







STORMWATER LAYOUT PLAN
SCALE 1:1000

LEGEND	DESCRIPTION
	PROPOSED STORMWATER (600-900)mmØ
	PROPOSED STORMWATER CATCHPIT
	EXISTING MANHOLES AND STORMWATER
	ROAD BANKS
	CADASTRAL BOUNDARIES
	PROPOSED HEADWALL

STRUCTURE LIST-Diedericks Road						
STRUCTURE NAME	Y	X	RM ELEVATION	SUMP ELEVATION SUMP DEPTH	INVERT ELEVATION	MATERIAL
MH1	-20 948.218	2 863 257.062	1579.603	1578.395 1.209	P1-INV IN 1578.395	Concrete
MH2	-20 946.742	2 863 260.354	1579.928	1578.253 1.675	P2-INV IN 1578.733 P2-INV OUT 1578.253	Concrete Concrete
MH3	-20 923.100	2 863 265.954	1579.505	1577.872 1.633	P2-INV IN 1577.872 P3-INV OUT 1577.872	Concrete Concrete
MH4	-20 914.809	2 863 284.456	1579.505	1577.750 1.755	P4-INV IN 1577.750 P4-INV OUT 1577.750	Concrete Concrete
MH5	-20 903.302	2 863 303.120	1579.629	1577.629 2.000	P4-INV IN 1577.629 P28-INV IN 1577.789 P5-INV OUT 1577.629	Concrete Concrete Concrete
MH6	-20 893.807	2 863 325.329	1579.000	1577.477 1.523	P5-INV IN 1577.477 P7-INV OUT 1577.477	Concrete Concrete
MH7	-20 882.525	2 863 361.224	1580.000	1577.215 2.785	P7-INV IN 1577.215 P7-INV OUT 1577.215	Concrete Concrete
MH8	-20 871.929	2 863 393.734	1580.003	1576.945 3.057	P7-INV IN 1576.945 P8-INV OUT 1576.945	Concrete Concrete
MH10	-20 848.455	2 863 468.043	1579.605	1576.454 3.151	P8-INV IN 1576.454 P27-INV IN 1576.635 P10-INV OUT 1576.454	Concrete Concrete Concrete
MH11	-20 823.662	2 863 545.801	1578.794	1575.935 2.860	P10-INV IN 1575.935 P11-INV OUT 1575.935	Concrete Concrete
MH12	-20 816.689	2 863 577.971	1578.502	1575.754 2.748	P11-INV IN 1575.754 P26-INV IN 1576.840 P13-INV OUT 1575.754	Concrete Concrete Concrete
MH14	-20 815.417	2 863 636.480	1577.952	1575.444 2.508	P14-INV IN 1575.444 P14-INV OUT 1575.444	Concrete Concrete
MH15	-20 803.823	2 863 685.580	1577.254	1575.146 2.107	P14-INV IN 1575.146 P25-INV IN 1575.350 P15-INV OUT 1575.146	Concrete Concrete Concrete
MH16	-20 783.298	2 863 763.225	1575.450	1573.748 1.702	P15-INV IN 1573.748 P16-INV OUT 1573.748	Concrete Concrete
MH17	-20 775.795	2 863 789.389	1574.679	1573.119 1.561	P16-INV IN 1573.119 P17-INV OUT 1573.119	Concrete Concrete
MH18	-20 758.002	2 863 858.933	1574.300	1572.133 2.167	P17-INV IN 1572.133 P18-INV OUT 1572.133	Concrete Concrete
MH19	-20 738.763	2 863 860.548	1574.495	1572.036 2.459	P18-INV IN 1572.036 P19-INV OUT 1572.036	Concrete Concrete
MH21	-20 719.026	2 863 916.231	1574.497	1573.246 1.250	P20-INV IN 1573.246	Concrete
MH22	-20 696.963	2 863 951.121	1574.606	1573.041 1.564	P20-INV IN 1573.041 P21-INV OUT 1573.041	Concrete Concrete

STRUCTURE LIST-Diedericks Road						
STRUCTURE NAME	Y	X	RIM ELEVATION	SUMP ELEVATION SUMP DEPTH	INVERT ELEVATION	MATERIAL
MH23	-20 661.25	2 863 983.188	1575.004	1572.777 2.227	P21-INV IN 1572.777 P23-INV OUT 1572.777	Concrete Concrete
MH24	-20 618.769	2 864 005.791	1575.209	1572.513 2.696	P22-INV IN 1572.513 P23-INV OUT 1572.513	Concrete Concrete
MH25	-20 567.140	2 864 016.231	1574.500	1572.222 2.278	P23-INV IN 1572.222 P24-INV OUT 1572.222	Concrete Concrete
MH27	-20 787.459	2 863 675.522	1577.114	1575.444 1.671	P25-INV OUT 1575.444	Concrete
MH29	-20 798.509	2 863 574.562	1578.312	1576.930 1.382	P26-INV OUT 1576.930	Concrete
MH31	-20 830.801	2 863 462.279	1579.500	1578.310 1.190	P27-INV OUT 1578.310	Concrete
MH33	-20 889.326	2 863 289.652	1579.504	1578.274 1.230	P28-INV OUT 1578.274	Concrete
MH35	-20 457.761	2 864 038.482	1574.562	1573.440 1.123	P29-INV OUT 1573.440	Concrete
MH36	-20 457.621	2 864 024.525	1574.639	1573.352 1.287	P30-INV IN 1573.352 P30-INV OUT 1573.352	Concrete Concrete
MH38	-20 355.432	2 864 046.099	1573.538	1572.404 1.134	P31-INV OUT 1572.404	Concrete
MH39	-20 356.280	2 864 032.704	1573.513	1572.330 1.184	P31-INV IN 1572.330 P32-INV OUT 1572.330	Concrete Concrete
OUTFALL1	-20 731.202	2 863 859.126	1574.420	1571.984 2.436	P19-INV IN 1571.984	Concrete
OUTFALL2	-20 567.202	2 864 012.729	1572.941	1572.199 0.742	P30-INV IN 1572.199	Concrete
OUTFALL3	-20 457.587	2 864 020.108	1574.574	1573.330 1.245	P30-INV IN 1573.330	Concrete
OUTFALL4	-20 356.498	2 864 029.091	1573.199	1572.249 0.950	P32-INV IN 1572.249	Concrete

PIPE LIST-Diedericks Road					
PIPE NAME	START INVERT LEVEL	END INVERT LEVEL	30 LENGTH TO INSIDE EDGES	SLOPE	DIAMETER AND CLASS
P1	1578.395	1578.373	2.414	0.605%	900mm Class 1000
P2	1578.253	1577.872	23.115	1.566%	900mm Class 1000
P3	1577.872	1577.750	19.082	0.601%	900mm Class 1000
P4	1577.750	1577.629	20.732	0.555%	900mm Class 1000
P5	1577.629	1577.477	22.960	0.630%	900mm Class 1000
P6	1577.477	1577.215	36.434	0.694%	900mm Class 1000
P7	1577.215	1576.985	33.003	0.750%	900mm Class 1000
P8	1576.985	1576.454	76.737	0.630%	900mm Class 1000
P9	1576.454	1575.935	80.423	0.636%	900mm Class 1000
P11	1575.935	1576.754	31.723	0.549%	900mm Class 1000
P12	1575.754	1575.536	39.176	0.540%	900mm Class 1000
P14	1575.444	1575.146	49.257	0.590%	900mm Class 1000
P15	1575.146	1573.748	79.142	1.740%	900mm Class 1000
P16	1573.748	1573.119	26.049	2.313%	900mm Class 1000
P17	1573.119	1572.133	70.605	1.373%	900mm Class 1000
P18	1572.133	1572.036	18.112	0.503%	900mm Class 1000
P19	1572.036	1571.984	6.500	0.675%	900mm Class 1000
P20	1573.246	1573.041	40.284	0.497%	600mm Class 1000
P21	1573.041	1572.777	46.998	0.550%	600mm Class 1000
P22	1572.777	1572.513	47.128	0.549%	600mm Class 1000
P23	1572.513	1572.222	51.678	0.554%	600mm Class 1000
P24	1572.222	1572.199	2.507	0.659%	600mm Class 1000
P25	1575.444	1575.350	18.112	0.490%	600mm Class 1000
P26	1576.930	1576.840	17.400	0.487%	600mm Class 1000
P27	1578.310	1576.635	17.605	9.022%	600mm Class 1000
P28	1578.274	1577.789	18.332	2.500%	600mm Class 1000
P29	1573.440	1573.352	12.962	0.630%	600mm Class 1000
P30	1573.352	1573.330	3.421	0.500%	600mm Class 1000
P31	1572.404	1572.330	12.426	0.555%	600mm Class 1000
P32	1572.330	1572.249	2.636	2.221%	600mm Class 1000



General Notes:

1. All workmanship to be in accordance with the relevant project specification as included in the contract document.
2. All existing services within the site, protected or not, on the drawing are to be treated as live. The Engineer shall make the necessary allowances to deal with the services affected by the proposed works in accordance with the various services affected by the proposed work so that the necessary alterations can be made to the drawings without affecting the safety of the works.
3. Levels, dimensions and setting out of the site to be verified by Consultant and Contractors on site prior to construction.
4. All existing drainage culverts are to be inspected, and any found in unserviceable condition to be replaced.
5. Culvert inverts are to be 'decided' by Engineer on site unless shown otherwise. Min. cover = 600mm, min. slope = 2%.
6. Pipe culverts are to be laid in class 'c' bedding in accordance with SD 0401 with 150mm bedding and bedding as per SD 0405A and SD 0406. Min dia = 450mm for minor access roads and access bell-mouths, and min dia = 600mm for major road cross drainage.
7. For erosion control stone pitching is recommended at chute outlet and culvert exit.
8. Earth berms are to be constructed at culvert inlets to divert storm-water into culverts where necessary.
9. Rock boulders are to be placed across the invert of drains susceptible to erosion at every vertical drop.
10. Grassed/Concrete lined V-drains as per SD 0601/3 & 4 are recommended for shallow cuttings of depth less than 6m measured at a point 6m from edge of carriageway. Concrete lined 1 000V - drains as per SD 0601/2 are recommended for cuttings of depth greater than 5m measured at a point 6m from edge of carriageway.
11. Where surface runoff is toward the road, catch-water banks are to be provided to divert storm-water to major cross drainage structures.
12. All surface and subsurface drainage to be determined in consultation with the local community. Daylighting requirements are to be decided by the Engineer on site. Concrete verges as per SD 1903 may be used in place of surfaced bell-mouths for accesses serving single residential properties.
13. Guardrails to be provided in accordance with SD 1101 and SD 1102 where fill embankments exceed 3m in height or where hazardous obstructions cannot be removed. Approach end must be buried type.
14. Existing road signs, services and fencing affected by construction are to be removed/relocated where necessary.
15. Underground service crossings and markers are to be in accordance with SD 1001 - 3.
16. All new road signs and road markings requirements are to conform to the Southern African Development Community Road Traffic Signs Manual (SADC - RTSM).
17. All work is to be carried out in accordance with "COLTO Specifications for Road and Bridge Works for State Road Authorities."
18. All survey and setting out data provided is based on (WGS 84 Le31) - New file and proposed cuttings are to be top-sold and vegetated immediately after Construction to prevent erosion.

DATE	STATUS	REV	REVISION DESCRIPTION	REFERENCE DRAWING No.	REFERENCE DRAWING TITLE	NOTES:	<div><div><div>DESIGNED BY</div><div>M.TSHUMA</div><div>N/A</div></div><div><div>DRAWN BY</div><div>Z.BUYELA</div><div>N/A</div></div><div><div>DESIGN CHECKED</div><div>T.ZUMA</div><div>N/A</div></div><div><div>DRAWING CHECKED</div><div>M.TSHUMA</div><div>N/A</div></div><div><div>P1 TECH/ P1 ENGINEER APPROVAL</div><div></div><div></div></div><div><div>NAME</div><div>T.ZUMA</div><div>SIGNATURE</div></div><div><div>DATE</div><div></div><div>PROFESSIONAL REG No. 201170074</div></div></div>		<div><div><div>ENGINEER:</div><div><div></div><div>49 Ferreira Street Nelspruit 1200</div></div><div><div>MAFAHLENI ENGINEERS AND PROJECT MANAGERS</div><div>DEPARTMENT</div><div>CIVIL</div></div></div></div>	<div><div><div>CLIENT:</div><div><div></div><div><div>EMALAHLENI MUNICIPALITY</div><div>P.O. Box 3</div><div>Emalahleni</div><div>1035</div></div></div></div></div>	<div><div><div>PROJECT TITLE:</div><div><div>PROPOSED REHABILITATION OF BEATTY & DIEDERICKS</div></div></div><div><div><div>DRAWING STATUS DESCRIPTION</div><div>D-DEVELOPMENT T-TENDER P-PLANNING C-CONSTRUCTION A-AAS BUILT</div><div>MAFAHLENI ENGINEERS DRAWING NUMBER</div></div><div><div><div>DRAWING TITLE:</div><div>ROAD STORMWATER LAYOUT PLAN</div></div><div>EMAL- 2024- RDS- 010 - T - 00</div></div></div></div>	<div><div><div>SCALE</div><div>1:1000</div></div><div><div>SHEET</div><div>10F4</div></div><div><div>SHEET SIZE</div><div>A1</div></div></div>
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