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# TECHNICAL REPORT: MIG PROJECT (2017/2018) - Allandridge/Nyakallong uPVC pipes

PROVINCE : FREE STATE

DISTRICT MUNICIPALITY : LEJWELEPUTSWA

LOCAL AUTHORITY : MATJHABENG FS204

LONGITUDE	26° 38' 58"
LATITUDE	27° 46' 39"

DESCRIPTION OF SCHEME : Replacement of old galvanised pipes with uPVC pipes at

PROJECT REFERENCE NO. : N/A

TECHNICAL REPORT DATE : September 2017 and revised report October 2017  
DATE RECEIVED : October 2017

NUMBER OF PEOPLE SERVED : 10% of total 18 000

TOTAL COST OF SCHEME : R 6 682 316.78

MIG FUNDS ALLOCATED : R 6 682 316.78 incl VAT

EXISTING WATER SUPPLY : Existing infrastructure is as follows:

## WATER SOURCE

Allandridge and Nyakallong receives water directly from Sedibeng Water. This water is treated at the Sedibeng Water's Bulkfontein Water Treatment Plant (WTP) situated outside Bothaville. The WTP plant has a capacity of 360MI/Day. 215MI/Day is delivered to various communities in 3 different Municipalities, only 3.25 MI/d is supplied to Allandridge and Nyakallong and delivered via a 250mm uPVC CL12 pipe that was recently replaced.

## COST ESTIMATE

Allanridge

ITEM	DESCRIPTION	AMOUNT
1	Site Clearance	R 80 460,00
2	Excavations	R 112 644,00
3	Excavations in rock.	R 18 774,00
4	Breaking of existing services.	R 25 000,00
5	Supply & Lay 200mm Dia. HDPE Class 9 pipe (approximately 894m).	R 603 450,00
6	Bedding	R 59 451,00
7	Backfilling.	R 23 467,50
8	Road Crossing	R 22 750,00
9	Construction of Valve Boxes	R 125 000,00
10	Supply & Installation of Valves and gauges.	R 157 500,00
11	Reinstate Existing Services (Paving)	R 12 600,00
12	Reinstate Existing Services (Concrete Slabs)	R 8 400,00
13	Reinstate Existing Services (Grass)	R 1 155,00
14	Repairing of leaks at House connections where necessary.	R 65 000,00
Sub-Total 1		R 1 315 651,50
Plus: Preliminaries & Generals 25%		R 328 912,88
Sub-Total 2		R 1 644 564,38
Plus: Contingencies		R 411 141,09
Sub-Total 3: Total Estimated Construction Costs		R 2 055 705,47
Allowance for Professional Fees (Inclusive of Supervision, monitoring & Disbursements)		R 356 057,35
Sub-Total 4		R 2 411 762,82
Plus: Allowance for VAT		R 337 646,79
TOTAL PROJECT ESTIMATED COSTS		R 2 749 409,61

LEGAL REQUIREMENTS:

: The necessary environmental impact assessment, authorisation licence, permit application, rezoning and servitude in terms of the various acts must be applied for, where applicable, before the construction of the project can commence.

GENERAL REMARKS:

The current network doesn't have sufficient valves to allow for isolation during maintenance. When there are breakages, the technical team is forced to close and drain the entire network so that they can commence with repairs. Existing Isolation Valves and Fire Hydrants will also be checked for functionality and compliance as some of the valves were found leaking while others are tight and cannot be opened or closed. Allowance for repairs and replacement has been made in the contract for such work.

The total existing pipe length is 33km and the pipe which needs to be replaced is only 893m in Allamridge and 1700m in Nyakallong of the old galvanized pipes will be replaced under this contract; the rest of the AC pipes will still be replaced in phases by the municipality in accordance with their Infrastructure Development Plan.

After completion of replacement of this section the water supply should be assessed and as indicated in the report the savings on water losses should be reported in the following phases.

PRESSURE MANAGEMENT

Allamridge and Nyakallong area are currently receiving water directly from Sedibeng Water through a 250mm diameter pipe at a pressure of approximately 3,0 bar. This pressure is within the design limit. However, it was indicated in the report that HDPE pressure couplings tends to leak and dislocate at house connection to the main water pipe supply. This could be as a result of previous poor workmanship.

When water is not been utilized, pressure builds up in the entire system causing vulnerable areas where pipes are not properly installed to dislocate. This causes leaks in the system. As part of this project, allowance has been made for inspecting stands where leaks have been identified, for repairs.

It is indicated in the report that out of 900 connections in Allamridge only 300 connections are metered, the reason for not metering is not indicated. This is not an ideal situation and needs to be addressed.