



CULVERT INFORMATION				SETTING OUT DETAILS				HYDRAULIC INFORMATION				REMARKS				
CULVERT NUMBER (No.)	DESIGN DISTANCE (km)	REFERENCE LAYOUT DRAWING	OPENINGS / SIZE TYPE & CULVERT (CLASS)	SKREW ANGLE (DEG)	LENGTHS LEFT (m)	RIGHT (m)	TOTAL (m)	INVERT LEVELS LEFT (m)	RIGHT (m)	RETURN PERIOD (1-year)	AREA (km ²)		RUNOFF (m ³ /s)	GRADE IN STRUCTURE (%)	HWID (mm)	FREE BOARD (m)
ROAD P141-1																
1	0.905 000	MRS 06/xx/01/yn	4/2400x2400 BC (75S)	90	8.992	9.308	18.300	15	1534.226	1534.010	25	10.343	102.887	-1.183	1.776	-0.364
2	1.370 000	MRS 06/xx/02/yn	2/750x750 BC (200S)	90	7.979	10.321	18.300	15	1535.534	1534.401	25	0.171	1.634	-6.192	3.756	0.068
3	1.720 000	MRS 06/xx/02/yn	2/750x750 BC (200S)	90	7.360	6.500	15.860	13	1534.124	1533.105	25	0.184	1.834	-6.430	3.002	-0.364
4	2.050 000	MRS 06/xx/02/yn	3/2400x1200 BC (75S)	90	8.819	9.481	18.300	15	1533.634	1533.028	25	2.869	14.520	-3.313	2.762	-0.364
5	2.670 000	MRS 06/xx/03/yn	2/900x900 BC (175S)	90	8.890	13.070	21.960	18	1539.000	1536.151	25	0.506	3.121	-12.973	5.554	-0.134
6	2.870 000	MRS 06/xx/03/yn	1/750x750 BC (200S)	90	16.157	20.443	36.600	30	1538.486	1536.592	25	0.126	0.686	-7.508	13.360	-0.134
7	3.430 000	MRS 06/xx/03/yn	1/1200x900 BC (150S)	90	9.867	12.093	21.960	18	1529.459	1527.943	25	0.528	3.809	-6.902	5.057	-0.134
8	3.900 000	MRS 06/xx/04/yn	2/900x900 BC (175S)	90	7.382	8.478	15.860	13	1531.241	1530.488	25	0.400	2.924	-4.748	2.394	-0.134
9	4.370 000	MRS 06/xx/04/yn	3/1200x1200 BC (150S)	90	7.298	8.562	15.860	13	1529.586	1527.590	25	1.142	7.120	-6.278	2.348	-0.364
10	4.720 000	MRS 06/xx/04/yn	6/2400x1200 BC (75S)	90	7.707	8.153	15.860	13	1571.809	1571.503	25	13.135	36.780	-1.935	1.735	-0.134
11	5.950 000	MRS 06/xx/04/yn	1/750x750 BC (200S)	90	8.840	8.240	17.080	14	1536.733	1537.144	25	0.119	0.981	2.407	3.171	-0.775
12	6.240 000	MRS 06/xx/05/yn	1/750x750 BC (200S)	90	9.383	7.697	17.080	14	1535.460	1536.175	25	0.184	1.595	4.185	2.892	-1.071
13	7.100 000	MRS 06/xx/05/yn	4/2100x1200 BC (75S)	90	8.239	7.621	15.860	13	1513.694	1514.119	25	7.500	23.122	2.660	1.829	-0.559
D2769																
14	0.680 000	MRS 06/xx/10/yn	2/900x900 BC (175S)	90	7.582	8.278	15.860	13	1560.568	1560.089	25	0.288	4.996	-3.020	2.095	-0.134
MIA ACCESS																
15	0.250 000	MRS 06/xx/10/yn	2/1200x900 BC (150S)	90	6.429	5.771	12.200	10	1525.658	1526.116	25	0.528	4.885	3.752	2.013	-0.552

AA	18/12/2012	For Approval			SURVEYED BY: LIDAR SURVEY NOVEMBER 2011 PROVIDED BY XSTRATA	DESIGNED FOR: TWEEFONTEIN PROJECT XSTRATA COAL SA	DESIGNED BY: JEFFARES & GREEN PTY (Ltd) ENGINEERING AND ENVIRONMENTAL CONSULTING	APPROVED BY: PR 980444 rms Raadgeverde Ingenieur for Consulting Engineers	APPROVED BY: GOEDGEKEUR DEUR DESIGN APPROVED	APPROVED BY: GOEDGEKEUR DEUR APPROVED BY	APPROVED BY: ONTWERP DEUR DESIGNED BY NAGESIEN DEUR CHECKED BY CCLR	AM JN LN CCLR	MPUMALANGA REGERING OPENBARE WERKE, PAWIE EN VERVOER MPUMALANGA REALIGNMENT OF PROVINCIAL ROADS	MPUMALANGA GOVERNMENT PUBLIC WORKS, ROADS AND TRANSPORT	SKAAL / SCALE 1:1000	LÉER N° / FILE No --	DISTRIK / DISTRICT NKANGALA	PROVINSIE PLAN N° / PROVINCE PLAN No MRS 06/-/Sp
REV No	DATUM DATE	WYSIGINGS / AMENDMENTS	rms Hoof v. Dept. for Head of Dept.	DATUM DATE	HANDTEK / SIGNTR.										Tipe ONTWERP / TYPE OF PLANNING PRELIMINARY DESIGN	PAD N° / ROAD No P141/1 & D2769	XSTRATA COAL PLAN N° / PLAN No TOP-J&G-5003-CV-01-1402	

W:\02298 - Tweefontein Realignment JCC - R00003 Drawings\Working Drawings\Alternative 2012\Preliminary Design\AC228A\AL_TOP-J&G-5003-CV-01-1402

PROVINCE PLAN No
 XSTRATA COAL PLAN No
MRS 06/-/Sp
 TOP-J&G-5003-CV-01-1402