

General

GENERAL

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 A	110.00	GENERAL				
	110.01	Scheduled fixed-charge and value-related items:				
PSA8.3.1	110.01.01	Fixed preliminary and general charges	Sum	1		
PSA8.3.2	110.01.02	Value-related preliminary and general charges	Sum	1		
	110.02	Scheduled time-related items:				
PSA8.4.1	110.02.01	Time-related preliminary and general charges	Sum	1		
	110.03	Sums stated provisionally by the Engineer:				
PSA8.5.1	110.03.01	Works executed by the Contractor:				
	110.03.01.01	General refurbishment work	Prov Sum	1	100 000.000	100 000.000
	110.03.01.02	Erection of sign boards on plant	Prov Sum	1	100 000.000	100 000.000
	110.03.01.03	Safety Equipment for the existing chlorine dosing system	Prov Sum	1	500 000.000	500 000.000
PSA8.6	110.04	Prime Cost Sums:				
	110.04.01	Additional tests required by the Engineer	PC Sum	1	600 000.000	600 000.000
	110.04.02	Charge required by Contractor on subitem 110.04.01 above	%	600000		
	110.04.03	Housing for Engineer's representative	PC Sum	1	2 200 000.000	2 200 000.000
	110.04.04	Charge required by Contractor on subitem 110.04.03 above	%	2200000		
	110.04.05	Cellphone costs for Engineer's Representative	PC Sum	1	200 000.000	200 000.000
	110.04.06	Charge required by Contractor on subitem 110.04.06 above	%	200000		
		Skills Development				
	110.04.07	Accredited Training programmes: Unskilled	PC Sum	1	1 000 000.000	1 000 000.000
Carried forward						

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PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	110.04.08	Work Integrated Learning: Undergraduates	PC Sum	1	1 300 000.000	1 300 000.000
	110.04.09	Professionalisation programmes: Graduates	PC Sum	1	1 700 000.000	1 700 000.000
	110.04.10	Charge required by Contractor on subitem 110.04.07 to 110.04.09 above	%	4000000		
		Social Responsibility				
	110.04.11	Community development initiatives	PC Sum	1	1 000 000.000	1 000 000.000
	110.04.12	Charge required by Contractor on subitem 110.04.06 above	%	1000000		
PSA8.9	110.05	Wayleave	Sum	1		
PSA8.10	110.06	Compliance with OHS Act and Regulations (including the Construction Regulations, 2014)	Sum	1		
PSA8.11	110.07	Community Liaison Officer (CLO)	Sum	1		
	110.08	Participation of Local Enterprises				
PSA8.12.1	110.08.01	Work allocated to local enterprises that are 51% black owned	Sum	1		
PSA8.12.2	110.08.02	Procurement of non-core services and materials from local enterprises that are a minimum 51% black owned	Sum	1		
PSA8.15	110.09	Environmental Management as per Annexure E of Main Bid Document (Amount carried from Schedule C - Environmental)	Sum	1		
PSA8.16	110.10	Quality Management	Sum	1		
PSA8.17	110.11	Accommodating Other Contractors	Sum	1		
PSA8.18	110.12	Provision of Security Personnel	Sum	1		
1200 A	Total Carried to Bill 1 Summary					

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PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 AB	120	ENGINEER'S OFFICE				
PSAB8.1	120.01	Office and laboratory accommodation:				
	120.01.01	Offices (interior floor space only)	m ²	160		
	120.01.02	Laboratories (interior floor space only)	m ²	100		
	120.01.03	Open concrete working floors, 150 mm thick	m ²	50		
	120.01.04	Roofs over open concrete working floors	m ²	100		
	120.01.05	Ablution units				
	120.05.05.01	Site	m ²	20		
	120.05.05.02	Laboratory unit	m ²	10		
	120.01.06	Stores	m ²	20		
	120.01.07	Kitchen units	No	1		
PSAB8.2	120.02	Office and laboratory furniture:				
	120.02.01	Chairs	No	25		
	120.02.02	Draughtsman's stools	No	5		
	120.02.03	High chairs for laboratory	No	6		
	120.02.04	Desks/computer table combination, complete with drawers and locks	No	10		
	120.02.05	Drawing tables	No	4		
	120.02.06	Conference tables	No	1		
	120.02.07	Blackboard (2 m ²)	No	10		
PSAB8.3	120.03	Office and laboratory fittings, installations and equipment				
	120.03.01	Items measured by number				
	120.03.01.01	220/250 volt power points	No	20		
	120.03.01.02	400/231 volt 3-phase power points	No	2		
<i>Carried forward</i>						

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PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	120.03.01.03	Double 80 watt fluorescent-light fittings complete with ballast and tubes	No	25		
	120.03.01.04	Double 55 watt fluorescent-light fittings complete with ballast and tubes	No	10		
	120.03.01.05	Single incandescent-light fittings complete with 100 watt globes	No	10		
	120.03.01.06	Wash-hand basins complete with taps and drains	No	4		
	120.03.01.07	Laboratory basins complete with swan-neck taps and drains	No	3		
	120.03.01.08	Extractor fans installed complete with own power connection	No	2		
	120.03.01.09	Fume cupboards complete according to the drawings	No	4		
	120.03.01.10	Fire extinguishers, 9,0 kg, all purpose dry powder type, complete, mounted on wall with brackets	No	5		
	120.03.01.11	Air-conditioning units with, 2,2 kW minimum capacity, mounted and with own power connection	No	12		
	120.03.01.12	Heater, space-heating type, minimum capacity 1,5 kW	No	10		
	120.03.01.13	Curing chamber for UCS specimens, complete with water connection, including the provision of brick partitions, plaster, paint and shelving, all complete according to the drawings	No	1		
	120.03.01.14	General-purpose steel cupboards with shelves	No	8		
	120.03.01.15	Steel filing cabinets with drawers	No	4		
	120.03.01.16	Refrigerators	No	2		
	120.03.01.17	Uninterrupted power supply units	No	9		
	120.03.01.18	A0 size plan shelf with 10 clamps	No	5		
	120.03.01.19	Steel plan cabinets	No	5		
<i>Carried forward</i>						

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PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	120.03.01.20	Floodlights complete with poles and minimum 500 watt globes	No	5		
	120.03.02	Prime-cost items and items paid for as a sum:				
	120.03.02.01	The provision of wi-fi services, including the cost of data, contract administration and service provider rental	PC Sum	1	25 000.000	25 000.000
	120.03.02.02	Handling costs and profit in respect of item 120.03.02.01 above	%	25000		
	120.03.02.03	Cellphone cost including pro-rata rentals, for calls in connection with site supervision and contract administration	PC Sum	1	25 000.000	25 000.000
	120.03.02.04	Handling costs and profit in respect of item 120.03.02.03 above	%	25000		
	120.03.02.05	The provision of 400/231 volt 3-phase electrical power installation, including all wiring, switchboards, mains connections, etc	Sum	1		
	120.03.02.06	The provision of gas installations, including gasstorage cylinders, tubing, regulators, gas burners and shut-off cocks	Sum	1		
	120.03.03	Items measured by area:				
	120.03.03.01	Shelving as specified, complete with brackets	m ²	25		
	120.03.03.02	Work-benches complete with concrete slab top, minimum thickness 75 mm	m ²	40		
	120.03.03.03	Work-benches complete with concrete slab top, minimum thickness 25 mm	m ²	10		
	120.03.03.04	Constant-temperature baths of concrete and/or plastered brick (in galvanized iron or asbestos cement) complete with heating elements, water, circulating pumps and automatic temperature control (water depth 500 mm)	m ²	4		
<i>Carried forward</i>						

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PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSAB8.4	120.03.03.05	Foundations for laboratory equipment	m ²	2		
	120.03.03.06	Roller blinds, opaque type	m ²	60		
	120.03.03.07	Venetian blinds	m ²	50		
	120.03.03.08	Notice boards as specified	m ²	30		
	120.03.03.09	Whiteboard	m ²	30		
PSAB8.4	120.04	Carports	No	8		
PSAB8.5	120.05	Rented housing, hotel and other accommodation				
	120.05.01	Provisional sum for providing rented housing, hotel or other accommodation	Prov Sum	1	600 000.000	600 000.000
	120.05.02	Handling costs and profit in respect of item 120.05.01 above	%	600000		
PSAB8.6	120.06	Services				
	120.06.01	Services at offices and laboratories:				
	120.06.01.01	Fixed costs	Sum	1		
	120.06.01.02	Running costs	month	36		
	120.06.02	Services for rented houses	month	36		
	120.06.03	Services for labourers' accommodation on the site:				
	120.06.03.01	Fixed costs	Sum	1		
	120.06.03.04	Running costs	month	36		
PSAB8.7	120.07	Provision of photostat facilities	month	36		
PSAB8.8	120.08	Supply of computer hardware and software				
	120.08.01	Supply of computer hardware and software	PC Sum	1	150 000.000	150 000.000
<i>Carried forward</i>						

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PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	120.08.02	Handling costs and profit in respect of item 120.08.01 above	%	150000		
PSAB8.9	120.09	Site meeting venue	Sum	1		
PSAB8.10	120.1	Contracts Nameboards	No	2		
PSAB8.11	120.11	Survey equipment and assistance	Sum	1		
PSAB8.12	120.12	Camera equipment allowance	Prov Sum	1	20 000.000	20 000.000
1200 AB Total Carried to Bill 1 Summary						

BILL 1 SUMMARY		AMOUNT
SANS 1200 A	GENERAL	
SANS 1200 AB	ENGINEER'S OFFICE	
Bill 1 Total Carried to BoQ Summary		

Bill 2: Dayworks (Civil)**DAYWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 A	110.30	GENERAL (DAYWORKS)				
PSA8.7	110.30.01	Labour:				
	110.30.01.01	Foreman/supervisor	h	-		Rate Only
	110.30.01.02	Skilled labourer	h	-		Rate Only
	110.30.01.03	Semi-skilled labourer	h	-		Rate Only
	110.30.01.04	Unskilled labourer	h	-		Rate Only
	110.30.01.05	Operator	h	-		Rate Only
PSA8.7	110.30.02	Materials:				
	110.30.02.01	Cement: CEM I 42.5	t	-		Rate Only
	110.30.02.02	Coarse aggregate	t	-		Rate Only
	110.30.02.03	Fine aggregate	t	-		Rate Only
	110.30.02.04	Rebar: 8 mm dia mild steel bars	t	-		Rate Only
	110.30.02.05	Rebar: 12 mm dia high-tensile steel bars	t	-		Rate Only
	110.30.02.06	Rebar: 16 mm dia high-tensile steel bars	t	-		Rate Only
	110.30.02.07	Grade X42 steel pipe, including lining and coating: Welded DN 800, 4.5 mm wall thickness	m	-		Rate Only
	110.30.02.08	750 mm, Class 75D concrete pipe	m	-		Rate Only
	110.30.02.09	900 mm, Class 75D concrete pipe	m	-		Rate Only
	110.30.02.10	1050 mm, Class 100D concrete pipe	m	-		Rate Only
	110.30.02.11	Concrete - 30 Mpa	m ³	-		Rate Only
	110.30.02.12	Concrete - 25 Mpa	m ³	-		Rate Only
	110.30.02.13	Concrete - 20 Mpa	m ³	-		Rate Only
	110.30.02.14	Concrete - 15 Mpa	m ³	-		Rate Only
PSA8.7	110.30.03	Plant:				
	110.30.03.01	Bulldozer, Minimum power: 220 kW (35 t)	h	-		Rate Only
Carried forward						



Bill 2: Dayworks (Civil)**DAYWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
	110.30.03.02	Motor grader, Minimum power: 93 kW (similar to "Cat 120B")	h	-		Rate Only
	110.30.03.03	Excavator, Minimum power: 103 kW (20 ton, similar to "Cat 302C")	h	-		Rate Only
	110.30.03.04	Excavator, Minimum power: 103 kW (40 ton, similar to "Cat 302C")	h	-		Rate Only
	110.30.03.05	T.L. Backactor, Minimum power: 50 kW (similar to "Case 580G")	h	-		Rate Only
	110.30.03.06	Front-end loader, Minimum power: 145 kW (22 ton)	h	-		Rate Only
	110.30.03.07	Vibrating pedestrian roller, Minimum drum width: 0,39 m Minimum power: 3,7 kW	h	-		Rate Only
	110.30.03.08	Vibrating plate compactor, Minimum power: 2 kW	h	-		Rate Only
	110.30.03.09	Dump truck, Minimum load mass: 25 t Minimum load capacity: 16 m³	h	-		Rate Only
	110.30.03.10	Water tank truck, with sprinkler, Minimum capacity: 10 kl	h	-		Rate Only
	110.30.03.11	Mobile crane, Minimum capacity: 10 t	h	-		Rate Only
	110.30.03.12	Mobile crane, Minimum capacity: 30 t	h	-		Rate Only
	110.30.03.13	Sludge pump, 100 mm dia, with hoses	h	-		Rate Only
	110.30.03.14	Generating set, Minimum output power: 10 kW	h	-		Rate Only
	110.30.03.15	Concrete pump complete	h	-		Rate Only
	110.30.03.16	Tower crane complete with lifting equipment	h	-		Rate Only
	110.30.03.17	Water pump complete with hose	h	-		Rate Only
	110.30.03.18	Fork lift	h	-		Rate Only
	110.30.03.19	Pay loader	h	-		Rate Only
	110.30.03.20	Bob cat	h	-		Rate Only
	110.30.03.21	Drilling machine	h	-		Rate Only
<i>Carried forward</i>						



Bill 2: Dayworks (Civil)**DAYWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	110.30.03.22	Air compressor complete with jack hammer	h	-		Rate Only
1200 A Total carried to Bill 2 Summary						

Bill 2: Dayworks (Civil)**SUMMARY**

BILL 2 SUMMARY		AMOUNT
SANS 1200 A GENERAL: DAYWORKS		
Bill 2 Total Carried to BoQ Summary		

Bill 3: Module 6 outstanding works (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE				
8.2.8	130.01	Demolish and remove structures/buildings:				
	130.01.01	Portion of concrete wall after construction (approximately 1 m ³) (to do tie in) at Inlet Works	Sum	1		
	130.01.02	Concrete pipe thrust blocks after construction (approximately 3 m ³) (to do tie in) at Inlet Works	Sum	1		
	130.01.03	Saw cut and remove reinforced concrete structurally damaged and requiring replacement (approxiamtely 20 m ³)	Sum	1		
	130.01.04	Saw cut and remove unreinforced concrete structurally damaged and requiring replacement (approxiamtely 10 m ³)	Sum	1		
	130.01.05	Remove existing edge restraints to portion of unfinished paving	m	50		
1200 C	Total Carried to Bill 3 Summary					

Bill 3: Module 6 outstanding works (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
PSD 8.3.1	140.01	Site preparation				
PSD 8.3.1.1	140.01.01	Clear and strip site				
	140.01.01.01	To Admin Building	m ²	12		
	140.01.01.02	To Sludge Dewatering Facility	m ²	114		
	140.01.01.03	To Sludge Dewatering Facility Tanks	m ²	169		
	140.01.01.04	To PST Pump Station	m ²	21		
	140.01.01.05	To Emergency Pump Station	m ²	155		
	140.01.01.06	To RAS/WAS Pump Station and Chambers	m ²	91		
	140.01.01.07	To Chlorine Contact Tank	m ²	242		
	140.01.01.08	To BNR MCC Building	m ²	8		
	140.01.01.09	To Chlorine Wash Water Pump Station	m ²	8		
	140.01.01.10	To BNR	m ²	718		
	140.01.01.11	To Inlet Works Pump Station	m ²	110		
	140.01.01.12	To Workshop	m ²	30		
	140.01.01.13	To Inlet Works Screen Compactor	m ²	81		
	140.01.01.14	To Inlet Works Degritter Pump Station	m ²	109		
	140.01.01.15	To SSTs	m ²	713		
	140.01.01.16	To Inlet Works Grit Classifiers and Bins	m ²	2286		
PSD 8.3.3	140.02	Restricted excavation:				
	140.02.01	Excavate for restricted foundations and structures in platforms in all materials, and use for backfill or embankment. or dispose:				
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSD 8.3.8	140.02.01.01	Depth up to 2,0 m at Sludge Holding Tanks (x 2)	m³	100		
	140.02.01.02	Depth up to 2,0 m at Canals	m³	40		
	140.02.01.03	Depth up to 2,0 m at Outfall Structure	m³	40		
	140.02.01.04	Depth over 2,0 m and up to 4,0 m at RAS/WAS Pump Station	m³	80		
	140.02.01.05	Depth over 2,0 m and up to 4,0 m at Sludge Holding Tanks (x 2)	m³	20		
	140.02.01.06	Depth over 2,0 m and up to 4,0 m at Canals	m³	10		
	140.02.02	Extra over items 140.02 above for :				
	140.02.02.01	Hard rock excavation	m³	40		
	140.02.03	Soilcrete backfill where directed by the Engineer at Biological Reactor	m³	50		
	140.03	Existing services:				
PSD 8.3.9	140.03.01	Hand excavation for locating and exposing existing services:				
	140.03.01.01	In all other areas	m³	5		
	140.03.02	Extra-over for backfill or for fill material against structures				
	140.03.02.01	To RAS/WAS	m³	30		
PSD 8.3.10	140.03.02.02	To BNR	m³	179		
	140.03.02.03	To Inlet Works Pump Station	m³	33		
	140.03.02.04	To Gate House	m³	1		
	140.03	Topsoiling	m³	90		
PSD 8.3.14	140.04	Extra over items 140.02 for temporary stockpiling	m³	10		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSD 8.3.15	140.05	Extra over items 140.02 for disposing of spoil material on a site provided by the Contractor	m ³	10		
PSDM 8.3.3	140.06	Rip and re-compact minimum of 93% of modified AASHTO maximum density				
	140.06.01	To Admin Building	m ³	2		
	140.06.02	To Sludge Dewatering Facility	m ³	16		
	140.06.03	To Sludge Dewatering Facility (Tanks)	m ³	25		
	140.06.04	To PST Pump station	m ³	6		
	140.06.05	To Emergency Pump Station	m ³	23		
	140.06.06	To RAS/WAS Pump Station	m ³	9		
	140.06.07	To Chlorine Contact Tank	m ³	36		
	140.06.08	To BNR MCC Building	m ³	1		
	140.06.09	To Chlorine Wash Water Pump Station	m ³	2		
	140.06.10	To PSTs	m ³	6		
	140.06.11	To Inlet Works Channel to PSTs	m ³	38		
	140.06.12	To Inlet Works Pump Station	m ³	526		
	140.06.13	To Workshop	m ³	4		
	140.06.14	To Inlet Works Screen Compactor	m ³	12		
	140.06.15	To Inlet Works Degritter Pump Station	m ³	16		
	140.06.16	To SSTs	m ³	107		
	140.06.17	To Inlet Works Grit Classifiers and Bins	m ³	343		
1200 D	Total Carried to Bill 3 Summary					

Bill 3: Module 6 outstanding works (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES)				
		TRENCHES FOR WATER PIPES				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.01	Pipes up to 125 mm dia for depths:				
	142.01.01.01	Over 1,0 m up to 2,0 m	m	150		
	142.02	Extra over item 142.01 above for:				
	142.02.01	Hard rock excavation	m ³	75		
	142.02.02	Hand excavation where ordered by the Engineer:				
	142.02.02.01	Soft material	m ³	10		
	142.02.03	Soilcrete backfill where directed by the Engineer	m ³	40		
1200 DB Total Carried to Bill 3 Summary						

Bill 3: Module 6 outstanding works (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.01	Treatment of roadbed:				
	147.01.01	Roadbed preparation and compaction of material to:				
	147.01.01.01	Minimum of 93% of modified AASHTO maximum density (under structurers) at Chlorine Pump Station and Dossage Building	m³	25		
	147.01.01.02	Minimum of 93% of modified AASHTO maximum density (under structurers) at RAS/WAS Pump Station	m³	15		
	147.01.01.03	Minimum of 93% of modified AASHTO maximum density (under structurers) at Junction Valve Chambers and Manholes	m³	5		
PSDM 8.3.5	147.01.02	Selected layer using material from commercial sources:				
		Importation of G7 material from commercial sources and compact to 93% MOD AASHTO				
	147.01.02.01	To Inlet Works Grit Classifiers and Bins	m³	339		
		Importation of G9 material from commercial sources and compact to 93% MOD AASHTO				
	147.01.02.02	To Inlet Works Grit Classifiers and Bins	m³	339		
PSDM 8.3.18	147.02	Final finishing and cleaning up of the Site of the Works Site at Inlet Works				
	147.02.01	At Inlet Works	Sum	1		
	147.02.02	At Chlorine Pump Station and Dossage Building	Sum	1		
<i>Carried forward</i>						

EARTHWORKS (ROADS, SUBGRADE)

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	147.02.03	At Emergency Pump Station	Sum	1		
	147.02.04	At PST Recycle Pump Station	Sum	1		
	147.02.05	At RAS/WAS Pump Station	Sum	1		
	147.02.06	At Biological Reactor	Sum	1		
	147.02.07	At Primary Settling Tanks (x 2)	Sum	1		
	147.02.08	At Secondary Settling Tanks (x 3)	Sum	1		
	147.02.09	At Sludge Holding Tanks (x 2)	Sum	1		
	147.02.10	At Canals	Sum	1		
	147.02.11	At Clarifier Flow Division Structure	Sum	1		
	147.02.12	At Outfall Structure	Sum	1		
	147.02.13	At Junction Valve Chambers and Manholes	Sum	1		
	147.02.14	For Pipework	Sum	1		
	147.02.15	At Administration Offices	Sum	1		
	147.02.16	At Gate Guard and Access Control	Sum	1		
	147.02.17	At Electrical and Mechanical Workshop	Sum	1		
	147.02.18	At Biological Reactor MCC Building	Sum	1		
1200 DM Total Carried to Bill 3 Summary						

Bill 3: Module 6 outstanding works (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
SD8.2.1	500.01	Rough:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Edge of floor slabs at Junction Valve Chambers and Manholes	m ²	5		
SD8.2.2	500.02	Smooth:				
	500.02.01	Vertical formwork to:				
	500.02.01.01	Sides of external walls of future manholes	m ²	35		
	500.02.01.02	Sides of internal walls of future manholes	m ²	30		
SD8.2.5	500.03	Narrow widths (up to 300 mm wide):				
		Different widths in the following ranges:				
	500.03.01	Up to 100 mm (sides of aprons)				
	500.03.01.01	To Admin Building	m	12		
	500.03.01.02	To Workshop	m	17		
	500.03.01.03	To Sludge Dewatering Facility	m	274		
	500.03.01.04	To Inlet Works Screen Compactor	m	55		
	500.03.01.05	To Inlet Works Channel to PSTs	m	253		
	500.03.01.06	To Inlet Works Degritter Pump Station	m	53		
	500.03.01.07	To PST Pump Station	m	21		
	500.03.01.08	To Emergency Pump Station	m	77		
	500.03.01.09	To RAS/WAS Pump Station	m	31		
	500.03.01.10	To Chlorine Contact Tank	m	121		
	500.03.01.11	To Chlorine Wash Water Pump Station	m	8		
	500.03.01.12	To BNR MCC Building	m	4		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.3.1	500.03.02	Up to 100 mm (sides of aprons) at Gate Guard and Access Control	m	20		
	500.03.03	Over 200 mm and up to 300 mm (side of sumps) at Junction Valve Chambers and Manholes	m	5		
	SCHEDULED REINFORCEMENT ITEMS					
SD8.3.1	500.04	Mild-steel bars in the following:				
	500.04.01	All diameters				
	500.01.01.01	To junction Valve Chambers and Manholes	t	0.5		
SD8.3.2	500.05	High-tensile welded mesh in the following:				
	500.05.01	Ref No 245 in Ramps				
	500.05.01.01	To Workshop	m ²	7		
	500.05.01.02	To Sludge Dewatering Facility	m ²	6		
	500.05.01.03	To Inlet Works Screen Compactor	m ²	28		
	500.05.01.04	To Inlet Works Degritter Pump Station	m ²	3		
	500.05.01.05	To Inlet Works Grit Classifiers and Bins	m ²	24		
	500.05.02	Ref No 245 in surface beds at Administration offices	m ²	370		
	500.05.03	Ref No 245 in surface beds at Gate Guard and Access Control	m ²	10		
	500.05.04	Ref No 395 in surface beds at Sludge Dewatering Building	m ²	75		
	SCHEDULED CONCRETE ITEMS					
	500.06	Blinding layer:				
SD8.4.2	500.06.01	Class 15 MPa/19 mm concrete of:				
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.3		75 mm thickness				
	500.06.01.01	To RAS/WAS Pump Station	m ²	8		
	500.06.01.02	To Inlet Works Screen Compactor	m ²	56		
	500.06.01.03	To Workshop	m ²	13		
	500.06.01.04	To Sludge Dewatering Facility	m ²	9		
	500.06.01.05	To Inlet Works Screen Compactor	m ²	81		
	500.06.01.06	To Inlet Works Degritter Pump Station	m ²	4		
	500.06.01.07	To Inlet Works Grit Classifiers and Bins	m ²	24		
	500.07	Strength concrete: (specify if extender is used)				
	500.07.01	Class 20 MPa/19 mm concrete in:				
	500.07.01.01	Insitu road beams 200 x 100mm between paved sections including excavation, backfilling, formwork, etc complete	m	253		
	500.07.02	Class 30 MPa/19 mm concrete in:				
		Aprons				
	500.07.02.01	To Admin Building	m ³	1		
	500.07.02.02	To Workshop	m ³	1		
	500.07.02.03	To Sludge Dewatering Facility	m ³	27		
	500.07.02.04	To Inlet Works Screen Compactor	m ³	6		
	500.07.02.05	To Inlet Works Channel to PSTs	m ³	25		
	500.07.02.06	To Inlet Works Degritter Pump Station	m ³	5		
	500.07.02.07	To PST Pump Station	m ³	2		
	500.07.02.08	To Emergency Pump Station	m ³	8		
	500.07.02.09	To RAS/WAS Pump Station	m ³	3		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.4	500.07.02.10	To Chhlorine Contact Tank	m ³	12		
	500.07.02.11	To Chlorine Wash Water Pump Station	m ³	1		
	500.07.02.12	To BNR MCC Building	m ³	1		
	500.07.02.13	Placed as per instruction from Resident Engineer	m ³	30		
		Stairs				
	500.07.02.14	To Emergency Pump Station	m ³	1		
	500.07.02.15	Aprons at Gate Guard and Access Control	m ³	5		
	500.07.03	Class 35 MPa/19 mm concrete in:				
	500.07.03.01	Floor slabs at Junction Valve Chambers and Manholes	m ³	5		
	500.07.03.02	Walls at Junction Valve Chambers and Manholes	m ³	10		
		Access Ramps:				
	500.07.03.03	To Workshop	m ³	1		
	500.07.03.04	To Sludge Dewatering Facility	m ³	1		
	500.07.03.05	To Inlet Works Screen Compactor	m ³	6		
	500.07.03.06	To Inlet Works Degritter Pump Station	m ³	1		
	500.07.03.07	To Inlet Works Grit Classifiers and Bins	m ³	4		
	500.08	Unformed surface finishes:				
	500.08.01	Wood-floated finishes to:				
	500.08.01.01	Top of floor slabs at Junction Valve Chambers and Manholes	m ²	15		
	500.08.01.02	Top of aprons:				
	500.08.01.02.01	To Admin Building	m ²	12		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	500.08.01.02.02	To Workshop	m ²	10		
	500.08.01.02.03	To Sludge Dewatering Facility	m ²	274		
	500.08.01.02.04	To Inlet Works Screen Compactor	m ²	55		
	500.08.01.02.05	To Inlet Works Channel to PSTs	m ²	253		
	500.08.01.02.06	To Inlet Works Degritter Pump Station	m ²	53		
	500.08.01.02.07	To PST Pump Station	m ²	21		
	500.08.01.02.08	To Emergency Pump Station	m ²	77		
	500.08.01.02.09	To RAS/WAS Pump Station	m ²	31		
	500.08.01.02.10	To Chlorine Contact Tank	m ²	121		
	500.08.01.02.11	To Chlorine Wash Water Pump Station	m ²	8		
	500.08.01.02.12	To BNR MCC Building	m ²	2		
	500.08.01.03	Top of aprons at Gate Guard and Access Control	m ²	15		
SD8.4.10	500.09	Casting pipes and specials in concrete				
	500.09.01	Up to 300 mm nominal bore:				
	500.09.01.01	Through 200 mm thick walls at Junction Valve Chambers and Manholes	No.	6		
SD8.5	500.10	JOINTS				
	500.10.01	Expansion joints with impregnated softboard between vertical concrete surfaces:				
		12 mm joints not exceeding 300 mm high				
	500.10.01.01	To Gate House	m	370		
	500.10.01.02	To Admin Building	m	5		
	500.10.01.03	To Workshop	m	7		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	500.10.01.04	To Sludge Dewatering Facility	m	110		
	500.10.01.05	To Inlet Works Screen Compactor	m	22		
	500.10.01.06	To Inlet Works Channel to PSTs	m	101		
	500.10.01.07	To Inlet Works Degritter Pump Station	m	11		
	500.10.01.08	To PST Pump Station	m	8		
	500.10.01.09	To Emergency Pump Station	m	31		
	500.10.01.10	To RAS/WAS Pump Station	m	12		
	500.10.01.11	To Chlorine Contact Tank	m	48		
	500.10.01.12	To Chlorine Wash Water Pump Station	m	3		
	500.10.01.13	To BNR MCC Building	m	2		
	500.10.02	Isolation joints				
		10 mm Jointex between concrete surface and brickwork, 125 mm high including sealing				
	500.10.02.01	To Gate House	m	35		
	500.10.02.02	To Admin Building	m	12		
	500.10.02.03	To Workshop	m	9		
	500.10.02.04	To Sludge Dewatering Facility	m	274		
	500.10.02.05	To Inlet Works Screen Compactor	m	55		
	500.10.02.06	To Inlet Works Channel to PSTs	m	253		
	500.10.02.07	To Inlet Works Degritter Pump Station	m	53		
	500.10.02.08	To PST Pump Station	m	21		
	500.10.02.09	To Emergency Pump Station	m	77		
	500.10.02.10	To RAS/WAS Pump Station	m	31		
	500.10.02.11	To Chlorine Contact Tank	m	121		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.7	500.10.02.12	To Chlorine Wash Water Pump Station	m	8		
	500.10.02.13	To BNR MCC Building	m	4		
	500.11	Grouting:				
	500.11.01	Opening up voids after mechanical installation				
	500.11.01.01	At Chlorine Pump Station and Dossage Building	m ³	0.5		
	500.11.01.02	At Junction Valve Chambers and Manholes	m ³	0.3		
SD8.9	500.12	Miscellaneous work other than metal work				
	500.12.01	250 micron green medium density polyethylene dampproof sheeting under no fines concrete at Biological Reactor	m ²	365		
2001 CC1 Total Carried to Bill 3 Summary						

Bill 3: Module 6 outstanding works (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 H	180.00	STRUCTURAL STEELWORK				
8.3.1	180.01	Supply and fabrication:				
	180.01.01	Preparation of shop detail drawings at Administration Offices	Sum	1		
	180.01.02	Preparation of shop detail drawings at Emergency Pump Station	Sum	1		
	180.01.03	Supply and fabrication of steelwork:				
	180.01.03.01	Hot rolled sections:				
	180.01.03.01.01	Angles at Emergency Pump Station	t	1.6		
	180.01.03.01.02	Universal beams, columns and channels Emergency Pump Station	t	3.1		
	180.01.03.02	Cold formed section at Administration Offices	t	0.8		
	180.01.03.03	Cold formed section at Emergency Pump Station	t	1.4		
	180.01.03.04	Connection plates, cleats, etc. at Administration Offices	t	0.1		
	180.01.03.05	Connection plates, cleats, etc. at Emergency Pump Station	t	0.3		
8.3.2	180.02	Delivery to Site:				
	180.02.01	Normal delivery:				
	180.02.01.01	All steel work	t	7.4		
8.3.3	180.03	Erection on Site:				
	180.03.01	All steel work	t	7.4		
8.3.4	180.04	Erection bolts:				
	180.04.01	Grade 8.8 bolts	t	0.2		
8.3.6	180.05	Holding-down (HD) bolts:				
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.3.7	180.05.01	M16 x 650 mm long threaded U-bar holding down bolts including washers at Administration Offices	No.	8		
	180.05.02	M20 Upat-UKA 3 chemical anchors	No.	65		
	180.06	Handrails:				
	180.06.01	Handrails, at Chlorine Pump Station and Dossage Building, Wecrolok or equal approved galvanized mild steel system complete with stanchions, etc as on drawing no 106681-M7-07-DR-CC-0004:				
	180.06.01.01	Horizontal	m	15		
	180.06.01.02	Shaped ends	No.	2		
	180.06.02	Handrails, at Emergency Pump Station, Wecrolok or equal approved galvanized mild steel system complete with stanchions, etc as on drawing no 106681-M7-07-DR-CC-0004:				
8.3.8	180.06.02.01	Horizontal	m	6		
	180.06.02.02	Sloping (measured on slope)	m	4		
	180.06.02.03	Shaped ends	No.	4		
	180.07	Ladders, complete and installed:				
	180.07.01	Approximately 2 m high access ladder complete as on drawing no 106681-M7-05-DR-CC-0005 at Junction Valve Chambers and Manholes	No.	2		
8.3.9	180.07.02	Approximately 2 m high access ladder complete as on drawing no 106681-M7-05-DR-CC-0005 at MCC Building	No.	1		
	180.08	Flooring, complete and installed with frames:				
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	180.08.01	Open grid floors at PST Recycle Pump Station				
	180.08.01.01	Rectagrid RS40 open grid floors, at PST Recycle Pump Station, complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m ²	5		
	180.08.01.02	Rectagrid RS40 open grid floors, at Emergency Pump Station, complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m ²	85		
	180.09	Supply and install manholes and the like:				
	18.09.01	Grid inlets:				
	18.09.01.01	As shown on Drawing No 106681-M7-05-DR-CC-0001, standard depth 300 mm				
	18.09.01.01.01	To Workshop	m ²	2		
1200 H	Total Carried to Bill 3 Summary					

Bill 3: Module 6 outstanding works (Civil)**CLADDING AND SHEETING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 HB	182	CLADDING AND SHEETING				
8.2.2	182.01	Supply and install cladding and sheeting:				
	182.01.01	0.58 mm thick Brownbuilt Klip-Lok 700 or similar approved galvanized metal sheeting with global coat finish both sides, in:				
	182.01.01.01	'Roof coverings with pitches not exceeding 25°, fixed to steel purlins				
	182.01.01.01.01	To Admin Building	m ²	18		
	182.01.01.01.02	To Workshop	m ²	69		
8.2.3	182.02	Supply and install ancillaries:				
	182.02.01	0,8 mm thick galvanized sheet metal with global coat finish one side:				
	182.02.01.01	Standard barge board flashing	m	15		
	182.02.01.01.01	To Gate House	m	5		
	182.02.01.01.02	To Admin Building	m	35		
	182.02.01.01.03	To Workshop	m	4		
	182.02.01.01.04	To Inlet Works Degritter Pump Station	m	31		
	182.02.01.02	Standard fascia board flashing				
	182.02.01.02.01	To Workshop	m	8		
	182.02.01.03	150 x 150 x 6 mm thick mild steel gutters including stop ends, outlets, etc				
	182.02.01.03.01	at Sludge Dewatering Building	m	175		
	182.02.01.03.02	To Admin Building	m	22		
	182.02.01.03.03	To Workshop	m	49		
	182.02.01.04	120 x 150 x 6 mm thick mild steel downpipes including shoes, eaves off sets, etc				
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**CLADDING AND SHEETING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	182.02.01.04.01	at Sludge Dewatering Building	m	140		
	182.02.01.04.02	To Admin Building	m	10		
	182.02.01.05	100 x 50 x 2.5mm thick mild steel rectangular tubing post				
	182.02.01.05.01	To Admin Building	m	6		
	182.02.01.05.02	To Workshop	m	4		
	182.02.01.06	100 x 70 x 2.5mm thick mild steel rectangular tubing purlin				
	182.02.01.06.01	To Admin Building	m	47		
	182.02.01.06.02	To Workshop	m	33		
1200 HB Total Carried to Bill 3 Summary						

Bill 3: Module 6 outstanding works (Civil)**CORROSION PROTECTION OF STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 HC	183.00	CORROSION PROTECTION OF STRUCTURAL STEELWORK				
8.2.1	183.01	Surface dressing and repairs at place of fabrication	t	7.4		
8.2.2	183.02	Transport	t	7.4		
8.2.3	183.03	Surface preparation and coating application:				
		Hot dipped galvanized as per relevant project specification				
	183.03.01	In the shop	t	7.4		
	183.03.02	On Site	t	7.4		
8.2.4	183.04	Establishment on Site for corrosion protection	Sum	1		
1200 HC Total Carried to Bill 3 Summary						

Bill 3: Module 6 outstanding works (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 L	210.00	MEDIUM-PRESSURE PIPELINES				
8.2.13	210.01	Valve and hydrant chambers etc:				
	210.01.01	Valve chamber complete as per drawing 106681-M7-06-DR-CC-0018, including cutting existing supply pipework to tie in to new valve chamber pipework and isolation valve installation	No.	2		
	210.01.01.01	To Module 3-5 WAS Stream Carousel Pump Station	No.	1		
	210.02	Precast Valve box				
	210.02.01	Potable water shut off valve per building requiring connection to potable water supply point	No.	6		
PSL 8.2.18	210.03	Connection to existing infrastructure				
		For Module 6 PST 1				
	210.03.01	Connection of DN 200 HDPE pipeline from existing Primary Settling Tank to DN 200 steel pipe at existing Primary Sludge Recycle Pump Station including supply fixing and bedding of all neccesarry connection pipe fittings and couplings.	Sum	1		
	210.03.02	Connection of DN 160 HDPE pipeline from existing Isolating Valve Chamber to DN 150 steel pipe at existing Primary Sludge Recycle Pump Station including supply fixing and bedding of all neccesarry connection pipe fittings and couplings.	Sum	1		
		For Module 6 PST 2				
	210.03.03	Connection of DN 200 HDPE pipeline from existing Primary Settling Tank to DN 200 steel pipe at existing Primary Sludge Recycle Pump Station including supply fixing and bedding of all neccesarry connection pipe fittings and couplings.	Sum	1		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	210.03.04	Connection of DN 160 HDPE pipeline from existing Isolating Valve Chamber to DN 150 steel pipe at existing Primary Sludge Recycle Pump Station including supply fixing and bedding of all neccesarry connection pipe fittings and couplings. To Gate House	Sum	1		
	210.03.05	Connection of 110mm HDPE PN12 PE100 pipeline from existing Potable Water Supply to 32mm pipe at existing Gate House including exposing existing supply point, supply fixing and bedding of all neccesarry connection pipes, fittings, couplings etc.	No.	1		
	210.03.06	Connection of 160mm uPVC Class 34 pipeline from existing Sewer Network to 28mm drainage pipe at existing Gate House including exposing existing supply point, supply fixing and bedding of all neccesarry connection pipes, fittings, couplings etc. To Admin Building	No.	1		
	210.03.07	Connection of 110mm HDPE PN12 PE100 pipeline from existing Potable Water Supply to 50mm pipe at existing Admin Building including exposing existing supply point, supply fixing and bedding of all neccesarry connection pipes, fittings, couplings etc.	No.	1		
	210.03.08	Connection of 160mm uPVC Class 34 pipeline from existing Sewer Network to 28mm drainage pipe at existing Admin Building including exposing existing supply point, supply fixing and bedding of all neccesarry connection pipes, fittings, couplings etc. To Sludge Dewatering Facility	No.	1		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
	210.03.09	Connection of 110mm HDPE PN12 PE100 pipeline from existing Potable Water Supply to 110mm pipe at existing Sludge Handling Facility including exposing existing supply point, supply fixing and bedding of all neccesarry connection pipes, fittings, couplings etc..	No.	1		
	210.03.10	Connection of 160mm uPVC Class 34 pipeline from existing Sewer Network to 28mm drainage pipe at existing Sludge Handling Facility including exposing existing supply point, supply fixing and bedding of all neccesarry connection pipes, fittings, couplings etc. To Inlet Works MCC	No.	1		
	210.03.11	Connection of 110mm HDPE PN12 PE100 pipeline from existing Potable Water Supply to 110mm pipe at existing MCC Building including exposing existing supply point, supply fixing and bedding of all neccesarry connection pipes, fittings, couplings etc.	No.	1		
	210.03.12	Connection of 160mm uPVC Class 34 pipeline from existing Sewer Network to 110mm drainage pipe at existing MCC Building including exposing existing supply point, supply fixing and bedding of all neccesarry connection pipes, fittings, couplings etc. To BNR MCC Building	No.	1		
	210.03.13	Connection of 110mm HDPE PN12 PE100 pipeline from existing Potable Water Supply to 110mm pipe at existing BNR MCC Building including exposing existing supply point, supply fixing and bedding of all neccesarry connection pipes, fittings, couplings etc.	No.	1		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSL 8.2.18	210.03.14	Connection of 160mm uPVC Class 34 pipeline from existing Sewer Network to 110mm drainage pipe at existing BNR MCC Building including exposing existing supply point, supply fixing and bedding of all necessary connection pipes, fittings, couplings etc.	No.	1		
	210.04	Repair to Existing Infrastructure				
	210.04.01	Supply, lay and bed pipes on class B bedding, complete with couplings and specials:				
	210.04.01.01	uPVC class 16 pipes: 28mm Diameter	m	2		
1200 L Total Carried to Bill 3 Summary						

Bill 3: Module 6 outstanding works (Civil)**BEDDING (PIPES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 LB	211.00	BEDDING (PIPES)				
		BEDDING FOR WATER PIPES				
8.2.1	211.01	Provision of bedding from trench excavations:				
	211.01.01	Selected granular material	m ³	45		
PSLB 8.2.2	211.02	Supply only of bedding by importation:				
	211.02.01	From commercial sources:				
	211.02.01.01	Selected granular material	m ³	30		
		BEDDING FOR STORMWATER PIPES				
8.2.1	211.03	Provision of bedding from trench excavations:				
	211.03.01	Selected granular material	m ³	20		
	211.03.02	Selected fill material	m ³	15		
1200 LB Total Carried to Bill 3 Summary						

Bill 3: Module 6 outstanding works (Civil)**STORMWATER DRAINAGE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LE 8.2.10	214.00	STORMWATER DRAINAGE				
	214.01	Accessories:				
	214.01.01	Manhole covers including frames:				
	214.01.01.01	600 x 900 mm manhole access lid in steel grating	No.	1		
	214.01.02	Sump manhole covers including slab:				
	214.01.02.01	300 x 300 mm manhole access lid in steel grating				
	214.01.02.01.01	To PSTs	No.	1		
1200 LE Total Carried to Bill 3 Summary						

Bill 3: Module 6 outstanding works (Civil)**SUBBASE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 ME	223.00	SUBBASE				
PSME 8.3.3	223.01	Construct the subbase course with material from commercial sources	m³	150		
	223.01.01	To PSTs	m³	35		
	223.01.02	To Inlet Works Grit Classifiers and Bins	m³	339		
	223.01.03	To inlet works channel	m³	38		
	223.02	Stablised natural gravel subbase compacted to 95% of MOD AASHTO density (C4)				
	223.02.01	To Inlet Works Grit Classifiers and Bins	m³	226		
PSME 8.3.8	223.03	Stabilizing agent:				
	223.03.01	Portland cement	t	0.2		
1200 ME Total Carried to Bill 3 Summary						

Bill 3: Module 6 outstanding works (Civil)**SEGMENTED PAVING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 MJ	227.00	SEGMENTED PAVING				
PSMJ 8.2.1	227.01	Provision of edge restraints:				
	227.01.01	200 mm x 100 mm for straight edging	m	220		
	227.01.01.01	To Inlet Works Screen Compactor	m	379		
PSMJ 8.2.2	227.02	Construction of paving complete:				
	227.02.01	Type S-A blocks: (including sand layer)				
	227.02.01.01	80 mm thick	m ²	2220		
	227.02.01.01.01	To Inlet Works Screen Compactor	m ²	73		
	227.02.01.01.02	To PSTs	m ²	235		
	227.02.01.01.03	To SSTs	m ²	356		
	227.02.01.01.04	To Inlet Works Grit Classifiers and Bins	m ²	2262		
PSMJ 8.2.3	227.03	Cutting blocks to fit edge restraints:				
	227.03.01	Straight cutting	m	435		
	227.04	Paintwork				
	227.04.01	100mm wide white parking designation lines to parking bays				
	227.04.01.01	To Admin Building	m	234		
1200 MJ Total Carried to Bill 3 Summary						

Bill 3: Module 6 outstanding works (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
PD 10		BUILDING WORK				
	PD.00	Brickwork including brickforce every 4th course and bonding to existing brick and/or concrete surfaces:				
	PD.00.01	110 mm thick, outside face: face brick, inside face:non-facing plastered, engineering bricks				
	PD.00.01.01	To Sludge Dewatering Facility	m ²	42		
	PD.00.01.02	To PST Pump Station	m ²	11		
	PD.00.02	230 mm thick fire wall, both faces:non-facing plastered, engineering bricks				
	PD.00.02.01	To Sludge Dewatering Facility	m ²	7		
	PD.00.03	Bonding to existing brick and/or concrete surfaces:				
	PD.00.03.01	Hoop irons (3rd course)	No.	4		
	PD.01	Doors and Windows:				
	PD.01.01	Steel gate including two coats paint, ironmongery, etc at Gate Guard and Access Control:				
	PD.01.01.01	Gate size 1 100 x 2 242 mm high	No.	1		
	PD.01.01.02	Gate size 1 300 x 2 290 mm high	No.	1		
	PD.01.01.03	Sliding gate size 3 810 x 2 302 mm high	No.	2		
	PD.01.02	Twin Industrial turnstiles as per Flow Systems Manufacturers or similar approved complete Gate Guard and Access Control:				
	PD.01.02.01	Overall size 2 030 x 2 295 mm high	No.	1		
	PD.02	Ceilings:				
Carried forward						

Bill 3: Module 6 outstanding works (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.02.01	6,4 mm thick Rhinoboard ceiling boards with 38 x 50 mm branderling at 400 mm centres in both directions complete with jointing strips, etc				
	PD.02.01.01	Suspended ceiling	m ²	5		
	PD.02.01.01.01	To Gate House	m ²	6		
	PD.02.01.01.02	To Workshop	m ²	15		
	PD.02.01.01.03	To PST Pump Station	m ²	14		
	PD.02.02	6,4 mm thick lay-in ceiling tiles 400 x 400mm in suspended grid structure at 400 mm centres in both directions complete with jointing strips, etc				
	PD.02.02.01	Suspended ceiling				
	PD.02.02.01.01	To Workshop	m ²	1		
	PD.02.02.01.02	To Sludge Dewatering Facility	m ²	34		
	PD.03	Miscellaneous Work:				
		Plasterwork:				
	PD.03.01	15mm thick, one coat cement plaster to internal walls				
	PD.03.01.01	To Gate House	m ²	49		
	PD.03.01.02	To Sludge Handling Facility	m ²	1575		
	PD.03.01.03	To Inlet Works Lift Pump Station	m ²	237		
	PD.03.01.04	To Inlet Works at PST Pump Station	m ²	254		
	PD.03.01.05	To Inlet Works at MCC Building	m ²	695		
	PD.03.01.06	To BNR MCC Building	m ²	382		
	PD.03.01.07	To RAS/WAS Pump Station	m ²	288		
	PD.03.01.08	To Chlorine Wash Water Pump Station	m ²	219		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.03.01.09	To Chlorine Dosing Building	m ²	480		
	PD.03.02	Paintwork				
	PD.03.02.01	One coat metal primer and two coats high-gloss enamel paint:				
		Steel door frames				
	PD.03.01.01.01	(28 m ²) at Sludge Dewatering Building	Sum	1		
	PD.03.01.01.02	(69 m ²) at Electrical and Mechanical Workshop	Sum	1		
	PD.03.01.01.03	To PST Pump Station	m ²	9		
	PD.03.01.01.04	To BNR MCC Building	m ²	10		
	PD.03.01.01.05	To Chlorine Dosing Building	m ²	4		
	PD.03.01.01.06	To Chlorine Wash Water Pump Station	m ²	9		
	PD.03.02.02	One coat metal primer and two coats global finish paint one side:				
		Existing galvanised sheet metal flashing, barge boards and fascia boards				
	PD.03.02.02.01	To Admin Building	m ²	11		
	PD.03.02.02.02	To Workshop	m ²	11		
	PD.03.02.03	One coat merit plaster primer UC56 and two coats Plascon Super Eggshell Enamel:				
		Internal plastered walls				
	PD.03.01.03.01	(1518 m ²) at Electrical and Mechanical Workshop	Sum	1		
	PD.03.01.03.02	To Gate House	m ²	49		
	PD.03.01.03.03	To Sludge Handling Facility	m ²	1575		
	PD.03.01.03.04	To Inlet Works lift pump station	m ²	237		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.03.01.03.05	To Inlet Works at PST Pump Station	m ²	254		
	PD.03.01.03.06	To Inlet Works at MCC Building	m ²	695		
	PD.03.01.03.07	To BNR MCC Building	m ²	382		
	PD.03.01.03.08	To RAS/WAS Pump Station	m ²	288		
	PD.03.01.03.09	To Chlorine Wash Water Pump Station	m ²	219		
	PD.03.01.03.10	To Chlorine Dosing Building	m ²	480		
	PD.03.02.04	One coat merit plaster primer UC56 and two coats Plascon Polvin Super Acrylic:				
		Internal plastered walls				
	PD.03.01.04.01	(1012 m ²) at Electrical and Mechanical Workshop	Sum	1		
	PD.03.02.05	Two coats low-gloss varnish:				
		Timber doors				
	PD.03.02.05.01	(62 m ²) at Sludge Dewatering Building	Sum	1		
	PD.03.02.05.02	To BNR MCC Buildig	m ²	6		
	PD.03.02.05.03	Timber windows (both sides measured on flat) (11 m ²) at Sludge Dewatering Building	Sum	1		
	PD.03.02.05.04	Meranti slats (both sides measured on flat) (130 m ²) at Sludge Dewatering Building	Sum	1		
	PD.03.02.06	Backflashing Items				
		Galvanised steel backflashing to openings around vent cowls, opening size approximately 700 x 700mm				
	PD.03.02.06.01	To Sludge Dewatering Facility	No.	23		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.03.03	Plumbing complete with taps, traps, connections, etc (Refer to materials specifications):				
	PD.03.03.01	Hand wash basin at Sludge Dewatering Building	No.	4		
	PD.03.03.02	Hand wash basin at MCC Building	No.	1		
	PD.03.03.03	Water closet at Sludge Dewatering Building	No.	4		
	PD.03.03.04	Water closet at MCC Building	No.	1		
	PD.03.03.05	Showers at Sludge Dewatering Building	No.	2		
	PD.03.03.06	Showers at MCC Building	No.	1		
	PD.03.03.07	Fire hose reel with 30 m hose at Sludge Dewatering Building	No.	4		
	PD.03.03.08	Fire hose reel with 30 m hose at Admin Building	No.	1		
	PD.03.03.09	Fire water pipework reticulation to fire hose reels including all bends, etc (from connection point on outside of external wall up to fire hose reels) at Sludge Dewatering Building	No.	4		
	PD.03.03.10	Fire water pipework reticulation to fire hose reels including all bends, etc (from connection point on outside of external wall up to fire hose reels) at Gate Guard and Access Control	No.	1		
	PD.03.03.11	1 600 litre (18 kW) vertical industrial geyser, valves, etc at Electrical and Mechanical Workshop	No.	2		
	PD.03.03.12	50 litre Geyser complete with valves, etc at MCC Building	No.	1		
	PD.03.03.13	Waste pipework for 3 sanitary fitting or point including all bends etc, up to gulley or ground level including all stub-stacks, two-way vent valves, etc. at MCC Building	Sum	1		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.03.03.14	Hot water pipework reticulation in ceilings voids from geyser to all drop pipework points to sanitary fittings or points including all bends, isolation valves, etc at MCC Building	Sum	1		
	PD.03.03.15	Hot water pipework reticulation chased into walls for 2 sanitary fittings or points including all bends, etc (pipework from ceiling level to fittings or points) at MCC Building	Sum	1		
	PD.03.03.16	Cold water pipework reticulation chased into walls for 3 sanitary fittings or points and one geyser including all bends, etc	Sum	1		
	PD.03.03.17	Cold water pipework reticulation in ceilings voids from geyser to all drop pipework points to sanitary fittings or points including all bends, isolation valves, etc at MCC Building	Sum	1		
	PD.03.03.18	Fire water pipework reticulation to fire hose reel including all bends, etc (from connection point on outside of external wall up to fire hose reel) at MCC Building	Sum	1		
		Refix plumbing fittings and fixtures including flexible pipes, traps, connection pipes etc complete				
	PD.03.03.19	Hand wash basin				
	PD.03.03.19.01	To Admin Building	No.	1		
	PD.03.03.20	Remove and replace toilet seat cover (to match existing)				
	PD.03.03.20.01	To Admin Building	No.	2		
		Test and connect where necessary plumbing fittings complete with taps, traps, connections, etc (Refer to materials specifications):				
	PD.03.03.21	Hand wash basin				
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.03.03.21.01	To Sludge Dewatering Facility	No.	4		
	PD.03.03.21.02	To Inlet Works MCC	No.	1		
	PD.03.03.21.03	To BNR MCC Building	No.	1		
	PD.03.03.22	Water Closet				
	PD.03.03.22.01	To Sludge Dewatering Facility	No.	4		
	PD.03.03.22.02	To Inlet Works MCC	No.	1		
	PD.03.03.22.03	To BNR MCC Building	No.	1		
	PD.03.03.23	Urinals				
	PD.03.03.23.01	To Sludge Dewatering Facility	No.	2		
	PD.03.03.24	Showers				
	PD.03.03.24.01	To Sludge Dewatering Facility	No.	2		
	PD.03.03.24.02	To Inlet Works MCC	No.	1		
	PD.04	Miscellaneous Items:				
	PD.04.01	Items measured by number:				
	PD.04.01.01	4.5 kg DCP fire extinguisher at Administration Offices	No.	2		
	PD.04.01.02	1,0 x 1,0 m 'Mentis' grating as floor mat at Administration Offices	No.	1		
	PD.04.01.03	Steiner toilet roll dispenser at Sludge Dewatering Building	No.	4		
	PD.04.01.04	Steiner toilet roll dispenser at Gate Guard and Access Control	No.	1		
	PD.04.01.05	Steiner toilet roll dispenser at Electrical and Mechanical Workshop	No.	7		
	PD.04.01.06	Steiner toilet roll dispenser at MCC Building	No.	1		
	PD.04.01.07	Steiner paper towel dispenser at Sludge Dewatering Building	No.	4		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.04.01.08	Steiner paper towel dispenser at Gate Guard and Access Control	No.	1		
	PD.04.01.09	Steiner paper towel dispenser at Electrical and Mechanical Workshop	No.	17		
	PD.04.01.10	Steiner paper towel dispenser at MCC Building	No.	1		
	PD.04.01.11	Steiner soap dispenser at Sludge Dewatering Building	No.	4		
	PD.04.01.12	Steiner soap dispenser at Gate Guard and Access Control	No.	1		
	PD.04.01.13	Steiner soap dispenser at MCC Building	No.	1		
	PD.04.01.14	Steiner "S.H.E" bin sanitary disposal system at Sludge Dewatering Building	No.	2		
	PD.04.01.15	Steiner "S.H.E" bin sanitary disposal system at Gate Guard and Access Control	No.	1		
	PD.04.01.16	Steiner "S.H.E" bin sanitary disposal system at Electrical and Mechanical Workshop	No.	7		
	PD.04.01.17	Steiner "S.H.E" bin sanitary disposal system at MCC Building	No.	1		
	PD.04.01.18	Towel bar at Sludge Dewatering Building	No.	4		
	PD.04.01.19	Towel bar at Gate Guard and Access Control	No.	1		
	PD.04.01.20	Towel bar at Electrical and Mechanical Workshop	No.	17		
	PD.04.01.21	Towel bar at MCC Building	No.	1		
	PD.04.01.22	400 mm x 600 mm mirror at Sludge Dewatering Building	No.	4		
	PD.04.01.23	400 mm x 600 mm mirror at Gate Guard and Access Control	No.	1		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.04.01.24	400 mm x 600 mm mirror at Electrical and Mechanical Workshop	No.	17		
	PD.04.01.25	400 mm x 600 mm mirror at MCC Building	No.	1		
	PD.04.01.26	4,5 kg DCP fire extinguisher at Sludge Dewatering Building	No.	8		
	PD.04.01.27	4,5 kg DCP fire extinguisher at Electrical and Mechanical Workshop	No.	2		
	PD.04.01.28	4,5 kg DCP fire extinguisher at Gate House	No.	1		
	PD.04.01.29	4,5 kg DCP fire extinguisher at Admin Building	No.	2		
	PD.04.01.30	9 kg DCP fire extinguisher at Sludge Dewatering Building	No.	9		
	PD.04.01.31	9 kg DCP fire extinguisher at Electrical and Mechanical Workshop	No.	9		
	PD.04.01.32	9 kg DCP fire extinguisher at MCC Building	No.	3		
	PD.04.01.33	9 kg DCP fire extinguisher at Inlet Works MCC	No.	3		
	PD.04.01.34	5 kg CO ² fire extinguisher at Sludge Dewatering Building	No.	4		
	PD.04.01.35	5 kg CO ² fire extinguisher at Electrical and Mechanical Workshop	No.	1		
	PD.04.01.36	5 kg CO ² fire extinguisher at MCC Building	No.	3		
	PD.04.01.37	5 kg CO ² fire extinguisher at Inlet Works MCC	No.	3		
	PD.04.01.38	10 kg CO ² fire extinguisher at Electrical and Mechanical Workshop	No.	3		
	PD.04.01.39	Weather proof extinguisher cabinets at Sludge Dewatering Building	No.	8		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.04.01.40	Weather proof extinguisher cabinets at MCC Building	No.	6		
	PD.04.01.41	Weather proof extinguisher cabinets at Gate House	No.	1		
	PD.04.01.42	Weather proof extinguisher cabinets at Inlet Works MCC	No.	6		
	PD.04.01.43	65 mm dia fire hydrant at Sludge Dewatering Building	No.	2		
	PD.04.01.44	65 mm dia fire hydrant at Electrical and Mechanical Workshop	No.	3		
	PD.04.01.45	Double door locker size 300 x 450 x 1800 mm high complete at Electrical and Mechanical Workshop	No.	78		
	PD.04.01.46	Fire blanket at Electrical and Mechanical Workshop	No.	1		
	PD.04.01.47	450 x 450 mm cast iron manhole cover at MCC Building	No.	1		
	PD.04.01.48	Photoluminescent signs with pictograms screwed or plugged as shown on Drawing no 106681-M7-06-DR-CC-0021:				
	PD.04.01.48.01	Exit sign at Sludge Dewatering Building	No.	2		
	PD.04.01.48.02	Exit sign at Gate Guard and Access Control	No.	1		
	PD.04.01.48.03	Exit sign at Electrical and Mechanical Workshop	No.	1		
	PD.04.01.48.04	Exit sign at MCC Building	No.	2		
	PD.04.01.48.05	Sign E1 at Electrical and Mechanical Workshop	No.	1		
	PD.04.01.48.06	Sign E1 at Electrical and Mechanical Workshop	No.	4		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.04.01.48.07	Sign F1 at Electrical and Mechanical Workshop	No.	2		
	PD.04.01.48.08	Sign F4 at Sludge Dewatering Building	No.	1		
	PD.04.01.48.09	Sign F4 at Gate Guard and Access Control	No.	1		
	PD.04.01.48.10	Sign F4 at Electrical and Mechanical Workshop	No.	1		
	PD.04.01.48.11	Sign F13 at Gate Guard and Access Control	No.	1		
	PD.04.01.48.12	Sign F13 at MCC Building	No.	6		
	PD.04.01.48.13	Sign F13 at Gate House	No.	1		
	PD.04.01.48.14	Sign F13 at Inlet Works MCC	No.	6		
	PD.04.01.48.15	Sign E1/E2 at Sludge Dewatering Building	No.	1		
	PD.04.01.48.16	Sign E1/E2 at Gate Guard and Access Control	No.	1		
	PD.04.01.48.17	Sign E1/E2 at Electrical and Mechanical Workshop	No.	1		
	PD.04.01.48.18	Sign E3/E3 at Electrical and Mechanical Workshop	No.	1		
	PD.04.02	Items measured by area:				
	PD.04.02.01	250 micron green medium density polyethylene dampproof sheeting under floors				
	PD.04.02.01.01	At RAW/WAS Pump Station	m ²	220		
	PD.04.02.01.02	At Electrical and Mechanical Workshop	m ²	5		
	PD.04.02.02	Ant poison, aldrin emulsifiable concentrates solution to SABS 618 spread at a rate recommended by the manufacturer under paving blocks at Administration Offices	m ²	20		
<i>Carried forward</i>						

Bill 3: Module 6 outstanding works (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.04.02.03	Flowcrete Peran STB 3 mm thick at Sludge Dewatering Building:				
	PD.04.02.03.01	To top of floors	m ²	1230		
	PD.04.02.03.02	To top of stairs and landings	m ²	15		
	PD.04.02.04	300 x 300 x 10 mm thick mosaic 'tiles of standard colour including adhesive to screeds (screeds measured elsewhere) jointed with waterproof grout:				
	PD.04.02.04.01	On floor to falls at MCC Building	m ²	2		
	PD.04.02.05	"Sealoflex" cemflex waterproofer and abrasion resistant layer to:				
	PD.04.02.05.01	Shower floors at MCC Building	m ²	2		
	PD.04.03	Items measured by length:				
	PD.04.03.01	3 mm weld mesh fence bent twice including posts, two coats paint, ironmongery, etc:				
	PD.04.03.01.01	2,1 m high fence at Gate Guard and Access Control	m	25		
	PD.04.03.02	600 mm wide shelves at Gate Guard and Access Control	m	5		
	PD.04.03.03	100 mm high covered granolithic skirting Electrical and Mechanical Workshop	m	250		
SPEC PD	Total Carried to Bill 3 Summary					

Bill 3: Module 6 outstanding works (Civil)**SUMMARY**

BILL 3 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 H	STRUCTURAL STEELWORK	
SANS 1200 HB	CLADDING AND SHEETING	
SANS 1200 HC	CORROSION PROTECTION OF STRUCTURAL STEELWORK	
SANS 1200 L	MEDIUM-PRESSURE PIPELINES	
SANS 1200 LB	BEDDING (PIPES)	
SANS 1200 LE	STORMWATER DRAINAGE	
SANS 1200 ME	SUBBASE	
SANS 1200 MJ	SEGMENTED PAVING	
PART SPEC PD	BUILDING WORK	
Bill 3 Total Carried to BoQ Summary		

Bill 4: Roads (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE				
PSC 8.2.1	130.01	Clear and grub:				
	130.01.01	Areas	m²	16832		
8.2.2	130.02	Remove and grub large trees and tree stumps of girth:				
	130.02.01	Over 1,0 m and up to and including 2,0 m	No.	10		
	130.02.02	Over 2,0 m and up to and including 3,0 m	No.	10		
8.2.8	130.03	Demolish and remove structures/buildings:				
	130.03.01	Existing guard house	Sum	1		
	130.04	Transport materials and debris to unspecified site and dump	m³-km			
1200 C	Total Carried to Bill 2 Summary					

Bill 4: Roads (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.02	Treatment of roadbed:				
	147.02.01	Roadbed preparation and compaction of material to:				
	147.02.01.01	Minimum of 90% of modified AASHTO maximum density (G10)	m ³	2524		
	147.02.02	In-place treatment of road-bed in intermediate or hard rock material by:				
	147.02.02.01	Ripping	m ³	35		
PSDM 8.3.5	147.03	Selected layer using material from commercial source:				
	147.03.01	Compacted to 90% of modified AASHTO density (G9)	m ³	1625		
	147.03.02	Compacted to 93% of modified AASHTO density (G7)	m ³	1625		
PSDM 8.3.7	147.04	Cut to spoil from:				
	147.04.01	Soft excavation	m ³	5037		
	147.04.02	Hard excavation	m ³	1679		
8.3.13	147.05	Surface finishes:				
	147.05.01	Topsoiling	m ²	4000		
	147.05.02	Grassing or other cover	m ²	4000		
PSDM 8.3.17	147.06	Extra over items 147.02 and 147.03 for obtaining material from commercial sources	m ³	8011		
PSDM 8.3.18	147.07	Final finishing and cleaning up of the Site of the Works	Sum	1		
1200 DM		Total Carried to Bill 2 Summary				

Bill 4: Roads (Civil)**SUBBASE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 ME	223.00	SUBBASE				
PSME 8.3.3	223.01	Construct the subbase course with material from commercial sources	m ³	1315		
8.3.5	223.02	Process subbase material by one of the following processes, as relevant, and use in the subbase:				
	223.02.01	Stabilization	m ³	1132		
8.3.8	223.03	Stabilizing agent:				
	223.03.02	Portland cement	t	59		
PSME 8.3.11	223.04	Treatment of subbase with:				
	223.04.01	Weed killer	m ²	10850		
	223.04.02	Insecticide	m ²	10850		
1200 ME Total Carried to Bill 2 Summary						

Bill 4: Roads (Civil)**SEGMENTED PAVING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 MJ	227.00	SEGMENTED PAVING				
8.2.1	227.01	Provision of edge restraints:				
	227.01.01	For straight edging	m	4090		
	227.01.02	For curved edging	m	60		
PSMJ 8.2.2	227.02	Construction of paving complete:				
	227.02.01	Type S-A blocks:				
	227.02.01.01	80 mm thick	m ²	11597		
8.2.3	227.03	Cutting blocks to fit edge restraints:				
	227.03.01	Straight cutting	m	2104		
1200 MJ Total Carried to Bill 4 Summary						

Bill 4: Roads (Civil)**KERBING AND CHANNELLING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 MK	228.00	KERBING AND CHANNELLING				
8.2.2	228.01	Concrete kerbing and channelling combined (precast kerbing and in-situ channelling):				
	228.01.01	SANS 927 fig 7 with 150 mm wide Class 25 MPa/19 mm concrete channel:				
	228.01.01.01	Radius over 20 m and straight sections	m	2700		
8.2.7	228.02	Trimming of excavations for concrete lined open drains in:				
	228.02.01	Soft material	m ²	1465		
8.2.8	228.02	Cast-in-situ concrete lining to open drains:				
	228.02.01	Class 25 MPa/19 mm concrete, 150 mm thick	m ³	240		
8.2.9	228.03	Formwork to cast-in-situ concrete lining of open drains (smooth surface finish):				
	228.03.01	To sides with formwork on the internal face only	m ²	41		
	228.03.02	To sides with formwork on both internal and external faces (each face measured)	m ²	41		
	228.03.03	To ends of slabs	m ²	1		
8.2.10	228.04	Sealed joints in concrete lining of open drains:				
	228.04.01	Jointex	m	800		
	228.04.02	Two compound polysulfide sealant	m	800		
8.2.12	228.05	Steel reinforcement:				
	228.05.01	High-tensile welded mesh ref 395	m ²	1600		
1200 MK	Total Carried to Bill 4 Summary					

Bill 4: Roads (Civil)**ANCILLARY ROADWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 MM 8.3.1 8.3.2 8.3.3 8.3.4 8.4.1	229.00	ANCILLARY ROADWORKS				
	229.01	PERMANENT ROAD SIGNS				
	229.02	Sign faces with painted/galvanized background, with painted symbols, characters, legends and borders and with signboard constructed from:				
	229.02.01	Aluminium sheet (2,0 mm thick), of area:				
	229.02.01.01	Exceeding 10 m² up to 15 m²	m²	15		
	229.03	Provision and application of retro-reflective material:				
	229.03.01	Engineering grade retro-reflective background, characters, symbols, legend and borders	m²	15		
	229.04	Sign supports:				
	229.04.01	Steel tubing hot-dip zinc-coated	No.	28		
	229.05	Excavation and backfilling and concreting for sign supports:				
	229.05.01	Backfill with Class 10 MPa/19 mm concrete	m³	3		
	229.06	ROAD MARKINGS				
	229.07	Proprietary brand road marking material applied at nominal rate of 0,42 litre/m²:				
	229.08.01	White lines (broken or unbroken):				
	229.08.01.01	150 mm wide	km	2.1		
	229.08.01.02	300 mm wide	km	1		
	229.08.02	White characters and symbols	m²	6		
SANS MM Total Carried to Bill 4 Summary						

Bill 4: Roads (Civil)**SUMMARY**

BILL 2: SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 1200 ME	SUBBASE	
SANS 1200 MJ	SEGMENTED PAVING	
SANS 1200 MK	KERBING AND CHANNELLING	
SANS 1200 MM	ANCILLARY ROADWORKS	
Bill 4 Total Carried to BoQ Summary		

Bill 5: Stormwater (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE				
PSC 8.2.1	130.01	Clear and grub:				
	130.01.01	Strips, 1.2 m wide for grass lined type 1	m	215		
	130.01.02	Strips, 2.0 m wide for grass lined type 2	m	190		
	130.01.03	Strips, 1.2 m wide for stormwater pipeline	m	15		
8.2.2	130.02	Remove and grub large trees and tree stumps of girth:				
	130.02.01	Over 1,0 m and up to and including 2,0 m	No.	10		
	130.02.02	Over 2,0 m and up to and including 3,0 m	No.	10		
8.2.8	130.03	Demolish and remove structures/buildings:				
	130.03.01	Existing stormwater grass lined Type 2 channel 100 m long	Sum	1		
8.2.10	130.04	Remove topsoil to nominal depth of 150 mm and stockpile	m ³	230		
1200 C	Total Carried to Bill 5 Summary					

Bill 5: Stormwater (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
PSD 8.3.3	140.01	Restricted excavation:				
	140.01.01	Excavate for stormwater channel in all materials, and use for backfill or embankment, or dispose:				
	140.01.01.01	Depth up to 1,0 m	m ³	235		
	140.01.01.02	Depth over 1,0 m and up to 2,0 m	m ³	35		
	140.01.02	Excavate for restricted foundations in all materials, and use for backfill or embankment, or dispose	m ³	65		
PSD 8.3.3	140.01.03	Extra over items 140.01.01 to 140.01.02 above for :				
	140.01.03.01	Hard rock excavation	m ³	85		
	140.01.04	Extra over item 140.01 for hand excavation	m ³	10		
8.3.5	140.02	Extra excavation in all materials to provide working space around structure	m ²	50		
8.3.7	140.03	Additional lateral support between excavations and manholes, if ordered	Sum	1		
PSD 8.3.8	140.04	Existing services:				
	140.04.01	Hand excavation for locating and exposing existing services:				
	140.04.01.01	In all other areas	Sum	1		
8.3.9	140.05	Extra over items 140.01 and 140.02 for backfill or for fill material against structures	m ³	150		
PSD 8.3.10	140.06	Topsoiling	m ³	790		
8.3.11	140.07	Grassing or other vegetation cover:				
	140.07.01	Planting of grass cuttings	m ²	1060		
	140.07.02	Sodding	m ²	1060		
	140.07.03	Hydroseeding	m ²	1060		
1200 D	Total Carried to Bill 5 Summary					

Bill 5: Stormwater (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES)				
		TRENCHES FOR STORMWATER PIPES				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.01	Pipes over 400 mm dia up to 550 mm dia for depths:				
	142.01.01.01	Over 1,0 m up to 2,0 m	m	20		
	142.01.02	Pipes over 550 mm dia up to 750 mm dia for depths:				
	142.01.02.01	Over 1,0 m up to 2,0 m	m	205		
PSDB 8.3.2	142.02	Extra over item 142.01 above for:				
	142.02.01	Hard rock excavation	m ³	150		
PSDB 8.3.3	142.03	Excavation ancillaries:				
	142.03.01	Make up deficiency in backfill material:				
	142.03.01.01	By importation from commercial or off-site sources selected by the Contractor	m ³	515		
1200 DB	Total Carried to Bill 5 Summary					

Bill 5: Stormwater (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.01	Treatment of in-situ material:				
	147.01.01	In-situ material preparation and compaction of material to:				
	147.01.01.01	Minimum of 93% of modified AASHTO maximum density (Rip and recompact to a depth of 150 mm)	m ³	175		
PSDM 8.3.5	147.02	Selected layer using material from commercial sources or excavations:				
	147.02.01	G5 material compacted in 150 mm layers to 95% Modified AASHTO max density	m ³	175		
	147.02.02	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	175		
	147.02.03	Rockfill (100 mm stone) process and compact	m ³	175		
PSDM 8.3.17	147.03	Extra over item 147.02 for obtaining material from commercial sources				
	147.03.01	G5 material	m ³	175		
	147.03.02	G7 material	m ³	175		
	147.03.03	Rockfill (100 mm stone)	m ³	175		
PSDM 8.3.18	147.04	Final finishing and cleaning up of the Site of the Works	Sum	1		
1200 DM	Total Carried to Bill 5 Summary					

Bill 5: Stormwater (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
		SCHEDULED FORMWORK ITEMS				
SD8.2.2	500.01	Smooth:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Walls	m ²	35		
	500.01.02	Horizontal formwork to:				
	500.01.02.01	Soffit of the cover slab	m ²	10		
SD8.2.5	500.02	Narrow widths (up to 300 mm wide):				
	500.02.01	Different widths in the following ranges:				
	500.02.01.01	Over 200 mm and up to 300 mm	m	35		
SD8.2.6	500.03	Box out holes/form voids:				
	500.03.01	Large, circular, of diameter over 0,35 m up to and including 0,75 m and in the following depth ranges:				
	500.03.01.01	Over 0,5 m and up to and including 1,0 m	No.	4		
		SCHEDULED REINFORCEMENT ITEMS				
SD8.3.1	500.04	Mild-steel bars in the following:				
	500.04.01	All diameter	t	2		
SD8.3.2	500.05	High-tensile welded mesh in the following:				
	500.05.01	Mesh ref 395	m ²	60		
		SCHEDULED CONCRETE ITEMS				
SD8.4.2	500.06	Blinding layer:				
	500.06.01	Class 15 MPa/19 mm concrete of:				
	500.06.01.01	75 mm thickness	m ²	20		
Carried forwad						

Bill 5: Stormwater (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.3	500.07	Strength concrete: (specify if extender is used)				
	500.07.01	Class 25 MPa/ 19 mm concrete in:				
	500.07.01.01	Foundation slab	m ³	5		
	500.07.01.02	Cover slab	m ³	5		
	500.07.01.03	Inlet walls	m ³	10		
	500.07.02	Class 30 MPa/ 19 mm concrete in:				
	500.07.02.01	Down chute channel	m ³	5		
	500.07.02.02	Down chute outlet structure	m ³	5		
	SD8.4.4	500.08				
	500.08.01	Unformed surface finishes:				
	500.08.01.01	Wood-floated finishes to:				
	500.08.01.01	Foundation slab	m ²	15		
	500.08.01.02	Cover slab	m ²	10		
	500.08.01.03	Inlet walls	m ²	5		
	500.08.01.04	Down chute channel	m ²	10		
SD8.4.10	500.09	Casting pipes and specials in concrete				
	500.09.01	Over 300 mm up to 750 mm nominal bore:				
	500.09.01.01	Through 200 mm thick walls	No.	4		
SD8.6	500.10	Supply and erect precast concrete units:				
	500.10.01	Field inlet cover slabs as per drawing 106681-M7-22-DR-CC-0003	m ³	1		
	500.10.02	Precast concrete cover				
2001 CC1 Total Carried to Bill 5 Summary						

Bill 5: Stormwater (Civil)**BEDDING (PIPES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LB	211.00	BEDDING (PIPES)				
		BEDDING FOR STORMWATER PIPES				
PSLB 8.2.2	211.01	Supply only of bedding by importation:				
	211.01.01	From commercial sources:				
	211.01.01.01	Selected granular material	m ³	250		
	211.01.01.02	Selected fill material	m ³	300		
1200 LB Total Carried to Bill 5 Summary						

Bill 5: Stormwater (Civil)**STORMWATER DRAINAGE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 LE	214.00	STORMWATER DRAINAGE				
8.2.1	214.01	Supply and lay concrete pipe culverts on class B bedding:				
	214.01.01	Type SC 75D-load pipes with ogee joints:				
	214.01.01.01	550 mm diameter	m	10		
	214.01.01.02	600 mm diameter	m	5		
8.2.8	214.02	Supply and install manholes and the like:				
	214.02.01	Concrete manholes:				
	214.02.01.01	As shown on Drawing No106681-M7-22-DR-CC-0007	No.	3		
8.2.10	214.03	Accessories:				
	214.03.01	Manhole covers including frames:				
	214.03.01.01	SANS 558 type 2A or similar approved	No.	3		
PSLE 8.2.19	214.04	Jointing with existing network	Sum	1		
PSLE 8.2.20	214.05	Break into existing manhole and install:				
	214.05.01	525 mm diameter 75D concrete pipe	No.	1		
	214.05.02	600 mm diameter 75D concrete pipe	No.	1		
	214.05.03	750 mm diameter 75D concrete pipe	No.	1		
1200 LE Total Carried to Bill 5 Summary						

Bill 5: Stormwater (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
PART SPEC PD		BUILDING WORK				
PD 10	PD.01	Brickwork:				
	PD.01.01	230 mm thick, non-facing plastered/extra, engineering bricks	m ²	15		
	PD.02	Plaster Work:				
	PD.02.01	10 mm thick, wood-float finish	m ²	15		
	PD.09	Miscellaneous Items:				
	PD.09.01	Items measured by length:				
	PD.09.01.01	"Brickforce BK 150" or similar approved, built into joints of 220mm brickwork walls (measured net)	m	35		
SPEC PD Total Carried to Bill 5 Summary						

Bill 5: Stormwater (Civil)**SUMMARY**

Bill 5 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 LB	BEDDING (PIPES)	
SANS 1200 LE	STORMWATER DRAINAGE	
PART SPEC PD	BUILDING WORK	
Bill 5 Total Carried to BoQ Summary		

Bill 6: Primary Settling Tanks (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE Refer to Drawings: 106681-M7-11-DR-CC-0001 and 106681-M7-41-DR-CC-0001 & 0002				
PSC 8.2.1	130.01	Clear and grub:				
	130.01.01	Areas	m ²	6900		
8.2.2	130.02	Remove and grub large trees and tree stumps of girth:				
	130.02.01	Over 1,0 m and up to and including 2,0 m	No.	5		
	130.02.02	Over 2,0 m and up to and including 3,0 m	No.	5		
8.2.4	130.03	Reclear surfaces (only on instructions from Engineer):				
	130.03.01	Areas	m ²	2200		
8.2.10	130.04	Remove topsoil to nominal depth of 150 mm and stockpile	m ³	1035		
PSC 8.2.14	130.05	Dismantle, remove and relocate of existing light mast	No.	2		
1200 C	Total Carried to Bill 6 Summary					

Bill 6: Primary Settling Tanks (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
		Refer to Drawings: 106681-M7-11-DR-CC-0001 & 0002				
PSD 8.3.2	140.01	Bulk excavation:				
	140.01.01	Excavate in all materials and use for embankment or backfill as ordered from:				
	140.01.01.01	Necessary excavations	m ³	17560		
	140.01.01.02	Commercial sources	m ³	21505		
	140.01.02	Excavate in all materials and dispose	m ³	59500		
	140.01.03	Extra over items 140.01.01 to 140.01.02 above for:				
	140.01.03.01	Hard rock excavation	m ³	10760		
PSD 8.3.3	140.02	Restricted excavation:				
	140.02.01	Excavate for sludge hoppers, at Primary Settling Tanks, in all materials, and use for backfill or embankment, or dispose	m ³	75		
	140.02.02	Excavate for pump shafts, at Primary Settling Tanks, in all materials, and use for backfill or embankment, or dispose	m ³	20		
PSD 8.3.3	140.02.03	Extra over items 140.02.01 to 140.02.02 above for :				
	140.02.03.01	Hard rock excavation	m ³	25		
	140.02.04	Extra over item 140.02 for hand excavation	m ³	10		
8.3.5	140.03	Extra excavation in all materials to provide working space around structure	m ²	1215		
8.3.9	140.04	Extra over items 140.01 and 140.02 for backfill or for fill material against structures	m ³	6240		
PSD 8.3.10	140.05	Topsoiling	m ³	1035		
<i>Carried forward</i>						

Bill 6: Primary Settling Tanks (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.3.11	140.06	Grassing or other vegetation cover:				
	140.06.01	Hydroseeding	m ²	4700		
PSD 8.3.15	140.07	Extra over item 140.01.02 for disposing of spoil material on a site provided by the Contractor	m ³	43100		
1200 D Total Carried to Bill 6 Summary						

Bill 6: Primary Settling Tanks (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES)				
		TRENCHES FOR SEWER PIPES				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.01	Pipes over 125 mm dia up to 400 mm dia for depths:				
	142.01.01.01	Up to 1,0 m for for sludge withdrawal pipes	m	35		
	142.01.02	Pipes over 550 mm dia for depths:				
	142.01.02.01	Over 1,0 m up to 2,0 m for inlet pipes	m	35		
PSDB 8.3.2	142.02	Extra over item 142.01 above for:				
	142.02.01	Hard rock excavation	m ³	25		
		TRENCHES FOR SUBSURFACE DRAINS				
PSDB 8.3.2	142.03	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.03.01	Trenches of width less than 600 mm for depths:				
	142.03.01.01	Up to 1,0 m (around and under tanks)	m	605		
	142.03.01.02	Over 1,0 m up to 2,0 m (towards pump shaft)	m	20		
	142.03.01.03	Over 2,0 m up to 3,0 m (towards pump shaft)	m	20		
PSDB 8.3.2	142.04	Extra over item 142.03 above for:				
	142.04.01	Hard rock excavation	m ³	30		
PSDB 8.3.2	142.04.02	Hand excavation where ordered by the Engineer:				
	142.04.02.01	Soft material	m ³	15		
	142.04.02.02	Hard material	m ³	15		
<i>Carried forward</i>						

Bill 6: Primary Settling Tanks (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSDB 8.3.2	142.05	Excavate and dispose of unsuitable material from trench bottom	m ³	60		
1200 DB Total Carried to Bill 6 Summary						

Bill 6: Primary Settling Tanks (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.01	Treatment of in-situ material:				
	147.01.01	In-situ material preparation and compaction of material to:				
	147.01.01.01	Minimum of 93% of modified AASHTO maximum density (Rip and recompact to a depth of 150 mm)	m ³	350		
PSDM 8.3.5	147.02	Selected layer using material from commercial sources or excavations:				
	147.02.01	G5 material compacted in 150 mm layers to 95% Modified AASHTO max density	m ³	1035		
	147.02.02	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	8310		
	147.02.03	Rockfill (100 mm stone) process and compact	m ³	660		
PSDM 8.3.17	147.03	Extra over item 147.02 for obtaining material from commercial sources				
	147.03.01	G5 material	m ³	1035		
	147.03.02	G7 material	m ³	8310		
	147.03.03	Rockfill (100 mm stone)	m ³	660		
PSDM 8.3.18	147.04	Final finishing and cleaning up of the Site of the Works	Sum	1		
1200 DM Total Carried to Bill 6 Summary						

Bill 6: Primary Settling Tanks (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
		SCHEDULED FORMWORK ITEMS				
SD8.2.1	500.01	Rough:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Sides of sludge hopper floor slabs (2,2 m radius)	m ²	15		
	500.01.01.02	Sides of sludge hopper walls (external surface 2,2 m radius)	m ²	50		
SD8.2.2	500.02	Smooth:				
	500.02.01	Vertical formwork to:				
	500.02.01.01	Sides of columns	m ²	116		
	500.02.01.02	Sides of central platform roof	m ²	12		
	500.02.01.03	Sides of sludge hopper walls	m ²	46		
	500.02.01.04	Sides of walls (internal surface)	m ²	975		
	500.02.01.05	Sides of walls (external surface)	m ²	990		
	500.02.01.06	Sides of launder walls (external)	m ²	198		
	500.02.01.07	Sides of launder walls (internal)	m ²	148		
	500.02.01.08	Sides of launder outlet chamber walls (external)	m ²	55		
	500.02.01.09	Sides of launder outlet chamber walls (internal)	m ²	65		
	500.02.02	Sloping formwork to:				
	500.02.02.01	Sides of launder walls	m ²	36		
	500.02.03	Horizontal formwork to:				
	500.02.03.01	Soffit of central platforms	m ²	10		
	500.02.03.02	Soffit of launder floors	m ²	270		
SD8.2.5	500.03	Narrow widths (up to 300 mm wide):				
<i>Carried forward</i>						

Bill 6: Primary Settling Tanks (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.2.6	500.03.01	Different widths in the following ranges:				
	500.03.01.01	Over 200 mm and up to 300 mm	m	15		
	500.04	Box out holes/form voids:				
	500.04.01	Small circular, of diameter up to and including 0,35 m, and in the following depth ranges:				
	500.04.01.01	0 m up to and including 0,5 m	No.	6		
	500.04.02	Small other than circular, of area up to and including 0,1 m², and in the following depth ranges:				
	500.04.02.01	0 m up to and including 0,5 m	No.	8		
SCHEDULED REINFORCEMENT ITEMS						
SD8.3.1	500.05	High-tensile steel bars in the following:				
	500.05.01	All diameters	t	118		
SCHEDULED CONCRETE ITEMS						
SD8.4.2	500.06	Blinding layer:				
	500.06.01	Class 15 MPa/19 mm concrete of:				
	500.06.01.01	50 mm thickness	m²	30		
	500.06.01.02	100 mm thickness	m²	2210		
SD8.4.3	500.07	Strength concrete: (Dolomitic aggregate)				
	500.07.01	Class 25 MPa/ 19 mm concrete in:				
	500.07.01.01	Pipe encasement	m³	75		
	500.07.02	Class 35 MPa/ 19 mm concrete in:				
	500.07.02.01	Sludge hopper floor slabs	m³	15		
<i>Carried forward</i>						

Bill 6: Primary Settling Tanks (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.4	500.07.02.02	Sludge hopper walls	m ³	20		
	500.07.02.03	Sloping tank floor slabs	m ³	360		
	500.07.02.04	Wall footings	m ³	145		
	500.07.02.05	Tank walls	m ³	300		
	500.07.02.06	Laundry floor slabs	m ³	67		
	500.07.02.07	Laundry walls	m ³	32		
	500.07.02.08	Columns	m ³	15		
	500.07.02.09	Central platform roofs	m ³	5		
	500.07.02.10	Laundry outlet floor slab	m ³	2		
	500.07.02.11	Laundry outlet walls	m ³	1		
	500.07.02.12	Laundry outlet chamber slab	m ³	5		
	500.07.02.13	Laundry outlet chamber walls	m ³	15		
	500.07.03	Class 30 MPa/ 10 mm concrete in: Structural floor screeds				
	500.07.03.01	50 mm thick to conical shaped tank floors	m ³	100		
	500.08	Unformed surface finishes:				
	500.08.01	Wood-floated finishes to:				
	500.08.01.01	Top of central platforms	m ²	7		
	500.08.01.02	Top of laundry outlet chamber floors	m ²	10		
	500.08.01.03	Top of laundry outlet chamber walls	m ²	5		
	500.08.02	Steel-floated finishes to:				
	500.08.02.01	Top of tank walls	m ²	70		
	500.08.02.02	Top of laundry walls	m ²	24		
	500.08.02.03	Top laundry channel	m ²	245		
<i>Carried forward</i>						

Bill 6: Primary Settling Tanks (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	500.08.02.04	Top of launder walls (sloping)	m ²	36		
	500.08.03	Power-floated finishes to:				
	500.08.03.01	Top of conical shaped screeds on tank floors to 3 mm tolerance	m ²	2082		
	500.08.04	Extra over subitem 500.08.02 for special finishing accuracy (Specify)				
	500.08.04.01	Special finishing tolerances to top of outside ringwalls as specified	m ²	70		
	500.09	Bond breaker below floor				
SD8.4.9	500.09.01	250 micron polyethylene sheeting	m ²	2208		
SD8.4.10	500.10	Casting pipes and specials in concrete				
	500.10.01	Up to 300 mm nominal diameter:				
	500.10.01.01	Through 450 mm thick central platform	No.	4		
	500.10.01.02	Through 400 mm thick sludge hopper walls	No.	6		
	500.10.01.03	Through 300 mm thick launder outlet walls	No.	2		
	500.10.01.04	Through entire encasement length of 18 m for cable sleeves	No.	4		
	500.10.01.05	Through entire encasement length of 18 m for sludge withdrawal pipes	No.	2		
	500.10.02	Over 300 mm up to 800 mm nominal diameter:				
	500.10.02.01	Through 400 mm thick sludge hopper walls	No.	2		
	500.10.02.02	Through entire encasement length of 18 m for inlet pipes	No.	2		
	500.10.03	Over 800 mm up to 1200 mm nominal diameter:				
<i>Carried forward</i>						

Bill 6: Primary Settling Tanks (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.5	500.10.03.01	Through 300 mm thick launder outlet walls	No.	3		
	500.11	JOINTS				
	500.11.01	Expansion joints as detailed on drawings 106681-M7-07-DR-CC-0009 and 0010				
	500.11.01.01	Curved floor joint type R in 200 mm thick floor slab	m	305		
	500.11.02	Construction joints as detailed on drawings 106681-M7-07-DR-CC-0009 and 0010				
	500.11.02.01	Straight foundation joint type T in 400 mm wall footings	m	10		
	500.11.02.02	Straight wall joint type J in 300 mm thick walls	m	105		
	500.11.02.03	Straight floor/foundation joint type S in 200 mm thick sloping floor slabs	m	380		
	500.11.02.04	Straight floor/foundation joint type S in 400 mm thick wall footings	m	50		
	500.11.02.05	Curved floor to wall joint type D in 220 mm thick walls	m	215		
	500.11.02.06	Curved floor to wall joint type D in 400 mm thick walls	m	30		
	500.11.02.07	Curved wall joint type H in 300 mm thick walls	m	230		
	500.11.02.08	Curved wall joint type H in 400 mm thick walls	m	30		
	500.11.02.09	Curved wall/foundation joint type U through 300 mm wide wall at top of footings	m	230		
	500.11.02.10	Curved joint type V at launder floor slab connection to walls	m	230		
<i>Carried forward</i>						

Bill 6: Primary Settling Tanks (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.8	500.12	HD bolts and miscellaneous metal work:				
	500.12.01	HD bolts				
	500.12.01.01	M10 316 Stainless steel chemical anchors with ss washers	No.	226		
	500.12.02	Weir plates				
	500.12.02.01	2.5 mm thick 304 stainless steel v-notch weir plate	m	455		
SD8.10	500.13	Tests for water tightness				
	500.13.01	Primary Settling Tanks	Sum	1		
2001 CC1 Total Carried to Bill 6 Summary						

Bill 6: Primary Settling Tanks (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 H	180.00	STRUCTURAL STEELWORK				
8.3.9	180.01	Flooring, complete and installed with frames:				
	180.01.01	Rectagrid RS40 open grid floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m ²	15		
1200 H Total Carried to Bill 6 Summary						

Bill 6: Primary Settling Tanks (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 L	210.00	MEDIUM-PRESSURE PIPELINES				
8.2.2	210.01	Supplying, laying and bedding of HDPE specials complete with couplings:				
	210.12.01	HDPE to steel pipe connection complete as per drawing: 106681-M7-06-DR-CC-0017				
	210.12.01.01	DN 200 mm HDPE to DN 200 mm steel	No.	2		
8.2.2	210.02	Supply, laying and bedding of steel specials complete with couplings: (Refer to relevant Project Specification for corrosion protection)				
		Refer to Drawing: 106681-M7-71-DR-CC-0002				
	210.02.01	Item 1: To be manufactured, refer to special item	No.	2		
	210.02.02	Item 2: To be manufactured, refer to special item	No.	2		
	210.02.03	Item 3: Spool piece DN 800 X 8 mm SANS 719 Grade C; flanged one end SANS 1123 Table 1000/3 (RF), full pipe length	No.	2		
	210.02.04	Item 4: Steel pipe DN 800 X 8 mm SANS 719 Grade C	No.	2		
	210.02.05	Item 5: Medium radius bend (2 D); 78.7 Degree DN 800 X 8 mm SANS 719 Grade C; refer to typical fitting details	No.	2		
	210.02.06	Item 6: Steel pipe DN 800 X 8 mm SANS 719 Grade C	No.	2		
	210.02.07	Item 7: Medium radius bend (2 D); 90 Degree DN 800 X 8 mm SANS 719 Grade C; refer to typical fitting details	No.	2		
	210.02.08	Item 8: Spool piece DN 800 X 8 mm SANS 719; flanged one end SANS 1123 Table 1000/3 (RF), refer to special item	No.	2		
<i>Carried forward</i>						

Bill 6: Primary Settling Tanks (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.2.13	210.02.09	Refer to Drawing: 106681-M7-71-DR-CC-0003 Item 1: HDPE pipe DN 200 PE 100 PN 8, refer to special item	No.	2		
	210.02.10	Item 3: Spool piece DN 200 x 4.5 mm SANS 719 grade c; flanged one end SANS 1123 table 1000/3 (RF) with puddle flange, refer to special item	No.	2		
	210.02.11	Refer to Drawing: 106681-M7-41-DR-CC-0005 Cast-in specials for pipelines from sludge recycle pump station. Steel pipe DN 150 x 4.2 mm SANS 62; with puddle flange DN 150, OD 285 mm, thickness 18 mm. Length approximately 500 mm (tbc on site)	No.	2		
	210.03	Supply, laying and bedding of concrete pipe specials: Refer to Drawing: 106681-M7-41-DR-CC-0004 & 0005				
	210.03.01	Cast-in specials for outlet pipework at primary settling tanks 1 and 2 with swellable waterstop and bandage seal around the pipe. Cut length of DN 1050 SI 100D concrete pipe.	No.	2		
	210.03.02	Cast-in specials for inlet pipework at primary settling tank 2 with swellable waterstop and bandage seal around the pipe. Cut length of DN 1050 SI 100D concrete pipe.	No.	1		
	210.04	Pump shafts: Refer to Drawing: 106681-M7-41-DR-CC-0010				
<i>Carried forward</i>						

Bill 6: Primary Settling Tanks (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.2.14	210.04.01	Construct pump shafts complete as shown on drawings, including excavation, backfilling, formwork, reinforcement, covers, access, etc. (if no reinforcement is shown on the drawings assume reinforcement to be 120 kg/m³ of concrete).	No.	2		
	210.05	Extra over item 210.04 for pump shafts of depth exceeding 1.5 m:				
	210.05.01	Pump shafts:				
PSL 8.2.18	210.05.01.01	Over 1.5 m up to 7.5 m in increments of 0.25 m	No.	48		
	210.06	Connection to existing infrastructure Refer to Drawing: 106681-M7-44-DR-CC-0005				
	210.06.01	Connection of pipeline 1.1 to existing Division structure including supply fixing and bedding of all neccesarry connection pipe fittings and couplings	Sum	1		
	210.06.02	Connection of pipeline 1.2 to existing Division structure including supply fixing and bedding of all neccesarry connection pipe fittings and couplings	Sum	1		
1200 L Total Carried to Bill 6 Summary						

Bill 6: Primary Settling Tanks (Civil)**CABLE DUCTS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LC	212.00	CABLE DUCTS				
PSLC 8.2.5	212.01	Supply, lay, bed and prove duct:				
	212.01.01	HDPE pipes:				
	212.01.01.01	75 mm dia	m	60		
1200 LC Total Carried to Bill 6 Summary						

Bill 6: Primary Settling Tanks (Civil)**STORMWATER DRAINAGE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 LE	214.00	STORMWATER DRAINAGE				
PSLE 8.2.14	214.01	Pipes in subsurface drains:				
	214.01.01	Normal duty uPVC pipes complete with couplings:				
	214.01.01.01	110 mm internal dia, perforated	m	250		
	214.01.01.02	160 mm internal dia, perforated	m	355		
	214.01.01.03	160 mm internal dia, unperforated	m	40		
PSLE 8.2.15	214.02	Geofabric				
	214.02.01	Geotextile filter fabric (180 g/m ²)	m ²	1215		
PSLE 8.2.16	214.03	Crushed stone in subsurface drains	m ³	90		
	214.04	Coarse graded sand filling on top of subsoil drainage	m ³	260		
PSLE 8.2.19	214.05	Jointing with existing network	Sum	1		
1200 LE Total Carried to Bill 6 Summary						

Bill 6: Primary Settling Tanks (Civil)**SUMMARY**

BILL 6 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 H	STRUCTURAL STEELWORK	
SANS 1200 L	MEDIUM-PRESSURE PIPELINES	
SANS 1200 LC	CABLE DUCTS	
SANS 1200 LE	STORMWATER DRAINAGE	
Bill 6 Total Carried to BoQ Summary		

Bill 7: Sludge Recycle Pump Station (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE Refer to Drawings: 106681-M7-42-DR-CC-0001 to 0004				
8.2.4	130.01	Reclear surfaces (only on instructions from Engineer):				
	130.01.01	Areas	m ²	205		
8.2.10	130.02	Remove topsoil to nominal depth of 150 mm and stockpile	m ³	65		
1200 C Total Carried to Bill 7 Summary						

Bill 7: Sludge Recycle Pump Station (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
		Refer to Drawings: 106681-M7-42-DR-CC-0001 & 0004				
PSD 8.3.3	140.01	Restricted excavation:				
	140.01.01	Excavate for Sludge Recycle Pump Station in all materials, and use for backfill or embankment, or dispose	m ³	429		
PSD 8.3.3	140.01.02	Extra over items 140.01.01 above for :				
	140.01.02.01	Hard rock excavation	m ³	107		
	140.01.03	Extra over item 140.01 for hand excavation	m ³	45		
8.3.5	140.02	Extra excavation in all materials to provide working space around structure	m ²	141		
8.3.9	140.03	Extra over items 140.01 for backfill or for fill material against structures	m ³	381		
PSD 8.3.15	140.04	Extra over items 140.01.01 for disposing of spoil material on a site provided by the Contractor	m ³	429		
1200 D	Total Carried to Bill 7 Summary					

Bill 7: Sludge Recycle Pump Station (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.01	Treatment of in-situ material:				
	147.01.01	In-situ material preparation and compaction of material to:				
	147.01.01.01	Minimum of 93% of modified AASHTO maximum density (Rip and recompact to a depth of 150 mm)	m ³	25		
PSDM 8.3.5	147.02	Selected layer using material from commercial sources or excavations:				
	147.02.01	G5 material compacted in 150 mm layers to 95% Modified AASHTO max density	m ³	120		
	147.02.02	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	428		
	147.02.03	Rockfill (100 mm stone) process and compact	m ³	48		
PSDM 8.3.17	147.03	Extra over item 147.02 for obtaining material from commercial sources				
	147.03.01	G5 material	m ³	120		
	147.03.02	G7 material	m ³	428		
	147.03.03	Rockfill (100 mm stone)	m ³	48		
PSDM 8.3.18	147.04	Final finishing and cleaning up of the Site of the Works	Sum	1		
1200 DM	Total Carried to Bill 7 Summary					

Bill 7: Sludge Recycle Pump Station (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
		SCHEDULED FORMWORK ITEMS				
SD8.2.2	500.01	Smooth:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Sides of walls	m ²	302		
	500.01.01.02	Sides of columns	m ²	48		
	500.01.01.03	Sides of ring beam	m ²	43		
	500.01.01.04	Sides of pump plinths	m ²	20		
	500.01.01.05	Sides of support plinths	m ²	35		
	500.01.01.06	Sides of stairs	m ²	5		
	500.01.02	Sloping formwork to:				
	500.01.02.01	Soffit of stairs	m ²	5		
	500.01.03	Horizontal formwork to:				
	500.01.03.01	Soffit of floor slab	m ²	26		
	500.01.03.02	Soffit of ring beams	m ²	14		
SD8.2.5	500.02	Narrow widths (up to 300 mm wide):				
	500.02.01	Different widths in the following ranges:				
	500.02.01.01	Over 200 mm and up to 300 mm	m	104		
		SCHEDULED REINFORCEMENT ITEMS				
SD8.3.1	500.03	High-tensile steel bars in the following:				
	500.03.01	All diameter	t	17		
SD8.3.2	500.04	High-tensile welded mesh in the following:				
	500.04.01	Ref No 193 in apron and ramps	m ²	67		
Carried forward						

Bill 7: Sludge Recycle Pump Station (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
Total brought forward		<i>Brought forward</i>				
SD8.4.2	500.04.02	Ref No 395 in surface beds	m ²	110		
	500.04.03	Ref No 617 in surface beds	m ²	20		
	SCHEDULED CONCRETE ITEMS					
SD8.4.2	500.05	Blinding layer:				
	500.05.01	Class 15 MPa/19 mm fly ash concrete of:				
	500.05.01.01	75 mm thickness	m ²	162		
SD8.4.3	500.06	Strength concrete: (Dolomitic Aggregates)				
	500.06.01	Class 35 MPa/ 19 mm concrete in:				
	500.06.01.01	Raft foundations	m ³	48		
SD8.4.3	500.06.01.02	Surface beds	m ³	20		
	500.06.01.03	Floor slabs	m ³	6		
	500.06.01.04	Columns	m ³	4		
	500.06.01.05	Walls	m ³	45		
	500.06.01.06	Ring beams	m ³	7		
	500.06.01.07	Pump plinths	m ³	7		
	500.06.01.08	Pipe support plinths	m ³	6		
	500.06.01.09	Stairs and landings	m ³	2		
	500.06.01.10	Foundation slabs	m ³	1		
	500.06.01.11	Aprons	m ³	5		
	500.06.01.12	Ramps	m ³	3		
SD8.4.4	500.07	Unformed surface finishes:				
	500.07.01	Wood-floated finishes to:				
	500.07.01.01	Top of pump plinths	m ²	10		
Total carried forward						

Bill 7: Sludge Recycle Pump Station (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
Total brought forward		<i>Brought forward</i>				
SD8.4.10	500.07.01.02	Top of support plinths	m ²	5		
	500.07.01.03	Top of stairs and landings	m ²	5		
	500.07.01.04	Top of walls	m ²	17		
	500.07.01.05	Top of ring beam	m ²	14		
	500.07.01.06	Top of foundation slabs	m ²	5		
	500.07.01.07	Aprons and ramps	m ²	67		
	500.07.02	Power-floated finishes to:				
	500.07.02.01	Top of raft foundation	m ²	159		
	500.07.02.02	Top of floor slab	m ²	26		
	500.08	Casting pipes and specials in concrete				
SD8.7	500.08.01	Up to 300 mm nominal bore:				
	500.08.01.01	Through 250 mm thick walls	No.	14		
	500.08.01.02	Through 250 mm thick floors	No.	6		
	500.09	Grouting:				
	500.09.01	Under base plates				
	500.09.01.01	25 mm non-shrink grout under base plates	m ³	0.2		
2100 CC1		Total Carried to Bill 7 Summary				

Bill 7: Sludge Recycle Pump Station (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 H	180.00	STRUCTURAL STEELWORK				
8.3.1	180.01	Supply and fabrication:				
	180.01.01	Preparation of shop detail drawings	Sum	1		
	180.01.02	Supply and fabrication of steelwork:				
	180.01.02.01	Hot rolled sections:				
	180.01.02.01.01	Angles	t	1.4		
	180.01.02.01.02	Universal beams,columns and channels	t	2.03		
	180.01.02.02	Cold formed section				
	180.01.02.02.01	Lip channels	t	1		
	180.01.02.03	Connection plates, cleats, etc.	t	0.2		
8.3.2	180.02	Delivery to Site:				
	180.02.01	Normal delivery:				
	180.02.01.01	All steel work	t	4.4		
8.3.3	180.03	Erection on Site:				
	180.03.01	All steel work	t	4.4		
8.3.4	180.04	Erection bolts:				
	180.04.01	Grade 8.8 bolts	t	0.11		
8.3.6	180.05	Holding-down (HD) bolts:				
	180.05.01	M20 chemical anchors	No.	32		
8.3.7	180.06	Handrails:				
	180.06.01	Handrails complete as show on Drawing No 106681-M7-07-DR-CC-0004				
	180.06.01.01	Horizontal	m	19		
	180.06.01.02	Sloping (measured on slope)	m	8		
<i>Carried forward</i>						

Bill 7: Sludge Recycle Pump Station (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.3.9	180.06.01.03	Shaped ends	No.	10		
	180.07	Flooring, complete and installed with frames:				
	180.07.01	Rectagrid RS40 open grid floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m ²	10		
	180.07.02	Cast in angle 45 x 45 x 5mm with 10mm dia x 150mm long lugs at 600mm centres	m	34		
8.3.10	180.08	Non-destructive testing				
	180.08.01	Load test on crawl beam after installation	No.	1		
1200 H Total Carried to Bill 7 Summary						

Bill 7: Sludge Recycle Pump Station (Civil)**CLADDING AND SHEETING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 HB	182	CLADDING AND SHEETING				
8.2.2	182.01	Supply and install cladding and sheeting:				
	182.01.01	0.58 mm thick Concealed fix Klip-Lok 700 or similar approved galvanized Z450 spelter sheeting with Globalcon finish in:				
	182.01.01.01	Roof coverings with pitches not exceeding 25°, fixed to steel purlins	m²	170		
	182.01.01.03	Extra over roof sheeting for cranking to form approximately 10 degree angle at ridge	m	32		
	182.01.01.04	Extra over roof sheeting for 450 mm radius cranking	m	32		
8.2.3	182.02	Supply and install ancillaries:				
	182.02.01	0,8 mm thick galvanized sheet metal with Globalcon finish on both sides:				
	182.02.01.01	Standard ridge flashing	m	20		
	182.02.01.02	Narrow or broad flute closers	m	53		
	182.02.01.03	300 mm Diameter galvanized steel Whirlybird ventilator	No.	4		
1200 HB	Total Carried to Bill 7 Summary					

Bill 7: Sludge Recycle Pump Station (Civil)**CORROSION PROTECTION OF STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 HC	183.00	CORROSION PROTECTION OF STRUCTURAL STEELWORK				
8.2.1	183.01	Surface dressing and repairs at place of fabrication	t	4.4		
8.2.2	183.02	Transport	t	4.4		
8.2.3	183.03	Surface preparation and coating application:				
		Hot dipped galvanized as per relevant project specification				
	183.03.01	In the shop	t	4.4		
	183.03.02	On Site	t	4.4		
8.2.4	183.04	Establishment on Site for corrosion protection	Sum	1		
1200 HC Total Carried to Bill 7 Summary						

Bill 7: Sludge Recycle Pump Station (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 L 8.2.2	210.00	MEDIUM-PRESSURE PIPELINES Refer to Drawing: 106681-M7-42-DR-MM-0001				
	210.01	Supply, laying and bedding of specials complete with couplings: (Refer to relevant Project Specification for corrosion protection)				
	210.01.01	Item 4: Long radius elbow 90 deg; DN-150 x 5 mm, to JIS B2311-82, flanged SANS 1123 table 1000/3 (RF), refer to typical fitting details	No.	2		
	210.01.02	Item 12: Spool piece DN 150 x 4.2 mm SANS 62; flanged both ends SANS 1123 table 1000/3 (RF) with puddle flange, refer to special item	No.	4		
	210.01.03	Item 13: To be manufactured, refer to special item	No.	2		
	210.01.04	Item 14: Equal tee DN 150 x 4.2 mm SANS 62; flanged SANS 1123 table 1000/3 (RF), with spool piece, refer to special item	No.	2		
	210.01.05	Item 15: Long radius elbow 90 deg; DN-150 x 5 mm, to JIS B2311-82, flanged SANS 1123 table 1000/3 (RF), with spool piece, refer to special item	No.	2		
	210.01.06	Item 23: Spool piece DN 200 x 4.5 mm SANS 719 grade C; flanged both ends SANS 1123 Table 1600/3 (RF) with puddle flange, refer to special item	No.	4		
	210.01.07	Item 24: To be manufactured, refer to special item	No.	2		
	210.01.08	Item 25: Equal tee DN 200 x 4.5 mm SANS 719 grade C ; flanged SANS 1123 Table 1600/3 (RF), with spool piece, refer to special item	No.	2		
1200 L		Total Carried to Bill 7 Summary				

Bill 7: Sludge Recycle Pump Station (Civil)**CABLE DUCTS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LC	212.00	CABLE DUCTS				
PSLC 8.2.5	212.01	Supply, lay, bed and prove duct:				
	212.01.01	uPVC pipes:				
	212.01.01.01	200 mm dia	m	5		
1200 LC Total Carried to Bill 7 Summary						

Bill 7: Sludge Recycle Pump Station (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
PART SPEC PD		BUILDING WORK				
PD 10	PD.01	Brickwork:				
	PD.01.01	230 mm thick, outside face: face brick standard, inside face:non-facing plastered engineeringbricks in:				
	PD.01.01.01	Superstructure	m ²	150		
	PD.01.02	230 mm thick, non-facing plastered, engineering bricks				
	PD.01.02.01	Cable trenches	m ²	11		
	PD.02	Plaster Work:				
	PD.02.01	10 mm thick, steel-float finish				
	PD.02.01.01	Internal brick or concrete walls or columns	m ²	150		
	PD.02.01.02	Trench walls	m ²	11		
	PD.04	Doors and Windows:				
		Refer to Drawing: 106681-M7-42-DR-CC-0005				
	PD.04.01	Doors				
	PD.04.01.01	Door: D1 complete as per door and window schedule	No.	1		
	PD.04.01.02	Door: D2 complete as per door and window schedule	No.	1		
	PD.04.01.03	Door: D3 complete as per door and window schedule	No.	1		
	PD.04.02	Windows				
	PD.04.02.01	Window: W1 complete as per door and window schedule	No.	19		
	PD.08	Miscellaneous Work:				
	PD.08.01	Paintwork, one coat primer and two coats super acrylic paint:				
Carried forward						

Bill 7: Sludge Recycle Pump Station (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.08.01.01	Internal plastered walls	m ²	150		
	PD.09	Miscellaneous Items:				
	PD.09.01	Items measured by number:				
	PD.09.01.01	Hoop iron strap fixed onto concrete column and built into brickwork as per Drawing no. 106681-M7-07-DR-CC-0002	No.	245		
	PD.09.01.02	9 kg DCP fire extinguisher	No.	2		
	PD.09.01.03	Weather proof extinguisher cabinets	No.	2		
	PD.09.01.04	Photoluminescent signs with pictograms screwed or plugged as shown on Drawing no 106681-M7-06-DR-CC-0021:				
	PD.09.01.04.01	Sign E1	No.	1		
	PD.09.01.04.02	Sign E3	No.	1		
	PD.09.01.04.03	Sign E6	No.	1		
	PD.09.01.04.04	Sign E12	No.	1		
	PD.09.01.04.05	Sign F13	No.	2		
	PD.09.01.04.06	Sign F16	No.	1		
	PD.09.01.04.06	Sign F19	No.	1		
	PD.09.01.04.07	Sign F45	No.	1		
	PD.09.03	Items measured by area:				
	PD.09.03.01	Ant poison, aldrin emulsifiable concentrates solution to SABS 618 spread at a rate recommended by the manufacturer:				
	PD.09.03.01.01	In bottom of raft foundations	m ²	159		
	PD.09.03.01.02	Under ramps	m ²	21		
	PD.09.03.01.03	Under foundations	m ²	3		
<i>Carried forward</i>						

Bill 7: Sludge Recycle Pump Station (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.09.03.02	250 micron green medium density polyethylene dampproof sheeting under floors	m ²	159		
SPEC PD Total Carried to Bill 7 Summary						

Bill 7: Sludge Recycle Pump Station (Civil)**SUMMARY**

BILL 7 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 H	STRUCTURAL STEELWORK	
SANS 1200 HB	CLADDING AND SHEETING	
SANS 1200 HC	CORROSION PROTECTION OF STRUCTURAL STEELWORK	
SANS 1200 L	MEDIUM-PRESSURE PIPELINES	
SANS 1200 LC	CABLE DUCTS	
PART SPEC PD	BUILDING WORK	
Bill 7 Total Carried to BoQ Summary		

Bill 8: Biological Reactor (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE				
		Refer to Drawings: 106681-M7-12-DR-CC-0001 to 0004				
PSC 8.2.1	130.01	Clear and grub:				
	130.01.01	Areas	m ²	14070		
8.2.2	130.02	Remove and grub large trees and tree stumps of girth:				
	130.02.01	Over 1,0 m and up to and including 2,0 m	No.	5		
	130.02.02	Over 2,0 m and up to and including 3,0 m	No.	5		
8.2.4	130.03	Reclear surfaces (only on instructions from Engineer):				
	130.03.01	Areas	m ²	8540		
8.2.5	130.04	Take down existing fences	km	0.15		
8.2.7	130.05	Dismantle and remove:				
	130.05.01	Pipelines not encased in concrete:				
	130.05.01.01	Up to 500 mm dia	m	50		
	130.05.01.02	Over 500 mm dia	m	50		
	130.05.03	Underground LT cables and ducts	m	50		
	130.05.04	Underground 11kV to 33 kV cables and ducts	m	50		
	130.05.05	Underground Telkom cables and ducts	m	50		
	130.05.06	Underground optic fibre cables and ducts	m	50		
	130.05.07	Eskom overhead HT power lines	m	150		
	130.05.08	Overhead telephone lines	m	150		
8.2.10	130.06	Remove topsoil to nominal depth of 150 mm and stockpile	m ³	2115		
1200 C	Total Carried to Bill 8 Summary					

Bill 8: Biological Reactor (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
		Refer to Drawings: 106681-M7-12-DR-CC-0001 to 0004 and				
PSD 8.3.2	140.01	Bulk excavation:				
	140.01.01	Excavate in all materials and use for embankment or backfill as ordered from:				
	140.01.01.01	Necessary excavations	m ³	14865		
	140.01.01.02	Commercial sources	m ³	37250		
	140.01.02	Excavate in all materials and dispose	m ³	40870		
	140.01.03	Extra over items 140.01.01 to 140.01.02 above for:				
	140.01.03.01	Hard rock excavation	m ³	18630		
PSD 8.3.3	140.02	Restricted excavation:				
	140.02.01	Excavate for sump, at Recycle pumps, in all materials, and use for backfill or embankment, or dispose	m ³	25		
	140.02.02	Excavate for subsoil drainage sump in all materials, and use for backfill or embankment, or dispose	m ³	35		
PSD 8.3.3	140.02.03	Extra over items 140.02.01 to 140.02.02 above for :				
	140.02.03.01	Hard rock excavation	m ³	15		
	140.02.04	Extra over item 140.02 for hand excavation	m ³	10		
8.3.5	140.03	Extra excavation in all materials to provide working space around structure	m ²	1515		
PSD 8.3.8	140.04	Existing services:				
	140.04.01	Hand excavation for locating and exposing existing services:				
	140.04.01.01	In all areas	m ³	7450		
<i>Carried forward</i>						

Bill 8: Biological Reactor (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.3.9	140.05	Extra over items 140.01 and 140.02 for backfill or for fill material against structures	m ³	6060		
PSD 8.3.10	140.06	Topsoiling	m ³	2115		
8.3.11	140.07	Grassing or other vegetation cover:				
	140.07.01	Hydroseeding	m ²	5600		
PSD 8.3.15	140.08	Extra over item 140.01.02 for disposing of spoil material on a site provided by the Contractor	m ³	74500		
1200 D Total Carried to Bill 8 Summary						

Bill 8: Biological Reactor (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES)				
		TRENCHES FOR SUBSURFACE DRAINS				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.01	Trenches of width less than 600 mm for depths:				
	142.01.01.01	Up to 1,0 m (around reactor)	m	400		
	142.01.01.02	Up to 1,0 m (under reactor)	m	1450		
PSDB 8.3.2	142.02	Extra over item 142.01 above for:				
	142.02.01	Hard rock excavation	m ³	25		
PSDB 8.3.2	142.02.02	Hand excavation where ordered by the Engineer:				
	142.02.02.01	Soft material	m ³	50		
	142.02.02.02	Hard material	m ³	50		
PSDB 8.3.2	142.03	Excavate and dispose of unsuitable material from trench bottom	m ³	230		
1200 DB		Total Carried to Bill 8 Summary				

Bill 8: Biological Reactor (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.01	Treatment of in-situ material:				
	147.01.01	In-situ material preparation and compaction of material to:				
	147.01.01.01	Minimum of 93% of modified AASHTO maximum density (Rip and recompact to a depth of 150 mm)	m ³	1050		
PSDM 8.3.5	147.02	Selected layer using material from commercial sources or excavations:				
	147.02.01	G5 material compacted in 150 mm layers to 95% Modified AASHTO max density	m ³	2120		
	147.02.02	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	10280		
	147.02.03	Rockfill (100 mm stone) process and compact	m ³	2090		
PSDM 8.3.17	147.03	Extra over item 147.02 for obtaining material from commercial sources				
	147.03.01	G5 material	m ³	2120		
	147.03.02	G7 material	m ³	10280		
	147.03.03	Rockfill (100 mm stone)	m ³	2090		
PSDM 8.3.18	147.04	Final finishing and cleaning up of the Site of the Works	Sum	1		
1200 DM	Total Carried to Bill 8 Summary					

Bill 8: Biological Reactor (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
		SCHEDULED FORMWORK ITEMS				
SD8.2.1	500.01	Rough:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Sides of wall footings	m ²	170		
SD8.2.2	500.02	Smooth:				
	500.02.01	Vertical formwork to:				
	500.02.01.01	Sides of footings	m ²	270		
	500.02.01.02	Sides of walls	m ²	2100		
	500.02.01.03	Sides of reactor walls (internal)	m ²	1885		
	500.02.01.04	Sides of channel walls	m ²	4470		
	500.02.01.05	Sides of channels walls (0.6 m radius)	m ²	45		
	500.02.01.06	Sides of channel walls (3 m)	m ²	10		
	500.02.01.07	Sides of channel walls (4.6 m radius)	m ²	15		
	500.02.01.08	Sides of channel walls (7.6 m radius)	m ²	10		
	500.02.01.09	Sides of columns	m ²	908		
	500.02.01.10	Sides of downstand beams	m ²	215		
	500.02.01.11	Sides of stairs	m ²	15		
	500.02.01.12	Sides of drainage sump	m ²	170		
	500.02.02	Battered formwork to:				
	500.02.02.01	Sides of reactor walls (external)	m ²	1885		
	500.02.03	Sloping formwork to:				
	500.02.03.01	Soffits of stairs	m ²	50		
	500.02.04	Horizontal formwork to:				
	500.02.04.01	Soffits of slabs	m ²	2090		
Carried forward						

Bill 8: Biological Reactor (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.2.5	500.02.04.02	Soffits of downstand beams	m ²	190		
	500.02.04.03	Soffits of landings	m ²	5		
	500.02.04.04	Soffit of drainage sump slab	m ²	15		
	500.03	Narrow widths (up to 300 mm wide):				
SD8.2.6	500.03.01	Different widths in the following ranges:				
	500.03.01.01	Over 200 mm and up to 300 mm	m	825		
	500.04	Box out holes/form voids:				
	500.04.01	Small circular, of diameter up to and including 0,35 m, and in the following depth ranges:				
	500.04.01.01	0 m up to and including 0,5 m	No.	96		
	500.04.02	Small other than circular, of area up to and including 0,1 m², and in the following depth ranges:				
	500.04.02.01	0 m up to and including 0,5 m	No.	140		
	500.04.03	Large, circular, of diameter over 0,35 m up to and including 0,7 m and in the following depth ranges:				
	500.04.03.01	0 m up to and including 0,5 m	No.	40		
	500.04.04	Large, circular, of diameter over 0,7 m up to and including 1 m and in the following depth ranges:				
	500.04.04.01	0 m up to and including 0,5 m	No.	10		
	500.04.05	Large, other than circular, of area over 0.1 m² and up to and including 0.5 m², and in the following depth ranges:				
	500.04.05.01	0 m up to and including 0,5 m	No.	10		
<i>Carried forward</i>						

Bill 8: Biological Reactor (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.3.1	500.04.06	Large, other than circular, of area over 0.5 m ² and up to and including 1 m ² , and in the following depth ranges:				
	500.04.06.01	0 m up to and including 0,5 m	No.	6		
		SCHEDULED REINFORCEMENT ITEMS				
SD8.3.1	500.05	High-tensile steel bars in the following:				
	500.05.01	All diameters	t	540		
		SCHEDULED CONCRETE ITEMS				
SD8.4.2	500.06	Blinding layer:				
	500.06.01	Class 15 MPa/19 mm concrete of:				
	500.06.01.01	90 mm thickness	m ²	6975		
SD8.4.3	500.07	Strength concrete: (Dolomitic Aggregates)				
	500.07.01	Class 25 MPa/ 38 mm mass concrete in:				
	500.07.01.01	Walkway lids	m ³	1		
	500.07.02	Class 35 MPa/ 19 mm concrete in:				
	500.07.02.01	External wall footings	m ³	445		
	500.07.02.02	Internal wall footings	m ³	345		
	500.07.02.03	External walls	m ³	815		
	500.07.02.04	Internal walls	m ³	652		
	500.07.02.05	Floor slabs	m ³	895		
	500.07.02.06	Column footings	m ³	320		
	500.07.02.07	Columns	m ³	102		
	500.07.02.08	Column heads	m ³	10		
<i>Carried forward</i>						

Bill 8: Biological Reactor (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.4	500.07.02.09	Column walls	m ³	59		
	500.07.02.10	Stairs	m ³	15		
	500.07.02.11	Landings	m ³	5		
	500.07.02.12	Channel floors	m ³	618		
	500.07.02.13	Channel walls	m ³	410		
	500.07.02.14	Downstand beams	m ³	70		
SD8.4.4	500.08	Unformed surface finishes:				
	500.08.01	Wood-floated finishes to:				
	500.08.01.01	Top of floor slabs	m ²	5880		
	500.08.01.02	Top of walls	m ²	565		
	500.08.01.03	Top of column footing	m ²	685		
	500.08.01.04	Top of channel floors	m ²	1950		
SD8.4.9	500.09	Bond breaker below floor				
	500.09.01	250 micron polyethylene sheeting	m ²	6975		
SD8.4.10	500.10	Casting pipes and specials in concrete				
	500.10.01	Up to 300 mm nominal diameter:				
	500.10.01.01	Through 550 mm thick battered wall (Refer to Drawing No: 106681-M7-51-DR-CC-0009)	No.	1		
	500.10.02	Over 300 mm up to 600 mm nominal diameter:				
	500.10.02.01	Through 550 mm thick battered walls (Refer to Drawing No: 106681-M7-51-DR-CC-0014)	No.	2		
	500.10.03	Over 600 mm up to 1200 mm nominal diameter:				
<i>Carried forward</i>						

Bill 8: Biological Reactor (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.5	500.10.03.01	Through 300 mm thick walls (Refer to Drawing No: 106681-M7-51-DR-CC-0009)	No.	1		
	500.10.03.02	Through 550 mm thick battered walls (Refer to Drawing No: 106681-M7-51-DR-CC-0009, 0014 and 0016)	No.	5		
	500.11	JOINTS				
	500.11.01	Expansion joints as detailed on drawings no 106681-M7-07-DR-CC-0009 and 0010				
	500.11.01.01	Floor joint type A in 200 mm thick floor slab	m	60		
	500.11.01.02	Floor joint type B between 200 mm thick floor slab and column footings	m	45		
	500.11.01.03	Wall joint type E in 300 mm thick wall	m	45		
	500.11.01.04	Wall joint type M in 250 mm thick wall	m	50		
	500.11.01.05	Walkway sliding joint type Y between mixer & aerator walls and platforms	m	450		
	500.11.02	Construction joints as detailed on drawings no 106681-M7-07-DR-CC-0009 and 0010				
	500.11.02.01	Floor joint type C in 200 mm thick floor slab	m	1230		
	500.11.02.02	Wall joint type F in 300 mm thick wall	m	110		
	500.11.02.03	Wall joint type F in 500 mm thick wall	m	15		
	500.11.02.04	Wall joint type G in 300 mm thick wall	m	80		
	500.11.02.05	Floor joint type BM in 200 mm thick floor slab	m	1165		
SD8.6	500.12	Manufacture (or supply) and erect precast concrete units:				
	500.12.01	1100 x 250 mm precast cover slabs as per drawing 106681-M7-51-DR-CC-0015	No.	1640		
<i>Carried forward</i>						

Bill 8: Biological Reactor (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.7	500.12.02	Precast suspended slabs on mixer and aerator platforms as per drawing 106681-M7-51-DR-CC-0017 to 0021	m³	25		
	500.13	Grouting:				
SD8.10	500.13.01	Under base plates				
	500.13.01.01	25 mm non-shrink grout	m³	0.1		
	500.14	Tests for water tightness				
	500.14.01	Biological Reactor	Sum	1		
2001 CC1 Total Carried to Bill 8 Summary						

Bill 8: Biological Reactor (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 H	180.00	STRUCTURAL STEELWORK				
8.3.1	180.01	Supply and fabrication:				
	180.01.01	Preparation of shop detail drawings	Sum	1		
	180.01.02	Supply and fabrication of steelwork:				
	180.01.02.01	Hot rolled sections:				
	180.01.02.01.01	Angles	t	0.3		
	180.01.02.01.02	Universal beams,columns and channels	t	2.5		
	180.01.02.01.03	Steel frames for cover slabs support as per drawing 106681-M7-51-DR-CC-0015	t	1.6		
	180.01.02.02	Cold formed section	t	0.01		
	180.01.02.03	Connection plates, cleats, etc.	t	0.25		
8.3.2	180.02	Delivery to Site:				
	180.02.01	Normal delivery:				
	180.02.01.01	All steel work	t	4.5		
8.3.3	180.03	Erection on Site:				
	180.03.01	All steel work	t	4.5		
8.3.4	180.04	Erection bolts:				
	180.04.01	Grade 8.8 bolts	t	0.1		
8.3.6	180.05	Holding-down (HD) bolts:				
	180.05.01	M16 chemical anchors	No.	20		
	180.05.02	M20 chemical anchors	No.	160		
8.3.7	180.06	Handrails:				
	180.06.01	Handrails complete as show on Drawing No 106681-M7-07-DR-CC-0004				
<i>Carried forward</i>						

Bill 8: Biological Reactor (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.3.8	180.06.01.01	Horizontal	m	140		
	180.06.01.02	Sloping (measured on slope)	m	130		
	180.06.01.03	Shaped ends	No.	40		
	180.07	Ladders, complete and installed:				
	180.07.01	Chamber cage ladder complete as shown on drawings: 106681-M7-51-DR-CC-0016 and 106681-M7-05-DR-CC-0005 to 0006	No.	1		
8.3.9	180.07.02	Platform access ladder complete as shown on drawings: 106681-M7-51-DR-CC-0025 and 106681-M7-05-DR-CC-0005 to 0006	No.	1		
	180.08	Flooring, complete and installed with frames:				
	180.08.01	Rectagrid RS40 open grid floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m ²	220		
1200 H Total Carried to Bill 8 Summary						

Bill 8: Biological Reactor (Civil)**CORROSION PROTECTION OF STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 HC	183.00	CORROSION PROTECTION OF STRUCTURAL STEELWORK				
8.2.1	183.01	Surface dressing and repairs at place of fabrication	t	4.5		
8.2.2	183.02	Transport	t	4.5		
8.2.3	183.03	Surface preparation and coating application:				
		Hot dipped galvanized as per relevant project specification				
	183.03.01	In the shop	t	4.5		
	183.03.02	On Site	t	4.5		
8.2.4	183.04	Establishment on Site for corrosion protection	Sum	1		
Total Carried to Bill 8 Summary						

Bill 8: Biological Reactor (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 L 8.2.2	210.00	MEDIUM-PRESSURE PIPELINES				
	210.30	Supply, laying and bedding of specials complete with couplings: (Refer to relevant Project Specification for corrosion protection) Refer to Drawing: 106681-M7-51-MM-CC-0001				
	210.30.01	Item 1: Steel pipe DN 800 x 8 mm SANS 719 grade c; continuously welded; length approximately 41 500 mm (tbc on site)	No.	1		
	210.30.02	Item 2: Steel pipe DN 800 x 8 mm SANS 719 grade c; continuously welded; with puddle flange DN 800, OD 1025 mm, thickness 38 mm. length approximately 34 000 mm (tbc on site)	No.	1		
	210.30.03	Item 3: Medium radius bend (2 d); 90 degree DN 800 x 8 mm sans 719 grade c	No.	2		
	210.30.04	Item 4: Steel pipe DN 800 x 8 mm SANS 719 grade c; continuously welded; with puddle flange DN 800, OD 1025 mm, thickness 38 mm. length approximately 500mm (tbc on site)	No.	1		
	210.30.05	Refer to Drawing: 106681-M7-51-DR-CC-0001 & 0002 Cast-in special for feed pipeline from biological reactor to secondary settling tanks. Steel pipe DN 800 x 8 mm SANS 719 grade c; with puddle flange DN 800, OD 1025 mm, thickness 65 mm. Length approximately 500 mm (tbc on site)	No.	3		
<i>Carried forward</i>						

Bill 8: Biological Reactor (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	210.30.06	Cast-in special for return pipeline from RAS/WAS pump station. Steel pipe DN 600 x 6 mm SANS 719 grade c; with puddle flange DN 600, OD 840 mm, thickness 50 mm. Length approximately 500 mm (tbc on site)	No.	2		
		Supply, laying and bedding of concrete pipe specials:				
		Refer to Drawing: 106681-M7-51-DR-CC-0016				
	210.30.07	Cast-in special for pipeline from primary settling tank 2. Cut length of Cut length of DN 1050 SI 100D concrete pipe. Length approximately 1000 mm (tbc on site)	No.	1		
Total Carried to Bill 8 Summary						

Bill 8: Biological Reactor (Civil)**STORMWATER DRAINAGE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 LE	214.00	STORMWATER DRAINAGE				
PSLE 8.2.14	214.01	Pipes in subsurface drains:				
	214.01.01	Normal duty uPVC pipes complete with couplings:				
	214.01.01.01	110 mm internal dia, perforated	m	950		
	214.01.01.02	160 mm internal dia, perforated	m	640		
	214.01.01.03	160 mm internal dia, unperforated	m	180		
	214.01.02	Heavy-duty fittings:				
	214.01.02.01	Junctions, 110 mm internal dia	No.	40		
	214.01.02.02	Stop ends, 160 mm internal dia	No.	10		
	214.01.02.03	Junctions, 160 mm internal dia	No.	40		
PSLE 8.2.15	214.02	Geofabric				
	214.02.01	Geotextile filter fabric (180 g/m ²)	m ²	845		
	214.02.02	Geotextile filter fabric (400 g/m ²)	m ²	1420		
PSLE 8.2.16	214.03	19 mm Crushed stone in subsurface drains	m³	165		
	214.04	Coarse graded sand filling on top of subsoil drainage	m³	340		
1200 LE Total Carried to Bill 8 Summary						

Bill 8: Biological Reactor (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
PART SPEC PD		BUILDING WORK				
PD 10	PD.09	Miscellaneous Items:				
	PD.09.01	Items measured by area:				
	PD.09.01.01	Ant poison, aldrin emulsifiable concentrates solution to SABS 618 spread at a rate recommended by the manufacturer:				
	PD.09.01.01.01	Under foundations and floors	m ²	6970		
	PD.09.01.02	250 micron green medium density polyethylene dampproof sheeting under floors	m ²	6970		
SPEC PD Total Carried to Bill 8 Summary						

Bill 8: Biological Reactor (Civil)**SUMMARY**

BILL 8 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 H	STRUCTURAL STEELWORK	
SANS 1200 HC	CORROSION PROTECTION OF STRUCTURAL STEELWORK	
SANS 1200 L	MEDIUM-PRESSURE PIPELINES	
SANS 1200 LE	STORMWATER DRAINAGE	
PART SPEC PD	BUILDING WORK	
Bill 8 Total Carried to BoQ Summary		

Bill 9: Biological Reactor MCC Building (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE				
		Refer to Drawings: 106681-M7-52-DR-CC-0001 & 0007				
8.2.4	130.01	Reclear surfaces (only on instructions from Engineer):				
	130.01.01	Areas	m ²	350		
8.2.10	130.02	Remove topsoil to nominal depth of 150 mm and stockpile	m ³	55		
PSC 8.2.12	130.03	Remove topsoil to spoil site furnished by Contractor	m ³	45		
1200 C Total Carried to Bill 9 Summary						

Bill 9: Biological Reactor MCC Building (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
		Refer to Drawings: 106681-M7-52-DR-CC-0001 & 0007				
PSD 8.3.3	140.01	Restricted excavation:				
	140.01.01	Excavate for MCC Building, at Biological Reactor, in all materials, and use for backfill or embankment, or dispose	m ³	435		
	140.01.02	Excavate for Septic Tank and Soakaway in all materials, and use for backfill or embankment, or dispose	m ³	20		
PSD 8.3.3	140.01.03	Extra over items 140.01.01 to 140.01.02 above for :				
	140.01.03.01	Hard rock excavation	m ³	115		
	140.01.04	Extra over item 140.01 for hand excavation	m ³	45		
8.3.5	140.02	Extra excavation in all materials to provide working space around structure	m ²	55		
PSD 8.3.8	140.03	Existing services:				
	140.03.01	Hand excavation for locating and exposing existing services:				
	140.03.01.01	In all other areas	m ³	45		
8.3.9	140.04	Extra over items 140.01 for backfill or for fill material against structures	m ³	85		
PSD 8.3.15	140.05	Extra over items 140.01.01 and 140.01.02 for disposing of spoil material on a site provided by the Contractor	m ³	450		
1200 D	Total Carried to Bill 9 Summary					

Bill 9: Biological Reactor MCC Building (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES)				
		TRENCHES FOR WATER PIPES				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.01	Pipes up to 125 mm dia for depths:				
	142.01.01.01	Over 1,0 m up to 2,0 m				
	142.01.01.01.01	Potable water pipeline, 50 mm dia	m	40		
	142.01.01.01.02	Pipeline from MCC building to septic tank, 110 mm dia	m	10		
	142.01.02	Pipes over 125 mm dia up to 400 mm dia for depths:				
	142.01.02.01	Over 1,0 m up to 2,0 m				
	142.01.02.01.01	Concrete sleeve pipe, 300 mm dia	m	20		
PSDB 8.3.2	142.02	Extra over item 142.01 above for:				
	142.02.01	Backfill stabilized with 5% cement where directed by the Engineer	m ³	40		
1200 DB		Total Carried to Bill 9 Summary				

Bill 9: Biological Reactor MCC Building (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.01	Treatment of in-situ material:				
	147.01.01	In-situ material preparation and compaction of material to:				
	147.01.01.01	Minimum of 93% of modified AASHTO maximum density (Rip and recompact to a depth of 150 mm)	m ³	45		
PSDM 8.3.5	147.02	Selected layer using material from commercial sources or excavations:				
	147.02.01	Clean sand compacted in 150 mm layers to 100% of modified AASHTO max density	m ³	5		
	147.02.02	G5 material compacted in 150 mm layers to 95% Modified AASHTO max density	m ³	45		
	147.02.03	Gravel (25 mm stone) compacted in 150 mm layers to 95% of modified AASHTO max density	m ³	5		
	147.02.04	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	170		
	147.02.05	Rockfill (100 mm stone) process and compact	m ³	85		
	147.02.06	Rockfill (50 mm stone) process and compact	m ³	5		
	147.02.07	Rockfill (40 mm stone) process and compact	m ³	30		
PSDM 8.3.17	147.03	Extra over item 147.02 for obtaining material from commercial sources				
	147.03.01	Clean sand	m ³	5		
	147.03.02	G5 material	m ³	45		
	147.03.03	Gravel (25 mm stone)	m ³	5		
	147.03.04	G7 material	m ³	170		
<i>Carried forward</i>						

Bill 9: Biological Reactor MCC Building (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSDM 8.3.18	147.03.05	Rockfill (100 mm stone)	m ³	85		
	147.03.06	Rockfill (50 mm stone)	m ³	5		
	147.03.07	Rockfill (40 mm stone)	m ³	30		
	147.04	Final finishing and cleaning up of the Site of the Works	Sum	1		
1200 DM Total Carried to Bill 9 Summary						

Bill 9: Biological Reactor MCC Building (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
		SCHEDULED FORMWORK ITEMS				
SD8.2.2	500.01	Smooth:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Sides of cable gallery walls	m ²	200		
	500.01.01.02	Sides of transformer room walls	m ²	20		
	500.01.01.03	Sides of HT room walls	m ²	20		
	500.01.01.04	Sides of generator room walls	m ²	20		
	500.01.01.05	Sides of sump walls	m ²	5		
	500.01.02	Horizontal formwork to:				
	500.01.02.01	Soffits of slabs	m ²	85		
SD8.2.5	500.02	Narrow widths (up to 300 mm wide):				
	500.02.01	Different widths in the following ranges:				
	500.02.01.01	Over 200 mm and up to 300 mm	m	20		
SD8.2.6	500.03	Box out holes/form voids:				
	500.03.01	Small circular, of diameter up to and including 0,35 m, and in the following depth ranges:				
	500.03.01.01	0 m up to and including 0,5 m	No.	3		
	500.03.02	Large, other than circular, of area over 0.1 m² and up to and including 0.5 m², and in the following depth ranges:				
	500.03.02.01	0 m up to and including 0,5 m	No.	5		
	500.03.03	Large, other than circular, of area over 0.5 m² and in the following depth ranges:				
	500.03.03.01	0 m up to and including 0,5 m	No.	2		
<i>Carried forward</i>						

Bill 9: Biological Reactor MCC Building (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.3.1	500.04	SCHEDULED REINFORCEMENT ITEMS				
		High-tensile steel bars in the following:				
	500.04.01	All diameters	t	17		
SD8.3.2	500.05	High-tensile welded mesh in the following:				
	500.05.01	Ref No 193 in apron slab	m ²	70		
	500.05.02	Ref No 245 in surface beds	m ²	50		
	500.05.03	Ref No 395 in surface beds	m ²	50		
	500.05.04	Ref No 617 in surface beds	m ²	15		
SD8.4.2	500.06	Blinding layer:				
	500.06.01	Class 15 MPa/19 mm concrete of:				
	500.06.01.01	75 mm thickness	m ²	250		
SD8.4.3	500.07	Strength concrete: (specify if extender is used)				
	500.07.01	Class 30 MPa/ 19 mm concrete in:				
	500.07.01.01	Strip footings	m ³	3		
	500.07.01.02	Cable gallery foundation slab	m ³	30		
	500.07.01.03	Foundation Slab	m ³	27		
	500.07.01.04	MCC floor slab	m ³	23		
	500.07.01.05	Surface beds	m ³	8		
	500.07.01.06	Transformer plinth	m ³	17		
	500.07.01.07	Aprons	m ³	6		
	500.07.01.08	Cable gallery walls	m ³	19		
	500.07.01.09	Transformer, HT, generator rooms wall	m ³	9		
<i>Carried forward</i>						

Bill 9: Biological Reactor MCC Building (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.4	500.07.01.10	Sump floor slab	m ³	0.2		
	500.07.01.11	Sump walls	m ³	1		
	500.07.01.12	Ramps	m ³	1		
	500.08	Unformed surface finishes:				
	500.08.01	Steel-floated finishes to:				
	500.08.01.01	Top of transformer room walls	m ²	3		
	500.08.01.02	Top of generator room walls	m ²	3		
	500.08.01.03	Top of HT room walls	m ²	4		
	500.08.01.04	Top of Transformer plinth	m ²	19		
	500.08.01.05	Top of sump slab	m ²	0.2		
	500.08.01.06	Top of sump walls	m ²	1		
	500.08.02	Power-floated finishes to:				
	500.08.02.01	Cable gallery foundation slab	m ²	105		
	500.08.02.02	MCC floor slab	m ²	90		
	500.08.02.03	Surface beds	m ²	55		
	500.08.02.04	Aprons and ramps	m ²	67		
SD8.4.10	500.09	Casting pipes and specials in concrete				
	500.09.01	Up to 300 mm nominal bore:				
	500.09.01.01	Through 200 mm thick floors	No.	1		
	500.09.01.02	Through 250 mm thick floors	No.	1		
	500.09.01.03	Through 200 mm thick walls	No.	1		
	500.09.01.04	Through 250 mm thick walls	No.	1		
	500.09.01.05	Through 850 mm thick concrete plinth	No.	1		
2001 CC1 Total Carried to Bill 9 Summary						

Bill 9: Biological Reactor MCC Building (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 H	180.00	STRUCTURAL STEELWORK				
8.3.7	180.01	Handrails:				
	180.01.01	Handrails complete as show on Drawing No 106681-M7-07-DR-CC-0004				
	180.01.01.01	Horizontal	m	3		
	180.01.01.02	Shaped ends	No.	2		
8.3.8	180.02	Ladders, complete and installed:				
	180.02.01	Hot dipped galvanized mild steel access ladder 2.20 m high complete as on drawing no 106681-M7-05-DR-CC-0006	No.	1		
1200 H Total Carried to Bill 9 Summary						

Bill 9: Biological Reactor MCC Building (Civil)**CLADDING AND SHEETING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 HB	182	CLADDING AND SHEETING				
8.2.2	182.01	Supply and install cladding and sheeting:				
	182.01.01	0.58 mm thick Concealed fix Klip-Lok 700 or similar approved galvanized Z450 spelter sheeting with Globalcon finish in:				
	182.01.01.01	Roof coverings with pitches not exceeding 25°, fixed to timber purlins	m²	320		
	182.01.01.02	Side cladding fixed to timber battens	m	40		
	182.01.01.03	Extra over roof sheeting for cranking to form approximately 10 degree angle at ridge	m	20		
	182.01.01.04	Extra over roof sheeting and sidecladding for 500mm radius cranking	m	40		
8.2.3	182.02	Supply and install ancillaries:				
	182.02.01	0,8 mm thick galvanized sheet metal with Globalcon finish (standard colours) one side and grey colour other side in:				
	182.02.01.01	Standard ridge flashings	m	40		
	182.02.01.02	Narrow or broad flute closers	m	40		
	182.02.01.03	300 mm Diameter galvanized steel Whirlybird ventilator	No.	5		
1200 HB	Total Carried to Bill 9 Summary					

Bill 9: Biological Reactor MCC Building (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 L	210.00	MEDIUM-PRESSURE PIPELINES				
8.2.1	210.01	Supply, lay and bed on flexible bedding, complete with couplings:				
	210.01.01	HDPE PE 100 PN 12.5 pipes:				
	210.01.01.01	DN 50 mm diameter for potable water pipeline butt welded	m	40		
	210.01.02	uPVC class 9 pipes:				
	210.01.02.01	DN 110 mm diameter for pipeline from MCC building to septic tank	m	10		
	210.02	Supply, lay and bed on class B bedding, complete with couplings:				
	210.02.01	DN 300 Concrete sleeve pipe for potable water pipeline	m	20		
8.2.2	210.03	Supply, laying and bedding of uPVC specials complete with couplings:				
		Refer to Drawing: 106681-M7-52-DR-CC-0011				
	210.03.01	DN 110 mm uPVC pipe special from septic tank to french drain complete as shown on drawing	No.	1		
	210.03.02	DN 110 mm uPVC inlet pipe special at septic tank complete as shown on drawing	No.	1		
	210.04	Supply, laying and bedding of steel specials complete with couplings: (Refer to relevant Project Specification for corrosion protection)				
		Refer to Drawing: 106681-M7-52-DR-CC-0006				
	210.04.01	DN 50 mm steel pipe special at oil sump	No.	1		
<i>Carried forward</i>						

Bill 9: Biological Reactor MCC Building (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.2.3	210.05	Extra over items 210.01 to 210.03 for supplying, fixing and bedding of valves: Refer to Drawing: 106681-M7-52-DR-CC-0010				
	210.05.01	DN 20 Ball valve	No.	1		
	210.05.02	DN 50 Ball valve	No.	1		
8.2.13	210.06	Chambers and tanks Refer to Drawing: 106681-M7-52-DR-CC-0010 & 0011				
	210.06.01	Construct complete as shown on drawings, including excavation, backfilling, formwork, reinforcement, covers, access, etc. (if no reinforcement is shown on the drawings assume reinforcement to be 120 kg/m ³ of concrete)				
	210.06.01.01	Tie-in chamber	No.	1		
PSL 8.2.18		210.06.01.02	No.	1		
	210.07	Connection to existing infrastructure Refer to Drawing: 106681-M7-52-DR-CC-0010				
	210.07.01	Connection of DN 50 HDPE potable water pipeline to MCC building internal pipework including supply fixing and bedding of all necessary connection pipe fittings and couplings	Sum	1		
	210.07.02	Connection of DN 50 HDPE potable water pipeline at tie-in point including supply fixing and bedding of all necessary connection pipe fittings and couplings	Sum	1		
<i>Carried forward</i>						

Bill 9: Biological Reactor MCC Building (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	210.07.03	Connection of DN 110 uPVC pipe, at septic tank, to MCC building including supply fixing and bedding of all necessary connection pipe fittings and couplings	Sum	1		
1200 L Total Carried to Bill 9 Summary						

Bill 9: Biological Reactor MCC Building (Civil)**BEDDING (PIPES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LB	211.00	BEDDING (PIPES)				
		BEDDING FOR WATER PIPES				
8.2.1	211.01	Provision of bedding from trench excavations:				
	211.01.01	Selected granular material	m ³	10		
	211.01.02	Selected fill material	m ³	25		
PSLB 8.2.2	211.02	Supply only of bedding by importation:				
	211.02.01	From commercial sources:				
	211.02.01.01	Selected granular material	m ³	10		
	211.02.01.02	Selected fill material	m ³	25		
1200 LB Total Carried to Bill 9 Summary						

Bill 9: Biological Reactor MCC Building (Civil)**CABLE DUCTS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LC	212.00	CABLE DUCTS				
PSLC 8.2.5	212.01	Supply, lay, bed and prove duct:				
	212.01.01	HDPE pipes:				
	212.01.01.01	200 mm dia	m	5		
1200 LC Total Carried to Bill 9 Summary						

Bill 9: Biological Reactor MCC Building (Civil)**STORMWATER DRAINAGE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 LE	214.00	STORMWATER DRAINAGE				
8.2.10	214.01	Accessories:				
	214.01.01	Manhole covers including frames:				
	214.01.01.01	SANS 558 type 2A	No.	2		
PSLE 8.2.14	214.02	Pipes in subsurface drains:				
	214.02.01	Normal duty uPVC pipes complete with couplings:				
	214.02.01.01	100 mm internal dia, unperforated	m	24		
	214.02.02	Heavy-duty fittings:				
	214.02.02.01	Stop ends, 100 mm internal dia	No.	4		
	214.02.02.02	Junctions, 100 mm internal dia	No.	4		
	214.02.02.03	Tee's, 100 mm internal dia	No.	2		
	214.02.02.04	Sockets, 100 mm internal dia	No.	4		
	214.02.02.05	Two way vent valve, 100 mm internal dia	No.	2		
PSLE 8.2.15	214.03	Geofabric				
	214.03.01	Non-woven geotextile (400 g/m)	m ²	20		
1200 LE Total Carried to Bill 9 Summary						

Bill 9: Biological Reactor MCC Building (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
PART SPEC PD		BUILDING WORK				
PD 10	PD.01	Brickwork:				
	PD.01.01	230 mm thick, outside face: face brick standard, inside face: non-facing plastered engineering bricks in:				
	PD.01.01.01	Superstructure	m ²	97		
	PD.01.02	230 mm thick, non-facing plastered/extra, engineering bricks	m ²	116		
	PD.01.03	115 mm thick, non-facing plastered/extra, engineering bricks(State type)	m ²	12		
	PD.02	Plaster Work:				
	PD.02.01	10 mm thick, steel-float finish to:				
	PD.02.01.01	Internal plaster to brick walls	m ²	109		
	PD.02.02	20 mm thick high alumina, steel-float finish to:				
	PD.02.02.01	Internal plaster to brick walls of french drain	m ²	5		
	PD.04	Doors and Windows:				
		Refer to Drawing: 106681-M7-52-DR-CC-0009				
	PD.04.01	Doors				
	PD.04.01.01	Door: D1 complete as per door and window schedule	No.	5		
	PD.04.01.02	Door: D2 complete as per door and window schedule	No.	2		
	PD.04.01.03	Door: D4 complete as per door and window schedule	No.	1		
	PD.04.01.04	Door: D5 complete as per door and window schedule	No.	2		
	PD.04.02	Windows				
Carried forward						

Bill 9: Biological Reactor MCC Building (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.04.02.01	Window: W1 complete as per door and window schedule	No.	14		
	PD.04.02.02	Window: W2 complete as per door and window schedule	No.	1		
	PD.05	Structural Timber:				
	PD.05.01	Roof truss construction complete with purlins, bracing, roof ties, etc as shown on the drawings	No.	1		
	PD.05.02	Roof truss overhang construction complete as on detail C on drawing no 106681-M7-52-DR-CC-0006	No.	1		
	PD.06	Ceilings:				
	PD.06.01	6,4 mm Fibre-Cement Board fixed against 38 x 38 mm brandering at 450 mm centres in both directions complete with ioinina strips. etc.:				
	PD.06.01.01	Fixed ceiling	m²	12		
	PD.08	Miscellaneous Work:				
	PD.08.01	Paintwork, one coat merit plaster primer UC56 and two coats Plascon Super Eggshell Enamel on:				
	PD.08.01.01	Internal plastered walls	m²	213		
	PD.08.02	Plumbing complete with taps, traps, connections, etc (Refer to materials specifications):				
	PD.08.02.01	Hand wash basin	No.	1		
	PD.08.02.02	Water closet	No.	1		
	PD.08.02.03	Waste pipework for 2 sanitary fitting or point including all bends etc, up to gulley or ground level all drop pipework points to sanitary fittings or points including all bends, isolation valves, etc	Sum	1		
<i>Carried forward</i>						

Bill 9: Biological Reactor MCC Building (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.08.02.04	Water pipework reticulation chased into walls for 2 sanitary fittings or points including all bends, etc	Sum	1		
	PD.09	Miscellaneous Items:				
	PD.09.01	Items measured by number:				
	PD.09.01.01	"Waltons - Athena Veneer" Roller door Pedenza 1380 x 600 mm, Cherry finish, shelf - LHS	No.	1		
	PD.09.01.02	"Waltons" 2700 Highback chair, swivel & tilt mechanism, nylon base, contract black, laminated oak arms	No.	1		
	PD.09.01.03	"Waltons" 2700 Visitors chair, contract black, 4 legged laminated oak frame	No.	2		
	PD.09.01.04	"Waltons - Athena Veneer" Desk 2100 x 900 mm, Cherry finish, 2 leg Modesty panel - LHS (540470 VC)	No.	1		
	PD.09.01.05	Steiner toilet roll dispenser	No.	1		
	PD.09.01.06	Steiner paper towel dispenser	No.	1		
	PD.09.01.07	Steiner "S.H.E" bin sanitary disposal system	No.	1		
	PD.09.01.08	400 mm x 600 mm mirror	No.	1		
	PD.09.01.09	9 kg DCP fire extinguisher	No.	4		
	PD.09.01.10	Weather proof extinguisher cabinets	No.	4		
	PD.09.01.11	Photoluminescent signs with pictograms screwed or plugged as shown on Drawing no 106681-M7-06-DR-CC-0021:				
	PD.09.01.11.01	Sign E1	No.	2		
	PD.09.01.11.02	Sign E2	No.	1		
	PD.09.01.11.03	Sign E3	No.	5		
	PD.09.01.11.04	Sign F13	No.	4		
<i>Carried forward</i>						

Bill 9: Biological Reactor MCC Building (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.09.01.11.05	Sign F45	No.	4		
	PD.09.02	Items measured by length:				
	PD.09.02.01	"Brickforce BK 150" or similar approved, built into joints of 220mm brickwork walls (measured net)	m	545		
	PD.09.02.02	100 mm high ceramic tile skirting	m	17		
	PD.09.03	Items measured by area:				
	PD.09.03.01	Ant poison, aldrin emulsifiable concentrates solution to SABS 618 spread at a rate recommended by the manufacturer:				
	PD.09.03.02	In bottom of pad foundations and strip footings	m ²	11		
	PD.09.03.03	Under floors	m ²	207		
	PD.09.03.04	Under aprons	m ²	67		
	PD.09.03.05	250 micron green medium density polyethylene dampproof sheeting under floors	m ²	207		
	PD.09.03.06	300 x 300 x 10 mm thick ceramic tiles fixed with adhesive to plaster (plaster measured elsewhere)	m ²	11		
SPEC PD	Total Carried to Bill 9 Summary					

Bill 9: Biological Reactor MCC Building (Civil)**SUMMARY**

BILL 9 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 H	STRUCTURAL STEELWORK	
SANS 1200 HB	CLADDING AND SHEETING	
SANS 1200 L	MEDIUM-PRESSURE PIPELINES	
SANS 1200 LB	BEDDING (PIPES)	
SANS 1200 LC	CABLE DUCTS	
SANS 1200 LE	STORMWATER DRAINAGE	
PART SPEC PD	BUILDING WORK	
Bill 9 Total Carried to BoQ Summary		

Bill 10: Secondary Settling Tanks (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE Refer to Drawings: 106681-M7-12-DR-CC-0001 and 106681-M7-61-DR-CC-0001				
PSC 8.2.1	130.01	Clear and grub:				
	130.01.01	Areas	m ²	10570		
8.2.2	130.02	Remove and grub large trees and tree stumps of girth:				
	130.02.01	Over 1,0 m and up to and including 2,0 m	No.	5		
	130.02.02	Over 2,0 m and up to and including 3,0 m	No.	5		
8.2.4	130.03	Reclear surfaces (only on instructions from Engineer):				
	130.03.01	Areas	m ²	3300		
8.2.5	130.04	Take down existing fences	km	0.2		
8.2.8	130.05	Demolish and remove structures/buildings:				
	130.05.01	Remains of structures from previous Modules	Sum	1		
8.2.10	130.06	Remove topsoil to nominal depth of 150 mm and stockpile	m ³	1590		
1200 C Total Carried to Bill 10 Summary						

Bill 10: Secondary Settling Tanks (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
		Refer to Drawings: 106681-M7-12-DR-CC-0001 to 0004				
PSD 8.3.2	140.01	Bulk excavation:				
	140.01.01	Excavate in all materials and use for embankment or backfill as ordered from:				
	140.01.01.01	Necessary excavations	m ³	3400		
	140.01.01.02	Commercial sources	m ³	8500		
	140.01.02	Excavate in all materials and dispose	m ³	9350		
	140.01.03	Extra over items 140.01.01 to 140.01.02 above for:				
	140.01.03.01	Hard rock excavation	m ³	4250		
PSD 8.3.3	140.02	Restricted excavation:				
	140.02.01	Excavate for sludge hoppers, at Primary Settling Tanks, in all materials, and use for backfill or embankment, or dispose	m ³	110		
	140.02.02	Excavate for pump shafts, at Primary Settling Tanks, in all materials, and use for backfill or embankment, or dispose	m ³	30		
PSD 8.3.3	140.02.03	Extra over items 140.02.01 to 140.02.02 above for :				
	140.02.03.01	Hard rock excavation	m ³	35		
	140.02.04	Extra over item 140.02 for hand excavation	m ³	15		
8.3.5	140.03	Extra excavation in all materials to provide working space around structure	m ²	1820		
PSD 8.3.8	140.04	Existing services:				
	140.04.01	Hand excavation for locating and exposing existing services:				
<i>Carried forward</i>						

Bill 10: Secondary Settling Tanks (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	140.04.01.01	In all areas	m ³	1715		
8.3.9	140.05	Extra over items 140.01 and 140.02 for backfill or for fill material against structures	m ³	9350		
PSD 8.3.10	140.06	Topsoiling	m ³	1092		
8.3.11	140.07	Grassing or other vegetation cover:				
	140.07.01	Hydroseeding	m ²	7270		
PSD 8.3.15	140.08	Extra over item 140.01.02 for disposing of spoil material on a site provided by the Contractor	m ³	17140		
1200 D	Total Carried to Bill 10 Summary					

Bill 10: Secondary Settling Tanks (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES)				
		TRENCHES FOR SEWER PIPES				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.01	Pipes over 550 mm dia for depths:				
	142.01.01.01	Over 1,0 m up to 2,0 m for sludge withdrawal pipes	m	55		
	142.01.01.02	Over 1,0 m up to 2,0 m for inlet pipes	m	55		
PSDB 8.3.2	142.02	Extra over item 142.01 above for:				
	142.02.01	Hard rock excavation	m ³	50		
	142.02.02	Backfill stabilised with 5% cement (above sludge withdrawal and inlet pipes)	m ³	99		
		TRENCHES FOR SUBSURFACE DRAINS				
PSDB 8.3.2	142.03	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.03.01	Trenches of width less than 600 mm for depths:				
	142.03.01.01	Up to 1,0 m (around and under tanks)	m	905		
	142.03.01.02	Over 1,0 m up to 2,0 m (towards pump shaft)	m	30		
	142.03.01.03	Over 2,0 m up to 3,0 m (towards pump shaft)	m	30		
PSDB 8.3.2	142.04	Extra over item 142.03 above for:				
	142.04.01	Hard rock excavation	m ³	50		
PSDB 8.3.2	142.04.02	Hand excavation where ordered by the Engineer:				
	142.04.02.01	Soft material	m ³	20		
Carried forward						

Bill 10: Secondary Settling Tanks (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSDB 8.3.2	142.04.02.02	Hard material	m ³	20		
	142.05	Excavate and dispose of unsuitable material from trench bottom	m ³	90		
1200 DB Total Carried to Bill 10 Summary						

Bill 10: Secondary Settling Tanks (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.01	Treatment of in-situ material:				
	147.01.01	In-situ material preparation and compaction of material to:				
	147.01.01.01	Minimum of 93% of modified AASHTO maximum density (Rip and recompactd to a depth of 300 mm)	m ³	500		
PSDM 8.3.5	147.02	Selected layer using material from commercial sources or excavations:				
	147.02.01	G5 material compacted in 150 mm layers to 95% Modified AASHTO max density	m ³	1590		
	147.02.02	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	12520		
	147.02.03	Rockfill (100 mm stone) process and compact	m ³	990		
PSDM 8.3.17	147.03	Extra over item 147.02 for obtaining material from commercial sources				
	147.03.01	G5 material	m ³	1590		
	147.03.02	G7 material	m ³	12520		
	147.03.03	Rockfill (100 mm stone)	m ³	990		
PSDM 8.3.18	147.04	Final finishing and cleaning up of the Site of the Works	Sum	1		
1200 DM Total Carried to Bill 10 Summary						

Bill 10: Secondary Settling Tanks (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
		SCHEDULED FORMWORK ITEMS				
SD8.2.1	500.01	Rough:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Curved sides of sludge hopper floor slabs (2,2 m radius)	m ²	20		
	500.01.01.02	Curved sides of sludge hopper walls (external surface 2,2 m radius)	m ²	75		
	500.01.01.02	Curved sides of wall footings (37,4 m radius)	m ²	141		
	500.01.01.03	Curved sides of tank walls (external surface 36,6 m radius)	m ²	760		
SD8.2.2	500.02	Smooth:				
	500.02.01	Vertical formwork to:				
	500.02.01.01	Sides of columns	m ²	164		
	500.02.01.02	Sides of central platform beams	m ²	30		
	500.02.01.03	Sides of sludge hopper walls	m ²	62		
	500.02.01.04	Curved sides of walls (internal surface)	m ²	1460		
	500.02.01.05	Curved sides of walls (external surface)	m ²	1485		
	500.02.01.06	Curved sides of launder walls (external)	m ²	615		
	500.02.01.07	Curved sides of launder walls (internal)	m ²	545		
	500.02.01.08	Curved sides of launder outlet chamber walls	m ²	85		
	500.02.01.09	Sides of launder outlet chamber walls	m ²	100		
	500.02.02	Sloping formwork to:				
	500.02.02.01	Curved sides of launder walls	m ²	10		
	500.02.02.02	Soffit of central platforms	m ²	2		
Carried forward						

Bill 10: Secondary Settling Tanks (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.2.5	500.02.03	Horizontal formwork to:				
	500.02.03.01	Soffit of central platforms	m ²	10		
	500.02.03.02	Soffit of curved launder floors	m ²	400		
	500.03	Narrow widths (up to 300 mm wide):				
	500.03.01	Different widths in the following ranges:				
	500.03.01.01	Over 200 mm and up to 300 mm	m	33		
SD8.2.6	500.03.01.02	Over 200 mm and up to 300 mm, curved	m	352		
	500.03.01.03	Grooves, chases and splays:				
	500.03.01.04	Splay or chamfer 120 mm x 120 mm, curved on plan	m	320		
	500.04	Box out holes/form voids:				
	500.04.01	Small circular, of diameter up to and including 0,35 m, and in the following depth ranges:				
	500.04.01.01	0 m up to and including 0,5 m	No.	9		
SD8.3.1	500.04.02	Small other than circular, of area up to and including 0,1 m², and in the following depth ranges:				
	500.04.02.01	0 m up to and including 0,5 m	No.	12		
	SCHEDULED REINFORCEMENT ITEMS					
SD8.3.1	500.05	Mild- and High-tensile steel bars in the following:				
	500.05.01	All diameters	t	170		
SD8.4.2	SCHEDULED CONCRETE ITEMS (DOLOMITIC AGGREGATES)					
	500.06	Blinding layer:				
<i>Carried forward</i>						

Bill 10: Secondary Settling Tanks (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.3	500.06.01	Class 15 MPa/19 mm concrete of:				
	500.06.01.01	50 mm thickness	m ²	50		
	500.06.01.02	100 mm thickness	m ²	630		
	500.07	Strength concrete: (specify if extender is used)				
	500.07.01	Class 25 MPa/ 19 mm concrete in:				
	500.07.01.01	Pipe encasement	m ³	140		
	500.07.01.02	Benching in sludge hoppers including smooth finish to exposed surfaces	m ³	18		
	500.07.02	Class 35 MPa/ 19 mm concrete in:				
	500.07.02.01	Sludge hopper floor slabs	m ³	20		
	500.07.02.02	Sludge hopper walls	m ³	30		
	500.07.02.03	Sloping tank floor slabs	m ³	540		
	500.07.02.04	Wall footings	m ³	215		
	500.07.02.05	Tank walls	m ³	445		
	500.07.02.06	Laundry floor slabs	m ³	95		
	500.07.02.07	Laundry walls	m ³	50		
	500.07.02.08	Columns	m ³	20		
	500.07.02.09	Central platform beams	m ³	6		
	500.07.02.10	Corbels	m ³	1		
	500.07.02.11	Laundry outlet floor slab	m ³	1		
	500.07.02.12	Laundry outlet walls	m ³	3		
	500.07.02.13	Laundry outlet chamber slab	m ³	5		
	500.07.02.14	Laundry outlet chamber walls	m ³	25		
	500.07.03	Class 30 MPa/ 10 mm concrete in: Structural floor screeds				
<i>Carried forward</i>						

Bill 10: Secondary Settling Tanks (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.4	500.07.03.01	50 mm thick to conical shaped tank floors	m ³	155		
	500.07.03.02	Average 80 mm thick to launder channel floors	m ³	27		
	500.08	Unformed surface finishes:				
	500.08.01	Wood-floated finishes to:				
	500.08.01.01	Top of central platforms	m ²	11		
	500.08.01.02	Top of launder outlet chamber floors	m ²	20		
	500.08.01.03	Top of launder outlet chamber floors (screeded finish to receive screeds)	m ²	331		
	500.08.01.04	Top of conical shaped tank floors (screeded finish to receive screeds)	m ²	3066		
	500.08.01.03	Top of launder outlet chamber walls	m ²	5		
	500.08.02	Steel-floated finishes to:				
	500.08.02.01	Top of tank walls	m ²	105		
	500.08.02.02	Top of launder walls	m ²	40		
	500.08.02.03	Top of screed to falls in launder channel	m ²	370		
	500.08.02.04	Top of launder walls (sloping)	m ²	10		
	500.08.03	Power-floated finishes to:				
	500.08.03.01	Top of conical shaped screeds on tank floors to 3 mm tolerance (accuracy I)	m ²	3010		
	500.08.04	Extra over subitem 500.08.02 for special finishing accuracy (Specify)				
	500.08.04.01	Special finishing tolerances to top of 'outside ringwalls as specified	m ²	105		
	500.08.05	No Fines Concrete				
	500.08.05.01	Class 15 MPa/ 20 mm NF concrete in:				
<i>Carried forward</i>						

Bill 10: Secondary Settling Tanks (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.9	500.08.05.02	100 mm thickness including 10 mm mortar skim layer on top, under conical tank floors	m ²	2658		
	500.09	Bond breaker below floor				
SD8.4.10	500.09.01	250 micron polyethylene sheeting	m ²	3290		
	500.10	Casting pipes and specials in concrete				
SD8.5	500.10.01	Up to 300 mm nominal diameter:				
	500.10.01.01	Through 450 mm thick central platform	No.	6		
	500.10.01.02	Through 400 mm thick sludge hopper walls	No.	6		
	500.10.01.03	Through entire encasement length of 18 m for cable sleeves	No.	6		
	500.10.02	Over 300 mm up to 800 mm nominal diameter:				
	500.10.02.01	Through 400 mm thick sludge hopper walls	No.	6		
	500.10.02.02	Through entire encasement length of 18 m for inlet pipes	No.	3		
	500.10.02.03	Through entire encasement length of 18 m for sludge withdrawal pipes	No.	3		
	500.11	JOINTS				
	500.11.01	Expansion joints as detailed on drawings 106681-M7-07-DR-CC-0009 and 0010				
	500.11.01.01	Curved floor joint type R in 200 mm thick floor slab	m	460		
	500.11.02	Construction joints as detailed on drawings 106681-M7-07-DR-CC-0009 and 0010				
	500.11.02.01	Straight foundation joint type T in 400 mm wall footings	m	26		
<i>Carried forward</i>						

Bill 10: Secondary Settling Tanks (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.10	500.11.02.02	Straight wall joint type J in 300 mm thick walls	m	160		
	500.11.02.03	Straight floor/foundation joint type S in 200 mm thick sloping floor slabs	m	575		
	500.11.02.04	Curved floor joint type S in 200 mm thick sloping floor slabs	m	276		
	500.11.02.05	Straight floor/foundation joint type S in average 300mm thick wall footings	m	70		
	500.11.02.06	Curved floor to wall joint type D in 220 mm thick walls	m	320		
	500.11.02.07	Curved floor to wall joint type D in 400 mm thick walls	m	45		
	500.11.02.08	Curved wall joint type H in 300 mm thick walls	m	350		
	500.11.02.09	Curved wall joint type H in 400 mm thick walls	m	45		
	500.11.02.10	Curved wall/foundation joint type U through 300 mm wide wall at top of footings	m	345		
	500.11.02.11	Curved joint type V at launder floor slab connection to walls	m	340		
	500.13	Tests for water tightness				
	500.13.01	Secondary Settling Tanks (3 off)	Sum	1		
2001 CC1 Total Carried to Bill 10 Summary						

Bill 10: Secondary Settling Tanks (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 L	210.00	MEDIUM-PRESSURE PIPELINES				
8.2.2	210.01	Supplying, laying and bedding of HDPE specials complete with couplings:				
	210.01.01	HDPE to steel pipe connection complete as per drawing: 106681-M7-06-DR-CC-0017				
	210.01.01.01	DN 630 mm HDPE to DN 600 mm steel	No.	6		
8.2.2	210.02	Supply, laying and bedding of steel specials complete with couplings: (Refer to relevant Project Specification for corrosion protection)				
		Refer to Drawing: 106681-M7-72-DR-CC-0002				
	210.02.01	Item 1: To be manufactured, refer to special item	No.	3		
	210.02.02	Item 2: To be manufactured, refer to special item	No.	3		
	210.02.03	Item 3: Spool piece DN 800 X 8 mm SANS 719 Grade C; flanged one end SANS 1123 Table 1000/3 (RF), full pipe length	No.	3		
	210.02.04	Item 4: To be manufactured, refer to special item	No.	3		
		Refer to Drawing: 106681-M7-75-DR-CC-0002				
	210.02.05	Item 1: Spool piece DN 600 X 6 mm SANS 719 Grade C; flanged one end SANS 1123 Table 1000/3 (RF) with puddle flange, refer to special item	No.	3		
	210.02.06	Item 2: HDPE pipe DN 630 PE 100 PN 8, refer to special item	No.	3		
8.2.13	210.03	Pump shafts:				
<i>Carried forward</i>						

Bill 10: Secondary Settling Tanks (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.2.14		Refer to Drawing: 106681-M7-41-DR-CC-0010				
	210.03.01	Construct pump shafts complete as shown on drawings, including excavation, backfilling, formwork, reinforcement, covers, access, etc. (if no reinforcement is shown on the drawings assume reinforcement to be 120 kg/m ³ of concrete).	No.	3		
	210.04	Extra over item 210.03 for pump shafts of depth exceeding 1.5 m:				
	210.04.01	Pump shafts:				
	210.04.01.01	Over 1.5 m up to 7.5 m in increments of 0.25 m	No.	72		
1200 L Total Carried to Bill 10 Summary						

Bill 10: Secondary Settling Tanks (Civil)**CABLE DUCTS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LC	212.00	CABLE DUCTS				
PSLC 8.2.5	212.01	Supply, lay, bed and prove duct:				
	212.01.01	HDPE pipes:				
	212.01.01.01	75 mm dia cast into concrete elements for full length	m	170		
	212.01.01.02	Extra over 75 mm ducts above to form various bends	No.	21		
1200 LC	Total Carried to Bill 10 Summary					

Bill 10: Secondary Settling Tanks (Civil)**STORMWATER DRAINAGE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SANS 1200 LE	214.00	STORMWATER DRAINAGE				
PSLE 8.2.14	214.01	Pipes in subsurface drains:				
	214.01.01	Normal duty uPVC pipes complete with couplings:				
	214.01.01.01	110 mm internal dia, perforated	m	375		
	214.01.01.02	160 mm internal dia, perforated	m	530		
	214.01.01.03	160 mm internal dia, unperforated	m	55		
PSLE 8.2.15	214.02	Geofabric				
	214.02.01	Geotextile filter fabric (180 g/m ²)	m ²	1820		
PSLE 8.2.16	214.03	Crushed stone in subsurface drains	m ³	140		
	214.04	Coarse graded sand filling on top of subsoil drainage	m ³	395		
PSLE 8.2.19	214.05	Jointing with existing network	Sum	1		
1200 LE Total Carried to Bill 10 Summary						

Bill 10: Secondary Settling Tanks (Civil)**SUMMARY**

BILL 10 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 L	MEDIUM-PRESSURE PIPELINES	
SANS 1200 LC	CABLE DUCTS	
SANS 1200 LE	STORMWATER DRAINAGE	
Bill 10 Total Carried to BoQ Summary		

Bill 11: RAS/WAS Pump Station (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE (Refer to Drawings: 106681-M7-62-DR-CC-0001 to 0008)				
8.2.4	130.01	Reclear surfaces (only on instructions from Engineer):				
	130.01.01	Areas	m ²	350		
8.2.10	130.02	Remove topsoil to nominal depth of 150 mm and stockpile	m ³	52		
1200 C Total Carried to Bill 11 Summary						

Bill 11: RAS/WAS Pump Station (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS (Refer to Drawings: 106681-M7-62-DR-CC-0001 to 0008)				
PSD 8.3.3	140.01	Restricted excavation:				
	140.01.01	Excavate for RAS/WAS Pump Station in all materials, and use for backfill or embankment, or dispose	m ³	420		
PSD 8.3.3	140.01.02	Extra over items 140.01.01 above for :				
	140.01.02.01	Hard rock excavation	m ³	105		
	140.01.03	Extra over item 140.01 for hand excavation	m ³	45		
8.3.5	140.02	Extra excavation in all materials to provide working space around structure	m ²	50		
8.3.9	140.03	Extra over items 140.01 for backfill or for fill material against structures	m ³	70		
PSD 8.3.15	140.04	Extra over items 140.01.01 for disposing of spoil material on a site provided by the Contractor	m ³	420		
1200 D	Total Carried to Bill 11 Summary					

Bill 11: RAS/WAS Pump Station (Civil)**EARTHWORKS (PIPE TRENCHES) - SEWER PIPES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES) - SEWER PIPES				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.01	Pipes over 400 mm dia up to 600 mm dia for depths:				
	142.01.01.01	Over 1,0 m up to 2,0 m	m	100		
PSDB 8.3.2	142.02	Extra over item 142.01 above for:				
	142.02.01	Hard rock excavation	m ³	50		
PSDB 8.3.3	142.03	Excavation ancillaries:				
	142.03.01	Make up deficiency in backfill material:				
	142.03.01.01	From other necessary excavations on Site	m ³	170		
	142.03.01.02	By importation from commercial or off-site sources selected by the Contractor	m ³	170		
1200 DB	Total Carried to Bill 11 Summary					

Bill 11: RAS/WAS Pump Station (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.01	Treatment of in-situ material:				
	147.01.01	In-situ material preparation and compaction of material to:				
	147.01.01.01	Minimum of 93% of modified AASHTO maximum density (Rip and recompact to a depth of 150 mm)	m ³	50		
PSDM 8.3.5	147.02	Selected layer using material from commercial sources or excavations:				
	147.02.01	G5 material compacted in 150 mm layers to 95% Modified AASHTO max density	m ³	120		
	147.02.02	G6 material under surface beds on top of raft foundation and between walls, compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	75		
	147.02.02	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	160		
	147.02.03	Rockfill (100 mm stone) process and compact	m ³	90		
PSDM 8.3.17	147.03	Extra over item 147.02 for obtaining material from commercial sources				
	147.03.01	G5 material	m ³	120		
	147.03.02	G6 material	m ³	75		
	147.03.03	G7 material	m ³	160		
	147.03.04	Rockfill (100 mm stone)	m ³	90		
PSDM 8.3.18	147.04	Final finishing and cleaning up of the Site of the Works	Sum	1		
1200 DM	Total Carried to Bill 11 Summary					

Bill 11: RAS/WAS Pump Station (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
	500.01	SCHEDULED FORMWORK ITEMS - Rough:				
	500.01.01	Vertical formwork to:				
	500.01.02	Sides of raft floor and foundations (300mm high)	m ²	23		
	500.01.03	Sides of walls	m ²	70		
	500.01.04	Sides of sump walls	m ²	10		
	500.01.05	Horizontal formwork to:				
	500.01.06	Soffit of cable duct floor slab	m ²	17		
	500.01.07	Soffit of cable duct floor slab (permanent formwork)	m ²	2		
	500.02	SCHEDULED FORMWORK ITEMS - Smooth:				
SD8.2.2	500.02.01	Vertical formwork to:				
	500.02.01.01	Sides of walls	m ²	288		
	500.02.01.02	Sides of columns	m ²	53		
	500.02.01.03	Sides of ring beam	m ²	67		
	500.02.01.04	Sides of pump plinths	m ²	38		
	500.02.01.05	Sides of support plinths	m ²	101		
	500.02.01.06	Sides of stairs	m ²	2		
	500.02.01.07	Sides of ramps	m ²	2		
	500.02.01.08	Sides of sump walls	m ²	6		
	500.02.02	Sloping formwork to:				
	500.02.02.01	Soffits of stairs	m ²	2		
	500.02.03	Horizontal formwork to:				
	500.02.03.01	Soffit of roof slab up to 6 m high	m ²	25		
<i>Carried forward</i>						

Bill 11: RAS/WAS Pump Station (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.2.5	500.02.03.02	Soffit of roof ring beams up to 6 m high	m ²	19		
	500.03	SCHEDULED FORMWORK ITEMS - Narrow widths (up to 300 mm wide):				
	500.03.01	Different widths in the following ranges:				
	500.03.02	Over 20 mm and up to 100 mm	m	5		
SD8.3.1	500.03.03	Over 100 mm and up to 200 mm	m	57		
	500.03.04	Over 200 mm and up to 300 mm	m	110		
	500.04	SCHEDULED REINFORCEMENT ITEMS - Mild- and High-tensile steel bars in the following:				
	500.04.01	All diameters	t	27		
SD8.3.2	500.05	SCHEDULED REINFORCEMENT ITEMS - High-tensile welded mesh in the following:				
SD8.4.2	500.05.01	Ref No 395 in surface beds	m ²	110		
	500.05.02	Ref No 617 in surface beds	m ²	20		
	500.06	SCHEDULED CONCRETE ITEMS (DOLOMITIC AGGREGATE) - Blinding layer:				
	500.06.01	Class 15 MPa/19 mm concrete of:				
SD8.4.3	500.06.01.01	75 mm thickness	m ²	285		
	500.07	SCHEDULED CONCRETE ITEMS (DOLOMITIC AGGREGATE) - Strength concrete: (specify if extender is used)				
	500.07.01	Class 25 MPa/ 38 mm concrete in:				
	500.07.01.01	Concrete ramps	m ³	2		
	500.07.02	Class 35 MPa/ 19 mm concrete in:				
	500.07.02.01	Raft foundations	m ³	85		
<i>Carried forward</i>						

Bill 11: RAS/WAS Pump Station (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	500.07.02.02	Surface beds	m ³	30		
	500.07.02.03	Floor slabs	m ³	8		
	500.07.02.04	Columns	m ³	5		
	500.07.02.05	Walls	m ³	60		
	500.07.02.06	Ring beams	m ³	10		
	500.07.02.07	Pump plinths	m ³	15		
	500.07.02.08	Pipe support plinths	m ³	20		
	500.07.02.09	Stairs and landings	m ³	1		
	500.07.02.10	Foundation slabs	m ³	5		
	500.07.02.11	Roof slab	m ³	10		
new	500.07.03	Class 30 MPa/ 10 mm concrete in: Structural roof screeds				
new	500.07.03.01	Average 75 mm thick to roofs to receive waterproofing	m ³	2		
SD8.4.4	500.08	SCHEDULED CONCRETE ITEMS (DOLOMITIC AGGREGATE) - Unformed surface finishes:				
	500.08.01	Wood-floated finishes to:				
	500.08.01.01	Top of cable trench and sump floors	m ²	46		
	500.08.01.02	Top support plinth foundations	m ²	10		
	500.08.01.03	Top of stairs and landings	m ²	5		
	500.08.01.04	Top of ramps	m ²	10		
	500.08.01.05	Top of roof slab	m ²	25		
	500.08.02	Steel-floated finishes to:				
	500.08.02.01	Top of ring beams	m ²	20		
	500.08.02.02	Top of pump plinths	m ²	25		
<i>Carried forward</i>						

Bill 11: RAS/WAS Pump Station (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.10	500.08.02.03	Top of support plinths	m ²	5		
	500.08.02.04	Top of walls	m ²	30		
	500.08.03	Power-floated finishes to:				
	500.08.03.01	Top of floor slabs and surface beds	m ²	430		
	500.09	SCHEDULED CONCRETE ITEMS (DOLOMITIC AGGREGATE) - Casting pipes and specials in concrete				
	500.09.01	Up to 300 mm nominal bore:				
	500.09.01.01	Through 250 mm thick floors	No.	14		
	500.09.01.02	Through 300 mm thick walls	No.	23		
	500.09.02	Over 300 mm up to 600 mm nominal bore:				
	500.09.02.01	Through 300 mm thick walls	No.	8		
SD8.7	500.10	SCHEDULED CONCRETE ITEMS (DOLOMITIC AGGREGATE) - Grouting:				
	500.10.01	Under bases (or beds)				
	500.10.01.01	25 mm non-shrink grout	m ³	1		
2001 CC1 Total Carried to Bill 11 Summary						

Bill 11: RAS/WAS Pump Station (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 H	180.00	STRUCTURAL STEELWORK				
8.3.1	180.01	Supply and fabrication:				
	180.01.01	Preparation of shop detail drawings	Sum	1		
	180.01.02	Supply and fabrication of steelwork:				
	180.01.02.01	Roof structure, overhead walkway structure and crawl beam assembly				
	180.01.02.02	Hot rolled sections:				
	180.01.02.02.01	Angles	t	2.7		
	180.01.02.02.02	T- sections	t	0.8		
	180.01.02.02.03	Universal beams, hangers, cleats etc	t	5.4		
	180.01.02.02.04	IPE columns and beams in overhead walkways	t	3.2		
	180.01.02.03	Cold formed sections:				
	180.01.02.03.01	Lip channels	t	1.5		
	180.01.02.04	Connection plates, cleats, etc.	t	0.5		
8.3.2	180.02	Delivery to Site:				
	180.02.01	Normal delivery:				
	180.02.01.01	All steel work	t	11		
8.3.3	180.03	Erection on Site:				
	180.03.01	All steel work	t	11		
8.3.4	180.04	Erection bolts:				
	180.04.01	Grade 8.8 bolts	t	0.3		
8.3.6	180.05	Holding-down (HD) bolts:				
	180.05.01	M12 chemical anchors	No.	72		
	180.05.02	M16 chemical anchors	No.	176		
<i>Carried forward</i>						

Bill 11: RAS/WAS Pump Station (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.3.7	180.05.03	M20 chemical anchors	No.	65		
	180.06	Handrails:				
	180.06.01	Handrails complete as show on Drawing No 106681-M7-07-DR-CC-0004				
8.3.8	180.06.01.01	Horizontal	m	80		
	180.06.01.02	Sloping (measured on slope)	m	20		
	180.06.01.03	Shaped ends	No.	12		
8.3.8	180.07	Ladders and stairs, complete and installed with stringers, treads etc as shown on Drawing No 106681-M7-05-DR-CC-0005 and -M7-62-DR-CC-006:				
	180.07.01	Staircase 3,0 m long x 2,44 m high comprising twelve 900 mm wide treads	No.	1		
	180.07.02	Staircase 3,45 m long x 2,74 m high comprising fourteen 900 mm wide treads	No.	1		
8.3.9	180.08	Flooring, complete and installed with frames:				
	180.08.01	Rectagrid RS40 open grid cable trench floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001 and -M7-62-DR-CC-006	m ²	60		
	180.08.02	Rectagrid RS40 open grid overhead walkway floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001 and -M7-62-DR-CC-006	m ²	31		
8.3.10	180.08.03	Rectagrid RS40 thread and nosing complete and installed with frames as shown on Drawing No 106681-M7-07-DR-CC-0005	m ²	10		
	180.09	Non-destructive testing				
<i>Carried forward</i>						

Bill 11: RAS/WAS Pump Station (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	180.09.01	Load test on crawl beam after installation	No.	5		
1200 H Total Carried to Bill 11 Summary						

Bill 11: RAS/WAS Pump Station (Civil)**CLADDING AND SHEETING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 HB	182	CLADDING AND SHEETING				
8.2.2	182.01	Supply and install cladding and sheeting:				
	182.01.01	0.58 mm thick Concealed fix Klip-Lok 700 or similar approved galvanized Z450 spelter sheeting with Globalcon finish in:				
	182.01.01.01	Roof coverings with pitches not exceeding 25°, fixed to steel purlins and girts	m ²	290		
	182.01.01.02	Side cladding fixed to steel girts	m	40		
	182.01.01.03	Extra over roof sheeting for cranking to form 135 degree angle at ridge	m	40		
	182.01.01.04	Extra over roof sheeting for 450 mm radius bullnosing	m	40		
	182.01.01.05	Sisalation or equal approved aluminium faced roof insulation fixed with purlins and roof sheeting	m ²	276		
8.2.3	182.02	Supply and install ancillaries:				
	182.02.01	0,8 mm thick galvanized sheet metal with global coat finish on both sides:				
	182.02.01.01	Standard ridge flashing	m	20		
	182.02.01.02	Narrow or broad flute closers	m	60		
	182.02.02	300 mm Diameter galvanized steel	No.	5		
1200 H	Total Carried to Bill 11 Summary					

Bill 11: RAS/WAS Pump Station (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 HC	183.00	CORROSION PROTECTION OF STRUCTURAL STEELWORK				
8.2.1	183.01	Surface dressing and repairs at place of fabrication	t	11		
8.2.2	183.02	Transport	t	11		
8.2.3	183.03	Surface preparation and coating application:				
		Hot dipped galvanized as per relevant project specification				
	183.03.01	In the shop	t	11		
	183.03.02	On Site	t	11		
8.2.4	183.04	Establishment on Site for corrosion protection	Sum	1		
1200 HC Total Carried to Bill 11 Summary						

Bill 11: RAS/WAS Pump Station (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 L	210.00	MEDIUM-PRESSURE PIPELINES				
8.2.2	210.01	Supply, laying and bedding of specials complete with couplings: (Refer to relevant Project Specification for corrosion protection)				
		RAS Pipework. Refer to Drawing:- 106681-M7-62-DR-MM-0001				
	210.01.01	Item 14: Spool piece DN 350 x 6 mm- SANS 719 Grade C; flanged both ends- SANS 1123 table 1000/3 (RF); refer to special item	No.	6		
	210.01.02	Item 15: Spool piece DN 300 x 6 mm- SANS 719 Grade C; flanged both ends- SANS 1123 table 1000/3 (RF) with puddle flange; refer to special item	No.	6		
	210.01.03	Item 16: Spool piece DN 350 x 6 mm- SANS 719 Grade C; flanged both ends- SANS 1123 table 1000/3 (RF) with puddle flange; refer to special item	No.	3		
	210.01.04	Item 17: To be manufactured; refer to special item	No.	3		
	210.01.05	Item 18: Spool piece DN 350 x 6 mm- SANS 719 Grade C; flanged both ends- SANS 1123 table 1000/3 (RF); refer to special item	No.	3		
	210.01.06	Item 19: To be manufactured; refer to special item	No.	3		
	210.01.07	Item 20: To be manufactured; refer to special item	No.	3		
	210.01.08	Item 21: To be manufactured; refer to special item	No.	3		
	210.01.09	Item 22: Equal tee DN 600 x 6 mm SANS- 719 Grade C; flanged SANS 1123 table- 1000/3 (RF); refer to typical fitting details	No.	3		
Carried forward						

Bill 11: RAS/WAS Pump Station (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	210.01.10	Item 23: Short radius segment bend (1D)- 90 DEG; DN 600 x 6.0 mm SANS 719 Grade C; flanged SANS 1123 table 1000/3 (RF); refer to typical fitting details	No.	6		
	210.01.11	Item 24: Spool piece DN 600 x 6 mm SANS 719 Grade C; flanged both ends SANS 1123 table 1000/3 (RF); refer to special item	No.	3		
	210.01.12	Item 25: To be manufactured; refer to special item	No.	2		
	210.01.13	Item 27: To be manufactured; refer to special item	No.	2		
	210.01.14	Item 28: To be manufactured; refer to special item	No.	2		
	210.01.15	Item 29: To be manufactured; refer to special item	No.	2		
	210.01.16	Item 30: To be manufactured; refer to special item	No.	2		
	210.01.17	Item 31: Steel pipe DN 600 x 6 mm SANS 719 Grade C; continuously welded; length to be confirmed on site	No.	4		
	210.01.18	Item 32: Steel pipe DN 600 x 6 mm SANS 719 Grade C; continuously welded; length to be confirmed on site	No.	4		
	210.01.19	Item 33: To be manufactured; refer to special item	No.	4		
	210.01.20	Item 34: To be manufactured; refer to special item	No.	4		
		WAS Pipework. Refer to Drawing: 106681-M7-62-DR-MM-0004				
	210.01.21	Item 15: Spool piece DN 350 x 6 mm SANS 719 Grade C; flanged both ends SANS 1123 table 1000/3 (RF) with puddle flange; refer to special item	No.	2		
<i>Carried forward</i>						

Bill 11: RAS/WAS Pump Station (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	210.01.22	Item 17: Spool piece DN 250 x 5 mm- SANS 719 Grade C; flanged both ends- SANS 1123 table 1000/3 (RF) with puddle- flange; refer to special item	No.	2		
	210.01.23	Item 18: Spool piece DN 350 x 6 mm- SANS 719 Grade C; flanged both ends- SANS 1123 table 1000/3 (RF); refer to special item	No.	2		
	210.01.24	Item 19: To be manufactured; refer to special item	No.	4		
	210.01.25	Item 20: To be manufactured; refer to special item	No.	4		
	210.01.26	Item 21: To be manufactured; refer to special item	No.	4		
	210.01.27	Item 22: Short radius segment bend (1 D)- 90 DEG; DN 250 x 5 mm SANS 719 Grade C; flanged SANS 1123 table 1000/3 (RF); refer to typical fitting details	No.	4		
	210.01.28	Item 25: Spool piece DN 250 x 5 mm- SANS 719 Grade C; flanged both ends- SANS 1123 table 1000/3 (RF) with pipe support; refer to special item	No.	4		
	210.01.28	Sump Pump Pipework. Refer to Drawing: 106681-M7-62-DR-MM-0006				
	210.01.30	Item 3: To be manufactured; refer to special item	No.	4		
	210.01.31	Item 6: Spool piece DN 50 x 3.2 mm- SANS 62; flanged both ends SANS 1123 table 1000/3 (RF); refer to special item	No.	4		
	210.01.32	Item 9: Spool piece DN 50 x 3.2 mm- SANS 62; flanged both ends SANS 1123 table 1000/3 (RF) with pipe support; refer to special item	No.	4		
1200 L	Total Carried to Bill 11 Summary					

Bill 11: RAS/WAS Pump Station (Civil)**BEDDING (PIPES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LB	211.00	BEDDING (PIPES)				
		BEDDING FOR SEWER PIPES				
PSLB 8.2.2	211.01	Supply only of bedding by importation:				
	211.01.01	From commercial sources:				
	211.01.01.01	Selected granular material	m ³	15		
	211.01.01.02	Selected fill material	m ³	75		
1200 LB Total Carried to Bill 11 Summary						

Bill 11: RAS/WAS Pump Station (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
PART SPEC PD		BUILDING WORK				
PD 10	PD.01	Brickwork:				
	PD.01.01	110 mm thick, outside face: face brick standard bricks in:				
	PD.01.01.01	Beam filling	m ²	6		
	PD.01.02	230 mm thick, outside face: face brick standard, inside face: non-facing plaster engineering bricks in:				
	PD.01.02.01	Superstructure walls	m ²	240		
	PD.01.02.02	Gable walls	m ²	39		
	PD.01.03	230 mm thick, non-facing plaster, engineering bricks				
	PD.01.03.01	Cable trenches	m ²	15		
	PD.02	Plaster Work:				
	PD.02.01	10 mm thick, steel-float finish				
	PD.02.01.01	Internal brick walls	m ²	271		
	PD.02.01.02	Cable trench walls	m ²	15		
	PD.04	Doors and Windows: Refer to Drawing: 106681-M7-62-DR-CC-0009				
	PD.04.01	Doors				
	PD.04.01.01	Door: D1 complete as per door and window schedule including paintwork	No.	1		
	PD.04.01.02	Door: D2 complete as per door and window schedule including paintwork	No.	1		
	PD.04.01.03	Door: D3 complete as per door and window schedule including paintwork	No.	1		
	PD.04.02	Windows				
	PD.04.02.01	Window: W1 complete as per door and window schedule including paintwork	No.	18		
	PD.05	Miscellaneous Work:				
<i>Carried forward</i>						

Bill 11: RAS/WAS Pump Station (Civil)**SUMMARY**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.05.01	Paintwork, one coat primer and two coats super acrylic paint:				
	PD.05.01.01	Internal plastered walls	m ²	271		
	PD.06	Miscellaneous Items:				
	PD.06.01	Items measured by number:				
	PD.06.01.01	Hoop iron strap fixed onto concrete column and built into brickwork as per Drawing no. 106681-M7-07-DR-CC-0002	No.	820		
	PD.06.01.02	200 mm diameter x 300 mm long uPVC sleeve pipe cast into concrete floor slab	No.	14		
	PD.06.01.03	9 kg DCP fire extinguisher	No.	1		
	PD.06.01.04	Weather proof extinguisher cabinets	No.	1		
	PD.06.01.05	Photoluminescent signs with pictograms screwed or plugged as shown on Drawing no 106681-M7-06-DR-CC-0021:				
	PD.06.01.05.01	Sign E3	No.	1		
	PD.06.01.05.02	Sign E6	No.	1		
	PD.06.01.05.03	Sign F13	No.	2		
	PD.06.01.05.04	Sign F16	No.	1		
	PD.06.01.05.05	Sign F19	No.	1		
	PD.06.01.05.06	Sign F45	No.	1		
	PD.06.02	Items measured by area:				
	PD.06.02.01	Ant poison, aldrin emulsifiable concentrates solution to SABS 618 spread at a rate recommended by the manufacturer:				
	PD.06.02.01.01	In bottom of raft foundations	m ²	275		
<i>Carried forward</i>						

Bill 11: RAS/WAS Pump Station (Civil)

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.06.02.01.02	Under ramps	m ²	10		
	PD.06.02.01.03	Under foundations	m ²	15		
	PD.06.02.02	250 micron green medium density polyethylene dampproof sheeting under floors	m ²	275		
	PD.06.02.03	Approved torch-on waterproofing to roofs including aluminium protective paint coating	m ²	25		
SPEC PD Total Carried to Bill 11 Summary						

Bill 11: RAS/WAS Pump Station (Civil)

BILL 11 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 H	STRUCTURAL STEELWORK	
SANS 1200 HB	CLADDING AND SHEETING	
SANS 1200 HC	CORROSION PROTECTION OF STRUCTURAL STEELWORK	
SANS 1200 L	MEDIUM-PRESSURE PIPELINES	
SANS 1200 LB	BEDDING (PIPES)	
PART SPEC PD	BUILDING WORK	
Bill 11 Total Carried to BoQ Summary		

Bill 12: Conveyance (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE				
PSC 8.2.1	130.01	Clear and grub:				
	130.01.01	Areas				
		Refer to Drawing: 106681-M7-12-DR-CC-0007				
	130.01.01.01	For Module 6 Biological reactor and Secondary settling tanks terrace extensions	m ²	14050		
	130.01.02	Strips, 3 m wide				
	130.01.02.01	For pipeline 1.12 from Primary settling tank 2 to Biological reactor	m	50		
	130.01.02.02	For pipeline 3 from RAS/WAS pump station to Sludge handling facility	m	445		
	130.01.02.03	For pipeline 6.4 from Chlorine dosing building to Chlorine contact tank	m	150		
	130.01.02.04	For pipelines 6.5 and 6.6 from Chlorine pump station to Chlorine dosing building and Module 6 Chlorine contact tank.	m	40		
	130.01.02.05	For 280 mm diameter HDPE clearwater pipeline to be relocated	m	170		
8.2.2	130.02	Remove and grub large trees and tree stumps of girth:				
	130.02.01	Over 1,0 m and up to and including 2,0 m	No.	10		
	130.02.02	Over 2,0 m and up to and including 3,0 m	No.	10		
8.2.4	130.03	Reclear surfaces (only on instructions from Engineer):				
	130.03.01	Areas				
	130.03.01.01	For canals 6.1, 6.2 and 6.3 from Secondary settling tanks to Chlorine contact tank	m ²	3540		
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.2.8	130.03.02	Strips, 3 m wide				
	130.03.02.01	For pipelines 1.3 and 1.4 from Primary settling tanks to Recycle pump station	m	14		
	130.03.02.02	For pipelines 1.5 and 1.6 from Recycle pump station to Isolating valve chamber	m	22		
	130.03.02.03	For pipelines 1.7 and 1.8 from Isolating valve chamber to Division structure	m	22		
	130.03.02.04	For pipelines 1.9 and 1.10 from Isolating valve chamber to Primary settling tank 2	m	105		
	130.03.02.05	For pipeline 1.11 from Primary settling tank 1 to Primary settling tank 2	m	55		
	130.03.02.06	For pipeline 1.12 from Primary settling tank 2 to Biological reactor	m	178		
	130.03.02.07	For pipelines 2.1, 2.2 and 2.3 from Biological reactor to Secondary settling tanks	m	145		
	130.03.02.08	For pipeline 3 from RAS/WAS pump station to Sludge handling facility	m	445		
	130.03.02.09	For pipelines 4.1 and 4.2 from RAS/WAS pump station to Biological reactor	m	390		
	130.03.02.10	For pipelines 5.1, 5.2 and 5.3 from Secondary settling tanks to RAS/WAS pump station	m	78		
	130.03.02.11	For pipeline 6.4 from Chlorine dosing building to Chlorine contact tank	m	150		
	130.03.02.12	For pipelines 6.5 and 6.6 from Chlorine pump station to Chlorine dosing building and Module 6 Chlorine contact tank.	m	40		
	130.04	Demolish and remove structures/buildings:				
	130.04.01	Stormwater canals	Sum	1		
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.2.10	130.04.02	Remains of old drying beds	Sum	1		
	130.05	Remove topsoil to nominal depth of 150 mm and stockpile				
	130.05.01	For Module 6 Biological reactor and Secondary settling tanks terrace extensions	m ³	6325		
	130.05.02	For canals 6.1, 6.2 and 6.3 from Secondary settling tanks to Chlorine contact tank	m ³	1595		
	130.05.03	For pipelines 1.3 and 1.4 from Primary settling tanks to Recycle pump station	m ³	7		
	130.05.04	For pipelines 1.5 and 1.6 from Recycle pump station to Isolating valve chamber	m ³	10		
	130.05.05	For pipelines 1.7 and 1.8 from Isolating valve chamber to Division structure	m ³	10		
	130.05.06	For pipelines 1.9 and 1.10 from Isolating valve chamber to Primary settling tank 2	m ³	48		
	130.05.07	For pipeline 1.11 from Primary settling tank 1 to Primary settling tank 2	m ³	25		
	130.05.08	For pipeline 1.12 from Primary settling tank 2 to Biological reactor	m ³	81		
	130.05.09	For pipelines 2.1, 2.2 and 2.3 from Biological reactor to Secondary settling tanks	m ³	66		
	130.05.10	For pipeline 3 from RAS/WAS pump station to Sludge handling facility	m ³	201		
	130.05.11	For pipelines 4.1 and 4.2 from RAS/WAS pump station to Biological reactor	m ³	176		
	130.05.12	For pipelines 5.1, 5.2 and 5.3 from Secondary settling tanks to RAS/WAS pump station	m ³	36		
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSC 8.2.12	130.05.13	For pipeline 6.4 from Chlorine dosing building to Chlorine contact tank	m ³	70		
	130.05.14	For pipelines 6.5 and 6.6 from Chlorine pump station to Chlorine dosing building and Module 6 Chlorine contact tank.	m ³	18		
	130.05.15	For 280 mm diameter HDPE clearwater pipeline to be relocated	m ³	80		
	130.06	Remove topsoil to spoil site furnished by Contractor				
	130.06.01	For Module 6 Biological reactor and Secondary settling tanks terrace extentions				
	130.06.02	For canals 6.1, 6.2 and 6.3 from Secondary settling tanks to Chlorine contact tank	m ³	1595		
	130.06.03	For pipelines 1.3 and 1.4 from Primary settling tanks to Recycle pump station	m ³	7		
	130.06.04	For pipelines 1.5 and 1.6 from Recycle pump station to Isolating valve chamber	m ³	10		
	130.06.05	For pipelines 1.7 and 1.8 from Isolating valve chamber to Division structure	m ³	10		
	130.06.06	For pipelines 1.9 and 1.10 from Isolating valve chamber to Primary settling tank 2	m ³	48		
	130.06.07	For pipeline 1.11 from Primary settling tank 1 to Primary settling tank 2	m ³	25		
	130.06.08	For pipeline 1.12 from Primary settling tank 2 to Biological reactor	m ³	81		
	130.06.09	For pipelines 2.1, 2.2 and 2.3 from Biological reactor to Secondary settling tanks	m ³	66		
	130.06.10	For pipeline 3 from RAS/WAS pump station to Sludge handling facility	m ³	201		
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSC 8.2.13	130.06.11	For pipelines 4.1 and 4.2 from RAS/WAS pump station to Biological reactor	m ³	176		
	130.06.12	For pipelines 5.1, 5.2 and 5.3 from Secondary settling tanks to RAS/WAS pump station	m ³	36		
	130.06.13	For pipeline 6.4 from Chlorine dosing building to Chlorine contact tank	m ³	70		
	130.06.14	For pipelines 6.5 and 6.6 from Chlorine pump station to Chlorine dosing building and Module 6 Chlorine contact tank.	m ³	18		
	130.06.15	For 280 mm diameter HDPE clearwater pipeline to be relocated	m ³	80		
	130.07	Relocation of entire or part of existing Module 6 site camp in way of return pipework from RAS/WAS pump station to biological reactor	Sum	1		
1200 C Total Carried to Bill 12 Summary						

Bill 12: Conveyance (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
		Refer to Drawings: 106681-M7-12-DR-CC-0007 & 0008				
PSD 8.3.2	140.01	Bulk excavation:				
	140.01.01	Excavate in all materials and use for embankment or backfill as ordered from:				
	140.01.01.01	Necessary excavations	m ³	5280		
	140.01.01.02	Commercial sources	m ³	13200		
	140.01.02	Excavate in all materials and dispose	m ³	14520		
	140.01.03	Extra over items 140.01.01 to 140.01.02 above for:				
	140.01.03.01	Hard rock excavation	m ³	6600		
PSD 8.3.3	140.02	Restricted excavation:				
	140.02.01	Excavate for canal 6.1 to 6.3 trenches from SST's to CCT in all materials, and use for backfill or embankment, or dispose:				
	140.02.01.01	Depth up to 1,0 m	m ³	800		
	140.02.01.02	Depth over 1,0 m and up to 2,0 m	m ³	400		
PSD 8.3.3	140.02.02	Extra over items 140.02.01 above for :				
	140.02.02.01	Hard rock excavation	m ³	285		
	140.02.03	Extra over item 140.02 for hand excavation	m ³	115		
8.3.5	140.03	Extra excavation in all materials to provide working space around structure	m ²	1010		
PSD 8.3.8	140.04	Existing services:				
	140.04.01	Hand excavation for locating and exposing existing services:				
	140.04.01.01	In all areas	m ³	115		
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.3.9	140.05	Extra over items 140.01 and 140.02 for backfill or for fill material against structures	m ³	1010		
PSD 8.3.10	140.06	Topsoiling	m ³	8740		
8.3.11	140.07	Grassing or other vegetation cover:				
	140.07.01	Hydroseeding	m ²	16620		
PSD 8.3.15	140.08	Extra over item 140.01.02 and 140.02 for disposing of spoil material on a site provided by the Contractor	m ³	16120		
1200 D Total Carried to Bill 12 Summary						

Bill 12: Conveyance (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES)				
		TRENCHES FOR WATER PIPES				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.01	Pipes up to 125 mm dia for depths:				
	142.01.01.01	Pipeline 6.4, 110 mm dia				
	142.01.01.01.02	Over 1.0 m up to 2.0 m	m	150		
	142.01.01.02	Pipeline 6.5 and 6.6, 110 mm dia				
	142.01.01.02.01	Over 1.0 m up to 2.0 m	m	40		
	142.01.02	Pipes over 125 mm dia up to 400 mm dia for depths:				
	142.01.02.01	Pipelines 1.3 and 1.4, 160 mm dia				
	142.01.02.01.01	Over 1.0 m up to 2.0 m	m	5		
	142.01.02.01.02	Over 2.0 m up to 3.0 m	m	2		
	142.01.02.01.03	Over 3.0 m	m	7		
	142.01.02.02	Pipelines 1.5 and 1.6, 160 mm dia				
	142.01.02.02.01	Over 1.0 m up to 2.0 m	m	22		
	142.01.02.03	Pipelines 1.7 and 1.8, 160 mm dia				
	142.01.02.03.01	Over 1.0 m up to 2.0 m	m	22		
	142.01.02.04	Pipelines 1.9 and 1.10, 160 mm dia				
	142.01.02.04.01	Over 1.0 m up to 2.0 m	m	105		
	142.01.02.05	Pipeline 3, 250 mm dia				
	142.01.02.05.01	Over 1.0 m up to 2.0 m	m	445		
	142.01.02.06	280 mm diameter HDPE clearwater pipeline to be relocated				
	142.01.02.06.01	Over 1.0 m up to 2.0 m	m	170		
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSDB 8.3.2	142.01.02.06.02	Over 2.0 m up to 3.0 m	m	30		
	142.01.03	Pipes over 550 mm dia up to 800 mm dia for depths:				
	142.01.03.01	Pipelines 2.1, 2.2 and 2.3, 800 mm dia				
	142.01.03.01.01	Over 3.0 m	m	145		
	142.01.03.02	Pipelines 4.1 and 4.2, 600 mm dia				
	142.01.03.02.01	Over 2.0 m up to 3.0 m	m	390		
	142.01.03.03	Pipelines 5.1, 5.2 and 5.3, 600 mm dia				
	142.01.03.03.01	Over 2.0 m up to 3.0 m	m	71		
	142.01.03.03.02	Over 3.0 m	m	7		
	142.01.04	Pipes over 1000 mm dia for depths:				
	142.01.04.01	Pipeline 1.11, 1050 mm dia:				
	142.01.04.01.01	Over 3.0 m	m	55		
	142.01.04.02	Pipeline 1.12, 1050 mm dia:				
	142.01.04.02.01	Over 3.0 m	m	178		
	142.02	Extra over item 142.01 above for:				
	142.02.01	Hard rock excavation				
	142.02.01.01	Pipelines 1.3 and 1.4	m ³	5		
	142.02.01.02	Pipelines 1.5 and 1.6	m ³	5		
	142.02.01.03	Pipelines 1.7 and 1.8	m ³	5		
	142.02.01.04	Pipelines 1.9 and 1.10	m ³	26		
	142.02.01.05	Pipeline 1.11	m ³	99		
	142.02.01.06	Pipeline 1.12	m ³	319		
	142.02.01.07	Pipelines 2.1, 2.2 and 2.3	m ³	232		
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSDB 8.3.2	142.02.01.08	Pipeline 3	m ³	142		
	142.02.01.09	Pipelines 4.1 and 4.2	m ³	293		
	142.02.01.10	Pipelines 5.1, 5.2 and 5.3	m ³	74		
	142.02.01.11	Pipeline 6.4	m ³	32		
	142.02.01.12	Pipelines 6.5 and 6.6	m ³	9		
	142.02.02	Hand excavation where ordered by the Engineer:				
PSDB 8.3.2	142.02.02.01	Soft material	m ³	50		
	142.02.02.02	Hard material	m ³	65		
	142.02.03	Backfill stabilized with 5% cement where directed by the Engineer	m ³	50		
	142.03	Excavate and dispose of unsuitable material from trench bottom				
	142.03.01	Pipelines 1.3 and 1.4	m ³	1.6		
	142.03.02	Pipelines 1.5 and 1.6	m ³	2.6		
PSDB 8.3.3	142.03.03	Pipelines 1.7 and 1.8	m ³	2.6		
	142.03.04	Pipelines 1.9 and 1.10	m ³	12		
	142.03.05	Pipeline 1.11	m ³	17		
	142.03.06	Pipeline 1.12	m ³	55		
	142.03.07	Pipelines 2.1, 2.2 and 2.3	m ³	13		
	142.03.08	Pipeline 3	m ³	29		
	142.03.09	Pipelines 4.1 and 4.2	m ³	36		
	142.03.10	Pipelines 5.1, 5.2 and 5.3	m ³	7		
	142.03.11	Pipeline 6.4	m ³	8		
	142.03.12	Pipelines 6.5 and 6.6	m ³	2.5		
PSDB 8.3.3	142.04	Excavation ancillaries:				
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.3.4	142.04.01	Make up deficiency in backfill material:				
	142.04.01.01	From other necessary excavations on Site	m ³	900		
	142.04.02	Compaction in road crossings	m ³	15		
	142.05	Particular items:				
8.3.6	142.05.01	Shore trench:				
	142.05.01.01	Pipelines 1.11 and 1.12	m	235		
	142.06	Finishing:				
	142.06.01	Reinstate road surfaces complete with all courses:				
PSDB 8.3.8	142.06.01.01	Paving blocks/bricks	m ²	60		
	142.06.01.02	Kerbing	m	20		
	142.07	Removal of existing pipes:				
	142.07.01	Excavate in all materials to 300 mm above the pipelines:				
	142.07.01.01	280 mm diameter HDPE pipe	m ³	225		
	142.07.01.02	750 mm diameter concrete stormwater pipe	m ³	325		
	142.07.01.03	900 mm diameter concrete stormwater pipe	m ³	25		
	142.07.02	Excavate by hand to expose pipes:				
	142.07.02.01	280 mm diameter HDPE pipe	m	170		
	142.07.02.02	750 mm diameter concrete stormwater pipe	m	160		
	142.07.02.03	900 mm diameter concrete stormwater pipe	m	10		
	142.07.03	Remove pipes from trench and stack for inspection:				
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	142.07.03.01	280 mm diameter HDPE pipe	m	170		
	142.07.03.02	750 mm diameter concrete stormwater pipe	m	160		
	142.07.03.03	900 mm diameter concrete stormwater pipe	m	10		
	142.07.04	Deliver pipes and specials declared reusable:				
	142.07.04.01	280 mm diameter HDPE pipe	m	170		
	142.07.04.02	750 mm diameter concrete stormwater pipe	m	160		
	142.07.04.03	900 mm diameter concrete stormwater pipe	m	10		
	142.07.05	Dispose of pipes and specials unsuitable for reuse:				
	142.07.05.01	280 mm diameter HDPE pipe	m	170		
	142.07.05.02	750 mm diameter concrete stormwater pipe	m	160		
	142.07.05.03	900 mm diameter concrete stormwater pipe	m	10		
	142.07.06	Backfill and compact trench				
	142.07.06.01	280 mm diameter HDPE pipe	m ³	315		
	142.07.06.02	750 mm diameter concrete stormwater pipe	m ³	550		
	142.07.06.03	900 mm diameter concrete stormwater pipe	m ³	40		
	142.07.07	Make up deficiency in backfill material				
	142.07.07.01	280 mm diameter HDPE pipe	m ³	15		
	142.07.07.02	750 mm diameter concrete stormwater pipe	m ³	85		
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSDB 8.3.9	142.07.07.03	900 mm diameter concrete stormwater pipe	m³	10		
	142.60	Provision of temporary bridges for maintaining access to properties:				
PSDB 8.3.10	142.60.02	Temporary vehicular bridges	No.	2		
	142.61	Moving of temporary bridges to and their re-erection in new positions:				
	142.61.02	Temporary vehicular bridges	No.	2		
1200 DB Total Carried to Bill 12 Summary						

Bill 12: Conveyance (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.01	Treatment of in-situ material:				
	147.01.01	In-situ material preparation and compaction of material to:				
	147.01.01.01	Minimum of 93% of modified AASHTO maximum density (Rip and recompact to a depth of 300 mm)	m ³	205		
PSDM 8.3.5	147.02	Selected layer using material from commercial sources or excavations:				
	147.02.01	G5 material compacted in 150 mm layers to 95% Modified AASHTO max density	m ³	205		
	147.02.02	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	1215		
	147.02.03	Rockfill (100 mm stone) process and compact	m ³	410		
PSDM 8.3.17	147.03	Extra over item 147.02 for obtaining material from commercial sources				
	147.03.01	G5 material	m ³	205		
	147.03.02	G7 material	m ³	1215		
	147.03.03	Rockfill (100 mm stone)	m ³	410		
PSDM 8.3.18	147.04	Final finishing and cleaning up of the Site of the Works	Sum	1		
1200 DM Total Carried to Bill 12 Summary						

Bill 12: Conveyance (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 H 8.3.12	180.00	STRUCTURAL STEELWORK				
	180.01	Additional items Refer to Drawing: 106681-M7-44-DR-CC-0001				
	180.01.01	U-bolt pipe support connection complete, with corrosion protection, as shown on drawing	No.	1		
	180.01.02	DN 150 mm holderbat complete	No.	2		
1200 H Total Carried to Bill 12 Summary						

Bill 12: Conveyance (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 L	210.00	MEDIUM-PRESSURE PIPELINES				
8.2.1	210.01	Supply, lay and bed on flexible bedding, complete with couplings:				
	210.01.01	HDPE PE 100 PN 8 pipes:				
	210.01.01.01	DN 200 mm diameter for pipeline 1.3 butt welded	m	9		
	210.01.01.02	DN 200 mm diameter for pipeline 1.4 butt welded	m	5		
	210.01.01.03	DN 160 mm diameter for pipeline 1.5 butt welded	m	10		
	210.01.01.04	DN 160 mm diameter for pipeline 1.6 butt welded	m	11		
	210.01.01.05	DN 160 mm diameter for pipeline 1.7 butt welded	m	11		
	210.01.01.06	DN 160 mm diameter for pipeline 1.8 butt welded	m	11		
	210.01.01.07	DN 160 mm diameter for pipeline 1.9 butt welded	m	65		
	210.01.01.08	DN 160 mm diameter for pipeline 1.10 butt welded	m	39		
	210.01.02	uPVC class 9 pipes:				
	210.01.02.01	DN 110 mm diameter for pipeline 6.4	m	150		
	210.01.02.02	DN 110 mm diameter for pipeline 6.5	m	35		
	210.01.02.03	DN 110 mm diameter for pipeline 6.6	m	5		
	210.01.03	HDPE PE 100 PN 12.5 pipes:				
	210.01.03.01	DN 250 mm diameter for pipeline 3 butt welded	m	445		
	210.01.03.02	DN 280 mm diameter for relocation of clearwater pipeline butt welded	m	170		
	210.01.04	Grade C steel, t = 8 mm:				
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.2.1	210.01.04.01	DN 800 mm diameter for pipeline 2.1 continuously welded (Refer to drawing 106681-M7-72-DR-CC-0001 for corrosion protection)	m	57		
	210.01.04.02	DN 800 mm diameter for pipeline 2.2 continuously welded (Refer to drawing 106681-M7-72-DR-CC-0001 for corrosion protection)	m	36		
	210.01.04.03	DN 800 mm diameter for pipeline 2.3 continuously welded (Refer to drawing 106681-M7-72-DR-CC-0001 for corrosion protection)	m	52		
	210.01.05	Grade C steel, t = 6 mm:				
	210.01.05.01	DN 600 mm diameter for pipeline 4.1 continuously welded (Refer to drawing 106681-M7-74-DR-CC-0001 for corrosion protection)	m	244		
	210.01.05.02	DN 600 mm diameter for pipeline 4.2 continuously welded (Refer to drawing 106681-M7-74-DR-CC-0002 for corrosion protection)	m	146		
	210.01.05.03	DN 600 mm diameter for pipeline 5.1 continuously welded (Refer to relevant Project Specification for corrosion protection)	m	15		
	210.01.05.04	DN 600 mm diameter for pipeline 5.2 continuously welded (Refer to relevant Project Specification for corrosion protection)	m	30		
	210.01.05.05	DN 600 mm diameter for pipeline 5.3 continuously welded (Refer to relevant Project Specification for corrosion protection)	m	33		
8.2.1	210.02	Supply, lay and bed on class B bedding, complete with couplings:				
	210.02.01	Concrete sewer pipes with sacrificial layers to SANS 677				
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.2.2	210.02.01.01	DN 1050 SI class 100 D, 2.44 m lengths for pipeline 1.11	No.	22		
	210.02.01.02	DN 1050 SI class 100 D, 2.44 m lengths for pipeline 1.12	No.	73		
	210.02.02	Concrete interlocking joint sleeve pipes (both ends to be sealed):				
	210.02.02.01	DN 375 SC Class 75 D, 2.44 m lengths for pipeline 3	No.	4		
	210.03	Extra over items 210.01 to 210.02 for the supplying, laying, and bedding of uPVC specials complete with couplings:				
	210.03.01	DN 110 mm diameter, class 9				
	210.03.01.01	90° bends:	No.	4		
	210.03.01.02	Equal T-Piece	No.	1		
	210.03.02	uPVC suited flanged adaptors couplings, flanges to SANS 1123				
	210.03.02.01	DN 110 mm diameter, PN 10	No.	6		
8.2.2	210.04	Extra over items 210.01 to 210.02 for supplying, laying and bedding of HDPE specials complete with couplings:				
	210.04.01	DN 160 mm diameter, PE 100 PN 8				
	210.04.01.01	90° bends:	No.	2		
	210.04.01.02	60° bends:	No.	5		
	210.04.01.03	45° bends:	No.	4		
	210.04.01.04	22.5° bends:	No.	8		
	210.04.01.05	11.25° bends	No.	8		
	210.04.02	DN 200 mm diameter, PE 100 PN 8				
	210.04.02.01	11.25° bends	No.	2		
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.2.2	210.04.03	DN 250 mm diameter, PE 100 PN 12.5				
	210.04.03.01	90° bends:	No.	2		
	210.04.03.02	60° bends:	No.	1		
	210.04.03.03	45° bends:	No.	1		
	210.04.03.04	22.5° bends:	No.	6		
	210.04.03.05	11.25° bends	No.	2		
	210.04.04	DN 280 mm diameter, PE 100 PN 12.5				
	210.04.04.01	90° bends:	No.	2		
	210.04.05	DN 630 mm diameter, PE 100 PN 8				
	210.04.05.01	11.25° bends	No.	6		
	210.04.06	HDPE to steel pipe connection complete as per drawing: 106681-M7-06-DR-CC-0017				
	210.04.06.01	DN 160 mm HDPE to DN 150 mm steel	No.	12		
	210.04.06.02	DN 200 mm HDPE to DN 200 mm steel	No.	2		
	210.04.06.03	DN 250 mm HDPE to DN 250 mm steel	No.	2		
	210.07	Extra over items 210.01 to 210.02 for supplying, laying and bedding of concrete pipe bends complete with couplings:				
	210.07.01	DN 1050 SI class 100 D concrete sewer pipe bends with sacrificial layer to SANS 677, complete with thrust block, as per Rocla design				
	210.07.01.01	90° bends:	No.	1		
	210.07.01.02	45° bends:	No.	1		
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.2.2	210.07.01.03	22.5° bends:	No.	1		
	210.08	Extra over items 210.01 to 210.02 for supplying, laying and bedding steel bends complete with couplings:				
	210.08.01	DN 600 mm diameter, Grade C medium radius (2 D) steel bends:				
	210.08.01.01	Over 67.5° up to 90°:	No.	10		
	210.08.01.02	Over 45° up to 67.5°:	No.	1		
	210.08.01.03	Over 22.5° up to 45°:	No.	10		
	210.08.01.04	Over 11.25° up to 22.5°:	No.	1		
	210.08.02	DN 800 mm diameter, Grade C medium radius (2 D) steel bends:				
	210.08.02.01	Over 67.5° up to 90°:	No.	4		
	210.08.02.02	Over 45° up to 67.5°:	No.	6		
8.2.2	210.08.02.03	Over 22.5° up to 45°:	No.	1		
	210.08.02.04	Over 11.25° up to 22.5°:	No.	1		
PSL 8.2.18	210.09	Supply, laying and bedding of specials complete with couplings: (Refer to relevant Project Specification for corrosion protection)				
		Refer to Drawing: 106681-M7-44-DR-CC-0001				
	210.09.01	Item 1: DN 150 mm steel pipe special at Division structure	No.	2		
	210.10	Connection to existing infrastructure				
		Refer to Drawing: 106681-M7-73-DR-CC-0003				
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	210.10.01	Connection of pipeline 3 to existing isolating valve chamber at Sludge handling facility including supply fixing and bedding of all neccesarry connection pipe fittings and couplings Refer to Drawing: 106681-M7-76-DR-CC-0006	Sum	1		
	210.10.02	Connection of pipeline 6.4 to dosing system in existing Chlorine dosing building including supply fixing and bedding of all neccesarry connection pipe fittings and couplings	Sum	1		
	210.10.03	Connection 1 of pipeline 6.4 to Chlorine contact tank including supply fixing and bedding of all neccesarry connection pipe fittings and couplings	Sum	1		
	210.10.04	Connection 2 of pipeline 6.4 to Chlorine contact tank including supply fixing and bedding of all neccesarry connection pipe fittings and couplings Refer to Drawing: 106681-M7-76-DR-CC-0007	Sum	1		
	210.10.05	Connection of pipeline 6.5 to dosing system in existing Chlorine dosing building including supply fixing and bedding of all neccesarry connection pipe fittings and couplings	Sum	1		
	210.10.06	Connection of pipeline 6.5 to Chlorination pipework in existing Chlorine pump station including supply fixing and bedding of all neccesarry connection pipe fittings and couplings	Sum	1		
	210.10.07	Connection of pipeline 6.6 to Chlorination pipework in existing Chlorine pump station including supply fixing and bedding of all neccesarry connection pipe fittings and couplings	Sum	1		
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	210.10.08	Connection of pipeline 6.6 to existing Module 6 Chlorine contact tank including supply fixing and bedding of all necessary connection pipe fittings and couplings	Sum	1		
	210.10.09	Connection of 280 mm diameter HDPE relocated clearwater pipeline to existing clearwater pipeline at start point	Sum	1		
	210.10.10	Connection of 280 mm diameter HDPE relocated clearwater pipeline to existing clearwater pipeline at end point	Sum	1		
1200 L Total Carried to Bill 12 Summary						

Bill 12: Conveyance (Civil)**BEDDING (PIPES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LB	211.00	BEDDING (PIPES)				
		BEDDING FOR WATER PIPES				
	8.2.1	Provision of bedding from trench excavations:				
	211.01	Selected granular material				
	211.01.01	Selected granular material				
	211.01.01.01	Pipelines 1.3 and 1.4	m ³	4		
	211.01.01.02	Pipelines 1.5 and 1.6	m ³	6		
	211.01.01.03	Pipelines 1.7 and 1.8	m ³	6		
	211.01.01.04	Pipelines 1.9 and 1.10	m ³	31		
	211.01.01.05	Pipeline 1.11	m ³	58		
	211.01.01.06	Pipeline 1.12	m ³	187		
	211.01.01.07	Pipelines 2.1, 2.2 and 2.3	m ³	183		
	211.01.01.08	Pipeline 3	m ³	148		
	211.01.01.09	Pipelines 4.1 and 4.2	m ³	288		
	211.01.01.10	Pipelines 5.1, 5.2 and 5.3	m ³	57		
	211.01.01.11	Pipeline 6.4	m ³	35		
	211.01.01.12	Pipelines 6.5 and 6.6	m ³	9		
	211.01.01.13	280 mm diameter HDPE relocated clearwater pipeline	m ³	65		
	211.01.02	Selected fill material				
	211.01.02.01	Pipelines 1.3 and 1.4	m ³	3		
	211.01.02.02	Pipelines 1.5 and 1.6	m ³	4		
	211.01.02.03	Pipelines 1.7 and 1.8	m ³	4		
	211.01.02.04	Pipelines 1.9 and 1.10	m ³	19		
	211.01.02.05	Pipeline 1.11	m ³	70		
	211.01.02.06	Pipeline 1.12	m ³	224		
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**BEDDING (PIPES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSLB 8.2.2	211.01.02.07	Pipelines 2.1, 2.2 and 2.3	m ³	47		
	211.01.02.08	Pipeline 3	m ³	76		
	211.01.02.09	Pipelines 4.1 and 4.2	m ³	94		
	211.01.02.10	Pipelines 5.1, 5.2 and 5.3	m ³	18.5		
	211.01.02.11	Pipeline 6.4	m ³	25		
	211.01.02.12	Pipelines 6.5 and 6.6	m ³	6		
	211.01.01.13	280 mm diameter HDPE relocated clearwater pipeline	m ³	30		
	211.02	Supply only of bedding by importation:				
	211.02.03	From commercial sources:				
	211.02.03.01	Selected granular material				
	211.02.03.01.01	Pipelines 1.3 and 1.4	m ³	4		
	211.02.03.01.02	Pipelines 1.5 and 1.6	m ³	6		
	211.02.03.01.03	Pipelines 1.7 and 1.8	m ³	6		
	211.02.03.01.04	Pipelines 1.9 and 1.10	m ³	31		
	211.02.03.01.05	Pipeline 1.11	m ³	58		
	211.02.03.01.06	Pipeline 1.12	m ³	187		
	211.02.03.01.07	Pipelines 2.1, 2.2 and 2.3	m ³	183		
	211.02.03.01.08	Pipeline 3	m ³	148		
	211.02.03.01.09	Pipelines 4.1 and 4.2	m ³	288		
	211.02.03.01.10	Pipelines 5.1, 5.2 and 5.3	m ³	57		
	211.02.03.01.11	Pipeline 6.4	m ³	35		
	211.02.03.01.12	Pipelines 6.5 and 6.6	m ³	9		
	211.02.03.01.13	280 mm diameter HDPE relocated clearwater pipeline	m ³	65		
<i>Carried forward</i>						

Bill 12: Conveyance (Civil)**BEDDING (PIPES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	211.02.03.02	Selected fill material				
	211.02.03.02.01	Pipelines 1.3 and 1.4	m ³	3		
	211.02.03.02.02	Pipelines 1.5 and 1.6	m ³	4		
	211.02.03.02.03	Pipelines 1.7 and 1.8	m ³	4		
	211.02.03.02.04	Pipelines 1.9 and 1.10	m ³	19		
	211.02.03.02.05	Pipeline 1.11	m ³	70		
	211.02.03.02.06	Pipeline 1.12	m ³	224		
	211.02.03.02.07	Pipelines 2.1, 2.2 and 2.3	m ³	47		
	211.02.03.02.08	Pipeline 3	m ³	76		
	211.02.03.02.09	Pipelines 4.1 and 4.2	m ³	94		
	211.02.03.02.10	Pipelines 5.1, 5.2 and 5.3	m ³	18.5		
	211.02.03.02.11	Pipeline 6.4	m ³	25		
	211.02.03.02.12	Pipelines 6.5 and 6.6	m ³	6		
	211.02.03.02.13	280 mm diameter HDPE relocated clearwater pipeline	m ³	30		
1200 LB Total Carried to Bill 12 Summary						

Bill 12: Conveyance (Civil)**STORMWATER DRAINAGE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 LE	214.00	STORMWATER DRAINAGE				
PSLE 8.2.15	214.01	Geofabric				
	214.01.01	U24 or similar approved:				
	214.01.01.01	Pipelines 1.3 and 1.4	m ²	21		
	214.01.01.02	Pipelines 1.5 and 1.6	m ²	33		
	214.01.01.03	Pipelines 1.7 and 1.8	m ²	33		
	214.01.01.04	Pipelines 1.9 and 1.10	m ²	218		
	214.01.01.05	Pipeline 1.11	m ²	242		
	214.01.01.06	Pipeline 1.12	m ²	784		
	214.01.01.07	Pipelines 2.1, 2.2 and 2.3	m ²	254		
	214.01.01.08	Pipeline 3	m ²	445		
	214.01.01.09	Pipelines 4.1 and 4.2	m ²	527		
	214.01.01.10	Pipelines 5.1, 5.2 and 5.3	m ²	104		
	214.01.01.11	Pipeline 6.4	m ²	130		
	214.01.01.12	Pipelines 6.5 and 6.6	m ²	35		
PSLE 8.2.16	214.02	19 mm Crushed stone in subsurface drains:				
	214.02.01	Pipelines 1.3 and 1.4	m ³	2		
	214.02.02	Pipelines 1.5 and 1.6	m ³	3		
	214.02.03	Pipelines 1.7 and 1.8	m ³	3		
	214.02.04	Pipelines 1.9 and 1.10	m ³	14		
	214.02.05	Pipeline 1.11	m ³	17		
	214.02.06	Pipeline 1.12	m ³	55		
	214.02.07	Pipelines 2.1, 2.2 and 2.3	m ³	27		
	214.02.08	Pipeline 3	m ³	57		
Total carried forward						

STORMWATER DRAINAGE

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
Total brought forward						
	214.02.09	Pipelines 4.1 and 4.2	m³	71		
	214.02.10	Pipelines 5.1, 5.2 and 5.3	m³	14		
	214.02.11	Pipeline 6.4	m³	16		
	214.02.12	Pipelines 6.5 and 6.6	m³	5		
1200 LE Total Carried to Bill 12 Summary						

Bill 12: Conveyance (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
		SCHEDULED FORMWORK ITEMS				
SD8.2.1	500.01	Rough:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Walls of thrust block at Division structure	m ²	1.5		
SD8.2.2	500.02	Smooth:				
	500.02.01	Vertical formwork to:				
	500.02.01.01	Sides of walls	m ²	2580		
	500.02.01.02	Sides of walls (external surface 4.4 m radius)	m ²	15		
	500.02.01.03	Sides of walls (external surface 5.6 m radius)	m ²	16		
	500.02.01.04	Sides of walls (external surface 13.75 m radius)	m ²	110		
	500.02.01.05	Sides of walls (external surface 14.4 m radius)	m ²	50		
	500.02.01.06	Sides of walls (external surface 15.6 m radius)	m ²	51		
	500.02.01.07	Sides of walls (external surface 16.25 m radius)	m ²	130		
	500.02.01.08	Sides of walls (internal surface 4.65 m radius)	m ²	16		
	500.02.01.09	Sides of walls (internal surface 5.35 m radius)	m ²	17		
	500.02.01.10	Sides of walls (internal surface 14 m radius)	m ²	112		
	500.02.01.11	Sides of walls (internal surface 14.65 m radius)	m ²	49		
	500.02.01.12	Sides of walls (internal surface 15.35 m radius)	m ²	52		
Total carried forward						

Bill 12: Conveyance (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
Total brought forward						
SD8.2.5	500.02.01.13	Sides of walls (internal surface 16 m radius)	m ²	128		
	500.03	Narrow widths (up to 300 mm wide):				
	500.03.01	Different widths in the following ranges:				
	500.03.01.01	Over 100 mm and up to 200 mm (edge of floorslabs)	m	760		
	500.03.01.02	Over 100 mm and up to 200 mm (edge of floorslabs 4.2 m radius)	m	8		
	500.03.01.03	Over 100 mm and up to 200 mm (edge of floorslabs 5.8 m radius)	m	9		
	500.03.01.04	Over 100 mm and up to 200 mm (edge of floorslabs 13.55 m radius)	m	65		
	500.03.01.05	Over 100 mm and up to 200 mm (edge of floorslabs 14.2 m radius)	m	30		
	500.03.01.06	Over 100 mm and up to 200 mm (edge of floorslabs 15.8 m radius)	m	30		
	500.03.01.07	Over 100 mm and up to 200 mm (edge of floorslabs 16.45 m radius)	m	78		
SD8.3.1		SCHEDULED REINFORCEMENT ITEMS				
	500.04	High-tensile steel bars in the following:				
	500.04.01	All diameters	t	70		
		SCHEDULED CONCRETE ITEMS				
SD8.4.2	500.05	Blinding layer:				
	500.05.01	Class 15 MPa/19 mm concrete of:				
	500.05.01.01	75 mm thickness	m ²	1325		
SD8.4.3	500.06	Strength concrete: (specify if extender is used)				
Total carried forward						

Bill 12: Conveyance (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
Total brought forward						
SD8.4.4	500.06.01	Class 30 MPa/19 mm concrete in:				
	500.06.01.01	Floors	m ³	265		
	500.05.01.02	Walls	m ³	300		
	500.05.01.03	Thrust block at Division structure	m ³	0.25		
SD8.4.4	500.07	Unformed surface finishes:				
	500.07.01	Wood-floated finishes to:				
	500.07.01.01	Top of floor slabs	m ²	1325		
	500.07.02	Steel-floated finishes to:				
SD8.4.9	500.07.02.01	Top of walls	m ²	200		
	500.08	Bond breaker below floor				
SD8.4.9	500.08.01	Between canal floor and blinding layer	m ²	1325		
SD8.5	500.09	JOINTS				
	500.09.01	Expansion joints as detailed on drawings 166681-M7-07-DR-CC-0009 and 0010				
	500.09.01.01	Floor joint Type A	m	50		
	500.09.01.02	Wall joint Type EM	m	50		
SD8.5	500.09.02	Construction joints as detailed on drawings 106681-M7-07-DR-CC-0009 and 0010				
	500.09.02.01	Floor joint Type C	m	215		
	500.09.02.02	Wall joint Type J	m	215		
	500.10	Tests for water tightness				
SD8.10	500.10.01	Canals 6.1, 6.2 and 6.3	Sum	1		
2001 CC1 Total Carried to Bill 12 Summary						

Bill 12: Conveyance (Civil)**SUMMARY**

SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 1200 H	STRUCTURAL STEELWORK	
SANS 1200 L	MEDIUM-PRESSURE PIPELINES	
SANS 1200 LB	BEDDING (PIPES)	
SANS 1200 LE	STORMWATER DRAINAGE	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
Bill 12 Total Carried to BoQ Summary		

Bill 13: Chambers (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE				
8.2.4	130.01	Reclear surfaces (only on instructions from Engineer):				
	130.01.01	Areas				
	130.01.01.01	Primary sludge isolating valve chamber	m ²	40		
	130.01.01.02	RAS isolating valve chamber	m ²	110		
	130.01.01.03	WAS sump	m ²	65		
	130.01.01.04	Chlorine contact tank flowmeter chamber	m ²	35		
	130.01.01.05	Drop structure	m ²	50		
8.2.10	130.02	Remove topsoil to nominal depth of 150 mm and stockpile				
	130.02.01	Primary sludge isolating valve chamber	m ³	5		
	130.02.02	RAS isolating valve chamber	m ³	20		
	130.02.03	WAS sump	m ³	10		
	130.02.04	Chlorine contact tank flowmeter chamber	m ³	5		
	130.02.05	Drop structure	m ³	10		
1200 C	Total Carried to Bill 13 Summary					

Bill 13: Chambers (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
PSD 8.3.3	140.01	Restricted excavation:				
	140.01.01	Excavate in all materials, and use for backfill or embankment, or dispose				
	140.01.01.01	Primary sludge isolating valve chamber	m ³	40		
	140.01.01.02	RAS isolating valve chamber	m ³	160		
	140.01.01.03	WAS sump	m ³	70		
	140.01.01.04	Chlorine contact tank flowmeter chamber	m ³	40		
	140.01.01.05	Drop structure	m ³	70		
PSD 8.3.3	140.02.03	Extra over item 140.01.01 above for :				
	140.02.03.01	Hard rock excavation	m ³	40		
	140.01.04	Extra over item 140.01 for hand excavation	m ³	40		
8.3.5	140.03	Extra excavation in all materials to provide working space around structure	m ²	275		
8.3.9	140.05	Extra over items 140.01 for backfill or for fill material against structures	m ³	700		
PSD 8.3.15	140.06	Extra over items 140.01.01 for disposing of spoil material on a site provided by the Contractor	m ³	370		
1200 D	Total Carried to Bill 13 Summary					

Bill 13: Chambers (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES) Chlorine contact tank flowmeter chamber. Refer to Drawing: 106681-M7-85-DR-CC-0006 TRENCHES FOR SEWER PIPES				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.01	Pipes over 1 000 mm dia up to 1 250 mm dia for depths:				
	142.01.01.01	Up to 1,0 m	m	20		
	142.01.01.02	Over 1,0 m up to 2,0 m	m	20		
	142.01.01.03	Over 2,0 m up to 3,0 m	m	20		
PSDB 8.3.2	142.02	Extra over item 142.01 above for:				
	142.02.01	Hard rock excavation	m ³	30		
PSDB 8.3.2	142.03	Excavate and dispose of unsuitable material from trench bottom	m ³	10		
PSDB 8.3.3	142.04	Excavation ancillaries:				
	142.04.01	Make up deficiency in backfill material:				
	142.04.01.01	By importation from commercial or off-site sources selected by the Contractor	m ³	40		
1200 DB Total Carried to Bill 13 Summary						

Bill 13: Chambers (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.01	Treatment of in-situ material:				
	147.01.01	In-situ material preparation and compaction of material to:				
	147.01.01.01	Minimum of 93% of modified AASHTO maximum density (Rip and recompact to a depth of 300 mm)	m ³	45		
PSDM 8.3.5	147.02	Selected layer using material from commercial sources or excavations:				
	147.02.01	G5 material compacted in 150 mm layers to 95% Modified AASHTO max density	m ³	25		
	147.02.02	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	740		
	147.02.03	Rockfill (100 mm stone) process and compact	m ³	45		
PSDM 8.3.17	147.03	Extra over item 147.02 for obtaining material from commercial sources				
	147.03.01	G5 material	m ³	25		
	147.03.02	G7 material	m ³	740		
	147.03.03	Rockfill (100 mm stone)	m ³	45		
PSDM 8.3.18	147.04	Final finishing and cleaning up of the Site of the Works	Sum	1		
1200 DM	Total Carried to Bill 13 Summary					

Bill 13: Chambers (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
		Primary sludge isolating valve chamber. Refer to Drawing: 106681-M7-43-DR-CC-0001				
		SCHEDULED FORMWORK ITEMS				
SD8.2.1	500.01	Rough:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Sides of sump walls	m ²	2		
SD8.2.2	500.02	Smooth:				
	500.02.01	Vertical formwork to:				
	500.02.01.01	Sides of walls	m ²	83		
	500.02.02	Horizontal formwork to:				
	500.02.02.01	Soffit of slabs	m ²	7		
SD8.2.5	500.03	Narrow widths (up to 300 mm wide):				
	500.03.01	Different widths in the following ranges:				
	500.03.01.01	Over 200 mm and up to 300 mm (edge of slabs)	m	17		
		SCHEDULED REINFORCEMENT ITEMS				
SD8.3.1	500.04	High-tensile steel bars in the following:				
	500.04.01	All diameters	t	2		
		SCHEDULED CONCRETE ITEMS				
SD8.4.2	500.05	Blinding layer:				
	500.05.01	Class 15 MPa/19 mm concrete of:				
	500.05.01.01	75 mm thickness	m ²	19		
SD8.4.3	500.06	Strength concrete: (Dolomitic Aggregates)				
Carried forward						

Bill 13: Chambers (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.4	500.06.01	Class 35 MPa/ 19 mm concrete in:				
	500.06.01.01	Sump floor	m ³	0.3		
	500.06.01.02	Sump walls	m ³	0.5		
	500.06.01.03	Floor slabs	m ³	5		
	500.06.01.04	Walls	m ³	8		
	500.06.01.05	Roof slabs	m ³	2		
SD8.4.10	500.07	Unformed surface finishes:				
	500.07.01	Wood-floated finishes to:				
	500.07.01.01	Top of sump floor	m ²	0.3		
	500.07.01.02	Top of floor slabs	m ²	26		
SD8.6	500.07.01.03	Top of roof slabs	m ²	10		
	500.08	Casting pipes and specials in concrete				
	500.08.01	Up to 300 mm nominal bore:				
SD8.7	500.08.01.01	Through 250 mm thick walls	No.	6		
	500.09	Manufacture (or supply) and erect precast concrete units:				
SD8.2.1	500.09.01	1200 x 520 x 150 mm precast cover slabs	No.	5		
	500.10	Grouting:				
	500.10.01	Under bases (or beds)				
	500.10.01.01	25 mm non-shrink grout	m ³	0.5		
		RAS isolating valve chamber. Refer to Drawing: 106681-M7-62-DR-CC-0019				
		SCHEDULED FORMWORK ITEMS				
	500.11	Rough:				
<i>Carried forward</i>						

Bill 13: Chambers (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.2.2	500.11.01	Vertical formwork to:				
	500.11.01.01	Side of sump walls	m ²	2		
	500.12	Smooth:				
	500.12.01	Vertical formwork to:				
SD8.3.1	500.12.01.01	Sides of walls	m ²	246		
	500.12.01.02	Side of stairs	m ²	2		
	SCHEDULED REINFORCEMENT ITEMS					
	500.13	High-tensile steel bars in the following:				
SD8.4.2	500.13.01	All diameters	t	8		
	SCHEDULED CONCRETE ITEMS					
	500.14	Blinding layer:				
	500.14.01	Class 15 MPa/19 mm concrete of:				
SD8.4.3	500.14.01.01	75 mm thickness	m ²	64		
	500.15	Strength concrete: (specify if extender is used)				
	500.15.01	Class 25 MPa/ 38 mm fly ash mass concrete in:				
	500.15.01.01	Stairs	m ³	0.6		
SD8.4.4	500.15.02	Class 35 MPa/ 19 mm fly ash concrete in:				
	500.15.02.01	Sump floor slab	m ³	0.3		
	500.15.02.02	Floor slab	m ³	25		
	500.15.02.03	Walls	m ³	41		
SD8.4.4	500.16	Unformed surface finishes:				
	500.16.01	Wood-floated finishes to:				
<i>Carried forward</i>						

Bill 13: Chambers (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.10	500.16.01.01	Top of sump slab	m ²	0.3		
	500.16.01.02	Top of walls	m ²	12		
	500.16.02	Power-floated finishes to:				
	500.16.02.01	Top of floor slab	m ²	63		
SD8.7	500.17	Casting pipes and specials in concrete				
	500.17.01	Over 300 mm up to 600 mm nominal bore:				
	500.17.01.01	Through 550 mm thick walls	No.	4		
	500.18	Grouting:				
SD8.2.2	500.18.01	Under bases (or beds)				
	500.18.01.01	25 mm non-shrink grout	m ³	2		
		WAS sump. Refer to Drawing: 106681-M7-62-DR-CC-0015				
		SCHEDULED FORMWORK ITEMS				
SD8.3.1	500.19	Smooth:				
	500.19.01	Vertical formwork to:				
	500.19.01.01	Sides of walls	m ²	215		
		SCHEDULED REINFORCEMENT ITEMS				
SD8.4.2	500.20	High-tensile steel bars in the following:				
	500.20.01	All diameters	t	5		
		SCHEDULED CONCRETE ITEMS				
	500.21	Blinding layer:				
	500.21.01	Class 15 MPa/19 mm concrete of:				
	500.21.01.01	75 mm thickness	m ²	32		
<i>Carried forward</i>						

Bill 13: Chambers (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.3	500.22	Strength concrete: (specify if extender is used)				
	500.22.01	Class 15 MPa/ 19 mm fly ash concrete in:				
	500.22.01.01	Benching	m ³	5		
	500.22.02	Class 35 MPa/ 19 mm fly ash concrete in:				
	500.22.02.01	Floor slab	m ³	13		
SD8.4.4	500.22.02.02	Walls	m ³	31		
	500.23	Unformed surface finishes:				
	500.23.01	Wood-floated finishes to:				
	500.23.01.01	Top of walls	m ²	6		
	500.23.01.02	Benching	m ²	12		
SD8.4.10	500.23.01.03	Manhole base slab	m ²	3		
	500.23.01	Power-floated finishes to:				
	500.23.01.01	Top of floor slab	m ²	29		
	500.24	Casting pipes and specials in concrete				
	500.24.01	Up to 300 mm nominal bore:				
SD8.6	500.24.01.01	Through 300 mm thick walls	No.	2		
	500.24.02	Over 300 mm up to 600 mm nominal bore:				
	500.24.02.01	Through 300 mm thick walls	No.	2		
	500.25	Manufacture (or supply) and erect precast concrete units:				
	500.25.01	1500 mm diameter concrete rings	m ³	2		
	500.25.02	1500 mm diameter concrete cover slab with manhole opening and lifting lugs	m ³	0.4		
<i>Carried forward</i>						

Bill 13: Chambers (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.10	500.26	Tests for water tightness				
	500.26.01	Was sump	Sum	1		
		Chlorine contact tank flowmeter chamber. Refer to Drawing: 106681-M7-85-DR-CC-0006				
		SCHEDULED FORMWORK ITEMS				
SD8.2.2	500.27	Smooth:				
	500.27.01	Vertical formwork to:				
	500.27.01.01	Sides of walls and floor	m ²	85		
	500.27.02	Horizontal formwork to:				
	500.27.02.01	Soffit of slabs	m ²	6		
		SCHEDULED REINFORCEMENT ITEMS				
SD8.3.1	500.28	High-tensile steel bars in the following:				
	500.28.01	All diameters	t	2		
		SCHEDULED CONCRETE ITEMS				
SD8.4.2	500.29	Blinding layer:				
	500.29.01	Class 15 MPa/19 mm concrete of:				
	500.29.01.01	75 mm thickness	m ²	14		
SD8.4.3	500.30	Strength concrete: (specify if extender is used)				
	500.30.01	Class 35 MPa/ 19 mm fly ash concrete in:				
	500.30.01.01	Floor slab	m ³	6		
	500.30.01.02	Walls	m ³	11		
	500.30.01.03	Roof slab	m ³	2		
<i>Carried forward</i>						

Bill 13: Chambers (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.4	500.31	Unformed surface finishes:				
	500.31.01	Wood-floated finishes to:				
	500.31.01.01	Top of roof slabs	m ²	9		
	500.31.01.02	Top of walls	m ²	4		
	500.31.01.03	Top of floor slab	m ²	13		
SD8.4.10	500.32	Casting pipes and specials in concrete				
	500.32.01	Over 800 mm up to 1200 mm nominal bore:				
	500.32.01.01	Through 300 mm thick walls	No.	2		
		Drop structure. Refer to Drawing: 106681-M7-85-DR-CC-0015				
		SCHEDULED FORMWORK ITEMS				
SD8.2.2	500.33	Smooth:				
	500.33.01	Vertical formwork to:				
	500.33.01.01	Sides of walls	m ²	85		
SD8.2.5	500.34	Narrow widths (up to 300 mm wide):				
	500.34.01	Different widths in the following ranges:				
	500.34.01.01	Over 200 mm and up to 300 mm (edge of slabs)	m	17		
		SCHEDULED REINFORCEMENT ITEMS				
SD8.3.1	500.35	High-tensile steel bars in the following:				
	500.35.01	All diameters	t	2		
		SCHEDULED CONCRETE ITEMS				
SD8.4.2	500.36	Blinding layer:				
<i>Carried forward</i>						

Bill 13: Chambers (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.3	500.36.01	Class 15 MPa/19 mm concrete of:				
	500.36.01.01	75 mm thickness	m ²	26		
	500.37	Strength concrete: (specify if extender is used)				
SD8.4.4	500.37.01	Class 35 MPa/ 19 mm fly ash concrete in:				
	500.37.01.01	Floor slab	m ³	5		
	500.37.01.02	Walls	m ³	12		
SD8.4.4	500.38	Unformed surface finishes:				
	500.38.01	Wood-floated finishes to:				
	500.38.01.01	Top of walls	m ²	6		
SD8.4.10	500.38.01.02	Top of slabs	m ²	25		
	500.39	Casting pipes and specials in concrete				
SD8.10	500.39.01	Over 800 mm up to 1200 mm nominal bore:				
	500.39.01.01	Through 250 mm thick walls	No.	1		
	500.40	Tests for water tightness				
	500.40.01	Drop structure	Sum	1		
2001 CC Total Carried to Bill 13 Summary						

Bill 13: Chambers (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 H	180.00	STRUCTURAL STEELWORK				
8.3.1	180.01	Supply and fabrication:				
	180.01.01	Preparation of shop detail drawings	Sum	1		
		Primary sludge isolating valve chamber. Refer to Drawing: 106681-M7-43-DR-CC-0001				
8.3.8	180.02	Ladders, complete and installed:				
	180.02.01	Hot dipped galvanized mild steel access ladder 2.20 m high complete as on drawing no 106681-M7-05-DR-CC-0006	No.	1		
	180.02.02	Hot dipped galvanized mild steel access ladder 1.10 m high complete with external railing as on drawing no 106681-M7-05-DR-CC-0005	No.	1		
8.3.9	180.03	Flooring, complete and installed with frames:				
	180.03.01	Rectagrid RS40 open grid floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m²	0.5		
	180.03.02	Access Manhole cover complete as shown on Drawing No 106681-M7-06-DR-CC-0022	No.	1		
	180.03.03	Inlet air ventilator as shown on Drawing No. 106681-M7-06-DR-CC-0024	No.	1		
	180.03.04	Outlet air ventilator as shown on Drawing No. 106681-M7-06-DR-CC-0024	No.	1		
		RAS isolating valve chamber. Refer to Drawing: 106681-M7-62-DR-CC-0019				
8.3.1	180.04	Supply and fabrication:				
	180.04.02	Supply and fabrication of steelwork:				
<i>Carried forward</i>						

Bill 13: Chambers (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	180.04.02.01	Hot rolled sections:				
	180.04.02.01.01	Angles	t	0.1		
	180.04.02.01.02	Universal beams, columns and channels	t	0.7		
	180.04.02.02	Connection plates, cleats, etc.	t	0.04		
8.3.2	180.05	Delivery to Site:				
	180.05.01	Normal delivery:				
	180.05.01.01	All steel work	t	0.8		
8.3.3	180.06	Erection on Site:				
	180.06.01	All steel work	t	0.8		
8.3.4	180.07	Erection bolts:				
	180.07.01	Grade 8.8 bolts	t	0.02		
8.3.6	180.08	Holding-down (HD) bolts:				
	180.08.01	M30 chemical anchors	No.	16		
8.3.7	180.09	Handrails:				
	180.09.01	Handrails complete as show on Drawing No 106681-M7-07-DR-CC-0004				
	180.09.01.01	Horizontal	m	15		
	180.09.01.02	Shaped ends	No.	4		
8.3.8	180.10	Ladders, complete and installed:				
	180.10.01	Hot dipped galvanized mild steel access ladder 2.30 m high complete as on drawing no 106681-M7-05-DR-CC-0006	No.	2		
8.3.9	180.11	Flooring, complete and installed with frames:				
Total carried forward						

Bill 13: Chambers (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
Total brought forward						
8.3.8	180.11.01	Rectagrid RS40 open grid floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m ²	15		
		WAS sump. Refer to Drawing: 106681-M7-62-DR-CC-0015				
	180.12	Ladders, complete and installed:				
8.3.9	180.12.01	Hot dipped galvanized mild steel access ladder 4.30 m high complete as on drawing no 106681-M7-05-DR-CC-0005	No.	1		
	180.12.02	Hot dipped galvanized mild steel access ladder 3.60 m high complete as on drawing no 106681-M7-05-DR-CC-0005	No.	1		
	180.13	Flooring, complete and installed with frames:				
8.3.8	180.13.01	Rectagrid RS40 open grid floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m ²	0.2		
		Chlorine contact tank flowmeter chamber. Refer to Drawing: 106681-M7-85-DR-CC-0006				
	180.14	Ladders, complete and installed:				
8.3.9	180.14.01	Hot dipped galvanized mild steel access ladder 3.25 m high complete as on drawing no 106681-M7-05-DR-CC-0006	No.	1		
	180.15	Flooring, complete and installed with frames:				
	180.15.01	Rectagrid RS40 open grid floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m ²	0.3		
1200 H Total Carried to Bill 13 Summary						

Bill 13: Chambers (Civil)**CORROSION PROTECTION OF STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 HC	183.00	CORROSION PROTECTION OF STRUCTURAL STEELWORK				
8.2.1	183.01	Surface dressing and repairs at place of fabrication	t	0.8		
8.2.2	183.02	Transport	t	0.8		
8.2.3	183.03	Surface preparation and coating application:				
		Hot dipped galvanized as per relevant project specification				
	183.03.01	In the shop	t	0.8		
	183.03.02	On Site	t	0.8		
8.2.4	183.04	Establishment on Site for corrosion protection	Sum	1		
1200 HC Total Carried to Bill 13 Summary						

Bill 13: Chambers (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 L	210.00	MEDIUM-PRESSURE PIPELINES				
8.2.2	210.01	Supply, laying and bedding of specials complete with couplings: (Refer to relevant Project Specification for corrosion protection)				
		Primary sludge isolating valve chamber. Refer to Drawing: 106681-M7-43-DR-MM-0001				
	210.01.01	Item 4: Spool piece DN 150 x 4.2 mm SANS 62; flanged both ends SANS 1123 table 1000/3 (RF) with puddle flange, refer to special item	No.	2		
	210.01.02	Item 5: Spool piece DN 150 x 4.2 mm SANS 62; flanged both ends SANS 1123 table 1000/3 (RF) with puddle flange, refer to special item	No.	2		
	210.01.03	Item 6: Spool piece DN 150 x 4.2 mm SANS 62; flanged both ends SANS 1123 table 1000/3 (RF) with puddle flange, refer to special item	No.	1		
	210.01.04	Item 7: Spool piece DN 150 x 4.2 mm SANS 62; flanged both ends SANS 1123 table 1000/3 (RF) with puddle flange, refer to special item	No.	1		
		RAS isolating valve chamber. Refer to Drawing: 106681-M7-62-DR-MM-0008				
	210.01.05	Item 6: Spool piece DN 600 X 6.0 mm SANS 719; flange both ends 1123 Table 1000/3 (RF) with puddle flange, refer to special item	No.	2		
	210.01.06	Item 7: To be manufactured; refer to special item	No.	2		
		WAS sump. Refer to Drawing: 106681-M7-62-DR-MM-0007				
	210.01.07	Item 2: Spool piece DN 200 X 4.5 mm SANS 719 Grade C; flanged one end SANS 1123 Table 1000/3 (RF) with puddle flange, refer to special item	No.	1		
Total carried forward						

Bill 13: Chambers (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
Total brought forward						
	210.01.08	Item 5: Spool piece DN 200 X 4.5 mm SANS 719 Grade C; flanged one end SANS 1123 Table 1000/3 (RF) with puddle flange, refer to special item	No.	1		
	210.01.09	WAS pump station suction pipe	No.	1		
	210.01.10	Sump pump pipework	No.	1		
		Chlorine contact tank flowmeter chamber. Refer to Drawing: 106681-M7- 85-DR-CC-0006				
	210.01.11	Item 1: Spool piece DN 1200 X 10.0 mm SANS 719 Grade C; flanged one end SANS 1123 table 1000/3 (RF) with puddle flange, refer to special item	No.	1		
	210.01.12	Item 2: Spool piece DN 1200 X 10.0 mm SANS 719 Grade C; flanged both ends SANS 1123 table 1000/3 (RF), refer to special item	No.	1		
	210.01.13	Item 3: Spool piece DN 1200 X 10.0 mm SANS 719 Grade C; flanged both ends SANS 1123 table 1000/3 (RF) with puddle flanges, refer to special item	No.	1		
	210.01.14	Item 5: Spool piece DN 1200 X 10.0 mm SANS 719 Grade C; flanged one end SANS 1123 table 1000/3 (RF) with puddle flange, refer to special item	No.	1		
1200 L	Total Carried to Bill 13 Summary					

Bill 13: Chambers (Civil)**BEDDING (PIPES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LB	211.00	BEDDING (PIPES) FLOW METER CHAMBER BEDDING FOR SEWER PIPES				
PSLB 8.2.2	211.01	Supply only of bedding by importation:				
	211.01.01	From commercial sources:				
	211.01.01.01	Selected granular material	m ³	35		
	211.01.01.02	Selected fill material	m ³	40		
1200 LB Total Carried to Bill 13 Summary						

Bill 13: Chambers (Civil)**SUMMARY**

BILL 13 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 H	STRUCTURAL STEELWORK	
SANS 1200 HC	CORROSION PROTECTION OF STRUCTURAL STEELWORK	
SANS 1200 L	MEDIUM-PRESSURE PIPELINES	
SANS 1200 LB	BEDDING (PIPES)	
Bill 13 Total Carried to BoQ Summary		

Bill 14: Chlorine Contact Tank and Chlorination system (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE Refer to Drawings: 106681-M7-13-DR-CC-0001 to 0002				
PSC 8.2.1	130.01	Clear and grub:				
	130.01.01	Areas	m ²	1800		
8.2.4	130.02	Reclear surfaces (only on instructions from Engineer):				
	130.02.01	Areas	m ²	900		
8.2.10	130.03	Remove topsoil to nominal depth of 150 mm and stockpile	m ³	270		
1200 C Total Carried to Bill 14 Summary						

Bill 14: Chlorine Contact Tank and Chlorination system (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
		Refer to Drawings: 106681-M7-13-DR-CC-0001 to 0002				
PSD 8.3.2	140.01	Bulk excavation:				
	140.01.01	Excavate in all materials and use for embankment or backfill as ordered from:				
	140.01.01.01	Necessary excavations	m ³	1700		
	140.01.01.02	Commercial sources	m ³	1700		
	140.01.02	Excavate in all materials and dispose	m ³	3400		
	140.01.03	Extra over items 140.01.01 to 140.01.02 above for:				
	140.01.03.01	Hard rock excavation	m ³	3060		
8.3.5	140.03	Extra excavation in all materials to provide working space around structure	m ²	370		
PSD 8.3.8	140.04	Existing services:				
	140.04.01	Hand excavation for locating and exposing existing services:				
	140.04.01.01	In all areas	m ³	340		
8.3.9	140.05	Extra over items 140.01 backfill or for fill material against structures	m ³	1100		
PSD 8.3.15	140.06	Extra over item 140.01.02 for disposing of spoil material on a site provided by the Contractor	m ³	3400		
1200 D Total Carried to Bill 14 Summary						

Bill 14: Chlorine Contact Tank and Chlorination system (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES)				
		TRENCHES FOR SUBSURFACE DRAINS				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.01	Trenches of width less than 600 mm for depths:				
	142.01.01.01	Up to 1,0 m	m	125		
PSDB 8.3.2	142.02	Extra over item 142.51 above for:				
	142.02.01	Hard rock excavation	m ³	225		
PSDB 8.3.2	142.02.02	Hand excavation where ordered by the Engineer:				
	142.02.02.01	Soft material	m ³	15		
	142.02.02.02	Hard material	m ³	15		
1200 DB Total Carried to Bill 14 Summary						

Bill 14: Chlorine Contact Tank and Chlorination system (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.01	Treatment of in-situ material:				
	147.01.01	In-situ material preparation and compaction of material to:				
	147.01.01.01	Minimum of 93% of modified AASHTO maximum density (Rip and recompact to a depth of 150 mm)	m ³	405		
PSDM 8.3.5	147.02	Selected layer using material from commercial sources or excavations:				
	147.02.01	G5 material compacted in 150 mm layers to 95% Modified AASHTO max density	m ³	405		
	147.02.02	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	1365		
	147.02.03	Rockfill (100 mm stone) process and compact	m ³	370		
PSDM 8.3.17	147.03	Extra over item 147.02 for obtaining material from commercial sources				
	147.03.01	G5 material	m ³	405		
	147.03.02	G7 material	m ³	1365		
	147.03.03	Rockfill (100 mm stone)	m ³	370		
PSDM 8.3.18	147.04	Final finishing and cleaning up of the Site of the Works	Sum	1		
1200 DM	Total Carried to Bill 14 Summary					

Bill 14: Chlorine Contact Tank and Chlorination system (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
		SCHEDULED FORMWORK ITEMS				
SD8.2.1	500.01	Rough:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Sides of floor	m ²	25		
SD8.2.2	500.02	Smooth:				
	500.02.01	Vertical formwork to:				
	500.02.01.01	Sides of walls	m ²	2045		
	500.02.01.02	Sides of walls (external surface 1,2 m radius)	m ²	2		
	500.02.01.03	Sides of walls (internal surface 1,4 m radius)	m ²	3		
	500.02.01.04	Sides of stairs and stair footings	m ²	4		
	500.02.02	Sloping formwork to:				
	500.02.02.01	Soffits of stairs	m ²	6		
SD8.2.6	500.03	Box out holes/form voids:				
	500.03.01	Small other than circular, of area up to and including 0,1 m², and in the following depth ranges:				
	500.03.01.01	0 m up to and including 0,5 m	No.	2		
	500.03.02	Large, other than circular, of area over 0.1 m² and up to and including 0.5 m², and in the following depth ranges:				
	500.03.02.01	0 m up to and including 0,5 m	No.	2		
		SCHEDULED REINFORCEMENT ITEMS				
SD8.3.1	500.04	High-tensile steel bars in the following:				
	500.04.01	All diameters	t	74		
Total carried forward						

Bill 14: Chlorine Contact Tank and Chlorination system (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
Total brought forward						
SD8.4.2	500.05	Blinding layer:				
	500.05.01	Class 15 MPa/19 mm concrete of:				
	500.05.01.01	75 mm thickness	m ²	900		
SD8.4.3	500.06	Strength concrete: (Dolomitic Aggregates)				
	500.06.01	Class 35 MPa/ 19 mm concrete in:				
	500.06.01.01	Foundations and floor slabs	m ³	315		
	500.06.01.02	Walls	m ³	300		
	500.06.01.03	Stairs and stair footings	m ³	10		
SD8.4.4	500.07	Unformed surface finishes:				
	500.07.01	Wood-floated finishes to:				
	500.07.01.01	Top of floor slabs	m ²	895		
	500.07.01.02	Top of stairs	m ²	15		
	500.07.01.03	Top of walls	m ²	165		
SD8.4.10	500.08	Casting pipes and specials in concrete				
	500.08.01	Over 600 mm up to 1200 mm nominal bore:				
	500.08.01.01	Through 350 mm thick walls	No.	1		
SD8.5	500.09	JOINTS				
	500.09.01	Expansion joints as detailed on drawings 106681-M7-07-DR-CC-0009 and 0010				
	500.09.01.01	Straight floor joint type A in 350 mm thick floor slab	m	124		
	500.09.01.02	Straight wall joint type E in 350 mm thick walls	m	29		
Total carried forward						

Bill 14: Chlorine Contact Tank and Chlorination system (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
Total brought forward						
SD8.9	500.09.01.03	Straight wall joint type EM in 350 mm thick walls	m	7		
	500.09.01.04	Straight wall joint type M in 250 mm thick walls	m	44		
	500.09.02	Construction joints as detailed on drawings 106681-M7-07-DR-CC-0009 and 0010				
	500.09.02.01	Straight floor joint type DM in 350 mm wall footings	m	152		
	500.09.02.02	Straight floor joint type SM in 350 mm wall footings	m	143		
	500.10	Miscellaneous other than metal work:				
	500.10.01	Core drill and grout through existing Chlorine pump station walls for:				
	500.10.01.01	DN 100 mm diameter steel delivery pipework	Sum	1		
	500.10.01.02	DN 100 mm diameter steel suction pipework	Sum	1		
	500.10.02	Core drill and grout through existing Module 6 Chlorine contact tank walls for DN 100 mm steel pipe	Sum	1		
SD8.10	500.10.03	Core drill and grout through Chlorine contact tank walls for DN 100 mm steel pipe	Sum	1		
	500.11	Tests for water tightness				
	500.11.01	Chlorine Contact Tank	Sum	1		
2001 CC1 Total Carried to Bill 14 Summary						

Bill 14: Chlorine Contact Tank and Chlorination system (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 H	180.00	STRUCTURAL STEELWORK				
8.3.1	180.01	Supply and fabrication:				
	180.01.01	Preparation of shop detail drawings	Sum	1		
	180.01.02	Supply and fabrication of steelwork:				
	180.01.02.01	Hot rolled sections:				
	180.01.02.01.02	Universal beams,columns and channels	t	0.03		
	180.01.02.03	Connection plates, cleats, etc.	t	0.01		
8.3.2	180.02	Delivery to Site:				
	180.02.01	Normal delivery:				
	180.02.01.01	All steel work	t	0.04		
8.3.3	180.03	Erection on Site:				
	180.03.01	All steel work	t	0.04		
8.3.4	180.04	Erection bolts:				
	180.04.01	Grade 8.8 bolts	t	0.01		
8.3.7	180.05	Handrails:				
	180.05.01	Handrails complete as show on Drawing No 106681-M7-07-DR-CC-0004				
	180.05.01.01	Horizontal	m	16		
	180.05.01.02	Sloping (measured on slope)	m	5		
	180.05.01.03	Shaped ends	No.	10		
8.3.9	180.06	Flooring, complete and installed with frames:				
	180.06.01	Rectagrid RS40 open grid floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m ²	6		
Total Carried to Bill 14 Summary						

Bill 14: Chlorine Contact Tank and Chlorination system (Civil)**CORROSION PROTECTION OF STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 HC	183.00	CORROSION PROTECTION OF STRUCTURAL STEELWORK				
8.2.1	183.01	Surface dressing and repairs at place of fabrication	t	0.04		
8.2.2	183.02	Transport	t	0.04		
8.2.3	183.03	Surface preparation and coating application:				
		Hot dipped galvanized as per relevant project specification				
	183.03.01	In the shop	t	0.04		
	183.03.02	On Site	t	0.04		
8.2.4	183.04	Establishment on Site for corrosion protection	Sum	1		
1200 HC Total Carried to Bill 14 Summary						

Bill 14: Chlorine Contact Tank and Chlorination system (Civil)**STORMWATER DRAINAGE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 LE	214.00	STORMWATER DRAINAGE				
8.2.8	214.01	Supply and install manholes and the like:				
	214.01.01	Precast concrete manholes complete:				
	214.01.01.01	As shown on Drawing No 106681-M7-06-DR-CC-0011	No.	1		
PSLE 8.2.14	214.02	Pipes in subsurface drains:				
	214.02.01	Normal duty uPVC pipes complete with couplings:				
	214.02.01.01	160 mm internal dia, perforated	m	125		
	214.02.02	Heavy-duty fittings:				
	214.02.02.01	Junctions, 160 mm internal dia	No.	5		
PSLE 8.2.15	214.03	Geotextile filter fabric (180 g/m ²)	m ²	225		
PSLE 8.2.16	214.04	Crushed stone in subsurface drains	m ³	25		
PSLE 8.2.19	214.05	Jointing with existing network	Sum	1		
1200 LE	Total Carried to Bill 14 Summary					

BUILDING WORK

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
PART SPEC PD		BUILDING WORK				
PD 10	PD.09	Miscellaneous Items:				
	PD.09.01	Items measured by area:				
	PD.09.01.01	Ant poison, aldrin emulsifiable concentrates solution to SABS 618 spread at a rate recommended by the manufacturer:				
	PD.09.01.01.01	Under foundations and floors	m ²	900		
	PD.09.01.02	250 micron green medium density polyethylene dampproof sheeting under floors	m ²	900		
<div> <div>SPEC PD</div> <div>Total Carried to Bill 14 Summary</div> </div>						

Bill 14: Chlorine Contact Tank and Chlorination system (Civil)**SUMMARY**

BILL 14 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 H	STRUCTURAL STEELWORK	
SANS 1200 HC	CORROSION PROTECTION OF STRUCTURAL STEELWORK	
SANS 1200 LE	STORMWATER DRAINAGE	
PART SPEC PD	BUILDING WORK	
Bill 14 Total Carried to BoQ Summary		

Bill 15: Blower and Electrical Building (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE				
		Refer to Drawings: 106681-M7-52-DR- CC-0100 & 0107				
8.2.4	130.01	Reclear surfaces (only on instructions from Engineer):				
	130.01.01	Areas	m ²	2000		
1200 C Total Carried to Bill 15 Summary						

Bill 15: Blower and Electrical Building (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
		Refer to Drawings: 106681-M7-52-DR-CC-0001 & 0007				
PSD 8.3.3	140.01	Restricted excavation:				
	140.01.01	Excavate for for footings in all materials, and use for backfill or embankment, or dispose	m ³	684		
	140.01.02	Excavate for Septic Tank and Soakaway in all materials, and use for backfill or embankment, or dispose	m ³	65		
PSD 8.3.3	140.01.03	Extra over items 140.01.01 to 140.01.02 above for :				
	140.01.03.01	Hard rock excavation	m ³	188		
	140.01.04	Extra over item 140.01 for hand excavation	m ³	10		
8.3.5	140.02	Extra excavation in all materials to provide working space around structure	m ²	15		
PSD 8.3.8	140.03	Existing services:				
	140.03.01	Hand excavation for locating and exposing existing services:				
	140.03.01.01	In all other areas	m ³	10		
8.3.9	140.04	Extra over items 140.01 for backfill or for fill material against structures	m ³	20		
PSD 8.3.15	140.05	Extra over items 140.01.01 for disposing of spoil material on a site provided by the Contractor	m ³	465		
1200 D	Total Carried to Bill 15 Summary					

Bill 15: Blower and Electrical Building (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES)				
		TRENCHES FOR WATER PIPES				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.01	Pipes up to 125 mm dia for depths:				
	142.01.01.01	Over 1,0 m up to 2,0 m				
	142.01.01.01.01	Potable water pipeline, 50 mm dia	m	120		
	142.01.01.01.02	Pipeline from MCC building to septic tank, 110 mm dia	m	35		
	142.01.02	Pipes over 125 mm dia up to 400 mm dia for depths:				
	142.01.02.01	Over 1,0 m up to 2,0 m				
	142.01.02.01.01	Concrete sleeve pipe, 300 mm dia	m	14		
PSDB 8.3.2	142.02	Extra over item 142.01 above for:				
	142.02.01	Backfill stabilized with 5% cement where directed by the Engineer	m ³	15		
1200 DB Total Carried to Bill 15 Summary						

Bill 15: Blower and Electrical Building (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.01	Treatment of in-situ material:				
	147.01.01	In-situ material preparation and compaction of material to:				
	147.01.01.01	Minimum of 93% of modified AASHTO maximum density (Rip and recompact to a depth of 150 mm)	m ³	85		
PSDM 8.3.5	147.02	Selected layer using material from commercial sources or excavations:				
	147.02.01	Clean sand compacted in 150 mm layers to 100% of modified AASHTO max density	m ³	385		
	147.02.02	G5 material compacted in 150 mm layers to 95% Modified AASHTO max density	m ³	95		
	147.02.03	Gravel (25 mm stone) compacted in 150 mm layers to 95% of modified AASHTO max density	m ³	180		
	147.02.04	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	450		
	147.02.05	Rockfill (100 mm stone) process and compact	m ³	100		
	147.02.06	Rockfill (50 mm stone) process and compact	m ³	85		
	147.02.07	Rockfill (40 mm stone) process and compact	m ³	85		
PSDM 8.3.17	147.03	Extra over item 147.02 for obtaining material from commercial sources				
	147.03.01	Clean sand	m ³	385		
	147.03.02	G5 material	m ³	65		
	147.03.03	Gravel (25 mm stone)	m ³	180		
	147.03.04	G7 material	m ³	185		
<i>Carried forward</i>						

Bill 15: Blower and Electrical Building (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSDM 8.3.18	147.03.05	Rockfill (100 mm stone)	m ³	100		
	147.03.06	Rockfill (50 mm stone)	m ³	85		
	147.03.07	Rockfill (40 mm stone)	m ³	85		
	147.04	Final finishing and cleaning up of the Site of the Works	Sum	1		
1200 DM Total Carried to Bill 15 Summary						

Bill 15: Blower and Electrical Building (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
		SCHEDULED FORMWORK ITEMS				
SD8.2.2	500.01	Rough:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Sides of bases	m ²	160		
	500.01.01.02	Sides of columns in foundations	m ²	89		
SD8.2.2	500.02	Smooth:				
	500.02.01	Vertical formwork to:				
	500.02.01.01	Sides of upstand beams and slab edges	m ²	222		
	500.02.01.02	Sides of isolated beams	m ²	151		
	500.02.01.03	Sides of columns	m ²	708		
	500.02.02	Horizontal formwork to:				
	500.02.02.01	Soffits of slabs for prop heights of over 2m and up to and including 4m				
	500.02.02.01.01	Soffits of slabs and downstand beams	m ²	573		
	500.02.02.01.02	Soffits of beams	m ²	151		
	500.02.02.02	Soffits of slabs for prop heights of over 8m and up to and including 10m				
	500.01.02.02.01	Soffits of beams	m ²	31		
SD8.2.5	500.03	Narrow widths (up to 300 mm wide):				
	500.03.01	Different widths in the following ranges:				
	500.03.01.01	Over 100 mm and up to 200 mm	m	385		
	500.03.01.02	Over 200 mm and up to 300 mm	m	343		
		SCHEDULED REINFORCEMENT ITEMS				
Carried forward						

Bill 15: Blower and Electrical Building (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.3.1	500.04	High-tensile steel bars in the following:				
	500.04.01	All diameters	t	64.4		
SD8.3.2	500.05	High-tensile welded mesh in the following:				
	500.05.01	Ref No 395 in surface beds	m ²	1121		
SD8.4.2	500.06	Blinding layer:				
	500.06.01	Class 15 MPa/19 mm concrete of:				
	500.06.01.01	75 mm thickness	m ²	1647		
SD8.4.3	500.07	Strength concrete: (specify if extender is used)				
	500.07.01	Class 25MPa/19 mm concrete in:				
	500.07.01.01	Aprons and Ramps	m ³	15		
	500.07.01.02	Strip footings	m ³	28		
	500.07.02	Class 30 MPa/ 19 mm concrete in:				
	500.07.02.01	Cable trench floors	m ³	30		
	500.07.02.02	Column bases	m ³	86		
	500.07.02.03	Surface beds	m ³	167		
	500.07.02.04	Columns	m ³	108		
	500.07.02.05	Downstand beams	m ³	8		
	500.07.02.06	Upstand beams	m ³	11		
	500.07.02.07	Isolated beams	m ³	18		
	500.07.02.08	Suspended slabs	m ³	142		
	500.07.02.09	Plinths	m ³	20		
SD8.4.4	500.08	Unformed surface finishes:				
	500.08.01	Wood-floated finishes to:				
<i>Carried forward</i>						

Bill 15: Blower and Electrical Building (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.8	500.08.01.01	Top of ramps	m ²	21		
	500.08.01.02	Top of roof slabs	m ²	561		
	500.08.01.03	Top of cable trench floors	m ²	149		
	500.08.02	Steel-floated finishes to:				
	500.08.02.01	Top of aprons	m ²	154		
	500.08.02.02	Top of plinths	m ²	98		
	500.08.02.03	Top of isolated beams	m ²	66		
	500.08.03	Power-floated finishes to:				
	500.08.03.01	Top of surface beds and floor slabs etc	m ²	1122		
	500.09	Screeds:				
SD8.5	500.09.01	Floor screeds:				
	500.09.01.01	Average 65mm thick normal screed on cable trench floors	m ²	97		
	500.09.01.02	Average 65mm thick normal screed to falls (80mm thick at ridge lines with valley line sloping down to 50mm thick)	m ²	561		
	500.10	Designated joints				
	500.10.01	Isolation joints as per drawing DRG-CC-0247:				
	500.10.01.01	10mm thick "Jointex" or equivalent between concrete surface bed and brickwork (IJW)	m	365		
	500.10.01.02	20mm thick "Jointex" or equivalent between concrete surface bed and columns (IJC)	m	94		
	500.10.02	Saw-cut joints as per drawing DRG-CC-0247:				
	500.10.02.01	3mm x 50mm Saw-cut joint, reamed 10mm x 30mm	m	362		
<i>Carried forward</i>						

Bill 15: Blower and Electrical Building (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	500.10.02.02	3mm x 25mm Saw-cut joint in aprons	m	33		
2001 CC1 Total Carried to Bill 15 Summary						

Bill 15: Blower and Electrical Building (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 H	180.00	STRUCTURAL STEELWORK				
8.3.1	180.01	Suply and Fabrication of structural steel roof:				
	180.01.01	Preparation of shop drawings	t	30		
	180.01.02	Supply and fabrication of steelwork	t	30		
8.3.2	180.02	Delivery to site				
	180.02.01	Structural steel roof including bolts	t	30		
8.3.3	180.03	Erection on site				
	180.03.01	Structural steel roof including bolts	t	30		
8.3.13	180.03.02	Extra-over for corrosion protection of structural steelwork	t	30		
1200 H Total Carried to Bill 15 Summary						

Bill 15: Blower and Electrical Building (Civil)**Flooring, complete and installed with frames:**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
PSHA 8.3.4	181.00	Flooring, complete and installed with frames:				
	181.01.01	Rectagrid RS40 open grid floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m ²	135		
	181.01.02	Cast in angle 45 x 45 x 5mm with 10mm dia x 150mm long lugs at 600mm centres	m ²	295		
1200 HA Total Carried to Bill 15 Summary						

Bill 15: Blower and Electrical Building (Civil)**CLADDING AND SHEETING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 HB	182	CLADDING AND SHEETING				
8.2.2	182.01	Supply and install cladding and sheeting:				
	182.01.01	0.58 mm thick Concealed fix Klip-Lok 700 or similar approved galvanized Z450 spelter sheeting with Globalcon finish in:				
	182.01.01.01	Roof coverings with pitches not exceeding 25°, fixed to steel purlins	m ²	765		
	182.01.01.02	Side cladding fixed to steel battens	m	162		
	182.01.01.03	Extra over roof sheeting for cranking to form approximately 10 degree angle at ridge	m	16		
	182.01.01.04	Extra over roof sheeting and sidecladding for 500mm radius cranking	m	32		
8.2.3	182.02	Supply and install ancillaries:				
	182.02.01	0,8 mm thick galvanized sheet metal with Globalcon finish (standard colours) one side and grey colour other side in:				
	182.02.01.01	Drip flashing	m	110		
	182.02.01.02	Narrow and board flute closures	m	110		
	182.02.01.03	Poly closures	m	110		
	182.02.01.04	Gable flashing	m	50		
	182.02.01.05	Eave flashing	m	60		
	182.02.01.06	External corner side wall flashing	m	4		
	182.02.02	Rainwater				
	182.02.02.01	152mm x 152mm aluminium eaves gutters including stop ends, outlets, downpipes, etc.	m	60		
<i>Carried forward</i>						

CLADDING AND SHEETING

[illegible]

Bill 15: Blower and Electrical Building (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 L	210.00	MEDIUM-PRESSURE PIPELINES				
8.2.1	210.01	Supply, lay and bed on flexible bedding, complete with couplings:				
	210.01.01	HDPE PE 100 PN 12.5 pipes:				
	210.01.01.01	DN 50 mm diameter for potable water pipeline butt welded	m	120		
	210.01.02	uPVC class 9 pipes:				
	210.01.02.01	DN 110 mm diameter for pipeline from MCC building to septic tank	m	35		
	210.02	Supply, lay and bed on class B bedding, complete with couplings:				
	210.02.01	DN 300 Concrete sleeve pipe for potable water pipeline	m	14		
8.2.2	210.03	Supply, laying and bedding of uPVC specials complete with couplings:				
		Refer to Drawing: 106681-M7-52-DR-CC-0011				
	210.03.01	DN 110 mm uPVC pipe special from septic tank to french drain complete as shown on drawing	No.	1		
	210.03.02	DN 110 mm uPVC inlet pipe special at septic tank complete as shown on drawing	No.	1		
	210.04	Supply, laying and bedding of steel specials complete with couplings: (Refer to relevant Project Specification for corrosion protection)				
		Refer to Drawing: 106681-M7-52-DR-CC-0006				
	210.04.01	DN 50 mm steel pipe special at oil sump	No.	16		
<i>Carried forward</i>						

Bill 15: Blower and Electrical Building (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.2.3	210.05	Extra over items 210.01 to 210.03 for supplying, fixing and bedding of valves: Refer to Drawing: 106681-M7-52-DR-CC-0010				
	210.05.01	DN 20 Ball valve	No.	8		
	210.05.02	DN 50 Ball valve	No.	8		
8.2.13	210.06	Chambers and tanks Refer to Drawing: 106681-M7-52-DR-CC-0010 & 0011				
	210.06.01	Construct complete as shown on drawings, including excavation, backfilling, formwork, reinforcement, covers, access, etc. (if no reinforcement is shown on the drawings assume reinforcement to be 120 kg/m ³ of concrete)				
	210.06.01.01	Tie-in chamber	No.	1		
PSL 8.2.18		210.06.01.02	No.	1		
	210.07	Connection to existing infrastructure Refer to Drawing: 106681-M7-52-DR-CC-0010				
	210.07.01	Connection of DN 50 HDPE potable water pipeline to MCC building internal pipework including supply fixing and bedding of all necessary connection pipe fittings and couplings	Sum	1		
	210.07.02	Connection of DN 50 HDPE potable water pipeline at tie-in point including supply fixing and bedding of all necessary connection pipe fittings and couplings	Sum	1		
<i>Carried forward</i>						

Bill 15: Blower and Electrical Building (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	210.07.03	Connection of DN 110 uPVC pipe, at septic tank, to MCC building including supply fixing and bedding of all necessary connection pipe fittings and couplings	Sum	1		
1200 L Total Carried to Bill 15 Summary						

Bill 15: Blower and Electrical Building (Civil)**BEDDING (PIPES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 LB	211.00	BEDDING (PIPES)				
		BEDDING FOR WATER PIPES				
8.2.1	211.01	Provision of bedding from trench excavations:				
	211.01.01	Selected granular material	m ³	22		
	211.01.02	Selected fill material	m ³	35		
PSLB 8.2.2	211.02	Supply only of bedding by importation:				
	211.02.01	From commercial sources:				
	211.02.01.01	Selected granular material	m ³	50		
	211.02.01.02	Selected fill material	m ³	80		
1200 LB Total carried forward to summary						

Bill 15: Blower and Electrical Building (Civil)**CABLE DUCTS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LC	212.00	CABLE DUCTS				
PSLC 8.2.5	212.01	Supply, lay, bed and prove duct:				
	212.01.01	HDPE pipes:				
	212.01.01.01	200 mm dia	m	20		
1200 LC Total Carried to Bill 15 Summary						

Bill 15: Blower and Electrical Building (Civil)**STORMWATER DRAINAGE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 LE	214.00	STORMWATER DRAINAGE				
8.2.10	214.01	Accessories:				
	214.01.01	Manhole covers including frames:				
	214.01.01.01	SANS 558 type 2A	No.	3		
PSLE 8.2.14	214.02	Pipes in subsurface drains:				
	214.02.01	Normal duty uPVC pipes complete with couplings:				
	214.02.01.01	100 mm internal dia, unperforated	m	160		
	214.02.02	Heavy-duty fittings:				
	214.02.02.01	Stop ends, 100 mm internal dia	No.	3		
	214.02.02.02	Junctions, 100 mm internal dia	No.	2		
	214.02.02.03	Tee's, 100 mm internal dia	No.	1		
	214.02.02.04	Sockets, 100 mm internal dia	No.	1		
	214.02.02.05	Two way vent valve, 100 mm internal dia	No.	3		
PSLE 8.2.15	214.03	Geofabric				
	214.03.01	Non-woven geotextile (400 g/m)	m ²	150		
1200 LE Total Carried to Bill 15 Summary						

Bill 15: Blower and Electrical Building (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
PART SPEC PD		BUILDING WORK				
PD 10.01	PD.01	Brickwork:				
	PD.01.01	Non-facing plastered solid engineering bricks to form (plaster measured elsewhere):				
	PD.01.01.01	230mm thick trench wall	m ²	166		
	PD.01.01.02	230mm thick wall in foundations	m ²	237		
	PD.01.01.03	230mm thick on superstructure	m ²	281		
	PD.01.02	Outside face: face brick standard, inside face: non-facing plastered engineering bricks to form (plaster measured elsewhere):				
	PD.01.02.01	230mm wall on superstructure	m ²	1369		
PD 10.02	PD.02	Plaster Work:				
	PD.02.01	10 mm thick, steel-float finish to:				
	PD.02.01.01	Cable trench walls	m ²	333		
	PD.02.01.02	Internal plaster to brick walls	m ²	2436		
PD 10.04	PD.03	Doors and Windows:				
	PD.03.01	Semi-solid timber doors with aluminium frames and glazed fanlights complete installedcomplete including ironmongery				
	PD.03.01.01	Single door 813 x 2056 mm high in and including 900 x 2100 mm high "Nuklip 44mm" aluminium or equivalent door frame	No.	2		
	PD.03.02	Heavy duty 3CR12 steel doors with airtight seals and frames complete, including installation, paintwork, ironmongery etc				
	PD.03.02.01	Single door size 836 x 2357mm high in and including frame size 958 x 2400mm high	No.	3		
<i>Carried forward</i>						

Bill 15: Blower and Electrical Building (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PD 10.8	PD.03.02.02	Double fire door comprising 2 x leaves size 836 x 2357mm high in and including frame size 1800 x 2400mm high (Ironmongery Type D)	No.	2		
	PD.03.02.03	Double door comprising 2 x leaves size 1200 x 2357mm high in and including frame size 2528 x 2400mm high	No.	2		
	PD.03.02.04	Single fire door size 836 x 2357mm high in and including frame size 958 x 2400mm high	No.	2		
	PD.03.03	Single wall profiled 1.0mm hot-dipped galvanised slate curtain roller shutter as per roll up "Serranda high wind resistant" or equivalent, to be powder coated in UV resistant polyester, with and including frame comprising hot-dipped galvanised mild steel channel section guides mounted vertically and canopy to be constructed from HDG mild steel to manufacturers design				
	PD.03.03.01	Slatted roller shutter door for 4000 x 5655mm high opening	No	1		
	PD.03.04	"Winblock" or equivalent high density precast concrete window with aluminium frame, top hung with powder coated finish and 6.4mm laminated safety glass				
	PD.03.04.01	Comprising 9 units overall size approximately 1800 x 1800mm high	No.	10		
	PD.03.04.02	Comprising 16 units overall size approximately 2400 x 2400mm high	No.	12		
	PD.03.05	Louvres:				
	PD.03.05.01	2400 x 2400mm high	No.	14		
	PD.04	Miscellaneous Work:				
<i>Carried forward</i>						

Bill 15: Blower and Electrical Building (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PD 10.09	PD.04.01	Paintwork, one coat merit plaster primer UC56 and two coats Plascon Super Eggshell Enamel on:				
	PD.04.01.01	Internal plastered walls	m ²	2436		
	PD.04.02	Rainwater drainage:				
	PD.04.02.01	75mm Diameter uPVC pipe cast into concrete slabs, beams and columns	m	100		
	PD.04.02.02	Extra over uPVC pipes above for 75mm diameter 90° uPVC elbow cast into concrete column	No	40		
	PD.04.02.03	Hydrain or equivalent fullbore with 75mm diameter flanged PVC roof outlet cast in concrete with clamped Derbigum laps to manufacturer's specification including connecting to 75mm diameter uPVC pipes	No.	20		
	PD.05	Miscellaneous Items:				
	PD.05.01	Items measured by number:				
	PD.05.01.01	9 kg DCP fire extinguisher	No.	8		
	PD.05.01.02	Weather proof extinguisher cabinets	No.	8		
	PD.05.01.02	Photoluminescent signs with pictograms screwed or plugged as shown on Drawing no 106681-M7-06-DR-CC-0021:				
	PD.05.01.02.01	Sign F13	No.	8		
	PD.05.02	Items measured by area:				
	PD.05.02.01	Ant poison, aldrin emulsifiable concentrates solution to SABS 618 spread at a rate recommended by the manufacturer:				
	PD.05.02.01.01	In bottom of pad foundations and strip footings	m ²	1645		
	PD.05.02.02	Damp and waterproofing:				
<i>Carried forward</i>						

Bill 15: Blower and Electrical Building (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.05.02.02.01	250 micron green medium density polyethylene dampproof sheeting under floors	m ²	1316		
	PD.05.02.02.02	250 micron green medium density polyethylene damp proof course in walls	m ²	249		
	PD.05.02.02.03	80mm thick crushed stone on roof slab	m ²	561		
	PD.05.02.03	Derbigum SP4 (or similar approved) fully bonded torch-on waterproofing, min 100mm side and end laps, with 2 coats of bituminous aluminium roof coat paint, including turn-ups and sealing along edges:				
	PD.05.02.03.01	To flat roofs including sides and tops of upstand beams	m ²	629		
SPEC PD Total Carried to Bill 15 Summary						

Bill 15: Blower and Electrical Building (Civil)**SUMMARY**

BILL 15 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 H	STRUCTURAL STEELWORK	
SANS 1200 HA	STRUCTURAL STEELWORK (SUNDRY ITEMS)	
SANS 1200 HB	CLADDING AND SHEETING	
SANS 1200 L	MEDIUM-PRESSURE PIPELINES	
SANS 1200 LB	BEDDING (PIPES)	
SANS 1200 LC	CABLE DUCTS	
SANS 1200 LE	STORMWATER DRAINAGE	
PART SPEC PD	BUILDING WORK	
Bill 15 Total Carried to BoQ Summary		

Bill 16: Wash Bay (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE Refer to Drawings: 106681-M7-95-DR-CC-0002 to 0007				
PSC 8.2.1	130.01	Clear and grub:				
	130.01.01	Strips, 1 m wide	m	556		
	130.01.02	Areas	m ²	2800		
8.2.2	130.02	Remove and grub large trees and tree stumps of girth:				
	130.02.01	Over 1,0 m and up to and including 2,0 m	No.	1		
8.2.4	130.03	Reclear surfaces (only on instructions from Engineer):				
	130.03.01	Areas	m ²	2800		
8.2.10	130.04	Remove topsoil to nominal depth of 150 mm and stockpile	m ³	420		
PSC 8.2.12	130.05	Remove topsoil to spoil site furnished by Contractor	m ³	2380		
1200 C	Total Carried to Bill 16 Summary					

Bill 16: Wash Bay (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
		Refer to Drawings: 106681-M7-95-DR-CC-0002 to 0007				
PSD 8.3.2	140.01	Bulk excavation:				
	140.01.01	Excavate in all materials and use for embankment or backfill as ordered from:				
	140.01.01.01	Necessary excavations	m ³	122.5		
	140.01.02	Excavate in all materials and dispose	m ³	367.5		
	140.01.03	Extra over items 140.01.01 to 140.01.02 above for:				
	140.01.03.01	Hard rock excavation	m ³	800		
PSD 8.3.3	140.02	Restricted excavation:				
	140.02.01	Excavate for footings, at Wash bay, in all materials, and use for backfill or embankment, or dispose	m ³	165		
	140.02.02	Excavate for silt traps, at Wash bay, in all materials, and use for backfill or embankment, or dispose	m ³	145		
	140.02.03	Excavate for surface beds, at Wash bay, in all materials, and use for backfill or embankment, or dispose	m ³	300		
	140.02.03	Extra over item 140.02 for hand excavation	m ³	60		
PSD 8.3.15	140.03	Extra over item 140.01.02 for disposing of spoil material on a site provided by the Contractor	m ³	3805		
1200 D	Total Carried to Bill 16 Summary					

Bill 16: Wash Bay (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES)				
		TRENCHES FOR SEWER PIPES				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.02	Pipes over 125 mm dia up to 400 mm dia for depths:				
	142.01.02.01	Up to 1,0 m	m	556		
	142.01.02.02	Over 1,0 m up to 2,0 m	m	470		
	142.01.02.03	Over 2,0 m up to 3,0 m	m	88		
PSDB 8.3.2	142.02	Extra over item 142.01 above for:				
	142.02.01	Hard rock excavation	m ³	72		
	142.02.02	Hand excavation where ordered by the Engineer:				
	142.02.02.01	Soft material	m ³	29		
	142.02.02.02	Hard material	m ³	29		
	142.02.03	Backfill stabilized with 5% cement where directed by the Engineer	m ³	3		
	142.02.04	Soilcrete backfill where directed by the Engineer	m ³	9		
PSDB 8.3.2	142.03	Excavate and dispose of unsuitable material from trench bottom	m ³	15		
PSDB 8.3.3	142.04	Excavation ancillaries:				
	142.04.01	Make up deficiency in backfill material:				
	142.04.01.01	From other necessary excavations on Site	m ³	15		
1200 DB	Total Carried to Bill 16 Summary					

Bill 16: Wash Bay (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
PSDM 8.3.3	147.01	Treatment of in-situ material:				
	147.01.01	In-situ material preparation and compaction of material to:				
	147.01.01.01	Minimum of 93% of modified AASHTO maximum density (Rip and recompact to a depth of 300 mm)	m ³	140		
PSDM 8.3.5	147.02	Selected layer using material from commercial sources or excavations:				
	147.02.01	G5 material compacted in 150 mm layers to 95% Modified AASHTO max density	m ³	919		
	147.02.02	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	460		
	147.02.03	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	919		
	147.02.04	Rockfill (100 mm stone) process and compact	m ³	307		
PSDM 8.3.17	147.03	Extra over item 147.02 for obtaining material from commercial sources				
	147.03.01	G5 material	m ³	140		
	147.03.02	G7 material	m ³	275		
	147.03.03	Rockfill (100 mm stone)	m ³	275		
PSDM 8.3.18	147.04	Final finishing and cleaning up of the Site of the Works	Sum	1		
1200 DM	Total Carried to Bill 16 Summary					

Bill 16: Wash Bay (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
		SCHEDULED FORMWORK ITEMS				
SD8.2.2	500.01	Smooth:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Sides of silt traps	m ²	165		
	500.01.01.02	Sides of walls	m ²	330		
	500.01.01.03	Sides of footings	m ²	45		
	500.01.01.04	Sides of Wash bay surface bed	m ²	70		
	500.01.01.06	Sides of support plinths	m ²	10		
SD8.2.5	500.02	Narrow widths (up to 300 mm wide):				
	500.02.01	Different widths in the following ranges:				
	500.02.01.01	Over 200 mm and up to 300 mm	m	40		
SD8.2.6	500.03	Box out holes/form voids:				
	500.03.01	Small circular, of diameter up to and including 0,35 m, and in the following depth ranges:				
	500.03.01.01	0 m up to and including 0,5 m	No.	10		
	500.03.02	Large, other than circular, of area over 0.1 m² and up to and including 0.5 m², and in the following depth ranges:				
	500.03.02.01	0 m up to and including 0,5 m	No.	2		
		SCHEDULED REINFORCEMENT ITEMS				
SD8.3.1	500.04	High-tensile steel bars in the following:				
	500.04.01	All diameters	t	0.65		
SD8.3.2	500.05	High-tensile welded mesh in the following:				
Carried forward						

Bill 16: Wash Bay (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Carried forward</i>						
	500.05.01	Ref No 395 underneath rails	m ²	90		
	500.05.01	Ref No 617 in floor slab	m ²	640		
	500.05.02	Ref No 888 in floor slab	m ²	640		
SD8.4.2	SCHEDULED CONCRETE ITEMS					
	500.06	Blinding layer:				
	500.06.01	Class 15 MPa/19 mm concrete of:				
SD8.4.3	500.06.01.01	75 mm thickness	m ²	910		
	500.07	Strength concrete: (specify if extender is used)				
	500.07.01	Class 35 MPa/ 19 mm concrete in:				
	500.07.01.01	Footings	m ³	70		
	500.07.01.02	Foundation slabs	m ³	415		
	500.07.01.03	Walls	m ³	60		
SD8.4.4	500.07.01.04	Plinths	m ³	10		
	500.08	Unformed surface finishes:				
	500.08.01	Wood-floated finishes to:				
	500.08.01.01	Top of footings	m ²	55		
	500.08.01.02	Top of plinths	m ²	10		
	500.08.01.03	Top of walls	m ²	40		
SD8.4.11	500.08.02	Power-floated finishes to:				
	500.08.02.01	Top of floor slabs	m ²	760		
	500.08.02.02	Top of ramps	m ²	130		
	500.09	Miscellaneous work				
	500.09.01	Casting of 45 kg/m rails in concrete as shown on drawings: 106681-M7-95-DR-CC-0002 to 0006	m	185		
<i>Carried forward</i>						

Bill 16: Wash Bay (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.5	500.10	Joints:				
	500.10.01	Expansion joints as detailed on drawings no 106681-M7-07-DR-CC-0009 and 0010				
	500.10.01.01	Floor joint type A in 500 mm thick floor slab	m	95		
SD8.7	500.11	Grouting:				
	500.11.01	Under bases (or beds)				
	500.11.01.01	25 mm non-shrink grout	m ³	5		
2001 CC1 Total Carried to Bill 16 Summary						

Bill 16: Wash Bay (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 H	180.00	STRUCTURAL STEELWORK				
8.3.1	180.01	Supply and fabrication:				
	180.01.01	Preparation of shop detail drawings	Sum	1		
	180.01.02	Supply and fabrication of steelwork:				
	180.01.02.01	Hot rolled sections:				
	180.01.02.01.01	Angles	t	1.4		
	180.01.02.01.02	Universal beams,columns and channels	t	4		
	180.01.02.01.03	45 kg/m Rails	t	8.2		
	180.01.02.02	Connection plates, cleats, etc.	t	0.7		
8.3.2	180.02	Delivery to Site:				
	180.02.01	Normal delivery:				
	180.02.01.01	All steel work	t	14.2		
8.3.3	180.03	Erection on Site:				
	180.03.01	All steel work	t	14.2		
8.3.4	180.04	Erection bolts:				
	180.04.01	Grade 8.8 bolts	t	0.4		
8.3.6	180.05	Holding-down (HD) bolts:				
	180.05.01	M20 chemical anchors	No.	30		
8.3.7	180.06	Handrails:				
	180.06.01	Handrails complete as show on Drawing No 106681-M7-07-DR-CC-0004				
	180.06.01.01	Horizontal	m	110		
	180.06.01.02	Sloping (measured on slope)	m	20		
	180.06.01.03	Shaped ends	No.	30		
Carried forward						

Bill 16: Wash Bay (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
Brought forward						
8.3.8	180.07	Ladders, complete and installed:				
	180.07.01	Platform access ladder complete as shown on drawings: 106681-M7-95-DR-CC-0002 to 0007 and 106681-M7-05-DR-CC-0005 to 0006	No.	2		
	180.07.02	Tanks access ladder complete as shown on drawings: 106681-M7-95-DR-CC-0002 to 0007 and 106681-M7-05-DR-CC-0005 to 0006	No.	1		
8.3.9	180.08	Flooring, complete and installed with frames:				
	180.08.01	Rectagrid RS40 open grid floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m ²	60		
PSH 8.3.14	180.09	Design, manufacture, supply, erection and testing of a 33 kilolitre storage tank	Sum	1		
PSH 8.3.15	180.10	Lightning protection for a 33 kilolitre storage tank	Sum	1		
PSH 8.3.16	180.11	Sterilization of a 33 kilolitre storage tank	Sum	1		
1200 H	Total Carried to Bill 16 Summary					

Bill 16: Wash Bay (Civil)**CORROSION PROTECTION OF STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 HC	183.00	CORROSION PROTECTION OF STRUCTURAL STEELWORK				
8.2.1	183.01	Surface dressing and repairs at place of fabrication	t	14.2		
8.2.2	183.02	Transport	t	14.2		
8.2.3	183.03	Surface preparation and coating application:				
	183.03.01	Hot dipped galvanized as per relevant project specification: In the shop	t	14.2		
	183.03.02	Hot dipped galvanized as per relevant project specification: On Site	t	14.2		
8.2.4	183.04	Establishment on Site for corrosion protection	Sum	1		
1200 HC Total Carried to Bill 16 Summary						

Bill 16: Wash Bay (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 L	210.00	MEDIUM-PRESSURE PIPELINES				
8.2.1	210.01	Supply, lay and bed on flexible bedding, complete with couplings:				
	210.01.01	HDPE PE 100 PN 8 SDR21				
	210.01.01.01	160 mm diameter	m	556		
8.2.2	210.02	Extra over items 210.01 for supplying, laying and bedding of HDPE specials complete with couplings:				
	210.02.01	45° elbows:				
	210.02.01.01	160 mm dia	No.	2		
	210.02.02	90° elbows:				
	210.02.01.01	160 mm dia	No.	3		
PSL 8.2.18	210.03	Connection to existing main supply pipe	Sum	1		
1200 L Total Carried to Bill 16 Summary						

Bill 16: Wash Bay (Civil)**BEDDING (PIPES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LB	211.00	BEDDING (PIPES)				
		BEDDING FOR WATER PIPES				
	PSLB 8.2.2	Supply only of bedding by importation:				
	211.01.01	From commercial sources:				
	211.01.01.01	Selected granular material	m ³	64		
	211.01.01.02	Selected fill material	m ³	127		
8.2.5	211.02	Overhaul of material for bedding cradle and selected fill blanket:				
	211.02.01	Limited overhaul	m ³	191		
1200 LB Total Carried to Bill 16 Summary						

Bill 16: Wash Bay (Civil)**CABLE DUCTS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LC	212.00	CABLE DUCTS				
PSLC 8.2.5	212.01	Supply, lay, bed and prove duct:				
	212.01.01	uPVC pipes:				
	212.01.01.01	160 mm dia	m	5		
1200 LC Total Carried to Bill 18 Summary						

Bill 16: Wash Bay (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
PART SPEC PD		BUILDING WORK				
PD 10	PD.01	Brickwork:				
	PD.01.01	320 mm thick brick wall with concrete infill, outside and inside face: face brick extra, engineering bricks	m ²	250		
	PD.02	Miscellaneous Items:				
	PD.02.01	Items measured by number:				
	PD.02.01.01	9 kg DCP fire extinguisher	No.	1		
	PD.02.01.02	Weather proof extinguisher cabinets	No.	1		
	PD.02.01.03	Photoluminescent signs with pictograms screwed or plugged as shown on Drawing no 106681-M7-06-DR-CC-0021:				
	PD.02.01.03.01	Sign F13	No.	1		
	PD.02.02	Items measured by length:				
	PD.02.02.01	"Brickforce BK 150" or similar approved, built into joints of 220mm brickwork walls (measured net)	m	365		
	PD.02.03	Items measured by area:				
	PD.02.03.01	Ant poison, aldrin emulsifiable concentrates solution to SABS 618 spread at a rate recommended by the manufacturer:				
	PD.02.03.01.01	Below all structures	m ²	910		
	PD.02.03.02	250 micron green medium density polyethylene dampproof sheeting underneath structures	m ²	910		
	PD.02.03.03	Sika' sealoflex professional (or similar approved) flexible, fibre reinforced waterproofing (applied in accordance with manufacturers specifications) to:				
	PD.02.03.03.01	Flat roofs	m ²	124		
SPEC DB	Total Carried to Bill 16 Summary					

Bill 16: Wash Bay (Civil)**SUMMARY**

BILL 16 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 H	STRUCTURAL STEELWORK	
SANS 1200 HC	CORROSION PROTECTION OF STRUCTURAL STEELWORK	
SANS 1200 LC	CABLE DUCTS	
PART SPEC PD	BUILDING WORK	
Bill 16 Total Carried to BoQ Summary		

Bill 17: New Degritting Pump Station (Civil)**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE				
		Refer to Drawings: 106681-M7-97-DR-CC-0001 to 0008				
PSC 8.2.1	130.01	Clear and grub:				
	130.01.02	Strips, 1 m wide	m	85		
8.2.2	130.02	Remove and grub large trees and tree stumps of girth:				
	130.02.01	Over 1,0 m and up to and including 2,0 m	No.	1		
8.2.4	130.03	Reclear surfaces (only on instructions from Engineer):				
	130.03.01	Areas	m ²	250		
8.2.10	130.04	Remove topsoil to nominal depth of 150 mm and stockpile	m ³	13		
PSC 8.2.12	130.05	Remove topsoil to spoil site furnished by Contractor	m ³	38		
1200 C	Total Carried to Bill 17 Summary					

Bill 17: New Degritting Pump Station (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
PSD 8.3.2	140.01	Bulk excavation:				
	140.01.01	Excavate in all materials and use for embankment or backfill as ordered from:				
	140.01.02	Excavate in all materials and dispose	m ³	518		
	140.01.03	Extra over items 140.01.01, 140.01.01.01, 140.01.01.02 and 140.01.02 above for:				
	140.01.03.01	Hard rock excavation	m ³	130		
PSD 8.3.3	140.02	Restricted excavation:				
	140.02.01	Excavate for pipe trenches at DEGRITTING Pump station in all materials, and use for backfill or embankment, or dispose:				
	140.02.01.01	Depth up to 1,0 m	m ³	8		
	140.02.01.02	Depth over 1,0 m and up to 2,0 m	m ³	2		
	140.02.01.03	Depth over 2,0 m and up to 3,0 m	m ³	1		
	140.02.02	Extra over item 140.02.01 for hand excavation	m ³	1		
8.3.4	140.03	Importing of materials:				
	140.03.01	Extra over items 140.01 and 140.02 for importation of materials from commercial sources				
	140.03.01.01	G5 material compacted in 150 mm layers to 95% Modified AASHTO max density	m ³	77		
	140.03.01.02	G7 material compacted in 150 mm layers to 93% Modified AASHTO max density	m ³	73		
	140.03.01.03	Rockfill, process and compact (PROVISIONAL)	m ³	73		
<i>Carried forward</i>						

Bill 17: New Degritting Pump Station (Civil)**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.3.5	140.04	Extra excavation in all materials to provide working space around structure	m ²	134		
PSD 8.3.8	140.05	Existing services:				
	140.05.01	Hand excavation for locating and exposing existing services:				
	140.05.01.01	In roadways	m ³	14		
8.3.9	140.06	Extra over items 140.01 and 140.02 for backfill or for fill material against structures	m ³	81		
PSD 8.3.10	140.07	Topsoiling	m ³	4		
8.3.11	140.08	Grassing or other vegetation cover:				
	140.08.01	Hydroseeding	m ²	4		
PSD 8.3.15	140.09	Extra over items 140.01.02 for disposing of spoil material on a site provided by the Contractor	m ³	529		
1200 D	Total Carried to Bill 17 Summary					

Bill 17: New Degritting Pump Station (Civil)**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES)				
		TRENCHES FOR SEWER PIPES				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.01	Pipes up to 125 mm dia for depths:				
	142.01.01.01	Up to 1,0 m	m	17		
	142.01.01.02	Over 1,0 m up to 2,0 m	m	68		
	142.01.02	Pipes over 125 mm dia up to 400 mm dia for depths:				
	142.01.02.01	Up to 1,0 m	m	5		
	142.01.02.02	Over 1,0 m up to 2,0 m	m	5		
	142.01.02.03	Over 2,0 m up to 3,0 m	m	6		
PSDB 8.3.2	142.02	Extra over item 142.01 above for:				
	142.02.01	Hard rock excavation	m ³	26		
	142.02.02	Hand excavation where ordered by the Engineer:				
	142.02.02.01	Soft material	m ³	11		
	142.02.02.02	Hard material	m ³	11		
	142.02.03	Backfill stabilized with 5% cement where directed by the Engineer	m ³	2		
	142.02.04	Soilcrete backfill where directed by the Engineer	m ³	4		
PSDB 8.3.2	142.03	Excavate and dispose of unsuitable material from trench bottom	m ³	6		
PSDB 8.3.3	142.04	Excavation ancillaries:				
	142.04.01	Make up deficiency in backfill material:				
	142.04.01.01	From other necessary excavations on Site	m ³	6		
1200 DB	Total Carried to Bill 17 Summary					

Bill 17: New Degritting Pump Station (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
8.3.2	147.01	Preparation of Site:				
	147.01.01	Removal of topsoil to a depth of 150 mm, and the stockpiling and maintenance thereof	m ³	44		
PSDM 8.3.3	147.02	Treatment of roadbed:				
	147.02.01	Roadbed preparation and compaction of material to:				
	147.02.01.02	Minimum of 93% of modified AASHTO maximum density	m ³	44		
PSDM 8.3.4	147.03	Cut to fill:				
	147.03.01	Compact to 90% of modified AASHTO maximum density	m ³	10		
PSDM8.3.5	147.04	Selected layers:				
	147.04.01	Selected layer compacted to 93% of modified AASHTO maximum density	m ³	89		
	147.04.02	Selected layer compacted to 95% of modified AASHTO maximum density	m ³	50		
PSDM 8.3.6	147.05	Extra over items 147.03 and 147.04 for excavating and breaking down material in:				
	147.05.01	Hard excavation	m ³	8		
PSDM 8.3.7	147.06	Cut to spoil from:				
	147.06.01	Soft excavation	m ³	143		
	147.06.02	Hard excavation	m ³	36		
8.3.8	147.07	Removal of oversize material	m ³	48		
8.3.9	147.08	Overbreak of excavation in:				
	147.08.01	Hard excavation	m ²	18		
8.3.10	147.09	Materials bladed to windrow	m ³	36		
<i>Carried forward</i>						

Bill 17: New Degritting Pump Station (Civil)**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
8.3.11	147.09.01	Extra over items 147.01, 147.03 and 147.04 for temporary stockpiling of material	m ³	192		
8.3.13	147.1	Surface finishes:				
	147.10.01	Topsoiling	m ²	20		
PSDM 8.3.17	147.11	Extra over items 147.03 and 147.04 for obtaining material from commercial sources	m ³	37		
PSDM 8.3.18	147.12	Final finishing and cleaning up of the Site of the Works Site of the Works	Sum	1		
1200 DM Total Carried to Bill 17 Summary						

Bill 17: New Degritting Pump Station (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
		SCHEDULED FORMWORK ITEMS				
SD8.2.1	500.01	Rough:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Sides of walls	m ²	77		
SD8.2.2	500.02	Smooth:				
	500.02.01	Vertical formwork to:				
	500.02.01.01	Sides of walls	m ²	83		
	500.02.01.02	Sides of columns	m ²	37		
	500.02.01.03	Sides of ring beam	m ²	60		
	500.02.01.04	Sides of pump plinths	m ²	65		
	500.02.01.05	Sides of stairs	m ²	20		
	500.02.01.06	Sides of corbels	m ²	3		
	500.02.03	Horizontal formwork to:				
	500.02.03.01	MCC platform	m ²	12		
	500.02.03.02	Beam soffit	m ²	14		
	500.02.03.03	Corbels	m ²	1		
SD8.2.5	500.03	Narrow widths (up to 300 mm wide):				
	500.03.01	Different widths in the following ranges:				
	500.03.01.01	Over 200 mm and up to 300 mm	m	63		
	500.03.02	Grooves, chases and splays in the following ranges:				
	500.03.02.01	Over 20 mm x 20 mm and up to 100 mm x 100 mm	m	58		
		SCHEDULED REINFORCEMENT ITEMS				
Carried forward						

Bill 17: New Degritting Pump Station (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.3.1	500.04	Mild-steel bars in the following:				
	500.04.01	All diameters	t	0.1		
SD8.3.1	500.05	High-tensile steel bars in the following:				
	500.05.01	All diameters	t	14		
SCHEDULED CONCRETE ITEMS						
SD8.4.2	500.06	Blinding layer:				
	500.06.01	Class 15 MPa/19 mm concrete of:				
	500.06.01.01	75 mm thickness	m ²	246		
SD8.4.3	500.07	Strength concrete:				
	500.07.01	Class 25 MPa/38 mm concrete in:				
	500.07.01.01	Concrete ramps	m ³	3		
	500.07.02	Class 35 MPa/19 mm concrete in:				
	500.07.02.01	Raft foundations	m ³	122		
	500.07.02.02	Surface beds	m ³	27		
	500.07.02.03	Columns	m ³	3		
	500.07.02.04	Walls	m ³	28		
	500.07.02.05	Ring beams	m ³	7		
	500.07.02.06	Pump plinths	m ³	20		
	500.07.02.07	Pipe support plinths	m ³	15		
	500.07.02.08	Stairs and landings	m ³	5		
	500.07.02.09	MCC platform	m ³	3		
	500.07.02.10	Corbels	m ³	1		
SD8.4.4	500.08	Unformed surface finishes:				
<i>Carried forward</i>						

Bill 17: New Degritting Pump Station (Civil)**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.10	500.08.01	Wood-floated finishes to:				
	500.08.01.01	Top of ring beams	m ²	14		
	500.08.01.02	Top of pump plinths	m ²	17		
	500.08.01.03	Top support plinth foundations	m ²	43		
	500.08.01.04	Top of stairs and landings	m ²	7		
	500.08.01.05	Top of walls	m ²	20		
	500.08.02	Power-floated finishes to:				
	500.08.02.01	Top of floor slabs	m ²	135		
	500.08.02.02	Top of ramps	m ²	6		
	500.09	Cast in of pipes with or without puddle flanges:				
	500.09.01	Up to 300 mm nominal bore:				
	500.09.01.01	Through 200 mm thick floor	No.	11		
	500.09.01.02	Through 350 mm thick walls	No.	16		
2001 CC1 Total Carried to Bill 17 Summary						

Bill 17: New Degritting Pump Station (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 H	180.00	STRUCTURAL STEELWORK				
8.3.1	180.01	Supply and fabrication:				
	180.01.01	Preparation of shop detail drawings	Sum	1		
	180.01.02	Supply and fabrication of steelwork:				
	180.01.02.01	Hot rolled sections:				
	180.01.02.01.01	Angles	t	2.1		
	180.01.02.01.02	Universal beams,columns and channels	t	4.3		
	180.01.02.02	Cold formed sections	t	1.2		
	180.01.02.03	Connection plates, cleats, etc.	t	0.8		
8.3.2	180.02	Delivery to Site:				
	180.02.01	Normal delivery:				
	180.02.01.01	All steel work	t	8.4		
8.3.3	180.03	Erection on Site:				
	180.03.01	All steel work	t	8.4		
8.3.4	180.04	Erection bolts:				
	180.04.01	Grade 8.8 bolts	t	0.5		
8.3.6	180.05	Holding-down (HD) bolts:				
	180.05.01	M20 chemical anchors	t	0.1		
8.3.7	180.06	Handrails:				
	180.06.01	Handrails complete as show on Drawing No 106681-M7-07-DR-CC-0005				
	180.06.01.01	Horizontal	m	10		
	180.06.01.02	Sloping (measured on slope)	m	5		
8.3.9	180.07	Flooring, complete and installed with frames:				
<i>Carried forward</i>						

Bill 17: New Degritting Pump Station (Civil)**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	
<i>Brought forward</i>						
8.3.10	180.07.01	Rectagrid RS40 open grid floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m²	47		
	180.08	Non-destructive testing				
	180.08.01	Load test on crawl beam after installation	No.	4		
1200 L Total Carried to Bill 17 Summary						

Bill 17: New Degritting Pump Station (Civil)**CLADDING AND SHEETING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS HB	182	CLADDING AND SHEETING				
8.2.2	182.01	Supply and install cladding and sheeting:				
	182.01.01	0.58 mm thick Concealed fix Klip-Lok 700 or similar approved galvanized Z450 spelter sheeting with Globalcon finish in:				
	182.01.01.01	Roof coverings with pitches not exceeding 25°, fixed to timber purlins	m²	261		
	182.01.01.02	Side cladding fixed to steel girts	m	156		
	182.01.01.03	Extra over roof sheeting for cranking to form approximately 10 degree angle at ridge	m	34		
	182.01.01.04	Extra over roof sheeting and sidecladding for 500mm radius bullnosing	m	34		
8.2.3	182.02	Supply and install ancillaries:				
	182.02.01	0,8 mm thick galvanized sheet metal with global coat finish on both sides:				
	182.02.01.01	Standard ridge flashing	m	17		
	182.02.01.02	Narrow or broad flute closers	m	49		
	182.02.02	300 mm Diameter galvanized steel Whirlybird ventilator complete with all flashings, etc.	No.	4		
1200 HB	Total Carried to Bill 17 Summary					

Bill 17: New Degritting Pump Station (Civil)**CORROSION PROTECTION OF STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 HC	183.00	CORROSION PROTECTION OF STRUCTURAL STEELWORK				
8.2.1	183.01	Surface dressing and repairs at place of fabrication	t	8.4		
8.2.2	183.02	Transport	t	8.4		
8.2.3	183.03	Surface preparation and coating application:				
	183.03.01	In the shop	t	8.4		
	183.03.02	On Site	t	8.4		
8.2.4	183.04	Establishment on Site for corrosion protection	Sum	1		
1200 HC Total Carried to Bill 17 Summary						

Bill 17: New Degritting Pump Station (Civil)**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 L 8.2.1	210.00	MEDIUM-PRESSURE PIPELINES				
	210.01	Design, Supply, lay and bed on class B bedding, complete with couplings:				
		Washwater Pipework. Refer to Drawing: 106681-M7-97-DR-CC-0001				
	210.01.01	±85 m of 110 mm diameter HDPE (PE 100, PN10, SDR 17) pipeline including all bends, valves and special fittings from degritting pump station to the wash water screens. All pipe connections must be achor securing to structure.	Sum	1		
1200 L Total Carried to Bill 17 Summary						

Bill 17: New Degritting Pump Station (Civil)**BEDDING (PIPES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 LB	211.00	BEDDING (PIPES)				
		BEDDING FOR SEWER PIPES				
	PSLB 8.2.2	Supply only of bedding by importation:				
	211.01.01	From commercial sources:				
	211.01.01.01	Selected granular material	m ³	13		
	211.01.01.02	Selected fill material	m ³	25		
	8.2.5	Overhaul of material for bedding cradle and selected fill blanket:				
	211.02.01	Limited overhaul	m ³	37		
1200 LB Total Carried to Bill 17 Summary						

Bill 17: New Degritting Pump Station (Civil)**CABLE DUCTS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LC	212.00	CABLE DUCTS				
PSLC 8.2.5	212.01	Supply, lay, bed and prove duct:				
	212.01.01	HDPE pipes:				
	212.01.01.01	75 mm dia	m	50		
1200 LC Total Carried to Bill 17 Summary						

Bill 17: New Degritting Pump Station (Civil)**SUBBASE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 ME	223.00	SUBBASE				
PSME 8.3.3	223.01	Construct the subbase course with material from commercial sources	m ³	32		
8.3.5	223.02	Process subbase material by one of the following processes, as relevant, and use in the subbase:				
	223.02.01	Stabilization	m ³	32		
8.3.8	223.03	Stabilizing agent:				
	223.03.01	Road lime	t	1		
	223.03.02	Portland cement	t	2		
PSME 8.3.11	223.04	Treatment of subbase with:				
	223.04.01	Weed killer	m ²	315		
	223.04.02	Insecticide	m ²	315		
1200 ME Total Carried to Bill 17 Summary						

Bill 17: New Degritting Pump Station (Civil)**SEGMENTED PAVING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 MJ	227.00	SEGMENTED PAVING				
8.2.1	227.01	Provision of edge restraints:				
	227.01.01	For straight edging	m	72		
	227.01.02	For curved edging	m	34		
PSMJ 8.2.2	227.02	Construction of paving complete:				
	227.02.01	Type S-A blocks:				
	227.02.01.01	80 mm thick	m ²	292		
8.2.3	227.03	Cutting blocks to fit edge restraints:				
	227.03.01	Straight cutting	m	36		
1200 MJ Total Carried to Bill 17 Summary						

Bill 17: New Degritting Pump Station (Civil)**KERBING AND CHANNELLING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 MK 8.2.2	228.00	KERBING AND CHANNELLING				
	228.01	Concrete kerbing and channelling combined (precast kerbing and in-situ channelling):				
	228.01.01	SANS 927 fig 7 with 150 mm wide Class 25 MPa/19 mm concrete channel:				
	228.01.01.01	Radius over 20 m and straight sections	m	72		
1200 MK Total Carried to Bill 17 Summary						

Bill 17: New Degritting Pump Station (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
PART SPEC PD		BUILDING WORK				
PD 10	PD.01	Brickwork:				
	PD.01.01	230 mm thick, outside face: face brickstandard/extra/aesthetic, inside face:non-facing plastered/extra, engineeringbricks				
	PD.01.01.01	Superstructure	m ²	309		
	PD.01.02	230 mm thick, non-facing plastered/extra, engineering bricks				
	PD.01.02.01	Cable trenches	m ²	53		
	PD.02	Plaster Work:				
	PD.02.02	10 mm thick, steel-float finish:				
	PD.02.02.01	Internal brick	m ²	309		
	PD.02.02.02	Trench walls	m ²	53		
	PD.03	Doors and Windows:				
	PD.03.01	Steel door with frame:				
	PD.03.01.01	Door: D2 complete as per door and window schedule	No.	1		
	PD.03.01.02	Door: D4 complete as per door and window schedule	No.	1		
	PD.03.02	Steel window with frame, including glazing and sills:				
	PD.03.02.01	Window: W1 complete as per door and window schedule	No.	10		
	PD.04	Miscellaneous Work:				
	PD.04.01	Paintwork, one coat primer and two coats super acrylic paint:				
	PD.04.02.01	Internal plastered walls	m ²	309		
	PD.05	Miscellaneous Items:				
	PD.05.01	Items measured by number:				
Carried forward						

Bill 17: New Degritting Pump Station (Civil)**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.05.01.01	Hoop iron strap fixed onto concrete column and built into brickwork as per Drawing no. 106681-M7-07-DR-CC-0002	No.	229		
	PD.05.01.02	9 kg DCP fire extinguisher	No.	2		
	PD.05.01.03	Weather proof extinguisher cabinets	No.	2		
	PD.05.01.04	Photoluminescent signs with pictograms screwed or plugged as shown on Drawing no 106681-M7-06-DR-CC-0021:				
	PD.05.01.04.01	Sign E3	No.	1		
	PD.05.01.04.02	Sign E6	No.	1		
	PD.05.01.04.03	Sign F13	No.	2		
	PD.05.01.04.04	Sign F16	No.	1		
	PD.05.01.04.05	Sign F19	No.	1		
	PD.05.01.04.06	Sign F45	No.	1		
	PD.05.02	Items measured by length:				
	PD.05.02.01	"Brickforce BK 150" or similar approved, as per Drawing no. PCG4660100001935AU1.0, built into joints of 220mm brickwork walls (measured net)	m	1061		
	PD.05.03	Items measured by area:				
	PD.05.03.01	Ant poison, aldrin emulsifiable concentrates solution to SABS 618 spread at a rate recommended by the manufacturer:				
	PD.05.03.01.01	In bottom of raft foundation	m ²	250		
	PD.05.03.01.02	Under floors	m ²	133		
	PD.05.03.02	250 micron green medium density polyethylene dampproof sheeting under floors	m ²	250		
SPEC PD	Total Carried to Bill 17 Summary					

Bill 17: New Degritting Pump Station (Civil)**SUMMARY**

BILL 17 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 H	STRUCTURAL STEELWORK	
SANS 1200 HB	CLADDING AND SHEETING	
SANS 1200 HC	CORROSION PROTECTION OF STRUCTURAL STEELWORK	
SANS 1200 L	MEDIUM-PRESSURE PIPELINES	
SANS 1200 LB	BEDDING (PIPES)	
SANS 1200 LC	CABLE DUCTS	
SANS 1200 ME	SUBBASE	
SANS 1200 MJ	SEGMENTED PAVING	
SANS 1200 MK	KERBING AND CHANNELLING	
PART SPEC PD	BUILDING WORK	
Bill 17 Total Carried to BoQ Summary		

Bill 18 - Oil store**SITE CLEARANCE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 C	130.00	SITE CLEARANCE				
PSC 8.2.1	130.01	Clear and grub:				
	130.01.01	Strips, 1 m wide	m	25		
8.2.4	130.02	Reclear surfaces (only on instructions from Engineer):				
	130.02.01	Areas	m ²	18		
8.2.10	130.03	Remove topsoil to nominal depth of 150 mm and stockpile	m ³	9		
PSC 8.2.12	130.04	Remove topsoil to spoil site furnished by Contractor	m ³	35		
1200 C Total Carried to Bill 18 Summary						

Bill 18 - Oil store**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 D	140.00	EARTHWORKS				
PSD 8.3.2	140.01	Bulk excavation:				
	140.01.01	Excavate in all materials and use for embankment or backfill as ordered from:				
	140.01.01.01	Necessary excavations	m ³	38		
	140.01.02	Excavate in all materials and dispose	m ³	465		
	140.01.03	Extra over items 140.01.01, 140.01.01.01 and 140.01.02 above for:				
	140.01.03.02	Hard rock excavation	m ³	4		
PSD 8.3.3	140.02	Restricted excavation:				
	140.02.01	Excavate for pipe trenches in all materials, and use for backfill or embankment, or dispose:				
	140.02.01.01	Depth up to 1,0 m	m ³	11		
	140.02.02	Excavate for restricted foundations in all materials, and use for backfill or embankment, or dispose	m ³	70		
PSD 8.3.3	140.02.03	Extra over items 140.02.01 to 140.02.03 above for :				
	140.02.03.01	Hard rock excavation	m ³	2		
	140.02.04	Extra over item 140.02 for hand excavation	m ³	10		
8.3.5	140.03	Extra excavation in all materials to provide working space around structure	m ²	63		
8.3.9	140.04	Extra over items 140.01 and 140.02 for backfill or for fill material against structures	m ³	19		
PSD 8.3.10	140.05	Topsoiling	m ³	9		
8.3.11	140.06	Grassing or other vegetation cover:				
	140.06.01	Hydroseeding	m ²	108		
<i>Carried forward</i>						

Bill 18 - Oil store**EARTHWORKS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSD 8.3.14	140.07	Extra over item 140.01.02 for temporary stockpiling	m³	465		
PSD 8.3.15	140.08	Extra over item 140.01.02 for disposing of spoil material on a site provided by the Contractor	m³	465		
1200 D Total Carried to Bill 18 Summary						

Bill 18 - Oil store**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DB	142.00	EARTHWORKS (PIPE TRENCHES)				
		TRENCHES FOR SEWER PIPES				
PSDB 8.3.2	142.01	Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
	142.01.01	Pipes up to 125 mm dia for depths:				
	142.01.01.01	Up to 1,0 m	m	47		
PSDB 8.3.2	142.02	Extra over item 142.01 above for:				
	142.02.01	Hard rock excavation	m ³	2		
	142.02.02	Hand excavation where ordered by the Engineer:				
	142.02.02.01	Soft material	m ³	2		
	142.02.02.03	Hard material	m ³	2		
	142.02.03	Backfill stabilized with 5% cement where directed by the Engineer	m ³	0.5		
	142.02.04	Soilcrete backfill where directed by the Engineer	m ³	0.5		
PSDB 8.3.2	142.03	Excavate and dispose of unsuitable material from trench bottom	m ³	2		
PSDB 8.3.3	142.04	Excavation ancillaries:				
	142.04.01	Make up deficiency in backfill material:				
	142.04.01.01	From other necessary excavations on Site	m ³	4		
	142.04.01.02	By importation from commercial or off-site sources selected by the Contractor	m ³	4		
PSDB 8.3.2	142.05	Trenches for ducts - Excavate in all materials for trenches, backfill, compact and dispose of surplus material:				
PSDB 8.3.2	142.05.01	Trenches of width more than 600 mm for depths:				
<i>Carried forward</i>						

Bill 18 - Oil store**EARTHWORKS (PIPE TRENCHES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
PSDB 8.3.2	142.05.01.01	Up to 1,0 m	m	40		
	142.06	Extra over item 142.05 above for:				
	142.06.01	Hard rock excavation	m ³	3		
	142.06.02	Hand excavation where ordered by the Engineer:				
	142.06.02.01	Soft material	m ³	3		
	142.06.02.02	Hard material	m ³	3		
	142.06.03	Backfill stabilized with 5% cement where directed by the Engineer	m ³	0.8		
	142.06.04	Soilcrete backfill where directed by the Engineer	m ³	0.8		
PSDB 8.3.2	142.07	Excavate and dispose of unsuitable material from trench bottom	m ³	1.5		
PSDB 8.3.3	142.07	Excavation ancillaries:				
	142.07.01	Make up deficiency in backfill material:				
	142.07.01.01	From other necessary excavations on Site	m ³	6		
	142.07.01.02	By importation from commercial or off-site sources selected by the Contractor	m ³	6		
	142.07.02	Compaction in road crossings	m ³	29		
1200 DB Total Carried to Bill 18 Summary						

Bill 18 - Oil store**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 DM	147.00	EARTHWORKS (ROADS, SUBGRADE)				
8.3.2	147.01	Preparation of Site:				
	147.01.01	Removal of topsoil to a depth of 150 mm, and the stockpiling and maintenance thereof	m ³	188		
PSDM 8.3.3	147.02	Treatment of roadbed:				
	147.02.01	Roadbed preparation and compaction of material to:				
	147.02.01.02	Minimum of 93% of modified AASHTO maximum density	m ³	188		
PSDM 8.3.4	147.03	Cut to fill:				
	147.03.01	Compact to 90% of modified AASHTO maximum density	m ³	35		
PSDM8.3.5	147.04	Selected layers:				
	147.04.01	Selected layer compacted to 93% of modified AASHTO maximum density	m ³	698		
	147.04.02	Selected layer compacted to 95% of modified AASHTO maximum density	m ³	465		
PSDM 8.3.6	147.05	Extra over items 147.03 and 147.04 for excavating and breaking down material in:				
	147.05.01	Hard excavation	m ³	120		
8.3.8	147.06	Removal of oversize material	m ³	56		
8.3.9	147.07	Overbreak of excavation in:				
	147.07.01	Hard excavation	m ²	4		
8.3.10	147.08	Materials bladed to windrow	m ³	86		
8.3.11	147.08.01	Extra over items 147.01, 147.03 and 147.04 for temporary stockpiling of material	m ³	1385		
8.3.13	147.09	Surface finishes:				
<i>Carried forward</i>						

Bill 18 - Oil store**EARTHWORKS (ROADS, SUBGRADE)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	147.09.01	Topsoiling	m ²	9		
PSDM 8.3.17	147.1	Extra over items 147.03 and 147.04 for obtaining material from commercial sources	m ³	300		
PSDM 8.3.18	147.11	Final finishing and cleaning up of the Site of the Works Site of the Works	Sum	1		
1200 DM Total Carried to Bill 18 Summary						

Bill 18 - Oil store**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 2001 CC1	500	CONCRETE (STRUCTURAL)				
		SCHEDULED FORMWORK ITEMS				
SD8.2.1	500.01	Rough:				
	500.01.01	Vertical formwork to:				
	500.01.01.01	Sides of walls	m ²	30		
SD8.2.2	500.02	Smooth:				
	500.02.01	Vertical formwork to:				
	500.02.01.01	Sides of walls	m ²	53		
	500.02.01.02	Sides of columns	m ²	34		
	500.02.01.03	Sides of ring beam	m ²	25		
	500.02.01.04	Plinths	m ²	5		
	500.02.02	Sloping formwork to:				
	500.02.02.01	Ramps	m ²	6		
	500.02.03	Horizontal formwork to:				
	500.02.03.01	Roof slab	m ²	124		
	500.02.03.02	Beam soffit	m ²	11		
SD8.2.5	500.03	Narrow widths (up to 300 mm wide):				
	500.03.01	Different widths in the following ranges:				
	500.03.01.01	Over 200 mm and up to 300 mm	m	45		
	500.03.02	Grooves, chases and splays in the following ranges:				
	500.03.02.01	Over 20 mm x 20 mm and up to 100 mm x 100 mm	m	45		
SD8.2.6	500.04	Box out holes/form voids:				
Carried forward						

Bill 18 - Oil store**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
	500.04.01	Small circular, of diameter up to and including 0,35 m, and in the following depth ranges:				
	500.06.01.01	0 m up to and including 0,5 m	No.	10		
		SCHEDULED REINFORCEMENT ITEMS				
SD8.3.1	500.05	Mild-steel bars in the following:				
	500.05.01	All diameters	t	11.9		
SD8.3.1	500.06	High-tensile steel bars in the following:				
	500.06.01	All diameters	t	104.6		
		SCHEDULED CONCRETE ITEMS				
SD8.4.2	500.07	Blinding layer:				
	500.07.01	Class 15 MPa/19 mm concrete of:				
	500.07.01.01	75 mm thickness	m ²	243		
SD8.4.3	500.08	Strength concrete:				
	500.08.01	Class 25 MPa/38 mm concrete in:				
	500.08.01.01	Concrete ramps	m ³	4		
	500.08.01.02	Apron	m ³	4		
	500.08.02	Class 35 MPa/19 mm concrete in:				
	500.08.02.01	Foundation slabs	m ³	61		
	500.08.02.02	Columns	m ³	3		
	500.08.02.03	Walls	m ³	9		
	500.08.02.04	Ring beams	m ³	4		
	500.08.02.05	Plinths	m ³	1		
	500.08.02.06	Roof slab	m ³	28		
<i>Carried forward</i>						

Bill 18 - Oil store**CONCRETE (STRUCTURAL)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
SD8.4.4	500.09	Unformed surface finishes:				
	500.09.01	Wood-floated finishes to:				
	500.09.01.01	Top of pump plinths	m ²	3		
	500.09.01.02	Top of walls	m ²	23		
	500.09.02	Power-floated finishes to:				
	500.09.02.01	Top of foundation slabs	m ²	244		
	500.09.02.02	Top of ramps	m ²	19		
SD8.5	500.10	JOINTS				
	500.10.01	10 mm x 10 mm Polyurethane sealant placed vertically between concrete and brickwork as shown on dwg 106681-M7-07-DR-CC-0002	m ²	14		
2001 CC1 Total Carried to Bill 18 Summary						

Bill 18 - Oil store**STRUCTURAL STEELWORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 H	180.00	STRUCTURAL STEELWORK				
8.3.9	180.01	Flooring, complete and installed with frames:				
	180.01.01	Rectagrid RS40 open grid floors complete and installed with frames as shown on Drawing No 106681-M7-05-DR-CC-0001	m ²	5		
1200 H Total Carried to Bill 18 Summary						

Bill 18 - Oil store**MEDIUM-PRESSURE PIPELINES**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 L	210.00	MEDIUM-PRESSURE PIPELINES				
8.2.1	210.01	Design, Supply, lay and bed on class B bedding, complete with couplings:				
		Washwater Pipework. Refer to Drawings: 106681-M7-15-DR-CC-0001 and 106681-M7-95-DR-CC-0012				
	210.01.01	±40 m of 110 mm diameter HDPE (PE 100, PN6, SDR 26) pipeline including all bends and fittings from filling area to daylight. All pipe connections must be anchor securing to structures.	Sum	1		
1200 L Total Carried to Bill 18 Summary						

Bill 18 - Oil store**BEDDING (PIPES)**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LB	211.00	BEDDING (PIPES)				
		BEDDING FOR SEWER PIPES				
	PSLB 8.2.2	211.01				
		Supply only of bedding by importation:				
	211.01.01	From commercial sources:				
	211.01.01.01	Selected granular material	m ³	6		
8.2.5	211.01.01.02	Selected fill material	m ³	12		
	211.02	Overhaul of material for bedding cradle and selected fill blanket:				
	211.02.01	Limited overhaul	m ³	18		
1200 LB Total Carried to Bill 18 Summary						

Bill 18 - Oil store**CABLE DUCTS**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 LC	212.00	CABLE DUCTS				
PSLC 8.2.5	212.01	Supply, lay, bed and prove duct:				
	212.01.01	uPVC pipes:				
	212.01.01.01	160 mm dia	m	40		
1200 LC Total Carried to Bill 18 Summary						

Bill 18 - Oil store**SUBBASE**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 ME	223.00	SUBBASE				
PSME 8.3.3	223.01	Construct the subbase course with material from commercial sources	m ³	125		
8.3.5	223.02	Process subbase material by one of the following processes, as relevant, and use in the subbase:				
	223.02.01	Stabilization	m ³	125		
8.3.8	223.03	Stabilizing agent:				
	223.03.01	Road lime	t	5		
	223.03.02	Portland cement	t	5		
PSME 8.3.11	223.04	Treatment of subbase with:				
	223.04.01	Weed killer	m ²	1250		
	223.04.02	Insecticide	m ²	1250		
1200 ME Total Carried to Bill 18 Summary						

Bill 18 - Oil store**SEGMENTED PAVING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
SANS 1200 MJ	227.00	SEGMENTED PAVING				
8.2.1	227.01	Provision of edge restraints:				
	227.01.01	For straight edging	m	50		
PSMJ 8.2.2	227.02	Construction of paving complete:				
	227.02.01	Type S-A blocks:				
	227.02.01.01	80 mm thick	m ²	1250		
8.2.3	227.03	Cutting blocks to fit edge restraints:				
	227.03.01	Straight cutting	m	50		
1200 MJ Total Carried to Bill 18 Summary						

Bill 18 - Oil store**KERBING AND CHANNELLING**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 MK 8.2.2	228.00	KERBING AND CHANNELLING				
	228.01	Concrete kerbing and channelling combined (precast kerbing and in-situ channelling):				
	228.01.01	SANS 927 fig 8:				
	228.01.01.01	Radius over 4 m up to 20 m	m	55		
	228.01.01.02	Radius over 20 m and straight sections	m	130		
1200 MK Total Carried to Bill 18 Summary						

Bill 18 - Oil store**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
PART SPEC PD		BUILDING WORK				
PD 10	PD.01	Brickwork:				
	PD.01.01	230 mm thick, outside face: face brickstandard/extra/aesthetic, inside face:non-facing plastered/extra, engineeringbricks				
	PD.01.01.01	Superstructure	m ²	124		
	PD.01.02	230 mm thick, non-facing plastered/extra, engineering bricks				
	PD.02	Plaster Work:				
	PD.02.02	10 mm thick, steel-float finish:				
	PD.02.02.01	Internal brick	m ²	124		
	PD.03	Doors and Windows:				
	PD.03.01	Steel door with frame:				
	PD.03.01.01	Door: D1 complete as per door and window schedule	No.	2		
	PD.03.01.02	Door: D3 complete as per door and window schedule	No.	1		
	PD.03.02	Steel window with frame, including glazing and sills:				
	PD.03.02.01	Window: W1 complete as per door and window schedule	No.	10		
	PD.04	Miscellaneous Work:				
	PD.04.01	Paintwork, one coat primer and two coats super acrylic paint:				
	PD.04.02.01	Internal plastered walls	m ²	124		
	PD.05	Miscellaneous Items:				
	PD.05.01	Items measured by number:				
<i>Carried forward</i>						

Bill 18 - Oil store**BUILDING WORK**

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.05.01.01	Hoop iron strap fixed onto concrete column and built into brickwork as per Drawing no. 106681-M7-07-DR-CC-0002	No.	179		
	PD.05.01.02	9 kg DCP fire extinguisher	No.	2		
	PD.05.01.03	Weather proof extinguisher cabinets	No.	2		
	PD.05.01.04	Photoluminescent signs with pictograms screwed or plugged as shown on Drawing no 106681-M7-06-DR-CC-0021:				
	PD.05.01.04.01	Sign E3	No.	2		
	PD.05.01.04.02	Sign E6	No.	2		
	PD.05.01.04.03	Sign F13	No.	2		
	PD.05.01.04.04	Sign F45	No.	1		
	PD.05.02	Items measured by length:				
	PD.05.02.01	"Brickforce BK 150" or similar approved, as per Drawing no. PCG4660100001935AU1.0, built into joints of 220mm brickwork walls (measured net)	m	433		
	PD.05.03	Items measured by area:				
	PD.05.03.01	Ant poison, aldrin emulsifiable concentrates solution to SABS 618 spread at a rate recommended by the manufacturer:				
	PD.05.03.01.01	In bottom of foundation	m ²	152		
	PD.05.03.02	250 micron green medium density polyethylene dampproof sheeting under floors	m ²	152		
	PD.05.03.03	375 micron embossed black polyethylene dampproof course in walls and sills	m ²	13		
<i>Carried forward</i>						

BUILDING WORK

PAYMENT REFERS	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
<i>Brought forward</i>						
	PD.05.03.04	Sika' sealoflex professional (or similar approved) flexible, fibre reinforced waterproofing (applied in accordance with manufacturers specifications) to:				
	PD.05.03.04.01	Flat roofs	m ²	106		
	PD.05.03.05	2 Layers of 375 micron HDPE sheets placed on on smooth finished wall between wall and concrete slab	m ²	10		
SPEC PD Total Carried to Bill 18 Summary						

Bill 18 - Oil store**SUMMARY**

BILL 18 SUMMARY		AMOUNT
SANS 1200 C	SITE CLEARANCE	
SANS 1200 D	EARTHWORKS	
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)	
SANS 1200 DM	EARTHWORKS (ROADS, SUBGRADE)	
SANS 2001 CC1	CONCRETE (STRUCTURAL)	
SANS 1200 H	STRUCTURAL STEELWORK	
SANS 1200 L	MEDIUM-PRESSURE PIPELINES	
SANS 1200 LB	BEDDING (PIPES)	
SANS 1200 LC	CABLE DUCTS	
SANS 1200 ME	SUBBASE	
SANS 1200 MJ	SEGMENTED PAVING	
SANS 1200 MK	KERBING AND CHANNELLING	
PART SPEC PD	BUILDING WORK	
Bill 18 Total Carried to BoQ Summary		

BID No. RW 10407165/25
BILL OF QUANTITIES SUMMARY

BILL 1	: GENERAL	R	-
BILL 2	: DAYWORKS		-
<u>7A WORK</u>			
BILL 3	: MODULE 6 OUTSTANDING WORKS (7A)	R	-
<u>7B WORK</u>			
BILL 4	: ROAD (CIVIL)	R	-
BILL 5	: STORMWATER (CIVIL)	R	-
BILL 6	: PRIMARY SETTLING TANKS (CIVIL)	R	-
BILL 7	: SLUDGE RECYCLE PUMP STATION (CIVIL)	R	-
BILL 8	: BIOLOGICAL REACTOR (CIVIL)	R	-
BILL 9	: BIOLOGICAL REACTOR MCC BUILDING (CIVIL)	R	-
BILL 10	: SECONDARY SETTLING TANKS (CIVIL)	R	-
BILL 11	: RAS/WAS PUMP STATION STATION (CIVIL)	R	-
BILL 12	: CONVEYANCE (CIVIL)	R	-
BILL 13	: CHAMBERS (CIVIL)	R	-
BILL 14	: CHLORINE CONTACT TANK AND CHLORINATION SYSTEM (CIVIL)	R	-
BILL 15	: BLOWER AND ELECTRICAL BUILDING (CIVIL)	R	-
BILL 16	: WASH BAY (CIVIL)	R	-
BILL 17	: NEW DEGRITTING PUMP STATION (CIVIL)	R	-
BILL 18	: OIL STORE (CIVIL)	R	-
TOTAL OF PRICED ITEMS		R	-
CONTINGENCIES			
The Sum provided here is under the sole control of the Engineer and may be deducted in whole or in part			
	10%	R	-
CONTRACT PRICE ADJUSTMENT			
Sum provided in terms of the provisions of Clause 13.8 of the General Conditions of Contract			
	15%	R	-
SUBTOTAL		R	-
VALUE-ADDED TAX (VAT)			
The tenderer shall add 15% of the subtotal for value-added tax			
	15%	R	-
TENDER SUM CARRIED TO FORM OF TENDER		R	-

SIGNED ON BEHALF OF TENDERER :