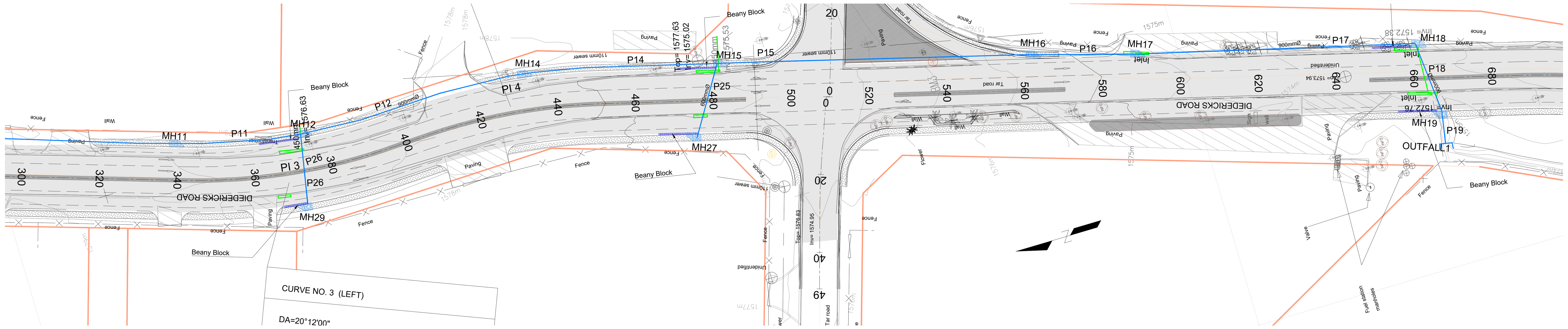


STORMWATER LAYOUT PLAN: SHEET 2
SCALE 1:500

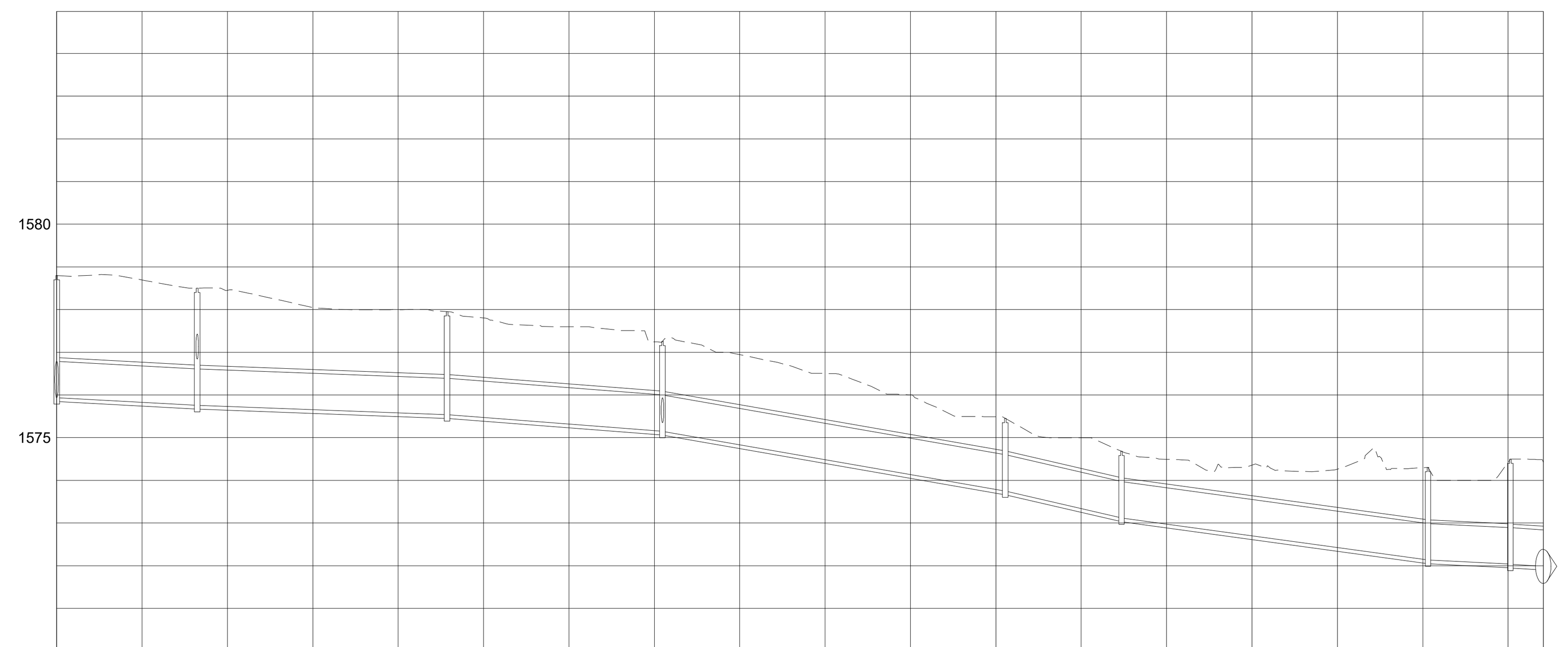
LEGEND	DESCRIPTION
(blue line)	PROPOSED STORMWATER (600-900)mmØ
(symbol)	PROPOSED STORMWATER CATCHPIT
(green symbol)	EXISTING MANHOLES AND STORMWATER
(symbol)	ROAD BANKS
(orange line)	CADASTRAL BOUNDARIES
(symbol)	PROPORSED HEADWALL

STRUCTURE LIST-Diedericks Road

STRUCTURE NAME	Y	X	RIM ELEVATION	SUMP ELEVATION SUMP DEPTH	INVERT ELEVATION	MATERIAL
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 P12-INV OUT 1575.754	Concrete Concrete Concrete
MH14	-20 815.417	2 863 636.480	1577.952	1575.444 2.508	P13-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
OUTFALL1	-20 731.202	2 863 859.126	1574.420	1571.984 2.436	P19-INV IN 1571.984	Concrete

PIPE LIST-Diedericks Road

PIPE NAME	START INVERT LEVEL	END INVERT LEVEL	3D LENGTH TO INSIDE EDGES	SLOPE	DIAMETER AND CLASS
P11	1575.935	1575.754	31.723	0.549%	900mm Class 100D
P12	1575.754	1575.536	39.176	0.540%	900mm Class 100D
P14	1575.444	1575.146	49.257	0.590%	900mm Class 100D
P15	1575.146	1573.748	79.142	1.740%	900mm Class 100D
P16	1573.748	1573.119	26.049	2.313%	900mm Class 100D
P17	1573.119	1572.133	70.605	1.373%	900mm Class 100D
P18	1572.133	1572.036	18.112	0.503%	900mm Class 100D
P19	1572.036	1571.984	6.500	0.675%	900mm Class 100D
P25	1575.444	1575.350	18.112	0.490%	600mm Class 100D
P26	1576.930	1576.840	17.400	0.487%	600mm Class 100D



NGL
EGL
HGL
SCALES:
Horizontal 1:1000
Vertical 1:100

DATUM 1570.000

REFERENCE (pipe)	SLOPE / LENGTH	HYDRAULICS DESIGN Q(m3/s)	HYDRAULICS DESIGN V(m/s)	HYDRAULICS MAX. (0.8D) Q(m3/s)	HYDRAULICS MAX. (0.8D) V(m/s)
MH11–MH12 Ø900 100D	0.55% 1:182.0 32.92m	0.95	0.00	1.20	0.00
MH12–MH13 Ø900 100D	0.54% 1:185.3 40.37m	1.10	0.00	1.20	0.00
MH13–MH14 Ø900 100D	0.51% 1:196.8 18.17m	0.95	0.00	1.20	0.00
MH14–MH15 Ø900 100D	0.59% 1:169.5 50.45m	0.95	0.00	1.20	0.00
MH15–MH16 Ø900 100D	1.74% 1:57.5 80.31m	0.95	0.00	1.20	0.00
MH16–MH17 Ø900 100D	2.31% 1:43.2 27.22m	0.95	0.00	1.20	0.00
MH17–MH18 Ø900 100D	1.37% 1:72.8 71.78m	1.10	0.00	1.20	0.00
MH18–MH19 Ø900 100D	0.50% 1:198.8 19.31m	1.10	0.00	1.20	0.00
MH19–OUTFALL1 Ø900 100D	0.67% 1:148.2 7.69m	0.95	0.00	1.20	0.00

REFERENCE	DISTANCE (m)	GROUND LEVEL	PIPE INVERT LEVEL
MH11	325.630	1578.794	1575.935
MH12	358.550	1578.502	1575.754 1575.754
MH13	398.920	1577.994	1575.536 1575.536
MH14	417.090	1577.952	1575.444 1575.444
MH15	467.540	1577.254	1575.146 1575.146
MH16	547.850	1575.450	1573.748 1573.748
MH17	575.070	1574.679	1573.119 1573.119
MH18	646.850	1574.300	1572.133 1572.133
MH19	666.160	1574.495	1572.036 1572.036
OUTFALL1	673.850	1574.420	1571.984

LONGSECTION BRANCH 2
FROM 0.000 TO 348.223

General Notes:

1. All workmanship to be in accordance with the relevant project specification as included in the contract document.
2. All existing services whether indicated or not, on the drawing are to be treated as live. the contractor is to 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 progress on the works.
3. All levels, dimensions and setting out details 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 are to be replaced unless shown otherwise.
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 depressed inlet and headwalls as per SD 0405/A 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 inlets & outlets ($5m^2$ each).
8. Earth berms are to be constructed at culvert inlets to direct storm-water into culverts where necessary.
9. Rock bolsters are to be placed across the invert of drains susceptible to erosion for every 2m vertical drop .
10. Grassed/Concrete lined V-drains as per SD 0601/3 & 4 are recommended for shallow cuttings of depth less than 5m measured at a point 6m from edge of carriageway. Concrete lined 1 OOOV - drains as per SD 0601/2 are recommended for deep 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. The positions of accesses are to be determined in consultation with the local community. Daylighting requirements are to be decided by the Engineer on site. Concrete wedges as per SD 0303 may be used in place of surfaced bell-mouths for accesses serving single residential properties.
13. Guardrails are to be installed 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 marking 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 Lo.31) .
19. New fills and exposed cuttings are to be top-soiled and vegetated immediately after Construction to prevent erosion.

DATE	STATUS	REV	REVISION DESCRIPTION	REFERENCE DRAWING No.	REFERENCE DRAWING TITLE	NOTES:

		SIGNATURE
DESIGNED BY	M.TSHUMA	N/A
DRAWN BY	Z.BIYELA	N/A
DESIGN CHECKED	T.ZUMA	N/A
DRAWING CHECKED	M.TSHUMA	N/A
Pr TECH/ Pr ENGINEER APPROVAL		
NAME: T.ZUMA	SIGNATURE	
DATE	PROFESSIONAL REG No. 201170074	

ENGINEER:
MAFAHLENI ENGINEERS AND PROJECT MANAGERS
49 Ferreira Street
Nelspruit
1200
DEPARTMENT: CIVIL

CLIENT:
EMALAHLENI MUNICIPALITY
P.O. Box 3
Emalahleni
1035

PROJECT TITLE: PROPOSED REHABILITATION OF BEATTY & DIEDERICKS

DRAWING TITLE: STORMWATER LAYOUT PLAN AND LONGITUDINAL SECTION: SHEET 2 CH 0.300 - CH 0.680

DRAWING STATUS DESCRIPTION: D=DEVELOPMENT T=TENDER P=PLANNING C=CONSTRUCTION A=AS BUILT

SCALE	SHEET	SHEET SIZE
1:500	3OF4	A1

MAFAHLENI ENGINEERS DRAWING NUMBER

ME PROJECT DESCRIPTION	DISCIPLINE	NUMBER	STATUS	REV
EMAL- 2024	RDS	012	T	00