CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Making progress possible. Together.

MEMORANDUM OF AGREEMENT

FOR THE

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

MADE AND ENTERED INTO BETWEEN

CITY OF CAPE TOWN METROPOLITAN MUNICIPALITY

AND

H&I JV

CONTRACT NO. 295Q/2021/22

FILE 2 OF 3

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CITY OF CAPE TOWN
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MEMORANDUM OF AGREEMENT

Contract No. 295Q/2021/22

FILE 2 OF 3

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C15 **INLET WORKS - WBA**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C15.1		.1 Sumps	m³	80	365.86	29 268.80
C15.2		.2 Column bases	m³	14	365.86	5 122.04
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		COMMERCIAL SOURCES				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C15.3		.1 Alongside walls in foundations	m³	5	248.89	1 244.45
	SANS 1200 G	**SOILCRETE**				
	PSG	**SOILCRETE**				
		Soilcrete (5% OPC)				
C15.4	8.4.10	(a) Backfilling behind walls	m³	11	1 191.52	13 106.72
	SANS 1200 G	**ROUGH FORMWORK**				
		ROUGH FORMWORK				
	8.2.1	(b) Plane vertical				
C15.5		.1 Sides of foundations	m²	68	364.71	24 800.28
C15.6		.2 Sump walls	m²	210	364.71	76 589.10
	8.2.5	Rough formwork to narrow widths				
C15.7		(a) Edges, risers, etc not exceeding 300mm wide	m	150	109.41	16 411.50
	8.1.1.2	Rough formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C15.8		(a) Chamfer size 50 x 50mm	m	21	150.20	3 154.20
C15.9		(b) Groove size 70mm wide x 50mm deep	m	21	160.80	3 376.80
					Carried Forward	173 073.89

					Brought Forward	173 073.89
C15.10		(c) Rebate size 200mm x 100mm deep in walls	m	21	375.50	7 885.50
C15.11		(e) Rebate size 200mm x 100mm deep in floors	m	21	375.50	7 885.50
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C15.12		.1 Slabs	m²	165	636.15	104 964.75
C15.13		.2 Beams	m²	56	721.55	40 406.80
C15.14		.4 Landings	m²	2	636.15	1 272.30
	8.2.2	(b) Plane vertical				
C15.15		.2 Sump walls	m²	210	364.71	76 589.10
C15.16		.3 Perimeter walls	m²	515	364.71	187 825.65
C15.17		.4 Baffle walls	m²	460	364.71	167 766.60
C15.18		.5 Ends of baffle walls 800mm wide	m²	32	364.71	11 670.72
C15.19		.6 Square or rectangular columns	m²	200	364.71	72 942.00
C15.20		.7 Sides of beams	m²	289	364.71	105 401.19
	8.2.2	(c) Plane sloping				
C15.21		.1 Stairs	m²	5	1 041.79	5 208.95
	8.2.5	Smooth formwork to narrow widths				
C15.22		(a) Edges, risers, etc not exceeding 300mm wide	m	118	109.41	12 910.38
C15.23		(b) Circular edges, risers, etc not exceeding 300mm wide	m	53	109.41	5 798.73
C15.24		(c) Raking side of stairs maximum 400mm wide	m	8	273.98	2 191.84
C15.25		(d) Edges, risers, etc not exceeding 300mm wide battered to 45 degrees	m	21	152.11	3 194.31
C15.26		(e) Circular formwork to vertical end of baffle wall 800mm wide	m	17	770.95	13 106.15
C15.27		(f) Triangular splay 180mm wide x 180mm high on top of perimeter wall	m	8	684.95	5 479.60
C15.28		(g) Set of V-reedings 100mm wide in top of concrete steps	m	14	171.24	2 397.36
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C15.29		(a) Chamfer circular on plan size 75 x 75mm	m	20	230.56	4 611.20
					Carried Forward	1 012 582.52

[redacted]

					Brought Forward	1 012 582.52
C15.30		(b) Groove size 250mm wide x 80mm deep x 200 mm long	no	48	374.75	17 988.00
C15.31		(c) Rebate size 120mm x 80mm deep in walls	m	140	46.06	6 448.40
C15.32		(e) Rebate size 120mm x 80mm deep in floors	m	40	214.44	8 577.60
C15.33		(f) Boxing out to toe of beam to form horisontal nib 100mm wide x 170mm high complete	m	27	262.47	7 086.69
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C15.34		.1 Over 0m and up to 0,5m	no	2	352.49	704.98
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C15.35		.1 Over 0m and up to 0,5m	no	24	432.55	10 381.20
	8.2.6	(c) Large, circular, over 0,35m and up to 0,7m diameter with depth				
C15.36		.1 Over 0m and up to 0,5m	no	2	565.99	1 131.98
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C15.37		.1 Smooth formwork	m²	50	651.99	32 599.50
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C15.38		.1 Grouting around pipes and fittings	m³	2	21 078.60	42 157.20
	SANS 1200 G	**HDPE LININGS TO STRUCTURES**				
	PSG-3.9	**HDPE LININGS**				
		The following HDPE linings is supplied by AKS Lining Systems (Pty) Ltd or other approved similar product.				
					Carried Forward	1 139 658.07

[redacted]

					Brought Forward	1 139 658.07
		2.5mm Thick HDPE (colour as specified) lining system fixed to formwork face with approved method to enable the lining clips at the back of the sheeting to be cast into the concrete surface. The exposed lining surface is to be cleaned and welded at all joints with an approved method to ensure a watertight surface, as per manufacturers specification, complete with all cutting and waste, cutting around pipes, etc and sealing around pipes, covers, etc with approved sealant (only net exposed surfaces will be paid for)				
	8.13	(a) Plane horizontal				
C15.39		.1 Slabs	m²	210	462.30	97 083.00
	8.13	(b) Plane vertical				
C15.40		.1 Walls	m²	980	462.30	453 054.00
	8.13	(c) Narrow widths not exceeding 300mm wide				
C15.41		.1 Narrow widths	m	100	284.53	28 453.00
	SANS 1200 G	**REINFORCEMENT**				
	PSG	**ROD REINFORCEMENT**				
		Steel bars				
	8.3.1	(a) Mild steel				
C15.42		.1 All sizes	ton	5	18 976.98	94 884.90
	8.3.1	(b) High tensile steel				
C15.43		.1 All sizes	ton	64	18 976.98	1 214 526.72
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C15.44		(a) Blinding layer 50mm thick	m³	40	1 857.71	74 308.40
	8.4.3	(c) Strength concrete 35Mpa/19mm				
C15.45		.1 Column bases	m³	6	1 936.19	11 617.14
C15.46		.2 Columns	m³	17	1 936.19	32 915.23
C15.47		.3 Sump base and walls	m³	40	1 936.19	77 447.60
C15.48		.5 Beams	m³	28	1 936.19	54 213.32
C15.49		.7 Stairs	m³	3	1 936.19	5 808.57
	SANS	**WATERPROOF CONCRETE**				
					Carried Forward	3 283 969.95

[redacted]

					Brought Forward	3 283 969.95
	1200 G 8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C15.50		.2 Roof slabs	m³	32	2 199.02	70 368.64
C15.51		.3 Floor slabs	m³	135	2 199.02	296 867.70
C15.52		.4 Perimeter walls	m³	80	2 199.02	175 921.60
C15.53		.5 Baffle walls	m³	161	2 199.02	354 042.22
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C15.54		.1 Benching to floors to falls including steel floated surface finish	m³	25	2 055.78	51 394.50
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(b) Steel floated finish				
C15.55		.1 Slabs and floor slabs	m²	600	19.44	11 664.00
C15.56		.2 Top of walls, beams, etc	m²	163	19.44	3 168.72
	8.4.4	(c) Power floated finish				
C15.57		.1 Floor slabs	m²	105	38.87	4 081.35
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C15.58		.1 Expansion joint in walls and floors	m²	5	118.25	591.25
C15.59		.4 Narrow widths not exceeding 300mm wide	m	20	35.48	709.60
		JOINT SEALER				
	8.5	(b) Polyurethane joint sealer				
C15.60		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	32	153.31	4 905.92
	8.5	(c) Saw cut joints				
					Carried Forward	4 257 685.45

[redacted]

					Brought Forward	4 257 685.45
C15.61		.1 4 x 40mm Deep saw cut joint in floor slabs	m	20	136.11	2 722.20
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C15.62	8.12	Testing entire structure for water tightness	no	1	46956.43	46 956.43
		BILL NO. C15 **INLET WORKS - WBA**				
		Carried forward to Summary of Bills			**Total**	4 307 364.08

[redacted]

Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Degritters & measurement flumes

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C16 **DEGRITTERS & MEASUREMENT FLUMES - WBB**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C16.1		.1 Sumps, floors	m³	420	365.86	153 661.20
C16.2		.2 Column bases	m³	19	365.86	6 951.34
C16.3		.3 Wall footings	m³	57	365.86	20 854.02
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C16.4		.2 Hard rock excavation	m³	11	803.79	8 841.69
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		COMMERCIAL SOURCES				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C16.5		.1 Alongside walls in foundations	m³	80	248.89	19 911.20
C16.6		.2 Behind retaining walls	m³	160	248.89	39 822.40
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE Backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
C16.7		.1 Alongside walls in foundations	m³	78	-	Included
C16.8		.2 Behind retaining walls	m³	260	-	Included
	SANS 1200 G	**SOILCRETE**				
	PSG	**SOILCRETE** Soilcrete (5% OPC)				
C16.9	8.4.10	(a) Backfilling in voids behind walls	m³	210	1 191.52	250 219.20
	SANS	**ROUGH FORMWORK**				
					Carried Forward	500 261.05

					Brought Forward	500 261.05
	1200 G PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C16.10		.1 Sides of floor slabs, bases etc	m²	420	364.71	153 178.20
C16.11		.2 Walls	m²	210	364.71	76 589.10
C16.12		.3 Sump walls	m²	53	364.71	19 329.63
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C16.13		.1 Slabs	m²	600	636.15	381 690.00
C16.14		.2 Beams	m²	44	721.55	31 748.20
C16.15		.3 Walkway slabs	m²	74	636.15	47 075.10
C16.16		.4 Landings	m²	2	636.15	1 272.30
	8.2.2	(b) Plane vertical				
C16.17		.1 Columns	m²	273	418.08	114 135.84
C16.18		.2 Beams	m²	257	507.04	130 309.28
C16.19		.3 Walls	m²	1418	418.08	592 837.44
C16.20		.4 Sump walls	m²	26	418.08	10 870.08
	8.2.2	(c) Plane sloping				
C16.21		.1 Stairs	m²	2	1 041.79	2 083.58
	8.2.2	(d) Plane battered				
C16.22		.1 Sump walls	m²	32	507.04	16 225.28
	8.2.2	(e) Plane circular				
C16.23		.1 Walls circular on plan to approximately 2m radius	m²	284	569.30	161 681.20
C16.24		.2 Walls circular on plan to approximately 3m radius	m²	557	569.30	317 100.10
C16.25		.3 Walls circular on plan to approximately 4m radius	m²	210	569.30	119 553.00
	8.2.5	Smooth formwork to narrow widths				
C16.26		(a) Edges, risers, etc not exceeding 300mm wide	m	42	109.41	4 595.22
		(b) Circular edges, risers, etc not exceeding 300mm				
					Carried Forward	2 680 534.60

[redacted]

					Brought Forward	2 680 534.60
C16.27		wide	m	21	109.41	2 297.61
C16.28		(c) Raking side of stairs maximum 400mm wide	m	4	308.38	1 233.52
C16.29		(g) Set of V-reedings 100mm wide in top of concrete steps	m	14	91.18	1 276.52
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
C16.30		(a) Chamfer size 50x50mm	m	105	150.20	15 771.00
C16.31		(b) Groove size 250mm wide x 80mm deep x 250 mm long	no	22	481.49	10 592.78
C16.32		(c) Rebate size 120mm x 80mm deep in walls	m	53	262.47	13 910.91
C16.33		(d) Rebate size 120mm x 80mm deep in floors	m	12	262.47	3 149.64
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C16.34		.1 over 0m and up to 0,5m	no	2	352.49	704.98
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C16.35		.1 over 0m and up to 0,5m	no	10	432.55	4 325.50
	8.2.6	(c) Large, circular, over 0,35m and up to 0,7m diameter with depth				
C16.36		.1 over 0m and up to 0,5m	no	2	565.99	1 131.98
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C16.37		.1 Smooth formwork	m²	12	651.99	7 823.88
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C16.38		.1 Grouting around pipes and fittings	m³	1	21 078.60	21 078.60
	SANS 1200 G	**HDPE LININGS TO STRUCTURES**				
	PSG-3.9	**HDPE LININGS**				
		The following HDPE linings is supplied by AKS Lining Systems (Pty) Ltd or other approved similar product.				
					Carried Forward	2 763 831.52

[redacted]

					Brought Forward	2 763 831.52
		2.5mm Thick HDPE (colour as specified) lining system fixed to formwork face with approved method to enable the lining clips at the back of the sheeting to be cast into the concrete surface. The exposed lining surface is to be cleaned and welded at all joints with an approved method to ensure a watertight surface, as per manufacturers specification, complete with all cutting and waste, cutting around pipes, etc and sealing around pipes, covers, etc with approved sealant (only net exposed surfaces will be paid for)				
	8.13	(a) Plane horizontal				
C16.39		.1 Slabs	m²	800	515.68	412 544.00
	8.13	(b) Plane vertical				
C16.40		.1 Walls	m²	840	515.68	433 171.20
C16.41		.2 Walls circular on plan	m²	840	569.05	478 002.00
	8.13	(c) Narrow widths not exceeding 300mm wide				
C16.42		.1 Narrow widths	m	100	337.90	33 790.00
	SANS 1200 G	**REINFORCEMENT**				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C16.43		.1 All sizes	ton	16	18 976.98	303 631.68
	8.3.1	(b) High tensile steel				
C16.44		.1 All sizes	ton	126	18 976.98	2 391 099.48
		MESH REINFORCEMENT				
	8.3.2	High tensile welded mesh				
C16.45		(a) Ref no.395	m²	420	107.37	45 095.40
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C16.46		(a) Blinding layer 50mm thick	m³	39	1 857.71	72 450.69
	8.4.3	(b) Strength concrete 20Mpa/19mm				
C16.47		.1 Wall footings	m³	16	1 802.35	28 837.60
	8.4.3	(c) Strength concrete 35Mpa/19mm				
C16.48		.1 Column bases	m³	6	1 978.65	11 871.90
					Carried Forward	6 974 325.47

[redacted]

					Brought Forward	6 974 325.47
C16.49		.2 Columns	m³	22	1 978.65	43 530.30
C16.50		.3 Walls	m³	24	1 978.65	47 487.60
C16.51		.4 Floor slabs	m³	18	1 978.65	35 615.70
C16.52		.6 Slabs	m³	160	1 978.65	316 584.00
C16.53		.7 Stairs	m³	2	1 978.65	3 957.30
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C16.54		.1 Roof slabs	m³	180	2 199.02	395 823.60
C16.55		.2 Beams	m³	39	2 199.02	85 761.78
C16.56		.3 Walkway slabs	m³	32	2 199.02	70 368.64
C16.57		.4 Sump floors	m³	11	2 199.02	24 189.22
C16.58		.5 Walls	m³	420	2 199.02	923 588.40
C16.59		.6 Sump walls	m³	26	2 199.02	57 174.52
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C16.60		.1 Benching to floors to falls including steel floated surface finish	m³	53	2 055.78	108 956.34
	SANS 1200 G	**SURFACE FINISHES**				
	PSG	**SURFACE FINISHES**				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C16.61		.1 Floor slabs	m²	336	13.92	4 677.12
C16.62		.2 Top of walls, beams, etc	m²	86	13.92	1 197.12
	8.4.4	(b) Steel floated finish				
C16.63		.1 Floor slabs	m²	651	19.44	12 655.44
C16.64		.2 Top of walls, beams, etc	m²	137	19.44	2 663.28
	8.4.4	(c) Power floated finish				
C16.65		.1 Floor slabs	m²	105	38.87	4 081.35
					Carried Forward	9 112 637.18

[redacted]

					Brought Forward	9 112 637.18
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C16.66		.4 Narrow widths not exceeding 300mm wide	m	53	118.25	6 267.25
	8.5	(b) Polyurethane joint sealer				
C16.67		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	53	153.31	8 125.43
	8.5	(c) Saw cut joints				
C16.68		.1 4 x 40mm Deep saw cut joint in floor slabs	m	20	136.11	2 722.20
		WATERSTOPS				
	8.5	(c) Waterstops				
C16.69		.1 300mm Wide center bulb type rubber waterstop castinto concrete floor slab over expansion joint	m	53	267.68	14 187.04
	SANS 1200 LC	**SLEEVES**				
		SLEEVE PIPES				
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 6 ducts including providing draw wires and bends, etc complete				
C16.70		.1 110mm Diameter cast into walkway slabs	m	210	82.83	17 394.30
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C16.71	8.12	Testing entire structure for water tightness	no	1	19857.57	19 857.57
		BILL NO. C16 **DEGRITTERS & MEASUREMENT FLUMES - WBB**				
		Carried forward to Summary of Bills			**Total**	9 181 190.97

[redacted]

Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Raw sewage pump station

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C17				
		RAW SEWAGE PUMP STATION - WPA				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C17.1		.1 Reduced levels for lower floors	m³	315	365.86	115 245.90
C17.2		.4 Wall footings	m³	53	365.86	19 390.58
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C17.3		.2 Hard rock excavation	m³	11	803.79	8 841.69
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		COMMERCIAL SOURCES				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C17.4		.1 Alongside walls in foundations	m³	105	248.89	26 133.45
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C17.5		.1 Edges of floor slabs exceeding 300mm high	m²	32	364.71	11 670.72
C17.6		.4 Walls	m²	360	364.71	131 295.60
	8.2.5	Rough formwork to narrow widths				
C17.7		(a) Edges, risers, etc not exceeding 300mm wide	m	32	109.41	3 501.12
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C17.8		.1 Slabs	m²	398	658.52	262 090.96
C17.9		.2 Landings	m²	5	609.90	3 049.50
C17.10		.4 Beams	m²	35	771.35	26 997.25
					Carried Forward	608 216.77

					Brought Forward	608 216.77
	8.2.2	(b) Plane vertical				
C17.11		.1 Floor chamber walls	m²	11	364.71	4 011.81
C17.12		.2 Upstands	m²	5	364.71	1 823.55
C17.13		.3 Walls	m²	760	364.71	277 179.60
C17.14		.4 Machine bases	m²	21	364.71	7 658.91
C17.15		.6 Steps	m²	5	507.04	2 535.20
C17.16		.7 Columns	m²	34	364.71	12 400.14
C17.17		.8 Beams	m²	153	364.71	55 800.63
C17.18		.9 Sides and soffit of crane support size 500 x 300 x 800mm high complete	no	11	770.95	8 480.45
	8.2.2	(c) Plane sloping				
C17.19		.3 Stairs	m²	16	1 041.79	16 668.64
	8.2.5	Smooth formwork to narrow widths				
C17.20		(a) Edges, risers, etc not exceeding 300mm wide	m	214	109.41	23 413.74
C17.21		(c) Raking side of stairs maximum 400mm wide	m	19	308.38	5 859.22
C17.22		(d) Set of V-reedings 100mm wide in top of concrete steps	m	14	171.24	2 397.36
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C17.23		(a) Chamfer circular on plan size 75 x 75mm	m	20	230.56	4 611.20
C17.24		(b) Groove size 70mm wide x 50mm deep	m	20	176.81	3 536.20
C17.25		(c) Rebate size 200mm x 100mm deep in walls	m	20	375.50	7 510.00
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C17.26		.1 Over 0m and up to 0,5m	no	1	438.49	438.49
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C17.27		.1 Over 0m and up to 0,5m	no	5	518.55	2 592.75
	8.2.6	(c) Large, circular, over 1,0m² and up to 1,6 m² diameter with depth				
C17.28		.1 Over 0m and up to 0,5m	no	5	651.99	3 259.95
	8.2.6	(d) Large, circular, over 2,5m² up to 3,2m² in area with depth				
					Carried Forward	1 048 394.61

[redacted]

					Brought Forward	1 048 394.61
C17.29		.2 Over 0m and up to 0,5m	no	1	758.74	758.74
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
	PSG	**SMOOTH FORMWORK**				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C17.30		.1 Smooth formwork	m²	50	684.95	34 247.50
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C17.31		.1 Grouting around pipes and fittings	m³	2	16 274.96	32 549.92
	SANS 1200 G	**HDPE LININGS TO STRUCTURES**				
	PSG-3.9	**HDPE LININGS**				
		The following HDPE linings is supplied by AKS Lining Systems (Pty) Ltd or other approved similar product.				
		2.5mm Thick HDPE (colour as specified) lining system fixed to formwork face with approved method to enable the lining clips at the back of the sheeting to be cast into the concrete surface. The exposed lining surface is to be cleaned and welded at all joints with an approved method to ensure a watertight surface, as per manufacturers specification, complete with all cutting and waste, cutting around pipes, etc and sealing around pipes, covers, etc with approved sealant (only net exposed surfaces will be paid for)				
	8.13	(a) Plane horizontal				
C17.32		.1 Slabs	m²	75	462.30	34 672.50
	8.13	(b) Plane vertical				
C17.33		.1 Walls	m²	490	462.30	226 527.00
	8.13	(c) Narrow widths not exceeding 300mm wide				
C17.34		.1 Narrow widths	m	50	231.15	11 557.50
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
					Carried Forward	1 388 707.77

[redacted]

					Brought Forward	1 388 707.77
C17.35		.1 All sizes	ton	4	18 976.98	75 907.92
	8.3.1	(b) High tensile steel				
C17.36		.1 All sizes	ton	74	18 976.98	1 404 296.52
		MESH REINFORCEMENT				
	8.3.2	High tensile welded mesh				
C17.37		(b) Ref no.395	m²	11	107.37	1 181.07
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C17.38		(a) Blinding layer 50mm thick	m³	21	1 857.71	39 011.91
	8.4.3	(c) Strength concrete 35Mpa/19mm				
C17.39		.7 Ramps	m³	5	1 978.65	9 893.25
C17.40		.8 Columns	m³	12	1 978.65	23 743.80
C17.41		.10 Stairs and landings	m³	7	1 978.65	13 850.55
C17.42		.11 Crane rail supports	m³	2	1 978.65	3 957.30
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C17.43		.1 Machine bases	m³	11	2 199.02	24 189.22
C17.44		.2 Roof slabs	m³	112	2 199.02	246 290.24
C17.45		.3 Beams	m³	27	2 199.02	59 373.54
C17.46		.4 Floor slabs	m³	110	2 199.02	241 892.20
C17.47		.5 Walls	m³	235	2 199.02	516 769.70
C17.48		.6 Floor chamber walls	m³	5	2 199.02	10 995.10
C17.49		.7 Upstands	m³	5	2 199.02	10 995.10
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
					Carried Forward	4 071 055.19

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					Brought Forward	4 071 055.19
C17.50		.1 Benching to floors to falls including steel floated surface finish	m³	42	1 802.35	75 698.70
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(b) Steel floated finish				
C17.51		.1 Slabs, floor slabs and ramps	m²	420	19.44	8 164.80
C17.52		.2 Top of walls, beams, etc	m²	58	19.44	1 127.52
C17.53		.3 Steps	m²	11	19.44	213.84
	8.4.4	(c) Power floated finish				
C17.54		.1 Floor slabs	m²	105	38.87	4 081.35
	SANS 1200 G	**ACID RESISTING FINISHES**				
		CONCRETE PROTECTION AND FLOOR COATINGS				
	8.4.11	a) Sikafloor 263 SL ZA or other approved self smoothing epoxy finish applied to manufacturers specification including all preparation, etc				
C17.55		i) 3 mm Thick to concrete floors and walls	m²	400	677.25	270 900.00
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C17.56		.1 Expansion joint in walls and floors	m²	10	118.25	1 182.50
C17.57		.4 Narrow widths not exceeding 300mm wide	m	20	35.48	709.60
		JOINT SEALER				
	8.5	(b) Polyurethane joint sealer				
C17.58		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	40	153.31	6 132.40
	8.5	(c) Saw cut joints				
C17.59		.1 4 x 40mm Deep saw cut joint in floor slabs	m	20	136.11	2 722.20
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C17.60	8.12	Testing entire structure for water tightness	no	1	39715.14	39 715.14
					Carried Forward	4 481 703.24

[redacted]

					Brought Forward	4 481 703.24
		BILL NO. C17 **RAW SEWAGE PUMP STATION - WPA**				
		Carried forward to Summary of Bills			**Total**	4 481 703.24

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C18 **DIVISION STRUCTURE - SQA**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C18.1		.1 Base	m³	50	365.86	18 293.00
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C18.2		.2 Hard rock excavation	m³	2	803.79	1 607.58
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		COMMERCIAL SOURCES				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C18.3		.2 Behind walls	m³	50	248.89	12 444.50
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C18.4		.1 Sides of floor slab	m²	9	364.71	3 282.39
	8.2.5	Rough formwork to narrow widths				
C18.5		(a) Edges, risers, etc not exceeding 300mm wide	m	11	364.71	4 011.81
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C18.6		.1 Slabs	m²	6	636.15	3 816.90
C18.7		.2 Walkway slabs	m²	8	733.25	5 866.00
C18.8		.3 Landings	m²	1	733.25	733.25
	8.2.2	(b) Plane vertical				
					Carried Forward	50 055.43

[redacted]

					Brought Forward	50 055.43
C18.9		.1 Walls	m²	840	364.71	306 356.40
	8.2.2	(c) Plane sloping				
C18.10		.3 Stairs	m²	11	1 068.05	11 748.55
	8.2.5	Smooth formwork to narrow widths				
C18.11		(a) Edges, risers, etc not exceeding 300mm wide	m	48	109.41	5 251.68
C18.12		(c) Raking side of stairs maximum 400mm wide	m	11	308.38	3 392.18
C18.13		(d) Set of V-reedings 100mm wide in top of concrete steps	m	32	104.52	3 344.64
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C18.14		(a) Chamfer circular on plan size 75 x 75mm	m	11	230.56	2 536.16
C18.15		(b) Groove size 250mm wide x 80mm deep x 250mm long	no	8	374.75	2 998.00
C18.16		(c) Rebate size 120mm x 80mm deep in walls	m	22	214.44	4 717.68
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C18.17		.1 Over 0m and up to 0,5m	no	2	438.49	876.98
	8.2.6	(b) Small, square, up to 0,1m² in area with depth				
C18.18		.1 Over 0m and up to 0,5m	no	2	518.55	1 037.10
	8.2.6	(c) Large, circular, over 0,75m² and up to 1,10m² diameter with depth				
C18.19		.1 Over 0m and up to 0,5m	no	4	684.95	2 739.80
	8.2.6	(d) Large, circular, over 1,5m² up to 2,1m² in area with depth				
C18.20		.2 Over 0m and up to 0,5m	no	3	758.74	2 276.22
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C18.21		.1 Smooth formwork	m²	21	684.95	14 383.95
		GROUTING				
					Carried Forward	411 714.77

[redacted]

					Brought Forward	411 714.77
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C18.22		.1 Grouting around pipes and fittings	m³	2	21 078.60	42 157.20
	SANS 1200 G	**HDPE LININGS TO STRUCTURES**				
		HDPE LININGS				
		The following HDPE linings is supplied by AKS Lining Systems (Pty) Ltd or other approved similar product.				
	PSG-3.9	2.5mm Thick HDPE (colour as specified) lining system fixed to formwork face with approved method to enable the lining clips at the back of the sheeting to be cast into the concrete surface. The exposed lining surface is to be cleaned and welded at all joints with an approved method to ensure a watertight surface, as per manufacturers specification, complete with all cutting and waste, cutting around pipes, etc and sealing around pipes, covers, etc with approved sealant (only net exposed surfaces will be paid for)				
	8.13	(a) Plane horizontal				
C18.23		.1 Slabs	m²	40	462.30	18 492.00
	8.13	(b) Plane vertical				
C18.24		.1 Walls	m²	320	462.30	147 936.00
	8.13	(c) Narrow widths not exceeding 300mm wide				
C18.25		.1 Narrow widths	m	30	284.53	8 535.90
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C18.26		.1 All sizes	ton	2	18 976.98	37 953.96
	8.3.1	(b) High tensile steel				
C18.27		.1 All sizes	ton	21	18 976.98	398 516.58
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C18.28		(a) Blinding layer 50mm thick	m³	3	1 857.71	5 573.13
	8.4.3	(a) Strength concrete 20Mpa/19mm				
					Carried Forward	1 070 879.54

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					Brought Forward	1 070 879.54
C18.29		.1 Encasement of pipes	m³	3	1 802.35	5 407.05
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C18.30		.1 Roof slabs	m³	2	2 199.02	4 398.04
C18.31		.2 Walls	m³	126	2 199.02	277 076.52
C18.32		.3 Floor slabs	m³	16	2 199.02	35 184.32
C18.33		.4 Walkway slabs	m³	2	2 199.02	4 398.04
C18.34		.5 Stairs and landings	m³	5	2 199.02	10 995.10
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C18.35		.1 Benching to floors including steel float finish	m³	26	4 017.12	104 445.12
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(b) Steel floated finish				
C18.36		.1 Floor slabs	m²	21	19.44	408.24
C18.37		.2 Top of walls, beams, etc	m²	32	19.44	622.08
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C18.38		.4 Narrow widths not exceeding 300mm wide	m	10	35.48	354.80
		JOINT SEALER				
	8.5	(b) Polyurethane joint sealer				
C18.39		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	10	153.31	1 533.10
	8.5	(c) Saw cut joints				
					Carried Forward	1 515 701.95

					Brought Forward	1 515 701.95
C18.40		.1 4 x 40mm Deep saw cut joint in floor slabs	m	20	136.11	2 722.20
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C18.41	8.12	Testing entire structure for water tightness	no	1	9928.79	9 928.79
		BILL NO. C18 **DIVISION STRUCTURE - SQA**				
		Carried forward to Summary of Bills			**Total for four settling tanks above**	1 528 352.94

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C19 **PRIMARY SETTLING TANKS - WDA - WDB - WDC - WDD**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C19.1		.1 Centre column base	m³	84	365.86	30 732.24
C19.2		.2 Concrete pipe encasement	m³	210	365.86	76 830.60
C19.3		.3 Wall footings	m³	420	365.86	153 661.20
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C19.4		.2 Hard rock excavation	m³	50	803.79	40 189.50
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		COMMERCIAL SOURCES				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C19.5		.1 Alongside walls in foundations	m³	420	248.89	104 533.80
C19.6		.2 Behind retaining walls	m³	2100	248.89	522 669.00
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(a) Plane horizontal				
C19.7		.1 Still chamber floor slab	m²	8	636.15	5 089.20
	8.2.1	(b) Plane vertical				
C19.8		.1 Sides of foundations	m²	34	364.71	12 400.14
	8.2.1	(e) Plane circular				
C19.9		.1 Sides of floor slabs	m²	239	364.71	87 165.69
	8.2.5	Rough formwork to narrow widths				
C19.10		(a) Edges, risers, etc not exceeding 300mm wide	m	420	109.41	45 952.20
					Carried Forward	1 079 223.57

					Brought Forward	1 079 223.57
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal, circular				
C19.11		.1 Channel floor slabs	m²	378	636.15	240 464.70
C19.12		.2 Walkway slabs	m²	491	636.15	312 349.65
C19.13		.3 Sloping soffit of centre column head	m²	17	1 133.17	19 263.89
	8.2.2	(b) Plane vertical				
C19.14		.1 Still chamber walls	m²	46	364.71	16 776.66
	8.2.2	(d) Plane battered				
C19.15		.1 Circular sides of floor channel around centre column	m²	80	770.95	61 676.00
	8.2.2	(e) Plane circular				
C19.16		.1 Tank walls circular on plan to approximately 15m radius	m²	3360	364.71	1 225 425.60
C19.17		.2 Scum channel walls circular on plan to approximately 13m radius	m²	512	364.71	186 731.52
C19.18		.3 Centre column sides circular on plan to approximately 1m radius	m²	76	364.71	27 717.96
	8.2.5	Smooth formwork to narrow widths				
C19.19		(a) Edges, risers, etc not exceeding 300mm wide	m	420	109.41	45 952.20
C19.20		(b) Circular edges, risers, etc not exceeding 300mm wide	m	407	109.41	44 529.87
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C19.21		(a) Chamfer circular on plan size 75 x 75mm	m	365	230.56	84 154.40
C19.22		(b) Groove size 70mm wide x 50mm deep	m	50	176.81	8 840.50
C19.23		(c) Rebate size 100mm x 100mm	m	50	241.12	12 056.00
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C19.24		.1 Over 0m and up to 0,5m	no	8	438.49	3 507.92
C19.25		.2 Over 0,5m and up to 1,0m	no	4	518.55	2 074.20
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
					Carried Forward	3 370 744.64

[redacted]

					Brought Forward	3 370 744.64
C19.26		.1 Over 0m and up to 0,5m	no	4	651.99	2 607.96
	8.2.6	(c) Large, circular, over 0,5m and up to 1,1m diameter with depth				
C19.27		.1 Over 0m and up to 0,5m	no	4	758.74	3 034.96
	8.2.6	(d) Large, other shapes, over 0,1m² up to 0,5m² in area with depth				
C19.28		.2 Over 0m and up to 0,5m	no	4	758.74	3 034.96
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C19.29		.1 Smooth formwork	m²	20	684.95	13 699.00
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C19.30		.1 Grouting around pipes and fittings	m³	2	21 078.60	42 157.20
	SANS 1200 G	**HDPE LININGS TO STRUCTURES**				
		HDPE LININGS				
		The following HDPE linings is supplied by AKS Lining Systems (Pty) Ltd or other approved similar product.				
		2.5mm Thick HDPE (colour as specified) lining system fixed to formwork face with approved method to enable the lining clips at the back of the sheeting to be cast into the concrete surface. The exposed lining surface is to be cleaned and welded at all joints with an approved method to ensure a watertight surface, as per manufacturers specification, complete with all cutting and waste, cutting around pipes, etc and sealing around pipes, covers, etc with approved sealant (only net exposed surfaces will be paid for)				
	8.13	(a) Plane horizontal				
C19.31		.1 Slabs raking	m²	100	462.30	46 230.00
	8.13	(b) Plane vertical				
C19.32		.1 Walls	m²	200	462.30	92 460.00
C19.33		.2 Walls circular on plan	m²	800	462.30	369 840.00
					Carried Forward	3 943 808.72

[redacted]

					Brought Forward	3 943 808.72
	8.13	(c) Narrow widths not exceeding 300mm wide				
C19.34		.1 Narrow widths	m	100	284.53	28 453.00
C19.35		.2 Narrow widths circular on plan	m	1200	284.53	341 436.00
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C19.36		.1 All sizes	ton	3	18 976.98	56 930.94
	8.3.1	(b) High tensile steel				
C19.37		.1 All sizes	ton	252	18 976.98	4 782 198.96
	SANS 1200 G	**CONCRETE**				
		PRESCRIBED MIX CONCRETE				
	8.4.1	(b) 10 Mpa No-fines concrete				
C19.38		.1 Below floor slabs	m³	231	2 036.91	470 526.21
		SCREED				
	8.1.0	(c) 1:3 Cement riversand screed mix				
C19.39		.1 10mm Thick on no-fines concrete surface including steel float surface finish	m²	1000	17.47	17 470.00
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C19.40		(a) Blinding layer 50mm thick	m³	34	1 857.71	63 162.14
	8.4.3	(a) Strength concrete 20Mpa/19mm				
C19.41		.1 Encasement of pipes below tank	m³	164	1 802.35	295 585.40
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C19.42		.1 Centre column foundation	m³	130	2 199.02	285 872.60
C19.43		.2 Wall footings	m³	235	2 199.02	516 769.70
C19.44		.3 Floor slabs	m³	479	2 199.02	1 053 330.58
					Carried Forward	11 855 544.25

[redacted]

					Brought Forward	11 855 544.25
C19.45		.4 Tank walls	m³	504	2 199.02	1 108 306.08
C19.46		.5 Scum channel walls	m³	46	2 199.02	101 154.92
C19.47		.6 Scum channel slab	m³	76	2 199.02	167 125.52
C19.48		.7 Walkway slab	m³	101	2 199.02	222 101.02
C19.49		.8 Centre column	m³	21	2 199.02	46 179.42
C19.50		.9 Centre column head	m³	14	2 199.02	30 786.28
C19.51		.10 Still chamber walls	m³	4	2 199.02	8 796.08
C19.52		.11 Still chamber floor slab	m³	4	2 199.02	8 796.08
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C19.53		.1 Benching to scum channel floor including steel float finish	m³	38	2 011.44	76 434.72
C19.54		.2 Ditti To still chamber floor	m³	4	2 011.44	8 045.76
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(b) Steel floated finish				
C19.55		.1 Floor slabs	m²	491	19.44	9 545.04
C19.56		.2 Top of walls, beams, etc	m²	126	19.44	2 449.44
	8.4.4	(c) Power floated finish				
C19.57		.1 Floor slabs	m²	420	38.87	16 325.40
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C19.58		.4 Narrow widths not exceeding 300mm wide	m	100	35.48	3 548.00
		JOINT SEALER				
	8.5	(b) Polyurethane joint sealer				
C19.59		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	100	153.31	15 331.00
					Carried Forward	13 680 469.01

[redacted]

					Brought Forward	13 680 469.01
C19.60	8.5	(c) Saw cut joints .1 4 x 40mm Deep saw cut joint in floor slabs	m	20	136.11	2 722.20
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C19.61	8.12	Testing entire structure for water tightness	no	4	46956.43	187 825.72
		BILL NO. C19 **PRIMARY SETTLING TANKS - WDA - WDB - WDC - WDD**				
		Carried forward to Summary of Bills			**Total for four settling tanks above**	13 871 016.93

[redacted]

Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Primary sludge pump station with strain press

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C20 **PRIMARY SLUDGE PUMP STATION WITH STRAIN PRESS - WPB - WFB**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C20.1		.1 Reduced levels for lower floors	m³	315	365.86	115 245.90
C20.2		.2 Column bases	m³	22	365.86	8 048.92
C20.3		.4 Wall footings	m³	53	365.86	19 390.58
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C20.4		.2 Hard rock excavation	m³	11	803.79	8 841.69
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		COMMERCIAL SOURCES				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C20.5		.1 Alongside walls in foundations	m³	110	248.89	27 377.90
C20.6		.2 Behind retaining walls	m³	525	248.89	130 667.25
C20.7		.3 Under floors	m³	50	248.89	12 444.50
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C20.8		.1 Edges of floor slabs exceeding 300mm high	m²	101	364.71	36 835.71
C20.9		.2 Column base footings	m²	23	364.71	8 388.33
C20.10		.4 Walls	m²	257	364.71	93 730.47
	8.2.5	Rough formwork to narrow widths				
C20.11		(a) Edges, risers, etc not exceeding 300mm wide	m	53	109.41	5 798.73
	SANS	**SMOOTH FORMWORK**				
					Carried Forward	466 769.98

					Brought Forward	466 769.98
	1200 G	**SMOOTH FORMWORK**				
	8.2.2	(a) Plane horizontal				
C20.12		.1 Slabs	m²	220	679.87	149 571.40
C20.13		.2 Landings	m²	3	636.15	1 908.45
C20.14		.3 Walkway slabs	m²	7	636.15	4 453.05
C20.15		.4 Beams	m²	33	818.65	27 015.45
C20.16		.5 Ring beams	m²	21	818.65	17 191.65
	8.2.2	(b) Plane vertical				
C20.17		.1 Machine bases	m²	20	364.71	7 294.20
C20.18		.2 Upstands	m²	100	364.71	36 471.00
C20.19		.3 Walls	m²	457	364.71	166 672.47
C20.20		.4 Machine bases	m²	11	364.71	4 011.81
C20.21		.5 Edges of slabs	m²	4	364.71	1 458.84
C20.22		.7 Columns	m²	35	364.71	12 764.85
C20.23		.8 Beams	m²	115	418.08	48 079.20
C20.24		.9 Ring beams	m²	58	418.08	24 248.64
	8.2.2	(c) Plane sloping				
C20.25		.3 Stairs	m²	20	1 091.59	21 831.80
	8.2.5	Smooth formwork to narrow widths				
C20.26		(a) Edges, risers, etc not exceeding 300mm wide	m	290	109.41	31 728.90
C20.27		(c) Raking side of stairs maximum 400mm wide	m	23	273.98	6 301.54
C20.28		(d) Set of V-reedings 100mm wide in top of concrete steps	m	20	104.52	2 090.40
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C20.29		(a) Groove size 70mm wide x 50mm deep	m	5	176.81	884.05
C20.30		(b) Rebate size 200mm x 100mm deep in walls	m	2	375.50	751.00
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C20.31		.1 Over 0m and up to 0,5m	no	22	438.49	9 646.78
					Carried Forward	1 041 145.46

[redacted]

					Brought Forward	1 041 145.46
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C20.32		.1 Over 0m and up to 0,5m	no	6	518.55	3 111.30
	8.2.6	(c) Large, circular, over 0,35m and up to 0,7m diameter with depth				
C20.33		.1 Over 0m and up to 0,5m	no	2	651.99	1 303.98
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C20.34		.1 Smooth formwork	m²	21	651.99	13 691.79
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C20.35		.1 Grouting around pipes and fittings	m³	2	21 078.60	42 157.20
	SANS 1200 G	**HDPE LININGS TO STRUCTURES**				
		HDPE LININGS				
		The following HDPE linings is supplied by AKS Lining Systems (Pty) Ltd or other approved similar product.				
		2.5mm Thick HDPE (colour as specified) lining system fixed to formwork face with approved method to enable the lining clips at the back of the sheeting to be cast into the concrete surface. The exposed lining surface is to be cleaned and welded at all joints with an approved method to ensure a watertight surface, as per manufacturers specification, complete with all cutting and waste, cutting around pipes, etc and sealing around pipes, covers, etc with approved sealant (only net exposed surfaces will be paid for)				
	8.13	(a) Plane horizontal				
C20.36		.1 Slabs	m²	80	462.30	36 984.00
	8.13	(b) Plane vertical				
C20.37		.1 Walls	m²	350	462.30	161 805.00
	8.13	(c) Narrow widths not exceeding 300mm wide				
C20.38		.1 Narrow widths	m	50	284.53	14 226.50
					Carried Forward	1 314 425.23

					Brought Forward	1 314 425.23
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C20.39		.1 All sizes	ton	4	18 976.98	75 907.92
	8.3.1	(b) High tensile steel				
C20.40		.1 All sizes	ton	62	18 976.98	1 176 572.76
		MESH REINFORCEMENT				
	8.3.2	High tensile welded mesh				
C20.41		(b) Ref no.193	m²	84	58.60	4 922.40
C20.42		(c) Ref no.395	m²	20	107.37	2 147.40
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C20.43		(a) Blinding layer 50mm thick	m³	20	1 857.71	37 154.20
	8.4.3	(c) Strength concrete 35Mpa/19mm				
C20.44		.1 Column bases	m³	14	1 978.65	27 701.10
C20.45		.2 Slabs	m³	46	1 978.65	91 017.90
C20.46		.3 Floor slabs	m³	26	1 978.65	51 444.90
C20.47		.6 Beams	m³	22	1 978.65	43 530.30
C20.48		.8 Columns	m³	3	1 978.65	5 935.95
C20.49		.9 Stairs and landings	m³	8	1 978.65	15 829.20
C20.50		.10 Ramps	m³	2	1 978.65	3 957.30
C20.51		.11 Apron slabs	m³	12	1 978.65	23 743.80
C20.52		.12 Upstands	m³	14	1 978.65	27 701.10
C20.53		.13 Machine bases	m³	6	1 978.65	11 871.90
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
					Carried Forward	2 913 863.36

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					Brought Forward	2 913 863.36
C20.54		.1 Floor slabs	m³	75	2 199.02	164 926.50
C20.55		.2 Roof slabs	m³	77	2 199.02	169 324.54
C20.56		.3 Beams	m³	12	2 199.02	26 388.24
C20.57		.4 Walkway slabs	m³	2	2 199.02	4 398.04
C20.58		.5 Walls	m³	116	2 199.02	255 086.32
C20.59		.7 Machine bases	m³	3	2 199.02	6 597.06
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C20.60		.1 Benching to floors to falls including steel floated surface finish	m³	63	2 055.78	129 514.14
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(b) Steel floated finish				
C20.61		.1 Slabs, floor slabs and ramps	m²	646	19.44	12 558.24
C20.62		.2 Top of walls, beams, etc	m²	24	19.44	466.56
	8.4.4	(c) Power floated finish				
C20.63		.1 Floor slabs	m²	105	38.87	4 081.35
	SANS 1200 G	**ACID RESISTING FINISHES**				
		CONCRETE PROTECTION AND FLOOR COATINGS				
	8.4.1	a) Sikafloor 263 SL ZA - or other approved self smoothing epoxy finish applied to manufactuerers specifications including all preparation, etc				
C20.64		i) 3 mm Thick to concrete floors	m²	120	677.25	81 270.00
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C20.65		.4 Narrow widths not exceeding 300mm wide	m	105	35.48	3 725.40
		JOINT SEALER				
					Carried Forward	3 772 199.75

[redacted]

					Brought Forward	3 772 199.75
	8.5	(b) Polyurethane joint sealer				
C20.66		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	105	153.31	16 097.55
	8.5	(c) Saw cut joints				
C20.67		.1 4 x 40mm Deep saw cut joint in floor slabs	m	20	136.11	2 722.20
	SANS 1200 G	**SUNDRIES**				
		HD BOLTS , ETC				
	8.8	HD bolts and miscellaneous metal work				
C20.68		(a) HD bolts as per drawings	no	25	236.50	5 912.50
		SUMPS				
		Sumps Dwg 3089.00.00.WLH.14.U001				
C20.69		500 x 500 x 500mm Deep floor sump complete	no	1	7 457.28	7 457.28
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C20.70	8.12	Testing entire structure for water tightness	no	1	12616.29	12 616.29
		BILL NO. C20 **PRIMARY SLUDGE PUMP STATION WITH STRAIN PRESS - WPB - WFB**				
		Carried forward to Summary of Bills			**Total**	3 817 005.57

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C21 **FINE SCREENS - WFA**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C21.1		.4 Wall footings	m³	53	365.86	19 390.58
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C21.2		.2 Hard rock excavation	m³	11	803.79	8 841.69
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C21.3		.1 Alongside walls in foundations	m³	105	248.89	26 133.45
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C21.4		.1 Sides of floor slabs	m²	37	364.71	13 494.27
C21.5		.3 Walls	m²	74	364.71	26 988.54
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C21.6		.1 Slabs	m²	228	711.90	162 313.20
C21.7		.2 Walkway slabs	m²	23	733.25	16 864.75
C21.8		.3 Channels	m²	28	733.25	20 531.00
	8.2.2	(b) Plane vertical				
					Carried Forward	294 557.48

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					Brought Forward	294 557.48
C21.9		.3 Walls	m²	1449	364.71	528 464.79
C21.10		.4 Pipe supports	m²	28	364.71	10 211.88
C21.11		.5 Channel walls	m²	42	364.71	15 317.82
	8.2.2	(c) Plane sloping				
C21.12		.3 Stairs	m²	5	1 138.89	5 694.45
	8.2.5	Smooth formwork to narrow widths				
C21.13		(a) Edges, risers, etc not exceeding 300mm wide	m	53	109.41	5 798.73
C21.14		(b) Raking side of stairs maximum 400mm wide	m	5	308.38	1 541.90
C21.15		(c) Set of V-reedings 100mm wide in top of concrete steps	m	20	91.18	1 823.60
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
C21.16		(a) Chamfer size 50x50mm	m	5	150.20	751.00
C21.17		(b) Groove size 70mm wide x 50mm deep	m	10	160.80	1 608.00
C21.18		(c) Rebate size 100mm x 100mm	m	5	241.12	1 205.60
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C21.19		.1 over 0m and up to 0,5m	no	19	438.49	8 331.31
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C21.20		.1 over 0m and up to 0,5m	no	19	518.55	9 852.45
	8.2.6	(c) Large, circular, over 0,5m² and up to 0,9m² diameter with depth				
C21.21		.1 over 0m and up to 0,5m	no	14	651.99	9 127.86
	8.2.6	(d) Large, circular, over 1,2m² up to 1,5m² in area with depth				
C21.22		.2 over 0,5m and up to 1,0m	no	3	758.74	2 276.22
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C21.23		.1 Smooth formwork	m²	105	737.99	77 488.95
					Carried Forward	974 052.04

[redacted]

					Brought Forward	974 052.04
		GROUTING				
	8.7	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C21.24		.1 Grouting around pipes and fittings	m³	5	21 078.60	105 393.00
	SANS 1200 G	**HDPE LININGS TO STRUCTURES**				
		HDPE LININGS				
		The following HDPE linings is supplied by AKS Lining Systems (Pty) Ltd or other approved similar product.				
		2.5mm Thick HDPE (colour as specified) lining system fixed to formwork face with approved method to enable the lining clips at the back of the sheeting to be cast into the concrete surface. The exposed lining surface is to be cleaned and welded at all joints with an approved method to ensure a watertight surface, as per manufacturers specification, complete with all cutting and waste, cutting around pipes, etc and sealing around pipes, covers, etc with approved sealant (only net exposed surfaces will be paid for)				
	8.13	(a) Plane horizontal				
C21.25		.1 Slabs	m²	160	462.30	73 968.00
	8.13	(b) Plane vertical				
C21.26		.1 Walls	m²	350	462.30	161 805.00
	8.13	(c) Narrow widths not exceeding 300mm wide				
C21.27		.1 Narrow widths	m	50	284.53	14 226.50
	SANS 1200 G	**REINFORCEMENT**				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C21.28		.1 All sizes	ton	2	18 976.98	37 953.96
	8.3.1	(b) High tensile steel				
C21.29		.1 All sizes	ton	61	18 976.98	1 157 595.78
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C21.30		(a) Blinding layer 50mm thick	m³	20	1 857.71	37 154.20
					Carried Forward	2 562 148.48

[redacted]

					Brought Forward	2 562 148.48
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C21.31		.1 Floor slabs	m³	110	2 199.02	241 892.20
C21.32		.2 Roof slabs	m³	46	2 199.02	101 154.92
C21.33		.3 Walkway slabs	m³	5	2 199.02	10 995.10
C21.34		.4 Walls	m³	231	2 199.02	507 973.62
C21.35		.5 Stairs and landings	m³	6	2 199.02	13 194.12
C21.36		.6 Pipe supports	m³	6	2 199.02	13 194.12
C21.37		.7 Channels	m³	8	2 199.02	17 592.16
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C21.38		.1 Benching to floors to falls including steel floated surface finish	m³	55	2 011.44	110 629.20
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C21.39		.1 Floor slabs	m²	200	13.92	2 784.00
C21.40		.2 Top of walls, beams, etc	m²	53	13.92	737.76
	8.4.4	(b) Steel floated finish				
C21.41		.1 Floor slabs	m²	65	19.44	1 263.60
C21.42		.2 Top of walls, beams, etc	m²	53	19.44	1 030.32
	8.4.4	(c) Power floated finish				
C21.43		.1 Floor slabs	m²	95	38.87	3 692.65
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
					Carried Forward	3 588 282.25

[redacted]

					Brought Forward	3 588 282.25
C21.44		.4 Narrow widths not exceeding 300mm wide	m	10	118.25	1 182.50
	8.5	(b) Polyurethane joint sealer				
C21.45		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	10	153.31	1 533.10
	8.5	(c) Saw cut joints				
C21.46		.1 4 x 40mm Deep saw cut joint in floor slabs	m	5	136.11	680.55
	SANS 1200 G	**PRECAST CONCRETE**				
		PRECAST CONCRETE				
		Precast concrete units supplied and fixed complete including all reinforcing, etc				
	8.6	(a) Strength concrete 35Mpa/19mm				
C21.47		(b) Cover slab size 700 x 400 x 200mm thick with tapered sides and stainless steel lifting hooks	no	4	1 276.88	5 107.52
C21.48		(c) Forming tapered hole in 200mm thick concrete slab for the cover above	no	4	75.15	300.60
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C21.49	8.12	Testing entire structure for water tightness	no	1	12616.29	12 616.29
		BILL NO. C21 **FINE SCREENS - WFA**				
		Carried forward to Summary of Bills			**Total**	3 609 702.81

[redacted]

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C22 **BIO REACTOR - WIA**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C22.1		.1 Wall footings	m³	1103	365.86	403 543.58
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C22.2		.2 Hard rock excavation	m³	53	803.79	42 600.87
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C22.3		.1 Alongside walls in foundations	m³	105	248.89	26 133.45
C22.4		.2 Behind retaining walls	m³	50	248.89	12 444.50
C22.5		.3 Under floors	m³	50	248.89	12 444.50
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C22.6		.1 Sides of floor slabs	m²	347	364.71	126 554.37
	8.2.5	Rough formwork to narrow widths				
C22.7		(a) Edges, risers, etc not exceeding 300mm wide	m	105	109.41	11 488.05
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C22.8		.1 Slabs	m²	116	661.37	76 718.92
					Carried Forward	711 928.24

					Brought Forward	711 928.24
C22.9		.2 Walkway slabs	m²	767	608.00	466 336.00
C22.10		.3 Scum channel floors	m²	1628	542.07	882 489.96
C22.11		.4 Scum channel cover slabs	m²	1050	609.90	640 395.00
C22.12		.5 Beams	m²	21	733.25	15 398.25
C22.13		.6 Landings	m²	32	733.25	23 464.00
	8.2.2	(b) Plane vertical				
C22.14		.1 Sides of slabs	m²	284	364.71	103 577.64
C22.15		.3 Walls	m²	11477	279.31	3 205 640.87
C22.16		.4 Scum channel walls	m²	4410	311.34	1 373 009.40
C22.17		.6 Square or rectangular columns	m²	3465	364.71	1 263 720.15
C22.18		.8 Beams	m²	90	418.08	37 627.20
	8.2.2	(c) Plane sloping				
C22.19		.1 Soffit of walls	m²	32	818.65	26 196.80
C22.20		.3 Stairs	m²	42	1 138.89	47 833.38
	8.2.2	(d) Plane battered				
C22.21		.1 Walls	m²	7634	279.31	2 132 252.54
	8.2.5	Smooth formwork to narrow widths				
C22.22		(a) Edges, risers, etc not exceeding 300mm wide	m	5387	109.41	589 391.67
C22.23		(c) Raking side of stairs maximum 400mm wide	m	32	308.38	9 868.16
C22.24		(d) Set of V-reedings 100mm wide in top of concrete steps	m	95	171.24	16 267.80
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
C22.25		(a) Chamfer size 150x150mm	m	84	321.75	27 027.00
C22.26		(b) Groove size 250mm wide x 80mm deep x 200 mm long	no	16	428.12	6 849.92
C22.27		(c) Rebate size 120mm x 80mm deep in walls and floors	m	40	214.44	8 577.60
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0.35m diameter with depth				
C22.28		.1 over 0m and up to 0,5m	no	20	438.49	8 769.80
	8.2.6	(b) Small, other shapes, up to 0.1m² in area with depth				
C22.29		.1 over 0m and up to 0,5m	no	30	518.55	15 556.50
					Carried Forward	11 612 177.88

					Brought Forward	11 612 177.88
	8.2.6	(c) Large, square, over 0,35m and up to 0,7m diameter with depth				
C22.30		.1 over 0m and up to 0,5m	no	20	651.99	13 039.80
	8.2.6	(d) Large, circular, over 0,3m² up to 0,7m² in area with depth				
C22.31		.2 over 0,5m and up to 1,0m	no	40	918.86	36 754.40
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C22.32		.1 Smooth formwork	m²	100	737.99	73 799.00
		GROUTING				
	8.7	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C22.33		.1 Grouting around pipes and fittings	m³	5	21 078.60	105 393.00
	SANS 1200 G	**REINFORCEMENT**				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C22.34		.1 All sizes	ton	63	18 976.98	1 195 549.74
	8.3.1	(b) High tensile steel				
C22.35		.1 All sizes	ton	1365	18 976.98	25 903 577.70
	SANS 1200 G	**SLIP SHEETS, ETC**				
		SLIP SHEETING BELOW CONCRETE FLOORS				
	8.4.2	1:3 Cement riversand screed mix				
C22.36		.1 20mm Thick applied on concrete blinding layer including steel float surface finish	m²	8500	41.08	349 180.00
C22.37		.2 375 Micron Hyperlastic orange under floors	m²	8500	34.72	295 120.00
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
					Carried Forward	39 584 591.52

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					Brought Forward	39 584 591.52
C22.38		(a) Blinding layer 50mm thick	m³	425	1 857.71	789 526.75
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C22.39		.1 Floor slabs	m³	1642	2 199.02	3 610 790.84
C22.40		.2 Wall footings	m³	2153	2 199.02	4 734 490.06
C22.41		.3 Columns	m³	263	2 199.02	578 342.26
C22.42		.4 Walls	m³	3744	2 199.02	8 233 130.88
C22.43		.5 Roof slabs	m³	34	2 199.02	74 766.68
C22.44		.6 Walkway slabs	m³	600	2 199.02	1 319 412.00
C22.45		.7 Upstands	m³	42	2 199.02	92 358.84
C22.46		.8 Scum channel floors slabs	m³	410	2 199.02	901 598.20
C22.47		.9 Scum channel walls	m³	567	2 199.02	1 246 844.34
C22.48		.10 Scum channel cover slabs	m³	50	2 199.02	109 951.00
C22.49		.11 Stairs and landings	m³	21	2 199.02	46 179.42
C22.50		.12 Beams	m³	15	2 199.02	32 985.30
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C22.51		.1 Benching to floors to falls including steel floated surface finish	m³	100	2 055.78	205 578.00
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C22.52		.1 Floor slabs	m²	525	13.92	7 308.00
C22.53		.2 Top of walls, beams, etc	m²	105	13.92	1 461.60
	8.4.4	(b) Steel floated finish				
C22.54		.1 Floor slabs	m²	12264	19.44	238 412.16
C22.55		.2 Top of walls, beams, etc	m²	977	19.44	18 992.88
						61 826 720.73

[redacted]

						61 826 720.73
	8.4.4	(c) Power floated finish				
C22.56		.1 Floor slabs	m²	525	38.87	20 406.75
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C22.57		.4 Narrow widths not exceeding 300mm wide	m	200	118.25	23 650.00
	8.5	(b) Polyurethane joint sealer				
C22.58		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	200	153.31	30 662.00
	8.5	(c) Saw cut joints				
C22.59		.1 4 x 40mm Deep saw cut joint in floor slabs	m	200	136.11	27 222.00
		COVER STRIPS				
	8.5	(d) Hypalon or other approved type cover strip fixed in accordance with manufacturers instructions complete				
C22.60		.1 250mm Wide cover strip 2mm thick fixed over expansion joint (expansion joint measured elsewhere to concrete floor slabs and walks	m	200	3 415.98	683 196.00
		CONSTRUCTION JOINTS				
		Floor slabs, walls, duct slabs and walls are to be cast in panels with certain sections cast 28 days later. The following items are for stop ends to form open strips where concrete is cast later **Ref dwg.3089.30.40.WIA.14.U001**				
		.1 Formwork to edges of slabs, walls, etc cut to fit around reinforcing and other services, later removed and ege of concrete scabbled and cleaned and approved bonding agent applied before new adjoining concrete cast, complete				
		FLOORS				
C22.61		.1 300 mm thick	m	1 640	96.07	157 554.80
C22.62		.2 400 mm thick	m	27	128.10	3 458.70
C22.63		.3 600 mm thick	m	350	192.15	67 252.50
		WALLS				
C22.64		.4 600 x 300 mm taper	m	690	192.15	132 583.50
					Carried Forward	62 972 706.98

[redacted]

					Brought Forward	62 972 706.98
C22.65		.5 550 x 250 mm taper	m	70	176.13	12 329.10
C22.66		.6 400 mm thick	m	90	128.10	11 529.00
C22.67		.7 300 mm thick	m	260	96.07	24 978.20
		WALKWAY SLABS WITH SLEEVE PIPES				
C22.68		.8 300 mm thick	m	230	96.07	22 096.10
		DUCT FLOORS				
C22.69		.9 250 mm thick	m	90	80.06	7 205.40
		DUCT WALLS				
C22.70		.10 250 mm thick	m	70	80.06	5 604.20
	SANS 1200 LC	**SLEEVES**				
		SLEEVE PIPES				
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 6 ducts including providing draw wires and bends, etc complete				
C22.71		.1 110mm Diameter cast into walkway slabs	m	4935	134.05	661 536.75
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C22.72	8.12	Testing entire structure for water tightness	no	1	77564	77 564.00
		BILL NO. C22 **BIO REACTOR - WIA**				
		Carried forward to Summary of Bills			**Total**	63 795 549.73

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C3 - Civil works				
		BILL NO. C23 **MEMBRANE PLANT - WHA**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C23.1		.1 Wall footings	m^3	100	365.86	36 586.00
C23.2		.2 Floor channels	m^3	190	365.86	69 513.40
C23.3		.3 Sumps	m^3	50	365.86	18 293.00
C23.4		.4 Column bases	m^3	150	365.86	54 879.00
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C23.5		.2 Hard rock excavation	m^3	5	803.79	4 018.95
		WORKING SPACE				
		Extra excavation and backfilling beyond the measured face in all materials to provide working space around structures				
C23.6	8.3.5	(a) Excavate for working space (previously excavated face on perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 1,8m deep, including backfilling and compaction to 93% mod AASHTO density	m^2	210	292.69	61 464.90
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C23.7		.1 Alongside walls in foundations	m^3	100	248.89	24 889.00
C23.8		.2 Behind retaining walls	m^3	500	248.89	124 445.00
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
					Carried Forward	394 089.25

[redacted]

					Brought Forward	394 089.25
	8.2.1	(b) Plane vertical				
C23.9		.1 Sides of floor slabs	m²	270	364.71	98 471.70
C23.10		.2 Sides of floor duct walls	m²	210	364.71	76 589.10
C23.11		.3 Sides of column bases	m²	110	364.71	40 118.10
	8.2.5	Rough formwork to narrow widths				
C23.12		(a) Edges, risers, etc not exceeding 300mm wide	m	105	109.41	11 488.05
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C23.13		.1 Slabs	m²	4690	733.25	3 438 942.50
C23.14		.2 Duct slabs in confined spaces	m²	1540	818.65	1 260 721.00
C23.15		.5 Beams	m²	650	733.25	476 612.50
C23.16		.6 Landings	m²	40	733.25	29 330.00
	8.2.2	(b) Plane vertical				
C23.17		.1 Sides of slabs	m²	105	364.71	38 294.55
C23.18		.3 Walls	m²	9240	279.31	2 580 824.40
C23.19		.4 Duct walls	m²	450	364.71	164 119.50
C23.20		.5 Floor channel walls	m²	449	364.71	163 754.79
C23.21		.6 Square or rectangular columns	m²	2680	364.71	977 422.80
C23.22		.7 Duct slabs	m²	20	364.71	7 294.20
C23.23		.8 Beams	m²	2520	364.71	919 069.20
C23.24		.9 Upstand beams	m²	651	364.71	237 426.21
C23.25		.10 Machine bases	m²	230	364.71	83 883.30
C23.26		.11 Steps	m²	8	364.71	2 917.68
C23.27		.12 Crane beam supports	m²	100	364.71	36 471.00
C23.28		.13 Gable walls	m²	380	364.71	138 589.80
	8.2.2	(c) Plane sloping				
C23.29		.3 Stairs	m²	70	1 138.89	79 722.30
C23.30		.4 Crane beam supports	m²	60	1 138.89	68 333.40
	8.2.5	Smooth formwork to narrow widths				
					Carried Forward	11 324 485.33

[redacted]

					Brought Forward	11 324 485.33
C23.31		(a) Edges, risers, etc not exceeding 300mm wide	m	410	109.41	44 858.10
C23.32		(c) Raking side of stairs maximum 400mm wide	m	50	308.38	15 419.00
C23.33		(d) Set of V-reedings 100mm wide in top of concrete steps	m	240	104.52	25 084.80
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
C23.34		(a) Chamfer size 150x150mm	m	210	321.75	67 567.50
C23.35		(b) Groove size 70mm wide x 50mm deep	m	105	96.75	10 158.75
C23.36		(c) Rebate size 100mm x 100mm	m	105	214.44	22 516.20
C23.37		(e) Floor channel in slab size 200 x 200mm deep	m	10	375.50	3 755.00
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C23.38		.1 over 0m and up to 0,5m	no	44	471.46	20 744.24
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C23.39		.1 over 0m and up to 0,5m	no	10	551.52	5 515.20
	8.2.6	(c) Large, circular, over 0,5m² and up to 1,1m² diameter with depth				
C23.40		.1 over 0m and up to 0,5m	no	24	684.95	16 438.80
C23.41		.2 over 0,5m and up to 1,0m	no	2	791.70	1 583.40
	8.2.6	(d) Large, circular, over 2,0m² up to 2,9m² in area with depth				
C23.42		.2 over 0,5m and up to 1,0m	no	2	951.82	1 903.64
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C23.43		.1 Smooth formwork	m²	100	684.95	68 495.00
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C23.44		.1 Grouting around pipes and fittings	m³	5	21 078.60	105 393.00
	SANS	**REINFORCEMENT**				
					Carried Forward	11 733 917.96

[redacted]

					Brought Forward	11 733 917.96
	1200 G	**REINFORCEMENT**				
		Steel bars				
	8.3.1	(a) Mild steel				
C23.45		.1 All sizes (except 40 mm dia)	ton	32	18 976.98	607 263.36
	8.3.1	(b) High tensile steel				
C23.46		.1 All sizes (except 40 mm dia)	ton	808	18 976.98	15 333 399.84
C23.47		.2 40 mm dia	ton	32	18 976.98	607 263.36
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C23.48		(a) Blinding layer 50mm thick	m³	220	1 857.71	408 696.20
	8.4.3	Strength concrete 20Mpa/19mm				
C23.49		.1 Steps	m³	3	1 802.35	5 407.05
C23.50		.2 Mass concrete fill in structural voids	m³	130	1 802.35	234 305.50
C23.51		.3 Apron slabs	m³	20	1 802.35	36 047.00
C23.52		.4 Raised floors	m³	120	1 802.35	216 282.00
C23.53		.7 Ramps	m³	5	1 802.35	9 011.75
	8.4.4	Strength concrete 35Mpa/19mm				
C23.54		.1 Wall footings	m³	20	1 978.65	39 573.00
C23.55		.2 Column bases	m³	330	1 978.65	652 954.50
C23.56		.3 Floor slabs	m³	130	1 978.65	257 224.50
C23.57		.4 Slabs	m³	1290	1 978.65	2 552 458.50
C23.58		.5 Duct floors, walls and slabs	m³	77	1 978.65	152 356.05
C23.59		.6 Crane beam supports	m³	32	1 978.65	63 316.80
C23.60		.7 Beams	m³	390	1 978.65	771 673.50
C23.61		.8 Walls	m³	61	1 978.65	120 697.65
C23.62		.9 Gable walls	m³	60	1 978.65	118 719.00
C23.63		.10 Machine bases	m³	150	1 978.65	296 797.50
C23.64		.11 Upstands	m³	154	1 978.65	304 712.10
C23.65		.12 Stairs and landings	m³	30	1 978.65	59 359.50
					Carried Forward	34 581 436.62

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					Brought Forward	34 581 436.62
C23.66		.13 Columns	m³	303	1 978.65	599 530.95
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 20Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C23.67		.1 Floor slabs	m³	840	2 055.78	1 726 855.20
C23.68		.3 Duct slabs	m³	189	2 055.78	388 542.42
C23.69		.4 Floor duct slabs	m³	62	2 055.78	127 458.36
C23.70		.5 Walls	m³	1329	2 055.78	2 732 131.62
C23.71		.6 Duct walls	m³	78	2 055.78	160 350.84
C23.72		.7 Floor duct walls	m³	124	2 055.78	254 916.72
C23.73		.8 Upstands	m³	5	2 055.78	10 278.90
C23.74		.9 Columns	m³	117	2 055.78	240 526.26
C23.75		.10 Beams	m³	50	2 055.78	102 789.00
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C23.76		.1 Benching to floors to falls including steel floated surface finish	m³	525	2 055.78	1 079 284.50
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C23.77		.1 Floor slabs	m²	8380	13.92	116 649.60
C23.78		.2 Top of walls, beams, etc	m²	420	13.92	5 846.40
	8.4.4	(b) Steel floated finish				
C23.79		.1 Floor slabs	m²	3150	19.44	61 236.00
C23.80		.2 Top of walls, beams, etc	m²	210	19.44	4 082.40
	8.4.4	(c) Power floated finish				
C23.81		.1 Floor slabs	m²	300	38.87	11 661.00
	SANS	**ACID RESISTING FINISHES**				
					Carried Forward	42 203 576.79

					Brought Forward	42 203 576.79
	1200 G	**CONCRETE PROTECTION AND FLOOR COATINGS**				
		(a) Sikafloor 263 SL ZA or other approved self smoothing epoxy finish applied to manufacturers specification including all preparation, etc				
C23.82		i) 3 mm Thick to concrete floors and walls	m²	8335	677.25	5 644 878.75
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 20mm Thick jointex placed vertically between concrete surfaces				
C23.83		.1 Expansion joint in columns, beams, etc	m²	200	75.25	15 050.00
	8.5	(b) Polyurethane joint sealer				
C23.84		.1 Remove 20 x 20mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	400	161.27	64 508.00
	8.5	(c) Saw cut joints				
C23.85		.1 4 x 40mm Deep saw cut joint in floor slabs	m	200	136.11	27 222.00
		SUMPS				
		Sumps measured in number including all concrete, formwork, reinforcement, etc				
C23.86		.1 Floor sump internal size 500 x 500 x 500 mm high with 300 mm base and sides complete	no	2	10 659.70	21 319.40
C23.87		.2 Floor sump internal size 600 x 600 x 600mm high with 300mm base and sides complete	no	10	11 185.91	111 859.10
	SANS 1200 LC	**SLEEVES**				
		SLEEVE PIPES				
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 6 ducts including providing draw wires and bends, etc complete				
C23.88		.1 110mm Diameter cast into walkway slabs	m	200	71.96	14 392.00
C23.89		.1 160mm Diameter cast into walkway slabs	m	200	202.04	40 408.00
C23.90		.1 200mm Diameter cast into walkway slabs	m	200	396.61	79 322.00
	SANS 1200 L	**MEDIUM PRESSURE PIPELINES**				
	PSL	**MEDIUM PRESSURE PIPELINES**				
					Carried Forward	48 222 536.04

[redacted]

					Brought Forward	48 222 536.04
	8.2.2	GALVANISED STEEL PIPES Medium Class screwed and socketed steel pipe to SANS 62, complete with cut length, all bends, tees, clamps, etc. bolted to MBR's basement walls				
C23.91		.1 32 mm dia	m	160	255.64	40 902.40
C23.92		.2 25 mm dia	m	20	235.75	4 715.00
		BRONZE GLOBE VALVE				
C23.93		.1 32 mm dia	no	2	360.66	721.32
C23.94		.2 25 mm dia	no	8	264.18	2 113.44
		Hose reel installation				
C23.95		Approved fire hose reel from Centurion or similar and approved. Complete with union, isolating valve with hand wheel, 25 mm dia pipe from Dunlop, length 25 m mounted on panel against concrete wall. Ref dwg. 3089.00.00.DET.14.D005	no	8	18 812.50	150 500.00
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C23.96	8.12	Testing entire structure for water tightness	no	1	126162.86	126 162.86
	SANS 1200 H	**STEEL SUSPENDED FLOOR**				
	PSH	Refer dwg. 3089.00.00.WHA.14.D001				
		SHOP DRAWINGS				
	8.3.1.1	Preparation of shop detail drawings and submit for approval				
C23.97		.1 Structural steelwork	ton	70	1 007.81	70 546.70
		SUPPLY AND FABRICATION				
		SINGLE SECTION STEELWORK				
	8.3.1.2	Single section beams, girders and rafters including connections, stiffeners, splice material, etc				
C23.98		.1 PC 200 x 75mm channel columns	ton	8	30 234.38	241 875.04
C23.99		.1 PC 200 x 75mm channel beams	ton	14	30 234.38	423 281.32
		BRACING				
	8.3.1.3	Hot rolled sections				
C23.100		.1 76 x 76 x 6mm Angle section bracing	ton	2	31 578.12	63 156.24
		BRACING				
					Carried Forward	49 346 510.36

[redacted]

					Brought Forward	49 346 510.36
	8.3.1.4	Gridcovering				
C23.101		.1 Rectagrid RS40 (30 x 4,5mm) flooring installed complete with all fixings	m²	700	2 718.41	1 902 887.00
		ALTERNATIVE for item C23.101				
C23.102		Laminated floor panels wit heavy duty overlay, clipped together and suitable joint filler	m²	700	10 873.62	**Rate only**
		FASTENERS				
	8.3.1.5	Fasteners				
C23.103		.1 Class 4.8 bolts with nuts and washers	ton	0.3	127 656.25	38 296.88
C23.104		.2 Class 8.8 bolts with nuts and washers	ton	0.2	127 656.25	25 531.25
		TRANSPORT STEEL TO SITE				
	8.3.2.1	Normal transport				
C23.105		.1 Structural steelwork	ton	70	806.25	56 437.50
		ERECTION				
		Off loading of steelwork on site, storage and erection				
	8.3.3	Structural steelwork				
C23.106		.1 Structural steelwork	ton	70	2 418.75	169 312.50
	8.3.4	Erection bolts				
C23.107		.1 Class 4.8 bolts with nuts and washers	ton	0.1	2 418.75	241.88
C23.108		.2 Class 8.8 bolts with nuts and washers	ton	0.1	2 418.75	241.88
C23.109		.3 16mm Dia chemical anchor 200mm long supplied and installed complete	no	600	68.53	41 118.00
	SANS 1200H	**CORROSION PROTECTION**				
		CORROSION PROTECTION AT WORKSHOP				
	8.3.13	Hot dipped galvanising				
C23.110		.1 Structural steel	ton	70	14 445.31	1 011 171.70
		CORROSION PROTECTION ON SITE AFTER ERECTION				
	8.3.1.4	Repair damaged primer coat and apply one coat universal undercoat to 25um DFT and one coat gloss enamel finish to 30 micron DFT				
C23.111		.1 General surfaces of structural steel	m²	2000	174.69	349 380.00
		BILL NO. C23 **MEMBRANE PLANT - WHA**				
		Carried forward to Summary of Bills			**Total**	52 941 128.94

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C24 **MEMBRANE RE-USE PUMPSTATION AND MCC - WPF**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C24.1		.1 Chambers	m³	164	365.86	60 001.04
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C24.2		.2 Hard rock excavation	m³	5	803.79	4 018.95
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C24.3		.1 Alongside walls in foundations	m³	210	248.89	52 266.90
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C24.4		.1 Sides of floor slabs	m²	121	364.71	44 129.91
C24.5		.2 Walls	m²	375	364.71	136 766.25
C24.6		.3 Sump walls	m²	14	364.71	5 105.94
	8.2.5	Rough formwork to narrow widths				
C24.7		(a) Edges, risers, etc not exceeding 300mm wide	m	11	109.41	1 203.51
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C24.8		.1 Slabs	m²	309	733.25	226 574.25
					Carried Forward	530 066.75

[redacted]

					Brought Forward	530 066.75
C24.9		.2 Walkway slabs	m²	50	636.15	31 807.50
C24.10		.5 Beams	m²	82	872.02	71 505.64
C24.11		.6 Landings	m²	2	636.15	1 272.30
	8.2.2	(b) Plane vertical				
C24.12		.1 Sump walls	m²	14	364.71	5 105.94
C24.13		.3 Walls	m²	1131	364.71	412 487.01
C24.14		.4 Machine bases	m²	55	364.71	20 059.05
C24.15		.5 Pipe supports	m²	88	364.71	32 094.48
C24.16		.6 Square or rectangular columns	m²	259	364.71	94 459.89
C24.17		.8 Beams	m²	297	364.71	108 318.87
	8.2.2	(c) Plane sloping				
C24.18		.3 Stairs	m²	6	1 138.89	6 833.34
	8.2.5	Smooth formwork to narrow widths				
C24.19		(a) Edges, risers, etc not exceeding 300mm wide	m	274	109.41	29 978.34
C24.20		(c) Raking side of stairs maximum 400mm wide	m	11	308.38	3 392.18
C24.21		(d) Set of V-reedings 100mmwide in top of concrete steps	m	15	117.86	1 767.90
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
C24.22		(a) Chamfer size 150x150mm	m	2	321.75	643.50
C24.23		(b) Groove size 70mm wide x 50mm deep	m	2	176.81	353.62
C24.24		(c) Rebate size 100mm x 100mm	m	2	241.12	482.24
C24.25		(d) Drip groove 30mm quarter round	m	61	85.77	5 231.97
C24.26		(e) Horizontal nib to concrete wall 110mm protruding from wall and 150mm high with soffit sloping down from front to back	m	111	526.34	58 423.74
C24.27		(f) Horizontal nib to concrete wall 110mm protruding from beam and 100mm high	m	120	526.34	63 160.80
C24.28		(g) Crane beam support from column size 300mm wide x 400mm protruding x 500mm high overall with soffit sloping down from front to back	no	15	1 166.82	17 502.30
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0.35m diameter with depth				
					Carried Forward	1 494 947.36

[redacted]

					Brought Forward	1 494 947.36
C24.29		.1 over 0m and up to 0,5m	no	2	471.46	942.92
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C24.30		.1 over 0m and up to 0,5m	no	10	551.52	5 515.20
	8.2.6	(c) Large, circular, over 0,35m and up to 0,7m diameter with depth				
C24.31		.1 over 0m and up to 0,5m	no	6	684.95	4 109.70
	8.2.6	(d) Large, circular, over 1,5m² up to 2,1m² in area with depth				
C24.32		.2 over 0,5m and up to 1,0m	no	3	791.70	2 375.10
C24.33		.3 over 1,0m and up to 1,5m	no	1	791.70	791.70
C24.34		.4 over 1,5m and up to 2,0m	no	1	1 037.82	1 037.82
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C24.35		.1 Smooth formwork	m²	20	684.95	13 699.00
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C24.36		.1 Grouting around pipes and fittings	m³	2	21 078.60	42 157.20
	SANS 1200 G	**REINFORCEMENT**				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C24.37		.1 All sizes	ton	16	18 976.98	303 631.68
	8.3.1	(b) High tensile steel				
C24.38		.1 All sizes	ton	163	18 976.98	3 093 247.74
	8.3.2	High tensile welded mesh				
C24.39		(a) Ref no.395	m²	105	107.37	11 273.85
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
					Carried Forward	4 973 729.27

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					Brought Forward	4 973 729.27
	8.4.2	Strength concrete 15Mpa/19mm				
C24.40		(a) Blinding layer 50mm thick	m³	56	1 857.71	104 031.76
	8.4.3	(b) Strength concrete 20Mpa/19mm				
C24.41		.2 Filling to foundations	m³	11	1 802.35	19 825.85
	8.4.3	(c) Strength concrete 35Mpa/19mm				
C24.42		.1 Walls	m³	50	1 978.65	98 932.50
C24.43		.2 Ramps	m³	8	1 978.65	15 829.20
C24.44		.3 Columns	m³	26	1 978.65	51 444.90
C24.45		.4 Slabs	m³	185	1 978.65	366 050.25
C24.46		.6 Machine bases	m³	19	1 978.65	37 594.35
C24.47		.12 Beams	m³	55	1 978.65	108 825.75
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C24.48		.1 Floor slabs	m³	315	2 199.02	692 691.30
C24.49		.2 Walls	m³	235	2 199.02	516 769.70
C24.50		.3 Walkway slabs	m³	21	2 199.02	46 179.42
C24.51		.4 Upstands	m³	5	2 199.02	10 995.10
C24.52		.5 Machine bases	m³	17	2 199.02	37 383.34
C24.53		.6 Pipe supports	m³	39	2 199.02	85 761.78
C24.54		.9 Sump floor	m³	2	2 199.02	4 398.04
C24.55		.10 Sump walls	m³	3	2 199.02	6 597.06
C24.56		.11 Stairs and landings	m³	3	2 199.02	6 597.06
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C24.57		.1 Benching to floors to falls including steel floated surface finish	m³	11	13.92	153.12
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
					Carried Forward	7 183 789.75

[redacted]

					Brought Forward	7 183 789.75
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C24.58		.1 Floor slabs	m²	1678	13.92	23 357.76
C24.59		.2 Top of walls, beams, etc	m²	128	19.44	2 488.32
	8.4.4	(b) Steel floated finish				
C24.60		.1 Floor slabs	m²	82	19.44	1 594.08
C24.61		.2 Top of walls, beams, etc	m²	6	19.44	116.64
	SANS 1200 G	**ACID RESISTING FINISHES**				
		CONCRETE PROTECTION AND FLOOR COATINGS				
		(a) Sikafloor 263 SL ZA or other approved self smoothing epoxy finish applied to manufacturers specification including all preparation, etc				
C24.62		i) 3 mm Thick to concrete floors and walls	m²	600	677.25	406 350.00
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 20mm Thick jointex placed vertically between concrete surfaces				
C24.63		.1 Expansion joint in columns, beams, etc	m²	34	75.25	2 558.50
C24.64		.4 Narrow widths not exceeding 300mm wide	m	53	250.83	13 293.99
	8.5	(b) Polyurethane joint sealer				
C24.65		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	121	153.31	18 550.51
	8.5	(c) Saw cut joints				
C24.66		.1 4 x 40mm Deep saw cut joint in floor slabs	m	100	136.11	13 611.00
	SANS 1200 LC	**SLEEVES**				
		SLEEVE PIPES				
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 6 ducts including providing draw wires and bends, etc complete				
C24.67		.1 110mm Diameter cast into walkway slabs	m	105	127.55	13 392.75
	SANS 1200 G	**TESTING**				
					Carried Forward	7 679 103.30

[redacted]

					Brought Forward	7 679 103.30
		TESTING FOR WATER TIGHTNESS				
C24.68	8.12	Testing entire structure for water tightness	no	1	39715.14	39 715.14
		BILL NO. C24 **MEMBRANE RE-USE PUMPSTATION AND MCC - WPF**				
		Carried forward to Summary of Bills			**Total**	7 718 818.44

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Overflow dams

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C25 **OVERFLOW DAMS - WMA**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C25.1		.1 Ground beams	m³	92	365.86	33 659.12
C25.2		.2 Pump station	m³	158	365.86	57 805.88
C25.3		.3 Inlet chambers	m³	47	365.86	17 195.42
C25.4		.4 Subsoil chambers	m³	11	365.86	4 024.46
C25.5		.5 Sumps	m³	5	365.86	1 829.30
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C25.6		.2 Hard rock excavation	m³	53	803.79	42 600.87
	SANS 1200 D	**WORKING SPACE**				
		WORKING SPACE Extra excavation and backfilling beyond the measured face in all materials to provide working space around structures				
C25.7	8.3.5	(a) Excavate for working space (previously excavated face +- 300mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 2m deep, including backfilling and compaction to 93% mod AASHTO density	m²	21	292.69	6 146.49
C25.8	8.3.5	(b) Excavate for working space (previously excavated face +- 300mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 3m deep, including backfilling and compaction to 93% mod AASHTO density	m²	21	292.69	6 146.49
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING				
					Carried Forward	169 408.03

[redacted]

					Brought Forward	169 408.03
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C25.9		.1 Alongside walls in foundations	m³	105	248.89	26 133.45
C25.10		.2 Behind 45 degree sloping sides of dam walls	m³	525	248.89	130 667.25
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C25.11		.1 Sides of floor slabs	m²	53	364.71	19 329.63
C25.12		.2 Sides of downstand ground beams	m²	788	364.71	287 391.48
C25.13		.3 Walls	m²	84	364.71	30 635.64
C25.14		.4 Sump walls	m²	32	364.71	11 670.72
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C25.15		.2 Walkway slabs	m²	21	636.15	13 359.15
	8.2.2	(b) Plane vertical				
C25.16		.1 Sides of floor slabs	m²	11	364.71	4 011.81
C25.17		.2 Sump walls	m²	147	364.71	53 612.37
C25.18		.3 Walls	m²	210	364.71	76 589.10
C25.19		.4 Step in floor slab	m²	5	364.71	1 823.55
C25.20		.5 Pipe supports	m²	5	364.71	1 823.55
	8.2.5	Smooth formwork to narrow widths				
C25.21		(a) Edges, risers, etc not exceeding 300mm wide	m	126	109.41	13 785.66
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
C25.22		(a) Chamfer size 50 x 50mm	m	3	150.20	450.60
C25.23		(b) Groove size 70mm wide x 50mm deep	m	4	160.80	643.20
C25.24		(c) Rebate size 100mm x 100mm	m	4	241.12	964.48
					Carried Forward	842 299.67

[redacted]

					Brought Forward	842 299.67
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C25.25		.1 over 0m and up to 0,5m	no	1	438.49	438.49
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C25.26		.1 over 0m and up to 0,5m	no	3	518.55	1 555.65
	8.2.6	(c) Large, circular, over 0,35m and up to 0,7m diameter with depth				
C25.27		.1 over 0m and up to 0,5m	no	12	651.99	7 823.88
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C25.28		.1 Smooth formwork	m²	10	770.95	7 709.50
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C25.29		.1 Grouting around pipes and fittings	m³	1	21 078.60	21 078.60
	SANS 1200 G	**REINFORCEMENT**				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C25.30		.1 All sizes	ton	5	18 976.98	94 884.90
	8.3.1	(b) High tensile steel				
C25.31		.1 All sizes	ton	21	18 976.98	398 516.58
	8.3.2	High tensile welded mesh				
C25.32		(a) Ref no.395	m²	13650	107.37	1 465 600.50
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
					Carried Forward	2 839 907.77

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					Brought Forward	2 839 907.77
C25.33		(a) Blinding layer 50mm thick	m³	525	1 926.19	1 011 249.75
C25.34		(b) Ditto below sloping dam wall sides	m³	147	1 999.83	293 975.01
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C25.35		.1 Floor slabs	m³	1554	2 199.02	3 417 277.08
C25.36		.2 Ditto sloping floor slabs	m³	378	2 199.02	831 229.56
C25.37		.3 Ground beams	m³	84	2 199.02	184 717.68
C25.38		.4 Pipe supports	m³	1	2 199.02	2 199.02
C25.39		.5 Walls	m³	37	2 199.02	81 363.74
C25.40		.6 Sump floors and walls	m³	21	2 199.02	46 179.42
C25.41		.7 Ramps	m³	42	2 199.02	92 358.84
C25.42		.8 Overflow slabs	m³	6	2 199.02	13 194.12
C25.43		.9 Overflow sides	m³	3	2 199.02	6 597.06
C25.44		.10 Walkway slabs	m³	3	2 199.02	6 597.06
C25.45		.11 Inlet base	m³	4	2 199.02	8 796.08
C25.46		.12 Inlet sides	m³	37	2 199.02	81 363.74
C25.47		.13 Pump station floor slabs	m³	16	2 199.02	35 184.32
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C25.48		.1 Benching to floors to falls including steel floated surface finish	m³	10	2 055.78	20 557.80
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C25.49		.1 Floor slabs	m²	10500	13.92	146 160.00
C25.50		.2 Sloping dam side floor slabs	m²	3150	13.92	43 848.00
C25.51		.3 Top of walls, beams, etc	m²	10	13.92	139.20
					Carried Forward	9 162 895.25

[redacted]

					Brought Forward	9 162 895.25
C25.52		.4 Floor slabs including finishing with broom finish	m²	189	13.92	2 630.88
	8.4.4	(b) Steel floated finish				
C25.53		.1 Floor slabs	m²	105	19.44	2 041.20
C25.54		.2 Top of walls, beams, etc	m²	21	19.44	408.24
	8.4.4	(c) Power floated finish				
C25.55		.1 Floor slabs	m²	525	38.87	20 406.75
	SANS 1200 G	**EXPANSION JOINTS**				
		SAW CUT JOINTS				
	8.5	Saw cut joints in top of concrete surfaces				
C25.56		.1 6 x 40mm Saw cut joint in floor slabs	m	3528	27.22	96 032.16
C25.57		.1 Ditto in 45 degrees sloping sides of dam walls	m	496	54.44	27 002.24
		EXPANSION JOINTS				
	8.6	(a) 20mm Thick jointex placed vertically between concrete surfaces including tear off strips				
C25.58		.1 Narrow widths not exceeding 300mm wide	m	945	75.25	71 111.25
	8.6	(b) Polyurethane joint sealer				
C25.59		.1 Remove 20 x 20mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	945	161.27	152 400.15
		COVER STRIPS				
		COVER STRIPS				
	8.5	Hypalon or other approved type cover strip fixed in accordance with manufacturers instructions complete				
C25.60		.1 250mm Wide cover strip 2mm thick fixed over expansion joint (expansion joint measured elsewhere) to concrete floor slabs	m	945	3 415.98	3 228 101.10
	SANS 1200 G	**CONSTRUCTION JOINTS**				
		CONSTRUCTION JOINTS				
	8.5	Construction joints				
C25.61		.1 Construction joint in 125mm thick concrete floor slab complete	m	683	162.71	111 130.93
	SANS 1200 G	**TESTING**				
					Carried Forward	12 874 160.15

[redacted]

					Brought Forward	12 874 160.15
		TESTING FOR WATER TIGHTNESS				
C25.62	8.12	Testing entire structure for water tightness	no	1	46956.43	46 956.43
	SANS 1200 MM	**GUARDRAILS**				
	PSMM	**STRAIGHT**				
	8.2.1	(a) Supply and erect hot dip galvanized steel guardrails on bitumen treated timber posts, including excavation, backfilling, timber spacer blocks, bolts, etc				
C25.63		.1 Straight sections	m	50	730.33	36 516.50
		END UNITS				
	8.2.3	Supply and fix hot dip galvanised steel end units complete				
C25.64		(a) End wings	no	8	459.79	3 678.32
		REFLECTOR PLATES				
	8.2.5	Supply and fix reflector plates complete				
C25.65		(a) Standard type reflectors	no	25	32.95	823.75
	SANS 1200 D	**SUBSOIL DRAINAGE**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C25.66		.1 Subsoil drains below concrete floors	m³	500	127.49	63 745.00
	SANS 1200 DB	**TRENCHING**				
	PSDB	Excavate in all materials, backfill and compact to 93% mod AASHTO density, and dispose of surplus and unsuitable materials off site at a site established by the Contractor for trenches				
	8.3.2	(a) .1 Up to 0.8m wide				
C25.67		.1 Up to 1m deep	m	30	228.61	6 858.30
C25.68		.2 Over 1m and up to 2m deep	m	30	457.21	13 716.30
C25.69		.3 Over 2m and up to 3m deep	m	110	685.82	75 440.20
C25.70		.4 Over 3m and up to 4m deep	m	40	914.42	36 576.80
	8.3.2	(b) Extra over reference 8.2.2 (a) for				
C25.71		.2 Hard rock excavation	m³	20	803.79	16 075.80
		DEFICIENCY MATERIAL				
					Carried Forward	13 174 547.55

[redacted]

					Brought Forward	13 174 547.55
	8.3.3	Excavation ancillaries				
		.1 Make up deficiency in backfill material, including disposing of unsuitable material off site at a site established by the Contractor				
		Note: Payment of commercial deficiency in backfill material will only be paid if instructed by the Engineer				
C25.72		(c) By importation of G7 material from commercial sources selected by the Contractor	m^3	500	248.89	124 445.00
	SANS 1200 LB	**BEDDING**				
	PSLB	**FROM COMMERCIAL SOURCES**				
	8.2.2	.3 Provision of bedding material by importation from commercial sources selected by the Contractor				
C25.73		(a) Selected granular material	m^3	100	248.89	24 889.00
C25.74		(b) Selected fill material	m^3	200	248.89	49 778.00
	SANS 1200 LD	**SUBSOIL DRAINS**				
	PSLD	**SUBSOIL DRAINS**				
	8.2.1	.1 Perforated pipes				
		Supply, lay, bed, and test Cordrain perforated subsoil pipes				
C25.75		.2 160mm Diameter laid below floors in no-fines concrete (concrete measured elsewhere)	m	900	202.18	181 962.00
	8.2.1	.2 Solid wall pipes				
		Supply, lay, bed and test uPVC class 9 spigot and socket and pipes complete				
C25.76		.1 200mm Diameter	m	200	202.18	40 436.00
		Pipe fittings				
	8.2.2	.2 uPVC Class 9 plugs				
C25.77		.1 160mm Diameter	no	20	99.71	1 994.20
C25.78		.2 200mm Diameter	no	10	287.56	2 875.60
	8.2.2	.3 uPVC Class 9 bends				
C25.79		.1 160mm Diameter 11.25° to 90°	no	20	438.33	8 766.60
C25.80		.2 200mm Diameter 11.25° to 90°	no	10	785.99	7 859.90
					Carried Forward	13 617 553.85

[redacted]

					Brought Forward	13 617 553.85
	8.2.2	.4 uPVC Class 9 tees				
C25.81		.1 160x160x160mm Tee	no	20	498.42	9 968.40
C25.82		.2 200x160x160mm Tee	no	10	119.92	1 199.20
	SANS 1200 DK	**GEOTEXTILES**				
	PSDK	**GEOTEXTILES**				
	8.2.4	Supply and lay geotextile fabric with suitable overlaps (net area of Bidim will be measured for payment)				
C25.83		(b) Bidim A4 wrapped around concrete encasement to pipes and pipes	m²	2000	19.89	39 780.00
	SANS 1200 G	**PRESCRIBED MIX CONCRETE**				
	8.4.1	(a) 15Mpa no-fines concrete				
C25.84		.1 Encasement of subsoil pipes below floors	m³	500	1 879.10	939 550.00
		MISCELLANEOUS				
		SUB-SURFACE DRAINAGE MANHOLE (inspection MH)				
		Pre-cast 700 mm dia shaft sections with adaptor slab, MH cover and frame complete as shown on dwg. 3089.00.00.WMA.14.U001				
C25.85		.1 2,75 up to 3,00m deep	no	4	30 081.66	120 326.64
C25.86		.2 3,01 m up to 3,25m deep	no	2	30 629.91	61 259.82
C25.87		.3 3,26m up to 3,50 m deep	no	3	30 629.91	91 889.73
		BILL NO. C25 **OVERFLOW DAMS - WMA**				
		Carried forward to Summary of Bills			**Total**	14 881 527.64

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C26 **EMERGENCY STORAGE DAM AND RECYCLE PUMP STATION - WMB**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C26.1		.1 Ground beams	m³	21	365.86	7 683.06
C26.2		.2 Pump station	m³	63	365.86	23 049.18
C26.3		.3 Portal culverts	m³	53	365.86	19 390.58
C26.4		.4 Sumps	m³	11	365.86	4 024.46
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C26.5		.2 Hard rock excavation	m³	5	803.79	4 018.95
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C26.6		.1 Final filling in dam walls including trimming and compaction	m³	525	248.89	130 667.25
C26.7		.1 Alongside walls in foundations	m³	53	248.89	13 191.17
C26.8		.2 Behind retaining walls	m³	53	248.89	13 191.17
C26.9		.3 Below ramps	m³	210	248.89	52 266.90
	SANS 1200 D	**WORKING SPACE**				
		WORKING SPACE Extra excavation and backfilling in all materials to provide working space around structures Excavate vertical face of excavation beyond the measured excavation face around the perimeter of the structure				
					Carried Forward	267 482.72

					Brought Forward	267 482.72
C26.10	8.3.5	(b) Excavate for working space (previously excavated face on perimeter of the structure) for the placing and removal of external formwork to ground beams. Average depth of excavation 1mm deep, including backfilling and compaction to 93% mod AASHTO density	m²	126	292.69	36 878.94
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C26.11		.2 Sides of downstand ground beams	m²	126	364.71	45 953.46
C26.12		.3 Chamber walls	m²	53	364.71	19 329.63
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C26.13		.2 Walkway slabs	m²	3	636.15	1 908.45
	8.2.2	(b) Plane vertical				
C26.14		.3 Chamber walls	m²	189	364.71	68 930.19
	8.2.5	Smooth formwork to narrow widths				
C26.15		(a) Edges, risers, etc not exceeding 300mm wide	m	301	109.41	32 932.41
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
C26.16		(a) Chamfer size 50x50mm	m	10	150.20	1 502.00
C26.17		(b) Groove size 70mm wide x 50mm deep	m	5	160.80	804.00
C26.18		(c) Rebate size 100mm x 100mm	m	5	241.12	1 205.60
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C26.19		.1 over 0m and up to 0,5m	no	2	471.46	942.92
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C26.20		.1 over 0m and up to 0,5m	no	4	551.52	2 206.08
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
					Carried Forward	480 076.40

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					Brought Forward	480 076.40
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C26.21		.1 Smooth formwork	m²	10	770.95	7 709.50
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C26.22		.1 Grouting around pipes and fittings	m³	1	21 078.60	21 078.60
	SANS 1200 G	**REINFORCEMENT**				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C26.23		.1 All sizes	ton	2	18 976.98	37 953.96
	8.3.1	(b) High tensile steel				
C26.24		.1 All sizes	ton	9	18 976.98	170 792.82
	8.3.2	High tensile welded mesh				
C26.25		(a) Ref no.395	m²	4106	107.37	440 861.22
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C26.26		(a) Blinding layer 50mm thick	m³	132	1 857.71	245 217.72
C26.27		(b) Ditto below sloping dam sides	m³	84	1 931.35	162 233.40
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C26.28		.1 Dam floor slabs	m³	371	2 199.02	815 836.42
C26.29		.2 Ditto sloping dam floor slabs	m³	210	2 199.02	461 794.20
C26.30		.3 Ground beams	m³	17	2 199.02	37 383.34
C26.31		.4 Ramps	m³	11	2 199.02	24 189.22
					Carried Forward	2 905 126.80

[redacted]

					Brought Forward	2 905 126.80
C26.32		.5 Chamber walls	m³	28	2 199.02	61 572.56
C26.33		.6 Chamber floor slabs	m³	8	2 199.02	17 592.16
C26.34		.7 Portal culvert base	m³	2	2 199.02	4 398.04
C26.35		.10 Walkway slabs	m³	1	2 199.02	2 199.02
C26.36		.11 Apron slabs	m³	2	2 199.02	4 398.04
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C26.37		.1 Benching to floors to falls including steel floated surface finish	m³	8	2 055.78	16 446.24
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C26.38		.1 Dam floor slabs	m²	2471	13.92	34 396.32
C26.39		.2 Sloping dam side floor slabs	m²	1617	13.92	22 508.64
C26.40		.3 Top of walls, beams, etc	m²	106	13.92	1 475.52
	8.4.4	(b) Steel floated finish				
C26.41		.1 Floor slabs	m²	53	19.44	1 030.32
C26.42		.2 Top of walls, beams, etc	m²	53	19.44	1 030.32
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C26.43		.4 Narrow widths not exceeding 300mm wide	m	148	118.25	17 501.00
	8.5	(b) Polyurethane joint sealer				
C26.44		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	148	153.31	22 689.88
	8.5	(c) Saw cut joints				
C26.45		.1 4 x 40mm Deep saw cut joint in floor slabs	m	100	272.21	27 221.00
		COVER STRIPS				
					Carried Forward	3 139 585.86

[redacted]

					Brought Forward	3 139 585.86
	8.5	Hypalon or other approved type cover strip fixed in accordance with manufactuerers instructions complete				
C26.46		.1 250mm Wide cover strip 2mn thick fixed over expansion joint (expansion joint measured elsewhere) to concrete floor slabs	m	350	3 415.98	1 195 593.00
		CONSTRUCTION JOINTS				
	8.5	(d) Construction joints Dwg 3089.30.40.WMB.14.U001				
C26.47		.1 Construction joint complete	m	265	162.71	43 118.15
C26.48		.1 6 x 40mm Saw cut joint	m	867	54.44	47 199.48
	SANS 1200 LE	**PORTAL CULVERTS WITH PRECAST FLOORS**				
	PSLE	**CLASS "S" PORTAL CULVERTS INCLUDING PRECAST CONCRETE FLOOR SLABS**				
		Supply and lay portal and rectangular culverts including all cutting to ends of culverts not exceeding 20 degrees, including precast concrete floor slabs installed complete				
	8.2.2.a	Class "S" culverts complete with precast invert slabs				
C26.49		.1 1200 x 450mm	m	5	3 892.04	19 460.20
		STORMWATER STRUCTURES				
		OUTLET STRUCTURES **Dwg SW9 & 3089.30.01.GZC-03.D005**				
	8.2.7	Pipe outlet structure complete for the following pipe sizes				
C26.50		.1 675 - 900mm Diameter pipe culverts	no	1	12 010.40	12 010.40
C26.51		.2 1050 - 1200mm Diameter pipe culverts	no	1	15 094.00	15 094.00
	SANS 1200 G	**TESTING**				
	PSG	**TESTING FOR WATER TIGHTNESS**				
C26.52	8.12	Testing entire structure for water tightness	no	1	25 232.57	25 232.57
	SANS 1200 LD	**SUBSOIL DRAINS**				
	PSLD	**SUBSOIL DRAINS** **Dwg.3089.00.00.14.U001**				
	8.2.1	.1 Perforated pipes				
		Supply, lay, bed, and test Cordrain perforated subsoil pipes				
					Carried Forward	4 497 293.66

[redacted]

					Brought Forward	4 497 293.66
C26.53		.2 110mm Diameter laid below floors in no-fines concrete (concrete measured elsewhere)	m	200	205.11	41 022.00
	8.2.1	.2 Solid wall pipes Supply, lay, bed and test uPVC class 9 spigot and socket and pipes complete				
C26.54		.1 160mm Diameter	m	40	1 432.70	57 308.00
		Pipe fittings				
	8.2.2	.2 uPVC Class 9 plugs				
C26.55		.1 110mm Diameter	no	3	438.33	1 314.99
C26.56		.2 160mm Diameter	no	1	438.33	438.33
	8.2.2	.3 uPVC Class 9 bends				
C26.57		.1 110mm Diameter 11.25° to 90°	no	3	438.33	1 314.99
C26.58		.2 160mm Diameter 11.25° to 90°	no	1	438.33	438.33
	8.2.2	.4 uPVC Class 9 tees				
C26.59		.1 100x100x100mm Tee	no	3	438.33	1 314.99
C26.60		.2 150x100x100mm Tee	no	1	438.33	438.33
	SANS 1200 DK	**GEOTEXTILES**				
	PSDK	**GEOTEXTILES**				
	8.2.4	Supply and lay geotextile fabric with suitable overlaps (net area of Bidim will be measured for payment)				
C26.61		(b) Bidim A4 wrapped around concrete encasement to pipes and pipes	m²	530	19.89	10 541.70
	SANS 1200 G	**PRESCRIBED MIX CONCRETE**				
	8.4.1	(a) 15Mpa no-fines concrete				
C26.62		.1 Encasement of subsoil pipes below floors	m³	60	1 879.10	112 746.00
		MISCELLANEOUS				
		SUB-SURFACE DRAINAGE MANHOLE (inspection MH) Pre-cast 700 mm dia shaft sections with adaptor slab, MH cover and frame compete as shown on dwg. 3089.00.00.WMA.14.U001				
C26.63		.1 3,25 up to 3,50m	no	2	30 629.91	61 259.82
					Carried Forward	4 785 431.14

[redacted]

					Brought Forward	4 785 431.14
C26.64		.2 3,51 m up to 3,75m	no	1	31 683.41	31 683.41
		BILL NO. C26 **EMERGENCY STORAGE DAM AND RECYCLE PUMP STATION - WMB**				
		Carried forward to Summary of Bills			**Total**	4 817 114.55

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C27 **FERRIC CHEMICAL DOSING (24 PLANT) - WNA**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C27.1		.1 Floor sumps	m³	5	365.86	1 829.30
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C27.2		.1 Alongside walls in foundations	m³	25	248.89	6 222.25
C27.3		.3 Under floors	m³	11	248.89	2 737.79
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C27.4		.2 Floor slabs	m²	17	364.71	6 200.07
C27.5		.3 Chamber walls	m²	8	364.71	2 917.68
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C27.6		.2 Slabs	m²	70	636.15	44 530.50
	8.2.2	(b) Plane vertical				
C27.7		.2 Walls	m²	160	364.71	58 353.60
C27.8		.3 Chamber walls	m²	8	364.71	2 917.68
	8.2.5	Smooth formwork to narrow widths				
					Carried Forward	125 708.87

					Brought Forward	125 708.87
C27.9		(a) Edges, risers, etc not exceeding 300mm wide	m	63	109.41	6 892.83
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1	Steel bars				
		(a) .1 Mild steel				
C27.10		.1 All sizes	ton	2.0	18 976.98	37 953.96
		(a) .2 High tensile steel				
C27.11		.1 All sizes	ton	14.0	18 976.98	265 677.72
		MESH REINFORCEMENT				
	8.3.2	(c) High tensile welded mesh				
C27.12		.2 Ref no.395	m²	32	107.37	3 435.84
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.3	(b) .2 Strength concrete 20Mpa/19mm				
C27.13		.1 Apron slabs	m³	2	1 802.35	3 604.70
	8.4.3	(b) .3 Strength concrete 35Mpa/19mm				
C27.14		.3 Floor slabs	m³	42	1 978.65	83 103.30
C27.15		.4 Surface beds	m³	2	1 978.65	3 957.30
C27.16		.5 Walls	m³	32	1 978.65	63 316.80
C27.17		.6 Chamber floors and walls	m³	4	1 978.65	7 914.60
		CONCRETE IN SMALL QUANTITIES				
	8.4.2	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
C27.18		.1 50mm Thick	m³	8	1 857.71	14 861.68
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(c) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C27.19		.1 Roof slabs	m³	23	2 199.02	50 577.46
C27.20		.2 Beams	m³	5	2 199.02	10 995.10
					Carried Forward	678 000.16

[redacted]

					Brought Forward	678 000.16
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C27.21		.1 Benching to floors to falls including steel floated surface finish	m³	8	2 055.78	16 446.24
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C27.22		.1 Slabs and floor slabs	m²	75	13.92	1 044.00
C27.23		.2 Top of walls, beams, etc	m²	18	13.92	250.56
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C27.24		.4 Narrow widths not exceeding 300mm wide	m	27	118.25	3 192.75
	8.5	(b) Polyurethane joint sealer				
C27.25		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	27	153.31	4 139.37
		SHOWER				
		Emergency shower and eye wash Dwg 3089.00.00.WNA.14.U001				
C27.26		.1 Emergency shower and eye wash complete with concrete base, etc. Spray nozzle or similar and approved	no	1	4 837.50	4 837.50
	SANS 1200 G	**ACID RESISTING COATINGS**				
		CONCRETE PROTECTION AND FLOOR COATINGS				
	8.4.11	(b) Chemical resistant coatings suitable for Ferric Chloride				
C27.27		i) Concrete floors	m²	25	516.00	12 900.00
C27.28		ii) Concrete walls	m²	30	548.25	16 447.50
		BILL NO. C27 **FERRIC CHEMICAL DOSING (24 PLANT) - WNA**				
		Carried forward to Summary of Bills			**Total**	737 258.08

[redacted]

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C28 **CHAMBERS AND MANHOLES -SQB-SQF-SQH-SQI-SQR-SQS-SQT-SQU**				
		CIVIL WORKS				
		CHAMBER (MBR RE-USE PUMP STATION)				
		Dwg 3089.00.00.SQF.14.U001				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	PSD	**RESTRICTED EXCAVATIONS** **Note:** Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
C28.1		.4 Chambers	m³	50	365.86	18 293.00
	8.3.3.b	Extra over reference 8.3.3 (a) for				
C28.2		.2 Hard rock excavation	m³	1	803.79	803.79
	SANS 1200 D	**WORKING SPACE**				
		WORKING SPACE Extra excavation and backfilling beyond the measured face in all materials to provide working space around structures				
C28.3	8.3.5	(a) Excavate for working space (previously excavated face +- 300mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 2,0m deep, including backfilling and compaction to 93% mod AASHTO density	m²	50	365.86	18 293.00
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
					Carried Forward	37 389.79

[redacted]

					Brought Forward	37 389.79
	8.3.9.a	Extra over reference 8.3.3 (a) for backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
C28.4		.1 Alongside walls in foundations	m³	30	-	-
		COMMERCIAL MATERIAL				
	8.3.4.b	Extra over reference 8.3.3 (a) for backfill or for fill with G7 material supplied by the Contractor from commercial sources against structures and compacted to 98% mod AASHTO density				
C28.5		.1 Alongside walls in foundations	m³	10	248.89	2 488.90
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1.b	Plane vertical				
C28.6		.1 Sides of floor slabs, bases, etc	m²	6	364.71	2 188.26
C28.7		.3 Walls	m²	28	364.71	10 211.88
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.1.a	Plane horizontal				
C28.8		.1 Slabs	m²	9	583.65	5 252.85
	8.2.2.b	Plane vertical				
C28.9		.3 Walls	m²	25	364.71	9 117.75
C28.10		.4 Pipe supports	m²	2	364.71	729.42
	8.2.5	Smooth formwork to narrow widths				
C28.11		(a) Edges, risers, etc not exceeding 300mm wide	m	20	109.41	2 188.20
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C28.12		(b) Groove size 70mm wide x 50mm deep	m	2	160.80	321.60
C28.13		(c) Rebate size 100mm x 100mm	m	2	241.12	482.24
		BOXING IN FOR HOLES AND VOIDS				
					Carried Forward	70 370.89

[redacted]

					Brought Forward	70 370.89
	8.2.6.b	Small, other shapes, up to 0,1m² in area with depth				
C28.14		.1 Over 0m and up to 0,5m	no	2	471.46	942.92
	8.2.6.c	Large, circular, over 1,0m and up to 1,20m diameter with depth				
C28.15		.1 Over 0m and up to 0,5m	no	2	551.52	1 103.04
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings complete including cleaning and repairing concrete surface to smooth finish after completion				
C28.16		.1 Smooth formwork (all sizes and positions)	m²	6	770.95	4 625.70
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C28.17		.1 Grouting around pipes and fittings	m³	0.2	21 078.60	4 215.72
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1.a	Mild steel				
C28.18		.1 All sizes	ton	0.1	18 976.98	1 897.70
	8.3.1.b	High tensile steel				
C28.19		.1 All sizes	ton	3	18 976.98	56 930.94
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C28.20		(a) Blinding layer 50mm thick	m³	1	1 857.71	1 857.71
		CONCRETE				
	8.4.3.g	Strength concrete 35Mpa/19mm				
C28.21		.3 Slabs	m³	3	1 978.65	5 935.95
					Carried Forward	147 880.57

[redacted]

					Brought Forward	147 880.57
C28.22		.4 Floor slabs	m³	4	1 978.65	7 914.60
C28.23		.9 Walls	m³	8	1 978.65	15 829.20
C28.24		.23 Pipe supports	m³	1	1 978.65	1 978.65
		BENCHING				
	8.4.3.h	Strength concrete 20Mpa/13mm				
C28.25		.1 Benching to floors to falls including steel floated surface finish	m³	2	1 802.35	3 604.70
	SANS 1200 G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
C28.26		.1 Slabs, floor slabs, etc	m²	20	13.92	278.40
C28.27		.2 Top of walls, beams, etc	m²	5	13.92	69.60
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C28.28	8.12	Testing entire structure for water tightness	no	1	8853.79	8 853.79
		CIVIL WORKS				
		DIVISION CHAMBER (EXISTING DU NOON RISING MAIN)				
		Dwg 3089.00.00.SQH.14.U001				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	PSD	**RESTRICTED EXCAVATIONS**				
		Note: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
					Carried Forward	186 409.51

[redacted]

					Brought Forward	186 409.51
C28.29		.4 Chambers	m³	50	365.86	18 293.00
	8.3.3.b	Extra over reference 8.3.3 (a) for				
C28.30		.2 Hard rock excavation	m³	1	803.79	803.79
	SANS 1200 D	**WORKING SPACE**				
		WORKING SPACE				
		Extra excavation and backfilling beyond the measured face in all materials to provide working space around structures				
C28.31	8.3.5	(a) Excavate for working space (previously excavated face +- 300mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 2,0m deep, including backfilling and compaction to 93% mod AASHTO density	m²	50	292.69	14 634.50
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
	8.3.9.a	Extra over reference 8.3.3 (a) for backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
C28.32		.1 Alongside walls in foundations	m³	30	-	-
		COMMERCIAL MATERIAL				
	8.3.4.b	Extra over reference 8.3.3 (a) for backfill or for fill with G7 material supplied by the Contractor from commercial sources against structures and compacted to 98% mod AASHTO density				
C28.33		.1 Alongside walls in foundations	m³	10	248.89	2 488.90
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1.b	Plane vertical				
C28.34		.1 Sides of floor slabs, bases, etc	m²	10	364.71	3 647.10
C28.35		.3 Walls	m²	30	364.71	10 941.30
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
					Carried Forward	237 218.10

[redacted]

					Brought Forward	237 218.10
	8.2.1.a	Plane horizontal				
C28.36		.1 Slabs	m²	11	583.65	6 420.15
	8.2.2.b	Plane vertical				
C28.37		.3 Walls	m²	38	364.71	13 858.98
C28.38		.4 Pipe supports	m²	3	364.71	1 094.13
	8.2.5	Smooth formwork to narrow widths				
C28.39		(a) Edges, risers, etc not exceeding 300mm wide	m	17	109.41	1 859.97
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C28.40		(a) Chamfer size 50 x 50mm	m	5	150.20	751.00
C28.41		(b) Groove size 70mm wide x 50mm deep	m	5	176.81	884.05
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6.b	Small square, up to 0.1m² in area with depth				
C28.42		.1 Over 0m and up to 0,5m	no	2	471.46	942.92
	8.2.6.c	Large, circular, over 0.35m and up to 0.7m diameter with depth				
C28.43		.1 Over 0m and up to 0,5m	no	4	551.52	2 206.08
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings complete including cleaning and repairing concrete surface to smooth finish after completion				
C28.44		.1 Smooth formwork (all sizes and positions)	m²	6	770.95	4 625.70
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C28.45		.1 Grouting around pipes and fittings	m³	0.5	21 078.60	10 539.30
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
					Carried Forward	280 400.38

[redacted]

					Brought Forward	280 400.38
	8.3.1.a	Mild steel				
C28.46		.1 All sizes	ton	0.1	18 976.98	1 897.70
	8.3.1.b	High tensile steel				
C28.47		.1 All sizes	ton	3	18 976.98	56 930.94
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C28.48		(a) Blinding layer 50mm thick	m³	1	1 857.71	1 857.71
		CONCRETE				
	8.4.3.g	Strength concrete 35Mpa/19mm				
C28.49		.3 Slabs	m³	3	1 978.65	5 935.95
C28.50		.4 Floor slabs	m³	5	1 978.65	9 893.25
C28.51		.9 Walls	m³	9	1 978.65	17 807.85
C28.52		.23 Pipe supports	m³	1	1 978.65	1 978.65
		BENCHING				
	8.4.3.h	Strength concrete 20Mpa/13mm				
C28.53		.1 Benching to floors to falls including steel floated surface finish	m³	2	1 802.35	3 604.70
	SANS 1200 G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
C28.54		.1 Slabs, floor slabs, etc	m²	20	13.92	278.40
C28.55		.2 Top of walls, beams, etc	m²	10	13.92	139.20
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C28.56	8.12	Testing entire structure for water tightness	no	1	8853.79	8 853.79
					Carried Forward	389 578.52

[redacted]

					Brought Forward	389 578.52
		CIVIL WORKS				
		FLOW METER CHAMBER (Raw Sewage Rising Main)				
		Dwg 3089.00.00.SQB.14.U001				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	PSD	**RESTRICTED EXCAVATIONS**				
		Note: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
C28.57		.4 Chambers	m³	30	365.86	10 975.80
	8.3.3.b	Extra over reference 8.3.3 (a) for				
C28.58		.2 Hard rock excavation	m³	1	803.79	803.79
	SANS 1200 D	**WORKING SPACE**				
		WORKING SPACE				
		Extra excavation and backfilling beyond the measured face in all materials to provide working space around structures				
C28.59	8.3.5	(a) Excavate for working space (previously excavated face +- 300mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 2,0m deep, including backfilling and compaction to 93% mod AASHTO density	m²	30	292.69	8 780.70
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
	8.3.9.a	Extra over reference 8.3.3 (a) for backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
C28.60		.1 Alongside walls in foundations	m³	10	-	-
		COMMERCIAL MATERIAL				
					Carried Forward	410 138.81

[redacted]

					Brought Forward	410 138.81
	8.3.4.b	Extra over reference 8.3.3 (a) for backfill or for fill with G7 material supplied by the Contractor from commercial sources against structures and compacted to 98% mod AASHTO density				
C28.61		.1 Alongside walls in foundations	m³	5	248.89	1 244.45
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1.b	Plane vertical				
C28.62		.1 Sides of floor slabs, bases, etc	m²	5	364.71	1 823.55
C28.63		.3 Walls	m²	32	364.71	11 670.72
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.1.a	Plane horizontal				
C28.64		.1 Slabs	m²	8	583.65	4 669.20
	8.2.2.b	Plane vertical				
C28.65		.3 Walls	m²	39	364.71	14 223.69
C28.66		.4 Pipe supports	m²	3	364.71	1 094.13
	8.2.5	Smooth formwork to narrow widths				
C28.67		(a) Edges, risers, etc not exceeding 300mm wide	m	10	109.41	1 094.10
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C28.68		(a) Chamfer size 50 x 50mm	m	5	150.20	751.00
C28.69		(b) Groove size 70mm wide x 50mm deep	m	5	176.81	884.05
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6.b	Small, other shapes, up to 0.1m² in area with depth				
C28.70		.1 Over 0m and up to 0,5m	no	2	471.46	942.92
	8.2.6.c	Large, circular, over 0.35m and up to 0.7m diameter with depth				
C28.71		.1 Over 0m and up to 0,5m	no	2	551.52	1 103.04
					Carried Forward	449 639.66

[redacted]

					Brought Forward	449 639.66
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings complete including cleaning and repairing concrete surface to smooth finish after completion				
C28.72		.1 Smooth formwork (all sizes and positions)	m²	6	770.95	4 625.70
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C28.73		.1 Grouting around pipes and fittings	m³	0.3	21 078.60	6 323.58
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1.a	Mild steel				
C28.74		.1 All sizes	ton	0.1	18 976.98	1 897.70
	8.3.1.b	High tensile steel				
C28.75		.1 All sizes	ton	3	18 976.98	56 930.94
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C28.76		(a) Blinding layer 50mm thick	m³	1	1 857.71	1 857.71
		CONCRETE				
	8.4.3.g	Strength concrete 35Mpa/19mm				
C28.77		.3 Slabs	m³	3	1 978.65	5 935.95
C28.78		.4 Floor slabs	m³	8	1 978.65	15 829.20
C28.79		.9 Walls	m³	9	1 978.65	17 807.85
C28.80		.23 Pipe supports	m³	1	1 978.65	1 978.65
		BENCHING				
					Carried Forward	562 826.93

[redacted]

					Brought Forward	562 826.93
	8.4.3.h	Strength concrete 20Mpa/13mm				
C28.81		.1 Benching to floors to falls including steel floated surface finish	m³	2	1 802.35	3 604.70
	SANS 1200 G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
C28.82		.1 Slabs, floor slabs, etc	m²	30	13.92	417.60
C28.83		.2 Top of walls, beams, etc	m²	5	13.92	69.60
	SANS 1200 G	**PRECAST CONCRETE**				
		PRECAST CONCRETE				
		Precast concrete units supplied and fixed complete including all concrete, formwork, reinforcing, lifting hooks, suitable joint sealing, bedding material, etc complete				
	8.6.a	Strength concrete 35Mpa/19mm				
C28.84		(a) Cover slab size 3000 x 976 x 200mm thick placed on top of chamber	no	1	6 760.46	6 760.46
		JOINT SEALER				
	8.5	(b) Polyurethane joint sealer				
C28.85		.1 Prime with an approved primer and fill 12 x 12mm joint with polyurethane sealer	m	8	153.31	1 226.48
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C28.86	8.12	Testing entire structure for water tightness	no	1	8853.79	8 853.79
		CIVIL WORKS				
		FLOW METER CHAMBER (EXISTING 1000MM DIA SEWER)				
		Dwg 3089.00.00.SQI.14.U001				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	PSD	**RESTRICTED EXCAVATIONS**				
					Carried Forward	583 759.56

[redacted]

					Brought Forward	583 759.56
		Note: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
C28.87		.4 Chambers	m³	30	365.86	10 975.80
	8.3.3.b	Extra over reference 8.3.3 (a) for				
C28.88		.2 Hard rock excavation	m³	1	803.79	803.79
	SANS 1200 D	**WORKING SPACE**				
		WORKING SPACE Extra excavation and backfilling beyond the measured face in all materials to provide working space around structures				
C28.89	8.3.5	(a) Excavate for working space (previously excavated face +- 300mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 2,0m deep, including backfilling and compaction to 93% mod AASHTO density	m²	30	292.69	8 780.70
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
	8.3.9.a	Extra over reference 8.3.3 (a) for backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
C28.90		.1 Alongside walls in foundations	m³	10	-	-
		COMMERCIAL MATERIAL				
	8.3.4.b	Extra over reference 8.3.3 (a) for backfill or for fill with G7 material supplied by the Contractor from commercial sources against structures and compacted to 98% mod AASHTO density				
C28.91		.1 Alongside walls in foundations	m³	5	248.89	1 244.45
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
					Carried Forward	605 564.30

[redacted]

					Brought Forward	605 564.30
	8.2.1.b	Plane vertical				
C28.92		.1 Sides of floor slabs, bases, etc	m²	5	364.71	1 823.55
C28.93		.3 Walls	m²	32	364.71	11 670.72
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.1.a	Plane horizontal				
C28.94		.1 Slabs	m²	8	583.65	4 669.20
	8.2.2.b	Plane vertical				
C28.95		.3 Walls	m²	39	364.71	14 223.69
C28.96		.4 Pipe supports	m²	3	364.71	1 094.13
	8.2.5	Smooth formwork to narrow widths				
C28.97		(a) Edges, risers, etc not exceeding 300mm wide	m	10	109.41	1 094.10
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C28.98		(a) Chamfer size 50 x 50mm	m	5	150.20	751.00
C28.99		(b) Groove size 70mm wide x 50mm deep	m	2	176.81	353.62
C28.100		(c) Rebate size 100mm x 100mm	m	2	241.12	482.24
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6.a	Small, circular, up to 0,35m diameter with depth				
C28.101		.1 Over 0m and up to 0,5m	no	2	471.46	942.92
	8.2.6.b	Small, other shapes, up to 0,1m² in area with depth				
C28.102		.1 Over 0m and up to 0,5m	no	2	551.52	1 103.04
	8.2.6.c	Large, circular, over 0,50m and up to 1,00m diameter with depth				
C28.103		.1 Over 0m and up to 0,5m	no	2	684.95	1 369.90
	8.2.6.d	Large, other shapes, over 0,1m² up to 0,5m² in area with depth				
					Carried Forward	645 142.41

[redacted]

					Brought Forward	645 142.41
C28.104		.2 Over 0m and up to 0,5m	no	2	791.70	1 583.40
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings complete including cleaning and repairing concrete surface to smooth finish after completion				
C28.105		.1 Smooth formwork (all sizes and positions)	m²	6	770.95	4 625.70
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C28.106		.1 Grouting around pipes and fittings	m³	0.3	21 078.60	6 323.58
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1.a	Mild steel				
C28.107		.1 All sizes	ton	0.1	18 976.98	1 897.70
	8.3.1.b	High tensile steel				
C28.108		.1 All sizes	ton	3	18 976.98	56 930.94
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C28.109		(a) Blinding layer 50mm thick	m³	1	1 857.71	1 857.71
		CONCRETE				
	8.4.3.g	Strength concrete 35Mpa/19mm				
C28.110		.3 Slabs	m³	3	1 978.65	5 935.95
C28.111		.4 Floor slabs	m³	8	1 978.65	15 829.20
C28.112		.9 Walls	m³	9	1 978.65	17 807.85
C28.113		.23 Pipe supports	m³	1	1 978.65	1 978.65
					Carried Forward	759 913.09

[redacted]

					Brought Forward	759 913.09
		BENCHING				
	8.4.3.h	Strength concrete 20Mpa/13mm				
C28.114		.1 Benching to floors to falls including steel floated surface finish	m³	2	1 802.35	3 604.70
	SANS 1200 G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
C28.115		.1 Slabs, floor slabs, etc	m²	30	13.92	417.60
C28.116		.2 Top of walls, beams, etc	m²	5	13.92	69.60
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C28.117	8.12	Testing entire structure for water tightness	no	1	8853.79	8 853.79
		CIVIL WORKS				
		SLUDGE FEED PUMP STATION VALVE CHAMBER (DEWATERING BUILDING)				
		Dwg 3089.00.00.WLE.14.D001,D002				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	PSD	**RESTRICTED EXCAVATIONS**				
		Note: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
C28.118		.4 Chambers	m³	30	365.86	10 975.80
	8.3.3.b	Extra over reference 8.3.3 (a) for				
C28.119		.2 Hard rock excavation	m³	1	803.79	803.79
					Carried Forward	784 638.37

[redacted]

					Brought Forward	784 638.37
	SANS 1200 D	**WORKING SPACE**				
		WORKING SPACE				
		Extra excavation and backfilling beyond the measured face in all materials to provide working space around structures				
	8.3.5	(a) Excavate for working space (previously excavated face +- 300mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 2,0m deep, including backfilling and compaction to 93% mod AASHTO density				
C28.120			m²	30	292.69	8 780.70
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
	8.3.9.a	Extra over reference 8.3.3 (a) for backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
C28.121		.1 Alongside walls in foundations	m³	10	-	-
		COMMERCIAL MATERIAL				
	8.3.4.b	Extra over reference 8.3.3 (a) for backfill or for fill with G7 material supplied by the Contractor from commercial sources against structures and compacted to 98% mod AASHTO density				
C28.122		.1 Alongside walls in foundations	m³	5	248.89	1 244.45
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1.b	Plane vertical				
C28.123		.1 Sides of floor slabs, bases, etc	m²	5	364.71	1 823.55
C28.124		.3 Walls	m²	20	364.71	7 294.20
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.1.a	Plane horizontal				
C28.125		.1 Slabs	m²	8	583.65	4 669.20
	8.2.2.b	Plane vertical				
					Carried Forward	808 450.47

[redacted]

					Brought Forward	808 450.47
C28.126		.3 Walls	m²	16	364.71	5 835.36
C28.127		.4 Pipe supports	m²	3	364.71	1 094.13
	8.2.5	Smooth formwork to narrow widths				
C28.128		(a) Edges, risers, etc not exceeding 300mm wide	m	10	109.41	1 094.10
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C28.129		(a) Chamfer size 50 x 50mm	m	5	150.20	751.00
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6.a	Small, circular, up to 0,35m diameter with depth				
C28.130		.1 Over 0m and up to 0,5m	no	6	471.46	2 828.76
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings complete including cleaning and repairing concrete surface to smooth finish after completion				
C28.131		.1 Smooth formwork (all sizes and positions)	m²	6	770.95	4 625.70
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C28.132		.1 Grouting around pipes and fittings	m³	0.3	21 078.60	6 323.58
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1.a	Mild steel				
C28.133		.1 All sizes	ton	0.1	18 976.98	1 897.70
	8.3.1.b	High tensile steel				
C28.134		.1 All sizes	ton	3	18 976.98	56 930.94
	SANS 1200 G	**CONCRETE**				
						889 831.74

[redacted]

						889 831.74
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C28.135		(a) Blinding layer 50mm thick	m³	1	1 857.71	1 857.71
		CONCRETE				
	8.4.3.g	Strength concrete 35Mpa/19mm				
C28.136		.3 Slabs	m³	3	1 978.65	5 935.95
C28.137		.4 Floor slabs	m³	8	1 978.65	15 829.20
C28.138		.9 Walls	m³	4	1 978.65	7 914.60
C28.139		.23 Pipe supports	m³	1	1 978.65	1 978.65
		BENCHING				
	8.4.3.h	Strength concrete 20Mpa/13mm				
C28.140		.1 Benching to floors to falls including steel floated surface finish	m³	2	1 802.35	3 604.70
	SANS 1200 G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
C28.141		.1 Slabs, floor slabs, etc	m²	30	13.92	417.60
C28.142		.2 Top of walls, beams, etc	m²	5	13.92	69.60
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12 mm Thick jointex placed vertically between concrete surfaces				
C28.143		.1 Narrow widths not exceeding 300 mm wide	m	4	118.25	473.00
	8.5	(b) Polyurethane joint sealer				
C28.144		.1 Remove 12 x 12 tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	4	153.31	613.24
		JOINT SEALER				
					Carried Forward	928 525.99

[redacted]

					Brought Forward	928 525.99
	8.5	(b) Polyurethane joint sealer				
C28.145		.1 Prime with an approved primer and fill 10 x 20mm joint with polyurethane sealer	m	8	153.31	1 226.48
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C28.146	8.12	Testing entire structure for water tightness	no	1	8853.79	8 853.79
		CIVIL WORKS				
		FINAL EFFLUENT, FILTRATE AND PRIMARY SLUDGE CHAMBERS				
		Dwg 3089.00.00.SQR,SQS,SQT,SQU.14.U001				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	PSD	**RESTRICTED EXCAVATIONS**				
		Note: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
C28.147		.4 Chambers	m^3	770	365.86	281 712.20
	8.3.3.b	Extra over reference 8.3.3 (a) for				
C28.148		.2 Hard rock excavation	m^3	25	803.79	20 094.75
	SANS 1200 D	**WORKING SPACE**				
		WORKING SPACE				
		Extra excavation and backfilling beyond the measured face in all materials to provide working space around structures				
C28.149	8.3.5	(a) Excavate for working space (previously excavated face +- 300mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 2,0m deep, including backfilling and compaction to 93% mod AASHTO density	m^2	510	292.69	149 271.90
					Carried Forward	1 389 685.11

					Brought Forward	1 389 685.11
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
	8.3.9.a	Extra over reference 8.3.3 (a) for backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
C28.150		.1 Alongside walls in foundations	m³	230	-	-
		COMMERCIAL MATERIAL				
	8.3.4.b	Extra over reference 8.3.3 (a) for backfill or for fill with G7 material supplied by the Contractor from commercial sources against structures and compacted to 98% mod AASHTO density				
C28.151		.1 Alongside walls in foundations	m³	10	248.89	2 488.90
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1.b	Plane vertical				
C28.152		.1 Sides of floor slabs, bases, etc	m²	48	364.71	17 506.08
C28.153		.3 Walls	m²	485	364.71	176 884.35
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2.a	Plane horizontal				
C28.154		.1 Slabs	m²	65	636.15	41 349.75
		Plane horizontal - permanent formwork to be left intact				
C28.155		.1 Slabs	m²	9	675.03	6 075.27
	8.2.2.b	Plane vertical				
C28.156		.3 Walls	m²	340	364.71	124 001.40
C28.157		.4 Pipe supports	m²	10	364.71	3 647.10
	8.2.5	Smooth formwork to narrow widths				
C28.158		(a) Edges, risers, etc not exceeding 300mm wide	m	180	109.41	19 693.80
					Carried Forward	1 781 331.76

[redacted]

					Brought Forward	1 781 331.76
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C28.159		(a) Chamfer size 50 x 50mm	m	10	150.20	1 502.00
C28.160		(b) Groove size 70mm wide x 50mm deep	m	10	160.80	1 608.00
C28.161		(c) Rebate size 100mm x 100mm	m	10	241.12	2 411.20
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6.a	Small, circular, up to 0,35m diameter with depth				
C28.162		.1 Over 0m and up to 0,5m	no	10	471.46	4 714.60
	8.2.6.b	Small, other shapes, up to 0,1m² in area with depth				
C28.163		.1 Over 0m and up to 0,5m	no	10	551.52	5 515.20
	8.2.6.c	Large, circular, over 0,35m and up to 0,7m diameter with depth				
C28.164		.1 Over 0m and up to 0,5m	no	8	684.95	5 479.60
	8.2.6.d	Large, other shapes, over 0,7m² up to 1,0m² in area with depth				
C28.165		.1 Over 0m and up to 0,5m	no	7	791.70	5 541.90
	8.2.6.e	Large, circular, over 1,0 m^2 up to 1,5 m^2 in area with depth				
C28.166		.1 Over 0 m and up to 0,5 m	no	12	951.82	11 421.84
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings complete including cleaning and repairing concrete surface to smooth finish after completion				
C28.167		.1 Smooth formwork (all sizes and positions)	m²	60	770.95	46 257.00
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C28.168		.1 Grouting around pipes and fittings	m³	3	21 078.60	63 235.80
	SANS	**REINFORCEMENT**				
					Carried Forward	1 929 018.90

[redacted]

					Brought Forward	1 929 018.90
	1200 G	**ROD REINFORCEMENT**				
	8.3.1.a	Mild steel				
C28.169		.1 All sizes	ton	0.5	18 976.98	9 488.49
	8.3.1.b	High tensile steel				
C28.170		.1 All sizes	ton	18	18 976.98	341 585.64
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C28.171		(a) Blinding layer 50mm thick	m³	5	3 598.67	17 993.35
		CONCRETE				
	8.4.3.g	Strength concrete 35Mpa/19mm				
C28.172		.3 Slabs	m³	18	1 978.65	35 615.70
C28.173		.4 Floor slabs	m³	34	1 978.65	67 274.10
C28.174		.9 Walls	m³	95	1 978.65	187 971.75
C28.175		.23 Pipe supports	m³	4	1 978.65	7 914.60
		BENCHING				
	8.4.3.h	Strength concrete 20Mpa/13mm				
C28.176		.1 Benching to floors to falls including steel floated surface finish	m³	28	1 802.35	50 465.80
	SANS 1200 G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
C28.177		.1 Slabs, floor slabs, etc	m²	150	13.92	2 088.00
C28.178		.2 Top of walls, beams, etc	m²	10	13.92	139.20
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
					Carried Forward	2 649 555.53

[redacted]

					Brought Forward	2 649 555.53
C28.179	8.12	Testing entire structures for water tightness	chambers	20	5 233.14	104 662.80
		MISCELLANEOUS				
		MISCELLANEOUS				
		Scabble concrete walls approximately 10mm deep to expose aggregate for casting in new walls, etc				
C28.180		.1 200mm Wide	m	24	165.00	3 960.00
C28.181		Drill 16mm dia holes 180mm deep in slabs, etc and insert 12mm dia high tensile steel dowels 800mm long with approved epoxy	no	120	158.30	18 996.00
C28.182		Approved wet to dry epoxy applied to concrete surfaces 200mm wide all in accordance with manufacturers instructions	m	24	159.39	3 825.36
C28.183		Cut out size 2000 x 800mm through existing 250mm thick concrete wall, and finish opening neatly with non shrink grout	no	2	9 071.92	18 143.84
		BILL NO. C28 **CHAMBERS AND MANHOLES -SQB-SQF-SQH-SQI-SQR-SQS-SQT-SQU**				
		Carried forward to Summary of Bills			**Total**	2 799 143.53

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C29 **FERRIC CHEMICAL DOSING (08 PLANT) - WNB**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C29.1		.1 Floor sumps	m³	4	365.86	1 463.44
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C29.2		.1 Alongside walls in foundations	m³	20	248.89	4 977.80
C29.3		.3 Under floors	m³	10	248.89	2 488.90
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C29.4		.2 Floor slabs	m²	17	364.71	6 200.07
C29.5		.3 Chamber walls	m²	8	364.71	2 917.68
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C29.6		.2 Slabs	m²	40	636.15	25 446.00
	8.2.2	(b) Plane vertical				
C29.7		.2 Walls	m²	120	364.71	43 765.20
C29.8		.3 Chamber walls	m²	8	364.71	2 917.68
	8.2.5	Smooth formwork to narrow widths				
					Carried Forward	90 176.77

[redacted]

					Brought Forward	90 176.77
C29.9		(a) Edges, risers, etc not exceeding 300mm wide	m	35	109.41	3 829.35
	8.1.1.2	Normal formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C29.10		(d) Drip groove 30mm halfround	m	16	85.77	1 372.32
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1	Steel bars				
		(a) .1 Mild steel				
C29.11		.1 All sizes	ton	2	18 976.98	37 953.96
		(a) .2 High tensile steel				
C29.12		.1 All sizes	ton	9	18 976.98	170 792.82
	8.3.2	**MESH REINFORCEMENT**				
		(c) High tensile welded mesh				
C29.13		.2 Ref no.395	m²	25	107.37	2 684.25
C29.14		.3 Ref no 193	m²	25	58.60	1 465.00
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.3	Strength concrete 20Mpa/19mm				
C29.15		.1 Apron slabs	m³	2	1 802.35	3 604.70
	8.4.3	Strength concrete 35Mpa/19mm				
C29.16		.3 Slabs	m³	35	1 978.65	69 252.75
C29.17		.4 Surface beds	m³	2	1 978.65	3 957.30
C29.18		.5 Walls	m³	20	1 978.65	39 573.00
C29.19		.6 Chamber floors and walls	m³	4	1 978.65	7 914.60
		CONCRETE IN SMALL QUANTITIES				
	8.4.2	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
C29.20		.1 50mm Thick	m³	8	1 857.71	14 861.68
	SANS	**WATERPROOF CONCRETE**				
					Carried Forward	447 438.50

					Brought Forward	447 438.50
	1200 G					
	8.4.3	(c) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C29.21		.1 Roof slabs	m³	5	2 199.02	10 995.10
C29.22		.2 Beams	m³	3	2 199.02	6 597.06
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C29.23		.1 Benching to floors to falls including steel floated surface finish	m³	8	13.92	111.36
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C29.24		.1 Slabs and floor slabs	m²	110	13.92	1 531.20
C29.25		.2 Top of walls, beams, etc	m²	20	13.92	278.40
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C29.26		.4 Narrow widths not exceeding 300mm wide	m	3	118.25	354.75
	8.5	(b) Polyurethane joint sealer				
C29.27		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	3	153.31	459.93
	8.5	(c) Saw cut joints				
C29.28		.1 4 x 40mm Deep saw cut joint in floor slabs	m	5	272.21	1 361.05
		SHOWER				
		Emergency shower and eye wash Dwg 3089.00.00.WNA.14.U001				
C29.29		.1 Emergency shower and eye wash complete with concrete base, etc. Spray nozzle or similar and approved	no	1	4 837.50	4 837.50
					Carried Forward	473 964.85

[redacted]

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					Brought Forward	473 964.85
	SANS 1200 G	**ACID RESISTING COATINGS**				
		CONCRETE PROTECTION AND FLOOR COATINGS				
	8.4.11	(b) Chemical resistant coatings suitable for Ferric Chloride				
C29.30		i) Concrete floors	m²	52	516.00	26 832.00
C29.31		ii) Concrete walls	m²	72	548.25	39 474.00
		BILL NO. C29 **FERRIC CHEMICAL DOSING (08 PLANT) - WNB**				
		Carried forward to Summary of Bills			**Total**	540 270.85

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
WAS pump station (08 plant)

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C30				
		WAS PUMP STATION (08 PLANT) - WLG				
		Ref. dwg. 3089.00.00.WLG.14.U001				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C30.1		.1 Floor sumps	m³	300	365.86	109 758.00
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C30.2		.1 Alongside walls in foundations	m³	10	248.89	2 488.90
C30.3		.3 Under floors	m³	10	248.89	2 488.90
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C30.4		.2 Floor slabs	m²	12	364.71	4 376.52
C30.5		.3 Chamber walls	m²	40	364.71	14 588.40
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(b) Plane vertical				
C30.6		.2 Walls	m²	120	364.71	43 765.20
	8.2.5	Smooth formwork to narrow widths				
C30.7		(a) Edges, risers, etc not exceeding 300mm wide	m	50	109.41	5 470.50
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
					Carried Forward	182 936.42

[redacted]

					Brought Forward	182 936.42
C30.8		.1 over 0m and up to 0,5m	m	5	471.46	2 357.30
	SANS 1200 G	**REINFORCEMENT**				
	8.3.1	**ROD REINFORCEMENT**				
		Steel bars				
		(a) .1 Mild steel				
C30.9		.1 All sizes	ton	1	18 976.98	18 976.98
		(a) .2 High tensile steel				
C30.10		.1 All sizes	ton	6	18 976.98	113 861.88
	8.3.2	**MESH REINFORCEMENT**				
		(c) High tensile welded mesh				
C30.11		.2 Ref no.395	m²	16	107.37	1 717.92
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.3	Strength concrete 20Mpa/19mm				
C30.12		.1 Apron slabs	m³	4	1 870.83	7 483.32
		CONCRETE IN SMALL QUANTITIES				
	8.4.2	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
C30.13		.1 50mm Thick	m³	3	1 926.19	5 778.57
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(f) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C30.14		.3 Floor slabs	m³	10	2 267.50	22 675.00
C30.15		.4 Machine bases	m³	0,5	2 267.50	
C30.16		.5 Walls	m³	25	2 267.50	56 687.50
		(g) Concrete strength 20MPa/13 mm				
C30.17		.1 Benching to floors to falls including steel floated surface finish	m³	10	1 870.83	18 708.30
	SANS	**SURFACE FINISHES**				
					Carried Forward	431 183.19

[redacted]

					Brought Forward	431 183.19
	1200 G	**SURFACE FINISHES**				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C30.18		.1 Slabs and floor slabs	m²	30	13.92	417.60
C30.19		.2 Top of walls, beams, etc	m²	10	13.92	139.20
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C30.20		.4 Narrow widths not exceeding 300mm wide	m	4	118.25	473.00
	8.5	(b) Polyurethane joint sealer				
C30.21		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	4	153.31	613.24
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C30.22	8.12	Testing entire structure for water tightness	no	1	8 853.79	8 853.79
		BILL NO. C30 **WAS PUMP STATION (08 PLANT) - WLG**				
		Carried forward to Summary of Bills			**Total**	441 680.02

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Odour control

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C31 **ODOUR CONTROL** Drawing 3089.00.00.GZE.13.D002				
		CIVIL WORKS				
	SANS 1200 G	**SMOOTH FORMWORK**				
	PSG	**SMOOTH FORMWORK**				
	8.2.5	Smooth formwork to narrow widths				
C31.1		(a) Edges, risers, etc not exceeding 300mm wide	m	150	109.41	16 411.50
	8.2.6	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C31.2		(a) Chamfer size 50 x 50mm	m	50	150.20	7 510.00
		BOXING IN FOR HOLES AND VOIDS				
	8.2.7	Small, circular, up to 0.35m diameter with depth				
C31.3		.1 Over 0m and up to 0,5m	no	2	471.46	942.92
C31.4		.2 Over 0,5m and up to 1,0m	no	2	551.52	1 103.04
C31.5		.3 Over 1,0m and up to 1,5m	no	2	684.95	1 369.90
C31.6		.4 Over 1,5m and up to 2,0m	no	2	791.70	1 583.40
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1	Mild steel				
C31.7		.1 All sizes	ton	0.1	18 976.98	1 897.70
		High tensile steel				
C31.8		.2 All sizes	ton	6	18 976.98	113 861.88
		MESH REINFORCEMENT				
	8.3.2	High tensile welded mesh				
C31.9		(d) Ref no.395	m²	300	107.37	32 211.00
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
					Carried Forward	176 891.34

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					Brought Forward	176 891.34
C31.10		(a) Blinding layer 50mm thick	m³	20	1 926.19	38 523.80
	8.4.3	Strength concrete 35Mpa/19mm				
C31.11		.4 Floor slabs	m³	60	2 047.13	122 827.80
	SANS 1200 G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
C31.12		.1 Slabs, floor slabs, etc	m²	300	13.92	4 176.00
		BILL NO. C31 **ODOUR CONTROL**				
		Carried forward to Summary of Bills			**Total**	342 418.94

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C4 - Water and sewer reticulation				
		BILL NO. C32 **WATER AND SEWER CONNECTIONS**				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	PSD 8.3.3.a	Restricted excavation in all materials and place within freehaul distance for:				
C32.1		1 Chambers and manholes	m³	270	365.86	98 782.20
	SANS 1200 DB	**EARTHWORKS (Pipe trenches)**				
	PSDB 8.3.2	Excavate in all material for trenches, backfill and compact to 90% mod AASHTO density and dispose of surplus and unsuitable materials off site at a site established by the Contractor for trenches Pipe diameter 100 dia up to 200 nom dia with 300 mm side allowance each side				
	8.3.2.a.1	Up to 0.8 m wide				
C32.2		i) 0,00 m - 1,00 m depth	m³	80	286.91	22 952.80
C32.3		ii) 1,01 m - 1,50 m depth	m³	90	326.76	29 408.40
C32.4		iii) 1,51 m - 2,00 m depth	m³	170	406.46	69 098.20
C32.5		iv) 2,01 m - 2,50 m depth	m³	50	486.16	24 308.00
	SANS 1200 DB	**EXISTING SERVICES (that intersect or adjoin a pipe trench**				
	8.3.5	a) Services that intersect a trench				
		i) Sewers				
C32.6		.1 100 mm dia - 150 mm dia	no	3	503.55	1 510.65
		ii) Water and recycle water pipes				
C32.7		.1 100 mm dia - 300 mm dia	no	2	503.55	1 007.10
		iii) Electrical				
C32.8		.1 11 Kw cable	no	1	503.55	503.55
					Carried Forward	247 570.90

					Brought Forward	247 570.90
		iv) Stormwater pipes				
C32.9		.1 1 450 mm dia	no	1	503.55	503.55
	8.3.5	Existing services that intersect or adjoin a pipe trench				
		1 Stormwater pipes				
C32.10		1 450 mm dia	m	60	125.89	7 553.40
	SANS 1200LB	**BEDDING (pipes)**				
	PSLB 8.2.1	Provision of bedding from trench excavation for flexible pipes				
C32.11		a) Selected granular material	m³	18	97.37	1 752.66
C32.12		b) Selected fill material	m³	76	97.37	7 400.12
	8.2.2	Supply of bedding by importation				
C32.13		(a) Selected granular material	m³	5	158.27	791.35
C32.14		(b) Selected fill material	m³	26	158.27	4 115.02
	8.2.4	Class 20/19 concrete for pipe thrust blocks				
C32.15		(a) pipe thrust blocks	m³	2	2 324.15	4 648.30
C32.16		(b) encasing of pipes	m³	3	2 324.15	6 972.45
	SANS 1200 L	**SCHEDULE - MEDIUM - PRESSURE PIPELINE**				
	PSL 8.2.1	Supply, lay, joint, bed (flexible pipe bedding) and test water pipes				
		uPVC pipelines, Class 12				
C32.17		i) 75 mm dia	m	10	115.67	1 156.70
C32.18		ii) 90 mm dia	m	25	144.70	3 617.50
		Type 4 HDPE, Class 12 pipes for water reticulation Rate to include for all bends, cut lengths, couplings, tees				
C32.19		i) 63 mm dia	m	40	105.51	4 220.40
C32.20		ii) 50 mm dia	m	20	72.89	1 457.80
C32.21		iii) 32 mm dia	m	120	59.50	7 140.00
					Carried Forward	298 900.15

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					Brought Forward	298 900.15
C32.22		iv) 25 mm dia	m	100	56.51	5 651.00
	8.2.2	Supply and bedding of specials complete with couplings				
		Saddles				
C32.23		i) 90 mm dia with 25 mm dia drilling on uPVC	no	1	55.90	55.90
C32.24		ii) 90 mm dia with 63 mm dia drilling on uPVC	no	2	279.50	559.00
C32.25		iii) 75 mm dia with 50 mm dia drilling on uPVC	no	1	188.12	188.12
C32.26		iv) 75 mm dia with 32 mm dia drilling on uPVC	no	4	322.50	1 290.00
C32.27		v) 63 mm dia with 25 mm dia drilling on uPVC	no	2	268.75	537.50
		CI 'Female reducer, socketed both sides to suit uPVC pipe				
C32.28		i) 90 x 75 mm	no	1	344.00	344.00
C32.29		ii) 75 x 63 mm	no	1	322.50	322.50
		CI Endcap				
C32.30		i) 90 mm dia	no	1	258.70	258.70
C32.31		ii) 75 mm dia	no	1	184.15	184.15
C32.32		Stand pipe with tap garden hose connection clamped to concrete or brick wall or fixed on to MS iron dropper, complete as shown on drawing 3089.00.00.DET.14.D005	no	10	1 664.64	16 646.40
		Stop cock chamber complete as shown on drawing 3089.00.00.DET.14.D005				
C32.33		i) for 63mm dia. Bronze globe valve	no	2	5 341.68	10 683.36
C32.34		ii) for 32mm dia. Bronze globe valve	no	2	2 262.34	4 524.68
C32.35		iii) for 25mm dia. Bronze glove valve	no	5	2 165.86	10 829.30
C32.36	8.2.11	Soilcrete backfill with 5% OPC for pipelines where vehicle traffic is expected. Top 500 mm of trench at positions to be determined by Engineer on site.	m^3	5	1 191.52	5 957.60
	SANS 1200 LD	**SEWERS**				
	PSLD 8.2.1	Supply, lay, joint, bed sewer pipes and test Class 34 uPVC heavy duty pipe in accordance to SANS 1601 or similar and approved				
					Carried Forward	356 932.36

					Brought Forward	356 932.36
C32.37		i) 160 mm dia	m	125	216.72	27 090.00
C32.38		ii) 110 mm dia	m	190	127.50	24 225.00
	8.2.2	Extra over item 8.2.1 for specials				
C32.39		i) 110 mm dia junction plain 45° with access	no	28	95.89	2 684.92
C32.40		ii) 110 mm dia rodding eye 45° complete as shown on CoCT drawing S3	no	15	285.95	4 289.25
		Bends				
C32.41		iii) 110 mm dia 22.5°	no	2	139.75	279.50
C32.42		iv) 110 mm dia 45°	no	2	139.75	279.50
	8.2.3	Manholes				
		.1 Precast concrete ring type sewer manhole with cover slab, spacers and manhole cover and frame. Refer detail drawing S1 and SW11A Note: Rate to include for water tight joints				
C32.43		i) 1.25 m - 1.50 m	no	2	26 523.41	53 046.82
C32.44		ii) 1.51 m - 1.75 m	no	1	27 028.66	27 028.66
C32.45		iii) 1.76 m - 2,00 m	no	1	28 028.41	28 028.41
C32.46		iv) 2,01 m - 2,25 m	no	1	28 576.66	28 576.66
	8.2.3	.2 5,5 m^3 Conservancy tank with suction point, quick coupling, access frame and lid complete as shown on drawing 3089.00.00.DET.13.D010				
C32.47		1. Guard towers	no	4	82 315.82	329 263.28
C32.48		2. Gate house	no	1	82 315.82	82 315.82
		MISCELLANEOUS				
C32.49		1. Break through concrete ring type manhole wall to suit new 110 mm dia uPVC pipe Repair watertight after pipe installation	no	1	2 535.92	2 535.92
C32.50		2. Break through 300 mm thick reinforced concrete wall to suit new 110 mm dia uPVC pipe Repair watertight after pipe installation	no	1	2 535.92	2 535.92
					Carried Forward	969 112.02

					Brought Forward	969 112.02
		BILL NO. C32 **WATER AND SEWER CONNECTIONS**				
		Carried forward to Summary of Bills			**Total**	969 112.02

Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Sewer reticulation

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C4 - Water and sewer reticulation				
		BILL NO. C33 **POTABLE WATER AND SITE SERVICE NETWORK**				
	SANS 1200 DB	**RESTRICTED EXCAVATIONS**				
	PSDB 8.3.3.a	Restricted excavation in all materials and place within freehaul distance for:				
C33.1		0.1 Fire hydrant and water meter chambers	m³	25	365.86	9 146.50
	SANS 1200 DB	**EARTHWORKS (Pipe trenches)**				
		TRENCHING				
		Excavate in all materials, backfill and compact to 90% mod AASHTO density, and dispose of surplus and unsuitable materials off site at a site established by the Contractor for trenches				
	8.3.2	a) Up to 0.8m wide				
C33.2		.1 0,00 m - 1, 00 m deep	m³	550	286.91	157 800.50
C33.3		.2 1,01 m - 1,50 m deep	m³	600	326.76	196 056.00
C33.4		.3 1,51 m - 2,00 m deep	m³	250	406.46	101 615.00
C33.5		.4 2,01 m - 2,50 m deep	m³	60	486.16	29 169.60
	SANS 1200 DB	**EXISTING SERVICES (that intersect or adjoin a pipe trench**				
	8.3.5	a) Services that intersect a trench				
		i) Sewers				
C33.6		.1 100 mm dia - 150 mm dia	no	5	503.55	2 517.75
		ii) Water and recycle water pipes				
C33.7		.1 100 mm dia - 300 mm dia	no	7	503.55	3 524.85
		iii) Electrical				
C33.8		.1 11 Kw cable	no	3	503.55	1 510.65
		iv) Stormwater pipes				
C33.9		.1 450 mm dia	no	2	503.55	1 007.10
	8.3.5	**Existing services that intersect or adjoin a pipe trench**				
		b) Services that adjoin a trench				
					Carried Forward	502 347.95

					Brought Forward	502 347.95
		.1 Stormwater pipes				
C33.10		.1 450 mm dia	m	60	125.89	7 553.40
		.2` Water and recycle pipes				
C33.11		.1 100 mm dia - 300 mm dia	m	150	125.89	18 883.50
	SANS 1200 DB	**FINISHING AND REPAIRING EXISTING ROAD CROSSINGS CROSSINGS**				
	8.3.6.1	(a) Layerworks including extra over item 8.3.2 for carefull excavation and stockpiling of materials for re-use, or replacing with new material, including all accommodation of traffic and bypasses, complete				
C33.12		.1 G5 gravel shoulders 150mm thick compacted to 93% mod AASHTO density	m²	60	64.38	3 862.80
C33.13		.2 C4/C3 stabilised subbase layer 150mm thick compacted to 95% mod AASHTO density	m²	60	78.66	4 719.60
C33.14		.3 G4/G2 base layer 150mm thick compacted to 88% mod AASHTO density	m²	60	98.15	5 889.00
	8.3.6.1	(b) Continuously graded medium asphalt, including approved prime and tack coat preparation				
C33.15		.2 30mm Thick	m²	60	169.92	10 195.20
	SANS 1200 LB	**BEDDING (PIPES)**				
	PSLB	**FROM EXCAVATIONS**				
	8.2.1	Provision of bedding material from trench excavations, including screening of material to remove all vegetation, stones and foreign objects to the Engineers approval				
C33.16		(a) Selected granular material	m³	90	97.37	8 763.30
C33.17		(b) Selected fill material	m³	40	97.37	3 894.80
		FROM OTHER EXCAVATIONS				
	8.2.2.1	Provision of bedding material by importation from other necessary excavations within the freehaul distance, including screening of material to remove all vegetation, stones and foreign objects to the Engineers approval				
C33.18		(a) Selected granular material	m³	30	158.27	4 748.10
C33.19		(b) Selected fill material	m³	60	158.27	9 496.20
		FROM COMMERCIAL SOURCES				
	8.2.2.3	Provision of bedding material by importation from commercial sources selected by the Contractor				
					Carried Forward	580 353.85

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					Brought Forward	580 353.85
C33.20		(a) Selected granular material	m^3	40	346.26	13 850.40
C33.21		(b) Selected fill material	m^3	80	346.26	27 700.80
	SANS 1200 LB	**CONCRETE**				
	8.2.4	**Class 20/19 concrete for pipe thrust blocks**				
C33.22		a) pipe thrust blocks	m^3	3	2 324.15	6 972.45
C33.23		b) encasing of pipes	m^3	8	2 324.15	18 593.20
	SANS 1200 LD	**UPVC MEDIUM PRESSURE PIPELINES**				
	PSLD	Supply, lay, joint, bed (flexible pipe bedding) and test uPVC spigot and socket water pipes with moulded rubber rings to SABS 966				
	8.2.1.a	Class 12 pipes				
C33.24		.1 75 mm diameter	m	290	115.67	33 544.30
C33.25		.2 90 mm diameter	m	365	144.70	52 815.50
C33.26		.3 110 mm diameter	m	180	110.64	19 915.20
C33.27		.5 160mm diameter	m	325	181.57	59 010.25
C33.28		.6 200 mm diameter	m	360	457.52	164 707.20
C33.29		.7 250 mm diameter	m	10	690.80	6 908.00
		DISINFECT				
	8.2.1.b	Disinfect pipes				
C33.30		.1 75 mm diameter	m	290	1.12	324.80
C33.31		.2 90 mm diameter	m	365	1.12	408.80
C33.32		.3 110 mm diameter	m	180	1.12	201.60
C33.33		.5 160 mm diameter	m	325	1.12	364.00
C33.34		.6 200 mm diameter	m	360	1.12	403.20
C33.35		.7 250 mm diameter	m	10	1.12	11.20
	SANS 1200 LD	**PIPE FITTINGS**				
		PIPE FITTINGS				
	8.2.2	Extra over 8.2.1 for the supplying, laying, and bedding of specials complete with couplings				
		PVC, CLASS 16				
	8.2.2.a.1	Socket ended pressure bends with lying type joint				
					Carried Forward	986 084.75

					Brought Forward	986 084.75
C33.36		.1 75 mm diameter 11.25°	no	1	130.08	130.08
C33.37		.2 75 mm diameter 22.5°	no	1	130.08	130.08
C33.38		.3 75 mm diameter 90°	no	5	136.52	682.60
C33.39		.4 90 mm diameter 11.25°	no	1	180.60	180.60
C33.40		.5 90 mm diameter 45°	no	4	212.85	851.40
C33.41		.6 90 mm diameter 90°	no	3	212.85	638.55
C33.42		.7 110 mm diameter 11.25°	no	2	221.45	442.90
C33.43		.8 110 mm diameter 22.5°	no	1	221.45	221.45
C33.44		.9 110 mm diameter 45°	no	1	269.82	269.82
C33.45		.10 160mm diameter 22.5°	no	1	538.58	538.58
C33.46		.11 160 mm diameter 45°	no	3	603.08	1 809.24
C33.47		.12 160 mm diameter 90°	no	3	603.08	1 809.24
C33.48		.13 200 mm diameter 22.5°	no	1	963.20	963.20
C33.49		.14 200 mm diameter 45°	no	1	1 281.40	1 281.40
C33.50		.15 200 mm diameter 90°	no	2	1 281.40	2 562.80
	8.2.2.a.2	**CAST IRON EQUAL TEES**				
C33.51		.1 90 x 90 mm diameter	no	1	491.28	491.28
C33.52		.2 110 x 110 mm diameter	no	2	580.50	1 161.00
C33.53		.3 160 x 160 mm diameter	no	1	1 225.50	1 225.50
C33.54		.4 200 x 200 mm diameter	no	3	1 897.38	5 692.14
	8.2.2.a.3	**CAST IRON HYDRANT TEE'S**				
C33.55		.1 90 mm diameter	no	5	772.92	3 864.60
C33.56		.2 110 mm diameter	no	1	854.62	854.62
C33.57		.3 160 mm diameter	no	1	1 381.38	1 381.38
C33.58		.4 200 mm diameter	no	2	1 827.50	3 655.00
	8.2.2.a.4	**CAST IRON REDUCING TEE'S**				
C33.59		.1 110 x 75 mm diameter	no	1	651.45	651.45
C33.60		.2 160 x 75 mm diameter	no	1	1 209.38	1 209.38
C33.61		.3 200 x 90 mm diameter	no	1	1 956.50	1 956.50
					Carried Forward	1 020 739.54

					Brought Forward	1 020 739.54
	8.2.2.a.5	**CAST IRON REDUCERS**				
C33.62		.1 90 x 75 mm diameter	no	1	331.10	331.10
C33.63		.2 110 x 75 mm diameter	no	1	424.62	424.62
C33.64		.3 160 x 110 mm diameter	no	2	704.12	1 408.24
C33.65		.4 200 x 90 mm diameter	no	1	11 104.75	11 104.75
C33.66		.5 200 x 110 mm diameter	no	1	1 144.88	1 144.88
C33.67		.6 200 x 160 mm diameter	no	1	1 449.10	1 449.10
	8.2.2.a.6	**CAST IRON ENDCAPS**				
C33.68		.1 75 mm dia	no	4	172.00	688.00
C33.69		.2 90 mm dia	no	2	241.88	483.76
	8.2.2.a.7	**uPVC repair couplings**				
C33.70		.1 75 mm dia	no	3	108.58	325.74
C33.71		.2 90 mm dia	no	1	118.25	118.25
C33.72		.3 110 mm dia	no	3	164.48	493.44
C33.73		.4 160 mm dia	no	1	338.62	338.62
	SANS 1200 LD	**FIRE HYDRANTS**				
	8.2.2.a.6	Extra over reference 8.2.1 (a) for supply, install, bed and testing fire hydrant assemblies complete including cutting of pipes, couplings, including tapered Class 35/19 concrete pedestal, complete as shown on: Drawing 3089.00.00.DET.14.D005				
C33.74		.1 Tee piece on main line measured separately	no	9	13 437.50	120 937.50
	SANS 1200 L *PSL* 8.2.3	**VALVES** Extra over reference 8.2.1 for supply, install, bed and test "cap top" line valve assembly as SABS 664, including cutting of pipes, couplings, etc				
C33.75		.1 80 mm dia (75 mm pipeline)	no	4	3 513.32	14 053.28
C33.76		.2 100 mm dia (110 mm pipeline)	no	4	4 013.19	16 052.76
C33.77		.3 150 mm dia (160 mm pipeline)	no	1	6 485.69	6 485.69
C33.78		.4 200 mm dia (200 mm pipeline)	no	3	11 350.06	34 050.18
	SANS 1200 L	**SUNDRIES**				
					Carried Forward	1 230 629.45

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					Brought Forward	1 230 629.45
C33.79		125 mm dia water meter installation with strainer, non return valve, fittings, etc complete as shown on CoC drawing W4B	sum	-	11 350.06	11 350.06
		Note: water meter chamber measured elsewhere				
	8.2.4	Extra over 8.2.1 for the cutting of the pipe and the supplying and fixing of the extra coupling if required				
		Class 12 uPVC pipes				
C33.80		.1 75 mm diameter	no	10	696.82	6 968.20
C33.81		.2 90 mm diameter	no	8	696.82	5 574.56
C33.82		.3 110 mm diameter	no	3	696.82	2 090.46
C33.83		.4 160 mm diameter	no	10	852.69	8 526.90
C33.84		.5 200 mm diameter	no	9	1 015.02	9 135.18
	8.2.13	Valve and hydrant chambers				
C33.85		.1 Valve chamber with C.I. cover complete as shown on drawing 3089.00.00.DET.14.D005	no	12	2 333.82	28 005.84
C33.86		.2 Water meter chamber with sump and precast roof slab Complete as shown on CoC detail drawing W4B	no	1	28 405.82	28 405.82
		MISCELLANEOUS				
	8.2.14	.1 Connect to existing uPVC pipe. Rate to include for cutting and preparing pipe ends, repair couplings both sides, complete with excavation, backfilling and compaction				
C33.87		.1 75 mm diameter	no	2	2 920.78	5 841.56
C33.88		.2 110 mm diameter	no	2	2 976.68	5 953.36
	8.2.14	.2 Connect to existing AC pipe. Rate to include for cutting and preparing pipe ends, for fitting C.1. or uPVC fittings both sides, complete with excavation, backfilling and compaction Note: Cutting, removing of AC piping by qualified and registered company				
C33.89		.1 75 mm dia	no	1	2 920.78	2 920.78
C33.90		.2 100 mm dia	no	2	2 976.68	5 953.36
		BILL NO. C33 **POTABLE WATER AND SITE SERVICE NETWORK**				
		Carried forward to Summary of Bills			**Total**	1 351 355.53

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C5 - Structural steelwork				
		BILL NO. C34 **STRUCTURAL STEELWORK** **C.6 STRUCTURAL STEELWORK**				
	SANS 1200 HA	**STRUCTURAL STEELWORK (SMALL WORKS)**				
	PSHA	Rate to include for supply of material, erection, welding, bolts, nuts, protection etc.				
	8.3.1	**STRUCTURAL STEEL**				
	8.3.1.1	Primary Settling Tanks Hot dip galvanized PC link with handrail bolted to circular walkway or concrete walls. Complete as shown on drawing 3089.00.00.WDA.14.X004				
C34.1		i) Walkway between tanks on level 13,10 m, length ± 600 mm	No	2	25 763.79	51 527.58
C34.2		ii) Walkway between tank on level 13,10 and Division structure landing level 13,05, length ± 1050 mm	No	1	32 199.10	32 199.10
		iii) 900 mm WIDE PC 180 x 70 hot dip galvanized stairs with 245 x 60 HDG stair tread bolted to PC, with standard ball type handrail. Complete with all fixtures bolted to concrete wall				
C34.3		Total height 2 150 mm, available length between tank and division structure 2 750 mm	no	1	43 722.44	43 722.44
	8.3.1.2	Primary sludge Pump Station / Strain Press				
		i) Hot dip galvanized PC stairs with landing, knee brace, support columns and handrails bolted to concrete support and concrete beam.				
C34.4		Complete as shown on drawing 3089.00.00.WFB.14.X001	No	1	101 486.49	101 486.49
		ii) Stainless steel 600 x 600 mm frame and hinged access cover bolted to concrete slab.				
C34.5		Complete as shown on drawing 3089.00.00.DET.13.D003	No	2	8 263.01	16 526.02
	8.3.1.3	Fine Screens				
		i) Stainless steel 600 x 600 mm frame and hinged access cover bolted to concrete slab				
					Carried Forward	245 461.63

					Brought Forward	245 461.63
C34.6		Complete as shown on drawing ii) Hot dip galvanized airvent with puddle flange and ss mesh and gauze, cast into concrete slab	No	4	8 263.01	33 052.04
C34.7		Complete as shown on drawing 3089.00.00.WFA.14.X001	No	2	3 007.74	6 015.48
		Biological Reactor				
C34.8		Stainless steel kick plate bolted to walkway walls. Complete as shown on detail. Ref. drawing 3089.00.00.WIA.14.X003	m	300	1 858.14	557 442.00
	8.3.1.4	MBR Plant				
		i) Stainless steel 600 x 600 mm frame and hinged access cover bolted to concrete slab				
C34.9		Complete as shown on drawing 3089.00.00.DET.13.D003	No	1	3 312.88	3 312.88
		ii) Stainless steel frame, hinged and braced access cover with handles, bolted to concrete slab. Hinged lid in suitable manageable sizes				
C34.10		1 2 000 x 1 500 mm	No	2	24 026.00	48 052.00
C34.11		2 2 250 x 1 500 mm	No	2	27 888.98	55 777.96
		iii) Hot dip galvanized PC stairs with handrails. 1 400 mm wide, 1 000 mm high, bolted to concrete wall. 1 400 mm wide, 1 000 mm high				
C34.12		Refer to detail drawing 3089.00.00.WHA.14.U007	No	3	137 425.71	412 277.13
	8.3.1.5	Primary Sludge Holding Tanks				
		i) Hot dip galvanized PC link wth handrail bolted to circular apron				
C34.13		Complete as shown on drawing 3089.00.00.WKA.14.D001	No	1	39 539.87	39 539.87
		ii) Stainless steel access cover with lifting handles and neoprene packing bolted to concrete slab				
C34.14		Complete as shown on drawing 3089.00.00.WKA.14.D001	No	4	8 821.75	35 287.00
	8.3.1.6	08 Plant/WAS pump station				
		i) Hot dip galvanized PC walkway link with handrail bolted to tank walls and landing				
					Carried Forward	1 436 217.99

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					Brought Forward	1 436 217.99
C34.15		Complete as shown on drawing 3089.00.00.WLG.14.D001	No	1	59 175.57	59 175.57
	8.3.1.7	Sludge cake silos				
		i) Stainless steel 600 x 600 mm frame and hinged access cover bolted to concrete slab				
C34.16		Complete as shown on drawing 3089.00.00.DET.13.D003	No	4	4 461.16	17 844.64
	8.3.2	HANDRAILS				
		Stainless steel standard ball type approved (1000 mm high) handrail, horizontal, side or top mounted, including shaped ends				
	8.3.2.1	a) Top mounted				
C34.17		1 Stone trap and inlet canal	m	26	1 822.41	47 382.66
C34.18		2 Inlet works	m	50	1 822.41	91 120.50
C34.19		3 Degritter	m	66	1 822.41	120 279.06
C34.20		4 Raw sewage pump station	m	48	1 822.41	87 475.68
C34.21		5 Division structure	m	24	1 822.41	43 737.84
C34.22		6 Primary sludge pump station/strain press	m	72	1 822.41	131 213.52
C34.23		7 Fine screens	m	60	1 822.41	109 344.60
C34.24		8 Bio reactor	m	2 050	1 822.41	3 735 940.50
C34.25		9 MBR plant	m	10	1 822.41	18 224.10
C34.26		10 MBR reuse pump station and MCC	m	52	1 822.41	94 765.32
C34.27		11 Overflow dams	m	48	1 822.41	87 475.68
C34.28		12 Emergency storage dam	m	14	1 822.41	25 513.74
C34.29		13 Dewatering building	m	10	1 822.41	18 224.10
C34.30		14 WAS sludge holding tanks	m	74	1 822.41	134 858.34
C34.31		15 Sludge cake silos	m	10	1 822.41	18 224.10
C34.32		16 Sludge feed pump station and valve chamber	m	11	1 822.41	20 046.51
C34.33		17 Primary/WAS filtrate pumpstation	m	25	1 822.41	45 560.25
C34.34		18 08 Plant/WAS pump station	m	3	1 822.41	5 467.23
C34.35		19 08 plant, existing raw sewage pump station	m	48	1 822.41	87 475.68
	8.3.2.2	b) Top mounted with radius				
C34.36		1 Primary settling tanks with radius R = 16,00 m	m	410	1 822.41	747 188.10
					Carried Forward	7 182 755.71

					Brought Forward	7 182 755.71
C34.37		2 Primary sludge holding tanks with radius R = 9,20 m	m	118	1 822.41	215 044.38
	8.3.2.3	c) Side mounted				
C34.38		1 Division structure	m	2	1 822.41	3 644.82
C34.39		2 WAS sludge holding tanks	m	78	1 822.41	142 147.98
C34.40		3 MBR plant	m	26	1 822.41	47 382.66
		Stainless steel standard ball type approved (1000 mm high) handrail, sloping, side or top mounted				
	8.3.2.4	a) Top mounted				
C34.41		1 Inlet works	m	8	1 822.41	14 579.28
C34.42		2 Degritter	m	12	1 822.41	21 868.92
C34.43		3 Raw sewage pumpstation	m	22	1 822.41	40 093.02
C34.44		4 Primary sludge pumpstation	m	9	1 822.41	16 401.69
C34.45		5 Fine screens	m	10	1 822.41	18 224.10
C34.46		6 Bio reactor	m	12	1 822.41	21 868.92
C34.47		7 MBR plant	m	4	1 822.41	7 289.64
C34.48		8 MBR reuse pumpstation and MCC	m	10	1 822.41	18 224.10
	8.3.2.5	b) Side mounted				
C34.49		1 Division structure	m	10	1 822.41	18 224.10
C34.50		2 WAS sludge holding tanks	m	6	1 822.41	10 934.46
	8.3.2.6	Stainless steel ball type approved (450 mm high) handrail, horizontal, side or top mounted				
		a) Top mounted				
C34.51		1 Raw sewage pumpstation	m	3	1 996.09	5 988.27
	8.3.2.7	Stainless steel removeable ball type approved (450 mm high) handrail, horizontal top mounted				
		Raw sewage pumpstation				
C34.52		1 Removable and lockable access gate	m	2	1 996.09	3 992.18
C34.53		MBR reuse pumpstation and MCC	m	5	1 996.09	9 980.45
	8.3.2.8	Stainless steel removable ball type approved (1000 mm high) handrail, horizontal top mounted				
C34.54		Emergency storage dam	m	2	1 880.30	3 760.60
					Carried Forward	7 802 405.28

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					Brought Forward	7 802 405.28
	8.3.2.9	Stainless steel handrail bolted to staircase concrete wall MBR plant				
C34.55		1 Horizontal	m	18	1 822.41	32 803.38
C34.56		2 Inclined	m	21	1 822.41	38 270.61
	8.3.3	LADDERS, COMPLETE AND INSTALLED				
	8.3.3.1	Hot dip galvanized cat ladder complete as shown on drawing 3089.00.00.DET.13.D001 MBR reuse pumpstation and MCC				
C34.57		a) X = 10,50 Y = ±8,50	no	1	12 665.39	12 665.39
C34.58		b) X = 9,10 m Y = 6,30 m	no	1	16 535.39	16 535.39
		Overflow dams				
C34.59		c) X = 5,88 m Y = 5,30 m	no	1	4 334.94	4 334.94
		Sludge feed pumpstation and valve chamber				
C34.60		d) X = 8,20 Y = 6,90	no	1	8 437.14	8 437.14
		08 Plant - WAS Pump station				
C34.61		e) X = 8.75 Y = 7,25	no	1	9 404.64	9 404.64
	8.3.3.2	Hot dip galvanized cat ladder with safety hoop and platform complete as shown on drawing 3089.00.00.DET.13.D002 Dewatering building				
C34.62		a) X = 15,20 m Y = 9,70 m	no	1	30 670.84	30 670.84
		Primary sludge holding tanks				
C34.63		b) X = 13,60 Y = 7,50	no	1	33 573.34	33 573.34
		MBR plant, without platform				
C34.64		c) X = 12,80 m Y = 8,10 m	no	1	25 726.64	25 726.64
	8.3.3.3	Stainless steel ladders without safety hoop. Complete as shown on drawing 3089.00.00.DET.13.D001				
C34.65		1 Primary sludge pumpstation length ±2500 mm	no	2	15 854.64	31 709.28
					Carried Forward	8 046 536.87

					Brought Forward	8 046 536.87
C34.66		2 Fine screens, length ± 3 000 mm	no	2	23 447.69	46 895.38
C34.67		3 MBR plant, length ± 4 500mm	no	1	34 666.34	34 666.34
	8.3.3.4	GRP ladder bolted to concrete wall For profiles used refer to CoCT detail drawing EAH-ME-SS-019				
C34.68		i) 08 plant, ferric chloride dosing system, complete as shown on drawing 3089.00.00.WNB.14.U001	no	1	8 586.84	8 586.84
C34.69		ii) MBR plant, ferric chloride dosing system, complete as shown on drawing 3089.00.00.WNA.01.A001	no	1	8 586.84	8 586.84
	8.3.4	FLOORING Complete and installed with angle iron frames cast into concrete and or MS channel supports bolted to concrete and all required cut outs, all edges banded				
	8.3.4.1	Hot dip galvanized banded RS40 grating with 30 x 4.5 mm bearer bar, minimum of 25 bearer bars per metre for grating details refer to drawing 3089.00.00.DET.13.D003 Stone traps				
C34.70		i) 1560 x 1230 (span1200mm) Raw sewage pumpstation	no	1	5 474.59	5 474.59
C34.71		i) 1 060 x 1 030 mm (span 1 000 mm) Primary sludge pumpstation and strain press	no	1	3 121.91	3 121.91
C34.72		i) 560 x 530 mm (span 500 mm)	no	1	902.10	902.10
C34.73		ii) 630 x 630 mm (span 600 mm) Fine screens	no	1	3 471.78	3 471.78
C34.74		i) 530 x 22 800 mm one side on hot dip galvanized angle iron frame bolted to concrete wall Bio Reactor	no	1	34 025.98	34 025.98
C34.75		i) 660 x 460 mm (span 400 mm)	no	16	920.13	14 722.08
C34.76		ii) 860 x 460 mm (span 400 mm)	no	7	1 180.06	8 260.42
C34.77		iii) 1 160 x 460 mm (span 400 mm)	no	43	1 561.94	67 163.42
C34.78		iv) 1 260 x 460 mm (span 400 mm)	no	8	1 731.93	13 855.44
C34.79		v) 1 160 x 660 mm (span 600 mm)	no	18	2 225.06	40 051.08
					Carried Forward	8 336 321.07

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					Brought Forward	8 336 321.07
C34.80		vi) 1 260 x 660 mm (span 600 mm)	no	6	2 416.05	14 496.30
C34.81		vii) 1 360 x 660 mm (span 600 mm)	no	4	2 591.03	10 364.12
C34.82		viii) 1 860 x 760 mm (span 700 mm)	no	4	4 039.12	16 156.48
C34.83		ix) 1 060 x 810 mm (span 750 mm)	no	12	2 487.63	29 851.56
C34.84		x) 860 x 860 mm (span 800 mm)	no	4	2 140.12	8 560.48
C34.85		xi) 1 160 x 860 mm (span 800 mm)	no	8	2 872.16	22 977.28
C34.86		xii) 11 260 x 1 060 mm (span 1 000 mm)	no	2	33 632.53	67 265.06
C34.87		xiii) 1 560 x 1 060 mm (span 1 000 mm)	no	20	4 723.45	94 469.00
C34.88		xiv) 1 310 x 560 mm (span 500 mm)	no	1	2 124.21	2 124.21
		MBR reuse pumpstation and MCC				
C34.89		i) 1 060 x 1 030 mm (span 1 000 mm)	no	1	3 137.92	3 137.92
		Dewatering building				
C34.90		i) 560 x 560 mm (span 500 mm)	no	10	946.65	9 466.50
C34.91		ii) 1 060 x 1 060 mm (span 1 000 mm)	no	2	3 222.23	6 444.46
C34.92		iii) 860 x 860 mm (span 800 mm)	no	2	2 134.63	4 269.26
		Primary sludge holding tanks				
C34.93		i) 1 060 x 1 060 mm (span 1 000 mm)	no	3	3 222.23	9 666.69
	8.3.4.2	40 x 40 x 5 mm angle iron frame cast into concrete floor with fish tail anchor complete as shown on detail drawing 3089.00.00.DET.13.D003				
C34.94		i) Raw sewage pumpstation	m	3	291.79	875.37
C34.95		ii) Primary sludge pumpstation and strain press	m	3	291.79	875.37
C34.96		iii) Fine screens	m	46	291.79	13 422.34
C34.97		iv) Bio Reactor	m	500	291.79	145 895.00
C34.98		v) MBR reuse pump station and MCC	m	4	291.79	1 167.16
C34.99		vi) Dewatering building	m	38	291.79	11 088.02
C34.100		vii) Primary sludge holding tanks	m	13	291.79	3 793.27
	8.3.4.3	Hot dip galvanized banded RS 40 grating with 40 x 5.5 mm bearer bar, minimum of 25 bearer bars per metre of grating for details refer drawing 3089.00.00.DET.13.D003				
		Inlet works screens				
C34.101		i) 2570 x 1270 mm (span 1200 mm)	no	1	11 384.81	11 384.81
					Carried Forward	8 824 071.73

					Brought Forward	8 824 071.73
C34.102		ii) 2270 x 1270 mm (span 1200 mm)	no	1	10 061.33	10 061.33
C34.103		iii) 2170 x 1270 mm (span 1200 mm)	no	1	9 625.50	9 625.50
		Bio Reactor				
C34.104		i) 1 570 x 1 120 mm (span 1 050 mm)	no	8	6 168.02	49 344.16
C34.105		ii) 1 650 x 1 270 mm (span 1 200 mm)	no	2	7 330.38	14 660.76
C34.106		iii) 1 720 x 1 270 mm (span 1 200 mm)	no	4	7 640.26	30 561.04
C34.107		iv) 2 070 x 1 270 mm (span 1 200 mm)	no	2	9 173.66	18 347.32
C34.108		v) 1 570 x 1 570 mm (span 1 500 mm)	no	8	8 615.53	68 924.24
C34.109		vi) 1 820 x 1 570 mm (span 1 500 mm)	no	4	9 977.04	39 908.16
		Ferric chloride installation (08 plant and MBR plant)				
C34.110		i) 860 x 860 mm (span 800 mm)	no	4	2 640.12	10 560.48
	8.3.4.4	50 x 50 x 5 mm hot dip galvanized angle iron frame cast into concrete wall with fish tail anchor complete as shown on drawing 3089.00.00.DET.12.D003				
C34.111		i) Bio reactor	m	165	313.14	51 668.10
C34.112		ii) Ferric chloride installation	m	13	313.14	4 070.82
	8.3.4.5	Hot dip galvanized banded RS 40 grating with 60 x 4.5 mm bearer bar, minimum of 25 bearer bars per metre of grating for details refer drawing 3089.00.00.DET.13.D003				
		Bio reactor				
		Refer drawing 3089.00.00.WIA.14.D004 for the following gratings:				
C34.113		i) 2 070 x 1 470 mm (span 1 400 mm)	no	8	15 880.91	127 047.28
C34.114		ii) 5 280 x 1 780 mm (span 1 700 mm)	no	1	48 931.45	48 931.45
C34.115		iii) 8 900 x 1 740 mm (span 1 700 mm)	no	1	80 583.99	80 583.99
	8.3.4.6	60 x 60 x 5mm hot dip galvanized angle iron frame cast into concrete wall with fish tail anchor complete as shown on drawing 3089.00.00.DET.13.D003				
C34.116		i) Bio reactor	m	95	345.16	32 790.20
		STEP WITH SUPPORT				
	8.3.4.7	Hot dip galvanized banded RS40 grating 30 x 4.5mm bearer bar, minimum of 25 bearer bars per metre. Width 270 mm				
		Bio reactor				
					Carried Forward	9 421 156.56

					Brought Forward	9 421 156.56
C34.117		i) 270 x 170 x 2 800 mm long	no	1	2 200.62	2 200.62
C34.118		ii) 270 x 170 x 1 800 mm long	no	2	1 436.40	2 872.80
C34.119		ii) 270 x 170 x 1 500 mm long	no	2	1 205.53	2 411.06
	8.3.4.8	Heavy duty GRP grating with GRP angle iron frame cast into concrete				
		Ferric chloride installations				
C34.120		i) 680 x 1 540 mm	no	2	3 879.17	7 758.34
C34.121		ii) 580 x 580 mm	no	2	1 847.42	3 694.84
		MISCELLANEOUS				
	8.3.4.9	Heavy duty cast iron circular manhole cover and frame, refer to CoCT standard detail SW11A and S1				
C34.122		i) Stone trap and canal (Du-noon chamber)	no	2	6 002.16	12 004.32
C34.123		ii) on chambers and MH	no	24	6 002.16	144 051.84
	8.3.4.10	Polypropylene coated step irons with high tensile steel bar				
C34.124		i) 08 plant/WAS pumpstation	no	14	588.99	8 245.86
	8.3.4.11	Fibre reinforced polyester (FRP) hinged access cover and frame complete with handles, etc. Refer drawing 3089.00.00.WHA.14.U003				
		Membrane plant				
C34.125		i) 1 500 x 1 000	no	1	11 228.11	11 228.11
C34.126		ii) 800 x 800	no	2	7 841.86	15 683.72
	8.3.4.12	Hot dip galvanized vermin proof air vent, built into concrete roof slab. Refer drawing 3089.00.00.DET.13.D002				
		Chambers and manholes				
C34.127		i) UF plant	no	14	3 087.80	43 229.20
C34.128		ii) Remaining works	no	12	3 087.80	37 053.60
		BILL NO. C34 **STRUCTURAL STEELWORK**				
		Carried forward to Summary of Bills			**Total**	9 711 590.87

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C6 - Steel pipe fittings and valves				
		BILL NO. C35 **STEEL PIPE FITTINGS AND VALVES**				
	SANS 1200 A	**PROVISIONAL SUMS**				
		Note: Expenditure under the following provisional sums is for work executed by the Contractor\Sub-contractor or Supplier during the construction phase of the contract. Values paid under these items shall be "nett values excluding discount and VAT". Invoices shall be supplied for each expenditure and attached to the payment certificates. For work to be executed by the Contractor\Sub-contractor or Supplier and valued in terms of the "Valuation of Variations" clause in the Conditions of Contract.				
	8.5	.1 Work as instructed by the Engineer				
C35.1		.1 Work as instructed by the Engineer	Prov sum		260 000.00	260 000.00
C35.2		.2 Overheads, charges and profit on above	%		10%	26 000.00
	SANS 1200 L	**STEEL PIPE FITTINGS AND VALVES**				
	PSL 8.2.5	**1 STONE TRAPS** Refer drawing 3089.00.00.WBC.14.U001 150 mm dia stainless steel pipe, one end with puddle flange . Other end flanged, with resilient seal gate valve in accordance to SABS 664, flanged with extension spindle and handwheel Note: Rate to include for stainless steel extension spindle bracket, bolted to concrete wall				
C35.3		.1 150 mm dia SS pipe 5 600 mm long	no	1	22 971.95	22 971.95
C35.4		.2 150 mm dia SS pipe 3 100 mm long	no	1	19 279.32	19 279.32
C35.5		.3 150 mm dia SS pipe 600 mm long	no	1	10 722.64	10 722.64
C35.6		.4 Resilient seal gate valve	no	3	10 384.77	31 154.31
	8.2.5	**2 INLET WORKS** Refer drawing 3089.00.00.WBA.14.U001,X001 and X002 150 mm dia stainless steel pipe with 90°bend. One end with puddle flange. Other end flanged, with resilient seal gate valve in accordance to SABS 664, flanged with extension spindle and handwheel				
					Carried Forward	370 128.22

					Brought Forward	370 128.22
		Note: Rate to include for stainless steel extension spindle bracket, bolted to concrete wall				
C35.7		.1 150 mm dia SS pipes with 90° bend welded to straight pipes, total length ± 10 300 mm	no	3	32 759.42	98 278.26
C35.8		.2 150 mm dia SS pipes with 90° bend welded to straight pipes, total length ± 7 800 mm	no	3	29 534.42	88 603.26
C35.9		.3 150 mm dia SS pipes with 90° bend welded to straight pipes, total length ± 4300 mm	no	3	25 941.77	77 825.31
C35.10		.4 150 mm dia straight SS pipe, length 1 200mm	no	3	13 597.95	40 793.85
C35.11		.5 Resilient seal gate valve	no	12	10 372.95	124 475.40
	8.2.5	**3 STRAIN PRESS** Refer drawing 3089.00.00.WLH.14.U001 and X001 100 mm dia stainless steel pipe one end with 90° elbow, other end with puddle flange				
C35.12		.1 100 mm dia SS pipe, ± 3 150 mm long	no	2	8 685.20	17 370.40
	8.2.5	**4 FINE SCREENS** Refer drawing 3089.00.00.WFA.14.U003 and X001 100 mm dia stainless steel pipes (3 NO's) flanged, with puddle flange, flanged 90° elbow, with resilient seal gate valve in accordance to SABS 664, flanged with extension spindle and cap				
C35.13		.1 100 mm dia SS pipe, total length ± 5 900 mm 100 mm dia stainless steel pipe one end with puddle flange other end flanged with resilient seal gate valve in accordance to SABS 664, flanged with extension spindle and cap	no	6	11 910.20	71 461.20
C35.14		.2 100 mm dia SS pipe, total length 500 mm	no	2	6 535.20	13 070.40
C35.15		.3 Resilient seal gate valve	no	8	7 255.45	58 043.60
		BILL NO. C35 **STEEL PIPE FITTINGS AND VALVES**				
		Carried forward to Summary of Bills			**Total**	960 049.90

Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Access and roads

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C7 - Access, paving, drainage and fencing				
		BILL NO. C36 **ACCESS AND ROADS** **Ref dwg. 3089.00.00.AAB.10.U013 and 3089.30.01.GZC.03.D002**				
		ACCESS AND ROADS				
	SANS 1200 C	**CLEAR SITE**				
	PSC	**CLEAR SITE**				
	8.2.1	(a) Clear and grub area for the following construction activity, and dispose of all material off site at a spoil site established by the Contractor				
C36.1		.2 Roads servitudes	m²	2000	2.94	5 880.00
		REMOVE TREES				
	8.2.2	Remove and grub large trees and tree stumps, including filling in of holes, levelling of site and compaction, with trees of the following girth, and dispose of material off site at a spoil site established by the Contractor				
C36.2		(a) Exceeding 1m and up to and including 2m girth	no	2	541.46	1 082.92
C36.3		(b) Exceeding 2m and up to and including 3m girth	no	2	789.27	1 578.54
	SANS 1200 C	**TOPSOIL**				
		TOPSOIL				
	8.2.10	(a) Remove topsoil to a depth of 150mm and				
C36.4		.1 Stockpile on site and maintain	m³	100	59.55	5 955.00
C36.5		.2 Spoil off site at spoil site established by the Contractor	m³	100	139.47	13 947.00
		REMOVE EXISTING SERVICES				
		Removal of underground services as follows				
	8.2.7	(a) Dismantle remove and spoil pipelines, powerlines, cables, etc (excavation, backfilling and removal of concrete, etc measured elsewhere)				
C36.6		.1 100mm uPVC water pipeline	m	50	28.12	1 406.00
C36.7		.2 160mm uPVC sewer pipeline	m	50	28.12	1 406.00
C36.8		.3 600mm Concrete stormwater pipeline	m	50	299.93	14 996.50
					Carried Forward	46 251.96

[redacted]

					Brought Forward	46 251.96
		REMOVE EXISTING STRUCTURES				
		Demolish and spoil material for structures, buildings, etc at a spoil site established by the Contractor				
	8.2.8	(a) Sundry structures, etc				
C36.9		.3 Mass concrete structures	m³	15	792.45	11 886.75
C36.10		.4 Reinforced concrete structures	m³	15	914.69	13 720.35
C36.11		.5 150mm Thick concrete paving	m²	150	118.87	17 830.50
C36.12		.6 150mm Thick reinforced concrete paving	m²	150	137.20	20 580.00
C36.13		.7 Concrete kerbing (all types and sizes)	m	250	73.28	18 320.00
C36.14		.8 Mass brickwork structures	m³	8	124.03	992.24
C36.15		.9 Sewer manholes (all sizes)	no	3	530.71	1 592.13
C36.16		.10 Stormwater manholes, kerb inlets, etc (all sizes)	no	3	782.20	2 346.60
C36.17		.11 Watermeter chamber, airvalve chambers, etc (all sizes)	no	3	530.71	1 592.13
	SANS 1200 D	**EXISTING SERVICES**				
	PSD	**EXISTING SERVICES**				
	8.3.8	.2 Dealing with services that are at risk because of construction of earthworks (other than trenching)				
		(a) Type of service				
C36.18		.1 Electric cable	no	3	503.55	1 510.65
C36.19		.2 Telephone cable	no	3	503.55	1 510.65
C36.20		.3 Sewer pipe	no	3	503.55	1 510.65
C36.21		.4 Water pipe	no	3	503.55	1 510.65
	8.3.8	.2 Permanent protection of services				
		(b) Type of service				
C36.22		.1 Electric cable	sum	-	503.55	503.55
C36.23		.2 Telephone cable	sum	-	503.55	503.55
C36.24		.3 Sewer pipe	sum	-	503.55	503.55
C36.25		.4 Water pipe	sum	-	503.55	503.55
	8.3.8	.2 Temporary protection of services				
					Carried Forward	143 169.46

					Brought Forward	143 169.46
		(c) Type of service				
C36.26		.1 Electric cable	sum	-	503.55	503.55
C36.27		.2 Telephone cable	sum	-	503.55	503.55
C36.28		.3 Sewer pipe	sum	-	503.55	503.55
C36.29		.4 Water pipe	sum	-	503.55	503.55
	SANS 1200 DM	**ROADBED**				
	PSDM	**ROADBED**				
	8.3.3	(a) Roadbed preparation and compaction of soil to				
C36.30		.1 300mm Minimum of 93% mod AASHTO density below roads	m³	1920	55.36	106 291.20
C36.31		.2 150mm Minimum of 93% mod AASHTO density below sidewalks, islands, etc	m³	100	55.36	5 536.00
	8.3.3	(b) Roadbed preparation and compaction of sand to				
C36.32		.6 300mm Minimum of 100% mod AASHTO density below roads	m³	1920	55.36	106 291.20
C36.33		.7 150mm Minimum of 100% mod AASHTO density below sidewalks, islands, etc	m³	100	55.36	5 536.00
	SANS 1200 DM	**ROADBED IN POOR SOIL CONDITIONS**				
		ROADBED IN POOR SOIL CONDITIONS				
		Roadbed preparation and compaction of material consisting of roller compaction with				
C36.34		.5 20 Ton padfoot vibratory roller below roads, etc	m²-pass	400	1.55	620.00
C36.35		.6 20 Ton smooth drum vibratory roller below roads, etc	m²-pass	400	2.53	1 012.00
	SANS 1200 DM	**CUT OR BORROW TO FILL**				
		CUT OR BORROW TO FILL				
		Cut or borrow to fill				
	8.3.4	(a) Excavate from road prism, select, load, transport to point of use and fill over site				
C36.36		.2 Compacted to 93% mod AASHTO density	m³	400	102.11	40 844.00
	8.3.4	(b) Excavate from road prism, select, load, transport to point of use and fill below and alongside roads				
C36.37		.5 Compacted to 93% mod AASHTO density	m³	400	102.11	40 844.00
					Carried Forward	452 158.06

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					Brought Forward	452 158.06
	SANS 1200 DM	**COMMERCIAL MATERIAL**				
		COMMERCIAL MATERIAL				
		Construct filling over site, below roads or alongside roads with material supplied by the Contractor from commercial sources of the following quality				
	8.3.4	(c) G7 material				
C36.38		.2 Compacted to 93% mod AASHTO density	m³	400	284.92	113 968.00
	SANS 1200 DM	**COMMERCIAL DUMP ROCK**				
		COMMERCIAL DUMP ROCK				
	8.3.4	(d) Construct dump rock layer with material supplied by the Contractor from commercial sources of suitable size, quality and grading				
C36.39		.1 Dump rock layer 300mm thick placed in position and compacted with 10 pass 10 ton roller compaction below roads	m³	150	439.00	65 850.00
	SANS 1200 DM	**LAYERWORKS FROM EXCAVATION**				
		LAYERWORKS FROM EXCAVATION				
		Excavate from road prism, select, load, transport to point of use and construct layerworks as follows				
		Selected layers				
	8.3.5	(b) Compacted to 95% mod AASHTO density				
C36.40		.2 150mm Thick in roads	m³	200	125.97	25 194.00
	SANS 1200 DM	**LAYERWORKS WITH COMMERCIAL MATERIAL**				
		LAYERWORKS WITH COMMERCIAL MATERIAL				
		Construct layerworks with material supplied by the Contractor from commercial sources of the following quality				
		G7 Selected layers				
	8.3.5	(e) .2 Compacted to 95% mod AASHTO density				
C36.41		.2 150mm Thick in roads	m³	1720	322.71	555 061.20
	SANS 1200 DM	**ROCK EXCAVATION**				
		ROCK EXCAVATION				
	8.3.6	Extra over reference 8.3.4 and 8.3.5 for excavating and breaking down material in				
C36.42		(b) Hard rock excavation	m³	50	803.79	40 189.50
					Carried Forward	1 252 420.76

[redacted]

					Brought Forward	1 252 420.76
	SANS 1200 DM	**CUT TO SPOIL**				
		CUT TO SPOIL				
	8.3.7	Cut from site and spoil off site at spoil site established by the Contractor from				
C36.43		(a) Soft excavation	m³	200	116.72	23 344.00
	SANS 1200 DM	**CUT TO STOCKPILE**				
		CUT TO STOCKPILE				
	8.3.7	Cut from site or road box cut to stockpile on site from				
C36.44		(a) Soft excavation	m³	6000	106.56	639 360.00
	SANS 1200 DM	**REMOVE OVERSIZE MATERIAL**				
		REMOVE OVERSIZE MATERIAL				
C36.45	8.3.8	Removal of oversize material (only applicable to earthworks from site - not for commercial material supplied) and spoil off site at site established by the Contractor	m³	30	116.72	3 501.60
	SANS 1200 DB	**ROAD REPAIRS**				
	PSDB	**ROAD REPAIRS**				
		Finishing and repairing existing road pipe crossings				
	8.3.6	.1 (a) Layerworks including carefully stockpiling of material, including all necessary accommodation of traffic and bypasses, complete				
C36.46		.1 G5 gravel shoulders 150mm thick compacted to 93% mod AASHTO density	m²	300	64.38	19 314.00
C36.47		.2 G7 selected layer 150mm thick compacted to 93% mod AASHTO density	m²	300	41.33	12 399.00
C36.48		.3 C4/C3 stabilised subbase layer 150mm thick compacted to 95% mod AASHTO density	m²	300	78.66	23 598.00
C36.49		.4 G2 base layer 150mm thick compacted to 88% mod AASHTO density	m²	300	98.15	29 445.00
	8.3.6	.1 (b) Continuously graded medium asphalt, including approved prime and tack coat preparation				
C36.50		.2 30mm Thick in repairwork	m²	150	169.92	25 488.00
C36.51		.3 40mm Thick in repairwork	m²	150	226.57	33 985.50
	SANS	**CABLE DUCTS**				
					Carried Forward	2 062 855.86

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					Brought Forward	2 062 855.86
	1200 DB	**TRENCHING**				
		Excavate in all materials, backfill and compact to 90% mod AASHTO density, and dispose of surplus and unsuitable materials off site at a site established by the Contractor for trenches				
	8.3.2	(a) .1 Up to 0.8m wide				
C36.52		.1 Up to 1m deep	m	500	150.25	75 125.00
C36.53		.2 Over 1m and up to 2m deep	m	500	300.51	150 255.00
	8.3.2	(b) Extra over reference 8.2.2 (a) for				
C36.54		.2 Hard rock excavation	m³	10	803.79	8 037.90
		DEFICIENCY MATERIAL				
	8.3.3	Excavation ancillaries				
		.1 Make up deficiency in backfill material, including disposing of unsuitable material off site at a site established by the Contractor				
		Note: Payment of commercial deficiency in backfill material will only be paid if instructed by the Engineer				
C36.55		(a) From other necessary excavations on site	m³	50	248.89	12 444.50
C36.56		(c) By importation of G7 material from commercial sources selected by the Contractor	m³	100	248.89	24 889.00
	SANS 1200 LC	**CABLE DUCTS**				
		CABLE DUCTS				
	8.2.5	(b) Supply, lay, bed, and prove Kabelflex ducts including providing draw wires complete				
C36.57		.1 110mm Diameter	m	500	61.45	30 725.00
C36.58		.2 160mm Diameter	m	500	61.45	30 725.00
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 6 ducts including providing draw wires complete				
C36.59		.5 110mm Diameter	m	100	110.95	11 095.00
C36.60		.6 160mm Diameter	m	100	200.25	20 025.00
	8.2.5	(d) uPVC end caps to ducts				
C36.61		.1 110mm Duct	no	20	31.18	623.60
C36.62		.2 160mm Duct	no	20	31.18	623.60
	SANS	**BEDDING**				
					Carried Forward	2 427 424.46

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					Brought Forward	2 427 424.46
	1200 LC					
		FROM COMMERCIAL SOURCES				
	8.2.6	(c) Provision of bedding material by importation from commercial sources selected by the Contractor				
C36.63		(a) Selected granular material	m^3	200	97.37	19 474.00
C36.64		(b) Selected fill material	m^3	300	97.37	29 211.00
	SANS 1200 LC	**MANHOLES, ETC**				
		DRAWPITS				
	8.2.7	(a) Drawpits Dwg EAM-EE-G5-037				
C36.65		.1 Draw pit	no	5	6 206.62	31 033.10
	SANS 1200 LC	**SUNDRIES**				
		CABLE MARKERS				
	8.2.8	(a) Route markers				
C36.66		.1 Route marker	no	10	48.38	483.80
		KERB MARKINGS				
	8.2.8	(b) Inscribed and painted marking on kerbing				
C36.67		.1 Kerb marking	no	50	86.00	4 300.00
	SANS 1200 G	**SOILCRETE**				
	PSG	**SOILCRETE**				
		Soilcrete (5% OPC)				
C36.68	8.4.10	.1 Backfilling around pipes	m^3	40	1 191.52	47 660.80
	SANS 1200 DB	**SUBSOIL DRAINAGE**				
	PSDB	**TRENCHING**				
		Excavate in all materials, backfill and compact to 90% mod AASHTO density, and dispose of surplus and unsuitable materials off site at a site established by the Contractor for trenches				
	8.3.2	(a) .1 Up to 0.8m wide				
C36.69		.1 Up to 1m deep	m	200	150.25	30 050.00
C36.70		.2 Over 1m and up to 2m deep	m	200	300.51	60 102.00
	8.3.2	(b) Extra over reference 8.2.2 (a) for				
					Carried Forward	2 649 739.16

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					Brought Forward	2 649 739.16
C36.71		.2 Hard rock excavation	m³	5	803.79	4 018.95
C36.72	8.3.2	(c) Excavate unsuitable material from trench bottom, and dispose off site at a site established by the Contractor, and re-fill with suitable imported material compacted to 90% mod AASHTO density	m³	20	90.45	1 809.00
	SANS 1200 DB	**DEFICIENCY MATERIAL**				
	8.3.3	Excavation ancillaries				
		.1 Make up deficiency in backfill material, including disposing of unsuitable material off site at a site established by the Contractor				
		Note: Payment of commercial deficiency in backfill material will only be paid if instructed by the Engineer				
C36.73		(c) By importation of clean free draining sand from commercial sources selected by the Contractor	m³	50	248.89	12 444.50
	SANS 1200 LD	**SUBSOIL DRAINS**				
	PSLD	**SUBSOIL DRAINS**				
	8.2.1	.1 Supply, lay, bed, and test Kaytech perforated subsoil pipes complete				
C36.74		.1 110mm Diameter	m	200	205.11	41 022.00
C36.75		.2 160mm Diameter	m	200	1 432.70	286 540.00
	SANS 1200 DK	**GEOTEXTILES**				
	PSDK	**GEOTEXTILES**				
	8.2.4	Supply and lay geotextile fabric with suitable overlaps (net area of Bidim will be measured for payment)				
C36.76		(b) Bidim A4 wrapped around stone encasement to pipes	m²	800	19.89	15 912.00
	SANS 1200 LB	**PIPE ENCASEMENT**				
	PSLB	**FROM COMMERCIAL SOURCES**				
	8.2.2	.3 19mm Crushed stone from commercial sources supplied by the Contractor for				
C36.77		(c) Encasement of pipes	m³	150	276.54	41 481.00
	SANS 1200 ME	**SUBBASE**				
	PSME	**LAYERWORKS WITH COMMERCIAL MATERIAL**				
		Construct layerworks with material supplied by the Contractor from commercial sources of the following quality				
					Carried Forward	3 052 966.61

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					Brought Forward	3 052 966.61
		G5 Subbase layers				
	8.3.3	.1 .3 Compacted to 98% mod AASHTO density				
C36.78		.2 150mm Thick in roads	m³	1920	332.87	639 110.40
	SANS 1200 ME	**PROCESSING**				
		PROCESSING				
		Process layerwork material by the following process				
C36.79	8.3.5	(d) Stabilization (all layer thicknesses)	m³	1920	21.50	41 280.00
	SANS 1200 ME	**STABLILZATION**				
		STABILIZATION				
	8.3.8	Stabilizing agent				
C36.80		(b) Portland cement	ton	105	1 692.05	177 665.25
	SANS 1200 MF	**BASE**				
		LAYERWORKS WITH COMMERCIAL MATERIAL				
		Construct layerworks with material supplied by the Contractor from commercial sources of the following quality				
		G2 Graded crushed stone base				
	8.3.3	(b) .3 Compacted to 88% apparent density				
C36.81		.2 150mm Thick in roads	m³	1670	629.55	1 051 348.50
	SANS 1200 MH	**ASPHALT**				
	PSMH	**PRIME**				
	8.5.1	Prime coat using				
C36.82		.1 MC-30 cut-back bitumen	liter	8900	23.70	210 930.00
	SANS 1200 MH	**BLINDING**				
C36.83		Aggregate for blinding	m²	200	11.93	2 386.00
	SANS 1200 MH	**TACK COAT**				
	8.5.3	Tack coat using				
C36.84		.1 30% Cationic stable grade emulsion	liter	10000	6.73	67 300.00
	SANS 1200 MH	**ASPHALT SURFACING**				
		ASPHALT SURFACING				
					Carried Forward	5 242 986.76

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					Brought Forward	5 242 986.76
	8.5.4	.2 .1 Continuously graded medium asphalt with 50/70 penetrating grade bitumen binder				
C36.85		.2 30mm Thick	m²	11100	129.73	1 440 003.00
C36.86		.4 Overlay to existing asphalt surfacing (all thicknesses)	ton	400	1 729.77	691 908.00
	SANS 1200 MH	**CORE DRILLING**				
		CORE DRILLING				
C36.87		100mm Dia cores in asphalt paving and testing	no	200	368.94	73 788.00
	SANS 1200 MH	**SAW CUTTING**				
		SAW CUTTING				
		Saw-cutting of asphalt base or paving				
C36.88		.02 30mm Thick asphalt surfacing	m	500	13.61	6 805.00
C36.89		.03 40mm Thick asphalt surfacing	m	500	13.61	6 805.00
	SANS 1200 MH	**REPAIRS TO EXISTING SURFACING**				
		Treatment and repair of existing surfaces exibiting defects				
		EDGE BREAKS				
		Repairing edge breaks in surfacing				
C36.90		(a) Saw-cutting of 40mm asphalt base or paving	m	1000	13.61	13 610.00
C36.91		(b) 30% Cationic stable grade emulsion tack coat	litre	500	13.74	6 870.00
C36.92		(c) Reconstructing edges using continuously-graded medium asphalt	ton	100	1 997.30	199 730.00
	SANS 1200 MH	**CRACKS**				
		Applying bituminous binders and herbicides for sealing cracks				
C36.93		(a) Cleaning the cracks with compressed air	m	500	7.14	3 570.00
C36.94		(b) Herbicide	litre	50	537.50	26 875.00
C36.95		(c) Cold rubber-slurry mix for sealing cracks	litre	200	53.75	10 750.00
C36.96		(d) Rolling the cracks	m	500	53.75	26 875.00
	SANS 1200 MH	**DEPRESSIONS**				
	PSMH	Tack coat and repairs of depressions				
					Carried Forward	7 750 575.76

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					Brought Forward	7 750 575.76
C36.97		(a) 30% Cationic stable grade emulsion tack coat	litre	100	13.74	1 374.00
C36.98		(b) Filling depressions using continuously-graded medium asphalt	ton	5	1 997.30	9 986.50
	SANS 1200 MJ	**SEGMENTED PAVING**				
	PSMJ	**EDGE RESTRAINTS**				
	8.2.1	.1 Cast-in-situ concrete 30Mpa w 150mm edge beam size 150mm wide x 150mm high, wood floated on top, angle chamfer edges and 100mm Thick jointed movement joints at 3m centres				
C36.99		.1 Straight sections	m	50	92.59	4 629.50
C36.100		.2 Circular sections	m	50	92.59	4 629.50
	SANS 1200 MJ	**EXISTING PAVING**				
		LIFTING UP PAVING				
	8.2.6	Lifting up existing paving blocks including neatly, stacking on site designated by the Engineer to be re-used (re-use measured elsewhere)				
C36.101		.1 60mm Interlocking paving	m²	100	71.95	7 195.00
C36.102		.2 80mm Interlocking paving	m²	100	71.95	7 195.00
	8.2.7	Lifting up existing paving blocks and spoil material at site established by the Contractor				
C36.103		.1 60mm Interlocking paving	m²	50	71.95	3 597.50
C36.104		.2 80mm Interlocking paving	m²	50	71.95	3 597.50
	SANS 1200 MJ	**RE-LAY PAVING**				
	8.2.8	Take existing paving blocks from stockpile on site and re-lay in new position including all cutting of units to fit between edge restraints, laid on and including 20mm riversand bed, compacted and plastersand broomed into joints on completion				
		Paving in stretcher bond pattern				
C36.105		.1 60mm Interlocking paving on sidewalks and islands	m²	100	265.80	26 580.00
C36.106		.2 80mm Interlocking paving on roads	m²	100	275.64	27 564.00
	SANS 1200 MK	**KERBING, CHANNELLING, ETC**				
	PSMK	**PRECAST CONCRETE KERBING**				
		Supply and install precast concrete kerbing				
	8.2.1	(a) .1 BK2 kerbing				
C36.107		.1 Straight sections	m	200	229.27	45 854.00
					Carried Forward	7 892 778.26

						Brought Forward	7 892 778.26
C36.108		.2 Curved sections, radius over 20m	m	150	229.27	34 390.50
C36.109		.3 Curved sections, radius over 4m, but up to and including 20m	m	80	332.59	26 607.20
C36.110		.4 Curved sections, radius over 1m, but up to and including 4m	m	80	332.59	26 607.20
	8.2.1	(a) .2 MK5 kerbing				
C36.111		.1 Straight sections	m	1000	281.56	281 560.00
C36.112		.2 Curved sections, radius over 20m	m	600	281.56	168 936.00
C36.113		.3 Curved sections, radius over 4m, but up to and including 20m	m	80	442.61	35 408.80
C36.114		.4 Curved sections, radius over 1m, but up to and including 4m	m	80	442.61	35 408.80
	8.2.1	(a) .4 E1 kerbing				
C36.115		.1 Straight sections	m	200	203.47	40 694.00
C36.116		.2 Curved sections, radius over 20m	m	50	203.47	10 173.50
C36.117		.3 Curved sections, radius over 4m, but up to and including 20m	m	20	203.47	4 069.40
C36.118		.4 Curved sections, radius over 1m, but up to and including 4m	m	20	203.47	4 069.40
	8.2.1	(a) .5 E3 kerbing				
C36.119		.1 Straight sections	m	50	226.03	11 301.50
C36.120		.2 Curved sections, radius over 20m	m	20	226.03	4 520.60
C36.121		.3 Curved sections, radius over 4m, but up to and including 20m	m	10	226.03	2 260.30
C36.122		.4 Curved sections, radius over 1m, but up to and including 4m	m	10	226.03	2 260.30
	SANS 1200 MK	**PRECAST CONCRETE KERBING AND CHANNELLING**				
		PRECAST CONCRETE KERBING AND CHANNELING COMBINATION				
	8.2.2	(a) .1 BK2 & C1 kerbing combination				
C36.123		.1 Straight sections	m	500	413.60	206 800.00
C36.124		.2 Curved sections, radius over 20m	m	150	413.60	62 040.00
C36.125		.3 Curved sections, radius over 4m, but up to and including 20m	m	80	464.22	37 137.60
					Carried Forward	8 887 023.36

[redacted]

					Brought Forward	8 887 023.36
C36.126		.4 Curved sections, radius over 1m, but up to and including 4m	m	80	464.22	37 137.60
	8.2.2	(a) .2 MK5 & C1 kerbing combination				
C36.127		.1 Straight sections	m	500	396.44	198 220.00
C36.128		.2 Curved sections, radius over 20m	m	200	396.44	79 288.00
C36.129		.3 Curved sections, radius over 4m, but up to and including 20m	m	100	635.74	63 574.00
C36.130		.4 Curved sections, radius over 1m, but up to and including 4m	m	50	635.74	31 787.00
	8.2.2	(a) .3 Two C1 kerbings as V-channel				
C36.131		.1 Straight sections	m	100	341.33	34 133.00
C36.132		.2 Curved sections, radius over 20m	m	50	341.33	17 066.50
C36.133		.3 Curved sections, radius over 4m, but up to and including 20m	m	10	443.72	4 437.20
C36.134		.4 Curved sections, radius over 1m, but up to and including 4m	m	10	443.72	4 437.20
	SANS 1200 MK	**TRANSITIONS TO KERBS**				
		TRANSITIONS TO KERBS				
	8.2.6	.1 .3 Cast-in-situ strength concrete 30Mpa/19mm transitions				
C36.135		.1 Transitions 2m long (all types of kerbs)	no	150	696.33	104 449.50
	SANS 1200 MK	**CONCRETE LINED OPEN DRAINS**				
		CONCRETE LINED OPEN DRAINS				
	8.2.7	Trimming of excavations for concrete lined open drains and compaction to 93% mod AASHTO density in				
C36.136		(a) Soft material	m^2	200	31.35	6 270.00
	8.2.8	Cast-in-situ strength concrete 25Mpa/19mm				
C36.137		(a) Lining to open drains	m^3	30	2 556.89	76 706.70
C36.138		(c) Wood floated surface finish to concrete	m^2	200	13.92	2 784.00
	8.2.9	Smooth formwork to cast-in-situ concrete lined open drains				
C36.139		(c) Edges and ends of slabs	m^2	20	498.90	9 978.00
	8.2.10	Sealed joints to concrete lined open drains				
					Carried Forward	9 557 292.06

					Brought Forward	9 557 292.06
C36.140		(b) 12mm Sondor Jointex expansion joint 125mm high between concrete faces, including formwork and raking out 12mm expansion joint material to a depth of 12mm, prime with approved primer and fill joint with approved polyurethane sealer	m	50	108.64	5 432.00
		Reinforcement				
	8.2.12	(c) High tensile steel mesh reinforcement				
C36.141		.2 Ref no 245	m²	200	45.56	9 112.00
	SANS 1200 MK	**ARMOFLEX LINED OPEN DRAINS**				
		ARMOFLEX LINED OPEN DRAINS				
		Construct Armoflex lined open drains complete				
	8.2.7	Trimming of excavations for Armoflex lined open drains and compact to 93% mod AASHTO density in				
C36.142		(a) Soft material	m²	200	31.35	6 270.00
		Armoflex lining				
	8.2.8	.1 Armoflex grey interlocking precast paving blocks, including all cutting of units to fit between edge restraints, laid on and including prepared and compacted ground surface, including 3.1mm dia galvanised wire connections between blocks all as per manufacturers specifications, including filling of voids with topsoil from site and hydroseeding with approved seed mixture and watering and weeding until grass covering is established of blocks type				
C36.143		.1 Armoflex 140	m²	100	436.90	43 690.00
C36.144		.2 Armoflex 165	m²	100	459.51	45 951.00
	SANS 1200 MM	**GUARDRAILS**				
	PSMM	**STRAIGHT GUARDRAILS**				
	8.2.1	(a) Supply and erect hot dip galvanized steel guardrails on bitumen treated timber posts, including excavation, backfilling, timber spacer blocks, bolts, etc				
C36.145		.1 Straight sections	m	100	730.33	73 033.00
	SANS 1200 MM	**CIRCULAR GUARDRAILS**				
	8.2.2	Extra over reference 8.2.1 (a) for horizontally curved guardrails, factory bent to radius of less than 150m				
C36.146		(a) Curved sections	m	100	88.61	8 861.00
	SANS 1200 MM	**SUNDRIES**				
					Carried Forward	9 749 641.06

					Brought Forward	9 749 641.06
		END UNITS				
	8.2.3	Supply and fix hot dip galvanised steel end units complete				
C36.147		(a) End wings	no	8	459.79	3 678.32
	SANS 1200 MM	**REFLECTOR PLATES**				
	8.2.5	Supply and fix reflector plates complete				
C36.148		(a) Standard type reflectors	no	100	32.95	3 295.00
	SANS 1200 MM	**TRAFFIC SIGNS MEASURED IN NUMBER**				
		TRAFFIC SIGNS ERECTED COMPLETE				
		Statutory signs, street names, etc supplied and erected complete, including posts, excavation, etc				
	8.3.6	(a) Provision and erection of regulatory traffic signs for 60km/h design standard, complete				
C36.149		.1 Stop sign (R1)	no	5	1 201.42	6 007.10
C36.150		.2 4-Way Stop sign (R1.4)	no	5	1 201.42	6 007.10
C36.151		.3 Stop/yield sign (R1.2)	no	5	1 201.42	6 007.10
C36.152		.4 Yield sign (R2)	no	5	1 201.42	6 007.10
C36.153		.5 Yield at traffic circle sign (R2.2)	no	5	1 201.42	6 007.10
C36.154		.6 Speed limit (R201)	no	5	1 201.42	6 007.10
	8.3.6	(b) Provision and erection of warning traffic signs for 60km/h design standard, complete				
C36.155		.1 T-junction (W104)	no	5	1 471.14	7 355.70
C36.156		.2 Traffic circle (W201)	no	5	1 471.14	7 355.70
C36.157		.5 Single sharp curve chevron (W405/6)	no	5	1 471.14	7 355.70
C36.158		.6 Dead end/road closed chevron (W410)	no	5	1 471.14	7 355.70
	8.3.6	(c) Provision and erection of information traffic signs for 60km/h design standard, complete				
C36.159		.1 Cul-de-sac (IN4)	no	5	5 561.15	27 805.75
	SANS 1200 MM	**RETRO-REFLECTIVE ROAD MARKINGS**				
		ROAD MARKINGS				
		Retro-reflective paint applied at a nominal rate of 0.42l/m²				
	8.4.1	(a) White lines (broken or unbroken)				
					Carried Forward	9 849 885.53

[redacted]

					Brought Forward	9 849 885.53
C36.160		.1 100mm Lines	m	500	7.31	3 655.00
C36.161		.2 150mm Lines	m	500	10.96	5 480.00
C36.162		.3 200mm Lines	m	500	14.62	7 310.00
C36.163		.4 300mm Lines	m	200	25.80	5 160.00
	8.4.1	(b) Yellow lines (broken or unbroken)				
C36.164		.1 100mm Lines	m	200	7.31	1 462.00
C36.165		.2 150mm Lines	m	200	10.96	2 192.00
C36.166		.3 200mm Lines	m	100	14.62	1 462.00
C36.167		.4 300mm Lines	m	100	25.80	2 580.00
C36.168	8.4.1	(c) White characters and symbols	m²	100	91.38	9 138.00
C36.169	8.4.1	(d) Yellow characters and symbols	m²	100	91.38	9 138.00
C36.170	8.4.1	(e) Traffic island markings (any colour)	m²	100	91.38	9 138.00
	SANS 1200 MM	**SETTING OUT**				
		Setting out and pre-marking				
	8.4.4	(a) Lines (excluding traffic island, symbols, etc.)				
C36.171		.1 Lines	km	2.0	2 150.00	4 300.00
		CONCRETE ROADS - GZC Ref.dwg.3089.00.00.AAB.10.U013				
		PAVING AROUND STRUCTURES				
		CLEAR SITE				
	SANS 1200 C	**CLEAR SITE**				
	8.2.1	(a) Clear and grub area for the following construction				
C36.172		.2 Roads servitudes	m²	8000	2.94	23 520.00
	SANS 1200 C	**REMOVE TREES**				
	8.2.2	Remove and grub large trees and tree stumps, including filling				
C36.173		(a) Exceeding 1m and up to and including 2m girth	no	1	5 414.60	5 414.60
C36.174		(b) Exceeding 2m and up to and including 3m girth	no	1	7 892.66	7 892.66
		TOPSOIL				
	SANS 1200 C	**TOPSOIL**				
	8.2.10	(a) Remove topsoil to a depth of 150mm and				
					Carried Forward	9 947 727.79

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					Brought Forward	9 947 727.79
C36.175		.1 Stockpile on site and maintain	m³	100	59.55	5 955.00
C36.176		.2 Spoil off site at spoil site established by the	m³	50	59.55	2 977.50
	SANS 1200 C	**REMOVE EXISTING SERVICES**				
		Removal of underground services as follows				
	8.2.7	(a) Dismantle remove and spoil pipelines, powerlines,				
C36.177		.1 100mm uPVC water pipeline	m	100	28.12	2 812.00
C36.178		.2 160mm uPVC sewer pipeline	m	100	28.12	2 812.00
C36.179		.3 600mm Concrete stormwater pipeline	m	100	299.93	29 993.00
	SANS 1200 C	**REMOVE EXISTING STRUCTURES**				
		Demolish and spoil material for structures, buildings, etc at a				
	8.2.8	(a) Sundry structures, etc				
C36.180		.1 Mass concrete structures	m³	10	792.45	7 924.50
C36.181		.2 Reinforced concrete structures	m³	10	914.69	9 146.90
C36.182		.3 100mm Thick concrete paving	m²	100	118.87	11 887.00
C36.183		.4 150mm Thick reinforced concrete paving	m²	100	137.20	13 720.00
C36.184		.5 Concrete kerbing (all types and sizes)	m	350	73.28	25 648.00
C36.185		.6 Mass brickwork structures	m³	10	124.03	1 240.30
C36.186		.7 Sewer manholes (all sizes)	no	5	782.20	3 911.00
C36.187		.8 Stormwater manholes, kerb inlets, etc (all sizes)	no	5	782.20	3 911.00
C36.188		.9 Watermeter chamber, airvalve chambers, etc (all	no	5	782.20	3 911.00
		EXISTING SERVICES				
	SANS 1200 D	**EXISTING SERVICES**				
	8.3.8	.2 Dealing with services that are at risk because of				
		(a) Type of service				
C36.189		.1 Electric cable	no	5	503.55	2 517.75
C36.190		.2 Telephone cable	no	5	503.55	2 517.75
C36.191		.3 Sewer pipe	no	5	503.55	2 517.75
C36.192		.4 Water pipe	no	5	503.55	2 517.75
	8.3.8	.2 Permanent protection of services				
					Carried Forward	10 083 647.99

[redacted]

					Brought Forward	10 083 647.99
		(b) Type of service				
C36.193		.1 Electric cable	sum	-	503.55	503.55
C36.194		.2 Telephone cable	sum	-	503.55	503.55
C36.195		.3 Sewer pipe	sum	-	503.55	503.55
C36.196		.4 Water pipe	sum	-	503.55	503.55
	8.3.8	.2 Temporary protection of services				
		(c) Type of service				
C36.197		.1 Electric cable	sum	-	503.55	503.55
C36.198		.2 Telephone cable	sum	-	503.55	503.55
C36.199		.3 Sewer pipe	sum	-	503.55	503.55
C36.200		.4 Water pipe	sum	-	503.55	503.55
		ROADBED				
	SANS 1200 DM	**ROADBED**				
	8.3.3	(a) Roadbed preparation and compaction of soil to				
C36.201		.1 300mm Minimum of 93% mod AASHTO density below roads	m³	1190	55.36	65 878.40
C36.202		.2 150mm Minimum of 93% mod AASHTO density below sidewalks, islands, etc	m³	50	55.36	2 768.00
	8.3.3	(b) Roadbed preparation and compaction of sand to				
C36.203		.3 300mm Minimum of 100% mod AASHTO density below roads	m³	1190	55.36	65 878.40
C36.204		.4 150mm Minimum of 100% mod AASHTO density below sidewalks, islands, etc	m³	50	55.36	2 768.00
		ROADBED IN POOR SOIL CONDITIONS				
	SANS 1200 DM	**ROADBED IN POOR SOIL CONDITIONS**				
		Roadbed preparation and compaction of material consisting of roller compaction with				
C36.205		.5 20 Ton padfoot vibratory roller below roads, etc	m²-pass	500	2.53	1 265.00
C36.206		.6 20 Ton smooth drum vibratory roller below roads, etc	m²-pass	500	2.53	1 265.00
		CUT OR BORROW TO FILL				
	SANS	**CUT OR BORROW TO FILL**				
					Carried Forward	10 227 499.19

					Brought Forward	10 227 499.19
	1200 DM					
		Cut or borrow to fill				
	8.3.4	(a) Excavate from road prism, select, load, transport to point of use and fill over site				
C36.207		.2 Compacted to 95% mod AASHTO density	m^3	200	88.18	17 636.00
	8.3.4	(a) Excavate from road prism, select, load, transport to point of use and fill below and alongside roads				
C36.208		.5 Compacted to 95% mod AASHTO density	m^3	200	88.18	17 636.00
		COMMERCIAL MATERIAL				
	SANS 1200 DM	**COMMERCIAL MATERIAL**				
		Construct filling over site, below roads or alongside roads with material supplied by the Contractor from commercial sources of the following quality				
	8.3.4	(c) G7 material				
C36.209		.2 Compacted to 95% mod AASHTO density	m^3	200	286.94	57 388.00
		COMMERCIAL DUMP ROCK				
	SANS 1200 DM	**COMMERCIAL DUMP ROCK**				
	8.3.4	(d) Construct dump rock layer with material supplied by the Contractor from commercial sources of suitable size, quality and grading				
C36.210		.1 Dump rock layer 300mm thick placed in position and compacted with 10 pass 10 ton roller compaction below roads	m^3	100	441.02	44 102.00
		LAYERWORKS FROM EXCAVATION				
	SANS 1200 DM	**LAYERWORKS FROM EXCAVATION**				
		Excavate from road prism, select, load, transport to point of use and construct layerworks as follows				
		Subbase layers				
	8.3.5	(b) Compacted to 95% mod AASHTO density				
C36.211		.2 150mm Thick in roads	m^3	100	125.97	12 597.00
		LAYERWORKS WITH COMMERCIAL MATERIAL				
	SANS 1200 DM	**LAYERWORKS WITH COMMERCIAL MATERIAL**				
					Carried Forward	10 376 858.19

[redacted]

					Brought Forward	10 376 858.19
		Construct layerworks with material supplied by the Contractor from commercial sources of the following quality				
	8.3.5	(e) G5 Subbase				
		.2 Compacted to 95% mod AASHTO density				
C36.212		.2 150mm Thick in roads	m³	1090	332.87	362 828.30
		ROCK EXCAVATION				
	SANS 1200 DM	**ROCK EXCAVATION**				
	8.3.6	Extra over reference 8.3.4 and 8.3.5 for excavating and breaking down material in				
C36.213		(b) Hard rock excavation	m³	20	803.79	16 075.80
		CUT TO SPOIL				
	SANS 1200 DM	**CUT TO SPOIL**				
	8.3.7	Cut from site and spoil off site at spoil site established by the Contractor from				
C36.214		(a) Soft excavation	m³	200	132.06	26 412.00
		CUT TO STOCKPILE				
	SANS 1200 DM	**CUT TO STOCKPILE**				
	8.3.7	Cut from site or road box cut to stockpile on site from				
C36.215		(a) Soft excavation	m³	1400	70.53	98 742.00
		REMOVE OVERSIZE MATERIAL				
	SANS 1200 DM	**REMOVE OVERSIZE MATERIAL**				
C36.216	8.3.8	Removal of oversize material (only applicable to earthworks from site - not for commercial material supplied) and spoil off site at site established by the Contractor	m³	20	70.53	1 410.60
		SOILCRETE				
	SANS 1200 LC	**SOILCRETE**				
		Soilcrete (5% OPC)				
C36.217		.1 Backfilling around pipes	m³	20	1 191.52	23 830.40
		SUBBASE				
	SANS	**LAYERWORKS WITH COMMERCIAL MATERIAL**				
					Carried Forward	10 906 157.29

					Brought Forward	10 906 157.29
	1200 ME					
		Construct layerworks with material supplied by the Contractor from commercial sources of the following quality				
		G5 Base course				
	8.3.3	.1 .3 Compacted to 98% mod AASHTO density				
C36.218		.2 150mm Thick in roads	m³	1190	332.87	396 115.30
		PROCESSING				
	SANS 1200 ME	**PROCESSING**				
		Process layerwork material by the following process				
C36.219	8.3.5	(d) Stabilization (all layer thicknesses)	m³	1190	17.92	21 324.80
		STABLILZATION				
	SANS 1200 ME	**STABILIZATION**				
	8.3.8	Stabilizing agent				
C36.220		(b) Portland cement	ton	65	1 692.05	109 983.25
		SEGMENTED PAVING				
	SANS 1200 MJ	**EDGE RESTRAINTS**				
	8.2.1	.1				
C36.221		.1 Straight sections	m	100	123.46	12 346.00
C36.222		.2 Circular sections	m	100	123.46	12 346.00
		KERBING, CHANNELLING, ETC				
	SANS 1200 MK	**PRECAST CONCRETE KERBING**				
		Supply and install precast concrete kerbing				
	8.2.1	(a) .4 BK2 kerbing				
C36.223		.1 Straight sections	m	1500	229.27	343 905.00
C36.224		.2 Curved sections, radius over 20m	m	600	229.27	137 562.00
C36.225		.3 Curved sections, radius over 4m, but up to	m	100	332.59	33 259.00
C36.226		.4 Curved sections, radius over 1m, but up to	m	100	332.59	33 259.00
		TRANSITIONS TO KERBS				
	SANS	**TRANSITIONS TO KERBS**				
					Carried Forward	12 006 257.64

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					Brought Forward	12 006 257.64
	1200 MK 8.2.6	.1 .3 Cast-in-situ strength concrete 30Mpa/19mm transitions				
C36.227		.1 Transitions 2m long (all types of kerbs)	no	50	770.98	38 549.00
		CONCRETE ROADS				
		Concrete pavement excluding texturing and curing: Ref.dwg.3089.30.01.GZC.03.D002				
		(a) Strength concrete 35Mpa/19mm				
C36.170		(a) 170mm Thick	m²	6900	313.35	2 162 115.00
		Texturing and curing the concrete pavement:				
C36.171		(a) Burlap-dragged and grooved texture	m²	6900	6.45	44 505.00
		Joints: Dwg 3089.30.01.GZC.03.D002				
		(a) Expansion joints complete (including dowels) and formwork cut and fitted around reinforcing				
C36.172		(i) 20 x 170mm High expansion joint complete with joint filler, sealer, dowel bars, etc	m	1200	161.27	193 524.00
		(b) Saw cut joints				
C36.173		(i) 4 x 80mm Deep saw cut joint complete	m	1500	54.44	81 660.00
		Drilling and testing of cores:				
C36.174		(b) 100mm Cores drilled from the pavement and tested for compressive strength	no	20	368.94	7 378.80
		DOWELS				
		Steel reinforcement in concrete pavement:				
C36.175		(a) Mild steel bars	ton	5.0	18 224.48	91 122.40
C36.176		(b) High tensile steel bars	ton	5.0	18 224.48	91 122.40
C36.177		(c) Mesh ref 617	m²	6900	114.75	791 775.00
	SANS 1200 G	**WEIGHBRIDGE**				
		SMOOTH FORMWORK				
	8.2.2	(b) Plane vertical				
C36.236		.4 Sides of strip footings	m²	16	438.49	7 015.84
	8.2.5	Smooth formwork to narrow widths				
C36.237		(a) Edges, risers, etc not exceeding 300mm wide	m	48	131.55	6 314.40
					Carried Forward	15 521 339.48

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					Brought Forward	15 521 339.48
		REINFORCEMENT				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C36.238		.1 All sizes	ton	0.1	18 224.48	1 822.45
	8.3.1	(b) High tensile steel				
C36.239		.1 All sizes	ton	1.0	18 224.48	18 224.48
	8.3.2	High tensile welded mesh				
C36.240		(b) Ref no.245	m²	20	49.96	999.20
		CONCRETE				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C36.241		(a) Blinding layer 50mm thick	m³	1	2 733.01	2 733.01
		CONCRETE				
	8.4.3	(d) Strength concrete 35Mpa/19mm				
C36.242		.1 Ramps	m³	25	2 280.13	57 003.25
C36.243		.2 Strip footings	m³	5	2 280.13	11 400.65
		SURFACE FINISHES				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C36.244		.1 Ramps	m²	60	13.92	835.20
C36.245		.2 Top of walls, beams, etc	m²	12	13.92	167.04
		BILL NO. C36 **ACCESS AND ROADS**				
		Carried forward to Summary of Bills			**Total**	15 614 524.76

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C7 - Access, paving, drainage and fencing				
		BILL NO. C37 **PAVING AROUND STRUCTURES**				
		PAVING AROUND STRUCTURES				
	SANS 1200 C	**CLEAR SITE**				
		CLEAR SITE				
	8.2.1	(a) Clear and grub area for the following construction activity, and dispose of all material off site at a spoil site established by the Contractor				
C37.1		.2 Roads servitudes	m²	2000	2.94	5 880.00
		REMOVE EXISTING SERVICES				
		Removal of underground services as follows				
	8.2.7	(a) Dismantle remove and spoil pipelines, powerlines, cables, etc (excavation, backfilling and removal of concrete, etc measured elsewhere)				
C37.2		.1 100mm uPVC water pipeline	m	50	14.06	703.00
C37.3		.2 160mm uPVC sewer pipeline	m	50	14.06	703.00
C37.4		.3 600mm Concrete stormwater pipeline	m	50	206.52	10 326.00
		REMOVE EXISTING STRUCTURES				
		Demolish and spoil material for structures, buildings, etc at a spoil site established by the Contractor				
	8.2.8	(a) Sundry structures, etc				
C37.5		.3 Mass concrete structures	m³	5	792.45	3 962.25
C37.6		.4 Reinforced concrete structures	m³	5	914.69	4 573.45
C37.7		.5 150mm Thick concrete paving	m²	50	118.87	5 943.50
C37.8		.6 150mm Thick reinforced concrete paving	m²	50	137.20	6 860.00
C37.9		.7 Concrete kerbing (all types and sizes)	m	50	73.28	3 664.00
C37.10		.8 Mass brickwork structures	m³	2	792.45	1 584.90
C37.11		.9 Sewer manholes (all sizes)	no	2	782.20	1 564.40
C37.12		.10 Stormwater manholes, kerb inlets, etc (all sizes)	no	2	782.20	1 564.40
					Carried Forward	47 328.90

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					Brought Forward	47 328.90
C37.13		.11 Watermeter chamber, airvalve chambers, etc (all sizes)	no	2	782.20	1 564.40
	SANS 1200 D	**EXISTING SERVICES**				
		EXISTING SERVICES				
	8.3.8	.2 Dealing with services that are at risk because of construction of earthworks (other than trenching)				
		(a) Type of service				
C37.14		.1 Electric cable	no	2	503.55	1 007.10
C37.15		.2 Telephone cable	no	2	503.55	1 007.10
C37.16		.3 Sewer pipe	no	2	503.55	1 007.10
C37.17		.4 Water pipe	no	2	503.55	1 007.10
	8.3.8	.2 Permanent protection of services				
		(b) Type of service				
C37.18		.1 Electric cable	sum	-	0	-
C37.19		.2 Telephone cable	sum	-	0	-
C37.20		.3 Sewer pipe	sum	-	0	-
C37.21		.4 Water pipe	sum	-	0	-
	8.3.8	.2 Temporary protection of services				
		(c) Type of service				
C37.22		.1 Electric cable	sum	-	0	-
C37.23		.2 Telephone cable	sum	-	0	-
C37.24		.3 Sewer pipe	sum	-	0	-
C37.25		.4 Water pipe	sum	-	0	-
	SANS 1200 DM	**ROADBED**				
		ROADBED				
	8.3.3	(a) Roadbed preparation and compaction of soil to				
C37.26		.1 300mm Minimum of 93% mod AASHTO density below roads	m³	2120	88.58	187 789.60
C37.27		.2 150mm Minimum of 93% mod AASHTO density below sidewalks, islands, etc	m³	100	88.58	8 858.00
	8.3.3	(a) Roadbed preparation and compaction of sand to				
					Carried Forward	249 569.30

					Brought Forward	249 569.30
C37.28		.6 300mm Minimum of 100% mod AASHTO density below roads	m³	2120	88.58	187 789.60
C37.29		.7 150mm Minimum of 100% mod AASHTO density below sidewalks, islands, etc	m³	100	88.58	8 858.00
	SANS 1200 DM	**ROADBED IN POOR SOIL CONDITIONS**				
		ROADBED IN POOR SOIL CONDITIONS Roadbed preparation and compaction of material consisting of roller compaction with				
C37.30		.5 20 Ton padfoot vibratory roller below roads, etc	m²-pass	100	1.55	155.00
C37.31		.6 20 Ton smooth drum vibratory roller below roads, etc	m²-pass	100	1.55	155.00
	SANS 1200 DM	**CUT OR BORROW TO FILL**				
		CUT OR BORROW TO FILL				
	8.3.4	(a) Cut or borrow to fill Excavate from road prism, select, load, transport to point of use and fill over site				
C37.32		.2 Compacted to 95% mod AASHTO density	m³	100	186.24	18 624.00
		Excavate from road prism, select, load, transport to point of use and fill below and alongside roads				
C37.33		.5 Compacted to 95% mod AASHTO density	m³	100	186.24	18 624.00
	SANS 1200 DM	**COMMERCIAL MATERIAL**				
		COMMERCIAL MATERIAL Construct filling over site, below roads or alongside roads with material supplied by the Contractor from commercial sources of the following quality				
	8.3.4	(c) G7 material				
C37.34		.2 Compacted to 95% mod AASHTO density	m³	100	296.45	29 645.00
	SANS 1200 DM	**COMMERCIAL DUMP ROCK**				
	8.3.4	**COMMERCIAL DUMP ROCK** (d) Construct dump rock layer with material supplied by the Contractor from commercial sources of suitable size, quality and grading				
C37.35		.1 Dump rock layer 300mm thick placed in position and compacted with 10 pass 10 ton roller compaction below roads	m³	50	450.53	22 526.50
	SANS 1200 DM	**LAYERWORKS FROM EXCAVATION**				
		LAYERWORKS FROM EXCAVATION				
					Carried Forward	535 946.40

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					Brought Forward	535 946.40
		Excavate from road prism, select, load, transport to point of use and construct layerworks as follows				
		Selected layers				
	8.3.5	(b) Compacted to 95% mod AASHTO density				
C37.36		.2 150mm Thick in roads	m³	300	124.20	37 260.00
	SANS 1200 DM	**LAYERWORKS WITH COMMERCIAL MATERIAL**				
		LAYERWORKS WITH COMMERCIAL MATERIAL				
		Construct layerworks with material supplied by the Contractor from commercial sources of the following quality				
		G7 Selected layers				
	8.3.5	(e) .2 Compacted to 95% mod AASHTO density				
C37.37		.2 150mm Thick in roads	m³	1820	337.47	614 195.40
	SANS 1200 DM	**ROCK EXCAVATION**				
		ROCK EXCAVATION				
	8.3.6	Extra over reference 8.3.4 and 8.3.5 for excavating and breaking down material in				
C37.38		(b) Hard rock excavation	m³	50	803.79	40 189.50
	SANS 1200 DM	**CUT TO SPOIL**				
		CUT TO SPOIL				
	8.3.7	Cut from site and spoil off site at spoil site established by the Contractor from				
C37.39		(a) Soft excavation	m³	100	146.16	14 616.00
	SANS 1200 DM	**CUT TO STOCKPILE**				
		CUT TO STOCKPILE				
	8.3.7	Cut from site or road box cut to stockpile on site from				
C37.40		(f) Soft excavation	m³	4000	70.53	282 120.00
	SANS 1200 DM	**REMOVE OVERSIZE MATERIAL**				
		REMOVE OVERSIZE MATERIAL				
	8.3.8	Removal of oversize material (only applicable to earthworks from site - not for commercial material supplied) and spoil off site at site established by the Contractor				
C37.41			m³	20	70.53	1 410.60
	SANS 1200 G	**SOILCRETE**				
					Carried Forward	1 525 737.90

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					Brought Forward	1 525 737.90
		SOILCRETE				
	8.4.10	Soilcrete (5% OPC)				
C37.42		.1 Backfilling around pipes	m³	10	1 191.52	11 915.20
	SANS 1200 LB	**PIPE ENCASEMENT**				
		FROM COMMERCIAL SOURCES				
	8.2.2	.3 19mm Crushed stone from commercial sources supplied by the Contractor for				
C37.43		(c) Encasement of pipes	m³	50	276.54	13 827.00
	SANS 1200 ME	**SUBBASE**				
		LAYERWORKS WITH COMMERCIAL MATERIAL				
		Construct layerworks with material supplied by the Contractor from commercial sources of the following quality				
		G5 Subbase layers				
	8.3.3	.1 .3 Compacted to 98% mod AASHTO density				
C37.44		.2 150mm Thick in roads	m³	2120	347.63	736 975.60
	SANS 1200 ME	**PROCESSING**				
		PROCESSING				
		Process layerwork material by the following process				
C37.45	8.3.5	(d) Stabilization (all layer thicknesses)	m³	2120	19.96	42 315.20
	SANS 1200 ME	**STABLILZATION**				
		STABILIZATION				
	8.3.8	Stabilizing agent				
C37.46		(b) Portland cement	ton	115	1 692.05	194 585.75
	SANS 1200 MJ	**SEGMENTED PAVING**				
		EDGE RESTRAINTS				
	8.2.1	.1				
C37.47		.1 Straight sections	m	50	92.59	4 629.50
C37.48		.2 Circular sections	m	50	92.59	4 629.50
	SANS 1200 MJ	**PRECAST CONCRETE PAVING**				
		CONCRETE PAVING				
					Carried Forward	2 534 615.65

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					Brought Forward	2 534 615.65
		Grey interlocking precast concrete paving blocks type SA including all cutting of units to fit between edge restraints, laid on and including 20mm riversand bed, compacted and plastersand broomed into joints on completion				
	8.2.2	.1 Class 25 concrete paving blocks				
C37.49		.1 60mm Paving blocks in paving around structures	m²	12300	265.80	3 269 340.00
	SANS 1200 MJ	**EXISTING PAVING**				
		LIFTING UP PAVING				
	8.2.6	Lifting up existing paving blocks including neatly, stacking on site designated by the Engineer to be re-used (re-use measured elsewhere)				
C37.50		.1 60mm Interlocking paving	m²	100	37.71	3 771.00
C37.51		.2 80mm Interlocking paving	m²	100	37.71	3 771.00
	8.2.7	Lifting up existing paving blocks and spoil material at site established by the Contractor				
C37.52		.1 60mm Interlocking paving	m²	50	37.71	1 885.50
C37.53		.2 80mm Interlocking paving	m²	50	37.71	1 885.50
		RE-LAY PAVING				
	8.2.8	Take existing paving blocks from stockpile on site and re-lay in new position including all cutting of units to fit between edge restraints, laid on and including 20mm riversand bed, compacted and plastersand broomed into joints on completion				
		Paving in stretcher bond pattern				
C37.54		.1 60mm Interlocking paving on sidewalks and islands	m²	100	265.80	26 580.00
C37.55		.2 80mm Interlocking paving on roads	m²	100	275.64	27 564.00
		GRAVEL MAINTENANCE ROAD				
	SANS 1200 C	**CLEAR SITE**				
		CLEAR SITE				
	8.2.1.a	Clear and grub area for the following construction activity, and dispose of all material off site at a spoil site established by the Contractor				
C37.56		.2 Roads servitudes	m²	10000	2.94	29 400.00
	SANS 1200 C	**TOPSOIL**				
		TOPSOIL				
					Carried Forward	5 898 812.65

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					Brought Forward	5 898 812.65
	8.2.10.a	Remove topsoil to a depth of 150mm and				
C37.57		.1 Stockpile on site and maintain	m^3	100	59.55	5 955.00
C37.58		.2 Spoil off site at spoil site established by the Contractor	m^3	100	139.47	13 947.00
	SANS 1200 DM	**ROADBED**				
		ROADBED				
		Roadbed preparation and compaction to				
	8.3.3.a	Gravel material				
C37.59		.3 300mm Minimum of 93% mod AASHTO density below roads	m^3	1500	55.36	83 040.00
	8.3.3.a	Sand				
C37.60		.6 300mm Minimum of 100% mod AASHTO density below roads	m^3	1500	55.36	83 040.00
	SANS 1200 DM	**ROADBED IN POOR SOIL CONDITIONS**				
		ROADBED IN POOR SOIL CONDITIONS				
		Roadbed preparation and compaction of material consisting of roller compaction with				
	8.3.3.a	Gravel material				
C37.61		.5 20 Ton padfoot vibratory roller below roads, etc	m^2-pass	200	8.76	1 752.00
C37.62		.6 20 Ton smooth drum vibratory roller below roads, etc	m^2-pass	200	8.76	1 752.00
	SANS 1200 DM	**CUT OR BORROW TO FILL**				
		CUT OR BORROW TO FILL				
		Excavate from road prism, select, load, transport to point of use and fill over site, below roads, etc				
	8.3.4.a	Gravel material				
C37.63		.2 Compacted to 95% mod AASHTO desnity	m^3	100	58.79	5 879.00
	8.3.4.a	Sand				
C37.64		.4 Compacted to 100% mod AASHTO desnity	m^3	100	58.79	5 879.00
	8.3.4.b	Rock fill from site				
C37.65		.2 Rock fill obtained from stockpile on site and fill below roads processed and compated with 10 pass 10 ton roller compaction	m^3	50	58.79	2 939.50
	SANS 1200 DM	**COMMERCIAL MATERIAL**				
		COMMERCIAL MATERIAL				
					Carried Forward	6 102 996.15

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					Brought Forward	6 102 996.15
		Construct filling over site, below roads or alongside roads with material supplied by the Contractor from commercial sources of the following quality				
	8.3.4.c	G7 material				
C37.66		.2 Compacted to 95% mod AASHTO desnity	m^3	50	344.02	17 201.00
	SANS 1200 DM	**COMMERCIAL DUMP ROCK**				
		COMMERCIAL DUMP ROCK				
	8.3.4.d	Construct dump rock layer with material supplied by the Contractor from commercial sources of suitable size, quality and grading				
C37.67		.1 Dump rock layer 300mm thick placed in position and compacted with 10 pass 10 ton roller compaction below roads	m^3	50	344.02	17 201.00
	SANS 1200 DM	**LAYERWORKS FROM EXCAVATION**				
		LAYERWORKS FROM EXCAVATION				
		Excavate from road prism, select, load transport to point of use and construct layerworks as follows				
		Selected layers - gravel material				
	8.3.5.b	Compacted to 95% mod AASHTO density				
C37.68		.2 150mm Thick in roads	m^3	50	204.41	10 220.50
		Selected layers - sand material				
	8.3.5.c	Compacted to 100% mod AASHTO density				
C37.69		.2 150mm Thick in roads	m^3	50	204.41	10 220.50
	SANS 1200 DM	**LAYERWORKS WITH COMMERCIAL MATERIAL**				
		LAYERWORKS WITH COMMERCIAL MATERIAL				
		Construct layerworks with material supplied by the Contractor from commercial sources of the following quality				
	8.3.5.a.1	G7 Selected layers				
	8.3.5.e.2	Compacted to 95% mod AASHTO density				
C37.70		.2 150mm Thick in roads	m^3	50	419.05	20 952.50
	SANS 1200 DM	**CUT TO SPOIL**				
		CUT TO SPOIL				
					Carried Forward	6 178 791.65

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					Brought Forward	6 178 791.65
	8.3.7	Cut from site or road box cut and spoil material off site at spoil site established by the Contractor from				
C37.71		(a) Soft excavation	m^3	500	116.72	58 360.00
	SANS 1200 DM	**CUT TO STOCKPILE**				
		CUT TO STOCKPILE				
	8.3.7	Cut from site or road box cut to stockpile material on site from				
C37.72		(f) Soft excavation	m^3	300	50.28	15 084.00
	SANS 1200 DM	**CATCHWATER MOUNDS AND CHANNELS**				
		CATCHWATER MOUNDS AND CHANNELS				
	8.3.15.a	Catch water mounds				
C37.73		.1 Excavate in soft material for V-drain and place material in catch water mound and compact to 90% mod AASHTO density, including all trimming, shaping, etc.	m^3	100	127.49	12 749.00
	8.3.15.b	Catch water channels				
C37.74		.1 Excavate in soft material for catch water channel and place in berm and compact to 90% mod AASHTO density, including all trimming, shaping, etc.	m^3	100	127.49	12 749.00
	SANS 1200 DM	**GRAVEL SURFACING WITH COMMERCIAL MATERIAL**				
		GRAVEL SURFACING WITH COMMERCIAL MATERIAL				
		Construct surfacing with material supplied by the Contractor from commercial sources of the following quality				
		G5 Gravel surface layer				
	8.3.16.e	Compacted to 95% mod AASHTO density				
C37.75		.2 150mm Thick in roads	m^3	1430	332.87	476 004.10
	SANS 1200 MM	**GUARDRAILS**				
		STRAIGHT GUARDRAILS				
	8.2.1.a	Supply and erect hot dip galvanized steel guardrails on bitumen treated timber posts, including excavation, backfilling, timber spacer blocks, etc				
C37.76		.2 Straight sections	m	200	730.33	146 066.00
		CIRCULAR GUARDRAILS				
	8.2.2	Extra over reference 8.2.1 (a) for horizontally curved guardrails, factory bent to radius of less than 150 mm				
					Carried Forward	6 899 803.75

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					Brought Forward	6 899 803.75
C37.77		(a) Curved sections	m	100	459.79	45 979.00
	SANS 1200 MM	**SUNDRIES**				
		END UNITS				
	8.2.3	Supply and fix hot dip galvanised steel end units complete				
C37.78		(a) End wings	no	4	459.79	1 839.16
		REFLECTOR PLATES				
	8.2.5	Supply and fix reflector plates complete				
C37.79		(a) Standard type reflectors	no	100	32.95	3 295.00
		BILL NO. C37 **PAVING AROUND STRUCTURES**				
		Carried forward to Summary of Bills			**Total**	6 950 916.91

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Boundary walls

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C7 - Access, paving, drainage and fencing				
		BILL NO. C38 **BOUNDARY WALLS - GZA** **Ref. dwg.3089.00.00.GZA.17.U001**				
		PERIMETER WALL				
	SANS 1200 C	**CLEAR SITE**				
		CLEAR SITE Clear and grub strips for (where not cleared within other clear and grub areas) and dispose of material off site at a spoil site established by the Contractor				
	8.2.1	Fencing				
C38.1		(a) Fencing line 5m wide	m	1300	14.41	18 733.00
		REMOVE TREES				
	8.2.2	Remove and grub large trees and tree stumps, including filling in of holes, levelling of site and compaction, with trees of the following girth, and dispose of material off site at a spoil site established by the Contractor				
C38.2		(a) Exceeding 1m and up to and including 2m girth	no	10	541.46	5 414.60
C38.3		(b) Exceeding 2m and up to and including 3m girth	no	10	789.27	7 892.70
	SANS 1200 C	**TOPSOIL**				
		TOPSOIL Remove topsoil to a depth of 150mm and				
C38.4		.1 Stockpile on site and maintain	m³	500	59.55	29 775.00
C38.5		.2 Spoil off site at spoil site established by the Contractor	m³	200	139.47	27 894.00
	SANS 1200 C	**REMOVE EXISTING STRUCTURES**				
		REMOVAL OF EXISTING STRUCTURES Take down existing structures and stockpile usable material to be re-used on site designated by the Engineer and protect from damage and theft (re-erection measured elsewhere) Unsuitable material to be spoiled off site at a site established by the Contractor				
	8.2.8	Precast concrete boundary walls				
					Carried Forward	89 709.30

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					Brought Forward	89 709.30
C38.6		(a) Precast concrete boundary walls 1,8m high	m	300	39.15	11 745.00
C38.7		(b) Precast concrete boundary walls 2,4m high	m	350	39.15	13 702.50
	SANS 1200 C	**REMOVE AND SPOIL EXISTING STRUCTURES**				
		REMOVE AND SPOIL EXISTING STRUCTURES				
		Take down existing structures and spoil all material off site at a site established by the Contractor. Prices shall include for removal of all foundations, backfilling levelling and compaction of the site				
	8.2.5	Fencing				
C38.8		(a) 1,8m High fence	m	100	17.07	1 707.00
C38.9		(b) 2,1m High fence	m	100	17.07	1 707.00
	8.2.8	Precast concrete boundary walls				
C38.10		(a) Precast concrete boundary walls 1,8m high	m	300	39.15	11 745.00
C38.11		(b) Precast concrete boundary walls 2,4m high	m	350	39.15	13 702.50
	8.2.9	Brick boundary walls				
C38.12		(a) 115mm Thick brick boundary wall including pilasters, etc 1,2m high	m	20	39.15	783.00
C38.13		(b) 115mm Thick brick boundary wall including pilasters, etc 1,8m high	m	20	39.15	783.00
C38.14		(c) 230mm Thick brick boundary wall 1,2m high	m	20	39.15	783.00
C38.15		(d) 230mm Thick brick boundary wall 1,8m high	m	20	39.15	783.00
		REMOVE EXISTING STRUCTURES				
		Demolish and spoil material for structures, buildings, etc at a spoil site established by the Contractor				
	8.2.10	Sundry structures, etc				
C38.16		.3 Mass concrete structures	m^3	5	914.69	4 573.45
C38.17		.4 Reinforced concrete structures	m^3	5	914.69	4 573.45
C38.18		.5 150mm Thick concrete paving	m^2	200	118.87	23 774.00
C38.19		.6 150mm Thick reinforced concrete paving	m^2	200	137.20	27 440.00
C38.20		.7 Concrete kerbing (all types and sizes)	m	500	73.28	36 640.00
C38.21		.8 Mass brickwork structures	m^3	5	124.03	620.15
C38.22		.9 Sewer manholes (all sizes)	no	2	782.20	1 564.40
					Carried Forward	246 335.75

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					Brought Forward	246 335.75
C38.23		.10 Stormwater manholes, kerb inlets, etc (all sizes)	no	2	782.20	1 564.40
C38.24		.11 Watermeter chamber, airvalve chambers, etc (all sizes)	no	2	782.20	1 564.40
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
		Dwg 3089.00.00.GZA.17.D001				
		RESTRICTED EXCAVATIONS				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C38.25		.1 Wall footings	m³	1650	365.86	603 669.00
C38.26		.2 Column bases	m³	675	365.86	246 955.50
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C38.27		.2 Hard rock excavation	m³	75	803.79	60 284.25
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(a) Selected material compacted to 93% mod AASHTO density				
C38.28		.1 Alongside walls in foundations	m³	750	-	-
	SANS 1200 DB	**EXISTING SERVICES**				
		PROTECT EXISTING SERVICES				
		Existing services that intersect or adjoin wall footing excavations				
	8.3.5.a	Services that intersect an excavation				
C38.29		.1 Electric cable	no	20	503.55	10 071.00
C38.30		.2 Telephone cable	no	20	503.55	10 071.00
C38.31		.3 Fibre optic cable	no	20	503.55	10 071.00
C38.32		.4 Water main not exceeding 300mm dia (house connection pipes not measurable)	no	20	503.55	10 071.00
C38.33		.5 Sewer main not exceeding 300mm dia	no	20	503.55	10 071.00
C38.34		.6 Stormwater pipe not exceeding 600mm dia	no	20	503.55	10 071.00
	8.3.5.b	Services that adjoin an excavation				
C38.35		.1 Electric cable	m	1000	125.89	125 890.00
C38.36		.2 Telephone cable	m	1000	125.89	125 890.00
					Carried Forward	1 472 579.30

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					Brought Forward	1 472 579.30
C38.37		.3 Fibre optic cable	m	1000	125.89	125 890.00
C38.38		.4 Water main not exceeding 300mm dia (house connection pipes not measurable)	m	200	125.89	25 178.00
C38.39		.5 Sewer main not exceeding 300mm dia	m	200	125.89	25 178.00
C38.40		.6 Stormwater pipe not exceeding 600mm dia	m	200	125.89	25 178.00
	SANS 1200 DB	**REPAIR ROAD CROSSINGS**				
		FINISHING AND REPAIRING EXISTING ROAD CROSSINGS				
	8.3.6.1.a	Layerworks including extra over item 8.3.2 for carefull excavation and stockpiling of materials for re-use, or replacing with new material, including all accommodation of traffic and bypasses, complete				
C38.41		.1 G5 gravel shoulders 150mm thick compacted to 93% mod AASHTO density	m²	200	64.38	12 876.00
C38.42		.2 G7 selected layer 150mm thick compacted to 93% mod AASHTO density	m²	200	41.33	8 266.00
C38.43		.3 C4/C3 stabilised subbase layer 150mm thick compacted to 95% mod AASHTO density	m²	200	78.66	15 732.00
C38.44		.4 G4/G2 base layer 150mm thick compacted to 88% mod AASHTO density	m²	200	98.15	19 630.00
	8.3.6.1.b	Continuously graded medium asphalt, including approved prime and tack coat preparation				
C38.45		.1 25mm Thick	m²	100	141.60	14 160.00
C38.46		.2 30mm Thick	m²	100	169.92	16 992.00
C38.47		.3 40mm Thick	m²	100	226.57	22 657.00
	SANS 1200 G	**STRENGTH CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C38.48		(a) Blinding layer 50mm thick	m³	120	1 926.19	231 142.80
	8.4.3	(b) .3 Strength concrete 30Mpa/19mm				
C38.49		.2 Wall footings	m³	660	1 923.55	1 269 543.00
C38.50		.3 Column bases	m³	255	1 923.55	490 505.25
	PU	**BRICKWORK**				
		SUPERSTRUCTURE				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
					Carried Forward	3 775 507.35

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					Brought Forward	3 775 507.35
C38.51		.1 230mm Thick wall	m²	3375	1 280.56	4 321 890.00
C38.52		.2 Ditto in foundations	m²	1080	1 280.56	1 383 004.80
C38.53		.3 Mass brickwork in piers	m³	240	3 555.51	853 322.40
C38.54		.4 Ditto in foundations	m²	75	3 555.51	266 663.25
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C38.55		.1 Stretcher course bond	m²	6750	-	-
C38.56		.2 Ditto in foundations	m²	2160	-	-
	8.4.1c	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
C38.57		.1 Stretcher course bond	m²	1005	586.44	589 372.20
C38.58		.2 Ditto in foundations	m²	330	586.44	193 525.20
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C38.59		.2 150mm Wide brickforce	m	13500	2.19	29 565.00
C38.60		.3 Rod reinforcing (all sizes)	kg	750	23.75	17 812.50
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C38.61		.1 375 Micron under walls	m²	450	32.28	14 526.00
	PU	**PRECAST CONCRETE COPINGS**				
		COPINGS				
	8.20	Precast concrete copings supplied and installed complete				
		Dwg 3089.00.00.GZA.17.D001				
C38.62		.1 270 x 75mm Moulded coping fitted to top of 230mmwall complete wit all mitres, end blocks, etc	m	1350	332.41	448 753.50
					Carried Forward	11 893 942.20

[redacted]

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					Brought Forward	11 893 942.20
C38.63		.2 615 x 510mm Moulded coping fitted to top of brick pier complete wit all mitres, end blocks, etc	no	285	659.85	188 057.25
	SANS 1200 C	**TEMPORARY FENCING**				
	8.2.43	Providing temporary fences and gates complete Note: It is assumed that the Contractor will remove the existing perimeter wall and construct the new boundary wall in 100m sections, while providing a temporary security fence around the works during construction. And remove the temporary fence after construction of the 100m section and re erect in the following section of work, and repeat as required. Should the Contractor wish to shorten or lengthen this procedure they should price accordingly, as this 100m temporary fence will not be adjusted, and will remain a fixed price.				
C38.64		(d) Security fencing of approved design	m	100	376.25	37 625.00
	SANS 1200 HA	**GATES**				
		GATES				
	8.3.1	Gates supplied and fixed complete, including all posts, stays, hinges, locking devices, excavation, backfilling, concrete bases, etc Dwg 3089.00.00.DET.17.D011				
C38.65		(b) 8.0m wide and 2.4m high single leaf sliding gate complete	no	1	69 875.00	69 875.00
		BILL NO. C38 **BOUNDARY WALLS - GZA**				
		Carried forward to Summary of Bills			**Total**	12 189 499.45

Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Boundary fencing

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C7 - Access, paving, drainage and fencing				
		BILL NO. C39 **BOUNDARY FENCING - GZA**				
		BOUNDARY FENCING				
	SANS 1200 C	**CLEAR SITE**				
		CLEAR SITE				
		Clear and grub strips for (where not cleared within other clear and grub areas) and dispose of material off site at a spoil site established by the Contractor				
	8.2.1	Fencing				
C39.1		(a) Fencing line 5m wide	m	3000	14.41	43 230.00
		REMOVE TREES				
	8.2.2	Remove and grub large trees and tree stumps, including filling in of holes, levelling of site and compaction, with trees of the following girth, and dispose of material off site at a spoil site established by the Contractor				
C39.2		(a) Exceeding 1m and up to and including 2m girth	no	5	541.46	2 707.30
C39.3		(b) Exceeding 2m and up to and including 3m girth	no	5	789.27	3 946.35
	SANS 1200 C	**TOPSOIL**				
		TOPSOIL				
	8.2.10	Remove topsoil to a depth of 150mm and				
C39.4		.1 Stockpile on site and maintain	m^3	500	59.55	29 775.00
C39.5		.2 Spoil off site at spoil site established by the Contractor	m^3	200	59.55	11 910.00
	SANS 1200 C	**REMOVE AND SPOIL EXISTING STRUCTURES**				
		REMOVE AND SPOIL EXISTING STRUCTURES				
		Take down existing structures and spoil all material off site at a site established by the Contractor. Prices shall include for removal of all foundations, backfilling levelling and compaction of the site				
	8.2.5	Fencing				
C39.6		(a) 1,8m High fence	m	300	37.65	11 295.00
C39.7		(b) 2,1m High fence	m	200	37.65	7 530.00
					Carried Forward	110 393.65

					Brought Forward	110 393.65
		REMOVE EXISTING STRUCTURES				
		Demolish and spoil material for structures, buildings, etc at a spoil site established by the Contractor				
	8.2.8	Sundry structures, etc				
C39.8		.3 Mass concrete structures	m³	5	792.45	3 962.25
C39.9		.4 Reinforced concrete structures	m³	5	914.69	4 573.45
C39.10		.5 150mm Thick concrete paving	m²	100	118.87	11 887.00
C39.11		.6 150mm Thick reinforced concrete paving	m²	100	137.20	13 720.00
C39.12		.7 Concrete kerbing (all types and sizes)	m	50	73.28	3 664.00
C39.13		.8 Mass brickwork structures	m³	5	124.03	620.15
C39.14		.9 Sewer manholes (all sizes)	no	2	782.20	1 564.40
C39.15		.10 Stormwater manholes, kerb inlets, etc (all sizes)	no	2	782.20	1 564.40
C39.16		.11 Watermeter chamber, airvalve chambers, etc (all sizes)	no	2	782.20	1 564.40
	SANS 1200 DB	**EXISTING SERVICES**				
		PROTECT EXISTING SERVICES				
		Existing services that intersect or adjoin fencing excavations				
	8.3.5.a	Services that intersect the fencing excavations				
C39.17		.1 Electric cable	no	5	503.55	2 517.75
C39.18		.2 Telephone cable	no	5	503.55	2 517.75
C39.19		.3 Fibre optic cable	no	5	503.55	2 517.75
C39.20		.4 Water main not exceeding 300mm dia (house connection pipes not measurable)	no	5	503.55	2 517.75
C39.21		.5 Sewer main not exceeding 300mm dia	no	5	503.55	2 517.75
C39.22		.6 Stormwater pipe not exceeding 600mm dia	no	5	503.55	2 517.75
	8.3.5.b	Services that adjoin the fencing excavations				
C39.23		.1 Electric cable	m	200	125.89	25 178.00
C39.24		.2 Telephone cable	m	200	125.89	25 178.00
C39.25		.3 Fibre optic cable	m	200	125.89	25 178.00
C39.26		.4 Water main not exceeding 300mm dia (house connection pipes not measurable)	m	100	125.89	12 589.00
					Carried Forward	256 743.20

					Brought Forward	256 743.20
C39.27		.5 Sewer main not exceeding 300mm dia	m	100	125.89	12 589.00
C39.28		.6 Stormwater pipe not exceeding 600mm dia	m	100	125.89	12 589.00
	SANS 1200 DB	**REPAIR ROAD CROSSINGS**				
		FINISHING AND REPAIRING EXISTING ROAD CROSSINGS				
	8.3.6.1.a	Layerworks including extra over item 8.3.2 for carefull excavation and stockpiling of materials for re-use, or replacing with new material, including all accommodation of traffic and bypasses, complete				
C39.29		.1 G5 gravel shoulders 150mm thick compacted to 93% mod AASHTO density	m²	50	64.38	3 219.00
C39.30		.2 G7 selected layer 150mm thick compacted to 93% mod AASHTO density	m²	50	41.33	2 066.50
C39.31		.3 C4/C3 stabilised subbase layer 150mm thick compacted to 95% mod AASHTO density	m²	50	78.66	3 933.00
C39.32		.4 G4/G2 base layer 150mm thick compacted to 88% mod AASHTO density	m²	50	98.15	4 907.50
	8.3.6.1.b	Continuously graded medium asphalt, including approved prime and tack coat preparation				
C39.33		.1 25mm Thick	m²	15	141.60	2 124.00
C39.34		.2 30mm Thick	m²	15	169.92	2 548.80
C39.35		.3 40mm Thick	m²	15	226.57	3 398.55
		NEW FENCING				
	SANS 1200 HA	**HIGH SECURITY FENCING**				
		Fencing supplied and fixed complete, including all posts, stays, standards, droppers, excavation, backfilling, concrete bases, etc				
	8.3.1	Welded mesh fencing in approx. 3300mm panels 2400mm high of 3mm galvanized wire with aperture size (centres) @ 76.2mm x 12.7mm including horizontal reinforcing. Fixed to and including hot dip galvanized locking posts, clamps, etc. With 400x 400 x 600mm 20Mpa concrete footings. Note High Grade includes 730mm galvanized Ripper Smart Coil on top and 300mm Anti-Burrow galvanized and bitumen coated panels below ground. Dwg 3089.00.00.DET.17.D007 & D008				
C39.36		(a) High security fencing (high grade)	m	1800	2 004.88	3 608 784.00
C39.37		(b) High security fencing (lower grade)	m	1200	1 666.25	1 999 500.00
					Carried Forward	5 912 402.55

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					Brought Forward	5 912 402.55
	8.3.2	Gates supplied and fixed complete, including all posts, stays, hinges, locking devices, excavation, backfilling, concrete bases, etc Dwg 3089.00.00.DET.17.D007, D010				
C39.38		(a) Single gate size 1125mm wide and 2100mm high complete with wire coil top	no	1	12 900.00	12 900.00
C39.39		(b) Double gate size 4058mm wide and 2400mm high complete with wire coil top	no	2	23 650.00	47 300.00
		MESH FENCING				
	8.3.3	Security mesh fencing supplied and fixed complete Dwg 3089.00.00.DET.17.D006				
C39.40		(a) Mesh fencing 1,8m high	m	300	430.00	129 000.00
		BILL NO. C39 **BOUNDARY FENCING - GZA**				
		Carried forward to Summary of Bills			**Total**	6 101 602.55

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Carports

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C7 - Access, paving, drainage and fencing				
		BILL NO. C40 **CARPORTS GZC** **16 Car ports to be provided. Ref dwg. 3089.30.01.GZC.03.D003**				
		CARPORTS				
	SANS 1200 D	**EARTHWORKS**				
		RESTRICTED EXCAVATIONS				
	8.3.3	(a) Restricted excavation in all materials and place within				
C40.1		.1 Column bases	m³	4.3	365.86	1 573.20
	SANS 1200G	**STRENGTH CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C40.2		(a) Blinding layer 50mm thick	m³	0.6	2 005.63	1 203.38
	8.2.5.1	(b) .3 Strength concrete 20Mpa/19mm				
C40.3		.2 Footings	m³	3	1 878.25	5 634.75
C40.4		.3 Column bases	m³	2	1 878.25	3 756.50
		ROOF OVER CARPORTS				
		Dwg 3089.30.01.GZC.03.D003				
	SANS 1200 H	**SHOP DRAWINGS**				
	8.3.1.1	Preparation of shop detail drawings and submit for approval				
C40.5		.1 Structural steelwork	ton	2.2	37 625.00	82 775.00
	SANS 1200 H	**SUPPLY AND FABRICATE**				
	8.3.1.2	POSTS, ETC				
		Hollow sections				
C40.6		.1 100 x 100mm square MS column	ton	1.0	39 990.00	39 990.00
	8.3.1.2	CLADDING SUPPORT				
		Cold rolled sections				
C40.7		.1 150 x 75 x 20 x 2mm Lipped channel section	ton	1.3	47 300.00	61 490.00
					Carried Forward	196 422.83

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					Brought Forward	196 422.83
	8.3.1.2	Plates				
C40.8		.1 200 x 100 x 6mm	ton	0.1	38 915.00	3 891.50
C40.9		.2 150 x 75 x 4mm	ton	0.1	39 775.00	3 977.50
	8.3.1.2	FASTENERS				
C40.10		.1 M6 bolts	ton	0.05	182 750.00	9 137.50
C40.11		.2 M12 Bolts	ton	0.05	167 700.00	8 385.00
	SANS 1200 H	**TRANSPORT TO SITE AND OFF LOADING**				
	8.3.2.1	Normal transport				
C40.12		.1 Structural steelwork	ton	2.2	537.50	1 182.50
	SANS 1200 H	**ERECTION OF STEELWORK ON SITE**				
	8.3.3	Structural steelwork				
C40.13		.1 Structural steelwork	ton	2.2	9 675.00	21 285.00
	8.3.4	Erection bolts				
C40.14		.1 Class 4.8 bolts with nuts and washers	ton	0.5	150 500.00	75 250.00
C40.15		.2 Class 8.8 bolts with nuts and washers	ton	0.5	155 875.00	77 937.50
	SANS 1200 HC	**CORROSION PROTECTION**				
		CORROSION PROTECTION AT WORKSHOP				
	8.2.3	Hot dipped galvanising				
C40.16		.1 Structural steel	ton	2.2	15 856.25	34 883.75
	SANS 1200 HB	**CLADDING AND SHEETING**				
		Supply, deliver to site and fix cladding and sheeting including Dwg 3089.30.01.GZC.03.D003				
	8.2.2	0.58mm Klip-Lok 700 Chromadek Z200 galvanised and colour coated both sides roof sheeting fixed to				
C40.17		.1 Steel Purlins	m²	241	338.59	81 600.19
					Carried Forward	513 953.27

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					Brought Forward	513 953.27
		BILL NO. C40 **CARPORTS GZC**				
		Carried forward to Summary of Bills			**Total**	513 953.27

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C41 **STONE TRAPS AND INLET CANAL - WBC**				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		SUPERSTRUCTURE				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C41.1		.1 230mm Brick wall circular on plan as access shaft to chamber	m²	6	519.74	3 118.44
C41.2		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	18	508.01	9 144.18
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C41.3		.1 Stretcher course bond	m²	35	1 083.98	37 939.30
C41.4		.5 Brick on edge coping to 280mm walls	m²	12	543.75	6 525.00
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C41.5		.2 150mm Wide brickforce	m	53	2.19	116.07
C41.6		.3 Rod reinforcing (all sizes)	kg	11	23.75	261.25
		WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
C41.7		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	67	27.62	1 850.54
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
					Carried Forward	58 954.78

					Brought Forward	58 954.78
C41.8		.1 Vertically	m	14	63.68	891.52
C41.9		2 Horizontally	m	12	23.53	282.36
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C41.10		.1 Access shaft walls circular on plan	m^2	14	121.48	1 700.72
		BILL NO. C41				
		STONE TRAPS AND INLET CANAL - WBC				
		Carried forward to Summary of Bills			**Total**	61 829.38

Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Inlet works

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C42				
		INLET WORKS - WBA				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C42.1		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 20Mpa concrete complete	m²	53	613.01	32 489.53
		SUPERSTRUCTURE				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C42.2		.1 115mm Thick wall in lining to concrete walls, etc including hoop iron wall ties (4 per m2) shot plugged to concrete and built into brick wall complete	m²	110	266.49	29 313.90
C42.3		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	158	508.01	80 265.58
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C42.4		.1 Stretcher course bond	m²	221	1 083.98	239 559.58
C42.5		.5 Brick on edge coping to 230mm walls	m²	21	543.75	11 418.75
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C42.6		.2 150mm Wide brickforce	m	525	2.19	1 149.75
C42.7		.3 Rod reinforcing (all sizes)	kg	53	23.75	1 258.75
		WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
					Carried Forward	395 455.84

					Brought Forward	395 455.84
C42.8		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	252	27.62	6 960.24
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C42.9		.1 Vertically	m	53	63.68	3 375.04
C42.10		2 Horizontally	m	53	23.53	1 247.09
	PU	**GLASS BLOCKS**				
		GLASS BLOCKS				
	8.20	Aluglass Bautech Clearview 198 - or other approved - glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
C42.11		.1 190 x 190 x 190mm Glass blocks in panels	m²	38	2 365.00	89 870.00
	PU	**PRECAST CONCRETE COPINGS**				
		COPINGS				
	8.21	Precast concrete copings supplied and installed complete				
C42.12		.1 300 x 100mm Moulded coping fitted to top of 280mm cavity wall complete wit all mitres, end blocks, etc	m	53	440.40	23 341.20
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Polyethelene sheeting				
C42.13		.1 250 Micron USB green under floors	m²	53	12.73	674.69
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	12mm Thick jointex placed vertically between concrete surfaces				
C42.14		.4 Narrow widths not exceeding 300mm wide in brick walls	m	105	27.99	2 938.95
		JOINT SEALER				
	8.6	Polyurethane joint sealer				
					Carried Forward	523 863.05

					Brought Forward	523 863.05
C42.15		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	210	50.52	10 609.20
	SANS 1200 H	**STEEL ROOF**				
		SHOP DRAWINGS				
	8.3.1.1	Preparation of shop detail drawings and submit for approval				
C42.16		.1 Structural steelwork	ton	3.7	1 075.00	3 977.50
		SUPPLY AND FABRICATION				
		SINGLE SECTION STEELWORK				
	8.3.1.2	Single section beams, girders and rafters including connections, stiffeners, splice material, etc				
C42.17		.1 IPE 254 x 146 x 31kg/m I-section beam	ton	1.0	34 400.00	34 400.00
		BRACING				
	8.3.1.3	Hot rolled sections				
C42.18		.1 76 x 76 x 6mm Angle section roof bracing	ton	1.0	34 400.00	34 400.00
		CLADDING SUPPORT				
	8.3.1.4	Cold rolled sections				
C42.19		.1 200 x 100 x 20 x 3mm Lipped channel section purlins	ton	1.6	34 400.00	55 040.00
		FASTENERS				
	8.3.1.5	Fasteners				
C42.20		.1 Class 4.8 bolts with nuts and washers	ton	0.05	107 500.00	5 375.00
C42.21		.2 Class 8.8 bolts with nuts and washers	ton	0.05	107 500.00	5 375.00
		TRANSPORT STEEL TO SITE				
	8.3.2.1	Normal transport				
C42.22		.1 Structural steelwork	ton	3.7	1 075.00	3 977.50
		ERECTION				
		Off loading of steelwork on site, storage and erection				
	8.3.3	.1 Structural steelwork				
C42.23		.1 Structural steelwork	ton	3.7	5 375.00	19 887.50
	8.3.4	Erection bolts				
						696 904.75

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						696 904.75
C42.24		.1 Class 4.8 bolts with nuts and washers	ton	0.05	10 750.00	537.50
C42.25		.2 Class 8.8 bolts with nuts and washers	ton	0.05	10 750.00	537.50
	SANS 1200H	**CORROSION PROTECTION**				
		CORROSION PROTECTION AT WORKSHOP				
	8.3.13	Hot dipped galvanising				
C42.26		.1 Structural steel	ton	3.7	11 825.00	43 752.50
		CORROSION PROTECTION ON SITE AFTER ERECTION				
	8.3.14	Repair damaged primer coat and apply one coat universal undercoat to 25um DFT and one coat gloss enamel finish to 30 micron DFT				
C42.27		.1 General surfaces of structural steel	m²	150	136.52	20 478.00
	SANS 1200 HB	**CLADDING AND SHEETING**				
		Supply, deliver to site and fix cladding and sheeting including all necessary approved fasteners, closures, seals, etc and cutting and notching complete (colour Pebble Grey)				
		ROOF SHEETING				
	8.2.2	0,58mm Klip-Lok 700 Chromadek Z200 galvanised and colour coated both sides roof sheeting fixed to				
C42.28		.2 Timber purlins	m²	530	335.60	177 868.00
		ANCILLARIES				
		Supply, deliver to site and fix all ancillaries including all necessary approved fasteners, closures, seals, etc and cutting and notching complete				
	8.2.3	Ridging				
C42.29		.1 0,6mm Ridge capping 450mm girth 3 times bent along length	m	50	310.52	15 526.00
		Fibre cement				
	8.2.4	Fascia				
C42.30		.1 10 x 200mm High fascia board fixed complete	m	38	83.85	3 186.30
	PU	**INSULATION**				
		INSULATION				
	8.10	Supply, deliver to site and fix Sisalation 420 roof insulation, including all galvanised wire supportwork, cutting and notching complete to				
					Carried Forward	958 790.55

					Brought Forward	958 790.55
C42.31		.7 Underside of roof sheeting	m²	494	51.35	25 366.90
	PU	**BIRD PROOFING**				
		Bird proofing placed over box gutter and fixed to roof sheeting with approved fixtures to Engineers approval				
C42.32	8.20	.1 500mm Wide sheets	m²	15	274.69	4 120.35
	PU	**FASCIAS, ETC**				
		FASCIAS				
	8.21	Fibre cement fascia board fixed complete				
C42.33		.1 10 x 200mm Fascia board	m	50	83.85	4 192.50
		BARGE BOARDS				
	8.22	Fibre cement barge board fixed complete				
C42.34		.1 10 x 200mm Barge board	m	20	83.85	1 677.00
	PU	**RAINWATER DISPOSAL**				
		DOWNPIPES				
	8.16	Galvanised mild steel pipes and fittings installed complete				
C42.35		.1 100mm Dia rainwater pipe fixed to colums and walls with approved holders complete	m	50	467.62	23 381.00
C42.36		.2 Ditto cast into concrete columns	m	30	413.88	12 416.40
C42.37		.3 100mm Dia 45 degree bend	no	5	306.38	1 531.90
C42.38		.4 100mm Dia 90 degree bend	no	5	344.00	1 720.00
		GUTTERS				
	8.17	Gutters supplied and fixed complete, including all mitres, stopped ends, outlets, etc				
		2mm Powder coated aluminium (Pebble Grey)				
C42.39		.1 Size 150 x 150mm Eaves gutter	m	70	1 886.62	132 063.40
C42.40		.1 Size 300 x 200mm box gutter	m	27	3 386.25	91 428.75
		DOWNPIPES				
	8.18	Rainwater pipes supplied and fixed complete, including offsets, shoes, etc				
		1.2mm Powder coated aluminium (Pebble Grey)				
C42.41		.2 Size 150 x 150mm	m	84	1 886.62	158 476.08
					Carried Forward	1 415 164.83

					Brought Forward	1 415 164.83
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C42.42		.1 Walls	m²	389	105.35	40 981.15
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions. All paint to be of an approved colour as specified by the Arhitect				
	8.19	Undercoat and two coats exterior quality gloss enamel paint to				
C42.43		.1 Steel doors and frames	m²	10	107.50	1 075.00
C42.44		.2 General surfaces of structural steelwork	m²	50	198.88	9 944.00
	8.20	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C42.45		.1 Plastered walls	m²	389	66.65	25 926.85
C42.46		.2 Plastered or concrete ceilings	m²	200	64.50	12 900.00
	8.21	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C42.47		.2 Plastered walls	m²	200	68.80	13 760.00
C42.48		.3 Plastered or concrete ceilings	m²	100	66.65	6 665.00
C42.49		.4 Facias and barge boards	m²	20	66.65	1 333.00
	8.22	Extra over external painting to walls for painting plaster recess joint in different colour				
C42.50		.1 Recessed joint	m	50	23.65	1 182.50
	PU	**TIMBER ROOFS - LUMP SUM**				
		TIMBER ROOFS - LUMP SUM				
		SANS graded CCA treated SA Pine				
	8.8.0	Pre-fabricated roof construction erected complete.				
					Carried Forward	1 528 932.33

					Brought Forward	1 528 932.33
C42.51		.1 Timber roof construction complete (Size of building on plan 310 m²)	Lump sum	-	141 631.25	141 631.25
		FASCIAS				
	8.9.0	Fibre cement fascia board fixed complete including all				
C42.52		.1 10 x 200mm Fascia board	m	80	83.85	6 708.00
		GUTTERS				
	8.17	Gutters supplied and fixed complete, including all mitres,				
		2mm Powder coated aluminium (Pebble Grey)				
C42.53		.1 Size 150 x 150mm Eaves gutter	m	80	1 886.62	150 929.60
		DOWNPIPES				
	8.18	Rainwater pipes supplied and fixed complete, including				
		1,2mm Powder coated aluminium (Pebble Grey)				
C42.54		.2 Size 150 x 150mm	m	50	1 886.62	94 331.00
	SANS 1200 HB	**CLADDING AND SHEETING**				
		Supply, deliver to site and fix cladding and sheeting				
		ROOF SHEETING				
	8.2.2	0,58mm Klip-Lok 700 Chromadek Z200 galvanised and				
C42.55		.1 Timber purlins	m²	380	335.60	127 528.00
		ANCILLARIES				
		Supply, deliver to site and fix all ancillaries including all				
	8.2.3	Ridging				
C42.56		.1 0,6mm Ridge capping 450mm girth 3 times bent	m	60	310.52	18 631.20
		INSULATION				
	8.10	Supply, deliver to site and fix Sisalation 420 roof insulation,				
C42.57		.7 Underside of roof sheeting	m²	380	51.35	19 513.00
		BILL NO. C42 **INLET WORKS - WBA**				
		Carried forward to Summary of Bills			**Total**	2 088 204.38

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Degritters & measurement flumes

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C43 **DEGRITTERS & MEASUREMENT FLUMES - WBB**				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C43.1		.1 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 20Mpa concrete complete	m²	84	613.01	51 492.84
C43.2		.2 Ditto circular on plan	m²	11	618.93	6 808.23
		SUPERSTRUCTURE				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C43.3		.3 115mm Thick wall in lining to concrete walls, etc including hoop iron wall ties (4 per m2) shot plugged to concrete and built into brick wall complete	m²	84	266.49	22 385.16
C43.4		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	210	508.01	106 682.10
C43.5		.5 Ditto circular on plan	m²	32	513.76	16 440.32
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C43.6		.1 Stretcher course bond	m²	410	1 083.98	444 431.80
C43.7		.2 Ditto circular on plan	m²	38	1 112.55	42 276.90
C43.8		.3 Brick on edge coping to 230mm walls	m²	21	543.75	11 418.75
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C43.9		.2 150mm Wide brickforce	m	315	2.19	689.85
					Carried Forward	702 625.95

					Brought Forward	702 625.95
C43.10		.3 Rod reinforcing (all sizes)	kg	21	23.75	498.75
		WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
C43.11		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	210	27.62	5 800.20
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C43.12		.1 Vertically	m	53	63.68	3 375.04
C43.13		2 Horizontally	m	53	23.53	1 247.09
	PU	**PRECAST CONCRETE COPINGS**				
		COPINGS				
	8.20	Precast concrete copings supplied and installed complete				
C43.14		.1 300 x 100mm Moulded coping fitted to top of 280mm cavity wall complete wit all mitres, end blocks, etc	m	27	440.40	11 890.80
C43.15		.2 Ditto circular on plan	m	6	410.65	2 463.90
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Polyethelene sheeting				
C43.16		.1 250 Micron USB green under floors	m²	95	12.73	1 209.35
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	12mm Thick jointex placed vertically between concrete surfaces				
C43.17		.1 Narrow widths not exceeding 300mm wide in brick walls	m	105	27.99	2 938.95
		JOINT SEALER				
	8.6	Polyurethane joint sealer				
C43.18		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	105	50.52	5 304.60
	PU	**PLASTER**				
		ONE COAT PLASTER				
					Carried Forward	737 354.63

[redacted]

					Brought Forward	737 354.63
	8.35	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C43.19		.1 Walls	m²	168	105.35	17 698.80
C43.20		.2 Circular walls	m²	42	121.48	5 102.16
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C43.21		.1 Steel doors and frames	m²	10	107.50	1 075.00
C43.22		.2 General surfaces of structural steelwork	m²	10	198.88	1 988.80
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C43.23		.1 Plastered walls	m²	168	66.65	11 197.20
C43.24		.2 Plastered or concrete ceilings	m²	100	64.50	6 450.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C43.25		.3 Plastered walls	m²	100	68.80	6 880.00
C43.26		.4 Plastered or concrete ceilings	m²	100	66.65	6 665.00
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
C43.27		.1 Recessed joint	m	50	23.65	1 182.50
	SANS 1200 H	**STRUCTURAL STEELWORK**				
		SHOP DRAWINGS Dwg 3089.30.40.WBA.15.D001				
	8.3.1.1	Preparation of shop detail drawings and submit for approval				
C43.28		.1 Structural steelwork	ton	9.2	1 075.00	9 890.00
		SUPPLY AND FABRICATION				
					Carried Forward	805 484.09

					Brought Forward	805 484.09
		LATTICE STEELWORK				
	8.3.1.2	Lattice trusses and girders including connections stiffeners, splice material, etc				
C43.29		.1 16 No of, triangular shaped flat roof trusses 6,3m long x 2,1m high at one end and 1m high at other end, made up of 70x70x6mm angle section top chord, 70x70x6mm angle section bottom chord and laced with 60x60x5mm angle section	ton	5.3	36 550.00	193 715.00
		BRACING				
	8.3.1.3	Hot rolled sections				
C43.30		.1 50 x 50 x 5mm Angle section roof bracing	ton	1.0	34 400.00	34 400.00
		CLADDING SUPPORT				
	8.3.1.4	Cold rolled sections				
C43.31		.1 150 x 75 x 2,5mm Lipped channel section purlins	ton	3.0	34 400.00	103 200.00
		FASTENERS				
	8.3.1.5	Fasteners				
C43.32		.1 Class 4.8 bolts with nuts and washers	ton	0.05	107 500.00	5 375.00
C43.33		.2 Class 8.8 bolts with nuts and washers	ton	0.05	107 500.00	5 375.00
C43.34		.3 16mm Dia chemical anchor	no	128	268.75	34 400.00
		Transport steelwork to site				
	8.3.2.1	Normal transport				
C43.35		.1 Structural steelwork	ton	9.2	1 075.00	9 890.00
		ERECTION				
		Off loading of steelwork on site, storage and erection				
	8.3.3	.1 Structural steelwork				
C43.36		.1 Structural steelwork	ton	9.2	5 375.00	49 450.00
	SANS 1200H	**CORROSION PROTECTION**				
	8.3.13	Extra over reference 8.3.1 to 8.3.9 for corrosion protection				
		AT WORKSHOP				
		Hot dipped galvanising				
C43.37		.1 Structural steel	ton	9.2	11 825.00	108 790.00
					Carried Forward	1 350 079.09

[redacted]

					Brought Forward	1 350 079.09
		ON SITE AFTER ERECTION Repair damaged primer coat and apply one coat universal undercoat to 25um DFT and one coat gloss enamel finish to 30 micron DFT				
C43.38		.2 General surfaces of structural steel	m²	200	136.52	27 304.00
	SANS 1200 HB	**CLADDING AND SHEETING**				
		Supply, deliver to site and fix cladding and sheeting including all necessary approved fasteners, closures, seals, etc and cutting and notching complete (colour Pebble Grey)				
		ROOF SHEETING				
	8.2.2	0,58mm Klip-Lok 700 Chromadek Z200 galvanised and colour coated both sides roof sheeting fixed to				
C43.39		.2 Steel purlins	m²	560	335.60	187 936.00
		ANCILLARIES				
		Supply, deliver to site and fix all ancillaries including all necessary approved fasteners, closures, seals, etc and cutting and notching complete				
	8.2.3	Flashings				
C43.40		.1 0,6mm Stepped sidewall flashing 350mm girth 2 times bent along length	m	100	220.96	22 096.00
		Fibre cement				
	8.2.4	Fascia				
C43.41		.1 10 x 200mm High fascia board fixed complete	m	140	143.32	20 064.80
	PU	**INSULATION**				
		INSULATION				
	8.10	Supply, deliver to site and fix Sisalation 420 roof insulation, including all galvanised wire supportwork, cutting and notching complete to				
C43.42		.1 Underside of roof sheeting	m²	560	51.35	28 756.00
	PU	**RAINWATER DISPOSAL**				
		DOWNPIPES				
	8.16	Galvanised mild steel pipes and fittings installed complete				
C43.43		.1 100mm Dia rainwater pipe fixed to colums and walls with approved holders complete	m	60	467.62	28 057.20
C43.44		.2 100mm Dia 45 degree bend	no	12	306.38	3 676.56
					Carried Forward	1 667 969.65

[redacted]

					Brought Forward	1 667 969.65
C43.45		.3 100mm Dia 90 degree bend	no	12	344.00	4 128.00
C43.46		.4 75mm Dia GMS spout 300mm long, one end scew cut and cast through concrete wall or beam	no	6	537.50	3 225.00
		GUTTERS				
	8.17	Gutters supplied and fixed complete, including all mitres, stopped ends, outlets, etc				
		2mm Powder coated aluminium (Pebble Grey)				
C43.47		.1 Size 150 x 150mm Eaves gutter	m	70	1 886.62	132 063.40
		DOWNPIPES				
	8.18	Rainwater pipes supplied and fixed complete, including offsets, shoes, etc				
		1.2mm Powder coated aluminium (Pebble Grey)				
C43.48		.2 Size 150 x 150mm	m	70	1 886.62	132 063.40
		BILL NO. C43 **DEGRITTERS & MEASUREMENT FLUMES - WBB**				
		Carried forward to Summary of Bills			**Total**	1 939 449.45

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Raw sewage pump station

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C8 - Building works				
		BILL NO. C44 **RAW SEWAGE PUMP STATION - WPA**				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		BRICKWORK				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C44.1		.2 115mm Thick wall in lining to concrete including hoop iron ties shot plugged to concrete (4 per m2)	m²	117	266.49	31 179.33
C44.2		.3 230mm Thick wall	m²	50	508.77	25 438.50
C44.3		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	235	508.01	119 382.35
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C44.4		.1 Stretcher course bond	m²	53	1 083.98	57 450.94
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
C44.5		.20 Stretcher course bond	m²	143	1 280.56	183 120.08
	8.4.1c	Facebrick sundries				
C44.6		.1 230mm Wide face brick on edge sill	m	10	196.48	1 964.80
C44.7		.2 230mm Wide face brick on edge coping	m	10	179.91	1 799.10
	PU	**SUNDRIES**				
		BRICK REINFORCING				
	8.4.6	Brick reinforcing				
C44.8		.2 150mm Wide brickforce	m	800	2.19	1 752.00
C44.9		.3 Rod reinforcing (all sizes)	kg	53	23.75	1 258.75
					Carried Forward	423 345.85

					Brought Forward	423 345.85
		PRECAST CONCRETE LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
C44.10		.1 75 x 110mm Lintol	m	20	70.12	1 402.40
		HOOP IRON WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
C44.11		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	420	27.62	11 600.40
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C44.12		.1 Vertically	m	105	63.68	6 686.40
C44.13		2 Horizontally	m	105	23.53	2 470.65
	PU	**GLASS BLOCKS**				
		GLASS BLOCKS				
	8.20	Aluglass Bautech Clearview 198 - or other approved - glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
C44.14		.1 190 x 190 x 190mm Glass blocks in panels	m²	11	2 365.00	26 015.00
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C44.15		.1 375 Micron under walls including cement mortar triangular filler in wall cavity	m²	20	32.28	645.60
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into brickwork, etc complete Dwg EAM-EE-GS-045				
		3CR12 steel				
C44.16		.1 Single door and frame with door size 815 x 2400mm high including all locking devices hinges, etc complete	no	1	45 077.68	45 077.68
	PU	**LOUVRES**				
					Carried Forward	517 243.98

[redacted]

					Brought Forward	517 243.98
		LOUVRES				
	8.20	Take delivery of louvre sub-frame supplied by the Mechanical Contractor and build into brick wall, complete with prefabriced lintols above and finishing off (Mechanical Contractor will install louvre)				
C44.17		.1 Louvre size approximately 1 to 2m2 in area	no	6	441.48	2 648.88
	PU	**ROLLER SHUTTER DOORS**				
		ALUMINIUM ROLLER SHUTTER DOORS				
	8.21	Powder coated aluminium roller shutter door (colour RAL 7016 Graphite Grey) installed to manufacturers specifications complete with locking mechanism, etc Dwg 3089.92.00.WPA.16.E001				
C44.18		.1 Size 3500 x 3750mm high with crank handle operation complete	no	1	54 404.69	54 404.69
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C44.19		.1 Internal walls	m²	235	105.35	24 757.25
C44.20		.1 External walls	m²	208	110.72	23 029.76
	PU	**PAINTING**				
		PAINTING **Note:** All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C44.21		.1 Steel doors and frames	m²	10	107.50	1 075.00
C44.22		.2 General surfaces of structural steelwork	m²	10	198.88	1 988.80
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C44.23		.1 Plastered walls	m²	235	66.65	15 662.75
					Carried Forward	640 811.11

					Brought Forward	640 811.11
C44.24		.2 Plastered or concrete ceilings	m²	200	64.50	12 900.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C44.25		.2 Plastered walls	m²	208	68.80	14 310.40
C44.26		.3 Plastered or concrete ceilings	m²	50	66.65	3 332.50
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
C44.27		.1 Recessed joint	m	158	23.65	3 736.70
		BILL NO. C44 **RAW SEWAGE PUMP STATION - WPA**				
		Carried forward to Summary of Bills			**Total**	675 090.71

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C45 **PRIMARY SLUDGE PUMP STATION WITH STRAIN PRESS - WPB - WFB**				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		BRICKWORK				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C45.1		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	110	508.01	55 881.10
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C45.2		.1 Stretcher course bond	m²	53	1 083.98	57 450.94
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
C45.3		.2 Stretcher course bond	m²	65	1 280.56	83 236.40
	PU	**SUNDRIES**				
		BRICK REINFORCING				
	8.4.6	Brick reinforcing				
C45.4		.2 150mm Wide brickforce	m	630	2.19	1 379.70
C45.5		.3 Rod reinforcing (all sizes)	kg	20	23.75	475.00
		PRECAST CONCRETE LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
C45.6		.1 75 x 110mm Lintol	m	20	70.12	1 402.40
		HOOP IRON WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
					Carried Forward	199 825.54

[redacted]

					Brought Forward	199 825.54
C45.7		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	176	27.62	4 861.12
		CLOSING OF WALL CAVITIES				
	8.4.2	Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C45.8		.1 Vertically	m	53	63.68	3 375.04
C45.9		2 Horizontally	m	84	23.53	1 976.52
	PU	**GLASS BLOCKS**				
		GLASS BLOCKS				
	8.20	Aluglass Bautech Clearview 198 - or other approved - glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
C45.10		.1 190 x 190 x 190mm Glass blocks in panels	m²	7	2 365.00	16 555.00
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C45.11		.1 375 Micron under walls	m²	10	18.83	188.30
	8.4.3	Polyethelene sheeting				
C45.12		.2 250 Micron USB green under floors	m²	100	12.73	1 273.00
	SANS 1200 GB	**SLIDING JOINTS**				
	8.2.8	**SLIDING JOINT**				
C45.13		Two layers malthoid placed between horizontal brickwork and concrete surfaces	m²	15	622.29	9 334.35
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into brickwork, etc complete Dwg 3089.00.00.WPB.14.D001, EAM-EE-GS-045				
		3CR12 steel				
C45.14		.1 Single door and frame with door size 815 x 2400mm high including all locking devices hinges, etc complete	no	1		
					45 077.68	45 077.68
					Carried Forward	282 466.55

[redacted]

					Brought Forward	282 466.55
C45.15		.2 Double door and frame with door size 1500 x 2900mm high including all locking devices hinges, etc and cut out on top of doors for crane beam complete	no	1	61 778.42	61 778.42
	PU	**LOUVRES**				
	8.20	Take delivery of louvre sub-frame supplied by the Mechanical Contractor and build into brick wall, complete with prefabriced lintols above and finishing off (Mechanical Contractor will install louvre)				
C45.16		.1 Louvre size approximately 1 to 2m2 in area	no	6	441.48	2 648.88
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster				
		.1 Wood float finish to				
C45.17		.1 Internal walls	m²	110	105.35	11 588.50
C45.18		.2 External walls	m²	45	110.72	4 982.40
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C45.19		.1 Steel doors and frames	m²	20	107.50	2 150.00
C45.20		.2 General surfaces of structural steelwork	m²	20	198.88	3 977.60
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C45.21		.1 Plastered walls	m²	110	66.65	7 331.50
C45.22		.2 Plastered or concrete ceilings	m²	100	64.50	6 450.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C45.23		.2 Plastered walls	m²	100	68.80	6 880.00
C45.24		.3 Plastered or concrete ceilings	m²	100	66.65	6 665.00
					Carried Forward	396 918.85

[redacted]

					Brought Forward	396 918.85
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
C45.25		.1 Recessed joint	m	150	23.65	3 547.50
		BILL NO. C45 **PRIMARY SLUDGE PUMP STATION WITH STRAIN PRESS - WPB - WFB**				
		Carried forward to Summary of Bills			**Total**	400 466.35

[redacted]

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C8 - Building works				
		BILL NO. C46 **MEMBRANE PLANT - WHA**				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		SUPERSTRUCTURE				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C46.1		.1 115mm Thick wall	m²	326	250.95	81 809.70
C46.2		.3 230mm Thick wall	m²	326	508.77	165 859.02
C46.3		.5 285mm Cavity wall of two 115mm walls with 55mm cavity between including butterfly wall ties	m²	4276	501.11	2 142 746.36
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
C46.4		.20 Stretcher course bond	m²	1000	1 280.56	1 280 560.00
	SANS 1200G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between				
C46.5		.1 Expansion joint between concrete and brickwork	m²	350	27.99	9 796.50
	8.5	(b) Polyurethane joint sealer				
C46.6		.1 Remove 12 x 10mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	2100	50.52	106 092.00
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C46.7		.1 110mm Wide brickforce	m	1000	2.19	2 190.00
C46.8		.2 150mm Wide brickforce	m	12000	2.19	26 280.00
					Carried Forward	3 815 333.58

[redacted]

					Brought Forward	3 815 333.58
C46.9		.3 Rod reinforcing (all sizes)	kg	400	23.75	9 500.00
		LINTOLS				
		Precast pre-stressed concrete lintols built into brickwork				
	8.3					
C46.10		.1 75 x 110mm Lintol	m	330	70.12	23 139.60
		WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
C46.11		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	5000	27.62	138 100.00
		CLOSING OF WALL CAVITIES				
	8.4.2	Two coarses of brickwork in closing of 55mm cavity of cavity walls where required				
C46.12		.1 Vertically	m	1512	63.68	96 284.16
C46.13		.2 Horizontally	m	1560	23.53	36 706.80
	PU	**GLASS BLOCKS**				
	8.20	Aluglass Bautech Clearview 198 - or other approved - glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
		.1 190 x 190 x 80mm Glass blocks in panels	m²	80	2 365.00	189 200.00
	PU	**WATERPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C46.15		.1 375 Micron under walls including cement mortar triangular fillet in wall cavity	m²	510	32.28	16 462.80
C46.16		.2 375 Micron under sills	m²	3.2	18.83	60.26
	8.4.4	Polyethelene sheeting				
C46.17		.1 375 Micron USB green under floors	m²	3811	32.77	124 886.47
		WATERPROOFING OF WINDOWS				
C46.18		250 Micron damp proof sheeting strip of suitable width built into brickwork for sealing window frames all round	m	67	42.43	2 842.81
					Carried Forward	4 452 516.48

[redacted]

					Brought Forward	4 452 516.48
	8.20	**WATERPROOFING** Derbigum - or other approved - waterproofing membrane fixed to concrete roofs to manufacturers specifications complete, including all cutting and waste, dressing up to walls, etc and cutting, fitting and sealing around all outlet pipes, etc				
C46.19		.1 Concrete flat roofs	m²	1762	213.39	375 993.18
C46.20		.2 Concrete upstand beams and edges	m²	130	247.68	32 198.40
	8.21	Two coats aluminium paint applied to waterproofing including all preparation and approved undercoat complete				
C46.21		.1 General surfaces of waterproofing	m²	1900	48.38	91 922.00
	SANS 1200 H	**STRUCTURAL STEELWORK - ROOF**				
		SHOP DRAWINGS				
	8.3.1.1	Preparation of shop detail drawings and submit for approval				
C46.22		.1 Structural steelwork	ton	48	1 075.00	51 600.00
		SUPPLY AND FABRICATION				
		LATTICE STEELWORK				
	8.3.1.2	Lattice trusses and girders including connections stiffeners, splice material, etc				
C46.23		.1 Triangular shaped flat roof trusses 31.2m long x 4.3m high at one end and 1.0m high at other end, made up of 150x150x15mm angle section top chord, 120x120x12mm angle section bottom chord, 90x90x10mm diagonal angles and 80x80x10mm vertical angle section	ton	30	36 550.00	1 096 500.00
		BRACING				
	8.3.1.3	Hot rolled sections				
C46.24		.1 76 x 76 x 6mm Angle section roof bracing	ton	2	34 400.00	68 800.00
		CLADDING SUPPORT				
	8.3.1.4	Hot rolled sections				
C46.25		.1 76 x 76 x 6mm Angle section sag angles	ton	3.0	34 400.00	103 200.00
	8.3.1.5	Cold rolled sections				
C46.26		.1 200 x 75 x 20 x 3mm Lipped channel section purlins	ton	13.0	34 400.00	447 200.00
	8.3.1.6	FASTENERS				
C46.27		.1 Class 4.8 bolts with nuts and washers	ton	0.1	107 500.00	10 750.00
C46.28		.2 Class 8.8 bolts with nuts and washers	ton	0.1	107 500.00	10 750.00
					Carried Forward	6 741 430.06

[redacted]

					Brought Forward	6 741 430.06
C46.29		.3 15mm Diameter expansion bolt 150mm long	no	100	268.75	26 875.00
		TRANSPORT STEEL TO SITE				
	8.3.2.1	Normal transport				
C46.30		.1 Structural steelwork	ton	48.0	1 075.00	51 600.00
		ERECTION				
	8.3.3	Structural steelwork				
C46.31		.1 Structural steelwork	ton	48	5 375.00	258 000.00
	8.3.4	Erection bolts				
C46.32		.1 Class 4.8 bolts with nuts and washers	ton	0.1	10 750.00	1 075.00
C46.33		.2 Class 8.8 bolts with nuts and washers	ton	0.1	10 750.00	1 075.00
	8.3.6	Holding down bolts				
C46.34		.1 Drilling and fixing expansion bolt in concrete	no	25	107.50	2 687.50
	SANS 1200 HC	**CORROSION PROTECTION**				
	8.2.3a	CORROSION PROTECTION AT WORKSHOP				
		Hot dipped galvanising				
C46.35		.1 Structural steel	ton	48	11 825.00	567 600.00
	8.2.3b	CORROSION PROTECTION ON SITE AFTER ERECTION				
		Repair damaged primer coat and apply one coat universal undercoat to 25um DFT and one coat gloss enamel finish to 30 micron DFT				
C46.36		.1 General surfaces of structural steel	m²	100	136.52	13 652.00
	SANS 1200 HB	**CLADDING AND SHEETING**				
		Supply, deliver to site and fix cladding and sheeting including all necessary approved fasteners, closures, seals, etc and cutting and notching complete (colour Pebble Grey)				
		ROOF SHEETING				
	8.2.2	0.58mm Klip-Lok 700 Chromadek Z200 galvanised and colour coated both sides roof sheeting fixed to				
C46.37		.1 Steel purlins for sloping roof	m²	2300	335.60	771 880.00
C46.38		.2 Steel purlins for vertical cladding	m²	100	335.60	33 560.00
		ANCILLARIES				
					Carried Forward	8 469 434.56

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					Brought Forward	8 469 434.56
C46.39		Bullnose to sheeting to 300mm radius Supply, deliver to site and fix all ancillaries including all necessary approved fasteners, closures, seals, etc and cutting and notching complete Flashings (colour Pebble Grey)	m	70	119.43	8 360.10
C46.40	8.2.3	.1 0,6mm Stepped sidewall flashing 350mm girth 2 times bent along length	m	80	220.96	17 676.80
	PU	**HANDRAILS**				
C46.41		70mm Dia wrot Sapelo handrails with stainless steel wall bracket bolted to concrete wall. Approximately 3m in length	no	22	1 021.25	22 467.50
	PU	**SUSPENDED CEILINGS**				
		SUSPENDED CEILINGS DWG 3089.92.00.WHA.16.F001				
	8.10	Vinyl coated plasterboard ceilings supplied and erected complete				
C46.42		.1 9mm Vinyl coated plasterboard suspended ceiling of 600 x 1200mm ceiling panels laid loose in Donn type suspension system consisting of 38 x 38mm aluminium T-section main and cross tees, suspended with 4mm galvanized wire hangers approximately 800mm below concrete slabs and beams, complete with 30x30mm aluminium angle section cornice at junction of ceiling and wall	m²	962	209.18	201 231.16
C46.43		.2 Form hole through ceiling for light fittings	no	40	18.54	741.60
C46.44		.4 50mm Insulation blanket laid over ceilings	m²	962	67.99	65 406.38
	PU	**TIMBER DOORS AND FRAMES**				
		TIMBER FRAMES Wrot Sapele Single rebated 80 x 55mm hardwood door frame for the following size doors, built into brickwork complete with galvanised hoop iron straps fixed to frames and built into brickwork for the following door sizes Dwg 3089.92.00.WHA.F001				
C46.45	8.8	.1 Door size 813 x 2032mm (D02, 04, 05, 06, 10, 11, 15)	no	7	1 585.60	11 099.20
		SEMI SOLID CORE DOORS Semi solid core doors with masonite veneer suitable for painting Dwg 3089.92.00.WHA.F001				
C46.46	8.9	.1 Door size 762 x 2032mm with 150mm high undercut at bottom of door (D06, D07, 08, 09, 12, 13, 14)	no	6	1 566.28	9 397.68
					Carried Forward	8 805 814.98

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					Brought Forward	8 805 814.98
C46.47		.2 Door size 813 x 2032mm (D02, 04, 05, 06, 10, 11, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24) **IRONMONGERY TO SOLID CORE DOORS ABOVE, COMPLETE** Dwg 3089.92.00.WHA.16.F001	no	16	1 566.28	25 060.48
C46.48	8.10	.1 Door size 762 x 2032mm with 150mm high undercut at bottom of door (D07, 08, 09, 12, 13, 14)	no	6	3 083.28	18 499.68
C46.49		.2 Door size 813 x 2032mm (D02, 04, 05, 08, 10, 11, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24)	no	16	5 537.71	88 603.36
	PU	**SKIRTINGS**				
		TIMBER SKIRTINGS Wrot Sapele				
C46.50	8.11	.1 22 x 200mm Single rebated skirting fixed to walls	m	320	357.24	114 316.80
	PU	**ALUMINIUM WINDOWS**				
		WINDOWS Purpose made powder coated aluminium glazed windows supplied and installed complete with glazing, ironmongery, etc to manufacturers specification Prices to include for fixing damp proof sheeting (dampproof sheeting measured elsewhere) to window frame when fixing window to brickwork or concrete and sealing joint between window frame and plaster or brickwork finish with approved Polyurethane sealant all round to external faces				
	8.12	Dwg 3089.92.00.WHA.F001				
C46.51		.1 Window size 1500 x 1000mm (W01, 02, 03, 04, 05, 06, 07, 08, 09)	no	9	1 612.50	14 512.50
C46.52		.2 Window size 1800 x 1000mm (W10, 11)	no	2	1 612.50	3 225.00
C46.53		.3 Window size 3000 x 1000mm (W12)	no	1	2 150.00	2 150.00
	PU	**ALUMINIUM FRAMES**				
		DOOR FRAMES				
	8.13	Purpose made powder coated aluminium (colour RAL 7016 Antracite Grey) doors frames supplied and installed complete to manufacturers specification Dwg 3089.92.00.WHA.F001				
C46.54		.1 Door size 762 x 2032mm with 150mm high undercut at bottom of door (D06, D07, 08, 12, 13, 14)	no	6	5 375.00	32 250.00
					Carried Forward	9 104 432.80

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					Brought Forward	9 104 432.80
C46.55		.2 Door size 813 x 2032mm (D16, 17, 18, 19, 20, 21, 22, 23, 24)	no	9	5 375.00	48 375.00
	PU	**LOUVRES**				
					Carried Forward	9 152 807.80
					Brought Forward	9 152 807.80
	8.21	Powder coated aluminium roller shutter door (colour RAL Take delivery of louvre sub-frame supplied by the Mechanical Contractor and build into brick wall, complete with prefabriced lintols above and finishing off (Mechanical Contractor will install louvre)				
C46.56	8.20	.1 Louvre size not exceeding $5m^2$ in area	no	19	441.48	8 388.12
	PU	**ROLLER SHUTTER DOORS**				
	8.21	**ALUMINIUM ROLLER SHUTTER DOORS** Powder coated aluminium roller shutter door (colour RAL 7016 Graphite Grey) installed to manufacturers specifications complete with locking mechanism, etc Dwg 3089.92.00.WHA.F001				
C46.57		.1 Size 2400 x 2600mm high with crank handle operation complete	no	1	30 923.59	30 923.59
C46.58		.2 Size 4000 x 2900mm high with crank handle operation complete	no	1	47 972.91	47 972.91
C46.59		.3 Size 2400 x 3000mm high with crank handle operation complete	no	1	33 169.61	33 169.61
C46.60		.4 Size 4200 x 3995mm high with crank handle operation complete	no	1	64 715.96	64 715.96
C46.61		.5 Size 2800 x 3825mm high with crank handle operation complete	no	2	44 910.16	89 820.32
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES Purpose made doors and frames supplied and built into brickwork, etc complete Dwg 3089.92.00.WHA.F001				
	8.8	**3CR12 steel**				
C46.62		.1 Single door and frame with door size 1100 x 2100mm high including all locking devices hinges, etc complete	no	2	13 276.06	26 552.12
	PU	**ALUMINIUM SHOPFRONTS**				
		SHOPFRONTS				
					Carried Forward	9 454 350.43

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					Brought Forward	9 454 350.43
	8.28.2	Purpose made powder coated aluminium glazed shopfronts supplied and installed complete with glazing, ironmongery, etc to manufacturers specification, and sealing all round frames, adjoining walls, ceilings, floors, etc with approved sealant Type ISF001 & 002				
C46.63		.1 Shopfront size 2920 x 2440mm high	no	10	8 600.00	86 000.00
C46.64		.2 Extra over the above for double door complete with ironmongery, etc	no	10	3 225.00	32 250.00
C46.65		.3 Extra for applying frosted window film complete	no	10	3 225.00	32 250.00
	PU	**DRYWALL PARTITIONS**				
		DRYWALL PARTITIONS				
C46.66	8.20	.1 Gyproc Sound Resistant Wall System - or other approved - of 146 x 50mm Gypframe with 12,5mm Soundbloc Rhinoboard cladding on both sides with 102mm Isover Cavitybatt 14kg/m3 insulation fitted in cavity, the joints covered wth FIBA tape and entire surface skimmed with approved plaster finish 3-6mm thick	m²	300	1 063.45	319 035.00
C46.67	8.20	.2 Extra over the above for forming opening for single door (door and frames measured elsewhere)	no	20	1 916.19	38 323.80
C46.68	8.20	.3 Extra over the above for forming opening for double door (door and frames measured elsewhere)	no	20	2 287.06	45 741.20
	PU	**FLOOR COVERINGS**				
		CARPETS TILES				
	8.21	Van Dyk Modulyss Pure Air 100 900 carpet tiles colour LRV 3L 21 supplied and fixed to screeded floors (screed measured elsewhere) all to manufacturers instructions				
C46.69		.1 To floors	m²	300	731.00	219 300.00
	PU	**SHOWER DOORS**				
		SHOWER DOORS				
	8.22	Shower doors and partitions with approved safety glass glazing fixed complete				
C46.70		.1 Glazed aluminium shower door size 900 x 1800mm high (D)	no	12	4 439.75	53 277.00
C46.71		.2 Glazed aluminium shower partition size 1500 x 1800mm high (D)	no	16	5 084.75	81 356.00
	PU	**TOILET PARTITIONS**				
					Carried Forward	10 361 883.43

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					Brought Forward	10 361 883.43
	8.23	Toilet partions and doors 2000mm high fixed complete as per manufacturers specifications Dwg 3089.92.00.WHA.16.F001				
C46.72		.1 Toilet partition 2m long	no	7	9 808.38	68 658.66
C46.73		.2 Toilet door 813 x 2000mm complete with ironmongery	no	6	5 593.47	33 560.82
	PU	**RAINWATER DISPOSAL**				
		GUTTERS Gutters supplied and fixed complete, including all mitres, stopped ends, outlets, etc				
	8.16	2mm Powder coated aluminium (Pebble Grey)				
C46.74		.1 Size 400 x 300mm	m	68	3 386.25	230 265.00
		DOWNPIPES Rainwater pipes supplied and fixed complete, including offsets, shoes, etc				
	8.17	2mm Powder coated aluminium (Pebbel Grey)				
C46.75		.1 150mm Dia downpipe fixed to walls	m	60	1 910.81	114 648.60
	8.18	Galvanised mild steel pipes and fittings installed complete				
C46.76		.1 100mm Dia pipe cast into concrete columns	m	100	413.88	41 388.00
C46.77		.2 100mm Dia fullbore outlet cast into concrete slab	no	10	430.00	4 300.00
C46.78		.3 75mm Dia GMS spout 300mm long, one end scew cut and cast through concrete wall or beam	no	20	537.50	10 750.00
		SUNDRIES				
C46.79		Galvanised Mentex type 118 hail guards fixed over box gutter complete	m^2	50	365.50	18 275.00
	PU	**SCREED**				
		SCREED				
	8.4	1:3 Cement screed with steel floated finish				
C46.80		.1 30mm Thick to floors	m^2	4652	93.52	435 055.04
C46.81		.2 Ditto to landings	m^2	28	93.52	2 618.56
C46.82		.3 Ditto to treads and risers of stairs	m^2	82	212.85	17 453.70
C46.83		.4 60mm Average thick to floors to falls	m^2	843	123.62	104 211.66
C46.84		.5 100mm Average thick to roofs to falls	m^2	1762	203.18	358 003.16
					Carried Forward	11 801 071.63

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					Brought Forward	11 801 071.63
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.6	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C46.85		.1 Walls	m²	11450	105.35	1 206 257.50
C46.86		.4 Soffit of concrete slabs	m²	87	98.90	8 604.30
		TWO COAT PLASTER				
	8.6	Two coat plaster consisting of one coat 1:6 cement plaster, including all narrow widths, angles, V-joints, etc finished with 6mm thick Rhinolite gypsum plaster coat steel floated to				
C46.87		.1 Walls	m²	60	193.50	11 610.00
	PU	**TILING**				
		WALL TILING				
	8.7	Wall tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to plaster (plaster measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
C46.88		.1 Walls with 600 x 300mm porcelain tiles	m²	411	611.90	251 490.90
		FLOOR TILING				
	8.8	Floor tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to screed (screed measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
C46.89		.1 Floors with 600 x 600mm porcelain tiles	m²	400	619.01	247 604.00
	8.9	Mosaic tiling (Allow R400.00/m² for purchasing and delivery of mosaics to site excluding VAT) fixed to screed (screed measured elsewhere) with approved tile adhesive and grouted with waterproof tile grout				
C46.90		.1 Shower floors	m²	13	1 010.68	13 138.84
	PU	**PAINTING**				
		PAINTING **Note:** All paint to be Dulux - or other approved - and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Architect				
					Carried Forward	13 539 777.17

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					Brought Forward	13 539 777.17
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C46.91		.1 Steel doors and frames	m²	10	107.50	1 075.00
C46.92		.2 General surfaces of structural steelwork	m²	200	198.88	39 776.00
C46.93		.3 Timber doors and frames	m²	55	107.50	5 912.50
C46.94		.4 Timber skirtings not exceeding 150mm girth	m	160	37.62	6 019.20
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C46.95		.1 Plastered walls	m²	8324	66.65	554 794.60
C46.96		.2 Plastered or concrete ceilings	m²	4825	64.50	311 212.50
C46.97		.4 Skimmed drywall partitions	m²	2000	66.65	133 300.00
	8.20	Prepare and apply one coat Dulux Trade Primer code T1011 and two coats Dulux Pearlglo water based paint code D40 to internal				
C46.98		.2 Plastered walls in ablution areas	m²	120	68.80	8 256.00
	8.21	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C46.99		.2 Plastered walls	m²	3187	68.80	219 265.60
C46.100		.3 Plastered or concrete ceilings	m²	335	66.65	22 327.75
	8.22	Extra over external painting to walls for painting plaster recess joint in different colour				
C46.101		.1 Recessed joint	m	1353	23.65	31 998.45
	PU	**PLUMBING AND DRAINAGE**				
		PLUMBING AND DRAINAGE **Note:** Plumbing measured in elements (plumbing points) and shall be priced accordingly. Prices must include for supply and installation of all fittings, taps, supply and discharge piping from the fitting to the perimeter of the building face complete. Supply and discharge piping from the perimeter of the building up to the connection point on the site, will be measured separately, and must be priced accordingly. The external supply and discharge piping must include all items such as, excavation, bedding, backfilling, pipe fittings, manholes, etc complete				
	PU	**PLUMBING**				
		Plumbing points in building				
					Carried Forward	14 873 714.77

[redacted]

					Brought Forward	14 873 714.77
		TOILETS				
	8.17	.1 Toilets				
C46.102		Vaal Downtown or similar approved locally manufactured vitreous china close coupled suite (colour white) overall size 604 x 360 x 829mm high, comprising 90 degree outlet open rim back inlet pan with matching 6,3 litre top dual flush cistern including lid and fitments installed complete to manufacurers instructions	no	6	1 457.59	8 745.54
		HANDWASH BASINS				
	8.18	.1 Handwash basins				
C46.103		Vaal Downtown or similar approved vitreous china wall hung basin (colour white) overall size 440 x 510mm with one taphole with integrated overflow and chrome plated waste, bolted to wall with two 10mm bolts and sealed with silicone sealant where basin meets wall, including Cobra Watertech Protea Chrome basin mixer (Code: PA-851) or similar approved locally manufactured Chrome basin mixer, installed complete to manufacturers instructions	no	6	1 794.91	10 769.46
		SINKS				
	8.20	.2 Tea kitchen sink				
C46.104		Franke Cascade Model CDX611 grade 304 18/10 polished stainless steel single end bowl inset sink (code 1990032) or similar approved size 925 x 500mm with one 343 x 410 x 169mm deep bowl fixed onto cupbourd (cupboard measured elsewhere) with Spazi F/1 plumbing kit (code 1120008) two 90mm waste fittings complete to manufacturers instructions	no	2	3 234.18	6 468.36
		URINAL				
	8.20	.3 Urinal bowl				
C46.105		Villeroy & Boch - Subway wall mounted white urinal (no lid) (code 75130001) with flush installation set (code 116.003.00.1) with Sigma urinal flush plate (code 116.011.11.5) with urinal trap (code 152.950.11.10) and urinal division (code 11.202.11.1) installed complete to manufacturers instructions	no	2	12 787.12	25 574.24
		SHOWERS				
	8.20	.4 Shower				
					Carried Forward	14 925 272.37

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					Brought Forward	14 925 272.37
C46.106		Cobra Watertech or similar approved 40mm rough brass shower trap (Code: 373SQ) with shallow seal and chrome plated square grating , Cobra Watertech Chrome shower head (Code: KP2-6) or similar approved 10litre/min maximum flow restrictor, self cleaning spray nozzle, and minimum pressure 50 kPa, and Cobra Watertech Protea Chrome shower mixer (Code: PA-856) or similar approved, installed to suppliers instructions	no	12	3 359.59	40 315.08
		GEYSERS				
	8.20	.5 Geyser				
C46.107		200 Liter geyser	no	1	12 951.49	12 951.49
		FIRE FIGHTING				
	8.20	.6 Fire hose reel				
C46.108		20m Fire hose reel complete	no	4	3 470.42	13 881.68
C46.109		Fire extinguisher Class A including wall bracket complete	no	4	1 334.61	5 338.44
C46.110		Fire extinguisher Class D including wall bracket complete	no	4	3 529.25	14 117.00
	PU	**BATHROOM FITTINGS**				
	8.25	Bathroom fittings				
C46.111		.1 F16C stainless steel grade 304 cistern grab rail 750 x 220mm and F14C grab rail 300x 300 x 300mm installed complete as per suppliers instructions	no	2	2 272.67	4 545.34
C46.112		.2 Franke Rodan RODX605 0,8mm thick satin finished stainless steel waste bin (code 2120097) size 355 x 168 x 460mm high with capacity of 23 litres and cylinder lock and standard Franke key, fixed to wall with stainless steel screws as per suppliers instructions	no	2	4 333.87	8 667.74
C46.113		.3 Franke HF2400HD 1,2/1,5mm thick stainless steel satin finished automatic hand free hand dryer (code 2500001) size 280 x 207 x 245mm high with two vandal proof lock screws and key wrench, fixed to walls with stainless steel screws and 200W motor connected to power supply as per suppliers instructions	no	2	14 015.58	28 031.16
C46.114		.4 Franke Rodan RODX625 0,8mm thick satin finished stainless steel soap dispenser (code 2120107) size 120 x 107 x 296mm high fixed to wall with stainless steel screws as per suppliers instructions	no	4	4 906.62	19 626.48
					Carried Forward	15 072 746.78

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					Brought Forward	15 072 746.78
C46.115		.5 Franke Rodan RODX600 0,8mm thick satin finished stainless steel paper towel dispenser (code 2120099) size 275 x 112 x 355mm high with capacity of 500-800 towels, inspection window on the side with Franke standard key, fixed to wall with stainless steel screws as per suppliers instructions	no	2	3 074.60	6 149.20
C46.116		.6 Franke Rodan RODX672 0,8mm thick satin finished stainless steel double toilet roll holder (code 2120101) size 144 x 138 x 301mm high for two rolls maiimum, 120mm diameter with cylinder lock with standard Franke key, fixed to wall with stainless steel screws as per suppliers instructions	no	6	3 728.77	22 372.62
		BILL NO. C46 **MEMBRANE PLANT - WHA**				
		Carried forward to Summary of Bills			**Total**	15 101 268.60

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Membrane re-use pumpstation and MCC

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C47 **MEMBRANE RE-USE PUMPSTATION AND MCC - WPF**				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		BRICKWORK				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C47.1		.1 115mm Thick wall in lining to concrete walls or beams including hoop iron ties complete	m²	165	266.49	43 970.85
C47.2		.2 115mm Thick wall in beamfilling	m²	50	263.32	13 166.00
C47.3		.3 230mm Thick brick wall	m²	111	494.98	54 942.78
C47.4		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	739	508.01	375 419.39
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C47.5		.1 Stretcher course bond	m²	323	586.44	189 420.12
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
C47.6		.20 Stretcher course bond	m²	137	590.11	80 845.07
	PU	**SUNDRIES**				
		BRICK REINFORCING				
	8.4.6	Brick reinforcing				
C47.7		.2 150mm Wide brickforce	m	1890	2.19	4 139.10
C47.8		.3 Rod reinforcing (all sizes)	kg	30	23.75	712.50
		PRECAST CONCRETE LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
					Carried Forward	762 615.81

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					Brought Forward	762 615.81
C47.9		.1 75 x 110mm Lintol	m	20	70.12	1 402.40
		HOOP IRON WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
C47.10		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	1609	27.62	44 440.58
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C47.11		.1 Vertically	m	246	63.68	15 665.28
C47.12		2 Horizontally	m	170	23.53	4 000.10
	PU	**GLASS BLOCKS**				
		GLASS BLOCKS				
	8.20	Aluglass Bautech Clearview 198 - or other approved - glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
C47.13		.1 190 x 190 x 190mm Glass blocks in panels	m²	32	2 365.00	75 680.00
	SANS 1200 GB	**SLIDING JOINT**				
C47.14	8.2.8	Two layers malthoid placed between horisontal brickwork and concrete surfaces	m²	29	622.29	18 046.41
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C47.15		.1 375 Micron under walls	m²	56	18.94	1 060.64
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into brickwork, etc complete				
		Dwg EAM-EE-GS-045/048				
		3CR12 steel				
C47.16		.1 Single door and frame with door size 815 x 2400mm high including all locking devices hinges, etc complete	no	5	45 077.68	225 388.40
					Carried Forward	1 148 299.62

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					Brought Forward	1 148 299.62
C47.17		.2 Double door and frame with door size 1500 x 2400mm high including all locking devices hinges, etc complete	no	2	61 768.49	123 536.98
	PU	**LOUVRES**				
		LOUVRES				
	8.20	Take delivery of louvre sub-frame supplied by the Mechanical Contractor and build into brick wall, complete with prefabriced lintols above and finishing off (Mechanical Contractor will install louvre)				
C47.18		.1 Louvre size approximately 1 to 2m2 in area	no	6	441.48	2 648.88
	PU	**ROLLER SHUTTER DOORS**				
		ALUMINIUM ROLLER SHUTTER DOORS				
	8.20	Powder coated aluminium roller shutter door (colour RAL 7016 Graphite Grey) installed to manufacturers specifications complete with locking mechanism, etc				
C47.19		.1 Size 3500 x 3485mm high with crank handle operation complete	no	1	51 035.66	51 035.66
C47.20		.2 Size 3500 x 3060mm high with crank handle operation complete	no	3	43 582.96	130 748.88
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster				
		.1 Wood float finish to				
C47.21		.1 Internal walls	m²	922	105.35	97 132.70
C47.22		.2 External walls	m²	504	110.72	55 802.88
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Architect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C47.23		.1 Steel doors and frames	m²	80	107.50	8 600.00
					Carried Forward	1 617 805.60

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					Brought Forward	1 617 805.60
C47.24		.2 General surfaces of structural steelwork	m²	20	198.88	3 977.60
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C47.25		.1 Plastered walls	m²	922	66.65	61 451.30
C47.26		.2 Plastered or concrete ceilings	m²	200	64.50	12 900.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C47.27		.2 Plastered walls	m²	504	68.80	34 675.20
C47.28		.3 Plastered or concrete ceilings	m²	100	66.65	6 665.00
C47.29		.4 Facias and barge boards	m²	20	66.65	1 333.00
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
C47.30		.1 Recessed joint	m	420	23.65	9 933.00
	SANS 1200 H	**ROOF OVER PUMP STATION**				
		SHOP DRAWINGS				
	8.3.1.1	Preparation of shop detail drawings and submit for				
C47.31		.1 Structural steelwork	ton	15.0	1 075.00	16 125.00
		SUPPLY AND FABRICATE				
		LATTICE STEELWORK				
	8.3.1.2	Lattice trusses and girders including connections stiffeners, splice material, etc				
C47.32		.1 Triangular shaped flat roof trusses 15m long x 2m high at one end and 1,5m high at other end, made up of 90x90x8mm angle section top chord, 80x80x6mm angle section bottom chord and laced with 70x70x8mm angle section	ton	9.0	36 550.00	328 950.00
		BRACING				
	8.3.1.3	Hot rolled sections				
C47.33		.1 76 x 76 x 6mm Angle section roof bracing	ton	1.0	34 400.00	34 400.00
		CLADDING SUPPORT				
	8.3.1.4	Hot rolled sections				
C47.34		.1 76 x 76 x 6mm Angle section sag angles	ton	2.0	34 400.00	68 800.00
	8.3.1.5	Cold rolled sections				
					Carried Forward	2 197 015.70

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					Brought Forward	2 197 015.70
C47.35	8.3.1.6	.1 150 x 75 x 20 x 2mm Lipped channel section purlins FASTENERS	ton	3.0	34 400.00	103 200.00
C47.36		.1 Class 4.8 bolts with nuts and washers	ton	0.05	107 500.00	5 375.00
C47.37		.2 Class 8.8 bolts with nuts and washers	ton	0.05	107 500.00	5 375.00
C47.38		.3 15mm Diameter expansion bolt 150mm long	no	100	268.75	26 875.00
		TRANSPORT TO SITE				
	8.3.2.1	Normal transport				
C47.39		.1 Structural steelwork	ton	15.0	1 075.00	16 125.00
		ERECTION ON SITE				
	8.3.3	Structural steelwork				
C47.40		.1 Structural steelwork	ton	15.0	5 375.00	80 625.00
	8.3.4	Erection bolts				
C47.41		.1 Class 4.8 bolts with nuts and washers	ton	0.05	10 750.00	537.50
C47.42		.2 Class 8.8 bolts with nuts and washers	ton	0.05	10 750.00	537.50
	8.3.6	Holding down bolts				
C47.43		.1 Drilling and fixing expansion bolt in concrete	no	100	107.50	10 750.00
	SANS 1200 H	**CORROSION PROTECTION AT WORKSHOP**				
	8.3.13	Hot dipped galvanising				
C47.44		.1 Structural steel	ton	15.0	11 825.00	177 375.00
		CORROSION PROTECTION ON SITE AFTER ERECTION				
	8.3.14	Repair damaged primer coat and apply one coat universal undercoat to 25um DFT and one coat gloss enamel finish to 30 micron DFT				
C47.45		.1 General surfaces of structural steel	m²	200	136.52	27 304.00
	SANS 1200 HB	**CLADDING AND SHEETING**				
		Supply, deliver to site and fix cladding and sheeting including all necessary approved fasteners, closures, seals, etc and cutting and notching complete (colour Pebble Grey)				
		ROOF SHEETING				
	8.2.2	0.58mm Klip-Lok 700 Chromadek Z200 galvanised and colour coated both sides roof sheeting fixed to				
C47.46		.2 Steel purlins	m²	650	335.60	218 140.00
					Carried Forward	2 869 234.70

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					Brought Forward	2 869 234.70
		ANCILLARIES				
	8.2.3	Supply, deliver to site and fix all ancillaries including all necessary approved fasteners, closures, seals, etc and cutting and notching complete				
		Ridging				
C47.47		.1 0,6mm Ridge capping 450mm girth 3 times bent along length	m	80	310.52	24 841.60
		Flashings				
C47.48		.2 0,6mm Stepped sidewall flashing 350mm girth 2 times bent along length	m	20	220.96	4 419.20
		Fibre cement				
		.3 Fascia and bardge boards				
C47.49		.1 10 x 200mm High fascia board fixed complete	m	100	143.32	14 332.00
	PU	**INSULATION**				
		INSULATION				
	8.10	Supply, deliver to site and fix Sisalation 420 roof insulation, including all galvanised wire supportwork, cutting and notching complete to				
C47.50		.1 Underside of roof sheeting	m²	650	51.35	33 377.50
	PU	**RAINWATER DISPOSAL**				
		DOWNPIPES				
	8.16	Galvanised mild steel pipes and fittings installed complete				
C47.51		.1 100mm Dia rainwater pipe fixed to colums and walls with approved holders complete	m	50	467.62	23 381.00
C47.52		.2 Ditto cast into concrete columns	m	50	413.88	20 694.00
C47.53		.3 100mm Dia 45 degree bend	no	10	306.38	3 063.80
C47.54		.4 100mm Dia 90 degree bend	no	10	344.00	3 440.00
		GUTTERS				
	8.17	Gutters supplied and fixed complete, including all mitres, stopped ends, outlets, etc				
		2mm Powder coated aluminium (Pebble Grey)				
C47.55		.1 Size 150 x 150mm Eaves gutter	m	120	1 886.62	226 394.40
		DOWNPIPES				
					Carried Forward	3 223 178.20

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					Brought Forward	3 223 178.20
	8.18	Rainwater pipes supplied and fixed complete, including offsets, shoes, etc 1.2mm Powder coated aluminium (Pebble Grey)				
C47.56		.2 Size 150 x 150mm	m	100	1 886.62	188 662.00
		BILL NO. C47 **MEMBRANE RE-USE PUMPSTATION AND MCC - WPF**				
		Carried forward to Summary of Bills			**Total**	3 411 840.20

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C48 **GATEHOUSE - SUC**				
		BUILDING WORKS				
	SANS 1200 D	**EARTHWORKS**				
		RESTRICTED EXCAVATIONS				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C48.1		.1 Wall footings	m³	107	365.86	39 147.02
C48.2		.2 Column bases	m³	10	365.86	3 658.60
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C48.3		.2 Hard rock excavation	m³	2	803.79	1 607.58
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C48.4		.1 Alongside walls in foundations	m³	38	317.46	12 063.48
C48.5		.3 Under floors	m³	57	317.46	18 095.22
	SANS 1200 G	**ROUGH FORMWORK**				
		ROUGH FORMWORK				
	8.2.1	(a) .2 Plane vertical				
C48.6		.1 Sides of floor slabs	m²	10	376.82	3 768.20
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(b) .1 Plane horizontal				
C48.7		.1 Slabs	m²	100	376.82	37 682.00
C48.8		.2 Beams	m²	10	376.82	3 768.20
	8.2.2	(b) .2 Plane vertical				
					Carried Forward	119 790.30

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					Brought Forward	119 790.30
C48.9		.1 Sides of floor slabs	m²	2	376.82	753.64
C48.10		.3 Walls	m²	10	376.82	3 768.20
C48.11		.6 Square or rectangular columns	m²	20	376.82	7 536.40
C48.12		.7 Circular columns	m²	10	376.82	3 768.20
C48.13		.8 Beams	m²	10	376.82	3 768.20
	8.2.2	(b) .3 Plane sloping				
C48.14		.1 Slabs	m²	100	431.88	43 188.00
C48.15		.2 Beams	m²	10	523.64	5 236.40
	8.2.5	Normal formwork to narrow widths				
C48.16		(a) Edges, risers, etc not exceeding 300mm wide	m	100	113.05	11 305.00
C48.17		(b) Circular edges, risers, etc not exceeding 300mm wide	m	20	239.56	4 791.20
	8.1.1.2	Normal formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C48.18		(a) Chamfer size 50 x 50mm	m	10	199.92	1 999.20
C48.19		(b) Groove size 70mm wide x 50mm deep	m	10	211.59	2 115.90
C48.20		(c) Rebate size 100mm x 100mm	m	10	413.73	4 137.30
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1	Steel bars				
		(a) .1 Mild steel				
C48.21		.1 All sizes	ton	2.0	18 976.98	37 953.96
		(a) .2 High tensile steel				
C48.22		.1 All sizes	ton	15.0	18 976.98	284 654.70
		MESH REINFORCEMENT				
	8.3.2	(c) High tensile welded mesh				
C48.23		.2 Ref no.395	m²	189	80.25	15 167.25
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.3	(b) .3 Strength concrete 35Mpa/19mm				
					Carried Forward	549 933.85

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					Brought Forward	549 933.85
C48.24		.1 Floor slabs	m³	19	2 058.14	39 104.66
C48.25		.2 Roof slabs	m³	50	2 058.14	102 907.00
C48.26		.3 Beams	m³	10	2 058.14	20 581.40
C48.27		.4 Wall footings	m³	22	2 058.14	45 279.08
C48.28		.5 Column bases	m³	5	2 058.14	10 290.70
C48.29		.6 Walls	m³	5	2 058.14	10 290.70
C48.30		.7 Columns	m³	3	2 058.14	6 174.42
		CONCRETE IN SMALL QUANTITIES				
	8.4.2	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
C48.31		.1 50mm Thick	m³	4	1 938.01	7 752.04
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C48.32		.1 Floor slabs	m²	200	13.92	2 784.00
C48.33		.2 Top of walls, beams, etc	m²	10	13.92	139.20
	8.4.4	(b) Steel floated finish				
C48.34		.1 Floor slabs	m²	200	19.44	3 888.00
C48.35		.2 Top of walls, beams, etc	m²	10	19.44	194.40
		SPECIAL SURFACE FINISHES				
	8.4.4d	Polished exposed aggregate concrete floors Dwg 3089.92.00.SUC.16.F003				
		(a) Three stage grinding process				
C48.36		.1 Polished exposed aggregate concrete surface finish as described on finishing schedule	m²	20	241.88	4 837.60
C48.37		.2 Sealer to polished concrete surface with Crete Colors Colourhard C2 Hard sealer and C2 Ultra seal complete	m²	20	75.25	1 505.00
		(b) Seven stage grinding process				
					Carried Forward	805 662.05

[redacted]

					Brought Forward	805 662.05
C48.38		.1 Polished exposed aggregate concrete surface finish as described on finishing schedule	m²	36	241.88	8 707.68
C48.39		.2 Sealer to polished concrete surface with Crete Colors Colourhard C2 Hard sealer and C2 Ultra seal complete	m²	36	75.25	2 709.00
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C48.40		.4 Narrow widths not exceeding 300mm wide	m	50	35.48	1 774.00
		SEALERS				
	8.5	(b) Polyurethane joint sealer				
C48.41		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	50	153.31	7 665.50
		PRECAST CONCRETE				
		Dwg 3089.92.00.SUC.16.U001				
		SUPPLY PRECAST CONCRETE				
	8.6	(f) .1 Provision of precast units including all concrete, formwork, reinforcement,etc				
C48.42		.1 Window surround for window type W02 size 1800 x 1500mm high complete	no	3	6 199.52	18 598.56
C48.43		.2 Window surround for window type W03 size 2100 x 1885mm high complete	no	2	7 485.22	14 970.44
C48.44		.3 Window surround for window type W04 size 4900 x 1500mm high complete	no	1	12 020.65	12 020.65
C48.45		.4 Window surround for window type W05 size 1500 x 1500mm high complete	no	1	5 635.15	5 635.15
		ERECT PRECAST CONCRETE				
	8.6	(f) .2 Erection of precast units described above				
C48.46		.1 Window surround for window type W02 size 1800 x 1500mm high complete	no	3	558.89	1 676.67
C48.47		.2 Window surround for window type W03 size 2100 x 1885mm high complete	no	2	558.89	1 117.78
					Carried Forward	880 537.48

[redacted]

					Brought Forward	880 537.48
C48.48		.3 Window surround for window type W04 size 4900 x 1500mm high complete	no	1	652.05	652.05
C48.49		.4 Window surround for window type W05 size 1500 x 1500mm high complete	no	1	558.89	558.89
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C48.50		.3 230mm Thick wall	m²	20	508.77	10 175.40
C48.51		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 25Mpa concrete complete	m²	82	613.01	50 266.82
C48.52		.4 Ditto circular on plan	m²	14	618.93	8 665.02
		SUPERSTRUCTURE				
	8.4.1b	Stock brickwork in 1:4 cement mortar				
C48.53		.1 115mm Thick wall	m²	10	250.95	2 509.50
C48.54		.3 230mm Thick wall	m²	79	508.77	40 192.83
C48.55		.4 Ditto circular on plan	m²	10	514.69	5 146.90
C48.56		.5 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	217	508.01	110 238.17
C48.57		.6 Ditto circular on plan	m²	40	513.76	20 550.40
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C48.58		.1 Stretcher course bond	m²	110	586.44	64 508.40
C48.59		.2 Ditto in foundations	m²	26	546.50	14 209.00
C48.60		.3 Stretcher course bond circular on plan	m²	40	586.44	23 457.60
C48.61		.4 Ditto in foundations	m²	5	546.50	2 732.50
C48.62		.5 Soldier course bond	m²	10	548.59	5 485.90
					Carried Forward	1 239 886.86

[redacted]

					Brought Forward	1 239 886.86
	8.4.1c	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
C48.63		.20 Stretcher course bond	m²	50	630.06	31 503.00
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C48.64		.1 110mm Wide brickforce	m	20	2.19	43.80
C48.65		.2 150mm Wide brickforce	m	315	2.19	689.85
C48.66		.3 Rod reinforcing (all sizes)	kg	53	23.75	1 258.75
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
C48.67		.1 75 x 110mm Lintol	m	20	70.12	1 402.40
		WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
C48.68		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	50	27.62	1 381.00
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C48.69		.1 Vertically	m	53	63.68	3 375.04
C48.70		2 Horizontally	m	53	23.53	1 247.09
	PU	**PRECAST CONCRETE COPINGS**				
		COPINGS				
	8.20	Precast concrete copings supplied and installed complete				
C48.71		.1 300 x 100mm Moulded coping fitted to top of 280mm cavity wall complete wit all mitres, end blocks, etc	m	20	440.40	8 808.00
	PU	**WATERPROOFING**				
		DAMPPROOFING				
					Carried Forward	1 289 595.79

[redacted]

					Brought Forward	1 289 595.79
	8.4.3	Brickgrip dpc				
C48.72		.1 375 Micron under walls including cement mortar triangular filler in cavity walls	m²	28	32.28	903.84
C48.73		.2 375 Micron under sills	m²	5	18.83	94.15
	8.4.4	Polyethelene sheeting				
C48.74		.1 250 Micron USB green under floors	m²	189	12.73	2 405.97
		WATERPROOFING OF WINDOWS				
C48.75	8.20	250 Mic damp proof sheeting strip of suitable width built into brickwork for sealing window frames all round	m	53	42.43	2 248.79
		WATERPROOFING				
	8.20	Derbigum - or other approved - waterproofing membrane fixed to concrete roofs to manufacturers specifications complete, including all cutting and waste, dressing up to walls, etc and cutting, fitting and sealing around all outlet pipes, etc				
C48.76		.1 Concrete flat roofs	m²	200	213.39	42 678.00
C48.77		.2 Concrete upstand beams	m²	10	247.68	2 476.80
C48.78		.4 Turnup 200mm high	m	100	48.38	4 838.00
C48.79		.5 Dress waterproofing around fullbore outlet	no	4	118.25	473.00
	8.21	Two coats aluminium paint applied to waterproofing including all preparation and approved undercoat complete				
C48.80		.1 General surfaces of waterproofing	m²	220	48.38	10 643.60
	PU	**SUSPENDED CEILINGS**				
		SUSPENDED CEILINGS				
	8.10	Supply and erect suspended ceilings complete				
		.4 Skimmed plasterboard ceilings				
C48.81		.1 12,5mm Gyproc Rhinoboard panels screwed to and including Gypframe Ultra Steel brandering at max 600mm centres with joints taped with Rhino Tape, and skimmed with Gyproc Rhinolite Cretestone plaster, including Gyproc Galvanised steel angle section size 25 x 25mm against walls, suspended with approved suspended system 200mm below concrete slabs	m²	91	279.24	25 410.84
C48.82		.2 Ditto 300mm below timber or steel roof trusses	m²	86	279.24	24 014.64
					Carried Forward	1 405 783.42

[redacted]

					Brought Forward	1 405 783.42
C48.83		.3 Form hole through ceiling for light fittings	no	16	18.54	296.64
C48.84		.4 135mm Thick Aerolite 12,5kg/m3 ceiling insulation on top of suspended ceiling	m²	86	129.81	11 163.66
C48.85		.5 100mm Gyproc Rhineart cornice fixed to walls	m	105	67.99	7 138.95
	PU	**TIMBER DOORS AND FRAMES**				
		TIMBER FRAMES				
		Wrot Sapele				
	8.8	Single rebated 80 x 55mm hardwood door frame for the following size doors, built into brickwork complete with galvanised hoop iron straps fixed to frames and built into brickwork for the following door sizes				
		Dwg 3089.92.00.SUC.16.F001				
C48.86		.1 Door size 813 x 2032mm (D01, 02, 03, 04)	no	4	1 320.08	5 280.32
		SOLID CORE DOORS				
	8.9	Solid core doors with masonite veneer suitable for painting				
		Dwg 3089.92.00.SUC.16.F001				
C48.87		.1 Door size 813 x 2032mm (D01, 02, 03, 04)	no	4	1 566.28	6 265.12
	8.20	**IRONMONGERY TO SOLID CORE DOORS ABOVE, COMPLETE**				
		Dwg 3089.92.00.SUC.16.F001				
C48.88		.1 Door D01, 02, 03 & 04	no	4	3 083.28	12 333.12
	PU	**SKIRTINGS**				
		TIMBER SKIRTINGS				
	8.9	Wrot Sapele				
C48.89		.1 22 x 200mm Single rebated skirting nailed to walls	m	100	357.24	35 724.00
	PU	**ALUMINIUM WINDOWS**				
		WINDOWS				
	8.8	Purpose made powder coated aluminium glazed windows supplied and installed complete with glazing, ironmongery, etc to manufacturers specification				
		Prices to include for fixing damp proof sheeting (dampproof sheeting measured elsewhere) to window frame when fixing window to brickwork or concrete and sealing joint between window frame and plaster or brickwork finish with approved Polyurethane sealant all round to external faces				
		Dwg 3089.92.00.SUC.16.F001				
					Carried Forward	1 483 985.23

[redacted]

					Brought Forward	1 483 985.23
C48.90		.1 Window size 500 x 500mm (W01)	no	15	537.50	8 062.50
C48.91		.2 Window size 1800 x 1500mm (W02)	no	3	1 612.50	4 837.50
C48.92		.3 Window size 2100 x 1885mm (W03)	no	2	2 687.50	5 375.00
C48.93		.4 Window size 4900 x 1500mm (W04)	no	1	4 837.50	4 837.50
C48.94		.5 Window size 1500 x 1500mm (W05)	no	1	2 150.00	2 150.00
	PU	**ALUMINIUM SHOPFRONTS**				
		SHOPFRONTS				
	8.20	Purpose made powder coated aluminium (colour Anthracite grey RAL 7016 smooth) glazed shopfronts supplied and installed complete with glazing, ironmongery etc to manufacturers specification, and sealing all round frames adjoining walls, ceilings, floors, etc with approved sealant				
		Dwg 3089.92.00.SUC.16.F001				
		Type SF-01 & 02				
C48.95		.1 Double door size 1500 x 2400mm high	no	2	10 750.00	21 500.00
		Type ISF-03				
C48.96		.1 Single door size 900 x 2400mm high	no	1	5 375.00	5 375.00
		Type ISF-01 & 02				
C48.97		.1 Shopfront size 5600 x 2400mm high	no	2	60 544.00	121 088.00
C48.98		.2 Extra over the above for double door complete with ironmongery, etc	no	2	3 225.00	6 450.00
		Type SF-03				
C48.99		.1 Shopfront size 6500 x 2400mm high	no	1	61 275.00	61 275.00
C48.100		.2 Extra over the above for double door complete with ironmongery, etc	no	1	3 225.00	3 225.00
C48.101		.3 Extra over the above for single side hung window opening section complete with ironmongery, etc	no	2	3 225.00	6 450.00
	PU	**SCREED**				
		SCREED				
	8.6	1:3 Cement screed with steel floated finish				
C48.102		.1 30mm Thick to floors	m²	118	93.52	11 035.36
C48.103		.2 60mm Average thick to floors to falls	m²	100	123.62	12 362.00
					Carried Forward	1 758 008.09

					Brought Forward	1 758 008.09
	PU	PLASTER				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster				
		.2 Steel float finish to				
C48.104		.1 Walls	m²	79	105.35	8 322.65
C48.105		.2 Ditto in foundations	m²	14	124.70	1 745.80
C48.106		.3 Walls circular on plan	m²	11	121.48	1 336.28
C48.107		.4 Ditto in foundations	m²	2	134.38	268.76
C48.108		.5 Soffit of concrete slabs	m²	100	98.90	9 890.00
		TWO COAT PLASTER				
	8.7	Two coat plaster consisting of one coat 1:6 cement plaster finished with 6mm thick Rhinolite gypsum plaster coat steel floated to				
C48.109		.1 Walls	m²	393	193.50	76 045.50
C48.110		.2 Ditto circular on plan	m²	40	225.75	9 030.00
	PU	TILING				
		WALL TILING				
	8.7	Wall tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to plaster (plaster measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
C48.111		.1 Walls with 600 x 300mm porcelain tiles	m²	84	611.90	51 399.60
		FLOOR TILING				
	8.8	Floor tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to screed (screed measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
C48.112		.1 Floors with 600 x 600mm porcelain tiles	m²	118	619.01	73 043.18
	8.20	Tiling sundries				
C48.113		.1 150mm Tile skirting fixed to walls	m	422	135.30	57 096.60
C48.114		.2 Ditto circular	m	11	146.02	1 606.22
					Carried Forward	2 047 792.68

[redacted]

					Brought Forward	2 047 792.68
	8.21	Mosaic tiling (Allow R500.00/m² for purchasing and delivery of mosaics to site excluding VAT) fixed to screed (screed measured elsewhere) with approved tile adhesive and grouted with waterproof tile grout				
C48.115		.1 Shower floors	m²	2	1 136.03	2 272.06
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C48.116		.1 Steel doors and frames	m²	20	107.50	2 150.00
C48.117		.2 General surfaces of structural steelwork	m²	20	198.88	3 977.60
C48.118		.3 Timber doors and frames	m²	30	107.50	3 225.00
C48.119		.3 Timber skirtings not exceeding 150mm girth	m	50	37.62	1 881.00
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C48.120		.1 Plastered walls	m²	433	66.65	28 859.45
C48.121		.2 Plastered or concrete ceilings	m²	100	64.50	6 450.00
	8.20	Prepare and apply one coat Dulux Trade Ecosure Primer code T4013 and three coats Dulux Trade 65 Matt PVA paint code T2003 to internal				
C48.122		.3 Skimmed plasterboard ceilings	m²	300	86.00	25 800.00
	8.21	Prepare and apply one coat Dulux Trade Primer code T1011 and two coats Dulux Pearlglo water based paint code D40 to internal				
C48.123		.2 Plastered walls in ablution areas	m²	100	66.65	6 665.00
	8.22	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C48.124		.2 Plastered walls	m²	105	68.80	7 224.00
C48.125		.3 Plastered or concrete ceilings	m²	20	66.65	1 333.00
C48.126		.4 Facias and barge boards	m²	10	66.65	666.50
					Carried Forward	2 138 296.29

[redacted]

					Brought Forward	2 138 296.29
	8.23	Extra over external painting to walls for painting plaster recess joint in different colour				
C48.127		.1 Recessed joint	m	50	23.65	1 182.50
		PLUMBING AND DRAINAGE				
		PLUMBING AND DRAINAGE **Note:** Plumbing measured in elements (plumbing points) and shall be priced accordingly. Prices must include for supply and installation of all fittings, taps, supply and discharge piping from the fitting to the perimeter of the building face complete. Supply and discharge piping from the perimeter of the building up to the connection point on the site, will be measured separately, and must be priced accordingly. The external supply and discharge piping must include all items such as, excavation, bedding, backfilling, pipe fittings, manholes, etc complete				
	PU	**PLUMBING**				
		Plumbing points in building Dwg 3089.92.00.SUC.16.F004				
	8.17	.1 Toilets				
C48.128		Vaal Downtown or similar approved vitreous china close coupled suite, colour white, overall size 604 x 360 x 829mm high, comprising 90 degree outlet, open rim, back inlet oan with matching 6/3 litre top duel flush cistern including lid and fitments	no	2	1 457.59	2 915.18
	8.17	.4 Handwash basins				
C48.129		Vaal Downtown or similar approved vitreous china wall hung basin, colour white, overall size 440 x 510mm with one taphole with integrated overflow and chrome plated basin waste, bolted to wall with two 10mm bolts and sealed with silicone sealant where wall meats basin. Including Cobra Watertech Protea Chrome basin mixer (Code: PA-851) or similar approved basin mixer.	no	2	1 794.91	3 589.82
	8.20	.5 Canteen sink				
C48.130		Blanko Tipo sink (Code: BL00511942) with Spazio 1 kit 50/90mm outlet (Code: 1120008) installed complete to manufacturers instructions including Meir Modern chrome kitchen mixer (Code SMK03-C)	no	1	5 590.00	5 590.00
	8.20	.13 Geyser				
C48.131		150 Liter geyser	no	1	8 966.39	8 966.39
	8.20	.14 Fire hose reel				
					Carried Forward	2 160 540.18

					Brought Forward	2 160 540.18
C48.132		30m Fire hose reel including two fire extinguishers	no	1	6 385.65	6 385.65
	PU	**DRAINAGE**				
	8.15	External supply and discharge piping, etc				
C48.133		.1 20mm Dia HDPE water supply in ground	m	10	8.58	85.80
C48.134		.2 32mm Dia HDPE water supply in ground	m	10	23.27	232.70
C48.135		.3 110mm Dia uPVC sewer pipe in ground	m	10	143.51	1 435.10
C48.136		.4 160mm Dia uPVC sewer pipe in ground	m	10	349.91	3 499.10
C48.137		.5 20mm Yard stand tap	no	2	209.59	419.18
	PU	**BATHROOM FITTINGS**				
	8.20	Bathroom fittings				
C48.138		.5 Franke Rodan RODX600 0,8mm thick satin finished stainless steel paper towel dispenser (code 2120099) size 275 x 112 x 355mm high with capacity of 500-800 towels, inspection window on the side with Franke standard key, fixed to wall with stainless steel screws as per suppliers instructions	no	2	3 074.60	6 149.20
C48.139		.6 Franke Rodan RODX672 0,8mm thick satin finished stainless steel double toilet roll holder (code 2120101) size 144 x 138 x 301mm high for two rolls maiimum, 120mm diameter with cylinder lock with standard Franke key, fixed to wall with stainless steel screws as per suppliers instructions	no	2	3 728.77	7 457.54
		GATE HOUSE - CONCRETE ENTRANCE FEATURE				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
		RESTRICTED EXCAVATIONS				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C48.140		.2 Column bases	m³	140	365.86	51 220.40
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C48.141		.2 Hard rock excavation	m³	5	803.79	4 018.95
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		COMMERCIAL MATERIAL				
	8.3.4	(b) G7 material from commercial sources supplied by the Contractor compacted to 95% mod AASHTO density				
C48.142		.1 Alongside walls in foundations	m³	20	317.46	6 349.20
					Carried Forward	2 247 793.00

[redacted]

					Brought Forward	2 247 793.00
	SANS 1200 G	**ROUGH FORMWORK**				
		ROUGH FORMWORK				
	8.2.1	(a) .2 Plane vertical				
C48.143		.1 Sides of floor slabs, bases, etc	m²	50	376.82	18 841.00
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.1	(b) .1 Plane vertical				
C48.144		.10 Square or rectangular overhanging columns	m²	290	647.98	187 914.20
C48.145		.11 Sloping beams	m²	130	831.51	108 096.30
C48.146		.12 Beam sides	50	50	611.28	30 564.00
	8.2.1	(b) .3 Plane sloping				
C48.147		.1 Slabs	m²	160	1 584.19	253 470.40
C48.148		.2 Beams soffits	m²	90	1 584.19	142 577.10
	8.2.1	(b) .5 Plane circular				
C48.149		.1 Soffit of beams	m²	40	1 584.19	63 367.60
	8.1.1.2	Normal formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C48.150		(a) Chamfer size 50 x 50mm	m	10	199.92	1 999.20
C48.151		(b) Groove size 70mm wide x 50mm deep	m	10	195.07	1 950.70
C48.152		(c) Rebate size 100mm x 100mm	m	10	303.62	3 036.20
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.2.4	Steel bars				
		(a) .1 Mild steel				
C48.153		.1 All sizes	ton	2.0	18 976.98	37 953.96
		(a) .2 High tensile steel				
C48.154		.1 All sizes	ton	26.0	18 976.98	493 401.48
	SANS 1200 G	**STRENGTH CONCRETE**				
		STRENGTH CONCRETE				
					Carried Forward	3 590 965.14

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					Brought Forward	3 590 965.14
	8.2.5.1	(b) .4 Strength concrete 35Mpa/19mm				
C48.155		.2 Column base	m³	30	2 058.14	61 744.20
C48.156		.2 Columns	m³	40	2 058.14	82 325.60
	SANS 1200 G	**WATERPROOF CONCRETE**				
		WATERPROOF CONCRETE				
	8.4.3	(g) Strength concrete 35Mpa/19mm including "Penetron" waterproofing additive all in accordance with the Manufacturers spesifications				
C48.157		.1 Roof slabs	m³	40	2 278.52	91 140.80
C48.158		.2 Beams	m³	50	2 278.52	113 926.00
	SANS 1200 G	**CONCRETE**				
		CONCRETE IN SMALL QUANTITIES				
	8.2.5.1	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
C48.159		.1 50 mm Thick	m³	5	1 938.01	9 690.05
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.2.6	(b) Steel floated finish				
C48.160		.1 Slabs, floor slabs, etc	m²	160	19.44	3 110.40
C48.161		.2 Top of walls, beams, etc	m²	50	19.44	972.00
		RAINWATER DRAINAGE				
C48.162		85mm Dia Fullbore outlet with galavanised chain fixed to outlet, cast into concrete slab complete	no	4	3 712.01	14 848.04
		C48 **GATEHOUSE - SUC**				
		Carried forward to Summary of Bills			**Total**	3 968 722.23

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Guard Tower

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C49 **GUARD TOWERS - SUI (5 in number)**				
		BUILDING WORKS				
	SANS 1200 D	**EARTHWORKS**				
		RESTRICTED EXCAVATIONS				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C49.1		.1 Wall footings	m³	70	365.86	25 610.20
C49.2		2 Surface bed thickening	m³	5	365.86	1 829.30
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C49.3		.2 Hard rock excavation	m³	5	803.79	4 018.95
		BACKFILLING				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C49.4		.1 Alongside walls in foundations	m³	15	317.46	4 761.90
C49.5		.3 Under floors	m³	30	317.46	9 523.80
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.1	(b) .1 Plane horizontal				
C49.6		.1 Slabs	m²	150	646.93	97 039.50
C49.7		.2 Beams	m²	150	646.93	97 039.50
	8.2.2	Normal formwork to narrow widths				
C49.8		(a) Edges, risers, etc not exceeding 300mm wide	m	265	113.05	29 958.25
C49.9		(b) Circular edges, risers, etc not exceeding 300mm wide	m	20	129.56	2 591.20
	8.1.1.2	Normal formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C49.10		(a) Chamfer size 50 x 50mm	m	30	199.92	5 997.60
					Carried Forward	278 370.20

[redacted]

					Brought Forward	278 370.20
C49.11		(b) Groove size 70mm wide x 50mm deep	m	50	195.07	9 753.50
C49.12		(c) Rebate size 100mm x 100mm	m	50	276.09	13 804.50
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C49.13		.1 Over 0m and up to 0,5m	no	10	486.94	4 869.40
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C49.14		.1 Over 0m and up to 0,5m	no	10	569.52	5 695.20
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1	Steel bars				
		(a) .1 Mild steel				
C49.15		.1 All sizes	ton	5	18 976.98	94 884.90
		(a) .2 High tensile steel				
C49.16		.1 All sizes	ton	5	18 976.98	94 884.90
	8.3.2	**MESH REINFORCEMENT**				
		(c) High tensile welded mesh				
C49.17		.2 Ref no.395	m²	105	91.71	9 629.55
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.3	(b) .3 Strength concrete 30Mpa/19mm				
C49.18		.2 Window slabs	m³	10	2 003.05	20 030.50
C49.19		.3 Floor slabs	m³	20	2 003.05	40 061.00
C49.20		.4 Wall footings	m³	20	2 003.05	40 061.00
C49.21		.5 Columns	m³	5	2 003.05	10 015.25
		CONCRETE IN SMALL QUANTITIES				
	8.4.2	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
C49.22		.1 50mm Thick	m³	10	1 938.01	19 380.10
	SANS 1200 G	**WATERPROOF CONCRETE**				
		WATERPROOF CONCRETE				
					Carried Forward	641 440.00

[redacted]

					Brought Forward	641 440.00
	8.4.3	(c) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the Manufacturers spesifications				
C49.23		.1 Roof slabs	m³	30	2 278.52	68 355.60
C49.24		.2 Beams	m³	5	2 278.52	11 392.60
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.2.6	(a) Wood floated finish				
C49.25		.1 Floor slabs	m²	160	13.92	2 227.20
C49.26		.2 Top of walls, beams, etc	m²	50	13.92	696.00
		PRECAST CONCRETE				
		SUPPLY PRECAST CONCRETE Dwg 3089.92.00.SUI.16.U001				
	8.2.5.1	(f) .1 Provision of precast units including all concrete, formwork, reinforcement,etc				
C49.27		.1 Window surround for window type W06 & W08 size 2520 x 1000mm high complete	no	10	6 611.25	66 112.50
C49.28		.2 Window surround for window type W07 size 2250 x 1000mm high complete	no	5	6 611.25	33 056.25
		ERECT PRECAST CONCRETE				
	8.2.5.2	(f) .2 Erection of precast units described above				
C49.29		.1 Window surround for window type W06 & W08 size 2520 x 1000mm high complete	no	10	558.89	5 588.90
C49.30		.2 Window surround for window type W07 size 2250 x 1000mm high complete	no	5	558.89	2 794.45
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C49.31		.3 230mm Thick wall	m²	50	508.77	25 438.50
C49.32		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 25Mpa concrete complete	m²	60	613.01	36 780.60
C49.33		.5 Ditto circular on plan	m²	10	618.93	6 189.30
C49.34		.7 Mass brickwork	m³	5	3 555.51	17 777.55
					Carried Forward	917 849.45

[redacted]

					Brought Forward	917 849.45
		SUPERSTRUCTURE				
	8.4.1b	Stock brickwork in 1:4 cement mortar				
C49.35		.1 115mm Thick wall	m²	20	250.95	5 019.00
C49.36		.5 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	315	508.01	160 023.15
C49.37		.7 Mass brickwork	m³	5	3 555.51	17 777.55
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1c	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C49.38		.1 Stretcher course bond	m²	330	586.44	193 525.20
C49.39		.2 Ditto in foundations	m²	35	546.50	19 127.50
C49.40		.3 Stretcher course bond circular on plan	m²	55	586.44	32 254.20
C49.41		.4 Ditto in foundations	m²	5	546.50	2 732.50
	8.4.1d	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
C49.42		.20 Stretcher course bond	m²	40	630.06	25 202.40
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C49.43		.1 110mm Wide brickforce	m	55	2.19	120.45
C49.44		.2 150mm Wide brickforce	m	525	2.19	1 149.75
C49.45		.3 Rod reinforcing (all sizes)	kg	60	23.75	1 425.00
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
C49.46		.1 75 x 110mm Lintol	m	160	70.12	11 219.20
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
					Carried Forward	1 387 425.35

[redacted]

					Brought Forward	1 387 425.35
C49.47		.1 Vertically	m	105	63.68	6 686.40
C49.48		2 Horizontally	m	105	23.53	2 470.65
	PU	**PRECAST CONCRETE COPINGS**				
		COPINGS				
	8.20	Precast concrete copings supplied and installed complete				
C49.49		.1 300 x 100mm Moulded coping fitted to top of 280mm cavity wall complete wit all mitres, end blocks, etc	m	50	440.40	22 020.00
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C49.50		.1 375 Micron under walls including cement mortar triangular filler in cavity walls	m²	20	32.28	645.60
	8.4.4	Polyethelene sheeting				
C49.51		.1 250 Micron USB green under floors	m²	115	12.73	1 463.95
	8.4.5	**WATERPROOFING OF WINDOWS**				
C49.52		250 Mic damp proof sheeting strip of suitable width built into brickwork for sealing window frames all round	m	160	42.43	6 788.80
	PU	**SUSPENDED CEILINGS**				
		SUSPENDED CEILINGS Dwg 3089.92.00.SUE.16.U001				
	8.10	Vinyl coated plasterboard ceilings supplied and erected complete				
.53		.1 9mm Vinyl coated plasterboard suspended ceiling of 600 x 1200mm ceiling panels laid loose in Donn type suspension system consisting of 38 x 38mm aluminium T-section main and cross tees, suspended with 4mm galvanized wire hangers approximately 300mm below timber trusses, complete with 30x30mm aluminium angle section cornice at junction of ceiling and wall	m²	110	209.18	23 009.80
.54		.2 Form hole through ceiling for light fittings	no	20	18.54	370.80
	PU	**SKIRTINGS**				
		TIMBER SKIRTINGS				
	8.9	Wrot Sapele				
C49.55		.1 22 x 200mm Single rebated skirting nailed to walls	m	136	357.24	48 584.64
	PU	**DOORS**				
		Dwg 3089.92.00.SUE.16.U001				
					Carried Forward	1 499 465.99

[redacted]

					Brought Forward	1 499 465.99
		FRAMED, LEDGED AND BRACED				
	8.8	Framed, ledged and braced Sapele doors with 6mm plywood closed back				
C49.56		.2 Door size 813 x 2032mm with (type D01)	no	5	4 515.00	22 575.00
	8.20	**IRONMONGERY TO FRAMED LEDGED AND BRACED DOORS ABOVE, COMPLETE** Dwg 3089.92.00.SUE.16.U001				
C49.57		.1 Door D01	no	5	1 648.27	8 241.35
	PU	**ALUMINIUM WINDOWS**				
		WINDOWS				
	8.8	Purpose made powder coated aluminium glazed windows supplied and installed complete with glazing, ironmongery, etc to manufacturers specification. Prices to include for fixing damp proof sheeting (dampproof sheeting measured elsewhere) to window frame when fixing window to brickwork or concrete and sealing joint between window frame and plaster or brickwork finish with approved Polyurethane sealant all round to external faces Dwg 3089.92.00.SUE.16.U001				
C49.58		.1 Window size 500 x 500mm (W01,02,03,04,05)	no	25	645.00	16 125.00
C49.59		.2 Window size 2520 x 1000mm (W06,08)	no	10	3 956.00	39 560.00
C49.60		.3 Window size 2250 x 1000mm (W07)	no	5	3 956.00	19 780.00
	PU	**ALUMINIUM DOORS**				
		DOORS				
	8.8	Purpose made powder coated aluminium glazed doors supplied and installed complete with glazing, ironmongery, etc to manufacturers specification. And sealing all round frames adjoining walls, ceilings, floors, etc with approved sealant Dwg 3089.92.00.SUE.16.U001				
C49.61		.1 Door and frame size 900 x 2100mm high (D02)	no	5	6 450.00	32 250.00
	PU	**ALUMINIUM FRAMES**				
		DOOR FRAMES				
	8.9	Purpose made powder coated aluminium (colour RAL 7016 Antracite Grey) doors frames supplied and installed complete to manufacturers specification Dwg 3089.92.00.SUE.16.U001				
C49.62		.1 Door frame for door size 813 x 2032mm high (type D01)	no	5	1 612.50	8 062.50
	PU	**SCREED**				
					Carried Forward	1 646 059.84

[redacted]

					Brought Forward	1 646 059.84
		SCREED				
	8.6	1:3 Cement screed with steel floated finish				
C49.63		.1 30mm Thick to floors	m²	105	93.52	9 819.60
C49.64		.5 100mm Average thick to roofs to falls	m²	80	203.18	16 254.40
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C49.65		.1 Walls	m²	100	105.35	10 535.00
C49.66		.3 Walls circular on plan	m²	50	121.48	6 074.00
		TWO COAT PLASTER				
	8.7	Two coat plaster consisting of one coat 1:6 cement plaster, including all narrow widths, angles, V-joints, etc finished with 6mm thick Rhinolite gypsum plaster coat steel floated to				
C49.67		.1 Walls	m²	290	193.50	56 115.00
C49.68		.2 Ditto circular on plan	m²	55	225.75	12 416.25
	PU	**TILING**				
		WALL TILING				
	8.7	Wall tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to plaster (plaster measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
C49.69		.1 Walls with 600 x 300mm porcelain tiles	m²	100	611.90	61 190.00
		FLOOR TILING				
	8.8	Floor tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to screed (screed measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
C49.70		.1 Floors with 600 x 600mm porcelain tiles	m²	105	619.01	64 996.05
	PU	**PAINTING**				
		PAINTING **Note:** All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions				
					Carried Forward	1 883 460.14

[redacted]

					Brought Forward	1 883 460.14
		All paint to be of an approved colour as specified by the Architect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C49.71		.1 Steel doors and frames	m²	50	107.50	5 375.00
C49.72		.2 General surfaces of structural steelwork	m²	50	198.88	9 944.00
C49.73		.3 Timber doors and frames	m²	25	107.50	2 687.50
C49.74		.3 Timber skirtings not exceeding 150mm girth	m	150	37.62	5 643.00
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C49.75		.1 Plastered walls	m²	340	66.65	22 661.00
C49.76		.2 Plastered or concrete ceilings	m²	150	64.50	9 675.00
C49.77		.3 Skimmed plasterboard ceilings	m²	110	64.50	7 095.00
	8.20	Prepare and apply one coat Dulux Trade Primer code T1011 and two coats Dulux Pearlglo water based paint code D40 to internal				
C49.78		.2 Plastered walls in ablution areas	m²	150	66.65	9 997.50
	8.21	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C49.79		.2 Plastered walls	m²	500	68.80	34 400.00
C49.80		.3 Plastered or concrete ceilings	m²	50	66.65	3 332.50
	8.22	Extra over external painting to walls for painting plaster recess joint in different colour				
C49.81		.1 Recessed joint	m	100	23.65	2 365.00
		PLUMBING AND DRAINAGE				
		PLUMBING AND DRAINAGE **Note:** Plumbing measured in elements (plumbing points) and shall be priced accordingly. Prices must include for supply and installation of all fittings, taps, supply and discharge piping from the fitting to the perimeter of the building face complete. Supply and discharge piping from the perimeter of the building up to the connection point on the site, will be measured separately, and must be priced accordingly. The external supply and discharge piping must include all items such as, excavation, bedding, backfilling, pipe fittings, manholes, etc complete				
	PU	**PLUMBING**				
		Plumbing points in building				
					Carried Forward	1 996 635.64

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					Brought Forward	1 996 635.64
		Dwg 3089.92.00.SUE.16.U001				
	8.17	.1 Toilets				
C49.82		O.Novo white wall hung toilet pan (code 56601001) with O.Novo seat (code 9M396101) with Alpha 8c concealed cistern (code 110.179.001) and Alpha 10 face plate flush (code 115.040.11.1) installed complete to manufacturers instructions	no	5	7 347.13	36 735.65
	8.17	.4 Handwash basins				
C49.83		Villeroy & Boch - O.Novo 530 x 320mm undermount basin fitted to vanity slab (vanity slab measured elsewhere) installed complete to manufacturers instructions including Focus Electric chrome basin mixer (code 31174223)	no	5	12 436.97	62 184.85
	8.20	.13 Geyser				
C49.84		150 Liter geyser	no	5	8 966.39	44 831.95
	PU	**DRAINAGE**				
	8.15	External supply and discharge piping, etc				
C49.85		.1 20mm Dia HDPE water supply in ground	m	50	8.58	429.00
C49.86		.2 32mm Dia HDPE water supply in ground	m	50	23.27	1 163.50
C49.87		.3 110mm Dia uPVC sewer pipe in ground	m	50	143.51	7 175.50
C49.88		.4 160mm Dia uPVC sewer pipe in ground	m	50	349.91	17 495.50
C49.89		.7 20mm Yard stand tap	no	10	209.59	2 095.90
	PU	**BATHROOM FITTINGS**				
	8.20	Bathroom fittings				
C49.90		.1 F16C stainless steel grade 304 cistern grab rail 750 x 220mm and F14C grab rail 300x 300 x 300mm installed complete as per supplier instructions	set	5	2 272.67	11 363.35
C49.91		.2 Franke Rodan RODX605 0,8mm thick satin finished stainless steel waste bin (code 2120097) size 355 x 168 x 460mm high with capacity of 23 litres and cylinder lock and standard Franke key, fixed to wall with stainless steel screws as per suppliers instructions	no	5	4 333.87	21 669.35
C49.92		.3 Franke HF2400HD 1,2/1,5mm thick stainless steel satin finished automatic hand free hand dryer (code 2500001) size 280 x 207 x 245mm high with two vandal proof lock screws and key wrench, fixed to walls with stainless steel screws and 200W motor connected to power supply as per suppliers instructions	no	5	14 015.58	70 077.90
					Carried Forward	2 271 858.09

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					Brought Forward	2 271 858.09
C49.93		.4 Franke Rodan RODX625 0,8mm thick satin finished stainless steel soap dispenser (code 2120107) size 120 x 107 x 296mm high fixed to wall with stainless steel screws as per suppliers instructions	no	5	4 906.62	24 533.10
C49.94		.5 Franke Rodan RODX600 0,8mm thick satin finished stainless steel paper towel dispenser (code 2120099) size 275 x 112 x 355mm high with capacity of 500-800 towels, inspection window on the side with Franke standard key, fixed to wall with stainless steel screws as per suppliers instructions	no	5	3 074.60	15 373.00
C49.95		.6 Franke Rodan RODX672 0,8mm thick satin finished stainless steel double toilet roll holder (code 2120101) size 144 x 138 x 301mm high for two rolls maiimum, 120mm diameter with cylinder lock with standard Franke key, fixed to wall with stainless steel screws as per suppliers instructions	no	5	3 728.77	18 643.85
		BILL NO. C49 **GUARD TOWERS - SUI (5 in number)**				
		Carried forward to Summary of Bills			**Total**	2 330 408.04

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C50 **WEIGH BRIDGE - SUE**				
		BUILDING WORKS				
		EARTHWORKS				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C50.1		.1 Wall footings	m³	12	365.86	4 390.32
C50.2		2 Surface bed thickening	m³	1	365.86	365.86
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C50.3		.2 Hard rock excavation	m³	1	803.79	803.79
		BACKFILLING				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C50.4		.1 Alongside walls in foundations	m³	11	317.46	3 492.06
C50.5		.3 Under floors	m³	6	317.46	1 904.76
		SMOOTH FORMWORK				
	SANS 1200 GB	**SMOOTH FORMWORK**				
	8.2.1	(b) .1 Plane horizontal				
C50.6		.1 Slabs	m²	16	646.93	10 350.88
C50.7		.2 Beams	m²	11	646.93	7 116.23
	8.2.2	Normal formwork to narrow widths				
C50.8		(a) Edges, risers, etc not exceeding 300mm wide	m	18	113.05	2 034.90
C50.9		(b) Circular edges, risers, etc not exceeding 300mm wide	m	4	129.56	518.24
		REINFORCEMENT				
		ROD REINFORCEMENT				
					Carried Forward	30 977.04

[redacted]

					Brought Forward	30 977.04
		Steel bars				
	8.2.4	(a) .1 Mild steel				
C50.10		.1 All sizes	ton	0.3	18 976.98	5 693.09
	8.2.4	(a) .2 High tensile steel				
C50.11		.1 All sizes	ton	1.0	18 976.98	18 976.98
		MESH REINFORCEMENT				
	8.2.4	(c) High tensile welded mesh				
C50.12		.2 Ref no.395	m²	11	80.25	882.75
		CONCRETE				
		STRENGTH CONCRETE				
	8.2.5.1	(b) .3 Strength concrete 35Mpa/19mm				
C50.13		.3 Floor slabs	m³	2	2 058.14	4 116.28
C50.14		.4 Wall footings	m³	4	2 058.14	8 232.56
C50.15		.5 Columns	m³	1	2 058.14	2 058.14
		CONCRETE IN SMALL QUANTITIES				
	8.2.5.1	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
C50.16		.1 50mm Thick	m³	1	1 938.01	1 938.01
	SANS 1200 G	**WATERPROOF CONCRETE**				
		WATERPROOF CONCRETE				
	8.4.3	(c) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the Manufacturers spesifications				
C50.17		.1 Roof slabs	m³	3	2 278.52	6 835.56
C50.18		.2 Beams	m³	1	2 278.52	2 278.52
	SANS 1200 GB	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.2.6	(a) Wood floated finish				
C50.19		.1 Slabs and floor slabs	m²	18	13.92	250.56
C50.20		.2 Top of walls, beams, etc	m²	11	13.92	153.12
					Carried Forward	82 392.61

[redacted]

					Brought Forward	82 392.61
		PRECAST CONCRETE				
		SUPPLY PRECAST CONCRETE Dwg 3089.92.00.SUE.16.U001				
	8.2.5.1	(f) .1 Provision of precast units including all concrete, formwork, reinforcement,etc				
C50.21		.1 Window surround for window type W03 size 2000 x 1000mm high complete	no	1	5 635.15	5 635.15
		ERECT PRECAST CONCRETE				
	8.2.5.2	(f) .2 Erection of precast units described above				
C50.22		.1 Window surround for window type W03 size 2000 x 1000mm high complete	no	1	558.89	558.89
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C50.23		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 25Mpa concrete complete	m²	14	613.01	8 582.14
C50.24		.5 Ditto circular on plan	m²	2	618.93	1 237.86
		SUPERSTRUCTURE				
	8.4.1b	Stock brickwork in 1:4 cement mortar				
C50.25		.1 115mm Thick wall	m²	11	250.95	2 760.45
C50.26		.5 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	30	508.01	15 240.30
C50.27		.6 Ditto circular on plan	m²	6	513.76	3 082.56
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1c	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C50.28		.1 Stretcher course bond	m²	30	586.44	17 593.20
C50.29		.2 Ditto in foundations	m²	14	546.50	7 651.00
C50.30		.3 Stretcher course bond circular on plan	m²	6	586.44	3 518.64
C50.31		.4 Ditto in foundations	m²	2	546.50	1 093.00
					Carried Forward	149 345.80

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					Brought Forward	149 345.80
	8.4.1d	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
C50.32		.20 Stretcher course bond	m²	21	630.06	13 231.26
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C50.33		.2 150mm Wide brickforce	m	105	2.19	229.95
C50.34		.3 Rod reinforcing (all sizes)	kg	11	23.75	261.25
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
C50.35		.1 75 x 110mm Lintol	m	6	70.12	420.72
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C50.36		.1 Vertically	m	11	63.68	700.48
C50.37		2 Horizontally	m	21	23.53	494.13
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C50.38		.1 375 Micron under walls	m²	5	18.83	94.15
	8.4.4	Polyethelene sheeting				
C50.39		.1 250 Micron USB green under floors	m²	11	12.73	140.03
	8.20	**WATERPROOFING OF WINDOWS**				
C50.40		250 Mic damp proof sheeting strip of suitable width built into brickwork for sealing window frames all round	m	4	42.43	169.72
	PU	**SUSPENDED CEILINGS**				
		SUSPENDED CEILINGS Dwg 3089.92.00.SUE.16.U001				
	8.10	Vinyl coated plasterboard ceilings supplied and erected complete				
					Carried Forward	165 087.49

[redacted]

					Brought Forward	165 087.49
C50.41		.1 9mm Vinyl coated plasterboard suspended ceiling of 600 x 1200mm ceiling panels laid loose in Donn type suspension system consisting of 38 x 38mm aluminium T-section main and cross tees, suspended with 4mm galvanized wire hangers approximately 300mm below timber trusses, complete with 30x30mm aluminium angle section cornice at junction of ceiling and wall	m²	7	209.18	1 464.26
C50.42		.2 Form hole through ceiling for light fittings	no	4	18.54	74.16
	PU	**SKIRTINGS**				
		TIMBER SKIRTINGS				
	8.9	Wrot Sapele				
C50.43		.1 22 x 200mm Single rebated skirting nailed to walls	m	9	357.24	3 215.16
C50.44		.2 22 x 200mm Single rebated skirting nailed to circular walls	m	2	357.24	714.48
	PU	**ALUMINIUM WINDOWS**				
		WINDOWS				
	8.8	Purpose made powder coated aluminium glazed windows supplied and installed complete with glazing, ironmongery, etc to manufacturers specification. Prices to include for fixing damp proof sheeting (dampproof sheeting measured elsewhere) to window frame when fixing window to brickwork or concrete and sealing joint between window frame and plaster or brickwork finish with approved Polyurethane sealant all round to external faces				
		Dwg 3089.92.00.SUE.16.U001				
C50.45		.1 Window size 500 x 500mm (W01,W02)	no	2	645.00	1 290.00
C50.46		.2 Window size 2000 x 1000mm (W03)	no	1	2 150.00	2 150.00
	PU	**ALUMINIUM DOORS**				
		DOORS				
	8.9	Purpose made powder coated aluminium glazed doors supplied and installed complete with glazing, ironmongery, etc to manufacturers specification. And sealing all round frames adjoining walls, ceilings, floors, etc with approved sealant				
		Dwg 3089.92.00.SUE.16.U001				
C50.47		.1 Door and frame size 900 x 2100mm high (D01)	no	1	6 450.00	6 450.00
	PU	**SCREED**				
		SCREED				
	8.6	1:3 Cement screed with steel floated finish				
C50.48		.1 30mm Thick to floors	m²	7	93.52	654.64
					Carried Forward	181 100.19

[redacted]

					Brought Forward	181 100.19
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C50.49		.1 Walls	m²	30	105.35	3 160.50
C50.50		.3 Walls circular on plan	m²	6	121.48	728.88
		TWO COAT PLASTER				
	8.6	Two coat plaster consisting of one coat 1:6 cement plaster, including all narrow widths, angles, V-joints, etc finished with 6mm thick Rhinolite gypsum plaster coat steel floated to				
C50.51		.1 Walls	m²	11	193.50	2 128.50
C50.52		.2 Ditto circular on plan	m²	11	225.75	2 483.25
		FLOOR TILING				
	8.7	Floor tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to screed (screed measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
C50.53		.1 Floors with 600 x 600mm porcelain tiles	m²	7	619.01	4 333.07
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C50.54		.1 Steel doors and frames	m²	10	107.50	1 075.00
C50.55		.2 General surfaces of structural steelwork	m²	10	198.88	1 988.80
C50.56		.3 Timber doors and frames	m²	5	107.50	537.50
C50.57		.3 Timber skirtings not exceeding 150mm girth	m	12	37.62	451.44
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C50.58		.1 Plastered walls	m²	40	66.65	2 666.00
					Carried Forward	200 653.13

[redacted]

					Brought Forward	200 653.13
C50.59		.2 Plastered or concrete ceilings	m²	10	64.50	645.00
C50.60		.3 Skimmed plasterboard ceilings	m²	10	64.50	645.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C50.61		.2 Plastered walls	m²	25	68.80	1 720.00
C50.62		.3 Plastered or concrete ceilings	m²	10	66.65	666.50
C50.63		.4 Facias and barge boards	m²	12	66.65	799.80
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
C50.64		.1 Recessed joint	m	20	23.65	473.00
		BILL NO. C50 **WEIGH BRIDGE - SUE**				
		Carried forward to Summary of Bills			**Total**	205 602.43

[redacted]

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C51 **FLAMMABLE STORE - SUB**				
		BUILDING WORKS				
	SANS 1200 D	**EARTHWORKS**				
		RESTRICTED EXCAVATIONS				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C51.1		.1 Wall footings	m³	9	365.86	3 292.74
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C51.2		.2 Hard rock excavation	m³	1	803.79	803.79
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		COMMERCIAL MATERIAL				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C51.3		.1 Alongside walls in foundations	m³	6	317.46	1 904.76
C51.4		.3 Under floors	m³	18	317.46	5 714.28
	SANS 1200 G	**FORMWORK**				
		ROUGH FORMWORK				
	8.2.1	(a) .2 Plane vertical				
C51.5		.1 Wall footings	m²	15	376.82	5 652.30
		SMOOTH FORMWORK				
	8.2.2	(b) .1 Plane horizontal				
C51.6		.1 Slabs	m²	48	646.93	31 052.64
C51.7		.2 Beams	m²	8	646.93	5 175.44
	8.2.2	(b) .2 Plane vertical				
C51.8		.3 Beams	m²	15	376.82	5 652.30
	8.2.5	Normal formwork to narrow widths				
C51.9		(a) Edges, risers, etc not exceeding 300mm wide	m	30	113.05	3 391.50
					Carried Forward	62 639.75

[redacted]

					Brought Forward	62 639.75
	8.1.1.2	Normal formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C51.10		(a) Chamfer size 50 x 50mm	m	10	199.92	1 999.20
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1	Steel bars				
		(a) .1 Mild steel				
C51.11		.1 All sizes	ton	0.5	18 976.98	9 488.49
		(a) .2 High tensile steel				
C51.12		.1 All sizes	ton	4.0	18 976.98	75 907.92
		MESH REINFORCEMENT				
	8.3.2	(c) High tensile welded mesh				
C51.13		.2 Ref no.193 apron slab	m²	24	39.21	941.04
C51.14		.3 Ref no.395 floor slabs	m²	35	91.71	3 209.85
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.3	(b) .2 Strength concrete 20Mpa/19mm				
C51.15		.1 Apron slabs	m³	3	1 793.69	5 381.07
	8.4.3	(b) .3 Strength concrete 35Mpa/19mm				
C51.16		.3 Floor slabs	m³	6	2 058.14	12 348.84
C51.17		.4 Wall footings	m³	6	2 058.14	12 348.84
C51.18		.5 Ramps	m³	1	2 058.14	2 058.14
		CONCRETE IN SMALL QUANTITIES				
	8.4.2	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
C51.19		.1 50mm Thick	m³	1	1 938.01	1 938.01
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(c) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
					Carried Forward	188 261.15

[redacted]

					Brought Forward	188 261.15
C51.20		.1 Roof slabs	m³	15	2 278.52	34 177.80
C51.21		.2 Beams	m³	3	2 278.52	6 835.56
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C51.22		.1 Floor slabs	m²	85	13.92	1 183.20
C51.23		.2 Top of walls, beams, etc	m²	10	13.92	139.20
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C51.24		.1 Narrow widths not exceeding 300mm wide	m	24	35.48	851.52
	8.5	(b) Polyurethane joint sealer				
C51.25		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	24	153.31	3 679.44
	8.5	(c) Saw cut joints				
C51.26		.1 4 x 40mm Deep saw cut joint in floor slabs	m	10	136.11	1 361.10
	SANS 1200 LC	**SLEEVES**				
		SLEEVE PIPES				
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 6 ducts including providing draw wires and bends, etc complete				
C51.27		.1 110mm Diameter cast into concrete	m	10	77.40	774.00
	SANS 1200 GB	**SUNDRIES**				
	8.2.8	**SLIDING JOINT**				
C51.28		Two layers malthoid placed between horizontal brickwork and concrete surfaces	m²	8	20.15	161.20
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
					Carried Forward	237 424.17

[redacted]

					Brought Forward	237 424.17
C51.29		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 25Mpa concrete complete	m²	24	613.01	14 712.24
		SUPERSTRUCTURE				
	8.4.1b	Stock brickwork in 1:4 cement mortar				
C51.30		.3 230mm Thick wall	m²	5	508.77	2 543.85
C51.31		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	84	508.01	42 672.84
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
C51.32		.1 Stretcher course bond	m²	30	586.44	17 593.20
C51.33		.2 Ditto in foundations	m²	10	546.50	5 465.00
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C51.34		.2 150mm Wide brickforce	m	300	2.19	657.00
C51.35		.3 Rod reinforcing (all sizes)	kg	20	23.75	475.00
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
C51.36		.1 75 x 110mm Lintol	m	20	70.12	1 402.40
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C51.37		.1 Vertically	m	21	63.68	1 337.28
C51.38		2 Horizontally	m	48	23.53	1 129.44
		VENTILATOR BRICKS				
C51.39		.1 300 x 120mm Ventilator bricks built into cavity walls complete	no	5	17.14	85.70
	PU	**DAMPPROOFING**				
					Carried Forward	325 498.12

					Brought Forward	325 498.12
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C51.40		.1 375 Micron under walls including triangular cement mortar fillet in cavity walls	m²	8	32.28	258.24
	8.4.4	Polyethelene sheeting				
C51.41		.1 250 Micron USB green under floors	m²	35	12.73	445.55
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into Dwg EAM-EE-GS-045/ME-SS-009				
		3CR12 steel				
C51.42		.1 Double door and frame with door size 1500 x 2400mm high including all locking devices hinges, etc complete	no	1	61 768.49	61 768.49
	PU	**LOUVRES**				
		LOUVRES				
	8.20	Take delivery of louvre sub-frame supplied by the Mechanical Contractor and build into brick wall, complete with prefabriced lintols above and finishing off (Mechanical Contractor will install louvre)				
C51.43		.1 Louvre size approximately 1 to 2m2 in area	no	4	440.75	1 763.00
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C51.44		.1 Walls	m²	140	105.35	14 749.00
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C51.45		.1 Steel doors and frames	m²	9	107.50	967.50
					Carried Forward	405 449.90

[redacted]

					Brought Forward	405 449.90
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C51.46		.1 Plastered walls	m²	84	66.65	5 598.60
C51.47		.2 Plastered or concrete ceilings	m²	35	64.50	2 257.50
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C51.48		.2 Plastered walls	m²	56	68.80	3 852.80
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
C51.49		.1 Recessed joint	m	20	23.65	473.00
		BILL NO. C51 **FLAMMABLE STORE - SUB**				
		Carried forward to Summary of Bills			**Total**	417 631.80

[redacted]

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C52 **HEAD OF WORKS SUBSTATION - ELB**				
		BUILDING WORKS				
	SANS 1200 D	**EARTHWORKS**				
		RESTRICTED EXCAVATIONS				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C52.1		.1 Wall footings	m³	60	365.86	21 951.60
C52.2		.2 Cable duct trenches	m³	110	365.86	40 244.60
C52.3		.3 Column bases	m³	10	365.86	3 658.60
C52.4		.4 Sumps	m³	2	365.86	731.72
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C52.5		.2 Hard rock excavation	m³	2	602.84	1 205.68
		RESTRICTING BACKFILLING				
		COMMERCIAL MATERIAL				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C52.6		.1 Alongside walls in foundations	m³	60	317.46	19 047.60
C52.7		.3 Under floors	m³	200	317.46	63 492.00
		(c) Clean washed sand filling				
C52.8		.1 Inside cable ducts and lightly compacted by hand over electrical cables	m³	22	480.29	10 566.38
	SANS 1200 G	**FORMWORK**				
		ROUGH FORMWORK				
	8.2.1	.2 Plane vertical				
C52.9		.1 Sump walls	m²	8	376.82	3 014.56
C52.10		.2 Sides of floor slabs, bases, etc	m²	47	376.82	17 710.54
C52.11		.3 Floor channel sides	m²	12	376.82	4 521.84
		SMOOTH FORMWORK				
					Carried Forward	186 145.12

[redacted]

					Brought Forward	186 145.12
	8.2.2	.1 Plane horizontal				
C52.12		.1 Slabs	m²	200	569.85	113 970.00
C52.13		.2 Beams	m²	2	646.93	1 293.86
	8.2.2	.2 Plane vertical				
C52.14		.1 Sump walls	m²	8	376.82	3 014.56
C52.15		.2 Floor channel sides	m²	12	376.82	4 521.84
C52.16		.3 Beams	m²	8	376.82	3 014.56
C52.17		.4 Columns	m²	16	376.82	6 029.12
	8.2.5	Normal formwork to narrow widths				
C52.18		(a) Edges, risers, etc not exceeding 300mm wide	m	96	113.05	10 852.80
	8.1.1.2	Normal formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C52.19		(a) Chamfer size 50 x 50mm	m	5	199.92	999.60
		BOXING IN FOR HOLES AND VOIDS				
	8.26	(a) Small, circular, up to 0,35m diameter with depth				
C52.20		.1 Over 0m and up to 0,5m	no	2	486.94	973.88
	8.26	(b) Small, other shapes, up to 0,1m² in area with depth				
C52.21		.1 Over 0m and up to 0,5m	no	2	569.52	1 139.04
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1	Steel bars				
		(a) .1 Mild steel				
C52.22		.1 All sizes	ton	2.0	18 976.98	37 953.96
		(a) .2 High tensile steel				
C52.23		.1 All sizes	ton	6.0	18 976.98	113 861.88
		MESH REINFORCEMENT				
	8.3.2	(c) High tensile welded mesh				
C52.24		.2 Ref no.193 apron slab	m²	75	44.82	3 361.50
C52.25		.3 Ref no.395 floor slabs	m²	105	91.71	9 629.55
	SANS 1200 G	**CONCRETE**				
					Carried Forward	496 761.27

[redacted]

					Brought Forward	496 761.27
		STRENGTH CONCRETE				
	8.4.3	(b) .2 Strength concrete 20Mpa/19mm				
C52.26		.1 Apron slabs	m³	7	1 793.69	12 555.83
	8.4.3	(b) .3 Strength concrete 35Mpa/19mm				
C52.27		.2 Columns	m³	2	2 058.14	4 116.28
C52.28		.3 Floor slabs	m³	20	2 058.14	41 162.80
C52.29		.4 Wall footings	m³	16	2 058.14	32 930.24
C52.30		.5 Floor duct and chamber slabs	m³	25	2 058.14	51 453.50
C52.31		.6 Ramps	m³	2	2 058.14	4 116.28
C52.32		.7 Sump walls	m³	2	2 058.14	4 116.28
C52.33		.8 Column bases	m³	4	2 058.14	8 232.56
		CONCRETE IN SMALL QUANTITIES				
	8.4.2	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
C52.34		.1 50mm Thick	m³	6	1 938.01	11 628.06
		.2 Strength concrete 25Mpa/13mm				
C52.35		.1 Benching to cable ducts including steel floated surface finish	m³	1	1 793.69	1 793.69
	PU	**SCREED**				
	8.1.0	.3 1:4 Cement riversand screed with steel floated finish				
C52.36		.1 50mm Thick on sand filling in cable ducts	m²	22	1 826.75	40 188.50
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(c) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C52.37		.1 Roof slabs	m³	60	2 278.52	136 711.20
C52.38		.2 Beams	m³	2	2 278.52	4 557.04
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
	8.4.4	Unformed surface finishes				
					Carried Forward	850 323.53

[redacted]

					Brought Forward	850 323.53
		(a) Wood floated finish				
C52.39		.1 Floor slabs	m²	255	13.92	3 549.60
C52.40		.2 Top of walls, beams, etc	m²	19	13.92	264.48
		TRENCH COVERS AND FRAMES				
		Dwg EAM-EE-GS-001 & 007				
		Hot dip galvanised mild steel 45 x 45 x 3mm angle iron section frame with approved lugs at back, cast into concrete or built into brick walls, complete				
C52.41		.1 Frame	m	150	247.25	37 087.50
		Hot dip galvanised mild steel tophat section to suit 35mm thick timber trench covers placed between panels as support				
C52.42		.2 Frame	m	60	247.25	14 835.00
		Wrot Merati purpose made framed and ledged trench covers generally 800mm wide and 35mm thick, placed loose over trenches, including all cutting and waste etc, complete with two coats of Linseed oil for protection				
C52.43		.3 Covers	m²	60	1 290.00	77 400.00
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C52.44		.4 Narrow widths not exceeding 300mm wide	m	126	35.48	4 470.48
	8.5	(b) Polyurethane joint sealer				
C52.45		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	126	153.31	19 317.06
	8.5	(c) Saw cut joints				
C52.46		.1 4 x 40mm Deep saw cut joint in floor slabs	m	50	136.11	6 805.50
	SANS 1200 LC	**SLEEVES**				
		SLEEVE PIPES				
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 6 ducts including providing draw wires and bends, etc complete				
C52.47		.1 110mm Diameter cast into concrete	m	50	77.40	3 870.00
C52.48		.2 160mm Diameter cast into concrete	m	80	31.18	2 494.40
					Carried Forward	1 020 417.55

[redacted]

					Brought Forward	1 020 417.55
	SANS 1200 GB	**SUNDRIES**				
	8.2.8	**SLIDING JOINT**				
C52.49		Two layers malthoid placed between horizontal brickwork and concrete surfaces	m²	15	20.15	302.25
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C52.50		.3 230mm Thick wall	m²	140	508.77	71 227.80
C52.51		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 25Mpa concrete complete	m²	60	613.65	36 819.00
C52.52		.5 345mm Thick wall	m²	11	770.60	8 476.60
		SUPERSTRUCTURE				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C52.53		.3 230mm Thick wall	m²	20	508.77	10 175.40
C52.54		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	160	508.01	81 281.60
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1c	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C52.55		.1 Stretcher course bond	m²	80	586.27	46 901.60
C52.56		.2 Ditto in foundations	m²	40	546.50	21 860.00
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C52.57		.2 150mm Wide brickforce	m	1200	2.19	2 628.00
C52.58		.3 Rod reinforcing (all sizes)	kg	10	23.75	237.50
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
C52.59		.1 75 x 110mm Lintol	m	20	70.12	1 402.40
					Carried Forward	1 301 729.70

[redacted]

					Brought Forward	1 301 729.70
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C52.60		.1 Vertically	m	20	63.68	1 273.60
C52.61		2 Horizontally	m	60	23.53	1 411.80
	PU	**PRECAST CONCRETE COPINGS**				
		COPINGS				
	8.20	Precast concrete copings supplied and installed complete				
C52.62		.1 300 x 100mm Moulded coping fitted to top of 280mm cavity wall complete wit all mitres, end blocks, etc	m	6	440.40	2 642.40
	PU	**GLASS BLOCKS**				
	8.20	Aluglass Bautech Clearview 198 - or other approved - glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
C52.63		.1 190 x 190 x 80mm Glass blocks in panels	m²	8	2 365.00	18 920.00
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C52.64		.1 375 Micron under walls including cement mortar triangular fillet in cavity walls	m²	16	32.28	516.48
	8.4.4	Polyethelene sheeting				
C52.65		.1 250 Micron USB green under floors	m²	200	12.73	2 546.00
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into brickwork, etc complete Dwg EAM-EE-GS-048/ME-SS-012				
		3CR12 steel				
C52.66		.1 Single door and frame with door size 815 x 2400mm high including all locking devices hinges, etc complete	no	1	45 077.68	45 077.68
C52.67		.2 Double door and frame with door size 1500 x 2400mm high including all locking devices hinges, etc complete	no	2	61 768.49	123 536.98
					Carried Forward	1 497 654.64

[redacted]

					Brought Forward	1 497 654.64
	SANS 1200 HA	**SUPPLY, FABRICATE AND ERECT STEELWORK - ALL INCLUSIVE**				
		HIGH SECURITY FENCING				
		Fencing supplied and fixed complete, including all posts, stays, standards, droppers, excavation, backfilling, concrete bases, etc				
	8.3.1	Welded mesh fencing in approx. 3300mm panels 2400mm high of 3mm galvanized wire with aperture size (centres) @ 76.2mm x 12.7mm including horizontal reinforcing. Fixed to and including hot dip galvanized locking posts, clamps, etc. With 400x 400 x 600mm 20Mpa concrete footings.				
		Dwg 3089.00.00.DET.17.D008				
C52.68		.1 High security fencing (high grade)	m	14	1 983.38	27 767.32
	8.3.2	Gates supplied and fixed complete, including all posts, stays, hinges, locking devices, excavation, backfilling, concrete bases, etc				
		Dwg 3089.00.00.DET.D007				
C52.69		.1 Double leaf gate size 2400mm wide and 2400mm high complete	no	2	15 898.18	31 796.36
	PU	**LOUVRES**				
		LOUVRES				
	8.20	Take delivery of louvre sub-frame supplied by the Mechanical Contractor and build into brick wall, complete with prefabriced lintols above and finishing off (Mechanical Contractor will install louvre)				
C52.70		.1 Louvre size approximately 1 to 2m2 in area	no	6	441.48	2 648.88
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C52.71		.1 Walls externally	m²	130	110.72	14 393.60
C52.72		.2 Walls internally	m²	160	105.35	16 856.00
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions				
					Carried Forward	1 591 116.80

[redacted]

					Brought Forward	1 591 116.80
		All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C52.73		.1 Steel doors and frames	m²	20	107.50	2 150.00
C52.74		.2 General surfaces of structural steelwork	m²	5	198.88	994.40
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C52.75		.1 Plastered walls	m²	160	66.65	10 664.00
C52.76		.2 Plastered or concrete ceilings	m²	200	64.50	12 900.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C52.77		.2 Plastered walls	m²	160	68.80	11 008.00
C52.78		.3 Plastered or concrete ceilings	m²	20	66.65	1 333.00
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
C52.79		.1 Recessed joint	m	50	23.65	1 182.50
		BILL NO. C52 **HEAD OF WORKS SUBSTATION - ELB**				
		Carried forward to Summary of Bills			**Total**	1 631 348.70

Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Bioreactor Substation

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C53 **BIOREACTOR SUBSTATION - ELC**				
		BUILDING WORKS				
	SANS 1200 D	**EARTHWORKS**				
		RESTRICTED EXCAVATIONS				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C53.1		.1 Wall footings	m³	60	365.86	21 951.60
C53.2		.2 Cable duct trenches	m³	80	365.86	29 268.80
C53.3		.3 Column bases	m³	6	365.86	2 195.16
C53.4		.4 Sumps	m³	4	365.86	1 463.44
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C53.5		.2 Hard rock excavation	m³	2	602.84	1 205.68
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		RESTRICTED BACKFILLING				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C53.6		.1 Alongside walls in foundations	m³	30	317.46	9 523.80
C53.7		.2 Under floors	m³	198	317.46	62 857.08
		(c) Clean washed sand filling				
C53.8		.1 Inside cable ducts and lightly compacted by hand	m³	22	480.29	10 566.38
	SANS 1200 G	**FORMWORK**				
		ROUGH FORMWORK				
	8.2.1	.2 Plane vertical				
C53.9		.1 Sump walls	m²	16	376.82	6 029.12
C53.10		.2 Sides of floor slabs, bases, etc	m²	58	376.82	21 855.56
		SMOOTH FORMWORK				
	8.2.2	.1 Plane horizontal				
C53.11		.1 Slabs	m²	238	569.85	135 624.30
					Carried Forward	302 540.92

[redacted]

					Brought Forward	302 540.92
C53.12		.2 Beams	m²	2	646.93	1 293.86
	8.2.2	.2 Plane vertical				
C53.13		.1 Sump walls	m²	16	376.82	6 029.12
C53.14		.2 Square or rectangular columns	m²	20	376.82	7 536.40
C53.15		.3 Beams	m²	4	376.82	1 507.28
	8.2.5	Normal formwork to narrow widths				
C53.16		(a) Edges, risers, etc not exceeding 300mm wide	m	200	113.05	22 610.00
	8.1.1.2	Normal formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C53.17		(a) Chamfer size 50 x 50mm	m	10	199.92	1 999.20
C53.18		(b) Drip groove 30 mm halfround	m	82	86.78	7 115.96
		BOXING IN FOR HOLES AND VOIDS				
	8.2..6	(a) Small, circular, up to 0.35m diameter with depth				
C53.19		.1 Over 0m and up to 0,5m	no	2	486.94	973.88
	8.2.3	(b) Small, other shapes, up to 0,1m² in area with depth				
C53.20		.1 Over 0m and up to 0,5m	no	2	569.52	1 139.04
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1	Steel bars				
		(a) .1 Mild steel				
C53.21		.1 All sizes	ton	2.0	18 976.98	37 953.96
		(a) .2 High tensile steel				
C53.22		.1 All sizes	ton	20.0	18 976.98	379 539.60
		MESH REINFORCEMENT				
	8.3.2	(c) High tensile welded mesh				
C53.23		.2 Ref no.193 apron slab	m²	88	39.21	3 450.48
C53.24		.3 Ref no.395 floor slabs	m²	198	91.71	18 158.58
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.3	(b) .2 Strength concrete 20Mpa/19mm				
					Carried Forward	791 848.28

[redacted]

						Brought Forward	791 848.28
C53.25		.1 Apron slabs	m³	8	1 793.69	14 349.52
	8.4.3	(b) .3 Strength concrete 35Mpa/19mm				
C53.26		.1 Floor slabs	m³	30	2 058.14	61 744.20
C53.27		.2 Wall footings	m³	18	2 058.14	37 046.52
C53.28		.3 Floor duct and chamber slabs	m³	26	2 058.14	53 511.64
C53.29		.4 Ramps	m³	2	2 058.14	4 116.28
C53.30		.5 Sump walls	m³	4	2 058.14	8 232.56
C53.31		.6 Columns	m³	2	2 058.14	4 116.28
		CONCRETE IN SMALL QUANTITIES				
	8.4.2	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
C53.32		.1 50mm Thick	m³	11	1 938.01	21 318.11
		.2 Strength concrete 20Mpa/13mm				
C53.33		.1 Benching to cable ducts including steel floated surface finish	m³	10	1 793.69	17 936.90
	PU	**SCREED**				
	8.1.0	.3 1:4 Cement riversand screed with steel floated finish				
C53.34		.1 50mm Thick on sand filling in cable ducts	m²	22	1 793.69	39 461.18
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(c) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C53.35		.1 Roof slabs	m³	72	2 278.52	164 053.44
C53.36		.2 Beams	m³	1	2 278.52	2 278.52
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C53.37		.1 Floor slabs and slabs	m²	651	13.92	9 061.92
C53.38		.2 Top of walls, beams, etc	m²	10	13.92	139.20
		TRENCH COVERS AND FRAMES				
					Carried Forward	1 229 214.55

[redacted]

					Brought Forward	1 229 214.55
		Dwg EAM-EE-GS-001 & 007 Hot dip galvanised mild steel 45 x 45 x 3mm angle iron section frame with approved lugs at back, cast into concrete or built into brick walls, complete				
C53.39		.1 Frame	m	150	247.25	37 087.50
		Hot dip galvanised mild steel tophat section to suit 35mm thick timber trench covers placed between panels as support				
C53.40		.2 Frame	m	60	247.25	14 835.00
		Wrot Merati purpose made framed and ledged trench covers generally 800mm wide and 35mm thick, placed loose over trenches, including all cutting and waste etc, complete with two coats of Linseed oil for protection				
C53.41		.3 Covers	m²	60	1 290.00	77 400.00
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C53.42		.4 Narrow widths not exceeding 300mm wide	m	234	35.48	8 302.32
	8.5	(b) Polyurethane joint sealer				
C53.43		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	234	153.31	35 874.54
	8.5	(c) Saw cut joints				
C53.44		.1 4 x 40mm Deep saw cut joint in floor slabs	m	100	136.11	13 611.00
	SANS 1200 GB	**SUNDRIES**				
	8.2.8	**SLIDING JOINT**				
C53.45		Two layers malthoid placed between horizontal brickwork and concrete surfaces	m²	30	20.15	604.50
		BEARINGS Dwg 3089.00.00.ELC.16.D001				
C53.46		Limitgliss bearing	m	6	473.00	2 838.00
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C53.47		.3 230mm Thick wall	m²	160	508.77	81 403.20
					Carried Forward	1 501 170.61

[redacted]

					Brought Forward	1 501 170.61
C53.48		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 25Mpa concrete complete	m²	96	613.01	58 848.96
		SUPERSTRUCTURE				
	8.4.1b	Stock brickwork in 1:4 cement mortar				
C53.49		.5 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	251	508.01	127 510.51
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1c	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C53.50		.1 Stretcher course bond	m²	100	586.44	58 644.00
C53.51		.2 Ditto in foundations	m²	80	546.50	43 720.00
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C53.52		.2 150mm Wide brickforce	m	750	2.19	1 642.50
C53.53		.3 Rod reinforcing (all sizes)	kg	10	23.75	237.50
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
C53.54		.1 75 x 110mm Lintol	m	20	70.12	1 402.40
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C53.55		.1 Vertically	m	40	63.68	2 547.20
C53.56		2 Horizontally	m	100	23.53	2 353.00
	8.20	Aluglass Bautech Clearview 198 - or other approved - glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
C53.57		.1 190 x 190 x 80mm Glass blocks in panels	m²	10	2 365.00	23 650.00
	PU	**DAMPPROOFING**				
					Carried Forward	1 821 726.68

[redacted]

					Brought Forward	1 821 726.68
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C53.58		.1 375 Micron under walls including triangular cement mortar fillet in cavity walls	m²	40	32.28	1 291.20
	8.4.4	Polyethelene sheeting				
C53.59		.1 250 Micron USB green under floors	m²	198	12.73	2 520.54
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into brickwork, etc complete Dwg EAM-EE-GS-045/ME-SS-012				
		3CR12 steel				
C53.60		.1 Single door and frame with door size 815 x 2400mm high including all locking devices hinges, etc complete	no	1	45 077.68	45 077.68
C53.61		.2 Double door and frame with door size 1500 x 2400mm high including all locking devices hinges, etc complete	no	2	61 768.49	123 536.98
	PU	**LOUVRES**				
		LOUVRES				
	8.20	Take delivery of louvre sub-frame supplied by the Mechanical Contractor and build into brick wall, complete with prefabriced lintols above and finishing off (Mechanical Contractor will install louvre)				
C53.62		.1 Louvre size approximately 1 to 2m2 in area	no	6	441.48	2 648.88
	SANS	**SUPPLY, FABRICATE AND ERECT STEELWORK - ALL INCLUSIVE**				
	1200 HA					
		HIGH SECURITY FENCING				
		Fencing supplied and fixed complete, including all posts, stays, standards, droppers, excavation, backfilling, concrete bases, etc				
	8.3.1	Welded mesh fencing in approx. 3300mm panels 2400mm high of 3mm galvanized wire with aperture size (centres) @ 76.2mm x 12.7mm including horizontal reinforcing. Fixed to and including hot dip galvanized locking posts, clamps, etc. With 400x 400 x 600mm 20Mpa concrete footings. Dwg 3089.00.00.DET.17.D008				
C53.63		.1 High security fencing (High grade)	m	14	1 983.38	27 767.32
	8.3.2	Gates supplied and fixed complete, including all posts, stays, hinges, locking devices, excavation, backfilling, concrete bases, etc Dwg 3089.00.00.DET.17.D007				
					Carried Forward	2 024 569.28

[redacted]

					Brought Forward	2 024 569.28
C53.64		.1 Double leaf gate size 2500mm wide and 2400mm high complete	no	2	15 898.18	31 796.36
	SANS 1200 HC	**CORROSION PROTECTION**				
	8.3.13	Repair damaged primer coat and apply one coat universal undercoat to 25um DFT and one coat gloss enamel finish to 30 micron DFT				
C53.65		.1 General surfaces of structural steel	m²	80	136.52	10 921.60
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C53.66		.1 Walls externally	m²	130	110.72	14 393.60
C53.67		.2 Walls internally	m²	230	105.35	24 230.50
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C53.68		.1 Steel doors and frames	m²	5	107.50	537.50
C53.69		.2 General surfaces of structural steelwork	m²	5	198.88	994.40
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C53.70		.1 Plastered walls	m²	230	81.70	18 791.00
C53.71		.2 Plastered or concrete ceilings	m²	280	75.25	21 070.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C53.72		.2 Plastered walls	m²	130	68.80	8 944.00
C53.73		.3 Plastered or concrete ceilings	m²	20	66.65	1 333.00
					Carried Forward	2 157 581.24

[redacted]

					Brought Forward	2 157 581.24
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
C53.74		.1 Recessed joint	m	50	23.65	1 182.50
		BILL NO. C53 **BIOREACTOR SUBSTATION - ELC**				
		Carried forward to Summary of Bills			**Total**	2 158 763.74

[redacted]

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C54 **CHEMICAL DOSING (24 PLANT) - WNA**				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C54.1		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 25Mpa concrete complete	m²	10	613.01	6 130.10
		SUPERSTRUCTURE				
	8.4.1b	Stock brickwork in 1:4 cement mortar				
C54.2		.5 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	70	508.01	35 560.70
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1c	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C54.3		.1 Stretcher course bond	m²	70	586.44	41 050.80
C54.4		.2 Ditto in foundations	m²	10	546.50	5 465.00
	8.4.1d	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
C54.5		.1 Stretcher course bond	m²	20	630.06	12 601.20
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C54.6		.2 150mm Wide brickforce	m	200	2.19	438.00
C54.7		.3 Rod reinforcing (all sizes)	kg	10	23.75	237.50
					Carried Forward	101 483.30

[redacted]

					Brought Forward	101 483.30
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
C54.8		.1 75 x 110mm Lintol	m	20	70.12	1 402.40
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C54.9		.1 Vertically	m	18	63.68	1 146.24
C54.10		2 Horizontally	m	21	23.53	494.13
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C54.11		.1 375 Micron under walls including cement mortar triangular fillet in cavity walls	m²	7	32.28	225.96
	8.4.3	Polyethelene sheeting				
C54.12		.1 250 Micron USB green under floors	m²	14	12.73	178.22
	SANS 1200 GB	**SUNDRIES**				
C54.13	8.2.8	Two layers Malthoid between concrete and brickwork bearing surfaces	m²	8	622.29	4 978.32
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into brickwork, etc complete Dwg EAM-EE-GS-045				
		3CR12 steel				
C54.14		.1 Single door and frame with door size 815 x 2400mm high including all locking devices hinges, etc complete	no	1	45 077.68	45 077.68
	PU	**LOUVRES**				
		LOUVRES				
	8.20	Take delivery of louvre sub-frame supplied by the Mechanical Contractor and build into brick wall, complete with prefabriced lintols above and finishing off (Mechanical Contractor will install louvre)				
C54.15		.1 Louvre size approximately 1 to 2m2 in area	no	4	441.48	1 765.92
	PU	**SCREED**				
					Carried Forward	156 752.17

[redacted]

					Brought Forward	156 752.17
		GRANO				
	8.6	1:3 Grano cement screed with steel floated finish				
C54.16		.1 25mm Thick to floors to falls	m²	14	139.75	1 956.50
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C54.17		.1 Walls	m²	80	105.35	8 428.00
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C54.18		.1 Steel doors and frames	m²	10	107.50	1 075.00
C54.19		.2 General surfaces of structural steelwork	m²	10	198.88	1 988.80
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C54.20		.1 Plastered walls	m²	80	66.65	5 332.00
C54.21		.2 Plastered or concrete ceilings	m²	50	64.50	3 225.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C54.22		.2 Plastered walls	m²	100	68.80	6 880.00
C54.23		.3 Plastered or concrete ceilings	m²	20	743.90	14 878.00
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
C54.24		.1 Recessed joint	m	50	23.65	1 182.50
		BILL NO. C54 **CHEMICAL DOSING (24 PLANT) - WNA**				
		Carried forward to Summary of Bills			**Total**	201 697.97

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C8 - Building works				
		BILL NO. C55 **CHEMICAL DOSING (08 PLANT) - WNB**				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C55.1		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 25Mpa concrete complete	m²	4	613.01	2 452.04
		SUPERSTRUCTURE				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C55.2		.5 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	42	508.01	21 336.42
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C55.3		.1 Stretcher course bond	m²	42	586.44	24 630.48
C55.4		.2 Ditto in foundations	m²	4	546.50	2 186.00
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
C55.5		.1 Stretcher course bond	m²	20	630.06	12 601.20
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C55.6		.2 150mm Wide brickforce	m	150	2.19	328.50
C55.7		.3 Rod reinforcing (all sizes)	kg	10	23.75	237.50
		LINTOLS				
					Carried Forward	63 772.14

[redacted]

					Brought Forward	63 772.14
	8.3	Precast pre-stressed concrete lintols built into brickwork				
C55.8		.1 75 x 110mm Lintol	m	20	70.12	1 402.40
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C55.9		.1 Vertically	m	15	63.68	955.20
C55.10		2 Horizontally	m	14	23.53	329.42
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C55.11		.1 375 Micron under walls including cement mortar triangular fillet in cavity walls	m²	4	32.28	129.12
	8.4.4	Polyethelene sheeting				
C55.12		.1 250 Micron USB green under floors	m²	10	12.73	127.30
	SANS 1200 GB	**SUNDRIES**				
C55.13	8.2.8	Two layers Malthoid between concrete and brickwork bearing surfaces	m²	4	622.29	2 489.16
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into brickwork, etc complete Dwg EAM-EE-GS-045				
		3CR12 steel				
C55.14		.1 Single door and frame with door size 815 x 2400mm high including all locking devices hinges, etc complete	no	1	45 077.68	45 077.68
	PU	**LOUVRES**				
		LOUVRES				
	8.20	Take delivery of louvre sub-frame supplied by the Mechanical Contractor and build into brick wall, complete with prefabriced lintols above and finishing off (Mechanical Contractor will install louvre)				
C55.15		.1 Louvre size approximately 1 to 2m2 in area	no	4	441.48	1 765.92
	PU	**SCREED**				
		GRANO				
					Carried Forward	116 048.34

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					Brought Forward	116 048.34
	8.6	1:3 Grano cement screed with steel floated finish				
C55.16		.1 25mm Thick to floors to falls	m²	8	139.75	1 118.00
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C55.17		.1 Walls	m²	46	105.35	4 846.10
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C55.18		.1 Steel doors and frames	m²	10	107.50	1 075.00
C55.19		.2 General surfaces of structural steelwork	m²	10	198.88	1 988.80
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C55.20		.1 Plastered walls	m²	50	66.65	3 332.50
C55.21		.2 Plastered or concrete ceilings	m²	50	64.50	3 225.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C55.22		.2 Plastered walls	m²	50	68.80	3 440.00
C55.23		.3 Plastered or concrete ceilings	m²	10	66.65	666.50
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
C55.24		.1 Recessed joint	m	20	23.65	473.00
					Carried Forward	136 213.24

[redacted]

		Brought Forward				136 213.24
		BILL NO. C55 **CHEMICAL DOSING (08 PLANT) - WNB**				
		Carried forward to Summary of Bills			**Total**	136 213.24

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C56 **GATEHOUSE** **ELECTRICAL INSTALLATION**				
		LV INSTALLATION				
		LV RETICULATION INSTALLATION				
	PSEB.4&5&13&14&14.1	As per the General Electrical Specification Electrical installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings.				
		The Contractor shall do the complete installation of equipment as per Eskom specification for the site.				
		Electrical Supply point				
		The Contractor shall do the complete installation of equipment as per Eskom specification for the site.				
	16.4	100A/25kA J25S 3 Pole Hydraulic Magnetic MCCB (at Mini sub) Supply and install MCB tails 35mm2 x 1000mm complete with lugs and bolts				
C56.1		i) Supply	no	1	3 752.05	3 752.05
C56.2		ii) Install	no	1	331.69	331.69
C56.3		iii) Tails 35mm^2 Cu, complete with Lugs, bolts, nuts, washers and phase colour shink	set	1	373.88	373.88
		LV Cable installation				
	PSEB.5&5.1&14.1&14.8&14.10	25mm^2 x 4core Cu, SWA, PVC from MiniSub to DB - GH				
C56.4		i) Supply	m	144	365.22	52 591.68
C56.5		ii) Install	m	144	38.93	5 605.92
C56.6		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	306.74	613.48
		10mm^2 x 4core Cu, SWA, PVC from DB to Street/Area lights				
C56.7		i) Supply	m	79	150.08	11 856.32
C56.8		ii) Install	m	79	33.44	2 641.76
C56.9		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	11	216.03	2 376.33
	14.12	**Earth Wiring**				
					Carried Forward	80 143.11

[redacted]

					Brought Forward	80 143.11
		Bare Copper Earth Wire laid in the trench, sleeve and/or wire way with each LV-cable as spec, between supply point, Supply Point to MDB, all DB's and other equipment.				
		16mm² BCEW				
C56.10		i) Supply	m	144	43.15	6 213.60
C56.11		ii) Install	m	144	7.97	1 147.68
C56.12		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	23.98	47.96
		6mm² BCEW				
C56.13		i) Supply	m	79	18.17	1 435.43
C56.14		ii) Install	m	79	6.63	523.77
C56.15		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	11	16.01	176.11
	PSEB.14 &25	**Earthing** Building earth bar zinc plated, 300 x 40 x 5mm, with 12 x 10mm dia holes for earthing/bonding systems, plus any other accessories including mounting studs and installed at DB-M and DB-GH also be connected to all earths.				
		Note: Earth bars shall be installed so that it is well clear of human reach or where it cannot cause damage etc. to buildings during a fault condition.				
C56.16		i) Supply	no	2	790.10	1 580.20
C56.17		ii) Install	no	2	533.32	1 066.64
	25.4	1.5m x 16mm dia. Cu earth spike complete with 35mm² brass clamps, terminated to the supply cable earth and Building earth.				
C56.18		i) Supply	no	2	232.16	464.32
C56.19		ii) Install	no	2	113.77	227.54
		16mm² BCEW, connected to DB - GH and earth spike				
C56.20		i) Supply	m	5	60.30	301.50
C56.21		ii) Install	m	5	29.55	147.75
C56.22		iii) Terminate, complete with glands, lugs, heat shrink, stainless eel nuts, bolts and lock washers.	no	2	50.92	101.84
		Cable Sleeves and Wire ways				
					Carried Forward	93 577.45

[redacted]

					Brought Forward	93 577.45
	PSEB.7& 14.9&17	Cable sleeves as per Specification, 110mm dia PVC complete with couplings and 1mm galv. draw wire				
C56.23		i) Supply	m	189	134.38	25 397.82
C56.24		ii) Install	m	189	37.62	7 110.18
		110 mm dia, 90° slow bent building entry				
C56.25		i) Supply	no	11	268.75	2 956.25
C56.26		ii) Install	no	11	48.38	532.18
		Cable sleeves as per Specification, 50mm dia PVC complete with couplings and 1mm galv. draw wire				
C56.27		i) Supply	m	54	80.62	4 353.48
C56.28		ii) Install	m	54	26.88	1 451.52
		50 mm dia, 90° slow bent building entry DB - GH				
C56.29		i) Supply	no	4	161.25	645.00
C56.30		ii) Install	no	4	37.62	150.48
		Cable sleeves as per Specification, 32mm dia PVC complete with couplings and 1mm galv. draw wire (to Power skirting)				
C56.31		i) Supply	m	37	41.92	1 551.04
C56.32		ii) Install	m	37	26.88	994.56
		Excavations for Cable trenches				
	14.2&14.3&14.5&14.7	LV 0.8m deep x 0.6m wide x running meter complete with all backfill material to be sifted soil and compacted in layers to 90% MOD for trenches and 97% MOD for road crossings test certificates to be provided and remove surplus material.				
C56.33		Pickable soil, by hand or machine. Excavate, backfill and compact	m^3	53	123.62	6 551.86
C56.34		Soft rock, machine and pneumatic equipment. Excavate, backfill and compact and removal of all redundant and surplus material	m^3	11	268.75	2 956.25
C56.35		Hard rock, blasting only. Blast, excavate, backfill, compact includes permits, site establishment, notices and covers and/or rocks greater than 0.75m3 in the trenches, including the removal all redundant and surplus material	m^3	5	392.38	1 961.90
C56.36	14.4	Supply, import and install sand bedding. All backfill material to be sifted soil and compacted to 90% MOD	m^3	42	59.12	2 483.04
C56.37		Compaction Test (Troxler) every 50m of trench, test certificates to be provided. Supply and lay 500mm wide PVC marker tape 300mm above all LV cable	no	21	1 612.50	33 862.50
					Carried Forward	186 535.51

[redacted]

					Brought Forward	186 535.51
C56.38		i) Supply	m	79	2.68	211.72
C56.39		ii) Install	m	79	1.99	157.21
		Drilling for sleeves under road surfaces, water channels or paving (include sleeve, site establishment, excavation for drill hole)				
C56.40		i) Drill 110mmØ (Soft)	m	5	806.25	4 031.25
C56.41		ii) Drill 110mmØ (Intermediate)	m	5	213.92	1 069.60
	14.9	Cable sleeves as per Specification, 110mm dia PVC complete with couplings and 1mm galv. draw wire				
C56.42		i) Supply	m	221	123.62	27 320.02
C56.43		ii) Install	m	221	37.62	8 314.02
	14.9	Supply and build 1000 x 1000 x 800deep manholes complete with 100mm concrete base, brickwork and concrete lid with lifting eyes installed flush with FGL. Entry to Admin and Gatehouse building				
C56.44		i) Supply	no	1	9 137.50	9 137.50
C56.45		ii) Install	no	1	1 677.00	1 677.00
	EB.27	**Test and Commissioning**				
		Test and commissioning complete electrical network, issue test certificates with maintenance manuals complete:				
		Test and commissioning complete LV Cable network, issue test certificates				
C56.46	27.1	i) Certificate of compliance (COC's) for cable Installation	sum	-	1127.74	1 127.74
C56.47		ii) Continuity test	sum	-	7297.13	7 297.13
C56.48		iii) Insulation test	sum	-	663.37	663.37
	EB.28	**AS-Build Drawings**				
C56.49		Preparing and furnishing the marked-up "As built" drawings of complete electrical installation, with all user manuals and all test certificates for complete LV installation	sum	-	2331.77	2 331.77
		Other Items (Specify items)				
		a)				
		b)				
		c)				
		DB INSTALLATION				
		DISTRIBUTION BOARD INSTALLATION				
					Carried Forward	249 873.84

[redacted]

					Brought Forward	249 873.84
	PSEB.6&6.1&6.2&16&16.1&16.3&16.9	As per the General Electrical Specification, the complete electrical building installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings. (Work drawings to be approved by engineer before manufacturing)				
		Distribution Boards				
		DB - GH : Gatehouse : Flush mounted board with white face plate as per drawing complete with all equipment including surge arrestors, frames, panels, interior wiring, bus bars				
C56.50		i) Supply	no	1	17 884.59	17 884.59
C56.51		ii) Install	no	1	1 990.13	1 990.13
C56.52		iii) Labelling, complete circuits, cable and legend card.	sum	-	2666.77	2 666.77
		Test and Commissioning				
	EB.27&27.1	Test and commissioning complete electrical network, issue test certificates with maintenance manuals complete:				
C56.53		i) Certificate of compliance (COC's) for LV Installation	sum	-	2030.33	2 030.33
C56.54		ii) Measure & Record of Soil resistivity and earth resistance	sum	-	4643.63	4 643.63
C56.55		iii) Provide completed signed off Inspection Test Plan (ITP) document and FAT test certificates.	sum	-	4643.63	4 643.63
C56.56		iv) Provide a set of marked up "As-Built" drawings, 4 work days before commissioning, complete with measurements	sum	-	2331.77	2 331.77
		Other Items (Specify items)				
		a)				
		b)				
		c)				
		POWER INSTALLATION				
		SMALL POWER INSTALLATION				
	PSEB.10&10.1&10.3&21&21.1&25.3	Supply, wire and install Power outlets with all equipment and material needed to complete the installation all equipment to carry the SABS mark, shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings.				
		Power Outlets				
					Carried Forward	286 064.69

					Brought Forward	286 064.69
	PSEB.10.7&21.5	Aircon Isolator (HD-ISO): 20A 2p, Aircon Isolator with cord grommet module - slim line: equal or similar to Legrand 572013, 572307, 576040,				
C56.57		i) Supply	no	2	303.30	606.60
C56.58		ii) Install	no	2	33.16	66.32
		Un-switch socket outlet, 2 x European three pin socket, equal or similar to Ysalis, WHT – 300mm AFFL: Legrand Ysalis				
C56.59		i) Supply	no	4	300.28	1 201.12
C56.60		ii) Install	no	4	26.53	106.12
		Un-switch socket outlet (WHT), European two three socket 2400 Maintelligent USB: equal or similar to Legrand Ysalis – 300mm AFFL				
C56.61		i) Supply	no	6	1 071.38	6 428.28
C56.62		ii) Install	no	6	39.81	238.86
	17.1	**Power Points**				
		Wiring with 20mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, adaptors, couplings, bends, tees, saddles, lock-nuts, bushing, and material needed to complete the installation, installed in conduit and wire ways				
		Power Points for ISO (HD/AC) complete with 2x2.5mm^2 GP-wire with 1.5mm2 BCEW surface/flush mounted in PVC conduit.				
C56.63		i) Supply	no	2	745.39	1 490.78
C56.64		ii) Install	no	2	502.84	1 005.68
		Power Points for SSO complete with 2x2.5mm^2 GP-wire with 1.5mm 2 BCEW surface/flush mounted in PVC conduit.				
C56.65		i) Supply	no	11	745.39	8 199.29
C56.66		ii) Install	no	11	502.84	5 531.24
	EB.27	**Test and Commissioning**				
		Test and commissioning complete electrical network, issue test certificates with maintenance manuals complete:				
C56.67		i) Provide a set of marked up "As-Built" drawings, 4 work days before commissioning, complete with measurements	sum		2 331.68	
	10.7	**Mid-wall Split Air conditioning units**				
					Carried Forward	311 984.98

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					Brought Forward	311 984.98
		Supply and install 24000 btu/hr Mid-wall Split Inverter Air conditioning units complete with anti-corrosive coated condenser, 4m insulated refrigerant pipe cluster, 25mm water drain pipe from drip tray, 4m UV-resitant 2.5mm2 Cu cable, water drain pipe from drip tray, trunking to cover piping, galvanised and (white) powder coated mounting brackets, equeal or similar to Samsung: Model AR9500				
C56.68		i) Supply	no	1	36 000.42	36 000.42
C56.69		ii) Install	no	1	22 631.73	22 631.73
		Supply and install 24000 btu/hr Mid-wall Split Inverter Air conditioning units complete with anti-corrosive coated condenser, 8m insulated refrigerant pipe cluster, 25mm water drain pipe from drip tray, 8m UV-resitant 2.5mm2 Cu cable, water drain pipe from drip tray, trunking to cover piping, galvanised and (white) powder coated mounting brackets, equeal or similar to Samsung: Model AR9500				
C56.70		i) Supply	no	1	36 000.42	36 000.42
C56.71		ii) Install	no	1	26 115.78	26 115.78
		Other Items (Specify items) a) ..... b) ..... c)				
		LIGHTING INSTALLATION				
		LIGHTING INSTALLATION				
	PSEB.9 &20&25. 2	As per the General Electrical Specification, the complete electrical building installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings, position of equipment will be determine on site.				
		Light Fittings				
	PSEB.9.1 &9.4&20. 1&20.2&2 0.3&20.5 &20.6&20 .8	Light fittings complete with electronic gear and energy saving or LED lamps, all equipment to carry the SABS mark, as per drawings. Lamps to have a green cup or tree mark. Contractor to provide samples for approval to the engineer before ordering fittings. Type B: 15W LED Round Bulkhead, equal or similar to - Lighting Innovations Africa - Mmi ISV - BC L-15w-4K-PN (Outside Wall Bulkhead and stairs)				
C56.72		i) Supply	no	11	1 238.77	13 626.47
					Carried Forward	446 359.80

					Brought Forward	446 359.80
C56.73		ii) Install Type D1: 10W LED Down light, , 3m cord and 5 Amp plug top, equal or similar to - Lighting Innovations Africa - Atom Mini - OAS -10W-DIFF –WHT- 3K -PN (Offices, Passages, Board Room, kitchen and Canteen)	no	11	79.60	875.60
C56.74		i) Supply	no	14	750.41	10 505.74
C56.75		ii) Install Type K: Post Top, 54W, Blk, mounting heights of 3m, equal or similar to - Lighting Innovations Africa - Swan - WES-2-542W-4k-BLK- PN (Pathway at entrances)	no	14	72.97	1 021.58
C56.76		i) Supply	no	2	41 784.48	83 568.96
C56.77		ii) Install Type L: 52W LED, Post Top, IP65, mounting heights of 5m equal and similar to - Lighting Innovations Africa - Captain - Post-52W-C-IP65-PN (Parking and drive way)	no	2	597.03	1 194.06
C56.78		i) Supply	no	3	15 229.76	45 689.28
C56.79		ii) Install Type M: 158W LED, equal ot similar to - Lighting Innovations Africa - Canopy light SCNP-10-1-2C6-WHT-PN (Entrance Gate canopy)	no	3	597.03	1 791.09
C56.80		i) Supply	no	14	6 644.11	93 017.54
C56.81		ii) Install Type N: 26W LED, equal ot similar to - Lighting Innovations Africa - Rondo Wall OWLM-2x26W-4k-PN (Entrance Gate Pillars)	no	14	199.01	2 786.14
C56.82		i) Supply	no	21	9 038.28	189 803.88
C56.83		ii) Install Type O: 6W LED, brick light, equal ot similar to - Lighting Innovations Africa - Lumeo OWLM-6W-4K-WHT-PN-IP65-PN (Steps - footlight)	no	21	86.24	1 811.04
C56.84		i) Supply	no	2	2 718.15	5 436.30
C56.85		ii) Install Type S: 3 43w LED 5760 Lumens, 1500mm Surface Mounted Batten, equal ot similar to - Lighting Innovations Africa - Aztek - SZN3 -43-1R15-PN	no	2	86.24	172.48
C56.86		i) Supply	no	7	2 204.06	15 428.42
					Carried Forward	899 461.91

					Brought Forward	899 461.91
C56.87	PSEB.9.3	ii) Install Motion Sensor Switch: 2300W Occupancy Motion Sensor switch, 10A relay, flush ceiling mounted, 360deg, 7sec-99min, 6m, complete with 3m cord set and 5 Amp plug top, equal or similar to - Lighting Innovations Africa - CO96-WHT-F	no	7	79.60	557.20
C56.88		i) Supply	no	5	2 909.06	14 545.30
C56.89		ii) Install	no	5	86.24	431.20
	20.15	**Light switches** Single lever, one way, light switches complete with white covers equal or similar to Legrand				
C56.90		i) Supply	no	4	178.33	713.32
C56.91		ii) Install	no	4	26.53	106.12
		20A Photocell "Nema" socket mounted in bulkhead fitting, complete with all material needed to complete the installation.				
C56.92		i) Supply	no	1	1 340.02	1 340.02
C56.93		ii) Install	no	1	86.24	86.24
		5 Amp socket outlet surface mounted as per detail drawing complete with round box, covers and conduit, from wire way equal or similar to Crabtree				
C56.94		i) Supply	no	21	38.19	801.99
C56.95		ii) Install	no	21	26.53	557.13
		Lighting Points				
	PSEB.9.1 &17.1&20 .11	Wiring and 20mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, adaptors, couplings, bends, tees, saddles, lock-nuts, bushing, and material needed to complete the installation. Installed in conduit and wire ways complete Light/Switch Points for fittings complete with 2x1.5mm^2 GP-wire with 1mm2 BCEW surface mounted in PVC conduit.				
C56.96		i) Supply	no	68	130.69	8 886.92
C56.97		ii) Install	no	68	151.91	10 329.88
	PSEB.9.3	Motion Sensor Points complete with 3x1.5mm^2 GP-wire from circuit to lights, mounted in PVC conduit.				
C56.98		i) Supply	no	5	130.69	653.45
					Carried Forward	938 470.68

					Brought Forward	938 470.68
C56.99		ii) Install 5Amp Points for fittings complete with 2x1.5mm^2 GP-wire with 1.mm 2 BCEW surface mounted in PVC conduit, additional to light points Motion sensor and fans mounted on trunking	no	5	151.91	759.55
C56.100		i) Supply	no	21	130.69	2 744.49
C56.101		ii) Install Excavation of Pole holes by hand, 1.2 x 0.5 x 0.5m complete with backfill and compacted to 90% MOD	no	21	151.91	3 190.11
C56.102		i) Excavation holes	no	29	199.01	5 771.29
	EB.27	**Test and Commissioning** Test and commissioning complete electrical network, issue test certificates with maintenance manuals complete:				
C56.103		i) Provide a set of marked up "As-Built" drawings, 4 work days before commissioning, complete with measurements **Additional items:** (Specify details) a) ..... b) ..... c)	sum	-	2331.77	2 331.77
		DATA, DSTV & CCTV INSTALLATION				
	PSEB.15 &24&24.1 &24.2&24 .3	**DSTV, DATA, TELEPHONE & CCTV INSTALLATION** **Distribution boards** Supply and install Surface mounted distribution boards complete with hardwood back board, door and pad lockable handles. Telkom DB-Board, flush mounted 450 X 600 X 250mm deep with hard wood back board and industrial SSO at other floors				
C56.104		i) Supply	no	1	1 835.83	1 835.83
C56.105		ii) Install DSTV DB-Board, flush mounted 450 X 600 X 250mm deep with hardwood back board and industrial SSO at other floors	no	1	331.69	331.69
C56.106		i) Supply	no	1	1 835.83	1 835.83
C56.107		ii) Install	no	1	331.69	331.69
					Carried Forward	957 602.93

[redacted]

					Brought Forward	957 602.93
	PSEB.13	**DSTV/DATA/Telephone outlet points**				
		25mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, short lengths, couplings, bends, tees, saddles, lock-nuts, bushing, and material needed to complete the installation. Note Data/Telephone additional to point in clusters outlets.				
		Data/Telephone (RJ45) outlet wall mounted complete with cover and equal or similar to Legrad Ysalis DATA RJ45 outlet, WHT – 300mm AFFL				
C56.108		i) Supply	no	9	222.19	1 999.71
C56.109		ii) Install	no	9	180.44	1 623.96
		16 Amp Double Switch Socket Outlets with cover flush mounted with wall box, mounting plate and clips, equal or similar to Crabtree type Classic 6881/001P+6563/101P (Entry boxes)				
C56.110		i) Supply	no	1	151.09	151.09
C56.111		ii) Install	no	1	33.16	33.16
		Power Points for SSO complete with 2x2.5mm2 GP-wire with 1.5mm2 BCEW surface/flush mounted in PVC conduit. (DB & Wall box)				
C56.112		i) Supply	no	1	780.24	780.24
C56.113		ii) Install	no	1	516.11	516.11
		DSTV Dish outlet wall mounted complete with cover				
C56.114		i) Supply	no	2	222.19	444.38
C56.115		ii) Install	no	2	180.44	360.88
	15.2	**CCTV Installation outlet Points**				
		Wire ways and conduit with wiring provided, equipment to be provided by others				
		25mm Galvanised conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, short lengths, couplings, bends, tees, saddles, lock-nuts, bushing, round boxes, and material needed to complete the installation				
		Bullet Camera complete with round box flush wall mounted				
C56.116		i) Supply	no	4	2 346.37	9 385.48
C56.117		ii) Install	no	4	883.62	3 534.48
		Mini Dome Camera complete with round box flush Ceiling mounted				
					Carried Forward	976 432.42

[redacted]

					Brought Forward	976 432.42
C56.118		i) Supply	no	3	2 346.37	7 039.11
C56.119		ii) Install	no	3	883.62	2 650.86
		CCTV Camera points flush wall/ceiling mounted outlet as per drawing				
C56.120		i) Supply	no	7	2 346.37	16 424.59
C56.121		ii) Install	no	7	883.62	6 185.34
		16 Amp Double Dedicated (blue) Switch Socket outlets, flush mounted with wall box, mounting plate and clips, equal or similar to Crabtree type Classic (For equipment fed from DB-GH)				
C56.122		i) Supply	No	1	219.60	219.60
C56.123		ii) Install	No	1	39.81	39.81
		Power Points for SSO complete with 2x2.5mm2 GP-wire with 1.5mm2 BCEW surface/flush mounted in PVC conduit.				
C56.124		i) Supply	no	1	1 113.90	1 113.90
C56.125		ii) Install	no	1	516.11	516.11
		Cable Sleeves and Wire ways				
	EB14.9& 17	Cable sleeves as per Specification, 110mm dia PVC complete with couplings and 1mm galv. draw wire				
C56.126		i) Supply	m	47	123.62	5 810.14
C56.127		ii) Install	m	47	26.88	1 263.36
		110 mm dia. 90° slow bent building entry				
C56.128		i) Supply	no	4	247.25	989.00
C56.129		ii) Install	no	4	37.62	150.48
		Cable sleeves as per Specification, 50mm dia PVC complete with couplings and 1mm galv. draw wire				
C56.130		i) Supply	m	14	80.62	1 128.68
C56.131		ii) Install	m	14	26.88	376.32
		50 mm dia. 90° slow bent building entry				
C56.132		i) Supply	no	4	161.25	645.00
C56.133		ii) Install	no	4	37.62	150.48
		Optic fibre 32mmØ sleeve. (Fibre cable to be installed by other)				
C56.134		i) Supply	m	37	41.92	1 551.04
					Carried Forward	1 022 686.24

[redacted]

					Brought Forward	1 022 686.24
C56.135		ii) Install Supply and install Preform Fibre manhole, 380mm x 600mm deep complete with Frame and Covers	m	37	26.88	994.56
C56.136		i) Supply	no	6	806.25	4 837.50
C56.137		ii) Install	no	6	134.38	806.28
		Excavations for Cable trenches				
	14.2&14.3&14.5&14.7	LV 0.8m deep x 0.6m wide x running meter complete with all backfill material to be sifted soil and compacted in layers to 90% MOD for trenches and 97% MOD for road crossings test certificates to be provided and remove surplus material.				
C56.138		Pickable soil, by hand or machine. Excavate, backfill and compact	m^3	100	123.62	12 362.00
C56.139		Soft rock, machine and pneumatic equipment. Excavate, backfill and compact and removal of all redundant and surplus material	m^3	11	268.75	2 956.25
C56.140		Hard rock, blasting only. Blast, excavate, backfill, compact includes permits, site establishment, notices and covers and/or rocks greater than 0.75m3 in the trenches, including the removal all redundant and surplus material	m^3	5	419.25	2 096.25
C56.141		Supply, import and install sand bedding. All backfill material to be sifted soil and compacted to 90% MOD	m^3	21	69.88	1 467.48
C56.142		Compaction Test (Troxler) every 50m of trench, test certificates to be provided.	no	4	161.25	645.00
	EB.28	**AS-Build Drawings**				
C56.143		Preparing and furnishing the marked-up "As built" drawings of complete electrical installation, with all user manuals and all test certificates for complete pocket for DATA, Tel & CCTV.	sum	-	2331.77	2 331.77
		Additional items: (Specify details) a) ..... b) ..... c)				
		ACCESS CONTROL				
		ACCESS CONTROL INSTALLATION				
	PSEB.15 &15.3	Card-reader outlet flush mounted complete with cover with grommet, conduit and draw wire, equal or similar to Legrand type Ysalis				
					Carried Forward	1 051 183.33

					Brought Forward	1 051 183.33
C56.144		i) Supply	no	6	223.52	1 341.12
C56.145		ii) Install	no	6	180.44	1 082.64
	EB.23	**AS-BUILD DRAWINGS**				
C56.146		Preparing and furnishing the marked-up "As built" drawings of complete electrical installation, with all user manuals and all test certificates for complete Access control installation.	sum	-	2331.77	2 331.77
		Additional items: (Specify details)				
		a)				
		b)				
		c)				
		BILL NO. C56 **GATEHOUSE** **ELECTRICAL INSTALLATION**				
		Carried forward to Summary of Bills			**Total**	1 055 938.86

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C57 **GUARD TOWER** **ELECTRICAL INSTALLATION**				
		GUARD TOWER : ELECTRICAL INSTALLATION				
	PSEB.4 **PSEB.5**	**LV RETICULATION INSTALLATION**				
	EB.14 & EB.13 & 14.1	As per the General Electrical Specification Electrical installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings.				
		The Contractor shall do the complete installation of equipment as per Eskom specification for the site.				
		Electrical Supply point				
		The Contractor shall do the complete installation of equipment as per Eskom specification for the site.				
	16.4	125A 10kA Single Phase Circuit Breaker Supply and install complete with lugs and bolts				
C57.1		i) Supply	no	2	1 884.07	3 768.14
C57.2		ii) Install	no	2	265.35	530.70
C57.3		iii) Terminate, complete with glands, lugs, heat shrink, Tails 35mm2 Cu, complete with Lugs, bolts, nuts, washers and phase colour shink	set	2	320.54	641.08
	16.4	100A 10kA Single Phase Circuit Breaker Supply and install complete with lugs and bolts				
C57.4		i) Supply	no	2	1 811.71	3 623.42
C57.5		ii) Install	no	2	199.01	398.02
C57.6		iii) Terminate, complete with glands, lugs, heat shrink, Tails 25mm2 Cu, complete with Lugs, bolts, nuts, washers and phase colour shink	set	2	266.94	533.88
	16.4	80A 10kA Single Phase Circuit Breaker Supply and install complete with lugs and bolts				
C57.7		i) Supply	no	1	1 811.71	1 811.71
C57.8		ii) Install	no	1	199.01	199.01
C57.9		iii) Terminate, complete with glands, lugs, heat shrink, Tails 16mm2 Cu, complete with Lugs, bolts, nuts, washers and phase colour shink	set	1	233.50	233.50
	PSEB.5	**LV Cable installation**				
					Carried Forward	11 739.46

						Brought Forward	11 739.46
	PSEB.5.1 PSEB.5.2	35mm² x 3core Cu, SWA, PVC					
C57.10	14.1	i)	Supply	m	300	462.93	138 879.00
C57.11	& 14.8	ii)	Install	m	300	42.09	12 627.00
C57.12	& 14.10	iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	4	420.51	1 682.04
	PSEB.5.2	25mm² x 3core Cu, SWA, PVC					
C57.13	14.1	i)	Supply	m	220	320.69	70 551.80
C57.14	& 14.8	ii)	Install	m	220	38.93	8 564.60
C57.15	& 14.10	iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	4	280.14	1 120.56
	PSEB.5.2	16mm² x 3core Cu, SWA, PVC					
C57.16	14.1	i)	Supply	m	55	193.09	10 619.95
C57.17	& 14.8	ii)	Install	m	55	36.39	2 001.45
C57.18	& 14.10	iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	213.34	426.68
	PSEB.6 PSEB.6.1 PSEB.6.2 EB 16 16.1 &16.3 &16.9	**DISTRIBUTION BOARD INSTALLATION** As per the General Electrical Specification, the complete electrical building installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings. **Distribution Boards** DB - Flush Mounted (Orange) as per drawing complete with all equipment including surge arrestors, frames, panels, interior wiring & bus bars						
C57.19		i)	Supply	no	5	4 197.17	20 985.85
C57.20		ii)	Install	no	5	995.06	4 975.30
C57.21		iii)	Labelling, complete circuits, cable and legend card.	sum	-	2666.77	2 666.77
		Junction Box - Supply cable terminated with 10mm² GP wire in 25mm PVC conduit to DB - 400AFFGL					
C57.22		i)	Supply	no	5	707.47	3 537.35
C57.23		ii)	Install	no	5	59.71	298.55
	PSEB.10	**SMALL POWER INSTALLATION**					
						Carried Forward	290 676.36

[redacted]

					Brought Forward	290 676.36
	PSEB.10.1 & PSEB.10.3 & EB.21 & 21.1 & 25.3	Supply, wire and install Power outlets with all equipment and material needed to complete the installation all equipment to carry the SABS mark, shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings. **Power Outlets** Un-switch socket outlet (WHT), European two three socket 2400 Ma intelligent USB: Legrand Ysalis – 300mm AFFL				
C57.24		i) Supply	no	5	1 071.38	5 356.90
C57.25		ii) Install	no	5	46.44	232.20
	17.1	**Power Points** Wiring with 20mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, adaptors, couplings, bends, tees, saddles, lock-nuts, bushing, and material needed to complete the installation, installed in and wire ways conduit Power Points for SSO complete with 2x2.5mm^2 GP-wire with 1.5mm2 BCEW surface/flush mounted in PVC conduit.				
C57.26		i) Supply	no	5	745.39	3 726.95
C57.27		ii) Install	no	5	502.84	2 514.20
	PSEB.9 EB. 20 25.2	**LIGHTING INSTALLATION** As per the General Electrical Specification, the complete electrical building installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings, position of equipment will be determine on site.				
	PSEB.9.1 PSEB.9.4 & 20.1 & 20.2 & 20.3 & 20.5 & 20.6	**Light Fittings** Light fittings complete with electronic gear and energy saving or LED lamps, all equipment to carry the SABS mark, as per drawings. Lamps to have a green cup or tree mark. Contractor to provide samples for approval to the engineer before ordering fittings. Type B: 15W LED Round Bulkhead, - Lighting Innovations Africa Mmi ISV - BC L-15w-4K-PN (Outside Wall Bulkhead and stairs)				
C57.28		i) Supply	no	20	1 238.77	24 775.40
C57.29		ii) Install	no	20	79.60	1 592.00
		Type Q: 100W LED, floodlight- Lighting Innovations Africa - Captiva FL-100-WHT-4K-IP65-PN (Roof - Plant Area)				
C57.30		i) Supply	no	15	5 634.03	84 510.45
C57.31		ii) Install	no	15	112.78	1 691.70
					Carried Forward	415 076.16

					Brought Forward	415 076.16
	PSEB.9.3	Motion Sensor Switch: 2300W Occupancy Motion Sensor switch, 10A relay, flush ceiling mounted, 360deg, 7sec-99min, 6m, complete Lighting Innovations Africa - CO96-WHT-F				
C57.32		i) Supply	no	10	2 909.06	29 090.60
C57.33		ii) Install	no	10	86.24	862.40
	20.15	**Light switches**				
		20A Photocell "Nema" socket mounted in bulkhead fitting, complete with all material needed to complete the installation.				
C57.34		i) Supply	no	5	1 340.02	6 700.10
C57.35		ii) Install	no	5	86.24	431.20
	PSEB.9.1	**Lighting Points**				
	20.11 & 17.1	Wiring and 20mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, adaptors, couplings, bends, tees, saddles, lock-nuts, bushing, and material needed to complete the installation. Installed in conduit and wire ways complete				
		Light/Switch Points for fittings complete with 2x1.5mm^2 GP-wire with 1mm2 BCEW surface mounted in PVC conduit.				
C57.36		i) Supply	no	35	130.69	4 574.15
C57.37		ii) Install	no	35	151.91	5 316.85
	PSEB.9.3	Motion Sensor Points complete with 3x1.5mm^2 GP-wire from circuit to lights, mounted in PVC conduit.				
C57.38		i) Supply	no	10	130.69	1 306.90
C57.39		ii) Install	no	10	151.91	1 519.10
		Photo Cell Points complete with 3x1.5mm^2 GP-wire with 1mm^2 BCEW surface mounted in PVC conduit.				
C57.40		i) Supply	no	5	130.69	653.45
C57.41		ii) Install	no	5	151.91	759.55
	14.2	**Excavations for Cable trenches**				
	& 14.3 & 14.7 & 14.5	LV 0.8m deep x 0.6m wide x running meter complete with all backfill material to be sifted soil and compacted in layers to 90% MOD for trenches and 97% MOD for road crossings test certificates to be provided and remove surplus material.				
C57.42		Pickable soil, by hand or machine. Excavate, backfill and compact	m^3	330	123.62	40 794.60
					Carried Forward	507 085.06

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					Brought Forward	507 085.06
C57.43		Soft rock, machine and pneumatic equipment. Excavate, backfill and compact and removal of all redundant and surplus material	m³	50	268.75	13 437.50
C57.44	14.4	Supply, import and install sand bedding. All backfill material to be sifted soil and compacted to 90% MOD	m³	110	396.68	43 634.80
C57.45		Compaction Test (Troxler) every 50m of trench, test certificates to be provided.	no	10	1 612.50	16 125.00
		Supply and lay 500mm wide PVC marker tape 300mm above all LV cable				
C57.46		i) Supply	m	575	2.68	1 541.00
C57.47		ii) Install	m	575	1.99	1 144.25
		Drilling for sleeves under road surfaces, water channels or paving (include sleeve, site establishment, excavation for drill hole)				
C57.48		i) Drill 110mmØ (Soft)	m	5	806.25	4 031.25
C57.49		ii) Drill 110mmØ (Intermediate)	m	5	213.92	1 069.60
	14.9	Cable sleeves as per Specification, 110mm dia PVC complete with couplings and 1mm galv. draw wire				
C57.50		i) Supply	m	60	123.62	7 417.20
C57.51		ii) Install	m	60	48.38	2 902.80
	EB.27	**Test and Commissioning**				
		Test and commissioning complete electrical installation, issue test certificates with maintenance manuals complete:				
C57.52	27.1	i) Certificate of compliance (COC's)	sum	-	2030.33	2 030.33
C57.53		ii) Continuity test	sum	-	663.37	663.37
C57.54		iii) Insulation test	sum	-	663.37	663.37
	EB.28	**AS-Build Drawings**				
C57.55		Preparing and furnishing the marked-up "As built" drawings of complete electrical installation, with all user manuals and all test certificates for complete installation	sum	-	2331.77	2 331.77
		Other Items (Specify items)				
		a)				
		b)				
		BILL NO. C57 **GUARD TOWER** **ELECTRICAL INSTALLATION**				
		Carried forward to Summary of Bills			**Total**	604 077.30

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C58 **WEIGH BRIDGE** **ELECTRICAL INSTALLATION**				
		ELECTRICAL INSTALLATION				
		WEIGHBRIDGE OFFICES				
		LV RETICULATION INSTALLATION				
	PSEB.4&5&13&14&14.1	As per the General Electrical Specification Electrical installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings.				
		The Contractor shall do the complete installation of equipment as per Eskom specification for the site.				
		Electrical Supply point				
		The Contractor shall do the complete installation of equipment as per Eskom specification for the site.				
	16.4	80A 10kA Single Phase Circuit Breaker Supply and install complete with lugs and bolts				
C58.1		i) Supply	no	1	1 811.71	1 811.71
C58.2		ii) Install	no	1	199.01	199.01
C58.3		iii) Tails 16mm² Cu, complete with Lugs, bolts, nuts, washers and phase colour shrink	set	1	233.50	233.50
		LV Cable installation				
	PSEB.5&5.1&5.2&14.1&14.8&14.10	16mm² x 3core Cu, SWA, PVC from Gatehouse DB (to confirm)				
C58.4		i) Supply	m	90	193.09	17 378.10
C58.5		ii) Install	m	90	36.39	3 275.10
C58.6		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	213.34	426.68
		DISTRIBUTION BOARD INSTALLATION				
	PSEB.6&6.1&6.2&16&16.1&16.3&16.9	As per the General Electrical Specification, the complete electrical building installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings.				
		Distribution Boards				
					Carried Forward	23 324.10

					Brought Forward	23 324.10
		DB - WB Flush Mounted (white) as per drawing complete with all equipment including surge arrestors, frames, panels, interior wiring & bus bars				
C58.7		i) Supply	no	1	4 197.17	4 197.17
C58.8		ii) Install	no	1	995.06	995.06
C58.9		iii) Labelling, complete circuits, cable and legend card.	sum	-	2666.77	2 666.77
		Junction Box - Supply cable terminated with 10mm^2 GP wire in 25mm PVC conduit - 400AFFGL				
C58.10		i) Supply	no	1	707.47	707.47
C58.11		ii) Install	no	1	59.71	59.71
		SMALL POWER INSTALLATION				
	PSEB.10& 10.1&10.3 &EB21&21 .1&25.3	Supply, wire and install Power outlets with all equipment and material needed to complete the installation all equipment to carry the SABS mark, shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings.				
		Power Outlets				
		Un-switch socket outlet (WHT), European two three socket 2400 Maintelligent USB: equal or similar to Legrand Ysalis – 300mm AFFL				
C58.12		i) Supply	no	1	1 071.38	1 071.38
C58.13		ii) Install	no	1	46.44	46.44
	PSEB.10.2	Cluster D: 3 way - 16Amp Switch socket outlet & 2 x Euro three pin sockets & 2 x Data RJ45 outlet complete: equal and similar to Legrand - 572132, 572137, 572341, 572302, 689027SA, 576700, 689027DIV				
C58.14		i) Supply	no	1	1 018.85	1 018.85
C58.15		ii) Install	no	1	72.97	72.97
	17.1	**Power Points**				
		Wiring with 20mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, adaptors, couplings, bends, tees, saddles, lock-nuts, bushing, and material needed to complete the installation, installed in conduit and wire ways				
		Power Points for SSO complete with 2x2.5mm^2 GP-wire with 1.5mm2 BCEW surface/flush mounted in PVC conduit.				
C58.16		i) Supply	no	2	325.45	650.90
C58.17		ii) Install	no	2	283.93	567.86
					Carried Forward	35 378.68

					Brought Forward	35 378.68
	PSEB.9&20&25.2	**LIGHTING INSTALLATION** As per the General Electrical Specification, the complete electrical building installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings, position of equipment will be determine on site.				
	PSEB.9.1&9.4&20.1&20.2&20.3&20.5&20.6	**Light Fittings** Light fittings complete with electronic gear and energy saving or LED lamps, all equipment to carry the SABS mark, as per drawings. Lamps to have a green cup or tree mark. Contractor to provide samples for approval to the Engineer before ordering fittings.				
		Type B: 15W LED Round Bulkhead, equal or similar to - Lighting Innovations Africa - Mmi ISV - BC L-15w-4K-PN (Outside Wall Bulkhead and stairs)				
C58.18		i) Supply	no	2	1 238.77	2 477.54
C58.19		ii) Install	no	2	79.60	159.20
		Type Q: 100W LED, floodlight, equal or similar to - Lighting Innovations Africa - Captiva FL-100-WHT-4K-IP65-PN (Roof - Plant Area)				
C58.20		i) Supply	no	3	5 634.03	16 902.09
C58.21		ii) Install	no	3	112.78	338.34
	20.15	**Light switches** 20A Photocell "Nema" socket mounted in bulkhead fitting, complete with all material needed to complete the installation.				
C58.22		i) Supply	no	1	1 340.02	1 340.02
C58.23		ii) Install	no	1	86.24	86.24
	PSEB.9.3	Motion Sensor Switch: 2300W Occupancy Motion Sensor switch, 10A relay, flush ceiling mounted, 360deg, 7sec-99min, 6m, complete equal or similar to - Lighting Innovations Africa - CO96-WHT-F				
C58.24		i) Supply	no	1	2 909.06	2 909.06
C58.25		ii) Install	no	1	86.24	86.24
	PSEB.9.1&17.1&20.11	**Lighting Points** Wiring and 20mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, adaptors, couplings, bends, tees, saddles, lock-nuts, bushing, and material needed to complete the installation. Installed in conduit and wire ways complete Light/Switch Points for fittings complete with 2x1.5mm^2 GP-wire with 1mm2 BCEW surface mounted in PVC conduit.				
					Carried Forward	59 677.41

					Brought Forward	59 677.41
C58.26		i) Supply	no	5	130.69	653.45
C58.27		ii) Install	no	5	151.91	759.55
	PSEB.9.3	Motion Sensor Points complete with 3x1.5mm^2 GP-wire from circuit to lights, mounted in PVC conduit.				
C58.28		i) Supply	no	1	130.69	130.69
C58.29		ii) Install	no	1	151.91	151.91
		Photo Cell Points complete with 3x1.5mm^2 GP-wire with 1mm 2BCEW surface mounted in PVC conduit.				
C58.30		i) Supply	no	1	130.69	130.69
C58.31		ii) Install	no	1	151.91	151.91
		Excavations for Cable trenches				
	14.2&14.3&14.5&14.7	LV 0.8m deep x 0.6m wide x running meter complete with all backfill material to be sifted soil and compacted in layers to 90% MOD for trenches and 97% MOD for road crossings test certificates to be provided and remove surplus material.				
C58.32		Pickable soil, by hand or machine. Excavate, backfill and compact	m^3	45	123.62	5 562.90
C58.33		Soft rock, machine and pneumatic equipment. Excavate, backfill and compact and removal of all redundant and surplus material	m^3	5	268.75	1 343.75
C58.34	14.4	Supply, import and install sand bedding. All backfill material to be sifted soil and compacted to 90% MOD	m^3	2	396.68	793.36
C58.35		Compaction Test (Troxler) every 50m of trench, test certificates to be provided.	no	2	1 612.50	3 225.00
		Supply and lay 500mm wide PVC marker tape 300mm above all LV cable				
C58.36		i) Supply	m	90	2.68	241.20
C58.37		ii) Install	m	90	1.99	179.10
		Drilling for sleeves under road surfaces, water channels or paving (include sleeve, site establishment, excavation for drill hole)				
C58.38		i) Drill 110mmØ (Soft)	m	2	849.25	1 698.50
C58.39		ii) Drill 110mmØ (Intermediate)	m	2	213.92	427.84
	14.9	Cable sleeves as per Specification, 110mm dia PVC complete with couplings and 1mm galv. draw wire				
C58.40		i) Supply	m	18	123.62	2 225.16
					Carried Forward	77 352.42

					Brought Forward	77 352.42
C58.41		ii) Install	m	18	37.62	677.16
	EB.27	**Test and Commissioning** Test and commissioning complete electrical network, issue test certificates with maintenance manuals complete: Test and commissioning complete LV Cable network, issue test certificates				
C58.42	27.1	i) Certificate of compliance (COC's)	sum		2 030.33	2 030.33
C58.43		ii) Continuity test	sum		663.37	663.37
C58.44		iii) Insulation test	sum		663.37	663.37
	EB.28	**AS-Build Drawings**				
C58.45		Preparing and furnishing the marked-up "As built" drawings of complete electrical installation, with all user manuals and all test certificates for complete LV installation	sum	-	2331.77	2 331.77
		Other Items (Specify items) a) ..... b)				
		BILL NO. C58 **WEIGH BRIDGE** **ELECTRICAL INSTALLATION**				
		Carried forward to Summary of Bills			**Total**	83 718.42

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C59 **FLAMMABLE STORAGE BUILDING** **ELECTRICAL INSTALLATION**				
		ELECTRICAL INSTALLATION				
		WEIGHBRIDGE OFFICES				
		LV RETICULATION INSTALLATION				
	PSEB.4&5&13&14&14.1	As per the General Electrical Specification Electrical installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings.				
		The Contractor shall do the complete installation of equipment as per Eskom specification for the site.				
		Electrical Supply point				
		The Contractor shall do the complete installation of equipment as per Eskom specification for the site.				
	16.4	80A 10kA Single Phase Circuit Breaker Supply and install complete with lugs and bolts				
C59.1		i) Supply	no	1	1 811.71	1 811.71
C59.2		ii) Install	no	1	199.01	199.01
C59.3		iii) Tails 16mm² Cu, complete with Lugs, bolts, nuts, washers and phase colour shrink	set	1	233.50	233.50
		LV Cable installation				
	PSEB.5&5.1&5.2&14.1&14.8&14.10	16mm² x 3core Cu, SWA, PVC from Gatehouse DB (to confirm)				
C59.4		i) Supply	m	90	193.09	17 378.10
C59.5		ii) Install	m	90	36.39	3 275.10
C59.6		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	213.34	426.68
		DISTRIBUTION BOARD INSTALLATION				
	PSEB.6&6.1&6.2&16&16.1&16.3&16.9	As per the General Electrical Specification, the complete electrical building installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings.				
					Carried Forward	23 324.10

					Brought Forward	23 324.10
		Distribution Boards DB - WB Flush Mounted (white) as per drawing complete with all equipment including surge arrestors, frames, panels, interior wiring & bus bars				
C59.7		i) Supply	no	1	4 197.17	4 197.17
C59.8		ii) Install	no	1	995.06	995.06
C59.9		iii) Labelling, complete circuits, cable and legend card.	sum	1	2 666.77	2 666.77
		Junction Box - Supply cable terminated with 10mm^2 GP wire in 25mm PVC conduit - 400AFFGL				
C59.10		i) Supply	no	1	707.47	707.47
C59.11		ii) Install	no	1	59.71	59.71
		SMALL POWER INSTALLATION				
	PSEB.10& 10.1&10.3 &EB21&21 .1&25.3	Supply, wire and install Power outlets with all equipment and material needed to complete the installation all equipment to carry the SABS mark, shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings.				
		Power Outlets Un-switch socket outlet (WHT), European two three socket 2400 Maintelligent USB: equal or similar to Legrand Ysalis – 300mm AFFL				
C59.12		i) Supply	no	1	1 071.38	1 071.38
C59.13		ii) Install	no	1	46.44	46.44
	PSEB.10.2	Cluster D: 3 way - 16Amp Switch socket outlet & 2 x Euro three pin sockets & 2 x Data RJ45 outlet complete: equal and similar to Legrand - 572132, 572137, 572341, 572302, 689027SA, 576700, 689027DIV				
C59.14		i) Supply	no	1	1 018.85	1 018.85
C59.15		ii) Install	no	1	72.97	72.97
	17.1	**Power Points**				
		Wiring with 20mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, adaptors, couplings, bends, tees, saddles, lock-nuts, bushing, and material needed to complete the installation, installed in conduit and wire ways Power Points for SSO complete with 2x2.5mm^2 GP-wire with 1.5mm2 BCEW surface/flush mounted in PVC conduit.				
C59.16		i) Supply	no	2	325.45	650.90
					Carried Forward	34 810.82

					Brought Forward	34 810.82
C59.17		ii) Install	no	2	283.93	567.86
		LIGHTING INSTALLATION				
	PSEB.9& 20&25.2	As per the General Electrical Specification, the complete electrical building installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings, position of equipment will be determine on site.				
		Light Fittings				
	PSEB.9.1 &9.4&20.1 &20.2&20. 3&20.5&20 .6	Light fittings complete with electronic gear and energy saving or LED lamps, all equipment to carry the SABS mark, as per drawings. Lamps to have a green cup or tree mark. Contractor to provide samples for approval to the Engineer before ordering fittings.				
		Type B: 15W LED Round Bulkhead, equal or similar to - Lighting Innovations Africa - Mmi ISV - BC L-15w-4K-PN (Outside Wall Bulkhead and stairs)				
C59.18		i) Supply	no	2	1 238.77	2 477.54
C59.19		ii) Install	no	2	79.60	159.20
		Type Q: 100W LED, floodlight, equal or similar to - Lighting Innovations Africa - Captiva FL-100-WHT-4K-IP65-PN (Roof - Plant Area)				
C59.20		i) Supply	no	3	5 634.03	16 902.09
C59.21		ii) Install	no	3	112.78	338.34
	20.15	**Light switches**				
		20A Photocell "Nema" socket mounted in bulkhead fitting, complete with all material needed to complete the installation.				
C59.22		i) Supply	no	1	1 340.02	1 340.02
C59.23		ii) Install	no	1	86.24	86.24
	PSEB.9.3	Motion Sensor Switch: 2300W Occupancy Motion Sensor switch, 10A relay, flush ceiling mounted, 360deg, 7sec-99min, 6m, complete equal or similar to - Lighting Innovations Africa - CO96-WHT-F				
C59.24		i) Supply	no	1	2 909.06	2 909.06
C59.25		ii) Install	no	1	86.24	86.24
		Lighting Points				
	PSEB.9.1 &17.1&20 .11	Wiring and 20mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, adaptors, couplings, bends, tees, saddles, lock-nuts, bushing, and material needed to complete the installation. Installed in conduit and wire ways complete				
					Carried Forward	59 677.41

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					Brought Forward	59 677.41
		Light/Switch Points for fittings complete with 2x1.5mm^2 GP-wire with 1mm2 BCEW surface mounted in PVC conduit.				
C59.26		i) Supply	no	5	130.69	653.45
C59.27		ii) Install	no	5	151.91	759.55
	PSEB.9.3	Motion Sensor Points complete with 3x1.5mm^2 GP-wire from circuit to lights, mounted in PVC conduit.				
C59.28		i) Supply	no	1	130.69	130.69
C59.29		ii) Install	no	1	151.91	151.91
		Photo Cell Points complete with 3x1.5mm^2 GP-wire with 1mm 2BCEW surface mounted in PVC conduit.				
C59.30		i) Supply	no	1	130.69	130.69
C59.31		ii) Install	no	1	151.91	151.91
		Excavations for Cable trenches				
	14.2&14.3&14.5&14.7	LV 0.8m deep x 0.6m wide x running meter complete with all backfill material to be sifted soil and compacted in layers to 90% MOD for trenches and 97% MOD for road crossings test certificates to be provided and remove surplus material.				
C59.32		Pickable soil, by hand or machine. Excavate, backfill and compact	m^3	45	123.62	5 562.90
C59.33		Soft rock, machine and pneumatic equipment. Excavate, backfill and compact and removal of all redundant and surplus material	m^3	5	268.75	1 343.75
C59.34	14.4	Supply, import and install sand bedding. All backfill material to be sifted soil and compacted to 90% MOD	m^3	2	396.68	793.36
C59.35		Compaction Test (Troxler) every 50m of trench, test certificates to be provided.	no	2	1 612.50	3 225.00
		Supply and lay 500mm wide PVC marker tape 300mm above all LV cable				
C59.36		i) Supply	m	90	2.68	241.20
C59.37		ii) Install	m	90	1.99	179.10
		Drilling for sleeves under road surfaces, water channels or paving (include sleeve, site establishment, excavation for drill hole)				
C59.38		i) Drill 110mmØ (Soft)	m	2	849.25	1 698.50
C59.39		ii) Drill 110mmØ (Intermediate)	m	2	213.92	427.84
	14.9	Cable sleeves as per Specification, 110mm dia PVC complete with couplings and 1mm galv. draw wire				
C59.40		i) Supply	m	18	123.62	2 225.16
					Carried Forward	77 352.42

					Brought Forward	77 352.42
C59.41		ii) Install	m	18	48.38	870.84
	EB.27	**Test and Commissioning**				
		Test and commissioning complete electrical network, issue test certificates with maintenance manuals complete:				
		Test and commissioning complete LV Cable network, issue test certificates				
C59.42	27.1	i) Certificate of compliance (COC's)	sum	-	2030.33	2 030.33
C59.43		ii) Continuity test	sum	-	663.37	663.37
C59.44		iii) Insulation test	sum	-	663.37	663.37
	EB.28	**AS-Build Drawings**				
C59.45		Preparing and furnishing the marked-up "As built" drawings of complete electrical installation, with all user manuals and all test certificates for complete LV installation	sum	-	2331.77	2 331.77
		Other Items (Specify items)				
		a)				
		b)				
		BILL NO. C59 **FLAMMABLE STORAGE BUILDING** **ELECTRICAL INSTALLATION**				
		Carried forward to Summary of Bills			**Total**	83 912.10

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Electrical installation

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		SECTION - E				
		REMAINING WORKS				
		Sub portion C8 - Building works				
		BILL NO. C60 **PORTION C ELECTRICAL**				
		MOTOR CONTROL CENTERS AND DISTRIBUTION				
	EMCC 12.1	**DESIGN, DRAWINGS AND GENERAL**				
C60.1	PSGEN B	Provide designs, calculations as stipulated in the contract (refer to PSGEN.B Design and Drawings)	Sum	-	16125	16 125.00
C60.2	EMCC 12.1 (a)	Provide motor control center design drawings and wiring diagrams (refer to particular specifications PMS)	Sum	-	16125	16 125.00
C60.3	EMCC 12.1 (b)	Provide operating all maintenance manuals and "as-built" drawings as specified (refer to particular specification PMS)	Sum	-	7796.65	7 796.65
	EMCC 12.2	**SUPPLY AND DELIVERY TO SITE**				
C60.4	EMCC 12.2 (a)	Supply and delivery to site complete DB (refer to project specification PSPMC-6.A)	Sum	-	159961.77	159 961.77
C60.5	EMCC 12.2 (a)	Supply and delivery to site complete DB (refer to project specification PSPMC-6.B)	Sum	-	167382.62	167 382.62
C60.6	EMCC 12.2 (a)	Supply and delivery to site complete DB (refer to project specification PSPMC-6.C)	Sum	-	166741.2	166 741.20
C60.7	EMCC 12.2 (a)	Supply and delivery to site complete DB (refer to project specification PSPMC-6.D)	Sum	-	167306.2	167 306.20
C60.8	EMCC 12.2 (a)	Supply and delivery to site complete DB (refer to project specification PSPMC-6.E)	No.	2	167 355.95	334 711.90
	EMCC 12.3	**INSTALLATION**				
C60.9	EMCC 12.3 (a)	Site installation to site complete DB (refer to project specification PSPMC-6.A)	Sum	-	11277.38	11 277.38
C60.10	EMCC 12.3 (a)	Site installation to site complete DB (refer to project specification PSPMC-6.B)	Sum	-	11277.38	11 277.38
C60.11	EMCC 12.3 (a)	Site installation to site complete DB (refer to project specification PSPMC-6.C)	Sum	-	11277.38	11 277.38
C60.12	EMCC 12.3 (a)	Site installation to site complete DB (refer to project specification PSPMC-6.D)	Sum	-	11277.38	11 277.38
					Carried Forward	1 081 259.86

					Brought Forward	1 081 259.86
C60.13	EMCC 12.3 (a)	Site installation to site complete DB (refer to project specification PSPMC-6.E)	No.	2	11 277.38	22 554.76
	EMCC 12.4	**COMMISSIONING**				
C60.14	EMCC 12.4 (a)	Commissioning to site complete DB (refer to project specification PSPMC-6.A)	Sum	-	703.58	703.58
C60.15	EMCC 12.4 (a)	Commissioning to site complete DB (refer to project specification PSPMC-6.B)	Sum	-	703.58	703.58
C60.16	EMCC 12.4 (a)	Commissioning to site complete DB (refer to project specification PSPMC-6.C)	Sum	-	703.58	703.58
C60.17	EMCC 12.4 (a)	Commissioning to site complete DB (refer to project specification PSPMC-6.D)	Sum	-	703.58	703.58
C60.18	EMCC 12.4 (a)	Commissioning to site complete DB (refer to project specification PSPMC-6.E)	Sum	-	703.58	703.58
	EMCC	**DESIGNER / CONTRACTOR SPECIFIC REQUIREMENTS**				
C60.19	EMCC	All other items or equipment not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify)	Item			
		SMALL POWER AND LIGHTING INSTALLATIONS				
		Tenderers shall allow for any cost involved with complying to this tender for the supply, store, install, protection, test and commission of the following:				
	ESPL 6	**DISTRIBUTION BOARDS**				
		Distribution board complete with sheet metal tray, frames, sub-frames with all accessories as specified in the City of Cape Town specification. Flush mounted fire panel enclosure manufactured as per City of Cape Town specifications				
C60.20		Supply	No	8	2 680.04	21 440.32
C60.21		Install	No	8	331.69	2 653.52
					Carried Forward	1 131 426.36

[redacted]

					Brought Forward	1 131 426.36
		Flush mounted access control panel enclosure manufactured as per City of Cape Town Specifications				
C60.22		Supply	No	8	2 680.04	21 440.32
C60.23		Install	No	8	331.69	2 653.52
		Flush mounted fire detection control panel enclosure manufactured as per City of Cape Town Specifications				
C60.24		Supply	No	8	2 680.04	21 440.32
C60.25		Install	No	8	331.69	2 653.52
		TELEPHONE DISTRIBUTION DUCTS				
		200 mm thick pressed wood board installed in telephone ducts complete with anchors, etc 1000mm high x 800mm wide				
C60.26		Supply	No	8	2 680.04	21 440.32
C60.27		Install	No	8	331.69	2 653.52
	ESPL 3	**DRAW WIRE**				
		2mm Diameter stainless steel draw wire drawn into wire ways				
C60.28		Supply	m	14000	5.36	75 040.00
C60.29		Install	m	14000	1.99	27 860.00
		MANHOLES				
		300x300x300 deep manhole including excavation, building, backfilling and heavy duty cast iron cover.				
C60.30		Supply	No	20	2 687.50	53 750.00
C60.31		Install	No	20	1 290.00	25 800.00
		600x600x600 deep manhole including excavation, building, backfilling and heavy duty cast iron cover.				
C60.32		Supply	No	20	3 762.50	75 250.00
C60.33		Install	No	20	1 451.25	29 025.00
		1000x1000x1000 deep manhole including excavation, building, backfilling and heavy duty cast iron cover.				
C60.34		Supply	No	10	5 912.50	59 125.00
C60.35		Install	No	10	1 666.25	16 662.50
	ESPL 3	**PVC CONDUIT AND ACCESSORIES**				
		Flush mounted, installed cast into concrete, placed into position for building into brickwork or concrete or chased into brickwork or concrete complete with couplings, bends, tees, saddles etc.				
		20mm Diameter				
C60.36		Supply	m	9600	7.78	74 688.00
C60.37		Install	m	9600	15.92	152 832.00
		25mm Diameter				
C60.38		Supply	m	3040	11.26	34 230.40
C60.39		Install	m	3040	18.58	56 483.20
					Carried Forward	1 884 453.98

					Brought Forward	1 884 453.98
		32mm Diameter				
C60.40		Supply	m	640	19.64	12 569.60
C60.41		Install	m	640	21.23	13 587.20
		40mm Diameter				
C60.42		Supply	m	400	33.52	13 408.00
C60.43		Install	m	400	23.89	9 556.00
		50mm Diameter				
C60.44		Supply	m	320	43.69	13 980.80
C60.45		Install	m	320	26.53	8 489.60
	ESPL 3	**CONDUIT ACCESSORIES**				
		Round box 8 Way knockout for 20mm diameter conduit				
C60.46		Supply	No	120	8.04	964.80
C60.47		Install	No	120	19.90	2 388.00
		Coupling for 20mm diameter conduit				
C60.48		Supply	No	1920	1.34	2 572.80
C60.49		Install	No	1920	2.66	5 107.20
		Coupling for 25mm diameter conduit				
C60.50		Supply	No	608	1.68	1 021.44
C60.51		Install	No	608	2.66	1 617.28
		Coupling for 32mm diameter conduit				
C60.52		Supply	No	128	4.69	600.32
C60.53		Install	No	128	2.66	340.48
		Coupling for 40mm diameter conduit				
C60.54		Supply	No	80	6.70	536.00
C60.55		Install	No	80	2.66	212.80
		Coupling for 50mm diameter conduit				
C60.56		Supply	No	64	8.04	514.56
C60.57		Install	No	64	2.66	170.24
		Adaptors for 20mm diameter conduit				
C60.58		Supply	No	1840	1.34	2 465.60
C60.59		Install	No	1840	2.66	4 894.40
		Adaptors for 25mm diameter conduit				
C60.60		Supply	No	960	3.62	3 475.20
C60.61		Install	No	960	2.66	2 553.60
		Adaptors for 32mm diameter conduit				
C60.62		Supply	No	40	5.02	200.80
C60.63		Install	No	40	2.66	106.40
		Adaptors for 40mm diameter conduit				
C60.64		Supply	No	40	6.70	268.00
C60.65		Install	No	40	2.66	106.40
		Adaptors for 50mm diameter conduit				
C60.66		Supply	No	64	8.04	514.56
C60.67		Install	No	64	2.66	170.24
					Carried Forward	1 986 846.30

[redacted]

					Brought Forward	1 986 846.30
	ESPL 3	**RIGID PVC WALL BOXES**				
		Wall Boxes placed in position for casting into concrete, building or chased into brickwork or surface mounted to brickwork including locknuts				
		100 x 50 x 50mm box [clusterloc]				
C60.68		Supply	No	2400	6.70	16 080.00
C60.69		Install	No	2400	19.90	47 760.00
		100 x 100 x 50mm box [clusterloc]				
C60.70		Supply	No	1200	9.38	11 256.00
C60.71		Install	No	1200	19.90	23 880.00
		300 x 300 x 150mm box [clusterloc]				
C60.72		Supply	No	240	188.94	45 345.60
C60.73		Install	No	240	26.53	6 367.20
	ESPL 3	**PVC TRUNKING**				
		PVC Trunking complete with PVC cover, coupling, angle, tee, stop end, etc. surface mounted to brickwork, concrete, steel, wood, etc.				
		40 x 40 x 3mm Trunking				
C60.74		Supply	m	400	30.49	12 196.00
C60.75		Install	m	400	13.27	5 308.00
		50 x 50 x 3mm Trunking				
C60.76		Supply	m	640	54.04	34 585.60
C60.77		Install	m	640	15.92	10 188.80
		75 x 75 x 3mm Trunking				
C60.78		Supply	m	200	87.10	17 420.00
C60.79		Install	m	200	18.58	3 716.00
		100 x 100 x 3mm Trunking				
C60.80		Supply	m	144	142.94	20 583.36
C60.81		Install	m	144	26.53	3 820.32
		100 x 100 x 3mm Trunking				
C60.82		Supply	m	80	142.94	11 435.20
C60.83		Install	m	80	26.53	2 122.40
		40 x 40 x 3mm End Caps				
C60.84		Supply	No.	80	10.72	857.60
C60.85		Install	No.	80	6.63	530.40
		50 x 50 x 3mm Trunking				
C60.86		Supply	No.	80	12.73	1 018.40
C60.87		Install	No.	80	13.27	1 061.60
		75 x 75 x 3mm Trunking				
C60.88		Supply	No.	80	14.74	1 179.20
C60.89		Install	No.	80	13.27	1 061.60
					Carried Forward	2 264 619.58

					Brought Forward	2 264 619.58
		100 x 100 x 3mm Trunking				
C60.90		Supply	No.	80	22.11	1 768.80
C60.91		Install	No.	80	13.27	1 061.60
		100 x 100 x 3mm Trunking				
C60.92		Supply	No.	240	22.11	5 306.40
C60.93		Install	No.	240	13.27	3 184.80
		UNDERSCREED DUCTING SYSTEM				
		220x35mm under screed galvanized ducting with breakout outlet points at 500mm centre to accommodate a flush access floor box				
C60.94		Supply	m	240	962.60	231 024.00
C60.95		Install	m	240	86.24	20 697.60
		205 x 287 x 79mm Flush floor box for under screed duction system as specified with removable lid and concrete ingress prevention plate equal or similar to Cabstrut Floor box - Colour to be advised				
C60.96		Supply	No	40	1 433.82	57 352.80
C60.97		Install	No	40	265.35	10 614.00
	ESPL 3	**STAINLESS STEEL CONDUIT AND ACCESSORIES**				
		316 Stainless steel conduit surface mounted onto brickwork or concrete complete with couplings, bends, tees, saddles etc.				
		20mm Diameter conduit				
C60.98		Supply	m	1500	227.80	341 700.00
C60.99		Install	m	1500	29.19	43 785.00
		20mm Flexible diameter conduit				
C60.100		Supply	m	200	274.12	54 824.00
C60.101		Install	m	200	134.38	26 876.00
		25mm Diameter conduit				
C60.102		Supply	m	500	305.53	152 765.00
C60.103		Install	m	500	39.81	19 905.00
		25mm Flexible diameter conduit				
C60.104		Supply	m	200	381.62	76 324.00
C60.105		Install	m	200	134.38	26 876.00
	ESPL 3	**STAINLESS STEEL CONDUIT ACCESSORIES**				
		316 Stainless Steel conduit complete with cover, countersink bolt etc.				
		Round box 1-4 Way for 20mm diameter conduit				
C60.106		Supply	No	500	376.25	188 125.00
C60.107		Install	No	500	102.12	51 060.00
		Coupling for 20mm diameter conduit				
C60.108		Supply	No	400	46.76	18 704.00
C60.109		Install	No	400	21.50	8 600.00
					Carried Forward	3 605 173.58

					Brought Forward	3 605 173.58
		Adaptors for 20mm diameter conduit				
C60.110		Supply	No	400	59.12	23 648.00
C60.111		Install	No	400	21.50	8 600.00
		Coupling for 25mm diameter conduit				
C60.112		Supply	No	100	58.05	5 805.00
C60.113		Install	No	100	26.88	2 688.00
		Adaptors for 25mm diameter conduit				
C60.114		Supply	No	200	59.12	11 824.00
C60.115		Install	No	200	26.88	5 376.00
	ESPL 3	**STAINLESS STEEL FLEXIBLE CONDUIT**				
		316 Stainless Steel Flexible conduit				
		20mm Diameter x 1000mm long complete with connectors at both ends				
C60.116		Supply	No	100	376.25	37 625.00
C60.117		Install	No	100	18.58	1 858.00
		25mm Diameter x 1000mm long complete with connectors at both ends				
C60.118		Supply	No	100	424.62	42 462.00
C60.119		Install	No	100	21.23	2 123.00
	EMCA 7	**WIRING CHANNEL**				
		316 Stainless steel wiring channel complete with stainless steel cover surface or suspended from concrete steelwork or trusses complete with hangers, brackets, anchors, etc.				
		P1000 Channel				
C60.120		Supply	m	300	865.12	259 536.00
C60.121		Install	m	300	39.81	11 943.00
		P8000 Channel				
C60.122		Supply	m	500	1 445.62	722 810.00
C60.123		Install	m	500	39.81	19 905.00
		P8000 End Cap				
C60.124		Supply	No	100	118.19	11 819.00
C60.125		Install	No	100	19.90	1 990.00
		P8000 Elbow				
C60.126		Supply	No	20	924.62	18 492.40
C60.127		Install	No	20	26.53	530.60
		P8000 Tee				
C60.128		Supply	No	20	1 206.02	24 120.40
C60.129		Install	No	20	33.16	663.20
		P8000 4 Way				
C60.130		Supply	No	20	1 599.99	31 999.80
C60.131		Install	No	20	33.16	663.20
					Carried Forward	4 851 655.18

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					Brought Forward	4 851 655.18
		P8000 Distribution Board Outlet				
C60.132		Supply	No	20	1 206.02	24 120.40
C60.133		Install	No	20	33.16	663.20
		P8000 Distribution Board Outlet				
C60.134		Supply	No	20	1 206.02	24 120.40
C60.135		Install	No	20	33.16	663.20
		P9000 Channel				
C60.136		Supply	m	310	1 940.08	601 424.80
C60.137		Install	m	310	39.81	12 341.10
		P9000 End Cap				
C60.138		Supply	No	50	126.64	6 332.00
C60.139		Install	No	50	19.90	995.00
		P9000 Elbow				
C60.140		Supply	No	20	1 206.02	24 120.40
C60.141		Install	No	20	26.53	530.60
		P9000 Tee				
C60.142		Supply	No	20	1 374.86	27 497.20
C60.143		Install	No	20	33.16	663.20
		P9000 4 Way				
C60.144		Supply	No	20	1 618.07	32 361.40
C60.145		Install	No	20	33.16	663.20
		P9000 Distribution Board Outlet				
C60.146		Supply	No	20	1 398.98	27 979.60
C60.147		Install	No	20	33.16	663.20
		P9000 Distribution Board Outlet				
C60.148		Supply	No	20	1 398.98	27 979.60
C60.149		Install	No	20	33.16	663.20
		All accessories for wiring duct support, ceiling support every wood / concrete truss, cover clips, covers, channels & combination supports, clamps, fittings, gripple every 1.5m or every wood / concrete truss, nuts, bolts all that may be required				
C60.150		Supply	Sum	-	46439.71	46 439.71
C60.151		Install	Sum	-	11494.98	11 494.98
	ESPL	**POWER SKIRTING AND ACCESSORIES**				
		The rates for power skirting shall include for splices, jointing, drilling, cut opening in the back of the power skirting for access to draw box, etc. Power skirting surface mounted to brickwork or concrete complete with cover equal or similar to OL801 - Colour to be advised				
		2 Tier Three-compartment skirting				
C60.152		Supply	m	120	279.17	33 500.40
C60.153		Install	m	120	39.81	4 777.20
					Carried Forward	5 761 649.17

					Brought Forward	5 761 649.17
		2 Tier end cap				
C60.154		Supply	No	20	45.56	911.20
C60.155		Install	No	20	19.90	398.00
		2 Tier External elbow				
C60.156		Supply	No	15	71.03	1 065.45
C60.157		Install	No	15	26.53	397.95
		2 Tier Flat elbow				
C60.158		Supply	No	15	176.88	2 653.20
C60.159		Install	No	15	26.53	397.95
		2 Tier Standard tee				
C60.160		Supply	No	15	93.80	1 407.00
C60.161		Install	No	15	33.16	497.40
		2 Tier Flat tee				
C60.162		Supply	No	15	183.58	2 753.70
C60.163		Install	No	15	33.16	497.40
		Switching Accessories complete with cover plate as required and fitted to power skirting equal or similar to Clipsal S2000				
		16A Three-pin switched socket outlet				
C60.164		Supply	No	20	140.71	2 814.20
C60.165		Install	No	20	33.16	663.20
		16A Three-pin dedicated switched socket outlet with shaved earth pin				
C60.166		Supply	No	20	211.72	4 234.40
C60.167		Install	No	20	33.16	663.20
		20A Double-pole isolator with cord grip				
C60.168		Supply	No	50	317.59	15 879.50
C60.169		Install	No	50	33.16	1 658.00
		30A Double-pole isolator				
C60.170		Supply	No	50	335.00	16 750.00
C60.171		Install	No	50	33.16	1 658.00
		Telephone Point				
C60.172		Supply	No	20	335.00	6 700.00
C60.173		Install	No	20	33.16	663.20
		Data Point				
C60.174		Supply	No	20	238.52	4 770.40
C60.175		Install	No	20	19.90	398.00
		Blank cover plate for telephone / data points				
C60.176		Supply	No	50	238.52	11 926.00
C60.177		Install	No	50	19.90	995.00
	ESPL	**UTILITY POWER POLE AND ACCESSORIES**				
		Utility Pole mounted on the final floor level up to the concrete soffit complete with complete with pole,				
					Carried Forward	5 842 401.52

					Brought Forward	5 842 401.52
		covers, base plate, ceiling flange and jack assembly, outlet kit containing body, universal cradle, covers and dividers equal or similar to Cabstrut Station Master utility pole - Colour to be advised				
		3.5m Pole and accessories as specified				
C60.178		Supply	No	2	1 675.02	3 350.04
C60.179		Install	No	2	199.01	398.02
		4m Pole and accessories as specified				
C60.180		Supply	No	5	1 943.03	9 715.15
C60.181		Install	No	5	232.18	1 160.90
		Switching Accessories complete with cover plate as required and fitted to Utility Pole equal or similar to Clipsal S2000				
		16A Three-pin switched socket outlet				
C60.182		Supply	No	3	1 943.03	5 829.09
C60.183		Install	No	3	232.18	696.54
		16A Three-pin dedicated switched socket outlet with shaved earth pin				
C60.184		Supply	No	3	148.07	444.21
C60.185		Install	No	3	33.16	99.48
		Telephone Point				
C60.186		Supply	No	3	148.07	444.21
C60.187		Install	No	3	33.16	99.48
		Data Point				
C60.188		Supply	No	3	148.07	444.21
C60.189		Install	No	3	26.53	79.59
		Blank cover plate for telephone / data points				
C60.190		Supply	No	3	87.10	261.30
C60.191		Install	No	3	26.88	80.64
	ESPL 4	**LIGHT SWITCHES**				
		Light switch complete with cover and switch installed in 100 x 50 x 50mm wall boxes equal or similar to Clipsal S2000 - Colour to be advised				
		16A One-lever one-way switch				
C60.192		Supply	No	14	54.94	769.16
C60.193		Install	No	14	26.53	371.42
		16A Two-lever one-way switch				
C60.194		Supply	No	40	75.30	3 012.00
C60.195		Install	No	40	33.16	1 326.40
		16A One-lever two-way switch				
C60.196		Supply	No	2	66.80	133.60
C60.197		Install	No	2	39.81	79.62
		16A Two-lever two-way switch				
					Carried Forward	5 871 196.58

					Brought Forward	5 871 196.58
C60.198		Supply	No	5	80.40	402.00
C60.199		Install	No	5	46.44	232.20
		16A Two-lever with one-way and one two-way switch				
C60.200		Supply	No	5	113.91	569.55
C60.201		Install	No	5	53.07	265.35
		16A One-lever one way watertight switch				
C60.202		Supply	No	1	121.94	121.94
C60.203		Install	No	1	39.81	39.81
		16A One-lever intermediate switch				
C60.204		Supply	No	1	241.21	241.21
C60.205		Install	No	1	26.53	26.53
		3.4 Amp Rotary dimmer with integrated switch				
C60.206		Supply	No	1	1 273.02	1 273.02
C60.207		Install	No	1	59.71	59.71
		Touch press mechanical on/off dimming with 500VA Universal tactile dimmer module				
C60.208		Supply	No	1	1 273.02	1 273.02
C60.209		Install	No	1	59.71	59.71
		Touch press mechanical on/off dimming with 800W Universal tactile dimmer module				
C60.210		Supply	No	1	1 608.03	1 608.03
C60.211		Install	No	1	59.71	59.71
		Blank Cover plate for 100mm x 50mm box				
C60.212		Supply	No	50	26.80	1 340.00
C60.213		Install	No	50	13.27	663.50
	ESPL 5	**SWITCHED SOCKET OUTLET**				
		Switched socket outlet complete with cover and socket installed in 100 x 100 x 50mm wall boxes equal or similar to Clipsal S2000 - Colour to be advised				
		16A Three-pin switched socket outlet				
C60.214		Supply	No	20	179.56	3 591.20
C60.215		Install	No	20	33.16	663.20
		16A Three-pin dedicated switched socket outlet with shaved earth pin				
C60.216		Supply	No	1	167.51	167.51
C60.217		Install	No	1	33.16	33.16
		16A Double three-pin switched socket outlet				
C60.218		Supply	No	5	151.09	755.45
C60.219		Install	No	5	33.16	165.80
		16A Double three-pin dedicated switched socket outlet with shaved earth pin				
C60.220		Supply	No	1	185.07	185.07
C60.221		Install	No	1	33.16	33.16
					Carried Forward	5 885 026.42

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					Brought Forward	5 885 026.42
		Blank Cover plate for 100mm x 100mm box				
C60.222		Supply	No	5	26.80	134.00
C60.223		Install	No	5	13.27	66.35
	ESPL 5	**ISOLATORS**				
		Isolator complete with cover and socket installed in 100 x 100 x 50mm wall boxes equal or similar to Clipsal S2000 - Colour to be advised				
		30A Double pole isolator				
C60.224		Supply	No	20	178.22	3 564.40
C60.225		Install	No	20	33.16	663.20
		60A Double pole isolator				
C60.226		Supply	No	1	190.29	190.29
C60.227		Install	No	1	33.16	33.16
		30A Triple-pole isolator				
C60.228		Supply	No	2	253.26	506.52
C60.229		Install	No	2	39.81	79.62
		60A Triple-pole isolator				
C60.230		Supply	No	2	253.26	506.52
C60.231		Install	No	2	39.81	79.62
	ESPL 5	**GENERAL SWITCHES**				
		General switches complete with accessories				
		Day / night switch equal or similar Royce Thompson				
C60.232		Supply	No	20	1 340.02	26 800.40
C60.233		Install	No	20	86.24	1 724.80
		Fireman Switch				
C60.234		Supply	No	50	5 092.07	254 603.50
C60.235		Install	No	50	199.01	9 950.50
		4.7VA Vertical shaver socket outlets				
C60.236		Supply	No	2	871.01	1 742.02
C60.237		Install	No	2	86.24	172.48
		5A Round three-pin unswitched socket outlet installed in a round conduit box or 100x50x50mm box (box measured elsewhere)				
C60.238		Supply	No	20	38.19	763.80
C60.239		Install	No	20	26.53	530.60
		5A three-pin unswitched socket outlet to fit P8300 Wiring channel				
C60.240		Supply	No	100	38.19	3 819.00
C60.241		Install	No	100	26.53	2 653.00
		16A three-pin switched socket outlet in weatherproof box				
C60.242		Supply	No	50	340.37	17 018.50
C60.243		Install	No	50	46.44	2 322.00
					Carried Forward	6 212 950.70

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					Brought Forward	6 212 950.70
		16A Double three-pin switched socket outlet in weatherproof box				
C60.244		Supply	No	50	338.69	16 934.50
C60.245		Install	No	50	46.44	2 322.00
	ESPL 4	**OCCUPANCY SENSOR**				
		WALL SENSORS				
		Passive infrared wall switch sensor 93m² 180° coverage and Automatic on/off and Manual on / automatic off control as per specification.				
C60.246		Supply	No	10	3 118.41	31 184.10
C60.247		Install	No	10	86.24	862.40
		Ultrasonic wall switch 37m² 180° coverage with Automatic on/off and Manual on / automatic off control as per specification.				
C60.248		Supply	No	5	3 118.41	15 592.05
C60.249		Install	No	5	86.24	431.20
		Ultrasonic and Passive infrared wall switch 93m² 180° coverage and Automatic on/off and Manual on / automatic off control as per specification.				
C60.250		Supply	No	20	3 118.41	62 368.20
C60.251		Install	No	20	86.24	1 724.80
		Ultrasonic and Passive infrared ceiling sensor 46m² coverage with Automatic on/off and Manual on / automatic off control as per specification.				
C60.252		Supply	No	5	3 118.41	15 592.05
C60.253		Install	No	5	86.24	431.20
		Ultrasonic and Passive infrared ceiling sensor 93m² coverage with intelligent and Automatic on/off and Manual on / automatic off control as per specification.				
C60.254		Supply	No	5	3 118.41	15 592.05
C60.255		Install	No	5	86.24	431.20
		Ultrasonic and Passive infrared ceiling sensor 186m² coverage with Automatic on/off and Manual on / automatic off control.				
C60.256		Supply	No	10	4 090.89	40 908.90
C60.257		Install	No	10	86.24	862.40
		Ultrasonic ceiling sensor 46m² coverage with Automatic on/off and Manual on / automatic off control as per specification.				
C60.258		Supply	No	20	3 118.41	62 368.20
C60.259		Install	No	20	86.24	1 724.80
		Ultrasonic ceiling sensor 93m² coverage with Automatic on/off and Manual on / automatic off control as per specification.				
C60.260		Supply	No	1	3 118.41	3 118.41
C60.261		Install	No	1	86.24	86.24
					Carried Forward	6 485 485.40

					Brought Forward	6 485 485.40
		Ultrasonic ceiling sensor 186m² coverage with Automatic on/off and Manual on / automatic off control 230VAC.				
C60.262		Supply	No	1	4 090.89	4 090.89
C60.263		Install	No	1	86.24	86.24
	ESPL 5	**WEATHERPROOF ISOLATORS**				
		20A Double-pole isolator in weatherproof box				
C60.264		Supply	No	30	365.82	10 974.60
C60.265		Install	No	30	46.44	1 393.20
		30A Double-pole isolator in weatherproof box				
C60.266		Supply	No	40	365.82	14 632.80
C60.267		Install	No	40	46.44	1 857.60
		60A Double-pole isolator in weatherproof box				
C60.268		Supply	No	20	377.88	7 557.60
C60.269		Install	No	20	46.44	928.80
		30A Triple-pole isolator in weatherproof box				
C60.270		Supply	No	30	440.87	13 226.10
C60.271		Install	No	30	53.07	1 592.10
		60A Triple-pole isolator in weatherproof box				
C60.272		Supply	No	40	440.87	17 634.80
C60.273		Install	No	40	53.07	2 122.80
	ESPL 5	**FLOOR RETICULATION BOX AND ACCESSORIES**				
		Floor reticulation box for under screed floor boxes flush with the final floor surface complete with accessories draw box, removable lid and concrete ingress prevention plate equal or similar to Cabstrut Floor box - Colour to be advised				
		205 x 287 x 79mm Flush floor box and accessories as specified				
C60.274		Supply	No	6	1 433.82	8 602.92
C60.275		Install	No	6	265.35	1 592.10
		Floor reticulation box for access floor boxes flush with the final access floor surface complete with accessories draw box and removable lid equal or similar to Cabstrut Floor box - Colour to be advised				
		205 x 287 x 79mm floor box and accessories as specified				
C60.276		Supply	No	1	1 433.82	1 433.82
C60.277		Install	No	1	265.35	265.35
		Switching Accessories complete with cover plate as required and fitted to floor boxes equal or similar to Clipsal S2000				
		16A Three-pin switched socket outlet				
					Carried Forward	6 573 477.12

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					Brought Forward	6 573 477.12
C60.278		Supply	No	4	100.50	402.00
C60.279		Install	No	4	33.16	132.64
		16A Three-pin dedicated switched socket outlet				
C60.280		Supply	No	4	127.30	509.20
C60.281		Install	No	4	33.16	132.64
		Telephone Point				
C60.282		Supply	No	2	87.10	174.20
C60.283		Install	No	2	26.53	53.06
		Data Point				
C60.284		Supply	No	2	87.10	174.20
C60.285		Install	No	2	26.53	53.06
		Blank cover plate for telephone / data points				
C60.286		Supply	No	4	87.10	348.40
C60.287		Install	No	4	19.90	79.60
	ESPL 5	**WALL RETICULATION BOX AND ACCESSORIES**				
		Wall reticulation box for dry or brick walls complete with box, cradle and cover plate equal or similar to Cabstrut wall box - Colour to be advised				
		1 Tier wall box and accessories as specified				
C60.288		Supply	No	1	211.72	211.72
C60.289		Install	No	1	46.44	46.44
		2 Tier wall box and accessories as specified				
C60.290		Supply	No	1	317.59	317.59
C60.291		Install	No	1	59.71	59.71
		Switching Accessories complete with cover plate as required and fitted to the wall box equal or similar to Clipsal S2000				
		16A Three-pin switched socket outlet				
C60.292		Supply	No	1	117.25	117.25
C60.293		Install	No	1	33.16	33.16
		16A Three-pin dedicated switched socket outlet with shaved earth pin				
C60.294		Supply	No	1	119.93	119.93
C60.295		Install	No	1	33.16	33.16
		Telephone Point				
C60.296		Supply	No	1	85.09	85.09
C60.297		Install	No	1	13.27	13.27
		Data Point				
C60.298		Supply	No	1	85.09	85.09
C60.299		Install	No	1	13.27	13.27
		Blank cover plate for telephone / data points				
C60.300		Supply	No	1	85.09	85.09
C60.301		Install	No	1	13.27	13.27
					Carried Forward	6 576 770.16

					Brought Forward	6 576 770.16
	ESPL	**LUMINAIRES AND EQUIPMENT**				
	4	Supply and install luminaires or equipment complete with lamps, connections etc. mounted in position				
		Type A: [Refer to Project Specification]				
C60.302		Supply	No	30	8 527.35	255 820.50
C60.303		Install	No	30	86.24	2 587.20
		Type B: [Refer to Project Specification]				
C60.304		Supply	No	30	10 603.31	318 099.30
C60.305		Install	No	30		
		Type C: [Refer to Project Specification]				
C60.306		Supply	No	35	3 930.01	137 550.35
C60.307		Install	No	35	86.24	3 018.40
		Type D: [Refer to Project Specification]				
C60.308		Supply	No	35	6 811.59	238 405.65
C60.309		Install	No	35	86.24	3 018.40
		Type E: [Refer to Project Specification]				
C60.310		Supply	No	35	8 527.35	298 457.25
C60.311		Install	No	35	86.24	3 018.40
		Type F: [Refer to Project Specification]				
C60.312		Supply	No	35	10 603.31	371 115.85
C60.313		Install	No	35	86.24	3 018.40
		Type G: [Refer to Project Specification]				
C60.314		Supply	No	60	5 203.56	312 213.60
C60.315		Install	No	60	86.24	5 174.40
		Type H: [Refer to Project Specification]				
C60.316		Supply	No	60	7 094.60	425 676.00
C60.317		Install	No	60	86.24	5 174.40
		Type I: [Refer to Project Specification]				
C60.318		Supply	No	40	8 411.56	336 462.40
C60.319		Install	No	40	165.84	6 633.60
		Type J: [Refer to Project Specification]				
C60.320		Supply	No	20	8 411.56	168 231.20
C60.321		Install	No	20	165.84	3 316.80
		Type K: [Refer to Project Specification]				
C60.322		Supply	No	12	9 091.76	109 101.12
C60.323		Install	No	12	238.81	2 865.72
		Type L: [Refer to Project Specification]				
C60.324		Supply	No	40	14 028.40	561 136.00
C60.325		Install	No	40	331.69	13 267.60
		Type M: [Refer to Project Specification]				
C60.326		Supply	No	40	15 379.13	615 165.20
C60.327		Install	No	40	331.69	13 267.60
					Carried Forward	10 788 565.50

[redacted]

					Brought Forward	10 788 565.50
		Type N: [Refer to Project Specification]				
C60.328		Supply	No	20	9 038.28	180 765.60
C60.329		Install	No	20	86.24	1 724.80
		Type O: [Refer to Project Specification]				
C60.330		Supply	No	10	2 718.15	27 181.50
C60.331		Install	No	10	86.24	862.40
		Type P: [Refer to Project Specification]				
C60.332		Supply	No	20	2 215.85	44 317.00
C60.333		Install	No	20	86.24	1 724.80
		Type Q: [Refer to Project Specification]				
C60.334		Supply	No	10	4 563.57	45 635.70
C60.335		Install	No	10	86.24	862.40
	ESPL 9, 10 & 11	**TESTING, COMMISSIONING etc.**				
C60.336		Test and commission the complete low voltage system including certificate of compliance for each distribution board, asbuilt drawings,	Item		6 633.76	6 633.76
		BUILDINGS ELECTRICAL INSTALLATION				
	PSGEN (B)	**DESIGN, DRAWINGS AND GENERAL**				
C60.337	PSGEN B	Provide designs, calculations as stipulated in the contract (refer to PSGEN.B Design and Drawings)	Sum	-	2687.5	2 687.50
C60.338	PSGEN B	Provide operating all maintenance manuals and "as-built" drawings	Sum	-	3762.5	3 762.50
	ESPL 18.1	**SUPPLY AND DELIVERY TO SITE**				
C60.339	ESPL 18.1 (a)	Supply and delivery to site of a complete electrical installation (refer to project specification PSESPL-A)	Sum	-	0	Included
C60.340	ESPL 18.1 (a)	Supply and delivery to site of a complete electrical installation (refer to project specification PSESPL-B)	Sum	-	0	Included
C60.341	ESPL 18.1 (a)	Supply and delivery to site of a complete electrical installation (refer to project specification PSESPL-C)	Sum	-	0	Included
C60.342	ESPL 18.1 (a)	Supply and delivery to site of a complete electrical installation (refer to project specification PSESPL-D)	Sum	-	0	Included
C60.343	ESPL 18.1 (a)	Supply and delivery to site of a complete electrical installation (refer to project specification PSESPL-E)	Sum	-	0	Included
	ESPL 18.2	**INSTALLATION**				
C60.344	ESPL 18.2 (a)	Site Installation to site of a complete electrical installation (refer to project specification PSESPL-A)	Sum	-	0	Included
					Carried Forward	11 104 723.46

[redacted]

					Brought Forward	11 104 723.46
C60.345	ESPL 18.2 (a)	Site Installation to site of a complete electrical installation (refer to project specification PSESPL-B)	Sum	-	0	Included
C60.346	ESPL 18.2 (a)	Site Installation to site of a complete electrical installation (refer to project specification PSESPL-C)	Sum	-	0	Included
C60.347	ESPL 18.2 (a)	Site Installation to site of a complete electrical installation (refer to project specification PSESPL-D)	Sum	-	0	Included
C60.348	ESPL 18.2 (a)	Site Installation to site of a complete electrical installation (refer to project specification PSESPL-E)	Sum	-	0	Included
	ESPL 18.3	**COMMISSIONING**				
C60.349	ESPL 18.2 (a)	Commissioning to site of a complete electrical installation (refer to project specification PSESPL-A)	Sum	-	0	Included
C60.350	ESPL 18.2 (a)	Commissioning to site of a complete electrical installation (refer to project specification PSESPL-B)	Sum	-	0	Included
C60.351	ESPL 18.2 (a)	Commissioning to site of a complete electrical installation (refer to project specification PSESPL-C)	Sum	-	0	Included
C60.352	ESPL 18.2 (a)	Commissioning to site of a complete electrical installation (refer to project specification PSESPL-D)	Sum	-	0	Included
C60.353	ESPL 18.2 (a)	Commissioning to site of a complete electrical installation (refer to project specification PSESPL-E)	Sum	-	0	Included
	ESPL	**DESIGNER / CONTRACTOR SPECIFIC REQUIREMENTS**				
C60.354	ESPL	All other items or equipment not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify)	Item		26 875.00	
		FIRE DETECTION AND SUPPRESSION				
	EPFD 1.1	**SUPPLY AND DELIVERY TO SITE**				
		Fire Panel complete with opertaing and LCD display unit with panel controller, universal power				
					Carried Forward	11 104 723.46

					Brought Forward	11 104 723.46
C60.355		supply, batteries, housing, rails, battery controller module, analogue addressable line module, zone modules, annunciator modules, relay modules, input/output modules, communication module, interface module, all other modules required to successfully commission the Fire detection system [To City of Cape Town Specification]	No	6	47 806.10	286 836.60
~~C60.356~~		~~Gas release Panel and all accessories~~	~~No~~	~~6~~		
C60.357		Addressable Strobe for base sounder accessories	Each	50	1 177.05	58 852.50
C60.358		Addressable Indoor Base sounder accessories	Each	50	1 177.05	58 852.50
C60.359		Addressable Optical smoke detector accessories	Each	50	570.42	28 521.00
C60.360		Addressable Thermal Detector accessories	Each	80	642.85	51 428.00
C60.361		Detector Base with Relay and Spring accessories	Each	230	72.42	16 656.60
C60.362		Red Manual call point Indoor surface mount, resettable, complete with test key accessories	Each	55	1 086.50	59 757.50
C60.363		Low voltage Relay interface module 230V accessories	Each	25	1 629.75	40 743.75
C60.364		Enclosure / Cabinets to house all equipment in a neat and tidy installation accessories	Each	8	9 054.19	72 433.52
C60.365		Fire resistant 2-Wire screened cable accessories	m	4000	16.30	65 200.00
	EPFD 1.2	**INSTALLATION**				
C60.366		Fire Panel complete with opertaing and LCD display unit with panel controller, universal power supply, batteries, housing, rails, battery controller module, analogue addressable line module, zone modules, annunciator modules, relay modules, input/output modules, communication module, interface module, all other modules required to successfully commission the Fire detection system [To City of Cape Town Specification]	No	4	1 745.14	6 980.56
~~C60.367~~		~~Gas release Panel and all accessories~~	~~No~~	~~4~~		
C60.368		Addressable Strobe for base sounder accessories	Each	50	394.44	19 722.00
C60.369		Addressable Indoor Base sounder accessories	Each	50	394.44	19 722.00
C60.370		Addressable Optical smoke detector accessories	Each	300	394.44	118 332.00
C60.371		Addressable Thermal Detector accessories	Each	80	430.29	34 423.20
C60.372		Detector Base with Relay and Spring accessories	Each	480	430.29	206 539.20
C60.373		Red Manual call point Indoor surface mount, resettable, complete with test key accessories	Each	55	430.29	23 665.95
					Carried Forward	12 273 390.34

[redacted]

					Brought Forward	12 273 390.34
C60.374		Low voltage Relay interface module 230V accessories	Each	25	430.29	10 757.25
C60.375		Enclosure / Cabinets to house all equipment in a neat and tidy installation accessories	Each	8	430.29	3 442.32
C60.376		Fire resistant 2-Wire screened cable accessories	m	4000	17.92	71 680.00
	EPFD 1.3	**COMMISSIONING**				
C60.377		Commissioning and Testing of the entire Fire Detection System in accordance with SANS 10139	Sum	-	6275.17	6 275.17
C60.378		Commissioning and Testing of the Fire Suppression System in accordance with SANS 14520.	Sum	-	6275.17	6 275.17
C60.379		As-Built drawings, User Manuals, Installation certificate, Commissioning certificate, Acceptance certificate, Verification certificate for the entire Fire Detection System in accordance with SANS 10139	Sum	-	17929.08	17 929.08
		SECURITY				
	~~ESEC~~	~~**DESIGN, DRAWINGS AND GENERAL**~~				
~~C60.380~~	~~PSESEC~~	~~Provide designs, calculations as stipulated in the contract (refer to project specifications PSESEC 1)~~	~~Sum~~	-		
~~C60.381~~	~~ESEC~~	~~Provide operating all maintenance manuals and "as-built" drawings~~	~~Sum~~	-		
	~~ESEC 6.1~~	~~**SUPPLY AND DELIVERY TO SITE**~~				
~~C60.382~~	~~ESEC 6.1 (b)~~	~~Supply and delivery to site of complete fence (refer to particular specifications)~~	~~m~~	~~4000~~		
~~C60.383~~	~~ESEC 6.1 (b)~~	~~Supply and delivery to site of complete 6m fence gate with equal or similar Centurion smart gate motors (refer to particular specifications)~~	~~No.~~	~~6~~		
~~C60.384~~	~~ESEC 6.1 (b)~~	~~Supply and delivery to site of complete powered coated stainless steel turnstile gate with equal or similar 2 x [two] morphoaccess card readers pre-installed by supplier . The turn stile shall be equal or similar to titan full height. One card reader in theentrance and the other in exist motors (refer to particular specifications)~~	~~No.~~	~~6~~		
~~C60.385~~	~~ESEC 6.1 (b)~~	~~Supply and delivery to site of complete 316 stainless steel gooseneck (refer to particular specifications)~~	~~No.~~	~~16~~		
	~~ESEC 6.1 (b)~~	~~Supply and delivery to site of a complete that is equal or similar to Centurion G-Speak (refer~~				
					Carried Forward	12 389 749.33

					Brought Forward	12 389 749.33
C60.386		to particular specifications)	No.	16		
	ESEC 6.2	**INSTALLATION**				
C60.387	ESEC 6.2 (b)	Installation of an complete fence (refer to particular specifications)	m	4000		
C60.388	ESEC 6.2 (b)	Installation of an complete 6m fence gate with equal or similar Centurion smart gate motors (refer to particular specifications)	No.	6		
C60.389	ESEC 6.2 (b)	Installation of an complete powered coated stainless steel turnstile gate with equal or similar 2 x [two] morphoaccess card readers pre-installed by supplier . The turn stile shall be equal or similar to titan full height. One card reader in theentrance and the other in exist motors (refer to particular specifications)	No.	6		
C60.390	ESEC 6.2 (b)	Installation of an complete 316 stainless steel gooseneck (refer to particular specifications)	No.	16		
C60.391	ESEC 6.2 (b)	Installation of an complete that is equal or similar to Centurion G-Speak (refer to particular specifications)	No.	16		
	EMCA 20.3 (c)	Excavating, back filling, consolidation, importation of soil and dumping of all rock and stone removed during excavations including cleaning of cable routes all according to particular specifications				
C60.392		a) Pickable soil	m^3	500		
C60.393		b) Soft rock	m^3	300		
C60.394		c) Hard rock	m^3	100		
C60.395		Importation of additional soil for the bedding of cables and the backfilling of trenches and drilling complete as per particular specification.	m^3	920		
C60.396		Dumping and removing of all rock and stone removed during excavations including cleaning of cable routes complete as per particular specification.	m^3	400		
C60.397		Nett amount for core drilling 100mm diameter holes through 250mm concrete	Each	20		
	ESEC 6.3	**COMMISSIONING**				
C60.398	ESEC 6.3 (b)	Commissioning of an complete fence (refer to particular specifications)	m	4000		
C60.399	ESEC 6.3 (b)	Commissioning of an complete 6m fence gate with equal or similar Centurion smart gate motors (refer to particular specifications)	No.	6		
					Carried Forward	12 389 749.33

					Brought Forward	12 389 749.33
~~C60.400~~	~~ESEC 6.3 (b)~~	~~Commissioning of an complete powered coated stainless steel turnstile gate with equal or similar 2 x [two] morphoaccess card readers pre-installed by supplier . The turn stile shall be equal or similar to titan full height. One card reader in the entrance and the other in exist motors (refer to particular specifications)~~	~~No.~~	~~6~~		
~~C60.401~~	~~ESEC 6.3 (b)~~	~~Commissioning of an complete 316 stainless steel gooseneck (refer to particular specifications)~~	~~No.~~	~~16~~		
~~C60.402~~	~~ESEC 6.3 (b)~~	~~Commissioning of an complete that is equal or similar to Centurion G-Speak (refer to particular specifications)~~	~~No.~~	~~16~~		
		MULTICORE CABLES & EARTH WIRES				
	GEN	**DESIGN, DRAWINGS AND GENERAL**				
C60.403	PSGEN B	Provide designs, calculations as stipulated in the contract (refer to PSGEN.B Design and Drawings)	Sum	-	53750	53 750.00
C60.404	PSGEN B	Provide operating all maintenance manuals and "as-built" drawings	Sum	-	2687.5	2 687.50
	EMCA 21.1	**SUPPLY AND DELIVERY TO SITE**				
	EMCA 21.1 (a)	**Supply and delivery to site of cables, jointing, terminating materials, all earth wires and cable names tags as per the particular specification**				
C60.405		120mm² 4C PVC SWA PVC Cu Cable	m	650	1 656.45	1 076 692.50
C60.406		35mm² 4C PVC SWA PVC Cu Cable	m	1000	524.11	524 110.00
C60.407		25mm² 4C PVC SWA PVC Cu Cable	m	960	365.22	350 611.20
C60.408		10mm² 3C PVC SWA PVC Cu Cable	m	520	135.46	70 439.20
C60.409		6mm² 3C PVC SWA PVC Cu Cable	m	1140	94.00	107 160.00
C60.410		4mm² 3C PVC SWA PVC Cu Cable	m	3200	67.19	215 008.00
C60.411		2.5mm² 3C PVC SWA PVC Cu Cable	m	1424	52.13	74 233.12
C60.412		6mm² 1C PVC Red	m	3840	20.33	78 067.20
C60.413		6mm² 1C PVC Black	m	3840	20.33	78 067.20
C60.414		4mm² 1C PVC Red	m	9240	13.43	124 093.20
C60.415		4mm² 1C PVC Black	m	9240	13.64	126 033.60
C60.416		2.5mm² 1C PVC Red	m	17266	8.26	142 617.16
					Carried Forward	15 413 319.21

					Brought Forward	15 413 319.21
C60.417		2.5mm² 1C PVC Black	m	17266	8.26	142 617.16
C60.418		1.5mm² 1C PVC Red	m	6739	5.16	34 773.24
C60.419		1.5mm² 1C PVC Black	m	6739	5.16	34 773.24
C60.420		1.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	1440	22.36	32 198.40
C60.421		2.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	1440	33.44	48 153.60
C60.422		4mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	1440	53.70	77 328.00
C60.423		6mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	1440	79.81	114 926.40
C60.424		1.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	400	27.46	10 984.00
C60.425		2.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	400	42.22	16 888.00
C60.426		4mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	400	63.98	25 592.00
C60.427		6mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	400	102.12	40 848.00
C60.428		70mm² PVC Green / Yellow Cu Cable	m	520	229.61	119 397.20
C60.429		25mm² PVC Green / Yellow Cu Cable	m	800	88.80	71 040.00
C60.430		16mm² PVC Green / Yellow Cu Cable	m	768	51.30	39 398.40
C60.431		10mm² PVC Green / Yellow Cu Cable	m	416	32.96	13 711.36
C60.432		6mm² 1C PVC Green / Yellow Cu Cable	m	3072	20.33	62 453.76
C60.433		4mm² 1C PVC Green / Yellow Cu Cable	m	7392	13.43	99 274.56
C60.434		2.5mm² 1C PVC Green / Yellow Cu Cable	m	24005	8.26	198 281.30
	EMCA 21.1 (a)	**Enviro Glands Termination material including glands, neoprene shrouds, lugs, insulating materials, cable ties and corrosion proof bolts, washers, spring washers, nuts, etc to terminate the following 600/1000V PVC SWA PVC electrical cables complete.**				
C60.435		120mm² 4C PVC SWA PVC Cu Cable	No.	14	649.91	9 098.74
C60.436		35mm² 4C PVC SWA PVC Cu Cable	No.	26	268.01	6 968.26
C60.437		25mm² 4C PVC SWA PVC Cu Cable	No.	26	160.80	4 180.80
C60.438		10mm² 3C PVC SWA PVC Cu Cable	No.	12	107.20	1 286.40
C60.439		6mm² 3C PVC SWA PVC Cu Cable	No.	96	68.34	6 560.64
C60.440		4mm² 3C PVC SWA PVC Cu Cable	No.	64	62.98	4 030.72
C60.441		2.5mm² 3C PVC SWA PVC Cu Cable	No.	128	46.90	6 003.20
					Carried Forward	16 634 086.59

					Brought Forward	16 634 086.59
C60.442		70mm² PVC Green / Yellow Cu Cable	No.	12	26.80	321.60
C60.443		25mm² PVC Green / Yellow Cu Cable	No.	20	16.08	321.60
C60.444		16mm² PVC Green / Yellow Cu Cable	No.	20	13.41	268.20
C60.445		10mm² PVC Green / Yellow Cu Cable	No.	10	10.72	107.20
C60.446		6mm² 1C PVC Green / Yellow Cu Cable	No.	192	5.36	1 029.12
C60.447		4mm² 1C PVC Green / Yellow Cu Cable	No.	1568	4.02	6 303.36
C60.448		2.5mm² 1C PVC Green / Yellow Cu Cable	No.	5428	4.02	21 820.56
C60.449		1.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	1200	4.02	4 824.00
C60.450		2.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	480	4.02	1 929.60
C60.451		4mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	240	4.02	964.80
C60.452		6mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	40	5.36	214.40
C60.453		1.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	40	4.02	160.80
C60.454		2.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	40	4.02	160.80
C60.455		4mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	40	4.02	160.80
C60.456		6mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	40	5.36	214.40
	EMCA 21.1 (a)	**Terminating 300/500V PVC single core cable into electrical equipment [plug, light] complete**				
C60.457		6mm² 1C PVC Red	No.	96	5.36	514.56
C60.458		6mm² 1C PVC Black	No.	96	5.36	514.56
C60.459		4mm² 1C PVC Red	No.	784	4.02	3 151.68
C60.460		4mm² 1C PVC Black	No.	784	4.02	3 151.68
C60.461		2.5mm² 1C PVC Red	No.	2000	4.02	8 040.00
C60.462		2.5mm² 1C PVC Black	No.	2000	4.02	8 040.00
C60.463		1.5mm² 1C PVC Red	No.	714	4.02	2 870.28
C60.464		1.5mm² 1C PVC Black	No.	714	4.02	2 870.28
C60.465	EMCA 21.1 (b)	Supply and delivery to site of cable route markers	Each	40	335.00	13 400.00
C60.466	EMCA 21.1 (c)	Supply and delivery to site of concrete cable slabs	Each	72	134.00	9 648.00
	EMCA	Supply and delivery to site of cable trays, ladders				
					Carried Forward	16 725 088.87

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					Brought Forward	16 725 088.87
	21.1 (d)	and wire trunking **316 Stainless Steel** heavy duty cable ladder, trunking, welded wire mesh and accessories including all necessary supports, clamps strapping, brackets, reducer splice, hangers, threaded rods, trunking, bolts, nuts and anchor bolts etc as specified				
C60.467		150mm Wide cable ladder	m	250	2 141.88	535 470.00
C60.468		150mm wide 90° Horizontal Bend	Each	10	2 412.03	24 120.30
C60.469		150mm wide 90° Internal elbow (Riser)	Each	10	2 323.59	23 235.90
C60.470		150mm wide 90° External elbow (Dropper)	Each	10	2 323.59	23 235.90
C60.471		150mm wide Tee	Each	10	4 237.14	42 371.40
C60.472		150mm wide 4 Way Cross-over	Each	10	5 740.64	57 406.40
C60.473		300mm Wide cable ladder	m	100	2 384.69	238 469.00
C60.474		300mm wide 90° Horizontal Bend	Each	5	2 862.28	14 311.40
C60.475		300mm wide 90° Internal elbow (Riser)	Each	5	2 524.59	12 622.95
C60.476		300mm wide 90° External elbow (Dropper)	Each	5	2 524.59	12 622.95
C60.477		300mm wide Tee	Each	5	4 984.87	24 924.35
C60.478		300mm wide 4 Way Cross-over	Each	5	6 673.30	33 366.50
C60.479		400mm Wide cable ladder	m	80	2 614.65	209 172.00
C60.480		400mm wide 90° Horizontal Bend	Each	16	3 175.84	50 813.44
C60.481		400mm wide 90° Internal elbow (Riser)	Each	16	2 677.36	42 837.76
C60.482		400mm wide 90° External elbow (Dropper)	Each	16	2 677.36	42 837.76
C60.483		400mm wide Tee	Each	16	5 571.80	89 148.80
C60.484		400mm wide 4 Way Cross-over	Each	16	7 179.82	114 877.12
C60.485		150mm Wide cable ladder flat covers	m	250	1 045.21	261 302.50
C60.486		300mm Wide cable ladder flat covers	m	100	1 683.06	168 306.00
C60.487		400mm Wide cable ladder flat covers	m	80	2 090.43	167 234.40
		316 Stainless Steel heavy duty return flange cable tray, trunking, welded wire mesh and accessories including all necessary supports, clamps strapping, brackets, reducer splice, hangers, threaded rods, trunking, bolts, nuts and anchor bolts etc as specified				
C60.488		150mm Wide return flange cable tray	m	200	955.17	191 034.00
					Carried Forward	19 104 809.70

					Brought Forward	19 104 809.70
C60.489		150mm wide 90° Horizontal Bend	Each	5	731.66	3 658.30
C60.490		150mm wide 90° Internal elbow (Riser)	Each	5	701.09	3 505.45
C60.491		150mm wide 90° External elbow (Dropper)	Each	5	701.09	3 505.45
C60.492		150mm wide Tee	Each	5	956.77	4 783.85
C60.493		150mm wide 4 Way Cross-over	Each	5	1 149.73	5 748.65
C60.494		200mm Wide return flange cable tray	m	200	1 197.98	239 596.00
C60.495		200mm wide 90° Horizontal Bend	Each	10	935.87	9 358.70
C60.496		200mm wide 90° Internal elbow (Riser)	Each	10	751.75	7 517.50
C60.497		200mm wide 90° External elbow (Dropper)	Each	10	751.75	7 517.50
C60.498		200mm wide Tee	Each	10	1 224.51	12 245.10
C60.499		200mm wide 4 Way Cross-over	Each	10	1 431.14	14 311.40
C60.500		300mm Wide return flange cable tray	m	400	1 415.07	566 028.00
C60.501		300mm wide 90° Horizontal Bend	Each	20	1 198.79	23 975.80
C60.502		300mm wide 90° Internal elbow (Riser)	Each	20	868.33	17 366.60
C60.503		300mm wide 90° External elbow (Dropper)	Each	20	868.33	17 366.60
C60.504		300mm wide Tee	Each	20	1 575.86	31 517.20
C60.505		300mm wide 4 Way Cross-over	Each	20	1 993.95	39 879.00
		316 Stainless Steel heavy duty welded wire mesh cable tray, trunking, welded wire mesh and accessories including all necessary supports, clamps strapping, brackets, reducer splice, hangers, threaded rods,trunking, bolts, nuts and anchor bolts etc as specified				
C60.506		150mm Wide welded wire mesh cable tray	m	200	1 005.02	201 004.00
C60.507		150mm wide 90° Horizontal Bend	Each	5	1 334.66	6 673.30
C60.508		150mm wide 90° Internal elbow (Riser)	Each	5	1 072.55	5 362.75
C60.509		150mm wide 90° External elbow (Dropper)	Each	5	1 072.55	5 362.75
C60.510		150mm wide Tee	Each	5	3 199.96	15 999.80
C60.511		150mm wide 4 Way Cross-over	Each	5	5 402.96	27 014.80
C60.512		200mm Wide welded wire mesh cable tray	m	200	1 098.28	219 656.00
C60.513		200mm wide 90° Horizontal Bend	Each	10	1 599.99	15 999.90
					Carried Forward	20 609 764.10

					Brought Forward	20 609 764.10
C60.514		200mm wide 90° Internal elbow (Riser)	Each	10	1 342.70	13 427.00
C60.515		200mm wide 90° External elbow (Dropper)	Each	10	1 342.70	13 427.00
C60.516		200mm wide Tee	Each	10	3 545.69	35 456.90
C60.517		200mm wide 4 Way Cross-over	Each	10	5 539.64	55 396.40
C60.518		300mm Wide welded wire mesh cable tray	m	400	1 306.52	522 608.00
C60.519		300mm wide 90° Horizontal Bend	Each	20	2 026.11	40 522.20
C60.520		300mm wide 90° Internal elbow (Riser)	Each	20	1 616.06	32 321.20
C60.521		300mm wide 90° External elbow (Dropper)	Each	20	1 616.06	32 321.20
C60.522		300mm wide Tee	Each	20	3 883.37	77 667.40
C60.523		300mm wide 4 Way Cross-over	Each	20	6 576.82	131 536.40
	EMCA 21.1 (h)	Pratley EZEE-Fit with solid cover IP 68 including non sparking connectors, insulating sleeves, identification tag, mounting screws, locknuts , lock out device with lock, lid securing chain, reducers and all accessories				
C60.524		**Box 0**	No.	50	1 150.37	57 518.50
C60.525		Compression Kits (Small)	No.	200	32.43	6 486.00
C60.526		Compression Kits (large)	No.	200	32.43	6 486.00
C60.527		Blanking Plugs	No.	100	20.09	2 009.00
C60.528		**Box 1**	No.	50	1 413.40	70 670.00
C60.529		Reducing Glands [25-20]	No.	100	122.88	12 288.00
C60.530		Compression Kits (Small)	No.	100	70.95	7 095.00
C60.531		Compression Kits (large)	No.	100	70.95	7 095.00
C60.532		Blanking Plugs	No.	100	21.47	2 147.00
C60.533		**Box 2**	No.	20	2 154.64	43 092.80
C60.534		Reducing Glands [32-20]	No.	40	166.65	6 666.00
C60.535		Reducing Glands [32-25]	No.	40	197.93	7 917.20
C60.536		Compression Kits	No.	40	45.76	1 830.40
C60.537		Blanking Plugs	No.	40	25.12	1 004.80
C60.538		**Box 3**	No.	20	3 514.71	70 294.20
C60.539		Reducing Glands [40-20]	No.	40	220.34	8 813.60
C60.540		Reducing Glands [40-25]	No.	40	261.74	10 469.60
C60.541		Reducing Glands [40-32]	No.	40	297.56	11 902.40
C60.542		Compression Kits	No.	40	56.71	2 268.40
C60.543		Blanking Plugs	No.	40	38.46	1 538.40
C60.544		**Box 4**	No.	20	5 001.84	100 036.80
C60.545		Reducing Glands [50-20]	No.	40	318.34	12 733.60
C60.546		Reducing Glands [50-25]	No.	40	365.12	14 604.80
C60.547		Reducing Glands [50-32]	No.	40	418.87	16 754.80
C60.548		Reducing Glands [50-40]	No.	80	490.11	39 208.80
C60.549		Compression Kits	No.	40	72.37	2 894.80
					Carried Forward	22 088 273.70

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					Brought Forward	22 088 273.70
C60.550		Blanking Plugs	No.	40	49.46	1 978.40
C60.551	EMCA 18.2 (g)	110mm² HDPE kabelflex Sleeves	m	200	209.62	41 924.00
C60.552		160mm² HDPE kabelflex Sleeves	m	100	274.12	27 412.00
C60.553		50mm² HDPE Optex Sleeves	m	250	166.62	41 655.00
		All jointing, Coupling, sealing ring, end plugs, spacer modules bell mouth, mandrel, duct brush to complete the sleeve installation. The following is allowed for under the civil scope:				
C60.554		a) Concrete 1m x 1m x 1m manholes with lids	No.	10	18 812.50	188 125.00
C60.555		b) Drilling under existing road 160mm diameter holes for sleeves	m	50	1 128.75	56 437.50
C60.556	EMCA 21.2 (e)	Supply and delivery to site of cable supports to motors and other electrical equipment	Sum	-	16125	16 125.00
C60.557	EMCA 21.2 (f)	Installation of pump set sensor termination cubicles	No.	1	2 687.50	2 687.50
	PSG 21.2	**INSTALLATION**				
	EMCA 21.2 (a)	**Installation of cables, jointing, terminating materials, all earth wires and cable name tags as per the particular specification**				
C60.558		120mm² 4C PVC SWA PVC Cu Cable	m	650	73.26	47 619.00
C60.559		35mm² 4C PVC SWA PVC Cu Cable	m	1000	42.09	42 090.00
C60.560		25mm² 4C PVC SWA PVC Cu Cable	m	960	38.96	37 401.60
C60.561		10mm² 3C PVC SWA PVC Cu Cable	m	520	33.44	17 388.80
C60.562		6mm² 3C PVC SWA PVC Cu Cable	m	1140	31.20	35 568.00
C60.563		4mm² 3C PVC SWA PVC Cu Cable	m	3200	23.31	74 592.00
C60.564		2.5mm² 3C PVC SWA PVC Cu Cable	m	1424	15.53	22 114.72
C60.565		6mm² 1C PVC Red	m	3840	6.63	25 459.20
C60.566		6mm² 1C PVC Black	m	3840	6.63	25 459.20
C60.567		4mm² 1C PVC Red	m	9240	5.31	49 064.40
C60.568		4mm² 1C PVC Black	m	9240	5.31	49 064.40
C60.569		2.5mm² 1C PVC Red	m	17266	3.98	68 718.68
C60.570		2.5mm² 1C PVC Black	m	17266	3.98	68 718.68
					Carried Forward	23 027 876.78

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					Brought Forward	23 027 876.78
C60.571		1.5mm² 1C PVC Red	m	6739	3.32	22 373.48
C60.572		1.5mm² 1C PVC Black	m	6739	3.32	22 373.48
C60.573		1.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	1440	3.32	4 780.80
C60.574		2.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	1440	3.98	5 731.20
C60.575		4mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	1440	5.31	7 646.40
C60.576		6mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	1440	6.63	9 547.20
C60.577		1.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	400	3.32	1 328.00
C60.578		2.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	400	3.98	1 592.00
C60.579		4mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	400	5.31	2 124.00
C60.580		6mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	400	6.63	2 652.00
C60.581		70mm² PVC Green / Yellow Cu Cable	m	520	14.60	7 592.00
C60.582		25mm² PVC Green / Yellow Cu Cable	m	800	10.61	8 488.00
C60.583		16mm² PVC Green / Yellow Cu Cable	m	768	9.29	7 134.72
C60.584		10mm² PVC Green / Yellow Cu Cable	m	416	7.97	3 315.52
C60.585		6mm² 1C PVC Green / Yellow Cu Cable	m	3072	6.63	20 367.36
C60.586		4mm² 1C PVC Green / Yellow Cu Cable	m	7392	5.31	39 251.52
C60.587		2.5mm² 1C PVC Green / Yellow Cu Cable	m	24005	3.98	95 539.90
	EMCA 21.1 (a)	**Enviro Glands Termination material including glands, neoprene shrouds, lugs, insulating materials, cable ties and corrosion proof bolts, washers, spring washers, nuts, etc to terminate the following 600/1000V PVC SWA PVC electrical cables complete.**				
C60.588		120mm² 4C PVC SWA PVC Cu Cable	No.	14	199.01	2 786.14
C60.589		35mm² 4C PVC SWA PVC Cu Cable	No.	26	159.21	4 139.46
C60.590		25mm² 4C PVC SWA PVC Cu Cable	No.	26	145.94	3 794.44
C60.591		10mm² 3C PVC SWA PVC Cu Cable	No.	12	112.78	1 353.36
C60.592		6mm² 3C PVC SWA PVC Cu Cable	No.	96	88.75	8 520.00
C60.593		4mm² 3C PVC SWA PVC Cu Cable	No.	64	92.87	5 943.68
C60.594		2.5mm² 3C PVC SWA PVC Cu Cable	No.	128	86.24	11 038.72
C60.595		70mm² PVC Green / Yellow Cu Cable	No.	12	19.90	238.80
					Carried Forward	23 327 528.96

					Brought Forward	23 327 528.96
C60.596		25mm² PVC Green / Yellow Cu Cable	No.	20	15.92	318.40
C60.597		16mm² PVC Green / Yellow Cu Cable	No.	20	13.27	265.40
C60.598		10mm² PVC Green / Yellow Cu Cable	No.	10	10.61	106.10
C60.599		6mm² 1C PVC Green / Yellow Cu Cable	No.	192	7.97	1 530.24
C60.600		4mm² 1C PVC Green / Yellow Cu Cable	No.	1568	6.63	10 395.84
C60.601		2.5mm² 1C PVC Green / Yellow Cu Cable	No.	5428	6.63	35 987.64
C60.602		1.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	1200	6.63	7 956.00
C60.603		2.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	480	6.63	3 182.40
C60.604		4mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	240	6.63	1 591.20
C60.605		6mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	40	6.63	265.20
C60.606		1.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	40	6.63	265.20
C60.607		2.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	40	6.63	265.20
C60.608		4mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	40	6.63	265.20
C60.609		6mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	40	6.63	265.20
	EMCA 21.1 (a)	**Terminating 300/500V PVC single core cable into electrical equipment [plug, light] complete**				
C60.610		6mm² 1C PVC Red	No.	96	7.97	765.12
C60.611		6mm² 1C PVC Black	No.	96	7.97	765.12
C60.612		4mm² 1C PVC Red	No.	784	6.63	5 197.92
C60.613		4mm² 1C PVC Black	No.	784	6.63	5 197.92
C60.614		2.5mm² 1C PVC Red	No.	2000	6.63	13 260.00
C60.615		2.5mm² 1C PVC Black	No.	2000	6.63	13 260.00
C60.616		1.5mm² 1C PVC Red	No.	714	5.31	3 791.34
C60.617		1.5mm² 1C PVC Black	No.	714	5.31	3 791.34
C60.618	EMCA 21.1 (b)	Installation of cable route markers	Each	40	33.16	1 326.40
C60.619	EMCA 21.1 (c)	Installation of concrete cable slabs	Each	72	33.16	2 387.52
	EMCA 21.1 (d)	Installation complete of all cable trays, ladders and wire trunking				
		316 Stainless Steel heavy duty cable ladder,				
					Carried Forward	23 439 930.86

					Brought Forward	23 439 930.86
		trunking, welded wire mesh and accessories including all necessary supports, clamps strapping, brackets, reducer splice, hangers, threaded rods, trunking, bolts, nuts and anchor bolts etc as specified				
C60.620		150mm Wide cable ladder	m	250	37.95	9 487.50
C60.621		150mm wide 90° Horizontal Bend	Each	10	34.50	345.00
C60.622		150mm wide 90° Internal elbow (Riser)	Each	10	34.50	345.00
C60.623		150mm wide 90° External elbow (Dropper)	Each	10	34.50	345.00
C60.624		150mm wide Tee	Each	10	37.95	379.50
C60.625		150mm wide 4 Way Cross-over	Each	10	43.12	431.20
C60.626		300mm Wide cable ladder	m	100	43.12	4 312.00
C60.627		300mm wide 90° Horizontal Bend	Each	5	39.67	198.35
C60.628		300mm wide 90° Internal elbow (Riser)	Each	5	39.67	198.35
C60.629		300mm wide 90° External elbow (Dropper)	Each	5	39.67	198.35
C60.630		300mm wide Tee	Each	5	43.12	215.60
C60.631		300mm wide 4 Way Cross-over	Each	5	46.57	232.85
C60.632		400mm Wide cable ladder	m	80	46.57	3 725.60
C60.633		400mm wide 90° Horizontal Bend	Each	16	43.12	689.92
C60.634		400mm wide 90° Internal elbow (Riser)	Each	16	43.12	689.92
C60.635		400mm wide 90° External elbow (Dropper)	Each	16	43.12	689.92
C60.636		400mm wide Tee	Each	16	46.57	745.12
C60.637		400mm wide 4 Way Cross-over	Each	16	50.02	800.32
C60.638		150mm Wide cable ladder flat covers	m	250	25.88	6 470.00
C60.639		300mm Wide cable ladder flat covers	m	100	25.88	2 588.00
C60.640		400mm Wide cable ladder flat covers	m	80	25.88	2 070.40
		316 Stainless Steel heavy duty return flange cable tray, trunking, welded wire mesh and accessories including all necessary supports, clamps strapping, brackets, reducer splice, hangers, threaded rods, trunking, bolts, nuts and anchor bolts etc as specified				
C60.641		150mm Wide return flange cable tray	m	200	37.95	7 590.00
C60.642		150mm wide 90° Horizontal Bend	Each	5	34.50	172.50
					Carried Forward	23 482 851.26

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					Brought Forward	23 482 851.26
C60.643		150mm wide 90° Internal elbow (Riser)	Each	5	34.50	172.50
C60.644		150mm wide 90° External elbow (Dropper)	Each	5	34.50	172.50
C60.645		150mm wide Tee	Each	5	37.95	189.75
C60.646		150mm wide 4 Way Cross-over	Each	5	43.12	215.60
C60.647		200mm Wide return flange cable tray	m	200	41.40	8 280.00
C60.648		200mm wide 90° Horizontal Bend	Each	10	37.95	379.50
C60.649		200mm wide 90° Internal elbow (Riser)	Each	10	37.95	379.50
C60.650		200mm wide 90° External elbow (Dropper)	Each	10	37.95	379.50
C60.651		200mm wide Tee	Each	10	41.40	414.00
C60.652		200mm wide 4 Way Cross-over	Each	10	44.85	448.50
C60.653		300mm Wide return flange cable tray	m	400	43.12	17 248.00
C60.654		300mm wide 90° Horizontal Bend	Each	20	39.67	793.40
C60.655		300mm wide 90° Internal elbow (Riser)	Each	20	39.67	793.40
C60.656		300mm wide 90° External elbow (Dropper)	Each	20	39.67	793.40
C60.657		300mm wide Tee	Each	20	43.12	862.40
C60.658		300mm wide 4 Way Cross-over	Each	20	46.57	931.40
		316 Stainless Steel heavy duty welded wire mesh cable tray, trunking, welded wire mesh and accessories including all necessary supports, clamps strapping, brackets, reducer splice, hangers, threaded rods,trunking, bolts, nuts and anchor bolts etc as specified				
C60.659		150mm Wide welded wire mesh cable tray	m	200	49.33	9 866.00
C60.660		150mm wide 90° Horizontal Bend	Each	5	44.85	224.25
C60.661		150mm wide 90° Internal elbow (Riser)	Each	5	44.85	224.25
C60.662		150mm wide 90° External elbow (Dropper)	Each	5	44.88	224.40
C60.663		150mm wide Tee	Each	5	49.33	246.65
C60.664		150mm wide 4 Way Cross-over	Each	5	56.05	280.25
C60.665		200mm Wide welded wire mesh cable tray	m	200	53.81	10 762.00
C60.666		200mm wide 90° Horizontal Bend	Each	10	49.33	493.30
C60.667		200mm wide 90° Internal elbow (Riser)	Each	10	49.33	493.30
					Carried Forward	23 538 119.01

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					Brought Forward	23 538 119.01
C60.668		200mm wide 90° External elbow (Dropper)	Each	10	49.33	493.30
C60.669		200mm wide Tee	Each	10	53.81	538.10
C60.670		200mm wide 4 Way Cross-over	Each	10	58.30	583.00
C60.671		300mm Wide welded wire mesh cable tray	m	400	56.05	22 420.00
C60.672		300mm wide 90° Horizontal Bend	Each	20	51.57	1 031.40
C60.673		300mm wide 90° Internal elbow (Riser)	Each	20	51.57	1 031.40
C60.674		300mm wide 90° External elbow (Dropper)	Each	20	51.57	1 031.40
C60.675		300mm wide Tee	Each	20	56.05	1 121.00
C60.676		300mm wide 4 Way Cross-over	Each	20	46.47	929.40
C60.677	EMCA 21.2 (e)	Installation of cable supports to motors and other electrical equipment	Sum	-	26875	26 875.00
C60.678	EMCA 21.2 (f)	Installation of pump set sensor termination cubicles	No.	1	2 687.50	2 687.50
	EMCA 21.2 (g)	Excavating, back filling, consolidation, importation of soil and dumping of all rock and stone removed during excavations including cleaning of cable routes all according to particular specifications (including hand excavations where necessary along existing cable routes)				
C60.679		a) Pickable soil	m^3	200	231.12	46 224.00
C60.680		b) Soft rock	m^3	120	274.12	32 894.40
C60.681		c) Hard rock	m^3	50	396.68	19 834.00
C60.682		Importation of additional soil for the bedding of cables and the backfilling of trenches complete as per particular specification.	m^3	170	268.75	45 687.50
C60.683		Dumping and removing of all rock and stone removed during excavations including cleaning of cable routes complete as per particular specification.	m^3	170	59.12	10 050.40
C60.684		The restoration of road and paving to the original condition complete	m	250	376.25	94 062.50
C60.685		The restoration of paving to the original condition complete	m	1580	268.75	424 625.00
C60.686		Sifting soil through a 4mm mesh size for the bedding of cables and the backfilling of trenches complete as per particular specification.	m^3	170	134.38	22 844.60
C60.687		Nett amount for core drilling 100mm diameter holes through 250mm concrete	Each	50	1 773.75	88 687.50
					Carried Forward	24 381 770.41

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					Brought Forward	24 381 770.41
C60.688	EMCA 18.2 (g)	110mm² HDPE kabelflex Sleeves	m	200	209.62	41 924.00
C60.689		160mm² HDPE kabelflex Sleeves	m	100	274.12	27 412.00
C60.690		50mm² HDPE Optex Sleeves	m	250	166.62	41 655.00
		All jointing, Coupling, sealing ring, end plugs, spacer modules bell mouth, mandrel, duct brush to complete the sleeve installation. The following is allowed for under the civil scope:				
C60.691		a) Concrete 1m x 1m x 1m manholes with lids	No.	10	18 812.50	188 125.00
C60.692		b) Drilling under existing road 160mm diameter holes for sleeves	m	50	1 128.75	56 437.50
C60.693	EMCA 21.2 (e)	Supply and delivery to site of cable supports to motors and other electrical equipment	Sum	-	16125	16 125.00
C60.694	EMCA 21.2 (f)	Installation of pump set sensor termination cubicles	No.	1	3 762.50	3 762.50
C60.695	PSEMCA 9	Gound penetrating radar and cable detection of all excavations/trenches (Refer to project specification PSEMCA-9)	m	300	35.39	10 617.00
C60.696	PSEMCA 9	Detail surveying and plotting of all existing structures within 3m of the propose route proposed by Contractor (Refer to project specification PSEMCA-9)	m	300	376.25	112 875.00
C60.697	PSEMCA 9	All new cable routes shall first be planned with information obtained from surveyor and submitted for approval to the Engineer and City of Cape Town. All shall be completed in AutoCad format and Report for approval from the Engineer (Refer to project specification PSEMCA-9)	Sum	-	6633.76	6 633.76
	PSEMCA 9	Time related matters for arranging, coordinating, shut down procedure, approval from City of City of Cape Town (Refer to project specification PSEMCA-9)				
C60.698		a) Enginneer rate per hour	hr	160	862.39	137 982.40
C60.699		b) Electrician rate per hour	hr	800	238.81	191 048.00
C60.700		c) Artisan rate per hour	hr	1280	159.21	203 788.80
C60.701		d) Labourer rate per hour	hr	1920	106.15	203 808.00
C60.702		e) Rate per kilometer	km	2400	9.29	22 296.00
C60.703		f) Report printing A4 Black and white	Pages	3000	1.32	3 960.00
C60.704		g) Medium Voltage testing and confimation	No.	20	1 612.50	32 250.00
C60.705		h) Low Voltage testing and confimation	No.	50	2 687.50	134 375.00
C60.706		h) Low Voltage testing and confimation	No.	50	2 687.50	134 375.00
		All of the above time related item shall be submitted weekly to the Engineer for approval.				
	EMCA	**COMMISSIONING**				
					Carried Forward	25 951 220.37

					Brought Forward	25 951 220.37
	21.3					
C60.707	EMCA 21.3 (a)	Testing and commissioning of all cables as above mentioned	Sum	-	3316.88	3 316.88
C60.708	EMCA 21.3 (b)	Updating, verifying and submission of Electronic Cable schedules with Tag numbers and final agreed lengths	Sum	-	3316.88	3 316.88
C60.709	EMCA 21.3 (c)	Surveyor to mark-up as-built cable route plans and all mark-up-ups must be on AutoCAD format	Sum	-	9137.5	9 137.50
	ERMU	**DESIGNER / CONTRACTOR SPECIFIC REQUIREMENTS**				
C60.710	EMCA	All other items or equipment not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify)	Item			
		BILL NO. C60 **PORTION C ELECTRICAL**				
		Carried forward to Summary of Bills			**Total**	25 966 991.63

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C8 - Building works				
		BILL NO. C61 **JOINERY**				
		GATEHOUSE				
	PU	**JOINERY**				
		JOINERY				
	8.20	Purpose made joinery fittings supplied and installed complete with ironmongery, etc to manufacturers specification. And sealing all round frames adjoining walls, ceilings, floors, etc with approved sealant Note: Refer to the following drawings for position of joinery Dwg 3089.92.00.SUC.16.U001 Canteen counter Joinery item J3.1 Dwg 3089.92.00.SUC.16.F007				
C61.1		.1 Complete installation as shown on drawings	no	1	17 810.60	17 810.60
		Built in cupboards Joinery item J3.2 Dwg 3089.92.00.SUC.16.F008				
C61.2		.1 Complete installation as shown on drawings	no	1	12 745.20	12 745.20
		Curved desk Joinery item J3.3 Dwg 3089.92.00.SUC.16.F009				
C61.3		.1 Complete installation as shown on drawings	no	1	18 592.12	18 592.12
	PU	**FURNITURE**				
		FURNITURE Note: Refer to the following drawings for position of joinery Dwg 3089.92.00.SUC.16.U001				
	8.21	Global Top Counter, Urban Lite leg and Pedestal Furniture Item 1.1 Dwg 3089.92.00.SUC.16.D001				
C61.4		.1 Complete installation as shown on drawings	no	2	11 913.68	23 827.36
	8.22	Ascot Office Chair Furniture Item 1.2 Dwg 3089.92.00.SUC.16.D001				
					Carried Forward	72 975.28

					Brought Forward	72 975.28
C61.5		.1 Complete installation as shown on drawings	no	6	1 524.18	9 145.08
	8.23	Metal locker 23 - Slanted Furniture Item 2.1 Dwg 3089.92.00.SUC.16.D001				
C61.6		.1 Complete installation as shown on drawings	no	2	8 751.68	17 503.36
	8.24	Café Table: Smartline Square Table Top Malibu Dining Table Base Furniture Item 3.1 Dwg 3089.92.00.SUC.16.D001				
C61.7		.1 Complete installation as shown on drawings	no	8	3 152.00	25 216.00
	8.25	Tonic chair Furniture Item 3.2 Dwg 3089.92.00.SUC.16.D001				
C61.8		.1 Complete installation as shown on drawings	no	16	426.25	6 820.00
		GUARDHOUSE				
	PU	**JOINERY**				
		JOINERY				
	8.20	Purpose made joinery fittings supplied and installed complete with ironmongery, etc to manufacturers specification. And sealing all round frames adjoining walls, ceilings, floors, etc with approved sealant Note: Refer to the following drawings for position of joinery Dwg 3089.92.00.SUI.16.U001 Built in desk Joinery item J6.1 Dwg 3089.92.00.SUI.16.F001				
C61.9		.1 Complete installation as shown on drawings	no	6	3 203.50	19 221.00
	PU	**FURNITURE**				
		FURNITURE Note: Refer to the following drawings for position of joinery Dwg 3089.92.00.SUI.16.U001				
	8.20	Ascot Office Chair Furniture Item 1.1 Dwg 3089.92.00.SUI.16.D001				
C61.10		.1 Complete installation as shown on drawings	no	6	1 524.18	9 145.08
	8.21	Easy stacker chair Furniture Item 1.2 Dwg 3089.92.00.SUI.16.D001				
					Carried Forward	160 025.80

[redacted]

					Brought Forward	160 025.80
C61.11		.1 Complete installation as shown on drawings	no	6	567.60	3 405.60
		WEIGHBRIDGE				
	PU					
		JOINERY				
		JOINERY				
	8.20	Purpose made joinery fittings supplied and installed complete with ironmongery, etc to manufacturers specification. And sealing all round frames adjoining walls, ceilings, floors, etc with approved sealant Note: Refer to the following drawings for position of joinery Dwg 3089.92.00.SUE.16.U001 Built in Desk Joinery Item J7.1 Dwg 3089.92.00.SUE.16.F001				
C61.12		.1 Complete installation as shown on drawings	no	1	3 237.90	3 237.90
	PU	**FURNITURE**				
		FURNITURE Note: Refer to the following drawings for position of furniture Dwg 3089.92.00.SUE.16.U001				
	8.20	Ascot Office Chair Loose Furniture Item 1.1 Dwg 3089.92.00.SUE.16.D001				
C61.13		.1 Complete as shown on drawings	no	1	1 524.18	1 524.18
	8.21	Easy Stacker Chair Loose Furniture Item 1.2 Dwg 3089.92.00.SUE.16.D001				
C61.14		.1 Complete as shown on drawings	no	1	567.60	567.60
		MEMBRANE PLANT				
	PU	**JOINERY**				
		JOINERY Purpose made joinery fittings supplied and installed complete with ironmongery, etc to manufacturers specification. And sealing all round frames adjoining walls, ceilings, floors, etc with approved sealant Note: Refer to the following drawings for position of joinery Dwg 3089.92.00.WHA.16.U001 and U002				
					Carried Forward	168 761.08

[redacted]

					Brought Forward	168 761.08
	8.20	Kitchen Counter Joinery item J2.1 Dwg 3089.92.00.WHA.16.F001				
C61.15		.1 Complete installation as shown on drawings	no	1	61 553.42	61 553.42
		Canteen Lockers Joinery item J2.2 Dwg 3089.92.00.WHA.16.F002				
C61.16		.1 Complete installation as shown on drawings	no	1	37 255.20	37 255.20
		Male and Female Wet Area Lockers Joinery item J2.3 Dwg 3089.92.00.WHA.16.F003				
C61.17		.1 Complete installation as shown on drawings	no	2	72 616.25	145 232.50
		Female Dry Area Lockers Joinery item J2.4 Dwg 3089.92.00.WHA.16.F004				
C61.18		.1 Complete installation as shown on drawings	no	1	72 660.32	72 660.32
		Male Dry Area Lockers Joinery item J2.5 Dwg 3089.92.00.WHA.16.F005				
C61.19		.1 Complete installation as shown on drawings	no	1	39 968.50	39 968.50
		Beverage Pod Joinery item J2.6 Dwg 3089.92.00.WHA.16.F006				
C61.20		.1 Complete installation as shown on drawings	no	1	38 763.42	38 763.42
		Open Shelves Joinery item J2.7 Dwg 3089.92.00.WHA.16.F007				
C61.21		.1 Complete installation as shown on drawings	no	10	8 352.75	83 527.50
		Boardroom Wall Unit Joinery item J2.8 Dwg 3089.92.00.WHA.16.F008				
C61.22		.1 Complete installation as shown on drawings	no	1	29 676.45	29 676.45
	PU	**FURNITURE**				
		FURNITURE				
	8.20	Café Table: Smartline Square Table Top Malibu Dining Table Base Furniture Item 1.1 Dwg 3089.92.00.WHA.16.D001				
C61.23		.1 Complete installation as shown on drawings	no	4	3 152.00	12 608.00
		Tonic chair				
					Carried Forward	690 006.39

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					Brought Forward	690 006.39
		Furniture Item 1.2 Dwg 3089.92.00.WHA.16.D001				
C61.24		.1 Complete installation as shown on drawings	no	16	426.25	6 820.00
		Holy Cube Long Planter with artificial plant Furniture Item 1.3 Dwg 3089.92.00.WHA.16.D001				
C61.25		.1 Complete installation as shown on drawings	no	2	2 686.42	5 372.84
		Artificial plant Furniture Item 1.4 Dwg 3089.92.00.WHA.16.D001				
C61.26		.1 Complete installation as shown on drawings	no	2	591.25	1 182.50
		4 Seater KPA Bench Furniture Item 1.5 Dwg 3089.92.00.WHA.16.D001				
C61.27		.1 Complete installation as shown on drawings	no	2	5 122.38	10 244.76
		8 Seater Steel Bench Furniture Item 1.6 Dwg 3089.92.00.WHA.16.D001				
C61.28		.1 Complete installation as shown on drawings	no	1	8 130.22	8 130.22
		Wall Art Furniture Item 1.7 Dwg 3089.92.00.WHA.16.D001				
		.1 Work as instructed by the Engineer				
C61.29		.1 Work as instructed by the Engineer	Prov sum		50 000.00	50 000.00
C61.30		.2 Overheads, charges and profit on above	%		10%	5 000.00
		Block Out Roller blinds Furniture Item 2.1 Dwg 3089.92.00.WHA.16.D001				
C61.31		.1 Complete installation as shown on drawings	no	6	2 532.38	15 194.28
		Desk Furniture Item 3.1 Dwg 3089.92.00.WHA.16.D001				
C61.32		.1 Complete installation as shown on drawings	no	5	14 881.85	74 409.25
		Giro knee tilt Furniture Item 3.2 Dwg 3089.92.00.WHA.16.D001				
C61.33		.1 Complete installation as shown on drawings	no	5	3 378.55	16 892.75
		Holy Cube Tall Planter with artificial plant Furniture Item 3.3 Dwg 3089.92.00.WHA.16.D001				
					Carried Forward	883 252.99

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					Brought Forward	883 252.99
C61.34		.1 Complete installation as shown on drawings Artificial plant Furniture Item 3.4 Dwg 3089.92.00.WHA.16.D001	no	5	2 686.42	13 432.10
C61.35		.1 Complete installation as shown on drawings Ecocentric Filing Cabinets Furniture Item 3.5 Dwg 3089.92.00.WHA.16.D001	no	5	591.25	2 956.25
C61.36		.1 Complete installation as shown on drawings Canvas Wall Art Furniture Item 3.6 Dwg 3089.92.00.WHA.16.D001	no	5	5 757.82	28 789.10
		.1 Work as instructed by the Engineer				
C61.37		.1 Work as instructed by the Engineer	Prov sum		20 000.00	20 000.00
C61.38		.2 Overheads, charges and profit on above	%		10%	2 000.00
		Desk Furniture Item 4.1 Dwg 3089.92.00.WHA.16.D001				
C61.39		.1 Complete installation as shown on drawings Ecocentric Filing Cabinets Furniture Item 4.2 Dwg 3089.92.00.WHA.16.D001	no	1	14 881.85	14 881.85
C61.40		.1 Complete installation as shown on drawings Giro knee tilt Furniture Item 4.3 Dwg 3089.92.00.WHA.16.D001	no	2	5 757.82	11 515.64
C61.41		.1 Complete installation as shown on drawings Carlton Occasional Chair Furniture Item 4.4 Dwg 3089.92.00.WHA.16.D001	no	1	3 378.55	3 378.55
C61.42		.1 Complete installation as shown on drawings Lund coffee table Furniture Item 4.5 Dwg 3089.92.00.WHA.16.D001	no	2	6 337.12	12 674.24
C61.43		.1 Complete installation as shown on drawings Holy Cube Tall Planter with artificial plant Furniture Item 4.6 Dwg 3089.92.00.WHA.16.D001	no	1	14 566.25	14 566.25
C61.44		.1 Complete installation as shown on drawings	no	1	2 686.42	2 686.42
					Carried Forward	1 010 133.39

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					Brought Forward	1 010 133.39
		Artificial plant Furniture Item 4.7 Dwg 3089.92.00.WHA.16.D001				
C61.45		.1 Complete installation as shown on drawings	no	1	591.25	591.25
		Canvas Wall Art Furniture Item 4.8 Dwg 3089.92.00.WHA.16.D001				
		.1 Work as instructed by the Engineer				
C61.46		.1 Work as instructed by the Engineer	Prov sum		20 000.00	20 000.00
C61.47		.2 Overheads, charges and profit on above	%		10%	2 000.00
		Urban Lite Leg Desk System Furniture Item 5.1 Dwg 3089.92.00.WHA.16.D001				
C61.48		.1 Complete installation as shown on drawings	no	1	89 203.62	89 203.62
		Giro knee tilt Furniture Item 5.2 Dwg 3089.92.00.WHA.16.D001				
C61.49		.1 Complete installation as shown on drawings	no	12	3 378.55	40 542.60
		Holy Cube Tall Planter with artificial plant Furniture Item 5.3 Dwg 3089.92.00.WHA.16.D001				
C61.50		.1 Complete installation as shown on drawings	no	2	2 686.42	5 372.84
		Artificial plant Furniture Item 5.4 Dwg 3089.92.00.WHA.16.D001				
C61.51		.1 Complete installation as shown on drawings	no	2	591.25	1 182.50
		Canvas Wall Art Furniture Item 5.5 Dwg 3089.92.00.WHA.16.D001				
		.1 Work as instructed by the Engineer				
C61.52		.1 Work as instructed by the Engineer	Prov sum		20 000.00	20 000.00
C61.53		.2 Overheads, charges and profit on above	%		10%	2 000.00
		Ecocentric Filing Cabinets Furniture Item 5.6 Dwg 3089.92.00.WHA.16.D001				
C61.54		.1 Complete installation as shown on drawings	no	3	5 757.82	17 273.46
		Ecocentric Boardroom table for 10 people Furniture Item 6.1 Dwg 3089.92.00.WHA.16.D001				
C61.55		.1 Complete installation as shown on drawings	no	1	16 790.68	16 790.68
					Carried Forward	1 225 090.34

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					Brought Forward	1 225 090.34
		Classical Chair Furniture Item 6.2 Dwg 3089.92.00.WHA.16.D001				
C61.56		.1 Complete installation as shown on drawings	no	10	4 647.73	46 477.30
		Holy Cube Tall Planter with artificial plant Furniture Item 6.3 Dwg 3089.92.00.WHA.16.D001				
C61.57		.1 Complete installation as shown on drawings	no	2	2 686.42	5 372.84
		Artificial plant Furniture Item 6.4 Dwg 3089.92.00.WHA.16.D001				
C61.58		.1 Complete installation as shown on drawings	no	2	591.25	1 182.50
		Canvas Wall Art Furniture Item 6.5 Dwg 3089.92.00.WHA.16.D001				
		.1 Work as instructed by the Engineer				
C61.59		.1 Work as instructed by the Engineer	Prov sum		20 000.00	20 000.00
C61.60		.2 Overheads, charges and profit on above	%		10%	2 000.00
		Block Out Roller blinds Furniture Item 6.6 Dwg 3089.92.00.WHA.16.D001				
C61.61		.1 Complete installation as shown on drawings	no	2	2 532.38	5 064.76
		Curtains Furniture Item 6.7 Dwg 3089.92.00.WHA.16.D001				
C61.62		.1 Complete installation as shown on drawings	no	1	7 788.38	7 788.38
		Global Top Counter, Urban Lite leg and Pedestal Furniture Item 7.1 Dwg 3089.92.00.WHA.16.D001				
C61.63		.1 Complete installation as shown on drawings	no	5	14 969.85	74 849.25
		Giro knee tilt Furniture Item 7.2 Dwg 3089.92.00.WHA.16.D001				
C61.64		.1 Complete installation as shown on drawings	no	12	3 378.55	40 542.60
		Ecocentric Filing Cabinets Furniture Item 7.3 Dwg 3089.92.00.WHA.16.D001				
C61.65		.1 Complete installation as shown on drawings	no	2	5 757.82	11 515.64
					Carried Forward	1 439 883.61

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					Brought Forward	1 439 883.61
		Block Out Roller blinds Furniture Item 7.4 Dwg 3089.92.00.WHA.16.D001				
C61.66		.1 Complete installation as shown on drawings	no	3	10 406.00	31 218.00
		Global Top Counter, Urban Lite leg and Pedestal Furniture Item 8.1 Dwg 3089.92.00.WHA.16.D001				
C61.67		.1 Complete installation as shown on drawings	no	3	5 601.05	16 803.15
		Giro knee tilt Furniture Item 8.2 Dwg 3089.92.00.WHA.16.D001				
C61.68		.1 Complete installation as shown on drawings	no	3	3 378.55	10 135.65
		Ecocentric Filing Cabinets Furniture Item 8.3 Dwg 3089.92.00.WHA.16.D001				
C61.69		.1 Complete installation as shown on drawings	no	2	5 757.82	11 515.64
		Hisense 120L Silver Bar Fridge H120RTS Furniture Item 9.1 Dwg 3089.92.00.WHA.16.D002				
C61.70		.1 Complete installation as shown on drawings	no	1	3 116.42	3 116.42
		Russell Hobbs 30L Electronic Microwave Silver RHEM30L Furniture Item 8.2 Dwg 3089.92.00.WHA.16.D001				
C61.71		.1 Complete installation as shown on drawings	no	2	1 826.42	3 652.84
	PU	**LABORATORY EQUIPMENT**				
		LABORATORY EQUIPMENT				
	8.20	a) Items measured by No.				
C61.72		i) Biological oxygen demand apparatus	no	1	98 140.73	98 140.73
C61.73		ii) Moisture analyser	no	2	43 000.00	86 000.00
C61.74		iii) Spectrophotometer	no	2	133 003.00	266 006.00
C61.75		iv) Portable turbid meter	no	2	37 948.98	75 897.96
C61.76		v) Portable digital meter with pH and conductivity probes	no	2	66 332.00	132 664.00
C61.77		vi) Anti vibration table mount	no	2	22 218.19	44 436.38
C61.78		vii) Dissolved oxygen field kit	no	4	48 314.11	193 256.44
					Carried Forward	2 412 726.82

					Brought Forward	2 412 726.82
C61.79		viii) TSS portable hand-held turbidity, suspended solids and sludge blanket instrument	no	4	89 423.49	357 693.96
C61.80		ix) Colorimeter	no	2	12 738.46	25 476.92
C61.81		x) Fridge freezer	no	2	53 212.50	106 425.00
C61.82		xi) Incubator	no	1	23 811.25	23 811.25
C61.83		xii) Hydrogen sulphide detector	no	2	14 061.00	28 122.00
		a) Items to be measured by sum				
C61.84		i) Laboratory glassware, pipets and bottles	sum	-	181981.7	181 981.70
C61.85		ii) Reagents and liquids	sum	-	71719.07	71 719.07
C61.86		iii) E.coli testing equipment	sum	-	247058.03	247 058.03
		BILL NO. C61 JOINERY				
		Carried forward to Summary of Bills			**Total**	3 455 014.75

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - D				
		DEMOLITIONS, RENOVATIONS AND LANDSCAPING				
		D1 - Provisional sums and Dayworks				
	SANS 1200 A	**BILL NO. D1** **PROVISIONAL SUMS AND PRIME COST ITEMS (CIVIL WORKS)**				
		Note: Provisional sums applicable to the building work are to be priced under relevant Building Works bills of quantities				
		Note: Expenditure under the following provisional sums is for work executed by the Contractor\Sub-contractor or Supplier during the construction phase of the contract. Values paid under these items shall be "nett values excluding discount and VAT". Invoices shall be supplied for each expenditure and attached to the payment certificates.				
		For work to be executed by the Contractor and valued in terms of the "Valuation of Variations" clause in the Conditions of Contract				
		ENGINEERS REQUIREMENTS				
	8.5	(a) .2 Engineers requirements				
D1.1	PSA7.6	.3 Acceptance control testing	Prov sum		100 000.00	100 000.00
D1.2		.4 Overheads, charges and profit on above	%		10%	10 000.00
		WORK TO EXISTING SERVICES				
	8.5	(a) .3 Existing services				
D1.3	PSA7.9	.1 Locating existing services	Prov sum		100 000.00	100 000.00
D1.4		.2 Overheads, charges and profit on above	%		0.10	10 000.00
D1.5	PSA7.10	.3 Relocating existing services	Prov sum		100 000.00	100 000.00
D1.6		.4 Overheads, charges and profit on above	%		0.10	10 000.00
		PRIME COST ITEMS				
	8.6	Materials for dayworks				
D1.7	PSA8.1	(a) Materials used in the execution of dayworks	PC item		50 000.00	50 000.00
D1.8		(b) Overheads, charges and profit on above	%		0.10	5 000.00
					Carried Forward	385 000.00

					Brought Forward	385 000.00
		BILL NO. D1 **PROVISIONAL SUMS AND PRIME COST ITEMS (CIVIL WORKS)**				
		Carried forward to Summary of Bills			**Total**	385 000.00

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - D				
		DEMOLITIONS, RENOVATIONS AND LANDSCAPING				
		D1 - Provisional sums and Dayworks				
	SANS 1200 A	**BILL NO. D2** **DAYWORKS AND TEMPORARY WORKS (CIVIL WORKS)**				
		Note: Dayworks executed on instruction of the Engineer only. Supervision of dayworks is not payable under this section and is deemed to be included under Preliminary and General items in 1200A Daywork sheets shall be delivered to the Engineer at the end of each day for approval, failing this, the Engineer may reject the dayworks.				
		DAYWORKS				
	8.7.1	**LABOUR**				
D2.1		(a) Skilled	hr	1000	87.31	87 310.00
D2.2		(b) Semi-skilled	hr	3000	86.00	258 000.00
D2.3		(c) Un-skilled	hr	5000	58.41	292 050.00
		PLANT HIRE (WORK RATES ON SITE)				
		TRUCKS				
	8.7.2	.1 Tipper trucks (specify capacity)				
D2.4		(a) Capacity_____m^3 (small)	hr	500	4.26	2 130.00
D2.5		(b) Capacity_____m^3 (medium)	hr	500	5.59	2 795.00
D2.6		(c) Capacity_____m^3 (large)	hr	500	6.58	3 290.00
	8.7.2	.2 Off highway dump trucks (specify capacity)				
D2.7		(a) Capacity_____m^3 (medium)	hr	500	7.32	3 660.00
D2.8		(b) Capacity_____m^3 (large)	hr	500	9.17	4 585.00
	8.7.2	.3 Flatbed trucks (specify capacity)				
D2.9		(a) Capacity_____m^3 (small)	hr	500	2.71	1 355.00
D2.10		(b) Capacity_____m^3 (medium)	hr	500	5.14	2 570.00
D2.11		(c) Capacity_____m^3 (large)	hr	500	6.58	3 290.00
		LDV'S				
	8.7.2	.4 LDV (specify size)				
D2.12		(a) LDV_____ton	km	5000	3.84	19 200.00
		WATER TANKERS				
	8.7.2	.5 Water tankers (specify capacity)				
D2.13		(a) Capacity_____liter (small, towable)	hr	500	0.87	435.00
					Carried Forward	680 670.00

					Brought Forward	680 670.00
D2.14		(b) Capacity_____liter (medium)	hr	500	4.26	2 130.00
D2.15		(c) Capacity_____liter (large)	hr	500	5.48	2 740.00
		LOADERS				
	8.7.2	.6 Wheel loaders (specify capacity)				
D2.16		(a) Capacity_____m^3 (small)	hr	500	3.38	1 690.00
D2.17		(b) Capacity_____m^3 (medium)	hr	500	6.46	3 230.00
D2.18		(c) Capacity_____m^3 (large)	hr	500	8.62	4 310.00
		GRADERS				
	8.7.2	.7 Motor graders (specify model/kw)				
D2.19		(a) Model _____/_____kw	hr	500	14.43	7 215.00
		BULLDOZERS				
	8.7.2	.8 Bulldozers (specify model/mass/kw)				
D2.20		(a) Model____/_____/kg____kw (small)	hr	500	9.91	4 955.00
D2.21		(b) Model____/_____/kg____kw (medium)	hr	500	11.15	5 575.00
D2.22		(c) Model____/_____/kg____kw (large)	hr	500	22.29	11 145.00
		EXCAVATORS				
	8.7.2	.9 Crawler excavators (specify model/mass/kw)				
D2.23		(a) Model____/_____/kg____kw (small)	hr	500	3.29	1 645.00
D2.24		(b) Model____/_____/kg____kw (medium)	hr	500	7.79	3 895.00
D2.25		(c) Model____/_____/kg____kw (large)	hr	500	10.17	5 085.00
		TLB'S				
	8.7.2	.10 Tractor loader backhoe (TLB)(specify model)				
D2.26		(a) Model_____	hr	1000	4.50	4 500.00
		RIDE-ON ROLLERS				
	8.7.2	.11 Self propelled vibrating rollers (smooth drum) (specify mass)				
D2.27		(a) Mass_____kg (medium)	hr	500	2.13	1 065.00
D2.28		(b) Mass_____kg (large)	hr	500	5.48	2 740.00
	8.7.2	.12 Self propelled vibrating rollers (padfoot) (specify mass)				
D2.29		(a) Mass_____kg (medium)	hr	500	5.48	2 740.00
D2.30		(b) Mass_____kg (large)	hr	500	7.91	3 955.00
		WALK BEHIND ROLLERS				
	8.7.2	.14 Walk behind vibrating rollers (specify model)				
D2.31		(a) Model_____(BW 61) (small)	hr	500	1.15	575.00
					Carried Forward	749 860.00

					Brought Forward	749 860.00
D2.32		(b) Model_____(BW 76) (medium)	hr	500	1.27	635.00
D2.33		(c) Model_____(BW 90) (large)	hr	500	1.43	715.00
		COMPACTORS				
	8.7.2	.15 Plate compactors (specify model)				
D2.34		(a) Model_____	hr	500	0.99	495.00
	8.7.2	.16 Wackers (specify model)				
D2.35		(a) Model_____	hr	500	1.33	665.00
		COMPRESSORS				
	8.7.2	.18 Portable diesel compressors (specify capacity)				
D2.36		(a) Capacity_____cfm (small)	hr	500	3.80	1 900.00
D2.37		(b) Capacity_____cfm (medium)	hr	500	7.39	3 695.00
D2.38		(c) Capacity_____cfm (large)	hr	500	14.78	7 390.00
		WATERPUMPS				
	8.7.2	.19 Waterpump (specify capacity)				
D2.39		(a) Capacity_____ liter/sec (small)	hr	500	1.17	585.00
D2.40		(b) Capacity_____ liter/sec (medium)	hr	500	1.72	860.00
D2.41		(c) Capacity_____ liter/sec (large)	hr	500	3.44	1 720.00
		GENERATORS				
	8.7.2	.21 Mobile generator set (specify KVA)				
D2.42		(a) _____KVA (small)	hr	500	1.15	575.00
D2.43		(b) _____KVA (medium])	hr	500	1.15	575.00
D2.44		(c) _____KVA (large)	hr	500	1.84	920.00
		TRANSPORT (COST TO AND FROM SITE)				
		Note: Distance shall be measured one way only (tender rates shall include for transport in both directions to and from site)				
	8.7.3	.1 Low bed				
D2.45		(a) Low-bed (suitable for the largest piece of equipment above)	km	5000	0.33	1 650.00
	8.7.3	.2 Tipper truck				
D2.46		(a) Small	km	500	0.21	105.00
D2.47		(b) Medium	km	500	0.23	115.00
D2.48		(c) Large	km	500	0.27	135.00
	8.7.3	.3 Flatbed truck				
D2.49		(a) Small	km	500	0.16	80.00
					Carried Forward	772 675.00

					Brought Forward	772 675.00
D2.50		(b) Medium	km	500	0.21	105.00
D2.51		(c) Large	km	500	0.26	130.00
	8.7.3	.4 Water tanker				
D2.52		(a) Small	km	500	0.21	105.00
D2.53		(b) Medium	km	500	0.21	105.00
D2.54		(c) Large	km	500	0.21	105.00
		EXISTIG SERVICES				
		EXISTING SERVICES				
	8.8.4	Existing services				
D2.55		(a) Supply or hire specialist equipment for the detection of services	sum	-	0	-
D2.56		(b) The use of equipment referred to above	day	50	785.82	39 291.00
D2.57		(c) Excavation by hand in soft material to expose services	m^3	2000	5.04	10 080.00
		BILL NO. D2 **DAYWORKS AND TEMPORARY WORKS (CIVIL WORKS)**				
		Carried forward to Summary of Bills			**Total**	822 596.00

Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Demolitions

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - D				
		DEMOLITIONS				
		D2 - Demolitions				
		BILL NO. D3 **DEMOLITIONS**				
		DEMOLITIONS				
		DEMOLITION OF EXISTING STRUCTURES				
	SANS 1200 C	**CLEAR SITE**				
		CLEAR AND GRUB SITE				
	8.2.1	(a) Clear and grub area for				
D3.1		.1 '08 Head of Works as per DWG 3089.00.00.AAB.10.U021	ha	0.1	29 405.25	2 940.53
D3.2		.2 '97 Treatment Zone as per DWG 3089.00.00.AAB.10.U021	ha	5	29 405.25	147 026.25
D3.3		.3 '08 Reuse Zone as per DWG 3089.00.00.AAB.10.U021	ha	0.05	29 405.25	1 470.26
D3.4		.4 Miscellaneous Structures DWG 3089.00.00.AAB.10.U021	ha	0.1	29 405.25	2 940.53
D3.5		.5 Sludge Handling Zone as per DWG 3089.00.00.AAB.10.U021	ha	0.14	29 405.25	4 116.74
	SANS 1200 C	**TOPSOIL AND LANDSCAPING**				
		REMOVE TOPSOIL				
	8.2.10	(a) Remove topsoil to a depth of 150mm and				
D3.6		.1 Stockpile on site and maintain	m³	1000	59.55	59 550.00
	SANS 1200 C	**REMOVE AND SPOIL EXISTING SERVICES**				
		REMOVAL OF EXISTING SERVICES				
	8.2.7	(a) Dismantle remove and spoil pipelines, powerlines, cables, etc. (excavation, backfilling and removal of concrete, etc. measured elsewhere) Note: Careful consideration should be made with regard to the requirements stipulated in this Document's Health and Safety spesification for handling and disposing of Asbestos material. Rates provided should make provision for such instances				
	8.2.7	(a) .1 Pipelines not exceeding 5m deep with nominal diameters of:				
					Carried Forward	218 044.30

						Brought Forward	218 044.30
D3.7		i) less than 250 mm	m	3020	37.33		112 736.60
D3.8		ii) 250 to 350 mm	m	1810	37.33		67 567.30
D3.9		iii) 350 to 450 mm	m	300	37.33		11 199.00
D3.10		iv) 450 to 700 mm	m	560	37.33		20 904.80
D3.11		v) 700 to 1000 mm	m	70	54.46		3 812.20
	8.2.7	(a) .2 Extra over for handling of Asbestos material					
D3.12		i) All diameters	m	2880	113.82		327 801.60
	8.2.7	(a) .4 Underground cables not exceeding 2m deep					
D3.13		i) Cables from 0 mm² to 120 mm²	m	200	24.89		4 978.00
D3.14		ii) Cables exceeding 300 mm² up to 500 mm²	m	200	24.89		4 978.00
D3.15		iii) Cables exceeding 300 mm² up to 500 mm²	m	200	24.89		4 978.00
	SANS 1200 C	**REMOVE AND SPOIL EXISTING STRUCTURES**					
		Demolish and spoil material for structures, buildings, etc. at a spoil site established by the Contractor. Note: .1 Structural concrete from demolitions below shall be crushed and screened for future use, and the crushing, screening and stockpiling of the material is measured elsewhere .2 The removal of mechanical equipment, electrical equipment and pipe fittings is to be spoiled off site at a site established by the Contractor, and these items are measured elsewhere .3 Careful consideration should be made with regard to the requirements stipulated in this Document's Health and Safety. Rate provided below should be provision for handling and disposing of Asbestos material .4 The remainder of the demolished material shall be spoiled off site at a site established by the Contractor					
	SANS 1200 C	**DEMOLISH BUILDINGS**					
	8.2.8	(a) Buildings					
		.1 Single storey buildings etc					
	8.2.8	(a) .1 .1 '97 Treatment Train					
D3.16		i) Reuse Pump Station with a size of approximately 160m² in area on plan, consisting of brick walls, asbestos roof, etc, including grubbing up foundations, filling in of holes, etc and levilling site	No.	2	80 463.50		160 927.00
						Carried Forward	937 926.80

					Brought Forward	937 926.80
	8.2.8	(a) .1 .2 Reuse Pump Station				
D3.17		i) Electrical building with a size of approximately 150m² in area on plan, consisting of brick walls, asbestos roof, etc., inlcuding grubbing up foundations, filling in of holes, etc. and leveling of site	No.	1	77 504.86	77 504.86
D3.18		ii) Filtration building with a size of approximately 180m² in area on plan, consisting of brick walls, asbestos roof, etc., inlcuding grubbing up foundations, filling in of holes, etc. and leveling of site	No.	1	91 823.19	91 823.19
D3.19		iii) Booster pump station with a size of approximately 55m² in area on plan, consisting of brick walls, asbestos roof, etc., including grubbing up foundations, filling in of holes, etc. and leveling of site	No.	1	87 482.15	87 482.15
	8.2.8	(a) .1 .3 Miscellaneous Structures				
D3.20		i) Staff house with a size of approximately 207m² in area on plan, consisting of brick walls, asbestos roof, etc., including grubbing up foundations, filling in of holes, etc. and leveling of site	No.	1	54 625.35	54 625.35
D3.21		ii) Mess room and ablution facilities with a size of approximately 137m² in area on plan, consisting of brick walls, asbestos roof, etc, including grubbing up foundations, filling in of holes, etc and levilling site	No.	1	104 017.08	104 017.08
D3.22		iii) Old Sappi line reuse pump station with a size of approximately 80m² in area on plan, consisting of brick walls, asbestos roof, etc, including grubbing up foundations, filling in of holes, etc and levilling site	No.	1	76 642.35	76 642.35
D3.23		iv) Staff hostels with a size of approximately 300m² in area on plan, consisting of brick walls, asbestos roof, etc., including grubbing up foundations, filling in of holes, etc. and leveling of site	No.	1	209 113.73	209 113.73
	8.2.8	(a) .2 Double storey buildings				
		.1 '97 treatment train				
D3.24		i.) Control room building with size of approximately 190m² in area on plan, consisting of brick walls, asbestos roof, etc, including grubbing up foundations, filling in of holes, etc. and leveling of site	No.	1	99 298.21	99 298.21
	SANS 1200 C	**DEMOLISH CONCRETE STRUCTURES**				
	8.2.8	(b) Reinforced concrete structures				
					Carried Forward	1 738 433.72

						Brought Forward	1 738 433.72
	8.2.8	(b) .1	Reinforced concrete structures				
			.1 '08 Head of Works				
D3.25			i) Inlet works complete inlet works MCC, screening channels, degritters and concrete channels, etc Ref: DWG 100654/NIW-003, 006, 009, 011	No.	1	1 219 921.61	1 219 921.61
	8.2.8	(b) .2	'97 Treatment Train				
D3.26			i) Primary sludge pump station, etc Ref: DWG 100654/153A/03	No.	1	152 490.20	152 490.20
D3.27			ii) Primary settling tanks complete with draw-off chambers, primary sedimentation splitter box, etc Ref: DWG 1597/2/3/1	No.	2	465 095.12	930 190.24
D3.28			iii) Biological reactor complete with chambers, launder, settled sewage pump station, etc Ref: DWG 1597/2/2/1	No.	1	2 821 068.73	2 821 068.73
D3.29			iv) Raw activated sludge pump station complete with plinths Ref: DWG 1597/2/12/1	No.	1	152 490.20	152 490.20
D3.30			v) Secondary Settling tanks complete with draw-off chambers, sludge pump station, secondary sedimentation tank splitter box, etc. Ref: DWG 1597/2/4/1	No.	6	465 095.12	2 790 570.72
	8.2.8	(b) .3	Reuse Train				
D3.31			i) Mini subs concrete slabs	No.	2	15 439.63	30 879.26
	8.2.8	(b) .4	Miscellaneous Structures				
D3.32			i) Chemical dosing facility complete with concrete slabs, etc.	No.	1	192 137.65	192 137.65
D3.33			ii) Concrete overflow channel	No.	1	128 091.77	128 091.77
	8.2.8	(b) .5	Sludge handling				
D3.34			i) '97 Dissolved air floatation tanks complete draw-off chambers, sludge pump station, with recirculation pump system, etc	No.	1	127 115.83	127 115.83
D3.35			ii) '08 Dissolved air floatation units complete with draw off chambers, concrete plinths, DAF feed pump station and thickened sludge pump station, etc. Ref: DWG 400361 CT 20Z, 21Z, 22Z	No.	1	114 916.62	114 916.62
D3.36			iv) Sludge holding tank complete with sludge draw-off chamber, etc. Ref: M112/Z/19	No.	1	499 887.28	499 887.28
						Carried Forward	10 898 193.83

[redacted]

					Brought Forward	10 898 193.83
D3.37		v) WAS holding tank complete with pump station, etc.	No.	1	654 640.44	654 640.44
D3.38		vi) Primary Sludge holding tank complete with sludge draw off chamber, etc. Ref: M112/Z/19	No.	1	499 887.28	499 887.28
D3.39		vii) Sludge cake silos complete Ref: DWG 100654/SDB-003	No.	2	204 336.87	408 673.74
	SANS 1200 C	**DEMOLISH SUNDRY STRUCTURES**				
	8.2.8	(c) Sundries structures				
	8.2.8	(c) .1 Manholes, catch pits, precast inlet and outlet structures and junction boxes complete:				
	8.2.8	(c) .1 .1 '97 Treatment Train				
D3.40		i) Structures with a plan area up to and including 5m^{c} with a maximum depth of 3m	No	35	32 937.88	1 152 825.80
	8.2.8	(c) 0.1 .2 Sludge Management				
D3.41		i) Structures with a plan area up to and including 5m^{c} with a maximum depth of 3m	No	7	22 873.53	160 114.71
	8.2.8	(c) .2 Reinforced concrete structures (other than those measured above encountered below ground during construction)				
D3.42		.1 '97 Treatment Train	m^{3}	100	1 524.90	152 490.00
D3.43		.2 Sludge Management	m^{3}	100	1 524.90	152 490.00
	SANS 1200 C	**DEMOLISH STEELWORK, MECHANICAL EQUIPMENT, ELECTRICAL EQUIPMENT AND PIPEWORK**				
		DEMOLISH AND SPOIL OFF SITE				
	8.2.8	(c) Dismantling and removal of steelwork, mechanical and electrical equipment and pipework and spoil off site at site established by the Contractor				
	8.2.8	(c) .1 Buildings				
	8.2.8	(c) .1 .1 '97 treatment train				
D3.44		i) Reuse Pump Station (Ref. to item 1.18)	No.	1	71 347.96	71 347.96
D3.45		ii) Control Room (Ref. to item 1.26)	No.	1	142 695.93	142 695.93
	8.2.8	(c) .1 .2 Reuse Pump Station				
D3.46		i) Electrical Building (Ref. to 1.19)	No.	1	71 347.96	71 347.96
D3.47		ii) Filtration Building (Ref. to 1.20)	No.	1	71 347.96	71 347.96
					Carried Forward	14 436 055.61

							Brought Forward	14 436 055.61
D3.48			iii)	Booster Pump Station (Ref. to 1.21)	No.	1	71 347.96	71 347.96
	8.2.8	(c) .1	3	Miscellaneous Structures				
D3.49			i)	Old Sappi Line Reuse Pump Station (Ref. to item 1.24)	No.	1	85 617.56	85 617.56
		.2		Reinforced concrete structures				
	8.2.8	(c) .2	.1	'08 Head of Works				
D3.50				Inlet works complete inlet works MCC, screening channels, degritters and concrete channels, etc (Ref. to item 1.27)	No.	1	281 580.34	281 580.34
	8.2.8	(c) .2	.2	'97 treatment Train				
D3.51			i)	Primary sludge pump station (Ref. to item 1.28)	No.	1	28 539.19	28 539.19
D3.52			ii)	Primary settling tanks complete with draw-off chambers, primary sedimentation splitter box (Ref. to item 1.29)	No.	2	28 539.19	57 078.38
D3.53			iii)	Biological reactor complete with chambers, launder, settled sewage pump station (Ref. to item 1.30)	No.	1	114 156.74	114 156.74
D3.54			iv)	Raw activated sludge pump station complete with plinths (Ref. to item 1.31)	No.	1	28 539.19	28 539.19
D3.55			v)	Secondary Settling tanks complete with draw-off chambers, sludge pump station, secondary sedimentation tank splitter box, (Ref. to item 1.32)	No.	6	28 539.19	171 235.14
	8.2.8	(c) 0.2	.3	Miscellaneous Structures				
D3.56			i)	Chemical dosing facility complete with concrete slabs, etc (Ref. to item 1.34)	No.	1	28 539.19	28 539.19
	8.2.8	(c) .2	.4	Sludge handling facility				
D3.57			i)	'97 Dissolved air floatation tanks complete draw-off chambers, sludge pump station, with recirculation pump system (Ref. to item 1.36)	No.	3	28 539.19	85 617.57
D3.58			ii)	'08 Dissolved air floatation units complete with draw off chambers, concrete plinths, DAF feed pump station and thickened sludge pump station (Ref. to Item 1.37)	No.	1	42 808.78	42 808.78
D3.59			iv)	Sludge holding tank complete with sludge draw-offchamber (Ref. to item 1.38)	No.	1	57 078.37	57 078.37
D3.60			v)	WAS holding tank complete with pump station (Ref. to item 1.39)	No.	1	57 078.37	57 078.37
							Carried Forward	15 545 272.39

						Brought Forward	15 545 272.39
D3.61		vi) Primary Sludge holding tank complete with sludge draw off chamber (Ref. to item 1.40)	No.	1	57 078.37	57 078.37
D3.62		vii) Sludge cake silos complete (Ref. to item 1.41)	No.	2	71 347.96	142 695.92
		DEMOLISH AND STOCKPILE ON SITE				
	8.2.8	(d) Dismantling and removal of steelwork, mechanical and electrical equipment and pipework and deliver to storage yard on site.				
	8.2.8	(d) .1 '97 Treatment Train				
		.1 Reuse pump Station (ref to item 1.18)				
D3.63		i) Reuse pumps complete with pumps, motors, etc	sum	-	1882.32	1 882.32
		ii) Gantry and lifting equipment complete	sum	-	1882.32	1 882.32
	8.2.8	(d) .2 Control Room (Ref. to item 1.26)				
D3.65		i) Incomer 1 circuit breaker complete	sum	-	752.93	752.93
D3.66		ii) Incomer 2 circuit breaker complete	sum	-	752.93	752.93
D3.67		iii) Bus couple circuit breaker complete	sum	-	752.93	752.93
D3.68		iv) '97 Aerators drives complete	sum	-	1882.32	1 882.32
D3.69		v) '97 Settled sewage pump drives complete	sum	-	1882.32	1 882.32
D3.70		vi) '97 DAF feed drives complete	sum	-	752.93	752.93
D3.71		vii) '08 DAF feed drives complete	sum	-	752.93	752.93
D3.72		viii) '97 A-recycle pump drives complete	sum	-	752.93	752.93
D3.73		ix) Sludge Feed pump drives complete	sum	-	752.93	752.93
D3.74		x) Feed pump drives complete	sum	-	752.93	752.93
D3.75		xi) '97 Primary settling tank bridge drives complete	sum	-	752.93	752.93
D3.76		xii) '97 Secondary settling tank bridge drives complete	sum	-	752.93	752.93
	8.2.8	(d) .3 Primary sludge pump station (Ref. to item 1.28)				
D3.77		i) Primary sludge pumps complete with pumps, motor, etc.	sum	-	3764.65	3 764.65
D3.78		ii) Gantry and lifting equipment complete	sum	-	752.93	752.93
		.4 Primary settling tanks (Ref. to item 1.29)				
						Carried Forward	15 764 622.84

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						Brought Forward	15 764 622.84
D3.79			i) Carriage complete with drive unit, wheels, etc.	sum	-	3764.65	3 764.65
	8.2.8	(d) .5	Biological reactor (Ref. to item 1.30)				
D3.80			i) Settled sewage pumps complete with pumps, motor, etc	sum	-	3764.65	3 764.65
D3.81			ii) Aerators complete with impeller, shaft, gearbox, etc.	sum	-	15058.6	15 058.60
D3.82			ii) Gantry and lifting equipment complete	sum	-	1882.32	1 882.32
	8.2.8	(d) .6	Raw activated sludge pump station (Ref. to item 1.31)				
D3.83			i) RAS pumps complete with pump, motor, etc.	sum	-	3764.65	3 764.65
D3.84			ii) Gantry and lifting equipment complete	sum	-	752.93	752.93
	8.2.8	(d) .7	Secondary settling tank				
D3.85			i) Carriage complete with drive unit, wheels, etc.	sum	-	15058.6	15 058.60
	8.2.8	(d) .8	Reuse pump station (Ref. to item 1.19, 1.20 and 1.21)				
D3.86			i) Reuse pumps complete with pumps, motors, etc.	sum	-	3764.65	3 764.65
D3.87			ii) Gantry and lifting equipment complete	sum	-	752.93	752.93
D3.88			iii) Stepped screen	sum	-	3764.65	3 764.65
	8.2.8	(d) .9	Miscellaneous				
			.1 Old Sappi reuse pump station				
D3.89			i) Reuse pumps complete with pumps, motors, etc.	sum	-	3764.65	3 764.65
D3.90			ii) Gantry and lifting equipment complete	sum	-	752.93	752.93
	SANS 1200 C		**CRUSHING MATERIAL FROM DEMOLITION**				
	8.2.11	.1	Demolished structural concrete measured above shall be crushed and sieved to a nominal size of 75mm and stockpiled on site				
D3.91	8.2.11	.1 .1	Establishment and removal of suitable crushing and screening plant on site	sum	-	166023	166 023.00
			Crushing and screening of structural concrete of the following structures				
	8.2.11	.1 .2	'08 Head of Works				
						Carried Forward	15 987 492.05

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							Brought Forward	15 987 492.05
D3.92				i) Inlet works complete inlet works MCC, screening channels, degritters and concrete channels, etc (Ref. to item 1.25)	No.	1	131 683.20	131 683.20
	8.2.11	.1	.3	'97 Treatment Train				
D3.93				i) Primary sludge pump station, etc (Ref. to item 1.26)	No.	1	16 460.40	16 460.40
D3.94				ii) Primary settling tanks complete with draw-off chambers, primary sedimentation splitter box, etc (Ref. to item 1.27)	No.	2	50 204.22	100 408.44
D3.95				iii) Biological reactor complete with chambers, launder, settled sewage pump station, etc (Ref. to item 1.28)	No.	1	304 517.40	304 517.40
D3.96				iv) Raw activated sludge pump station complete with plinths (Ref. to item 1.29)	No.	1	16 460.40	16 460.40
D3.97				v) Secondary Settling tanks complete with draw-off chambers, sludge pump station, secondary sedimentation tank splitter box, etc. (Ref. to item 1.30)	No.	6	50 204.22	301 225.32
	8.2.11	.1	.4	Reuse Train				
D3.98				i) Mini subs concrete slabs (Ref. to item 1.31)	No.	2	1 666.62	3 333.24
	8.2.11	.1	.5	Miscellaneous Structures				
D3.99				i) Chemical dosing facility complete with concrete slabs, etc (Ref. to item 1.32)	No.	1	20 740.10	20 740.10
D3.100				ii) Concrete overflow channel (Ref. to item 1.33)	No.	1	13 826.74	13 826.74
	8.2.11	.1	.6	Sludge handling facility				
D3.101				i) '97 Dissolved air floatation tanks complete draw-off chambers, sludge pump station, with recirculation pump system, etc (Ref. to item 1.34)	No.	3	13 721.39	41 164.17
D3.102				ii) '08 Dissolved air floatation units complete with draw off chambers, concrete plinths, DAF feed pump station and thickened sludge pump station (Ref. to Item 1.35)	No.	1	12 075.35	12 075.35
D3.103				iv) Sludge holding tank complete with sludge draw-offchamber, etc (Ref. to item 1.36)	No.	1	54 003.28	54 003.28
D3.104				v) WAS holding tank complete with pump station, etc (Ref. to item 1.37)	No.	1	62 022.79	62 022.79
D3.105				vi) Primary Sludge holding tank complete with sludge draw off chamber (Ref. to item 1.38)	No.	1	54 003.28	54 003.28
							Carried Forward	17 119 416.16

[redacted]

					Brought Forward	17 119 416.16
D3.106		vii) Sludge cake silos complete (Ref. to item 1.39)	No.	2	22 056.94	44 113.88
	SANS 1200 C	**REMOVE AND SPOIL EXISTING ROADS**				
		Demolish and spoil material for roads at a spoil site established by the Contractor and backfill to natural ground level				
D3.107		.1 Existing roads surfacing including kerbing, etc	m²	6900	16.53	114 057.00
	SANS 1200 D	**MASS EARTHWORKS**				
		EARTHWORKS				
		COMMERCIAL MATERIAL PROVIDED BY THE CONTRACTOR				
	8.3.4	(a) Supply G7 material from commercial sources and backfill and compact to 97% mod AASHTO density in the following areas				
	8.3.4	(a) a) Buildings				
		.1 97 Treatment Train				
D3.108		i) Reuse Pump Station	m³	160	231.05	36 968.00
D3.109		i) Control Room	m³	95	231.05	21 949.75
	8.3.4	(a) a) .2 Reuse Pump Station				
D3.110		i) Electrical Building	m³	75	231.05	17 328.75
D3.111		ii) Filtration Building	m³	180	231.05	41 589.00
D3.112		iii) Booster Pump Station	m³	55	231.05	12 707.75
	8.3.4	(a) a) .3) Miscellaneous Structures				
D3.113		i) Staff house	m³	105	231.05	24 260.25
D3.114		ii) Mess Room and Ablution Facilities	m³	70	231.05	16 173.50
D3.115		iii) Old Sappi Line Reuse Pump Station	m³	40	215.20	8 608.00
	8.3.4	(a) b) Reinforced concrete structures				
		.1 '08 Head of Works				
D3.116		i) Inlet works complete inlet works MCC, screening channels, degritters and concrete channels, etc	m³	1300		
	8.3.4	(a) b) .2 '97 Treatment Train				
D3.117		i) Primary settling tanks complete with draw-off chambers, primary sedimentation splitter box, etc	m³	7700	215.20	1 657 040.00
					Carried Forward	19 114 212.04

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					Brought Forward	19 114 212.04
D3.118		ii) Biological reactor complete with chambers, launder, settled sewage pump station, etc	m³	11800	215.20	2 539 360.00
D3.119		iv) Secondary Settling Tanks complete with draw off chambers and secondary sedimentation splitter box	m³	20200	221.54	4 475 108.00
D3.120		v) Raw Activated Sludge pump station draw off chambers and pump station	m³	250	231.05	57 762.50
D3.121		vii) Primary Sludge Pump Station, etc	m³	400	231.05	92 420.00
	8.3.4	(a) b) .3 Sludge Management				
D3.122		i) '97 Dissolved air floatation tanks complete draw-off chambers, sludge pump station, with recirculation pump system, etc	m³	200	231.05	46 210.00
D3.123		ii) '08 Dissolved air floatation units complete with draw off chambers, concrete plinths, DAF feed pump station and thickened sludge pump station	m³	700	231.05	161 735.00
D3.124		iii) Sludge Holding Tank with sludge draw-off chamber, etc	m³	150	231.05	34 657.50
D3.125		iv) WAS holding tank complete with pump station, etc	m³	350	231.05	80 867.50
D3.126		v) Primary Sludge holding tank complete with sludge draw off chamber	m³	475	231.05	109 748.75
D3.127		vi) Sludge cake silos complete	m³	100	231.05	23 105.00
	8.3.4	(a) b) .4 Miscellaneous Structures				
D3.128		i) Chemical dosing plant	m³	140	231.05	32 347.00
	8.3.4	(a) c) Manholes, catch pits, precast inlet and outlet structures and junction boxes complete:				
D3.129		i) Structures, etc	m³	630	231.05	145 561.50
		PIPE TRENCHES				
	SANS 1200 DB	**EARTHWORKS (PIPE TRENCHES)**				
		Note: The following trench excavations and backfilling is for removal of underground pipelines (removal of pipelines measured under items D3.7-D3.15)				
	8.3.2	(a) Excavate in all materials and use as fill, making up shortfall of volume taken up by pipe with G7 material, and compacting backfill to 90% mod AASHTO density for				
	8.3.2	(a) .1 .1 Trench excavation not exceeding 2m deep				
					Carried Forward	26 913 094.79

						Brought Forward	26 913 094.79
			for removal of the following services				
D3.130			i) Pipe diameter smaller than 250mm	m	3020	179.76	542 875.20
D3.131			ii) Pipe diameter of 250 to 350 mm	m	1810	191.48	346 578.80
D3.132			iii) Pipe diameter of 350 to 450 mm	m	300	207.11	62 133.00
D3.133			iv) Pipe diameter of 450 to 700 mm	m	560	330.31	184 973.60
D3.134			v) Pipe diameter of 700 to 1000 mm	m	70	530.48	37 133.60
	8.3.2	(a) .1 .2	Trench excavation exceeding 2m deep and not exceeding 4m deep for removal of the following services				
D3.135			i) Pipe diameter of 500mm pipeline	m	14	719.05	10 066.70
D3.136			ii) Pipe diameter of 525mm pipeline	m	4	724.05	2 896.20
D3.137			iii) Pipe diameter of 600mm pipeline	m	25	740.54	18 513.50
D3.138			iv) Pipe diameter of 650mm pipeline	m	10	752.75	7 527.50
D3.139			v) Pipe diameter of 750mm pipeline	m	7	780.10	5 460.70
		BILL NO. D3 DEMOLITIONS					
		Carried forward to Summary of Bills				**Total**	28 131 253.59

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - D **RENOVATIONS** **D3 - Renovations**				
		BILL NO. D4 **RENOVATIONS** **Note:** **Measurement and pricing** Measurement of items is done in elements. It is the Contractors responsibility to visit the site and take their own measurements to price the applicable items in the bills of quantities. **Access to existing buildings** The Employer will vacate each building and give access to the Contractor to execute the maintenance work per building. Only one building will be made available at any time for access as this is an operational site and more than one building cannot be given. **Work measured under provisional sums and dayworks** Certain work is not possible to measure and price as a "lump sum" and will be executed under dayworks for labour and materials required to execute this work. This work is mainly for Plumbing and Electrical work and repair of certain items such as windows and doors, etc. Refer to daywork items at the end of these bills. **Cleaning of existing structures** All structures are to be cleaned properly by approved method (such as high pressure washers for the external facades - if this is approved for use by the Engineer) by removing all salt residue and contamination before repairs are done and new coatings applied. **Plumbing** All plumbing repairs will be done through "dayworks" **Electrical** All electrical repairs will be done through "dayworks"				
	SANS 1200 A	**DAYWORKS - VARIOUS TRADES** **DAYWORKS** **Note:** Dayworks executed on instruction of the Engineer only. Supervision of dayworks is not payable under this section and is deemed to be included under Preliminary and General items in 1200A. Daywork sheets shall be delivered to the Engineer at the end of each day for approval, failing this, the Engineer may reject the dayworks.				
					Carried Forward	

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					Brought Forward	
		PRIME COST ITEMS				
		Note:				
		Expenditure under the following Prime Cost item is for material purchases by the Contractor for the execution of dayworks only. Values paid under these items shall be "nett values excluding discount and VAT". Invoices shall be supplied for each expenditure and attached to the payment certificates.				
		MATERIALS				
		Material purchases for dayworks				
	8.6	(a) Materials purchased for the execution of dayworks				
D4.1		i) Existing '08 Control Room	Pc sum		50 000.00	50 000.00
D4.2		ii) Existing Dewatering building	Pc sum		50 000.00	50 000.00
D4.3		iii) Existing Primary Sludge Pump Station	Pc sum		50 000.00	50 000.00
D4.4		iv) Existing Raw Sewage Pump Station	Pc sum		50 000.00	50 000.00
D4.5		v) Existing Workshop	Pc sum		50 000.00	50 000.00
D4.6		vi) Existing Stone Trap Building	Pc sum		50 000.00	50 000.00
D4.7		vii) Existing Support Staff Building	Pc sum		50 000.00	50 000.00
	8.6	(b) Overheads, charges and profit on above				
D4.8		i) Existing '08 Control Room	%		10%	5 000.00
D4.9		ii) Existing Dewatering building	%		10%	5 000.00
D4.10		iii) Existing Primary Sludge Pump Station	%		10%	5 000.00
D4.11		iv) Existing Raw Sewage Pump Station	%		10%	5 000.00
D4.12		v) Existing Workshop	%		10%	5 000.00
D4.13		vi) Existing Stone Trap Building	%		10%	5 000.00
D4.14		vii) Existing Support Staff Building	%		10%	5 000.00
		LABOUR				
		Labour charges for dayworks				
	8.7.1	(a) Skilled - carpenter, joiner, plumber, electrician, etc				
D4.15		i) Existing '08 Control Room	hr	100	87.31	8 731.00
D4.16		ii) Existing Dewatering building	hr	100	87.31	8 731.00
					Carried Forward	402 462.00

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					Brought Forward	402 462.00
D4.17		iii) Existing Primary Sludge Pump Station	hr	100	87.31	8 731.00
D4.18		iv) Existing Raw Sewage Pump Station	hr	100	87.31	8 731.00
D4.19		v) Existing Workshop	hr	100	87.31	8 731.00
D4.20		vi) Existing Stone Trap Building	hr	100	87.31	8 731.00
D4.21		vii) Existing Support Staff Building	hr	100	87.31	8 731.00
	8.7.1	(b) Semi-skilled - bricklayer, painter, etc				
D4.22		i) Existing '08 Control Room	hr	100	86.00	8 600.00
D4.23		ii) Existing Dewatering building	hr	100	86.00	8 600.00
D4.24		iii) Existing Primary Sludge Pump Station	hr	100	86.00	8 600.00
D4.25		iv) Existing Raw Sewage Pump Station	hr	100	86.00	8 600.00
D4.26		v) Existing Workshop	hr	100	86.00	8 600.00
D4.27		vi) Existing Stone Trap Building	hr	100	86.00	8 600.00
D4.28		vii) Existing Support Staff Building	hr	100	86.00	8 600.00
	8.7.1	(c) Unskilled - labourers				
D4.29		i) Existing '08 Control Room	hr	100	58.41	5 841.00
D4.30		ii) Existing Dewatering building	hr	100	58.41	5 841.00
D4.31		iii) Existing Primary Sludge Pump Station	hr	100	58.41	5 841.00
D4.32		iv) Existing Raw Sewage Pump Station	hr	100	58.41	5 841.00
D4.33		v) Existing Workshop	hr	100	58.41	5 841.00
D4.34		vi) Existing Stone Trap Building	hr	100	58.41	5 841.00
D4.35		vii) Existing Support Staff Building	hr	100	58.41	5 841.00
		EXISTING 08 CONTROL ROOM BUILDING				
		Dwg 3089.92.00.SUK.16.A001, E001 and U001				
		EXTERNAL FACADE				
		ROOF				
D4.36		Clean entire roof structure by an approved method, repair all visual defects and seal sheeting fixing screws, flashings, etc with an approved sealant, and apply finishing coats as specified on the drawings, and leave roof watertight.	sum	-	61602.77	61 602.77
					Carried Forward	608 806.77

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					Brought Forward	608 806.77
		RAINWATER REMOVAL				
D4.37		Clean all rainwater removal items such as gutters down pipes, etc by an approved method, repair all visual defects and seal all joints, flashings, etc with an approved sealant, and apply finishing coats as specified on the drawings, and leave watertight.	sum	-	16125	16 125.00
		DOORS				
D4.38		Clean entire external facade by an approved method, repair all visual defects and seal all joints, etc with an approved sealant, and apply finishing coats as specified on the drawings, and leave watertight.	sum	-	68357.1	68 357.10
		DOORS AND WINDOWS (EXTERNAL FACE ONLY)				
		Doors and windows must be cleaned and recoated and sealed with finishes as specified on the drawings. If any additional repairs are required such as glass replacement, hinge replacements, lock replacements,etc this will be measured and priced for additionally as indicated in this section under Dayworks. Such repairs and replacements will be done as follows: 1. Materials will be purchased and delivered to site through daywork material supply. 2. Fixing of such items will be done through daywork labour rates supplied. 3. Note that supervision of all daywork items will not be paid for seperately under this section and is covered by the general P&G supervision of the contract.				
D4.39		Clean all doors and windows by an approved method, repair all visual defects and seal all joints, etc with an approved sealant, and apply finishing coats as specified on the drawings, and leave watertight. Replacing elements on the doors and windows will be measured under "Dayworks" below	sum	-	15318.75	15 318.75
		BRICK LINING				
D4.40		595mm high, 25mm thick satin black facebrick fixed to wall with Tylon CM11 or similar approved adhesive and Chryso - Super Jet Black Oxide mortar for fround from FCL. Surface area approximately 30m².	sum	-	38416.75	38 416.75
		BALUSTRADE				
D4.41		1000mm high stainless steel balustrade. Approximately 50m in length	sum	-	118250	118 250.00
		INTERNAL FINISHES				
		WALLS				
D4.42		Clean all walls by an approved method, repair all visual defects and seal all joints, etc with an approved sealant, and apply finishing coats as specified on the drawings, and leave watertight.	sum	-	68357.1	68 357.10
		CEILINGS				
D4.43		Clean all ceilings by an approved method, repair all visual defects and seal all joints, etc with an approved sealant, and apply finishing coats as specified on the drawings, and leave watertight.	sum	-	34848.12	34 848.12
					Carried Forward	968 479.59

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					Brought Forward	968 479.59
		FLOORS				
D4.44		Clean all floors by an approved method, repair all visual defects and seal all joints, etc with an approved sealant, and apply finishing coats as specified on the drawings.	sum	-	110884.98	110 884.98
		DOORS AND WINDOWS (INTERNAL FACE ONLY)				
		Doors and windows must be cleaned and recoated and sealed with finishes as specified on the drawings. If any additional repairs are required such as glass replacement, hinge replacements, lock replacements,etc this will be measured and priced for additionally as indicated in this section under Dayworks. Such repairs and replacements will be done as follows: 1. Materials will be purchased and delivered to site through daywork material supply. 2. Fixing of such items will be done through daywork labour rates supplied. 3. Note that supervision of all daywork items will not be paid for seperately under this section and is covered by the general P&G supervision of the contract.				
D4.45		Clean all doors and windows by an approved method, repair all visual defects and seal all joints, etc with an approved sealant, and apply finishing coats as specified on the drawings, and leave watertight. Replacing elements on the doors and windows will be measured under "Dayworks" below	sum	-	15318.75	15 318.75
		EXISTING DEWATERING BUILDING				
		Dwg 3089.92.00.SUJ.16.E001. U001. U002 and U003				
		EXTERNAL FACADE				
		ROOF				
D4.46		Ref.to item D4.37	sum	-	53750	53 750.00
		RAINWATER REMOVAL				
D4.47		Ref. to item D4.38	sum	-	16125	16 125.00
		EXTERNAL FACADE - EXCEPT WINDOWS AND DOORS				
D4.48		Ref. to item D4.39	sum	-	24187.5	24 187.50
		DOORS AND WINDOWS (EXTERNAL FACE ONLY)				
D4.49		Ref. to item D4.40	sum	-	24187.5	24 187.50
	PU	**BRICK LINING**				
D4.50		595mm high, 25mm thick satin black facebrick fixed to wall with Tylon CM11 or similar approved adhesive and Chryso - Super Jet Black Oxide mortar for fround from FCL. Surface area approximately 70m².	sum	-	89639.08	89 639.08
		GLASS BLOCKS Approved glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
					Carried Forward	1 302 572.40

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					Brought Forward	1 302 572.40
D4.51		.1 190 x 190 x 190mm Glass blocks in panels with a surface area of approximately 55m²	sum	-	130075	130 075.00
		INTERNAL FINISHES				
		WALLS				
D4.52		Ref. to item D4.43	sum	-	193500	193 500.00
		CEILINGS				
D4.53		Ref. to item D4.44	sum	-	23232.08	23 232.08
		FLOORS				
D4.54		Ref. to item D4.45	sum	-	64500	64 500.00
		DOORS AND WINDOWS (INTERNAL FACE ONLY)				
D4.55		Ref. to item D4.46	sum	-	24187.5	24 187.50
		NEW FLOOR SLAB				
		Note: The following work is for removal and replacement of floor slab to existing building				
	SANS 1200 C	**REMOVE EXISTING STRUCTURES**				
		Demolish and spoil material for structures, buildings, etc at a spoil site established by the Contractor				
	8.2.8	Sundry structures, etc				
D4.56		.6 150mm Thick reinforced concrete floor slab inside existing building	m²	840	228.74	192 141.60
D4.57		.7 Compact existing filling below floors to 95% mod AASHTO density to receive new concrete floor (concrete measured elsewhere)	m²	840	100.09	84 075.60
	SANS 1200 G	**ROD REINFORCEMENT**				
	8.3.1	Mild steel				
D4.58		.1 All sizes	ton	0.1	18 976.98	1 897.70
	8.3.1	High tensile steel				
D4.59		.2 All sizes	ton	1.5	18 976.98	28 465.47
		MESH REINFORCEMENT				
	8.3.2	High tensile welded mesh				
D4.60		.2 Ref no.245	m²	840	62.58	52 567.20
	SANS 1200 G	**STRENGTH CONCRETE**				
	8.4.3	Strength concrete 35Mpa/19mm				
D4.61		.4 Floor slabs	m³	126	1 934.57	243 755.82
	SANS	**UNFORMED SURFACE FINISHES**				
					Carried Forward	2 340 970.37

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					Brought Forward	2 340 970.37
	1200 G					
	8.4.4c	Power floated finish				
D4.62		.1 Slabs, floor slabs, etc	m²	840	38.87	32 650.80
		SPECIAL SURFACE FINISHES				
	8.4.4d	Approved surface hardner applied to manufacturers specification complete				
D4.63		.1 Floors	m²	840	129.00	108 360.00
	SANS 1200 G	**EXPANSION JOINTS**				
	8.5	12mm Thick jointex placed vertically between concrete surfaces				
D4.64		.4 Narrow widths not exceeding 300mm wide	m	50	35.48	1 774.00
		SEALERS				
	8.5	Polyurethane joint sealer				
D4.65		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	250	153.31	38 327.50
		SAW CUT JOINTS				
D4.66	8.5	Saw cut joint 3mm wide x 50mm deep in floor slab	m	270	136.11	36 749.70
	PU	**DAMPPROOFING**				
	8.4.3	Polyethelene sheeting				
D4.67		.1 250 Micron USB green under floors	m²	840	10.07	8 458.80
		EXISTING PRIMARY SLUDGE PUMP STATION				
		Dwg no's 3089.92.00.SUN.16.A001, U001				
		EXTERNAL FACADE				
		ROOF				
D4.68		Ref.to item D4.37	sum	-	35700.75	35 700.75
		RAINWATER REMOVAL				
D4.69		Ref. to item D4.38	sum	-	9137.5	9 137.50
		EXTERNAL FAÇADE - EXCEPT WINDOWS AND DOORS				
D4.70		Ref. to item D4.39	sum	-	29686.12	29 686.12
		DOORS AND WINDOWS (EXTERNAL FACE ONLY)				
D4.71		Ref. to item D4.40	sum	-	24187.5	24 187.50
		INTERNAL FINISHES				
		WALLS				
					Carried Forward	2 666 003.04

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					Brought Forward	2 666 003.04
D4.72		Ref. to item D4.43	sum	-	29686.12	29 686.12
		CEILINGS				
D4.73		Ref. to item D4.44	sum	-	23232.08	23 232.08
		FLOORS				
D4.74		Ref. to item D4.45	sum	-	34365.6	34 365.60
		DOORS AND WINDOWS (INTERNAL FACE ONLY)				
D4.75		Ref. to item D4.46	sum	-	24187.5	24 187.50
		EXISTING RAW SEWAGE PUMP STATION				
		Dwg no's 3089.92.SUL.16.A001, E001				
		EXTERNAL FACADE				
		ROOF				
D4.76		Ref.to item D4.37	sum	-	84920.7	84 920.70
		RAINWATER REMOVAL				
D4.77		Ref. to item D4.38	sum	-	21500	21 500.00
		DOORS				
D4.78		Ref. to item D4.39	sum	-	40312.5	40 312.50
		DOORS AND WINDOWS (EXTERNAL FACE ONLY)				
D4.79		Ref. to item D4.40	sum	-	40312.5	40 312.50
		INTERNAL FINISHES				
		WALLS				
D4.80		Ref. to item D4.43	sum	-	55379.7	55 379.70
		CEILINGS				
D4.81		Ref. to item D4.44	sum	-	23232.08	23 232.08
		FLOORS				
D4.82		Ref. to item D4.45	sum	-	101716.23	101 716.23
		DOORS AND WINDOWS (INTERNAL FACE ONLY)				
D4.83		Ref. to item D4.46	sum	-	40312.5	40 312.50
		EXISTING WORKSHOP				
		Dwg 3089.92.00.SUH.16.A001, U001				
		EXTERNAL FACADE				
					Carried Forward	3 185 160.55

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					Brought Forward	3 185 160.55
		ROOF				
D4.84		Ref.to item D4.37	sum	-	52675	52 675.00
		RAINWATER REMOVAL				
D4.85		Ref. to item D4.38	sum	-	16125	16 125.00
		DOORS				
D4.86		Ref. to item D4.39	sum	-	24187.5	24 187.50
		DOORS AND WINDOWS (EXTERNAL FACE ONLY)				
D4.87		Ref. to item D4.40	sum	-	24187.5	24 187.50
		BRICK LINING				
	PU					
D4.88	8.2	25mm Thick satin black facebrick lining fixed to wall with Tylon CM11 or similar approved adhesive and jointing with Chryso - Super Jet Black Oxide mortar	m²	110	1 280.56	140 861.60
D4.89	8.3	Ditto with agate satin facebrick and jointing with lighter coloured mortar	m²	20	1 280.56	25 611.20
	PU	**NEW WINDOWS AND SHOPFRONTS**				
		FORM OPENINGS				
		Openings of existing windows to be altered to suit new windows, complete with precast lintols, sills, etc complete				
D4.90	8.20	.1 Remove existing window and spoil off site and form new opening for window size 1200 x 1000mm high (W01,2,8,10,17)	no	5	229.56	1 147.80
D4.91	8.20	.2 Remove existing window and spoil off site and form new opening for window size 1500 x 1000mm high (W09,15,16)	no	3	280.76	842.28
D4.92	8.20	.3 Remove existing window and spoil off site and form new opening for window size 1200 x 1500mm high (W06,9)	no	2	314.66	629.32
D4.93	8.20	.4 Remove existing window and spoil off site and form new opening for window size 2900 x 1500mm high (W01,5,7,8)	no	4	707.89	2 831.56
D4.94	8.20	.5 Remove existing shopfront and spoil off site and form new opening for window size 3320 x 2310mm high (entrance door)	no	1	1 151.11	1 151.11
		Form new openings for new windows through 280mm existing cavity walls complete with precast lintols, sills, etc to suit windows complete				
D4.95	8.20	1. Opening for window size 500 x 500mm high (W02,3,4,5,6,7,11,12,13,14)	no	11	175.45	1 929.95
					Carried Forward	3 477 340.37

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					Brought Forward	3 477 340.37
	PU	**ALUMINIUM WINDOWS**				
	8.8	Purpose made powder coated aluminium glazed windows supplied and installed complete with glazing, ironmongery, etc to manufacturers specification Prices to include for fixing damp proof sheeting (dampproof sheeting measured elsewhere) to window frame when fixing window to brickwork or concrete and sealing joint between window frame and plaster or brickwork finish with approved Polyurethane sealant all round to external faces Dwg 3089.92.00.SUH.16.U001				
D4.96		.1 Window size 500 x 500mm (W02, 3, 4, 5, 6, 7, 11, 12, 13, 14)	no	11	5 375.00	59 125.00
D4.97		.2 Window size 1200 x 1000mm (W01, 2, 8, 10, 17)	no	5	1 612.50	8 062.50
D4.98		.3 Window size 1500 x 1000mm (W09, 15, 16)	no	3	1 612.50	4 837.50
D4.99		.4 Window size 1200 x 1500mm (W06, 9)	no	2	1 935.00	3 870.00
D4.100		.5 Window size 2900 x 1500mm (W01, 5, 7, 8)	no	4	2 687.50	10 750.00
	PU	**ALUMINIUM SHOPFRONTS**				
	8.20	Purpose made powder coated aluminium glazed shopfronts supplied and installed complete with glazing, ironmongery, etc to manufacturers specification, and sealing all round frames, adjoining walls, ceilings, floors, etc with approved sealant Entrance door Dwg 3089.92.00.SUH.16.U001				
D4.101		.1 Shopfront size 3320 x 2310mm high	no	1	12 900.00	12 900.00
D4.102		.2 Extra over the above for double door complete with ironmongery, etc	no	1	3 225.00	3 225.00
		INTERNAL FINISHES				
		WALLS				
D4.103		Ref. to item D4.43	sum	-	55379.7	55 379.70
		CEILINGS				
D4.104		Ref. to item D4.44	sum	-	23232.08	23 232.08
		FLOORS				
D4.105		Ref. to item D4.45	sum	-	88735.36	88 735.36
		STAIRCASE				
					Carried Forward	3 747 457.51

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					Brought Forward	3 747 457.51
D4.106		Clean staircase by an approved method, repair all visual defects and seal all joints, etc with an approved sealant, and apply finishing coats as specified on the drawings.	sum	-	19092	19 092.00
		DOORS AND WINDOWS (INTERNAL FACE ONLY)				
D4.107		Ref. to item D4.46	sum	-	24187.5	24 187.50
		NEW PLANTERS				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	8.3.3	Restricted excavation in all materials and place within freehaul distance for				
D4.108		.1 Wall footings	m³	30	365.86	10 975.80
	SANS 1200 D	**RESTRICTED BACKFILLING**				
	8.3.9	Extra over reference 8.3.3 (a) for backfill or for fill with selected material from site against structures and compacted to 93% mod AASHTO density				
D4.109		.1 Alongside walls in foundations	m³	10		
	SANS 1200 G	**STRENGTH CONCRETE**				
	8.4.3	Strenght concrete 20Mpa/19mm				
D4.110		.1 Wall footings	m³	7	1 725.22	12 076.54
	PU	**NORMAL BRICKWORK**				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
D4.111		.3 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and cavity filled in with 25Mpa\13mm concrete	m²	30	613.01	18 390.30
D4.112		.5 Ditto circular on plan	m²	5	618.93	3 094.65
		FACE BRICKWORK				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
D4.113		.2 Stretcher course bond	m²	30	1 280.56	38 416.80
D4.114		.5 Ditto circular on plan	m²	5	1 309.14	6 545.70
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
					Carried Forward	3 880 236.80

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					Brought Forward	3 880 236.80
D4.115		.1 Walls	m²	30	105.35	3 160.50
D4.116		.2 Ditto circular on plan	m²	5	121.48	607.40
		PRECAST CONCRETE COPINGS				
	8.20	Precast concrete copings supplied and installed complete				
D4.117		.1 330 x 75mm Moulded coping fitted to top of 280mmwall complete wit all mitres, end blocks, etc	m	30	382.00	11 460.00
D4.118		.2 Ditto circular on plan	m	5	410.65	2 053.25
		EXISTING STONE TRAP BUILDING				
		Dwg no's 3089.92.00.WBC.16.U001				
		EXTERNAL FACADE				
		ROOF				
D4.119		Ref.to item D4.37	sum	-	52675	52 675.00
		RAINWATER REMOVAL				
D4.120		Ref. to item D4.38	sum	-	16125	16 125.00
		EXTERNAL FACADE - EXCEPT WINDOWS AND DOORS				
D4.121		Ref. to item D4.39	sum	-	12577.5	12 577.50
		DOORS AND WINDOWS (EXTERNAL FACE ONLY)				
D4.122		Ref. to item D4.40	sum	-	5643.75	5 643.75
		INTERNAL FINISHES				
		WALLS				
D4.123		Ref. to item D4.43	sum	-	12577.5	12 577.50
		CEILINGS				
D4.124		Ref. to item D4.44	sum	-	27878.5	27 878.50
		FLOORS				
D4.125		Ref. to item D4.45	sum	-	17415	17 415.00
		DOORS AND WINDOWS (INTERNAL FACE ONLY)				
D4.126		Ref. to item D4.46	sum	-	5643.75	5 643.75
		EXISTING SUPPORT STAFF BUILDING				
		EXTERNAL FACADE				
		ROOF				
					Carried Forward	4 048 053.95

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					Brought Forward	4 048 053.95
D4.127		Ref.to item D4.37	sum	-	32250	32 250.00
		RAINWATER REMOVAL				
D4.128		Ref. to item D4.38	sum	-	8600	8 600.00
	SANS 1200 A	**PROVISIONAL SUMS**				
		Note: Expenditure under the following provisional sums is for work executed by the Contractor\Sub-contractor or Supplier during the construction phase of the contract. Values paid under these items shall be "nett values excluding discount and VAT". Invoices shall be supplied for each expenditure and attached to the payment certificates.				
		For work to be executed by the Contractor\Sub-contractor or Supplier and valued in terms of the "Valuation of Variations" clause in the Conditions of Contract.				
	8.5	.1 Work as instructed by the Engineer				
D4.129		.1 Work as instructed by the Engineer	Prov sum		26000000%	260 000.00
D4.130		.2 Overheads, charges and profit on above	%		10%	26 000.00
	8.5	.2 Laundry installation				
D4.131		.1 Laundry installation	Prov sum		26000000%	260 000.00
D4.132		.2 Overheads, charges and profit on above	%		10%	26 000.00
	8.5	.3 Canteen installation				
D4.133		.1 Canteen installation	Prov sum		26000000%	260 000.00
D4.134		.2 Overheads, charges and profit on above	%		10%	26 000.00
	8.5	.4 Toilet partitions and shower doors				
D4.135		.1 Toilet partitions and shower doors	Prov sum		10000000%	100 000.00
D4.136		.2 Overheads, charges and profit on above	%		10%	10 000.00
	8.5	.5 Electrical installation				
D4.137		.1 Electrical installation	Prov sum		26000000%	260 000.00
D4.138		.2 Overheads, charges and profit on above	%		10%	26 000.00
		WORK TO EXISTING BUILDINGS				
	SANS 1200 C	**REMOVE EXISTING STRUCTURES**				
		Demolish and spoil material for structures, buildings, etc at a spoil site established by the Contractor				
	8.2.8	Sundry structures, etc				
D4.139		.3 Mass concrete structures	m³	5	1 524.90	7 624.50
D4.140		.4 Reinforced concrete structures	m³	5	1 524.90	7 624.50
					Carried Forward	5 358 152.95

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					Brought Forward	5 358 152.95
D4.141		.5 150mm Thick concrete paving	m²	50	228.74	11 437.00
D4.142		.6 150mm Thick reinforced concrete paving	m²	50	228.74	11 437.00
D4.143		.7 Concrete kerbing (all types and sizes)	m	50	68.62	3 431.00
D4.144		.8 Mass brickwork structures	m³	5	1 524.90	7 624.50
		WORK TO EXISTING STRUCTURE				
D4.145		.1 Saw cut 85mm thick reinforced concrete surface bed	m	240	136.11	32 666.40
D4.146		.2 Saw cut 3mm wide x 50mm deep in reinforced concrete surface bed	m	200	136.11	27 222.00
D4.147		.3 Remove portion of surface bed cut above and spoil off site	m³	8	1 524.90	12 199.20
D4.148		.4 Cut tooth and bond existing brick wall for connection of new brick walls	m²	15	104.34	1 565.10
D4.149		.5 Support existing timber roof structure with sheeting complete, during removal of brick walls below and casting in new concrate ring beam to support roof structure (approximately 80m² in area)	sum	-	9061.18	9 061.18
		Remove the following elements from existing building and spoil off site at site established by the Contractor				
D4.150		.1 Remove all types of floor finishes from floors and prepare concrete surface for new screed finish (screed measured elsewhere)	m²	392	93.19	36 530.48
D4.151		.2 Remove all types of ceilings, cornices and insulation from timber roof trusses and prepare for new ceiling (new ceiling measured elsewhere)	m²	392	75.25	29 498.00
D4.152		.3 Remove 115mm brick wall insluding all finishes	m²	50	42.16	2 108.00
D4.153		.4 Remove 230mm brick wall including all finishes	m²	50	62.74	3 137.00
	SANS 1200 D	**EARTHWORKS**				
	8.3.3a	Restricted excavation in all materials and place within freehaul distance for				
D4.154		.1 Wall footings inside existing building	m³	51	315.02	16 066.02
D4.155		.2 Surface bed thickening inside existing building	m³	4	503.55	2 014.20
	8.3.4a	Supply and fill with G7 material supplied by the Contractor from commercial sources against structures and compacted to 93% mod AASHTO density				
D4.156		.1 Alongside walls in foundations inside existing building	m³	5	317.46	1 587.30
D4.157		.3 Under floors inside existing building	m³	20	317.46	6 349.20
					Carried Forward	5 572 086.53

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					Brought Forward	5 572 086.53
	SANS 1200 G	Soilcrete (5% OPC)				
D4.158	8.4.10	(a) Alongside walls in foundations inside existing building	m³	18	1 191.52	21 447.36
	SANS 1200 G	**CONCRETE, FORMWORK AND REINFORCEMENT**				
	8.2.2	Smooth formwork				
		Plane horizontal				
D4.159		.3 Beams	m²	8	408.50	3 268.00
		Plane vertical				
D4.160		.12 Beams	m²	28	408.50	11 438.00
	8.3.1	Rod reinforcement				
		Mild steel				
D4.161		.1 All sizes	ton	1.0	18 976.98	18 976.98
		High tensile steel				
D4.162		.1 All sizes	ton	4.0	18 976.98	75 907.92
	8.3.2	Mesh reinforcement				
		High tensile welded mesh				
D4.163		.2 Ref no.245	m²	50	62.58	3 129.00
	8.4.3	Strenght concrete 30Mpa/19mm				
D4.164		.1 Wall footings inside existing building	m³	14	1 934.57	27 083.98
D4.165		.2 Surface bed thickening for walls	m³	4	1 934.57	7 738.28
D4.166		.4 Floor slabs inside existing building	m³	10	1 934.57	19 345.70
D4.167		.5 Ring beams inside existing building	m³	6	1 934.57	11 607.42
	8.4.2	Blinding layers				
		Strength concrete 15Mpa/19mm				
D4.168		.1 50mm Thick below wall footings	m³	5	1 869.54	9 347.70
	8.5	Expansion joints				
		12mm Thick jointex placed vertically between concrete surfaces				
D4.169		.4 Narrow widths not exceeding 300mm wide	m	60	35.48	2 128.80
		SEALERS				
	8.5	Polyurethane joint sealer				
D4.170		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	120	153.31	18 397.20
					Carried Forward	5 801 902.87

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					Brought Forward	5 801 902.87
	PU	**BRICKWORK**				
		Foundations to existing buildings				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
D4.171		.3 230mm Thick wall	m²	68	508.77	34 596.36
		Superstructure to existing buildings				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
D4.172		.1 115mm Thick wall	m²	120	250.95	30 114.00
D4.173		.2 115mm Thick wall in beamfilling	m²	30	263.32	7 899.60
D4.174		.3 230mm Thick wall	m²	180	508.77	91 578.60
D4.175		.4 230mm Thick wall in closing of openings where windows removed	m²	20	508.77	10 175.40
D4.176		.5 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	50	508.01	25 400.50
D4.177		.6 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties in closing of openings where windows removed	m²	20	508.01	10 160.20
		Face brick lining				
D4.178		25mmTthick satin black facebrick fixed to wall with Tylon CM11 or similar approved adhesive and jointing with Chryso - Super Jet Black Oxide mortar	m²	80	630.06	50 404.80
	8.4.6	Brick reinforcing				
D4.179		.1 75mm Wide brickforce	m	600	2.19	1 314.00
D4.180		.2 150mm Wide brickforce	m	900	2.19	1 971.00
D4.181		.3 Rod reinforcing (all sizes)	kg	20	23.75	475.00
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
D4.182		.1 75 x 110mm Lintol	m	50	70.12	3 506.00
		WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
D4.183		.1 1,6 x 32mm Galvanised hoop iron ties, 600mm long with one end shot plugged to walls and other end built into brickwork	no	200	27.62	5 524.00
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
D4.184		.1 Vertically	m	20	63.68	1 273.60
					Carried Forward	6 076 295.93

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					Brought Forward	6 076 295.93
D4.185		2 Horizontally	m	20	23.53	470.60
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
D4.186		.1 375 Micron under walls including triangular cement mortar fillet in cavity wall	m²	22	32.28	710.16
	8.4.3	Polyethelene sheeting				
D4.187		.1 250 Micron USB green under floors	m²	50	12.73	636.50
	PU	**ROOFS**				
		ANCILLARIES				
		Fibre cement				
	8.10	.3 Fascia and bardge boards				
D4.188		.1 10 x 200mm High fascia board fixed complete	m	100	83.85	8 385.00
		GUTTERS				
		Gutters supplied and fixed complete, including all mitres, stopped ends, outlets, etc				
	8.16	2mm Powder coated aluminium (Pebble Grey)				
D4.189		.1 Size 150 x 150mm Eaves gutter	m	100	1 886.62	188 662.00
		DOWNPIPES				
		Rainwater pipes supplied and fixed complete, including offsets, shoes, etc				
	8.16	1.2mm Powder coated aluminium (Pebble Grey)				
D4.190		.2 Size 150 x 150mm	m	50	1 886.62	94 331.00
	PU	**SUSPENDED CEILINGS**				
		SUSPENDED CEILINGS Dwg 3089.30.40.SUF.14.D001				
	8.10	Vinyl coated plasterboard ceilings supplied and erected complete				
D4.191		.1 9mm Vinyl coated plasterboard suspended ceiling of 600 x 1200mm ceiling panels laid loose in Donn type suspension system consisting of 38 x 38mm aluminium T-section main and cross tees, suspended with 4mm galvanized wire hangers approximately 600mm below timber trusses, complete with 30x30mm aluminium angle section cornice at junction of ceiling and wall	m²	392	209.18	81 998.56
D4.192		.2 Form hole through ceiling for light fittings	no	50	18.54	927.00
					Carried Forward	6 452 416.75

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					Brought Forward	6 452 416.75
D4.193		.4 50mm Insulation blanket laid over ceilings	m²	392	67.99	26 652.08
	PU	**DOORS**				
		TIMBER FRAMES				
		Wrot Sapele				
	8.8	Single rebated 80 x 55mm hardwood door frame for the following size doors, built into brickwork complete with galvanised hoop iron straps fixed to frames and built into brickwork, including polysulphide sealant both sides of frames complete				
		Dwg 3089.30.40.SUF.14.D001				
D4.194		.1 Door size 813 x 2032mm (D01)	no	5	1 719.98	8 599.90
		SEMI SOLID CORE DOORS				
		Dwg 3089.30.40.SUF.14.D001				
	8.9	Semi solid core doors with masonite veneer suitable for painting				
D4.195		.2 Door size 813 x 2032mm (D01)	no	5	1 566.28	7 831.40
		IRONMONGERY TO SEMI SOLID DOORS ABOVE, COMPLETE				
	8.10	Dwg 3089.30.40.SUF.14.D001				
D4.196		.1 Door type D01	no	5	1 648.27	8 241.35
	PU	**SKIRTINGS**				
		TIMBER SKIRTINGS				
	8.9	Wrot Sapele				
D4.197		.1 22 x 200mm Skirting nailed to walls	m	200	357.24	71 448.00
	PU	**FLOOR COVERINGS**				
		VINYL TIMBER FLOOR				
	8.20	Vinyl timber floor (Allow R800.00/m² for supply and installing flooring complete excluding VAT) fixed to screeded floors (screed measured elsewhere) all to manufacturers instructions				
D4.198		.1 To floors	m²	160	946.00	151 360.00
		CARPET TILES				
	8.21	7 x 500 x 500mm Van Dyk Lineal - Anaseed carpet tiles (Location Grade - Heavy Commercial) of Tufted Solution Dyed Nylon and backing bitumen fixed to screeded floors (screed measured elsewhere) all to manufacturers instructions				
D4.199		.1 To floors	m²	50	483.75	24 187.50
					Carried Forward	6 750 736.98

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					Brought Forward	6 750 736.98
	PU	**ALUMINIUM WINDOWS AND SHOPFRONTS**				
		OPENINGS AND LINTOLS				
		Alter existing window openings to suit new windows, including supportwork for brickwork above and inserting new precast lintols complete for the following windows				
D4.200		.1 Window size 500 x 650mm (W01, 3-13, 15-16, 22-26)	no	19	1 118.96	21 260.24
D4.201		.2 Window size 1500 x 1125mm (W02, 14, 17-21)	no	7	4 018.94	28 132.58
		WINDOWS				
	8.8	Purpose made powder coated aluminium glazed windows supplied and installed complete with glazing, ironmongery, etc to manufacturers specification				
		Prices to include for fixing damp proof sheeting (dampproof sheeting measured elsewhere) to window frame when fixing window to brickwork or concrete and sealing joint between window frame and plaster or brickwork finish with approved Polyurethane sealant all round to external faces				
		Dwg 3089.30.40.SUF.14.D001				
D4.202		.1 Window size 500 x 650mm (W01, 3-13, 15-16, 22-26)	no	19	645.00	12 255.00
D4.203		.2 Window size 1500 x 1125mm (W02, 14, 17-21)	no	7	1 612.50	11 287.50
		STEELWORK				
D4.204	8.20	.1 Hot dip galvanised mild steel column size 100 x 100 x 4mm wall thickness with cap and foot plates and fixings to top and bottom as window support	m	12	913.75	10 965.00
		SHOPFRONTS				
		Purpose made powder coated aluminium glazed shopfronts supplied and installed complete with glazing, ironmongery, etc to manufacturers specification, and sealing all round frames, adjoining walls, ceilings, floors, etc with approved sealant				
		Type ISF01 & 02				
	8.21	Dwg 3089.92.00.SUF.16.E001				
D4.205		.1 Shopfront size 3750 x 2890mm high	no	2	13 975.00	27 950.00
D4.206		.2 Extra over the above for single door complete with ironmongery, etc	no	1	3 225.00	3 225.00
		Type SF01				
	8.22	Dwg 3089.92.00.SUF.16.E001				
D4.207		.1 Shopfront size 8700 x 2465mm high	no	1	45 397.25	45 397.25
D4.208		.2 Extra over the above for double door complete with ironmongery, etc	no	1	3 225.00	3 225.00
		Type SF02				
					Carried Forward	6 914 434.55

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					Brought Forward	6 914 434.55
	8.23	Dwg 3089.92.00.SUF.16.E001				
D4.209		.1 Shopfront size 8700 x 2465mm high	no	1	45 472.50	45 472.50
D4.210		.2 Extra over the above for double door complete with ironmongery, etc	no	1	3 225.00	3 225.00
D4.211		.3 Extra over the above for single fire escape door complete with ironmongery, etc	no	1	3 225.00	3 225.00
	PU	**SCREED**				
		SCREED				
	8.6	1:3 Cement screed with steel floated finish				
D4.212		.1 30mm Thick to floors	m²	400	93.52	37 408.00
	PU	**PLASTER**				
		WORK TO EXISTING BUILDING				
D4.213		Prepare existing facebrick or plastered brick walls to recisve new plaster finish (plaster measured elsewhere)	m²	378	120.40	45 511.20
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
D4.214		.1 Existing walls	m²	378	109.65	41 447.70
	PU	**TILING**				
		WALL TILING				
	8.7	Wall tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to plaster (plaster measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
D4.215		.1 Walls with 600 x 300mm porcelain tiles	m²	140	611.90	85 666.00
		FLOOR TILING				
	8.7	Floor tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to screed (screed measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
D4.216		.1 Floors with 600 x 600mm porcelain tiles	m²	160	619.01	99 041.60
	8.8	Mosaic tiling (Allow R300.00/m² for purchasing and delivery of mosaics to site excluding VAT) fixed to screed (screed measured elsewhere) with approved tile adhesive and grouted with waterproof tile grout				
					Carried Forward	7 275 431.55

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					Brought Forward	7 275 431.55
D4.217		.1 Shower floors	m²	14	885.34	12 394.76
	PU	**PAINTING**				
		PAINTING **Note:** All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Architect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
D4.218		.3 Timber doors and frames	m²	30	107.50	3 225.00
D4.219		.4 Timber skirtings not exceeding 150mm girth	m	200	37.62	7 524.00
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
D4.220		.1 Plastered walls	m²	200	66.65	13 330.00
D4.221		.2 Plastered or concrete ceilings	m²	20	64.50	1 290.00
	8.20	Prepare and apply one coat Dulux Trade Primer code T1011 and two coats Dulux Pearlglo water based paint code D40 to internal				
D4.222		.2 Plastered walls in ablution areas	m²	200	68.80	13 760.00
	8.21	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
D4.223		.2 Plastered walls	m²	378	68.80	26 006.40
D4.224		.4 Facias and barge boards	m²	50	66.65	3 332.50
	8.22	Extra over external painting to walls for painting plaster recess joint in different colour				
D4.225		.1 Recessed joint	m	200	23.65	4 730.00
	PU	**PLUMBING**				
		PLUMBING AND DRAINAGE **Note:** Plumbing measured in elements (plumbing points) and shall be priced accordingly. Prices must include for supply and installation of all fittings, taps, supply and discharge piping from the fitting to the perimeter of the building face complete. Supply and discharge piping from the perimeter of the building up to the connection point on the site, will be measured separately, and must be priced accordingly. The external supply and discharge piping must include all items such as, excavation, bedding, backfilling, pipe fittings, manholes, etc complete				
					Carried Forward	7 361 024.21

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					Brought Forward	7 361 024.21
D4.226		**WORK TO EXISTING PLUMBING INSTALLATION** Remove all existing plumbing piping and fittings complete to building, block off pipes and prepare for connection to new plumbing fittings complete	sum	-	768.62	768.62
		NEW PLUMBING AND DRAINAGE Plumbing points in building Dwg 3089.30.40.SUF.14.D001				
	8.17	.1 Toilets				
D4.227		Vaal Downtown or similar approved locally manufactured vitreous china close coupled suite (colour white) overall size 604 x 360 x 829mm high, comprising 90 degree outlet open rim back inlet pan with matching 6,3 litre top duel flush cistern including lid and fitments installed complete to manufacurers instructions	no	5	1 457.59	7 287.95
	8.17	.4 Handwash basins				
D4.228		Vaal Downtown or similar approved vitreous china wall hung basin (colour white) overall size 440 x 510mm with one taphole with integrated overflow and chrome plated waste, bolted to wall with two 10mm bolts and sealed with silicone sealant where basin meets wall, including Cobra Watertech Protea Chrome basin mixer (Code: PA-851) or similar approved locally manufactured Chrome basin mixer, installed complete to manufacturers instructions	no	6	1 794.91	10 769.46
	8.20	.5 Kitchen sink				
D4.229		.1 Franke Cascade Model CDX611 grade 304 18/10 polished stainless steel single end bowl inset sink (code 1990032) or similar approved size 925 x 500mm with one 343 x 410 x 169mm deep bowl fixed onto cupbourd (cupboard measured elsewhere) with Spazi F/1 plumbing kit (code 1120008) two 90mm waste fittings complete to manufacturers instructions, including locally manufactured chrome sink mixer in accordance with SANS 1480 and 15mm flexible connectors	no	1	3 234.18	3 234.18
	8.17	.11 Urinal bowl				
D4.230		Villeroy & Boch - Subway wall mounted white urinal (no lid) (code 75130001) with flush installation set (code 116.003.00.1) with Sigma urinal flush plate (code 116.011.11.5) with urinal trap (code 152.950.11.10) and urinal division (code 11.202.11.1) installed complete to manufacturers instructions	no	2	12 787.12	25 574.24
	8.20	.12 Shower				
D4.231		Cobra Watertech or similar approved 40mm rough brass shower trap (Code: 373SQ) with shallow seal and chrome plated square grating , Cobra Watertech Chrome shower head (Code: KP2-6) or similar approved 10litre/min maximum flow restrictor, self cleaning spray nozzle, and minimum pressure 50 kPa, and Cobra Watertech Protea Chrome shower mixer (Code: PA-856) or similar approved, installed to suppliers instructions	no	12	3 359.59	40 315.08
					Carried Forward	7 448 973.74

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					Brought Forward	7 448 973.74
	8.20	.13 Geyser				
D4.232		150 Liter geyser	no	1	7 911.53	7 911.53
	8.20	.14 Fire hose reel				
D4.233		30m Fire hose reel including two fire extinguishers	sets	1	7 368.06	7 368.06
	PU	**DRAINAGE**				
	8.15	External supply and discharge piping, etc				
D4.234		.2 32mm Dia HDPE water supply in ground	m	50	8.58	429.00
D4.235		.3 110mm Dia uPVC sewer pipe in ground	m	50	23.27	1 163.50
D4.236		.4 160mm Dia uPVC sewer pipe in ground	m	50	143.51	7 175.50
D4.237		.6 80mm Fire hydrant	no	1	349.91	349.91
D4.238		.7 20mm Yard stand tap	no	2	209.59	419.18
	PU	**BATHROOM FITTINGS**				
	8.20	Bathroom fittings				
D4.239		.2 Franke Rodan RODX605 0,8mm thick satin finished stainless steel waste bin (code 2120097) size 355 x 168 x 460mm high with capacity of 23 litres and cylinder lock and standard Franke key, fixed to wall with stainless steel screws as per suppliers instructions	no	2	4 333.87	8 667.74
D4.240		.3 Franke HF2400HD 1,2/1,5mm thick stainless steel satin finished automatic hand free hand dryer (code 2500001) size 280 x 207 x 245mm high with two vandal proof lock screws and key wrench, fixed to walls with stainless steel screws and 200W motor connected to power supply as per suppliers instructions	no	2	14 015.58	28 031.16
D4.241		.4 Franke Rodan RODX625 0,8mm thick satin finished stainless steel soap dispenser (code 2120107) size 120 x 107 x 296mm high fixed to wall with stainless steel screws as per suppliers instructions	no	4	4 907.70	19 630.80
D4.242		.5 Franke Rodan RODX600 0,8mm thick satin finished stainless steel paper towel dispenser (code 2120099) size 275 x 112 x 355mm high with capacity of 500-800 towels, inspection window on the side with Franke standard key, fixed to wall with stainless steel screws as per suppliers instructions	no	4	3 074.60	12 298.40
D4.243		.6 Franke Rodan RODX672 0,8mm thick satin finished stainless steel double toilet roll holder (code 2120101) size 144 x 138 x 301mm high for two rolls maiimum, 120mm diameter with cylinder lock with standard Franke key, fixed to wall with stainless steel screws as per suppliers instructions	no	5	3 728.77	18 643.85
	8.20	Lockers				
					Carried Forward	7 561 062.37

					Brought Forward	7 561 062.37
D4.244		.1 Cubical Solutions 2Z locker (Code: CSL/CHPL/304/Z) or similar approved locker, overall size 300 x 450 x 1900mm high (1800mm locker and 100mm plinth) comprising 12mm compact high pressure laminate white carcasses and doors , including auto return hinges (Code: CSSH/E112) and D shaped keeps (Code CSLJ/LK/3) for padlocks (padlocks not included) with lock cover plate and handles (Code: CSLJ/LH/9) installed complete	no	10	6 444.62	64 446.20
		NEW PLANTERS				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
D4.245		.1 Wall footings	m³	60	365.86	21 951.60
	SANS 1200 D	**RESTRICTED BACKFILLING**				
	8.3.9	Backfill or for fill with selected material from site against structures and compacted to 93% mod AASHTO density				
D4.246		.1 Alongside walls in foundations	m³	20		
	SANS 1200 G	**STRENGTH CONCRETE**				
	8.4.3	Strenght concrete 20Mpa/19mm				
D4.247		.1 Wall footings	m³	15	1 725.22	25 878.30
	PU	**NORMAL BRICKWORK**				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
D4.248		.3 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and cavity filled in with 25Mpa\13mm concrete	m²	60	613.01	36 780.60
D4.249		.5 Ditto circular on plan	m²	10	618.93	6 189.30
		FACE BRICKWORK				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik				
D4.250		.2 Stretcher course bond	m²	30	1 280.56	38 416.80
D4.251		.5 Ditto circular on plan	m²	5	1 309.14	6 545.70
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
D4.252		.1 Walls	m²	60	105.35	6 321.00
D4.253		.2 Ditto circular on plan	m²	10	121.48	1 214.80
					Carried Forward	7 768 806.67

					Brought Forward	7 768 806.67
		PRECAST CONCRETE COPINGS				
	8.20	Precast concrete copings supplied and installed complete				
D4.254		.1 330 x 75mm Moulded coping fitted to top of 280mmwall complete wit all mitres, end blocks, etc	m	60	382.00	22 920.00
D4.255		.2 Ditto circular on plan	m	10	410.65	4 106.50
		JOINERY AND FURNITURE				
		JOINERY				
		Purpose made joinery fittings supplied and installed complete with ironmongery, etc to manufacturers specification. And sealing all round frames adjoining walls, ceilings, floors, etc with approved sealant				
	8.20	Centeen Counter Joinery item J3.1 Dwg 3089.92.00.SUF.16.F001				
D4.256		.1 Complete installation as shown on drawings	no	1	19 567.15	19 567.15
	8.21	Open Shelves Joinery item J3.2 Dwg 3089.92.00.SUF.16.F002				
D4.257		.1 Complete installation as shown on drawings	no	1	8 352.75	8 352.75
		FURNITURE				
	8.22	Global Top Counter, Urban Lite leg and Pedestal Furniture item 1.1 Dwg 3089.92.00.SUF.16.D001				
D4.258		.1 Complete installation as shown on drawings	no	2	17 870.53	35 741.06
	8.23	Visitors Chair: Giro knee tilt Furniture item 1.2 Dwg 3089.92.00.SUF.16.D001				
D4.259		.1 Complete installation as shown on drawings	no	4	3 378.55	13 514.20
	8.24	Giro knee tilt Furniture item 1.3 Dwg 3089.92.00.SUF.16.D001				
D4.260		.1 Complete installation as shown on drawings	no	2	3 378.55	6 757.10
	8.25	Holy Cube Tall Planter with artificial plant Furniture item 1.4 Dwg 3089.92.00.SUF.16.D001				
D4.261		.1 Complete installation as shown on drawings	no	2	2 686.42	5 372.84
	8.26	Artificial plant Furniture item 1.5 Dwg 3089.92.00.SUF.16.D001				
D4.262		.1 Complete installation as shown on drawings	no	2	591.25	1 182.50
					Carried Forward	7 886 320.77

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					Brought Forward	7 886 320.77
	8.27	Ecocentric Filing Cabinets Furniture item 1.6 Dwg 3089.92.00.SUF.16.D001				
D4.263		.1 Complete installation as shown on drawings	no	2	5 757.82	11 515.64
	8.28	Canvas Wall Art Furniture item 1.7 Dwg 3089.92.00.SUF.16.D001				
		.1 Work as instructed by the Engineer				
D4.264		.1 Work as instructed by the Engineer	Prov sum		3 000.00	3 000.00
D4.265		.2 Overheads, charges and profit on above	%		10%	300.00
	8.29	Block Out Roller blinds Furniture item 2.1 Dwg 3089.92.00.SUF.16.D001				
D4.266		.1 Complete installation as shown on drawings	no	2	2 532.38	5 064.76
	8.30	Block Out Roller blinds Furniture item 2.2 Dwg 3089.92.00.SUF.16.D001				
D4.267		.1 Complete installation as shown on drawings	no	1	1 119.18	1 119.18
	8.31	Bench 1500 Furniture item 3.1 Dwg 3089.92.00.SUF.16.D001				
D4.268		.1 Complete installation as shown on drawings	no	2	2 643.29	5 286.58
	8.32	Metal locker 22 - Slanted Furniture item 3.2 Dwg 3089.92.00.SUF.16.D001				
D4.269		.1 Complete installation as shown on drawings	no	2	7 196.70	14 393.40
	8.33	Metal locker 23 - Slanted Furniture item 3.3 Dwg 3089.92.00.SUF.16.D001				
D4.270		.1 Complete installation as shown on drawings	no	2	8 751.68	17 503.36
	8.34	Café Table: Smartline Square Table Top, Malibu Dining Table Base Furniture item 4.1 Dwg 3089.92.00.SUF.16.D001				
D4.271		.1 Complete installation as shown on drawings	no	8	3 152.00	25 216.00
	8.35	Tonic chair Furniture item 4.2 Dwg 3089.92.00.SUF.16.D001				
D4.272		.1 Complete installation as shown on drawings	no	32	426.25	13 640.00
	8.36	Holy Cube Long Planter with artificial plant Furniture item 4.3				
					Carried Forward	7 983 359.69

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					Brought Forward	7 983 359.69
		Dwg 3089.92.00.SUF.16.D001				
D4.273		.1 Complete installation as shown on drawings	no	2	3 546.42	7 092.84
	8.37	Artificial plant Furniture item 4.4 Dwg 3089.92.00.SUF.16.D001				
D4.274		.1 Complete installation as shown on drawings	no	2	591.25	1 182.50
	8.38	8 Seater Steel Bench Furniture item 4.5 Dwg 3089.92.00.SUF.16.D001				
D4.275		.1 Complete installation as shown on drawings	no	2	8 130.22	16 260.44
	8.39	Wall Art Furniture item 4.6 Dwg 3089.92.00.SUF.16.D001				
		.1 Work as instructed by the Engineer				
D4.276		.1 Work as instructed by the Engineer	Prov sum		5 000.00	5 000.00
D4.277		.2 Overheads, charges and profit on above	%		10%	500.00
	8.40	Block Out Roller blinds Furniture item 4.7 Dwg 3089.92.00.SUF.16.D001				
D4.278		.1 Complete installation as shown on drawings	no	3	2 532.38	7 597.14
	8.41	Block Out Roller blinds Furniture item 4.8 Dwg 3089.92.00.SUF.16.D001				
D4.279		.1 Complete installation as shown on drawings	no	5	2 532.38	12 661.90
	8.42	Carlton Occasional Chair Furniture item 5.1 Dwg 3089.92.00.SUF.16.D001				
D4.280		.1 Complete installation as shown on drawings	no	4	6 337.12	25 348.48
	8.43	Lodge 3 seater sofa Furniture item 5.2 Dwg 3089.92.00.SUF.16.D001				
D4.281		.1 Complete installation as shown on drawings	no	1	12 361.42	12 361.42
	8.44	Lund coffee table Furniture item 5.3 Dwg 3089.92.00.SUF.16.D001				
D4.282		.1 Complete installation as shown on drawings	no	2	14 566.25	29 132.50
	8.45	Holy Cube Short Planter with artificial plant Furniture item 5.4 Dwg 3089.92.00.SUF.16.D001				
D4.283		.1 Complete installation as shown on drawings	no	2	3 546.42	7 092.84
					Carried Forward	8 107 589.75

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					Brought Forward	8 107 589.75
	8.46	Artificial Plant Furniture item 5.5 Dwg 3089.92.00.SUF.16.D001				
D4.284		.1 Complete installation as shown on drawings	no	2	698.75	1 397.50
	8.47	Canvas Wall Art Furniture item 5.6 Dwg 3089.92.00.SUF.16.D001				
		.1 Work as instructed by the Engineer				
D4.285		.1 Work as instructed by the Engineer	Prov sum		10 000.00	10 000.00
D4.286		.2 Overheads, charges and profit on above	%		10%	1 000.00
	8.48	Bench 1750 Furniture item 6.1 Dwg 3089.92.00.SUF.16.D001				
D4.287		.1 Complete installation as shown on drawings	no	4	3 269.24	13 076.96
	8.49	Metal locker 6 - Standard Furniture item 6.2 Dwg 3089.92.00.SUF.16.D001				
D4.288		.1 Complete installation as shown on drawings	no	2	7 096.42	14 192.84
	8.50	Metal locker 7 - Standard Furniture item 6.3 Dwg 3089.92.00.SUF.16.D001				
D4.289		.1 Complete installation as shown on drawings	no	2	8 752.39	17 504.78
	8.51	Bench 1500 Furniture item 7.1 Dwg 3089.92.00.SUF.16.D001				
D4.290		.1 Complete installation as shown on drawings	no	2	2 643.29	5 286.58
	8.52	Metal locker 22 - Slanted Furniture item 7.2 Dwg 3089.92.00.SUF.16.D001				
D4.291		.1 Complete installation as shown on drawings	no	2	7 196.70	14 393.40
	8.53	Metal locker 23 - Slanted Furniture item 7.3 Dwg 3089.92.00.SUF.16.D001				
D4.292		.1 Complete installation as shown on drawings	no	2	8 751.68	17 503.36
		BILL NO. D4 **RENOVATIONS**				
		Carried forward to Summary of Bills			**Total**	8 201 945.17

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - D				
		REFURBISHMENT				
		D4 - Refurbishment				
		BILL NO. D5 **REFURBISHMENT - WDE - WPG**				
		REFURBISHMENT				
		RAW SEWAGE PUMP STATION AND PST's				
		1.1 RAW SEWAGE PUMP STATION				
	SANS 1200 C	**REMOVE EXISTING STRUCTURES**				
		Ref drawing 3089.00.00.WPG.14.U001				
	8.2.8	Demolish and spoil material for structures, buildings, etc at a spoil site established by the Contractor				
D5.1		.1 Reinforced concrete roof structure	m^3	24	1524.9	R 36 597.60
D5.2		.2 Walls	m^3	11	288.92	R 3 178.12
D5.3		.3 Break out 3 600 x 700 mm opening in 300 mm thick reinforced concrete wall	m^3	1	4879.42	R 4 879.42
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.1.a	Plane horizontal				
D5.4		.1 Slabs	m^2	45	198.88	R 8 949.60
	8.2.2.b	Plane vertical				
D5.5		.2 Walls	m^2	2	440.75	R 881.50
	8.2.5	Smooth formwork to narrow widths				
D5.6		a) Edges, risers, etc not exceeding 300 mm wide	m	60	129	R 7 740.00
	8.2.1.2	Smooth formwork to chambers, grooves, rebates, etc exceeding 25 x 25 mm in size				
D5.7		a) Chamber size 150 x 150 mm	m	4	107.5	R 430.00
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1.a	Mild steel				
					Carried Forward	62 656.24

					Brought Forward	62 656.24
D5.8		.1 All sizes	ton	0.2	18976.98	R 3 795.40
	8.3.1.b	High tensile steel				
D5.9		.1 All sizes	ton	1.2	18976.98	R 22 772.38
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
		WATERPROOF CONCRETE				
	8.4.3	Strength concrete 35Mpa/19mm				
D5.10		.1 1 m wide cantilever walkway	m^3	4	1989.67	R 7 958.68
D5.11		.2 Built up 300 mm wide concrete wall from level 4.80 to weir level 5,00	m	4	1989.67	R 7 958.68
	SANS 1200 G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
D5.12		.1 Slabs, floor slabs, etc	m^2	45	13.92	R 626.40
D5.13		.2 Top of walls, beams, etc	m^2	2	13.92	R 27.84
		MISCELLANEOUS				
		MISCELLANEOUS				
		.1 Scabble concrete walls ± 10 mm deep to expose concrete surface width of new concrete				
D5.14		i) 200 mm wide	m	82	211.3	R 17 326.60
D5.15		ii) Drill 16 mm dia holes 180 mm deep in centre of slab/walls every 200 mm and insert 12 mm dia, high tensile steel, 800 mm long with suitable epoxy	no	450	156.19	R 70 285.50
D5.16		iii) Drill 16 mm dia holes 180 mm deep in centre of wall every 350 mm and insert 12 mm dia, high tensile steel, 300 mm long with suitable epoxy	no	12	156.19	R 1 874.28
		Use suitable wet to dry epoxy prior of pouring concrete strictly in accordance to manufacturers instructions, width 200 mm wide				
D5.17		.1 width 200 mm	m	82	142.52	R 11 686.64
					Carried Forward	206 968.63

					Brought Forward	206 968.63
D5.18		.2 width 300 mm	m	4	142.52	R 570.08
D5.19		.3 90 mm dia uPVC, Class 9 sleeve pipe, 200 mm long, cast into slab	no	7	142.52	R 997.64
D5.20		.4 Empty scum, sludge and raw sewage from pump sumps (2 NO's) by specialist Contractor and discharge off site	m^3	145	8705.52	R 1 262 300.40
		1.2 PST'S (PRIMARY SETTLING TANKS - 3 NO'S)				
		MISCELLANEOUS				
		Ref drawing 3089.30.01.WDE.14.D001				
D5.21		.1 Remove top lining, all loose concrete particles by high pressure water jet blasting or similar and approved methods	m^2	485	10.75	R 5 213.75
		.2 Apply SIKA MONOTOP 412 MFG on suitable primer, or similar and approved, strictly to manufacturer's instructions Note: rate to include for primer				
D5.22		.1 10 mm thick	m^2	40	367.37	R 14 694.80
D5.23		.2 20 mm thick	m^2	115	734.73	R 84 493.95
D5.24		.3 30 mm thick	m^2	115	1102.1	R 126 741.50
D5.25		.4 40 mm thick	m^2	60	1469.46	R 88 167.60
D5.26		.3 Apply SIKAGARD 720 moisture barrier or similar and approved, strictly to manufacturer's instructions	m^2	330	164.63	R 54 327.90
D5.27		.4 Apply SIKAGARD 63N top coat, or similar and approved, strictly to manufacturer's instructions	m^2	330	80.96	R 26 716.80
		REFURBISHMENT				
		SPLITTER BOX				
		1.3 SPLITTER BOX				
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.1.a	Plane horizontal				
D5.28		.1 Slabs	m^2	6	129	R 774.00
	8.2.2.b	Plane vertical				
					Carried Forward	1 871 967.05

					Brought Forward	1 871 967.05
D5.29		.2 Walls	m^2	75	440.75	R 33 056.25
	8.2.5	Smooth formwork to narrow widths				
D5.30		a) Edges, risers, etc not exceeding 300 mm wide	m	15	129	R 1 935.00
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1.a	Mild steel				
D5.31		.1 All sizes	ton	0.1	18976.98	R 1 897.70
	8.3.1.b	High tensile steel				
D5.32		.1 All sizes	ton	1	18976.98	R 18 976.98
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.3	Strength concrete 20 Mpa/19 mm				
D5.33		.1 Mass concrete stairs	m^3	1	1725.22	R 1 725.22
		WATERPROOF CONCRETE				
	8.4.3	Strength concrete 35Mpa/19mm				
D5.34		.1 Slabs	m^3	1	1989.67	R 1 989.67
D5.35		.2 Walls	m^3	9	1989.67	R 17 907.03
	SANS 1200 G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
D5.36		.1 Slabs	m^2	15	13.92	R 208.80
D5.37		.2 Top of walls, beams, etc	m^2	15	13.92	R 208.80
		MISCELLANEOUS				
		MISCELLANEOUS				
		.1 Scabble concrete walls ± 10 mm deep to expose concrete surface width of new concrete				
					Carried Forward	1 949 872.50

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					Brought Forward	1 949 872.50
D5.38		i) 250 mm wide	m	65	211.3	R 13 734.50
D5.39		ii) Drill 16 mm dia holes 180 mm deep in centre of slab/walls every 350 mm and insert 12 mm dia, high tensile steel, 730 mm long with suitable epoxy	no	175	226.62	R 39 658.50
D5.40		.2 Use suitable wet to dry epoxy prior of pouring concrete strictly in accordance to manufacturers instructions, width 250 mm wide	m	65	13.92	R 904.80
D5.41		.3 90 mm dia uPVC, Class 9 sleeve pipe, 200 mm long, cast into concrete slab	no	6	13.92	R 83.52
	SANS 1200 HA	**STRUCTURAL STEELWORK (Small Works)**				
		Rate to include for supply of material, erection, welding, bolts, nuts, protection, etc				
	8.3.2	**HANDRAILS**				
		Stainless steel standard ball type approved (1 000 mm high) handrail, horizontal, side or top mounted, including shaped ends				
D5.42		a) Top mounted	m	50	1913.5	R 95 675.00
	8.3.4	**SCHEDULE 6.4 - FLOORING**				
		Complete and installed with angle iron frames cast into concrete and or MS channel supports bolted to concrete and all required cut outs, all edges banded				
D5.43		a) Hot dip galvanized banded RS40 grating with 30 x 4.5 mm bearer bar, minimum of 25 bearer bars per metre	no	6	5542.97	R 33 257.82
		Note: Rate to include for PC support frame bolted to concrete walls				
D5.44		b) Hot dip galvanized 40 x 40 x 5 mm angle iron frame cast into concrete wall with fish tail anchors complete as shown on detail drawing	m	50	185.04	R 9 252.00
		New Flooring Dwg 3089.00.00.DET.13.D003				
		Note: Angle iron frame must fit existing grating				
D5.45		c) New flooring with PC frame refer detail	no	6	7760.16	R 46 560.96
		BILL NO. D5 **REFURBISHMENT - WDE - WPG**				
		Carried forward to Summary of Bills			**Total**	2 188 999.60

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - D				
		BOREHOLES				
		D5 - Boreholes				
		BILL NO. D6 **BOREHOLES - REFER TO PSL 10**				
	SANS 1200 L	**BOREHOLES**				
	8.2.19	**BOREHOLES** **Note:** Position of boreholes shall be indicated on site. Complete drilling and installation of boreholes to project specification				
D6.1		.1 Borehole No.1	No.	1	50 555.10	50 555.10
D6.2		.2 Borehole No.2	No.	1	46 722.72	46 722.72
D6.3		.3 Borehole No.3	No.	1	46 722.72	46 722.72
D6.4		.4 Borehole No.4	No.	1	46 722.72	46 722.72
D6.5		.5 Borehole No.5	No.	1	46 722.72	46 722.72
D6.6		.6 Borehole No.6	No.	1	46 722.72	46 722.72
		BILL NO. D6 **BOREHOLES - REFER TO PSL 10**				
		Carried forward to Summary of Bills			**Total**	284 168.70

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Landscaping

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION D				
		LANDSCAPING				
		D7 Landscaping				
		BILL NO. D7 **SOFT LANDSCAPING AND IRRIGATION (ZONE A)**				
		PRELIMINARIES, GENERAL + DAY WORKS				
D7.1		Provide for contractual requirements, construction guarantee and all ancillary cost *(As only required over and above specifications. List these as addendum to tender)*	sum	-	0	-
D7.2		Provide for establishment of facilities on site	sum	-	0	-
D7.3		Provide for holding nursery, if required	sum	-	0	-
D7.4		Provide for removal of facilities from site	sum	-	0	-
D7.5		Allow for co-ordinating and receiving all plant material for this contract, including quality control, holding and maintenance	sum	-	0	-
D7.6		Provide for compliance with all health and safety requirements as set out by the main contractor.	sum	-	0	-
D7.7		Provide for compliance with all environmental requirements as set out by the main contractor.	sum	-	0	-
		PROVIDE FOR DAYWORKS (Rates only)				
		Labour to be claimed at cost :				
D7.8		% overhead recovery on labour	%		0.16	**Rate only**
D7.9		hourly rate for foreman	hr		107.50	**Rate only**
D7.10		hourly rate for labour	hr		53.75	**Rate only**
		Material to be claimed at cost :				
D7.11		% overhead on material	%		0.16	**Rate only**
		Plant and equipment hire to be claimed at Cost:				
D7.12		% overhead recovery of plant	%		0.16	**Rate only**
D7.13		Dump of organic materials at registered dump site.	m^3		278.11	**Rate only**
D7.14		Dump rubble/ stone (inorganic material) at registered dump site	m^3		301.78	**Rate only**
		EARTHWORKS + INSTALLATIONS FOR LANDSCAPE WORKS				
		Cleaning of contaminated soil as directed below:				
					Carried Forward	-

					Brought Forward	-
D7.15		Provide rate for cleaning landscape areas, to be free of rubble, concrete and all foreign materials. Materials to be dumped at a registered dump site.	m³	115	464.43	53 279.41
		Excavate in-situ soil as directed below:				
D7.16		Excavate 250L tree holes for planting in soft landscape areas - The volume is calculated from the quantity of trees by the specified size of the hole (1.2 x 1.2 x 1.2) =(1.728)	m³	166	38.28	6 350.19
D7.17		Distribute and shape unwanted excavated material of item 2.2.1 (40%) to site as directed by the Landscape Architect	m³	66	51.16	3 394.73
D7.18		Excavate all planter beds sub base material (150mm thick) in planter beds. Remove material from site to approved dumping area as instructed by Landscape Architect.	m³	74	220.97	16 440.17
D7.19		Excavate all planter beds to a depth of 350 mm of subsoil from all planter beds and remove from site to	m³	1228	104.38	128 194.30
D7.20		Allow for rough shaping of all planting areas before planting medium is installed to the satisfaction of the landscape architect.	m²	6595	2.76	18 202.20
D7.21		Allow for fine shaping of all planting areas once planting medium is installed to the satisfaction of the landscape architect.	m²	6595	3.68	24 269.60
D7.22		Supply and install 2mm thick x1m mole barrier (kaytrech or similarly approved) to all trees within paving, to product and manufacturers specifications.	lm	125	136.74	17 092.50
		Erosion Control				
		Jute Geo-textile				
D7.23		Supply and install Jute geotextile or similarly approved. The fabric to have an overlap of 150mm minimum with a 500mm overlap at the top and bottom or the slope. Fixed with split bamboo or latte pegs, 200mm long, Spaced at 1.5m cenctres.	m²	1000	25.91	25 910.00
		Gumpole				
D7.24		Supply and install treated CCA SA pine or gum poles of not less than 150mmØ with a taper of not more than 75mmØ over its length. Timber pegs shall be treated and not less than 400mm in length	lm	300	33.89	10 167.00
		PLANTING MEDIUM				
		Trees: Planting medium mix to consist of 60% in-situ soil and 40% approved compost				
					Carried Forward	303 300.10

					Brought Forward	303 300.10
		General Planting Areas: 200mm approved compost to all planting areas Raised Planters: Planting medium mix to consist of 60% stockpiled top-soil and 40% approved compost **Supply imported compost according to specifications: (sample for landscape architects approval)**				
D7.25		Compost to tree holes (40% of volume)	m³	66	416.27	27 621.68
D7.26		Compost to planting (200mm Planting areas)	m³	702	436.99	306 679.58
D7.27		Compost to lawn area (40mm per m²)	m³	123	436.99	53 942.05
		Relocate & install stockpiled topsoil according to				
D7.28		Stockpiled topsoil it to tree holes (60% of volume)	m³	100	59.75	5 947.08
D7.29		Stockpiled topsoil to planting (300mm Planting areas)	m³	1053	67.56	71 120.41
D7.30		Stockpiled topsoil to lawn (150mm Planting areas)	m³	463	73.06	33 819.47
		Supply & install organic fertiliser to specifications:				
D7.31		All tree planting areas: 1kg / m³	No.	166	14.07	2 334.04
D7.32		All planting areas: 0.250kg / m²	No.	877	14.92	13 088.57
D7.33		All lawn area: 60g/ m²	No.	185	14.92	2 762.59
		Supply & install of Bonemeal to specification:				
D7.34		All tree planting areas: 1kg / m³	No.	166	14.07	2 334.04
D7.35		All planting areas: 0.12kg/ plant	No.	3304	14.07	46 486.72
D7.36		Social lawn area: 0.080kg/ m²	No.	247	16.62	4 103.15
		Tree, Shrub/ ground cover planting areas preparation				
D7.37		Mix and place medium in tree pits, 60%:40% in-situ top soil : compost including organic fertiliser as specified.	m³	166	54.13	8 979.52
D7.38		Pre-mix medium, at stockpile area, place and spread planting medium to a depth of 500mm (60% in-situ top soil : 40% compost & fertilisers to all planting area as per specification and measurement)	m³	1755	54.94	96 392.23
		Metabolic Activator				
D7.39		Supply metabolic activator, 'Symbex or equal' from Agro-Hytec(082 9006025)	ltr	45	280.19	12 490.80
					Carried Forward	991 402.04

					Brought Forward	991 402.04
D7.40		Apply 'Symbex' mixing: Mix metabolic activator with water to manufacturers instructions: 50ml:2l(water) . Apply to manufacturers (Agro-Hytec) instructions.	ltr	1783	7.56	13 480.92
		Water Retainers For Soil Mediums				
D7.41		Supply "Hydrogel B/ Aquasorb/ Stockosorb" or approved equal product	kg	221	87.90	19 402.69
D7.42		Apply "Hydrogel B/ Aquasorb/ Stockosorb or other similarly approved product' mixing: To be applied in the hydrated form and placed in each plant and tree hole. Application rate to be in accordance with manufacturers specifications.	ltr	44147		
		Post planting				
D7.43		Supply and install 'Reliance' (or approved equivalent) medium mulch , 50mm thick (sample for landscape architects approval)	m^3	175	422.22	74 078.50
		Other:				
D7.44		Provide soil tests ("Go bio farming":Nico Uys, Cell: 083 565 7337) before starting of planting works to Landscape Architect's requirement	No.	2	1 307.54	2 615.08
D7.45		Provide soil precipitation tests before starting installation and planting works to Landscape Architect's requirement	No.	2	3 131.52	6 263.04
D7.46		Provide a provisional sum for fertiliser as required by the results of the soil analyses as directed by the Landscape Architect	prov sum		15 000.00	R 15 000.00
		PLANTING WORKS				
		Plant Installation				
		Excavate into planting fill, dust roots with bone meal, place plant, backfill, compact and level surplus soil for :				
D7.47		200-tray plugs (plantlets)	No.	4840	3.07	14 858.80
D7.48		4kg container size	No.	10110	9.05	91 495.50
D7.49		Roll on lawn/sods	No.	3086	3.39	10 461.54
		Tree planting preparation:				
		Mix and place medium in tree pits, 60%:40% in-situ top soil : compost including organic fertiliser as specified.				
D7.50		250 ltr tree	No.	96	21.17	2 032.32
		Plant Support				
					Carried Forward	1 241 090.43

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				Brought Forward		1 241 090.43
D7.51		Supply and install tree stakes and ties complete to external Trees (See detail 1)	No.	96	354.89	34 069.44
D7.52		Provide a provisional sum for selected plant material for in-fill as directed by the Landscape Architect	prov sum		260 000.00	R 260 000.00
		Alien Clearance				
D7.53		Removing of alien trees, under 3m height, as set out by landscape architect on site. Rates incl. Cutting, removal of stump and carting to dump (non Arborist Work)	No	25	306.44	7 661.00
D7.54		Removing of alien trees over 3m height, as set out by landscape architect on site. Rates incl. Cutting, removal of stump and carting to dump (non Arborist Work)	No	5	1 470.90	7 354.50
D7.55		Spraying of alien trees under 3m height, as set out by landscape architect on site. Rates incl. all material and equipment as required by the health and safety regulations	No	10	159.35	1 593.50
D7.56		Spraying of alien trees over 5m height, as set out by landscape architect on site. Rates incl. all material and equipment as required by the health and safety regulations	No	10	183.87	1 838.70
D7.57		Mechanical and chemical clearance of all alien and invasive species within the area. Rate to include the removal and dumping at registered dump of the organic material.	m²	989	2.19	2 166.46
		PLANT LIST				
		Note : rates tendered for plants to be inclusive of supply and delivery: transport, holding, handling and mark-up.				
		Note : 200 plug tray quantities are numbers of plantlets				
		Lawn: Supply & Deliver				
D7.58		Cynodon dactylon	m²	3086	38.45	118 656.70
		Shrubs: Supply & Deliver				
D7.59		Agapanthus praecox 4kg @ 6/m²	No.	505	19.59	9 892.95
D7.60		Agathosma capense 4kg @ 5/m²	No.	421	29.69	12 499.49
D7.61		Aloe cooperi 4kg	No.	253	36.65	9 272.45
D7.62		Aloe thraskii 4kg	No.	253	36.71	9 287.63
D7.63		Aloe ferox 4kg	No.	253	56.96	14 410.88
D7.64		Carrisa macrocarpa 'green carpet' 4kg	No.	337	19.59	6 601.83
					Carried Forward	1 736 395.96

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				Brought Forward		1 736 395.96
D7.65		Coleonema album 4kg @ 3/m²	No.	253	19.59	4 956.27
D7.66		Chrysanthemoides incana 4kg	No.	337	19.25	6 487.25
D7.67		Dietes bicolor 4kg @ 5/m²	No.	421	20.52	8 638.92
D7.68		Dietes grandiflora 4kg @ 5/m²	No.	421	20.52	8 638.92
D7.69		Elegia tectorum 4kg	No.	337	31.59	10 645.83
D7.70		Euryops pectinatus 4kg	No.	337	19.59	6 601.83
D7.71		Felicia erigeroides 4kg @ 5/m²	No.	421	29.69	12 499.49
D7.72		Felicia filifolia 4kg @ 5/m²	No.	421	28.29	11 910.09
D7.73		Helichrysum dasyanthum 4kg	No.	505	29.69	14 993.45
D7.74		Kniphofia uvaria 4kg @ 6/m²	No.	505	23.38	11 806.90
D7.75		Leonotus leonurus 4kg @ 3/m²	No.	253	28.29	7 157.37
D7.76		Nylandtia spinosa 4kg @ 3/m²	No.	253	44.23	11 190.19
D7.77		Pelargonium capitatum 4kg @4/m²	No.	337	28.29	9 533.73
D7.78		Pelargonium cucullatum 4kg @4/m²	No.	337	28.29	9 533.73
D7.79		Plumbago auriculata 20kg @3/m²	No.	253	227.45	57 544.85
D7.80		restio festuciformis 4kg	No.	253	31.42	7 949.26
D7.81		Rhus crenata 4kg @ 3/m²	No.	253	19.59	4 956.27
D7.82		Salvia africana-lutea 4kg	No.	337	23.38	7 879.06
D7.83		Salvia chamelaeagnea 4kg	No.	337	28.29	9 533.73
D7.84		Stoebe plumosa 4kg	No.	337	27.80	9 368.60
D7.85		Strelitzia juncea 10kg @ 1/m²	No.	84	189.54	15 921.36
D7.86		Strelitzia reginea 10kg @ 1/m²	No.	84	183.22	15 390.48
D7.87		Tecoma capensis 4kg @ 3/m²	No.	253	23.38	5 915.14
		Groundcovers: Supply & Deliver				
D7.88		Arctotis acaulis plug @ 6/m²	No.	484	2.61	1 263.24
D7.89		Arctotis stoechadifolia plug @ 6/m²	No.	484	2.61	1 263.24
D7.90		Carpobrotus acinaciformis plug @ 6/m²	No.	484	3.83	1 853.72
D7.91		Delosperma cooperi plug @ 6/m²	No.	484	4.42	2 139.28
D7.92		Gazania krebsiana plug @ 6/m²	No.	484	2.73	1 321.32
				Carried Forward		2 013 289.48

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					Brought Forward	2 013 289.48
D7.93		Helichrysum cymosum plug @ 6/m²	No.	484	2.72	1 316.48
D7.94		Lampranthus aureus plug @ 6/m²	No.	484	2.72	1 316.48
D7.95		Osteospermum fruiticosum plug @ 6/m²	No.	484	2.72	1 316.48
D7.96		Osteospermum scklonii plug @ 6/m²	No.	484	2.72	1 316.48
D7.97		Tulbaghia violacea plug @ 6/m²	No.	484	2.72	1 316.48
		Bulbs: Supply & Deliver				
D7.98		Gladiolus species 4kg @ 3/m²	No.	253	36.65	9 272.45
D7.99		Morea elegans 4kg @ 3/m²	No.	253	36.65	9 272.45
D7.100		Watsonia meriana 4kg @ 3/m²	No.	253	26.53	6 712.09
		Trees: Supply & Deliver				
D7.101		Acacia africana 250 ltr	No.	24	2 177.86	52 268.64
D7.102		Kiggelaria africana 250 ltr	No.	24	2 148.56	51 565.44
D7.103		Sideroxylon inerme 250 ltr	No.	24	2 163.82	51 931.68
D7.104		Tarchonanthus camphoratus 250 ltr	No.	24	2 459.79	59 034.96
		IRRIGATION				
		Valve box preparation				
D7.105		Supply and install A2 geotextile below each valve box.	m²	8	R 29.27	234.16
D7.106		Supply and install a 50mm layer of 13mm grey chipstone on the geotextile at the base of all the valve boxes.	m³	0.4	R 1 922.86	769.14
		DESCRIPTION **MAINLINE**				
D7.107		WATER CONNECTION FROM ZONE C	Prov. Sum		R 260 000.00	R 260 000.00
D7.108		110MM CLASS 9 UPVC PIPE SABS	m	850	R 129.39	R 109 981.50
D7.109		110MM X 1" SAB HIGH PRESSURE SADDLES KIWA/SABS	No.	23	R 90.29	R 2 076.67
D7.110		110MM PLIMAT S/W PVC TEE	No.	8	R 192.17	R 1 537.36
D7.111		110MM PLIMAT S/W PVC ELBOW	No.	8	R 152.62	R 1 220.96
D7.112		110MM PLIMAT S/W PVC 45o ELBOW	No.	4	R 159.98	R 639.92
					Carried Forward	2 636 389.30

				Brought Forward		2 636 389.30
D7.113		PVC CLEANER 500ML	No.	1	R 32.30	R 32.30
D7.114		473ML OATY PVC CEMENT	No.	1	R 156.91	R 156.91
		SPRAYLINE				
D7.115		RAINBIRD RB 5004 GEAR DRIVE POP UP	No.	16	R 127.66	R 2 042.56
D7.116		15MM X 3/4" FULL FLOW MALE ADAPTOR	No.	16	R 9.72	R 155.52
D7.117		15MM FULL FLOW ELBOW	No.	16	R 10.65	R 170.40
D7.118		RAINBIRD RB 5000 GEAR DRIVE SHRUB SPRAYER	No.	47	R 147.09	R 6 913.23
D7.119		RISER GREEN PVC 20 X 600MM	No.	47	R 6.99	R 328.53
D7.120		20MM SOCKET	No.	47	R 14.68	R 689.96
D7.121		15MM X 3/4" FULL FLOW MALE ADAPTOR	No.	47	R 9.72	R 456.84
D7.122		15MM FULL FLOW ELBOW	No.	47	R 10.65	R 500.55
D7.123		RAINBIRD NOZZLES (8H, 10H, 15H, 15 RCS)	No.	37	R 164.88	R 6 100.56
D7.124		15MM X 1/2" FULL FLOW MALE ELBOW	No.	37	R 16.81	R 621.97
D7.125		15MM FULL FLOW ELBOW	No.	37	R 10.65	R 394.05
D7.126		RAINBIRD NOZZLES (8H, 10H, 15H, 15 RCS)	No.	190	R 111.04	R 21 097.60
D7.127		15MM X 0.750M PVC RISER	No.	190	R 6.77	R 1 286.30
D7.128		15MM SOCKET	No.	190	R 6.89	R 1 309.10
D7.129		15MM X 1/2" FULL FLOW MALE ELBOW	No.	190	R 16.81	R 3 193.90
D7.130		25MM X 15MM FULL FLOW REDUCING TEE	No.	280	R 17.74	R 4 967.20
D7.131		25MM X 15MM FULL FLOW REDUCING COUPLING	No.	40	R 13.86	R 554.40
D7.132		15MM FULL FLOW ELBOW	No.	40	R 10.65	R 426.00
D7.133		25MM FULL FLOW TEE	No.	100	R 17.74	R 1 774.00
D7.134		25MM FULL FLOW ELBOW	No.	80	R 14.20	R 1 136.00
D7.135		25MM X 1" FULL FLOW MALE ELBOW	No.	23	R 23.09	R 531.07
D7.136		25MM FULL FLOW TEE	No.	23	R 17.74	R 408.02
D7.137		25MM FULL FLOW ELBOW	No.	23	R 14.20	R 326.60
D7.138		15MM CLASS 6 LDPE FULL FLOW PIPE	m	200	R 3.18	R 636.00
D7.139		25MM CLASS 6 FULL FLOW PIPE	m	2200	R 8.76	R 19 272.00
D7.140		25MM FULL FLOW COUPLING	No.	22	R 11.95	R 262.90
				Carried Forward		2 712 133.77

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					Brought Forward	2 712 133.77
D7.141		THREAD TAPE	No.	50	R 2.44	R 122.00
D7.142		CONSUMABLES	No.	1	R 549.39	R 549.39
		DRIPPERS FOR TREES				
D7.143		25L/HR PC BUTTON DRIPPERS (4 PER TREE)	No.	436	R 7.78	R 3 392.08
D7.144		25MM X 15MM FULL FLOW REDUCING TEE	No.	120	R 17.74	R 2 128.80
D7.145		25MM X 15MM FULL FLOW REDUCING COUPLING	No.	20	R 13.86	R 277.20
D7.146		15MM FULL FLOW TEE	No.	120	R 12.53	R 1 503.60
D7.147		15MM FULL FLOW ELBOW	No.	20	R 10.65	R 213.00
		VALVES				
D7.148		25MM POLYPROPELENE BARREL NIPPLES	No.	23	R 8.54	R 196.42
D7.149		25MM POLYPROPELENE ELBOWS MALE/MALE	No.	23	R 11.60	R 266.80
D7.150		25MM CHROME PLATED BRASS BALL VALVE (FULL BALL)	No.	23	R 109.06	R 2 508.38
D7.151		RAINBIRD RB 100 PGA 25MM SOLENOID VALVE	No.	23	R 213.10	R 4 901.30
D7.152		RAINBIRD 430MM X 300MM X 300MM VALVE BOX-COMPATABLE WITH RBIRD LOCKING DEVICE	No.	23	R 315.35	R 7 253.05
D7.153		RAIN BIRD RBLOCK VANDAL RESISTANT LOCKING DEVICE	No.	23	R 27.47	R 631.81
D7.154		RAINBIRD SINGLE STATION DECODER	No.	23	R 1 207.13	R 27 763.99
D7.155		RAINBIRD LSP-1 SURGE PROTECTORS	No.	4	R 1 200.16	R 4 800.64
D7.156		50MM HDPE SLEEVE PIPE	m	700	R 16.75	R 11 725.00
D7.157		1.5MM2 RAINBIRD SPECIFICATION DECODER CABLE	m	700	R 29.67	R 20 769.00
D7.158		COPPER GROUNDING ROD AND CLAMP	No.	1	R 164.82	R 164.82
D7.159		6MM2 EARTH CABLE	m	10	R 24.98	R 249.80
D7.160		3M DBY CONNECTORS	No.	100	R 26.58	R 2 658.00
D7.161		9V ENERGIZER ALKALINE SQUARE BATTERIES	No.	1	R 92.30	R 92.30
D7.162		3 PIN PLUG	No.	1	R 29.40	R 29.40
D7.163		PTFE THREAD TAPE	No.	25	R 2.44	R 61.00
D7.164		CONSUMABLES	No.	1	R 549.39	R 549.39
		AIR VALVES				
					Carried Forward	2 804 940.94

					Brought Forward	2 804 940.94
D7.165		110MM X 2" SAB HIGH PRESSURE SADDLES KIWA/SAE	No.	1	R 107.75	R 107.75
D7.166		50MM AIR RELIEF VALVE	No.	1	R 2 366.77	R 2 366.77
D7.167		50MM X 0.600M GALVANISED RISER PIPE	No.	1	R 213.60	R 213.60
D7.168		50MM CHROME PLATED BRASS BALL VALVE (FULL BALL)	No.	1	R 397.59	R 397.59
D7.169		RAINBIRD 250MM ROUND VALVE BOX	No.	1	R 133.91	R 133.91
D7.170		CONSUMABLES	sum	-	R 549.39	R 549.39
		LABOUR				
D7.171		Locate & open sleeves	No.	18	R 164.82	R 2 966.76
D7.172		Setting out of sprinklers & valves	No.	313	R 16.48	R 5 158.24
D7.173		mainline pipes & cable sleeve - 600mm cover	m	618	R 49.45	R 30 560.10
D7.174		Trench , install , backfill and compact HDPE/ LDPE lateral pipes - 400mm cover	m	2400	R 38.45	R 92 280.00
D7.175		Flush lines & install Sprinklers	No.	290	R 16.48	R 4 779.20
D7.176		Installation of Solenoid Valves	No.	23	R 164.82	R 3 790.86
D7.177		Installation of Air Valves	No.	1	R 164.82	R 164.82
D7.178		Installation of Dripper Rings	No.	436	R 5.49	R 2 393.64
D7.179		Design Fee Payable If Materials Are Not Purchased From Controlled Irrigation	No.	1	R 5 493.90	R 5 493.90
D7.180		Commissioning of system	sum	-	R 1 648.17	R 1 648.17
D7.181		Preparation of As build documentation for handover to clien	sum	-	R 1 648.17	R 1 648.17
		HARD LANDSCAPING				
		Paving PAVERS 1. 200 x 200 x 70 thick Class 40 Mpa – Sandblasted - COLOUR Charcoal 2. 200 x 200 x 70 thick Class 40 Mpa – Sandblasted- COLOUR Beige 3. 200 x 200 x 70 thick Class 40 Mpa - Sandblasted- COLOUR Sandstone Sample to be provided for approval by Client or Landscape Architect Supplier or similar approved: Modern Concrete Works (Pty) Ltd Ryneveld Street, Eersterivier, 7100, Contact: Deon van Vuuren (C) 082 907 2171 (T) 021 007 0239				
					Carried Forward	2 959 593.81

					Brought Forward	2 959 593.81
		Rates include all work, incl.fine grading, 25mm base sand layer,supply of materials,and execution incl cutting. Base Course Specification + Quantities in Engineers BOQ				
D7.182		Pedestrian	m²	623	R 245.10	R 152 697.30
D7.183		Roadway	m²	430	R 418.18	R 179 817.40
		PAVERS AROUND BINS,BOLLARD AND CYCLING POSTS				
D7.184		BOLLARDS-400 x 400 x 70 thick Class 40 Mpa – Sandblasted COLOUR Charcoal with chamfered top edge with precast (aperture) opening 134 diameter size in centre	No	20	R 577.81	R 11 556.20
D7.185		BINS-400 x 400 x 70 thick Class 40 Mpa – Sandblasted COLOUR Charcoal with chamfered top edge with precast (aperture) opening 90 diameter size in centre	No	10	R 577.81	R 5 778.10
D7.186		BICYCLES-400 x 400 x 100 thick Class 40 Mpa – Sandblasted COLOUR Charcoal with chamfered top edge with precast (aperture) opening 90 diameter size in centre	No	20	R 577.81	R 11 556.20
		Gravel Stone				
D7.187		Gravel Stone 13-18mm, 100 deep, Brownstown laid on bidum cloth (on a sub base to Engineers Specification and BOQ)	m²	500	R 130.94	R 65 470.00
		Street furniture				
		Supply & install per drawings				
D7.188		Pergola and Seat Wall Planter (**Dwg CODE AAD**)	sum	-	625911.41	R 625 911.41
D7.189		Bins (**Dwg CODE AAD**)	sum	-	17192.45	R 17 192.45
D7.190		Bollard (**Dwg CODE AAD**)	sum	-	134636.94	R 134 636.94
D7.191		Bicycle rack (**Dwg CODE AAD**)	sum	-	56444.67	R 56 444.67
D7.192		Lighting	prov sum		260000	R 260 000.00
D7.193		Signage	prov sum		30000	R 30 000.00
		Special features				
D7.194		Rocks	prov sum		260000	R 260 000.00
					Carried Forward	4 770 654.48

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					Brought Forward	4 770 654.48
D7.195		Water Features	prov sum		260000	R 260 000.00
		PRE-CONTRACT COMPLETION MAINTENANCE				
D7.196		Allow for all aspects of maintaining the plants and irrigation in their final positions until the practical completion certificate is issued.In the event of unforseen delays of the project.	monthly rate	3	R 17 721.30	R 53 163.90
		Maintenance Post-Practical Completion				
D7.197		Provide rate for the connection, supply + removal of a subwater meter to the main contractors supply	No.	1	R 13 437.50	**Rate Only**
		Irrigation				
		TO COMPLY WITH THE CURRENT CITY OF CAPE TO WNS WATER RESTRICTIONS REGULATIONS				
D7.198		Provide for programming, monitoring and maintaining the irrigation system	p/mth	12	R 1 591.98	R 19 103.76
		Landscape Management				
		Planting & Hard surface areas				
D7.199		Allow for the pruning of trees, weeding of shrub, groundcover areas and hard surfaces every second week. The supply and application of treatments to the site to attend to any pests and diseases that may affect the plants and trees. Managing and adjust plant supports (trees stakes) once a month and all damages must be addressed immediately. Removal of all litter,	p/mth	12	R 6 438.08	R 77 256.96
		Lawn areas				
D7.200		Mowing lawn area to maintain 20 to 30mm blade, include edge trimming.	p/mth	12	R 1 968.41	R 23 620.92
		ADDITIVES AND FERTILISING				
		Tree, shrubs and Ground covers:				
D7.201		Supply and spread mulch layer of 25mm upon completion of contract (feature planting planting areas)	m^3	88	R 541.09	R 47 467.12
D7.202		Supply and spread organic fertilizer on all landscaped areas (including lawns) at a rate of 60g/m2 in May and again in August	kg	791	R 14.06	R 11 127.08
D7.203		Supply and spread organic fertilizer (Neutrog) at a rate of 100g/ tree every 3 months. (4 x application)	kg	38	R 23.49	R 902.02
		Top Dressing				
					Carried Forward	5 263 296.24

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					Brought Forward	5 263 296.24
D7.204		Supply and install 10mm Relience (or approved equivalent) Top Dressing on spot areas on lawn, fine grade to level surface.	m^3	31	R 502.14	R 15 496.04
		General				
D7.205		Allow for the supply and application of treatments to the site to attend to any pests and diseases that may affect the plants and trees.	p/mth	12	530.66	6 367.92
D7.206		All administrative monitoring and reporting	p/mth	12	95.51	1 146.12
D7.207		Provisional sum for plant in-fill as directed by Landscape Architect	prov sum		260 000.00	R 260 000.00
		BILL NO. D7 **SOFT LANDSCAPING AND IRRIGATION (ZONE A)**				
		Carried forward to Summary of Bills			**Total**	5 546 306.32

Contract: Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Landscaping

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION D				
		LANDSCAPING				
		D7 Landscaping				
		BILL NO. D8				
		SOFT LANDSCAPING AND IRRIGATION (ZONE B)				
		PRELIMINARIES, GENERAL + DAY WORKS				
D8.1		Provide for contractual requirements, construction guarantee and all ancillary cost *(As only required over and above specifications. List these as addendum to tender)*	sum	-	0	-
D8.2		Provide for establishment of facilities on site	sum	-	0	-
D8.3		Provide for holding nursery, if required	sum	-	0	-
D8.4		Provide for removal of facilities from site	sum	-	0	-
D8.5		Allow for co-ordinating and receiving all plant material for this contract, including quality control, holding and maintenance	sum	-	0	-
D8.6		Provide for compliance with all health and safety requirements as set out by the main contractor.	sum	-	0	-
D8.7		Provide for compliance with all environmental requirements as set out b	sum	-	0	-
		PROVIDE FOR DAYWORKS (Rates only)				
		Labour to be claimed at cost :				
D8.8		% overhead recovery on labour	%		0.16	**Rate only**
D8.9		hourly rate for foreman	hr		107.50	**Rate only**
D8.10		hourly rate for labour	hr		53.75	**Rate only**
		Material to be claimed at cost :				
D8.11		% overhead on material	%		0.16	**Rate only**
		Plant and equipment hire to be claimed at Cost:				
D8.12		% overhead recovery of plant	%		0.16	**Rate only**
D8.13		Dump of organic materials at registered dump site.	m³		278.11	**Rate only**
D8.14		Dump rubble/ stone (inorganic material) at registered dump site	m³		301.78	**Rate only**
		EARTHWORKS + INSTALLATIONS FOR LANDSCAPE WORKS				
		Cleaning of contaminated soil as directed below:				
D8.15		Provide rate for cleaning landscape areas, to be free of rubble, concrete and all foreign materials. Materials to be dumped at a registered dump site.	m³	28	278.93	7 907.67
		Excavate in-situ soil as directed below:				
					Carried Forward	7 907.67

					Brought Forward	7 907.67
D8.16		Excavate 250L tree holes for planting in soft landscape areas - The volume is calculated from the quantity of trees by the specified size of the hole (1.2 x 1.2 x 1.2) =(1.728)	m³	26	38.28	992.22
D8.17		Distribute and shape unwanted excavated material of item 2.2.1 (40%) to site as directed by the Landscape Architect	m³	10	51.16	530.43
D8.18		Excavate all planter beds sub base material (150mm thick) in planter beds. Remove material from site to approved dumping area as instructed by Landscape Architect.	m³	4	543.47	2 282.57
D8.19		Excavate all planter beds to a depth of 350 mm of subsoil from all planter beds and remove from site to approved dumping area as instructed by Landscape Architect.	m³	10	220.97	2 165.51
D8.20		Allow for rough shaping of all planting areas before planting medium is installed to the satisfaction of the landscape architect.	m²	140	2.76	386.40
D8.21		Allow for fine shaping of all planting areas once planting medium is installed to the satisfaction of the landscape architect.	m²	140	3.68	515.20
D8.22		Supply and install 2mm thick x1m mole barrier (kaytrech or similarly approved) to all trees within paving, to product and manufacturers specifications.	m	125	117.27	14 658.75
		PLANTING MEDIUM				
		Trees: Planting medium mix to consist of 60% in-situ soil and 40% approved compost General Planting Areas: 200mm approved compost to all planting areas Raised Planters: Planting medium mix to consist of 60% stockpiled top-soil and 40% approved compost				
		Supply imported compost according to specifications: (sample for landscape architects approval)				
D8.23		Compost to tree holes (40% of volume)	m³	10	416.27	4 315.89
D8.24		Compost to planting (200mm Planting areas)	m³	6	436.99	2 447.14
D8.25		Compost to lawn area (40mm per m²)	m³	4	436.99	1 957.72
		Relocate & install stockpiled topsoil according to specifications				
D8.26		Stockpiled topsoil it to tree holes (60% of volume)	m³	16	59.75	929.23
D8.27		Stockpiled topsoil to planting (300mm Planting areas)	m³	8	67.56	567.50
D8.28		Stockpiled topsoil to lawn (150mm Planting areas)	m³	17	83.20	1 397.76
		Supply & install organic fertiliser to specifications:				
D8.29		All tree planting areas: 1kg / m³	kg	26	14.07	364.69
D8.30		All planting areas: 0.250kg / m²	kg	7	14.92	104.44
D8.31		All lawn area: 60g/ m²	kg	7	14.92	100.26
		Supply & install of Bonemeal to specification:				
D8.32		All tree planting areas: 1kg / m³	kg	26	14.07	364.69
					Carried Forward	41 988.07

				Brought Forward		41 988.07
D8.33		All planting areas: 0.12kg/ plant	kg	3	22.22	74.66
D8.34		Social lawn area: 0.080kg/ m²	kg	9	16.62	148.92
		Tree, Shrub/ ground cover planting areas preparation				
D8.35		Mix and place medium in tree pits, 60%:40% in-situ top soil : compost including organic fertiliser as specified.	m³	26	54.13	1 403.05
D8.36		Pre-mix medium, at stockpile area, place and spread planting medium to a depth of 500mm (60% in-situ top soil : 40% compost & fertilisers to all planting area as per specification and measurement)	m³	14	54.94	769.16
		Metabolic Activator				
D8.37		Supply metabolic activator, 'Symbex or equal' from Agro-Hytec(082 9006025)	ltr	1	280.19	286.47
D8.38		Apply 'Symbex' mixing: Mix metabolic activator with water to manufacturers instructions: 50ml:2l(water) . Apply to manufacturers (Agro-Hytec) instructions.	ltr	41	7.56	309.17
		Water Retainers For Soil Mediums				
D8.39		Supply "Hydrogel B/ Aquasorb/ Stockosorb" or approved equal product	kg	5	87.90	413.13
D8.40		Apply "Hydrogel B/ Aquasorb/ Stockosorb or other similarly approved product' mixing: To be applied in the hydrated form and placed in each plant and tree hole. Application rate to be in accordance with manufacturers specifications.	ltr	940		
		Post planting				
D8.41		Supply and install 'Reliance' (or approved equivalent) medium mulch , 50mm thick (sample for landscape architects approval)	m³	1	422.22	591.11
		Other:				
D8.42		Provide soil tests ("Go bio farming":Nico Uys, Cell: 083 565 7337) before starting of planting works to Landscape Architect's requirement	No.	1	1 307.54	1 307.54
D8.43		Provide soil precipitation tests before starting installation and planting works to Landscape Architect's requirement	No.	1	3 131.52	3 131.52
D8.44		Provide a provisional sum for fertiliser as required by the results of the soil analyses as directed by the Landscape Architect	prov sum		15 000.00	R 15 000.00
		PLANTING WORKS				
		Plant Installation				
		Excavate into planting fill, dust roots with bone meal, place plant, backfill, compact and level surplus soil for :				
D8.45		200-tray plugs (plantlets)	No.	48	3.07	147.36
D8.46		4kg container size	No.	88	9.05	796.40
D8.47		Roll on lawn/sods	No.	112	3.39	379.68
				Carried Forward		66 746.24

					Brought Forward	66 746.24
		Tree planting preparation:				
		Mix and place medium in tree pits. 60%:40% in-situ top soil : compost including organic fertiliser as specified.				
D8.48		250 ltr tree	No.	15	21.17	317.55
		Plant Support				
D8.49		Supply and install tree stakes and ties complete to external Trees (See detail 1)	No.	15	354.89	5 323.35
D8.50		Provide a provisional sum for selected plant material for in-fill as directed by the Landscape Architect	prov sum		10 000.00	R 10 000.00
		Alien Clearance				
D8.51		Removing of alien trees, under 3m height, as set out by landscape architect on site. Rates incl. Cutting, removal of stump and carting to dump (non Arborist Work)	No	5	306.44	1 532.20
D8.52		Removing of alien trees over 3m height, as set out by landscape architect on site. Rates incl. Cutting, removal of stump and carting to dump (non Arborist Work)	No	5	1 470.90	7 354.50
D8.53		Spraying of alien trees under 3m height, as set out by landscape architect on site. Rates incl. all material and equipment as required by the health and safety regulations	No	5	159.35	796.75
D8.54		Spraying of alien trees over 5m height, as set out by landscape architect on site. Rates incl. all material and equipment as required by the health and safety regulations	No	5	183.87	919.35
D8.55		Mechanical and chemical clearance of all alien and invasive species within the area. Rate to include the removal and dumping at registered dump of the organic material.	m²	95	2.19	206.96
		PLANT LIST				
		Note : rates tendered for plants to be inclusive of supply and delivery: transport, holding, handling and mark-up.				
		Note : 200 plug tray quantities are numbers of plantlets				
		Lawn: Supply & Deliver				
D8.56		Cynodon dactylon	m²	112	38.45	4 306.40
		Shrubs: Supply & Deliver				
D8.57		Aloe cooperi 4kg	No.	20	56.86	1 137.20
D8.58		Dietes bicolor 4kg @ 5/m²	No.	24	20.52	492.48
D8.59		Euryops pectinatus 4kg	No.	16	19.59	313.44
D8.60		Kniphofia uvaria 4kg @ 6/m²	No.	12	23.38	280.56
D8.61		Pelargonium capitatum 4kg @4/m²	No.	16	28.29	452.64
		Groundcovers: Supply & Deliver				
					Carried Forward	100 179.61

				Brought Forward		100 179.61
D8.62		Arctotis stoechadifolia plug @ 6/m²	No.	24	2.61	62.64
D8.63		Carpobrotus acinaciformis plug @ 6/m²	No.	24	3.83	91.92
		Trees: Supply & Deliver				
D8.64		Kiggelaria africana (250 ltr)	No.	8	2 148.56	17 188.48
D8.65		Sideroxylon inerme (250 ltr)	No.	7	2 163.82	15 146.74
		IRRIGATION				
D8.66		SUPPLY AND INSTALLATION OF FULLY AUTOMATED IRRIGATION SYSTEM	prov sum		R 25 000.00	R 25 000.00
		HARD LANDSCAPING				
		Paving				
D8.67		Type: De Hoop Red laid in Herringbone Pattern Size: 200 x 100 x 50mm Supplier: Corobrik (Pty) Ltd - Western Cape Contact person: Werner Oelofse werner.oelofse@corobrik.co.za (T) 021 888 2300 (C) 083 284 9445	m²	400	R 418.18	R 167 272.00
D8.68		Type: De Hoop Matt Brown Size: 200 x 100 x 50mm Per Supplier above	m²	150	R 521.38	R 78 207.00
		Rates include all work, incl.fine grading, 25mm base sand layer,supply of materials and execution incl cutting. Base Course Specification + Quantities in Engineers BOQ				
		Brick cutting and Header Course Mitres				
D8.69		Cuting of bricks	l/m	50	R 21.50	R 1 075.00
D8.70		Corners are to be mitred symmetrically in a neat and tidy manner, avoiding parts smaller than 40mm width. No transverse mitre or introduction of a third angle/block orientation.	l/m	15	R 193.50	R 2 902.50
		Gravel Stone				
D8.71		Gravel Stone 13-18mm, 100 deep, Brownstown laid on bidum cloth (on a sub base to Engineers Specification and BOQ)	m²	1216	R 78.85	R 95 881.60
		Street furniture				
D8.72		Lighting	prov sum		R 15 000.00	R 15 000.00
D8.73		Signage	prov sum		R 5 000.00	R 5 000.00
		Special features				
D8.74		Rocks	prov sum		R 10 000.00	R 10 000.00
D8.75		Water Features	prov sum		R 15 000.00	R 15 000.00
		PRE-CONTRACT COMPLETION MAINTENANCE				
				Carried Forward		548 007.49

					Brought Forward	548 007.49
D8.76		Allow for all aspects of maintaining the plants and irrigation in their final positions until the practical completion certificate is issued.In the event of unforseen delays of the project.	Monthly rate	3	R 5 443.94	R 16 331.82
		Maintenance Post-Practical Completion				
D8.77		Provide rate for the connection, supply + removal of a subwater meter to the main contractors supply	No.	1	R 13 437.50	**Rate Only**
		Irrigation				
		TO COMPLY WITH THE CURRENT CITY OF CAPE TOWN WATER RESTRICTIONS REGULATIONS				
D8.78		Provide for programming, monitoring and maintaining the irrigation	p/mth	12	R 0.00	R 0.00
		Landscape Management				
		Planting & Hard surface areas				
D8.79		Allow for the pruning of trees, weeding of shrub, groundcover areas and hard surfaces every second week. The supply and application of treatments to the site to attend to any pests and diseases that may affect the plants and trees. Managing and adjust plant supports (trees stakes) once a month and all damages must be addressed immediately. Removal of all litter,	p/mth	12	R 263.20	R 3 158.40
		Lawn areas				
D8.80		Mowing lawn area to maintain 20 to 30mm blade, include edge trimming.	p/mth	12	R 71.32	R 855.84
		ADDITIVES AND FERTILISING				
		Tree, shrubs and Ground covers:				
D8.81		Supply and spread mulch layer of 25mm upon completion of contract (feature planting planting areas)	m^3	1	R 541.09	R 378.76
D8.82		Supply and spread organic fertilizer on all landscaped areas (including lawns) at a rate of 60g/m2 in May and again in August	kg	17	R 14.06	R 236.21
D8.83		Supply and spread organic fertilizer (Neutrog) at a rate of 100g/ tree every 3 months. (4 x application)	kg	6	R 23.49	R 140.94
		Top Dressing				
D8.84		Supply and install 10mm Relience (or approved equivalent) Top Dressing on spot areas on lawn, fine grade to level surface.	m^3	1	R 502.14	R 562.40
		General				
D8.85		Allow for the supply and application of treatments to the site to attend to any pests and diseases that may affect the plants and trees.	p/mth	12	37.14	R 445.68
D8.86		All administrative monitoring and reporting	p/mth	12	689.86	R 0.00 R 8 278.32
					Carried Forward	578 395.86

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					Brought Forward	578 395.86
D8.87		Provisional sum for plant in-fill as directed by Landscape Architect	prov sum		R 5 000.00	R 5 000.00
		BILL NO. D8 **SOFT LANDSCAPING AND IRRIGATION (ZONE B)**				
		Carried forward to Summary of Bills			**Total**	583 395.86

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Contract: Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Landscaping

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION D				
		LANDSCAPING				
		D7 Landscaping				
		BILL NO. D9				
		SOFT LANDSCAPING AND IRRIGATION (ZONE C)				
		PRELIMINARIES, GENERAL + DAY WORKS				
D9.1		Provide for contractual requirements, construction guarantee and all ancillary cost *(As only required over and above specifications. List these as addendum to tender)*	sum	-	0	-
D9.2		Provide for establishment of facilities on site	sum	-	0	-
D9.3		Provide for holding nursery, if required	sum	-	0	-
D9.4		Provide for removal of facilities from site	sum	-	0	-
D9.5		Allow for co-ordinating and receiving all plant material for this contract, including quality control, holding and maintenance	sum	-	0	-
D9.6		Provide for compliance with all health and safety requirements as set out by the main contractor.	sum	-	0	-
D9.7		Provide for compliance with all environmental requirements as set out by the main contractor.	sum	-	0	-
		PROVIDE FOR DAYWORKS (Rates only)				
		Labour to be claimed at cost :				
D9.8		% overhead recovery on labour	%	-	0.16	**Rate only**
D9.9		hourly rate for foreman	hr	-	107.50	**Rate only**
D9.10		hourly rate for labour	hr	-	53.75	**Rate only**
		Material to be claimed at cost :				
D9.11		% overhead on material	%	-	0.16	**Rate only**
		Plant and equipment hire to be claimed at Cost:				
D9.12		% overhead recovery of plant	%	-	0.16	**Rate only**
D9.13		Dump of organic materials at registered dump site.	m³	-	278.11	**Rate only**
D9.14		Dump rubble/ stone (inorganic material) at registered dump site	m³	-	301.78	**Rate only**
		EARTHWORKS + INSTALLATIONS FOR LANDSCAPE WORKS				
		Cleaning of contaminated soil as directed below:				
D9.15		Provide rate for cleaning landscape areas, to be free of rubble, concrete and all foreign materials. Materials to be dumped at a registered dump site.	m³	213	278.93	59 453.93
		Excavate in-situ soil as directed below:				
D9.16		Excavate 250L tree holes for planting in soft landscape areas - The volume is calculated from the quantity of trees by the specified size of the hole (1.2 x 1.2 x 1.2) =(1.728)	m³	232	38.28	8 863.81
D9.17		Distribute and shape unwanted excavated material of item 2.2.1 (40%) to site as directed by the Landscape Architect	m³	93	51.16	4 738.48
					Carried Forward	73 056.22

				Brought Forward		73 056.22
D9.18		Allow for rough shaping of all planting areas before planting medium is installed to the satisfaction of the landscape architect.	m²	11363	2.21	25 112.23
D9.19		Allow for fine shaping of all planting areas once planting medium is installed to the satisfaction of the landscape architect.	m²	11363	3.68	41 815.84
D9.20		Supply and install 2mm thick x1m mole barrier (kaytrech or similarly approved) to all trees within paving, to product and manufacturers specifications.	m	335	117.27	39 285.45
		PLANTING MEDIUM				
		Trees: Planting medium mix to consist of 60% in-situ soil and 40% approved compost				
		General Planting Areas: 200mm approved compost to all planting areas				
		Raised Planters: Planting medium mix to consist of 60% stockpiled top-soil and 40% approved compost				
		Supply imported compost according to specifications: (sample for landscape architects approval)				
D9.21		Compost to tree holes (40% of volume)	m³	93	416.27	38 555.26
D9.22		Compost to lawn area (40mm per m²)	m³	455	436.99	198 620.69
		Relocate & install stockpiled topsoil according to specifications				
D9.23		Stockpiled topsoil it to tree holes (60% of volume)	m³	139	59.75	8 301.14
D9.24		Stockpiled topsoil to lawn (150mm Planting areas)	m³	1704	83.20	141 810.24
		Supply & install organic fertiliser to specifications:				
D9.25		All tree planting areas: 1kg / m³	kg	232	14.07	3 257.94
D9.26		All lawn area: 60g/ m²	kg	682	14.92	10 172.16
		Supply & install of Bonemeal to specification:				
D9.27		All tree planting areas: 1kg / m³	kg	232	14.07	3 257.94
D9.28		Social lawn area: 0.080kg/ m²	kg	909	16.62	15 108.24
		Tree, Shrub/ ground cover planting areas preparation				
D9.29		Mix and place medium in tree pits, 60%:40% in-situ top soil : compost including organic fertiliser as specified.	m³	232	54.13	12 533.91
D9.30		Pre-mix medium, at stockpile area, place and spread planting medium to a depth of 500mm (60% in-situ top soil : 40% compost & fertilisers to all planting area as per specification and measurement)	m³	2386	54.94	131 099.48
		Metabolic Activator				
D9.31		Supply metabolic activator, 'Symbex or equal' from Agro-Hytec(082 9006025)	ltr	27	280.19	7 665.17
D9.32		Apply 'Symbex' mixing: Mix metabolic activator with water to manufacturers instructions: 50ml:2l(water) . Apply to manufacturers (Agro-Hytec) instructions.	ltr	1094	7.56	8 272.77
		Water Retainers For Soil Mediums				
					Carried Forward	757 924.67

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					Brought Forward	757 924.67
D9.33		Supply "Hydrogel B/ Aquasorb/ Stockosorb" or approved equal product	kg	13	87.90	1 177.86
D9.34		Apply "Hydrogel B/ Aquasorb/ Stockosorb or other similarly approved product' mixing: To be applied in the hydrated form and placed in each plant and tree hole. Application rate to be in accordance with manufacturers specifications.	ltr	2680	-	-
D9.35		Supply and install 'Reliance' (or approved equivalent) medium mulch , 50mm thick (sample for landscape architects approval)	m^3	15	422.22	6 333.30
		Other:				
D9.36		Provide soil tests ("Go bio farming":Nico Uys, Cell: 083 565 7337) before starting of planting works to Landscape Architect's requirement	No.	1	1 307.54	1 307.54
D9.37		Provide soil precipitation tests before starting installation and planting works to Landscape Architect's requirement	No.	1	3 131.52	3 131.52
D9.38		Provide a provisional sum for fertiliser as required by the results of the soil analyses as directed by the Landscape Architect	prov sum		15 000.00	R 15 000.00
		PLANTING WORKS				
		Plant Installation				
		Excavate into planting fill, dust roots with bone meal, place plant, backfill, compact and level surplus soil for :				
D9.39		Roll on lawn/sods	No.	11363	3.39	38 520.57
		Tree planting preparation:				
		Mix and place medium in tree pits, 60%:40% in-situ top soil : compost including organic fertiliser as specified.				
D9.40		250 ltr tree	No.	134	21.17	2 836.78
		Plant Support				
D9.41		Supply and install tree stakes and ties complete to external Trees (See detail 1)	No.	134	354.89	47 555.26
D9.42		Provide a provisional sum for selected plant material for in-fill as directed by the Landscape Architect	prov sum		10 000.00	R 10 000.00
		Alien Clearance				
D9.43		Removing of alien trees, under 3m height, as set out by landscape architect on site. Rates incl. Cutting, removal of stump and carting to dump (non Arborist Work)	No	5	306.44	1 532.20
D9.44		Removing of alien trees over 3m height, as set out by landscape architect on site. Rates incl. Cutting, removal of stump and carting to dump (non Arborist Work)	No	5	1 470.90	7 354.50
D9.45		Spraying of alien trees under 3m height, as set out by landscape architect on site. Rates incl. all material and equipment as required by the health and safety regulations	No	5	159.35	796.75
D9.46		Spraying of alien trees over 5m height, as set out by landscape architect on site. Rates incl. all material and equipment as required by the health and safety regulations	No	5	183.87	919.35
					Carried Forward	894 390.30

				Brought Forward		894 390.30
D9.47		Mechanical and chemical clearance of all alien and invasive species within the area. Rate to include the removal and dumping at registered dump of the organic material.	m²	14210	2.19	31 119.90
		PLANT LIST				
		Note : rates tendered for plants to be inclusive of supply and delivery: transport, holding, handling and mark-up.				
		Note : 200 plug tray quantities are numbers of plantlets				
		Lawn: Supply & Deliver				
D9.48		Cynodon dactylon	m²	11363	38.45	436 907.35
		Trees: Supply & Deliver				
D9.49		Kiggelaria africana	250ltr	67	2 148.56	143 953.52
D9.50		Sideroxylon inerme	250ltr	67	2 163.82	144 975.94
		IRRIGATION				
		Valve box preparation				
D9.51		Supply and install A2 geotextile below each valve box.	m²	8	R 28.08	224.64
D9.52		Supply and install a 50mm layer of 13mm grey chipstone on the geotextile at the base of all the valve boxes.	m³	0.4	R 1 922.86	769.14
		DESCRIPTION **MAINLINE**				
D9.53		WATER CONNECTION	Prov sum		R 1 500.00	R 1 500.00
D9.54		110MM CLASS 9 UPVC PIPE SABS	M	850	R 129.39	R 109 981.50
D9.55		110MM X 1 1/ 2" SAB HIGH PRESSURE SADDLES KIWA/SABS	EA	18	R 107.75	R 1 939.50
D9.56		110MM X 1" SAB HIGH PRESSURE SADDLES KIWA/SABS	EA	1	R 90.29	R 90.29
D9.57		110MM PLIMAT S/W PVC TEE	EA	10	R 192.17	R 1 921.70
D9.58		110MM PLIMAT S/W PVC ELBOW	EA	4	R 152.62	R 610.48
D9.59		110MM PLIMAT S/W PVC 45o ELBOW	EA	2	R 159.98	R 319.96
D9.60		PVC CLEANER 500ML	EA	1	R 32.30	R 32.30
D9.61		473ML OATY PVC CEMENT	EA	1	R 156.91	R 156.91
		SPRAYLINE				
D9.62		RAIN BIRD 6504FC GEAR DRIVE POP-UP SPRINKLER C/W #12 NOZZLE	EA	72	R 531.17	R 38 244.24
D9.63		25MM TRIPLE ELBOW SWING JOINT RISER	EA	72	R 61.02	R 4 393.44
D9.64		50MM X 1" SAB SADDLE SABS/KIWA	EA	72	R 18.28	R 1 316.16
D9.65		50MM SAB COMPRESSION END CAP SABS/KIWA	EA	36	R 44.24	R 1 592.64
D9.66		50MM X 1 1/2" SAB MALE ADAPTOR KIWA/SABS	EA	18	R 40.69	R 732.42
D9.67		50MM SAB EQUAL ELBOW KIWA/SABS	EA	42	R 71.60	R 3 007.20
D9.68		50MM SAB EQUAL TEE KIWA/SABS	EA	18	R 97.62	R 1 757.16
					Carried Forward	1 819 936.70

					Brought Forward	1 819 936.70
D9.69		HDPE 50MM PE100 PN8 SABS	M	800	R 21.47	R 17 176.00
D9.70		50MM SAB COUPLING SABS/KIWA	EA	8	R 66.36	R 530.88
		DRIPPERS FOR TREES				
D9.71		25L/HR PC BUTTON DRIPPERS (4 PER TREE)	EA	384	R 7.78	R 2 987.52
D9.72		25MM X 15MM FULL FLOW REDUCING TEE	EA	100	R 17.74	R 1 774.00
D9.73		25MM X 15MM FULL FLOW REDUCING COUPLING	EA	20	R 13.86	R 277.20
D9.74		15MM FULL FLOW TEE	EA	100	R 12.53	R 1 253.00
D9.75		15MM FULL FLOW ELBOW	EA	20	R 10.65	R 213.00
D9.76		25MM CLASS 6 FULL FLOW PIPE	M	700	R 8.76	R 6 132.00
D9.77		25MM FULL FLOW COUPLING	EA	7	R 11.95	R 83.65
D9.78		25MM X 1" FULL FLOW MALE ELBOW	EA	1	R 23.09	R 23.09
D9.79		25MM FULL FLOW TEE	EA	1	R 17.74	R 17.74
		VALVES				
D9.80		40MM POLYPROPELENE BARREL NIPPLE	EA	18	R 14.33	R 257.94
D9.81		40MM CHROME PLATED BRASS BALL VALVE (FULL BORE)	EA	18	R 252.18	R 4 539.24
D9.82		RAINBIRD RB150 PGA 40MM SOLENOID VALVE	EA	18	R 527.84	R 9 501.12
D9.83		25MM POLYPROPELENE BARREL NIPPLES	EA	1	R 8.54	R 8.54
D9.84		25MM POLYPROPELENE ELBOWS MALE/MALE	EA	1	R 11.60	R 11.60
D9.85		25MM CHROME PLATED BRASS BALL VALVE (FULL BALL)	EA	1	R 109.06	R 109.06
D9.86		RAINBIRD RB 100 PGA 25MM SOLENOID VALVE	EA	1	R 213.10	R 213.10
D9.87		25MM HYDROSTATIC PRESSURE REDUCING VALVE PN 16 SETTING 0.5 - 7.0 BAR	EA	1	R 924.20	R 924.20
D9.88		RAINBIRD 430MM X 300MM X 300MM VALVE BOX-COMPATABLE WITH RBIRD LOCKING DEVICE	EA	19	R 315.35	R 5 991.65
D9.89		RAIN BIRD RBLOCK VANDAL RESISTANT LOCKING DEVICE	EA	19	R 27.47	R 521.93
D9.90		RAINBIRD SINGLE STATION DECODER	EA	19	R 1 207.13	R 22 935.47
D9.91		RAINBIRD LSP-1 SURGE PROTECTORS	EA	4	R 1 200.16	R 4 800.64
D9.92		RAINBIRD 50 STATION BASE DECODER CONTROLLER	EA	1	R 18 707.97	R 18 707.97
D9.93		RAINBIRD 75 ADD ON MODULE FOR DECODER CONTROLLER	EA	1	R 6 197.07	R 6 197.07
D9.94		RAINBIRD TWO STATION DECODER	EA	1	R 2 776.45	R 2 776.45
D9.95		RAINBIRD WIRELESS RAIN SENSOR	EA	1	R 1 109.07	R 1 109.07
D9.96		50MM HDPE SLEEVE PIPE	M	700	R 16.75	R 11 725.00
D9.97		1.5MM2 RAINBIRD SPECIFICATION DECODER CABLE	M	700	R 29.67	R 20 769.00
D9.98		COPPER GROUNDING ROD AND CLAMP	EA	1	R 164.82	R 164.82
D9.99		6MM2 EARTH CABLE	M	10	R 24.98	R 249.80
D9.100		3M DBY CONNECTORS	EA	90	R 26.58	R 2 392.20
					Carried Forward	1 964 310.65

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					Brought Forward	1 964 310.65
D9.101		9V ENERGIZER ALKALINE SQUARE BATTERIES	EA	1	R 92.30	R 92.30
D9.102		3 PIN PLUG	EA	1	R 29.40	R 29.40
D9.103		PTFE THREAD TAPE	EA	50	R 2.44	R 122.00
D9.104		CONSUMABLES	EA	1	R 549.39	R 549.39
		AIR VALVES				
D9.105		110MM X 2" SAB HIGH PRESSURE SADDLES KIWA/SABS	EA	1	R 107.75	R 107.75
D9.106		50MM AIR RELIEF VALVE	EA	1	R 2 366.77	R 2 366.77
D9.107		50MM X 0.600M GALVANISED RISER PIPE	EA	1	R 213.60	R 213.60
D9.108		50MM CHROME PLATED BRASS BALL VALVE (FULL BALL)	EA	1	R 397.59	R 397.59
D9.109		RAINBIRD 250MM ROUND VALVE BOX	EA	1	R 133.91	R 133.91
D9.110		CONSUMABLES	EA	1	R 549.39	R 549.39
		LABOUR				
D9.111		Locate water & power connection points	EA	1	R 274.69	R 274.69
D9.112		Locate & open sleeves	EA	6	R 164.82	R 988.92
D9.113		Setting out of sprinklers & valves	EA	91	R 16.48	R 1 499.68
D9.114		Trench , install , backfill and compact PVC-U/ HDPE mainline pipes & cable sleeve - 600mm cover	M	690	R 49.45	R 34 120.50
D9.115		Trench , install , backfill and compact HDPE/ LDPE lateral pipes - 400mm cover	M	1500	R 38.45	R 57 675.00
D9.116		Flush lines & install Sprinklers	EA	72	R 16.48	R 1 186.56
D9.117		Installation of Solenoid Valves	EA	19	R 164.82	R 3 131.58
D9.118		Installation of Air Valves	EA	1	R 164.82	R 164.82
D9.119		Installation of Dripper Rings	EA	384	R 5.49	R 2 108.16
D9.120		Design Fee Payable If Materials Are Not Purchased From Controlled Irrigation	EA	1	R 5 493.90	R 5 493.90
D9.121		Commissioning of system	EA	1	R 1 648.17	R 1 648.17
D9.122		Preparation of As build documentation for handover to client	EA	1	R 1 648.17	R 1 648.17
		HARD LANDSCAPING				
		Paving				
		Gravel Stone				
D9.123		Gravel Stone 13-18mm,100 deep, Brownstown laid on bidum cloth (on a sub base to Engineers Specification and BOQ)	m²	2847	R 78.85	R 224 485.95
		Street furniture				
D9.124		Lighting	prov sum		R 40 000.00	R 40 000.00
D9.125		Signage	prov sum		R 30 000.00	R 30 000.00
		Special features				
D9.126		Rocks	prov sum		R 10 000.00	R 10 000.00
					Carried Forward	2 383 298.85

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					Brought Forward	2 383 298.85
D9.127		Water Features	prov sum		R 30 000.00	R 30 000.00
		PRE-CONTRACT COMPLETION MAINTENANCE				
D9.128		Allow for all aspects of maintaining the plants and irrigation in their final positions	Monthly rate	3	R 21 016.77	R 63 050.31
		Maintenance Post-Practical Completion				
D9.129		Provide rate for the connection, supply + removal of a subwater meter to the main	sum	-	R 13 437.50	rate only
		Irrigation				
		TO COMPLY WITH THE CURRENT CITY OF CAPE TOWN WATER RESTRICTIONS REGULATIONS				
D9.130		Provide for programming, monitoring and maintaining the irrigation system	p/mth	12	R 1 591.98	R 19 103.76
		Landscape Management				
		Planting & Hard surface areas				
D9.131		Allow for the pruning of trees, weeding of shrub, groundcover areas and hard surfaces every second week. The supply and application of treatments to the site to attend to any pests and diseases that may affect the plants and trees. Managing and adjust plant supports (trees stakes) once a month and all damages must be addressed immediately. Removal of all litter.	p/mth	12	R 12 160.40	R 145 924.80
		Lawn areas				
D9.132		Mowing lawn area to maintain 20 to 30mm blade, include edge trimming.	p/mth	12	R 7 235.87	R 86 830.44
		ADDITIVES AND FERTILISING				
		Tree, shrubs and Ground covers:				
D9.133		Supply and spread organic fertilizer on all landscaped areas (including lawns) at a rate of 60g/m2 in May and again in August	kg	1364	R 14.06	R 19 171.65
D9.134		Supply and spread organic fertilizer (Neutrog) at a rate of 100g/ tree every 3 months. (4 x application)	kg	54	R 23.49	R 1 259.06
		Top Dressing				
D9.135		Supply and install 10mm Relience (or approved equivalent) Top Dressing on spot areas on lawn, fine grade to level surface.	m^3	114	R 502.14	R 57 058.17
		General				
D9.136		Allow for the supply and application of treatments to the site to attend to any pests and diseases that may affect the plants and trees.	p/mth	12	R 812.14	R 9 745.68
D9.137		All administrative monitoring and reporting	p/mth	12	955.19	11 462.28
D9.138		Provisional sum for plant in-fill as directed by Landscape Architect	prov sum		5000	5 000.00
		BILL NO. D9 **SOFT LANDSCAPING AND IRRIGATION (ZONE C)**				
		Carried forward to Summary of Bills			**Total**	2 831 905.00

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Contract: Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Landscaping

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION D				
		LANDSCAPING				
		D7 Landscaping				
		BILL NO. D10				
		SOFT LANDSCAPING AND IRRIGATION (ZONE D)				
		PRELIMINARIES, GENERAL + DAY WORKS				
D10.1		Provide for contractual requirements, construction guarantee and all ancillary cost *(As only required over and above specifications. List these as addendum to tender)*	sum	-	0	-
D10.2		Provide for establishment of facilities on site	sum	-	0	-
D10.3		Provide for holding nursery, if required	sum	-	0	-
D10.4		Provide for removal of facilities from site	sum	-	0	-
D10.5		Allow for co-ordinating and receiving all plant material for this contract, including quality control, holding and maintenance	sum	-	0	-
D10.6		Provide for compliance with all health and safety requirements as set out by the main contractor.	sum	-	0	-
D10.7		Provide for compliance with all environmental requirements as set out by the main contractor.	sum	-	0	-
		PROVIDE FOR DAYWORKS (Rates only)				
		Labour to be claimed at cost :				
D10.8		% overhead recovery on labour	%	-	0.16	**Rate only**
D10.9		hourly rate for foreman	hr	-	107.50	**Rate only**
D10.10		hourly rate for labour	hr	-	53.75	**Rate only**
		Material to be claimed at cost :				
D10.11		% overhead on material	%	-	0.16	**Rate only**
		Plant and equipment hire to be claimed at Cost:				
D10.12		% overhead recovery of plant	%	-	0.16	**Rate only**
D10.13		Dump of organic materials at registered dump site.	m³	-	278.11	**Rate only**
D10.14		Dump rubble/ stone (inorganic material) at registered dump site	m³	-	301.78	**Rate only**
		EARTHWORKS + INSTALLATIONS FOR LANDSCAPE WORKS				
		Cleaning of contaminated soil as directed below:				
D10.15		Provide rate for cleaning landscape areas, to be free of rubble, concrete and all foreign materials. Materials to be dumped at a registered dump site.	m³	55	518.18	28 499.90
		Excavate in-situ soil as directed below:				
D10.16		Excavate all planter beds to a depth of 100 mm of subsoil from all planter beds and remove from site to approved dumping area as instructed by Landscape Architect.	m³	1100	104.38	114 818.00
D10.17		Allow for rough shaping of all planting areas before planting medium is installed to the satisfaction of the landscape architect.	m²	11000	2.21	24 310.00
					Carried Forward	167 627.90

				Brought Forward		167 627.90
D10.18		Allow for fine shaping of all planting areas once planting medium is installed to the satisfaction of the landscape architect.	m²	11000	3.68	40 480.00
		PLANTING MEDIUM				
		Trees: Planting medium mix to consist of 60% in-situ soil and 40% approved compost				
		General Planting Areas: 200mm approved compost to all planting areas				
		Raised Planters: Planting medium mix to consist of 60% stockpiled top-soil and 40% approved compost				
		Supply imported compost according to specifications: (sample for landscape architects approval)				
D10.19		Compost to planting (100mm Planting areas)	m³	1100	444.19	488 609.00
		Supply & install organic fertiliser to specifications:				
D10.20		All planting areas: 0.250kg / m²	kg	2750	14.92	41 030.00
		Supply & install of Bonemeal to specification:				
D10.21		All planting areas: 0.12kg/ plant	kg	1320	22.22	29 330.40
		Tree, Shrub/ ground cover planting areas preparation				
D10.22		Spread compost to a thickness of 100mm and work into the insitu soil a spade depth (300mm)	m²	11000	3.07	33 770.00
		Metabolic Activator				
D10.23		Supply metabolic activator, 'Symbex or equal' from Agro-Hytec(082 9006025)	ltr	55	280.19	15 410.45
D10.24		Apply 'Symbex' mixing: Mix metabolic activator with water to manufacturers instructions: 50ml:2l(water) . Apply to manufacturers (Agro-Hytec) instructions.	ltr	2200	7.56	16 632.00
		Post planting				
D10.25		Supply and install 'Reliance' (or approved equivalent) medium mulch , 50mm thick (sample for landscape architects approval)	m³	550	422.22	232 221.00
		Other:				
D10.26		Provide a provisional sum for fertiliser as required by the results of the soil analyses as directed by the Landscape Architect	prov sum		3000	3 000.00
		PLANTING WORKS				
		Plant Installation				
		Excavate into planting fill, dust roots with bone meal, place plant, backfill, compact and level surplus soil for :				
D10.27		Cutings	No.		1.68	1.68
D10.28		Provide a provisional sum for selected plant material for in-fill as directed by the Landscape Architect	prov sum		5000	5 000.00
		PLANT LIST				
		Note : rates tendered for plants to be inclusive of supply and delivery: transport, holding, handling and mark-up.				
					Carried Forward	1 073 112.43

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					Brought Forward	1 073 112.43
D10.29		Carpobrotus cutings (plug, 6/m²)	No	66000	0.88	58 080.00
		IRRIGATION				
		Valve box preparation				
D10.30		Supply and install A2 geotextile below each valve box.	m²	8	R 28.08	224.64
D10.31		Supply and install a 50mm layer of 13mm grey chipstone on the geotextile at the base of all the valve boxes.	m³	1	R 1 922.86	1 922.86
		DESCRIPTION **MAINLINE**				
D10.32		WATER CONNECTION FROM ADMIN BUILDING	Prov.Sum		1500	R 1 500.00
D10.33		110MM CLASS 9 UPVC PIPE SABS	m	1000	R 129.39	R 129 390.00
D10.34		110MM X 1" SAB HIGH PRESSURE SADDLES KIWA/SABS	No.	29	R 90.29	R 2 618.41
D10.35		110MM PLIMAT S/W PVC TEE	No.	6	R 192.17	R 1 153.02
D10.36		110MM PLIMAT S/W PVC ELBOW	No.	4	R 152.62	R 610.48
D10.37		110MM PLIMAT S/W PVC 45o ELBOW	No.	3	R 159.98	R 479.94
D10.38		PVC CLEANER 500ML	sum	-	32.3	R 32.30
D10.39		473ML OATY PVC CEMENT	sum	-	156.91	R 156.91
		SPRAYLINE				
D10.40		RAINBIRD RB 3500 GEAR DRIVE SHRUB SPRAYER	No.	40	R 136.43	R 5 457.20
D10.41		15MM X 600MM GREEN PVC RISER	No.	40	R 5.65	R 226.00
D10.42		15MM SOCKET	No.	40	R 6.89	R 275.60
D10.43		15MM X 3/4" FULL FLOW MALE ADAPTOR	No.	40	R 9.72	R 388.80
D10.44		15MM FULL FLOW ELBOW	No.	40	R 10.65	R 426.00
D10.45		RAINBIRD RB 5000 GEAR DRIVE SHRUB SPRAYER	No.	187	R 147.09	R 27 505.83
D10.46		RISER GREEN PVC 20 X 600MM	No.	187	R 6.99	R 1 307.13
D10.47		20MM SOCKET	No.	187	R 14.68	R 2 745.16
D10.48		15MM X 3/4" FULL FLOW MALE ADAPTOR	No.	187	R 9.72	R 1 817.64
D10.49		15MM FULL FLOW ELBOW	No.	187	R 10.65	R 1 991.55
D10.50		25MM X 15MM FULL FLOW REDUCING TEE	No.	220	R 17.74	R 3 902.80
D10.51		25MM X 15MM FULL FLOW REDUCING COUPLING	No.	40	R 13.86	R 554.40
D10.52		15MM FULL FLOW ELBOW	No.	40	R 10.65	R 426.00
D10.53		25MM FULL FLOW TEE	No.	80	R 17.74	R 1 419.20
D10.54		25MM FULL FLOW ELBOW	No.	60	R 14.20	R 852.00
D10.55		25MM X 1" FULL FLOW MALE ELBOW	No.	29	R 23.09	R 669.61
D10.56		25MM FULL FLOW TEE	No.	29	R 17.74	R 514.46
D10.57		25MM FULL FLOW ELBOW	No.	29	R 14.20	R 411.80
D10.58		15MM CLASS 6 LDPE FULL FLOW PIPE	m	200	R 3.18	R 636.00
					Carried Forward	1 320 808.17

				Brought Forward		1 320 808.17
D10.59		25MM CLASS 6 FULL FLOW PIPE	m	1900	R 8.76	R 16 644.00
D10.60		25MM FULL FLOW COUPLING	No.	19	R 11.95	R 227.05
D10.61		THREAD TAPE	No.	50	R 2.44	R 122.00
D10.62		CONSUMABLES	sum	-	549.39	R 549.39
		VALVES				
D10.63		25MM POLYPROPELENE BARREL NIPPLES	No.	29	R 8.54	R 247.66
D10.64		25MM POLYPROPELENE ELBOWS MALE/MALE	No.	29	R 11.60	R 336.40
D10.65		25MM CHROME PLATED BRASS BALL VALVE (FULL BALL)	No.	29	R 109.06	R 3 162.74
D10.66		RAINBIRD RB 100 PGA 25MM SOLENOID VALVE	No.	29	R 213.10	R 6 179.90
D10.67		RAINBIRD 430MM X 300MM X 300MM VALVE BOX-COMPATABLE WITH RBIRD LOCKING DEVICE	No.	29	R 315.35	R 9 145.15
D10.68		RAIN BIRD RBLOCK VANDAL RESISTANT LOCKING DEVICE	No.	29	R 27.47	R 796.63
D10.69		RAINBIRD SINGLE STATION DECODER	No.	29	R 1 207.13	R 35 006.77
D10.70		RAINBIRD LSP-1 SURGE PROTECTORS	No.	5	R 1 200.16	R 6 000.80
D10.71		50MM HDPE SLEEVE PIPE	m	900	R 16.75	R 15 075.00
D10.72		1.5MM2 RAINBIRD SPECIFICATION DECODER CABLE	m	900	R 29.67	R 26 703.00
D10.73		COPPER GROUNDING ROD AND CLAMP	No.	1	R 164.82	R 164.82
D10.74		6MM2 EARTH CABLE	m	10	R 24.98	R 249.80
D10.75		3M DBY CONNECTORS	No.	130	R 26.58	R 3 455.40
D10.76		9V ENERGIZER ALKALINE SQUARE BATTERIES	No.	1	R 92.30	R 92.30
D10.77		3 PIN PLUG	No.	1	R 29.40	R 29.40
D10.78		PTFE THREAD TAPE	No.	25	R 2.44	R 61.00
D10.79		CONSUMABLES	sum	-	549.39	R 549.39
		AIR VALVES				
D10.80		110MM X 2" SAB HIGH PRESSURE SADDLES KIWA/SABS	No.	1	R 107.75	R 107.75
D10.81		50MM AIR RELIEF VALVE	No.	1	R 2 366.77	R 2 366.77
D10.82		50MM X 0.600M GALVANISED RISER PIPE	No.	1	R 213.60	R 213.60
D10.83		50MM CHROME PLATED BRASS BALL VALVE (FULL BALL)	No.	1	R 397.59	R 397.59
D10.84		RAINBIRD 250MM ROUND VALVE BOX	No.	1	R 133.91	R 133.91
D10.85		CONSUMABLES	sum	-	549.39	R 549.39
		LABOUR				
D10.86		Locate water & power connection points	sum	-	274.69	R 274.69
D10.87		Locate & open sleeves	No.	2	R 164.82	R 329.64
D10.88		Setting out of sprinklers & valves	No.	256	R 16.48	R 4 218.88
D10.89		Trench , install , backfill and compact PVC-U/ HDPE mainline pipes & cable sleeve - 600mm cover	m	816	R 49.45	R 40 351.20
					Carried Forward	1 494 550.19

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					Brought Forward	1 494 550.19
D10.90		Trench , install , backfill and compact HDPE/ LDPE lateral pipes - 400mm cover	m	2100	R 38.45	R 80 745.00
D10.91		Flush lines & install Sprinklers	No.	227	R 16.48	R 3 740.96
D10.92		Installation of Solenoid Valves	No.	29	R 164.82	R 4 779.78
D10.93		Installation of Air Valves	No.	1	R 164.82	R 164.82
D10.94		Design Fee Payable If Materials Are Not Purchased From Controlled Irrigation	sum	-	5493.9	R 5 493.90
D10.95		Commissioning of system	sum	-	1648.17	R 1 648.17
D10.96		Preparation of As build documentation for handover to client	sum	-	1648.17	R 1 648.17
		PRE-CONTRACT COMPLETION MAINTENANCE				
D10.97		Allow for all aspects of maintaining the plants and irrigation in their final positions until the practical completion certificate is issued.In the event of unforseen delays of the project.	Monthly rate	3	R 14 501.64	R 43 504.92
		Maintenance Post-Practical Completion				
		Irrigation				
		TO COMPLY WITH THE CURRENT CITY OF CAPE TOWNS WATER RESTRICTIONS REGULATIONS				
D10.98		Provide for programming, monitoring and maintaining the irrigation system	p/mth	12	R 1 591.98	R 19 103.76
		Landscape Management				
		Planting & Hard surface areas				
D10.99		Allow for the pruning of trees, weeding of shrub, groundcover areas and hardsurfaces,removal of all litter, every second week. Managing and adjust plant supports (trees stakes) once a month and all damages must be addressed immediately.	p/mth	12	R 7 959.90	R 95 518.80
		ADDITIVES AND FERTILISING				
		Tree, shrubs and Ground covers:				
D10.100		Supply and spread mulch layer of 25mm upon completion of contract (feature planting planting areas)	m^3	275	541.09	148 799.75
D10.101		Supply and spread organic fertilizer on all landscaped areas (including lawns) at a rate of 60g/m2 in May and again in August	kg	1320	14.06	18 559.20
		General				
D10.102		Allow for the supply and application of treatments to the site to attend to any pests and diseases that may affect the plants and trees.	p/mth	12	530.66	6 367.92
D10.103		All administrative monitoring and reporting	p/mth	12	955.19	11 462.28
D10.104		Provisional sum for plant in-fill as directed by Landscape Architect	prov. Sum		2000	2 000.00
		BILL NO. D10 **SOFT LANDSCAPING AND IRRIGATION (ZONE D)**				
		Carried forward to Summary of Bills			**Total**	1 938 087.62

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Contract: Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Landscaping

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION D				
		LANDSCAPING				
		D7 Landscaping				
		BILL NO. D11				
		SOFT LANDSCAPING AND IRRIGATION (ZONE E)				
		PRELIMINARIES, GENERAL + DAY WORKS				
D11.1		Provide for contractual requirements, construction guarantee and all ancillary cost *(As only required over and above specifications. List these as addendum to tender)*	sum	-	0	-
D11.2		Provide for establishment of facilities on site	sum	-	0	-
D11.3		Provide for holding nursery, if required	sum	-	0	-
D11.4		Provide for removal of facilities from site	sum	-	0	-
D11.5		Allow for co-ordinating and receiving all plant material for this contract, including quality control, holding and maintenance	sum	-	0	-
D11.6		Provide for compliance with all health and safety requirements as set out by the main contractor.	sum	-	0	-
D11.7		Provide for compliance with all environmental requirements as set out by the main contractor.	sum	-	0	-
		PROVIDE FOR DAYWORKS (Rates only)				
		Labour to be claimed at cost :				
D11.8		% overhead recovery on labour	%	-	0.16	**Rate only**
D11.9		hourly rate for foreman	hr	-	107.50	**Rate only**
D11.10		hourly rate for labour	hr	-	53.75	**Rate only**
		Material to be claimed at cost :				
D11.11		% overhead on material	%	-	0.16	**Rate only**
		Plant and equipment hire to be claimed at Cost:				
D11.12		% overhead recovery of plant	%	-	0.16	**Rate only**
D11.13		Dump of organic materials at registered dump site.	m³	-	278.11	**Rate only**
D11.14		Dump rubble/ stone (inorganic material) at registered dump site	m³	-	301.78	**Rate only**
		EARTHWORKS + INSTALLATIONS FOR LANDSCAPE WORKS				
		Cleaning of contaminated soil as directed below:				
D11.15		Provide rate for cleaning landscape areas, to be free of rubble, concrete and all foreign materials. Materials to be dumped at a registered dump site.	m³	51	278.93	14 179.41
		Excavate in-situ soil as directed below:				
D11.16		Excavate all planter beds sub base material (150mm thick) in planter beds. Remove material from site to approved dumping area as instructed by Landscape Architect.	m³	508	104.38	53 061.57
D11.17		Excavate all planter beds to a depth of 350 mm of subsoil from all planter beds and remove from site to approved dumping area as instructed by Landscape Architect.	m³	1186	104.38	123 810.34
					Carried Forward	191 051.32

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				Brought Forward		191 051.32
D11.18		Allow for rough shaping of all planting areas before planting medium is installed to the satisfaction of the landscape architect.	m²	3389	2.21	7 489.69
D11.19		Allow for fine shaping of all planting areas once planting medium is installed to the satisfaction of the landscape architect.	m²	3389	3.68	12 471.52
		PLANTING MEDIUM				
		Trees: Planting medium mix to consist of 60% in-situ soil and 40% approved compost				
		General Planting Areas: 200mm approved compost to all planting areas				
		Raised Planters: Planting medium mix to consist of 60% stockpiled top-soil and 40% approved compost				
		Supply imported compost according to specifications: (sample for landscape architects approval)				
D11.20		Compost to planting (200mm Planting areas)	m³	678	436.99	296 191.82
		Relocate & install stockpiled topsoil according to specifications				
D11.21		Stockpiled topsoil to planting (300mm Planting areas)	m³	1017	67.56	68 688.25
		Supply & install organic fertiliser to specifications:				
D11.22		All planting areas: 0.250kg / m²	kg	847	14.92	12 640.97
		Supply & install of Bonemeal to specification:				
D11.23		All planting areas: 0.12kg/ plant	kg	407	22.22	9 036.43
		Tree, Shrub/ ground cover planting areas preparation				
D11.24		Pre-mix medium, at stockpile area, place and spread planting medium to a depth of 500mm (60% in-situ top soil : 40% compost & fertilisers to all planting area as per specification and measurement)	m³	1695	54.94	93 095.83
		Metabolic Activator				
D11.25		Supply metabolic activator, 'Symbex or equal' from Agro-Hytec(082 9006025)	ltr	34	280.19	9 495.64
D11.26		Apply 'Symbex' mixing: Mix metabolic activator with water to manufacturers instructions: 50ml:2l(water) . Apply to manufacturers (Agro-Hytec) instructions.	ltr	1356	7.56	10 248.34
		Water Retainers For Soil Mediums				
D11.27		Supply "Hydrogel B/ Aquasorb/ Stockosorb" or approved equal product	kg	187	87.90	16 443.70
D11.28		Apply "Hydrogel B/ Aquasorb/ Stockosorb or other similarly approved product' mixing: To be applied in the hydrated form and placed in each plant and tree hole. Application rate to be in accordance with manufacturers specifications.	ltr	37415	-	-
		Post planting				
D11.29		Supply and install 'Reliance' (or approved equivalent) medium mulch . 50mm thick (sample for landscape architects approval)	m³	169	422.22	71 545.18
		Other:				
					Carried Forward	798 398.68

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				Brought Forward		798 398.68
D11.30		Provide soil tests ("Go bio farming":Nico Uys, Cell: 083 565 7337) before starting of planting works to Landscape Architect's requirement	No.	1	1 307.54	1 307.54
D11.31		Provide soil precipitation tests before starting installation and planting works to Landscape Architect's requirement	No.	1	3 131.52	3 131.52
D11.32		Provide a provisional sum for fertiliser as required by the results of the soil analyses as directed by the Landscape Architect	prov sum		15000	R 15 000.00
		PLANTING WORKS				
		Plant Installation				
		Excavate into planting fill, dust roots with bone meal, place plant, backfill, compact and level surplus soil for :				
D11.33		200-tray plugs (plantlets)	No.	8134	3.07	24 970.15
D11.34		4kg container size	No.	9354	9.05	84 650.44
D11.35		Provide a provisional sum for selected plant material for in-fill as directed by the Landscape Architect	prov sum		30000	R 30 000.00
		PLANT LIST				
		Note : rates tendered for plants to be inclusive of supply and delivery: transport, holding, handling and mark-up.				
		Note : 200 plug tray quantities are numbers of plantlets				
		Shrubs: Supply & Deliver				
D11.36		Agapanthus praecox 4kg @ 6/m²	No.	2440	21.78	53 144.94
D11.37		Dietes grandiflora 4kg @ 5/m²	No.	2033	20.52	41 725.37
D11.38		Elegia tectorum 4kg @ 6/m²	No.	2033	29.39	59 761.63
D11.39		Carrisa macrocarpa 'green carpet' 4kg @ 6/m²	No.	1627	19.59	31 867.44
D11.40		Tecoma capensis 4kg @ 3/m²	No.	1220	23.38	28 524.54
		Groundcovers: Supply & Deliver				
D11.41		Arctotis stoechadifolia plug @ 6/m²	No.	1627	2.61	4 245.74
D11.42		Carpobrotus acinaciformis plug @ 6/m²	No.	1627	3.83	6 230.34
D11.43		Delosperma cooperi plug @ 6/m²	No.	1627	4.42	7 190.10
D11.44		Gazania krebsiana plug @ 6/m²	No.	1627	2.73	4 440.95
D11.45		Helichrysum cymosum plug @ 6/m²	No.	1627	2.72	4 424.68
		IRRIGATION				
D11.46		SUPPLY AND INSTALLATION OF FULLY AUTOMATED IRRIGATION SYSTEM FOR TURF VALVES	prov sum		300000	R 300 000.00
		PRE-CONTRACT COMPLETION MAINTENANCE				
D11.47		Allow for all aspects of maintaining the plants and irrigation in their final positions until the practical completion certificate is issued.In the event of unforseen delays of the project.	Monthly rate	3	R 8 340.72	R 25 022.16
					Carried Forward	1 524 036.22

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					Brought Forward	1 524 036.22
		Maintenance Post-Practical Completion				
D11.48		Provide rate for the connection, supply + removal of a subwater meter to the main contractors supply	No.	1	R 1 492.91	Rate only
		Irrigation				
		TO COMPLY WITH THE CURRENT CITY OF CAPE TOWN WATER RESTRICTIONS REGULATIONS				
D11.49		Provide for programming, monitoring and maintaining the irrigation system	p/mth	12	R 955.19	R 11 462.28
		Landscape Management				
		Planting & Hard surface areas				
D11.50		Allow for the pruning of trees, weeding of shrub, groundcover areas and hardsurfaces,removal of all litter, every second week. Managing and adjust plant supports (trees stakes) once a month and all damages must be addressed immediately.	p/mth	12	R 3 113.28	R 37 359.36
		ADDITIVES AND FERTILISING				
		Tree, shrubs and Ground covers:				
D11.51		Supply and spread mulch layer of 25mm upon completion of contract (feature planting planting areas)	m^3	85	R 541.09	R 45 843.85
D11.52		Supply and spread organic fertilizer on all landscaped areas at a rate of 60g/m2 in May and again in August	kg	407	R 14.06	R 5 717.92
		General				
D11.53		Allow for the supply and application of treatments to the site to attend to any pests and diseases that may affect the plants and trees.	p/mth	12	R 530.66	R 6 367.92
D11.54		All administrative monitoring and reporting	p/mth	12	R 955.19	R 11 462.28
D11.55		Provisional sum for plant in-fill as directed by Landscape Architect	prov sum		R 3 000.00	R 3 000.00
		BILL NO. D11 **SOFT LANDSCAPING AND IRRIGATION (ZONE E)**				
		Carried forward to Summary of Bills			**Total**	1 645 249.83

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION D				
		LANDSCAPING				
		D7 Landscaping				
		BILL NO. D12 **SOFT LANDSCAPING AND IRRIGATION (ZONE F)**				
		PRELIMINARIES, GENERAL + DAY WORKS				
D12.1		Provide for contractual requirements, construction guarantee and all ancillary cost *(As only required over and above specifications. List these as addendum to tender)*	sum	-	0	-
D12.2		Provide for establishment of facilities on site	sum	-	0	-
D12.3		Provide for holding nursery, if required	sum	-	0	-
D12.4		Provide for removal of facilities from site	sum	-	0	-
D12.5		Allow for co-ordinating and receiving all plant material for this contract, including quality control, holding and maintenance	sum	-	0	-
D12.6		Provide for compliance with all health and safety requirements as set out by the main contractor.	sum	-	0	-
D12.7		Provide for compliance with all environmental requirements as set out by the main contractor.	sum	-	0	-
		PROVIDE FOR DAYWORKS (Rates only)				
		Labour to be claimed at cost :				
D12.8		% overhead recovery on labour	%	-	0.16	**Rate only**
D12.9		hourly rate for foreman	hr	-	107.50	**Rate only**
D12.10		hourly rate for labour	hr	-	53.75	**Rate only**
		Material to be claimed at cost :				
D12.11		% overhead on material	%	-	0.16	**Rate only**
		Plant and equipment hire to be claimed at Cost:				
D12.12		% overhead recovery of plant	%	-	278.11	**Rate only**
D12.13		Dump of organic materials at registered dump site.				**Rate only**
D12.14		Dump rubble/ stone (inorganic material) at registered dump site	m³	-	30.10	**Rate only**
		EARTHWORKS + INSTALLATIONS FOR LANDSCAPE WORKS				
		Cleaning of contaminated soil as directed below:				
D12.15		Provide rate for cleaning landscape areas, to be free of rubble, concrete and all foreign materials. Materials to be dumped at a registered dump site.	m³	96	410.68	39 351.36
		Excavate in-situ soil as directed below:				
D12.16		Excavate 250L tree holes for planting in soft landscape areas - The volume is calculated from the quantity of trees by the specified size of the hole (1.2 x 1.2 x 1.2) =(1.728)	m³	86	38.28	3 307.39
D12.17		Distribute and shape unwanted excavated material of item 2.2.1 (40%) to site as directed by the Landscape Architect	m³	35	51.16	1 768.09
					Carried Forward	44 426.84

					Brought Forward	44 426.84
D12.18		Allow for rough shaping of all planting areas before planting medium is installed to the satisfaction of the landscape architect.	m²	47910	2.03	97 257.30
D12.19		Allow for fine shaping of all planting areas once planting medium is installed to the satisfaction of the landscape architect.	m²	47910	3.39	162 414.90
D12.20		Supply and install 2mm thick x1m mole barrier (kaytrech or similarly approved) to all trees within paving, to product and manufacturers specifications.	m	125	117.27	14 658.75
		PLANTING MEDIUM				
		Trees: Planting medium mix to consist of 60% in-situ soil and 40% approved compost				
		General Planting Areas: 200mm approved compost to all planting areas				
		Raised Planters: Planting medium mix to consist of 60% stockpiled top-soil and 40% approved compost				
		Supply imported compost according to specifications: (sample for landscape architects approval)				
D12.21		Compost to tree holes (40% of volume)	m³	35	416.27	14 386.29
		Relocate & install stockpiled topsoil according to specifications				
D12.22		Stockpiled topsoil it to tree holes (60% of volume)	m³	52	59.75	3 097.44
		Supply & install organic fertiliser to specifications:				
D12.23		All tree planting areas: 1kg / m³	kg	86	14.07	1 215.65
		Supply & install of Bonemeal to specification:				
D12.24		All tree planting areas: 1kg / m³	kg	86	14.07	1 215.65
		Tree, Shrub/ ground cover planting areas preparation				
D12.25		Mix and place medium in tree pits, 60%:40% in-situ top soil : compost including organic fertiliser as specified.	m³	86	54.13	4 676.83
		Hydroseeding areas preparation				
		Additives				
D12.26		5mm compost at 700kg/ha	ton	3.35	1 146.43	3 844.78
D12.27		Microbial inoculant: Bio-Tricho (1L/ha)	ltr	4.79	275.79	1 321.31
D12.28		Microbial inoculant Environoc 401 (2L/ha)	ltr	9.58	252.72	2 421.56
D12.29		Microbial inoculant Environoc 501 (2L/ha)	ltr	9.58	241.74	2 316.35
D12.30		Hydropam soil binder (at 6kg/ha)	kg	28.75	329.64	9 475.83
D12.31		Dustex soil binder (at 600kg/ha)	ton	2.87	3 021.64	8 686.01
D12.32		Smoke treatment as per specialist requirements - soak seeds in dilution for 30min before seeding (1ltr/kg seed)	ltr	61.0	45.17	2 755.37
D12.33		Water (10000ltr/ha)	kl	4.8	274.69	1 316.04
D12.34		Mix all of the above with water and seed mixes and apply to areas as directed by the landscape architect.	m²	47910	1.64	78 572.40
		Metabolic Activator				
					Carried Forward	454 059.30

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					Brought Forward	454 059.30
D12.35		Supply metabolic activator, 'Symbex or equal' from Agro-Hytec(082 9006025)	ltr	2	280.19	484.17
D12.36		Apply 'Symbex' mixing: Mix metabolic activator with water to manufacturers instructions: 50ml:2l(water) . Apply to manufacturers (Agro-Hytec) instructions.	ltr	69	7.56	522.55
		Water Retainers For Soil Mediums				
D12.37		Supply "Hydrogel B/ Aquasorb/ Stockosorb" or approved equal product	kg	5	87.90	439.50
D12.38		Apply "Hydrogel B/ Aquasorb/ Stockosorb or other similarly approved product' mixing: To be applied in the hydrated form and placed in each plant and tree hole. Application rate to be in accordance with manufacturers specifications.	ltr	1000	-	-
		Other:				
D12.39		Provide a provisional sum for fertiliser as required by the results of the soil analyses as directed by the Landscape Architect	prov sum		15 000.00	R 15 000.00
		PLANTING WORKS				
		Plant installation				
		Tree planting preparation:				
		Mix and place medium in tree pits 60%:40% in-situ top soil : compost including organic fertiliser as specified.				
D12.40		250 ltr tree	No.	50	21.17	1 058.50
		Plant support				
D12.41		Supply and install tree stakes and ties complete to external Trees (See detail 1)	No.	50	354.89	17 744.50
D12.42		Provide a provisional sum for selected plant material for in-fill as directed by the Landscape Architect	prov sum		R 20 000.00	R 20 000.00
		Alien Clearance				
D12.43		Removing of alien trees, under 3m height, as set out by landscape architect on site. Rates incl. Cutting, removal of stump and carting to dump (non Arborist Work)	No	25	306.44	7 661.00
D12.44		Removing of alien trees over 3m height, as set out by landscape architect on site. Rates incl. Cutting, removal of stump and carting to dump (non Arborist Work)	No	5	1 470.90	7 354.50
D12.45		Spraying of alien trees under 3m height, as set out by landscape architect on site. Rates incl. all material and equipment as required by the health and safety regulations	No	10	159.35	1 593.50
D12.46		Spraying of alien trees over 5m height, as set out by landscape architect on site. Rates incl. all material and equipment as required by the health and safety regulations	No	10	183.87	1 838.70
D12.47		Mechanical and chemical clearance of all alien and invasive species within the area. Rate to include the removal and dumping at registered dump of the organic material.	m²	7187	2.19	15 738.44
		PLANT LIST				
		Trees: Supply & Deliver				
					Carried Forward	543 494.65

					Brought Forward	543 494.65
D12.48		Kiggelaria africana (250 ltr)	No.	30	2 148.56	64 456.80
D12.49		Sideroxylon inerme (250 ltr)	No.	20	2 163.82	43 276.40
		IRRIGATION				
D12.50		SUPPLY AND INSTALLATION OF FULLY AUTOMATED IRRIGATION SYSTEM	prov sum		R 260 000.00	R 260 000.00
		HARD LANDSCAPING				
		Gravel Stone				
D12.51		Gravel Stone 13-18mm,100 deep, Brownstown laid on bidum cloth (on a sub base to Engineers Specification and BOQ)	m²	300	R 130.94	R 39 282.00
		PRE-CONTRACT COMPLETION MAINTENANCE				
D12.52		Allow for all aspects of maintaining the plants and irrigation in their final positions until the practical completion certificate is issued.In the event of unforseen delays of the project.	Monthly rate	3	R 20 819.96	R 62 459.88
		Maintenance Post-Practical Completion				
D12.53		Provide rate for the connection, supply + removal of a subwater meter to the main contractors supply	No.	1	R 14 929.06	R 14 929.06
		Irrigation				
		TO COMPLY WITH THE CURRENT CITY OF CAPE TOWN WATER RESTRICTIONS REGULATIONS				
D12.54		Provide for programming, monitoring and maintaining the irrigation system	p/mth	12	R 1 591.98	**R 19 103.76**
		Landscape Management				
		Planting & Hard surface areas				
D12.55		Allow for the pruning of trees, weeding of shrub, groundcover areas and hard surfaces every second week. The supply and application of treatments to the site to attend to any pests and diseases that may affect the plants and trees. Managing and adjust plant supports (trees stakes) once a month and all damages must be addressed immediately. Removal of all litter,	p/mth	12	R 11 655.42	R 139 865.04
		Lawn areas				
D12.56		Mowing lawn area to maintain 20 to 30mm blade, include edge trimming.	p/mth	12	R 2 580.00	R 30 960.00
		ADDITIVES AND FERTILISING				
		Tree, shrubs and Ground covers:				
D12.57		Supply and spread organic fertilizer on all landscaped areas (including lawns) at a rate of 60g/m2 in May and again in August	kg	5749	R 14.06	R 80 833.75
D12.58		Supply and spread organic fertilizer (Neutrog) at a rate of 100g/ tree every 3 months. (4 x application)	kg	20	R 23.49	R 469.80
		General				
					Carried Forward	1 299 131.15

					Brought Forward	1 299 131.15
D12.59		Allow for the supply and application of treatments to the site to attend to any pests and diseases that may affect the plants and trees.	p/mth	12	R 530.66	R 6 367.92
D12.60		All administrative monitoring and reporting	p/mth	12	R 1 591.98	R 19 103.76
D12.61		Provisional sum for plant in-fill as directed by Landscape Architect	sum		9890	R 10 000.00
		BILL NO. D12 **SOFT LANDSCAPING AND IRRIGATION (ZONE F)**				
		Carried forward to Summary of Bills			**Total**	1 334 602.83

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Summary of Schedules

SUMMARY OF PRICED BILLS		
Schedule No.	**DESCRIPTION**	**Amount (ZAR)**
PRELIMANARIES		
BILL NO.1	PRELIMINARY AND GENERAL (CIVIL WORK)	R155 702 866.19
BILL NO.2	PRELIMINARY AND GENERAL (BUILDING WORK)	R39 932 717.80
SUB-TOTAL FOR PRELIMINAIRES (B1)		R195 635 583.99
PROTION A - UF WORKS		
BILL NO. A1	PROVISIONAL SUMS AND PRIME COST ITEMS (CIVIL WORK)	R2 728 000.00
BILL NO. A2	DAYWORKS AND TEMPORARY WORKS (CIVIL WORK)	R821 606.00
BILL NO. A3	EARTHWORKS - GZB	R3 118 802.03
BILL NO. A4	PIPEWORK - GZC	R4 808 812.94
BILL NO. A5	MICRO SCREEN INSTALLATION - WPC	R4 254 064.58
BILL NO. A6	UF FEED PUMPSTATION - WPC	R2 959 338.85
BILL NO. A7	UF BUILDING AND COMPRESSOR ROOM - WOB	R4 416 420.41
BILL NO. A8	UV AND CIP PUMP SUMP - WPD	R2 336 984.40
BILL NO. A9	UF RE-USE PUMP STATION - WPD AND ULTRAFILTRATION SUBSTATION - ELE	R5 404 040.92
BILL NO. A10	UF REJECT RETURN PUMP STATION - WPE	R1 144 096.51
BILL NO. A11	CHAMBERS AND MANHOLES - SQC - SQD - SQE - SQO - SQP and CH.1-8	R1 494 533.03
BILL NO. A12	WATER AND SEWER CONNECTIONS	R154 568.61
BILL NO. A13	STRUCTURAL STEELWORK	R5 061 737.20
BILL NO. A14	RE-USE PIPELINE AND CHAMBERS	R59 424 683.20
BILL NO. A15	MICRO SCREEN INSTALLATION - WPC	R434 980.97
BILL NO. A16	UF FEED PUMPSTATION - WPC	R516 541.36
BILL NO. A17	UF BUILDING AND COMPRESSOR ROOM - WOB	R2 796 513.67
BILL NO. A18	UV AND CIP PUMP SUMP - WPD	R277 705.55
BILL NO. A19	UF RE-USE PUMP STATION WPD AND ULTRA FILTRATION SUBSTATION - ELE - WPD	R1 232 140.40
BILL NO. A20	MAIN SUBSTATION - ELA	R1 550 165.58
BILL NO. A21	PORTION A ELECTRICAL	R9 775 062.75
SUB-TOTAL FOR PORTION A (B2)		R114 710 798.96
PORTION - B - MANAGEMENT BUILDING		
BILL NO. B1	PROVISIONAL SUMS AND PRIME COST ITEMS (BUILDING WORK)	R2 633 001.12
BILL NO. B2	DAYWORKS AND TEMPORARY WORKS (CIVIL WORK)	R819 246.00
BILL NO. B3	EARTHWORKS - GZB	R1 280 718.49
BILL NO. B4	WATER AND SEWER CONNECTIONS	R317 506.20
BILL NO. B5	MANAGEMENT BUILDING PARKING - SUA	R4 858 879.72
BILL NO. B6	STORMWATER - GZC	R1 098 145.13
BILL NO. B7	MANAGEMENT BUILDING - SUA	R34 763 295.57
BILL NO. B8	JOINERY - SUA	R5 955 893.64
BILL NO. B9	PORTION B ELECTRICAL	R8 590 630.92
SUB-TOTAL FOR PORTION B (B3)		R60 317 316.79
PORTION C SUB SECTION A: DEWATERING AND SLUDGE HOLDING		
BILL NO. C1	PROVISIONAL SUMS AND PRIME COST ITEMS (CIVIL WORK)	R1 364 000.00

BILL NO. C2	DAYWORKS AND TEMPORARY WORKS (CIVIL WORK)	R768 520.50
BILL NO. C3	EARTHWORKS	R119 870 760.96
BILL NO. C4	DEWATERING BUILDING - WLA	R10 625 767.49
BILL NO. C5	PRIMARY SLUDGE HOLDING TANKS - WKA	R5 838 297.18
BILL NO. C6	WAS SLUDGE HOLDING TANKS - WLB	R3 524 901.40
BILL NO. C7	SLUDGE CAKE SILOS (4 no) - WLC - WLD	R4 082 876.03
BILL NO. C8	SLUDGE FEED PUMP INSTALLATION - WLE	R139 998.43
BILL NO. C9	PRIMARY/WAS FILTRATE PUMP STATION - WLF	R653 081.99
BILL NO. C10	DEWATERING BUILDING - WLA	R10 502 671.78
BILL NO. C11	SLUDGE MANAGEMENT SUBSTATION - ELD	R2 401 401.96
BILL NO. C12	EARTHWORKS AND PIPEWORK	R34 233 078.44
SUB-TOTAL FOR PORTION C Sub.A (B4)		R194 005 356.16
PORTION – C: REMAINING WORKS		
BILL NO. C13	RIVER PROTECTION	R5 115 691.00
BILL NO. C14	STONE TRAPS AND INLET CANAL - WBC	R3 402 901.38
BILL NO. C15	INLET WORKS - WBA	R4 307 364.08
BILL NO. C16	DEGRITTERS & MEASUREMENT FLUMES - WBB	R9 181 190.97
BILL NO. C17	RAW SEWAGE PUMP STATION - WPA	R4 481 703.24
BILL NO. C18	DIVISION STRUCTURE - SQA	R1 528 352.94
BILL NO. C19	PRIMARY SETTLING TANKS - WDA - WDB - WDC - WDD	R13 871 016.93
BILL NO. C20	PRIMARY SLUDGE PUMP STATION WITH STRAIN PRESS - WPB - WFB	R3 817 005.57
BILL NO. C21	FINE SCREENS - WFA	R3 609 702.81
BILL NO. C22	BIO REACTOR - WIA	R63 795 549.73
BILL NO. C23	MEMBRANE PLANT - WHA	R52 941 128.94
BILL NO. C24	MEMBRANE RE-USE PUMPSTATION AND MCC - WPF	R7 718 818.44
BILL NO. C25	OVERFLOW DAMS - WMA	R14 881 527.64
BILL NO. C26	EMERGENCY STORAGE DAM AND RECYCLE PUMP STATION - WMB	R4 817 114.55
BILL NO. C27	FERRIC CHEMICAL DOSING (24 PLANT) - WNA	R737 258.08
BILL NO. C28	CHAMBERS AND MANHOLES -SQB-SQF-SQH-SQI-SQR-SQS-SQT-SQU	R2 799 143.53
BILL NO. C29	FERRIC CHEMICAL DOSING (08 PLANT) - WNB	R540 270.85
BILL NO. C30	WAS PUMP STATION (08 PLANT) - WLG	R441 680.02
BILL NO. C31	ODOUR CONTROL	R342 418.94
BILL NO. C32	WATER AND SEWER CONNECTIONS	R969 112.02
BILL NO. C33	POTABLE WATER AND SITE SERVICE NETWORK	R1 351 355.53
BILL NO. C34	STRUCTURAL STEELWORK	R9 711 590.87
BILL NO. C35	STEEL PIPE FITTINGS AND VALVES	R960 049.90
BILL NO. C36	ACCESS AND ROADS	R15 614 524.76
BILL NO. C37	PAVING AROUND STRUCTURES	R6 950 916.91
BILL NO. C38	BOUNDARY WALLS - GZA	R12 189 499.45
BILL NO. C39	BOUNDARY FENCING - GZA	R6 101 602.55
BILL NO. C40	CARPORTS GZC	R513 953.27
BILL NO. C41	STONE TRAPS AND INLET CANAL - WBC	R61 829.38
BILL NO. C42	INLET WORKS - WBA	R2 088 204.38
BILL NO. C43	DEGRITTERS & MEASUREMENT FLUMES - WBB	R1 939 449.45
BILL NO. C44	RAW SEWAGE PUMP STATION - WPA	R675 090.71
BILL NO. C45	PRIMARY SLUDGE PUMP STATION WITH STRAIN PRESS - WPB - WFB	R400 466.35

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BILL NO. C46	MEMBRANE PLANT - WHA	R15 101 268.60
BILL NO. C47	MEMBRANE RE-USE PUMPSTATION AND MCC - WPF	R3 411 840.20
BILL NO. C48	GATEHOUSE - SUC	R3 968 722.23
BILL NO. C49	GUARD TOWERS - SUI (5 in number)	R2 330 408.04
BILL NO. C50	WEIGH BRIDGE - SUE	R205 602.43
BILL NO. C51	FLAMMABLE STORE - SUB	R417 631.80
BILL NO. C52	HEAD OF WORKS SUBSTATION - ELB	R1 631 348.70
BILL NO. C53	BIOREACTOR SUBSTATION - ELC	R2 158 763.74
BILL NO. C54	CHEMICAL DOSING (24 PLANT) - WNA	R201 697.97
BILL NO. C55	CHEMICAL DOSING (08 PLANT) - WNB	R136 213.24
BILL NO. C56	GATEHOUSE	R1 055 938.86
BILL NO. C57	GUARD TOWER	R604 077.30
BILL NO. C58	WEIGH BRIDGE	R83 718.42
BILL NO. C59	FLAMMABLE STORAGE BUILDING	R83 912.10
BILL NO. C60	PORTION C ELECTRICAL	R25 966 991.63
BILL NO. C61	JOINERY	R3 455 014.75
SUB-TOTAL FOR PORTION C (B5)		R318 670 635.17
PORTION - D - DEMOLITIONS, RENOVATIONS AND LANDSCAPING		
BILL NO. D1	PROVISIONAL SUMS AND PRIME COST ITEMS (CIVIL WORKS)	R385 000.00
BILL NO. D2	DAYWORKS AND TEMPORARY WORKS (CIVIL WORKS)	R822 596.00
BILL NO. D3	DEMOLITIONS	R28 131 253.59
BILL NO. D4	RENOVATIONS	R8 201 945.17
BILL NO. D5	REFURBISHMENT - WDE - WPG	R2 188 999.60
BILL NO. D6	BOREHOLES - REFER TO PSL 10	R284 168.70
BILL NO. D7	SOFT LANDSCAPING AND IRRIGATION (ZONE A)	R5 546 306.32
BILL NO. D8	SOFT LANDSCAPING AND IRRIGATION (ZONE B)	R583 395.86
BILL NO. D9	SOFT LANDSCAPING AND IRRIGATION (ZONE C)	R2 831 905.00
BILL NO. D10	SOFT LANDSCAPING AND IRRIGATION (ZONE D)	R1 938 087.62
BILL NO. D11	SOFT LANDSCAPING AND IRRIGATION (ZONE E)	R1 645 249.83
BILL NO. D12	SOFT LANDSCAPING AND IRRIGATION (ZONE F)	R1 334 602.83
SUB-TOTAL FOR PORTION D (B6)		R53 893 510.51
SUB TOTAL OF PRICED SCHEDULES (B1+B2+B3+B4+B5+B6 = G1)		R937 233 201.58
CONTINGENCIES		
	The following items will be deducted in part or whole if not required: -	
C1	Allow the sum of 10% (ten percent) of the above total (Sub-total G1) for contingencies to be spent as the Engineer may direct.	
CONTINGENCY TOTAL CARRIED FORWARD TO GRAND TOTAL (G2)		R93 723 320.16
GRAND SUMMARY		
DESCRIPTION		**AMOUNT (ZAR)**
B1	SUB-TOTAL FOR PRELIMINARIES	R195 635 583.99
B2	SUB-TOTAL FOR PORTION A	R114 710 798.96
B3	SUB-TOTAL FOR PORTION B	R60 317 316.79
B4	SUB-TOTAL FOR PORTION C Sub. A	R194 005 356.16
B5	SUB-TOTAL FOR PORTION C	R318 670 635.17

B6	SUB-TOTAL FOR PORTION D	R53 893 510.51
G1	**SUB-TOTAL OF PRICES SCHEDULES**	R937 233 201.58
G2	**CONTINGENCY TOTAL**	R93 723 320.16
SUB-TOTAL OF PRICES SCHEDULES & CONT. (G1 + G2)		R1 030 956 521.74
VALUE ADDED TAX (@ 15%)		R154 643 478.26
GROSS TOTAL OF TENDER (CARRIED FORWARD TO FORM OF OFFER C1.1 of CONTRACT)		R1 185 600 000.00

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DECLARATION (In respect of completeness of tender)

City of Cape Town
Tower Block, Civic Centre
12 Hertzog Boulevard
CAPE TOWN

I/we, the undersigned, do hereby declare that these are the properly priced Bills of Quantities forming Part C2.2 of this Contract Document containing 156 pages in consecutive order upon which my/our tender for **TENDER NO. 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT** has been based. If I/we have submitted a printed version of the Bills of Quantities, I/we warrant that no amendments have been made to it from the original, other than amendments issued in any Addenda in terms of Clause C.3.2 in Part T1.2 Tender Data.

[redacted]
SIGNATURE OF TENDERER/S

16/06/22
DATE

[redacted]