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FLOOD DAMAGE REMEDIATION OF ZINNIA RD AND AZALEA RD IN WARD 10

BILL OF QUANTITIES**SECTION 1 PRELIMINARY AND GENERAL****PART AA PRELIMINARIES**

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>GENERAL CONDITIONS OF CONTRACT (GCC 2015) READ IN CONJUNCTION WITH THE CONTRACT DATA</u>				
1	GCC 2015	Fixed Charge obligations	sum	1		
2	GCC 2015	Time Related obligations	sum	1		
		<u>SANS 1921-1 : GENERAL ENGINEERING AND CONSTRUCTION WORKS READ IN CONJUNCTION WITH THE ASSOCIATED SPECIFICATION DATA IN THE SCOPE OF WORKS</u>				
3	SANS 1921-1	Fixed Charge Items	sum	1		
4	SANS 1921-1	Time Related Items	sum	1		
		<u>COMMUNITY LIAISON OFFICER</u>				
5	PS.15.1	Allow for a CLO to be appointed.	PC Sum	100000	1.00	100 000.00
6	PS.15.1	Allow for a percentage (%) mark-up on item 05	%	100000		
		<u>LOCAL LABOUR</u>				
7	PS.15.2	Allow for the weekly submission of proof of employment of local labour	week	16		
		<u>STAKEHOLDER MANAGEMENT AND LIAISON</u>				
8	PS.20	Stakeholder Management and Liaison	week	16		

TOTAL CARRIED TO SECTION 1 SUMMARY: PRELIMINARY AND GENERAL

R

PART AB GENERAL SPECIFICATIONS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	GCC.6.2.1	Surities	sum	1		
2	GCC.8.6.1.1	Workmans Compensation	sum	1		
3	GCC.8.6.1.1	Insurance of work, damage to persons and property etc.	sum	1		
4	AB.4	Contractor's Camp Site / Store Yard	sum	1		
5	AB.7	Initial supply of all signs, barricades and delineators	sum	1		
6	AB.7	Road Deviations	sum	1		
7	PS.AB.11	Proving of exising services by hand	m3	30		
8		Flushing/High Pressure Jetting of exising stormwater lines	PC Sum	60000	1.00	60 000.00

FLOOD DAMAGE REMEDIATION OF ZINNIA RD AND AZALEA RD IN WARD 10

Part Continued **PART** AB GENERAL SPECIFICATIONS

Item	Clause	Description	Unit	Quantity	Rate	Amount
9		Survey control for setting out of works	sum	1		
10	AB.6	Allowance for samples, geotechnical and acceptance testing by a SANAS Accredited Specialist Material Lab as required by the Engineer	PC Sum	15000	1.00	15 000.00
11		Contractors Markup on Item above	%	15000		
12		Allowance for the use of additional local labour	PC Sum	5000	1.00	5 000.00
13		Cost of Samples and Contractors Preliminary Site control Testing	sum	1		
		<u>TIME RELATED ITEMS</u>				
14		Allow for progress photographs (Contractor to submit BOTH a USB and CD weekly depicting works on site as required by the Engineer, be able to print out a minimum of 40 photographs in colour per month)	week	16		
15		Maintenance of Pedestrian and Traffic facilities	week	16		
16	AB.7	Maintenance of all signs, barricades and delineators	sum	1		
17		Contractors Superintendence	week	16		
18		Site Security	week	16		
19	PS.DW	Dayworks (TLB Hire)	hr	15		
20	PS.DW	Dayworks (LDV Hire)	hr	15		
21	PS.DW	Dayworks (Skilled Labour)	hr	15		
22	PS.DW	Dayworks (Unskilled Labour)	hr	15		

TOTAL CARRIED TO SECTION 1 SUMMARY: PRELIMINARY AND GENERAL

R

PART AH OCCUPATIONAL HEALTH and SAFETY

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	AH.14.1	Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	sum	1		
2	AH.14.2	Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	week	16		
3	AH.14.3	Submission of the Health and Safety File	sum	1		

TOTAL CARRIED TO SECTION 1 SUMMARY: PRELIMINARY AND GENERAL

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FLOOD DAMAGE REMEDIATION OF ZINNIA RD AND AZALEA RD IN WARD 10**SECTION 2 ZINNIA ROAD****PART B SITE CLEARANCE**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	B.8.2	General clearance and grubbing of road reserve(Either side of the existing roadway)	m2	20		
2	B.8.2	General clearing and grubbing on existing roadway	m2	20		
3	B.8.2	General clearance and grubbing in contractor's camp site	m2	400		
4	B.8.14	Removal of asphalt roadways to tip	m3	5		
5	B.8.10	Clearing and grubbing with the stream to open up entry/exit points of flow	m2	175		
6	B.8.5	Removal of wire mesh fence and store on site for re-use	m	50		
7		Removal of existing damaged gabion baskets and store on site for re-use	m3	10		
8		Removal of rockfill and spoil at spoil site	m3	5		

TOTAL CARRIED TO SECTION 2 SUMMARY: ZINNIA ROAD

R**PART C CONCRETE WORK**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PS.C.6	Grade 25/19 mass concrete to be used at Engineers discretion	m3	5		
2	PS C.6	Construct concrete chute using 25MPa concrete, Mesh REF 395, 150mm thick. Chute to have splays at entrance, stone pitching, and gabion mattresses. Include all necessary shuttering, formwork, expansion joints, weedkiller and finishing	m3	5		
3	PS C.6	Construct concrete slab using Grade 25/19 mass concrete for base of culvert, Mesh REF 395. Base dimensions 10m X 5.5m x 0.3 thick. Rate to include texturing, shuttering, curing of concrete pavemen and sealing of joints	m3	5		
4		Y10 (hot dipped galvanised) tie bars in longitudinal joints, 500mm in length	no.	30		
5		Construct 50mm thick concrete blinding for concrete base using grade25/19 mass concrete. Rate to include for all formwork, texturing and sealing of joints	m3	5		

TOTAL CARRIED TO SECTION 2 SUMMARY: ZINNIA ROAD

R

FLOOD DAMAGE REMEDIATION OF ZINNIA RD AND AZALEA RD IN WARD 10**PART DA EARTHWORKS : BULK**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	DA.8.3	Excavate unsuitable material and spoil at spoil site. The spoil site to be approved by Engineer prior to spoiling.	m3	45		
2	DA.8.3	Extra over above for excavation of intermediate material to spoil at spoil site. The spoil site is to be approved by Engineer prior to spoiling.	m3	10		
3	DA.4	Import suitable fill material (G7 or better Quality) from Contractor's off-site source and compact to 93% MOD A.A.S.H.T.O inclusive of haulage and royalties. Weedkiller to be included	m3	10		
4	DA.8.3	Rip and recompact 150mm insitu material (subgrade below formation) to 95% MOD A.A.S.H.T.O	m3	10		
5	DA.8.9	Formation	m2	40		
6	DA.8.6	Trimming of embankments	m2	40		
7	DA.8.10	Overhaul material in excess of freehaul distance of 1.0 km - spoil site to be approved by Engineer prior to spoiling.	m3 * km	15		

TOTAL CARRIED TO SECTION 2 SUMMARY: ZINNIA ROAD

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PART DB EARTHWORKS FOR PIPE TRENCHES

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	DB.8.5	Excavate and backfill in all material for 450 mm diameter pipe where depth is : Over 0,0 m and not exceeding 1,5 m	m	20		
2	DB.8.5	Extra over for excavation where depth exceed 1.5m	m	15		
3	DB.8.10	Placing and compacting of Class C bedding for 600 mm diameter pipe	m	10		
4	DB.8.13	Provision of clean coarse sand for backfilling pipe trenches from Contractors of-site source. Rate to include for placing and compacting of sand	m	10		
5	DD.8.2	Excavate in all material for pipe culvert foundation within the river bed to spoil. The spoil site is to be approved by the engineer prior to spoiling	m	20		

TOTAL CARRIED TO SECTION 2 SUMMARY: ZINNIA ROAD

R

PART DD EARTHWORKS FOR STRUCTURES

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	DD.8.2	Excavate in all material for gabion retaining structure to spoil at spoil site approved by Engineer	m3	10		

FLOOD DAMAGE REMEDIATION OF ZINNIA RD AND AZALEA RD IN WARD 10**Part Continued PART DD EARTHWORKS FOR STRUCTURES**

Item	Clause	Description	Unit	Quantity	Rate	Amount
2		Restricted excavation for Gabion basket bedding preparation. Rate to include for compaction	m3	10		
3	DD.8.3	Backfill and compact using imported suitable fill material (G7 or better) from contractor's off-site source and compact to 95% MOD A.A.S.H.T.O. Rate to include all haulage and royalties	m3	10		
4		Excavate in all material for headwalls to stockpile	m3	10		

TOTAL CARRIED TO SECTION 2 SUMMARY: ZINNIA ROAD**R****PART EB GRADED CRUSHED STONE**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	EB.8(1)	Supply, load, transport and process upper selected G5 graded crushed stone, 150 mm thick from commercial or off-site source, compacted to 95% MOD A.A.S.H.T.O	m3	6		
2	EB.8(1)	Supply, load, transport and process upper selected G2 graded crushed stone, 150 mm thick from commercial or off-site source, compacted to 95% MOD A.A.S.H.T.O	m3	6		
3	EB.8(2)	Supply and apply prime coat at 0.6l/m2	m2	50		

TOTAL CARRIED TO SECTION 2 SUMMARY: ZINNIA ROAD**R****PART ED ROAD ASPHALT**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	ED.8.1	Continuously graded wearing course of thickness 40mm SA-S14. Private Plant Asphalt Sa-S14. Bitumen content 5% as per mix design entered at time of use.	t	5		
2	AA.ED	Saw cut existing road edge. Saw Cut to expose 50mm wide G2 layer of the existing roadway to aid as a key between existing and new asphalt wearing course	m	25		
3	ED.8.	Patching of existing road surface	t	1		

TOTAL CARRIED TO SECTION 2 SUMMARY: ZINNIA ROAD**R****PART F PROTECTION WORKS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	F.8.1	Supply and lay of PVC coated (1.0m X 1.0m X 2.0m) Gabion boxes as per the detailed drawing. Rate to include for stone and geofabric as surround to cage	m3	16		

FLOOD DAMAGE REMEDIATION OF ZINNIA RD AND AZALEA RD IN WARD 10**Part Continued PART F PROTECTION WORKS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
2	F.8.1	Supply and lay of PVC coated (1.0m X 1.5m X 2.0m) Gabion boxes as per the detailed drawing. Rate to include for stone and geofabric as surround to cage	m3	35		
3	F.8.1	Supply and lay of PVC coated (1.0m X 2.0m X 2.0m) Gabion boxes as per the detailed drawing. Rate to include for stone and geofabric as surround to cage	m3	10		
4		Reinstatement of fence	m	50		
5	F.8.1	Imported topsoil: thickness 100 mm	m2	40		
6	F.8.1	Supply and lay of PVC coated 2.0m X 1.0m X 300mm deep Gabion gabion mattress. Rate to include stone and geofabric as surround to cage	m3	2		

TOTAL CARRIED TO SECTION 2 SUMMARY: ZINNIA ROAD**R****PART PG NON PRESSURE PIPELINES and PC CULVERTS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PG.8.2	450 mm diameter concrete Class 100D	m	20		

TOTAL CARRIED TO SECTION 2 SUMMARY: ZINNIA ROAD**R****PART PH MANHOLES and APPURTENANT DRAINAGE WORKS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PH.4	Inlet and Outlet headwalls at entry/exit points of stream	no.	2		

TOTAL CARRIED TO SECTION 2 SUMMARY: ZINNIA ROAD**R**

FLOOD DAMAGE REMEDIATION OF ZINNIA RD AND AZALEA RD IN WARD 10**SECTION 3 AZALEA ROAD****PART B SITE CLEARANCE**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	B.8.2	General clearance and grubbing of road reserve(Either side of the existing roadway)	m2	10		
2	B.8.2	General clearing and grubbing on existing roadway	m2	5		
3	B.8.14	Removal of asphalt roadways to tip	m3	2		
4	B.8.10	Clearing and grubbing with the stream(Removal of stones, grass trees within the stream) to open up entry/exit points of flow	m2	200		
5	B.8.5	Removal of wire mesh fence and store on site for re-use	m	30		
6		Removal of brickwork - Demolish to tip	m3	5		
7		Removal of existing gabions and spoil at tip	m3	10		

TOTAL CARRIED TO SECTION 3 SUMMARY: AZALEA ROAD**R****PART C CONCRETE WORK**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PS.C.6	Grade 25/19 mass concrete to be used at Engineers discretion	m3	10		
2	PS C.6	Construct concrete chute using 25MPa concrete, Mesh REF 395, 150mm thick. Chute to have splays at entrance, stone pitching, and gabion mattresses. Include all necessary shuttering, formwork, expansion joints, weedkiller and finishing	m3	7		
3	PS C.6	Construct concrete slab using Grade 25/19 mass concrete for base of culvert, Mesh REF 395. Base dimensions 10m X 5.5m x 0.3 thick. Rate to include texturing, shuttering, curing of concrete pavemen and sealing of joints	m3	5		
4		Y10 (hot dipped galvanised) tie bars in longitudinal joints, 500mm in length	no.	50		
5		Construct 50mm thick concrete blinding for concrete base using grade25/19 mass concrete. Rate to include for all formwork, texturing and sealing of joints	m3	5		

TOTAL CARRIED TO SECTION 3 SUMMARY: AZALEA ROAD**R**

FLOOD DAMAGE REMEDIATION OF ZINNIA RD AND AZALEA RD IN WARD 10

PART DA EARTHWORKS : BULK

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	DA.8.3	Excavate unsuitable material and spoil at spoil site. The spoil site to be approved by Engineer prior to spoiling.	m3	30		
2	DA.8.3	Excavate soft material and spoil at spoil site. The spoil site to be approved by Engineer prior to spoiling.	m3	15		
3	DA.4	Import suitable fill material (G7 or better Quality) from Contractor's off-site source and compact to 93% MOD A.A.S.H.T.O inclusive of haulage and royalties. Weedkiller to be included	m3	30		
4	DA.8.3	Rip and recompact 150mm insitu material (subgrade below formation) to 95% MOD A.A.S.H.T.O	m3	10		
5	DA.8.9	Formation	m2	120		
6	DA.8.6	Trimming of embankments	m2	40		
7	DA.8.10	Overhaul material in excess of freehaul distance of 1.0 km - spoil site to be approved by Engineer prior to spoiling.	m3 * km	15		

TOTAL CARRIED TO SECTION 3 SUMMARY: AZALEA ROAD

R

PART DD EARTHWORKS FOR STRUCTURES

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	DD.8.2	Excavate in all material for gabion retaining structure to spoil at spoil site approved by Engineer	m3	80		
2		Restricted excavation for gabion basket bedding preparation. Rate to include for compaction	m3	25		
3	DD.8.3	Backfill and compact using imported suitable fill material (G7 or better) from contractor's off-site source and compact to 95% MOD A.A.S.H.T.O. Rate to include all haulage and royalties	m3	150		
4		Excavate in all material for headwall endwings to stockpile	m3	20		
5	DD.8.2	Excavate in all material for box culvert / pipe culvert structure to spoil at spoil site approved by Engineer	m3	30		
6	DD.8.2	Excavate in all material for culvert (pipe or box) foundation within the river bed to spoil. The spoil site is to be approved by the Engineer prior to spoiling DD5Excavate in all material for culvert pipe foundation within the river bed to spoil. The spoil site is to be approved by the engineer prior to spoiling	m3	10		

FLOOD DAMAGE REMEDIATION OF ZINNIA RD AND AZALEA RD IN WARD 10

PART DD EARTHWORKS FOR STRUCTURES

Item	Clause	Description	Unit	Quantity	Rate	Amount
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TOTAL CARRIED TO SECTION 3 SUMMARY: AZALEA ROAD

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PART EB GRADED CRUSHED STONE

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	EB.8(1)	Supply, load, transport and process upper selected G5 graded crushed stone, 150 mm thick from commercial or off-site source, compacted to 95% MOD A.A.S.H.T.O	m3	12		
2	EB.8(1)	Supply, load, transport and process upper selected G2 graded crushed stone, 150 mm thick from commercial or off-site source, compacted to 95% MOD A.A.S.H.T.O	m3	12		
3	EB.8(2)	Supply and apply prime coat at 0.6l/m2	m2	60		

TOTAL CARRIED TO SECTION 3 SUMMARY: AZALEA ROAD

R

PART ED ROAD ASPHALT

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	ED.8.1	Continuously graded wearing course of thickness 40mm SA-S14. Private Plant Asphalt Sa-S14. Bitumen content 5% as per mix design entered at time of use.	t	10		
2	AA.ED	Saw cut existing road edge. Saw Cut to expose 50mm wide G2 layer of the existing roadway to aid as a key between existing and new asphalt wearing course	m	15		

TOTAL CARRIED TO SECTION 3 SUMMARY: AZALEA ROAD

R

PART F PROTECTION WORKS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	F.8.1	Supply and lay of PVC coated (1.0m X 1.0m X 2.0m) gabion baskets as per the detailed drawing. Rate to include for stone and geofabric to surround	m3	40		
2	F.8.1	Supply and lay of PVC coated (1.0m X 1.5m X 2.0m) gabion baskets as per the detailed drawing. Rate to include for stone and geofabric to surround	m3	80		
3		Supply and lay of PVC coated (1.0m X 2.0m X 2.0m) gabion baskets as per the detailed drawing. Rate to include for stone and geofabric to surround	m3	10		
4	F.8.1	Imported topsoil: thickness 100 mm	m2	10		

FLOOD DAMAGE REMEDIATION OF ZINNIA RD AND AZALEA RD IN WARD 10**Part Continued PART F PROTECTION WORKS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
5	F.8.1	Supply and lay of PVC coated 2.0m X 1.0m X 300mm deep Gabion gabion mattress. Rate to include stone and geofabric as surround to cage	m3	15		

TOTAL CARRIED TO SECTION 3 SUMMARY: AZALEA ROAD**R****PART PG NON PRESSURE PIPELINES and PC CULVERTS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PG.8.7	Standard precast concrete portal culvert Class C - 1200 x 1200 mm	m	45		
2	PG.8.7	1200mm dia concrete pipe Class 100D	m	45		

TOTAL CARRIED TO SECTION 3 SUMMARY: AZALEA ROAD**R****PART PH MANHOLES and APPURTENANT DRAINAGE WORKS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1		Inlet and Outlet Headwall for entry/exit point of culvert	no.	2		

TOTAL CARRIED TO SECTION 3 SUMMARY: AZALEA ROAD**R**

SUMMARY OF BILL OF QUANTITIES

Section

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	B	SITE CLEARANCE	R	
	C	CONCRETE WORK	R	
	DA	EARTHWORKS : BULK	R	
	DB	EARTHWORKS FOR PIPE TRENCHES	R	
	DD	EARTHWORKS FOR STRUCTURES	R	
	EB	GRADED CRUSHED STONE	R	
	ED	ROAD ASPHALT	R	
	F	PROTECTION WORKS	R	
	PG	NON PRESSURE PIPELINES and PC CULVERTS	R	
	PH	MANHOLES and APPURTENANT DRAINAGE WORKS	R	
3	AZALEA ROAD		R	
	B	SITE CLEARANCE	R	
	C	CONCRETE WORK	R	
	DA	EARTHWORKS : BULK	R	
	DD	EARTHWORKS FOR STRUCTURES	R	
	EB	GRADED CRUSHED STONE	R	
	ED	ROAD ASPHALT	R	
	F	PROTECTION WORKS	R	
	PG	NON PRESSURE PIPELINES and PC CULVERTS	R	
	PH	MANHOLES and APPURTENANT DRAINAGE WORKS	R	
SUB TOTAL			R	
ADD VAT (15%) - (only if a registered VAT Vendor)			R	
TOTAL CARRIED TO FORM OF TENDER			R	