

BENCHMARK COORDINATES

BM NAME	Y COORD	X COORD	HEIGHT
VM1	83339.622	3774887.406	73.960
VM2	83034.440	3774919.761	77.630

Water Coordinate Table - Shawu St

ID	Y	X
T Piece	83355.247	3774992.144
45°	83349.273	3774987.305
22½°	83334.238	3774988.884
22½°	83275.335	3774964.020
11½°	83106.428	3774999.634
45°	83088.696	3775000.388
T Piece	83083.411	3775005.915

Water Coordinate Table - Outpost

ID	Y	X
Conn to Exist	82997.607	3775109.005
90°	83042.058	3775108.816
90°	83044.610	3775153.168
22½°	83125.221	3775149.740
22½°	83133.836	3775145.684
22½°	83184.999	3775088.884
T-Piece	83212.101	3775080.620
22½°	83257.808	3775066.393
45°	83340.531	3775097.414
11½°	83396.345	3775086.214
T-Piece	83421.852	3775088.404

Water Coordinate Table Access 1

ID	Y	X
T Piece	83212.101	3775080.620
45°	83215.761	3775073.688
45°	83205.374	3775039.220
T Piece	83198.298	3775035.584

Water Coordinate Table - Ngonyama St

ID	Y	X
T Piece	83198.261	3775035.464
22½°	83254.374	3775018.262
22½°	83264.082	3775018.550
22½°	83330.921	3775043.614
22½°	83344.238	3775041.414
22½°	83359.231	3775030.056
T Piece	83355.247	3774992.144
22½°	83349.581	3774938.148
22½°	83344.116	3774931.082
22½°	83302.420	3774915.446
11½°	83223.211	3774918.801
45°	83086.301	3774947.668
45°	83081.284	3774954.130
T Piece	83083.411	3775005.915
45°	83085.997	3775064.949
45°	83092.122	3775070.575
45°	83140.072	3775068.536
22½°	83158.749	3775047.801

Water Coordinate Table - Mafunyane St

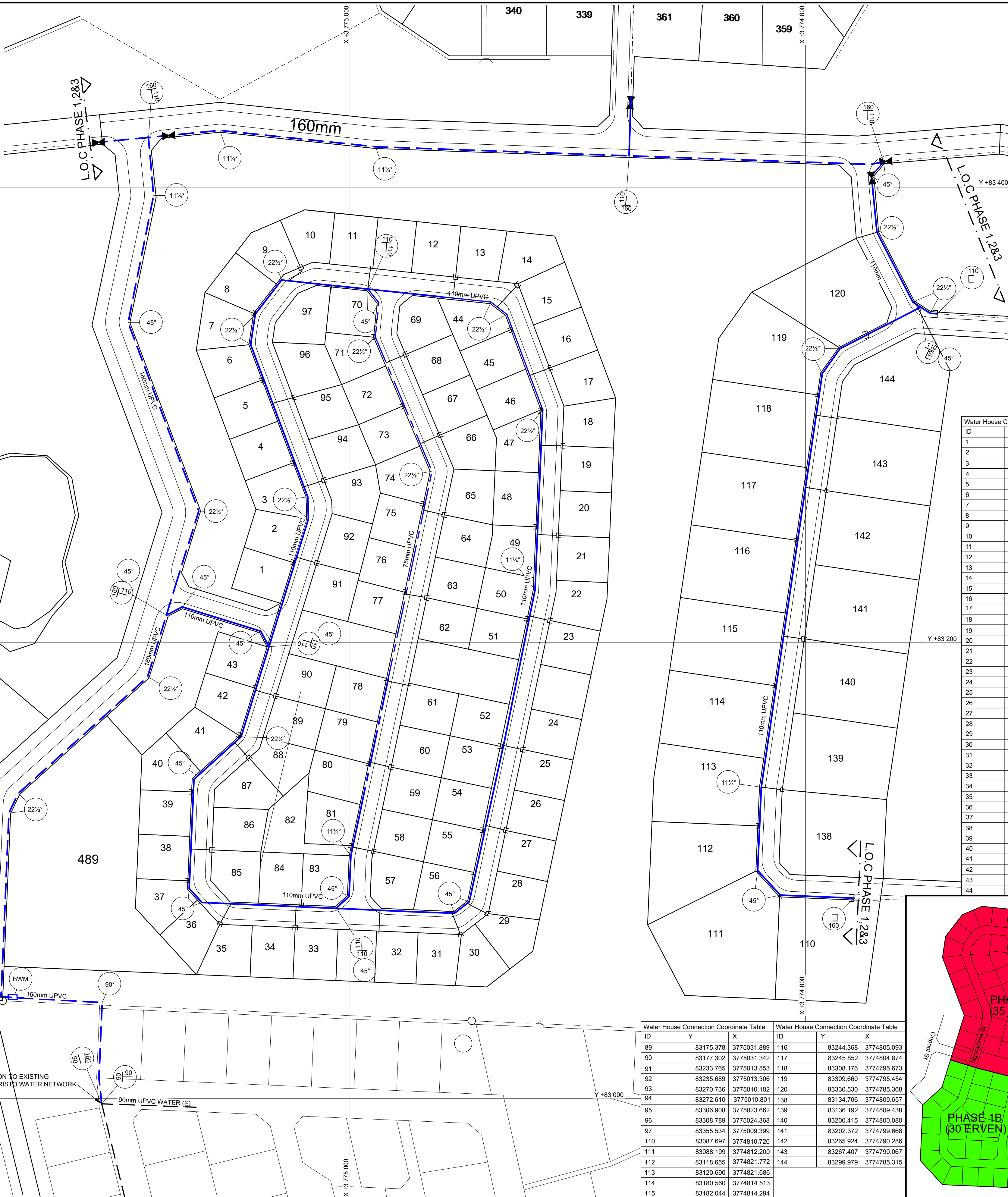
ID	Y	X
T Piece	83421.841	3775088.514
11½°	83424.914	3775057.101
11½°	83417.738	3774988.761
T Piece	83413.775	3774877.498
T Piece	83411.088	3774765.804

Water Coordinate Table - Access 2 Rd

ID	Y	X
T Piece	83411.088	3774765.804
45°	83404.828	3774771.109
22½°	83390.204	3774768.725
22½°	83349.585	3774752.943
22½°	83344.619	3774745.329
End Cap	83344.419	3774742.226

Water Coordinate Table - Dzombo St

ID	Y	X
T Piece	83347.334	3774749.492
22½°	83329.083	3774784.901
22½°	83318.210	3774792.675
11½°	83136.629	3774819.457
45°	83100.180	3774821.057
45°	83089.214	3774811.095
End Cap	83087.915	3774778.793



NOTES

- ALL CONSTRUCTION AND TESTING MUST BE DONE IN ACCORDANCE WITH SANS 1200
- ALL MEASUREMENTS OF PIPES, SPECIALS, ETC. NEED TO BE SURVEYED AND CONFIRMED, ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER FOR CLARIFICATION PRIOR TO COMMENCEMENT OF WORKS
- ABBREVIATIONS:
 - AV - AIR VALVE
 - A.O.S. - CONFIRM ON SITE
 - E - EXISTING
 - F - FUTURE
 - FC - FIBRE CEMENT
 - FD - FIRE HYDRANT
 - LD - LEAK DETECTION
 - L.O.C. - LIMIT OF CONSTRUCTION
 - M - WATER METER
 - N.G.L. - NATURAL GROUND LEVEL
 - O - OMITTED
 - P - PROPOSED
 - V - VALVE
- NO DIMENSIONS MAY BE SCALED FROM DRAWINGS
- UNLESS OTHERWISE SPECIFIED ALL CONCRETE WORKS TO BE 30MPa
- DEFLECTING ANGLES OF 6° AND LESS ARE TAKEN UP BY PIPE COUPLINGS UNLESS OTHERWISE SPECIFIED
- ALL PIPE FITTINGS BELOW GROUND LEVEL WRAPPED WITH "DENSOPOL 80HT TAPE" OR SIMILAR APPROVED APPLIED ACCORDING TO SUPPLIERS SPECIFICATIONS
- WATERPIPER:
 - O. MAIN WATERPIPER:
 - UPVC (CLASS 09) (SANS 966)
- MINIMUM COVER OVER WATER PIPES WITHIN ERF BOUNDARY TO BE 900mm, AND 1200mm WITHIN ROAD RESERVES.
- POSITION OF EXISTING SERVICES AND NEW WATER PIPES TO BE CONFIRMED BEFORE COMMENCEMENT OF WORKS
- SEE DRAWING NUMBER 10408000-201 FOR WATER DETAILS
- FIRE PLAN IN ACCORDANCE TO RELEVANT DRAWINGS
- IRRIGATION PLAN IN ACCORDANCE TO RELEVANT DRAWINGS
- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS

Water House Connection Coordinate Table

ID	Y	X
1	83234.587	3775026.206
2	83236.497	3775025.616
3	83277.747	3775025.543
4	83279.601	3775026.238
5	83314.089	3775039.171
6	83315.957	3775039.872
7	83344.002	3775043.410
8	83345.840	3775042.624
9	83365.308	3775023.066
10	83366.094	3775021.227
11	83365.425	3774990.888
12	83361.656	3774954.553
13	83361.401	3774952.569
14	83358.658	3774926.442
15	83357.116	3774925.010
16	83321.916	3774911.810
17	83320.041	3774911.107
18	83287.420	3774905.811
19	83285.427	3774905.906
20	83248.090	3774907.484
21	83246.092	3774907.569
22	83210.573	3774910.994
23	83208.599	3774911.315
24	83153.932	3774922.933
25	83151.968	3774923.254
26	83118.362	3774930.281
27	83116.423	3774930.772
28	83081.937	3774938.113
29	83080.033	3774939.029
30	83071.366	3774950.190
31	83070.945	3774952.253
32	83072.436	3774987.317
33	83073.999	3775023.125
34	83074.046	3775025.123
35	83075.380	3775056.535
36	83076.223	3775058.349
37	83094.594	3775072.221
38	83096.592	3775072.136
39	83133.600	3775070.562
40	83135.564	3775070.479
41	83159.032	3775050.101
42	83160.718	3775049.025
43	83181.425	3775042.628
44	83337.966	3774930.704

Water House Connection Coordinate Table

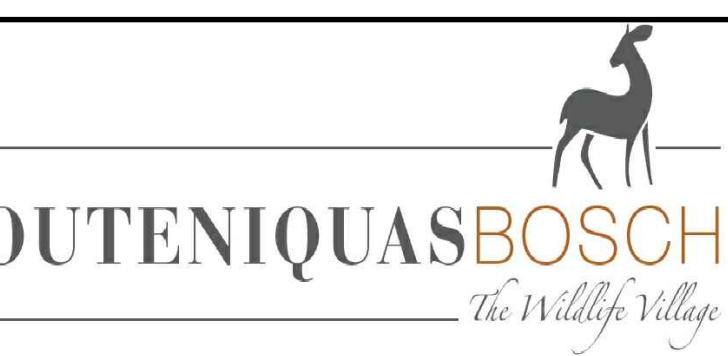
ID	Y	X
45	83336.112	3774929.955
46	83302.942	3774917.162
47	83300.731	3774917.256
48	83251.965	3774919.330
49	83249.962	3774919.415
50	83211.656	3774923.026
51	83209.704	3774923.427
52	83155.736	3774934.803
53	83153.774	3774935.230
54	83118.826	3774942.599
55	83116.869	3774943.012
56	83098.492	3774946.887
57	83107.314	3774988.972
58	83109.271	3774988.559
59	83144.215	3774981.231
60	83146.164	3774980.780
61	83181.102	3774973.414
62	83218.578	3774965.512
63	83220.535	3774965.099
64	83255.008	3774957.736
65	83256.982	3774957.414
66	83290.706	3774959.085
67	83292.543	3774959.876
68	83326.073	3774974.212
69	83327.910	3774975.003
70	83335.223	3774990.540
71	83333.191	3774990.342
72	83304.421	3774978.197
73	83302.596	3774977.427
74	83262.142	3774968.590
75	83260.184	3774969.003
76	83223.442	3774976.750
77	83221.451	3774977.170
78	83183.577	3774985.156
79	83148.132	3774992.629
80	83146.187	3774993.039
81	83111.981	3775000.000
82	83110.037	3775000.662
83	83085.852	3775020.365
84	83085.937	3775022.363
85	83108.033	3775059.635
86	83110.031	3775059.554
87	83147.994	3775044.372
88	83149.359	3775042.910

LEGEND:

200mm UPVC (E)	EXISTING WATER MAIN WITH SIZE & TYPE
PROPOSED 160mm UPVC SEWER PIPE	
PROF. 450mm CONC. STORMWATER PIPE	
PROF. 75mm CL 09 UPVC WATER PIPE	
PROF. 110mm CL 09 UPVC WATER PIPE	
PROF. 160mm CL 09 UPVC WATER PIPE	
PROF. VALVE CHAMBER (DETAIL W10)	
PROF. FIRE HYDRANT (DETAIL W12)	
PROF. VALVE CHAMBER WITH TYPE SHOWN	
A - AIR VALVE (DETAIL W13)	
S - SCOUR VALVE (DETAIL W14)	
C - CHECK VALVE (DETAIL W26)	
PROF. VALVE CHAMBER (DETAIL W10)	
PROF. SINGLE ERF CONNECTION (DETAIL W20)	
PROF. DOUBLE ERF CONN. (DETAIL W21)	
PROPOSED T-PIECE WITH DIAMETERS	
PROPOSED BEND	
PROPOSED REDUCER	
PROF. ADAPTOR WITH TYPE & DIAMETERS	
PROF. UPVC ENDCAP & DIAMETERS	
BWM	BULK WATER METER
BM	BENCHMARK, NUMBER & REDUCED LEVEL

FOR CONSTRUCTION

100 MILLIMETRES ON ORIGINAL DRAWING		
A	BEFORE CONTRACT COMMENCES	
A	AFTER CONTRACT HAS COMMENCED	
NO	DATE	AMENDMENTS
A	10-07-2019	VARIOUS CHANGES
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CESA
Consulting Engineers South Africa

PROJECT
OUTENIKUASBOSCH - DEVELOPMENT OF PHASES 1-3

DRAWING DESCRIPTION
WATER LAYOUT

DRAWING NO.
10408000-200

DESIGNED: DJK	CHECKED: DKJ
DRAWN: LA / MA	SCALE: 1:1000 A1
APPROVED: [Signature]	DATE: 2019-01-24
FILE PATH: P:\Hartenbos\10408000 Outeniquasbosch M1645\05 ConstrDraw\10408000-200.DRW	