

CONTRACT NO : RFP168/2024  
CONSTRUCTION OF PHASE 1 ROOIWAL WWTW

## **PART 1: CIVIL BOQ**

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**P01000: PRELIMINARY AND GENERAL**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	001.01	<b><u>P0001 GENERAL REQUIREMENTS AND CHARGES</u></b>				
		<b>Preliminary and general charges:</b>				
		.01 Fixed charges:				
		.01 Contractual requirements for the provision of all sureties, insurance				
P011001		.03 Ablution and W.C. facilities (incl. for Engineer and assistants and visitors)	Sum	1		
P011002		.04 Tools, plant and equipment	Sum	1		
P011003		.05 Water, power and	Sum	1		
P011004		.06 Dealing with water	Sum	1		
P011005		.07 Plant for concrete mixing	Sum	1		
P011006		.08 Other fixed charge obligations	Sum	1.00		
P011007		<b>.09 Remove Engineer's and Contractor's</b>	Sum	1.00		
P011008		.10 Supply and erect project name board	Sum	1.00		
		.02 Time-related charges:				
P011009		.01 Contractual Requirements	Sum	1		
		Operate and maintain site facilities				
P011010		.02 Offices, workshop and storage facilities etc	Sum	1		
P011011		.03 Ablution and W.C. facilities (incl. for Engineer and assistants and visitors)	Sum	1		
P011012		.04 Tools, plant and equipment	Sum	1		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
P011013		.05 Water, power and	Sum	1		
P011014		.06 Supervision for duration of construction	Sum	1		
P011015		.07 Company and Head-Office overhead costs for the duration of the project	Sum	1		
P011016		<b>.08 Other time related obligations</b>	Sum	1		
		Sums stated provisionally by				
P011017		.09 Provisional Sum for cost of accredited training of Employer selected sub-contractors from the local community	Prov Sum	1	R200,000.00	R200,000.00
P011018		.10 Management and Supervision of Local Emerging Contractors for work marked as "S.C." in this Schedule of Quantities.	Sum	1		
P011019		.11 Provisional Sum for testing requested by the Engineer by an approved independent laboratory including travelling expenses and supply of a certified copy of test results	Prov Sum	1	R50,000.00	R50,000.00
P011020		.12 Overheads, charges and profit on item P011019 above and P011024 below	%		R50,000.00	
P011021		.14 Provisional sum for salary of CLO and travel assistance of Project Steering Committee Members appointed by Employer	Prov Sum	1	R300,000.00	R300,000.00
TOTAL CARRIED FORWARD						R550,000.00

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						R550,000.00
P011023		Profit and attendance on item P011021	%		R300,000.00	
		Daywork:				
P011024		.16 Unskilled Laboureer	hr	200		
P011025		.17 Semi-skilled labourer	hr	100		
P011026		.18 Skilled artisan	hr	100		
P011027		.19 100 kw trench excavator	hr	200		
P011028		.20 Hand operated roller	hr	200		
P011029		.21 Mobile crane (5t)	hr	200		
P011030	001.02	Locating existing services	Sum	1		
P011031	001.03	Excavate by hand to expose existing services, and backfill	m³	200		
P011032	001.04	.01 Temporary protection, as required or as indicated by the Engineer of any and all services	Prov Sum	1	R50,000.00	R50,000.00
		OVERHAUL (Section 103)				
P011033		Overhaul on material hauled outside the defined free-haul boundaries	m³-km	R 1		Rate Only
P011034		Environmental management during construction:				
P011035		.01 Environmental awareness campaign (see C3.7)	Sum			
P011036		.02 Water pollution control	Sum			
P011037		.03 Compliance with relevant environmental	Sum			
<b>TOTAL CARRIED FORWARD</b>						R600,000.00

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						R600,000.00
P011039		.02 Water pollution control	Sum			
P011040		.03 Compliance with relevant environmental	Sum			
P011041		.04 Compliance with Environmental Management Plan for duration of Contract (Part 3 : Scope of Work : Section C3.7)	Sum			
		ENGINEER'S ACCOMMODATION				
P011042		.01 Services for office	Sum			
		Treatment and maintenance of areas surrounding offices and laboratories				
		Office and laboratory accommodation				
		.01 Establish facilities on site:				
P011043		.01 Furnished office	Sum			
P011044		.02 Name boards	Sum			
P011045		.03 Cellular communication	Sum			
P011046		.04 Internet Connection	Sum			
P011047		.06 Refrigerator	Sum			
P011048		.07 Microwave oven	Sum			
P011049		.08 Kettle	Sum			
P011050		.09 A3 Black and white printer	Sum			
<b>TOTAL CARRIED FORWARD</b>						R600,000.00

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						R600,000.00
P011053		.10 250GHz, 500GB laptop computer loaded with the latest version of MS Windows and MS Office	Sum			
P011054		.02 Operate and maintain site facilities: .01 Furnished office	Sum			
P011055		.02 Name boards	Sum			
P011056		.03 Cellular communication	Sum			
P011057		.04 Internet Connection	Sum			
P011058		.05 Office equipment	Sum			
P011059		.06 Refrigerator	Sum			
P011060		.07 Microwave oven	Sum			
P011061		.08 Kettle	Sum			
P011062		.09 A3 Black and white printer	Sum			
P011063		.10 250GHz, 500GB laptop computer loaded with the latest version of MS Windows and MS Office	Sum			
P011064		Provision of survey equipment and assistants	Sum			
P011065		Provision of forward cover for imported materials, goods, plant and Sums stated provisionally by the Engineer:	Sum			
<b>TOTAL CARRIED FORWARD</b>						R600,000.00

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						R600,000.00
P011066		.01 For QA/QC inspections of structures items ordered by the engineer and carried out by the Engineer or an independent professional	Prov Sum	1	R50,000.00	R50,000.00
P011067		.02 Overheads, charges and profit on item P011025 above	%		R50,000.00	
P011068		.03 For testing ordered by the Engineer and carried out by an independent laboratory	Prov Sum	1	R50,000.00	R50,000.00
		Visits During Defects Liability Period				
P011069	002.04	.01 Training and operations supervision for operationing staff, on all equipment installed	Hr	R 160		
		Maintenance During Defects Liability				
P011070	002.04	.01 Site inspection and checking that equipment is properly maintained. Site visits at 1, 6 and 12 months after the commissioning date.	Hr	R 240		
P011071		Environmental Specialist to be appointed by the project	Prov Sum	1	1,500,000.00	1,500,000.00
		<b>Occupational Health and Safety:</b>				
		General safety obligations				
P011072		Mandatory Signage / Road signs	Sum			
<b>TOTAL CARRIED FORWARD</b>						R2,200,000.00

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						R2,200,000.00
P011073		Safety Poster including Acts & Regulations	Sum			
P011074		Safety office / shed or container	Month			
P011075		Allowance for toilets (Gender specific)	Each			
P011076		Lay down & storage areas	Sum			
P011077		Employee eating area	Sum			
P011078		Hand washing & sanitizing stations	Sum			
		<b>Safety Planning</b>				
P011079		Safety file and Risk Assessment	Sum			
P011080		Health and safety plan	Sum			
P011081		Medical assessment of employees (Entrance & Exit) & Vaccines for for employees working within sewer	Sum			
P011082		Fall Protection Plan	Sum			
P011083		Traffic Management Plan	Sum			
		<b>Safety Personnel</b>				
P011084		Construction safety officer (Full time)	Month			
		OHS Training				
P011085		Safety Representative Training	Each			
P011086		First Aid Training	Each			
P011087		Construction vehicle operators	Each			
P011088		Working at Heights training	Each			
<b>TOTAL CARRIED FORWARD</b>						R2,200,000.00



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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						R2,200,000.00
P011089		Fire fighting training	Each			
		Personal Protective Equipment (PPE)				
P011090		Work overalls - Reflective Conti suits (Min 2 pairs each)	Each			
P011091		Safety Shoes	Each			
P011092		Gum Boots	Each			
P011093		Hardhats	Each			
P011094		Reflective vests	Each			
P011095		Ear Plugs (100's)	Box			
P011096		Ear Muffs	Each			
P011097		Full body Safety Harness (Double lanyard)	Each			
P011098		Life Lines	Each			
P011099		Dust / Cloth Masks (100s)	Box			
P011100		Eye protection (Safety Glasses)	Each			
P011101		Hand Protection (Gloves) 100pcs	Bulk			
P011102		Barricade Netting (1 x 50m)	Sum			
P011103		Edge protection material & equipment	Sum			
P011104		Fire Extinguishers (9kg)	Each			
P011105		First Aid box (GR3 kit). Including refill kits required.	Each			
P011106		Spill kit (120litre)	Each			
<b>TOTAL CARRIED FORWARD</b>						R2,200,000.00

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						R2,200,000.00
P011107		Lock out items (locks, tags,safes, etc..)	Sum			
P011108		Emergency air siren	Each			
P011109		Rescue equipment	Sum			
P011110		Contractor to allow for CIDB Built Programme	Prov Sum	1	R5,000,000.00	R5,000,000.00
P011111		Profit and attendance on item P011110	%		R5,000,000.00	
TOTAL CARRIED FORWARD TO SUMMARY						R7,200,000.00

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**A11000 : MODULE 1 BULK EARTHWORKS**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		<b><u>MASS EARTHWORKS</u></b>				
	<b>203.01</b>	<b>Excavation and borrow to fill:</b>				
A11000		.01 Compaction to 90% of modified AASHTO density	m3	15,696		
	<b>203.03</b>	<b>Excavate and spoil of:</b>				
A11001		.02 Intermediate material	m3	14,126		
A11002		.03 Hard material	m3	4,600		
A11003		.04 Boulder material class A	m3	1,540		
A11004	<b>203. 08</b>	Preparation and compaction of construction-bed material to 90% of modified AASHTO density	m3	400		
		<b>Note: Bidders to allow for an overhaul distance that is within 12.5km with a free haulage of 2.5km.</b>				
A11005	<b>103</b>	Overhaul (Extra over items in payref 203.03) beyond the freehaul limit)	m³km	14,126		
A11006		.01 In situ treatment by ripping	m3	400.00		
	<b>203.11</b>	<b>Finishing off slopes:</b>				
A11007		.01 Excavation slopes	m2	1,000.00		
A11008		.02 Fill slopes	m2	20.00		
A11009	<b>203.14</b>	Extra over item 203.01 for borrow material from sources to be supplied by the Contractor (G7 quality material)	m3	5,440		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A11010	<b>701.04</b>	<b><u>FOUNDATIONS FOR STRUCTURES</u></b>  Dewatering of foundation excavations	lumpsum	1		
A11011	<b>701.06</b>	Fill within restricted areas (extra over item 203.01)	m3	3,500		
A11012	<b>701.07</b>	<b>Foundation fill consisting of</b>  .03 G6 material on site compacted in 4 x 150mm layers at 0 to +2% of the MOD AASHTO optimum moisture content, i.e, material should be excavated to a depth of 600mm below the proposed founding depth and backfilled.	m3	1,600		
A11013	<b>202</b>	<b><u>PARTICULAR PROJECT</u></b>  Specialised shoring left in excavation for restricted excavations, i.e. to achieve the steep excavation slopes as specified in the scope of works and illustrated in the bulk earthwork drawing (Vertical in certain Areas)  GABIONS AND PITCHING (PROVISIONAL)  Surface preparation bedding of gabions	m2	480.00		
A11014	<b>505.05</b>	a. Mattresses 6 x 2 x 0.23m  Gabion mattresses :	m2	400.00		
A11015	<b>505.05</b>	a. Mattresses 6 x 2 x 0.23m	m2	400		
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>						

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**A12000 : MODULE 1 BULK EARTHWORKS**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		<b>A12000 : MODULES 1 ROADS STORMWATER &amp; DRAINAGE</b>				
		<b><u>TRENCHING</u></b>				
	<b>202</b>	<b>Trench excavations</b>				
		.0,1 Up to 1,0 m wide:				
A12001		01 Up to 1,0 m deep	m3	450		
A12002		02 Over 1,0 m and up to 1,5	m3	60		
A12003		03 Over 1,5 m and up to 2,0	m3	20		
	<b>203</b>	<b>Excavate and spoil of:</b>				
A12004		.01 Soft material	m3	100		
A12005		.02 intermediate material	m3	10		
A12006	<b>203.2</b>	Extra over items 203.03 for disposing of spoil material to sites to be provided by the Contractor	m3	850		
		<b><u>PREFABRICATED CULVERTS AND STORMWATER DRAINAGE</u></b>				
	<b>502</b>	Backfilling with selected excavated material compacted to:				
A12007		.01 90% of modified AASHTO density	m3	150		
A12008		.02 93% of modified AASHTO density	m3	20		
	<b>502</b>	Supplying and laying of concrete pipe culverts (type SC-pipes):				
		.01 Class 50D pipes with ogee joints/spigot and socket joints with rubber rings on class B bedding:				
A12009		. 01 375 mm ND	m	750		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
	8.2.1	<b>BEDDING (PIPES)</b> Provision of bedding from trench excavations				
A12010		a) Selected granular material	m <sup>3</sup>	15		
A12011		b) Selected fill material	m <sup>3</sup>	30		
	8.2.2	Supply only of bedding by importation				
	8.2.2.1	From other necessary excavations				
A12012		a) Selected granular material	m <sup>3</sup>	350		
A12013		b) Selected fill material	m <sup>3</sup>	150		
	8.2.2.3	From Commercial sources				
A12014		1) Selected granular material	m <sup>3</sup>	40		
A12015		2) Selected fill material	m <sup>3</sup>	160		
	502.2	<b>Manholes, catchpits, precast inlet and outlet structures and junction boxes complete:</b>				
		.01 Manholes:				
A12016		.01 Stormwater manholes as shown on the Stormwater details drawing with manhole cover option (standard depth = 2.0m)	no	15		
A12017		.02 Stormwater grid inlet as shown on the Stormwater details drawing (standard depth = 1.5m)	no	7		
		.06 Extra over or under item 502.16.01 for variation in depth of manholes from the standard depth designated for purposes of tendering:				
A12018		.01 Stormwater manholes	m	10		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
		<b><u>KERBING AND CHANNELLING</u></b>				
	<b>503</b>	Concrete kerbing-channelling				
A12019		.01 Precast concrete half-battered kerb, SANS 927 fig 3, with 200 mm wide class 25 / 19 cast in situ concrete channel,as per the existing kerbing on site	m	100		
A12020	<b>503</b>	.02 Precast concrete mountable kerb, SANS 927 fig 8b, including haunching as shown on the road layerworks drawing	m	700		
A12021		.03 Class 30/19 cast in situ concrete edge beam, including reinforcement, as shown on the road layerworks drawing	m	45		
		<b><u>OPEN DRAINS</u></b>				
	<b>504</b>	<b>Channels:</b>				
A12022		.01 Class 25/19 cast in situ concrete channels 800mm width x 300mm depth internal wall thickness 125mm including mesh Ref 193 in the sidewalls and base	m	200		
A12023		.02 Supply and install RS40 rectagrid 25 x 4.5 bearer bars, in 2m long banded pannels on 30x30mm angle irons over channel (All steel to be hot dipped galvanised)	m	50		
		<b>EARTHWORKS</b>				
A12024	8.3.2(a)	Bulk excavation in all materials and use for embankment or backfill or dispose as ordered	m <sup>3</sup>	2200		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
	8.3.2(b)	) Extra over for:				
A12025	8.3.2(b) (1)	Intermediate material	m <sup>3</sup>	1650		
A12026	8.3.2(b) (2)	Hard rock excavation	m <sup>3</sup>	220		
A12027		(2) Hard rock material	m <sup>3</sup>	5		
A12028	8.3.4(a)	Extra over items above for importation of material from commercial sources or from borrow pits	m <sup>3</sup>	100		
	8.3.6	Overhaul				
A12029	8.3.6(a)	Limited overhaul	m <sup>3</sup>	2200		
A12030	8.3.6(b)	Long overhaul	m3.k m			
		<b>Preparation by ripping to a depth of 150mm and subsequent compaction of in situ subgrade material to:</b>				
	601					
A12031		.01 90% of modified AASHTO density	m3	1140		
	601	Gravel layers constructed from material obtained from borrow pits or temporary: stockpile:				
		.01 Selected layer: (150 mm thick) As per subgrade specification:				
A12032		.01 G7 compacted to 93% of modified	m3	1140		
		.02 Subbase: (150 mm thick):				
A12033		.01 G5 compacted to 95% of modified	m3	1250		
<b>TOTAL CARRIED FORWARD</b>						



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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A12034	601.1	Extra over item 601.02 for borrow material from sources to be supplied by the				
A12034		.01 G7 quality material for selected	m3	1140		
A12035		.02 G5 quality material for subbase	m3	2025		
	602	Crushed-stone base constructed with material obtained from:				
		.01 Commercial sources				
A12036		.03 G1 material compacted to 98% of modified AASHTO density	m3	810		
A12037	8.3.8	Stablizing agent (b) Portland cement (2.5%)	t	2		
		<b><u>PRIME COAT</u></b>				
	605	Prime coat:				
A12038		.01 RTH 3/12P or RTL 3/12P tar prime applied at 0.7l/m <sup>2</sup>	Litre	2700		
		<b><u>ASPHALT BASE AND SURFACING</u></b>				
	606	Asphalt surfacing 30 mm thick using 60 / 70 penetration-grade bitumen (Premix; Max. chip size 13mm):				
A12039		.01 Continuously graded, medium	m2	2700		
A12040	606.1	Tack coat of 30% stable-grade emulsion applied at 1.0l/m2	litre	2700		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
		<b>KERBING AND CHANNELLING</b>				
	8.2.1	Precast concrete kerbs and channels on concrete bedding				
		Combination kerbs (Fig 13)				
A12041		Radius < 20m	m	100		
A12042		Radius > 20m and straight	m	100		
		Edgings				
A12043		Radius < 20m	m	75		
A12044		Radius > 20m and straight	m	100		
		Barrier Kerbs				
A12045		Radius < 20m	m	40		
A12046		Radius > 20m and straight	m	100		
		V-channels				
A12047		Radius > 20m and straight	m	100		
A12048		Half round channels (70kg/m)	m	25		
		<b><u>TRAFFIC SIGNS</u></b>				
		Sign boards with painted background, symbols, lettering and borders in engineering-grade retro-reflective material				
A12049	612	.01 Area not exceeding 2 m2	m2	2		
<b>TOTAL CARRIED FORWARD</b>						

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A12000 : MODULE 1 BULK EARTHWORKS

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A12050	612	<b>Sign supports:</b>  .02 Steel tubing 2.5m height	no	2		
A12051	612	<b>Extra over subitem 613.03.02 for</b>  02 Painted galvanized steel	no	2		
A12052	612.1	Excavation and backfilling for sign supports	m3	1		
<b>TRAFFIC MARKINGS</b>						
A12053	613	<b>Road-marking paint:</b>  .01 White lines (broken or unbroken)  .01 100 mm wide	km	1		
A12054		.02 Yellow lines (broken or unbroken):  .02 150 mm wide	km	1		
A12055		.03 White lettering and symbols	m2	40		
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>						

CITY OF TSHWANE  
 CONTRACT NO:RFP168/2024  
 CONSTRUCTION OF PHASE 1,  
 A13000 : MODULE 1 PAVING AND ANCILLARY WORK

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		<b><u>SITE CLEARING AND GRUBBING</u></b>				
	<b>101.01</b>	Clearing and grubbing:				
		.01 Areas:				
A13001		.01 For all bulk earthworks	m2	2440		
		02 Strips:				
A13002		.01 Exceeding 1m and up to and including 2 m	no	10		
	<b>101.03</b>	Grubbing and the removal of the stumps and roots of large trees with a girth:				
A13003		.01 Exceeding 1m and up to and including 2 m	no	10		
	<b>101.05</b>	<b>Removal and disposal of specific</b>				
A13004		.01 Concrete kerbing/kerbing	m	90		
A13005		.02 Asphalt surfacing	m2	300		
A13006		.03 kerb inlets, catchpits	no	10		
A13007		.04 DN 300 Concrete pipework from existing storm water system	m	10		
		The tendered rate shall include full compensation for excavating,uplifting, backfilling,demolishing, removing, transporting and the disposal of material off site to a spoil site determined by the Contractor				
<b>TOTAL CARRIED FORWARD</b>						

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CONSTRUCTION OF PHASE 1,  
A13000 : MODULE 1 PAVING AND ANCILLARY WORK

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
		<b><u>ACCOMMODATION OF TRAFFIC</u></b>				
A13008	<b>102.01</b>	Accommodation of traffic and maintenance of bypasses	m	40		
	<b>102.02</b>	Earthworks for bypasses:				
A13009		.01 Shaping of bypasses	m	40		
A13010		.02 Cut and borrow to fill	m3	10		
A13011		.03 Cut to spoil	m3	50		
A13012	<b>102.03</b>	<b>Gravel wearing courses for bypasses</b>	m3	50		
A13013	<b>102.04</b>	Watering of bypasses	m3	10		
	<b>102.10</b>	Temporary fencing and gates:				
A13014		.01 Temporary fencing (ordinary diamond mesh)	m	40		
	<b>102.14</b>	<b>Temporary traffic-control</b>				
A13015		01. Flagmen	Lump Sum	1		
A13016		.02 Portable STOP and GO-RY	no	4		
		LANDSCAPING AND GRASSING				
	<b>104.30</b>	Preparing areas for grassing and ground				
		.02 Topsoiling on the Site with:				
A13020		.01 Topsoil obtained from the Site or borrow areas provided by the	m3	50		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
A13018	104.40	.05 Stockpiling of topsoil (free-haul of 5km)	m3	390		
		Grassing:				
A13019	104.07	.01 Planting of grass cuttings	ha	0.1		
		Trees, shrubs and ground covers:				
		.01 Provision of trees and shrubs:				
A13020		.01 Indigenous (to match	No	20		
		.03 Planting and establishing of:				
A13021		.01 Trees	No	20		
A13022		Extra work for landscaping	Prov Sum	1		
TOTAL CARRIED FORWARD						

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**A13000 : MODULE 1 PAVING AND ANCILLARY WORK**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
		<b>SEGMENTED PAVING</b>				
		Construction of segmental block				
A13023	8.2.2	Construction of interlocking cement pavers (80mm thick) on 25mm thick clean bedding sand - including cutting of units to fit infill corners etc.	m <sup>2</sup>	2200		
A13023	PA 15.4	150 micron DPM - general purpose underlay sheeting to precast paving slabs	m <sup>2</sup>	2200		
A13023	<b>SANS DM 8.3.3 (a)</b>	Paving bed preparation and compaction of selected in-situ backfill material compacted to 95% MOD AASHTO for a minimum depth of 150 mm	m <sup>3</sup>	330		
	<b>609.03</b>	<b>The construction of edge</b>				
A13023		.01 Precast concrete kerb, SANS size 75 x 150mm high (complying with SANS 927:2007) in 1000mm lengths, wet pressed, bedded and jointed in (3:1) cement mortar and flush pointed on exposed faces, including 15MPa/19mm unreinforced concrete haunching at back of each joint, excavation, backfilling, ramming, etc.)	m	140		
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>						

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**CONSTRUCTION OF PHASE 1,**  
**A14000 : PRIMARY SETTLING TANK**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		A14000 : PRIMARY SETTLING TANK				
		SUBSURFACE DRAINS AND DRAINAGE BLANKETS				
	501.04	Geotextiles:				
A14001		Geotextiles:	m2	3233.08		
A14002		.03 350 PVC sheeting	m2	366		
	501.05	Pipes in subsurface drains:				
		Excavate in all materials for trenches, backfill, compact and dispose of surplus material for pipes that are not exceeding 1m deep				
A14003A	8.3.3	Supply and install perforated 75mm dia. PVC under road surface	m	250		
		.02 Fittings for HDPE, class 10, PE80				
A14004		.01 75 mm dia tees (perforated)	No	45		
		<b>FOUNDATIONS FOR STRUCTURES</b>				
	701.02	Excavation for structures:				
		.01 Excavation of soft material situated in the following depth ranges:				
A14005		.01 0 m up to 2 m	m³	240		
A14006		.02 Exceeding 2 m up to 4 m	m³	100		
A14007		.02 Extra over subitem 701.02.01 for excavation in hard material irrespective of depth	m³	340		
	701.07	Foundation fill consisting of				
A14008		.05 50mm thick blinding layer, class 15/19 concrete	m³	100		
		FALSEWORK, FORMWORK AND CONCRETE FINISH				
	702.01	Formwork, class F1 surface finish:				
<b>TOTAL CARRIED FORWARD</b>						



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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A14012		.01 Single-surface formwork:  .03 Plane, vertical to  .01 Narrow width <=250mm floor	m²	20		
A14010		.02 Exterior sump face( measured 150mm below F.G.L)  .04 Curved, cylindrical	m²	100		
A14011		.01 Exterior tank face(measured 150mm below F.G.L) (radius 17.35m)	m²	780		
A14012		.02 Narrow width<=500mm tank wall foundation toe (radius 17.925m)	m²	140		
A14013		.03 Narrow width<=500mm no fines concrete drainage (radius 18.225m )	m²	180		
A14014		.02 Double surface formwork  .03 Plane vertical to:  .01 Narrow width <=200mm plinths in feed and sludge pipe ducts	m²	20		
A14015		.02 Sludge and inlet pipes inner face  .04 Curved, cylindrical	m²	420		
A14016		.01 Sludge Hopper (inner radius 1.9m)	m²	200		
	702.02	Formwork, class F2 surface finish:  .01 Single-surface formwork:				
<b>TOTAL CARRIED FORWARD</b>						

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**A14000 : PRIMARY SETTLING TANK**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A14017		.02 Sludge and inlet pipes inner face	m <sup>2</sup>	1160		
		.04 Curved, cylindrical				
A14018		.01 Sludge Hopper (inner radius 1.9m)	m <sup>2</sup>	200		
		.04 Curved, cylindrical				
A14019		.01 Tank wall interior face( below launder soffit) (radius 17.0m)	m <sup>2</sup>	2092		
A14020		.02 Diffuser box internal face (radius 3.3m)	m <sup>2</sup>	140		
A14021		.03 Hopper mass concrete infill	m <sup>2</sup>	20		
		.07 Curved, horizontal:				
A14022		.01 Launder soffit	m <sup>2</sup>	380		
A14023		.02 Outlet chamber soffit	m <sup>2</sup>	20		
A14024		.03 Diffuser box soffit	m <sup>2</sup>	80		
A14025		.04 Narrow width <=200mm diffuser box	m <sup>2</sup>	20		
		.02 Double surface formwork:				
		.03 Plane, vertical to:				
A14026		.01 Outlet chamber walls	m <sup>2</sup>	20		
		.04 Curved, cylindrical:				
A14027		.01 Outlet chamber faces (inside radius 16.4m)	m <sup>2</sup>	20		
		.03 Beams:				
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A14028		.01 Beam soffit	m <sup>2</sup>	20		
A14029		.02 Beam sides	m <sup>2</sup>	20		
		.04 Columns:				
		.01 Square and rectangular:				
A14030		.01 Diffuser box columns	m <sup>2</sup>	180		
	702.03	Formwork, class F3 surface finish:				
		.01 Single-surface formwork:				
		.03 Plane, vertical to:				
A14031		.01 Sump inner walls	m <sup>2</sup>	80		
		.04 Curved, cylindrical:				
A14032		.01 Narrow width <=150mm external face to overflow launder	m <sup>2</sup>	40		
A14033		.02 Diffuser box outer face (radius 3.5m)	m <sup>2</sup>	160		
		.05 Curved, conical				
A14034		.01 Launder nib	m <sup>2</sup>	120		
		.02 Double surface formwork:				
		.03 Plane, vertical to:				
A14035		.01 External sump face (measured 150mm below F.G.L) and inner walls	m <sup>2</sup>	40		
		.04 Curved, cylindrical:				
A14036		.01 Overflow weir ( inside radius	m <sup>2</sup>	280		
<b>TOTAL CARRIED FORWARD</b>						

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**A14000 : PRIMARY SETTLING TANK**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A14037		.02 Internal tank face above launder floor and external tank face (measure	m²	540		
	702.06	Formwork to openings:  Form pocket for HD Bolts by others including lip for grouting (Provisional Quantity):				
A14038		(a) 100 x 100 x 150mm deep	No	40		
A14039		(b) 80 x 80 x 200mm deep	No	40		
A14040		(c) 80 x 80 x 250mm deep	No	20		
		(d) Box out/Form circular, square or rectangular voids <=500mm thick for area:				
A14041		.01 <=0.25 m²	No	40		
A14042		.02 <= 1.0 m²	No	20		
	702.07	Chamfers larger than 25x25mm:				
A14043		.01 Launder weir-100mmx100mm chamfer	m	240		
		STEEL REINFORCEMENT FOR STRUCTURES				
	703.03	Welded steel fabric for:  .01 Slabs:				
A14044		.01 Ref no.888, mesh size 200mm x 200mm, wire dia. 12mm and 12mm	kg	11940		
	703.04	Reinforcement for structures  .01 Mild steel:				
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A14045		.01 Bars with an 8 mm dia	t	20		
A14046		.02 Bars with a 10 mm dia	t	20		
		.02 High-yield-stress steel:				
A14047		.01 Bars with a 10 mm dia	t	20		
A14048		.02 Bars with a 12 mm dia	t	40		
A14049		.03 Bars with a 16 mm dia	t	60		
A14050		.04 Bars with a 20 mm dia	t	20		
A14051		.05 Bars with a 25 mm dia	t	60		
		CONCRETE				
	704.01	Cast in situ concrete:				
		.01 Class 15/30 mass concrete in :				
A14052		.01 Feed and sludge pipe haunch	m <sup>3</sup>	40		
		.02 Class 35 / 19 structural concrete in:				
A14053		.01 Floor slabs, U3 surface finish	m <sup>3</sup>	756		
A14054		.02 Pipe ducts	m <sup>3</sup>	80		
A14055		.03 Foundations for main tank walls, U1 surface finish	m <sup>3</sup>	380		
A14056		.04 Main tank walls	m <sup>3</sup>	1060		
A14057		.05 Sludge hopper	m <sup>3</sup>	80		
A14058		.06 Diffuser box, U3 surface finish where reqd	m <sup>3</sup>	60		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A14059		.07 Launder slab, U3 surface finish where reqd	m <sup>3</sup>	100		
A14060		.08 Launder weir	m <sup>3</sup>	40		
A14061		.09 Diffuser box columns	m <sup>3</sup>	20		
A14062		.10 Outlet chamber	m <sup>3</sup>	20		
A14063		.11 Beam in diffuser box	m <sup>3</sup>	20		
A14064		.12 Benching in sludge hopper	m <sup>3</sup>	60		
A14065		.13 Benching in launder	m <sup>3</sup>	20		
A14066		.14 Sump	m <sup>3</sup>	60		
		Cast in situ no-fines concrete:				
		.01 Class NF 19 in:				
A14067		.01 Drainage layer	m <sup>3</sup>	220		
		Grouting:				
A14068		(a) Grout pockets for H.D. bolts	m <sup>3</sup>	2		
A14069		(b) Grout up openings in walls <=500mm thick using an approved non-shrink grout for area <= 1.0 m <sup>2</sup>	No	8		
A14070		(c) Grout up openings in concrete walls and slab for pipework ducts, specials, penstocks etc, supplied and placed by others (provisional)	m <sup>3</sup>	4		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A14071		(d) Grout up openings in floors and walls ≤350mm thick using an approved nonshrink grout for area:  .01 ≤ 0.25 m²	No	8		
A14072		.02 ≤ 1.00 m²	No	16		
		<b>JOINTS IN STRUCTURES</b>				
	706.03	Expansion joints as detailed on the drawings:				
		.01 Floor expansion joints:				
A14073		.01 150 to 450mm thick	m	260		
A14074		.02 150mm thick	m	140		
	706.05	Contraction joints as detailed on the				
		.01 Floor contraction joints:				
A14075		.01 150 to 450mm thick	m	80		
A14076		.02 150mm thick	m	260		
	706.06	Joints with waterstops:				
		.01 Waterstops in a straight joint:				
A14077	809.01	.01 200mm PVC rearguard waterstop	m	400		
		<b>STRUCTURAL STEELWORK</b>				
		Structural steel items:				
		.01 Measured by mass:				
A14078		.01 3CR12 restraint strap	kg	160		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A14079		.02 Measured by linear metre:  .01 Unistruts p330 fixed to overflow launder wall for weirs and baffle plates	m	240		
A14080		.04 Measured by number:  .01 .01 M10 bolts (SS304) at 500mm centres	No	440		
A14081		.02 .02 Fishtail lugs 100mm long x 30mm wide at 300mm centres cast into overflow launder wall	No	760		
A14082		.03 Cast in M16 holding down bolts x 450mm long with 100x100x6mm mild steel washers for mild steel restraint straps in Feed and RAS pipe channels	No	60		
A14083		.04 Supply and install M.S. restraint straps 90x6mm thick 900mm dia pipe	No	20		
A14084		.05 Supply and install M.S. restraint straps 90x6mm thick 250mm dia pipe	No	20		
A14085		.06 M16 bolts x 100mm long for joint connections	No	20		
A14086		.07 Chemical anchors for steel restraints	No	20		
	903.06	Other special tests requested by the Engineer:				
A14087	610.10	.01 Testing of structures in accordance with the Specification for watertightness	Sum	2		
		Miscellaneous:				
<b>TOTAL CARRIED FORWARD</b>						



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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
A14088		.01 Supply and install approved groundwater pressure relief valve of 194 mm Ø (Gereg or similar approved)	No	24		
A14089		.02 75mm diameter Nextube cast into inlet structure top slab and column with 2.6mm diameter galv. draw wire	m	200		
TOTAL CARRIED FORWARD						

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**CONSTRUCTION OF PHASE 1,**  
**A15000 : PROCESS PIPEWORK**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		A15000 : PROCESS PIPEWORK				
		TRENCHING				
		NB! Some pipelines for Module 1-3 fall within the bulk Excvation. Trenching will only cover the requirement to trench the bulk backfill to the structures in order to adequatley construct the pipe bedding. This is to be done as the backfill is being built up. Depth is thus measured from top of bedding in these instances and not from natural ground level.				
	202.01	Trench excavations:				
A15001		.02 Over 1,0 m and up to 1,5 m	m³	2000		
A15002		.03 Over 1,5 m and up to 2,0 m	m³	650		
A15003		.04 Over 2,0 m and up to 2,5 m	m³	230		
A15004		.05 Over 2,5 m and up to 3,0 m	m³	30		
		.03 Over 2,0 m and up to 3,0 m wide:				
A15005		.01 Up to 1,0 m deep	m³	60		
A15006		.02 Over 1,0 m and up to 1,5 m	m³	30		
A15007		.03 Over 1,5 m and up to 2,0 m	m³	30		
A15008		.04 Over 2,0 m and up to 2,5 m	m³	6		
	202.02	Extra over items 202.01, 202.03, 202.04 and 202.09 for excavating in:				
A15009		.01 Intermediate material	m³	250		
A15010		.02 Hard material	m³	100		
<b>TOTAL CARRIED FORWARD</b>						

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**A15000 : PROCESS PIPEWORK**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A15011	202.15	Reinstate road surface complete with all courses for Asphalt up to and including 50mm thick	m	300		
A15012	202.03	Excavations outside the normal trench	m³	100		
A15013	202.04	Hand excavation (extra over item	m³	100		
A15014	202.06	The backfilling of trenches (excluding backfill around the pipe barrel) with material obtained from excavations (Compaction of backfill to 90% of mod AASHTO)  Note: The bulk of the backfill for module 1-3 pipework is measured under the bulk earthworks section - Refer to the note under "Trenching" in this schedule  Supplying, laying and jointing of water  .01GRP PN6 SN5000 waste water pipes manufactured to SANS 1748 Part 1 with Re kacouplings including sealing gaskets (Flowtite or similar approved):	m³	1500		
A15015		.01DN 1100	m	100		
A15016		.02 DN 450	m	50		
A15017		.03 DN 500	m	250		
A15018		.03 DN 350  .02 UPVC Class 12 complete with fittings :	m	1050		
A15019		.02 DN 200	m	100		
<b>TOTAL CARRIED FORWARD</b>						

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**A15000 : PROCESS PIPEWORK**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A15020		.03 DN 150	m	150		
A15021		.04 DN 100	m	100		
		.03HDPE PE80 PN16 SDR 9 (Provisional) complete with compression couplings				
A15022		.01DN 25	m	50		
A15023		.02DN 50	m	50		
A15024		.03 DN 75	m	50		
		.04 90° Bends for Class 12 UPVC Pipe:				
A15025		.01 DN 200	No	5		
A15026		.02 DN 150	No	6		
A15027		.03 DN 100	No	5		
		.05 45° Bends for Class 12 UPVC Pipe:				
A15028		.01 DN 200	No	6		
A15029		.02 DN 150	No	6		
		.06 Equal Tees for lass 12 UPVC Pipe:				
A15030		.01 DN200 x DN200	No	1		
		.07 Stand pipe complete with 20 MP concrete base, 80 mm MS angle support, 15 mm ND. MS pipe and BIB tap for:				
<b>TOTAL CARRIED FORWARD</b>						

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**A15000 : PROCESS PIPEWORK**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A15031		.01 25 mm ND HDPE pipe	No	4		
		.08 90° Bends for HDPE PE80 PN16 SDR 9 Pipe:				
A15032		.01DN 25	No	5		
A15033		.02DN 50	No	5		
A15034		.03 DN 75	No	5		
		.09 45° Bends for HDPE PE80 PN16 SDR 9 Pipe:				
A15035		.01DN 25	No	5		
A15036		.02DN 50	No	5		
A15037		.03 DN 75	No	5		
		.10Reducing Tees for HDPE PE80 PN16 SDR 9 Pipe:				
A15038		.01 DN 50 X DN 25	No	5		
		.11Reducers for HDPE PE80 PN16 SDR 9				
A15039		.01DN 50 X DN 25	No	3		
A15040		.01 DN 75 x DN 50	No	3		
		.12 - 30° GRP PN6 SN5000 bends for:				
A15041		.07DN 1100	No	2		
A15042		.08 DN 450	No	2		
		.13 - 45° GRP PN6 SN5000 bends for:				
A15043		.07DN 1100	No	2		
A15044		.08 DN 450	No	2		
<b>TOTAL CARRIED FORWARD</b>						

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**A15000 : PROCESS PIPEWORK**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A15045		.1460 - 90° GRP PN6 SN5000 bends				
		.07DN 1100	No	2		
A15046		.08 DN 450	No	2		
		.15 Extra Over for short lengths GRP PN 6 including coupling (Flowtite or similar approved				
A15047		01. DN 1100	No	2		
A15048		02. DN 500	No	4		
A15049		03. DN 450	No	2		
A15050		04. DN 350	No	4		
		.15 Extra Over for short lengths GRP PN 6 including coupling (Flowtite or similar approve) Including puddle flange at connection to structures or manholes.				
A15051		01. DN 1100	No	2		
A15052		02. DN 500	No	4		
A15053		03. DN 450	No	2		
A15054		04. DN 350	No	24		
	402.03	Encasement of pipes with: (For All GRP)				
A15055		.02Soilcrete (5% OPC)	m³	500		
	402.05	Supplying and placing unscreened selected backfill material under, alongsideand up to 200 mm above pipe barrels using:				
<b>TOTAL CARRIED FORWARD</b>						

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**A15000 : PROCESS PIPEWORK**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
		.03 Imported material from sources provided by the Contractor	m³	1000		
		<b>All Pipework to be installed in accordance with SANS 1200 L and SANS 719 as the standard specification for the pressure pipes. The pressure class for the flanges and other fittings use PN16 to SABS 1123. Fabricated flanges must be to SANS 1476</b>				
		<b>All steel must be Schedule 80</b>				
		<b>Supply and install and build in where applicable Grade 316 Stainless Steel fittings and pipework including flanges</b>				
A15056		90 deg flanged bends - 1100mm dia	No	2		
A15057		90 deg flanged bends - 450mm dia	No	2		
A15058		45 deg flanged bends - 1100mm dia	No	2		
A15059		45 deg flanged bends - 450mm dia	No	2		
A15060		3m 1100mm dia. Stainless Steel pipe: one end flanged other with belmouth	No	1		
A15061		6m 1100mm dia. Stainless Steel pipe: both ends flanged	No	2		
A15062		6m 1100mm dia. Stainless Steel pipe: both ends flanged	No	2		
A15063		Flexible flange adaptors 1100mm dia	No	2		
A15064		Flexible flange adaptors 450mm dia	No	5		
		Sludge gate valves flanged SANS 664				
A15065		450mm dia	No	2		
		Sludge valves :				
A15066		450mm telescopic valve to suit 450mm steel pipe	No	2		
A15067		304 stainless steel 300 x 300mm sluice gate complete with gearbox, spindle, wheel, etc.	No	2		
<b>TOTAL CARRIED FORWARD</b>						

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**CONSTRUCTION OF PHASE 1,**  
**A15000 : PROCESS PIPEWORK**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A15068		Cut existing sludge lines (525mm dia) to east and west works - include all work required ie arrangements to stop flow, excavation , cutting making good-	No	2		
		TESTING				
	403.01	Hydraulic field-testing of pipelines:				
A15070		01. DN 1100	Sum	1		
A15071		02. DN 500	Sum	1		
A15072		03. DN 450	Sum	1		
A15073		04. DN 350	Sum	1		
		Sewers				
		Supply and install 2m diameter precast manholes ( refer to drawing LD5) complete including 1m x 1m heady duty cover and frame. For the following depths				
	8.2.3					
A15074		01. 1 to 2m deep	No	5		
A15075		02. 2 to 3m deep	No	10		
A15076		03. 3 to 4m deep	No	5		
<b>TOTAL CARRIED FORWARD</b>						



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 CONSTRUCTION OF PHASE 1,  
 A16000 : MINOR STRUCTURES, PLITTER BOX AND SLUDGE DISTRIBUTION TOWERS

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		<b>A16000 : MINOR STRUCTURES, SPLITTER BOX, AND SLUDGE DISTRIBUTION TOWERS</b>				
		<b>FOUNDATIONS FOR STRUCTURES</b>				
	<b>701.02</b>	Excavation for structures:				
		.01Excavation of soft material situat in the following depth				
A16001		.010 m up to 2 m	m <sup>3</sup>	250		
A16002		.02Exceeding 2 m up to 4 m	m <sup>3</sup>	80		
		<b>FALSEWORK, FORMWORK ANDCONCRETE FINISH</b>				
		Splitter box, sumps and sludge distribution tower:				
	<b>702.01</b>	Formwork, class F1 surface finish:				
		.01Single-surface formwork:				
A16003		0.010 Plane, horizontal	m <sup>2</sup>	30		
A16004		0.020 Plane, sloping for (base of box)	m <sup>2</sup>	40		
A16005		0.030 Curved cylindrical 5.7m radius (h =0.6m)	m <sup>2</sup>	30		
A16006		0.040 Plane, vertical (h =0.6m)	m <sup>2</sup>	150		
A16007		0.050 Curved vertical sludge distribution towers"	m <sup>2</sup>	10		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
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**CONSTRUCTION OF PHASE 1,**  
**A16000 : MINOR STRUCTURES, PLITTER BOX AND SLUDGE DISTRIBUTION TOWERS**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
	<b>702.02</b>	Formwork, class F2 surface finish:				
		.01Single-surface formwork:				
A16008		.01Plane, horizontal for pipe support beam	m²	5		
A16009		.02Plane, sloping	m²	10		
A16010		.03 Plane, vertical for pipe support beam (h=0.6m)	m²	40		
A16011		.04Plane, vertical for pipe boxes	m²	40		
A16012		.05Plane, vertical sludge distribution towers	m²	100		
A16013		.06Curved,vertical sludge distribution towers	m²	70		
A16014		.06Curved,vertical sludge distribution towers	m²	50		
		.02Double surface formwork (both sides measured):				
A16015		.01Curved cylindrical 5.35m outside radiu sand	m²	210		
A16016		.02Curved cylindrical 3.6m outside radiuand 3.3m inside radius	m²	150		
		Miscellaneous Boxes and sludge sump :				
<b>TOTAL CARRIED FORWARD</b>						

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CONSTRUCTION OF PHASE 1,  
A16000 : MINOR STRUCTURES, PLITTER BOX AND SLUDGE DISTRIBUTION TOWERS

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A16017	702.02	Formwork, class F2 surface finish:  .01Single-surface formwork: .01Plane, vertical for walls (overall depth = 3.3m)	m²	300		
A16018	702.06	Formwork to openings  (d)Box out/Form circular, square or rectangularvoids <=500mm thick for area:  .01 <= 0.25 m² for sludge	No	19		
A16019		.02 <= 2.0 m² for DN1100	No	6		
A16020		.03 <= 3.0 m² for DN1300	No	1		
A16021		.42 <= 4.0 m² for DN1800	No	2		
A16022		Narrow widths Sludge  .01Curved 300 mm narrow widths	m	100		
A16023	702.07	Chamfers larger than 25x25mm:  .01Launder weir-100mmx100mm chamfer	m	30		
		STEEL REINFORCEMENT FOR STRUCTURES				
A16024	703.04	Reinforcement for Splitter Box and Sludge Distribution Towers  .02High-yield-stress steel  .01Bars with a 12 mm dia	t	5		
A16025		.02Bars with a 16 mm dia	t	20		
<b>TOTAL CARRIED FORWARD</b>						

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 A16000 : MINOR STRUCTURES, PLITTER BOX AND SLUDGE DISTRIBUTION TOWERS

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
A16026	704.01	.01High-yield-stress steel: .01Bars with a 16 mm dia	t	10		
		<b><u>CONCRETE</u></b>				
		<b>Cast in situ concrete:</b>				
		.01Class 30 / 19 in:				
A16027		.01Splitter box	m³	110		
A16028	704.05	.02Sludge distribution	m³	30		
A16029		.03Miscellaneous Junction	m³	110		
A16030		.04Benching sludge	m³	10		
		<b>Cast in situ no-fines concrete:</b>				
		.01Class NF 19 in:				
A16031	903.03	.01100mm layer	m³	30		
		<b>Precast concrete manholes:</b>				
A16032		.01Dia. 1.25 m (internal), 0.5 m in height sludge distribution towers	No	2		
		<b><u>QUALITY CONTROL</u></b>				
		<b>TESTING</b>				
A16033		.03 Compressive-strength tests on concrete cubes	Prov Sum	1	100,000.00	R 100,000
TOTAL CARRIED FORWARD						R 100,000

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**CONSTRUCTION OF PHASE 1,**  
**A16000 : MINOR STRUCTURES, PLITTER BOX AND SLUDGE DISTRIBUTION TOWERS**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						R 100,000
		<b><u>PARTICULAR PROJECT</u></b>				
	<b>B 805.12</b>	Tie-ins and alterations to the existing				
A16034		.01The flow split to the 2 new PSTs within the North Works (refer to particular spec in the scope of work and the pipework layout drawing):  .01 Building DN1300 into operational channel	Sum	1		
A16035		.02 Building DN1100 x 2 into operational channel	Sum	1		
A16036		.03 Breaking out channel walls	Sum	1		
A16037		.04 Damming x 2 for installation of sluice gates	Sum	1		
A16038		.05 Laying DN1300 below channel (6m length)	Sum	1		
A16039		.06 Laying DN1100 below channel (2x 3m length)	Sum	1		
A16040	<b>B302.23</b>	Supply and install 1400 x 1500 high Bi-directional, 6m head, concrete wall mount frame, stainless steel (304L) frame/gate, AISI 303 stem, EPDM seal, gearbox, handwheel, yoke. Penstock to comply with DIM 19569-4	No	4		
		<b><u>MISCELLANEOUS</u></b>				
	<b>903.06</b>	Other special tests requested by the Engineer				
A16041	<b>B801.05</b>	.01Testing of structures in accordance with te Specification for watertightness (Ref. N B 801.05)	Sum	1		
TOTAL CARRIED FORWARD						R 100,000

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		A17000 : SLUDGE PIPEWORK PIPEWORK				
		TRENCHING				
	202.01	<b>Trench excavations: Up to 1,0 m wide:</b>				
A17001		.01 Over 1,0 m and up to 1,5 m wide	m³	898.9		
A17002		.02 Over 1,5 m and up to 2,0 m wide	m³	675.8		
A17003		.03 Over 2,0 m and up to 2,5 m	m³	626		
A17004		<b>Over 1m and up to 2m wide:</b>				
A17005		.01 Over 1,0 m and up to 1,5 m wide	m³	63		
A17006		.02 Over 1,5 m and up to 2,0 m wide	m³	154		
A17007		.03 Over 2,0 m and up to 2,5 m	m³	580.4		
	202.02	Extra over items 202.01 for excavating in:				
A17008		.01 Intermediate material	m³	375.2		
A17009		.02 Hard material	m³	162.6		
A17010	202.15	Reinstate road surface complete with all courses for Asphalt up to and including 50mm thick	m²	117		
A17011	202.03	Excavations outside the normal trench	m³	117		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A17012	202.04	Hand excavation (extra over item)	m³	115		
A17013	202.06	The backfilling of trenches (excluding backfill around the pipe barrel) with material obtained from excavations (Compaction of backfill to 90% of mod AASHTO)	m³	1987		
		Supplying, laying and jointing of water				
		.01GRP PN6 SN5000 waste water pipes manufactured to SANS 1748 Part 1 with Re kacouplings including sealing gaskets (Flowtite or similar approved):				
		HDPE Class 16 complete with fittings :				
A17014		.01 300mm pipe	m	1827		
		45° Bends for Class 16:				
A17015		.01 DN 300mm	No	13		
		Equal Tees for for Class 16:				
A17016		.01 DN300 x DN300	No	6		
	402.03	Encasement of pipes with:				
A17017		.02Soilcrete (5% OPC)	m³	667.6		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A17018	402.05	Supplying and placing unscreened selected backfill material under, alongside and up to 200 mm above pipe barrels using:				
A17019		.03 Imported material from sources provided by the Contractor	m³	970.4		
A17020	502.2	Cut existing sludge lines (300mm dia)	No	8		
A17021		<b>Manholes, catchpits, precast inlet and outlet structures and junction boxes complete:</b>				
A17022		.01 Manholes:				
A17023		.01 Manholes as shown on the details drawing with manhole cover option (standard depth = 2.0m)	no	35		
		.02 Manholes as shown on the details drawing with manhole cover option (standard depth = 1.5m)	no	10		
		Sundries				
		01. Contract to allow for pipe jacking under railway line for the installation of the 300mm HDPE pipe.	Sum	1		
		TESTING				
	403.01	Hydraulic field-testing of pipelines:				
		01. DN 300	Sum	1		
<b>TOTAL CARRIED FORWARD</b>						



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CONSTRUCTION OF PHASE 1,  
A16000 : MINOR STRUCTURES, PLITTER BOX AND SLUDGE DISTRIBUTION TOWERS

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		<b>A18000 :PUMP STATION</b>				
		<b>FOUNDATIONS FOR STRUCTURES</b>				
	<b>701.02</b>	Excavate and spoil of:				
		.01Excavation of soft material situat in the following depth				
A18001		.010 m up to 2 m	m <sup>3</sup>	45.5		
A18002		.02Exceeding 2 m up to 4 m	m <sup>3</sup>	410.26		
A18003		.03 Hard material	m3	41		
A18004		.04 Boulder material class A	m3	21		
A18005	<b>203. 08</b>	Preparation and compaction of construction-bed material to 90% of modified AASHTO density	m2	97.68		
		<b>Foundation fill consisting of</b>				
A18006		50mm thick blinding layer, class 15/19 concrete	m3	4.88		
A18007		Sand in false floor	m3	39.072		
		Foundation lining				
A18008		375mm micron DPM waterproofing	m <sup>2</sup>	19.6		
	<b>702.01</b>	<b>Formwork, class F1 surface finish:</b>				
		.01Single-surface formwork:				
A18009		0.010 Plane, horizontal	m <sup>2</sup>	195.36		
<b>TOTAL CARRIED FORWARD</b>						
<b>BROUGHT FORWARD</b>						
A18010		0.020 Plane, vertical	m <sup>2</sup>	635.4		
A18011		0.020 Plane, vertical in narrow widths	m <sup>2</sup>	557.84		
A18012		0.020 Plane, in slope at stairs	m <sup>2</sup>	27.15		
	<b>702.06</b>	Formwork to openings				
		(d)Box out/Form circular, square or rectangular voids <=500mm thick for area:				

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A16000 : MINOR STRUCTURES, PLITTER BOX AND SLUDGE DISTRIBUTION TOWERS

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
A18013		.01 <= 0.25 m²	No	30		
A18014		.02 <= 2.0 m²	No	24		
	<b>702.07</b>	Chamfers larger than 25x25mm:				
A18015		.01 45mmx 45mm chamfer	m	130		
	<b>702.07</b>	Benching				
A18016		.01 500 x 500mm benching	m	19.2		
		STEEL REINFORCEMENT FOR STRUCTURES				
	<b>703.04</b>	Reinforcement for Splitter Box and Sludge Distribution Towers				
		.02High-yield-stress steel				
A18017		.01Bars with a 12 mm dia	t	28.992		
A18018		.02Bars with a 16 mm dia	t	43.842		
		<b><u>CONCRETE</u></b>				
	<b>704.01</b>	Cast in situ concrete:				
		.01Class 30 / 19 in:				
A18019		.01 Retaining Wall	m³	19.5		
A18020		.02 Ground Beams	m³	31.3		
<b>TOTAL CARRIED FORWARD</b>						
<b>BROUGHT FORWARD</b>						
A18021		.03 Surface bed	m³	34.188		
A18022		.04 Walls	m³	89.46		
A18023		.05 Staircase	m³	6.7875		
A18024		.06 Slab	m³	19.47		
A18025		.07 Plinths	m³	57.462		
A18026		.08 Roof slab	m³	31.755		
		<b>Section 805 : Building Work</b>				
		<b>Joints in Structure</b>				
		<b>Waterstops in a straight joint</b>				
A18027		Isolation joints	m	50		

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 A16000 : MINOR STRUCTURES, PLITTER BOX AND SLUDGE DISTRIBUTION TOWERS

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
A18028		<b>Brickwork</b>  220mm thick brickwall (both sides face brick)	m2	171.36		
A18029		150mm Wide reinforcement built in horizontally	m	505.51		
A18030		Prestressed fabricated concrete lintels including necessary temporary supports  150 x 75mm Lintels in lengths not exceeding 3m	m	18		
TOTAL CARRIED FORWARD						

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A16000 : MINOR STRUCTURES, PLITTER BOX AND SLUDGE DISTRIBUTION TOWERS

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A18031		<b>Face brickwork</b>  Allow a Prime cost sum of R7500.00 (supply and delivery of a 1000 face bricks), face bricks to pointed with recessed horizontal and vertical joints  Extra over brickwork in super structure for facebrickwork	m2	171.36		
A18032		Brick-on-edge header course around the window, pointed on face and 220mm soffit	m	48		
A18033		<b>Steel door with frame</b>  Standard transformer door, size 1829 x 2428 high (D1) including necessary joinery	no	2		
A18034		Standard transformer door, size 915 x 2428 high (D2) including necessasry joinery	no	2		
A18035		<b>Steel window and frame</b>  Steel window and frame, including glazing and louvres (900mm x 1500mm)	no	24		
	<b>SANS 1200 H</b>					
		<b>STRUCTURAL STEELWORK</b>				
	8.3.1	SUPPLY AND FABRICATION				
A18036	8.3.1.1	Preparation of shop detail drawings	Sum	1		
	8.3.1.2	Supply delivery and install safe working load manual single beam crane in the pump station complete with all the necessary cleats, brackets, gussets, packs, nuts, bolts and painting etc.				
A18037		2T SWL Manual single beam crane	t	2.5		
	809.01	<b>Structural steel items</b>				
		Measured by linear metre				
A18038		Hot dip galvanised structural steel Staircase	t	0.3		
		<b>Waterproofing to roofs</b>				
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
A18039		Prime with one coat bitumen primer and 2 layers of 4mm and 3mm fully bonded waterproof membrane layers reinforced with woven spunbonded polyester fabric and coated with polyethelene film for heat bonding, laid with 100mm side and 150mm end laps including	m2	97.68		
A18040		255mm high upturn in flashing and counter flashing	m	168		
A18041		25mm washed concrete stone aggregate protective layer	m <sup>2</sup>	97.68		
		<b>Concrete floor finishes</b>				
A18042		50mm screeds to falls at roof	m <sup>2</sup>	97.68		
A18043		Granolithic screeds	m <sup>2</sup>	122.1		
		<b>Painting of metal surfaces</b>				
A18044		Red oxide undercoat and two approved enamel paint on doors	m <sup>2</sup>	16		
		<b>a) 75mm downpipe steel complete with bends, holder bats, etc.</b>				
A18045		a) Buildings	No	32		
		<b><u>QUALITY CONTROL</u></b>				
		<b>TESTING</b>				
	<b>903.03</b>	<b>Special tests on concrete</b>				
A18046		.01 Compressive-strength tests on concrete cubes	no	16		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
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**CONSTRUCTION OF PHASE 1**  
**F11000 : NORTH WORKS SCREENING AND GRIT HANDLING**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		<b>F1100: NORTH WORKS SCREENING AND GRIT HANDLING</b>				
	<b>SANS 1200 C</b>	<b>SITE CLEARANCE</b>				
F11001	8.2.1	Clear and grub	m <sup>2</sup>	1300		
F11002	8.2.2	Clear and grub existing trees a) over 1m and up to and including 2m	No	5		
F11003		b) over 2m and up to and including 5m	No	13		
	8.2.7	Dismantle, remove and dispose of existing pipelines				
F11004		a) 110mm	m	100		
F11005		b) 160mm	m	50		
		e) Break up existing concrete aprons along inlet works and dispose off site	Sum	1		
F11006	8.2.10	Remove topsoil to nominal depth of 150mm, stockpile and maintain	m 3	1300		
F11007	101.05.	Lift and remove existing precast kerbs, channels	m	355		
F11008	101.05. 03	Break up and strip existing bituminous surfaced areas to a depth of 50mm and dispose of off site.	m <sup>2</sup>	750		
<b>TOTAL CARRIED FORWARD</b>						

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**F11000 : NORTH WORKS SCREENING AND GRIT HANDLING**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
		<b>EARTHWORKS</b>				
		<b>EXCAVATION</b>				
	8.3.3(a)	Restricted excavation in all materials and use excavated material to backfill or dispose within freehaul distance anywhere on site:				
F11009		d) 750 x 250mm footings and pipelines	m <sup>3</sup>	500		
F11010		b) Screenings building and grit rail tracks	m <sup>3</sup>	111		
		To selected sandy material compacted to 100% MOD AASTHO for:				
F11011		a) Stockpile for pipe bedding, cover, etc. To selected embankment material compacted to 95% MOD AASHTO	m <sup>3</sup>	310		
		To general fill across site				
F11012		a) Form terraces to 95 % MOD AASHTO	m <sup>3</sup>	155		
F11013		b) Backfilling to structures to 98 % MOD AASHTO	m <sup>3</sup>	155		
	8.3.3 (b)	Extra-over for item 2.2.1 to 2.2.5 for excavation in:				
F11014		Intermediate material	m <sup>3</sup>	50		
F11015		hard rock material	m <sup>3</sup>	50		
	8.3.4	<b>IMPORT MATERIAL</b>				
F11016		From commercial sources or from borrow pits	m <sup>3</sup>	500		
F11017	8.3.6 (b)	Long overhaul (provisional)	m <sup>3</sup> .k m	90		
	8..3.8 (c)	Existing services				
<b>TOTAL CARRIED FORWARD</b>						

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**F11000 : NORTH WORKS SCREENING AND GRIT HANDLING**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
F11018		Excavate by hand the soft material to expose existing services	m <sup>3</sup>	20		
F11019	202.13	Soilcrete fill where ordered by the Engineer (5% OPC by weight)	m <sup>3</sup>	5		
	<b>SANS 1200 G</b>	<b>CONCRETE (STRUCTURAL)</b>				
	8.1.3	CONCRETE				
	8.4.2	Blinding layer in 15 MPa/19 mm concrete				
F11020		50 mm minimum thickness	m <sup>2</sup>	60		
	8.4.3	Strength concrete: 25 MPa/19mm				
F11021		a) Strip footings	m <sup>3</sup>	140		
F11022		b) Surface beds (screen building, MCC Rooms, Gen Building)	m <sup>3</sup>	2000		
F11023		c) Cavity infill to foundation brickwork	m <sup>3</sup>	20		
		Strength concrete: 35MPa/19mm				
F11024		a) Suspended slabs and beams over screening and grit classifier building	m <sup>3</sup>	180		
F11025		75 mm sand/cement (1:3 ratio)topping over sand filled future degritters and channels	m <sup>2</sup>	10		
	8.1.1	<b>FORMWORK</b>				
	8.2.2	Smooth vertical external and internal faces to:				
F11026		a) Walls	m <sup>2</sup>	310		
F11027		b) Suspended slabs	m <sup>2</sup>	540		
<b>TOTAL CARRIED FORWARD</b>						



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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
F11028	8.2.5	Narrow widths up to 300 mm wide for:  b) Straights	m	290		
F11029	8.2.4	Special smooth off-form Conical	m <sup>2</sup>	20		
F11030		Circular exterior and interior  Small, other shapes up to 0,1 m <sup>2</sup> in area depths	m <sup>2</sup>	20		
F11031		a) up to 0.5m deep  Large, other shapes, area 0,1 - 0,5 m <sup>2</sup> : depths over and up to	No	5		
F11032		a) over 1,0 m up to 2,0 m  <b>Reinforcement</b>	No	5		
F11033		a) High tensile steel bars not greater than 16 mm dia.	t	10		
F11034	8.3.2	High-tensile welded mesh reinforcement Type reference 395 in standard sheets	m <sup>2</sup>	800		
	8.4.4	UNFORMED SURFACE FINISHES  ii) Steel-floated finish				
F11035		a) Suspended slabs and beams	m <sup>2</sup>	850		
	8.5	<b>JOINTS</b>				
F11036		a) Floor joint (10 mm expansion joint between brickwork and surface beds with filler)	m	300		
F11037		b) Joints to insitu walkway at 1.5 m centres with 5 mm joint filler (including formwork)	m	22		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
F11038	8.7	Grout column bases and HD (Holding down) HDG bolts as specified in PSG	m <sup>3</sup>	1		
F11039	8.8	HD HDG BOLTS supply and install M20 chemical anchors for structural steel column base at 110mm minimum depth	No	80		
	<b>SANS 1200 H</b>	<b>STRUCTURAL STEELWORK</b>				
	8.3.1	SUPPLY AND FABRICATION				
F11040	8.3.1.1	Preparation of shop detail drawings	Sum	1		
		Supply and fabrication of steelwork (roof structure over existing incinerator building) complete with all the necessary cleats, brackets, gussets, packs, nuts, bolts, etc. as follows:				
	8.3.1.2	a) Using steel to EN10025 - 2 - S533JR				
F11041		Rafters 4 x 254 x 146 x 31kg/m	t	2.5		
F11042		Baseplates 8 x 0.3 x 0.3 x 0.01 thick	t	0.1		
F11043		Eve struts	t	1		
F11044		Crawl beam and crawl beam supports 1 x 203 x 133 x 25kg	t	0.5		
F11045		Purlins/Sheeting rails 125 x 50 x 20 x 2.5CFLC	t	0.7		
F11046		Cross bracing 70x70x6h	t	0.5		
	8.3.2	Delivery of steelwork included under items above				
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
F11047		a) Normal loads				
	8.3.3	ERECTION	t	8.3		
F11048		Offloading, stacking on Site, and erection of steelwork included under items above	t	8.3		
	8.3.7 (b)	Handrail assembly complete				
F11049		Horizontal	m	120		
F11050		Sloping	m	30		
F11051		Circular	m	40		
F11052	8.3.8	Mild Steel Hot Dip Galvanised access staircase, 800mm x 2.25mm high. Standard mentis stair treads, 200 x 100 mm thick stringers, complete with standard ball and tube handrails.	No	2		
F11053	8.3.2	Additional items i) Independent testing : load testing of gantry	Sum	1		
F11054		Two (2) tonne crawl complete with chain trolley hoist and hook	Sum	1		
	<b>SANS 1200 HB</b>	<b>ROOF SHEETING AND SUNDRY METAL WORK</b> Supply and install 0.6mm thick IBR troughed profile cromodek finish roof sheeting all in accordance with suppliers specifications.				
F11055		a) inlet works portal frame	m <sup>2</sup>	200		
F11056	8.2.3	Supply and install ancillaries: a) ridge capping (0.8mm)	m	13		
F11057		b) Serated closures to apex (0.6mm)	m	26		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
		<b>CORROSION PROTECTION OF STEELWORK</b>				
F11058	8.2.2	Inlet Works Transport	t	3		
F11059	8.2.3 (a)	Protective coatings: a) Sandblast all structural steelwork to SIS 055900 of 1967 to SA 2,5 to a blast profile of 40- 75 micron	t	3		
F11060		b) Apply one coat Plascon Zinc Phosphate Primer (Code UC 182) to a dft of 55 micron	t	3		
F11061		c) Apply one coat Plascon Alkyd Undercoat (Code UC 189) to a dft of 35 micron	t	3		
F11062		d) Apply one coat Plascon High Gloss Enamel (Code G Range) to a dft of 30 micron	t	3		
F11063		e) Hot dipped galvanising to SANS 763	t	3		
	<b>SANS 1200 L</b>	<b>MEDIUM PRESSURE PIPELINES</b>				
	8.2.1	a) Supply, lay and bed class 34 pipes complete with "lyng" rubbering joints and test				
F11064		i) 200mm dia	m	50		
F11065		ii) 160mm dia	m	100		
		b) Supply, lay and bed class 12 uPVC pipes complete with "lyng" rubbering joints and test				
F11066		i) 200mm dia	m	50		
F11067		ii) 160mm dia	m	60		
F11068		iii) 110mm dia	m	100		
F11069	8.2.11	Anchor/thrust blocks and pedestals (including formwork and reinforcement)	m <sup>3</sup>	15		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
F11070	8.2.12	Concrete casing (25 MPa)of internal pipework in the screening building	m <sup>3</sup>	5		
F11071	8.2.13	Valve and hydrant chambers (0.6m x 0.6m x 1m deep)	No	5		
F11072	8.2.14a)	Manholes (1m x 1m)	No	5		
F11073	8.2.14b)	Extra-over for manholes of depth exceeding 1.5m up to and including 2.5m	No	4		
<b>SANS 1200 STORMWATER DRAINAGE</b>						
<b>LE</b>						
8.2.8 MANHOLES Construct complete with covers and frames						
F11074		800 x 800 x 1000 mm deep stormwater collection manhole with concrete base slab from NFP brick walls and 100 mm cover slab complete with RS40 rectagrid cover and frame cast into floor slab	No	5		
<b>PA 15 BRICKWORK AND PLASTER</b>						
805.01 NFP (non facing to be plastered) type 10.5MPa foundation brickwork 280mm thick with concrete filled cavity						
F11075		a) Screenings building	m <sup>2</sup>	40		
F11076		b) Buildings	m <sup>2</sup>	110		
Superstructure brickwork NFP type 280mm thick cavity wall, one skin facebrick						
F11077		a) Screenings building	m <sup>2</sup>	130		
F11078		b) Buildings	m <sup>2</sup>	370		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
		Damproof course to joints between brickwork and between brickwork and concrete in approved bituminuous sheeting, cut to full width of the walls including for laps and sealing at joints and angles				
F11079		a) Screenings building	m <sup>2</sup>	20		
F11080		b) Buildings	m <sup>2</sup>	60		
		Supply and build in "Brickforce" brick reinforcing over openings:				
F11081		a) In 280mm thick walls	m	150		
		Building in-door and window frames etc.				
F11082		a) 813 x 2032	No	4		
F11083		b) 1219 x 2032	No	2		
F11084		c) 595 x 595	No	14		
F11085		d) 800 x 2400	No	4		
F11086		e) 1224 x 2000	No	4		
	805.02	Cement plaster				
		i) Supply and apply cement plaster in single coat minimum 10mm thick to internal faces of brickwork and finishing with steel trowel				
F11087		a) Screenings buildings	m <sup>2</sup>	130		
F11088		b) Buildings	m <sup>2</sup>	370		
		ii) Supply and apply cement plaster in single coat with waterproof additive				
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
		a) Internal and external faces of cable trenches	m <sup>2</sup>	100		
	805.03.01	Supply and form screed to floors and suspended roof slabs of buildings including power float finish				
F11090		a) Screenings building	m <sup>2</sup>	230		
F11091		b) Buildings	m <sup>2</sup>	110		
		Supply and install 250 micron polyethylene sheeting to form underlay and DPC under floors and through walls				
F11092		a) Screenings building	m <sup>2</sup>	640		
F11093		b) Buildings	m <sup>2</sup>	160		
F11094		Pre-stressed concrete lintels to span over superstructure cavity walls	m	50		
		Supply and install:				
		a) 75mm downpipe complete with bends, holder bats, etc.				
F11095		a) Screenings building	No	4		
F11096		b) Buildings	No	10		
<b>CARPENTRY, JOINERY AND IRONMONGERY</b>						
	805.07.01.01	Supply and install doors and window complete with fixing of glass panes				
F11097		a) 813 x 2032	No	4		
F11098		b) 1219 x 2032	No	2		
F11099		c) 595 x 595	No	14		
F11100		d) 800 x 2400	No	4		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
F11101		e) 1224 x 2000	No	4		
		Supply and install precoloured aluminium louvres built into walls				
F11102		a) 600 x 600	No	2		
F11103		b) 1400 x 1500	No	2		
		Supply and install hardwood covers				
F11104		a) 32 mm hardwood covers to cable trench including cutting for cables including 3 coats of varnish	m <sup>2</sup>	10		
F11105		Supply and install standard fibre cement facia and barge boards	m	200		
	805.06.02	<b>Ceiling</b> a)Supply and install fibre cement ceiling including 38 mm battens at 300 centers.				
F11106		i) Screenings building	m <sup>2</sup>	65		
F11107		ii) Buildings	m <sup>2</sup>	70		
F11108		b) 600 x 600 trap door in ceiling	No	3		
F11109		c) 75 mm cove cornices	m	290		
F11110		Supply and install 75 mm hardwood skirtings	m	290		
F11111		Hoop iron ties to trusses	No	20		
		<b>FIRE PROTECTION EQUIPMENT (SMALL BUILDINGS)</b> Fire protection equipment including signage				
F11112		a) Hose reels	No	3		
F11113		b) Fire extinguishers	No	6		
<b>TOTAL CARRIED FORWARD</b>						



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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
	805.12. 01	<b>PAINTING</b> All internal plastered on concrete wall surfaces to be coated 1 x Plascon Plastic Primer followed by 2 x Plascon Velvaglo polyurethane enamel (or similar approved) applied strictly in accordance with the manufacturer's instructions				
F11114		a) Screenings building	m <sup>2</sup>	130		
F11115		b) Buildings	m <sup>2</sup>	370		
F11116		4mm bitumen torch on waterproofing system and aluminium paint over	m <sup>2</sup>	540		
		Supply and apply (incl. all surface preparation) 2 coat epoxy floor coating system all in strict accordance with manufacturer's instructions (provisional)				
F11117		a) Screenings building	m <sup>2</sup>	640		
F11118		b) Buildings	m <sup>2</sup>	160		
		<b>DOMESTIC WATER SUPPLY</b>				
F11119		Supply and install saddle connector to 110mm diameter watermain supply line for 32mm dia. HDPE pipe	No	5		
F11120		32mm HPDE supply line complete with fittings to 19mm standpipe	m	100		
F11121		19mm diam to 12mm diam reducers for wash hand basin	No	4		
F11122		12mm dia. HDPE supply line complete with fittings to wash hand basin	m	20		
F11123		Supply and install wall mounted stainless steel industrial type hand wash basin	No	4		
TOTAL CARRIED FORWARD						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
F11124	8.5	Supply install and connect to 12mm (1/2 inch) C.P. Pillar tap with star handle to wash hand basin	No	8		
F11125		Supply, install and connect to supply 19mm (3/4 inch) brass hose bibtap complete with support plate to mount to wall	No	5		
		<b>JOINTS IN THE BALANCING TANKS</b>				
F11126		a) Removal and Installation of Hot poured rubber bitumen compound in 15mm joint forming a noising on each side in line wqith detail A2.	m	663		
F11127		b) Removal and Installation of 20 x 20mm section two component of a polyurethane base sealing compoundwith a corkfill resoin bonded with a 30mm diameter closed cell, self skinned bond breaker in accordance with detail C2	m	800		
F11128		b) Removal and Installation of 12mm thick soft board and pvc waterstop in accordance with detail D  <b>Exposed Aggregate Base Preparation</b>	m	800		
F11129		All weak and damaged concrete should be chipped away.  Application Remedy	m2	150		
F11130		Apply non-shrink grout similar to Sika Monotop by hand to fill the voids formed after the cleaning process.	m3	75		
F11131		Apply a mineral turpentine primer to the cleaned surface to ensure better bond with the finishing coat. This primer must be given 2-3 hours to set.	m2	25		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
F11132		Apply two neat coats of Acrylic, silicone enhanced, epoxy or polyurethane anti-carbonation coating without any dilution. It should be ensured that over coating is done when the first coat is dry for 5-6 hrs.	m2	68		
		STRUCTURAL AND SUNDRY STEELWORK Scheduled Items				
		Base Preparation				
F11133		a) Clean all structural steel frame members and brush off the old paint with mechanical wire-brushing or by sand blasting.	m2	150		
F11134		b) Apply corrosion inhibitor on the all steel members such as red oxide.	m2	165		
		PAINT TO STRUCTURAL STEELWORK				
		All structural steel work to be painted with 1 primer coat of "UC 53 Plascon Namelcote"				
F11135		All structural steel must be painted on site with a second layer (50 micron thick) with "UC 1 Plascon Merit Universal Undercoat"	m2	185		
F11136		A final coat (as per clients colour choice) 50 micron thick must be painted on site "NY 1 Plascon Super Universal" To structural steelwork	m2	225		
		Severely Affected Base of Structural Steel Columns				
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
F11137		<p>Cast a square “b x b” by “h” height concrete plinth with 4 Y10 bars in the corners and R8 links leaving a 50mm clear space between the column and link and providing a 50mm cover to the link. The dimension of “b” will depend on the size of the column and dimension, “h”, will depend on height of corrosion. This concrete casing will protect the against further corrosion.</p> <p>Concrete Spalling and Honeycombing</p> <p>Base Preparation</p>	m <sup>2</sup>	250		
F11138		<p>All weak and damaged concrete should be chipped away. Rebar must be exposed to at least 50mm beyond the visibly corroded area. If the re-bars are only partially exposed after all unsound concrete is removed, it may not be necessary to remove additional concrete to expose the full circumference of the reinforcement. When the exposed reinforcement steel has loose wrap, corrosion or is not well bonded to the surrounding concrete, the concrete removal should continue until a clear space of 15 to 25 mm is created behind the reinforcing steel and remove dust by air blowing and wash with clean water to achieve a clean dry surface.</p> <p>Clean exposed steel reinforcement with mechanical wire-brushing or by sand blasting and in case the reinforcing bars are corroded and have lost more than 25% of their diameter, they must be cut and removed.</p>	m <sup>2</sup>	185		
F11139		Clean areas with exposed rebar and repair with Epoxy cement based anti corrosion bonding agent similar to SikaTop Armatec 110 EpocCem	m <sup>2</sup>	352		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
F11140		Apply non-shrink grout similar to Sika Monotop by hand to fill the voids formed after the cleaning process.	m3	36		
		Application of Remedy				
F11141		Apply mineral turpentine primer to the cleaned surface to ensure better bond with the finishing coat. This primer must be given 2-3 hours to set.	m2	80		
F11142		Apply two neat coats of Acrylic, silicone enhanced, epoxy or polyurethane anti-carbonation coating should be applied without any dilution. It should be ensured that over coating is done when the first coat is dry for 5-6 hrs.	m2	50		
		<b>Sewer Pipe in the Reactor</b>				
	202.01	<b>Trench excavation</b>				
F11143		Over 1.0m and up to 1.5m deep	m3	40		
F11144		The backfilling of trenches (excluding backfill around the pipe barrel ) with material obtained from excavations	m3	20		
		Extra over items 202.06 for using backfill material obtained				
F11145		From borrow areas	m3	30		
	302.01	Supplying, laying and jointing of sewer pipes irrespective of depth or width of trench:				
F11146		900mm dia. Class 50D	m	20		
F11147		Concrete encasing of pipes	m3	10		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		B11000 : INCINERATOR				
		<b>STRUCTURAL STEELWORK</b>				
		SUPPLY AND FABRICATION				
B11001	809.04	Preparation of shop detail drawings	Sum	1		
	809.05	Supply and fabrication of steelwork (roof structure over existing incinerator building) complete with all the necessary cleats, brackets, gussets, packs, nuts, bolts, etc. as follows:				
		a) Using steel to EN10025 - 2 - S533JR				
B11002		Truss 1 of 60 x 60 x 5 Angle in top and bottom chord.	t	2.5		
B11003		Baseplates 8 x 0.3 x 0.3 x 0.01 thick	t	0.1		
B11004		Eve struts	t	1		
B11005		Crawl beam and crawl beam supports 1 x 203 x 133 x 25kg	t	0.5		
B11006		Purlins/Sheeting rails 100 x 50 x 20 x 2.5CFLC	t	0.7		
B11007		Cross bracing 70x70x6h	t	0.5		
		Delivery of steelwork included under items above				
B11008	809.06	ERECTION	t	8.3		
B11009		Offloading, stacking on Site, and erection of steelwork included under items above	t	8.3		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
B11010		Handrail assembly complete Horizontal	m	120		
B11011		Sloping	m	30		
B11012		Circular	m	40		
B11013		Mild Steel Hot Dip Galvanised access staircase, 800mm x 2.25mm high. Standard mentis stair treads, 200 x 100 mm thick stringers, complete with standard ball and tube handrails.	No	2		
B11014		Additional items i) Independent testing : load testing of gantry	Sum	1		
B11015		Two (2) tonne crawl complete with chain trolley hoist and hook	Sum	1		
<b>ROOF SHEETING AND SUNDRY METAL WORK</b>						
		Supply and install 0.6mm thick IBR troughed profile cromodek finish roof sheeting all in accordance with suppliers specifications.				
B11016		a) inlet works portal frame	m <sup>2</sup>	165		
	8.2.3	Supply and install ancillaries:				
B11017		a) ridge capping (0.8mm)	m	13		
B11018		b) Serated closures to apex (0.6mm)	m	26		
<b>TOTAL CARRIED FORWARD</b>						

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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
		<b>BRICKWORK AND PLASTER</b>				
	805.02	Cement plaster				
		i) Supply and apply cement plaster in single coat minimum 10mm thick to internal faces of brickwork and finishing with steel trowel				
B11024		a) Incinerator Building	m <sup>2</sup>	270		
		ii) Supply and apply cement plaster in single coat with waterproof additive				
		a) Internal and external faces of cable trenches	m <sup>2</sup>	270		
	805.03.01	Supply and form screed to floors and suspended roof slabs of buildings including power float finish				
B11025		a) Incinerator Building	m <sup>2</sup>	160		
		Supply and install 250 micron polyethylene sheeting to form underlay and DPC under floors and through walls				
B11026		a) Incinerator Building	m <sup>2</sup>	160		
F11094		Pre-stressed concrete lintels to span over superstructure cavity walls	m	50		
		<b>Miscellaneous</b>				
		Supply and install:				
		a) 75mm downpipe complete with bends, holder bats, etc.				
B11027		a) Incinerator Building	No	4		
<b>TOTAL CARRIED FORWARD</b>						



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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
		<b>CARPENTRY, JOINERY AND IRONMONGERY</b>				
	805.07.01.01	Supply and install doors and window complete with fixing of glass panes				
B11029		a) 813 x 2032	No	4		
B11030		b) 1219 x 2032	No	2		
B11033		e) 1224 x 2000	No	4		
		Supply and install precoloured aluminium louvres built into walls				
B11034		a) 600 x 600	No	2		
B11035		b) 1400 x 1500	No	2		
		Supply and install hardwood covers				
B11036		a) 32 mm hardwood covers to cable trench including cutting for cables including 3 coats of varnish	m <sup>2</sup>	10		
B11037		Supply and install standard fibre cement facia and barge boards	m	200		
		<b>FIRE PROTECTION EQUIPMENT (SMALL BUILDINGS)</b>				
		Fire protection equipment including signage				
B11038		a) Hose reels	No	3		
B11039		b) Fire extinguishers	No	6		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**B11000 : INCINERATOR**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
	<b>805.12. 01</b>	<b>PAINTING</b>				
		All internal plastered on concrete wall surfaces to be coated 1 x Plascon Plastic Primer followed by 2 x Plascon Velvagro polyurethane enamel (or similar approved) applied strictly in accordance with the manufacturer's instructions				
B11040		a) Incinerator Building	m <sup>2</sup>	130		
B11042		4mm bitumen torch on waterproofing system and aluminium paint over	m <sup>2</sup>	540		
		Supply and apply (incl. all surface preparation) 2 coat epoxy floor coating system all in strict accordance with manufacturer's instructions (provisional)				
B11043		a) Incinerator Building	m <sup>2</sup>	640		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**B12000 : SUPPORT BUILDINGS**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		<b>B12000 : ADMINISTRATION, WORKSHOP, CARPORT, KITCHEN</b>				
		<b>BRICKWORK AND PLASTER</b>				
B12000	805.01	NFP (non facing to be plastered) type 10.5MPa foundation brickwork 280mm thick with concrete filled cavity				
		a) Buildings	m <sup>2</sup>	80		
		Superstructure brickwork NFP type 280mm thick cavity wall, one skin facebrick				
B12001		a) Buildings	m <sup>2</sup>	260		
	805.02	Cement plaster				
		i) Supply and apply cement plaster in single coat minimum 10mm thick to internal faces of brickwork and finishing with steel trowel				
B12002		a) Buildings	m <sup>2</sup>	1100		
		ii) Supply and apply cement plaster in single coat with waterproof additive				
B12003		a) Internal and external faces	m <sup>2</sup>	1100		
	805.03. 01	Supply and form screed to floors and suspended roof slabs of buildings including power float finish				
B12004		a) Buildings	m <sup>2</sup>	1273		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**B12000 : SUPPORT BUILDINGS**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
		<b>CARPENTRY, JOINERY AND IRONMONGERY</b>				
	805.05	Supply and install doors and window complete with fixing of glass panes				
B12005		a) 813 x 2032	No	18		
B12006		b) 1219 x 2032	No	11		
B12007		e) 1224 x 2000	No	8		
		Supply and install precoloured aluminium louvres built into walls				
B12008		a) 600 x 600	No	8		
B12009		b) 1400 x 1500	No	8		
		Supply and install hardwood covers				
B12010		Supply and install standard fibre cement facia and barge boards	m	402		
	805.05	<b>Ceiling</b>				
B12011		Plaster-board ceiling woth a 50mm thick fibreglass wool insulation	m <sup>2</sup>	1273		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**B12000 : SUPPORT BUILDINGS**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
		<b>ROOF SHEETING AND SUNDRY METAL WORK</b>				
		Removal, Supply and install 0.6mm thick IBR troughed profile cromodek finish roof sheeting all in accordance with suppliers specifications.				
B12012	8.2.3	a) Buildings	m <sup>2</sup>	763.8		
		Supply and install ancillaries:				
B12013		a) ridge capping (0.8mm)	m	1100		
B11018		b) Serated closures to apex (0.6mm)	m	880		
		<b>Miscellaneous</b>				
		Supply and install:				
		a) 75mm steel gutters complete with ends etc.				
B12014		a) Buildings	m	402		
		a) 75mm downpipe steel complete with bends, holder bats, etc.				
B12015		a) Buildings	No	16		
		Handrail assembly complete				
B12016		Horizontal	m	120		
B12017		Sloping	m	30		
B12018		Circular	m	40		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**B12000 : SUPPORT BUILDINGS**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
B12019	805.07	Plumbing in building				
B12019		Water closet Suite	No	8		-
B12020		Urinal	No	4		-
B12021		Wash hand basins	No	12		-
B12022		Sinks	No	4		-
		Plumbing pipework	Prov Sum	1	58,800.00	58,800.00
		Fire protection equipment including signage				
B12023		a) Hose reels	No	6		
B12024		b) Fire extinguishers	No	12		
		805.12.01	PAINTING			
	All internal plastered on concrete wall surfaces to be coated 1 x Plascon Plastic Primer followed by 2 x Plascon Velvaglo polyurethane enamel (or similar approved) applied strictly in accordance with the manufacturer's instructions					
B12025	a) Buildings		m <sup>2</sup>	130		
B12025	4mm bitumen torch on waterproofing system and aluminium paint over		m <sup>2</sup>	540		
	Supply and apply (incl. all surface preparation) 2 coat epoxy floor coating system all in strict accordance with manufacturer's instructions (provisional)					
B12026	a) Buildings	m <sup>2</sup>	640			
TOTAL CARRIED FORWARD						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		<b>DIGESTER 1</b>				
		REPAIR TO DIGESTER				
		<b>Note: All sludge material to be disposed within 12.5km from site, sludge to be mixed soil. (Free haul is 2.5km)</b>				
C11001		Digester Emptying and Cleaning to safe working condition and install support formwork measured .	Sum	1		
C11002		Record all digester cracks position, lengths and thicknesses before and after removal of screed and submit to Engineer / Specialist	Sum	1		
		<b>Clean the cracks and remove all debris. Ream out the crack down to firm material. Remove dust and loose material by vacuuming or flushing with water or other effective cleaning methods and apply corrosion inhibitor on the exposed reinforcement to prevent further corrosion.</b>				
C11003		Base Preparation	m²	250		
C11004		To internal digester Walls	m²	350		
		a) Minor and Moderate Cracks				
C11005		Apply crack filling compound similar to penecrete mortar to all cracks on non water retaining walls and floors on site not exceeding 5mm wide	m²	250		
C11006		Repair cracks on water retaining walls with a polyurethane injection foam resin similar to Sika injection 101.	m²	250		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
C11007		<b>a) Major Cracks</b>  Major cracks or structural cracks on the walls must be stitched with U-shaped metal with short legs and the procedure will be to drill holes on both sides of the crack, cleaning holes and anchoring the legs of the stitching metal in the holes with non-shrink grout or an epoxy resin-based bonding system and there after inject epoxy or crack filler along the crack.	m²	350		
C11008		<b>Concrete Spalling and Honeycombing</b>  <b>Base Preparation</b>  All weak and damaged concrete should be chipped away. Rebar must be exposed to at least 50mm beyond the visibly corroded area. If the re-bars are only partially exposed after all unsound concrete is removed, it may not be necessary to remove additional concrete to expose the full circumference of the reinforcement. When the exposed reinforcement steel has loose wrap, corrosion or is not well bonded to the surrounding concrete, the concrete removal should continue until a clear space of 15 to 25 mm is created behind the reinforcing steel and remove dust by air blowing and wash with clean water to achieve a clean dry surface.	m²	150		
C11009		Clean exposed steel reinforcement with mechanical wire-brushing or by sand blasting and in case the reinforcing bars are corroded and have lost more than 25% of their diameter, they must be cut and removed.	m²	173.25		
C11010		Replace steel reinforcing with new steel bars of the same diameter welded with a lap length of 150 mm on either side of the existing steel. Rate to include necessary exposing to achieve lap lengths	kg	50		
<b>TOTAL CARRIED FORWARD</b>						



**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
C11011	704.08	Clean areas with exposed rebar and repair with Epoxy cement based anti corrosion bonding agent similar to SikaTop Armatec 110 EpocCem	m <sup>2</sup>	34.6		
C11012		Apply non-shrink grout similar to Sika Monotop by hand to fill the voids formed after the cleaning process.	m <sup>3</sup>	17.325		
		<b>Application of Remedy</b>				
C11013		Apply mineral turpentine primer to the cleaned surface to ensure better bond with the finishing coat. This primer must be given 2-3 hours to set.	m <sup>2</sup>	115.5		
C11014		Apply two neat coats of Acrylic, silicone enhanced, epoxy or polyurethane anti-carbonation coating should be applied without any dilution. It should be ensured that over coating is done when the first coat is dry for 5-6 hrs.	m <sup>2</sup>	115.5		
		<b>Exposed Aggregate Base Preparation</b>				
C11015		All weak and damaged concrete should be chipped away.	m <sup>2</sup>	231		
		<b>Application Remedy</b>				
C11016		Apply non-shrink grout similar to Sika Monotop by hand to fill the voids formed after the cleaning process.	m <sup>3</sup>	23.1		
C11017		Apply a mineral turpentine primer to the cleaned surface to ensure better bond with the finishing coat. This primer must be given 2-3 hours to set.	m <sup>2</sup>	231		
C11018		Apply two neat coats of Acrylic, silicone enhanced, epoxy or polyurethane anti-carbonation coating without any dilution. It should be ensured that over coating is done when the first coat is dry for 5-6 hrs.	m <sup>2</sup>	231		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
C11019		Apply a cementitious waterproofing slurry similar to SikaTop® Seal-107 ZA to all concrete surfaces as directed by the engineer. Application should be to manufacturers specifications.	m <sup>2</sup>	2310		
		<b>TESTING</b>				
C11020		.01Cost of testing	PS Sum	1	25,000.00	R 25,000
C11021		.02Percentage on provisionial sum for charges and profit	%		25,000.00	
		<b>NEW STAIRCASES AND GUARD RAILS</b>				
C11022		Manufacture, supply and install hot dip galvanised staircases and guard rails as per the existing refurbished digesters ,i.e Digesters 4,5 & 6	PS Sum	1	100,000.00	R 100,000
C11023		.02Percentage on provisionial sum for charges and profit	%			
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>						R 125,000

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		<b>DIGESTER 1</b>				
		REPAIR TO DIGESTER				
		<b>Note: All sludge material to be disposed within 12.5km from site, sludge to be mixed soil. (Free haul is 2.5km)</b>				
C11001		Digester Emptying and Cleaning to safe working condition and install support formwork measured .	Sum	1		
C11002		Record all digester cracks position, lengths and thicknesses before and after removal of screed and submit to Engineer / Specialist	Sum	1		
		<b>Clean the cracks and remove all debris. Ream out the crack down to firm material. Remove dust and loose material by vacuuming or flushing with water or other effective cleaning methods and apply corrosion inhibitor on the exposed reinforcement to prevent further corrosion.</b>				
C11003		Base Preparation	m²	250		
C11004		To internal digester Walls	m²	350		
		a) Minor and Moderate Cracks				
C11005		Apply crack filling compound similar to penecrete mortar to all cracks on non water retaining walls and floors on site not exceeding 5mm wide	m²	250		
C11006		Repair cracks on water retaining walls with a polyurethane injection foam resin similar to Sika injection 101.	m²	250		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
C11007		<b>a) Major Cracks</b>  Major cracks or structural cracks on the walls must be stitched with U-shaped metal with short legs and the procedure will be to drill holes on both sides of the crack, cleaning holes and anchoring the legs of the stitching metal in the holes with non-shrink grout or an epoxy resin-based bonding system and there after inject epoxy or crack filler along the crack.	m²	350		
C11008		<b>Concrete Spalling and Honeycombing</b>  <b>Base Preparation</b>  All weak and damaged concrete should be chipped away. Rebar must be exposed to at least 50mm beyond the visibly corroded area. If the re-bars are only partially exposed after all unsound concrete is removed, it may not be necessary to remove additional concrete to expose the full circumference of the reinforcement. When the exposed reinforcement steel has loose wrap, corrosion or is not well bonded to the surrounding concrete, the concrete removal should continue until a clear space of 15 to 25 mm is created behind the reinforcing steel and remove dust by air blowing and wash with clean water to achieve a clean dry surface.	m²	150		
C11009		Clean exposed steel reinforcement with mechanical wire-brushing or by sand blasting and in case the reinforcing bars are corroded and have lost more than 25% of their diameter, they must be cut and removed.	m²	173.25		
C11010		Replace steel reinforcing with new steel bars of the same diameter welded with a lap length of 150 mm on either side of the existing steel. Rate to include necessary exposing to achieve lap lengths	kg	50		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
C11011		Clean areas with exposed rebar and repair with Epoxy cement based anti corrosion bonding agent similar to SikaTop Armatec 110 EpocCem	m <sup>2</sup>	34.6		
C11012		Apply non-shrink grout similar to Sika Monotop by hand to fill the voids formed after the cleaning process.	m <sup>3</sup>	17.325		
		<b>Application of Remedy</b>				
C11013		Apply mineral turpentine primer to the cleaned surface to ensure better bond with the finishing coat. This primer must be given 2-3 hours to set.	m <sup>2</sup>	115.5		
C11014		Apply two neat coats of Acrylic, silicone enhanced, epoxy or polyurethane anti-carbonation coating should be applied without any dilution. It should be ensured that over coating is done when the first coat is dry for 5-6 hrs.	m <sup>2</sup>	115.5		
		<b>Exposed Aggregate Base Preparation</b>				
C11015		All weak and damaged concrete should be chipped away.	m <sup>2</sup>	231		
		<b>Application Remedy</b>				
C11016		Apply non-shrink grout similar to Sika Monotop by hand to fill the voids formed after the cleaning process.	m <sup>3</sup>	23.1		
C11017		Apply a mineral turpentine primer to the cleaned surface to ensure better bond with the finishing coat. This primer must be given 2-3 hours to set.	m <sup>2</sup>	231		
C11018		Apply two neat coats of Acrylic, silicone enhanced, epoxy or polyurethane anti-carbonation coating without any dilution. It should be ensured that over coating is done when the first coat is dry for 5-6 hrs.	m <sup>2</sup>	231		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
C11019		Apply a cementitious waterproofing slurry similar to SikaTop® Seal-107 ZA to all concrete surfaces as directed by the engineer. Application should be to manufacturers specifications.	m <sup>2</sup>	2310		
		<b>TESTING</b>				
C11020		.01Cost of testing	PS Sum	1	25,000.00	R 25,000
C11021		.02Percentage on provisionial sum for charges and profit	%		25,000.00	
		<b>NEW STAIRCASES AND GUARD RAILS</b>				
C11022		Manufacture, supply and install hot dip galvanised staircases and guard rails as per the existing refurbished digesters ,i.e Digesters 4,5 & 6	PS Sum	1	100,000.00	R 100,000
C11023		.02Percentage on provisionial sum for charges and profit	%			
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>						R 125,000

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		<b>DIGESTER 1</b>				
		REPAIR TO DIGESTER				
		<b>Note: All sludge material to be disposed within 12.5km from site, sludge to be mixed soil. (Free haul is 2.5km)</b>				
C11001		Digester Emptying and Cleaning to safe working condition and install support formwork measured .	Sum	1		
C11002		Record all digester cracks position, lengths and thicknesses before and after removal of screed and submit to Engineer / Specialist	Sum	1		
		<b>Clean the cracks and remove all debris. Ream out the crack down to firm material. Remove dust and loose material by vacuuming or flushing with water or other effective cleaning methods and apply corrosion inhibitor on the exposed reinforcement to prevent further corrosion.</b>				
C11003		Base Preparation	m²	250		
C11004		To internal digester Walls	m²	350		
		a) Minor and Moderate Cracks				
C11005		Apply crack filling compound similar to penecrete mortar to all cracks on non water retaining walls and floors on site not exceeding 5mm wide	m²	250		
C11006		Repair cracks on water retaining walls with a polyurethane injection foam resin similar to Sika injection 101.	m²	250		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
C11007		<p><b>a) Major Cracks</b></p> <p>Major cracks or structural cracks on the walls must be stitched with U-shaped metal with short legs and the procedure will be to drill holes on both sides of the crack, cleaning holes and anchoring the legs of the stitching metal in the holes with non-shrink grout or an epoxy resin-based bonding system and there after inject epoxy or crack filler along the crack.</p>	m²	350		
C11008		<p><b>Concrete Spalling and Honeycombing</b></p> <p><b>Base Preparation</b></p> <p>All weak and damaged concrete should be chipped away. Rebar must be exposed to at least 50mm beyond the visibly corroded area. If the re-bars are only partially exposed after all unsound concrete is removed, it may not be necessary to remove additional concrete to expose the full circumference of the reinforcement. When the exposed reinforcement steel has loose wrap, corrosion or is not well bonded to the surrounding concrete, the concrete removal should continue until a clear space of 15 to 25 mm is created behind the reinforcing steel and remove dust by air blowing and wash with clean water to achieve a clean dry surface.</p>	m²	150		
C11009		<p>Clean exposed steel reinforcement with mechanical wire-brushing or by sand blasting and in case the reinforcing bars are corroded and have lost more than 25% of their diameter, they must be cut and removed.</p>	m²	173.25		
C11010		<p>Replace steel reinforcing with new steel bars of the same diameter welded with a lap length of 150 mm on either side of the existing steel. Rate to include necessary exposing to achieve lap lengths</p>	kg	50		
<b>TOTAL CARRIED FORWARD</b>						



**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
C11011		Clean areas with exposed rebar and repair with Epoxy cement based anti corrosion bonding agent similar to SikaTop Armatec 110 EpocCem	m <sup>2</sup>	34.6		
C11012		Apply non-shrink grout similar to Sika Monotop by hand to fill the voids formed after the cleaning process.	m <sup>3</sup>	17.325		
		<b>Application of Remedy</b>				
C11013		Apply mineral turpentine primer to the cleaned surface to ensure better bond with the finishing coat. This primer must be given 2-3 hours to set.	m <sup>2</sup>	115.5		
C11014		Apply two neat coats of Acrylic, silicone enhanced, epoxy or polyurethane anti-carbonation coating should be applied without any dilution. It should be ensured that over coating is done when the first coat is dry for 5-6 hrs.	m <sup>2</sup>	115.5		
		<b>Exposed Aggregate Base Preparation</b>				
C11015		All weak and damaged concrete should be chipped away.	m <sup>2</sup>	231		
		<b>Application Remedy</b>				
C11016		Apply non-shrink grout similar to Sika Monotop by hand to fill the voids formed after the cleaning process.	m <sup>3</sup>	23.1		
C11017		Apply a mineral turpentine primer to the cleaned surface to ensure better bond with the finishing coat. This primer must be given 2-3 hours to set.	m <sup>2</sup>	231		
C11018		Apply two neat coats of Acrylic, silicone enhanced, epoxy or polyurethane anti-carbonation coating without any dilution. It should be ensured that over coating is done when the first coat is dry for 5-6 hrs.	m <sup>2</sup>	231		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
C11019		Apply a cementitious waterproofing slurry similar to SikaTop® Seal-107 ZA to all concrete surfaces as directed by the engineer. Application should be to manufacturers specifications.	m <sup>2</sup>	2310		
		<b>TESTING</b>				
C11020		.01Cost of testing	PS Sum	1	25,000.00	R 25,000
C11021		.02Percentage on provisionial sum for charges and profit	%		25,000.00	
		<b>NEW STAIRCASES AND GUARD RAILS</b>				
C11022		Manufacture, supply and install hot dip galvanised staircases and guard rails as per the existing refurbished digesters ,i.e Digesters 4,5 & 6	PS Sum	1	100,000.00	R 100,000
C11023		.02Percentage on provisionial sum for charges and profit	%			
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>						R 125,000

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		<b>DIGESTER 1</b>				
		REPAIR TO DIGESTER				
		<b>Note: All sludge material to be disposed within 12.5km from site, sludge to be mixed soil. (Free haul is 2.5km)</b>				
C11001		Digester Emptying and Cleaning to safe working condition and install support formwork measured .	Sum	1		
C11002		Record all digester cracks position, lengths and thicknesses before and after removal of screed and submit to Engineer / Specialist	Sum	1		
		<b>Clean the cracks and remove all debris. Ream out the crack down to firm material. Remove dust and loose material by vacuuming or flushing with water or other effective cleaning methods and apply corrosion inhibitor on the exposed reinforcement to prevent further corrosion.</b>				
C11003		Base Preparation	m²	250		
C11004		To internal digester Walls	m²	350		
		a) Minor and Moderate Cracks				
C11005		Apply crack filling compound similar to penecrete mortar to all cracks on non water retaining walls and floors on site not exceeding 5mm wide	m²	250		
C11006		Repair cracks on water retaining walls with a polyurethane injection foam resin similar to Sika injection 101.	m²	250		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
C11007		<b>a) Major Cracks</b>  Major cracks or structural cracks on the walls must be stitched with U-shaped metal with short legs and the procedure will be to drill holes on both sides of the crack, cleaning holes and anchoring the legs of the stitching metal in the holes with non-shrink grout or an epoxy resin-based bonding system and there after inject epoxy or crack filler along the crack.	m²	350		
C11008		<b>Concrete Spalling and Honeycombing</b>  <b>Base Preparation</b>  All weak and damaged concrete should be chipped away. Rebar must be exposed to at least 50mm beyond the visibly corroded area. If the re-bars are only partially exposed after all unsound concrete is removed, it may not be necessary to remove additional concrete to expose the full circumference of the reinforcement. When the exposed reinforcement steel has loose wrap, corrosion or is not well bonded to the surrounding concrete, the concrete removal should continue until a clear space of 15 to 25 mm is created behind the reinforcing steel and remove dust by air blowing and wash with clean water to achieve a clean dry surface.	m²	150		
C11009		Clean exposed steel reinforcement with mechanical wire-brushing or by sand blasting and in case the reinforcing bars are corroded and have lost more than 25% of their diameter, they must be cut and removed.	m²	173.25		
C11010		Replace steel reinforcing with new steel bars of the same diameter welded with a lap length of 150 mm on either side of the existing steel. Rate to include necessary exposing to achieve lap lengths	kg	50		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
C11011		Clean areas with exposed rebar and repair with Epoxy cement based anti corrosion bonding agent similar to SikaTop Armatec 110 EpocCem	m <sup>2</sup>	34.6		
C11012		Apply non-shrink grout similar to Sika Monotop by hand to fill the voids formed after the cleaning process.	m <sup>3</sup>	17.325		
		<b>Application of Remedy</b>				
C11013		Apply mineral turpentine primer to the cleaned surface to ensure better bond with the finishing coat. This primer must be given 2-3 hours to set.	m <sup>2</sup>	115.5		
C11014		Apply two neat coats of Acrylic, silicone enhanced, epoxy or polyurethane anti-carbonation coating should be applied without any dilution. It should be ensured that over coating is done when the first coat is dry for 5-6 hrs.	m <sup>2</sup>	115.5		
		<b>Exposed Aggregate Base Preparation</b>				
C11015		All weak and damaged concrete should be chipped away.	m <sup>2</sup>	231		
		<b>Application Remedy</b>				
C11016		Apply non-shrink grout similar to Sika Monotop by hand to fill the voids formed after the cleaning process.	m <sup>3</sup>	23.1		
C11017		Apply a mineral turpentine primer to the cleaned surface to ensure better bond with the finishing coat. This primer must be given 2-3 hours to set.	m <sup>2</sup>	231		
C11018		Apply two neat coats of Acrylic, silicone enhanced, epoxy or polyurethane anti-carbonation coating without any dilution. It should be ensured that over coating is done when the first coat is dry for 5-6 hrs.	m <sup>2</sup>	231		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
C11019		Apply a cementitious waterproofing slurry similar to SikaTop® Seal-107 ZA to all concrete surfaces as directed by the engineer. Application should be to manufacturers specifications.	m <sup>2</sup>	2310		
		<b>TESTING</b>				
C11020		.01Cost of testing	PS Sum	1	25,000.00	R 25,000
C11021		.02Percentage on provisionial sum for charges and profit	%		25,000.00	
		<b>NEW STAIRCASES AND GUARD RAILS</b>				
C11022		Manufacture, supply and install hot dip galvanised staircases and guard rails as per the existing refurbished digesters ,i.e Digesters 4,5 & 6	PS Sum	1	100,000.00	R 100,000
C11023		.02Percentage on provisionial sum for charges and profit	%			
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>						R 125,000

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**  
**C11000 : DIGESTER**

ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		<b>DIGESTER 1</b>				
		REPAIR TO DIGESTER				
		<b>Note: All sludge material to be disposed within 12.5km from site, sludge to be mixed soil. (Free haul is 2.5km)</b>				
C11001		Digester Emptying and Cleaning to safe working condition and install support formwork measured .	Sum	1		
C11002		Record all digester cracks position, lengths and thicknesses before and after removal of screed and submit to Engineer / Specialist	Sum	1		
		<b>Clean the cracks and remove all debris. Ream out the crack down to firm material. Remove dust and loose material by vacuuming or flushing with water or other effective cleaning methods and apply corrosion inhibitor on the exposed reinforcement to prevent further corrosion.</b>				
C11003		Base Preparation	m²	250		
C11004		To internal digester Walls	m²	350		
		a) Minor and Moderate Cracks				
C11005		Apply crack filling compound similar to penecrete mortar to all cracks on non water retaining walls and floors on site not exceeding 5mm wide	m²	250		
C11006		Repair cracks on water retaining walls with a polyurethane injection foam resin similar to Sika injection 101.	m²	250		
<b>TOTAL CARRIED FORWARD</b>						

**CITY OF TSHWANE**  
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**CONSTRUCTION OF PHASE 1,**  
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ITEM	PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
C11007		<b>a) Major Cracks</b>  Major cracks or structural cracks on the walls must be stitched with U-shaped metal with short legs and the procedure will be to drill holes on both sides of the crack, cleaning holes and anchoring the legs of the stitching metal in the holes with non-shrink grout or an epoxy resin-based bonding system and there after inject epoxy or crack filler along the crack.	m²	350		
C11008		<b>Concrete Spalling and Honeycombing</b>  <b>Base Preparation</b>  All weak and damaged concrete should be chipped away. Rebar must be exposed to at least 50mm beyond the visibly corroded area. If the re-bars are only partially exposed after all unsound concrete is removed, it may not be necessary to remove additional concrete to expose the full circumference of the reinforcement. When the exposed reinforcement steel has loose wrap, corrosion or is not well bonded to the surrounding concrete, the concrete removal should continue until a clear space of 15 to 25 mm is created behind the reinforcing steel and remove dust by air blowing and wash with clean water to achieve a clean dry surface.	m²	150		
C11009		Clean exposed steel reinforcement with mechanical wire-brushing or by sand blasting and in case the reinforcing bars are corroded and have lost more than 25% of their diameter, they must be cut and removed.	m²	173.25		
C11010		Replace steel reinforcing with new steel bars of the same diameter welded with a lap length of 150 mm on either side of the existing steel. Rate to include necessary exposing to achieve lap lengths	kg	50		
<b>TOTAL CARRIED FORWARD</b>						



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C11014		Apply two neat coats of Acrylic, silicone enhanced, epoxy or polyurethane anti-carbonation coating should be applied without any dilution. It should be ensured that over coating is done when the first coat is dry for 5-6 hrs.	m <sup>2</sup>	115.5		
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C11015		All weak and damaged concrete should be chipped away.	m <sup>2</sup>	231		
		<b>Application Remedy</b>				
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<b>TOTAL CARRIED FORWARD</b>						

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<b>BROUGHT FORWARD</b>						
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C11022		Manufacture, supply and install hot dip galvanised staircases and guard rails as per the existing refurbished digesters ,i.e Digesters 4,5 & 6	PS Sum	1	100,000.00	R 100,000
C11023		.02Percentage on provisionial sum for charges and profit	%			
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>						R 125,000

**CITY OF TSHWANE**  
**CONTRACT NO: RFP168/2024**  
**CONSTRUCTION OF PHASE 1,**

PAY REF	DESCRIPTION	AMOUNT
P0 1000	PRELIMINARY AND GENERAL	R7,200,000.00
A1 1000	BULK EARTHWORKS	
A1 2000	ROADS, STORMWATER & DRAINAGE	
A1 3000	PAVING AND ANCILLARY WORKS	
A1 4000	PRIMARY SETTLING TANKS	
A1 5000	PROCESS PIPEWORK	
A1 6000	MINOR STRUCTURES AND SPLITTER BOX	R100,000.00
A1 6000	PUMP STATION	
B1 1000	INCINERATOR BUILDING	
B1 2000	SUPPORT BUILDINGS	
C1 1000	DIGESTERS 1	R125,000.00
C1 2000	DIGESTERS 2	R125,000.00
C1 3000	DIGESTERS 3	R125,000.00
C1 4000	DIGESTERS 4	R125,000.00
C1 4000	DIGESTERS 5	R125,000.00
F1 1000	NORTH WORKS SCREENING AND GRIT HANDLING	
	SUBTOTAL	R7,925,000.00
	ADD CONTINGENCY 10% This sum will be under the sole control of the Engineer and may be deducted in part or full.	R792,500.00
	EPWP TRAINING Contractor to allow for EPWP training	R2,000,000.00
	SUBTOTAL Excl VAT	R8,717,500.00
	ADD VAT (15%)	R1,307,625.00
		R10,025,125.00