



- LEGEND**
- 100mm dia - CLASS 34 HEAVY DUTY PVC FREEFLOW PIPE
 - 100mm dia HOUSE CONNECTION - CLASS 34 PVC - HEAVY DUTY FREEFLOW PIPE
 - 1000mm dia PRE-CAST CONCRETE MANHOLES WITH TYPE 'A' HEAVY DUTY MANHOLE COVER AND FRAME (SALBERS OR SIMILAR APPROVED) - ALSO SEE NOTES BELOW
 - HOTEL SEWER LINE AND MANHOLES
- NOTE**
1. ALL MANHOLES WILL BE SET OUT WITH THE CO-ORDINATES PROVIDED AND NOT FROM THE BOP BOUNDARY LINES.
 2. IF THE MANHOLE FALLS IN THE ROAD THE TYPE 'A' MANHOLE COVER AND FRAME HAS TO BE REPLACED WITH A TYPE 'F' REPLACEMENT COVER AND FRAME.

- NOTES**
1. CONSTRUCTION
 - 1.1 ALL THE MANHOLES IN THE ROAD SURFACE WILL HAVE A HEAVY DUTY MANHOLE COVER AND FRAME AS WELL AS A HEAVY DUTY COVER SLAB.
 - 1.2 ALL CONSTRUCTION, TESTING AND MATERIALS TO COMPLY WITH SABS 1200 SERIES AND SABS 104.
 - 1.3 ALL TRENCHING AND BACKFILLING TO COMPLY WITH SABS 1070.
 - 1.4 PIPE BEDDING TO BE CLASS 'C' AS PER SABS 1200 LB WITH BEDDING GRADE OF SELECTED FILL MATERIAL QUALITY.
 2. MATERIALS
 - 2.1 ALL SEWER PIPE WILL BE PVC PIPE AND THE SIZE AND TYPE AS INDICATED ON THE LAYOUT DRAWING OR THE BIDDING.
 - 2.2 ALL PIPES WILL HAVE A FLEXIBLE MECHANICAL JOINT.
 - 2.3 ALL MANHOLE RINGS TO COMPLY WITH SABS 104.
 - 2.4 ALL PRECAST MANHOLE RINGS TO COMPLY WITH SABS 104 WITH STEEL RINGS.
 - 2.5 TRENCHING TO BE CONSTRUCTED WITH DOLOMITIC AGGREGATE.
 3. GENERAL
 - 3.1 ALL HOUSE CONNECTIONS TO STOP 1m FROM ERP BOUNDARY IN ROAD RESERVE SIDE.
 - 3.2 ALL 100mm dia HOUSE CONNECTIONS TO BE INSTALLED AT A MINIMUM GRADE OF 1:20 AND IN SPECIAL CONDITIONS AT A MINIMUM GRADE OF 1:20.
 - 3.3 SEWER IN ROAD RESERVE TO BE 2m AWAY FROM ERP BOUNDARY AND SEWERS RUNNING AT MID BLOCK TO BE 1m AWAY FROM ERP BOUNDARY.

SEWERAGE RETICULATION SCHEDULE

MANHOLE NUMBER	COORDINATES (WGS 84)	MANHOLE NO.	MANHOLE LEVEL	STEP	MANHOLE RING TYPE	DEPTH TO CENTER	PIPE DIA.	PIPE LENGTH (M)	PIPE SLOPE (%)	PIPE TYPE
A1	3288.848	3274.737	1234.978	1234.881	25	PRE-CAST	1.433	1236.348	0.000	2.25%
A2	3289.880	3277.276	1234.875	1233.966	25	PRE-CAST	1.489	1234.875	0.000	1.87%
A3	3242.822	3236.727	1232.275	1232.106	25	PRE-CAST	1.435	1233.640	0.000	1.43%
A4	3247.847	3235.844	1232.842	1232.707	25	PRE-CAST	1.485	1231.473	0.000	1.68%
PUMP STATION										
B1	3247.818	3235.200	1232.517	1231.817	15	PRE-CAST	1.551	1231.817	0.000	1.00%
B2	3278.727	3236.057	1231.827	1231.827	15	PRE-CAST	1.551	1231.827	0.000	1.00%
B3	3278.481	3237.886	1231.384	1231.314	50	CAST IRON	1.755	1243.938	20.000	2.27%
B4	3279.803	3237.074	1230.489	1230.419	50	CAST IRON	2.000	1246.474	21.000	2.37%
B5	3282.421	3235.051	1229.482	1229.412	25	PRE-CAST	2.200	1241.017	0.000	1.48%
B6	3284.011	3232.412	1228.489	1228.473	25	PRE-CAST	2.200	1240.300	0.000	1.48%
B7	3286.424	3230.000	1227.488	1227.464	25	PRE-CAST	2.200	1239.744	0.000	1.50%
B8	3289.488	3227.079	1226.537	1226.522	25	PRE-CAST	2.200	1239.707	0.000	1.48%
B9	3292.575	3225.184	1225.592	1225.574	25	PRE-CAST	2.200	1237.172	0.000	1.48%
B10	3245.462	3219.173	1224.283	1224.226	25	PRE-CAST	1.955	1235.146	0.000	1.24%
B11	3250.288	3218.102	1223.880	1223.823	25	PRE-CAST	1.955	1234.623	0.000	1.24%
B12	3253.883	3217.187	1223.124	1223.064	50	PRE-CAST	1.500	1231.564	20.000	1.30%
B13	3257.487	3216.272	1222.369	1222.312	25	PRE-CAST	1.500	1231.047	0.000	1.30%
B14	3261.091	3215.357	1221.614	1221.557	25	PRE-CAST	1.500	1230.530	0.000	1.30%
B15	3264.695	3214.442	1220.859	1220.802	25	PRE-CAST	1.500	1230.013	0.000	1.30%
B16	3268.299	3213.527	1220.104	1220.047	25	PRE-CAST	1.500	1229.496	0.000	1.30%
B17	3271.903	3212.612	1219.349	1219.292	25	PRE-CAST	1.500	1228.979	0.000	1.30%
B18	3275.507	3211.697	1218.594	1218.537	25	PRE-CAST	1.500	1228.462	0.000	1.30%
B19	3279.111	3210.782	1217.839	1217.782	25	PRE-CAST	1.500	1227.945	0.000	1.30%
B20	3282.715	3209.867	1217.084	1217.027	25	PRE-CAST	1.500	1227.428	0.000	1.30%
B21	3286.319	3208.952	1216.329	1216.272	25	PRE-CAST	1.500	1226.911	0.000	1.30%
B22	3289.923	3208.037	1215.574	1215.517	25	PRE-CAST	1.500	1226.394	0.000	1.30%
B23	3293.527	3207.122	1214.819	1214.762	25	PRE-CAST	1.500	1225.877	0.000	1.30%
B24	3297.131	3206.207	1214.064	1214.007	25	PRE-CAST	1.500	1225.360	0.000	1.30%
B25	3300.735	3205.292	1213.309	1213.252	25	PRE-CAST	1.500	1224.843	0.000	1.30%
B26	3304.339	3204.377	1212.554	1212.497	25	PRE-CAST	1.500	1224.326	0.000	1.30%
B27	3307.943	3203.462	1211.799	1211.742	25	PRE-CAST	1.500	1223.809	0.000	1.30%
B28	3311.547	3202.547	1211.044	1210.987	25	PRE-CAST	1.500	1223.292	0.000	1.30%
B29	3315.151	3201.632	1210.289	1210.232	25	PRE-CAST	1.500	1222.775	0.000	1.30%
B30	3318.755	3200.717	1209.534	1209.477	25	PRE-CAST	1.500	1222.258	0.000	1.30%
B31	3322.359	3199.802	1208.779	1208.722	25	PRE-CAST	1.500	1221.741	0.000	1.30%
B32	3325.963	3198.887	1208.024	1207.967	25	PRE-CAST	1.500	1221.224	0.000	1.30%
B33	3329.567	3197.972	1207.269	1207.212	25	PRE-CAST	1.500	1220.707	0.000	1.30%
B34	3333.171	3197.057	1206.514	1206.457	25	PRE-CAST	1.500	1220.190	0.000	1.30%
B35	3336.775	3196.142	1205.759	1205.702	25	PRE-CAST	1.500	1219.673	0.000	1.30%
B36	3340.379	3195.227	1205.004	1204.947	25	PRE-CAST	1.500	1219.156	0.000	1.30%
B37	3343.983	3194.312	1204.249	1204.192	25	PRE-CAST	1.500	1218.639	0.000	1.30%
B38	3347.587	3193.397	1203.494	1203.437	25	PRE-CAST	1.500	1218.122	0.000	1.30%
B39	3351.191	3192.482	1202.739	1202.682	25	PRE-CAST	1.500	1217.605	0.000	1.30%
B40	3354.795	3191.567	1201.984	1201.927	25	PRE-CAST	1.500	1217.088	0.000	1.30%
B41	3358.399	3190.652	1201.229	1201.172	25	PRE-CAST	1.500	1216.571	0.000	1.30%
B42	3362.003	3189.737	1200.474	1200.417	25	PRE-CAST	1.500	1216.054	0.000	1.30%
B43	3365.607	3188.822	1200.719	1200.662	25	PRE-CAST	1.500	1215.537	0.000	1.30%
B44	3369.211	3187.907	1200.964	1200.907	25	PRE-CAST	1.500	1215.020	0.000	1.30%
B45	3372.815	3186.992	1201.209	1201.152	25	PRE-CAST	1.500	1214.503	0.000	1.30%
B46	3376.419	3186.077	1201.454	1201.397	25	PRE-CAST	1.500	1213.986	0.000	1.30%
B47	3380.023	3185.162	1201.699	1201.642	25	PRE-CAST	1.500	1213.469	0.000	1.30%
B48	3383.627	3184.247	1201.944	1201.887	25	PRE-CAST	1.500	1212.952	0.000	1.30%
B49	3387.231	3183.332	1202.189	1202.132	25	PRE-CAST	1.500	1212.435	0.000	1.30%
B50	3390.835	3182.417	1202.434	1202.377	25	PRE-CAST	1.500	1211.918	0.000	1.30%
B51	3394.439	3181.502	1202.679	1202.622	25	PRE-CAST	1.500	1211.401	0.000	1.30%
B52	3398.043	3180.587	1202.924	1202.867	25	PRE-CAST	1.500	1210.884	0.000	1.30%
B53	3401.647	3179.672	1203.169	1203.112	25	PRE-CAST	1.500	1210.367	0.000	1.30%
B54	3405.251	3178.757	1203.414	1203.357	25	PRE-CAST	1.500	1209.850	0.000	1.30%
B55	3408.855	3177.842	1203.659	1203.602	25	PRE-CAST	1.500	1209.333	0.000	1.30%
B56	3412.459	3176.927	1203.904	1203.847	25	PRE-CAST	1.500	1208.816	0.000	1.30%
B57	3416.063	3176.012	1204.149	1204.092	25	PRE-CAST	1.500	1208.299	0.000	1.30%
B58	3419.667	3175.097	1204.394	1204.337	25	PRE-CAST	1.500	1207.782	0.000	1.30%
B59	3423.271	3174.182	1204.639	1204.582	25	PRE-CAST	1.500	1207.265	0.000	1.30%
B60	3426.875	3173.267	1204.884	1204.827	25	PRE-CAST	1.500	1206.748	0.000	1.30%
B61	3430.479	3172.352	1205.129	1205.072	25	PRE-CAST	1.500	1206.231	0.000	1.30%
B62	3434.083	3171.437	1205.374	1205.317	25	PRE-CAST	1.500	1205.714	0.000	1.30%
B63	3437.687	3170.522	1205.619	1205.562	25	PRE-CAST	1.500	1205.197	0.000	1.30%
B64	3441.291	3169.607	1205.864	1205.807	25	PRE-CAST	1.500	1204.680	0.000	1.30%
B65	3444.895	3168.692	1206.109	1206.052	25	PRE-CAST	1.500	1204.163	0.000	1.30%
B66	3448.499	3167.777	1206.354	1206.297	25	PRE-CAST	1.500	1203.646	0.000	1.30%
B67	3452.103	3166.862	1206.599	1206.542	25	PRE-CAST	1.500	1203.129	0.000	1.30%
B68	3455.707	3165.947	1206.844	1206.787	25	PRE-CAST	1.500	1202.612	0.000	1.30%
B69	3459.311	3165.032	1207.089	1207.032	25	PRE-CAST	1.500	1202.095	0.000	1.30%
B70	3462.915	3164.117	1207.334	1207.277	25	PRE-CAST	1.500	1201.578	0.000	1.30%
B71	3466.519	3163.202	1207.579	1207.522	25	PRE-CAST	1.500	1201.061	0.000	1.30%
B72	3470.123	3162.287	1207.824	1207.767	25	PRE-CAST	1.500	1200.544	0.000	1.30%
B73	3473.727	3161.372	1208.069	1208.012	25	PRE-CAST	1.500	1200.027	0.000	1.30%
B74	3477.331	3160.457	1208.314	1208.257	25	PRE-CAST	1.500	1199.510	0.000	1.30%
B75	3480.935	3159.542	1208.559	1208.502	25	PRE-CAST	1.500	1198.993	0.000	1.30%
B76	3484.539	3158.627	1208.804	1208.747	25	PRE-CAST	1.500	1198.476	0.000	1.30%
B77	3488.143	3157.712	1209.049	1208.992	25	PRE-CAST	1.500	1197.959	0.000	1.30%
B78	3491.747	3156.797	1209.294	1209.237	25	PRE-CAST	1.500	1197.442	0.000	1.30%
B79	3495.351	3155.882	1209.539	1209.482	25	PRE-CAST	1.500	1196.925	0.000	1.30%
B80	3498.955	3154.967	1209.784	1209.727	25	PRE-CAST	1.500	1196.408	0.000	1.30%
B81	3502.559	3154.052	1210.029	1209.972	25	PRE-CAST	1.500	1195.891	0.000	1.30%
B82	3506.163	3153.137	1210.274	1210.217	25	PRE-CAST	1.500	1195.374	0.000	1.30%
B83	3509.767	3152.222	1210.519	1210.462	25	PRE-CAST	1.500	1194.857	0.000	1.30%
B84	3513.371	3151.307	1210.764	1210.707	25	PRE-CAST	1.500	1194.340	0.000	1.30%
B85	3516.975	3150.392	1211.009	1210.952	25	PRE-CAST	1.500	1193.823	0.000	1.30%
B86	3520.579	3149.477	1211.254	1211.197	25	PRE-CAST	1.500	1193.306	0.000	1.30%
B87	3524.183	3148.562	1211.499	1211.442	25	PRE-CAST	1.500	1192.789	0.000	1.30%
B88	3527.787	3147.647	1211.744	1211.687	25	PRE-CAST	1.500	1192.272	0.000	1.30%
B89	3531.391	3146.732	1211.989	1211.932	25	PRE-CAST	1.500	1191.75		