



GENERAL NOTES:

- THIS DESIGN WAS ENGINEERED BY:
SEA PROJECTS AND ENGINEERING (PTY) LTD
- ALL MATERIALS AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS PROJECT SPECIFICATIONS.
 - ALL DIMENSIONS IN MILLIMETERS.
 - ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
 - ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL CIVIL ENGINEERING WORKS.
 - FINAL POSITION TO BE DETERMINED ON SITE.
 - ALL CONCRETE MIXES TO BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
 - EXCAVATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
 - ALL MASS CONCRETE TO BE 15MPa/10 UNLESS STATED OTHERWISE BY THE ENGINEER.
 - BENCHING SHALL BE FINISHED WITH A 20mm DOLOMITIC LAYER PLACED WHILE CONCRETE IS STILL GREEN AND STEEL FLOAT TO SMOOTH FINISHED.
 - BACKFILL TO BE DONE WITH G5 MATERIAL COMPACTED IN LAYERS OF 150mm THICK TO 95% MOD RASBIT AT OMC.
 - CHANNELING MUST BE BUILT WITH GLAZED EARTHENWARE OR FIBRE CEMENT CHANNEL RECESSED INTO CONCRETE FOUNDATION.
 - EXCAVATION PRIOR TO TRENCH EXCAVATIONS AND CONFIRM LEVELS.
 - COMPACTION OF BEDDING MATERIAL AROUND PIPE TO BE DONE WITH SPECIAL CARE.
 - ALL PIPES TO BE PRESSURE TESTED TESTED AFTER COMPLETION.

LEGEND

⊕ Benchmark	⊕ Sign Post	▒ Concrete Paving	— Culvert
⊕ Electric Pole	⊕ Steel Pole	▒ Brick Paving	— Drain
⊕ Sign Board	⊕ Staywire	▒ Tamed Road	— Top of pipe
⊕ Fibre Manhole	⊕ Water Valve	▒ Dust Road	— Fence
⊕ Lamp Post	⊕ Valve Manhole	▒ Driveway	— Wall
⊕ Fire Hydrant	⊕ Bollard	▒ Railway	— Top Kerb
⊕ Tree	⊕ Wooden Pole	▒ Gate	— Minor Contour
⊕ Water Meter	⊕ Water Tank	▒ Invert Level	— Major Contour
⊕ Sewer Manhole	⊕ Unknown Manhole	⊕ Electric Box	
⊕ Rock	⊕ Stormwater Manhole		

DESIGN COORDINATOR APPROVAL:

SIGNATURE _____ DATE _____

PROJECT MANAGER APPROVAL:

SIGNATURE _____ DATE _____

CLIENT APPROVAL:

SIGNATURE _____ DATE _____

REVISIONS

NO.	DATE	DESCRIPTION	BY:	CHK:	APPR:
A	28/05/2026	ISSUED FOR TENDER	C.K.	M.R.	S.N.

DESIGNED:	DRAWN:	CHECKED:	APPROVED:	DATE:	SCALE:
M.R	C.K	M.R	S.N	29/05/2026	N.T.S

CLIENT:



MAQUASSI HILLS LOCAL MUNICIPALITY
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Wolmarasstad
2630

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PROJECT:
REPLACEMENT OF ASBESTOS CEMENT BULK AND RETICULATION PIPELINES

DRAWING TITLE:
MAKWASSI HILL - BULK PIPELINE:
DN250 BULK PIPELINE LONGSECTION ALTERNATIVE

CONSULTANTS:
SEA PROJECTS AND ENGINEERING



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SIZE: A0
PROJECT NO.: 20241003
DRAWING NO.: DRG-CIV-007
SHEET NO.: 01
REVISION: A

NGL ---
EGL ---
HGL ---

SCALES:
Horizontal 1:500
Vertical 1:100

DATUM 1310.000

REFERENCE	0200 PN 12	M9556	0200 PN 12	M9556	0200 PN 12
DISTANCE (m)	20.000	40.000	80.000	120.000	160.000
GROUND LEVEL	1314.451	1314.585	1314.744	1314.743	1314.549
PIPE INVERT LEVEL	1314.451	1314.586	1314.744	1314.743	1314.469
DEPTH TO INVERT	0.000	0.000	0.000	0.000	0.000
TRENCH LEVEL	1314.451	1314.586	1314.744	1314.743	1314.469
DEPTH TO TRENCH	0.000	0.000	0.000	0.000	0.000
SLOPE / LENGTH	-0.48% -1:209.9 49.86m		-0.68% -1:147.9 75.21m		-1.50% -1:66.7 66.6m
CHANGE IN DIRECTION	STRAIGHT		STRAIGHT		25.6°
FITTINGS	0		0		18
HYDRAULICS	DESIGN Q(s) DESIGN W(m/s)	10.00 10.0	10.00 10.0	10.00 10.0	10.00 10.0
CLASSIFICATION	PIPE VALVE				
GEOLOGICAL DATA					

LONGSECTION ALTERNATIVE PIPE ROUTE FOR OPTION 1
FROM 0.000 TO 195.162