

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
		SECTION A: PRELIMINARY AND GENERAL				
A1	1200A 8.3	Fixed-charge items				
A1.1	8.3.1	Contractual requirements	Sum	1.00		
A1.2	8.3.2	Establish facilities on site				
A1.2.1	8.3.2.1	Facilities for the Engineer				
A1.2.2		As per SANS 1200 AB and PS AB, to include but not limited to a site instruction book, protective clothing and safety equipment, Furnished Office (1 No.), project nameboards (2 No), survey equipment, laboratory equipment.	Sum	1.00		
A1.2.3	8.3.2.2	Facilities for the Contractor				
A1.2.4		Facilities for the Contractor, including offices, storage sheds, workshops, ablution and latrine facilities, tools and equipment, water supplies, electric power, communications, dealing with water, access and accommodation of traffic As per SANS 1200 A.	Sum	1.00		
A1.2.5	8.3.3	Other fixed charged obligations.	Sum	1.00		
A1.2.6	8.3.4	Removal of Engineer's and Contractor's site establishment and reinstatement of site on completion.	Sum	1.00		
A2	8.4	Time-related items				
A2.1	8.4.1	Contractual requirements	Month	24.00		
A2.2	8.4.2	Operate and maintain facilities on site for duration of construction except where otherwise stated				
A2.2.1	8.4.2.1 8.4.2.3	Facilities for Engineer	Month	24.00		
A2.2.2	8.4.2.2 8.4.2.3	Facilities for Contractor	Month	24.00		
A2.3	8.4.3	Supervision for duration of construction	Month	24.00		
A2.4	8.4.4	Company and Head Office overhead costs for duration of Contract	Month	24.00		
A2.5	8.4.5	Other time-related obligations	Month	24.00		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
A3	1200A	Setting out of the Works Setting out of the Works and the preservation and replacement of beacons and reference pegs.				
A3.1	8.3.3	Fixed-charged obligations for Item A3	Sum	1.00		
A3.2	8.4.5	Time-related obligations for Item A3	Month	24.00		
A4	8.8	Temporary Works				
A4.1	8.8.1	Maintain Access Road to works	Sum	1.00		
A4.2	8.8.3	Protection of existing structures until construction in vicinity is complete				
A4.2.1		a) Concrete structures, pipes, kiosks, transformers etc along the cable routes	Sum	1.00		
A4.2.2		b) Existing and new-substation structures	Sum	1.00		
A4.2.3		c) Existing Pump Station, storage tanks and outflow canal.	Sum	1.00		
A5	PA A 8.11	Dealing with Existing Services Existing services are indicated on drawing set P08959-G-LA-001-01	Sum	1.00		
A6	PA A 8.12	Detecting of Existing Services	Sum	1.00		
A7	PA A 8.14	Dealing with water in excavations	Sum	1.00		
A8	PA A 8.14	Dealing with water inside structures, manholes, sumps and chambers	Sum	1.00		
A9	PA A 8.15	Allowance for returning to site (If deemed necessary) for commissioning and handover.	Sum	1.00		
A10	PA A 8.16	Allowance for all Hazard and Operability (HAZOP) studie(s)	Sum	1.00		
A11	PA A 8.17	Compulsory Data Pack, for all installed equipmet.	Sum	1.00		
A12	PA A 8.18	Operational Training for all equipment installed, including but not limeted to, pump controls, VSD's, MV switch gear, HVAC, Overhead Crane, other	Sum	1.00		
TOTAL FOR SECTION: Carried to Summary						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate	ZAR	Amount ZAR
B1		SECTION B: COMPLIANCE WITH HEALTH AND SAFETY AND ENVIRONMENTAL PROTECTION					
		Compliance with Health and Safety Requirements and Obligations					
B1.1	PSA 8.3.5	Fixed-charged cost to meet all of the requirements and obligations in terms of the Occupational Health and Safety Act and the Construction Regulations	Sum	1.00			
B1.2	PS A 8.4.6	Time-related cost to meet all of the requirements and obligations in terms of the Occupational Health and Safety Act and the Construction Regulations	Month	24.00			
B2		Compliance with Environmental Management Plan and environmental protection obligations					
B2.1	PS A 8.3.6	Fixed-charged cost to meet all of the requirements and obligations in terms of the Environmental Management Plan and environmental protection obligations	Sum	1.00			
B2.2	PS A 8.4.7	Time-related cost to meet all of the requirements and obligations in terms of the Environmental Management Plan and environmental protection obligations	Month	24.00			
TOTAL FOR SECTION: Carried to Summary							

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
SECTION C: DAYWORKS						
C1	1200A	Labour				
C1.1	8.7	Skilled labour	h	90.00		
C1.2	8.7	Semi-skilled labour	h	180.00		
C1.1	8.7	Unskilled labour	h	180.00		
C2	1200A	Materials				
C2.1	8.7	Allow for net cost of goods or materials actually used	Prov Sum	1.00		100 000.00
C2.2		Percentage mark-up on Item C2.1 (State % and extend as an amount)	%	100 000.00		
C3	1200A	Contractor's own plant on site				
C3.1	8.7	Allow for all-inclusive cost of using the Contractor's own plant on Site	Prov Sum	1.00		100 000.00
Plant hired by the Contractor						
C3.1	8.7	Allow for net cost of hired plant	Prov Sum	1.00		50 000.00
C3.2		Percentage mark-up on Item C3.1 (State % and extend as an amount)	%	50 000.00		
TOTAL FOR SECTION: Carried to Summary						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate	ZAR	Amount ZAR
SECTION D: PROVISIONAL SUMS							
D1	1200A	Control testing					
D1.1	PS A 8.5.1	Additional testing ordered by the Engineer					
D1.1.1		Control testing of materials and workmanship	Prov Sum	1.00			80 000.00
D1.1.2		Condition assessment on existing pipework. Transport, grit blasting and evaluation pipework	Prov Sum	1.00			1 000 000.00
D1.2		Percentage adjustment on Item D1.1 for Contractor's overheads and profit (State % and extend as an amount)	%	1 080 000.00			
D2	PS A 8.5	Sums stated Provisionally by the Engineer					
D2.1		Cost of Community Liaison Officer for the duration of the contract	Prov Sum	1.00			700 000.00
D3		For works to be executed by the Contractor as instructed by the Engineer	Prov Sum	1.00			4 500 000.00
D4		Galvanised piping, fittings and taps for plumbing inside the Pump Station. Connected to existing connection.	Prov Sum	1.00			20 000.00
D5		Supply and install fire protection equipment as per details provided by the Engineer	Prov Sum	1.00			250 000.00
D6		Adjudicator's fee	Prov Sum	1.00			50 000.00
D7		Installation of cable sleeving for all cables crossing roads. This includes re-instatement of tar and roadwork's as per original.	PC sum	1			600 000.00
D8		Provisional Sum for the modification of the MV Works as per the Engineers Instruction.	PC sum	1			575 000.00
D8.1		Markup on item D8	%	575 000.00			
D9	PS A 8.5	INSPECTIONS AND SERVICING Allow the amount of Twenty Thousand Rand (R 20 000.00) for the inspections and servicing of waste area components.	Item	1.00	20 000.00		20 000.00
D9.1		Allow for profit on the above	%	20 000.00			
Carried Forward							

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
D10	PS A 8.5	IRONMONGERY Allow the amount of Five thousand, Five hundred Rand (R 5500.00) for the supply and installation of all ironmongery fittings where needed.	Item	1.00	5 500.00	5 500.00
D10.1		Allow for profit on the above	%	5 500.00		
D10.2		Allow for attendance on the above	%	5 500.00		
D11	PS A 8.5	SUB-SOIL DRAINAGE Allow the amount of Fifteen Thousand Rand (R15 000.00) for the supply, manufacture and installation of Sub-soil drainage where needed.	Item	1.00		15 000.00
D11.1		Allow for profit on the above	%	15 000.00		
D12		Provide the "As Built" information				
D12.1		Provide the "As Built" drawings, reports Operating Manuals and any other information pertaining to the installation in file format as per specification	Sum	1		
D12.2		Provide the "As Built" drawings, reports, Operating Manuals and any other information pertaining to the installation in electronic format on a 4 TB external hard drive	Sum	1		
D13		Provision for Factory Acceptance Testing (FAT) witnessing to be conducted both internationally and locally. Includes travel, accommodation, and subsistence allowances for three (3) Engineers, three (3) Employer Representatives, and one (1) Contractor's Representative to witness the FAT at the manufacturer's facility. (Allowance for actual testing to be made elsewhere)	Prov Sum	1.00		12 000 000.00
D14		Allow for the manufacture of complete, new Low Voltage MCC including CS&I Integration into MV Moor Starter Board. (The design of the MCC is to be developed in conjunction with EWS and the Engineer once the design philosophy has been finalised.)	Prov Sum	1.00		4 500 000.00
D15		Allow for the creation of a Digital Twin. The exact scope will be made available to the Contractor after award of the Contract	Prov Sum	1.00		2 500 000.00
C.16		Unforeseen work	Sum	1.00		2 000 000.00
TOTAL FOR SECTION: Carried to Summary						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
F1		SECTION F : ELECTRICAL - MAIN MEDIUM VOLTAGE RETICULATION				
		Design, manufacture, supply, install, testing and commission 11kV switchgear as per specifications				
F1.1		Supply and deliver Incoming circuit breaker Motorised - with protection class (5P20) current transformers, protection (class X) current transformers wired for, overcurrent, and earth fault protection with arc protection ALFR. Multifunction overcurrent, earth fault, sensitive earth fault, and thermal overload protection relay. Power meter installed as per specifications (eThekwini Electricity Incoming Circuit Breaker)	No	1		
F1.1.1		Installation, testing and commissioning of item F1.1	No	1		
F1.2		Supply and deliver feeder circuit breaker Motorised - with voltage transformer and protection class (4P20) current transformers, measuring class (0,2) current transformers wired for overcurrent with arc protection ALFR; Multifunction overcurrent and thermal overload protection relay. Power meter installed as per specifications (EWS Feeder Circuit Breaker with Metering)	No	1		
F1.2.1		Installation, testing and commissioning of item F1.2	No	1		
F1.3		Supply and deliver feeder circuit breaker Motorised - with protection class (5P20) current transformers, protection (class X) current transformers wired for overcurrent with arc protection ALFR. Multifunction overcurrent and thermal overload protection relay. Power meter installed as per specifications (Veolia Feeder Circuit Breaker)	No	1		
F1.3.1		Installation, testing and commissioning of item F1.3	No	1		
F1.4		Supply & deliver new 11kV floor standing bulk metering board to accommodate the Municipal metering equipment & mains isolator to eThekwini Electricity requirements (EWS metering)	No	1		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
F1.4.1		Installation, testing and commissioning of item F1.4	No	1		
F1.5		Supply and deliver feeder isolator with transition panel to feeder circuit breakers with arc protection ALFR (EWS Incoming Isolator)	No	1		
F1.5.1		Installation, testing and commissioning of item F1.5	No	1		
F1.6		Supply and deliver feeder circuit breaker Motorised - with protection class (5P20) current transformers, protection (class X) current transformers wired for, overcurrent, and earth fault protection with arc protection ALFR. Multifunction overcurrent, earth fault, sensitive earth fault, and thermal overload protection relay. (Feeder Ring 1, Feeder Ring 2)	No	2		
F1.6.1		Installation, testing and commissioning of item F1.6	No	2		
F1.7		Supply and Deliver Remote Terminal Units as per specification for the following MV Panels: Main Incoming Baord; EWS Board;	No	2		
F1.7.1		Installation, testing and commissioning of item F1.7	No	2		
F2		Design, manufacture, supply, install, testing and commission 11kV Mini Substations with smart RMUs and RTUs as per specifications				
F2.1		Supply and deliver install 500kVA Mini Subs	NO	5		
F2.1.1		Installation, testing and commissioning of item F2.1	No	5		
F2.2		Supply and deliver install 1000kVA Mini Subs with plinths and circuit breaker protection for transformer, LV isolator and LV feeder circuit breaker to local supplies as per specifications	No	1		
F2.2.1		Installation, testing and commissioning of item 2,2	No	1		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
F3		Design, manufacture, supply, install and commission 11kV metering panel and cabling including racking, conduit, etc. as per eThekweni Electricity Unit Standard specifications				
F3.1		Main Intake Substation - EWS Switchboard				
F3.1.1		Supply	No	1		
F3.1.2		Install	No	1		
F4		Supply and install 110V DC battery backup unit for MV switchgear complete with batteries, voltmeters, ammeters, filters, all interface wiring between BTU and panel, etc., complete and to specification. Include a 5% factor of safety				
F4.1		Main Intake Substation				
F4.1.1		Supply	No	1		
F4.1.2		Install	No	1		
F4.2		Low Level Pump Station				
F4.2.1		Supply	No	1		
F4.2.2		Install	No	1		
F5		Removal of existing/redundant switchgear, cabling and ancillary equipment at old Main substations, low level pump station and at old substations 3,4,5 and associated cabling and transportation to Springfield Reclamation stores and make good as per specifications	sum	1		
F6		Installation of cable sleeving for all cables crossing roads. This includes re-instatement of tar and roadwork's as per original. (PC Sum)	sum	1		
F7		Allow for the complete MV design for new Main Intake Substation: new EWS Switchboard, new Veolia Switchboard and new Low-level Pump Station Switchboard as per specifications.	sum	1		
F8		Allow for the production of an integrated changeover plan to ensure minimal interruption to the site and plant operations (as per specifications)	sum	1		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
F9		Trenching (MV Cables)				
F9.1		Excavation of a 600mm (Wide) x 1200mm (Deep) trench for the new MV underground cable, including for sifting, back-filling and compaction, as per the Electrical Specification and Drawings.				
F9.1.1		Soft excavation as classified in SANS 1200 Section D (Earthworks) and Section DB (Pipe Trenches) 1998. Payment for this item shall be as per Clause 8.3.2 of SANS 1200 DB.	m ³	10473		
F9.1.2		Intermediate excavation as classified in SANS 1200 Section D (Earthworks) and Section DB (Pipe Trenches) 1998. Payment for this item shall be as per Clause 8.3.2 of SANS 1200 DB.	m ³	1238		
F9.1.3		Hard excavation as classified in SANS 1200 Section D (Earthworks) and Section DB (Pipe Trenches) 1998. Payment for this item shall be as per Clause 8.3.2 of SANS 1200 DB.	m ³	625		
F9.2		Backfill - 600mm wide by 1200mm deep				
F9.2.1		Allow for the importation of suitable sand for the cable blanket (cover) and cable bedding. Note the imported soil must meet a thermal resistivity 1,0K.m/W and be of a different colour to the soil found on site.	m ³	4191		
F9.2.2		Allow for sifting of excavated trench material for use as backfill.	m ³	8146		
F9.2.3		Allow for the importation of suitable sand for backfill of trench.	m ³	815		
F9.2.4		Backfill in layers to 90% MOD AASHTO maximum density (100% for sand) in layers not exceeding 200mm.	m ³	8146		
F9.2.5		Removal of unusable excavated material to dumpsite.	m ³	4191		
F9.3		Danger Tape				
F9.3.1		Supply	m	19668		
F9.3.2		Install	m	19668		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
F9.4		Supply and install 500mm(L) x 250mm(W) x 50mm(T) pre-cast reinforced concrete tiles to cover the entire width and length of the MV cable trench (to provide protection for the MV, Equipotential earthing and fibre optic underground cables) as per the specification				
F9.4.1		Supply	No	39336		
F9.4.2		Install	No	39336		
F9.5		Supply, deliver to site, off-load and install concrete cable markers for the MV cable complete with an aluminium marker plate as per the detail on the MV layout drawing and to Specification				
F9.5.1		Supply	No	559		
F9.5.2		Install	No	559		
F10		Existing Services				
F10.1		Allow for the appointment of a specialist cable tracing agency, making use of the high frequency cable location test method, to trace and mark existing underground MV and LV cable routes for assistance and determination of the new cable routes and the final decommissioning of redundant cables on commissioning the works	Sum	1		
F10.2		Based on the information developed from the tracing and verification of existing on site cabling routes allow for the fine tuning of the proposed new cable routes and mark up on the drawings the proposed alterations to the proposed new MV cable routes to avoid conflict with the existing installation for approval by the Engineer.	Sum	1		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
F11		Supply, deliver to site, off load and install the following MV underground cable				
F11.1		120 mm ² Cu XLPE insulated, copper tape screened, PVC bedded, steel wire armoured and PVC sheathed, 6.35/11 kV cable complete and to specification. Routing (for information - final measurements to be undertaken by the contractor): Main Intake Sub (EWS) to M/S 1 (local): M/S 1 (local) to Low Level Pump Station: Low Level Pump Station to M/S 2 (Heating & Mixing Bldg 2): M/S 2 (Heating & Mixing Bldg 2) to M/S 3 (Tanker Bay): M/S 3 (Tanker Bay) to M/S 4 (Sludge Dewatering): M/S 4 (Sludge Dewatering) to M/S 5 (Heating Bldg 1): M/S 5 (Heating Bldg 1) to M/S 6 (Raw Sludge): M/S 6 (Raw Sludge) to Main Intake Sub (EWS): Main Intake Sub (Veolia) to Aeration (Veolia M/S): Main Intake Sub (Veolia) to Veolia Works:				
F11.1.1		Total Supply	m	7 750		
F11.1.2		Total Install	m	7 750		
F12		Supply, deliver to site, off load and install indoor termination kits for terminating the following MV underground cable to new MV switchgear and indoor/outdoor Distribution Transformers, including for lugs, shrouds/boot, heatshrink, etc., complete and to specification.				
F12.1		120 mm ² Cu XLPE insulated, copper tape screened, PVC bedded, steel wire armoured and PVC sheathed, 6.35/11 kV cable.				
F12.1.1		Supply	No	22		
F12.1.2		Install	No	22		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
F13		Supply, deliver to site, off load and install heat shrink type jointing kits for jointing the following MV underground cable, complete and to Specification.				
F13.1		120 mm ² Cu XLPE insulated, copper tape screened, PVC bedded, steel wire armoured and PVC sheathed, 6.35/11 kV cable.				
F13.1.1		Supply	No	22		
F13.1.2		Install	No	22		
F14		Supply, deliver and install bare copper earth wire (BCEW) attached to the respective supply cables, buried in ground, pulled into ducts, sleeves or fastened to cables fixed on cable trays, as indicated on drawings, and to specification.				
F14.1		120mm ² BCEW				
F14.1.1		Supply	m	50		
F14.1.2		Install	m	50		
		70mm ² BCEW				
F14.1.1		Supply	m	8000		
F14.1.2		Install	m	8000		
F15		Supply and install cable terminations for the following BCEW complete with shrouds, lugs, connectors, etc. and to specification.				
F15.1		120mm ² BCEW				
F15.1.1		Supply	No	12		
F15.1.2		Install	No	12		
		70mm ² BCEW				
F15.1.1		Supply	No	45		
F15.1.2		Install	No	45		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
F16		Supply, deliver to site, off load and install the following fibre optic underground cable				
F16.1		12 Core Multi Mode Fibre Optic cable complete to specification and as shown on the detailed drawings				
F16.1.1		Supply	m	7 900		
F16.1.2		Install	m	7 900		
F16.2		Supply, deliver to site, off load and install type ST termination kits for terminating the 12 Core Fibre Optic cable onto the respective fibre optic patch panels complete and to specification.				
F16.2.1		Supply	No	24		
F16.2.2		Install	No	24		
F16.3		Supply, deliver to site, off load and install termination kits for terminating the 12 Core Fibre Optic cable onto the respective MV Switchgear RTUs complete and to specification.				
F16.3.1		Supply	No	22		
F16.3.2		Install	No	22		
F16.4		Supply, deliver to site, off load and install joint kits for the jointing of the 12 Core Fibre Optic cables complete and to specification.				
F16.4.1		Supply	No	22		
F16.4.2		Install	No	22		
F16.5		Supply, deliver to site, off load and install Single Core Fibre Optic patch leads to establish communication between the respective patch panels and the network switches complete and to specification.				
F16.5.1		Supply	No	14		
F16.5.2		Install	No	14		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
F16.6		Supply, deliver to site, off load and install type ST terminations for terminating the Single Core Fibre Optic patch leads onto the respective fibre optic path panels and network switches complete and to Specification.				
F16.6.1		Supply	No	26		
F16.6.2		Install	No	26		
F16.7		Supply and installation of 12 way fibre optic termination/patch panel, including suitable rack and all rack mounted fixings, etc, complete and to specification				
F16.7.1		Supply	No	10		
F16.7.2		Install	No	10		
F16.8		Supply and install all necessary interface cabling, power cabling, Fibre Optic Patch panel interfaces, Fibre Optic fly leads, Ethernet connections and wiring including for all terminations between the MV RTUs, Ethernet Network Switches and Patch Panels as required and indicated on the drawings, necessary to hook up and commission etc. complete and to specification so that all MV RTU equipment is operational and compatible with the future SCADA system	sum	1		
F17		Panel PC for monitoring the status of the MV network	No	1		
F17.1		Panel PC to be mounted in a suitable enclosure within the main intake substation building - as per specifications				
F17.1.1		Supply	No	1		
F17.1.2		Install	No	1		
F17.2		Allowance for the software development and integration of a suitable operating system to monitor the MV network	Sum	1		
F17.3		All wiring, cabling, power supplies, communications to allow connectivity between the panel PC and the MV network	Sum	1		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
F18		Supply and install the following widths 3CR12 Steel cable ladder, attached to the bottom and/or sides of the purpose built trenches within the Substation Buildings, including for all necessary 3CR12 Steel fixings, bends, nuts, bolts and all 6mm ² Stainless Steel wire rope bonding strap and two 6xM10 lugs per bonding strap etc., complete as per specification				
F18.1		600mm wide				
F18.1.1		Supply	m	30		
F18.1.2		Install	m	30		
F18.2		400mm wide				
F18.2.1		Supply	m	20		
F18.2.2		Install	m	20		
F18.3		200mm wide				
F18.3.1		Supply	m	30		
F18.3.2		Install	m	30		
F19		New Distribution Kiosk				
F19.1		Supply, deliver to site, offload, install, test and commission new Distribution Kiosks complete, as per the Schematic Diagrams and to specification.				
F19.1.1		Supply	No	7		
F19.1.2		Install	No	7		
F20		Allow to survey the site to establish any prevailing conditions and carry out soil resistivity testing in the locations indicated on the layout drawings. A detailed report indicating test results and requirements to achieve the necessary earth resistance for each area. As per specification.				
F20.1		Resistivity test survey in earth	No	9		
F20.2		Test report indicating electrode requirements to achieve 1 Ohm or less.	No	1		
Carried Forward						

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Brought Forward						
F20.3		Supply and install medium voltage earth mat comprising multiple 1600mm long, 16mm copper clad earth electrodes driven into ground, interconnected with 50mm ² bare copper conductors. Test certificate to be provided for each earth mat. 1 Ohm electrical earth				
F20.3.1		New Incoming Main Substation	No	1		
F20.3.2		Minisubstation - 500kVA & 1000kVA	No	6		
F20.3.3		Aeration Minisub	No	1		
F20.4		Supply and install pre-drilled copper earth bars with removable test links, secured to wall with insulated mountings				
F20.4.1		60mm x 12mm x 8000mm	No	3		
F20.4.2		50mm x 6mm x 500mm	No	2		
F20.4.3		50mm x 6mm x 300mm	No	2		
F20.4.4		25mm x 6mm x 200mm	No	7		
F21		All Signage's Installed as per OSH Act	sum	1		
F22		Allow for fire extinguishers as per specification and to meet statutory regulations	sum	1		
F23		Allow for independent commissioning pressure testing and phase rotation checks of MV Works for certification complete (Note: Cables are XLPE and specific specialist tests are required).	No	1		
F24		Maintenance SLA on mini substrations and MV switchgear for a 5 year period, consisting of periodic physical inspections, maintenance parts and labour	Sum	1.00		
		TOTAL FOR SECTION: Carried to Summary				

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
G1		SECTION G : ELECTRICAL - MAIN MEDIUM VOLTAGE RETICULATION - VEOLIA SUBSTATION				
		Allow for the design, manufacture, supply, install, testing and commission 11kV switchgear as per specifications				
G1.1		Supply & deliver new 11kV floor standing bulk metering board to accommodate the Municipal metering equipment & mains isolator to eThekweni Electricity requirements (Veolia metering)	No	1		
G1.1.1		Installation, testing and commissioning of item G1.1	No	1		
G1.2		Supply and deliver feeder circuit breaker Motorised - with protection class (5P20) current transformers, protection (class X) current transformers wired for, overcurrent, and earth fault protection with arc protection ALFR. Multifunction overcurrent, earth fault, sensitive earth fault, and thermal overload protection relay. (Feeder Veolia Water Plant, Feeder Transformer Aeration)	No	2		
G1.2.1		Installation, testing and commissioning of item G1.2	No	2		
G1.3		Supply and deliver feeder isolator with transition panel to feeder circuit breakers with arc protection ALFR (Veolia Incoming Isolator)	No	1		
G1.3.1		Installation, testing and commissioning of item G1.3	No	1		
G1.4		Supply and Deliver Remote Terminal Units as per specification for the following MV Panel: Veolia Board;	No	1		
G1.4.1		Installation, testing and commissioning of item G1.4	No	1		
G2		Design, manufacture, supply, install, testing and commission 11kV Mini Substations as per specifications				
G2.1		Supply and deliver install 1000kVA Mini Sub with plinths and LV isolator and LV feeder circuit breaker to local supplies as per specifications (Aeration Minisub)	No	1		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
G2.2		Installation, testing and commissioning of item G2.1	No	1		
G3		Design, manufacture, supply, install and commission 11kV metering panel and cabling including racking, conduit, etc. as per eThekweni Electricity Unit Standard specifications				
G3.1		Main Intake Substation - Veolia Switchboard				
G3.1.1		Supply	No	1		
G3.1.2		Install	No	1		
G4		Removal of existing/redundant switchgear, ancillary equipment and associated cabling and transportation to Springfield Reclamation stores and make good as per specifications	sum	1		
G5		Allow for the production of an integrated changeover plan to ensure minimal interruption to the site and plant operations (as per specifications)	sum	1		
G6		Supply and install all necessary interface cabling, power cabling, Fibre Optic Patch panel interfaces, Fibre Optic fly leads, Ethernet connections and wiring including for all terminations between the MV RTUs, Ethernet Network Switches and Patch Panels as required and indicated on the drawings, necessary to hook up and commission etc. complete and to specification so that all MV RTU equipment is operational and compatible with the future SCADA system	sum	1		
G7		Supply and install the following widths 3CR12 Steel cable ladder, attached to the bottom and/or sides of the purpose built trenches within the Substation Buildings, including for all necessary 3CR12 Steel bends, fixings, nuts, bolts and all 6mm ² Stainless Steel wire rope bonding strap and two 6xM10 lugs per bonding strap etc., complete as per specification				
G7.1		600mm wide				
G7.1.1		Supply	m	30		
G7.1.2		Install	m	30		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
G7.2		400mm wide				
G7.2.1		Supply	m	30		
G7.2.2		Install	m	30		
G7.3		200mm wide				
G7.3.1		Supply	m	30		
G7.3.2		Install	m	30		
G8		Allow to survey the site to establish any prevailing conditions and carry out soil resistivity testing in the locations indicated on the layout drawings. A detailed report indicating test results and requirements to achieve the necessary earth resistance for each area. As per specification.				
G8.1		Resistivity test survey in earth	No	2		
G8.2		Test report indicating electrode requirements to achieve 1 Ohm or less.	No	1		
G8.3		Supply and install earth mat comprising multiple 1600mm long, 16mm copper clad earth electrodes driven into ground, interconnected with 50mm ² bare copper conductors. Test certificate to be provided for each earth mat. 1 Ohm electrical earth				
G8.3.1		Minisubstation - 1000kVA	No	1		
G8.3.2		Veolia Substation - 1000kVA	No	1		
G9		All Signage's Installed as per OSH Act	sum	1		
G10		Allow for fire extinguishers as per specification and to meet statutory regulations	sum	1		
G11		Maintenance SLA on substration for a 5 year period, consisting of periodic physical inspections, maintenance parts and labour	Sum	1.00		
		TOTAL FOR SECTION: Carried to Summary				

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
H1		SECTION H : ELECTRICAL - MAIN MEDIUM VOLTAGE INSTALLATION - LOW LEVEL PUMP STATION				
		Design, manufacture, supply, install, testing and commission 11kV compact switchgear as per specifications				
H1.1		Supply and deliver feeder circuit breaker Motorised - with protection class (5P20) current transformers, protection (class X) current transformers wired for, overcurrent, and earth fault protection with arc protection ALFR. Multifunction overcurrent, earth fault, sensitive earth fault, and thermal overload protection relay	No	2		
H1.1.1		Installation, testing and commissioning of item H1.1	No	2		
H1.2		Supply and deliver Incoming circuit breaker Motorised - with protection class (5P20) current transformers, protection (class X) current transformers wired for, overcurrent, and earth fault protection with arc protection ALFR. Multifunction overcurrent, earth fault, sensitive earth fault, and thermal overload protection relay. (Feeders to VSDs and transformer)	No	5		
H1.2.1		Installation, testing and commissioning of item H1.2	No	5		
H1.3		Supply and Deliver Remote Terminal Units as per specification for the following MV Panels: Low Lvl PS 11kV Board with necessary extensions to allow for all switches;	No	1		
H1.3.1		Installation, testing and commissioning of item H1.3	No	1		
H2		Design, manufacture, supply, install, testing and commission 11kV/420V transformer as per specifications				
H2.1		Supply and deliver install 200kVA transformer as per specifications (Local transformer)	No	1		
H2.1.1		Installation, testing and commissioning of item H2.1	No	1		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
H3		Design, manufacture and supply Medium Voltage 11kV/3.3kV VSD motor starters as per specifications				
H3.1		2 times immersible pumps and 2 times shaft driven pumps as per specifications	No	4		
H3.2		Installation, testing and commissioning of item H3.1	No	4		
H4		Supply, deliver to site, off load and install the following MV cable (connection between switchgear and VSDs)				
H4.1		50 mm ² Cu XLPE insulated, copper tape				
H4.1.1		Supply	m	80		
H4.1.2		Install	m	80		
H5		Supply, deliver to site, off load and install indoor termination kits for terminating the following MV underground cable to new MV switchgear and indoor/outdoor Distribution Transformers, including for lugs, shrouds/boot, heatshrink, etc., complete and to specification.				
H5.1		50 mm ² Cu XLPE insulated, copper tape screened, PVC bedded, steel wire armoured and PVC sheathed, 6.35/11 kV cable.				
H5.1.1		Supply	No	8		
H5.1.2		Install	No	8		
H6		Supply, deliver and install bare copper earth wire (BCEW) attached to the respective supply cables, buried in ground, pulled into ducts, sleeves or fastened to cables fixed on cable trays, as indicated on drawings, and to specification.				
H6.1		120mm ² BCEW				
H6.1.1		Supply	m	100		
H6.1.2		Install	m	100		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
H7		Supply and install cable terminations for the following BCEW complete with shrouds, lugs, connectors, etc. and to specification.				
H7.1		120mm ² BCEW				
H7.1.1		Supply	No	16		
H7.1.2		Install	No	16		
H8		Supply and install the following widths 3CR12 Steel cable ladder, attached to the bottom and/or sides of the purpose built trenches within the Substation Buildings, including for all necessary 3CR12 Steel bends, fixings, nuts, bolts and all 6mm ² Stainless Steel wire rope bonding strap and two 6xM10 lugs per bonding strap etc., complete as per specification				
H8.1		600mm wide				
H8.1.1		Supply	m	20		
H8.1.2		Install	m	20		
H8.2		400mm wide				
H8.2.1		Supply	m	10		
H8.2.2		Install	m	10		
H8.3		200mm wide				
H8.3.1		Supply	m	20		
H8.3.2		Install	m	20		
H9		Removal of existing Switchgear and associated cabling and transportation to Springfield Reclamation stores	sum	1		
H10		Allow to survey the site to establish any prevailing conditions and carry out soil resistivity testing in the locations indicated on the layout drawings. A detailed report indicating test results and requirements to achieve the necessary earth resistance for each area. As per specification.				
H10.1		Resistivity test survey in earth	No	1		
H10.2		Test report indicating electrode requirements to achieve 1 Ohm or less.	No	1		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
H10.3		Supply and install medium voltage earth mat comprising multiple 1600mm long, 16mm copper clad earth electrodes driven into ground, interconnected with 50mm ² bare copper conductors. Test certificate to be provided for each earth mat. 1 Ohm electrical earth Lower Level Pump Station Substation	No	1		
H10.4		Supply and install pre-drilled copper earth bars with removable test links, secured to wall with insulated mountings 60mm x 12mm x 8000mm	No	1		
H10.5		50mm x 6mm x 500mm	No	2		
H11		All Signage's Installed as per OSH Act	sum	1		
H12		Allow for fire extinguishers as per specification and to meet statutory regulations	sum	1		
H13		Maintenance SLA on MV Switchgear and VSD's for a 5 year period, consisting of periodic physical inspections, maintenance parts and labour	Sum	1.00		
		TOTAL FOR SECTION: Carried to Summary				

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
		<p>SECTION I : ELECTRICAL - LOW VOLTAGE RETICULATION - MAIN CONNECTIONS</p> <p>The Contractor shall note that the LV supply cables, control cables, earthing conductors, terminations and the associated lengths listed hereunder are Provisional and for Tender purposes only. The Contractor shall be responsible for the final sizing, routing and measurements of all supply, earthing and control cables to accommodate the final equipment and instrumentation selected, only after confirmation may any orders be placed for the procurement of these items.</p>				
I1		<p>Connection Points to Existing Pump Stations & Equipment</p> <p>The Contractor shall also be responsible for determining the final connection points to ensure all existing low voltage supplies are catered for; only after confirmation may any orders be placed for the procurement of these items.</p>				
I1.1		Minisub 1 - Local Main				
I1.1.1		Provide 630A Feeder Circuit Breaker to Existing MCC	sum	1		
I1.1.2		Connection to existing MCC: 630A Main Circuit Breaker	sum	1		
I1.1.3		Supply & install cabling as per rates stated below	m	30		
I1.2		Minisub 2 - Heating & Mixing Building 2				
I1.2.1		Provide 630A Feeder Circuit Breaker to Existing MCC	sum	1		
I1.2.2		Connection to existing MCC: 630A Main Circuit Breaker	sum	1		
I1.2.3		Supply & install cabling as per rates stated in section 2	m	50		
I1.3		Minisub 3 - Tanker Bay				
I1.3.1		Provide 630A Feeder Circuit Breaker to Existing MCC	sum	1		
I1.3.2		Connection to existing MCC: 630A Main Circuit Breaker	sum	1		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
I1.3.3		Supply & install cabling as per rates stated in section 2	m	50		
I1.3.4		Provide 160A Feeder Circuit Breaker to Existing MCC	sum	1		
I1.3.5		Connection to existing MCC:	sum	1		
I1.3.6		Supply & install cabling as per rates stated in section 2	m	70		
I1.4		Minisub 4 - Sludge De-Watering				
I1.4.1		Provide 630A Feeder Circuit Breaker to Existing MCC	sum	1		
I1.4.2		Connection to existing MCC: 630A Main Circuit Breaker	sum	1		
I1.4.3		Supply & install cabling as per rates stated in section 2	m	90		
I1.5		Minisub 5 - Heating Building 1				
I1.5.1		Provide 630A Feeder Circuit Breaker to Existing MCC	sum	1		
I1.5.2		Connection to existing MCC: 630A Main Circuit Breaker	sum	1		
I1.5.3		Supply & install cabling as per rates stated in section 2	m	50		
I1.6		Minisub 6 - Raw Sludge				
I1.6.1		Provide 630A Feeder Circuit Breaker to Existing MCC	sum	1		
I1.6.2		Connection to existing MCC: 500A Main Circuit Breaker	sum	1		
I1.6.3		Supply & install cabling as per rates stated in section 2	m	30		
I2		Supply, deliver to site, offload and install the following multicore PVC/PVC/SWA/PVC, 600V/1000V copper cables buried in ground, pulled into ducts, sleeves or on cable trays, as indicated on drawings and to Specification.				
I2.1		185mm² x 4 core (Cu) cable.				
I2.1.1		Supply	m	100		
I2.1.2		Install	m	100		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
I2.2		150mm² x 4 core (Cu) cable.				
I2.2.1		Supply	m	100		
I2.2.2		Install	m	100		
I2.3		120mm² x 4 core (Cu) cable.				
I2.3.1		Supply	m	150		
I2.3.2		Install	m	150		
I2.4		95mm² x 4 core (Cu) cable.				
I2.4.1		Supply	m	150		
I2.4.2		Install	m	150		
I2.5		70mm² x 4 core (Cu) cable.				
I2.5.1		Supply	m	150		
I2.5.2		Install	m	150		
I2.6		50mm² x 4 core (Cu) cable.				
I2.6.1		Supply	m	50		
I2.6.2		Install	m	50		
I2.7		35mm² x 4 core (Cu) cable.				
I2.7.1		Supply	m	50		
I2.7.2		Install	m	50		
I2.8		25mm² x 4 core (Cu) cable.				
I2.8.1		Supply	m	50		
I2.8.2		Install	m	50		
I2.9		16mm² x 4 core (Cu) cable.				
I2.9.1		Supply	m	50		
I2.9.2		Install	m	50		
I2.10		10mm² x 4 core (Cu) cable.				
I2.10.1		Supply	m	50		
I2.10.2		Install	m	50		
I2.11		6mm² x 4 core (Cu) cable.				
I2.11.1		Supply	m	50		
I2.11.2		Install	m	50		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
I2.12		4mm² x 4 core (Cu) cable.				
I2.12.1		Supply	m	50		
I2.12.2		Install	m	50		
I2.13		2.5mm² x 4 core (Cu) cable.				
I2.13.1		Supply	m	50		
I2.13.2		Install	m	50		
I2.14		2.5mm² x 7 core (Cu) cable.				
I2.14.1		Supply	m	100		
I2.14.2		Install	m	100		
I3		Supply and install cable terminations for the following multicore PVC/PVC/SWA/PVC copper cables complete with shrouds, lugs, connectors, green heat shrink (over neutral when used as earth cable) etc. and to Specification.				
I3.1		185mm² x 4 core (Cu) cable.				
I3.1.1		Supply	No	10		
I3.1.2		Install	No	10		
I3.2		150mm² x 4 core (Cu) cable.				
I3.2.1		Supply	No	10		
I3.2.2		Install	No	10		
I3.3		120mm² x 4 core (Cu) cable.				
I3.3.1		Supply	No	10		
I3.3.2		Install	No	10		
I3.4		95mm² x 4 core (Cu) cable.				
I3.4.1		Supply	No	10		
I3.4.2		Install	No	10		
I3.5		70mm² x 4 core (Cu) cable.				
I3.5.1		Supply	No	10		
I3.5.2		Install	No	10		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
I3.6		50mm² x 4 core (Cu) cable.				
I3.6.1		Supply	No	6		
I3.6.2		Install	No	6		
I3.7		35mm² x 4 core (Cu) cable.				
I3.7.1		Supply	No	6		
I3.7.2		Install	No	6		
I3.8		25mm² x 4 core (Cu) cable.				
I3.8.1		Supply	No	6		
I3.8.2		Install	No	6		
I3.9		16mm² x 4 core (Cu) cable.				
I3.9.1		Supply	No	6		
I3.9.2		Install	No	6		
I3.10		10mm² x 4 core (Cu) cable.				
I3.10.1		Supply	No	6		
I3.10.2		Install	No	6		
I3.11		6mm² x 4 core (Cu) cable.				
I3.11.1		Supply	No	6		
I3.11.2		Install	No	6		
I3.12		4mm² x 4 core (Cu) cable.				
I3.12.1		Supply	No	6		
I3.12.2		Install	No	6		
I3.13		2.5mm² x 4 core (Cu) cable.				
I3.13.1		Supply	No	6		
I3.13.2		Install	No	6		
I3.14		2.5mm² x 7 core (Cu) cable.				
I3.14.1		Supply	No	8		
I3.14.2		Install	No	8		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
I4		Supply and install cable jointing kits for the following multicore PVC/PVC/SWA/PVC copper cables complete to Specification.				
I4.1		185mm² x 4 core (Cu) cable.				
I4.1.1		Supply	No	2		
I4.1.2		Install	No	2		
I4.2		150mm² x 4 core (Cu) cable.				
I4.2.1		Supply	No	2		
I4.2.2		Install	No	2		
I4.3		120mm² x 4 core (Cu) cable.				
I4.3.1		Supply	No	2		
I4.3.2		Install	No	2		
I4.4		95mm² x 4 core (Cu) cable.				
I4.4.1		Supply	No	2		
I4.4.2		Install	No	2		
I4.5		70mm² x 4 core (Cu) cable.				
I4.5.1		Supply	No	2		
I4.5.2		Install	No	2		
I4.6		50mm² x 4 core (Cu) cable.				
I4.6.1		Supply	No	4		
I4.6.2		Install	No	4		
I4.7		35mm² x 4 core (Cu) cable.				
I4.7.1		Supply	No	4		
I4.7.2		Install	No	4		
I4.8		25mm² x 4 core (Cu) cable.				
I4.8.1		Supply	No	4		
I4.8.2		Install	No	4		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
I5		Trenching (LV Cables)				
I5.1		Excavation of a 600mm (Wide) x 700mm (Deep) trench for the new LV underground cable, including for sifting, back-filling and compaction, as per the Electrical Specification and Drawings.				
I5.1.1		Soft excavation as classified in SANS 1200 Section D (Earthworks) and Section DB (Pipe Trenches) 1998. Payment for this item shall be as per Clause 8.3.2 of SANS 1200 DB.	m ³	125		
I5.1.2		Intermediate excavation as classified in SANS 1200 Section D (Earthworks) and Section DB (Pipe Trenches) 1998. Payment for this item shall be as per Clause 8.3.2 of SANS 1200 DB.	m ³	20		
I5.1.3		Hard excavation as classified in SANS 1200 Section D (Earthworks) and Section DB (Pipe Trenches) 1998. Payment for this item shall be as per Clause 8.3.2 of SANS 1200 DB.	m ³	10		
I5.2		Backfill - 600mm wide by 700mm deep				
I5.2.1		Allow for the importation of suitable sand for the cable blanket (cover) and cable bedding. Note the imported sand must be of a different colour to the sand found on site.	m ³	25		
I5.2.2		Allow for sifting of excavated trench material for use as backfill.	m ³	115		
I5.2.3		Allow for the importation of suitable sand for backfill of trench.	m ³	15		
I5.2.4		Backfill in layers to 90% MOD AASHTO maximum density (100% for sand) in layers not exceeding 200mm.	m ³	155		
I5.2.5		Removal of unusable excavated material to dumpsite.	m ³	15		
I5.3		Danger Tape				
I5.3.1		Supply	m	350		
I5.3.2		Install	m	350		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
I5.4		Supply, deliver to site, off-load and install concrete cable markers for the LV cable complete with an aluminium marker plate as per the detail on the LV layout drawing and to Specification				
I5.4.1		Supply	No	50		
I5.4.2		Install	No	50		
I6		Supply and install the following widths 3CR12 Steel cable ladder, attached to walls or suspended from roof slabs/trusses within the plant buildings, including for all necessary 3CR12 Steel bends, brackets, fixings, nuts, bolts and all 6mm ² Stainless Steel wire rope bonding strap and two 6xM10 lugs per bonding strap etc., complete as per specification.				
I6.1		600mm wide				
I6.1.1		Supply	m	30		
I6.1.2		Install	m	30		
I6.2		400mm wide				
I6.2.1		Supply	m	30		
I6.2.2		Install	m	30		
I6.3		200mm wide				
I6.3.1		Supply	m	30		
I6.3.2		Install	m	30		
I6.4		150mm wide				
I6.4.1		Supply	m	30		
I6.4.2		Install	m	30		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
I7		Supply and install low voltage earth mat comprising multiple 1600mm long, 16mm copper clad earth electrodes driven into ground, interconnected with 50mm ² bare copper conductors. Test certificate to be provided for each earth mat. 1 Ohm electrical earth				
I7.1		New Incoming Main Substation	No	1		
I7.2		Minisubstation - 500kVA & 1000kVA	No	6		
I7.3		Aeration Minisub	No	1		
TOTAL FOR SECTION: Carried to Summary						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
J1		SECTION J : LOW LEVEL PUMP STATION - BUILDING WORKS				
		FUMIGATION				
J1.1		Fumigation of Building	m ²	220.00		
J2		TEMPORARY BARRICADES, SCREENS, ETC				
J2.1		Temporary barricades, screens, roofs, etc including removal				
J2.1.1		Dust screen 1.5m high between concrete floor and ceiling, of suitable timber framing with 375 micron polyethylene sheeting stapled on on one side, including corners, ends, etc	m	25.00		
J2.2		Breaking down and removing brickwork etc				
J2.2.1		Half brick walls	m ²	65.00		
J2.2.2		One brick walls	m ²	125.00		
J2.3		Taking out and removing doors, windows, etc, including thresholds, sills, etc (building up openings and making good finishes elsewhere)				
J2.3.1		Roller shutter door 3800 x 2100m high	No	1.00		
J2.4		Taking out and removing doors, windows, etc, including thresholds, sills, etc and building up openings in brick walls, including making good cement plaster on wall side(s) (making good paintwork				
J2.4.1		Steel single door and frame 813 x 2013m high overall from 220mm brick wall	No	1.00		
J2.4.2		Steel windows and frame 3500 x 940mm high overall from 220mm brick wall	No	5.00		
J2.5		Taking out/off and removing sundry metalwork				
J2.5.1		Steel pipe handrails from walls, including brackets, and making good plaster finish. Install new Wecrolock handrails (Elsewhere measured)	m	30.00		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
J3		BUILDING UP OPENINGS				
J3.1		Brickwork in NFP bricks in class II mortar in building up openings				
J3.1.1		Half brick walls	m ²	20.00		
J3.1.2		One brick walls	m ²	35.00		
J3.2		Sundries				
J3.2.1		Cutting toothings and bonding new brickwork to existing	m ²	20.00		
J3.3		Face bricks pointed with recessed horizontal and vertical joints				
J3.3.1		Extra over brickwork for face brickwork in patches	m ²	30.00		
J4		PREPARATORY WORK TO EXISTING SURFACES				
J4.1		Hacking faces of existing concrete columns, beams, etc to receive plaster and paint	m ²	55.00		
J5		OPENINGS THROUGH EXISTING WALLS ETC				
J5.1		Altering openings				
J5.1.1		Altering opening in one brick wall for 1800mm x 944mm high new steel windows and frame overall by breaking out brickwork on both sides and bottom, including pre stressed concrete lintels, making good cement plaster on one side and into reveals and face brickwork on other side and into reveals and with 20 MPa concrete threshold with steel trowelled finish. Window elsewhere measured.	No	2.00		
J5.2		Hacking up/off and removing granolithic, screeds, plaster, paint etc from concrete or brickwork and preparing surfaces for new screed, plaster, tile finishes, etc				
J5.2.1		Existing Stoep paint from floors	m ²	250.00		
J6		PREPARATORY WORK TO EXISTING SURFACES				
J6.1		Concrete plinth to be pressure cleaned as per architects detail	m ²	220.00		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
J6.2		Cat Ladder to be prepared for new Paint work	m	6.00		
J7		SITE CLEARANCE				
J7.1		Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth (Including roofs, court yards, and surround areas where necessary).	m ²	220.00		
J8		EXCAVATIONS, FILLING ETC (PROVISIONAL)				
J8.1		Excavations in earth not exceeding 2m deep				
J8.1.1		Trenches	m ³	43.00		
J8.1.1.1		Extra over bulk excavations in earth for excavation in				
J8.1.1.2		Extra over for Soft rock	m ³	20.00		
J8.2		Extra over all excavations for carting away				
J8.2.1		Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m ³	30.00		
J8.3		Keeping excavations free of water				
J8.3.1		Keeping excavations free of all water other than subterranean water	Item	1.00		
J8.4		FILLING ETC				
J8.4.1		Earth filling obtained from the excavations (compacted)				
J8.4.1.1		In prescribed stock piles on site	m ³	10		
J9		MASONRY				
J9.1		FOUNDATIONS (PROVISIONAL)				
J9.1.1		BRICKWORK				
J9.1.1.1		Brickwork of NFP bricks in class II mortar				
J9.1.1.1.1		Half Brick walls	m ²	20		
J9.1.1.1.2		One Brick Walls	m ²	95		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
J9.2		SUPERSTRUCTURE				
J9.2.1		FACE BRICKWORK				
J9.2.1.1		Face bricks pointed with recessed horizontal and flush vertical joints. To Architects details.				
J9.2.1.1.1		Half brick walls	m ²	10		
J9.2.1.1.2		One brick walls	m ²	442		
J9.2.1.2		Extra over brickwork for face brickwork	m ²	20		
J9.2.1.3		Extra over brickwork to beamfilling for face brickwork	m ²	85		
J9.2.2		BRICKWORK SUNDRIES				
J9.2.2.1		Forming toothings and bonding new brickwork to existing	m ²	20		
J9.2.2.2		Raking out joints of existing face brickwork to receive plaster finish	m ²	20		
J9.2.2.3		Closing cavities of hollow walls vertically with brickwork one brick wide	m	10		
J10		WATERPROOFING				
J10.1		DAMP PROOFING OF WALLS AND FLOORS				
J10.1.1		One layer of 500 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
J10.1.1.1		In walls, sills, etc	m ²	250		
		Cemflex waterproofing to slabs as per specialist specification				
J10.1.1.2		Slabs	m ²	250		
J10.2		JOINT SEALANTS ETC.				
J10.2.1		Bostik 22DS100 Highway polysulphide sealant including backing cord, bond breaker, primer type "Bostik 22DS100GH3", etc.				
J10.2.2		15mm x 20mm in expansion joint in floors including racking out, expansion joint filler as necessary	m	180		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
J11		FLOOR COVERINGS, WALL LININGS, ETC				
J11.1		Epoxy Resin floor coating screed to be applied and installed as per manufacturers specification				
J11.1.1		On floors	m ²	250		
J12		METALWORK				
J12.1		GALVANISED STEEL HANDRAILS Welded handrails to (stair) walls				
J12.1.1		50mm External diameter x 1.5mm thick WECROLOCK handrails, to be installed by specialist in accordance with structural engineer's specifications.	m	30		
J12.1.2		Mentis grating 1000 x 325 x 25x 4.5mm trench cover (Stainless Steel). To architects detail	m	26		
J13		STEEL WINDOWS, DOORS, ETC				
J13.1		Galvanised pressed steel combination doors and frames				
J13.1.1		Galvanised mild steel single door with 50mm frame size 1016x2184mm. 1.6mm thick pressed stainless steel frame to suit wall thickness. 1.5 pairs stainless steel hinges per leaf. S/S handles, Including all ironmongery	No	4		
J13.1.2		Galvanised mild steel double louvred door in two equal leaves with 50mm frame. Minimum 100mm stile with rebated meeting stiles size 1510x2500mm. 1.6mm thick pressed stainless steel frame to suit wall thickness. 1.5 pairs stainless steel hinges per leaf. Expanded metal antivermin mesh applied to back, Including all ironmongery	No	1		
J13.2		Purpose made clerestory windows to match existing				
J13.2.1		Aluminium Casement Window with Aluminium Operable Louver Panels size 8313x1864mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral. W1	No	1		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
J13.2.2		Aluminium Casement Window size 3563x1864mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver.Single 6.38mm laminated safety glazing Colour: Neutral. W2	No	1		
J13.2.3		Aluminium Casement Window with Aluminium Operable Louver Panels size 7470x953mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral.W3	No	1		
J13.2.4		Aluminium Casement Window size 3622x1765mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver.Single 6.38mm laminated safety glazing Colour: Neutral W4	No	1		
J13.2.5		Aluminium Casement Window size 7101x953mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral W5	No	1		
J13.2.6		Aluminium Casement Window with Aluminium Operable Louver Panels size 6407x1864mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral W6	No	2		
J13.2.7		Aluminium Casement Window size 1361x1864mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral W7	No	1		
J13.2.8		Aluminium Casement Window size 3124x1864mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral W8	No	1		
J13.2.9		Aluminium Casement Window size 3210x1864mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral W9	No	1		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
J13.2.10		Aluminium Casement Window size 3188x1864mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral W10	No	1		
J13.2.11		Aluminium Casement Window size 4652x1864mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral W11	No	1		
J13.2.12		Aluminium Casement Window with Aluminium Operable Louver Panels size 5116x940mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral W12	No	2		
J13.2.13		Aluminium Casement Window with Aluminium Operable Louver Panels size 3186x940mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral W13	No	2		
J13.2.14		Aluminium Casement Window with Aluminium Operable Louver Panels size 4609x940mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral W14	No	2		
J13.2.15		Aluminium Casement Window with Aluminium Operable Louver Panels size 3758x940mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral W15	No	2		
J13.2.16		Aluminium Casement Window with Aluminium Operable Louver Panels size 7016x1864mm. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral W16	No	2		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
J13.2.17		Aluminium Window with one side hung opening section, Stainless steel easy clean friction stay hinges to suit opening sections and window size 1847x 1247mm. Matte Silver nylon handles to suit window, to Architect's approval. Aluminium frame with epoxy powder coating - Interpon Class 2 D2525T Colour: Matte Silver. Single 6.38mm laminated safety glazing Colour: Neutral W16	No	2		
J13.3		Galvanised steel powder coated roller shutters with 76mm slats (18kg/m ²), fixed to brickwork or concrete Chain operated slatted roller shutter for 3800mm x 4000mm high opening	No	1		
J14		SCREEDS				
J14.1		Cement screed to floors. inclusive of all cracks , damage and holes				
J14.2		25mm thick on floors and landings	m ²	250		
J15		INTERNAL PLASTER				
J15.1		Cement plaster wood floated, on brickwork				
J15.1.1		On walls	m ²	365		
J15.1.2		On narrow widths	m ²	73		
J15.2		Cement plaster rendering coat with gypsum skim plaster finishing coat, on concrete				
J15.2.1		On Soffits	m ²	220		
J16		EXTERNAL PLASTER				
J16.1		Cement plaster wood floated, on brickwork				
J16.1.1		On walls	m ²	55		
J16.1.2		On narrow widths	m ²	20		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
J16.1.3		PLUMBING (WORK GROUP 148)				
J17		RAINWATER DISPOSAL				
J17.1		0,6mm Baked enamel pre-painted aluminium alloy H13-35H4. To architects detail				
J17.1.1		100 x 165 x 60 x 40mm VHSV eaves gutter with 20mm wide overlapping joints sealed with and including "Compriband" or other approved sealing strip, fixed to falls with and including aluminium hangers at 600mm centres, bolted to steel purlins including holes in purlin	m	30		
J17.1.1.1		Extra for stopped end	No	4		
J17.1.1.2		Extra for eaves outlet with nozzle for and joint to 100 x 125mm rectangular downpipe including wire balloon grating	No	4		
J17.1.2		100 x 125mm Rectangular rainwater pipes with aluminium brackets fixed to brick wall or concrete	m	10		
J17.1.2.1		Extra for shoe	No	4		
J17.1.2.2		Extra for swan neck 1050mm projection	No	4		
J17.1.2.3		Extra for spreador	No	4		
J18		PAINT WORK				
J18.1		ON INTERNAL FLOATED PLASTER SURFACES One coat primer and two coats interior quality PVA emulsion paint in colours which have a value of 7 or less on the Munsell system in accordance with SABS 1091 to Architects Details.				
J18.1.1		On walls	m ²	365		
J18.1.2		On narrow widths	m ²	73		
J18.2		ON EXTERNAL FLOATED PLASTER SURFACES One coat primer and two coats exterior quality PVA emulsion paint. To Architects Details.				
J18.2.1		On walls	m ²	55		
J18.2.2		On narrow widths	m ²	20		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
J18.3		ON SMOOTH CONCRETE SURFACES One coat bonding liquid, one coat primer and two coats superior quality acrylic emulsion paint for interior and exterior use, including stopping blow holes				
J18.3.1		Walls and columns	m ²	120		
J18.3.2		Ceilings, soffits and beams	m ²	250		
J18.4		ON METAL SURFACES One coat self etching primer and two coats premium quality polyurethane enamel paint, on galvanised steel				
J18.4.1		Gates, grilles, burglar screens, balustrades, catladders etc (both sides measured over the full flat area)	m ²	35		
		TOTAL FOR SECTION: Carried to Summary				

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
		SECTION K : LOW LEVEL PUMP STATION - STRUCTURAL WORKS				
K1	SANS 1200 C	SITE CLEARANCE				
K1.1	8.2.8	Demolish and remove structures/buildings and dismantle steelwork	m ³	47.00		
K1.2	8.2.8	Concrete Palisade Fence	m	27.00		
K1.3	8.2.8	Saw cut edge, breakout concrete and cut off rebar for openings in 300 mm thick slab and repair with repair grout as per detail	m ²	17.00		
K1.4	8.2.9	Transport materials from items (K1.1 and K1.2 and debris and dispose	m ³ .km	1074.00		
K2	SANS 1200 D	EARTHWORKS				
K2.1	8.3.3(a)	Restricted excavation in all materials and use for backfill and dispose of surplus material.	m ³			
K2.1.1		Strip footings	m ³	125.00		
K2.1.2		Cable trench for Electrical Room	m ³	23.00		
K2.1.3	8.3.3(b)	Extra-over Item K2.1 for hard rock excavation	m ³	8.0		
K3	SANS 1200 G	CONCRETE WORKS				
K3.1		Formwork (Rate to include for forming of 25 X 25 mm chamfers to all exposed edges)				
K3.1.1	8.2.2	Smooth, vertical to walls, columns and beams	m ²	284.00		
K3.1.2	8.2.5	Smooth, vertical to edges of foundations or slabs up to 300 mm thick	m	171.00		
K3.1.3	8.2.5	Smooth, horizontal to soffits of slabs and beams	m ²	190.00		
K3.1.4	8.2.6	Formed voids in walls and slabs up to 300 mm thick				
K3.1.4.1		Openings up to 1000 X 1000 mm for equipment	No	7.00		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
K3.1.5	8.4.4	Uniformed surface finishes				
K3.1.5.1		Steel floated finish	m ²	324.00		
K3.2		Concrete				
K3.2.1	8.4.3	Strength concrete Grade 35 MPa/19mm Walls, beams and slabs	m ³	210.00		
K3.2.2	8.4.3	Strength concrete Grade 20 MPa/19mm Blinding layer, 50 mm thick	m ²	230.00		
K3.2.3	8.4.3	Strength concrete Grade 20 MPa/19mm Benching within structures	m ³	10.00		
K3.3		Reinforcement				
K3.4	8.3.1	High Tensile Steel Bars				
K3.5		a) Bars 8 mm diameter and larger	t	22.00		
K3.6	8.3.1	Mild steel bars				
K3.7		a) Bars 8 mm diameter and larger	t	6.00		
K3.8		Joints between existing and new concrete				
K3.8.1	PS G 8.10	Drill and epoxy cast in of dowel bars Y16 800 mm long, 300 mm deep into existing concrete	No	854.00		
K3.8.2	PS G 8.10	Apply Epoxy bonding compound, Epidermix 344 or similar	m ²	65.00		
K3.8.3	PS G 8.10	Core up to 200 mm through existing slabs for cable ways or pouring of concrete	No	4.00		
K3.8.4	PS G 8.10	Drill 20 mm Dia. Into exiting slab for air release	No	6.00		
K3.9		Concrete repair and sealing				
K3.9.1	PS G 8.10	Remove all vegetation from structure roof	Sum	1.00		
K3.9.2	PS G 8.10	Grit blasting roof soffit and columns to remove paint and dirt	m ²	2120.00		
K3.9.3	PS G 8.10	High Pressure wash upstand beams, top of roof surface, roof soffit, sump walls, floor and soffit.	m ²	3012.00		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
K3.9.4	PS G 8.10	Flood test roof to identify ponding areas	Sum	1.00		
K3.9.5	PS G 8.10	Chip away bitumen paste to reach bare concrete in areas where ponding was observed. Apply wet to dry epoxy and screen to correct fall	m ²	42.00		
K3.9.4	PS G 8.10	Chip away loose/spalling concrete on walls, columns, beams and slabs	m ²	10.00		
K3.9.5	PS G 8.10	Wire brush and clean exposed rebar. Coat exposed rebar with epoxy protective coating	m ²	10.00		
K3.9.6	PS G 8.10	Patch prepared area with cementitious repair grout (OPC based)	ltr	1000.00		
K3.9.7	PS G 8.10	Coat walls, columns, beams and soffit of slabs with a surface applied, crystalline water proofing compound	m ²	2120.00		
K3.9.8	PS G 8.10	Reseal downpipes by chipping out concrete around downpipe, insert Penebar or similar and apply repair grout.	No	20.00		
K3.9.9	PS G 8.10	Apply two coats of aluminium pigmented bitumen solution paint to roof area and beams	m ²	900.00		
K4	SANS 1200 HA	Structural Steelwork				
K4.1	8.3.1	Structural Stainless Steel 304L, steps, platforms and walkways, complete including all grids, handrailing, bolts, nuts, washers, and HD bolts.	t	5.00		
K4.2	8.3.2	Ball and Tube stainless steel 304L Handrail assembly complete.				
K4.2.1		1) Horizontal	m	48.00		
K4.2.2		2) Sloping	m	11.00		
K4.2.3		3) Shaped ends	No	20.00		
K4.3	8.3.4	Stainless Steel 304L ladders complete for lengths below, as per detailed drawing P08959-S-DT-001-01				
K4.3.1		3 000 mm	No	2.00		
K4.3.2		6 800 mm	No	1.00		
K4.3.3		7 000 mm	No	2.00		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
K4.3.4		7 700 mm	No	2.00		
K4.4	8.3.3	Flooring, Complete and Installed with fishlugged Frames				
K4.4.1		Open Grid Floors RS40 or similar, Stainless Steel 304L	m ²	104.00		
K5		Miscellaneous Steel Items				
K5.1	PS HA 8.3.7	Grab rails, Stainless Steel 304L, Complete as per as per detailed drawing P08959-S-DT-001-01	No	2.00		
K5.2	PS HA 8.3.7	Slab opening Sliding Covers for sizes below, Stainless Steel 304L, complete including manufacture, transportation and installation				
K5.2.1		1.0 x 1.0 m	No	2.00		
K5.2.2		1.2 x 1.1 m	No	1.00		
K5.2.3		1.3 x 1.3 m	No	1.00		
K5.3	PS HA 8.3.7	Dismantle, handle, transport, sand blast and recoat, return to site and reassemble existing structural steel work. Coating System as per PS HA 5.7	kg	611.00		
K5.4		Valve and Pipe Supports				
K5.4.1	PS HA 8.3.7	Pipe Support Strap for 600-700 mm Pipe as per details on drawing P08959-M-DT-013-01	No	4.00		
K5.4.2	PS HA 8.3.7	Valve Support for Check Valve as per details on drawing P08959-M-DT-013-01 Height: 260 mm Length: 900 mm	No	8.00		
K5.4.3	PS HA 8.3.7	Horizontal Pipe Bracket for pipes <150 mm Various sizes as per drawing P08959-M-DT-013-01	No	3.00		
K5.4.4	PS HA 8.3.7	Vertical Pipe Bracket for pipes <150 mm Various sizes as per drawing P08959-M-DT-013-01	No	10.00		
K5.4.5	PS HA 8.3.7	Pipe Clips	No	18.00		
		TOTAL FOR SECTION: Carried to Summary				

Item No	Payment Clause	Short Description	Unit	Quantity	Rate	ZAR	Amount ZAR
L1		SECTION L : LOW LEVEL PUMP STATION - MECHANICAL Dismantling, removing and transport to EWS store or disposal of redundant existing Pipework, fittings and equipment, as directed by the engineer					
L1.1		Existing EMU submersible pump, duckfoot, and pipework in sump.	Sum	1.00			
L1.2		Existing enf suction pumps including motors	No.	3.00			
L1.3		Existing 750 mm ND pipework including gate valves and check valves (per pumping line)	No	4.00			
L2		Main Duty Pumps and Pipework Design, supply, manufacture, transport, install, test and commission main duty pumps and pipework inline with specifications, including protection equipment. Mechanical drawings P08959-M-DT-001 - 002 and -010 and P08959-M-PI-001 to -005 provides a concept layout of the pump system.					
L2.1		Design, supply and deliver to site main duty pumps					
L2.1.1		ITEM I7: Immersable Pump, 90° intake bend with clean port, including pump support structure (steel or concrete) and protection equipment. Duty 750-1500 l/s @ 12-24 m Head	No	2.00			
L2.1.2		Maintenance SLA on Pumps and Motors for a 5 year period, consisting of periodic physical inspections, maintenance parts and labour on item L2.1.1	Sum	1.00			
L2.1.3		ITEM I8: Vertical End Suction Pump, including extended carbon shaft with motor, coupler, 90° intake bend with cleaning port, including pump support structure (steel or concrete). Duty 750-1500 l/s @ 12-24 m Head	No	2.00			
L2.1.4		Maintenance SLA on Pumps and Motors for a 5 year period, consisting of periodic physical inspections, maintenance parts and labour on item L2.1.3	Sum	1.00			
Carried Forward							

Item No	Payment Clause	Short Description	Unit	Quantity	Rate	ZAR	Amount ZAR
Brought Forward							
L2.2		Design, supply and deliver to site main duty valves and equipment					
L2.2.1		ITEM I3: 750 mm NB Wedge Gate Valve to SANS 664, PN10. Flanged. Including geabox and extended spindel (approx 3 950 mm long)	No	12.00			
L2.2.2		ITEM I9: 600 mm Dismantling Coupler, PN 10, Stainless steel.	No	4.00			
L2.2.3		ITEM I13: 700 mm Swing Check Valve. PN 10, Flanged	No	4.00			
L2.2.4		2" No Flow switch to fit Item I9 PN 10	No	4.00			
L2.2.5		3/4" Pressure Transducer to fit Item I9, PN 10, stainless steel	No	8.00			
L2.2.6		3/4" Pressure guage (Bourdon tube), glycerine filled, op fit Item I9, PN 10, stainless steel	No	4.00			
L2.2.7		3/4" stainless steel ball valve to fit Item I9, PN 10	No	24.00			
L2.3		Design, supply and deliver to site main duty pipework All pipework is to be stainless steel 316L with wall thickness of 9.53 mm					
L2.3.1		ITEM I1: 1 200 mm ND to 750 mm ND Bell Mouth 90° Bend, one end flanged,	No	4.00			
L2.3.2		ITEM I4: 750 mm ND Pipe piece, 955 mm long, both ends flanged. Fitted with 3/9" threaded socket, compatable with a pressure transducer, pressure transducer to be fitted with ball valve	No	2.00			
L2.3.3		ITEM I5: 750 mm ND Pipe piece, 850 mm long, both ends flanged. Fitted with 3/9" threaded socket, compatable with a pressure transducer, pressure transducer to be fitted with ball valve	No	2.00			
L2.3.4		ITEM I6: 750 mm ND to 600 mm ND concentric reducer, both ends flanged, fitted with 3/4" threaded socket	No	4.00			
L2.3.5		ITEM I10: 600 mm ND double bend to align pump and discharge valves. Flanged both ends. Fitted with 3/4" and 2" threaded sockets compatable with no-flow switch, pressure transducer and pressure guage	No	2.00			
Carried Forward							

Item No	Payment Clause	Short Description	Unit	Quantity	Rate	ZAR	Amount ZAR
Brought Forward							
L2.3.6		ITEM I11: 600 mm ND double bend to align pump and discharge valves. Flanged both ends. Fitted with 3/4" and 2" threaded sockets compatable with no-flow switch, pressure transducer and pressure guage	No	2.00			
L2.3.7		ITEM I12: 600 mm ND to 700 mm ND concentric reducer, both ends flanged	No	4.00			
L2.3.8		ITEM I14: 700 mm ND 45° Lateral Juction, flanged all ends, with 2" threaded socket	No	4.00			
L2.3.9		ITEM I15: 700 mm ND 45° bend, Flanged,	No	4.00			
L2.3.10		ITEM I16: 750 mm ND Pipe piece, 246 mm long, both ends flanged.	No	8.00			
L2.3.11		ITEM I17: 750 mm ND to 700 mm ND concentric reducer, both ends flanged	No	4.00			
L2.3.12		Isolation Kits					
L2.3.12.1		750 mm	No	16.00			
L2.3.12.2		700 mm	No	8.00			
L2.3.12.3		600 mm	No	8.00			
L2.4		Installation of Equipment					
L2.4.1		Main Duty pumps supplied under item L2.1.1	Sum	1.00			
L2.4.2		Main Duty pumps supplied under item L2.1.3	Sum	1.00			
L2.4.3		Valves and Specials supplied under items L2.2 and L2.3	Sum	1.00			
L2.5		Refirbish and apply lining and coat in-place as per specification					
L2.5.1		ITEM I2: Exisitng 750 mm ND Puddle pipe 1081 mm long, flanged	No	4.00			
L2.5.2		ITEM I18: Exisitng 750 mm ND Puddle pipe 1382 mm long, flanged	No	8.00			
L2.6		Testing and commissioning of equipment Testing and commissioning of all equipment supplied and installed under Items L2.1, L2.2, L2.3 and L2.5	Sum	1.00			
Carried Forward							

Item No	Payment Clause	Short Description	Unit	Quantity	Rate	ZAR	Amount ZAR
Brought Forward							
L3		Drainage Pipework Design, supply, manufacture, transport, install and test drainage pipework inline with specifications, including protection equipment. Mechanical drawings P08959-M-DT-001 - 002 and -011 and P08959-M-PI-001 to -005 provides a concept layout of the pump system.					
L3.1		Design, supply and deliver to site drainage pumps, valves and equipment					
L3.1.1		Immersible Pump, including duckfoot, quick release coupler, lifting chain and guide rail. Duty 4 l/s @ 10 m Head.	No	1.00			
L3.1.2		50 mm NB Swing Check valve, PN 10, stainless steel, flanged	No	1.00			
L3.1.3		50 mm NB Gate Valve, PN 10, stainless steel, flanged.	No	1.00			
L3.1.4		2" stainless steel ball valve to fit Item I9, PN 10	No	4.00			
L3.2		Design, supply and deliver to site drainage pipework					
L3.2.1		50 mm ND Stainless steel, SCH 40, pipework, threaded as indicated on tender drawings	m	25.00			
L3.2.2		50 mm ND Female-Female threaded elbow	No	7.00			
L3.2.3		50 mm ND Threaded Male-Male coupling	No	8.00			
L3.2.4		50 mm ND Female-Female threaded T-piece	No	3.00			
L3.2.5		50 mm ND Stainless steel, SCH 40, pipework, flanged as indicated on tender drawings	m	16.00			
L3.2.6		50 mm ND 90° Elbow, SHC40, flanged, stainless steel	No	2.00			
L3.2.7		50 mm ND to 100 mm ND concentric Reducer, flanged, stainless steel	No	1.00			
L3.2.8		Isolation Kits					
L3.2.8.1		50 mm	No	5.00			
Carried Forward							

Item No	Payment Clause	Short Description	Unit	Quantity	Rate	ZAR	Amount ZAR
Brought Forward							
L3.3		Installation of Equipment					
L3.3.1		Equipment, Valves and Specials supplied under items L3.1 and L3.2	Sum	1.00			
L3.4		Testing and commissioning of equipment Testing and commissioning of all equipment supplied and installed under Items L3.1 and L3.2	Sum	1.00			
L4		Main Sump Pump Pipework Design, supply, manufacture, transport, install and test drainage pipework inline with specifications, including protection equipment. Mechanical drawings P08959-M-DT-001 - 002 and -012 and P08959-M-PI-001 to -005 provides a concept layout of the pump system.					
L4.1		Design, supply and deliver to site drainage pumps, valves and equipment					
L4.1.1		Immersible Pump, including duckfoot, quick release coupler, lifting chain and guide rail. Duty 12 l/s @ 10 m Head.	No	4.00			
L4.1.2		80 mm NB Swing Check valve, PN 10, stainless steel, flanged	No	4.00			
L4.1.3		80 mm NB Gate Valve, PN 10, stainless steel, flanged.	No	4.00			
L4.2		Design, supply and deliver to site main sump pump pipework					
L4.2.1		50 mm ND Stainless steel, SCH 40, pipework, flanged as indicated on tender drawings	m	22.00			
L4.2.2		80 mm ND 90° Elbow, SHC40, flanged, stainless steel	No	2.00			
L4.2.3		80 mm ND Equal T-piece, SHC40, flanged, stainless steel	No	2.00			
L4.2.4		80 mm ND to 100 mm ND concentric Reducer, flanged, stainless steel	No	2.00			
L4.2.5		100 mm ND Stainless steel, SCH 40, pipework, flanged as indicated on tender drawings	m	11.00			
L4.2.6		100 mm ND Equal T-piece, SHC40, flanged, stainless steel	No	1.00			
Carried Forward							

Item No	Payment Clause	Short Description	Unit	Quantity	Rate	ZAR	Amount ZAR
Brought Forward							
L4.2.7		100 mm ND to 150 mm ND concentric Reducer, flanged, stainless steel	No	1.00			
L4.2.8		150 mm ND x 100 mm ND Reducing T-piece, SHC40, flanged, stainless steel	No	1.00			
L4.2.9		150 mm ND Blank flange, stainless steel	No	1.00			
L4.2.10		150 mm ND Stainless steel, SCH 40, pipework, flanged as indicated on tender drawings	m	8.00			
L4.2.11		150 mm ND 90° Elbow, SHC40, flanged, stainless steel	No	1.00			
L4.2.12		Isolation Kits					
L4.2.12.1		80 mm	No	20.00			
L4.3		Installation of Equipment					
L4.3.1		Equipment, Valves and Specials supplied under items L4.1 and L4.2	Sum	1.00			
L4.4		Testing and commissioning of equipment					
L4.5		Testing and commissioning of all equipment supplied and installed under Items L4.1 and L4.2	Sum	1.00			
L5		Purge Pipework Design, supply, manufacture, transport, install and test drainage pipework inline with specifications, including protection equipment.					
L5.1		Design, supply and deliver to site purge Vales and fittings					
L5.1.1		3/4" stainless steel ball valve to fit Item I9, PN 10	No	8.00			
L5.1.2		Brass Compression fittings, elbows, T's and straight connectors	No	18.00			
L5.2		Design, supply and deliver to site main sump pump pipework					
L5.2.1		22 mm Polucop pipe	m	76.00			
L6		Sluice Gates					
L6.1		1,1 m x 1x1 m Stainless Steel sluice gate including extended spindle to ground floor (approx length 5.3 m), gearbox and handle	No	3.00			
Carried Forward							

Item No	Payment Clause	Short Description	Unit	Quantity	Rate	ZAR	Amount ZAR
Brought Forward							
L7		Overhead Crane and Gantries					
L7.1	MS 1	Overhead crane, complete as per specification, including rails, clips and electrical supply	No	1.00			
L7.2	MS 2	Supply and deliver to site and install, A-frame Gantry Crane, with SWL of 500 kg	No	1.00			
L7.3	MS 3	Supply, delivery to site and install, chain block-and tackle for A-frame gantry complete with trolley. Capacity 500 kg	No	1.00			
L7.4	MS 4	Evaluation of existitng crane rails by crane supplier. Removal for existitng rails, transport to EWS store or dispose of all rails, clips and sundry items.	Sum	1.00			
L7.5	MS 5	Dismantling, removing and transport to EWS store or disposal of existing manual overhead crane as direcetd by the engineer	Sum	1.00			
L8		Miscellaneous Items					
L8.1		Mobile torque rench to fit valve heads for opening and closing valves.	Sum	1.00			
L8.2		Clean uPVC ventilation pipes	Sum	1.00			
L8.3		800 mm Turbine Vent, stainless steel	No	2.00			
		TOTAL FOR SECTION: Carried to Summary					

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
M1		SECTION M : LOW LEVEL PUMP STATION - ELECTRICAL MV				
		3.3kV 3 Phase Cables to Pumps				
M1.1		Dry Type Motors				
M1.1.1		Cable PVC Insulated, PVC Bedded, SWA 1.9/3.3kV 35mm ² Cu x 3 core SANS 1507-3	m	120		
M1.1.2		Terminations at motor	ea	2		
M1.1.3		Terminations at drive	ea	2		
M1.1.4		Earthing, 25mm ² copper insulated green and yellow	m	30		
M1.1.5		Earth wire terminations	ea	4		
M1.1.6		Emergency Stop	ea	2		
M1.2		Immersible Pump				
M1.2.1		Cable PVC Insulated, PVC Bedded, SWA 1.9/3.3kV 50mm ² Cu x 3 core SANS 1507-3	m	120		
M1.2.2		Terminations at motor	ea	2		
M1.2.3		Terminations at drive	ea	2		
M1.2.4		Earthing, 25mm ² copper insulated green and yellow	m	30		
M1.2.5		Earth wire terminations	ea	4		
M1.2.6		Emergency Stop	ea	2		
M1.3		Cable Trays <i>Wire basket cable tray Heavy Duty 5mm wire, hot dip galvanised, 50x50mm pitch apertures. Rate to include joiner clamp sets, hold down saddles, support channels, hangers, etc.</i>				
M1.3.1		400mm wide by 75mm high	m	120		
M1.3.2		100mm wide by 75mm high	m	48		
M1.3.3		<i>Cable tray bend horizontal</i>				
M1.3.3.1		400mm wide by 75mm high	ea	2		
M1.3.3.2		100mm wide by 75mm high	ea	4		
		<i>Cable tray bends vertical</i>				
M1.3.3.1		400mm wide by 75mm high	ea	2		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
M1.3.3.2		100mm wide by 75mm high	ea	4		
M1.3.4		Cable tray T				
M1.3.4.1		400mm wide by 75mm high to 100 mm wide	ea	4		
TOTAL FOR SECTION: Carried to Summary						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
		SECTION N : LOW LEVEL PUMP STATION - ELECTRICAL SMALL POWER AND LIGHTING				
N1		Low-Level Pump Station: Substation Small Power and Lighting				
N1.1		Lighting				
N1.1.1		Type A IP65 LED 41W with plastic clips, vapour proof 4ft	ea	67		
N1.1.2		Type B IP65 LED Floodlight 5355 Optic 38W	ea	9		
N1.2		Socket Outlets and Light Switches				
N1.2.1		Water Proof Socket Outlets, double 16A, surface mount, PVC cover and PVC screws	ea	12		
N1.2.1		3-Phase 5-Pin Outlet (IP44 32A 3P+N+E) Surface Mounted	ea	14		
N1.2.2		Light Switch, 16A, 1 lever 1 way	ea	13		
N1.2.3		Light Switch, 16A, 2 lever 1 way	ea	4		
N1.2.4		Light Switch, 16A, 3 lever 1 way	ea	1		
N1.2.5		Light Switch, 16A, 2 lever 2 way	ea	4		
N1.2.6		Photocell, IP65, corrosion proof, in clear weatherproof box to withstand corrosive gases and coastal air	ea	2		
N1.3		Power Points				
N1.3.1		Crane 3 Phase 32A	ea	1		
N1.3.2		Socket outlet welding/ testing 32A	ea	3		
N1.3.3		32A 3-Pole Isolator (DIP) - PUFZ1	ea	6		
N1.3.4		20A 3-Pole Isolator (PEA-RP400GAQ)	ea	3		
N1.3.5		20A 3-Pole Isolator (AXIAL FAN)	ea	4		
N1.3.6		10A 3-Pole Fan Isolator (AXIAL FAN)	ea	2		
N1.3.7		10A 3-Pole Isolator (5 x SUMP PUMP) on Mounting Bracket	ea	5		
N1.3.8		160A 3-Pole 50kA Isolator (2 x 650kW MV PUMP MOTOR SET) on Mounting Bracket	ea	2		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
N1.3.9		1250A 3-Pole 50kA Isolator (2 x 550kW MV PUMP MOTOR SET) on Mounting Bracket	ea	2		
N1.4		Cable Trays <i>Wire basket cable tray Medium Duty 4mm wire, hot dip galvanised, 100x50mm pitch apertures. Rate to include joiner clamp sets, hold down saddles, support channels, hangers, etc.</i>				
N1.4.1		300mm wide by 50mm high	m	251		
N1.4.2		100mm wide by 50mm high	m	164		
N1.4.3		50mm wide by 50mm high	m	197		
N1.4.4		<i>Cable tray bend horizontal</i>				
N1.4.5		300mm wide by 50mm high	ea	8		
N1.4.6		100mm wide by 50mm high	ea	6		
N1.4.7		50mm wide by 50mm high	ea	7		
N1.4.7		<i>Cable tray bends vertical</i>				
N1.4.8		300mm wide by 50mm high (external/internal)	ea	8		
N1.4.9		100mm wide by 50mm high (external/internal)	ea	6		
1.4.10		50mm wide by 50mm high (external/internal)	ea	7		
N1.5		Cable tray T				
N1.5.1		300mm wide by 50mm high	ea	4		
N1.5.2		100mm wide by 50mm high	ea	3		
N1.5.3		50mm wide by 50mm high	ea	4		
N1.5.4		Power Supplies to Valves	ea	1.00		
N1.6		Trunking				
N1.6.1		PVC grey 100mm x 50mm	m	60		
N1.6.2		PVC grey 50mm x 50mm	m	60		
N1.7		Conduit				
N1.7.1		20mm PVC conduit, complete with hospital stand-off saddles and stainless steel screws	m	1679		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
N1.7.2		Expansion couplers	ea	10		
N1.7.3		Round box, PVC, 2 way	ea	120		
N1.7.4		Round box, PVC, 3 way	ea	120		
N1.8		LV Cables				
N1.8.1		2.5mm ² copper, 4 core PVC insulated, black, red and green/yellow	m	504		
N1.8.2		4mm ² copper, 4 core PVC insulated, black, red and green/yellow	m	216		
N1.9		Terminations Cables				
N1.9.1		2.5mm ² copper, 4 core PVC insulated, black, red and green/yellow	ea	28		
N1.9.2		4mm ² copper, 4 core PVC insulated, black, red and green/yellow	ea	12		
N.10		Wiring				
N1.10.1		1.5mm ² copper, PVC insulated, black, red and green/yellow	m	1953		
N.10.2		2.5mm ² copper, PVC insulated, black, red and green/yellow	m	1364		
N10.3		2.5mm ² copper, PVC insulated, blue, red, green and yellow	m	2544		
N10.4		4mm ² copper, PVC insulated, blue, red, green and yellow	m	624		
N10.5		10mm ² copper insulated copper earth wire	m	684		
N11		Main LV Distribution Board				
N11.1		Main LV DB as per SLD and specification	ea	1		
N11.2		Sub DB A as per SLD	ea	1		
N.12		Earthing and Lightning Protection				
N12.1		Main Building	ea	1		
N12.2		Additional Points	ea	10		
		TOTAL FOR SECTION: Carried to Summary				

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
		SECTION O : LOW LEVEL PUMP STATION - ELECTRICAL CONTROL				
O1		Emergency Stop				
O1.1		Distribution Board Enclosure for Feeding Emergency Stop's	ea	1		
O1.2		Galvanised and painted post for mounting emergency stop	ea	4		
O2		Cable Trays 300mm wide galvanised wire mesh tray medium duty 100x50mm 4mm dia. Wire				
O2.1		Power Supplies to Valves	m	200		
O2.1		Control and Monitoring Cables	m	200		
O3		Communications Cables				
O3.1		Motor monitoring	m	200		
O3.2		Temperature	m	200		
O3.3		Bearing Vibration	m	200		
O4		Communications				
O4.1		Ethernet Cat 6A cable	m	500		
O4.2		Ultrasonic level sensor	ea	3		
O4.3		Bracket for sensor as per detail dwg	ea	3		
O4.4		Control unit for ultrasonic	ea	3		
O4.5		PVC conduits 20mm dia	m	200		
O4.6		Three prong stainless steel liquid level	ea	1.00		
O4.7		Digital I/O Communications Box, IP65, industrial rugged	ea	10		
O5		Motor Monitoring				
O5.1		Vibration evaluation unit, ethernet/IP communication. Edge connection for IOT	ea	4.00		
O5.2		24V DC Power supply for IO-Link and VSE units 5Amp	ea	4.00		
O5.3		Software package monitoring vibration analysis, QM9102 moneo RTM	ea	1.00		
		TOTAL FOR SECTION: Carried to Summary				

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
P1	600-04	SECTION P : LOW LEVEL PUMP STATION - HVAC PUMP SUMPS - EXTRACT AIR DUCT SYSTEM				
P1.1	600.0.01.00	Round Ducting				
P1.1.1	.01.01	Category 6 - (Round Ducting) Ø560 & 1mm Galv Thick	m	4.00		
P1.1.2	.01.02	Category 6 - (Round Ducting) Ø800 & 1mm Galv Thick	m	2.00		
P1.2	600.0.02.00	Duct Fittings				
P1.2.1		Discharge Cowl (Including Mounting Brackets to PVC Pipe Ø560 and installation)				
P1.2.1.1	0.2.01	Ø560 Marine Discharge Cowl	No	2.00		
P1.2.2		Bends				
P1.2.2.1	.02.02	Category 6 - (Round Ducting) & 1mm Galv Thick Ø560 (90° Vertical bend)	No	2.00		
P1.2.3		Transformers Category 6 - (Round Ducting) & 1mm Galv Thick				
P1.2.3.1	.02.03	Ø800 - Ø560	No	2.00		
P2	600-04	PUMP SUMPS - EXTRACT AIR MECHANICAL EQUIPMENT				
P2.1	600.0.07.00	Mechanical Equipment Fans in accordance with Section 300				
P2.2		Ventilation Fans Axial flow fan, C/W steel galvanised mounting frame ,mounting feet, spring mounts, flanges as specified, suitable electrical connection wiring (1,5m long) between isolator and fan terminals, vibration isolators, tested, commissioned and installed in position. FAN MUST BE SPARK-PROOF & CERTIFIED.				
P2.2.1	.07.01	Axial Flow Fan Ø560: >1.4 m ³ /s @150 Pa	No	1.00		
P2.2.2	.07.02	Axial Flow Fan Ø560: >1.7 m ³ /s @150 Pa	No	1.00		
P2.2.3	.07.03	Circular Sound Attenuator Ø560, 560mm long	No	4.00		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
P2.3		Sheet Metal Ducting Sheet metal ducting in accordance with Section 300				
P2.3.1	600.0.01.00	Straight Ducting				
P2.3.1.1	.01.01	Category 1 - (up to 750mm with semi perimeter < 1150mm) & 1mm Galv Thick	m ²	40.00		
P2.3.1.2	.01.02	Category 3 - (751mm to 1350mm) & 1mm Galv Thick	m ²	20.00		
P2.4	600.0.02.00	Duct Fittings				
P2.4.1		Bends				
P2.4.1.1		Category 1 - (up to 750mm with semi perimeter < 1150mm) & 1mm Galv Thick				
P2.4.1.1.1	.02.01	350x200 (90° Horizontal Bend)	No	1.00		
P2.4.1.1.2	.02.02	700x200 (90° Vertical Bend)	No	1.00		
P2.4.1.1.3	.02.03	700x200 (90° Horizontal Bend)	No	1.00		
P2.4.1.2		Category 3 - (751mm to 1350mm) & 1mm Galv Thick				
P2.4.1.2.1	.02.04	1300x350 (90° Vertical Bend)	No	4.00		
P2.4.1.2.2	.02.05	1300x350 (90° Horizontal Bend)	No	1.00		
P2.4.2		Transformations				
		Category 3 - (751mm to 1350mm) & 1mm Galv Thick				
P2.4.2.1	.02.06	700x200 - 350x200	No	3.00		
P2.4.2.2	.02.07	700x350-700x250-FOT	No	2.00		
P2.4.2.3	.02.08	1300x350 - Ø800	No	2.00		
P2.4.2.4	.02.09	Ø800 - 1200x1200	No	2.00		
P2.4.3		Shoes				
P2.4.3.1		Category 3 - (751mm to 1350mm) & 1mm Galv Thick				
P2.4.3.1.1	.02.10	700x200	No	1.00		
P2.4.3.1.2	.02.11	700x350	No	2.00		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
P2.4.4		Stop Ends				
P2.4.4.1		Category 1 - (up to 750mm with semi perimeter < 1150mm) & 1mm Galv Thick				
P2.4.4.1.1	.02.12	350x200	No	3.00		
P2.4.4.2		Category 3 - (751mm to 1350mm) & 1mm Galv Thick				
P2.4.4.2.1	.02.13	1300x350	No	1.00		
P2.5	600.0.06.00	Air Terminals Air Terminals in accordance with Sections 300. Rates to include installation, fittings etc.				
P2.4.1		Extraction Air Grilles				
P2.4.1.1	.06.01	300x300	No	6.00		
P2.4.1.2	.06.02	600x600	No	1.00		
P2.4.2		Weather Louvres				
P2.4.2.1	.06.03	1200x1200	No	2.00		
P2.4.3		Dampers				
P2.4.3.1		Opposed Blade Damper				
P2.4.3.1.1	.06.04	300x300	No	6.00		
P2.4.3.1.1	.06.05	600x600	No	1.00		
P2.4.3.2		Gravity Damper				
P2.4.3.2.1	.06.06	1200x1200	No	2.00		
P2.5	600.0.07.00	Mechanical Equipment Fans in accordance with Section 300				
P2.5.1		Ventilation Fans Axial flow fan, C/W mounting by threaded rods suspended by roof slab, spring mounts and flanges as specified, suitable electrical connection wiring (1,5m long) between isolator and fan terminals, including mounting frame, vibration isolators, tested, commissioned and installed in position.				
P2.5.1.1	.07.01	Axial Flow Fan Ø800: >5,3 m ³ /s @ 250 Pa	No	2.00		
P2.5.1.2	.07.02	Circular Sound Attenuator Ø800, 800mm long	No	4.00		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
P2.6		Sheet Metal Ducting Sheet metal ducting in accordance with Section 300				
P2.6.1	600.0.01.00	Spiral Ducting				
P2.6.0.1	.01.01	Category 6 - (Round/Spiral Ducting) & 1mm Galv Thick	m	8.00		
P2.6.1	600.0.02.00	Duct Fittings				
P2.6.1.1		Bends Category 6 - (Round/Spiral Ducting) & 1mm Galv Thick				
P2.6.1.1.1	.02.01	Ø800 (90 deg)	No	6		
P2.6.1.2		Transformations Category 6 - (Round/Spiral Ducting) & 1mm Galv Thick				
P2.6.1.2.1	.02.02	Ø800 - 650x650	No	2.00		
P2.6.1.2.2	.02.03	Ø800 - 1800x600	No	2.00		
P2.7	600.0.06.00	Air Terminals Air Terminals in accordance with Sections 300. Rates to include installation, fittings etc.				
P2.7.1		Supply Louvres (Punkah Louvre with double deflection blades, including mounting bracket, installation, testing and commissioning as per detailed spec.				
P2.7.1.1	.06.01	600x600	No	2.00		
P2.7.2		Filters (To be installed as filter bank 1200x1200 in accordance with Axial Flow Fans, including filter bank frame square position to form 1200x1200 Filter Bank)				
P2.7.2.1	.06.02	3 x (600x600mm)	Lot	2.00		
P2.7.3		In-take Cowls (Including Wire Mesh Screen, 45 degrees as specified per drawing with a bottom of 300mm minimum)				
P2.7.3.1	.06.03	1200x1200	No	2.00		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
P2.8	600.0.07.00	Mechanical Equipment Fans in accordance with Section 300				
P2.8.1		Ventilation Fans Axial flow fan, C/W steel galvanised mounting frame ,mounting feet, spring mounts, flanges as specified, suitable electrical connection wiring (1,5m long) between isolator and fan terminals, including mounting frame, vibration isolators, tested, commissioned and installed in position.				
P2.8.0.1	.07.01	Axial Flow Fan Ø800: 4 m3/s @ 250 Pa	No	2.00		
P2.8.0.1	.07.02	Circular Sound Attenuator	No	4.00		
P2.8.1		Indoor Units (Supply and installation of Inverter Hide-Away Indoor Unit. Systems to be tested, installed, and commissioned. Units to include factory fitted primary filters, drainpump and drainpipes as per drawing, hard wired controller per unit. Galvanised steel mounting frame c/w anti-vibration mounts included. Equipment to be factory treated against corrosion)				
P2.8.1.1	.07.01	38 kW Cooling Inverter Type Hide-Away Unit	No	3.00		
P2.8.2		G4 Primary Return Air Filter including filterbox, mounting and installation as per detailed specification				
P2.8.2.1	.07.02	1618x525mm	No	3.00		
P2.8.3		Condensate piping				
P2.8.3.1	.07.03	Ø32 PVC Medium Class	m	80.00		
P2.8.3.2	0.7.05	Stainless steel drainpan, p-trap, drainpump as per detailed specification	No	3.00		
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
P2.8.4		Outdoor Units (Supply and installation of compatible x2 Outdoor Condensing Units for Hide-Away Indoor Units. Note two outdoor units are required per indoor unit for the specified mitsubishi products given. Systems to be tested, installed, and commissioned. Units to include refrigerant piping of 6m measured one way with complete trunking from indoor to outdoor, anti vibration pads and galvanised steel frame mounting unit as per detail spec. Equipment to be factory treated against corrosion)				
P2.8.4.1	.07.06	Inverter Type Outdoor Condensing Units Compatible with 38kW Indoor Hide-Away Unit	No	3.00		
P2.8.4.2	.07.07	Ø32 PVC Medium Class	m	80.00		
P3		Allow for testing, balancing, commissioning and handover of all equipment.	Sum	1.00		
P4		Allow for cleaning and start-up of the installation.	Sum	1.00		
P5		Allow for one year comprehensive maintenance and guarantees.	Sum	1.00		
P6		Labelling (inclusive of labels on ceiling to indicate mechanical equipment positions)	Sum	1.00		
P7		Allow for Electrical & Refrigeration COC for all final connections between Isolators and Mechanical Equipment.	Sum	1.00		
		TOTAL FOR SECTION: Carried to Summary				

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Q1	SANS 1200 DM	SECTION Q : LOW LEVEL PUMP STATION - CIVIL WORKS				
Q1.1		SECTION C: ROAD WORKS				
Q1.1.1	8.3.7	EARTHWORKS				
Q1.1.1.1		Cut to spoil				
Q1.1.1.1		Cut material to road bed depth over area for road.	m ³	363.00		
Q1.1.2		TREATMENT OF ROAD-BED				
Q1.1.1.1	8.3.3(a)	Road-bed preparation and compaction of material				
Q1.1.1.1.1		Rip and recompact to 93 % mod. AASHTO maximum density	m ³	114.00		
Q1.2	SANS 1200 ME	SELECTED LAYER				
Q1.2.1	8.3.1	Construct gravel selected layer				
Q1.2.1.1		G6 material to roads and hard stands compacted to 95% mod. AASHTO maximum density	m ³	151.00		
Q1.3	SANS 1200 ME	SUBBASE				
Q1.3.1	8.3.1	Construct gravel subbase				
Q1.3.1.1		G5B material to roads and hard stands compacted to 97% mod. AASHTO maximum density	m ³	114.00		
Q1.4	SANS 1200 MF	BASE				
Q1.4.1	8.3.1	Construct gravel subbase				
Q1.4.1.1		G5B material to roads and hard stands compacted to 97% mod. AASHTO maximum density	m ³	62.00		
Q1.4.2	8.3.5	Process material by means of:				
Q1.4.2.1		Stabilizing agent		
Q1.4.2.2	8.3.8	Stabilizing agent				
Q1.4.2.2.1		Portland cement	t	8.00		
Q1.4.2.0.1		Lime	t	-		Rate Only
Carried Forward						

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
Brought Forward						
Q1.5		SURFACING				
Q1.5.1		SEGMENTED PAVING				
Q1.5.1.1	SANS 1200 MJ	CONSTRUCTION BELOW DESIGNATED TOP OF SUBBASE				
Q1.5.1.1.1	8.2.3	CUT UNITS TO FIT EDGE RESTRAINTS	m	348.00		
Q1.5.1.2	8.2.2	CONSTRUCT PRECAST CONCRETE SEGMENTED PAVING complete on Areas as shown on Dwg., pattern to approval, samples to be provided on request.				
Q1.5.1.2.1		80 mm Interlocking precast paving blocks, Type S-A or similar, 25MPa, on 20 mm selected sand layer	m ²	408.00		
Q1.5.1.2.2		60 mm Interlocking precast paving blocks, Type S-A or similar, 25MPa, on 20 mm selected sand layer	m ²	348.00		
Q1.6		CONCRETE KERBING AND CHANNELLING				
Q1.6.1	8.2.2	Type semi-mountable, Fig.7 kerb	m	50.00		
Q1.7		Edge and cross beams				
Q1.7.1	SANS 1200 D	Earth Works				
Q1.7.1.1	PS D 8.3.3	Restricted excavation				
Q1.7.1.1.1		For foundation and dispose	m ³	11.00		
Q1.7.2	SANS 1200 G	Concrete works				
Q1.7.2.1		Formwork Including Chamfers				
Q1.7.2.1.1	8.2.1	Formwork (Rough)	m ²	36.00		
Q1.7.2.2		Concrete				
Q1.7.2.2.1	8.4.2	50 mm Blinding layer 15MPa/19mm	m ²	18.00		
Q1.7.2.2.2	8.4.3	Grade 35MPa/19mm concrete for foundation	m ³	8.00		
Q1.7.2.3	8.4.4	Unformed Surface Finishes				
Q1.7.2.3.1		Wood floated	m ²	18.00		
		TOTAL FOR SECTION: Carried to Summary				

Item No	Payment Clause	Short Description	Unit	Quantity	Rate ZAR	Amount ZAR
R1		SECTION R : TEMPORARY WORKS/CHANGE-OVER EQUIPMENT HIRE Develop a methodology to move the existing 2500kVA auto transformer at the low level pump station to a temporary location to allow for the construction of a new electrical substation (as per specs)	sum	1		
R2		Works associated to item 1.0 of this section:				
R2.1		Disconnect and make safe all electrical connections to allow the relocation of the transformer	sum	1		
R2.2		Relocate the transformer to a temporary position	sum	1		
R2.3		Reconnect, test and commission transformer and associated MV switchgear to allow the continued operation of the pumping system	sum	1		
R2.4		Include for any additional MV cable, trenching, backfill, mechanical protection, terminations and joints that may be required.	sum	1		
R2.4		Develop a change over plan to move from the existing MV network to the new MV network(as per specs)	sum	1		
R3		Standby generator for change-over process				
R3.1		Hire of 200 kVA Prime rated generator including:	sum	1		
R3.2		Hire of change-over panel, suitably designed power cables (30 m) and all other auxiliaries	sum	1		
R3.3		Delivery, installation, testing and commissioning	sum	1		
R3.4		Supplying of diesel per generator at full load for 72Hrs per generator.	Sum	1		
		TOTAL FOR SECTION: Carried to Summary				

eTHEKWINI MUNICIPALITY: WATER AND SANITATION UNIT SOUTHERNWORKS WASTE WATER TREATMENT WORKS ELECTRO-MECHANICAL UPGRADES	
DESCRIPTION	AMOUNT (ZAR)
SECTION A PRELIMINARY AND GENERAL	
SECTION B COMPLIANCE WITH HEALTH & SAFETY AND ENVIRONMENTAL	
SECTION C DAYWORKS	
SECTION D PROVISIONAL SUMS	
SECTION F ELECTRICAL - MAIN MEDIUM VOLTAGE RETICULATION	
SECTION G ELECTRICAL - MAIN MEDIUM VOLTAGE RETICULATION - VEOLIA SUBSTATION	
SECTION H ELECTRICAL - MAIN MEDIUM VOLTAGE INSTALLATION - LOW LEVEL PUMP STATION	
SECTION I ELECTRICAL - LOW VOLTAGE RETICULATION - MAIN CONNECTIONS	
SECTION J LOW LEVEL PUMP STATION - BUILDING WORKS	
SECTION K LOW LEVEL PUMP STATION - STRUCTURAL WORKS	
SECTION L LOW LEVEL PUMP STATION - MECHANICAL	
SECTION M LOW LEVEL PUMP STATION - ELECTRICAL MV	
SECTION N LOW LEVEL PUMP STATION - ELECTRICAL SMALL POWER AND LIGHTING	
SECTION O LOW LEVEL PUMP STATION - ELECTRICAL CONTROL	
SECTION P LOW LEVEL PUMP STATION - HVAC	
SECTION Q LOW LEVEL PUMP STATION - CIVIL WORKS	
SECTION R TEMPORARY WORKS / CHANGE-OVER EQUIPMENT	
SUB-TOTAL	
TOTAL (Excluding VAT)	
VAT (15 %)	
TOTAL (Including VAT) Carried forward to Form of Offer	