



Environment One Corporation

**Pressure Sewer Preliminary
Cost and Design Analysis**

For

**Beach Road Developments LPS
07/04/23**

**Prepared For:
Woods**

Tel:

Fax:

Prepared By: Tyler Cunningham

April 28, 2023

Beach Road Developments LPS
07/04/23

Prepared by : Tyler Cunningham

On: April 28, 2023

Notes :

Zone number for Beach grove = 1-350. See attached plan P21-196-05-400-DR

Zone numbers for North Block = 600-700. See attached plan P21-517-00-400-DR

Zone numbers for South Block Village = 501

Note: Zone 64 is the main that the South Block connects to in Beach Road

<<<< END OF NOTES >>>>

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS

Prepared By:
Tyler Cunningham

Beach Road Developments LPS
07/04/23

April 28, 2023

Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Liters/Day per Pump	Max Flow Per Pump (lps)	Max Sim Ops	Max Flow (LPS)	Pipe Size (mm)	Max Velocity (MPS)	Length of Main this Zone	Friction Loss Factor (m/100m)	Friction Loss This Zone	Accum Fric Loss (meters)	Max Main Elevation	Minimum Pump Elevation	Static Head (meters)	Total Dynamic Head (m)
This spreadsheet was calculated using pipe diameters for: SDR11PE100 Friction loss calculations were based on a Constant for inside roughness "C" of: 130																	
1.00	2.00	4	4	720	.58	3	1.73	50.00	1.38	60.00	6.51	3.91	46.72	6.00	0.00	6.00	52.72
2.00	11.00	11	15	720	.50	4	2.07	63.00	1.01	195.00	2.77	5.41	42.81	6.00	0.00	6.00	48.81
3.00	4.00	4	4	720	.49	3	1.48	50.00	1.18	53.00	4.88	2.59	42.38	6.00	0.00	6.00	48.38
4.00	20.00	8	12	720	.51	4	2.02	63.00	0.99	109.00	2.66	2.89	39.79	6.00	0.00	6.00	45.79
5.00	20.00	5	5	720	.51	3	1.53	50.00	1.22	61.00	5.17	3.15	40.05	6.00	0.00	6.00	46.05
6.00	7.00	3	3	720	.52	2	1.05	50.00	0.83	16.00	2.55	0.41	38.02	6.00	0.00	6.00	44.02
7.00	12.00	5	8	720	.53	3	1.57	63.00	0.77	75.00	1.67	1.25	37.61	6.00	0.00	6.00	43.61
8.00	9.00	3	3	720	.51	2	1.03	50.00	0.82	22.00	2.47	0.54	40.64	6.00	0.00	6.00	46.64
9.00	13.00	5	8	720	.52	3	1.55	63.00	0.76	55.00	1.62	0.89	40.10	6.00	0.00	6.00	46.10
10.00	13.00	6	6	720	.52	3	1.55	63.00	0.76	70.00	1.62	1.13	40.34	6.00	0.00	6.00	46.34
11.00	21.00	7	22	720	.53	5	2.61	75.00	0.89	55.00	1.77	0.98	37.40	6.00	0.00	6.00	43.40
12.00	29.00	5	13	720	.53	4	2.11	63.00	1.03	66.00	2.88	1.90	36.36	6.00	0.00	6.00	42.36
13.00	30.00	6	20	720	.52	5	2.59	63.00	1.27	121.00	4.20	5.08	39.21	6.00	0.00	6.00	45.21
14.00	15.00	1	1	720	.54	1	.54	40.00	0.67	10.00	2.19	0.22	36.10	6.00	0.00	6.00	42.10
15.00	22.00	7	8	720	.54	3	1.61	63.00	0.79	60.00	1.74	1.05	35.88	6.00	0.00	6.00	41.88
16.00	17.00	4	4	720	.54	3	1.61	63.00	0.79	30.00	1.74	0.52	37.31	6.00	0.00	6.00	43.31
17.00	18.00	5	9	720	.54	3	1.62	63.00	0.79	53.00	1.75	0.93	36.79	6.00	0.00	6.00	42.79
18.00	19.00	8	17	720	.55	4	2.17	63.00	1.06	62.00	3.02	1.87	35.86	6.00	0.00	6.00	41.86
19.00	42.00	4	21	720	.56	5	2.73	75.00	0.93	53.00	1.93	1.02	33.99	6.00	0.00	6.00	39.99
20.00	21.00	0	17	720	.53	4	2.03	63.00	0.99	18.00	2.67	0.48	36.90	6.00	0.00	6.00	42.90
21.00	22.00	2	41	720	.53	6	3.10	75.00	1.06	65.00	2.44	1.59	36.42	6.00	0.00	6.00	42.42
22.00	29.00	0	49	720	.55	6	3.12	75.00	1.07	15.00	2.47	0.37	34.83	6.00	0.00	6.00	40.83
29.00	30.00	2	64	720	.55	7	3.66	75.00	1.25	10.00	3.32	0.33	34.46	6.00	0.00	6.00	40.46
30.00	33.00	0	84	720	.56	8	4.17	90.00	1.00	15.00	1.77	0.27	34.13	6.00	0.00	6.00	40.13
32.00	33.00	5	5	720	.55	3	1.65	63.00	0.81	90.00	1.81	1.63	35.49	6.00	0.00	6.00	41.49
33.00	42.00	1	90	720	.56	8	4.19	90.00	1.00	50.00	1.78	0.89	33.86	6.00	0.00	6.00	39.86
42.00	64.00	5	254	720	.57	13	6.93	125.00	0.86	95.00	0.93	0.89	32.97	6.00	0.00	6.00	38.97
43.00	47.00	1	11	720	.52	4	2.29	50.00	1.83	24.00	10.92	2.62	40.59	6.00	0.00	6.00	46.59
44.00	47.00	3	3	720	.53	2	1.05	50.00	0.84	50.00	2.59	1.30	39.27	6.00	0.00	6.00	45.27
45.00	46.00	6	6	720	.52	3	1.55	50.00	1.23	29.00	5.29	1.53	40.93	6.00	0.00	6.00	46.93
46.00	47.00	4	10	720	.53	4	2.08	63.00	1.02	51.00	2.80	1.43	39.40	6.00	0.00	6.00	45.40
47.00	58.00	6	30	720	.54	5	2.72	75.00	0.93	113.00	1.92	2.17	37.97	6.00	0.00	6.00	43.97
48.00	58.00	5	5	720	.53	3	1.60	50.00	1.27	46.00	5.58	2.57	38.37	6.00	0.00	6.00	44.37
49.00	50.00	3	13	720	.49	4	2.23	50.00	1.78	52.00	10.37	5.39	47.29	6.00	0.00	6.00	53.29
50.00	51.00	10	23	720	.52	5	2.70	63.00	1.32	70.00	4.52	3.16	41.90	6.00	0.00	6.00	47.90

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS

Prepared By:
Tyler Cunningham

Beach Road Developments LPS

07/04/23

April 28, 2023

Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Liters/Day per Pump	Max Flow Per Pump (lps)	Max Sim Ops	Max Flow (LPS)	Pipe Size (mm)	Max Velocity (MPS)	Length of Main this Zone	Friction Loss Factor (m/100m)	Friction Loss This Zone	Accum Fric Loss (meters)	Max Main Elevation	Minimum Pump Elevation	Static Head (meters)	Total Dynamic Head (m)
This spreadsheet was calculated using pipe diameters for: SDR11PE100 Friction loss calculations were based on a Constant for inside roughness "C" of: 130																	
51.00	59.00	6	29	720	.53	5	2.69	63.00	1.32	77.00	4.50	3.47	38.74	6.00	0.00	6.00	44.74
52.00	53.00	2	6	720	.51	3	1.67	50.00	1.33	19.00	6.05	1.15	42.23	6.00	0.00	6.00	48.23
53.00	54.00	4	10	720	.52	4	2.16	63.00	1.06	78.00	3.00	2.34	41.08	6.00	0.00	6.00	47.08
54.00	55.00	8	18	720	.53	4	2.14	63.00	1.05	55.00	2.96	1.63	38.74	6.00	0.00	6.00	44.74
55.00	59.00	4	22	720	.54	5	2.68	63.00	1.31	41.00	4.48	1.84	37.11	6.00	0.00	6.00	43.11
56.00	57.00	3	8	720	.51	3	1.66	50.00	1.32	34.00	6.01	2.04	41.84	6.00	0.00	6.00	47.84
57.00	58.00	9	17	720	.53	4	2.16	63.00	1.06	134.00	2.98	4.00	39.80	6.00	0.00	6.00	45.80
58.00	59.00	0	52	720	.55	7	3.79	75.00	1.30	15.00	3.55	0.53	35.80	6.00	0.00	6.00	41.80
59.00	60.00	0	103	720	.55	8	4.31	75.00	1.48	34.00	4.52	1.54	35.27	6.00	0.00	6.00	41.27
60.00	63.00	4	107	720	.56	8	4.32	75.00	1.48	26.00	4.53	1.18	33.73	6.00	0.00	6.00	39.73
61.00	62.00	6	6	720	.54	3	1.62	63.00	0.80	85.00	1.77	1.50	36.69	6.00	0.00	6.00	42.69
62.00	63.00	6	12	720	.55	4	2.19	63.00	1.07	86.00	3.07	2.64	35.19	6.00	0.00	6.00	41.19
63.00	64.00	0	119	720	.57	9	4.87	90.00	1.16	20.00	2.36	0.47	32.55	6.00	0.00	6.00	38.55
64.00	100.00	10	537	720	.57	21	11.51	160.00	0.87	590.00	0.70	4.13	32.08	6.00	0.00	6.00	38.08
99.00	100.00	0	246	720	.58	13	7.25	110.00	1.17	55.00	1.88	1.03	28.98	6.00	0.00	6.00	34.98
100.00	102.00	0	783	720	.59	29	15.99	160.00	1.20	20.00	1.29	0.26	27.95	6.00	0.00	6.00	33.95
101.00	102.00	0	577	720	.51	23	13.30	180.00	0.81	850.00	0.54	4.57	32.26	6.00	0.00	6.00	38.26
102.00	102.00	0	1,360	720	.59	46	25.89	180.00	1.57	1,500.00	1.85	27.69	27.69	6.00	0.00	6.00	33.69
130.00	64.00	1	4	1200	.58	3	1.65	50.00	1.31	240.00	5.93	14.22	46.30	6.00	0.00	6.00	52.30
131.00	130.00	3	3	720	.54	2	1.08	50.00	0.86	80.00	2.71	2.17	48.47	6.00	0.00	6.00	54.47
201.00	202.00	4	4	720	.50	3	1.51	50.00	1.20	38.00	5.01	1.90	49.39	6.00	0.00	6.00	55.39
202.00	204.00	13	17	720	.49	4	1.98	63.00	0.97	208.00	2.54	5.29	47.49	6.00	0.00	6.00	53.49
203.00	322.00	3	26	720	.50	5	2.49	63.00	1.22	53.00	3.89	2.06	37.12	6.00	0.00	6.00	43.12
204.00	205.00	4	21	720	.51	5	2.48	63.00	1.22	58.00	3.88	2.25	42.20	6.00	0.00	6.00	48.20
205.00	203.00	2	23	720	.49	5	2.48	63.00	1.21	73.00	3.88	2.83	39.95	6.00	0.00	6.00	45.95
206.00	214.00	9	9	720	.53	3	1.59	63.00	0.78	188.00	1.71	3.21	41.73	6.00	0.00	6.00	47.73
207.00	338.00	3	3	720	.49	2	.97	50.00	0.78	81.00	2.24	1.81	38.53	6.00	0.00	6.00	44.53
208.00	322.00	10	41	720	.50	6	3.27	75.00	1.12	193.00	2.70	5.21	40.27	6.00	0.00	6.00	46.27
209.00	245.00	5	5	720	.49	3	1.47	50.00	1.17	56.00	4.81	2.69	40.71	6.00	0.00	6.00	46.71
210.00	245.00	3	3	720	.52	2	1.04	50.00	0.83	38.30	2.52	0.97	38.99	6.00	0.00	6.00	44.99
211.00	216.00	2	13	720	.49	4	2.26	75.00	0.77	58.00	1.37	0.79	37.80	6.00	0.00	6.00	43.80
212.00	244.00	3	7	720	.48	3	1.61	63.00	0.79	60.00	1.73	1.04	42.72	6.00	0.00	6.00	48.72
213.00	244.00	4	4	720	.58	3	1.73	50.00	1.38	48.00	6.51	3.13	44.81	6.00	0.00	6.00	50.81
214.00	218.00	4	26	720	.51	5	2.66	63.00	1.30	55.00	4.39	2.42	38.52	6.00	0.00	6.00	44.52
215.00	214.00	3	11	720	.50	4	2.17	63.00	1.06	33.00	3.03	1.00	39.52	6.00	0.00	6.00	45.52

Page 2 Note: This analysis is valid only with the use of progressive cavity type grinder pumps as manufactured by Environment One.

C:\12dSynergy\data\WP-PEN-APP-01\P21-196 - Beach Grove Stages 5-8_10656\Model\Eng\LPS\Beach Grove - Whole Network Rev7 230322.EOne

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS

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Beach Road Developments LPS
07/04/23

April 28, 2023

Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Liters/Day per Pump	Max Flow Per Pump (lps)	Max Sim Ops	Max Flow (LPS)	Pipe Size (mm)	Max Velocity (MPS)	Length of Main this Zone	Friction Loss Factor (m/100m)	Friction Loss This Zone	Accum Fric Loss (meters)	Max Main Elevation	Minimum Pump Elevation	Static Head (meters)	Total Dynamic Head (m)
This spreadsheet was calculated using pipe diameters for: SDR11PE100										Friction loss calculations were based on a Constant for inside roughness "C" of: 130							
216.00	218.00	4	34	720	.51	6	3.39	90.00	0.81	75.00	1.21	0.91	37.01	6.00	0.00	6.00	43.01
217.00	215.00	4	8	720	.54	3	1.67	50.00	1.33	64.00	6.10	3.90	43.42	6.00	0.00	6.00	49.42
218.00	228.00	8	68	720	.50	7	3.82	90.00	0.91	134.00	1.50	2.01	36.10	6.00	0.00	6.00	42.10
219.00	220.00	5	16	720	.50	4	2.19	63.00	1.07	30.00	3.07	0.92	43.41	6.00	0.00	6.00	49.41
220.00	226.00	5	31	720	.50	6	3.24	75.00	1.11	127.00	2.65	3.37	42.49	6.00	0.00	6.00	48.49
221.00	227.00	4	40	720	.51	6	3.20	75.00	1.10	100.00	2.60	2.60	37.81	6.00	0.00	6.00	43.81
222.00	219.00	6	6	720	.56	3	1.67	63.00	0.82	88.00	1.85	1.63	45.04	6.00	0.00	6.00	51.04
223.00	220.00	5	5	720	.54	3	1.62	50.00	1.29	100.00	5.74	5.74	48.23	6.00	0.00	6.00	54.23
224.00	220.00	5	5	720	.55	3	1.65	50.00	1.32	90.00	5.96	5.36	47.85	6.00	0.00	6.00	53.85
225.00	226.00	5	5	720	.52	3	1.55	50.00	1.23	93.00	5.28	4.91	44.03	6.00	0.00	6.00	50.03
226.00	221.00	0	36	720	.54	6	3.22	75.00	1.10	50.00	2.62	1.31	39.12	6.00	0.00	6.00	45.12
227.00	228.00	2	42	720	.54	6	3.21	75.00	1.10	43.00	2.61	1.12	35.21	6.00	0.00	6.00	41.21
228.00	233.00	1	111	720	.48	8	4.32	90.00	1.03	23.00	1.89	0.44	34.09	6.00	0.00	6.00	40.09
229.00	230.00	5	5	720	.46	3	1.39	50.00	1.10	86.00	4.31	3.71	39.72	6.00	0.00	6.00	45.72
230.00	233.00	5	10	720	.55	4	2.02	63.00	0.99	89.00	2.65	2.36	36.01	6.00	0.00	6.00	42.01
231.00	232.00	10	10	720	.56	4	2.25	63.00	1.10	150.00	3.23	4.84	47.38	6.00	0.00	6.00	53.38
232.00	233.00	4	14	720	.46	4	2.13	50.00	1.70	93.00	9.56	8.89	42.54	6.00	0.00	6.00	48.54
233.00	42.00	3	138	720	.49	9	4.82	110.00	0.78	77.00	0.88	0.68	33.65	6.00	0.00	6.00	39.65
234.00	245.00	4	4	720	.50	3	1.50	50.00	1.19	42.00	4.98	2.09	40.11	6.00	0.00	6.00	46.11
235.00	214.00	2	2	720	.50	2	1.00	50.00	0.80	63.00	2.37	1.49	40.01	6.00	0.00	6.00	46.01
236.00	245.00	5	8	720	.51	3	1.60	63.00	0.78	65.00	1.72	1.12	39.14	6.00	0.00	6.00	45.14
237.00	208.00	7	11	720	.53	4	2.19	63.00	1.07	68.00	3.07	2.09	42.36	6.00	0.00	6.00	48.36
238.00	49.00	5	5	720	.58	3	1.73	63.00	0.85	87.00	2.00	1.74	49.03	6.00	0.00	6.00	55.03
239.00	49.00	5	5	720	.58	3	1.73	63.00	0.85	84.00	2.00	1.68	48.97	6.00	0.00	6.00	54.97
240.00	43.00	5	5	720	.58	3	1.73	63.00	0.85	87.00	2.00	1.74	42.33	6.00	0.00	6.00	48.33
241.00	43.00	5	5	720	.58	3	1.73	63.00	0.85	80.00	2.00	1.60	42.19	6.00	0.00	6.00	48.19
242.00	56.00	5	5	720	.58	3	1.73	63.00	0.85	75.00	2.00	1.50	43.34	6.00	0.00	6.00	49.34
243.00	52.00	4	4	720	.58	3	1.73	63.00	0.85	83.00	2.00	1.66	43.89	6.00	0.00	6.00	49.89
244.00	208.00	1	12	720	.58	4	2.21	63.00	1.08	45.00	3.13	1.41	41.68	6.00	0.00	6.00	47.68
245.00	322.00	7	27	720	.58	5	2.66	75.00	0.91	161.00	1.84	2.96	38.02	6.00	0.00	6.00	44.02
246.00	219.00	5	5	720	.58	3	1.74	63.00	0.85	102.00	2.01	2.05	45.46	6.00	0.00	6.00	51.46
248.00	237.00	4	4	720	.58	3	1.74	50.00	1.38	52.00	6.55	3.40	45.76	6.00	0.00	6.00	51.76
249.00	322.00	4	4	720	.58	3	1.74	50.00	1.38	80.00	6.55	5.24	40.30	6.00	0.00	6.00	46.30
304.00	310.00	9	12	720	.58	4	2.31	63.00	1.13	134.00	3.40	4.56	44.73	6.00	0.00	6.00	50.73
307.00	322.00	6	6	720	.58	3	1.73	50.00	1.38	79.00	6.51	5.14	40.20	6.00	0.00	6.00	46.20

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS

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Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Liters/Day per Pump	Max Flow Per Pump (lps)	Max Sim Ops	Max Flow (LPS)	Pipe Size (mm)	Max Velocity (MPS)	Length of Main this Zone	Friction Loss Factor (m/100m)	Friction Loss This Zone	Accum Fric Loss (meters)	Max Main Elevation	Minimum Pump Elevation	Static Head (meters)	Total Dynamic Head (m)
This spreadsheet was calculated using pipe diameters for: SDR11PE100											Friction loss calculations were based on a Constant for inside roughness "C" of: 130						
310.00	216.00	5	17	720	.58	4	2.31	63.00	1.13	93.00	3.40	3.16	40.17	6.00	0.00	6.00	46.17
311.00	211.00	7	11	720	.58	4	2.32	63.00	1.13	110.00	3.41	3.75	41.55	6.00	0.00	6.00	47.55
313.00	314.00	4	4	720	.58	3	1.73	50.00	1.38	51.00	6.51	3.32	38.47	6.00	0.00	6.00	44.47
314.00	321.00	5	9	720	.58	3	1.73	63.00	0.85	121.00	2.00	2.42	35.15	6.00	0.00	6.00	41.15
315.00	316.00	4	4	720	.58	3	1.73	50.00	1.38	44.00	6.51	2.87	41.28	6.00	0.00	6.00	47.28
316.00	321.00	10	14	720	.58	4	2.31	63.00	1.13	167.00	3.40	5.68	38.41	6.00	0.00	6.00	44.41
317.00	318.00	5	5	720	.58	3	1.73	50.00	1.38	52.00	6.51	3.39	48.73	6.00	0.00	6.00	54.73
318.00	344.00	9	14	720	.58	4	2.31	63.00	1.13	114.00	3.40	3.88	45.34	6.00	0.00	6.00	51.34
319.00	320.00	9	13	720	.58	4	2.31	63.00	1.13	137.00	3.40	4.66	44.38	6.00	0.00	6.00	50.38
320.00	321.00	6	74	720	.58	7	4.05	75.00	1.39	174.00	4.02	6.99	39.72	6.00	0.00	6.00	45.72
321.00	99.00	4	101	720	.58	8	4.63	75.00	1.58	73.00	5.14	3.75	32.73	6.00	0.00	6.00	38.73
322.00	99.00	12	116	720	.58	9	4.84	90.00	1.16	261.00	2.33	6.08	35.06	6.00	0.00	6.00	41.06
323.00	324.00	7	13	720	.58	4	2.23	63.00	1.09	154.00	3.18	4.89	35.86	6.00	0.00	6.00	41.86
324.00	99.00	4	29	720	.58	5	2.85	75.00	0.97	95.00	2.09	1.99	30.97	6.00	0.00	6.00	36.97
325.00	324.00	5	12	720	.58	4	2.32	63.00	1.13	80.00	3.41	2.73	33.70	6.00	0.00	6.00	39.70
326.00	319.00	4	4	720	.58	3	1.73	50.00	1.38	43.00	6.51	2.80	47.18	6.00	0.00	6.00	53.18
327.00	328.00	4	4	720	.58	3	1.73	50.00	1.38	38.00	6.51	2.47	46.78	6.00	0.00	6.00	52.78
328.00	320.00	9	13	720	.58	4	2.31	63.00	1.13	135.00	3.40	4.59	44.31	6.00	0.00	6.00	50.31
329.00	331.00	4	4	720	.58	3	1.73	50.00	1.38	41.00	6.51	2.67	44.01	6.00	0.00	6.00	50.01
330.00	304.00	3	3	720	.58	2	1.16	50.00	0.92	33.00	3.07	1.01	45.74	6.00	0.00	6.00	51.74
331.00	320.00	5	9	720	.58	3	1.74	63.00	0.85	81.00	2.00	1.62	41.34	6.00	0.00	6.00	47.34
332.00	311.00	4	4	720	.58	3	1.74	50.00	1.38	47.00	6.55	3.08	44.63	6.00	0.00	6.00	50.63
333.00	325.00	7	7	720	.58	3	1.74	50.00	1.38	80.00	6.55	5.24	38.94	6.00	0.00	6.00	44.94
336.00	343.00	5	5	720	.58	3	1.74	50.00	1.38	53.00	6.55	3.47	44.89	6.00	0.00	6.00	50.89
337.00	208.00	5	8	720	.58	3	1.74	63.00	0.85	55.00	2.00	1.10	41.37	6.00	0.00	6.00	47.37
338.00	323.00	3	6	720	.58	3	1.60	63.00	0.78	50.00	1.72	0.86	36.72	6.00	0.00	6.00	42.72
339.00	236.00	3	3	720	.58	2	1.16	50.00	0.92	49.00	3.07	1.51	40.65	6.00	0.00	6.00	46.65
340.00	217.00	4	4	720	.58	3	1.73	63.00	0.85	45.00	2.00	0.90	44.32	6.00	0.00	6.00	50.32
341.00	337.00	3	3	720	.58	2	1.16	50.00	0.92	41.00	3.07	1.26	42.63	6.00	0.00	6.00	48.63
342.00	212.00	4	4	720	.58	3	1.73	50.00	1.38	85.00	6.51	5.54	48.26	6.00	0.00	6.00	54.26
343.00	320.00	9	14	720	.58	4	2.32	75.00	0.79	119.00	1.43	1.70	41.42	6.00	0.00	6.00	47.42
344.00	320.00	5	19	720	.58	5	2.89	75.00	0.99	81.00	2.15	1.74	41.46	6.00	0.00	6.00	47.46
501.00	64.00	150	150	720	.58	10	5.78	90.00	1.38	10.00	3.24	0.32	32.40	6.00	0.00	6.00	38.40
600.00	101.00	4	17	720	.58	4	2.31	63.00	1.13	83.00	3.40	2.82	35.08	6.00	0.00	6.00	41.08
601.00	600.00	9	13	720	.58	4	2.31	63.00	1.13	144.00	3.40	4.90	39.98	6.00	0.00	6.00	45.98

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS

Prepared By:
Tyler Cunningham

Beach Road Developments LPS

07/04/23

April 28, 2023

Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Liters/Day per Pump	Max Flow Per Pump (lps)	Max Sim Ops	Max Flow (LPS)	Pipe Size (mm)	Max Velocity (MPS)	Length of Main this Zone	Friction Loss Factor (m/100m)	Friction Loss This Zone	Accum Fric Loss (meters)	Max Main Elevation	Minimum Pump Elevation	Static Head (meters)	Total Dynamic Head (m)
This spreadsheet was calculated using pipe diameters for: SDR11PE100																	
Friction loss calculations were based on a Constant for inside roughness "C" of: 130																	
602.00	601.00	4	4	720	.58	3	1.73	50.00	1.38	70.00	6.51	4.56	44.54	6.00	0.00	6.00	50.54
603.00	101.00	9	13	720	.58	4	2.31	63.00	1.13	150.00	3.40	5.10	37.36	6.00	0.00	6.00	43.36
604.00	603.00	4	4	720	.58	3	1.73	50.00	1.38	58.00	6.51	3.78	41.14	6.00	0.00	6.00	47.14
605.00	606.00	4	11	720	.58	4	2.31	63.00	1.13	49.00	3.40	1.67	38.00	6.00	0.00	6.00	44.00
606.00	607.00	4	36	720	.58	6	3.47	75.00	1.19	68.00	3.02	2.05	36.33	6.00	0.00	6.00	42.33
607.00	608.00	4	54	720	.58	7	4.05	90.00	0.97	47.00	1.68	0.79	34.28	6.00	0.00	6.00	40.28
608.00	609.00	4	104	720	.58	8	4.63	110.00	0.74	61.00	0.82	0.50	33.49	6.00	0.00	6.00	39.49
609.00	101.00	4	126	720	.58	9	5.20	110.00	0.84	72.00	1.02	0.73	32.99	6.00	0.00	6.00	38.99
610.00	101.00	9	392	720	.58	17	9.83	160.00	0.74	146.00	0.52	0.76	33.02	6.00	0.00	6.00	39.02
611.00	101.00	4	29	720	.58	5	2.89	75.00	0.99	82.00	2.15	1.76	34.02	6.00	0.00	6.00	40.02
612.00	611.00	4	15	720	.58	4	2.31	63.00	1.13	60.00	3.40	2.04	36.06	6.00	0.00	6.00	42.06
613.00	612.00	4	4	720	.58	3	1.73	50.00	1.38	56.00	6.51	3.65	39.71	6.00	0.00	6.00	45.71
614.00	612.00	3	3	720	.58	2	1.16	50.00	0.92	53.00	3.07	1.63	37.69	6.00	0.00	6.00	43.69
615.00	612.00	4	4	720	.58	3	1.73	50.00	1.38	64.00	6.51	4.17	40.23	6.00	0.00	6.00	46.23
616.00	611.00	5	5	720	.58	3	1.73	50.00	1.38	72.00	6.51	4.69	38.71	6.00	0.00	6.00	44.71
617.00	611.00	5	5	720	.58	3	1.73	50.00	1.38	95.00	6.51	6.19	40.21	6.00	0.00	6.00	46.21
618.00	619.00	4	4	720	.58	3	1.73	50.00	1.38	51.00	6.51	3.32	37.89	6.00	0.00	6.00	43.89
619.00	609.00	5	9	720	.58	3	1.73	63.00	0.85	79.00	2.00	1.58	34.57	6.00	0.00	6.00	40.57
620.00	621.00	4	4	720	.58	3	1.73	50.00	1.38	63.00	6.51	4.10	38.83	6.00	0.00	6.00	44.83
621.00	609.00	5	9	720	.58	3	1.73	63.00	0.85	87.00	2.00	1.74	34.73	6.00	0.00	6.00	40.73
622.00	623.00	4	4	720	.58	3	1.73	50.00	1.38	55.00	6.51	3.58	40.40	6.00	0.00	6.00	46.40
623.00	608.00	6	10	720	.58	4	2.31	63.00	1.13	98.00	3.40	3.33	36.82	6.00	0.00	6.00	42.82
624.00	625.00	4	4	720	.58	3	1.73	50.00	1.38	61.00	6.51	3.97	41.24	6.00	0.00	6.00	47.24
625.00	608.00	7	11	720	.58	4	2.31	63.00	1.13	111.00	3.40	3.78	37.27	6.00	0.00	6.00	43.27
626.00	627.00	4	21	720	.58	5	2.89	63.00	1.42	56.00	5.14	2.88	37.83	6.00	0.00	6.00	43.83
627.00	608.00	4	25	720	.58	5	2.89	75.00	0.99	68.00	2.15	1.46	34.95	6.00	0.00	6.00	40.95
628.00	629.00	4	4	720	.58	3	1.73	50.00	1.38	51.00	6.51	3.32	38.80	6.00	0.00	6.00	44.80
629.00	607.00	3	7	720	.58	3	1.73	63.00	0.85	60.00	2.00	1.20	35.48	6.00	0.00	6.00	41.48
630.00	631.00	4	4	720	.58	3	1.73	50.00	1.38	40.00	6.51	2.60	38.08	6.00	0.00	6.00	44.08
631.00	607.00	3	7	720	.58	3	1.73	63.00	0.85	60.00	2.00	1.20	35.48	6.00	0.00	6.00	41.48
632.00	633.00	4	4	720	.58	3	1.73	50.00	1.38	40.00	6.51	2.60	40.13	6.00	0.00	6.00	46.13
633.00	606.00	3	7	720	.58	3	1.73	63.00	0.85	60.00	2.00	1.20	37.53	6.00	0.00	6.00	43.53
634.00	635.00	4	10	720	.58	4	2.31	63.00	1.13	41.00	3.40	1.39	40.03	6.00	0.00	6.00	46.03
635.00	606.00	4	14	720	.58	4	2.31	63.00	1.13	68.00	3.40	2.31	38.64	6.00	0.00	6.00	44.64
636.00	637.00	4	4	720	.58	3	1.73	50.00	1.38	38.00	6.51	2.47	41.73	6.00	0.00	6.00	47.73

Page 5 Note: This analysis is valid only with the use of progressive cavity type grinder pumps as manufactured by Environment One.

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS

Prepared By:
Tyler Cunningham

Beach Road Developments LPS

07/04/23

April 28, 2023

Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Liters/Day per Pump	Max Flow Per Pump (lps)	Max Sim Ops	Max Flow (LPS)	Pipe Size (mm)	Max Velocity (MPS)	Length of Main this Zone	Friction Loss Factor (m/100m)	Friction Loss This Zone	Accum Fric Loss (meters)	Max Main Elevation	Minimum Pump Elevation	Static Head (meters)	Total Dynamic Head (m)
This spreadsheet was calculated using pipe diameters for: SDR11PE100 Friction loss calculations were based on a Constant for inside roughness "C" of: 130																	
637.00	605.00	3	7	720	.58	3	1.73	63.00	0.85	63.00	2.00	1.26	39.26	6.00	0.00	6.00	45.26
638.00	639.00	4	4	720	.58	3	1.73	63.00	0.85	100.00	2.00	2.00	42.87	6.00	0.00	6.00	48.87
639.00	634.00	2	6	720	.58	3	1.73	63.00	0.85	42.00	2.00	0.84	40.87	6.00	0.00	6.00	46.87
640.00	641.00	4	4	720	.58	3	1.73	50.00	1.38	77.00	6.51	5.01	45.69	6.00	0.00	6.00	51.69
641.00	644.00	4	8	720	.58	3	1.73	63.00	0.85	47.00	2.00	0.94	40.68	6.00	0.00	6.00	46.68
642.00	644.00	3	3	720	.58	2	1.16	50.00	0.92	57.00	3.07	1.75	41.49	6.00	0.00	6.00	47.49
643.00	626.00	2	2	720	.58	2	1.16	50.00	0.92	31.00	3.07	0.95	38.78	6.00	0.00	6.00	44.78
644.00	626.00	4	15	720	.58	4	2.31	63.00	1.13	56.00	3.40	1.91	39.74	6.00	0.00	6.00	45.74
645.00	646.00	3	3	720	.58	2	1.16	50.00	0.92	27.00	3.07	0.83	38.80	6.00	0.00	6.00	44.80
646.00	733.00	3	6	720	.58	3	1.73	63.00	0.85	37.00	2.00	0.74	37.97	6.00	0.00	6.00	43.97
647.00	648.00	4	4	720	.58	3	1.73	50.00	1.38	39.00	6.51	2.54	41.01	6.00	0.00	6.00	47.01
648.00	733.00	5	9	720	.58	3	1.73	63.00	0.85	62.00	2.00	1.24	38.47	6.00	0.00	6.00	44.47
649.00	650.00	4	4	720	.58	3	1.73	50.00	1.38	39.00	6.51	2.54	38.95	6.00	0.00	6.00	44.95
650.00	734.00	5	9	720	.58	3	1.73	63.00	0.85	61.00	2.00	1.22	36.41	6.00	0.00	6.00	42.41
651.00	652.00	4	4	720	.58	3	1.73	50.00	1.38	39.00	6.51	2.54	38.95	6.00	0.00	6.00	44.95
652.00	734.00	5	9	720	.58	3	1.73	63.00	0.85	61.00	2.00	1.22	36.41	6.00	0.00	6.00	42.41
653.00	654.00	4	4	720	.58	3	1.73	50.00	1.38	35.00	6.51	2.28	39.68	6.00	0.00	6.00	45.68
654.00	734.00	6	10	720	.58	4	2.31	63.00	1.13	65.00	3.40	2.21	37.40	6.00	0.00	6.00	43.40
655.00	656.00	4	4	720	.58	3	1.73	50.00	1.38	40.00	6.51	2.60	37.42	6.00	0.00	6.00	43.42
656.00	736.00	5	9	720	.58	3	1.73	63.00	0.85	61.00	2.00	1.22	34.82	6.00	0.00	6.00	40.82
657.00	658.00	4	4	720	.58	3	1.73	50.00	1.38	39.00	6.51	2.54	37.38	6.00	0.00	6.00	43.38
658.00	736.00	5	9	720	.58	3	1.73	63.00	0.85	62.00	2.00	1.24	34.84	6.00	0.00	6.00	40.84
659.00	660.00	4	4	720	.58	3	1.73	50.00	1.38	34.00	6.51	2.21	38.62	6.00	0.00	6.00	44.62
660.00	737.00	6	10	720	.58	4	2.31	63.00	1.13	65.00	3.40	2.21	36.41	6.00	0.00	6.00	42.41
661.00	662.00	4	4	720	.58	3	1.73	50.00	1.38	42.00	6.51	2.73	38.13	6.00	0.00	6.00	44.13
662.00	737.00	5	9	720	.58	3	1.73	63.00	0.85	60.00	2.00	1.20	35.40	6.00	0.00	6.00	41.40
663.00	664.00	4	4	720	.58	3	1.73	50.00	1.38	36.00	6.51	2.34	38.82	6.00	0.00	6.00	44.82
664.00	738.00	5	9	720	.58	3	1.73	63.00	0.85	65.00	2.00	1.30	36.48	6.00	0.00	6.00	42.48
665.00	738.00	2	2	720	.58	2	1.16	50.00	0.92	57.00	3.07	1.75	36.93	6.00	0.00	6.00	42.93
666.00	667.00	6	72	720	.58	7	4.05	90.00	0.97	91.00	1.68	1.52	37.55	6.00	0.00	6.00	43.55
667.00	738.00	1	73	720	.58	7	4.05	90.00	0.97	51.00	1.68	0.85	36.03	6.00	0.00	6.00	42.03
668.00	738.00	2	2	720	.58	2	1.16	50.00	0.92	53.00	3.07	1.63	36.81	6.00	0.00	6.00	42.81
669.00	670.00	3	3	720	.58	2	1.16	50.00	0.92	74.00	3.07	2.27	41.95	6.00	0.00	6.00	47.95
670.00	675.00	3	6	720	.58	3	1.73	50.00	1.38	43.00	6.51	2.80	39.68	6.00	0.00	6.00	45.68
671.00	672.00	4	4	720	.58	3	1.73	50.00	1.38	33.00	6.51	2.15	40.47	6.00	0.00	6.00	46.47

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS

Prepared By:
Tyler Cunningham

Beach Road Developments LPS
07/04/23

April 28, 2023

Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Liters/Day per Pump	Max Flow Per Pump (lps)	Max Sim Ops	Max Flow (LPS)	Pipe Size (mm)	Max Velocity (MPS)	Length of Main this Zone	Friction Loss Factor (m/100m)	Friction Loss This Zone	Accum Fric Loss (meters)	Max Main Elevation	Minimum Pump Elevation	Static Head (meters)	Total Dynamic Head (m)
This spreadsheet was calculated using pipe diameters for: SDR11PE100 Friction loss calculations were based on a Constant for inside roughness "C" of: 130																	
672.00	675.00	4	8	720	.58	3	1.73	63.00	0.85	72.00	2.00	1.44	38.32	6.00	0.00	6.00	44.32
673.00	674.00	4	4	720	.58	3	1.73	50.00	1.38	32.00	6.51	2.08	40.40	6.00	0.00	6.00	46.40
674.00	675.00	0	4	720	.58	3	1.73	63.00	0.85	72.00	2.00	1.44	38.32	6.00	0.00	6.00	44.32
675.00	738.00	1	19	720	.58	5	2.89	75.00	0.99	79.00	2.15	1.70	36.88	6.00	0.00	6.00	42.88
676.00	677.00	4	4	720	.58	3	1.73	50.00	1.38	35.00	6.51	2.28	43.15	6.00	0.00	6.00	49.15
677.00	678.00	5	9	720	.58	3	1.73	63.00	0.85	78.00	2.00	1.56	40.87	6.00	0.00	6.00	46.87
678.00	666.00	4	21	720	.58	5	2.89	75.00	0.99	82.00	2.15	1.76	39.31	6.00	0.00	6.00	45.31
679.00	680.00	4	4	720	.58	3	1.73	50.00	1.38	39.00	6.51	2.54	43.33	6.00	0.00	6.00	49.33
680.00	678.00	4	8	720	.58	3	1.73	63.00	0.85	74.00	2.00	1.48	40.79	6.00	0.00	6.00	46.79
681.00	666.00	10	45	720	.58	6	3.47	90.00	0.83	140.00	1.26	1.76	39.31	6.00	0.00	6.00	45.31
682.00	683.00	5	5	720	.58	3	1.73	50.00	1.38	62.00	6.51	4.04	43.19	6.00	0.00	6.00	49.19
683.00	685.00	1	6	720	.58	3	1.73	63.00	0.85	40.00	2.00	0.80	39.15	6.00	0.00	6.00	45.15
684.00	685.00	5	5	720	.58	3	1.73	50.00	1.38	87.00	6.51	5.67	44.02	6.00	0.00	6.00	50.02
685.00	688.00	4	15	720	.58	4	2.31	63.00	1.13	60.00	3.40	2.04	38.35	6.00	0.00	6.00	44.35
686.00	688.00	4	4	720	.58	3	1.73	50.00	1.38	69.00	6.51	4.49	40.80	6.00	0.00	6.00	46.80
687.00	688.00	3	3	720	.58	2	1.16	50.00	0.92	65.00	3.07	2.00	38.31	6.00	0.00	6.00	44.31
688.00	730.00	4	26	720	.58	5	2.89	75.00	0.99	58.00	2.15	1.25	36.31	6.00	0.00	6.00	42.31
689.00	730.00	2	158	720	.58	10	5.78	110.00	0.93	73.00	1.24	0.90	35.96	6.00	0.00	6.00	41.96
690.00	691.00	3	3	720	.58	2	1.16	50.00	0.92	68.00	3.07	2.09	42.36	6.00	0.00	6.00	48.36
691.00	730.00	2	5	720	.58	3	1.73	50.00	1.38	80.00	6.51	5.21	40.27	6.00	0.00	6.00	46.27
692.00	693.00	4	4	720	.58	3	1.73	50.00	1.38	40.00	6.51	2.60	44.65	6.00	0.00	6.00	50.65
693.00	725.00	5	9	720	.58	3	1.73	63.00	0.85	68.00	2.00	1.36	42.05	6.00	0.00	6.00	48.05
694.00	695.00	4	4	720	.58	3	1.73	50.00	1.38	50.00	6.51	3.26	45.94	6.00	0.00	6.00	51.94
695.00	735.00	2	6	720	.58	3	1.73	63.00	0.85	34.00	2.00	0.68	42.68	6.00	0.00	6.00	48.68
696.00	697.00	4	4	720	.58	3	1.73	50.00	1.38	37.00	6.51	2.41	45.33	6.00	0.00	6.00	51.33
697.00	735.00	3	7	720	.58	3	1.73	63.00	0.85	46.00	2.00	0.92	42.92	6.00	0.00	6.00	48.92
698.00	699.00	3	3	720	.58	2	1.16	50.00	0.92	56.00	3.07	1.72	45.30	6.00	0.00	6.00	51.30
699.00	735.00	3	6	720	.58	3	1.73	63.00	0.85	79.00	2.00	1.58	43.58	6.00	0.00	6.00	49.58
700.00	701.00	4	4	720	.58	3	1.73	50.00	1.38	40.00	6.51	2.60	45.21	6.00	0.00	6.00	51.21
701.00	739.00	10	14	720	.58	4	2.31	63.00	1.13	138.00	3.40	4.69	42.61	6.00	0.00	6.00	48.61
702.00	703.00	3	3	720	.58	2	1.16	50.00	0.92	28.00	3.07	0.86	41.39	6.00	0.00	6.00	47.39
703.00	704.00	2	5	720	.58	3	1.73	63.00	0.85	66.00	2.00	1.32	40.53	6.00	0.00	6.00	46.53
704.00	739.00	11	16	720	.58	4	2.31	63.00	1.13	38.00	3.40	1.29	39.21	6.00	0.00	6.00	45.21
705.00	706.00	3	3	720	.58	2	1.16	50.00	0.92	25.00	3.07	0.77	45.51	6.00	0.00	6.00	51.51
706.00	729.00	8	11	720	.58	4	2.31	63.00	1.13	108.00	3.40	3.67	44.74	6.00	0.00	6.00	50.74

Page 7 Note: This analysis is valid only with the use of progressive cavity type grinder pumps as manufactured by Environment One.

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS

Prepared By:
Tyler Cunningham

Beach Road Developments LPS

07/04/23

April 28, 2023

Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Liters/Day per Pump	Max Flow Per Pump (lps)	Max Sim Ops	Max Flow (LPS)	Pipe Size (mm)	Max Velocity (MPS)	Length of Main this Zone	Friction Loss Factor (m/100m)	Friction Loss This Zone	Accum Fric Loss (meters)	Max Main Elevation	Minimum Pump Elevation	Static Head (meters)	Total Dynamic Head (m)
This spreadsheet was calculated using pipe diameters for: SDR11PE100																	
Friction loss calculations were based on a Constant for inside roughness "C" of: 130																	
707.00	708.00	4	4	720	.58	3	1.73	50.00	1.38	44.00	6.51	2.87	45.66	6.00	0.00	6.00	51.66
708.00	729.00	5	9	720	.58	3	1.73	63.00	0.85	86.00	2.00	1.72	42.79	6.00	0.00	6.00	48.79
709.00	710.00	3	3	720	.58	2	1.16	50.00	0.92	32.00	3.07	0.98	43.62	6.00	0.00	6.00	49.62
710.00	681.00	8	11	720	.58	4	2.31	63.00	1.13	98.00	3.40	3.33	42.64	6.00	0.00	6.00	48.64
711.00	712.00	4	4	720	.58	3	1.73	50.00	1.38	44.00	6.51	2.87	44.66	6.00	0.00	6.00	50.66
712.00	728.00	7	11	720	.58	4	2.31	63.00	1.13	86.00	3.40	2.93	41.79	6.00	0.00	6.00	47.79
713.00	714.00	4	4	720	.58	3	1.73	50.00	1.38	44.00	6.51	2.87	43.45	6.00	0.00	6.00	49.45
714.00	728.00	5	9	720	.58	3	1.73	63.00	0.85	86.00	2.00	1.72	40.58	6.00	0.00	6.00	46.58
715.00	716.00	4	4	720	.58	3	1.73	50.00	1.38	44.00	6.51	2.87	42.24	6.00	0.00	6.00	48.24
716.00	727.00	5	9	720	.58	3	1.73	63.00	0.85	86.00	2.00	1.72	39.37	6.00	0.00	6.00	45.37
717.00	718.00	4	4	720	.58	3	1.73	50.00	1.38	44.00	6.51	2.87	45.28	6.00	0.00	6.00	51.28
718.00	725.00	5	9	720	.58	3	1.73	63.00	0.85	86.00	2.00	1.72	42.41	6.00	0.00	6.00	48.41
719.00	720.00	4	4	720	.58	3	1.73	50.00	1.38	44.00	6.51	2.87	43.44	6.00	0.00	6.00	49.44
720.00	726.00	5	9	720	.58	3	1.73	63.00	0.85	86.00	2.00	1.72	40.57	6.00	0.00	6.00	46.57
721.00	722.00	4	4	720	.58	3	1.73	50.00	1.38	44.00	6.51	2.87	43.44	6.00	0.00	6.00	49.44
722.00	726.00	5	9	720	.58	3	1.73	63.00	0.85	86.00	2.00	1.72	40.57	6.00	0.00	6.00	46.57
723.00	724.00	4	4	720	.58	3	1.73	50.00	1.38	44.00	6.51	2.87	43.44	6.00	0.00	6.00	49.44
724.00	726.00	5	9	720	.58	3	1.73	63.00	0.85	86.00	2.00	1.72	40.57	6.00	0.00	6.00	46.57
725.00	726.00	4	41	720	.58	6	3.47	75.00	1.19	61.00	3.02	1.84	40.69	6.00	0.00	6.00	46.69
726.00	689.00	4	72	720	.58	7	4.05	75.00	1.39	72.00	4.01	2.89	38.85	6.00	0.00	6.00	44.85
727.00	689.00	4	45	720	.58	6	3.47	75.00	1.19	56.00	3.02	1.69	37.65	6.00	0.00	6.00	43.65
728.00	727.00	4	24	720	.58	5	2.89	75.00	0.99	56.00	2.15	1.21	38.86	6.00	0.00	6.00	44.86
729.00	681.00	4	24	720	.58	5	2.89	75.00	0.99	82.00	2.15	1.76	41.07	6.00	0.00	6.00	47.07
730.00	610.00	9	198	720	.58	11	6.36	110.00	1.02	138.00	1.48	2.04	35.06	6.00	0.00	6.00	41.06
733.00	734.00	0	15	720	.58	4	2.31	63.00	1.13	60.00	3.40	2.04	37.23	6.00	0.00	6.00	43.23
734.00	610.00	0	43	720	.58	6	3.47	75.00	1.19	72.00	3.02	2.17	35.19	6.00	0.00	6.00	41.19
735.00	725.00	0	19	720	.58	5	2.89	75.00	0.99	61.00	2.15	1.31	42.00	6.00	0.00	6.00	48.00
736.00	610.00	0	142	720	.58	9	5.20	110.00	0.84	57.00	1.02	0.58	33.60	6.00	0.00	6.00	39.60
737.00	736.00	0	124	720	.58	9	5.20	110.00	0.84	59.00	1.02	0.60	34.20	6.00	0.00	6.00	40.20
738.00	737.00	0	105	720	.58	8	4.63	110.00	0.74	120.00	0.82	0.98	35.18	6.00	0.00	6.00	41.18
739.00	689.00	9	39	720	.58	6	3.47	90.00	0.83	156.00	1.26	1.96	37.92	6.00	0.00	6.00	43.92
740.00	741.00	4	4	720	.58	3	1.73	50.00	1.38	44.00	6.51	2.87	42.24	6.00	0.00	6.00	48.24
741.00	727.00	4	8	720	.58	3	1.73	63.00	0.85	86.00	2.00	1.72	39.37	6.00	0.00	6.00	45.37

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)

Beach Road Developments LPS

07/04/23

April 28, 2023

Prepared By:
Tyler Cunningham

Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (mm)	Liters per 100 lineal meters	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)	
This spreadsheet was calculated using pipe diameters for: SDR11PE100							Liters per Day per Dwelling				720
1.00	2.00	4	50.00	125.66	60.00	75.40	2,880	38.20	0.63	3.26	
2.00	11.00	15	63.00	204.28	195.00	398.35	10,800	27.11	0.89	2.63	
3.00	4.00	4	50.00	125.66	53.00	66.60	2,880	43.24	0.56	2.75	
4.00	20.00	12	63.00	204.28	109.00	222.67	8,640	38.80	0.62	2.20	
5.00	20.00	5	50.00	125.66	61.00	76.65	3,600	46.96	0.51	2.09	
6.00	7.00	3	50.00	125.66	16.00	20.11	2,160	107.43	0.22	2.53	
7.00	12.00	8	63.00	204.28	75.00	153.21	5,760	37.60	0.64	2.31	
8.00	9.00	3	50.00	125.66	22.00	27.65	2,160	78.13	0.31	2.49	
9.00	13.00	8	63.00	204.28	55.00	112.36	5,760	51.27	0.47	2.19	
10.00	13.00	6	63.00	204.28	70.00	143.00	4,320	30.21	0.79	2.51	
11.00	21.00	22	75.00	292.25	55.00	160.74	15,840	98.55	0.24	1.75	
12.00	29.00	13	63.00	204.28	66.00	134.83	9,360	69.42	0.35	1.67	
13.00	30.00	20	63.00	204.28	121.00	247.18	14,400	58.26	0.41	1.72	
14.00	15.00	1	40.00	80.42	10.00	8.04	720	89.52	0.27	2.13	
15.00	22.00	8	63.00	204.28	60.00	122.57	5,760	46.99	0.51	1.86	
16.00	17.00	4	63.00	204.28	30.00	61.28	2,880	46.99	0.51	2.61	
17.00	18.00	9	63.00	204.28	53.00	108.27	6,480	59.85	0.40	2.10	
18.00	19.00	17	63.00	204.28	62.00	126.65	12,240	96.64	0.25	1.70	
19.00	42.00	21	75.00	292.25	53.00	154.89	15,120	97.62	0.25	1.45	
20.00	21.00	17	63.00	204.28	18.00	36.77	12,240	332.87	0.07	1.58	
21.00	22.00	41	75.00	292.25	65.00	189.96	29,520	155.40	0.15	1.51	
22.00	29.00	49	75.00	292.25	15.00	43.84	35,280	804.80	0.03	1.35	
29.00	30.00	64	75.00	292.25	10.00	29.22	46,080	1,576.75	0.02	1.32	
30.00	33.00	84	90.00	418.54	15.00	62.78	60,480	963.35	0.02	1.31	
32.00	33.00	5	63.00	204.28	90.00	183.85	3,600	19.58	1.23	2.51	
33.00	42.00	90	90.00	418.54	50.00	209.27	64,800	309.65	0.08	1.28	
42.00	64.00	254	125.00	801.18	95.00	761.13	182,880	240.28	0.10	1.20	
43.00	47.00	11	50.00	125.66	24.00	30.16	7,920	262.61	0.09	1.67	
44.00	47.00	3	50.00	125.66	50.00	62.83	2,160	34.38	0.70	2.28	
45.00	46.00	6	50.00	125.66	29.00	36.44	4,320	118.54	0.20	2.13	
46.00	47.00	10	63.00	204.28	51.00	104.18	7,200	69.11	0.35	1.93	
47.00	58.00	30	75.00	292.25	113.00	330.24	21,600	65.41	0.37	1.58	
48.00	58.00	5	50.00	125.66	46.00	57.81	3,600	62.28	0.39	1.60	
49.00	50.00	13	50.00	125.66	52.00	65.35	9,360	143.24	0.17	1.74	
50.00	51.00	23	63.00	204.28	70.00	143.00	16,560	115.81	0.21	1.57	

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)

Beach Road Developments LPS

07/04/23

April 28, 2023

Prepared By:
Tyler Cunningham

Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (mm)	Liters per 100 lineal meters	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)
This spreadsheet was calculated using pipe diameters for: SDR11PE100							Liters per Day per Dwelling			720
51.00	59.00	29	63.00	204.28	77.00	157.30	20,880	132.74	0.18	1.36
52.00	53.00	6	50.00	125.66	19.00	23.88	4,320	180.93	0.13	2.18
53.00	54.00	10	63.00	204.28	78.00	159.34	7,200	45.19	0.53	2.05
54.00	55.00	18	63.00	204.28	55.00	112.36	12,960	115.35	0.21	1.52
55.00	59.00	22	63.00	204.28	41.00	83.76	15,840	189.12	0.13	1.31
56.00	57.00	8	50.00	125.66	34.00	42.73	5,760	134.81	0.18	1.93
57.00	58.00	17	63.00	204.28	134.00	273.74	12,240	44.71	0.54	1.75
58.00	59.00	52	75.00	292.25	15.00	43.84	37,440	854.07	0.03	1.21
59.00	60.00	103	75.00	292.25	34.00	99.36	74,160	746.35	0.03	1.18
60.00	63.00	107	75.00	292.25	26.00	75.98	77,040	1,013.90	0.02	1.15
61.00	62.00	6	63.00	204.28	85.00	173.64	4,320	24.88	0.96	2.58
62.00	63.00	12	63.00	204.28	86.00	175.68	8,640	49.18	0.49	1.62
63.00	64.00	119	90.00	418.54	20.00	83.71	85,680	1,023.56	0.02	1.13
64.00	100.00	537	160.00	1,327.32	590.00	7,831.20	387,120	49.43	0.49	1.10
99.00	100.00	246	110.00	622.11	55.00	342.16	177,120	517.65	0.05	0.66
100.00	102.00	783	160.00	1,327.32	20.00	265.46	564,240	2,125.48	0.01	0.62
101.00	102.00	577	180.00	1,651.30	850.00	14,036.04	415,440	29.60	0.81	1.42
102.00	102.00	1,360	180.00	1,651.30	1,500.00	24,769.49	979,680	39.55	0.61	0.61
130.00	64.00	4	50.00	125.66	240.00	301.59	3,360	11.14	2.15	3.26
131.00	130.00	3	50.00	125.66	80.00	100.53	2,160	21.49	1.12	4.37
201.00	202.00	4	50.00	125.66	38.00	47.75	2,880	60.31	0.40	2.75
202.00	204.00	17	63.00	204.28	208.00	424.91	12,240	28.81	0.83	2.35
203.00	322.00	26	63.00	204.28	53.00	108.27	18,720	172.90	0.14	1.12
204.00	205.00	21	63.00	204.28	58.00	118.48	15,120	127.61	0.19	1.52
205.00	203.00	23	63.00	204.28	73.00	149.13	16,560	111.05	0.22	1.33
206.00	214.00	9	63.00	204.28	188.00	384.05	6,480	16.87	1.42	3.19
207.00	338.00	3	50.00	125.66	81.00	101.79	2,160	21.22	1.13	3.49
208.00	322.00	41	75.00	292.25	193.00	564.04	29,520	52.34	0.46	1.44
209.00	245.00	5	50.00	125.66	56.00	70.37	3,600	51.16	0.47	2.03
210.00	245.00	3	50.00	125.66	38.30	48.13	2,160	44.88	0.53	2.09
211.00	216.00	13	75.00	292.25	58.00	169.50	9,360	55.22	0.43	2.37
212.00	244.00	7	63.00	204.28	60.00	122.57	5,040	41.12	0.58	2.28
213.00	244.00	4	50.00	125.66	48.00	60.32	2,880	47.75	0.50	2.19
214.00	218.00	26	63.00	204.28	55.00	112.36	18,720	166.61	0.14	1.77
215.00	214.00	11	63.00	204.28	33.00	67.41	7,920	117.48	0.20	1.97

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)

Beach Road Developments LPS

07/04/23

April 28, 2023

Prepared By:
Tyler Cunningham

Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (mm)	Liters per 100 lineal meters	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)	
This spreadsheet was calculated using pipe diameters for: SDR11PE100							Liters per Day per Dwelling				720
216.00	218.00	34	90.00	418.54	75.00	313.90	24,480	77.99	0.31	1.93	
217.00	215.00	8	50.00	125.66	64.00	80.42	5,760	71.62	0.34	2.31	
218.00	228.00	68	90.00	418.54	134.00	560.84	48,960	87.30	0.27	1.62	
219.00	220.00	16	63.00	204.28	30.00	61.28	11,520	187.98	0.13	2.35	
220.00	226.00	31	75.00	292.25	127.00	371.15	22,320	60.14	0.40	2.23	
221.00	227.00	40	75.00	292.25	100.00	292.25	28,800	98.55	0.24	1.69	
222.00	219.00	6	63.00	204.28	88.00	179.77	4,320	24.03	1.00	3.35	
223.00	220.00	5	50.00	125.66	100.00	125.66	3,600	28.65	0.84	3.06	
224.00	220.00	5	50.00	125.66	90.00	113.10	3,600	31.83	0.75	2.98	
225.00	226.00	5	50.00	125.66	93.00	116.87	3,600	30.80	0.78	2.61	
226.00	221.00	36	75.00	292.25	50.00	146.12	25,920	177.38	0.14	1.83	
227.00	228.00	42	75.00	292.25	43.00	125.67	30,240	240.64	0.10	1.45	
228.00	233.00	111	90.00	418.54	23.00	96.26	79,920	830.22	0.03	1.35	
229.00	230.00	5	50.00	125.66	86.00	108.07	3,600	33.31	0.72	2.65	
230.00	233.00	10	63.00	204.28	89.00	181.81	7,200	39.60	0.61	1.93	
231.00	232.00	10	63.00	204.28	150.00	306.42	7,200	23.50	1.02	2.62	
232.00	233.00	14	50.00	125.66	93.00	116.87	10,080	86.25	0.28	1.60	
233.00	42.00	138	110.00	622.11	77.00	479.03	99,360	207.42	0.12	1.32	
234.00	245.00	4	50.00	125.66	42.00	52.78	2,880	54.57	0.44	2.00	
235.00	214.00	2	50.00	125.66	63.00	79.17	1,440	18.19	1.32	3.09	
236.00	245.00	8	63.00	204.28	65.00	132.78	5,760	43.38	0.55	2.11	
237.00	208.00	11	63.00	204.28	68.00	138.91	7,920	57.01	0.42	1.86	
238.00	49.00	5	63.00	204.28	87.00	177.73	3,600	20.26	1.18	2.92	
239.00	49.00	5	63.00	204.28	84.00	171.60	3,600	20.98	1.14	2.88	
240.00	43.00	5	63.00	204.28	87.00	177.73	3,600	20.26	1.18	2.85	
241.00	43.00	5	63.00	204.28	80.00	163.43	3,600	22.03	1.09	2.76	
242.00	56.00	5	63.00	204.28	75.00	153.21	3,600	23.50	1.02	2.95	
243.00	52.00	4	63.00	204.28	83.00	169.55	2,880	16.99	1.41	3.59	
244.00	208.00	12	63.00	204.28	45.00	91.93	8,640	93.99	0.26	1.69	
245.00	322.00	27	75.00	292.25	161.00	470.52	19,440	41.32	0.58	1.56	
246.00	219.00	5	63.00	204.28	102.00	208.37	3,600	17.28	1.39	3.74	
248.00	237.00	4	50.00	125.66	52.00	65.35	2,880	44.07	0.54	2.40	
249.00	322.00	4	50.00	125.66	80.00	100.53	2,880	28.65	0.84	1.82	
304.00	310.00	12	63.00	204.28	134.00	273.74	8,640	31.56	0.76	3.06	
307.00	322.00	6	50.00	125.66	79.00	99.27	4,320	43.52	0.55	1.53	

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)

Beach Road Developments LPS

07/04/23

April 28, 2023

Prepared By:
Tyler Cunningham

Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (mm)	Liters per 100 lineal meters	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)	
This spreadsheet was calculated using pipe diameters for: SDR11PE100							Liters per Day per Dwelling				720
310.00	216.00	17	63.00	204.28	93.00	189.98	12,240	64.43	0.37	2.30	
311.00	211.00	11	63.00	204.28	110.00	224.71	7,920	35.25	0.68	3.05	
313.00	314.00	4	50.00	125.66	51.00	64.09	2,880	44.94	0.53	2.18	
314.00	321.00	9	63.00	204.28	121.00	247.18	6,480	26.22	0.92	1.65	
315.00	316.00	4	50.00	125.66	44.00	55.29	2,880	52.09	0.46	2.01	
316.00	321.00	14	63.00	204.28	167.00	341.15	10,080	29.55	0.81	1.55	
317.00	318.00	5	50.00	125.66	52.00	65.35	3,600	55.09	0.44	2.37	
318.00	344.00	14	63.00	204.28	114.00	232.88	10,080	43.28	0.55	1.93	
319.00	320.00	13	63.00	204.28	137.00	279.87	9,360	33.44	0.72	1.68	
320.00	321.00	74	75.00	292.25	174.00	508.51	53,280	104.78	0.23	0.96	
321.00	99.00	101	75.00	292.25	73.00	213.34	72,720	340.86	0.07	0.73	
322.00	99.00	116	90.00	418.54	261.00	1,092.39	83,520	76.46	0.31	0.98	
323.00	324.00	13	63.00	204.28	154.00	314.59	9,360	29.75	0.81	1.79	
324.00	99.00	29	75.00	292.25	95.00	277.63	20,880	75.21	0.32	0.98	
325.00	324.00	12	63.00	204.28	80.00	163.43	8,640	52.87	0.45	1.44	
326.00	319.00	4	50.00	125.66	43.00	54.04	2,880	53.30	0.45	2.13	
327.00	328.00	4	50.00	125.66	38.00	47.75	2,880	60.31	0.40	2.07	
328.00	320.00	13	63.00	204.28	135.00	275.78	9,360	33.94	0.71	1.67	
329.00	331.00	4	50.00	125.66	41.00	51.52	2,880	55.90	0.43	2.01	
330.00	304.00	3	50.00	125.66	33.00	41.47	2,160	52.09	0.46	3.52	
331.00	320.00	9	63.00	204.28	81.00	165.47	6,480	39.16	0.61	1.58	
332.00	311.00	4	50.00	125.66	47.00	59.06	2,880	48.76	0.49	3.54	
333.00	325.00	7	50.00	125.66	80.00	100.53	5,040	50.13	0.48	1.92	
336.00	343.00	5	50.00	125.66	53.00	66.60	3,600	54.05	0.44	2.24	
337.00	208.00	8	63.00	204.28	55.00	112.36	5,760	51.27	0.47	1.91	
338.00	323.00	6	63.00	204.28	50.00	102.14	4,320	42.29	0.57	2.36	
339.00	236.00	3	50.00	125.66	49.00	61.58	2,160	35.08	0.68	2.80	
340.00	217.00	4	63.00	204.28	45.00	91.93	2,880	31.33	0.77	3.07	
341.00	337.00	3	50.00	125.66	41.00	51.52	2,160	41.92	0.57	2.48	
342.00	212.00	4	50.00	125.66	85.00	106.81	2,880	26.96	0.89	3.17	
343.00	320.00	14	75.00	292.25	119.00	347.77	10,080	28.98	0.83	1.79	
344.00	320.00	19	75.00	292.25	81.00	236.72	13,680	57.79	0.42	1.38	
501.00	64.00	150	90.00	418.54	10.00	41.85	108,000	2,580.41	0.01	1.11	
600.00	101.00	17	63.00	204.28	83.00	169.55	12,240	72.19	0.33	1.75	
601.00	600.00	13	63.00	204.28	144.00	294.17	9,360	31.82	0.75	2.50	

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)

Beach Road Developments LPS

07/04/23

April 28, 2023

Prepared By:
Tyler Cunningham

Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (mm)	Liters per 100 lineal meters	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)
This spreadsheet was calculated using pipe diameters for: SDR11PE100							Liters per Day per Dwelling			720
602.00	601.00	4	50.00	125.66	70.00	87.96	2,880	32.74	0.73	3.24
603.00	101.00	13	63.00	204.28	150.00	306.42	9,360	30.55	0.79	2.20
604.00	603.00	4	50.00	125.66	58.00	72.88	2,880	39.51	0.61	2.81
605.00	606.00	11	63.00	204.28	49.00	100.10	7,920	79.12	0.30	2.27
606.00	607.00	36	75.00	292.25	68.00	198.73	25,920	130.43	0.18	1.96
607.00	608.00	54	90.00	418.54	47.00	196.71	38,880	197.65	0.12	1.78
608.00	609.00	104	110.00	622.11	61.00	379.49	74,880	197.32	0.12	1.66
609.00	101.00	126	110.00	622.11	72.00	447.92	90,720	202.54	0.12	1.54
610.00	101.00	392	160.00	1,327.32	146.00	1,937.89	282,240	145.64	0.16	1.58
611.00	101.00	29	75.00	292.25	82.00	239.64	20,880	87.13	0.28	1.69
612.00	611.00	15	63.00	204.28	60.00	122.57	10,800	88.11	0.27	1.97
613.00	612.00	4	50.00	125.66	56.00	70.37	2,880	40.93	0.59	2.55
614.00	612.00	3	50.00	125.66	53.00	66.60	2,160	32.43	0.74	2.71
615.00	612.00	4	50.00	125.66	64.00	80.42	2,880	35.81	0.67	2.64
616.00	611.00	5	50.00	125.66	72.00	90.48	3,600	39.79	0.60	2.30
617.00	611.00	5	50.00	125.66	95.00	119.38	3,600	30.16	0.80	2.49
618.00	619.00	4	50.00	125.66	51.00	64.09	2,880	44.94	0.53	2.67
619.00	609.00	9	63.00	204.28	79.00	161.38	6,480	40.15	0.60	2.13
620.00	621.00	4	50.00	125.66	63.00	79.17	2,880	36.38	0.66	2.85
621.00	609.00	9	63.00	204.28	87.00	177.73	6,480	36.46	0.66	2.19
622.00	623.00	4	50.00	125.66	55.00	69.12	2,880	41.67	0.58	2.90
623.00	608.00	10	63.00	204.28	98.00	200.20	7,200	35.96	0.67	2.33
624.00	625.00	4	50.00	125.66	61.00	76.65	2,880	37.57	0.64	2.98
625.00	608.00	11	63.00	204.28	111.00	226.75	7,920	34.93	0.69	2.34
626.00	627.00	21	63.00	204.28	56.00	114.40	15,120	132.17	0.18	2.10
627.00	608.00	25	75.00	292.25	68.00	198.73	18,000	90.58	0.26	1.92
628.00	629.00	4	50.00	125.66	51.00	64.09	2,880	44.94	0.53	2.90
629.00	607.00	7	63.00	204.28	60.00	122.57	5,040	41.12	0.58	2.36
630.00	631.00	4	50.00	125.66	40.00	50.27	2,880	57.30	0.42	2.78
631.00	607.00	7	63.00	204.28	60.00	122.57	5,040	41.12	0.58	2.36
632.00	633.00	4	50.00	125.66	40.00	50.27	2,880	57.30	0.42	2.97
633.00	606.00	7	63.00	204.28	60.00	122.57	5,040	41.12	0.58	2.55
634.00	635.00	10	63.00	204.28	41.00	83.76	7,200	85.96	0.28	2.57
635.00	606.00	14	63.00	204.28	68.00	138.91	10,080	72.56	0.33	2.29
636.00	637.00	4	50.00	125.66	38.00	47.75	2,880	60.31	0.40	3.28

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)

Beach Road Developments LPS

07/04/23

April 28, 2023

Prepared By:
Tyler Cunningham

Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (mm)	Liters per 100 lineal meters	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)
This spreadsheet was calculated using pipe diameters for: SDR11PE100							Liters per Day per Dwelling		720	
637.00	605.00	7	63.00	204.28	63.00	128.70	5,040	39.16	0.61	2.88
638.00	639.00	4	63.00	204.28	100.00	204.28	2,880	14.10	1.70	4.75
639.00	634.00	6	63.00	204.28	42.00	85.80	4,320	50.35	0.48	3.05
640.00	641.00	4	50.00	125.66	77.00	96.76	2,880	29.76	0.81	3.56
641.00	644.00	8	63.00	204.28	47.00	96.01	5,760	59.99	0.40	2.76
642.00	644.00	3	50.00	125.66	57.00	71.63	2,160	30.16	0.80	3.15
643.00	626.00	2	50.00	125.66	31.00	38.96	1,440	36.97	0.65	2.75
644.00	626.00	15	63.00	204.28	56.00	114.40	10,800	94.41	0.25	2.36
645.00	646.00	3	50.00	125.66	27.00	33.93	2,160	63.66	0.38	2.81
646.00	733.00	6	63.00	204.28	37.00	75.58	4,320	57.15	0.42	2.44
647.00	648.00	4	50.00	125.66	39.00	49.01	2,880	58.76	0.41	2.90
648.00	733.00	9	63.00	204.28	62.00	126.65	6,480	51.16	0.47	2.49
649.00	650.00	4	50.00	125.66	39.00	49.01	2,880	58.76	0.41	2.62
650.00	734.00	9	63.00	204.28	61.00	124.61	6,480	52.00	0.46	2.21
651.00	652.00	4	50.00	125.66	39.00	49.01	2,880	58.76	0.41	2.62
652.00	734.00	9	63.00	204.28	61.00	124.61	6,480	52.00	0.46	2.21
653.00	654.00	4	50.00	125.66	35.00	43.98	2,880	65.48	0.37	2.55
654.00	734.00	10	63.00	204.28	65.00	132.78	7,200	54.22	0.44	2.19
655.00	656.00	4	50.00	125.66	40.00	50.27	2,880	57.30	0.42	2.55
656.00	736.00	9	63.00	204.28	61.00	124.61	6,480	52.00	0.46	2.13
657.00	658.00	4	50.00	125.66	39.00	49.01	2,880	58.76	0.41	2.54
658.00	736.00	9	63.00	204.28	62.00	126.65	6,480	51.16	0.47	2.13
659.00	660.00	4	50.00	125.66	34.00	42.73	2,880	67.41	0.36	2.56
660.00	737.00	10	63.00	204.28	65.00	132.78	7,200	54.22	0.44	2.21
661.00	662.00	4	50.00	125.66	42.00	52.78	2,880	54.57	0.44	2.66
662.00	737.00	9	63.00	204.28	60.00	122.57	6,480	52.87	0.45	2.22
663.00	664.00	4	50.00	125.66	36.00	45.24	2,880	63.66	0.38	2.87
664.00	738.00	9	63.00	204.28	65.00	132.78	6,480	48.80	0.49	2.49
665.00	738.00	2	50.00	125.66	57.00	71.63	1,440	20.10	1.19	3.20
666.00	667.00	72	90.00	418.54	91.00	380.87	51,840	136.11	0.18	2.28
667.00	738.00	73	90.00	418.54	51.00	213.45	52,560	246.23	0.10	2.10
668.00	738.00	2	50.00	125.66	53.00	66.60	1,440	21.62	1.11	3.11
669.00	670.00	3	50.00	125.66	74.00	92.99	2,160	23.23	1.03	3.74
670.00	675.00	6	50.00	125.66	43.00	54.04	4,320	79.95	0.30	2.71
671.00	672.00	4	50.00	125.66	33.00	41.47	2,880	69.45	0.35	3.36

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)

Beach Road Developments LPS

07/04/23

April 28, 2023

Prepared By:
Tyler Cunningham

Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (mm)	Liters per 100 lineal meters	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)	
This spreadsheet was calculated using pipe diameters for: SDR11PE100							Liters per Day per Dwelling				720
672.00	675.00	8	63.00	204.28	72.00	147.08	5,760	39.16	0.61	3.02	
673.00	674.00	4	50.00	125.66	32.00	40.21	2,880	71.62	0.34	3.97	
674.00	675.00	4	63.00	204.28	72.00	147.08	2,880	19.58	1.23	3.63	
675.00	738.00	19	75.00	292.25	79.00	230.87	13,680	59.25	0.41	2.41	
676.00	677.00	4	50.00	125.66	35.00	43.98	2,880	65.48	0.37	3.61	
677.00	678.00	9	63.00	204.28	78.00	159.34	6,480	40.67	0.59	3.25	
678.00	666.00	21	75.00	292.25	82.00	239.64	15,120	63.09	0.38	2.66	
679.00	680.00	4	50.00	125.66	39.00	49.01	2,880	58.76	0.41	3.69	
680.00	678.00	8	63.00	204.28	74.00	151.17	5,760	38.10	0.63	3.29	
681.00	666.00	45	90.00	418.54	140.00	585.95	32,400	55.29	0.43	2.71	
682.00	683.00	5	50.00	125.66	62.00	77.91	3,600	46.21	0.52	3.19	
683.00	685.00	6	63.00	204.28	40.00	81.71	4,320	52.87	0.45	2.67	
684.00	685.00	5	50.00	125.66	87.00	109.33	3,600	32.93	0.73	2.95	
685.00	688.00	15	63.00	204.28	60.00	122.57	10,800	88.11	0.27	2.22	
686.00	688.00	4	50.00	125.66	69.00	86.71	2,880	33.21	0.72	2.67	
687.00	688.00	3	50.00	125.66	65.00	81.68	2,160	26.44	0.91	2.85	
688.00	730.00	26	75.00	292.25	58.00	169.50	18,720	110.44	0.22	1.94	
689.00	730.00	158	110.00	622.11	73.00	454.14	113,760	250.49	0.10	1.82	
690.00	691.00	3	50.00	125.66	68.00	85.45	2,160	25.28	0.95	3.35	
691.00	730.00	5	50.00	125.66	80.00	100.53	3,600	35.81	0.67	2.40	
692.00	693.00	4	50.00	125.66	40.00	50.27	2,880	57.30	0.42	3.00	
693.00	725.00	9	63.00	204.28	68.00	138.91	6,480	46.65	0.51	2.58	
694.00	695.00	4	50.00	125.66	50.00	62.83	2,880	45.84	0.52	3.29	
695.00	735.00	6	63.00	204.28	34.00	69.46	4,320	62.20	0.39	2.76	
696.00	697.00	4	50.00	125.66	37.00	46.50	2,880	61.94	0.39	3.21	
697.00	735.00	7	63.00	204.28	46.00	93.97	5,040	53.63	0.45	2.83	
698.00	699.00	3	50.00	125.66	56.00	70.37	2,160	30.69	0.78	4.06	
699.00	735.00	6	63.00	204.28	79.00	161.38	4,320	26.77	0.90	3.27	
700.00	701.00	4	50.00	125.66	40.00	50.27	2,880	57.30	0.42	3.47	
701.00	739.00	14	63.00	204.28	138.00	281.91	10,080	35.76	0.67	3.05	
702.00	703.00	3	50.00	125.66	28.00	35.19	2,160	61.39	0.39	3.83	
703.00	704.00	5	63.00	204.28	66.00	134.83	3,600	26.70	0.90	3.44	
704.00	739.00	16	63.00	204.28	38.00	77.63	11,520	148.40	0.16	2.54	
705.00	706.00	3	50.00	125.66	25.00	31.42	2,160	68.75	0.35	4.06	
706.00	729.00	11	63.00	204.28	108.00	220.62	7,920	35.90	0.67	3.71	

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)

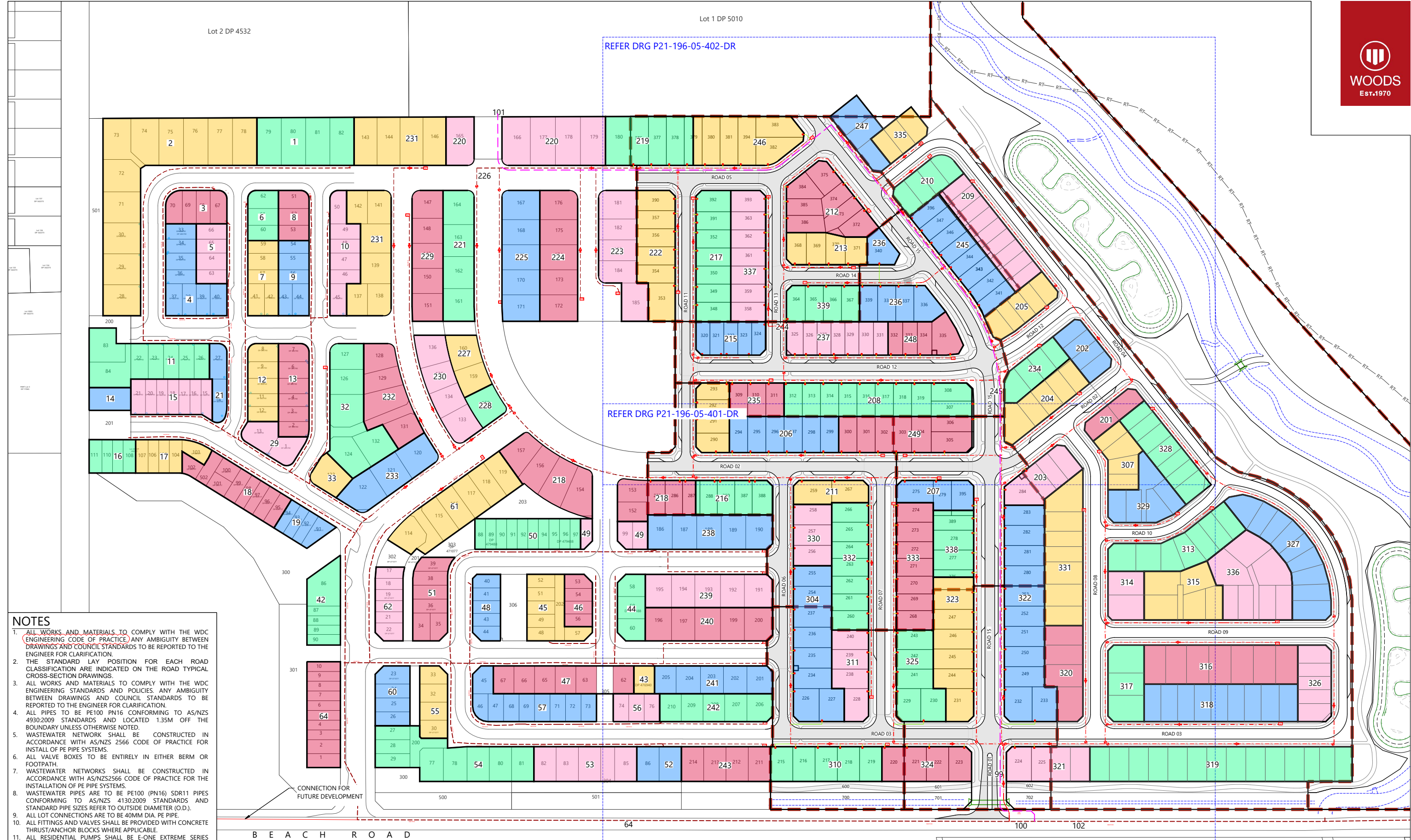
Beach Road Developments LPS

07/04/23

April 28, 2023

Prepared By:
Tyler Cunningham

Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (mm)	Liters per 100 lineal meters	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)	
This spreadsheet was calculated using pipe diameters for: SDR11PE100							Liters per Day per Dwelling				720
707.00	708.00	4	50.00	125.66	44.00	55.29	2,880	52.09	0.46	4.15	
708.00	729.00	9	63.00	204.28	86.00	175.68	6,480	36.88	0.65	3.69	
709.00	710.00	3	50.00	125.66	32.00	40.21	2,160	53.71	0.45	3.76	
710.00	681.00	11	63.00	204.28	98.00	200.20	7,920	39.56	0.61	3.32	
711.00	712.00	4	50.00	125.66	44.00	55.29	2,880	52.09	0.46	3.16	
712.00	728.00	11	63.00	204.28	86.00	175.68	7,920	45.08	0.53	2.70	
713.00	714.00	4	50.00	125.66	44.00	55.29	2,880	52.09	0.46	3.28	
714.00	728.00	9	63.00	204.28	86.00	175.68	6,480	36.88	0.65	2.82	
715.00	716.00	4	50.00	125.66	44.00	55.29	2,880	52.09	0.46	3.06	
716.00	727.00	9	63.00	204.28	86.00	175.68	6,480	36.88	0.65	2.59	
717.00	718.00	4	50.00	125.66	44.00	55.29	2,880	52.09	0.46	3.18	
718.00	725.00	9	63.00	204.28	86.00	175.68	6,480	36.88	0.65	2.72	
719.00	720.00	4	50.00	125.66	44.00	55.29	2,880	52.09	0.46	3.03	
720.00	726.00	9	63.00	204.28	86.00	175.68	6,480	36.88	0.65	2.57	
721.00	722.00	4	50.00	125.66	44.00	55.29	2,880	52.09	0.46	3.03	
722.00	726.00	9	63.00	204.28	86.00	175.68	6,480	36.88	0.65	2.57	
723.00	724.00	4	50.00	125.66	44.00	55.29	2,880	52.09	0.46	3.03	
724.00	726.00	9	63.00	204.28	86.00	175.68	6,480	36.88	0.65	2.57	
725.00	726.00	41	75.00	292.25	61.00	178.27	29,520	165.59	0.14	2.07	
726.00	689.00	72	75.00	292.25	72.00	210.42	51,840	246.37	0.10	1.92	
727.00	689.00	45	75.00	292.25	56.00	163.66	32,400	197.97	0.12	1.94	
728.00	727.00	24	75.00	292.25	56.00	163.66	17,280	105.59	0.23	2.17	
729.00	681.00	24	75.00	292.25	82.00	239.64	17,280	72.11	0.33	3.04	
730.00	610.00	198	110.00	622.11	138.00	858.52	142,560	166.05	0.14	1.73	
733.00	734.00	15	63.00	204.28	60.00	122.57	10,800	88.11	0.27	2.02	
734.00	610.00	43	75.00	292.25	72.00	210.42	30,960	147.14	0.16	1.75	
735.00	725.00	19	75.00	292.25	61.00	178.27	13,680	76.74	0.31	2.38	
736.00	610.00	142	110.00	622.11	57.00	354.60	102,240	288.32	0.08	1.67	
737.00	736.00	124	110.00	622.11	59.00	367.05	89,280	243.24	0.10	1.76	
738.00	737.00	105	110.00	622.11	120.00	746.54	75,600	101.27	0.24	2.00	
739.00	689.00	39	90.00	418.54	156.00	652.92	28,080	43.01	0.56	2.38	
740.00	741.00	4	50.00	125.66	44.00	55.29	2,880	52.09	0.46	3.14	
741.00	727.00	8	63.00	204.28	86.00	175.68	5,760	32.79	0.73	2.68	



REFER DRG P21-196-05-402-DR

REFER DRG P21-196-05-401-DR

- NOTES**
1. ALL WORKS AND MATERIALS TO COMPLY WITH THE WDC ENGINEERING CODE OF PRACTICE. ANY AMBIGUITY BETWEEN DRAWINGS AND COUNCIL STANDARDS TO BE REPORTED TO THE ENGINEER FOR CLARIFICATION.
 2. THE STANDARD LAY POSITION FOR EACH ROAD CLASSIFICATION ARE INDICATED ON THE ROAD TYPICAL CROSS-SECTION DRAWINGS.
 3. ALL WORKS AND MATERIALS TO COMPLY WITH THE WDC ENGINEERING STANDARDS AND POLICIES. ANY AMBIGUITY BETWEEN DRAWINGS AND COUNCIL STANDARDS TO BE REPORTED TO THE ENGINEER FOR CLARIFICATION.
 4. ALL PIPES TO BE PE100 PN16 CONFORMING TO AS/NZS 4930:2009 STANDARDS AND LOCATED 1.35M OFF THE BOUNDARY UNLESS OTHERWISE NOTED.
 5. WASTEWATER NETWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH AS/NZS 2566 CODE OF PRACTICE FOR INSTALL OF PE PIPE SYSTEMS.
 6. ALL VALVE BOXES TO BE ENTIRELY IN EITHER BERM OR FOOTPATH.
 7. WASTEWATER NETWORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AS/NZS2566 CODE OF PRACTICE FOR THE INSTALLATION OF PE PIPE SYSTEMS.
 8. WASTEWATER PIPES ARE TO BE PE100 (PN16) SDR11 PIPES CONFORMING TO AS/NZS 4130:2009 STANDARDS AND STANDARD PIPE SIZES REFER TO OUTSIDE DIAMETER (O.D.).
 9. ALL LOT CONNECTIONS ARE TO BE 40MM DIA. PE PIPE.
 10. ALL FITTINGS AND VALVES SHALL BE PROVIDED WITH CONCRETE THRUST/ANCHOR BLOCKS WHERE APPLICABLE.
 11. ALL RESIDENTIAL PUMPS SHALL BE E-ONE EXTREME SERIES SEMI-POSITIVE DISPLACEMENT PUMPS MODEL 2010IP.

- DATUM**
1. LEVELS ARE IN TERMS OF LYTTELTON VERTICAL DATUM 1937. ORIGIN OF LEVELS IS MN127 = RL 1.471 (2018)
 2. COORDINATES ARE IN TERMS OF LOCAL CIRCUIT MOUNT PLEASANT 2000.

REVISION DETAILS	INT	DATE	SURVEYED	WOODS
2 MOORE CONNECTION UPDATES	JLS	25/02/2022	DESIGNED	JLS
3 ISSUED FOR APPROVAL	MRB	12/08/2022	DRAWN	JLS
4 RFI CHANGES	MRB	7/10/2022	CHECKED	RH
5 UPDATED LAYOUT	AM	16/11/2022	APPROVED	MC

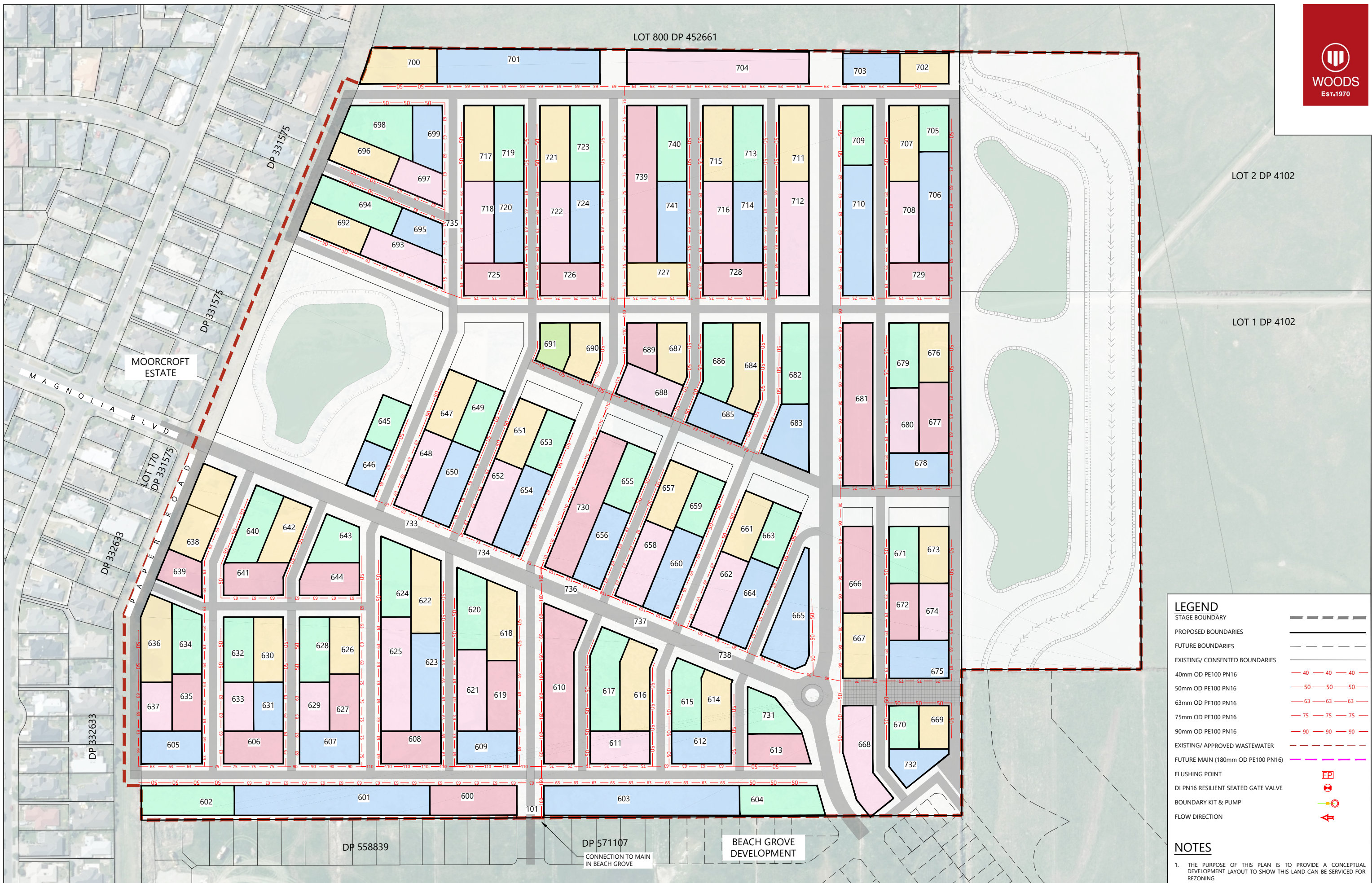
BEACH ROAD
KAIAPOI 7630
WOODS.CO.NZ



BEACH GROVE - STAGES 5 & 6
OVERALL LOW PRESSURE SEWER PLAN



STATUS	ISSUED FOR CONSTRUCTION	REV
SCALE	1:2500 @ A3	5
COUNCIL	WAIMAKARIRI DISTRICT	
DWG NO	P21-196-05-400-DR	



LEGEND

STAGE BOUNDARY: - - - - -

PROPOSED BOUNDARIES: ————

FUTURE BOUNDARIES: - - - - -

EXISTING/ CONSENTED BOUNDARIES: ————

40mm OD PE100 PN16: — 40 — 40 — 40 —

50mm OD PE100 PN16: — 50 — 50 — 50 —

63mm OD PE100 PN16: — 63 — 63 — 63 —

75mm OD PE100 PN16: — 75 — 75 — 75 —

90mm OD PE100 PN16: — 90 — 90 — 90 —

EXISTING/ APPROVED WASTEWATER: - - - - -

FUTURE MAIN (180mm OD PE100 PN16): ————

FLUSHING POINT:

DI PN16 RESILIANT SEATED GATE VALVE:

BOUNDARY KIT & PUMP:

FLOW DIRECTION:

NOTES

1. THE PURPOSE OF THIS PLAN IS TO PROVIDE A CONCEPTUAL DEVELOPMENT LAYOUT TO SHOW THIS LAND CAN BE SERVICED FOR REZONING

REVISION DETAILS	INT	DATE	SURVEYED	WOODS
1 ISSUED FOR INFORMATION	AM	28/02/2023	DESIGNED	TC
2 DRAWING UPDATED	JLS	10/05/2023	DRAWN	AM
			CHECKED	RH
			APPROVED	MC

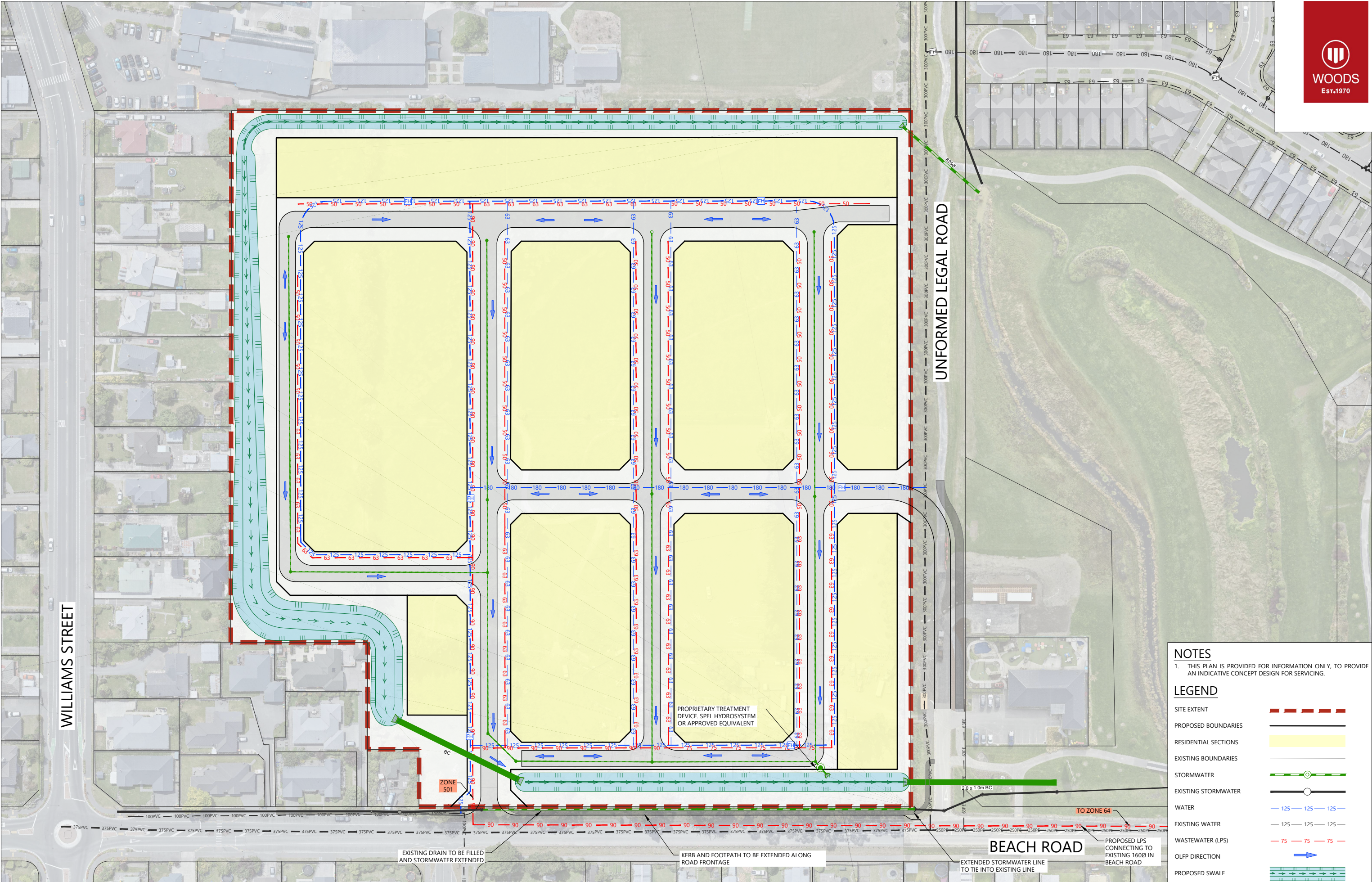
MOORE LAND
CONCEPT WASTEWATER CATCHMENT PLAN

MOMENTUM LAND LTD

KAIAPOI 7630 NORTH CANTERBURY

WOODS.CO.NZ

STATUS	ISSUED FOR INFORMATION	REV
SCALE	1:2500 @A3	2
COUNCIL	WAIMAKARIRI DISTRICT	
DWG NO	P21-517-00-400-DR	



NOTES
 1. THIS PLAN IS PROVIDED FOR INFORMATION ONLY, TO PROVIDE AN INDICATIVE CONCEPT DESIGN FOR SERVICING.

LEGEND

SITE EXTENT	
PROPOSED BOUNDARIES	
RESIDENTIAL SECTIONS	
EXISTING BOUNDARIES	
STORMWATER	
EXISTING STORMWATER	
WATER	
EXISTING WATER	
WASTEWATER (LPS)	
OLFP DIRECTION	
PROPOSED SWALE	

REVISION DETAILS	INT	DATE	SURVEYED	WOODS
1 ISSUED FOR INFORMATION	JLS	03/04/2023	DESIGNED	JLS
			DRAWN	JLS
			CHECKED	RH
			APPROVED	MC

MOORE LAND - SOUTH BLOCK

CONCEPT SERVICING PLAN

MOMENTUM LAND LTD

KAIAPOI 7630 NORTH CANTERBURY

WOODS.CO.NZ

STATUS	ISSUED FOR INFORMATION	REV
SCALE	1:1250 @ A3	1
COUNCIL	WAIMAKARIRI DISTRICT	
DWG NO	P22-114-00-901-MSC	