

Bill of Quantities

SECTION : GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
1		SECTION 1: PRELIMINARY AND GENERAL				
		Notes:				
		i) The agreement is to be the General Conditions of Contract for Works of Civil Engineering Construction (2015), published by the South African Institute of Civil Engineers.				
		ii) Tenderers are referred to the above mentioned documents for the full intent and meaning of each clause thereof (hereinafter referred to by heading and clause number only) for which such allowance must be made as may be considered necessary.				
		iii) Where standard clauses or alternatives are not entirely applicable to this contract such modifications, corrections or supplements as will apply are given under each relevant clause heading.				
		iv) Where any item is not relevant to this specific contract such item is marked N/A (Signifying 'Not Applicable')				
		v) Time related preliminaries will only be adjusted for omissions or additions, issued by the employer, or delays caused by the employer, for which variations and extension of time has been granted				
	SANS 1200 A	PRELIMINARY AND GENERAL				
1.1	PSA 8.3	FIXED-CHARGE ITEMS	Sum	1.0		
1.1.1	8.3.1	Contractual Requirements				
	PSA 8.3.2	Establish Facilities on the Site :				
	PSA 8.3.2.1	a) Facilities for Engineer				
1.1.2		Offices: 2 air-conditioned, prefabricated and furnished room with telephones, internet connection and name-boards				
	8.3.2.2	b) Facilities for Contractor				
1.1.3		Offices and storage sheds				
1.1.4		Ablution and latrine facilities				
1.1.5		Tools and equipment				
1.1.6		Water supplies, electric power and communications				
1.1.7		Dealing with water (Subclause 5.5)				
Total Carried Forward						

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ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.1.8		Access (Subclause 5.8)				
1.1.9	8.3.3	Other fixed-charge obligations				
1.2	PSA 8.4	TIME-RELATED ITEMS	Sum	1.0		
1.2.1	8.4.1	Contractual Requirements				
	8.4.2	Operate and maintain facilities on the Site:				
	8.4.2.1	a) Facilities for Engineer for duration of construction (SANS 1200 AB)				
1.2.2		Survey assistants and material				
	8.4.2.2	b) Facilities for Contractor for duration of construction, except where otherwise stated				
1.2.3		Offices and storage sheds				
1.2.4		Ablution and latrine facilities				
1.2.5		Tools and equipment				
1.2.6		Water supplies, electric power and communications				
1.2.7		Dealing with water (Subclause 5.5)				
1.2.8		Access (Subclause 5.8)				
1.2.9	8.4.3	Supervision				
1.2.10	8.4.4	Company and head office overhead costs				
1.2.11	8.4.5	Other time-related obligations				
1.3	PSA 8.5	SUMS STATED PROVISIONALLY BY ENGINEER	Sum	1.0	R1,000,000.00	R1,000,000.00
	8.8.5	Land Survey Act				
1.3.1		a) Search for and record tri- gonometrical survey beacons, bench marks and plot boundary pegs, and expose on completion of Works				
1.3.2		b) Protect beacons, etc., located under item .3.6 and reposition or re-establish, as ordered, the same by a Registered Land Surveyor on completion of the Works				
1.3.3		Progress Aerial Photography				
1.3.4		Engineers Testing				
1.3.5		Special Survey and setting out				
1.3.6		Provision of asbuilt information				
1.3.7		Security				
Total Carried Forward						

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ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		Health and Safety				
1.3.8		(a) Fixed obligations for the preparation of risk assessments, safe work procedures, the project H & S file, the H & S plan and any other H & S matters that the contractor deems necessary.	Sum	1.0		
1.3.9		(b) Fixed obligations for completing and checking the Project H & S file and handing over to the Client on completion of the works.	Sum	1.0		
1.3.10		(c) Time related obligations for updating and amending the risk assessments, safe work procedures, the project H & S file, the H & S plan and full compliance with all H & S matters during the construction of the works under the contract.	month	18.00		
1.4	PSA 8.7	Daywork				
		Personnel				
1.4.1		(a) Unskilled labour	h	650.0		
1.4.2		(b) Semi-skilled labour	h	240.0		
1.4.3		(c) Skilled labour	h	240.0		
1.4.4		(d) Ganger	h	240.0		
1.4.5		(e) Flagmen	h	15000.0		
1.4.6		(f) Site Administration Clerk	month	18.00	R10,000.00	R180,000.00
1.4.7		(g) Community Liaison Officer (CLO)	month	18.00	R10,000.00	R180,000.00
1.4.8		(h) Geotechnical Engineer with PrNatSci	month	18.00	R20,000.00	R360,000.00
1.4.9		(i) Surveyor	month	18.00	R10,000.00	R180,000.00
1.4.10		(j) Site Monitoring & Contract Administartion	month	18.00	R200,000.00	R3,600,000.00
		Plant				
1.4.11		(a) Bulldozer with rippers (minimum 125kW)	h	100.0		
1.4.12		(b) Front end loader (minimum 60kW)	h	100.0		
1.4.13		(c) Tractor loader backhoe 4 x 4 (50kW)	h	100.0		
1.4.14		(d) Track excavator (125kW)	h	100.0		
1.4.15		(e) Smooth drum roller (12 ton)	h	100.0		
1.4.16		(f) Water bowser (10 000 litre)	h	100.0		
1.4.17		(g) Tip truck 6 m³ capacity	h	100.0		
1.4.18		(h) Tip truck 10 m³ capacity	h	240.0		
1.4.19		(i) LDV (1600cc)	km	1800.0		
1.4.20		(j) Water pump (75mm diameter with 50m hose)	h	650.0		
Total Carried Forward						

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ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
1.5	PSA 8.8	TEMPORARY WORKS	Sum	1.0	100000	R100,000.00
1.5.1	8.8.1	Main access road to works: construction including regrading and gravelling of access roads where required as directed by the engineer				
1.5.2	8.8.2	Deal with traffic and maintain road (or accommodation of traffic)				
	8.8.4	Existing services				
1.5.3		Excavate by hand in soft material to expose existing services				
1.5.4		Temporary protection of existing services				
1.5.5		Relocation of existing services				
1.6		<u>ADHERENCE TO B.U.I.L.D PROGRAMME</u>				
		<u>Indirect Targeting for Enterprise Development</u>				
1.6.1		Minimum of 5% of the project value to develop targeted enterprises in accordance to the CIDB guidelines and as published in Gazette Notice no. 36190 of 25 February 2013	Prov sum	1	8500000	R8,500,000.00
Total Carried Forward To Summary						

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Bill of Quantities

SITE CLEARANCE

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ROADWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
3		SECTION 3: ROADWORKS				
	SANS 1200 DM	PREPARATION OF SITE				
3.1	PSDM 8.3.2(a)	Removal of topsoil to 300mm deep, stockpile and maintain	m³	2200.0		
		TREATMENT OF ROAD-BED				
3.2	PSDM 8.3.3 (c)	Three-pass roller compaction				
3.2.1		Vibratory roller	m²	5100.0		
3.2.2		Impact roller	m²	2045.0		
3.3	8.3.3(a)	Road-bed preparation and compaction of material				
3.3.1		Compact to 93 % mod. AASHTO maximum density	m³	765.0		
		Sidewalk preparation and compaction of material				
3.3.2		Compact to 93 % mod. AASHTO maximum density	m³	350.0		
3.4	8.3.3(b)	In-place treatment of Road-Bed in intermediate or hard material				
3.4.1		Ripping	m³	2000.0		
3.4.2		Blasting	m³	1000.0		
		EARTHWORKS				
3.5	8.3.4	Cut and borrow to Fill to formation (box) level and compact to 93% mod. AASHTO max. density measured in fill including benching:				
3.5.1		Compact to 93 % mod. AASHTO maximum density	m³	1000.0		
3.5.2		Rockfill, process, and compact	m³	375.0		
3.6	8.3.6	Extra-over items 3.5 inclusive for excavating and breaking down material in:				
3.6.1		(a) Intermediate Material	m³	150.0		
3.6.2		(b) Hard material (Includes material such as formations of unweathered rock that can be removed only after blasting)	m³	150.0		
3.6.3		(d) Boulder excavation Class B	m³	150.0		
3.7	8.3.7	Cut to Spoil from				
3.7.1		(a) Soft excavation	m³	500.0		
3.7.2		(b) Intermediate excavation	m³	500.0		
Total Carried Forward						

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ROADWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3.7.3		(c) Hard excavation (Includes material such as formations of unweathered rock that can be removed only after blasting)	m³	2000.0		
3.7.4		(e) Boulder excavation Class B	m³	500.0		
3.8	8.3.7	Cut to Stockpile from				
3.8.1		(a) Soft excavation	m³	840.0		
3.8.2		(b) Intermediate excavation	m³	500.0		
3.8.3		(c) Hard excavation (Includes material such as formations of unweathered rock that can be removed only after blasting)	m³	500.0		
3.8.4		(e) Boulder excavation Class B	m³	500.0		
3.9	SANS 1200 DM	SUNDRIES				
3.9.1	8.3.11	Extra-over items 8.3.2, 8.3.4 and 8.3.5 for temporary stockpiling of material	m³	2000.0		
	8.3.12	OVERHAUL				
3.9.2		Extra-over items 8.3.2, 8.3.4 and 8.3.5 for hauling material in excess of the freehaul of 0,5km but not more than 18,0km	m³.km	2000.0		
3.10	8.3.13	SURFACE FINISHES				
3.10.1		Topsoiling	m²	10000.0		
3.10.2		Grassing	ha	1.0		
3.11		Finishing-off cut and fill slopes:				
3.11.1	PS	(a) Cut slopes	m²	10000.0		
3.11.2	PS	(b) Fill slopes	m²	10000.0		
3.12	8.3.14	Construct Subgrade including shoulders with material from borrowpit or commercial sources and all haul				
3.12.1		G9 150mm to carriageways to 95% mod. AASHTO maximum density	m³	800.0		
3.12.2		G7 150mm to carriageways to 97% mod. AASHTO maximum density	m³	750.0		
3.13	SANS 1200 ME	SECTION : SUBBASE				
Total Carried Forward						

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ROADWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
3.13.1	8.3.1	Construct subbase including Sidewalks with material from commercial sources and all haul				
		150mm G5 to carriageway 98% mod. AASHTO maximum density	m³	1200.0		
3.14	8.3.8	Stabilizing agent				
3.14.1		b) Portland cement	t	3.0		
	SANS 1200 MFL	SECTION : BASE (LIGHT PAVEMENT STRUCTURES)				
	8.3.1	Construct base with material from commercial sources and all haul				
3.15		a) Crushed stone G2 (max. size 37.5mm)				
3.15.1		150 mm to all roadways compacted to 99% mod. AASHTO maximum density	m³	1150.0		
	SANS 1200 MG	SECTION : BITUMINOUS SURFACE TREATMENT				
3.16		PRIME COAT				
	8.4.1	Prime coat using:				
3.16.1		CUTBACK BITUMEN Grade MC30 at 0.8l/m²	m²	5900.0		
	SANS 1200 MH	SECTION : ASPHALT BASE AND SURFACING				
3.17		TACK COAT				
	8.5.3	Spray surface using emulsion				
3.17.1		Anionic stabilisation grade emulsion 60%	m²	5900.0		
3.18		ASPHALT BASE				
	8.5.4	Continuously graded asphalt base (including Sidewalks & Speedhumps) using:				
3.18.1		b) bitumen Type 50/70 pen grade	t	465.0		
	SANS 1200 MK	SECTION : KERBING AND CHANNELLING				
3.19		CONCRETE KERBING AND CHANNELLING				
Total Carried Forward						

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EARTHWORKS (PLATFORMS)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
4		SECTION 4: PLATFORM EARTHWORKS				
4.1	SANS 1200 C	SITE CLEARANCE				
4.1.1		Clear site, remove trees and other scheduled obstructions	ha	0.2		
4.2	SANS 1200 D	EXCAVATION				
4.2.1	8.3.1.2	Remove topsoil to nominal depth 150mm, stockpile, and maintain	m²	3000.0		
4.3		FINISHINGS				
4.3.1	8.3.10	Topsoiling	m²	7300.0		
4.3.2	8.3.11	Grassing	ha	0.8		
		EARTHWORKS				
4.4	8.3.2	Bulk Excavation (Internals Platforms)				
4.4.1		a) Excavate in all materials and use for embankment or backfill/as capping layer or dispose, as ordered	m³	2000.0		
4.4.2		b) Extra Over for				
4.4.2.1		1) Intermediate excavation	m³	500.0		
4.4.2.2		2) Hard Rock excavation (Includes material such as formations of unweathered rock that can be removed only after blasting)	m³	1500.0		
4.4.2.3		3) Boulder excavation Class A	m³	0.0		
4.4.2.4		4) Boulder excavation Class B	m³	500.0		
4.5	8.3.2	Bulk Excavation (Super Platform+Main Road 2+Connector Road 2)				
4.5.1		a) Excavate in all materials and use for embankment or backfill/as capping layer or dispose, as ordered	m³	185000.0		
4.5.2		b) Extra Over for				
4.5.2.1		1) Intermediate excavation	m³	0.0		
4.5.2.2		2) Hard Rock excavation (Includes material such as formations of unweathered rock that can be removed only after blasting)	m³	185000.0		
4.5.2.3		3) Boulder excavation Class A	m³	0.0		
4.5.2.4		4) Boulder excavation Class B	m³	20000.0		
Total Carried Forward						

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EARTHWORKS (PLATFORMS)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
	SANS 1200 ME					
4.6	8.3.4	Importing of Materials				
4.6.1		a) 2 x layers of 150mm G5 compacted to 98% mod. AASHTO maximum density	m³	3500.0		
4.6.2		b) G7 imported from commercial sources for capping layer	m³	15000.0		
4.7	SANS 1200 DM	SUNDRIES				
4.7.1	8.3.11	Extra-over items 4.4 for temporary stockpiling of material	m³	2000.0		
4.8	8.3.12	OVERHAUL				
4.8.1		Extra-over items 4.4 for hauling material in excess of the freehaul of 0,5km but not more than 18,0km	m³	5000.0		
		RETAINING WALLS				
		Dry Stack Interlocking Retaining Walls along Roads/Platforms				
4.9	SANS 1200 D	Excavate for Retaining Wall Base/Structure				
4.9.1	8.3.3	Restricted Excavation				
4.9.1.1		a) Excavate for restricted foundations, footings and pipe trenches in all materials and use for backfill or embankment or dispose	m³	250.0		
4.9.2		b) Extra Over for				
4.9.2.1		1) Intermediate excavation	m³	50.0		
4.9.2.2		2) Hard Rock excavation	m³	100.0		
4.9.2.3		3) Boulder excavation Class A	m³	0.0		
4.9.2.4		4) Boulder excavation Class B	m³	25.0		
4.9.2.5	8.3.2	Selected Backfill to back of Retaining wall	m³	960.0		
4.10	SANS 1200 G	Concrete				
4.10.1	8.1.2.2	b) Welded Mesh - Ref Mesh 245 (For retaining wall base)	m²	355.0		
Total Carried Forward						

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EARTHWORKS (PLATFORMS)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
4.10.2	8.1.3.1	25MPa Concrete for Retaining Wall Base	m³	150.0		
4.10.3	PS	Supply and Install dry stack interlocking retaining blocks as per drawings (Geolok 400 or Similar Approved)	m²	600.0		
4.11		Subsoil Drainage				
4.11.1	SANS 1200 LE 8.2.1	160mm diameter geopipe	m	380.0		
4.11.2		Suply and Lay Geofabric (Bidum U14)	m²	3200.0		
4.11.3	SANS 1200 LB 8.2.2.3	Dust Free 19mm Stone Aggregate	m³	98.0		
4.11.4	8.2.2.3	Selected Granular Material (Riversand)	m³	350.0		
4.12		Subsoil Drainage for Platforms				
4.12.1	SANS 1200 LE 8.2.1	160mm diameter geopipe	m	965.0		
4.12.2		Suply and Lay Geofabric (Bidum U14)	m²	4050.0		
4.12.3	SANS 1200 LB 8.2.2.3	Dust Free 19mm Stone Aggregate	m³	235.0		
4.12.4	8.2.2.3	Selected Granular Material (Riversand)	m³	290.0		
Total Carried Forward To Summary						

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STORMWATER & SUBSOIL DRAINAGE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
5		SECTION 5: STORMWATER, SUBSOILS DRAINAGE & CABLE DUCTS				
	SABS 1200 DB	EXCAVATION				
5.1	8.3.2(a)	Excavate in all materials for trenches backfill, compact, and dispose of surplus/unsuitable material, for pipes: Over 100 up to 750 mm diam. for total trench depth:				
5.1.1		i) Exceeding 0,0 m but not exceeding 1,0 m	m³	600.0		
5.1.2		ii) Exceeding 1,0 m but not exceeding 1,5 m	m³	350.0		
5.1.3		iii) Exceeding 1,5 m but not exceeding 2,0 m	m³	200.0		
5.1.4		iv) Exceeding 2,0 m but not exceeding 2,5 m	m³	150.0		
5.1.5		v) Exceeding 2,5 m but not exceeding 3,0 m	m³	100.0		
5.1.6		vi) Exceeding 3,0 m but not exceeding 3,5 m	m³	100.0		
5.1.7		vii) Exceeding 3,5 m but not exceeding 4.0 m	m³	135.0		
5.2	8.3.2(b)	Extra-over items 5.1 incl. for				
5.2.1		Intermediate excavation	m³	450.0		
5.2.2		Hard rock excavation	m³	1000.0		
5.2.3	8.3.2(c)	Excavate and dispose of unsuitable material from trench bottom (Provisional)	m³	180.0		
5.3	8.3.3.1	Make up deficiency in backfill material: (Provisional)				
5.3.1		a) From Commercial Source	m³	1400.0		
5.3.2		b) From other excavations on site	m³	200.0		
5.4	8.3.3.4	Overhaul				
5.4.1	PSDB 1	Special haul : Over 50 m up to 0,5 km (provisional)	m³.km	250.0		
5.5	8.3.4(a)	Shore trench				
5.5.1		i) Shore Trench opposite structure or service	m	250.0		
		EXISTING SERVICES				
5.6		Excavate by hand in all materials to expose :				
5.6.1		i) Stormwater services (provisional)	m³	50.0		
Total Carried Forward						

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STORMWATER & SUBSOIL DRAINAGE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
	SABS 1200LB	BEDDING				
5.7		PROVISION OF BEDDING				
		Available from trench within 0,5 km (Subclause 3.4.1)				
5.7.1	8.2.1	a) Selected granular material	m³	30.0		
5.7.2		b) Selected fill material	m³	30.0		
	8.2.2.3	c) Commercial sources (Provisional)				
5.7.3		1) Selected granular material	m³	690.0		
5.7.4		2) Selected fill material	m³	1100.0		
	SANS 1200 LE	STORMWATER DRAINAGE				
5.8	8.2.1	Supply, handle, lay, bed Class B concrete pipe Type and Class .100D, Spigot and Socket joints fitted with rubber rings				
5.8.1		a) 450 mm diameter	m	750.0		
5.8.2		b) 600 mm diameter	m	80.0		
	SABS 1200 DK	GABIONS AND PITCHING				
5.9	8.2.1	Surface preparation bedding of gabions				
5.9.1		a) Mattresses 6 x 2 x 0.23m	m²	40.0		
5.10	8.2.2	Gabion mattresses :				
5.10.1		a) Mattresses 6 x 2 x 0.23m	m³	10.0		
5.11		Extra-over items 4.30 for cutting and folding				
5.11.1		a) Gabion mattresses	m²	40.0		
5.11.2	8.2.4	Geotextile blanket, Grade B (270g/m2) Geotextile or similar approved	m²	240.0		
		HEADWALLS				
		Provide all materials & construct headwall onto s/water pipe as per detail. Rate to include for excavation				
5.12		a) Inlet headwall				
5.12.1		i) For pipes up to 600mm idiameter	No.	1.0		
Total Carried Forward						

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ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.13		b) Outlet headwall including splitter blocks				
5.13.1		i) For pipes up to 600mm idiameter	No.	3.0		
	8.2.8	MANHOLES construct complete with LD covers and frames				
5.14		Type A manhole as per eThekwini standard detail				
5.14.1		i) Exceeding 0,0 m but not exceeding 1,0 m	No.	1.0		
5.14.2		ii) Exceeding 1,0 m but not exceeding 1,5 m	No.	2.0		
5.14.3		iii) Exceeding 1,5 m but not exceeding 2,0 m	No.	6.0		
5.14.4		iv) Exceeding 2,0 m but not exceeding 2,5 m	No.	14.0		
5.14.5		v) Exceeding 2,5 m but not exceeding 3,0 m	No.	1.0		
5.15		Type B manhole as per eThekwini standard detail				
5.15.1		i) Exceeding 3,0 m but not exceeding 3,5 m	No.	3.0		
5.15.2		ii) Exceeding 3,5 m but not exceeding 4,0 m	No.	1.0		
5.15.3		iii) Exceeding 4,0 m but not exceeding 4,5 m	No.	1.0		
	8.2.8	CATCHPITS Construct complete with MD covers and frames				
5.16		Type S2 Kerb Inlet as per eThekwini standard detail				
5.16.1		i) Exceeding 0,0 m but not exceeding 1,0 m	No.	1.0		
5.16.2		ii) Exceeding 1,0 m but not exceeding 1,5 m	No.	1.0		
5.16.3		iii) Exceeding 1,5 m but not exceeding 2,0 m	No.	9.0		
5.16.4		iv) Exceeding 2,0 m but not exceeding 2,5 m	No.	4.0		
5.16.5		v) Exceeding 2,5 m but not exceeding 3,0 m	No.	3.0		
5.16.6		vi) Exceeding 3,0 m but not exceeding 3,5 m	No.	2.0		
5.16.7		vii) Exceeding 3,5 m but not exceeding 4,0 m	No.	4.0		
5.17	8.2.8	Type D3 Kerb Inlet at low points as per eThekwini standard detail				
5.17.1		i) Exceeding 0,0 m but not exceeding 1,0 m	No.	1.0		
5.17.2		ii) Exceeding 1,0 m but not exceeding 1,5 m	No.	1.0		
5.17.3		iii) Exceeding 1,5 m but not exceeding 2,0 m	No.	3.0		
5.17.4		iv) Exceeding 2,0 m but not exceeding 2,5 m	No.	1.0		
5.17.5		v) Exceeding 2,5 m but not exceeding 3,0 m	No.	2.0		
5.18	8.2.10	ACCESSORIES				
Total Carried Forward						

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STORMWATER & SUBSOIL DRAINAGE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
5.18.1		Extra Over Items 5.14 to 5.15 for HD concrete covers and frames	No.	6.0		
5.18.2		Extra Over Items 5.14 to 5.15 for HD Polymer concrete covers and frames	No.	2.0		
5.19		SUBSOIL PIPES				
5.19.1		i) 110 mm dia. slotted Unplasticised PVC pipes and fittings, normal duty complete with couplings	m	1200.0		
5.19.2		ii) 110mm x 45 deg. uPVC bends (provisional)	No.	20.0		
5.19.3		iii) 110mm x 110mm x 45 deg. uPVC junctions	No.	20.0		
5.19.4		iv) Stone - 19mm	m³	450.0		
5.19.5		v) Impermeable backfilling to subsoil drainage systems	m³	80.0		
5.19.6		vi) Sand obtained from approved commercial sources	m³	565.0		
5.19.7		vii) Rodding-eyes on sub-soil drains - complete with concrete slab covers and end-caps	No.	10.0		
5.20		Synthetic fibre filter fabric pollethelene sheet				
5.20.1		i) Grade C or similar	m²	7000.0		
5.21		MISCELLANEOUS				
5.21.1	8.2.11	Anchors for pipes	m³	100.0		
Total Carried Forward To Summary						

BMK Consulting Engineers

Bill of Quantities

SEWERS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
6		SECTION 6: SEWERS				
	SABS 1200 DB	EARTHWORKS (PIPE TRENCHES)				
		EXCAVATION				
	8.3.2 (a)	a) Excavate in soft materials for trenches, backfill, compact and dispose of surplus/unsuitable material for pipes:				
6.1		i) 160 mm up to 250 mm diam. for total trench depth:				
6.1.1		0m to 1.0m	m³	500.0		
6.1.2		Exceeding 1m but not 2.0m	m³	450.0		
6.1.3		Exceeding 2.0m but not 3.0m	m³	300.0		
6.1.4		Exceeding 3.0m but not 4.0m	m³	300.0		
6.1.5		Exceeding 4.0m but not 5.0m	m³	0.0		
6.2		Extra-over items 6.1 to 6.2 incl. for				
6.2.1		Intermediate excavation	m²	550.0		
6.2.2		Hard rock excavation	m²	800.0		
6.2.3	8.3.2(c)	Excavate and dispose of unsuitable material from trench bottom (Provisional)	m³	200.0		
6.3	8.3.3.1	Make up deficiency in backfill material: (Provisional)				
6.3.1		a)From other excavations on site	m³	150.0		
6.3.2		b)From Commercial Source	m³	1500.0		
		EXISTING SERVICES				
6.4		Excavate by hand in all materials to expose :				
6.4.1		i) Sewer services (provisional)	m³	20.0		
	SABS 1200LB	BEDDING				
6.5		PROVISION OF BEDDING				
		Available from trench within 0,5 km (Subclause 3.4.1)				
6.5.1	8.2.1	a) Selected granular material	m³	20.0		
6.5.2		b) Selected fill material	m³	20.0		
	8.2.2.3	Commercial sources (Provisional)				
6.5.3		a) Selected granular material	m³	200.0		
Total Carried Forward						

BMK Consulting Engineers

Bill of Quantities

SEWERS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.5.4		b) Selected fill material	m³	200.0		
	1200 LD	PIPEWORK				
6.6	8.2.1	Supply, lay, joint, bed (Class 34) Heavy duty uPVC sewer pipe on flexible pipe bedding				
6.6.1		a) 160 mm dia.	m	1000.0		
6.6.2		b) 200 mm dia.	m	100.0		
6.6.3		c) 250 mm dia.	m	0.0		
	SABS 1200 LD	MANHOLES ETC				
	PSLD 1	Manholes as per eThekweni Details complete with LD cover and frame & Type A Benching as per details, for depths over and up to:				
6.7		i) up to 250mm diam. for total trench depth:				
6.7.1		0m to 1.0m	No.	7.0		
6.7.2		Exceeding 1.0m but not 2.0m	No.	16.0		
6.7.3		Exceeding 2.0m but not 3.0m	No.	19.0		
6.7.4		Exceeding 3.0m but not 4.0m	No.	11.0		
6.7.5		Exceeding 4.0m but not 5.0m	No.	2.0		
6.7.6		Exceeding 5.0m but not 6.0m	No.	1.0		
6.8	8.2.10	ACCESSORIES				
6.8.1		Extra Over Items 6.7.1 to 6.7.6 for HD concrete covers and frames	No.	8.0		
6.8.2		Extra Over Items 6.7.1 to 6.7.6 for HD Polymer Concrete covers and frames	No.	5.0		
6.8.3		Extra Over Items 6.7.1 to 6.7.6 for Type A Drop Manhole	No.	18.0		
6.8.4		Extra Over Items 6.7.1 to 6.7.6 for Type B Drop Manhole	No.	5.0		
6.9		SUNDRIES				
6.9.1	8.2.7	Pipe protection Concrete cover slab (25Mpa) across roadways, inclusive of Ref 395 mesh as per dwg no. BMK-RPE-021	m³	50.0		
6.9.2	8.2.9	Marker posts, complete, installed	No.	60.0		
Total Carried Forward						

BMK Consulting Engineers

Bill of Quantities

SEWERS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.9.3	8.2.10	Permanent plug stoppers	No.	10.0		
6.10	8.2.11	Connect to existing sewer: :				
6.10.1		a) Tie into existing manhole as per engineers instruction.	No.	10.0		
6.11		Erf Connections (110 mm dia uPVC Class 34 sewer pipes) (107 Units)				
6.11.1		Direct Connections out of Main Sewer for the following lengths:				
6.11.1.1		0m to 2.0m	No.	80.0		
6.11.1.2		2m to 4.0m	No.	10.0		
6.11.2		Normal Erf Connections out of Manhole for the following lengths:				
6.11.2.1		0m to 2.0m	No.	10.0		
6.11.2.2		2m to 4.0m	No.	7.0		
6.11.3		Extra over Item 6.11 for supply, excavation, lay, bed, test and backfill of 110 mm uPVC Class 34 (or similar approved) pipes for longer than listed house connections (including all fittings)	m	250.0		
Total Carried Forward To Summary						

BMK Consulting Engineers

Bill of Quantities

WATER RETICULATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
	SABS 1200 DB	SECTION 7: WATER RETICULATION				
	SABS 1200 A	PRELIMINARY AND GENERAL				
7.1		INSPECTION AND DETECTION OF DEFECTS				
7.1.1	PSL 8.2.21	Allow provisional sum for Earthworks (Small Works) testing, where ordered by the Engineer (Prov.)	Sum	1.0	R50,000.00	R50,000.00
7.2	PSL 8.2.19	PRESSURE TESTING & DISINFECTION				
7.2.1		Water supplied for testing and disinfection of pipelines (prov)	Sum	1.0	R10,000.00	R10,000.00
7.2.2		Testing in accordance with PSL 7.4, PSL 7.2.1 & PSL 7.2.2	Sum	1.0	R10,000.00	R10,000.00
7.2.3		Contractors mark-up on item 7.2.2	%	10000.00		
		EXCAVATION				
7.3	PSDB 8.3.2 (a)	a) Excavate in soft materials for trenches, backfill, compact, haunch and dispose of surplus/unsuitable material for pipes up to and including 350mm dia. for depths:				
		i) 50mm diam. for total trench depth:				
7.3.1		Exceeding 0,5m but not 1,5m	m³	120.0		
7.3.2		Exceeding 1,5m but not 2,0m	m³	110.0		
		ii) 75mm diam. for total trench depth:				
7.3.3		Exceeding 0,5m but not 1,5m	m³	870.0		
7.3.4		Exceeding 1,5m but not 2,0m	m³	800.0		
		iii) 315mm diam. for total trench depth:				
7.3.5		Exceeding 0,5m but not 1,5m	m³	350.0		
7.3.6		Exceeding 1,5m but not 2,0m	m³	350.0		
7.4		Extra-over items 7.3.1 to 7.3.6 incl. for				
7.4.1		Intermediate excavation	m³	760.0		
7.4.2		Hard rock excavation	m³	1600.0		
7.4.3	8.3.2(c)	Excavate and dispose of unsuitable material from trench bottom (Provisional)	m³	564.0		
7.5	8.3.3.1	Make up deficiency in backfill material: (Provisional)				
7.5.1		a) From other excavations on site	m³	564.0		
Total Carried Forward						

BMK Consulting Engineers

Bill of Quantities

WATER RETICULATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		EXISTING SERVICES				
7.6	PSDB 8	Excavate by hand in all materials to expose :				
7.6.1		i) Water services (provisional)	m³	20.0		
	SANS 1200 LB	BEDDING				
		PROVISION OF BEDDING (Flexible)				
7.7		Available from trench within 0,5 km				
7.7.1	8.2.1	a) Selected granular material	m³	495.0		
7.7.2		b) Selected fill material	m³	360.0		
		Imported from				
7.7.3	8.2.2.3	c) Commercial sources (Provisional)				
7.7.4		1) Selected granular material	m³	100.0		
7.7.5		2) Selected fill material	m³	75.0		
	8.2.5	Overhaul of material for bedding (Provisional) where ordered Extra-over items .1.1 to .1.6				
7.7.6		a) Selected granular material	m³.km	560.0		
7.7.7		b) Selected fill material	m³.km	310.0		
	SABS 1200 LD	PIPEWORK				
		mPVC PIPELINES FROM 50mm dia. up to and including 300mm dia.(Class 12)				
7.8	8.2.1	Supply, deliver, handle, lay, bed, joint, test and disinfect in accordance with PSL 9, to SABS 966, Part 1 (1998)				
7.8.1		a) 50mm HDPE PE100 PN12.5	m	160.0		
7.8.2		b) 75mm HDPE PE100 PN12.5	m	1205.0		
7.8.3		c) 110mm dia mPVC Class 12	m	0.0		
7.8.4		d) 125mm dia mPVC Class 12	m	0.0		
7.8.5		e) 160mm dia mPVC Class 12	m	0.0		
7.8.6		f) 200mm dia mPVC Class 12	m	0.0		
7.8.7		g) 250mm dia mPVC Class 12	m	0.0		
Total Carried Forward						

BMK Consulting Engineers

Bill of Quantities

WATER RETICULATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
7.8.8		h) 315mm dia mPVC Class 12	m	385.0		
		Specials and Fittings for mPVC Pipelines (All specials and fittings to EWS standards)				
	8.2.2	Supply, deliver, handle, lay, bed, joint, test and disinfect in accordance with PSL 9.				
7.9		Steel Reducers (for mPVC pipes, all ends flanged)				
7.9.1		a) 315mm x 200mm	No.	0.0		
7.9.2		b) 315mm x 160mm	No.	0.0		
7.9.3		c) 315mm x 110mm	No.	0.0		
7.9.4		d) 315mm x 75mm	No.	10.0		
7.9.5		f) 200mm x 160mm	No.	0.0		
7.9.6		f) 200mm x 110mm	No.	0.0		
7.9.7		g) 200mm x 75mm	No.	0.0		
7.9.8		f) 160mm x 110mm	No.	0.0		
7.9.9		f) 160mm x 75mm	No.	0.0		
7.9.10		e) 110mm x 75mm	No.	0.0		
7.9.11		e) 110mm x 50mm	No.	0.0		
7.9.12		e) 75mm x 50mm	No.	15.0		
		Flange Adaptors - (C.I for mPVC pipe - flange to SABS 1123, Table 1600/3)				
7.10		Include for "Denso-wrapping" bolted connections in accordance with PSL1)				
7.10.1		a) 315mm	No.	10.0		
7.10.2		b) 250mm	No.	0.0		
7.10.3		c) 200mm	No.	0.0		
7.10.4		d) 160mm	No.	0.0		
7.10.5		e) 125mm	No.	0.0		
7.10.6		f) 110mm	No.	0.0		
7.10.7		g) 75mm	No.	25.0		
7.10.8		g) 50mm	No.	15.0		
Total Carried Forward						

BMK Consulting Engineers

Bill of Quantities

WATER RETICULATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
7.11		Equal Tees (Steel for mPVC pipes, all ends flanged)				
7.11.1		a) 50mm	No.	20.0		
7.11.2		a) 75mm	No.	10.0		
7.11.3		e) 110mm	No.	0.0		
7.11.4		c) 160mm	No.	0.0		
7.11.5		b) 200mm	No.	0.0		
7.11.6		c) 315mm	No.	3.0		
7.12		Unequal Tees (Steel for mPVC pipes, all ends flanged)				
7.12.1		a) 315mm x 315mm x 200mm dia.	No.	0.0		
7.12.2		b) 315mm x 315mm x 160mm dia.	No.	0.0		
7.12.3		c) 315mm x 315mm x 110mm dia.	No.	0.0		
7.12.4		d) 315mm x 315mm x 75mm dia.	No.	10.0		
7.12.5		e) 200mm x 200mm x 160mm dia.	No.	0.0		
7.12.6		f) 200mm x 200mm x 110mm dia.	No.	0.0		
7.12.7		g) 200mm x 200mm x 75mm dia.	No.	0.0		
7.12.8		h) 160mm x 160mm x 110mm dia.	No.	0.0		
7.12.9		i) 160mm x 160mm x 75mm dia.	No.	0.0		
7.12.10		j) 110mm x 110mm x 75mm dia.	No.	0.0		
7.12.11		k) 110mm x 110mm x 50mm dia.	No.	0.0		
7.12.12		l) 75mm x 75mm x 50mm dia.	No.	10.0		
7.13		Endcaps (Steel for mPVC pipe- socketed)				
7.13.1		a) 315mm	No.	6.0		
7.13.2		b) 200mm	No.	0.0		
7.13.3		c) 160mm	No.	0.0		
7.13.4		d) 110mm	No.	0.0		
7.13.5		e) 75mm	No.	5.0		
7.13.6		f) 50mm	No.	5.0		
Total Carried Forward						

BMK Consulting Engineers

Bill of Quantities

WATER RETICULATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
7.14		Hydrant Tee for mPVC pipes all ends flanged to SABS 1123 table 1600/3				
7.14.1		a) 75 x 80mm dia.	No.	10.0		
7.14.2		b) 315mm x 80mm dia.	No.	6.0		
7.14.3		c) 160mm x 80mm dia.	No.	0.0		
7.14.4		d) 110mm x 80mm dia.	No.	0.0		
		Pressure bends with Lyng Joint or similar approved - Class 16				
7.15		Bend 90 Degree				
7.15.1		a) 315mm dia	No.	10.0		
7.15.2		b) 200mm dia	No.	0.0		
7.15.3		c) 160mm dia	No.	0.0		
7.15.4		d) 110mm dia	No.	0.0		
7.15.5		e) 75mm dia	No.	10.0		
7.15.6		a) 50mm dia	No.	10.0		
7.16		Bend 45 Degree				
7.16.1		a) 315mm dia	No.	10.0		
7.16.2		b) 200mm dia	No.	0.0		
7.16.3		c) 160mm dia	No.	0.0		
7.16.4		d) 110mm dia	No.	0.0		
7.16.5		e) 75mm dia	No.	10.0		
7.16.6		a) 50mm dia	No.	10.0		
7.17		Bend 22.5 Degree				
7.17.1		a) 315mm dia	No.	10.0		
7.17.2		b) 200mm dia	No.	0.0		
7.17.3		c) 160mm dia	No.	0.0		
7.17.4		d) 110mm dia	No.	0.0		
7.17.5		e) 75mm dia	No.	10.0		
7.17.6		a) 50mm dia	No.	10.0		
Total Carried Forward						

BMK Consulting Engineers

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WATER RETICULATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
7.18		Bend 11.25 Degree				
7.18.1		a) 315mm dia	No.	10.0		
7.18.2		b) 200mm dia	No.	0.0		
7.18.3		c) 160mm dia	No.	0.0		
7.18.4		d) 110mm dia	No.	0.0		
7.18.5		e) 75mm dia	No.	10.0		
7.18.6		a) 50mm dia	No.	10.0		
		Pipe Sleeves for Roads Crossing				
7.19		Supply, deliver, handle, lay,bed, joint pipe sleeves for road crossings				
7.19.1		a) 50mm dia HDPE PE100 PN12.5	m	15.0		
7.19.2		b) 75mm diameter Class 16 mPVC	m	250.0		
7.19.3		c) 315mm diameter Class 16 mPVC	m	70.0		
7.19.4		d) 160mm diameter Class 16 mPVC	m	0.0		
7.19.5		e) 125mm diameter Class 16 mPVC	m	0.0		
7.19.6		f) 110mm diameter Class 16 mPVC	m	0.0		
7.20	8.2.11	Anchor/Thrust Blocks				
7.20.1		a) Supply and install concrete thrust block grade 25/19	m³	10.0		
7.21	8.2.12	Concrete encasing				
7.21.1		a) Pipe protection Concrete cover slab (25Mpa) accross roadways where indicated by engineer, inclusive of Ref 395 mesh as per eThekwini Standard Details	m³	20.0		
7.22	8.2.13	Fire hydrants				
7.22.1		a) Supply and install fire hydrant complete as per dwg. EWS standards. 80mm Isolating valve and 100mm x 80mm dia. reducer measured elsewhere.	No.	10.0		
7.23	PSL 5	Isolation Valves as per eThekwini standard details				
7.23.1		a) 50mm dia.	No.	5.0		
Total Carried Forward						

BMK Consulting Engineers

Bill of Quantities

WATER RETICULATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
7.23.2		b) 315mm dia.	No.	5.0		
7.23.3		c) 250mm dia.	No.	0.0		
7.23.4		d) 200mm dia.	No.	0.0		
7.23.5		e) 160mm dia.	No.	0.0		
7.23.6		f) 125mm dia.	No.	0.0		
7.23.7		g) 75mm dia.	No.	5.0		
7.24	PSA 4	Connection to main line to ethekwinini main line (to be done by eThekwinini contractor)	Sum	1.0	40000.00	R40,000.00
7.25		Erf Connections				
7.25.1		Direct Connections	No.	107.0		
Total Carried Forward To Summary						

BMK Consulting Engineers

Bill of Quantities

SECTION : ANCILLARY ROADWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
8	SANS 1200 MM	SECTION 8: ANCILLARY ROADWORKS				
8.1		GUARDRAILS				
8.1.1	8.2.1	Supply and erect galvanized steel guardrails on timber posts, backfilled with material available on Site	m	250.0		
8.1.2	8.2.2	Extra-over Item .1.1 for horizontally curved guardrails factory-bent to a radius of less than 150 mm	m	150.0		
	8.2.3	End Units				
8.1.3		a) End wings	No.	18.0		
8.1.4		b) Terminal sections to eThekwini standard details using single guardrail sections	No.	18.0		
8.1.5	8.2.5	Reflector plates, supply and fix every 5m, to eThekwini standard details	No.	60.0		
8.2		PERMANENT TRAFFIC SIGNS				
	8.3.1	Sign faces with painted or galvanized (as stated) background. Symbols, characters, legend, and borders in engineering grade retroreflective material with signboards constructed from				
8.2.1		a) Aluminium sheet (2,0 mm thick), of area over 2 m2 and up to 10 m2	m ²	60.0		
	8.3.3	Sign Supports				
8.2.2		c) Timber to eThekwini standard details diameter 145 mm - 175 mm pine	m	60.0		
8.2.3	8.1.1 & 8.3.4	Excavation for sign supports and backfilling with in-situ material	m ³	60.0		
8.2.4	8.3.7	Statutory signs, street names, and the like, supplied and erected complete	No.	20.0		
8.3		ROAD MARKINGS				
	8.4.1	Non-reflectorized paint applied at nominal rate of 0,42 l/m2 (or proprietary brand roadmarking material applied at a nominal rate of ... l/m2)				
8.3.1		a) White lines (unbroken) (width 100 mm)	km	2.0		
8.3.2		b) Yellow lines (unbroken) (width 150 mm)	km	0.8		
8.3.3		c) White characters and symbols	m ²	600.0		
8.3.4		e) Traffic island markings (any colour)	m ²	100.0		
8.3.5	8.4.3	Road studs (Type, size, shape, and colour, as given on Dwg))	No.	30.0		
8.3.6	8.4.4	Setting out and premarking of lines (excluding traffic island markings, characters, and symbols)	km	2.0		
Total Carried Forward						

BMK Consulting Engineers

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
8.4		GUIDE BLOCKS				
8.4.1	8.1.1 & 8.5.1	Guide blocks supplied and erected (Dwg)	No.	45.0		
		RETAINING WALLS				
		Dry Stack Interlocking Retaining Walls along Roads/Platforms				
8.5	SANS 1200 D	Excavate for Retaining Wall Base/Structure				
8.5.1	8.3.3	Restricted Excavation				
8.5.1.1		a) Excavate for restricted foundations, footings and pipe trenches in all materials and use for backfill or embankment or dispose	m³	2500.0		
8.5.2		b) Extra Over for				
8.5.2.1		1) Intermediate excavation	m³	600.0		
8.5.2.2		2) Hard Rock excavation	m³	1000.0		
8.5.2.3		3) Boulder excavation Class A	m³	0.0		
8.5.2.4		4) Boulder excavation Class B	m³	1000.0		
8.5.2.5	8.3.2	Selected Backfill to back of Retaining wall	m³	6340.0		
8.6	SANS 1200 G	Concrete				
8.6.1	8.1.2.2	b) Welded Mesh - Ref Mesh 245 (For retaining wall base)	m²	650.0		
8.6.2	8.1.3.1	25MPa Concrete for Retaining Wall Base	m³	600.0		
8.6.3	PS	Supply and Install dry stack interlocking retaining blocks as per drawings	m²	1000.0		
8.7		Subsoil Drainage				
8.7.1	SANS 1200 LE 8.2.1	160mm diameter geopipe	m	1000.0		
8.7.2		Supply and Lay Geofabric (Bidum U14)	m²	6000.0		
8.7.3	SANS 1200 LB 8.2.2.3	Dust Free 19mm Stone Aggregate	m³	475.0		
8.7.4	8.2.2.3	Selected Granular Material (Riversand)	m³	2000.0		
Total Carried Forward						

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Bill of Quantities

CABLE DUCTS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
9	SANS 1200 LC	SECTION 9 : CABLE DUCTS				
		EXCAVATION				
9.1		Over 100 up to 300 mm diam. for total trench depth:				
9.1.1		Exceeding 0,0 m but not exceeding 1,0 m	m³	120.0		
9.1.2		Exceeding 1,0 m but not exceeding 2,0 m	m³	302.0		
9.2	8.3.2(b)	Extra-over items .2.1 to .2.12 incl. for (prov):				
9.2.1		Intermediate excavation	m³	0.0		
9.2.2		Hard rock excavation	m³	200.0		
9.3	8.2.5	SUPPLY, LAY, BED, AND PROVE DUCTS				
9.3.1		160 mm diam. uPVC pipes	m	600.0		
9.3.2		110 mm diam. uPVC pipes	m	600.0		
9.3.3	8.2.6	IMPORT BEDDING MATERIAL (provisional)	m³	100.0		
9.4	8.2.7	DRAW PITS/MANHOLES COMPLETE WITH TYPE ... COVER AND FRAME				
9.4.1		Draw pit 600 mm x 600 mm (Dwg)	No.	50.0		
9.4.2		Manhole 1 m x 1 m (Dwg)	No.	50.0		
9.5	PSLC3.4	CABLE PROTECTION				
9.5.1		Concrete Cover Slab over cable ducts for reduced depth of cover	m	50.0		
Total Carried Forward To Summary						

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SUMMARY OF SECTIONS		Bill of Quantities	AMOUNT R
SECTION	DESCRIPTION		
1	PRELIMINARY AND GENERAL		
2	SITE CLEARANCE		
3	ROADWORKS		
4	EARTHWORKS (PLATFORMS)		
5	STORMWATER & SUBSOIL DRAINAGE		
6	SEWERS		
7	WATER RETICULATION		
8	ANCILLARY ROADWORKS		
9	CABLE DUCTS		
a	SUB TOTAL		
b	CSDG (0.25% factor applied to a, above)		
c	SUB TOTAL (a + b)		
d	15% VAT (c)		
Total Carried Forward To Form of Offer			

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