinges to open 180°, complete with ancors bolted into concrete. Refer to detail on Drw 5024-PH3-C310.	Sum	1		
18.3.2		Extra over pipework, to cut, position, install and cast 350mm (CI34) Sewer pipe to Emergency Pond side slope. Refer to detail on Drw 5024-PH3-C310.	Sum	1		
18.3.3		Supply, Transport, handle and lay 2x layers of Polypropylene liners (250 micron) to compacted earthworks, and anchor to embankment slope, before casting concrete.	m²	1150		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 19 : CONCRETE BLOCK PAVING

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
19	SANS 1200 DM	<u>SECTION 19 : CONCRETE BLOCK PAVING</u>				
19.1	SANS 1200 DM	<u>EARTHWORKS (ROADS, SUBGRADE)</u>				
19.1.1	8.3.3. (a)	Road-bed treatment : rip 200mm deep, shape and compaction of material for the access road and Pump Station yard parking areas, to a minimum of 93% of mod. AASHTO maximum density (100% for sand).	m³	128		
19.1.2	8.3.4	a) Cut to fill, borrow to fill, compacted to a minimum of 93% mod. AASHTO density (100% for sand).	m³	15		
19.2	SANS 1200 ME	<u>SUBBASE</u>				
	8.3.3	Construct the subbase course with material from commercial sources (G5 material) to a minimum of 95% Mod AASHTO maximum density for:				
19.2.1		a) 150mm thick layer for the access road	m³	50		
19.2.2		b) 100mm thick layer for the areas to be paved	m³	31		
19.3	SANS 1200 MF	<u>BASE</u>				
19.3.1	PSMF 8.3.3	Construct base with material from commercial sources (G3 material), 100mm depth and minimum of 98% Mod AASHTO maximum density.	m³	33		
19.4	SANS 1200 MK	<u>KERBING AND CHANNELING</u>				
	8.2.1	<u>Concrete kerbing</u>				
		a) Pre-cast Mountable Kerb (SANS Fig 8B) :				
19.4.1		i) Curved kerbing	m	20		
19.4.2		ii) 19/20MPa insitu-cast concrete edge beam to infill "zig-zag" edges on block packing perimeter, and smooth off (min 100mm wide, 60mm thick).	m	82		
19.5	SANS 1200 MJ	<u>SEGMENTED PAVING</u>				
	8.2.2	Construction of Block paving areas complete:				
19.5.1	a)	Supply, spread and level 20mm thick river sand for bedding, after completion and approval of road layerworks.	m²	310		
19.5.2	b)	Supply, transport, load, handle and lay 60mm fully interlocking paver (diagonal pattern mixture of grey and red), on the bedding sand, including cutting units to fit edge restraints, complete.	m²	310		
19.5.3	c)	Supply and broom in dry fine sieved plaster sand, mixed with cement 1:12 ratio, in all block paving voids, and slightly moist spray, on completion.	m²	310		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 20 : PIPE WORK AND SPECIAL FITTINGS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
20	SANS 1200 DM	SECTION 20 : PIPE WORK AND SPECIAL FITTINGS				
20.1	DS 11	Supply and deliver stainless steel pipework as per Drawings 5024-PH3-C404-T including all necessary brackets, bolts, nuts, washers, gaskets, etc. Complete for:				
20.1.1		ID No 1: 315mm Ø Flange Adaptor	No	1		
20.1.2		ID No 2: 315mm Ø Straight pipe flanged at one end and fitted with puddle flange (520mm)	No	2		
20.1.3		ID No 4: 350mm Ø Straight pipe flanged at one end and fitted with puddle flange (525mm, cut to suit on site)	No	1		
20.1.4		ID No 5: 350mm Ø Flange Adaptor	No	2		
20.1.5		ID No 6: 350mm Ø flanged Straight pipe, fitted with puddle flange (750mm)	No	2		
20.1.6		ID No 8: 150mm Ø Straight pipe flanged at one end and fitted with 150 to 300mm Ø concentric reducer. (3340mm)	No	3		
20.1.7		ID No 9: 150mm Ø Flanged pipe special fitted with 1x30° and 1x60° Medium radius bends (1210mm)	No	3		
20.1.8		ID No 10: 150mm Ø flanged rubber bellow compensator	No	3		
20.1.9		ID No 11: 150mm Ø flanged Straight pipe (900mm)	No	3		
20.1.10		ID No 12: 200mm Ø x 80mm Ø flanged eccentric taper reducer (180mm) fitted with 22mm Ø threaded stainless steel nipple	No	3		
20.1.11		ID No 13: 200mm Ø flanged 90° bend (Medium Radius)	No	5		
20.1.12		ID No 16: 200mm Ø Straight Pipe Flanged at one end and fitted with 50mm Ø Female screwed NPT stub at the centre; measured along the length of pipe.	No	3		
20.1.13		ID No 17: 200mm Ø flange adaptor.	No	8		
20.1.14		ID No 18: 200mm Ø flanged sweep tee (Medium Radius)	No	3		
20.1.15		ID No 19: 200mm Ø Straight pipe flanged at one end (1450mm, cut to suit on site)	No	1		
20.1.16		ID No 20: 200mm Ø Straight pipe flanged at one end (1050mm, cut to suit on site)	No	1		
20.1.17		ID No 21: 200mm Ø Straight pipe flanged at one end (520mm, cut to suit on site)	No	1		
20.1.18		ID No 23: 200mm Ø Straight pipe flanged at one end (800mm, cut to suit on site)	No	1		
20.1.19		ID No 24: 200mm Ø Straight pipe flanged at one end (2000mm, cut to suit on site)	No	1		
20.1.20		ID No 25: 200mm Ø flange adaptor	No	1		
20.1.21		ID No 26: 200mm Ø x 100mm Ø flanged eccentric taper reducer (180mm)	No	1		
20.1.23		ID No 28: 100mm Ø Straight pipe flanged at one end (780mm, cut to suit)	No	1		
20.1.24		ID No 29: 100mm Ø flange adaptor.	No	1		
20.1.25		ID No 30: 100mm Ø flanged 90° Bend (Medium Radius)	No	2		
20.1.26		ID No 31: 100mm Ø flanged Straight pipe (400mm)	No	1		
20.1.27		ID No 32: 100mm Ø flanged 90° bend fitted with puddle flange (200mm x 700mm)	No	1		
20.1.28		ID No 33: 100mm Ø Straight pipe flanged at one end (3500mm)	No	1		
20.1.29		ID No 34: 80mm Ø Straight pipe flanged at one end and fitted with puddle flange (cut to suit on site)	No	1		
20.1.30		ID No 36: 150mm Ø x 100mm Ø flanged eccentric taper reducer (155mm)	No	3		
20.1.31		Erection and installation of equipment supplied under item 3.7 complete as per specification	Sum	1		
20.1.32	DS 11	Commission and testing of all equipment under item 3.7. Refer to Clause DS 10.0 of the specification.	Sum	1		
20.1.33	DS 11	Testing of suction pipe including gate valve	No	3		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 21 : VALVES AND METERS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
21	SANS 1200 DM	<u>SECTION 21 : VALVES AND METERS</u>				
21.1		The following Items to be supplied with reference to Drawings 5024-PH3-C404-T and the relevant project specifications. To have Class 16 pressure rating unless advised otherwise.				
21.1.1	DS 11	ID No 3: 315mm Ø Knife Edge Gate Valve complete with stainless steel gate or similar approved including all necessary nuts, bolts complete to operate with actuator and stainless steel drive shaft	No	1		
21.1.2	DS 11	ID No 7: 350mm Ø Knife Edge Gate Valve complete with stainless steel gate or similar approved including all necessary nuts, bolts complete to operate with actuator and stainless steel drive shaft	No	1		
21.1.3	DS 11	ID No 14: 200mm Ø Flanged Ball Check Valve or similar approved including all necessary nuts, bolts complete.	No	3		
21.1.4	DS 11	ID No 15: 200mm Ø Knife Edge Gate Valve complete with stainless steel gate or similar approved including all necessary nuts, bolts complete to operate with actuator and stainless steel drive shaft	No	3		
21.1.5	DS 11	ID No 27: 100mm Ø Knife Edge Gate Valve complete with stainless steel gate or similar approved including all necessary nuts, bolts complete to operate with actuator and stainless steel drive shaft	No	1		
21.1.6	DS 11	ID No 35: 80mm Ø Knife Edge Gate Valve complete with stainless steel gate or similar approved including all necessary nuts, bolts complete to operate with actuator and stainless steel drive shaft	No	1		
21.1.7	DS 11	ID No 22: 200mm Ø Flanged Electronic Flow meter	No	1		
21.1.8	DS 11	Supply and install Glycerin type pressure gauge complete with ball valve and nipple on suction pipe work which is capable of dealing with sewage. Diaphragm or similar gauges are preferred.	No	3		
21.1.9	DS 11	Supply and install pressure gauge complete with ball valve and nipple on delivery pipe work.	No	3		
21.1.10	DS 11	Supply and install 50mm ND Vent-o-Mat RGX air valve or similar approved, complete with total of 14m HDPE pipe and required bends, purging to the wet sump.	No	3		
21.1.11	DS 11	Supply and install 25mm Automatic air release valve or similar approved, complete with total of 14m HDPE pipe and required bends, purging to the wet sump.	No	3		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

WORK SCOPE PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 22 : WASTEWATER GRINDER (MACERATOR)

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
22	SANS 1200 DM	<u>SECTION 22 : WASTEWATER GRINDER (MACERATOR)</u> The following Items to be supplied with reference to Drawings 5024-PH3-C105-T and the relevant project specifications.				
22.1.1	DS 11	Supply, install and commission an in-channel wastewater grinder (macerator) with a nominal diameter of not less than 250mm. To be complete with FRP Manhole, a submersible motor (IP68), control panel and configuration no longer than 3m in-line to be verified by the Engineer	Sum	1		
22.1.2	DS 11	Erection and installation of plant and equipment supplied under item 3.9.1 complete, as per specification of manufacturer.	Sum	1		
22.1.3	GS 9.2.4 / DS10.0	Commissioning and testing of plant and all equipment under item 3.9. Refer to Clause DS 10.0 of the Specifications.	Sum	1		
TOTAL CARRIED FORWARD TO SUMMARY						

KOUGA LOCAL MUNICIPALITY - BID No.: 76/2021
HANKEY SANITATION UPGRADE (PHASE 3) :
NEW SEWER PUMP STATIONS IN HANKEY AND CENTERTON

ONLY COMPLETE YELLOW CELLS.
All formulas are already entered and will calculate amounts, Summaries and Total Tender Amount

WORK SCOPE PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)

SECTION 23 : IN-SITU UPGRADE OF "LIVE" SEWER RISING MAIN

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		IN-SITU UPGRADE OF "LIVE" SEWER RISING MAIN				
23	PLX	TRENCHLESS PIPE UPGRADING BY MEANS OF "PIPE CRACKING" METHOD				
23.1	PLX 8.1	SITE ESTABLISHMENT OF DRILLING CONTRACTOR				
23.1.1		Fixed costs to establish "Pipe Cracking" Plant, equipment, labourers etc in Centerton. Cost to incl Construction Mangement, Office Over-head costs, Method Statement, Transport to Centerton, Accommodation and OHS requirements as specified, for full duration of "Pipe Cracking" processes on site.	Sum	1		
23.2	PSA 5.9 / PLX 8.2	TRAFFIC ACCOMMODATION AT ROAD SECTIONS				
23.2.1		Traffic Accommodation & Road signs, as well as flagmen, at each all roads along "Pipe Cracking" pipe route, for full duration of the "Pipe Cracking" processes on site.	Sum	1		
23.3	PLX 8.3.1	SETTING UP AT EACH DRILLING LOCATION				
23.3.1		Move and Re-establish of "Pipe Cracking" plant to next position, along pipeline route.	No.off	14		
23.3.2		Excavate only, BY HAND in all materials for Pipe Cracking Launcing Pits, and stockpile material on site for backfill.	m³	28		
23.4	PLX 8.4	SUPPLY NEW SEWAGE RISING MAIN PIPES				
23.4.1		Supply, cutting, welding and trimming beads of new Sewage Rising Main : a) 200mmø - PE100 / PN 6	m	1400		
23.5	PLX 8.5	PIPE CRACKING OF EXISTING LIVE SEWER PIPE				
23.5.1		Pipe Cracking of existing Sewer Rising Main, from existing Sewage Pump Station in Centerton, to existing Collector Sewer Manhole - Refer to Drw 5024-PH2-C103.	m	1400		
23.6	PSDB 8.3.2 (LI)	Backfill BY HAND all "Launching Pits" from stockpile material on site, and compact 95% ModAashto density, after inspection by Engineer and approval.	m³	28		
23.7		CCTV CAMERA INSPECTIONS				
23.7.1		Arrange for and perform CCTV camera inspection on commencement (before any Site Establishment of Pipe Cracking plant & Equipment may commence), and submit detailed report on existing Sewer Rising Main (route, levels, condition, etc.)	P.Sum	1	---	R 160 000.00
23.7.2		Mark-up on Pay Item 8.7.1 to arrange and pay Nominated Sub-Contractor, incl inter Service Level Agreements (SLA).	%	R 160 000.00		
23.8	PLX 8.6	Dealing with Raw Sewage in Existing Rising Main				
		Arrange with Municipality, cut into existing sewage pipe, and completely delaing with all seage s[pilling, complying with Enviironmental requiremენტs.	Sum	1	---	
TOTAL CARRIED FORWARD TO SUMMARY						

WORK SCOPE PACKAGE 3 : HANKEY SEWER PUMP STATION (MECHANICAL AND ELECTRICAL)

COL	1	2	3	4	5	6	7	8
ITEM	DESCRIPTION / ACTIVITY	UNIT	TOTAL	SUPPLY, WORKS TEST, DELIVER	INSTALL, SITE TEST & COMMISSION	GRAND TOTAL		
			QTY	RATE	AMOUNT	RATE	AMOUNT	
SECTION A	<u>PRELIMINARY AND GENERAL</u>							
A.	Allow for the following as described and called for :							
A.01	<u>Contractual Items</u>							
A.01.1	All conditions of contract	sum	1					
A.01.2	Statutory & regulatory requirements	sum	1					
A.01.3	Attendance of progress meetings as required	sum	1					
A.01.4	All tests, inspections & drawings	sum	1					
A.02	<u>Fixed Price Items</u>							
A.02.1	Erection of stores	sum	1					
A.02.2	Establishment of communication	sum	1					
A.02.3	Removal of site on completion	sum	1					
A.03	<u>Variable Items</u>							
A.03.1	Variable w.r.t. Contract Value	sum	1					
A.03.2	Variable w.r.t. Contract Period	sum	1					
A.04	<u>Other requirements (specify)</u>							
A.04.1		sum	1					
A.04.2		sum	1					
A.04.3		sum	1					
Total for section A - carried forward to "SUMMARY"								
SECTION B	<u>DISTRIBUTION BOARDS</u>							
B.01	<u>Electrical DB's</u>							
B.01.1	<u>All Board to have 30% spare space</u>							
B.01.1	DB - Main Board	no	1					
B.01.2	Pump Control 1	no	1					
B.01.3	Pump Control 2	no	1					
Total for section B - carried forward to "SUMMARY"								
SECTION C	<u>CABLES, WIRING & ACCESSORIES</u>							
C.2	<u>Allow for the following LV (1000V) cables (incl. install/laying/bedding material and backfilling)</u>							
C.2	<u>All LV cables - PVC/PVC/SWA/PVC</u>							
C.2.1	<u>25 mm² x 4c (DB-Main)</u>							
C.2.1.1	Supply and Install/Lay	m	75					
C.2.1.2	Terminate	no	2					
C.2.2	<u>16 mm² x 4c (Pumps)</u>							
C.2.2.1	Supply and Install/Lay	m	30					
C.2.2.2	Terminate	no	4					
C.2.2	<u>4 mm² x 4c (Macerator)</u>							
C.2.2.1	Supply and Install/Lay	m	25					
C.2.2.2	Terminate	no	2					
C.3	<u>Wiring - PVC insulated copper wire of the following sizes:</u>							
C.3.1	6,0 mm ²	m	0					
C.3.2	4,0 mm ²	m	75					
C.3.3	2,5 mm ²	m	320					
C.3.4	1,5 mm ²	m	0					
C.4	<u>Draw wire</u>							
C.4.1	16 swg galvanised	m	125					
C.5	<u>BCE - Bare Copper Earth Wire</u>							
C.07.3	70 mm ² supply and install	m	0					
C.07.4	70 mm ² terminate	no	0					
C.5.1	35 mm ² supply and install	m	0					
C.5.2	35 mm ² terminate	no	0					
C.07.5	25 mm ² supply and install	m	0					
C.07.6	25 mm ² terminate	no	0					
C.5.3	16 mm ² supply and install	m	105					
C.5.4	16 mm ² terminate	no	6					
C.5.7	6 mm ² supply and install	m	0					
C.5.8	6 mm ² terminate	no	0					
C.5.11	2,5 mm ² supply and install and terminate	m	132					
Total for section C - carried forward to "SUMMARY"								

WORK SCOPE PACKAGE 3 : HANKEY SEWER PUMP STATION (MECHANICAL AND ELECTRICAL)

COL	1	2	3	4	5	6	7	8
ITEM	DESCRIPTION / ACTIVITY	UNIT	TOTAL	SUPPLY, WORKS TEST, DELIVER		INSTALL, SITE TEST & COMMISSION		GRAND TOTAL
			QTY	RATE	AMOUNT	RATE	AMOUNT	
SECTION D	<u>CONDUIT, WIREWAYS & ACC. ELECTRICAL INSTALLATION</u>							
D.01	<u>SABS Approved PVC conduit, complete with all couplings, saddles etc. (On surface, build- and cast-in)</u>							
D.01.1	20 mm PVC Sprag	m	50					
D.01.2	20 mm PVC	m	95					
D.01.3	25 mm PVC	m	0					
D.02	<u>Outlet boxes</u>							
D.02.1	100 x 100 x 50 galvanised build/cast-in	no	4					
D.02.2	100 x 100 x 50 galvanised on surface	no	0					
D.02.3	100 x 100 x 50 galvanised chased in	no	0					
D.02.4	100 x 50 x 50 galvanised build/cast-in	no	1					
D.02.5	100 x 50 x 50 galvanised on surface	no	0					
D.02.6	100 x 50 x 50 galvanised chased-in	no	0					
D.02.7	Round PVC Box	no	9					
D.03	<u>OTHER INSTALLATIONS INSTALLATION (Fire, Security ect)</u>							
	<u>SABS Approved PVC or Bosal conduit, complete with all couplings, saddles etc. (On surface, build- and cast-in)</u>							
D.03.1	20 mm dia. PVC	m	0					
D.03.2	25 mm dia PVC	m	75					
D.03.3	20 mm PVC Sprag	m	0					
D.03.4	25 mm Bosal	m	0					
D.04	<u>Outlet boxes</u>							
D.04.1	100 x 100 x 50 galvanised build/cast-in	no	5					
D.04.2	100 x 100 x 50 galvanised on surface	no	0					
D.04.3	100 x 100 x 50 galvanised chased in	no	0					
D.04.2	100 x 50 x 50 galvanised build/cast-in	no	0					
D.04.5	100 x 50 x 50 galvanised on surface	no	0					
D.04.6	100 x 50 x 50 galvanised chased-in	no	0					
D.04.7	Round PVC Box	no	15					
Total for section D - carried forward to "SUMMARY"								
SECTION E	<u>SWITCHES AND SOCKET OUTLETS</u>							
E.01	<u>Light switches</u>							
E.01.1	16 A 1 Lever 1 way fitted with cover plate	no	0					
E.01.2	16 A 2 Lever 1 way fitted with cover plate	no	1					
E.01.3	16 A 3 Lever 1 way fitted with cover plate	no	0					
E.01.4	16 A 1 Lever 2 way fitted with cover plate	no	0					
E.01.5	16 A 2 Lever 2 way fitted with cover plate	no	0					
E.01.6	16 A 3 Lever 2 way fitted with cover plate	no	0					
E.01.7	16 A 4 Lever 2 way fitted with cover plate	no	0					
E.01.8	16A 1 Lever 1 way fitted with cover plate and neon light	no	0					
E.01.9	16A 1 Lever 1 way fitted with cover plate and 800W dimmer	no	0					
E.02	<u>Socket outlets</u>							
E.02.1	16 A SSO fitted with cover plate (with 1 x 164.2)	no	4					
E.02.2	16 A SSO Dedicated fitted with cover plate	no	0					
E.02.3	16 A double SSO fitted with cover plate	no	0					
E.02.4	16 A SSO Normal on Power Skirting	no	0					
E.02.5	16 A SSO Dedicated on Power Skirting	no	0					
E.02.6	3 Pin Module (SANS 164-2) on Power Skirting	no	8					
E.02.7	5 A SSO on round box	no	0					
E.02.8	32A Three Phase	no	0					
E.03	<u>Provision for other services</u>							
E.03.1	Telephone RJ11 outlet mounted to power skirting complete	no	0					
E.03.2	Data RJ45 outlet mounted to power skirting complete with	no	0					
E.03.3	Cover plate Tel on power skirting with outlet	no	0					
E.04	<u>Isolators</u>							
E.04.1	20 A Two pole in weather proof box to feed equipment	no	2					
E.04.2	20 A Triple pole in weather proof box to feed equipment	no	1					
E.04.3	60 A Triple pole in weather proof box to feed equipment	no	0					
E.04.4	80 A Triple pole in weather proof box to feed equipment	no	0					
Total for section E - carried forward to "SUMMARY"								

WORK SCOPE PACKAGE 3 : HANKEY SEWER PUMP STATION (MECHANICAL AND ELECTRICAL)

COL	1	2	3	4	5	6	7	8
ITEM	DESCRIPTION / ACTIVITY	UNIT	TOTAL	SUPPLY, WORKS TEST, DELIVER		INSTALL, SITE TEST & COMMISSION		GRAND TOTAL
			QTY	RATE	AMOUNT	RATE	AMOUNT	
SECTION F	<u>LUMINAIRES</u>							
F.01	<u>Luminaires</u> Allow for a 3m cabtyre and 5A plugtop to all recessed lights							
F.01.1	Type A : Recessed 600x600mm LED Panels	no	0					
F.01.2	Type A : With Battery Backup	no	0					
F.01.3	Type B : Recessed 12W 60Deg LED Downlighter	no	0					
F.01.4	Type B : With Battery Backup	no	0					
F.01.5	Type C : Vapour Proof Fluorescent - 2x36W	no	4					
F.01.6	Type D : 15W Floodlight	no	4					
F.01.7	Type D : 8m Mount Hight Galvanised Pole	no	0					
F.01.8	Type E : LED High Bay (150W) Wide Beam	no	0					
F.01.9	Type G : LED Strips in 5m lengths of Aluminium extrusion with covers IP 67 per 5 meter length	no	0					
F.01.10	Type G : LED Striplight Driver (IP65)	no	0					
F.01.11	IP65 Bulkhead	no	0					
F.02	<u>Photocell</u>							
F.02.1	Type P photocell in cheese bulkhead	no	1					
F.03	<u>Exit Lights</u>							
F.03.1	Ceiling mounted double sided self contained battery exit sign	no	0					
Total for section F - carried forward to "SUMMARY"								
SECTION G	<u>MISCELLANEOUS</u>							
G.01	<u>Power Skirting</u>							
G.01.1	PC03 Two Tier Power skirting c/w end stops & duct dividers-light grey or as spec'd	m	0					
G.01.2	PC06 3 x P9000 in ceiling void for power and tel/data	m	0					
G.01.3	P2000 Galvanized trunking	m	5					
G.01.4	Perforated Medium Duty Cable Tray 229mm Wide	m	0					
G.01.5	Perforated Medium Duty Cable Tray 76mm Wide	m	0					
G.01.6	Power Pole	m	0					
G.02	<u>Earthing</u>							
G.02.1	Earth resistivity test to SABS	no	1					
G.02.2	Earthing as required at each DB to achieve max 1 Ohm	no	1					
G.02.3	Testing and commissioning of earthing installation	no	1					
G.03	<u>Occupancy Sensors</u>							
G.03.1	OS1 : Ceiling Mounted PIR and Sound	no	2					
G.04	<u>Intruder Alarm</u>							
G.04.1	PIR Sensor	no	2					
G.04.2	Industrial door sensor	no	2					
G.04.3	Keypad	no	1					
G.05	<u>Telemetry</u>							
G.05.1	Flow Sensor - Pickup only meter already installed	no	2					
G.05.2	Status of power supply - pickup only	no	2					
G.05.3	Ultrasonic meter - supply and install	no	1					
G.05.4	Status of instuder alarm	no	1					
G.05.5	Status of generator - pickup from generator controller	no	1					
G.05.6	Status of diesel pump - pickup from generator controller	no	1					
G.05.7	Status of macerator - pickup from controller	no	1					
G.06	<u>Back-up Diesel Generator</u>							
G.06.1	6.5kV Back-up diesel generator as per specification	no	1					
Total for section G - carried forward to "SUMMARY"								
SECTION H	<u>EXCAVATION AND SLEEVES</u>							
H.01	<u>Excavation of cable trench including backfill and compacting (see details)</u>							
H.01.1	Soft, hand pickable soil	m	100					
H.01.2	Intermediate soil requiring the use of pneumatic tools	m	0					
H.01.3	Hard rock requiring blasting	m	0					
H.02	<u>Sleeves</u>							
H.02.1	110 mm dia PVC sleeve	m	100					
H.02.2	110 mm dia PVC slow bend	no	4					
H.02.3	75 mm dia PVC sleeve	m	0					
H.02.4	75 mm dia PVC slow bend	no	0					
H.02.5	50 mm dia PVC sleeve	m	25					
H.02.6	50 mm dia PVC slow bend	no	2					
H.03	<u>Miscellaneous</u>							
H.03.1	Cable marker tape 320 mm wide	m	125					
H.03.2	Cable route markers	no	5					
H.03.3	Concrete slabs over MV Cable	m	0					
Total for section H - carried forward to "SUMMARY"								

WORK SCOPE PACKAGE 3 : HANKEY SEWER PUMP STATION (MECHANICAL AND ELECTRICAL)

COL	1	2	3	4	5	6	7	8
ITEM	DESCRIPTION / ACTIVITY	UNIT	TOTAL	SUPPLY, WORKS TEST, DELIVER		INSTALL, SITE TEST & COMMISSION		GRAND TOTAL
			QTY	RATE	AMOUNT	RATE	AMOUNT	
SECTION I	MECHANICAL EQUIPMENT							
	Self Priming waste water pumps of the VS series capable of solids up to 63.5mm , have a 5 year warranty.....Make/ Model complete on galvanised slide rail base, balanced with belt drives and electric motor on raised galvanised steel platform.							
I.02	<u>12.15 l/s @ 44m head</u>							
I.02.1	Suction Flange [16bar]: 100mm	no	2					
I.02.2	Delivery Flange [16 Bar]: 100mm	no	2					
I.03	Supply and Install a 30kVA [23kW], 1750 rpm. Diesel engine to direct drive Pump No3. (The Diesel engine shall have a separate Control panel allowed for on the LV Switch-board for Control and indication of the Diesel engine).							
I.03.1	<u>12.15 l/s @ 44m head</u>							
I.03.2	Suction Flange [16bar]: 100mm	no	1					
I.03.3	Delivery Flange [16 Bar]: 100mm	no	1					
I.03.4	200 ltr welded steel fuel tank and all accessories	no	1					
I.03.5	Allow for engine exhaust connection	no	1					
I.04	Anti-Corrosive Direct Drive Single Inlet Centrifugal Fan c/w 200 dia uPVC Class 4 duct and air grilles in PVC.							
I.04.1	Duty: 0.225m3/s @ 200Pa 0.35kW, 230V, 1 Ph	no	1					
I.04.2	200mm uPVC Class 4 pipe	no	6					
I.04.3	200mm uPVC Class 4 - end cap	no	1					
I.04.4	200 x 120 mm cut in slots	no	4					
I.04.5	450 x 600 mm Galvanised weather louvre c/w insect mesh screen	no	1					
I.04.6	Stainless Steel Flange and duct bend c/w insect mesh screen	no	1					
I.04.7	5.0kg CO ₂ extinguisher in Fibre glass housing c/w signage, with CoC certificate.	no	1					
Total for section I - carried forward to "SUMMARY"								
SECTION J	PROVISIONAL SUM ALLOWANCES							
J.01	<u>Allowances</u>							
J.01.1	For building of electrical and communications manholes	P.Sum						15 000.00
J.01.2	For additional earthing if required	P.Sum						10 000.00
J.01.3	Lightning protection	P.Sum						50 000.00
J.01.4	Allowance for mechanical installation	P.Sum						15 000.00
J.01.5	Contingency sum	P.Sum						35 000.00
Total for section I - carried forward to "SUMMARY"								125 000.00

WORK SCOPE PACKAGE 4 : CENTERTON SEWER PUMP STATION (MECHANICAL AND ELECTRICAL)

COL	1	2	3	4	5	6	7	8
ITEM	DESCRIPTION / ACTIVITY	UNIT	TOTAL	SUPPLY, WORKS TEST, DELIVER		INSTALL, SITE TEST & COMMISSION		GRAND TOTAL
			QTY	RATE	AMOUNT	RATE	AMOUNT	
SECTION A	<u>PRELIMINARY AND GENERAL</u>							
A.	Allow for the following as described and called for :							
A.01	<u>Contractual Items</u>							
A.01.1	All conditions of contract	sum	1					
A.01.2	Statutory & regulatory requirements	sum	1					
A.01.3	Attendance of progress meetings as required	sum	1					
A.01.4	All tests, inspections & drawings	sum	1					
A.02	<u>Fixed Price Items</u>							
A.02.1	Erection of stores	sum	1					
A.02.2	Establishment of communication	sum	1					
A.02.3	Removal of site on completion	sum	1					
A.03	<u>Variable Items</u>							
A.03.1	Variable w.r.t. Contract Value	sum	1					
A.03.2	Variable w.r.t. Contract Period	sum	1					
A.04	<u>Other requirements (specify)</u>							
A.04.1		sum	1					
A.04.2		sum	1					
A.04.3		sum	1					
Total for section A - carried forward to "SUMMARY"								
SECTION B	<u>DISTRIBUTION BOARDS</u>							
B.01	<u>Electrical DB's</u>							
	<u>All Board to have 30% spare space</u>							
B.01.1	DB - Main Board	no	1					
B.01.2	Pump Control 1	no	1					
B.01.3	Pump Control 2	no	1					
Total for section B - carried forward to "SUMMARY"								
SECTION C	<u>CABLES, WIRING & ACCESSORIES</u>							
C.2	<u>Allow for the following LV (1000V) cables (incl. install/laying/bedding material and backfilling)</u>							
	<u>All LV cables - PVC/PVC/SWA/PVC</u>							
C.2.1	<u>25 mm² x 4c (DB-Main)</u>							
C.2.1.1	Supply and Install/Lay	m	75					
C.2.1.2	Terminate	no	2					
C.2.2	<u>16 mm² x 4c (Pumps)</u>							
C.2.2.1	Supply and Install/Lay	m	30					
C.2.2.2	Terminate	no	4					
C.2.2	<u>4 mm² x 4c (Macerator)</u>							
C.2.2.1	Supply and Install/Lay	m	25					
C.2.2.2	Terminate	no	2					
C.3	<u>Wiring - PVC insulated copper wire of the following sizes:</u>							
C.3.1	6,0 mm ²	m	0					
C.3.2	4,0 mm ²	m	75					
C.3.3	2,5 mm ²	m	320					
C.3.4	1,5 mm ²	m	0					
C.4	<u>Draw wire</u>							
C.4.1	16 swg galvanised	m	125					
C.5	<u>BCE - Bare Copper Earth Wire</u>							
C.07.3	70 mm ² supply and install	m	0					
C.07.4	70 mm ² terminate	no	0					
C.5.1	35 mm ² supply and install	m	0					
C.5.2	35 mm ² terminate	no	0					
C.07.5	25 mm ² supply and install	m	0					
C.07.6	25 mm ² terminate	no	0					
C.5.3	16 mm ² supply and install	m	105					
C.5.4	16 mm ² terminate	no	6					
C.5.7	6 mm ² supply and install	m	0					
C.5.8	6 mm ² terminate	no	0					
C.5.11	2,5 mm ² supply and install and terminate	m	132					
Total for section C - carried forward to "SUMMARY"								

WORK SCOPE PACKAGE 4 : CENTERTON SEWER PUMP STATION (MECHANICAL AND ELECTRICAL)

COL	1	2	3	4	5	6	7	8
ITEM	DESCRIPTION / ACTIVITY	UNIT	TOTAL	SUPPLY, WORKS TEST, DELIVER		INSTALL, SITE TEST & COMMISSION		GRAND TOTAL
			QTY	RATE	AMOUNT	RATE	AMOUNT	
SECTION D	<u>CONDUIT, WIREWAYS & ACC. ELECTRICAL INSTALLATION</u>							
D.01	<u>SABS Approved PVC conduit, complete with all couplings, saddles etc. (On surface, build-and-cast-in)</u>							
D.01.1	20 mm PVC Sprag	m	50					
D.01.2	20 mm PVC	m	95					
D.01.3	25 mm PVC	m	0					
D.02	<u>Outlet boxes</u>							
D.02.1	100 x 100 x 50 galvanised build/cast-in	no	4					
D.02.2	100 x 100 x 50 galvanised on surface	no	0					
D.02.3	100 x 100 x 50 galvanised chased in	no	0					
D.02.4	100 x 50 x 50 galvanised build/cast-in	no	1					
D.02.5	100 x 50 x 50 galvanised on surface	no	0					
D.02.6	100 x 50 x 50 galvanised chased-in	no	0					
D.02.7	Round PVC Box	no	9					
D.03	<u>OTHER INSTALLATIONS INSTALLATION (Fire, Security ect)</u>							
	<u>SABS Approved PVC or Bosal conduit, complete with all couplings, saddles etc. (On surface, build-and-cast-in)</u>							
D.03.1	20 mm dia. PVC	m	0					
D.03.2	25 mm dia PVC	m	75					
D.03.3	20 mm PVC Sprag	m	0					
D.03.4	25 mm Bosal	m	0					
D.04	<u>Outlet boxes</u>							
D.04.1	100 x 100 x 50 galvanised build/cast-in	no	5					
D.04.2	100 x 100 x 50 galvanised on surface	no	0					
D.04.3	100 x 100 x 50 galvanised chased in	no	0					
D.04.2	100 x 50 x 50 galvanised build/cast-in	no	0					
D.04.5	100 x 50 x 50 galvanised on surface	no	0					
D.04.6	100 x 50 x 50 galvanised chased-in	no	0					
D.04.7	Round PVC Box	no	15					
Total for section D - carried forward to "SUMMARY"								
SECTION E	<u>SWITCHES AND SOCKET OUTLETS</u>							
E.01	<u>Light switches</u>							
E.01.1	16 A 1 Lever 1 way fitted with cover plate	no	0					
E.01.2	16 A 2 Lever 1 way fitted with cover plate	no	1					
E.01.3	16 A 3 Lever 1 way fitted with cover plate	no	0					
E.01.4	16 A 1 Lever 2 way fitted with cover plate	no	0					
E.01.5	16 A 2 Lever 2 way fitted with cover plate	no	0					
E.01.6	16 A 3 Lever 2 way fitted with cover plate	no	0					
E.01.7	16 A 4 Lever 2 way fitted with cover plate	no	0					
E.01.8	16A 1 Lever 1 way fitted with cover plate and neon light	no	0					
E.01.9	16A 1 Lever 1 way fitted with cover plate and 800W dimmer	no	0					
E.02	<u>Socket outlets</u>							
E.02.1	16 A SSO fitted with cover plate (with 1 x 164.2)	no	4					
E.02.2	16 A SSO Dedicated fitted with cover plate	no	0					
E.02.3	16 A double SSO fitted with cover plate	no	0					
E.02.4	16 A SSO Normal on Power Skirting	no	0					
E.02.5	16 A SSO Dedicated on Power Skirting	no	0					
E.02.6	3 Pin Module (SANS 164-2) on Power Skirting	no	0					
E.02.7	5 A SSO on round box	no	8					
E.02.8	32A Three Phase	no	0					
E.03	<u>Provision for other services</u>							
E.03.1	Telephone RJ11 outlet mounted to power skirting complete v	no	0					
E.03.2	Data RJ45 outlet mounted to power skirting complete with co	no	0					
E.03.3	Cover plate Tel on power skirting with outlet	no	0					
E.04	<u>Isolators</u>							
E.04.1	20 A Two pole in weather proof box to feed equipment	no	2					
E.04.2	20 A Triple pole in weather proof box to feed equipment	no	1					
E.04.3	60 A Triple pole in weather proof box to feed equipment	no	0					
E.04.4	80 A Triple pole in weather proof box to feed equipment	no	0					
Total for section E - carried forward to "SUMMARY"								

WORK SCOPE PACKAGE 4 : CENTERTON SEWER PUMP STATION (MECHANICAL AND ELECTRICAL)

COL	1	2	3	4	5	6	7	8
ITEM	DESCRIPTION / ACTIVITY	UNIT	TOTAL	SUPPLY, WORKS TEST, DELIVER		INSTALL, SITE TEST & COMMISSION		GRAND TOTAL
			QTY	RATE	AMOUNT	RATE	AMOUNT	
SECTION F	LUMINAIRES							
F.01	Luminaires							
	Allow for a 3m cabtyre and 5A plugtop to all recessed lights							
F.01.1	Type A : Recessed 600x600mm LED Panels	no	0					
F.01.2	Type A : With Battery Backup	no	0					
F.01.3	Type B : Recessed 12W 60Deg LED Downlighter	no	0					
F.01.4	Type B : With Battery Backup	no	0					
F.01.5	Type C : Vapour Proof Flourescent - 2x36W	no	4					
F.01.6	Type D : 15W Floodlight	no	4					
F.01.7	Type D : 8m Mount Hight Galvanised Pole	no	0					
F.01.8	Type E : LED High Bay (150W) Wide Beam	no	0					
F.01.9	Type G : LED Strips in 5m lengths of Aluminium extrusion with covers IP 67 per 5 meter length	no	0					
F.01.10	Type G : LED Striplight Driver (IP65)	no	0					
F.01.11	IP65 Bulkhead	no	0					
F.02	Photocell							
F.02.1	Type P photocell in cheese bulkhead	no	1					
F.03	Exit Lights							
F.03.1	Ceiling mounted double sided self contained battery exit sign	no	0					
Total for section F - carried forward to "SUMMARY"								
SECTION G	MISCELLANEOUS							
G.01	Power Skirting							
G.01.1	PC03 Two Tier Power skirting c/w end stops & duct dividers light grey or as spec'd	m	0					
G.01.2	PC06 3 x P9000 in ceiling void for power and tel/data	m	0					
G.01.3	P2000 Galvanized trunking	m	5					
G.01.4	Perforated Medium Duty Cable Tray 229mm Wide	m	0					
G.01.5	Perforated Medium Duty Cable Tray 76mm Wide	m	0					
G.01.6	Power Pole	m	0					
G.02	Earthing							
G.02.1	Earth resistivity test to SABS	no	1					
G.02.2	Earthing as required at each DB to achieve max 1 Ohm	no	1					
G.02.3	Testing and commissioning of earthing installation	no	1					
G.03	Occupancy Sensors							
G.03.1	OS1 : Ceiling Mounted PIR and Sound	no	2					
G.04	Intruder Alarm							
G.04.1	PIR Sensor	no	2					
G.04.2	Industrial door sensor	no	2					
G.04.3	Keypad	no	1					
G.05	Telemetry							
G.05.1	Flow Sensor - Pickup only meter already installed	no	2					
G.05.2	Status of power supply - pickup only	no	2					
G.05.3	Ultrasonic meter - supply and install	no	1					
G.05.4	Status of instuder alarm	no	1					
G.05.5	Status of generator - pickup from generator controller	no	1					
G.05.6	Status of diesel pump - pickup from generator controller	no	1					
G.05.7	Status of macerator - pickup from controller	no	1					
G.06	Back-up Diesel Generator							
G.06.1	6.5kV Back-up diesel generator as per specification	no	1					
Total for section G - carried forward to "SUMMARY"								
SECTION H	EXCAVATION AND SLEEVES							
H.01	Excavation of cable trench insluding backfill and compacting (see details)							
H.01.1	Soft, hand pickable soil	m	100					
H.01.2	Intermediate soil requiring the use of pneumatic tools	m	0					
H.01.3	Hard rock requiring blasting	m	0					
H.02	Sleeves							
H.02.1	110 mm dia PVC sleeve	m	100					
H.02.2	110 mm dia PVC slow bend	no	4					
H.02.3	75 mm dia PVC sleeve	m	0					
H.02.4	75 mm dia PVC slow bend	no	0					
H.02.5	50 mm dia PVC sleeve	m	25					
H.02.6	50 mm dia PVC slow bend	no	2					
H.03	Miscellaneous							
H.03.1	Cable marker tape 320 mm wide	m	125					
H.03.2	Cable route markers	no	5					
H.03.3	Concrete slabs over MV Cable	m	0					
Total for section H - carried forward to "SUMMARY"								

WORK SCOPE PACKAGE 4 : CENTERTON SEWER PUMP STATION (MECHANICAL AND ELECTRICAL)

COL	1	2	3	4	5	6	7	8
ITEM	DESCRIPTION / ACTIVITY	UNIT	TOTAL	SUPPLY, WORKS TEST, DELIVER		INSTALL, SITE TEST & COMMISSION		GRAND TOTAL
			QTY	RATE	AMOUNT	RATE	AMOUNT	
SECTION I	<u>MECHANICAL EQUIPMENT</u>							
	Self Priming waste water pumps of the VS series capable of solids up to 63.5mm , have a 5 year warranty.....Make/ Model complete on galvanised slide rail base, balanced with belt drives and electric motor on raised galvanised steel platform.							
I.02	<u>12.15 l/s @ 44m head</u>							
I.02.1	Suction Flange [16bar]: 100mm	no	2					
I.02.2	Delivery Flange [16 Bar]: 100mm	no	2					
I.03	Supply and Install a 30kVA [23kW], 1750 rpm. Diesel engine to direct drive Pump No3. (The Diesel engine shall have a separate Control panel allowed for on the LV Switch-board for Control and indication of the Diesel engine).							
I.03.1	<u>12.15 l/s @ 44m head</u>							
I.03.2	Suction Flange [16bar]: 100mm	no	1					
I.03.3	Delivery Flange [16 Bar]: 100mm	no	1					
I.03.4	200 ltr welded steel fuel tank and all accessories	no	1					
I.03.5	Allow for engine exhaust connection	no	1					
I.04	Anti-Corrosive Direct Drive Single Inlet Centrifugal Fan c/w 200 dia uPVC Class 4 duct and air grilles in PVC.							
I.04.1	Duty: 0.225m3/s @ 200Pa 0.35kW, 230V, 1 Ph	no	1					
I.04.2	200mm uPVC Class 4 pipe	no	6					
I.04.3	200mm uPVC Class 4 - end cap	no	1					
I.04.4	200 x 120 mm cut in slots	no	4					
I.04.5	450 x 600 mm Galvanised weather louvre c/w insect mesh screen	no	1					
I.04.6	Stainless Steel Flange and duct bend c/w insect mesh screen	no	1					
I.04.7	5.0kg CO ² extinguisher in Fibre glass housing c/w signage, with CoC certificate.	no	1					
Total for section I - carried forward to "SUMMARY"								
SECTION J	<u>PROVISIONAL SUM ALLOWANCES</u>							
J.01	<u>Allowances</u>							
J.01.1	For building of electrical and communications manholes	P.Sum						15 000.00
J.01.2	For additional earthing if required	P.Sum						10 000.00
J.01.3	Lightning protection	P.Sum						50 000.00
J.01.4	Allowance for mechanical installation	P.Sum						15 000.00
J.01.5	Contingency sum	P.Sum						35 000.00
Total for section I - carried forward to "SUMMARY"								125 000.00

SUMMARY OF SCHEDULE OF QUANTITIES

DESCRIPTION OF WORK SCOPE SECTIONS	TENDER AMOUNTS
SECTION 1: PRELIMINARY & GENERAL	R 0.00
<u>WORK PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)</u>	
SECTION 2 : SITE CLEARANCE	R 0.00
SECTION 3 : EARTHWORKS	R 0.00
SECTION 4 : CONCRETE WORKS	R 0.00
SECTION 5 : STRUCTURAL STEEL WORK	R 0.00
SECTION 6 : BUILDING WORK	R 0.00
SECTION 7 : DETENTION POND	R 0.00
SECTION 8 : CONCRETE BLOCK PAVING	R 0.00
SECTION 9 : PIPE WORK AND SPECIAL FITTINGS	R 0.00
SECTION 10 : VALVES AND METERS	R 0.00
SECTION 11 : WASTEWATER GRINDER (MACERATOR)	R 0.00
SECTION 12 : SEWAGE CONSERVANCY TANK	R 0.00
SUB-TOTAL - WORK PACKAGE 1 : HANKEY SEWER PUMP STATION (CIVIL & STRUCTURAL)	R 0.00
<u>WORK PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)</u>	
SECTION 13 : SITE CLEARANCE	R 0.00
SECTION 14 : EARTHWORKS	R 0.00
SECTION 15 : CONCRETE WORKS	R 0.00
SECTION 16 : STRUCTURAL STEEL WORK	R 0.00
SECTION 17 : BUILDING WORK	R 0.00
SECTION 18 : DETENTION POND	R 0.00
SECTION 19 : CONCRETE BLOCK PAVING	R 0.00
SECTION 20 : PIPE WORK AND SPECIAL FITTINGS	R 0.00
SECTION 21 : VALVES AND METERS	R 0.00
SECTION 22 : WASTEWATER GRINDER (MACERATOR)	R 0.00
SECTION 23 : IN-SITU UPGRADE OF "LIVE" SEWER RISING MAIN	R 0.00
SUB-TOTAL - WORK PACKAGE 2 : CENTERTON SEWER PUMP STATION (CIVIL & STRUCTURAL)	R 0.00
<u>WORK PACKAGE 3 : HANKEY SEWER PUMP STATION (MECH & ELECTRICAL)</u>	
SECTION A PRELIMINARY AND GENERAL	R 0.00
SECTION B DISTRIBUTION BOARDS	R 0.00
SECTION C CABLES, WIRING & ACCESSORIES	R 0.00
SECTION D CONDUIT, WIREWAYS & ACC.	R 0.00
SECTION E SWITCHES AND SOCKET OUTLETS	R 0.00
SECTION F LUMINAIRES	R 0.00
SECTION G MISCELLANEOUS	R 0.00
SECTION H EXCAVATION AND SLEEVES	R 0.00
SECTION I MECHANICAL EQUIPMENT	R 0.00
SECTION J PROVISIONAL SUM ALLOWANCES	R 125 000.00
SUB-TOTAL - WORK PACKAGE 3 : HANKEY SEWER PUMP STATION (MECH & ELECTRICAL)	R 125 000.00

WORK PACKAGE 4 : CENTERTON SEWER PUMP STATION (MECH & ELECTRICAL)		
SECTION A	PRELIMINARY AND GENERAL	R 0.00
SECTION B	DISTRIBUTION BOARDS	R 0.00
SECTION C	CABLES, WIRING & ACCESSORIES	R 0.00
SECTION D	CONDUIT, WIREWAYS & ACC.	R 0.00
SECTION E	SWITCHES AND SOCKET OUTLETS	R 0.00
SECTION F	LUMINAIRES	R 0.00
SECTION G	MISCELLANEOUS	R 0.00
SECTION H	EXCAVATION AND SLEEVES	R 0.00
SECTION I	MECHANICAL EQUIPMENT	R 0.00
SECTION J	PROVISIONAL SUM ALLOWANCES	R 125 000.00
SUB-TOTAL - WORK PACKAGE 4 : CENTERTON SEWER PUMP STATION (MECH & ELECTRICAL)		R 125 000.00
SUB-TOTAL TENDER AMOUNT (A) - excl VAT		R 250 000.00
ESCALATION (5% of Sub-Total A)	5.0%	R 12 500.00
SUB-TOTAL (B)		R 262 500.00
VALUE ADDED TAX (15% of Sub-total B)	15.0%	R 39 375.00
TOTAL TENDER AMOUNT (incl VAT)		R 301 875.00