



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
		<b>SECTION 0 : PRELIMINARIES &amp; GENERAL</b>				
	<b>SANS 1200A</b>	<b>PRELIMINARY AND GENERAL (Applicable to the whole of the Works)</b>				
	<b>8.3</b>	<b>FIXED CHARGE ITEMS</b>				
1	8.3.1	Contractual requirements.	SUM			R -
	8.3.2	<b>Establishment of Facilities on the Site</b>				
	8.3.2	<b>Facilities for Engineer</b>				
2	8.3.2.1a	Furnished offices. (In No.7)	SUM			R -
3	8.3.2.1b	Telephone.	SUM			R -
4	8.3.2.1c	Name boards. (In No. 1).	SUM			R -
	8.3.2.2	<b>Facilities for Contractor</b>				
5	8.3.2.2a	Offices and storage sheds.	SUM			R -
6	8.3.2.2b	Workshops.	SUM			R -
7	8.3.2.2c	Laboratories.	SUM			R -
8	8.3.2.2d	Living accommodation.	SUM			R -
9	8.3.2.2e	Ablution and latrine facilities.	SUM			R -
10	8.3.2.2f	Tools and equipment.	SUM			R -
11	8.3.2.2g	Water supplies, electric power, communications, dealing with water, and access.	SUM			R -
12	8.3.2.2j	Plant.	SUM			R -
13	8.3.3	Other fixed charge obligations.	SUM			R -
14	8.3.4	Removal of site establishment.	SUM			R -
	<b>8.3</b>	<b>VALUE RELATED ITEMS</b>				
15	8.3.1	Contractual requirements.	SUM			R -
	8.3.2	<b>Establishment of Facilities on the Site</b>				
	8.3.2.1	<b>Facilities for Engineer</b>				
16	8.3.2.1a	Furnished offices. (In No.7)	SUM			R -
17	8.3.2.1b	Telephone.	SUM			R -
18	8.3.2.1c	Name boards. (In No. 1).	SUM			R -
	8.3.2.2	<b>Facilities for Contractor</b>				
19	8.3.2.2a	Offices and storage sheds.	SUM			R -
20	8.3.2.2b	Workshops.	SUM			R -
21	8.3.2.2c	Laboratories.	SUM			R -
22	8.3.2.2d	Living accommodation.	SUM			R -
23	8.3.2.2e	Ablution and latrine facilities.	SUM			R -
24	8.3.2.2f	Tools and equipment.	SUM			R -
25	8.3.2.2g	Water supplies, electric power, communications, dealing with water, and access.	SUM			R -
26	8.3.2.2j	Plant.	SUM			R -
27	8.3.3	Other value related obligations.	SUM			R -
28	8.3.4	Removal of site establishment.	SUM			R -
	<b>8.4</b>	<b>TIME RELATED ITEMS</b>				
29	8.4.1	Contractual requirements.	SUM			R -
	8.4.2	<b>Operation and Maintenance of Facilities on Site, for Duration of Construction, (unless otherwise stated)</b>				
	8.4.2.1	<b>Facilities for Engineer</b>				
30	8.4.2.1a	Furnished offices. (In No.7)	SUM			R -
31	8.4.2.1b	Telephone.	SUM			R -
32	8.4.2.1c	Name boards. (In No. 1).	SUM			R -
33	8.4.2.1d	Survey assistants and materials.	SUM			R -
	8.4.2.2	<b>Facilities for Contractor</b>				
34	8.4.2.2a	Offices and storage sheds.	SUM			R -
35	8.4.2.2b	Workshops.	SUM			R -
36	8.4.2.2c	Laboratories.	SUM			R -
37	8.4.2.2d	Living accommodation.	SUM			R -
38	8.4.2.2e	Ablution and latrine facilities.	SUM			R -
39	8.4.2.2f	Tools and equipment.	SUM			R -
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
40	8.4.2.2g	Water supplies, electric power, communications, dealing with water, and access.	SUM			R -
41	8.4.2.2j	Plant.	SUM			R -
42	8.4.3	Supervision for duration of construction.	SUM			R -
43	8.4.4	Company and head office overhead costs for duration of construction.	SUM			R -
44	8.4.5	Other time related obligations.	SUM			R -
	<b>8.5</b>	<b>PROVISIONAL SUMS FOR:</b>				
		work to be executed by the Contractor and valued in terms of the "valuation of variations" clause in the conditions of contract.				
45	8.5a	work to be executed by the Contractor and valued in terms of the "valuation of variations" clause in the conditions of contract.	SUM			R -
46	8.5b.1	work to be executed by the Employer or a Nominated Sub-Contractor.	SUM			R -
47	8.5b.2	Overheads, charges and profit on (a) above.	SUM			R -
48	8.5b.3	Specified activities associated with or independent of (a) or (b) above.	SUM			R -
	<b>8.6</b>	<b>PRIME COST ITEMS</b>				
		Prime cost of goods of materials to be supplied to the site of the Works in terms of the contract.				
49	8.6a	Prime cost of goods of materials to be supplied to the site of the Works in terms of the contract.	SUM			R -
50	8.6b	Overheads, charges and profit on (a) above.	SUM			R -
51	8.6c	Transport and labour to handle and install (a) above.	SUM			R -
	<b>8.7</b>	<b>DAYWORK</b>				
52	8.7a	Artisan	HR/DAY			R -
53	8.7b	Labourer	HR/DAY			R -
54	8.7c	Operator / Machine operator	HR/DAY			R -
55	8.7d	Supervisor	MONTH			R -
56	8.7e	Contractor's manager	MONTH			R -
	<b>8.8</b>	<b>TEMPORARY WORKS</b>				
57	8.8.1	Main access road to works.	SUM			R -
58	8.8.2	Dealing with or accommodation of traffic.	SUM			R -
59	8.8.3	Protection with Mesh Fence and Shade cloth type material structure until construction in each vicinity is complete.	SUM			R -
	8.8.4	<b>Existing services.</b>				
		Supply or hire of specialist equipment for the detection of a particular service.				
60	8.8.4a	Supply or hire of specialist equipment for the detection of a particular service.	SUM			R -
61	8.8.4b	The use of equipment referred to in (a) above.	SUM			R -
62	8.8.4c	Excavation by hand in soft material to expose (Refer to Schedule of Quantities)	m3			R -
63	8.8.4d	Temporary protection, as required in terms of the project specification, of (Refer to Schedule of Quantities)	SUM			R -
64	8.8.5	<b>Cost of survey in terms of the Land Survey Act.</b>				
		Trigonometrical survey and plot boundary pegs - locate and record.				
65	8.8.5a	Trigonometrical survey and plot boundary pegs - locate and record.	SUM			R -
		Trigonometrical survey of plot boundary pegs - protect and re-establish.				
66	8.8.5b	Trigonometrical survey of plot boundary pegs - protect and re-establish.	SUM			R -
67	8.8.6	Special water control in terms of Project Specification.	SUM			R -
68	8.9	Compensation in terms of sub-clause 57(4)(b)(ii) for delays due to the circumstances described in Sub-clauses 57(1) and (2) of the General Conditions of Contract, as amended	DAY			R -
69	8.10	Compliance with OHS and MHS Act and Regulations (including the Construction Regulations, 2003)	SUM			R -
<b>TOTAL CARRIED TO SUMMARY</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
		<b>SECTION 1 : CAUSEWAY</b>		-		
		<b>NOTE</b> Tenderers are to price this Schedule strictly in accordance with the Specifications and SANS 1200, where a conflict arises between these two documents the Specifications shall take precedence. Where a conflict arises between this Schedule and the Specifications, the Specifications shall take precedence. Tenderers shall study the Drawings before pricing this Schedule and the Schedule shall be priced to provide the complete Works.  To be read in conjunction with but not limited to the following Project Technical Specification(s) : - Civil and Structural :				
	<b>SANS 1200C</b>	<b>SITE CLEARANCE</b>				
	8.2.1	<b>Clear and grub.</b>				
1	8.2.1a	Area designated by the Engineer	ha	2.5	R	-
2	8.2.1b	Grass line to existing detention ponds	m2	420	R	-
3	8.2.1c	Clear Temporary stack and stockpile areas	m2	200	R	-
4	8.2.1d	Clean out all existing cleaning slabs & drying beds	Sum	1	R	-
5	8.2.9	Transport materials and debris to unspecified sites and dump (Provisional)	m3/km			RATE ONLY
6	8.2.10	Remove topsoil to a depth of 150mm and stockpile on site for reuse	m2	400	R	-
		<b>MISCELLANEOUS:</b>				
7	8.2.11	Regrade area and remove depressions to ensure natural drainage	m2	25 000	R	-
8	8.2.12	Repair erosion runnels and reshape hard standing areas	m2	2 500	R	-
	<b>SANS 1200D</b>	<b>EARTHWORKS</b>				
	8.3.8	<b>Existing Services</b>				
	8.3.8.1	<b>Location and exposing existing services</b>				
9	8.3.8.1b	Site survey by ground-penetrating radar and cable detector	Sum	1	R	-
10	8.3.8.1c	Excavate by hand in soft material for proof test pits (1m x 0.8m x 1.2m) every 20 meters	Day work			RATE ONLY
	8.3.8.2	<b>Specialist excavation for locating and exposing existing services:</b>				
	8.3.8.2c	<b>Services at risk because of construction of earthworks</b>				
	8.3.8.2c	Temporary protection of unknown services	Sum	1	R	-
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
		<b>THE FOLLOWING TO V-DRAINS</b>				
	<b>SANS 1200DB</b>	<b>EARTHWORKS (Pipe Trenches)</b>				
		<b>TRENCHES FOR SURFACE DRAINS</b>				
	8.3.2	<b>Excavate in all materials for surface drains, backfill, compact and dispose of surplus material:</b>				
	8.3.2.2	Trenches of width more than 600 mm for depths:				
11	8.3.2.2a	Up to 1,0 m	m	74	R	-
	8.3.2.b	<b>Extra over excavation for surface drains for:</b>				
12	8.3.2.b.1	Intermediate excavation.	m3	3	R	-
13	8.3.2.b.2	Hard rock excavation.	m3	1	R	-
	8.3.3	<b>Excavation Ancillaries</b>				
	8.3.3.3	<b>Compaction to V-drain channels</b>				
14	8.3.3.3a	150mm G2 material compacted to 85% bulk relative density	m3	9	R	-
15	8.3.3.3b	150mm Insitu material- rip and re- compact to 95% MOD AASHTO density	m3	9	R	-
	8.3.3.4	<b>Overhaul:</b>				
16	8.3.3.4b	Truck haul	m3/km			RATE ONLY
	8.3.4	<b>Particular items</b>				
	8.3.4b	<b>Temporary works: Control water inflow</b>				
17	8.3.4b.1	Provide equipment	sum	1	R	-
18	8.3.4b.2	Operate and maintain	days			RATE ONLY
19	8.3.4b.3	Remove equipment	sum	1	R	-
	8.3.5	<b>Existing services that intersect or adjoin a pipe trench.</b>				
20	8.3.5.1	Services that intersect at trench	Sum	1	R	-
	<b>SANS 1200D</b>	<b>EARTHWORKS</b>				
	8.3.4	<b>Importing of Materials</b>				
21	8.3.4a	Extra over for importation of materials from commercial sources or from borrow pits of 150mm G2 material	m3	9	R	-
	<b>SANS 1200G</b>	<b>CONCRETE (STRUCTURAL)</b>				
	8.2	<b>SCHEDULED FORMWORK ITEMS</b>				
	8.2.2	<b>Smooth</b>				
	8.2.5	<b>Narrow Widths (up to 300mm wide)</b>				
22	8.2.5.1b	Over 100 mm and up to 200 mm	m	155	R	-
	8.3.2	<b>High Tensile Welded Mesh</b>				
23	8.3.2	Type reference 245	m2	59	R	-
	8.4.4	<b>Unformed Surface Finishes</b>				
24	8.4.4a	Wood floated finish.	m2	59	R	-
	8.5	<b>Joints</b>				
	8.5.4	<b>Expansion joints</b>				
25	8.5.4a	10 mm wide with Jointex between horizontal surfaces	m	6	R	-
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
	<b>SANS 1200LE</b>	<b>STORMWATER DRAINAGE</b>				
	8.2.14	<b>Geofabric</b>				
31	8.2.14a	800mm wide x 0.15mm thick Polythene Sheeting	m	74		R -
		<b>MISCELLANEOUS:</b>				
32	8.2.15	Tie in existing V-drain	No	1		R -
33	8.2.16	Repair existing damaged channel approximately 1m wide	m	121		R -
34	8.3.17	Existing Manhole to be cleaned, repaired and reinstated	No	5		R -
		<b>THE FOLLOWING TO INFILTRATION CHANNELS</b>				
	<b>SANS 1200DB</b>	<b>EARTHWORKS (PIPE TRENCHES)</b>				
		<b>TRENCHES FOR SURFACE DRAINS</b>				
	8.3.2	<b>Excavate in all materials for surface drains, backfill, compact and dispose of surplus material:</b>				
	8.3.2.2	<b>Trenches of width more than 600 mm for depths:</b>				
35	8.3.2.2b	Up to 1,0 m	m	86		R -
36	8.3.2.2c	Over 1,0 m up to 2,0 m	m	1 101		R -
	8.3.2b	<b>Extra over excavation for surface drains for:</b>				
37	8.3.2.b.1	Intermediate excavation.	m3	447		R -
38	8.3.2.b.2	Hard rock excavation.	m3	223		R -
	8.3.3.4	<b>Overhaul:</b>				
39	8.3.3.4b	Truck haul	m3/km			RATE ONLY
	8.3.4	<b>Particular Items</b>				
40	8.3.4.1a	Shore trench opposite structure.	m	1 187		R -
42	8.3.5	Services that intersect a trench	No	10		R -
	8.3.4b	<b>Temporary works: Control water inflow</b>				
43	8.3.4b.1	Provide equipment	sum	1		R -
44	8.3.4b.2	Operate and maintain	days			RATE ONLY
45	8.3.4b.3	Remove equipment	sum	1		R -
	<b>SANS 1200LB</b>	<b>BEDDING (PIPES)</b>				
		<b>BEDDING FOR STORMWATER PIPES</b>				
	8.2.1	<b>Provision of Bedding from Trench Excavation</b>				
46	8.2.1a	Clean course 19mm aggregate	m3	1 788		R -
47	8.2.1b	Sand filling compacted to 100% of modified AASHTO density	m3	1 788		R -
48	8.2.1c	150mm layer, 3mm diameter pea gravel as per detail	m3	894		R -
	8.2.2.3	<b>Provision of bedding from commercial sources only with written consent from Client's representative (Provisional)</b>				
49	8.2.2.3a	Clean course 19mm aggregate	m3	1 788		R -
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
	<b>SANS 1200LE</b>	<b>STORMWATER DRAINAGE</b>				
	8.2.14	<b>Pipes in subsurface drains:</b>				
	8.2.14.1	<b>Normal duty uPVC pipes complete with couplings:</b>				
50	8.2.14.1a	110 mm internal diameter, perforated	m	36		R -
	8.2.15	<b>Geofabric</b>				
51	8.2.15	Light fibertex non-woven grade E geotextile	m2	6 864		R -
52	8.2.18	Caps for subsurface drain pipes	No	16		R -
<b><u>THE FOLLOWING TO PONDS</u></b>						
	<b>SANS 1200DB</b>	<b>EARTHWORKS (PIPE TRENCHES)</b>				
	<b>8.3.1</b>	<b>Cleaning of Existing structures</b>				
53	8.3.1a	De-silt, pressure clean and flow test existing concrete channels, pipes and down chutes	m	23		R -
	<b>8.3.3.3</b>	<b>Compaction to pond</b>				
54	8.3.3.3	150mm Clay layer compacted to 95% MOD ASSHTO	m3	188		R -
55	8.3.3.3	150mm Silt layer compacted to 95% MOD ASSHTO	m3	162		R -
	8.3.4	<b>Particular items</b>				
56	8.3.4b	<b>Temporary works: Control water inflow</b>				
57	8.3.4b.1	Provide equipment.	sum	1		R -
58	8.3.4b.2	Operate and maintain.	days			RATE ONLY
59	8.3.4b.3	Remove equipment.	sum	1		R -
	<b>SANS 1200D</b>	<b>EARTHWORKS</b>				
	8.3.2	<b>Bulk excavation</b>				
	8.3.2.1	<b>Excavate in all materials and use for backfill:</b>				
60	8.3.2.1a	Up to 1,0 m	m3	76		R -
61	8.3.2.1b	Depth over 2,0 m and up to 3,0 m	m3	1 510		R -
	8.3.2.b	<b>Extra over bulk excavation for:</b>				
62	8.3.2b1	Intermediate excavation	m3	151		R -
63	8.3.2b2	Hard rock excavation	m3	37		R -
	8.3.4	<b>Importing of Materials</b>				
	8.3.4a	<b>Provision of bedding from commercial sources only with written consent from Client's representative (Provisional)</b>				
64	8.3.4a.1	150mm Clay layer	m3	188		R -
65	8.3.4a.2	150mm Silt layer	m3	162		R -
66						
	<b>SANS 1200D</b>	<b>EARTHWORKS</b>				
	<b>8.3.6</b>	<b>Overhaul</b>				
69	8.3.6b	Long overhaul	m3/km	-		RATE ONLY
	<b>SANS 1200DK</b>	<b>GABIONS AND PITCHING</b>				
	<b>8.2.4</b>	<b>Geotextile or membrane.</b>				
70	8.2.4a	2mm HDPE Flexible Geomembrane Lining	m2	702		R -
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
71	8.2.5 8.2.5.1b	<b>Pitching</b> 300mm Medium duty grouted stone pitching	m2	7		R -
72	<b>SANS 1200 LE</b> 8.2.18	<b>MISCELLANEOUS:</b> Connecting existing culvert and headwall to connect to Pond 15	No	2		R -
<b><u>DISPOSAL OF CONTAMINATED EXCAVATED MATERIAL</u></b>						
<b>EARTHWORKS</b>						
<b>8.3.6 Overhaul</b>						
<b>Extra over for the haulage and disposal of contaminated excavated material, in accordance with the following</b>						
73		Collect a sample of the extracted sediment	Sum	1		R -
74		Send the sediment sample to a qualified laboratory for waste analysis to determine the Hazardous waste classification, Obtain and provide a Safety Data Sheet (SDS).	Sum	1		R -
75		Provide the Skips suitable for the transporting of the sediment	m3	-		R -
76		Transport the waste sediment to an approved Hazardous waste landfill site and dispose of the sediment	m3	-		R -
77		Provide Transnet Port Terminals with the Safe Disposal Certificate	Sum	1		R -
<b>TOTAL CARRIED TO SUMMARY</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
		<b>SECTION 2: MULTI-PURPOSE TERMINAL (MPT) AREA</b>				
		<b>NOTE</b> Tenderers are to price this Schedule strictly in accordance with the Specifications and SANS 1200, where a conflict arises between these two documents the Specifications shall take precedence. Where a conflict arises between this Schedule and the Specifications, the Specifications shall take precedence. Tenderers shall study the Drawings before pricing this Schedule and the Schedule shall be priced to provide the complete Works.  To be read in conjunction with but not limited to the following Project Technical Specification(s) : -  Civil and Structural :				
	<b>SANS 1200 C</b>	<b>SITE CLEARANCE</b>				
	8.2.1	<b>Clear and grub</b>				
1	8.2.1a	Area designated by the Engineer	ha	19		R -
2	8.2.1c	Temporary stack and stockpile areas	m2	1 000		R -
3	8.2.10	Remove topsoil to a depth of 150mm and stockpile on site for reuse	m2	800		R -
	8.2.5	<b>Take down existing fences</b>				
4	8.2.5a	Take down existing fences	m	1 000		R -
	8.2.7	<b>Dismantle and remove pipelines, electricity transmission lines, cables, etc.</b>				
5	8.2.7.1	Demolish and remove existing 300 diameter Stormwater pipes	m	1 612		R -
6	8.2.7.2	Demolish and remove existing Stormwater channels	m	134		R -
7	8.7.2.3	Demolition of existing manholes 1.0m to 2m deep including excavation and breaking down of concrete, loading, unloading and haulage of all material to an approved Municipal spoil site.	No	51		R -
8	8.7.2.4	Remove and block off the existing separator system	No	1		R -
9	8.2.7.5	Block existing channel to the separator	m	25		R -
	8.2.8	<b>Demolish and remove structures/buildings and dismantle steelwork, etc.</b>				
10	8.2.8a	Temporary park homes to be uplifted and removed	Sum	1		R -
	<b>SANS 1200D</b>	<b>EARTHWORKS</b>				
	8.3.8	<b>Existing Services</b>				
	8.3.8.1	<b>Location and exposing existing services</b>				
11	8.3.8.1b	Site survey by ground-penetrating radar and cable detector	Sum	1		R -
12	8.3.8.1c	Excavate by hand in soft material for proof test pits (1m x 0.8m x 1.2m) every 20 meters	Day work			RATE ONLY
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
13	8.3.8.2 8.3.8.2c	<b>Specialist excavation for locating and exposing existing services: Services at risk because of construction of earthworks</b> Temporary protection of unknown services	Sum	1		R -
14	<b>SANS 1200 C</b> 8.2.11	<b>MISCELLANEOUS: SITE CLEARANCE</b> Reshape and resize existing informal ponds on catchment MC7 as specified on drawing:	No	6		R -
	<b>SANS 1200 DB</b>	<b>THE FOLLOWING TO STORMWATER PIPES</b> <b>EARTHWORKS (PIPE TRENCHES)</b> <b>TRENCHES FOR STORMWATER PIPES</b>				
15	8.3.2 8.3.2.2 8.3.2.2a	<b>Excavate in all materials for stormwater trenches, backfill, compact and dispose of surplus material: Pipes over 125 mm dia up to 400 mm dia for depths: Up to 1,0 m</b>	m	118		R -
16	8.3.2.2b	Over 1,0 m up to 2,0 m	m	56		R -
17	8.3.2.2c	Over 2,0 m up to 3,0 m	m	197		R -
18	8.3.2.3 8.3.2.3b	<b>Pipes over 400 mm dia up to 550 mm dia for depths: Over 1,0 m up to 2,0 m</b>	m	157		R -
19	8.3.2.4 8.3.2.4b	<b>Pipes over 550 mm dia up to 700 mm dia for depths: Over 1,0 m up to 2,0 m</b>	m	626		R -
20	8.3.2.5 8.3.2.5b	<b>Pipes over 700 mm dia up to 850 mm dia for depths: Over 1,0 m up to 2,0 m</b>	m	480		R -
21	8.3.2.5c	Over 2,0 m up to 3,0 m	m	94		R -
22	8.3.2.5d	Over 3,0 m up to 4,0 m	m	62		R -
23	8.3.2 8.3.2.a	<b>Extra over excavation for pipe trenches for: Intermediate excavation.</b>	m <sup>3</sup>	458		R -
24	8.3.2.b	Hard rock excavation.	m <sup>3</sup>	229		R -
25	8.3.3.4 8.3.3.4a	<b>Overhaul: Limited overhaul</b>	m <sup>3</sup> /km			RATE ONLY
26	8.3.4 8.3.4.1	<b>Particular Items Shore trench opposite structure.</b>	m	1 785		R -
27	8.3.4b 8.3.4b.1	<b>Temporary works: Control water inflow Provide equipment</b>	sum	1		R -
28	8.3.4b.1	Operate and maintain	days			RATE ONLY
29	8.3.4c	Remove equipment	sum	1		R -
	<b>1200 LB</b>	<b>BEDDING (PIPES)</b> <b>BEDDING FOR STORMWATER PIPES</b> <b>Supply only of Bedding by Importation From commercial source (Provisional)</b>				
30	8.2.2 8.2.2.3 8.2.2.3a	Selected granular material	m <sup>3</sup>	974		R -
31	8.2.2.3b	Selected fill material.	m <sup>3</sup>	1 279		R -
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
	<b>SANS 1200 LE</b>	<b>STORMWATER DRAINAGE</b>				
	8.2.1	<b>Supply and Lay Concrete Pipe Culverts on class B bedding:</b>				
	8.2.1.2	<b>Class 100 -D-load pipes with U joints:</b>				
32		300mm Diameter	m	16		R -
33		375mm Diameter	m	155		R -
34		525mm Diameter	m	157		R -
35		600mm Diameter	m	626		R -
36		750mm Diameter	m	634		R -
	8.2.1.3	<b>Class 50-D-load pipes with U joints:</b>				
37		375mm Diameter	m	56		R -
		<b>Supply, handle, lay, joint and bed spigot and socket HDPE unperforated subsoil pipes:</b>				
38		200mm Diameter	m	144		R -
	8.2.15	<b>Geofabric</b>				
39		A2 geofabric wrapped around concrete pipe joints (minimum width 750mm diameter)	m	1 008		R -
	8.2.16	<b>MISCELLANEOUS:</b>				
		<b>Cleaning of Existing structures</b>				
40		Filtered Stormwater from stilling basin to be released to bay with existing SW Pipes.	Sum	1		R -
41	8.2.17	Clean and clear existing 300mm dia. Stormwater Pipe	m	724		R -
42	8.2.18	Cleaning out of existing stormwater grid channels after removal of top slot drain for all channel depth ranges	m	871		R -
43	8.2.19	Repair existing damaged channel and grade to flow towards new stilling basin SB8	m	420		R -
44	8.2.20	Replace existing channel with heavy duty grids (Type SD3)	m	871		R -
		<b><u>THE FOLLOWING TO STORMWATER MANHOLES</u></b>				
	<b>SANS 1200 DB</b>	<b>EARTHWORKS (PIPE TRENCHES)</b>				
	8.3.2	<b>Excavate in all materials for stormwater manholes, backfill, compact and dispose of surplus material:</b>				
45	8.3.2a	Depth over 1,0 m and up to 2,0 m	m3	259		R -
46	8.3.2a	Depth over 2,0 m and up to 3,0 m	m3	177		R -
47	8.3.2a	Depth over 3,0 m and up to 4,0 m	m3	182		R -
	8.3.2	<b>Extra over excavation for stormwater manholes for:</b>				
48	8.3.2.b	Intermediate excavation.	m3	62		R -
49	8.3.2.b	Hard rock excavation.	m3	31		R -
	8.3.2	<b>Backfilling:</b>				
50	8.3.2a	Backfill stabilized with 5% cement where directed by the Engineer	m3	243		R -
	8.3.3.4	<b>Overhaul</b>				
51	8.3.3.4b	Limited overhaul	m3/km			RATE ONLY
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
52	8.3.4 8.3.4a	<b>Particular Items</b> Shore trench opposite structure.	m	112		R -
53	8.3.4b	<b>Temporary works: Control water inflow</b>				
54	8.3.4b.1	Provide equipment	sum	1		R -
55	8.3.4b.1	Operate and maintain	days			RATE ONLY
	8.3.4c	Remove equipment	sum	1		R -
<b>SANS 1200 LE</b>		<b>STORMWATER DRAINAGE</b>				
	8.2.8	<b>Supply and install Ultra heavy duty manhole type SD3 complete including blinding, reinforced concrete base, brickwork, internal plaster, cement mortar rendering, and support for cover and frame.</b>				
56	8.2.8a	Over 0,5m up to 1,5m	No	35		R -
57	8.2.8a	Over 1,5m up to 2,5m	No	3		R -
58	8.2.8a	Over 2,5m up to 3,5m	No	12		R -
59	8.2.8a	Supply and install 1500mm precast circular manhole and base with ultra heavy duty cover	No	8		R -
60	8.2.8a	The constructor to supply and install Ecostorm plus 1500 filtration system as per Engineers specifications/drawings	No	8		R -
61	8.2.8a	Ecostorm plus 1500 replacement filter set as per Engineers specifications/drawings	set	8		R -
		<b><u>THE FOLLOWING TO STILLING BASINS</u></b>				
<b>SANS 1200 D</b>		<b>EARTHWORKS</b>				
	8.3.2	<b>Excavate for stilling basins in all materials, and use for backfill or embankment, or dispose</b>				
62	8.3.2a	Depth over 3,0 m and up to 4,0 m	m3	5 877		R -
		<b>Extra over excavations for:</b>				
63	8.3.2.b	Intermediate excavation.	m3	588		R -
64	8.3.2.b	Hard rock excavation.	m3	294		R -
	8.3.2	<b>Backfilling:</b>				
65	8.3.2a	Backfill stabilized with 5% cement where directed by the Engineer	m3	1 390		R -
	8.3.6	<b>Overhaul</b>				
66	8.3.6a	Limited overhaul	m3/km			RATE ONLY
	8.3.4b	<b>Temporary works: Control water inflow</b>				
67	8.3.4b.1	Provide equipment	sum	1		R -
68	8.3.4b.1	Operate and maintain	days			RATE ONLY
69	8.3.4c	Remove equipment	sum	1		R -
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
	<b>SANS 1200 G</b>	<b>CONCRETE (STRUCTURAL)</b>				
	8.2	<b>SCHEDULED FORMWORK ITEMS</b>				
	8.2.1	<b>Rough</b>				
	8.2.1.1	<b>Vertical formwork to:</b>				
70	8.2.1.1b	Bases	m2	273	R	-
71	8.2.1.1c	Walls below ground	m2	1 178	R	-
	8.2.2	<b>Smooth</b>				
	8.2.2.1	<b>Vertical formwork to:</b>				
72	8.2.2.1b	Sides	m2	748	R	-
73	8.2.2.1d	Walls	m2	1 007	R	-
74	8.2.2.1d	Columns	m2	271	R	-
	8.2.2.4	<b>Horizontal formwork to:</b>				
75		Soffit of slab	m2	1 113	R	-
76		Soffit of beams	m2	256	R	-
	8.2.6	<b>Box Out Holes/ Form Voids</b>				
	8.2.6.1	<b>Small circular, of diameter up to and including 0,35 m, and in the following depth ranges:</b>				
77	8.2.6.1a	Over 0,0m and up to and including 0,5m deep.	No	8	R	-
	8.2.6.3	<b>Large, circular, of diameter over 0,35 m up to and including 0,7 m and in the following depth ranges:</b>				
78	8.2.6.3a	Over 0,0m and up to and including 0,5m deep.	No	8	R	-
	8.2.6.4	<b>Large, other than circular, of area over 0,1 m<sup>2</sup> and up to and including 0,5 m<sup>2</sup>, and in the following depth ranges:</b>				
79	8.2.6.4a	Over 0,0m and up to and including 0,5m deep.	No	48	R	-
	8,3	<b>SCHEDULED REINFORCEMENT ITEMS</b>				
	8.3.1	<b>Steel bars of various diameters</b>				
80		High tensile steel bars	t	274	R	-
		<b>SCHEDULED CONCRETE ITEMS</b>				
	8.4.2	<b>Blinding layer</b>				
	8.4.2.2	<b>Concrete 15MPa/19mm</b>				
81	8.4.2.2a	Blinding layer 50mm minimum thickness.	m2	1 585	R	-
	8.4.3	<b>Strength concrete</b>				
		<b>40 Mpa/19mm</b>				
82		Bases	m3	806	R	-
83		Slabs	m3	446	R	-
84		Columns	m3	28	R	-
85		Beams	m3	136	R	-
86		Walls	m3	403	R	-
87		Overflow weir	m3	5	R	-
88		U grid channel	m	160	R	-
	8.5	<b>Joints</b>				
89		Penebar waterstop/construction joint	m	2 266	R	-
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
90	8.9 8.9.6	<b>Miscellaneous work other than metal work:</b> Concrete test cubes 150 x 150 x 150 in sets of three	Sets	304		R -
91	8.2.10 8.2.10a	<b>Accessories</b> Manhole covers including frames	No	32		R -
92	8.2.10c	Step irons.	No	288		R -
	<b>SANS 1200 MF</b>	<b>BASE</b>				
		<b>STILLING BASIN LAYER WORKS</b>				
93	8.3.3	<b>Construct base with material from commercial sources</b> 300 Micron uPVC sheeting	m2	1 584		R -
94	8.3.3b	150mm G5 crushed stone base layer, compacted to 95% of apparent relative density	m3	238		R -
95	8.2.14a	Geotextile Bidim U14 or similar approved	m2	1 584		R -
96	8.3.3a	150mm G7 natural gravel base, compacted to 93% MOD AASHTO.	m3	238		R -
97	8.3.3	300mm Dump rock compacted to form pioneer layer to COLTO specification	m3	475		R -
		<b>THE FOLLOWING TO PAVING</b>				
	<b>SANS 1200 MF</b>	<b>BASE</b>				
		<b>PAVING LAYER WORKS</b>				
98	8.3.3 8.3.3	<b>Construct base with material from commercial sources</b> Two layers of 125mm Thick C1 cement stabilized layer compacted to 95% Mod AASHTO density	m3	1 551		R -
99	8.3.3a	150mm Thick G2 compacted to 95% Mod AASHTO density	m3	931		R -
	<b>1200MJ</b>	<b>SEGMENTED PAVING</b>				
		<b>Construction of Paving Complete.</b> <u>Type S-G blocks:</u>				
100	8.2.2	80mm Thick	m2	6 203		R -
	<b>SANS 1200 MK</b>	<b>ROADS - KERBING AND CHANNELLING</b>				
101	8.2.1 8.2.1a	<b>Concrete kerbing, edging and channelling</b> Barrier kerb type BK9	m	156		R -
102	8.2.1a	Barrier kerb type BK9, circular on plan	m	79		R -
		<b>MISCELLANEOUS:</b> Allow for the careful removal, storage and reinstatement of the existing brick work paving, including removal of layerworks and the repair or replacement thereof if damaged.	m2	3 003		R -
		<b>THE FOLLOWING IN RE-INSTATING CONCRETE</b>				
	<b>SANS 1200DM</b>	<b>EARTHWORKS (ROADS, SUBGRADE)</b>				
		<b>Treatment of road bed:</b>				
103	8.3.3 8.3.3a 8.3.3a.1	<b>Road bed preparation and compaction of material to:</b> Scarify in situ material to a depth of 150 mm and compact to 95% of modified AASHTO density	m3	408		R -
104	8.3.5	G2 Graded crushed stone minimum of 88% of bulk relative density	m3	408		R -
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
105	8.3.12 8.3.12a	<b>Overhaul:</b> Limited overhaul (provisional)	m3/km			RATE ONLY
	<b>SANS 1200G</b>	<b>CONCRETE (STRUCTURAL)</b>				
	8.2	<b>SCHEDULED FORMWORK ITEMS</b>				
	8.2.2	<b>Smooth</b>				
106	8.2.2.1 8.2.2.1b	<b>Vertical formwork to:</b> Sides of slabs 200mm high	m	631		R -
	8.3	<b>SCHEDULED REINFORCEMENT ITEMS</b>				
	8.3.2	<b>High Tensile Welded Mesh</b>				
107	8.3.2a	Type reference 193	m2	2 719		R -
	8.4	<b>SCHEDULED CONCRETE ITEMS</b>				
	8.4.3	<b>Strength concrete</b>				
	8.4.3.2	<b>Concrete 30MPa/19mm</b>				
108	8.4.3.2a	Slabs	m3	544		R -
	8.4.4	<b>Unformed Surface Finishes</b>				
109	8.4.4a	wood floated finish	m2	2 719		R -
		<b><u>THE FOLLOWING IN RE-INSTATING ASPHALT</u></b>				
	<b>SANS 1200DM</b>	<b>EARTHWORKS (ROADS, SUBGRADE)</b>				
	8.3.3	<b>Treatment of road bed:</b>				
	8.3.3a	<b>Road bed preparation and compaction of material to:</b>				
148	8.3.3a.1	Scarify in situ material to a depth of 150 mm and compact to 95% of modified AASHTO density	m3	6		R -
149	8.3.5a	G2 Graded crushed stone minimum of 88% of bulk relative density	m3	6		R -
150	8.3.5b	C1 Compacted to 98% Mod AASHTO density	m3	12		R -
	8.3.12	<b>Overhaul:</b>				
151	8.3.12a	Limited overhaul (provisional)	m3/km			RATE ONLY
	<b>SANS 1200MH</b>	<b>ROADS - ASPHALT BASE AND SURFACING</b>				
	8.5.4	<b>Modified bitumen, Salviacim or equivalent</b>				
	8.5.4.2	<b>50 mm thick:</b>				
152	8.5.4.2a	Continuously graded bitumen 60/70 penetration grade	t	5		R -
		<b><u>DISPOSAL OF CONTAMINATED EXCAVATED MATERIAL</u></b>				
	<b>SANS 1200D</b>	<b>EARTHWORKS</b>				
	8.3.6	<b>Overhaul</b>				
		<b>Extra over for the haulage and disposal of contaminated excavated material, in accordance with the following</b>				
110		Collect a sample of the extracted sediment	Sum	1		R -
111		Send the sediment sample to a qualified laboratory for waste analysis to determine the Hazardous waste classification, Obtain and provide a Safety Data Sheet (SDS).	Sum	1		R -
112		Provide the Skips suitable for the transporting of the sediment	m3	11 465		R -
113		Transport the waste sediment to an approved Hazardous waste landfill site and dispose of the sediment	m3	11 465		R -
114		Provide Transnet Port Terminals with the Safe Disposal Certificate	Sum	1		R -
<b>TOTAL CARRIED TO SUMMARY</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
		<b>SECTION 3: RAIL EMBANKMENT</b>				
		<b>NOTE</b> Tenderers are to price this Schedule strictly in accordance with the Specifications and SANS 1200, where a conflict arises between these two documents the Specifications shall take precedence. Where a conflict arises between this Schedule and the Specifications, the Specifications shall take precedence. Tenderers shall study the Drawings before pricing this Schedule and the Schedule shall be priced to provide the complete Works.  To be read in conjunction with but not limited to the following Project Technical Specification(s) :-  Civil and Structural :-				
		<b>THE FOLLOWING OVER THE GENERAL RAIL EMBANKMENT CATCHMENT</b>				
	<b>SANS 1200C</b>	<b>SITE CLEARANCE</b>				
	8.2.1	<b>Clear and grub.</b>				
1	8.2.1a	Area designated by the Engineer	ha	2	R	-
	8.2.7	<b>Dismantle and remove pipelines, electricity transmission lines, cables, etc.</b>				
2	8.2.7.1	Demolition of existing manholes 1.0m to 2m deep including excavation and breaking down of concrete, loading, unloading and haulage of all material to and approved Municipal spoil site	No	12	R	-
3	8.2.7.2	Remove and block off the existing stormwater pipes	m	775	R	-
4	8.7.2.3	Clean and clear existing stormwater infrastructure	m	250	R	-
	<b>SANS 1200D</b>	<b>EARTHWORKS</b>				
	8.3.8	<b>Existing Services</b>				
	8.3.8.1	<b>Location and exposing existing services</b>				
5	8.3.8.1b	Site survey by ground-penetrating radar and cable detector	Sum	1	R	-
6	8.3.8.1c	Excavate by hand in soft material for proof test pits (1m x 0.8m x 1.2m) every 20 meters	Day work			RATE ONLY
	8.3.8.2	<b>Specialist excavation for locating and exposing existing services:</b>				
		<b>Services at risk because of construction of earthworks</b>				
7	8.3.8.2a	Connect the grid channel to the existing line	No	1	R	-
8	8.3.8.2b	Temporary protection of the electrical cable that feeds the high mast lights	Sum	1	R	-
	<b>SANS 1200DB</b>	<b>EARTHWORKS (PIPE TRENCHES)</b>				
		<b>TRENCHES FOR STORMWATER PIPES</b>				
	8.3.5	<b>Existing services that intersect or adjoin a pipe trench</b>				
9	8.3.5.1	Other services (provisional)	No	25	R	-
10	8.3.5.2	Services that adjoin the trench (provisional)	m	100	R	-
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
<b>THE FOLLOWING TO STORMWATER PIPES</b>						
<b>SANS 1200DB EARTHWORKS (PIPE TRENCHES)</b>						
<b>TRENCHES FOR STORMWATER PIPES</b>						
11	8.3.1 8.3.1c	Site clearance and (if specified) removal of topsoil Remove topsoil to a depth of 150mm and stockpile on site for reuse.	m2	103	R	-
12	8.3.2 8.3.2.5b	Excavate in all materials for stormwater trenches, backfill, compact and dispose of surplus material: Pipes over 700 mm dia up to 850 mm dia for depths: Over 1,0 m up to 2,0 m	m	33	R	-
13	8.3.2.5c	Over 2,0 m up to 3,0 m	m	44	R	-
14	8.3.2b 8.3.2b1	Extra over excavation for stormwater pipe trenches for: Intermediate excavation	m3	18	R	-
15	8.3.2b2	Hard rock excavation	m3	9	R	-
16	8.3.3.4 8.3.3.4b	Overhaul: Truck haul	m3/km			RATE ONLY
17	8.3.4 8.3.4a	Particular Items Shore trench opposite structure.	m	76	R	-
18	8.3.4b 8.3.4b.1	Temporary works: Control water inflow Provide equipment	Sum	1	R	-
19	8.3.4b.2	Operate and maintain	days			RATE ONLY
20	8.3.4b.3	Remove equipment	Sum	1	R	-
<b>SANS 1200LB BEDDING (PIPES)</b>						
<b>BEDDING FOR STORMWATER PIPES</b>						
21	8.2.2 8.2.2.3 8.2.2.3a	Supply only of Bedding by Importation From commercial sources (Provisional) Selected granular material.	m3	58	R	-
22	8.2.2.3b	Selected fill material.	m3	50	R	-
23	8.2.5 8.2.5	Overhaul of material for bedding cradle and selected fill blanket. (Provisional) Limited overhaul (provisional)	m3/km			RATE ONLY
<b>SANS 1200LE STORMWATER DRAINAGE</b>						
24	8.2.1 8.2.1.1 8.2.1.1a	Supply and Lay Concrete Pipe Culvert on class B bedding: Type SC 100 -D-load pipes with ogee joints: 750 mm dia	m	76	R	-
25	8.2.15 8.2.15a	Geofabric A2 geofabric wrapped around concrete pipe joints (minimum width 750mm diameter)	m	76	R	-
<b>THE FOLLOWING TO STORMWATER CULVERTS</b>						
<b>SANS 1200DB EARTHWORKS (PIPE TRENCHES)</b>						
<b>TRENCHES FOR CULVERTS</b>						
26	8.3.1 8.3.1c	Site Clearance and (if specified) removal of topsoil Remove topsoil to a depth of 150mm and stockpile on site for reuse.	m2	272	R	-
27	8.3.2 8.3.2.1 8.3.2.1a	Excavate in all materials for culverts, backfill, compact and dispose of surplus material: Trenches for depths: Up to 1,0 m	m	66	R	-
28	8.3.2.1b	Over 1,0 m up to 2,0 m	m	132	R	-
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
29	8.3.2b	<b>Extra over excavation for culverts for:</b>				
	8.3.2b1	Intermediate excavation	m3	32	R	-
30	8.3.2b2	Hard rock excavation	m3	16	R	-
	8.3.2	<b>Backfilling:</b>				
31	8.3.2a	Backfill stabilized with 5% cement where directed by the Engineer	m3	82	R	-
	8.3.3.4	<b>Overhaul:</b>				
32	8.3.3.4b	Truck haul	m3/km			RATE ONLY
	8.3.4	<b>Particular Items</b>				
33	8.3.4a	Shore trench opposite structure.	m	198	R	-
	8.3.4b	<b>Temporary works: Control water inflow</b>				
34	8.3.4b.1	Provide equipment	Sum	1	R	-
35	8.3.4b.2	Operate and maintain	days			RATE ONLY
36	8.3.4b.3	Remove equipment	Sum	1	R	-
	<b>SANS 1200 MF</b>	<b>BASE</b>				
		<b>CULVERT LAYER WORKS</b>				
	<b>8.3.3</b>	<b>Construct base with material from commercial sources</b>				
37	8.3.3.3	150mm G2 material compacted to 85% bulk relative density	m3	41	R	-
38	8.3.3a	150mm G7 natural gravel base, compacted to 93% MOD AASHTO.	m <sup>3</sup>	41	R	-
39	8.3.3b	150mm G5 crushed stone base layer, compacted to 95% of apparent relative density	m <sup>3</sup>	41	R	-
	<b>SANS 1200GE</b>	<b>PRECAST CONCRETE (STRUCTURAL)</b>				
		<b>SCHEDULED CONCRETE ITEMS</b>				
	<b>SANS 1200LE</b>	<b>STORMWATER DRAINAGE</b>				
	8.2.1	<b>Supply and Lay Precast Concrete Pipe Culverts on class B bedding:</b>				
	8.2.1.1	<b>Supply and lay portal and rectangular culverts:</b>				
40	8.2.1.1	SATS Class 1 750x600mm culvert inclusive of base	m	159	R	-
41	8.2.1.1	SATS Class 1 900x600mm culvert inclusive of base	m	38	R	-
	8.2.10	<b>Accessories</b>				
42	8.2.10.1	150 x 2mm thick "Sikadur" Combiflex bandage or equally approved in joints between portal frames and walls including "Sika primer 3N Sikaflex pro 3 purform" or equally approved sealant to be protected with 10mm softboard	m	322	R	-
		<b>THE FOLLOWING TO STORMWATER MANHOLES</b>				
	<b>SANS 1200DB</b>	<b>EARTHWORKS (PIPE TRENCHES)</b>				
		<b>EXCAVATION FOR STORMWATER MANHOLES</b>				
	8.3.1	<b>Site Clearance and (if specified) removal of topsoil</b>				
43	8.3.1c	Remove topsoil to a depth of 150mm and stockpile on site for reuse.	m2	60	R	-
	8.3.2	<b>Excavate in all materials for stormwater manholes, backfill, compact and dispose of surplus material:</b>				
	8.3.2.1	<b>Ultra heavy duty manhole type SD3 for depths:</b>				
44	8.3.2.1a	Over 0,5m up to 1,5 m	m3	44	R	-
45	8.3.2.1b	Over 1,5 m up to 2,5 m	m3	28	R	-
46	8.3.2.1c	Over 5,5 m up to 6,5 m	m3	29	R	-
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
47	8.3.2b	<b>Extra over excavation for stormwater manholes for:</b>				
	8.3.2b1	Intermediate excavation	m3	10	R	-
48	8.3.2b2	Hard rock excavation	m3	5	R	-
	8.3.2	<b>Backfilling:</b>				
49	8.3.2a	Backfill stabilized with 5% cement where directed by the Engineer	m3	18	R	-
	8.3.4	<b>Particular Items</b>				
50	8.3.4a	Shore trench opposite structure.	m	27	R	-
	8.3.4b	<b>Temporary works: Control water inflow</b>				
51	8.3.4b.1	Provide equipment	Sum	1	R	-
51	8.3.4b.2	Operate and maintain	days			RATE ONLY
53	8.3.4b.3	Remove equipment	Sum	1	R	-
	<b>SANS 1200LE</b>	<b>STORMWATER DRAINAGE</b>				
	8.2.8	<b>Supply and install Ultra heavy duty manhole type SD3 complete including blinding, reinforced concrete base, brickwork, internal plaster, cement mortar rendering, and support for cover and frame (cover and frame measured elsewhere) for depths</b>				
54	8.2.8a	Over 0,5m up to 1,5m	No	9	R	-
55	8.2.8a	Over 1,5m up to 2,5m	No	2	R	-
56	8.2.8a	Over 2,5m up to 3,5m	No	1	R	-
	<b>SANS 1200LG</b>	<b>PIPE JACKING</b>				
	8.2.1	<b>Jacking establishment.</b>				
57	8.2.1a	Fixed charges for thrust and reception pits	Sum	1	R	-
58	8.2.1b	Time related charges for thrust and reception pits	Sum	1	R	-
	8.2.2	<b>Supply of Pipes to be Jacked</b>				
59	8.2.2	750mm Diameter Class 100D concrete pipes	m	49	R	-
	8.2.3	<b>Jacking of Pipes</b>				
60	8.2.3	750mm Diameter Class 100D concrete pipes	m	49	R	-
	8.2.4	<b>Excavation for jacking.</b>				
61	8.2.4	Soft excavation	m3	22	R	-
62	8.2.4	Intermediate excavation	m3	2	R	-
63	8.2.4	Hard rock excavation	m3	1	R	-
64	8.2.5	Extra over 8.2.1 and 8.2.4 for unforeseen rock or boulders (Provisional)	Sum	1	R	-
	8.2.9	<b>Stabilization of Unstable Areas or Grouting of Voids where Ordered</b>				
65	8.2.9a	Provision and establishment of equipment on site, and removal on completion of operation.	Sum	1	R	-
66	8.2.9b	Operation of equipment	DAY			RATE ONLY
67	8.2.9c	Materials used.	DAY			RATE ONLY
68	8.2.10	Standing time for pipe jacking gang and the jacking equipment covered by item 8.2.1	Hrs			RATE ONLY
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
		<b>THE FOLLOWING IN GRID CHANNELS</b>				
	<b>SANS 1200DB</b>	<b>EARTHWORKS (PIPE TRENCHES)</b>				
		<b>TRENCHES FOR SURFACE DRAINS</b>				
		<b>Site Clearance and (if specified) removal of topsoil</b>				
69	8.3.1 8.3.1c	Remove topsoil to a depth of 150mm and stockpile on site for reuse.	m2	1 001	R	-
	8.3.2	<b>Excavate in all materials for surface drains, backfill, compact and dispose of surplus material:</b>				
	8.3.2.2	<b>Trenches of width more than 600 mm for depths:</b>				
70	8.3.2.2a	Up to 1,0 m	m	801	R	-
	8.3.2b	<b>Extra over bulk excavation for:</b>				
71	8.3.2b1	Intermediate excavation	m3	45	R	-
72	8.3.2b2	Hard rock excavation	m3	23	R	-
	8.3.2	<b>Backfilling:</b>				
73	8.3.2a	Backfill stabilized with 5% cement where directed by the Engineer	m3	300	R	-
	8.3.3.4	<b>Overhaul</b>				
74	8.3.3.4b	Limited overhaul	m3/km	0		RATE ONLY
	8.3.4	<b>Particular Items</b>				
75	8.3.4a	Shore trench opposite structure.	m	801	R	-
	8.3.4b	<b>Temporary works: Control water inflow</b>				
76	8.3.4b.1	Provide equipment	Sum days	1	R	-
77	8.3.4b.1	Operate and maintain	Sum days	1		RATE ONLY
78	8.3.4c	Remove equipment	Sum	1	R	-
		<b>GRID CHANNEL LAYER WORKS</b>				
	<b>8.3.3</b>	<b>Construct base with material from commercial sources</b>				
79	8.3.3.3	150mm G2 material compacted to 85% bulk relative density	m3	150	R	-
80	8.3.3a	150mm G7 natural gravel base, compacted to 93% MOD AASHTO.	m <sup>3</sup>	150	R	-
81	8.3.3b	150mm G5 crushed stone base layer, compacted to 95% of apparent relative density	m <sup>3</sup>	150	R	-
	<b>SANS 1200G</b>	<b>CONCRETE (STRUCTURAL)</b>				
	8.2	<b>SCHEDULED FORMWORK ITEMS</b>				
	8.2.1	<b>Rough</b>				
	8.2.1.1	<b>Vertical formwork to:</b>				
82	8.2.1.1c	Grid walls below ground	m2	1 602	R	-
	8.3	<b>SCHEDULED REINFORCEMENT ITEMS</b>				
	8.3.2	<b>High Tensile Welded Mesh</b>				
83	8.3.2	Type reference 193	m2	2 122	R	-
	8.4	<b>SCHEDULED CONCRETE ITEMS</b>				
	8.4.2	<b>Blinding layer</b>				
	8.4.2.1	<b>Concrete 15MPa/19mm</b>				
84	8.4.2.1a	Blinding layer 50mm minimum thickness.	m2	24	R	-
	8.4.3	<b>Strength concrete</b>				
	8.4.3.2	<b>Concrete 30MPa/19mm</b>				
85	8.4.3.2a	Grid channel base	m3	104	R	-
86	8.4.3.2a	Grid channel walls	m3	320	R	-
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
87	8.4.4 8.4.4a	<b>Unformed Surface Finishes</b> Wood floated finish.	m2	1 602	R	-
88	8.5 8.5.9 8.5.9a	<b>Joints</b> <b>Sealing of joints with sealant:</b> 20mm in top of isolation joints with Thioflex or equivalent	m	1 602	R	-
89	8.5.12 8.5.12a	<b>Isolation joints</b> 20mm Bitucell joint filler between concrete surfaces, 250mm high	m	1 602	R	-
<b>SANS 1200HA</b>		<b>STRUCTURAL STEELWORK (SUNDRY ITEMS)</b>				
90	8.3.1 8.3.1.1 8.3.1.1a	<b>Structural steel:</b> <b>The following in grid channels::</b> 80x4.5mm RS40 Mentis Rectagrid	m2	200	R	-
91	8.3.1.1b	90x90x8 Angle bracing	t	9	R	-
92	8.3.1.1c	R12 Anchor rods 150mm long	No	1 335	R	-
93	8.3.6 8.3.6a	<b>Corrosion Protection</b> Structures, general.	Sum	1	R	-
		<b><u>THE FOLLOWING IN SUBSOIL COLLECTOR DRAINS</u></b>				
<b>SANS 1200DB</b>		<b>EARTHWORKS (PIPE TRENCHES)</b>				
		<b>TRENCHES FOR SURFACE DRAINS</b>				
94	8.3.2 8.3.2.2 8.3.2.2b	<b>Excavate in all materials for surface drains, backfill, compact and dispose of surplus material:</b> <b>Trenches of width more than 600 mm for depths:</b> Up to 1,0m	m	1 813	R	-
95	8.3.2b 8.3.2b1	<b>Extra over excavation for surface drains for:</b> Intermediate excavation	m	138	R	-
96	8.3.2b2	Hard rock excavation	m	69	R	-
97	8.3.3.4 8.3.3.4a	<b>Overhaul:</b> Limited overhaul (provisional)	M3/KM			RATE ONLY
98	8.3.4 8.3.4.1a	<b>Particular items:</b> Shore trench	m	1 813	R	-
99	8.3.4b 8.3.4b.1	<b>Temporary works: Control water inflow</b> Provide equipment	Sum days	1	R	-
100	8.3.4b.1	Operate and maintain				RATE ONLY
101	8.3.4c	Remove equipment	Sum	1	R	-
<b>SANS 1200LB</b>		<b>BEDDING (PIPES)</b>				
		<b>BEDDING FOR STORMWATER PIPES</b>				
		<b>Supply only of Bedding by Importation</b>				
		<b>From commercial source (Provisional)</b>				
102	8.2.2 8.2.2.3 8.2.2.3a	Clean course 19mm aggregate	m3	551	R	-
103	8.2.2.3b	Sand filling compacted to 100% of modified AASHTO density	m3	551	R	-
104	8.2.2.3c	150mm Layer, 3mm diameter pea gravel as per detail	m3	276	R	-
<b>SANS 1200LE</b>		<b>STORMWATER DRAINAGE</b>				
		<b>Pipes in subsurface drains:</b>				
		<b>Normal duty uPVC pipes complete with couplings:</b>				
105	8.2.15 8.2.15.1 8.2.15.1a	110 mm internal diameter, perforated	m	16	R	-
106	8.2.15.1b	Supply, handle, lay, joint and bed spigot and socket 200 mm internal diameter HDPE perforated subsoil pipes	m	1 813	R	-
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
107	8.2.16	<b>Geofabric</b>				
	8.2.16a	Light fibertex non-woven grade E geotextile	m2	5 440	R	-
108	8.2.16b	A4 geofabric wrapped around HDPE geopipe	m	1 813	R	-
109	8.2.17	19mm stone in subsurface drains encasing to pipe work	m3	290	R	-
110	8.2.18	Caps for subsurface drain pipes	No	20	R	-
<b>THE FOLLOWING TO PONDS</b>						
<b>SANS 1200DB</b>		<b>EARTHWORKS (PIPE TRENCHES)</b>				
<b>8.3.1</b>		<b>Cleaning of Existing structures</b>				
111	8.3.1a	De-silt, pressure clean and flow test existing concrete channels, pipes and down chutes	m	101	R	-
<b>8.3.3.3</b>		<b>Compaction to pond</b>				
112	8.3.3.3	150mm Clay layer compacted to 95% MOD ASSHTO	m3	543	R	-
113	8.3.3.3	150mm Silt layer compacted to 95% MOD ASSHTO	m3	543	R	-
<b>8.3.4</b>		<b>Particular items</b>				
<b>8.3.4b</b>		<b>Temporary works: Control water inflow</b>				
114	8.3.4b.1	Provide equipment.	Sum	1	R	-
115	8.3.4b.2	Operate and maintain.	days		RATE ONLY	
116	8.3.4b.3	Remove equipment.	Sum	1	R	-
<b>SANS 1200D</b>		<b>EARTHWORKS</b>				
<b>8.3.2</b>		<b>Bulk excavation</b>				
<b>8.3.2.1</b>		<b>Excavate in all materials and use for backfill:</b>				
117	8.3.2.1a	Up to 1,0 m	m3	136	R	-
118	8.3.2.1b	Depth over 1,0 m and up to 2,0 m	m3	1 808	R	-
<b>8.3.2b</b>		<b>Extra over bulk excavation for:</b>				
119	8.3.2b1	Intermediate excavation	m3	181	R	-
120	8.3.2b2	Hard rock excavation	m3	90	R	-
<b>8.3.4</b>		<b>Importing of Materials</b>				
121	8.3.4d	Clay layer compacted to 95% MOD ASSHTO	m3	543	R	-
122	8.3.4d	Silt layer compacted to 95% MOD ASSHTO	m3	543	R	-
<b>8.3.6</b>		<b>Overhaul:</b>				
123	8.3.6b	Long haul	m3/km		RATE ONLY	
<b>SANS 1200DK</b>		<b>GABIONS AND PITCHING</b>				
<b>8.2.4</b>		<b>Geotextile or membrane.</b>				
124	8.2.4a	2mm HDPE Flexible Geomembrane Lining	m2	1 336	R	-
<b>8.2.5</b>		<b>Pitching</b>				
125	8.2.5.1b	300mm Medium duty grouted stone pitching	m2	76	R	-
<b>8.2.5.1a</b>		<b>450mm HEADWALL</b>				
126	8.2.5.1a	Build 230mm wall for the headwall, plaster internal and external for depths: Over 2.5m and up to 3.5m	No	2	R	-
<b>SANS 1200LE</b>		<b>MANHOLES</b>				
		<b>COMMUNICATION LINE</b>				
<b>8.2.8</b>		<b>Excavate in all materials for Communication manholes, backfill, compact and dispose of surplus material:</b>				
127	8.2.8a	Over 0,5m up to 1,5 m	m3	1	R	-
<b>8.3.2</b>		<b>Extra over excavations for:</b>				
128	8.3.2.b.1	Intermediate excavation.	m3	0.1	R	-
129	8.3.2.b.2	Hard rock excavation.	m3	0.1	R	-
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
130	8.3.2 8.3.2a	<b>Backfilling:</b> Backfill stabilized with 5% cement where directed by the Engineer	m3	2	R	-
131	8.3.3.4 8.3.3.4b	<b>Overhaul:</b> Truck haul	m3/km			RATE ONLY
132	8.3.4 8.3.4a	<b>Particular Items</b> Shore trench opposite structure.	m	5	R	-
133	8.3.4b 8.3.4b.1	<b>Temporary works: Control water inflow</b> Provide equipment	Sum	Sum		
134	8.3.4b.2	Operate and maintain	days	days		RATE ONLY
135	8.3.4b.3	Remove equipment	Sum	Sum		
<b>SANS 1200LE</b>		<b>MANHOLES</b>				
136	8.2.8a	Supply and install new communications manholes, levels to be confirmed on site.	No	2	R	-
<b>SANS 1200MK</b>		<b>ROADS - KERBING AND CHANNELLING</b>				
137	8.2.1 8.2.1a	<b>Concrete kerbing, edging and channelling</b> Barrier kerb type BK9	m	73	R	-
<b>SANS 1200C</b>		<b>MISCELLANEOUS:</b> <b>COMMUNICATION LINE</b> Cleaning of existing structures				
138	8.2.7a	Relocate optic fibre/ communication cables	m	94	R	-
<b>SANS 1200DB</b>		<b>BOLLARDS</b>				
139	8.2.5.1b	Supply and install bollards in accordance with details on the drawings	No	40	R	-
<b>SANS 1200DM</b>		<b>TRENCHES FOR SEWER PIPES</b>				
140	8.2.11	Connection to existing rising sewer line Excavate, break, connect to and re-build the existing connecting manhole	Sum	1	R	-
141	8.2.12	a) Relocate 160mm diameter Foul sewer rising main and communications cable is to be relocated with associated manholes	m	189	R	-
<b>SANS 1200DM</b>		<b>THE FOLLOWING IN RE-INSTATING CONCRETE</b> <b>EARTHWORKS (ROADS, SUBGRADE)</b>				
		<b>Treatment of road bed:</b> <b>Road bed preparation and compaction of material to:</b>				
142	8.3.3 8.3.3a 8.3.3a.1	Scarify in situ material to a depth of 150 mm and compact to 95% of modified AASHTO density	m3		R	-
143	8.3.5	G2 Graded crushed stone minimum of 88% of bulk relative density	m3	0	R	-
144	8.3.12 8.3.12a	<b>Overhaul:</b> Limited overhaul (provisional)	m3/km	0		RATE ONLY
<b>SANS 1200G</b>		<b>CONCRETE (STRUCTURAL)</b>				
		<b>SCHEDULED FORMWORK ITEMS</b> <b>Smooth</b>				
145	8.2 8.2.2 8.2.2.1 8.2.2.1b	<b>Vertical formwork to:</b> Sides of slabs 200mm high	m	377	R	-
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
146	8.3 8.3.2 8.3.2a	<b>SCHEDULED REINFORCEMENT ITEMS</b> High Tensile Welded Mesh Type reference 193	m2	377		R -
147	8.4 8.4.3 8.4.3.2 8.4.3.2a	<b>SCHEDULED CONCRETE ITEMS</b> Strength concrete Concrete 30MPa/19mm Slabs	m3	88		R -
148	8.4.4 8.4.4a	<b>Unformed Surface Finishes</b> wood floated finish	m2	437		R -
<b>THE FOLLOWING IN RE-INSTATING ASPHALT</b>						
<b>SANS 1200DM EARTHWORKS (ROADS, SUBGRADE)</b>						
149	8.3.3 8.3.3a 8.3.3a.1	<b>Treatment of road bed:</b> <b>Road bed preparation and compaction of material to:</b> Scarify in situ material to a depth of 150 mm and compact to 95% of modified AASHTO density	m3	11		R -
150	8.3.5a	G2 Graded crushed stone minimum of 88% of bulk relative density	m3	11		R -
151	8.3.5b	C1 Compacted to 98% Mod AASHTO density	m3	21		R -
152	8.3.12 8.3.12a	<b>Overhaul:</b> Limited overhaul (provisional)	m3/km			RATE ONLY
<b>SANS 1200MH ROADS - ASPHALT BASE AND SURFACING</b>						
153	8.5.4 8.5.4.2 8.5.4.2a	<b>Modified bitumen, Salviacim or equivalent</b> <b>50 mm thick:</b> Continuously graded bitumen 60/70 penetration grade	t	8		R -
<b>DISPOSAL OF CONTAMINATED EXCAVATED MATERIAL</b>						
<b>SANS 1200D EARTHWORKS</b>						
<b>8.3.6 Overhaul</b>						
<b>Extra over for the haulage and disposal of contaminated excavated material, in accordance with the following</b>						
154		Collect a sample of the extracted sediment	Sum	1		R -
155		Send the sediment sample to a qualified laboratory for waste analysis to determine the Hazardous waste classification, Obtain and provide a Safety Data Sheet (SDS).	Sum	1		R -
156		Provide the Skips suitable for the transporting of the sediment	m3	6 303		R -
157		Transport the waste sediment to an approved Hazardous waste landfill site and dispose of the sediment	m3	6 303		R -
158		Provide Transnet Port Terminals with the Safe Disposal Certificate	Sum	1		R -
<b>TOTAL CARRIED TO SUMMARY</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
		<b>SECTION 4 : TIPPLER</b>				
		<b>NOTE</b> Tenderers are to price this Schedule strictly in accordance with the Specifications and SANS 1200, where a conflict arises between these two documents the Specifications shall take precedence. Where a conflict arises between this Schedule and the Specifications, the Specifications shall take precedence. Tenderers shall study the Drawings before pricing this Schedule and the Schedule shall be priced to provide the complete Works.  To be read in conjunction with but not limited to the following Project Technical Specification(s) : - Civil and Structural :				
	<b>SANS 1200C</b>	<b>SITE CLEARANCE</b>				
	8.2.1	<b>Clear and grub</b>				
1	8.2.1a	Area designated by the Engineer	m2	2070		
2	8.2.1b	Grass line existing detention ponds	m2	3300	R	-
	8.2.7	<b>Dismantle and remove pipelines, electricity transmission lines, cables, etc.</b>				
	8.2.7.1	Pipelines not encased in concrete:				
3	8.2.7.1a	Over 500 mm diameter	m	71	R	-
	8.2.7.3	<b>Electricity transmission lines:</b>				
4	8.2.7.3a	Electricity transmission lines - (LV cables supplying High Mast Lights around Pond 1 and 2)	m	52	R	-
	8.2.8	<b>Demolish and remove structures/buildings and dismantle steelwork, etc.</b>				
5	8.2.8a	Manholes	No	1	R	-
6	8.2.8b	Pipes to be blocked off at Manholes: block/plug pipe openings in the manhole by constructing a watertight brick or concrete bulkhead. Concrete bulkhead shall be a minimum thickness of 250mm (tight brick and mortar)	No	4	R	-
		<b>Transport materials and debris to unspecified sites and dump (Provisional)</b>				
7	8.2.9	Transport materials and debris to unspecified sites and dump (Provisional)	m3/km			RATE ONLY
8	8.2.10	Remove topsoil to a nominal depth of 150mm and stockpile on Site	m2	6525	R	-
		<b>MISCELLANEOUS:</b>				
9	8.2.11	Regrade area and remove depressions to ensure natural	m2	123	R	-
	<b>SANS 1200D</b>	<b>EARTHWORKS</b>				
	8.3.8	<b>Existing Services</b>				
	8.3.8.1	<b>Location and exposing existing services</b>				
10	8.3.8.1b	Site survey by ground-penetrating radar and cable detector	Sum	1	R	-
11	8.3.8.1.c	Excavate by hand in soft material for proof test pits (1m x 0.8m x 1.2m) every 20 meters	Sum	1	R	-
	8.3.8.2	<b>Services at risk because of construction of earthworks</b>				
12	8.3.8.2c	Temporary protection and relocation of unknown existing services	Sum	1	R	-
<b>TOTAL CARRIED FORWARD</b>					R	-

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
<b><u>THE FOLLOWING TO CULVERTS</u></b>						
	<b>SANS 1200DB</b>	<b>EARTHWORKS (PIPE TRENCHES) TRENCHES FOR CULVERTS</b>				
	8.3.2	<b>Excavate in all materials for culverts, backfill, compact and dispose of surplus material:</b>				
	8.3.2.1	Trenches for depths:				
13	8.3.2.1a	Up to 1,0 m	m	166	R	-
14	8.3.2.1b	Over 1,0 m up to 2,0 m	m	173	R	-
15	8.3.2.1c	Over 2,0 m up to 3,0 m	m	193	R	-
	8.3.2b	<b>Extra over excavation for culverts for:</b>				
16	8.3.2b1	Intermediate excavation	m3	88	R	-
17	8.3.2b2	Hard rock excavation	m3	44	R	-
	8.3.2	<b>Backfilling:</b>				
18	8.3.2a	Backfill stabilized with 5% cement where directed by the Engineer	m3	210	R	-
	8.3.4	<b>Particular Items</b>				
19	8.3.4.1	Shore trench opposite structure	m	532	R	-
	8.3.4b	<b>Temporary works: Control water inflow</b>				
20	8.3.4b.1	Provide equipment	Sum days	1	R	-
21	8.3.4b.2	Operate and maintain	Sum		RATE ONLY	
22	8.3.4b.3	Remove equipment	Sum	1	R	-
	<b>SANS 1200LB</b>	<b>BEDDING FOR CONCRETE CULVERTS</b>				
	<b>8.3.3</b>	<b>CULVERT LAYER WORKS</b>				
	<b>8.3.3.3</b>	<b>Construct base with material from commercial sources</b>				
23	8.3.3.3	150mm G2 material compacted to 85% bulk relative density	m3	61	R	-
24	8.3.3a	150mm G7 natural gravel base, compacted to 93% MOD AASHTO.	m <sup>3</sup>	61	R	-
25	8.3.3b	150mm G5 crushed stone base layer, compacted to 95% of apparent relative density	m <sup>3</sup>	61	R	-
	<b>SANS 1200LE</b>	<b>STORMWATER DRAINAGE</b>				
	8.2.1	<b>Supply and Lay Concrete Pipe Culverts on class B bedding:</b>				
	8.2.1.1	<b>Supply and lay portal and rectangular culverts:</b>				
26	8.2.1.1b	SATS Class 1 600x450mm culvert inclusive of base	m	37	R	-
27	8.2.1.1d	SATS Class 1 750x450mm culvert inclusive of base	m	461	R	-
25	8.2.1.1d.1	SATS Class 1 750x600mm culvert inclusive of base	m	34	R	-
	8.2.10	<b>Accessories</b>				
26	8.2.10.1	150 x 2mm thick "Sikadur" Combiflex bandage or equally approved in joints between portal frames and walls including "Sika primer 3N Sikaflex pro 3 purform" or equally approved sealant to be protected with 10mm softboard	m	1129	R	-
<b><u>THE FOLLOWING TO TRAPEZOIDAL CHANNEL</u></b>						
	<b>SANS 1200DB</b>	<b>TRENCHES FOR SURFACE DRAINS</b>				
	8.3.2	<b>Excavate in all materials for surface drains, backfill, compact and dispose of surplus material:</b>				
	8.3.2.2	Trenches of width more than 600 mm for depths:				
27	8.3.2.2a	Up to 1,0 m	m	454	R	-
29	8.3.2.2b	Over 1,0 m up to 2,0 m	m	16	R	-
	8.3.2b	<b>Extra over excavation for surface drains for:</b>				
30	8.3.2b1	Intermediate excavation	m3	47	R	-
31	8.3.2b2	Hard rock excavation	m3	23	R	-
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
32	8.3.2 8.3.2a	<b>Backfilling:</b> Backfill stabilized with 5% cement where directed by the Engineer	m3	77	R	-
33	8.3.3.4 8.3.3.4b	<b>Overhaul:</b> Truck haul	m3/km			RATE ONLY
34	8.3.4 8.3.4.1	<b>Particular Items</b> Shore trench opposite structure.	m	470	R	-
35	8.3.4b 8.3.4b.1	<b>Temporary works: Control water inflow</b> Provide equipment	Sum days	1	R	-
38	8.3.4b.2	Operate and maintain	Sum			RATE ONLY
39	8.3.4b.3	Remove equipment	Sum	1	R	-
40	8.3.5 8.3.5a	<b>Existing services that intersect or adjoin the channel</b> Existing channel	No	1	R	-
<b>SANS 1200LB</b>		<b>BEDDING (PIPES)</b>				
8.2.2		<b>Supply of Bedding by Importation</b>				
8.2.2.3		<b>From commercial source (Provisional)</b>				
41	8.2.2.3a	Selected granular material	m3	76	R	-
42	8.2.2.3b	Selected fill material	m3	76	R	-
<b>SANS 1200DM</b>		<b>EARTHWORKS (ROADS, SUBGRADE)</b>				
8.3.3		<b>Treatment of road bed:</b>				
8.3.3a		<b>Road bed preparation and compaction of material to:</b>				
43	8.3.3a.1	150mm Insitu material- rip and re- compact to 95% MOD AASHTO density	m3	76	R	-
44	8.3.5	150mm G2 material compacted to 85% bulk relative density	m3	76	R	-
<b>SANS 1200G</b>		<b>CONCRETE (STRUCTURAL)</b>				
8.2		<b>SCHEDULED FORMWORK ITEMS</b>				
8.2.2		<b>Smooth</b>				
8.2.5		<b>Narrow Widths (up to 300mm wide)</b>				
45	8.2.5.1b	Over 100 mm and up to 200 mm	m	940	R	-
<b>SANS 1200GE</b>		<b>CAST IN SITU CONCRETE (STRUCTURAL)</b>				
		<b>SCHEDULED CONCRETE ITEMS</b>				
		<b>19/25Mpa Unreinforced Concrete</b>				
46	8.2.1b	50mm Blinding	m	470	R	-
		<b>19/25Mpa Reinforced concrete</b>				
8.2.1		<b>Provide Structural Cast In Situ Units, including reinforcing</b>				
47	8.2.1a	Trapezoidal Channels to the Engineers specifications (top:1077mm wide, bottom:500mm wide)	m	470	R	-
		<b>Accessories</b>				
48	8.2.10 8.2.10a	Trapezoidal Channel Covers or Grating to the Engineers specifications	m	470	R	-
		<b>High Tensile Welded Mesh</b>				
49	8.3.2 8.3.2a	Type reference 245	m2	607	R	-
		<b>Unformed Surface Finishes</b>				
50	8.4.4 8.4.4a	Wood floated finish.	m2	607	R	-
		<b>Joints</b>				
		<b>Expansion joints</b>				
51	8.5.4 8.5.4a	10 mm wide with Jointex between horizontal surfaces	m	61	R	-
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
	<b>SANS 1200LE</b>	<b>STORMWATER DRAINAGE</b>				
52	8.2.15 8.2.15a	<b>Geofabric</b> 800mm wide x 0.15mm thick Polythene Sheeting	m	607	R	-
		<b>MISCELLANEOUS:</b>				
53	8.3.1.a	Channels (De-silt, pressure clean and flow test existing concrete channels, pipes and down chutes)	m	848	R	-
54	8.3.1.b	Tie in existing Trapezoidal Channel	No	1	R	-
		<b>THE FOLLOWING TO BOX CHANNELS</b>				
	8.3.2	<b>Excavate in all materials for surface drains, backfill, compact and dispose of surplus material:</b>				
55	8.3.2.2	750x600mm Box Channels to the Engineers specifications	m	375	R	-
	8.3.2b	<b>Extra over excavation for surface drains for:</b>				
56	8.3.2b1	Intermediate excavation	m3	41	R	-
57	8.3.2b2	Hard rock excavation	m3	21	R	-
	8.3.2	<b>Backfilling:</b>				
58	8.3.2a	Backfill stabilized with 5% cement where directed by the Engineer	m3	38	R	-
59	8.3.2c	Excavate and dispose of unsuitable material from trench bottom	m3	38	R	-
	8.3.3.4	<b>Overhaul:</b>				
60	8.3.3.4b	Truck haul	m3/km			RATE ONLY
	8.3.4	<b>Particular Items</b>				
61	8.3.4.1	Shore trench opposite structure.	m	375	R	-
	8.3.4b	<b>Temporary works: Control water inflow</b>				
62	8.3.4b.1	Provide equipment	Sum days	1	R	-
63	8.3.4b.2	Operate and maintain	Sum days			RATE ONLY
64	8.3.4b.3	Remove equipment	Sum	1	R	-
	8.3.5	<b>Existing services that intersect or adjoin the channel</b>				
65	8.3.5a	Existing channel	No	1	R	-
	<b>SANS 1200LB</b>	<b>BEDDING</b>				
	8.2.1	<b>Supply of Bedding by Importation</b>				
66	8.2.1a	Selected granular material	m3	42	R	-
67	8.2.1b	Selected fill material	m3	42	R	-
	<b>SANS 1200DB</b>	<b>Compaction to Box Channels</b>				
68	8.3.3.3a	150mm G2 material compacted to 85% bulk relative density	m3	94	R	-
69	8.3.3.3b	150mm Insitu material- rip and re- compact to 95% MOD AASHTO density	m3	94	R	-
	<b>SANS 1200G</b>	<b>CONCRETE (STRUCTURAL)</b>				
	8.2	<b>SCHEDULED FORMWORK ITEMS</b>				
	8.2.2	<b>Smooth</b>				
	8.2.5	<b>Narrow Widths (up to 300mm wide)</b>				
70	8.2.5.1a	Over 100 mm and up to 200 mm	m	1668	R	-
	<b>SANS 1200GE</b>	<b>CAST IN SITU CONCRETE (STRUCTURAL)</b>				
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
71	8.2.1b	<b>SCHEDULED CONCRETE ITEMS</b> <b>19/25Mpa Unreinforced Concrete</b> 50mm Blinding	m	375	R	-
72	8.2.1 8.2.1a	<b>SCHEDULED CONCRETE ITEMS</b> <b>19/25Mpa Reinforced Concrete</b> Provide Structural Cast In Situ Units, including reinforcing 750x600mm Box Channels to the Engineers specifications	m	375	R	-
73	8.2.10 8.2.10a	<b>Accessories</b> 750x600mm Box Channel Covers or Grating to the Engineers specifications	m	375	R	-
74	8.3.2 8.3.2a	<b>High Tensile Welded Mesh</b> Type reference 245	m2	1751	R	-
75	8.4.4 8.4.4a	<b>Unformed Surface Finishes</b> Wood floated finish.	m2	1751	R	-
76	8.5 8.5.4 8.5.4a	<b>Joints</b> <b>Expansion joints</b> 10 mm wide with Jointex between horizontal surfaces	m	83	R	-
<b>SANS 1200LE</b>		<b>STORMWATER DRAINAGE</b>				
77	8.2.15 8.2.15a	<b>Geofabric</b> 800mm wide x 0.15mm thick Polythene Sheeting	m	1751	R	-
<b>SANS 1200D</b>		<b>THE FOLLOWING TO PONDS</b> <b>Bulk excavation</b> <b>Excavate in all materials and use for backfill:</b> Depth over 1 m and up to 2 m				
78	8.3.2.1 <b>SANS 1200D</b>		m3	8521	R	-
79	8.3.2	<b>Extra over bulk excavation for:</b>			R	-
80	8.3.2.b.1 8.3.2.b.2	Intermediate excavation Hard rock excavation	m3 m3	852 426	R R	- -
81	8.3.4 8.3.4.1	<b>Particular Items</b> Shore trench opposite structure.	m	781	R	-
82	8.3.4b 8.3.4b.1	<b>Temporary works: Control water inflow</b> Provide equipment	Sum	1	R	-
83	8.3.4b.2	Operate and maintain	days		RATE ONLY	
84	8.3.4b.3	Remove equipment	Sum	1	R	-
<b>8.3.6</b>		<b>Overhaul:</b>				
	8.3.6b	Long haul	m3/km		RATE ONLY	
<b>SANS 1200DB</b>		<b>Compaction to pond</b>				
85	8.3.3.3	Clay in layers of 150mm, compacted to 95% MOD ASSHTO	m3	2064	R	-
86	8.3.3.3	Silt in layers of 150mm, compacted to 95% MOD ASSHTO	m3	2064	R	-
<b>8.3.2</b>		<b>ANCHOR TRENCHES</b> <b>Excavate in all materials for surface drains, backfill, compact and dispose of surplus material:</b> Anchor Trenches to the Engineers specifications				
87	8.3.2.2		m	681	R	-
<b>8.3.2</b>		<b>Extra over excavation for surface drains for:</b>				
88	8.3.2a	Intermediate excavation	m3	6	R	-
89	8.3.2b	Hard rock excavation	m3	3	R	-
<b>8.3.2</b>		<b>Backfilling:</b>				
90	8.3.2a	Backfill stabilized with 5% cement where directed by the Engineer	m3	102	R	-
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
91	<b>SANS 1200DB</b> 8.3.3.3	<b>Compaction to anchor trenches</b> Silt in layers of 150mm, compacted to 95% MOD ASSHTO	m3	102		R -
92	8.3.3.4 8.3.3.4b	<b>Overhaul:</b> Limited overhaul	m3/km			RATE ONLY
93	8.3.4 8.3.4.1	<b>Particular Items</b> Shore trench opposite structure.	m	681		R -
94	8.3.4.2 8.3.4.2a	<b>Temporary works: Control water inflow</b> Provide equipment.	Sum	1		R -
95	8.3.4.2b	Operate and maintain	DAY			RATE ONLY
96	8.3.4.2c	Remove equipment.	Sum	1		R -
<b>SANS 1200DK</b>		<b>GABIONS AND PITCHING</b>				
97	8.2.4 8.2.4a	<b>Geotextile or membrane.</b> 2mm HDPE Flexible Geomembrane Lining	m2	7630		R -
	8.2.5	<b>Pitching</b>				
98	8.2.5.1a	<b>450mm HEADWALL</b> Build 230mm brick wall for the headwall, on 30Mpa concrete slab including blocks and footing, plaster internal and external brick walls for depths: Up to 1.5m (per Engineers detail)	No	8		R -
99	8.2.5.1b	Medium duty grouted stone pitching	m2	81		R -
100	8.2.6	<b>MISCELLANEOUS:</b> Connecting existing culvert and headwall to connect to ponds	No	1		R -
101	8.2.7	Ponds ( to be cleaned and, repaired and reinstated)	No	2		R -
102	8.2.7.a	Existing pond infills as indicated by the Engineer	m2	200		R -
103	8.2.7.b	De-silt, clean and reshape existing detention ponds	No	2		R -
		<b>STORMWATER PIPES</b>				
<b>SANS 1200DB</b>		<b>TRENCHES FOR STORMWATER PIPES</b>				
104	8.3.1 8.3.1c	Site Clearance and (if specified) removal of topsoil Remove topsoil to a depth of 150mm.	m2	159		R -
	8.3.2	<b>Excavate in all materials for stormwater trenches, backfill, compact and dispose of surplus material:</b>				
105	8.3.2.2 8.3.2.2b	<b>Pipes over 125 mm dia up to 400 mm dia for depths:</b> Over 1,0 m up to 2,0 m	m	61		R -
106	8.3.2.4 8.3.2.4b	<b>Pipes over 550 mm dia up to 700 mm dia for depths:</b> Over 1,0 m up to 2,0 m	m	56		R -
107	8.3.2b 8.3.2b1	<b>Extra over excavation for stormwater pipe trenches for:</b> Intermediate excavation	m3	12		R -
108	8.3.2b2	Hard rock excavation	m3	6		R -
109	8.3.2 8.3.2a	<b>Backfilling:</b> Backfill stabilized with 5% cement where directed by the Engineer	m3	74		R -
110	8.3.4 8.3.4.1	<b>Particular Items</b> Shore trench opposite structure.	m	118		R -
111	8.3.4b 8.3.4b.1	<b>Temporary works: Control water inflow</b> Provide equipment	sum	1		R -
112	8.3.4b.2	Operate and maintain	days			RATE ONLY
	8.3.4b.3	Remove equipment	sum	1		R -
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
	<b>SANS 1200LB</b>	<b>BEDDING (PIPES)</b>				
		<b>BEDDING FOR STORMWATER PIPES</b>				
	8.2.2	<b>Supply of Bedding by Importation</b>				
	8.2.2.1	<b>From other necessary excavations (Provisional)</b>				
113	8.2.2.1a	Selected granular material	m3	38	R	-
114	8.2.2.1b	Selected fill material	m3	15	R	-
	<b>SANS 1200LE</b>	<b>STORMWATER DRAINAGE</b>				
	8.2.1	<b>Supply and Lay Concrete Pipes culverts on class B bedding:</b>				
	8.2.1.1	<b>Class 100D pipes:</b>				
115	8.2.1.1a.1	300 mm dia	m	8	R	-
116	8.2.1.1a.2	350 mm dia	m	16	R	-
117	8.2.1.1a.3	375 mm dia	m	38	R	-
118	8.2.1.1d	600 mm dia	m	56	R	-
119	8.2.15	<b>Geofabric</b>				
	8.2.15a	A2 geofabric wrapped around concrete pipe joints (minimum width 750mm diameter)	m	118	R	-
120	8.2.19	Joining with existing network	Sum	1	R	-
		<b><u>THE FOLLOWING TO PIPE JACKING</u></b>				
	<b>SANS 1200LG</b>	<b>PIPE JACKING</b>				
	8.2.1	<b>Jacking establishment</b>				
121	8.2.1a	Fixed charges	Sum	1	R	-
122	8.2.1b	Time related charges	Sum	1	R	-
	8.2.2	<b>Supply of Pipes to be Jacked</b>				
123	8.2.2a	750mm Diameter Class 100D concrete pipes	m	94	R	-
	8.2.3	<b>Jacking of Pipes</b>				
124	8.2.3a	750mm Diameter Class 100D concrete pipes	m	94	R	-
	8.2.4	<b>Excavation for jacking</b>				
125	8.2.4a	Intermediate excavation	m3	12	R	-
126	8.2.4b	Hard rock excavation	m3	6	R	-
	8.2.9	<b>Stabilization of Unstable Areas or Grouting of Voids where Ordered</b>				
127	8.2.9a	Provision and establishment of equipment on site, and removal on completion of operation.	Sum	1	R	-
128	8.2.9b	Operation of equipment	DAY			RATE ONLY
129	8.2.9c	Materials used.	DAY			RATE ONLY
130	8.2.10	Standing time for pipe jacking gang and the jacking equipment covered by item 8.2.1	Hrs			RATE ONLY
		<b>MISCELLANEOUS:</b>				
131	8.3.1.a	Stormwater pipes (De-silt, pressure clean and flow test existing concrete channels, pipes and down chutes)	m	220	R	-
132	8.3.1.b	Blocking existing pipe	No	4	R	-
133	8.2.11	Restricted excavation in all materials for pipe jacking end pits and stormwater pipe route & junctions, compaction to 93% Mod AASHTO density. Inclusive of all benching volumes and haulage.	m3	26	R	-
		<b>Testing</b>				
134	8.2.12	Testing drainage pipe system	Item	1	R	-
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
<b><u>THE FOLLOWING TO MANHOLES</u></b>						
<b>SANS 1200DA EARTHWORKS (SMALL WORKS)</b>						
<b>8.3.1 Excavation</b>						
135	8.3.1a	Remove topsoil to nominal depth of 150mm, stockpile and maintain.	m2	372	R	-
136	8.3.1b	Excavate in all material and use for backfill or embankment or dispose, as ordered.	m3	443	R	-
<b>8.3.2 Extra over for</b>						
137	8.3.2.b.1	Intermediate excavation.	m3	44	R	-
138	8.3.2.b.2	Hard rock	m3	22	R	-
<b>8.3.2 Backfilling:</b>						
139	8.3.2a	Backfill stabilized with 5% cement where directed by the Engineer	m3	285	R	-
<b>8.3.4 Particular Items</b>						
140	8.3.4a	Shore trench opposite structure.	m	72	R	-
<b>8.3.4b Temporary works: Control water inflow</b>						
141	8.3.4b.1	Provide equipment	Sum	1	R	-
142	8.3.4b.2	Operate and maintain	days		RATE ONLY	
143	8.3.4b.3	Remove equipment	Sum	1	R	-
<b>SANS 1200LE STORMWATER DRAINAGE</b>						
<b>8.2.8 Supply and Install Manholes, Catchpits, etc.</b>						
144	8.2.8a	Manholes (Type SD3 MH)	No	12	R	-
145	8.2.8a.1	Manholes: MH06, layout shows Type SD5, contractor to use detail Type SD2	No	1	R	-
146	8.2.8c	Extra over or under item (a) above for variation in depth of manholes from the standard depth.	m	16	R	-
<b>8.2.10 Accessories</b>						
147	8.2.10a	Manhole covers including frames per Engineers specifications	No	13	R	-
<b>8.2.22 MISCELLANEOUS:</b>						
148	8.2.22	Catchpit and manholes (to be cleaned and , repaired and reinstated)	No	12	R	-
<b><u>THE FOLLOWING IN RE-INSTATING ASPHALT</u></b>						
<b>SANS 1200DM EARTHWORKS (ROADS, SUBGRADE)</b>						
<b>8.3.3 Treatment of road bed:</b>						
<b>8.3.3a Road bed preparation and compaction of material to:</b>						
149	8.3.3a.1	Scarify in situ material to a depth of 150 mm and compact to 95% of modified AASHTO density	m3	12	R	-
150	8.3.5a	G2 Graded crushed stone minimum of 88% of bulk relative density	m3	12	R	-
151	8.3.5b	C1 Compacted to 98% Mod AASHTO density	m3	24	R	-
<b>8.3.12 Overhaul:</b>						
152	8.3.12a	Limited overhaul (provisional)	m3/km		RATE ONLY	
<b>SANS 1200MH ROADS - ASPHALT BASE AND SURFACING</b>						
<b>8.5.4 Modified bitumen, Salviacim or equivalent</b>						
<b>8.5.4.2 50 mm thick:</b>						
153	8.5.4.2a	Continuously graded bitumen 60/70 penetration grade	t	9	R	-
<b>TOTAL CARRIED FORWARD</b>						R -



ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
	<b>SANS 1200D 8.3.6</b>	<b><u>DISPOSAL OF CONTAMINATED EXCAVATED MATERIAL</u> EARTHWORKS Overhaul Extra over for the haulage and disposal of contaminated excavated material, in accordance with the following</b>				
154		Collect a sample of the extracted sediment	Sum	1	R	-
155		Send the sediment sample to a qualified laboratory for waste analysis to determine the Hazardous waste classification, Obtain and provide a Safety Data Sheet (SDS).	Sum	1	R	-
156		Provide the Skips suitable for the transporting of the sediment	m3	11 896	R	-
157		Transport the waste sediment to an approved Hazardous waste landfill site and dispose of the sediment	m3	11 896	R	-
158		Provide Transnet Port Terminals with the Safe Disposal Certificate	Sum	1	R	-
<b>TOTAL CARRIED TO SUMMARY</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
		<b>SECTION 5 : STOCKPILE</b>		-		
		<b>NOTE</b> Tenderers are to price this Schedule strictly in accordance with the Specifications and SANS 1200, where a conflict arises between these two documents the Specifications shall take precedence. Where a conflict arises between this Schedule and the Specifications, the Specifications shall take precedence. Tenderers shall study the Drawings before pricing this Schedule and the Schedule shall be priced to provide the complete Works.  To be read in conjunction with but not limited to the following Project Technical Specification(s) : - Civil and Structural :				
	<b>SANS 1200C</b>	<b>SITE CLEARANCE</b>				
	8.2.1	<b>Clear and grub</b>				
1	8.2.1a	Area designated by the engineer	m2	1 000	R	-
2	8.2.1c	Clear Temporary stack and stockpile areas	m2	1 000	R	-
		<b>MISCELLANEOUS:</b>				
3	8.2.1b	Regrade area and remove depressions to ensure natural drainage	m2	1 000	R	-
4	8.2.10	Remove topsoil to a nominal depth of 150mm and stockpile on Site	m2	800	R	-
	8.2.7	<b>Dismantle and remove pipelines, electricity transmission lines, cables, etc.</b>				
5	8.2.7.1	Demolition of existing manholes 1.0m to 2m deep including excavation and breaking down of concrete, loading, unloading and haulage of all material to and approved Municipal spoil site	No	14	R	-
6	8.2.7.2	Demolish and remove existing 100mm UPVC pipes	m	1 352	R	-
7		Demolish and remove existing 300 diameter Stormwater pipes	m	30	R	-
8	8.2.7.3	Demolition of existing Headwall including excavation and breaking down of concrete, loading, unloading and haulage of all material to an approved Municipal spoil site.	No	1	R	-
9	8.2.7.4	Block existing channel to the separator	No	2	R	-
		<b>Transport materials and debris to unspecified sites and dump (Provisional)</b>				
10	8.2.9a	Transport materials and debris to unspecified Site and dump	m3/km			RATE ONLY
	<b>SANS 1200 D</b>	<b>EARTHWORKS</b>				
	8.3.8	<b>Existing Services</b>				
	8.3.8.1	<b>Location and exposing existing services</b>				
11	8.3.8.1b	Site survey by ground-penetrating radar and cable detector	Sum	1	R	-
12	8.3.8.1c	Hand excavation for locating and exposing existing services:	Day work			RATE ONLY
	8.3.8.2	<b>Services at risk because of construction of earthworks</b>				
13	8.3.8.2c	Temporary protection of unknown service	SUM	1	R	-
		<b>THE FOLLOWING TO STORMWATER MANHOLES</b>				
	<b>SANS 1200DB</b>	<b>EARTHWORKS (PIPE TRENCHES)</b>				
	8.2.8	<b>EXCAVATION FOR STORMWATER MANHOLES</b> <b>Excavate in all materials for stormwater manholes, backfill, compact and dispose of surplus material:</b>				
14	8.2.8a	Over 0,5m up to 1,5 m	m3	49	R	-
15	8.2.8a	Over 1,5 m up to 2,5 m	m3	134	R	-
16	8.2.8a	Over 2,5 m up to 3,5 m	m3	80	R	-
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
17	8.3.2 8.3.2.b.1	<b>Extra over excavations for:</b> Intermediate excavation.	m3	19	R	-
18	8.3.2.b.2	Hard rock excavation.	m3	9	R	-
19	8.3.2 8.3.2a	<b>Backfilling:</b> Backfill stabilized with 5% cement where directed by the Engineer	m3	291	R	-
20	8.3.3.4 8.3.3.4b	<b>Overhaul:</b> Truck haul	m3/km			RATE ONLY
21	8.3.4 8.3.4a	<b>Particular Items</b> Shore trench opposite structure.	m	224	R	-
22	8.3.4b 8.3.4b.1	<b>Temporary works: Control water inflow</b> Provide equipment	sum	1	R	-
23	8.3.4b.2	Operate and maintain	days			RATE ONLY
24	8.3.4b.3	Remove equipment	sum	1	R	-
<b>SANS 1200LE</b>		<b>STORMWATER DRAINAGE</b>				
25	8.2.8 8.2.8a	<b>Supply and install Ultra heavy duty manhole type SD3 complete including blinding, reinforced concrete base, brickwork, internal plaster, cement mortar rendering, and support for cover and frame.</b> Over 0,5m up to 1,5m	No	7	R	-
26	8.2.8a	Over 1,5m up to 2,5m	No	13	R	-
	8.2.8a	Over 2,5m up to 3,5m	No	5	R	-
		<b>THE FOLLOWING TO STORMWATER PIPES</b>				
<b>SANS 1200 DB</b>		<b>EARTHWORKS (PIPE TRENCHES)</b>				
		<b>TRENCHES FOR STORMWATER PIPES</b>				
27	8.3.2 8.3.2.2 8.3.2.2a	<b>Excavate in all materials for stormwater trenches, backfill, compact and dispose of surplus material:</b> <b>Pipes over 125 mm dia up to 400 mm dia for depths:</b> Up to 1,0 m	m	54	R	-
28	8.3.2.2b	Over 1,0 m up to 2,0 m	m	95	R	-
29	8.3.2.3 8.3.2.3b	<b>Pipes over 400 mm dia up to 550 mm dia for depths:</b> Over 1,0 m up to 2,0 m	m	443	R	-
30	8.3.2.4 8.3.2.4b	<b>Pipes over 550 mm dia up to 700 mm dia for depths:</b> Over 1,0 m up to 2,0 m	m	500	R	-
31	8.3.2.4c	Over 2,0 m up to 3,0 m	m	753	R	-
32	8.3.2.4d	Over 3,0 m up to 4,0 m	m	21	R	-
33	8.3.2.b 8.3.2.b.1	<b>Extra over excavation for pipe trenches for:</b> Intermediate excavation.	m <sup>3</sup>	234	R	-
34	8.3.2.b.2	Hard rock excavation.	m <sup>3</sup>	117	R	-
35	8.3.3.4 8.3.3.4b	<b>Overhaul:</b> Truck haul	m3/km			RATE ONLY
36	8.3.4 8.3.4a	<b>Particular Items</b> Shore trench opposite structure.	m	1 866	R	-
37	8.3.4b 8.3.4b.1	<b>Temporary works: Control water inflow</b> Provide equipment	sum	1	R	-
38	8.3.4b.2	Operate and maintain	days			RATE ONLY
39	8.3.4b.3	Remove equipment	sum	1	R	-
40	8.2.15	<b>Geofabric</b> A2 geofabric wrapped around concrete pipe joints (minimum width 750mm diameter)	m	1 866	R	-
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						R -
		<b>MISCELLANEOUS:</b>				
41	8.3.1d	<b>Cleaning of Existing structures</b> Clean and repair existing channel approximately 1m wide	m	678		R -
	<b>SANS 1200LB</b>	<b>BEDDING (PIPES)</b>				
		<b>BEDDING FOR STORMWATER PIPES</b>				
	8.2.2	<b>Supply only of Bedding by Importation</b>				
42	8.2.2.3	<b>From other necessary excavations (Provisional)</b>				
	8.2.2.3a	Selected granular material.	m3	940		R -
43	8.2.2.3b	Selected fill material.	m3	940		R -
	8.2.5	<b>Overhaul of material for bedding cradle and selected fill blanket. (Provisional)</b>				
44	8.2.5	Limited overhaul	m3/km			RATE ONLY
		<b>THE FOLLOWING TO PONDS</b>				
	<b>SANS 1200D</b>	<b>EARTHWORKS - SITE PREPARATION</b>				
	<b>8.3.2</b>	<b>Bulk excavation</b>				
	8.3.2.a	<b>Excavate in all materials and use for embankment or backfill or dispose, as ordered:</b>				
45	8.3.2.a1	for ponds	m3	16 859		R -
	8.3.2b	<b>Extra over bulk excavation for:</b>				
46	8.3.2b1	Intermediate excavation	m3	736		R -
47	8.3.2b2	Hard rock excavation	m3	368		R -
	8.3.4	<b>Importing of Materials</b>				
	8.3.4a	<b>Commercial sources</b>				
48	8.3.4a1	150mm Clay layer	m3	2 849		R -
49	8.3.4a2	150mm Silt layer	m3	2 846		R -
	<b>8.3.6</b>	<b>Overhaul:</b>				
50	8.3.6b	Long haul	m3/km	-		RATE ONLY
	8.3.4b	<b>Temporary works: Control water inflow</b>				
51	8.3.4b.1	Provide equipment.	sum	1		R -
52	8.3.4b.2	Operate and maintain.	days			RATE ONLY
53	8.3.4b.3	Remove equipment.	sum	1		R -
	<b>SANS 1200DB</b>	<b>EARTHWORKS(PIPE TRENCHES)</b>				
		<b>Compaction to pond</b>				
54	8.3.3.3	150mm Clay layer compacted to 95% MOD ASSHTO	m3	2 849		R -
55	8.3.3.3	150mm Silt layer compacted to 95% MOD ASSHTO	m3	2 846		R -
	<b>SANS 1200DK</b>	<b>GABIONS AND PITCHING</b>				
	8.2.4	<b>Geotextile or membrane.</b>				
56	8.2.4a	2mm HDPE Flexible Geomembrane Lining	m2	9 495		R -
	8.2.5	<b>Pitching</b>				
57	8.2.5.1b	Medium duty grouted stone pitching	m2	128		R -
	<b>SANS1200LE</b>	<b>MISCELLANEOUS:</b>				
		<b>STORMWATER DRAINAGE</b>				
58	8.2.14	Connecting existing culvert and headwall to connect to ponds	No	1		R -
		<b>450mm HEADWALL</b>				
59	8.2.5.1a	Build 230mm brick wall for the headwall, on 30Mpa concrete slab including blocks and footing, plaster internal and external brick walls for depths: Up to 1.5m (per Engineers detail)	No	8		R -
	8.2.8	<b>COMMUNICATION LINE</b>				
		<b>Excavate in all materials for Communication manholes, backfill, compact and dispose of surplus material:</b>				
60	8.2.8a	Over 0,5m up to 1,5 m	m3	3		R -
<b>TOTAL CARRIED FORWARD</b>						R -

ITEM NO	PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						
						R -
61	8.3.2 8.3.2.b.1	<b>Extra over excavations for:</b> Intermediate excavation.	m3	1		R -
62	8.3.2.b.2	Hard rock excavation.	m3	1		R -
63	8.3.2 8.3.2a	<b>Backfilling:</b> Backfill stabilized with 5% cement where directed by the Engineer	m3	5		R -
64	8.3.3.4 8.3.3.4b	<b>Overhaul:</b> Truck haul	m3/km			RATE ONLY
65	8.3.4 8.3.4a	<b>Particular Items</b> Shore trench opposite structure.	m	14		R -
66	8.3.4b 8.3.4b.1	<b>Temporary works: Control water inflow</b> Provide equipment	sum	1		R -
67	8.3.4b.2	Operate and maintain	days			RATE ONLY
68	8.3.4b.3	Remove equipment	sum	1		R -
	<b>SANS 1200LE</b>	<b>MANHOLES</b>				
69	8.2.8a	Supply and install new communications manholes, levels to be confirmed on site.	No	6		R -
		<b>THE FOLLOWING IN RE-INSTATING ASPHALT</b>				
	<b>SANS 1200DM</b>	<b>EARTHWORKS (ROADS, SUBGRADE)</b>				
70	8.3.3 8.3.3a 8.3.3a.1	<b>Treatment of road bed:</b> <b>Road bed preparation and compaction of material to:</b> Scarify in situ material to a depth of 150 mm and compact to 95% of modified AASHTO density	m3	6		R -
71	8.3.5a	G2 Graded crushed stone minimum of 88% of bulk relative density	m3	6		R -
72	8.3.5b	C1 Compacted to 98% Mod AASHTO density	m3	12		R -
73	8.3.12 8.3.12a	<b>Overhaul:</b> Limited overhaul (provisional)	m3/km			RATE ONLY
	<b>SANS 1200MH</b>	<b>ROADS - ASPHALT BASE AND SURFACING</b>				
74	8.5.4 8.5.4.2 8.5.4.2a	<b>Modified bitumen, Salviacim or equivalent</b> <b>50 mm thick:</b> Continuously graded bitumen 60/70 penetration grade	t	5		R -
	<b>SANS 1200D</b>	<b>DISPOSAL OF CONTAMINATED EXCAVATED MATERIAL</b>				
	<b>8.3.6</b>	<b>EARTHWORKS</b> <b>Overhaul</b> <b>Extra over for the haulage and disposal of contaminated excavated material, in accordance with the following</b>				
75		Collect a sample of the extracted sediment	Sum	1		R -
76		Send the sediment sample to a qualified laboratory for waste analysis to determine the Hazardous waste classification, Obtain and provide a Safety Data Sheet (SDS).	Sum	1		R -
77		Provide the Skips suitable for the transporting of the sediment	m3	19 206		R -
78		Transport the waste sediment to an approved Hazardous waste landfill site and dispose of the sediment	m3	19 206		R -
79		Provide Transnet Port Terminals with the Safe Disposal Certificate	Sum	1		R -
<b>TOTAL CARRIED TO SUMMARY</b>						
						R -

**Transnet Port Terminals**  
**Upgrade of the Stormwater Environmental System**  
**Bills of Quantities**  
**Summary Page**



SECTIONS	TOTAL
SECTION 0 : Preliminaries & General	R -
SECTION 1: Causeway Areas	R -
SECTION 2 : Multi-Purpose Terminal (MPT) Area	R -
SECTION 3 : Rail Embankment Area	R -
SECTION 4 : Tippler Area	R -
SECTION 5 : Stockpile Area	R -
PROVISIONAL SUM : Additional Ponds & Ancillary Works	R 31 000 000.00

TOTAL (EXCLUDING VAT)	R -
ALLOW VAT @15%	R -
TOTAL (INCLUDING VAT)	R -