SGR - drainage design and costing

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PASSENGER RAIL AGENCY OF SOUTH AFRICA

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Item	Description	Unit	Qty	Rate	Amount
	Denver station				
1	Clearing of existing debris/waste including carting away and pumping underground water out of the trench	Sum	1		
2	Chop/break the existing reinforced concrete floor slab and cart away spoil	m^3	12		
3	Restricted excavation for the perforated pitch fibre sub-soil pipes (300 x 300) as shown in the drawing including compaction to 90% modified AASHTO	m^3	20		
4	Lay 100mm dia perforated pitch fibre pipe (sub-soil drainage pipe) including 250 micron imprevious membrane (bidum) as shown in the drawing along the entire breadth of the station.rate to include compacting to 90% modified AASHTO and backfilling	m	50		
5	19mm crushed stone as shown in the drawing	m^3	20		
6	Cast concrete 25 Mpa (300mm x 200mm x 80m)	m^3	4.8		
7	Construct wing wall, headwall and apron slab for the eye of the sub-soil discharge point rate to include reinforcement, formwork as show in the drawing 25 mpa concrete	m^3	1.5		
8	Cast V-drain channel (500mm wide & 50mm thick)	m^3	3.5		
	Sub-total 1				
	Toronga station				
1	Clearing of existing debris/waste including carting away and pumping underground water out of the trench	Sum	1		
2	Chop/break the existing reinforced concrete floor slab and cart away spoil	m^3	12		
3	Restricted excavation for the perforated pitch fibre sub-soil pipes (300 x 300) as shown in the drawing including compaction to 90% modified AASHTO	m^3	20		
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7	Construct wing wall, headwall and apron slab for the eye of the sub-soil discharge point rate to include reinforcement, formwork as show in the drawing 25 mpa concrete	m^3	1.5		
8	Cast V-drain channel (500mm wide & 50mm thick)	m^3	3.5		
9	Install roof sheeting on the entrances of the sub-ways to prevent rain water from entering	Sum	1		
	Sub-total 2				
	Sub-Total 3 (Sub-total 2 +1)				
	20% contingences				
	Sub-Total 4 (Sub-total 3+ contingences)				
	15% VAT				
	Grand Total				

Designed by Anele Mgudane **Pr Tech Eng**
Programme Manager

Signed