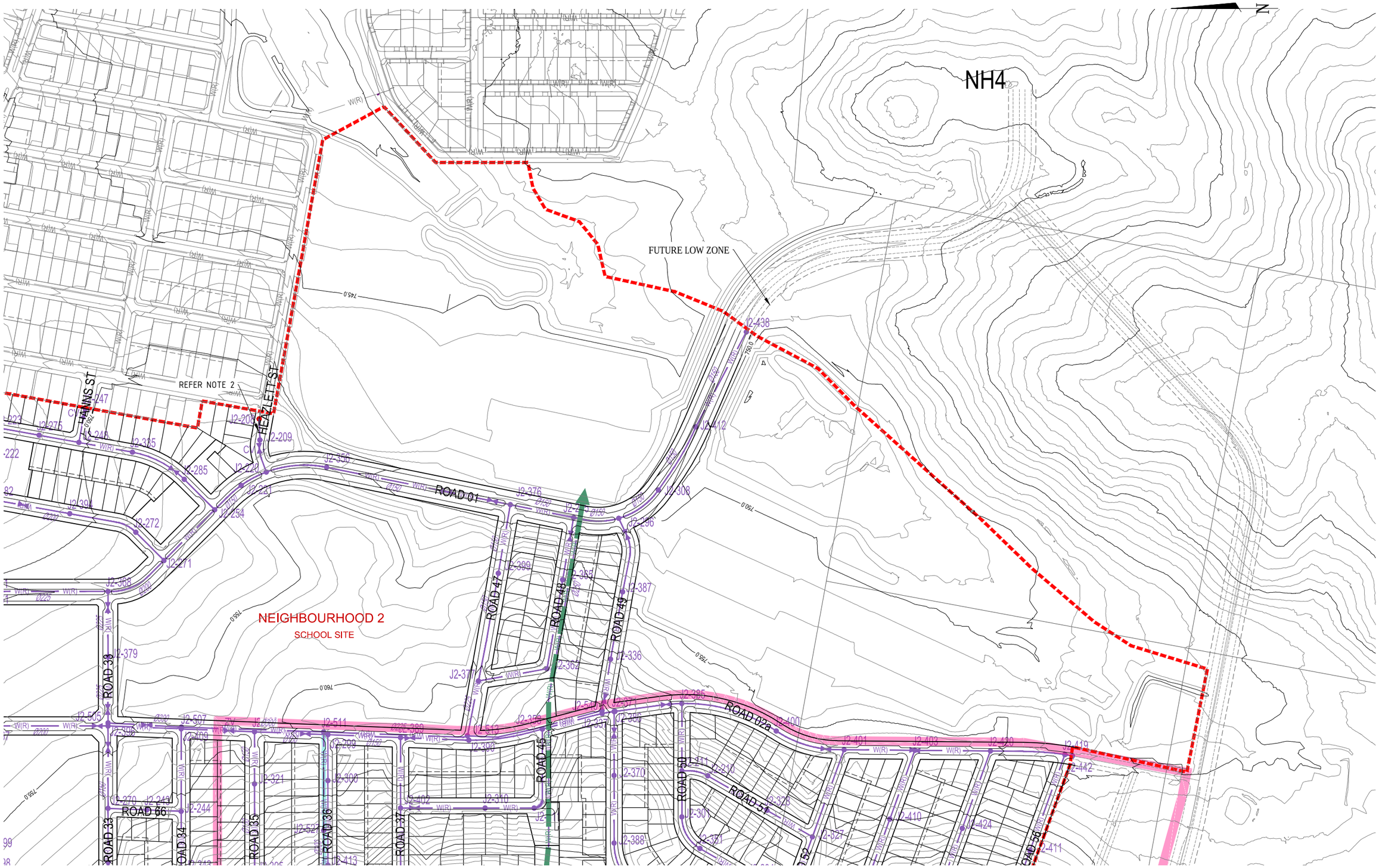

FOR CONTINUATION REFER 16-001756-D211+

FOR CONTINUATION REFER 16-001756-D212+

KEY PLAN

SHEET 1 | SHEET 2

NOTE

1. FOR NOTES & TABLES REFER 16-001756-D214+
2. CONNECT TO EXISTING
3. FOR LEGEND REFER 16-001756-D214+

	FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS
AMENDMENTS		J	VVB	JM		23/03/2017	
	A	BC	KC			29/09/2017	QPRC COMMENTS ADDRESSED

WAE No.

PROJECT No.

A3 PLOT SCALE (METRES) A1 PLOT
1:4000 20 10 0 20 40 60 80 100 1:2000

CLIENT

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

calibre CONSULTING
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DRAWING TITLE
RECYCLED WATER CONCEPT MASTER PLAN SHEET 3

DRAWING NUMBER
16-001756-D213+

AMEND.
A

Demand (L/s)	Pressure (Min) (m H2O)	Pressure (Max) (m H2O)	Fire Flow (Needed) (L/s)	Pressure (Total Flow Needed) (m H2O)
0	28.1	40.2	10	32.2
0	22.1	34.1	10	26.2
0	37.4	49.2	10	41.4
0	36.5	48.2	10	40.5
0.5	28	40.8	10	29.9
0.13	34.5	47.1	10	38.6
0	67.1	79.5	10	68.2
0	47	59.3	10	51.2
1.27	38.7	50.9	10	41.7
0.45	34.4	47.3	10	36.8
1.06	44.4	56.7	10	47.5
0.36	27.2	40	10	29.7
0	32.7	44.9	10	33
0.52	27.8	40.5	10	31.6
0.56	51.8	64	10	55.2
0.64	28.4	41.1	10	32.4
0.47	59.5	71.8	10	62.4
0.48	40.2	52.3	10	43.5
0.55	35.5	47.8	10	39.3
0.58	46.4	58.6	10	50.6
0.26	66.5	78.9	10	69.6
0.14	67.2	79.5	10	68.4
0.79	47.2	59.5	10	50.3
0.34	52.6	65.1	10	56.1
0.41	35.9	48.2	10	39.1
0.56	36.2	48.4	10	39.1
0.06	36.7	48.9	10	40.9
0.59	45	57.4	10	48.7
0.26	58.4	70.7	10	57
0.45	60.9	73.2	10	64.2
0.83	43.9	55.9	10	48
0.19	65.5	77.8	10	69.2
0.41	52.2	64.5	10	56
0.21	64.8	77.1	10	68.6
0.32	65.4	77.7	10	68.9
0.45	49.2	61.4	10	52.6
0.52	49.6	61.9	10	53.7
0.25	28.4	41.1	10	32.2

Label	Elevation (m)	Demand (L/s)	Pressure (Min) (m H2O)	Pressure (Max) (m H2O)	Fire Flow (Needed) (L/s)	Pressure (Total Flow Needed) (m H2O)
J2-390	762.62	0.21	58.2	70.6	30	51.1
J2-389	761.86	0.17	59	71.3	30	57.5
J2-388	774.33	0.59	46.5	58.9	10	49.7
J2-386	764.69	0.13	56.2	68.5	10	60
J2-385	759.15	0.28	61.7	74	10	65.6
J2-382	784.77	0.41	35.8	48.5	10	39.2
J2-375	774.93	0.15	45.7	58.3	10	49.4
J2-374	770.34	0.15	50.3	62.9	10	53.6
J2-371	764.76	0	56.1	68.4	10	60
J2-370	771.74	0.31	49.1	61.5	10	52.5
J2-364	789.93	0.18	30.4	43.3	10	30.5
J2-363	788.75	0.53	31.9	44.5	10	36
J2-358	765.16	0.31	55.7	68	10	59.5
J2-353	774.83	0.25	46.2	58.4	10	49.7
J2-351	769.63	0.26	51.3	63.6	10	54.8
J2-347	778.55	0.28	42.1	54.7	10	45.6
J2-345	778.85	0.3	41.9	54.4	10	46.1
J2-344	766.18	0.19	54.5	67	10	58.1
J2-342	773.46	0.3	47.1	59.7	10	50.7
J2-341	766.37	0.13	54.2	66.8	10	57.4
J2-340	764.46	0.23	56.2	68.7	10	59.4
J2-339	783	0.06	38.1	50.2	10	41.4
J2-338	783.42	0.11	37.7	49.8	10	41
J2-337	765.41	0.31	55.4	67.8	10	59.3
J2-328	764.32	0.34	56.6	68.9	10	60.1
J2-327	763.13	0.43	57.8	70.1	10	61.6
J2-326	773.5	0.21	47.3	59.7	10	51.2
J2-325	782.31	0.21	38.5	50.9	10	42.7
J2-324	783.84	0.13	37.1	49.4	10	41.4
J2-323	767.93	0.34	52.7	65.3	10	56.2
J2-321	762.46	0.34	58.4	70.7	10	62.5
J2-320	758.84	0.13	62	74.3	30	60.8
J2-316	767.36	0.21	53.3	65.8	10	56.9
J2-313	783.84	0.59	36.5	49.4	10	38.2
J2-311	768.3	0.26	52.6	64.9	10	55.9
J2-310	768.72	0.37	52.1	64.5	10	55.5
J2-307	771.02	0.28	49.6	62.2	10	53.3
J2-305	785.12	0.32	35.2	48.1	10	37.2

NOTES

1. BASIS OF DESIGN: WATER SUPPLY CODE OF AUSTRALIA, WSA 03-2011 3RD ED, VER 3.1, WATER SERVICES ASSOCIATION OF AUSTRALIA.
2. DEMAND RATES REFERENCE GOOGONG DESIGN ASSUMPTIONS FOR POTABLE AND RECYCLED WATER SYSTEMS MWH (AUGUST 2014, REV 7).
3. WATER MAINS 100mm DIAMETER UNLESS NOTED OTHERWISE
4. WATER MAIN MATERIAL UPV-C PN16, COLEBROOK WHITE COEFFICIENT 0.3mm.
5. ALL NODES WITHIN NETWORK TO ACHIEVE A MINIMUM 20m PRESSURE HEAD IN RESIDENTIAL AREAS AND 25m PRESSURE HEAD IN COMMERCIAL AREAS.
6. STOP VALVE LOCATIONS BASED ON NOMINAL 40 ALOTMENTS SHUT DOWN PER SECTION. TO BE DETERMINED IN DETAIL DESIGN.
7. RECYCLED WATER NETWORK ASSUMED TO INCLUDE FIRE FIGHTING HYDRANTS.
8. CONTOURS @ 1m INTERVALS.
9. HYDRANTS TO BE INSTALLED TYPICALLY AT "ALL HIGH AND LOW POINTS" AND AT 60m CENTRES. LOCATIONS WILL BE SHOWN ON DETAIL DESIGN DRAWINGS.
10. STOP VALVES AND HYDRANTS TO BE LOCATED AT ALL TEMPORARY END CAPS.
11. PRESSURE RESULTS BASED ON A MINIMUM AND MAXIMUM RESERVOIR LEVELS OF 793.33m (BWL) AND 800.00m (TWL) AT HILL 800 SITE.
12. CALCULATIONS CARRIED OUT BY WATERGEMS V8 HYDRAULIC MODEL.
13. HIGH ZONE JUNCTION ARE NOTED BY YELLOW HIGHLIGHT.

		DESIGN	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS
FIRST ISSUE		BC	VYB	SM		23/03/2017	
AMENDMENTS							
	A	BC	KC			29/09/2017	QPRC COMMENTS ADDRESSED

WAE No.

PROJECT No.

A3 PLOT SCALE (METRES) A1 PLOT

CLIENT

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

calibre CONSULTING
www.calibreconsulting.co

DRAWING TITLE
RECYCLED WATER CONCEPT DATA
SHEET 1 OF 4

DRAWING NUMBER
16-001756-D214+

AMEND.
A

Demand (L/s)	Pressure (Min) (m H2O)	Pressure (Max) (m H2O)	Fire Flow (Needed) (L/s)	Pressure (Total Flow Needed) (m H2O)
0.26	34.7	47.6	10	36.9
0.10	50	62.3	10	53.6
0.34	57.6	70	10	61.4
0.13	59.8	72.2	30	58.6
0.34	54.6	66.9	10	58.3
0.28	55	67.2	10	59.1
0.11	41.4	54	10	44.9
0.15	42.8	55.4	10	46.2
0.14	53.8	66.3	10	57.8
0.36	51	63.2	10	55.2
0.11	52.7	65.2	10	56.9
0.3	50	62.5	10	54.2
0.42	30.4	43.3	10	32.1
0.54	33.9	46.8	10	35.5
0.41	52.6	64.7	10	56.7
0.29	52.2	64.3	10	56.4
0.31	37.5	50.1	10	41.4
0.19	39.2	51.8	10	43
0.11	54.5	66.9	10	58.1
0.12	54.1	66.6	10	57.9
0.39	33.3	46.1	10	36.7
0.28	33.6	46.3	10	37.1
0	47.8	60.2	10	43.9
0.19	47.6	60	10	44.4
0.18	49.3	61.8	10	53.4
0.18	49	61.6	10	53
0.13	54.2	66.5	10	58
0.31	55	67.3	10	58.6
0.11	51.8	64.2	10	55.5
0.29	44.6	57	10	48.8
0.13	43.9	56.3	10	48.2
0	46.9	59.2	10	51.1
0	46.9	59.2	10	51.2
0	28.4	37.6	10	30.4
0	30.9	40	10	32.8
0	26	34.6	10	26.7
0	35	43.5	30	35.3
0	35.8	44.9	30	37.4
0	48.9	58.9	10	50.8

Label	Elevation (m)	Demand (L/s)	Pressure (Min) (m H2O)	Pressure (Max) (m H2O)	Fire Flow (Needed) (L/s)	Pressure (Total Flow Needed) (m H2O)
J2-527	768.61	0	23.3	31.3	10	24.3
J2-523	744.83	0	45	55.1	10	47.2
J2-519	785.34	0	6.8	14.6	10	7.7
J2-517	752.43	0	38.5	47.5	30	39.9
J2-515	784.78	0	7.9	15.2	10	8.4
J2-513	782.53	0	29	37.4	30	29.7
J2-511	761.82	0	29.9	38.1	10	31
J2-507	756.49	0	34.9	43.4	30	35
J2-505	754.49	0	36.8	45.4	30	38
J2-501	762.11	0	28.7	37.8	10	30.6
J2-499	761.05	0	30.3	38.9	10	31.8
J2-497	775.93	0	16	24	10	17
J2-495	783.19	0	9.4	16.8	10	9.9
J2-493	781.9	0	11	18.1	10	11.3
J2-491	797.41	0	2.9	9.6	10	10
J2-489	797.97	0	2.4	9.4	10	10
J2-487	790.76	0	2.5	9.2	10	9.7
J2-485	777.26	0	15.9	22.7	10	16
J2-461	751.16	0	39.6	48.7	30	41.1
J2-459	749.97	0	40.6	49.9	30	42.2
J2-457	749.15	0	41.3	50.8	30	43.5
J2-455	749.03	0	41.4	50.9	30	43.5
J2-453	750.47	0	40.3	49.4	30	42.2
J2-451	751.73	0	39	48.2	30	40.6
J2-449	755.43	0	35.4	44.5	30	36.9
J2-445	751.58	0.18	39.2	48.3	30	35.8
J2-444	759.37	0	31.5	40.3	30	30.6
J2-438	745.9	0	44.4	54	10	46
J2-437	754.45	0	35.7	45.5	10	38.2
J2-412	747.22	0	43.4	52.7	10	44.8
J2-409	756.52	0.14	34.8	43.8	30	35.7
J2-407	761.99	0.45	28.7	38.1	10	30.3
J2-406	761.97	0.18	29.2	38.5	10	30.8
J2-405	750.91	1.58	40	49	30	40.6
J2-404	751.04	0.49	39	48.9	10	41.4
J2-398	756.46	0.14	34.8	43.4	30	35.1
J2-398	753.07	0.54	37.1	46.8	10	39.4
J2-396	754.53	7.02	36.7	45.4	30	37.9
J2-394	748.85	0.42	41.8	51	10	43.7

NOTES

1. BASIS OF DESIGN: WATER SUPPLY CODE OF AUSTRALIA, WSA 03-2011 3RD ED, VER 3.1, WATER SERVICES ASSOCIATION OF AUSTRALIA.
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3. WATER MAINS 100mm DIAMETER UNLESS NOTED OTHERWISE
4. WATER MAIN MATERIAL UPV-C PN16, COLEBROOK WHITE COEFFICIENT 0.3mm.
5. ALL NODES WITHIN NETWORK TO ACHIEVE A MINIMUM 20m PRESSURE HEAD IN RESIDENTIAL AREAS AND 25m PRESSURE HEAD IN COMMERCIAL AREAS.
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13. HIGH ZONE JUNCTION ARE NOTED BY YELLOW HIGHLIGHT.

AMENDMENTS	DESIGN	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS
FIRST ISSUE	BC	VVB	JM	TC	23/03/2017	
A	BC	KC			29/09/2017	QPRC COMMENTS ADDRESSED

WAE No.

PROJECT No.

A3 PLOT SCALE (METRES) A1 PLOT

CLIENT

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

calibre CONSULTING
www.calibreconsulting.co

DRAWING TITLE
RECYCLED WATER CONCEPT DATA SHEET 2

DRAWING NUMBER
16-001756-D215+

AMEND.
A

Demand (L/s)	Pressure (Min) (m H2O)	Pressure (Max) (m H2O)	Fire Flow (Needed) (L/s)	Pressure (Total Flow Needed) (m H2O)
0	40.2	49.3	30	41.6
0.14	36.7	45.5	10	37.5
0.49	27.6	37.2	10	28.8
0.5	39.8	48.9	30	41.2
0.21	25.9	35.2	10	27.7
0.21	27.5	36.8	10	29.5
0.05	38.4	47.2	30	39.7
0.03	42.9	52.5	30	44.6
0.21	31.5	40	30	32.1
0.04	42.7	51.5	30	43.2
0.53	26.9	36.5	10	28.2
0.47	33.8	43.5	10	35.3
0.37	25.4	35	10	27
0	38.3	47.3	30	39.7
0	38.4	47.4	30	39.7
0.67	39.4	48.4	30	40.1
0.27	34.8	43.6	10	35.8
0.28	29.6	38.2	10	30.7
0.34	41.9	51.9	10	43.6
0.13	31.5	40.7	10	31.2
0.5	32.3	41.9	10	33.7
0.2	37.6	47.2	10	38.9
0	41.2	50.2	30	41.2
0.23	37.7	47.1	10	39.7
0	35	44.1	30	31.6
0	42.1	51.7	10	44.4
0.23	40.4	50.4	10	42.5
0.09	30.5	39.7	10	29.3
0.38	26	34.7	10	26.9
0.21	30.5	39.1	10	31.5
0.37	39.6	48.9	10	40.7
0	39.6	48.7	30	38.9
0.18	36.8	45.9	30	33.1
0.58	45.3	55.4	10	47.3
0.17	44.3	54.3	10	46.1
0.37	28.4	37.5	10	27.3
0.32	25.9	35	10	24.5
0.03	30.7	39.7	30	31.1

Label	Elevation (m)	Demand (L/s)	Pressure (Min) (m H2O)	Pressure (Max) (m H2O)	Fire Flow (Needed) (L/s)	Pressure (Total Flow Needed) (m H2O)
J2-319	766.53	0.11	24.1	33.4	10	25.8
J2-318	745.29	0.26	45.1	54.6	10	47.2
J2-317	745.85	0.07	44.6	54	10	46.7
J2-315	744.94	0.3	44.9	54.9	10	46.7
J2-314	759.39	0.18	31	40.5	10	32.6
J2-312	756.67	0.64	34.1	43.2	30	35.1
J2-309	766.34	0.37	24	33.6	10	25.5
J2-308	748.36	0	42.4	51.5	10	43.8
J2-306	740.87	0.4	49	59	10	51.1
J2-303	761.36	0.2	29.5	38.6	10	29.9
J2-302	762.96	0.24	27.9	37	10	27.1
J2-298	755.62	1.15	34.7	44.3	10	36.2
J2-297	758.02	0.42	32.3	41.9	10	33.7
J2-296	749.06	0.04	41.9	50.8	10	43.3
J2-295	748.83	0.09	42.2	51.1	10	43.6
J2-292	757.94	0.02	33.1	42	30	33.7
J2-291	745.9	0.17	43.9	54	10	45.8
J2-290	763.7	0.17	27.7	36.7	30	28.1
J2-289	762.07	0.24	28.7	37.9	30	27.2
J2-288	761.34	0.11	29.4	38.6	10	28
J2-287	755.68	0.37	34.6	44.2	10	36.7
J2-286	754.38	0.37	35.9	45.5	10	37.5
J2-285	751.65	0.36	39	48.2	10	40.4
J2-284	743.75	0.31	46.2	56.1	10	48.2
J2-283	745.1	0.51	45.2	54.8	10	46.7
J2-282	746.68	0.01	43.8	53.2	10	45.8
J2-281	763.67	0.11	26.6	36.2	10	28.3
J2-280	747.19	0.58	42.7	52.7	10	44.6
J2-279	749.05	0.2	40.9	50.8	10	42.7
J2-278	740.12	0.32	49.7	59.8	10	51.9
J2-277	742.83	0.06	47	57	10	49.1
J2-275	747.92	0.21	42.5	52	10	43.9
J2-272	750.55	0.16	40.2	49.3	10	42
J2-271	751.93	0	38.9	48	30	40.2
J2-270	757.58	0.01	33.6	42.3	30	34.2
J2-269	741.21	0.2	48.6	58.7	10	50.8
J2-268	742.43	0.4	47.4	57.4	10	49.3
J2-267	766.01	0.15	24.9	33.9	30	25.2

NOTES

1. BASIS OF DESIGN: WATER SUPPLY CODE OF AUSTRALIA, WSA 03-2011 3RD ED, VER 3.1, WATER SERVICES ASSOCIATION OF AUSTRALIA.
2. DEMAND RATES REFERENCE GOOGONG DESIGN ASSUMPTIONS FOR POTABLE AND RECYCLED WATER SYSTEMS MWH (AUGUST 2014, REV 7).
3. WATER MAINS 100mm DIAMETER UNLESS NOTED OTHERWISE
4. WATER MAIN MATERIAL UPV-C PN16, COLEBROOK WHITE COEFFICIENT 0.3mm.
5. ALL NODES WITHIN NETWORK TO ACHIEVE A MINIMUM 20m PRESSURE HEAD IN RESIDENTIAL AREAS AND 25m PRESSURE HEAD IN COMMERCIAL AREAS.
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		DESIGN	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS
FIRST ISSUE		BC	VVB	JM	TC	23/03/2017	
AMENDMENTS							
	A	BC	KC			29/09/2017	QPRC COMMENTS ADDRESSED

WAE No.

PROJECT No.

A3 PLOT SCALE (METRES) A1 PLOT

CLIENT

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

calibre CONSULTING
www.calibreconsulting.co

DRAWING TITLE
RECYCLED WATER CONCEPT DATA SHEET 3

DRAWING NUMBER
16-001756-D216+

AMEND.
A

Demand (L/s)	Pressure (Min) (m H2O)	Pressure (Max) (m H2O)	Fire Flow (Needed) (L/s)	Pressure (Total Flow Needed) (m H2O)
0.28	23	32	10	23.7
0.28	30.4	40.1	10	31.8
0.15	44.8	54.5	10	47.1
0.18	43.2	52.9	10	45.5
0.06	30.9	39.8	30	31.4
0.29	29.2	38	30	29.6
0.21	22.8	32.3	10	24.5
0.18	23.6	33.2	10	25.2
0.11	47.2	57.3	10	49.6
0.13	46.6	56.7	10	49.1
0	39.7	48.8	30	40.4
0.09	46.6	56.4	10	49
0.21	45.9	55.7	10	48.3
0.13	40.8	50.2	10	42
0.09	40.9	50.3	10	41.2
0	39.8	49	30	39
0	40.9	50.1	30	42.5
0.25	29.9	38.6	10	31.1
0.18	31.9	40.6	10	33.1
0.19	48.2	58.3	10	50.5
0.24	25.7	34.7	10	27.2
0.11	46.8	56.5	10	47.5
0.03	45.8	55.5	10	47.3
0.17	33.4	43	10	33.9
0.22	32.9	42.5	10	34.3
0.04	45.1	55.1	10	47.3
0.1	46.6	56.6	10	48.7
0.03	45.8	55.4	10	48
0.18	44.4	53.8	10	46
0.05	44.4	53.9	10	46.1
0.05	40.1	49.1	30	40.5
0	40.4	49.5	30	40.7
0.09	46.7	56.6	10	48.6
0.17	46.4	56.2	10	48.1
0.28	35.6	45.3	10	37.9
0.24	35.6	45.2	10	37.8

Label	Elevation (m)	Demand (L/s)	Pressure (Min) (m H2O)	Pressure (Max) (m H2O)	Fire Flow (Needed) (L/s)	Pressure (Total Flow Needed) (m H2O)
J2-209	752	0.09	38.9	47.9	10	39.7
J2-208	751.78	0.01	39.1	48.1	10	39.4
J2-207	742.79	0.02	47.2	57.1	10	49.7
J2-206	743.5	0.07	46.7	56.4	10	49
J2-205	739.54	0.04	50.3	60.3	10	52.8
J2-204	739.21	0.2	50.6	60.7	10	52.9
J2-203	758.52	0	32.3	41.4	30	33
J2-202	760.07	0.09	30.8	39.8	30	31.4
J2-201	754.16	0	36.7	45.7	30	36.3
J2-200	753.89	0.3	37	46	30	37.7
J2-199	755.31	0.64	35.6	44.6	30	36.6
J2-198	756.23	0	34.7	43.7	30	35.7
J2-197	757.14	0.04	33.8	42.8	30	34.6
J2-196	767.9	0	22.9	32	10	23.7
J2-194	750.35	0	40.5	49.5	30	40.9
J2-193	750.43	0.6	40.5	49.5	30	40.8
J2-192	768.26	0.13	22.9	31.7	10	23.9
J2-186	748.03	0	42.3	51.9	30	44.1
J2-183	745.57	0	44.6	54.3	10	46.9
J2-182	743.83	0	46.3	56	10	48.7
J2-181	742.91	0	47.1	57	10	49.6
J2-178	739.68	0	50.1	60.2	10	52.6
J2-177	739.34	0	50.5	60.5	10	52.8
J-190	743.26	0.26	46.6	56.6	10	48.7
J-10	762.12	0	28.6	37.8	10	30.6
G-133	764.71	0	25.7	35.3	10	37.9

Label	Elevation (m)	Demand (L/s)	Pressure (Minimum) (m H2O)	Pressure (Maximum) (m H2O)
J2-545	791.08	0	3.2	10.2
J2-544	794.5	0	4.5	10.5
J2-475	801.36	0	1.1	10.1
J2-478	788.36	0	4.7	11.6
J2-471	761.89	0	31	38
J2-467	749.05	11.34	43.7	50.8

NOTES

1. BASIS OF DESIGN: WATER SUPPLY CODE OF AUSTRALIA, WSA 03-2011 3RD ED, VER 3.1, WATER SERVICES ASSOCIATION OF AUSTRALIA.
2. DEMAND RATES REFERENCE GOOGONG DESIGN ASSUMPTIONS FOR POTABLE AND RECYCLED WATER SYSTEMS MWH (AUGUST 2014, REV 7).
3. WATER MAINS 100mm DIAMETER UNLESS NOTED OTHERWISE
4. WATER MAIN MATERIAL UPV-C PN16, COLEBROOK WHITE COEFFICIENT 0.3mm.
5. ALL NODES WITHIN NETWORK TO ACHIEVE A MINIMUM 20m PRESSURE HEAD IN RESIDENTIAL AREAS AND 25m PRESSURE HEAD IN COMMERCIAL AREAS.
6. STOP VALVE LOCATIONS BASED ON NOMINAL 40 ALOTMENTS SHUT DOWN PER SECTION. TO BE DETERMINED IN DETAIL DESIGN.
7. RECYCLED WATER NETWORK ASSUMED TO INCLUDE FIRE FIGHTING HYDRANTS.
8. CONTOURS @ 1m INTERVALS.
9. HYDRANTS TO BE INSTALLED TYPICALLY AT "ALL HIGH AND LOW POINTS" AND AT 60m CENTRES. LOCATIONS WILL BE SHOWN ON DETAIL DESIGN DRAWINGS.
10. STOP VALVES AND HYDRANTS TO BE LOCATED AT ALL TEMPORARY END CAPS.
11. PRESSURE RESULTS BASED ON A MINIMUM AND MAXIMUM RESERVOIR LEVELS OF 793.33m (BWL) AND 800.00m (TWL) AT HILL 800 SITE.
12. CALCULATIONS CARRIED OUT BY WATERGEMS V8 HYDRAULIC MODEL.
13. HIGH ZONE JUNCTION ARE NOTED BY YELLOW HIGHLIGHT.

	FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS
AMENDMENTS		BC	VVB	JM		23/03/2017	
	A	BC	KC			29/09/2017	QPRC COMMENTS ADDRESSED

WAE No.

PROJECT No.

A3 PLOT SCALE (METRES) A1 PLOT

CLIENT

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

calibre CONSULTING
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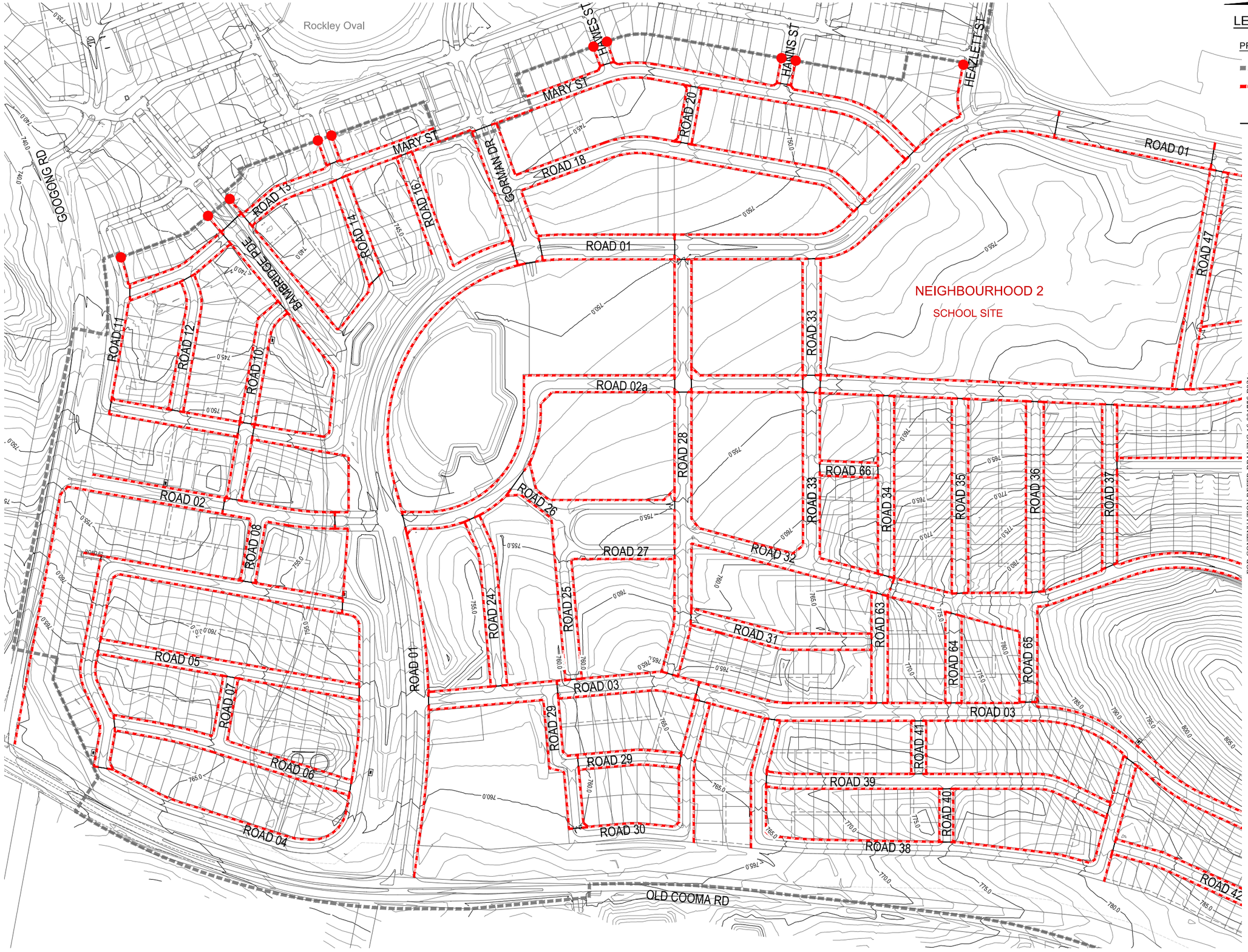
DRAWING TITLE
RECYCLED WATER CONCEPT DATA SHEET 4

DRAWING NUMBER
16-001756-D217+

AMEND.
A



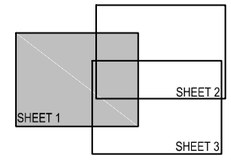
FOR CONTINUATION REFER DRAWING 16-001756-D231+

N

LEGEND

PROPOSED

- NEIGHBOURHOOD BOUNDARY
- SHARED TRENCH (NBN/GAS/STREETLIGHTING/ELECTRICITY)\ (EXACT MAKE-UP TO BE CONFIRMED)
- CONDUIT CROSS TYPICAL 1xNBN100 1xG100 1xE140 OR 2xE140 1xSL50 (SUBJECT TO DETAIL DESIGN)
- CONNECTION POINT (PRELIMINARY)
- SUB-STATION (PROPOSED LOCATION ON DESIGN WORK TO DATE)



KEY PLAN

NOTES:

1. DETAIL DESIGN DRAWING WILL BE PROVIDED AT CONSTRUCTION CERTIFICATE
2. THESE DRAWINGS REPRESENT THE ALIGNMENT RESERVATIONS FOR THE RETICULATION OF POWER, TELECOMMUNICATIONS AND GAS.
3. EXISTING ELECTRICAL AND COMMUNICATIONS TO BE RATIONALISED INTO NEW SUBDIVISION OR RELOCATED CLEAR OF WORKS.
4. CONTOURS AT 1.0m INTERVALS
5. DRAWING EXCLUDES RELOCATION OF TRUNK SERVICES - REFER DRAWINGS 16-001756-D021+ TO D024+

		DESIGN	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS
FIRST ISSUE		BC	VVB			23/03/2017	
AMENDMENTS	A	BC	KC			29/09/2017	QPRC COMMENTS ADDRESSED

WAE No.

PROJECT No.

A3 PLOT 1:4000 SCALE (METRES) 20 10 0 20 40 60 80 100 A1 PLOT 1:2000

CLIENT

PROJECT: GOOGONG NORTH NEIGHBOURHOOD 2 DA SUBMISSION

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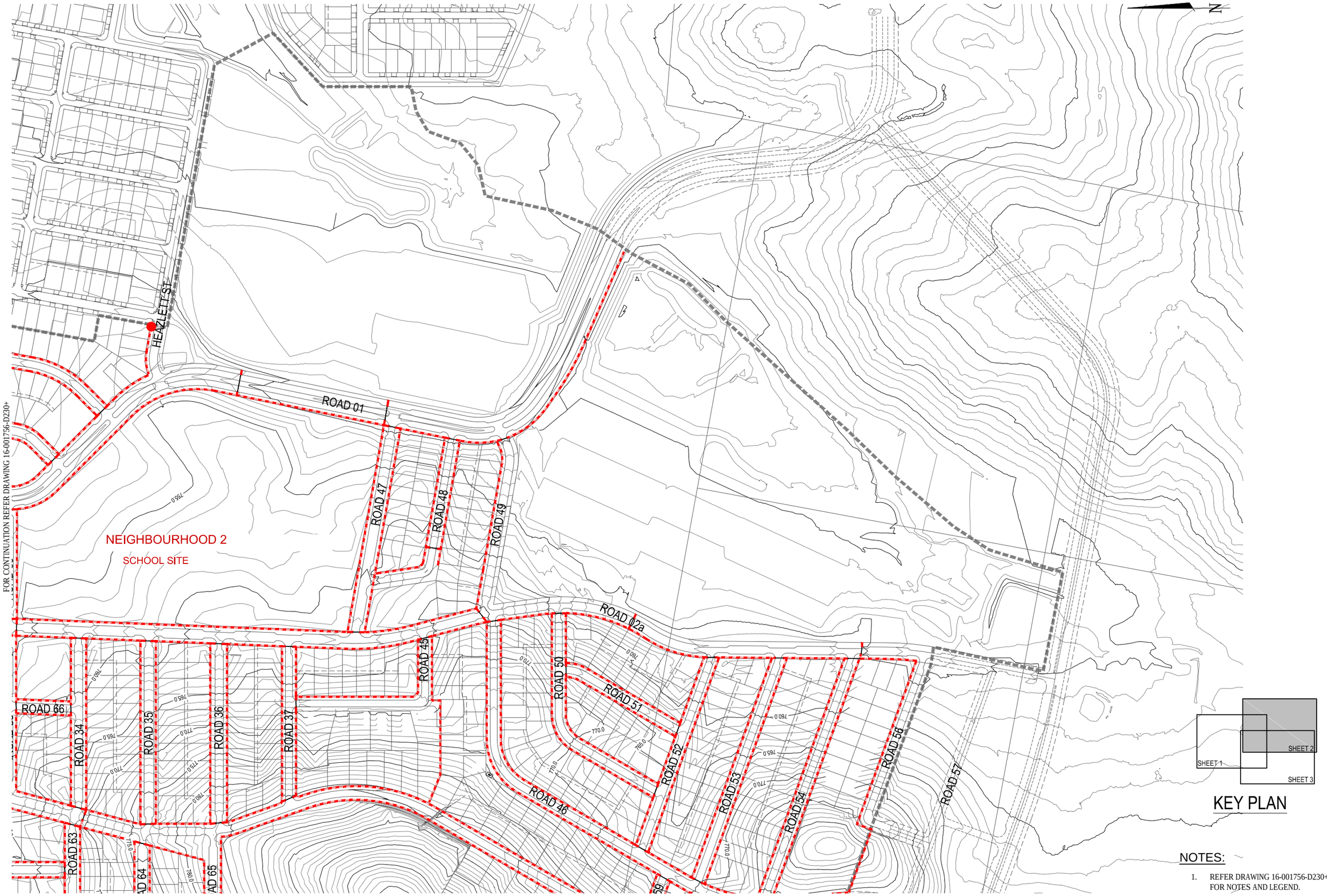
DRAWING TITLE: UTILITY CONCEPT MASTER PLAN - SHEET 1 OF 3

DRAWING NUMBER: 16-001756-D230+

AMEND. A



FOR CONTINUATION REFER DRAWING 16-001756-D230+

FOR CONTINUATION REFER DRAWING 16-001756-D232+

NOTES:

1. REFER DRAWING 16-001756-D230+ FOR NOTES AND LEGEND.

	DESIGN	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS
FIRST ISSUE	BC	VVB			23/03/2017	
A.	BC	KC			29/09/2017	QPRC COMMENTS ADDRESSED

WAE No. .....

PROJECT No. .....

A3 PLOT SCALE (METRES) A1 PLOT

1:4000 20 10 0 20 40 60 80 100 1:2000

CLIENT

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

calibre CONSULTING
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DRAWING TITLE
UTILITY CONCEPT
MASTER PLAN - SHEET 2

DRAWING NUMBER 16-001756-D231+

AMEND. A

FOR CONTINUATION REFER DRAWING 16-001756-D231+

NEIGHBOURHOOD 2

SCHOOL SITE

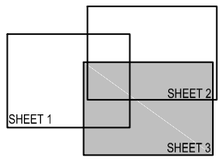
ROAD 33 | ROAD 66 | ROAD 34 | ROAD 35 | ROAD 36 | ROAD 37 | ROAD 45 | ROAD 02a | ROAD 50 | ROAD 51 | ROAD 52 | ROAD 53 | ROAD 54 | ROAD 56 | ROAD 57 | ROAD 61

ROAD 63 | ROAD 64 | ROAD 65 | ROAD 03 | ROAD 46 | ROAD 59 | ROAD 32 | ROAD 58

ROAD 41 | ROAD 39 | ROAD 40 | ROAD 38 | ROAD 42 | ROAD 43

N

FOR CONTINUATION REFER DRAWING 16-001756-D230+



KEY PLAN

NOTES:

1. REFER DRAWING 16-001756-D230+ FOR NOTES AND LEGEND.

	FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS
AMENDMENTS		BC	VVB			23/03/2017	
	A	BC	KC			29/09/2017	QPRC COMMENTS ADDRESSED

WAE No.

PROJECT No.

A3 PLOT SCALE (METRES) A1 PLOT

1:4000 20 10 0 20 40 60 80 100 1:2000

CLIENT

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

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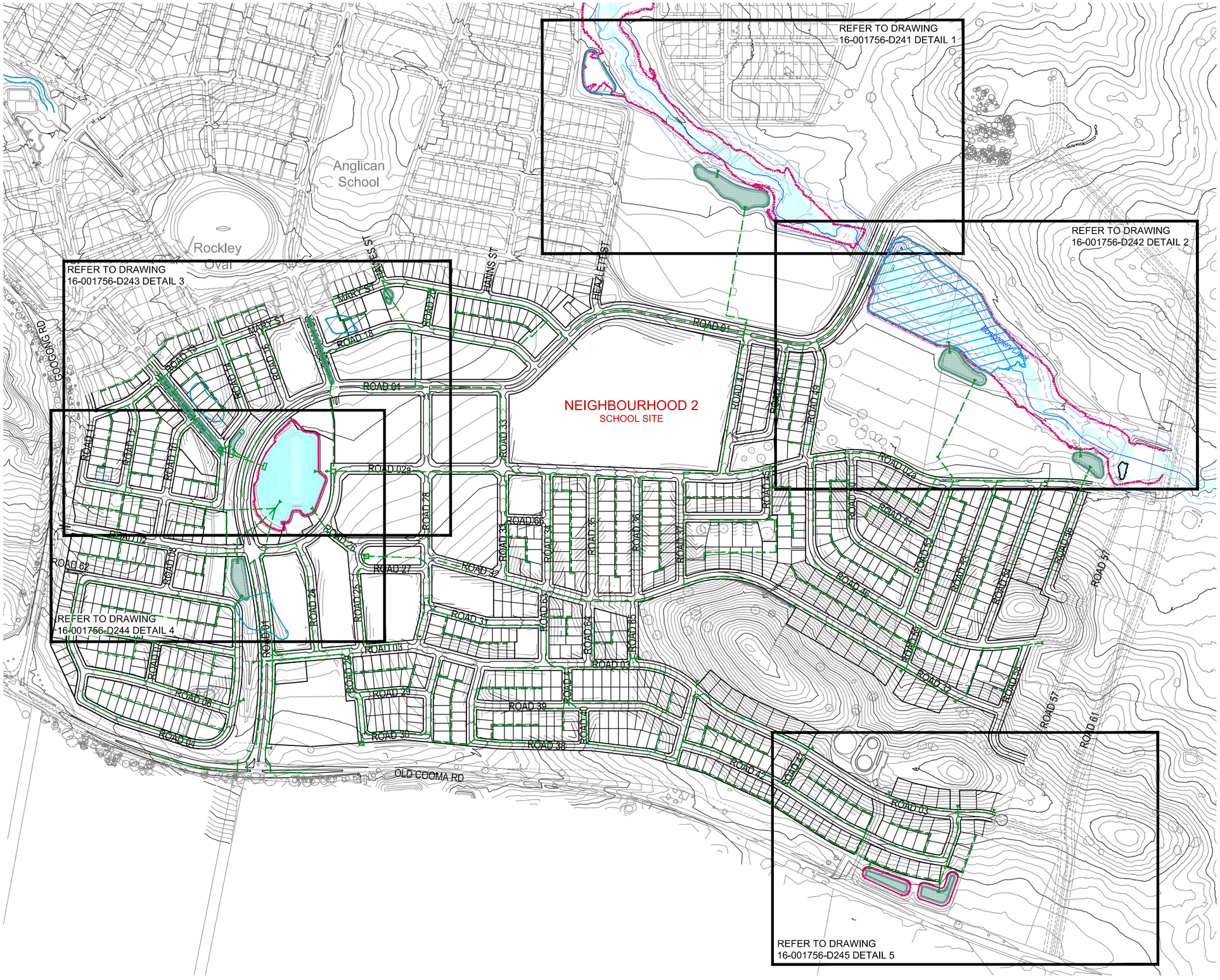
DRAWING TITLE
UTILITY CONCEPT
MASTER PLAN - SHEET 3

DRAWING NUMBER
16-001756-D232+

AMEND.
A



N

LEGEND

- NEIGHBOURHOOD BOUNDARY
- SW — EXISTING STORMWATER
- EXISTING BASIN/WETLAND
- EXISTING BASIN/WETLAND TO BE REMOVED
- EXISTING DAM
- EXISTING DAM TO BE REMOVED
- RIPARIAN CORRIDOR
- EXISTING TREES
- EXISTING CREEK
- OF — EXISTING 450MMØ RESERVOIR OVERFLOW
- OF — EXISTING 450MMØ RESERVOIR OVERFLOW TO BE DEMOLISHED
- OF — PROPOSED 450MMØ RESERVOIR OVERFLOW PIPE/MANHOLE
- PROPOSED CUTOFF DRAIN/SWALE
- PROPOSED STORMWATER PROPOSED
- PROPOSED STORMWATER STRUCTURE/HEADWALL
- GPT — GPT (CDS UNIT)
- BIO-RETENTION BASIN
- PROPOSED WATER QUALITY POND
- DETENTION BASIN C09
- OUTER 50% CRZ
- INNER 50% CRZ
- Q100 LIMIT

NOTES:

1. INCLUDES PAST DEVELOPMENT.
2. SUBJECT TO CONFIRMATION IN DETAILED DESIGN.
3. CONTOURS AT 1.0m INTERVALS.

		DESIGN	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS
FIRST ISSUE		BC	VVB			23/03/2017	
AMENDMENTS	A	BC	KC			29/09/2017	QPRC COMMENTS ADDRESSED

WAE No.

PROJECT No.

A3 PLOT 1:7000 — SCALE (METRES) 50 0 50 100 150 — A1 PLOT 1:3500

CLIENT

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

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DRAWING TITLE
WSUD POND KEY PLAN

DRAWING NUMBER
16-001756-D240+

AMEND.
A

CATCHMENT DETAILS

BASIN/CATCHMENT	SOUTH-WEST	SOUTH -EAST			NORTHERN			
SUB-CATCHMENTS	WC-1.1, WC-1.2 & WC-2.1	GC-1.1 TO GC-2.3	GC-3.1 TO GC-4.3	GC-5.1	NB-1.1 TO NB-4.1	NG-1.1, NG-2.1 & NG-3.1	NP0, NP-1.1 TO NP-1.5	NM-0 TO NM-7.6
CATCHMENT AREA (Ha)	12.10	28.61	27.84	15.61	11.83	3.90	14.96	86.21
PROPOSED TREATMENT	BIORETENTION BASIN/GPT	BIORETENTION BASIN/GPT	BIORETENTION BASIN/GPT	BIORETENTION BASIN/GPT	BIORETENTION SWALE/ BIORETENTION BASIN	BIORETETION SWALE	BIORETENTION BASIN/GPT	POND/GPT/ BIORETENTION BASIN
TREATMENT DEVICE NAME	SQID 'G'	SQID 'H'	SQID 'I'	SQID 'J'	SQID 'A' AND SQID 'B'	SQID 'D'	SQID 'E'	SQID 'C' AND SQID 'F'

OVERALL ESTATE PERFORMANCE - NORTH CATCHMENT

	SUSPENDED SOLIDS	TOTAL NITROGEN	TOTAL PHOSPHOROUS
TARGET RETENTION	80%	65%	65%
ESTIMATED RETENTION	86%	67%	66%

OVERALL ESTATE PERFORMANCE - SOUTH WEST CATCHMENT

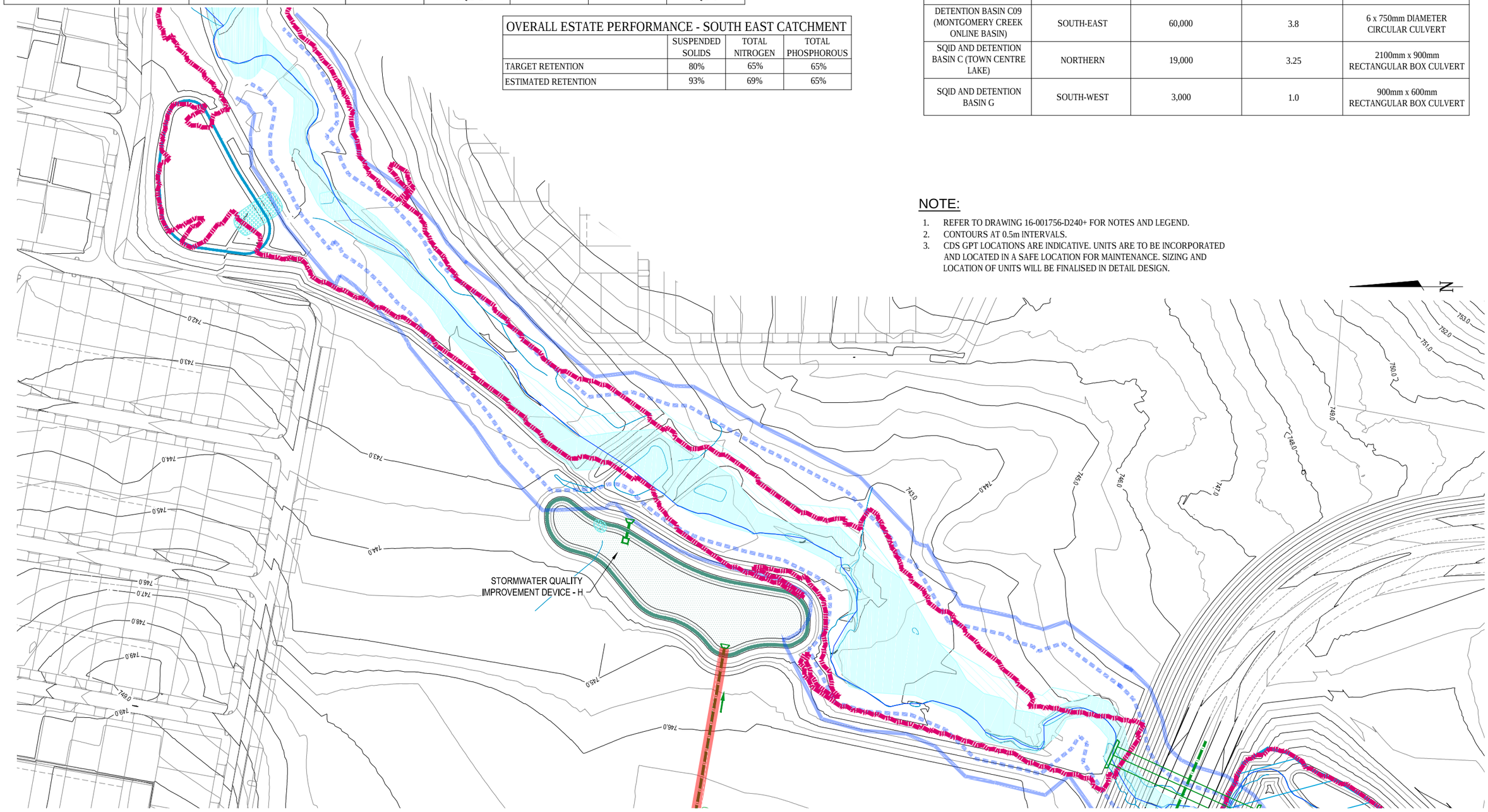
	SUSPENDED SOLIDS	TOTAL NITROGEN	TOTAL PHOSPHOROUS
TARGET RETENTION	80%	65%	65%
ESTIMATED RETENTION	90%	81%	65%

OVERALL ESTATE PERFORMANCE - SOUTH EAST CATCHMENT

	SUSPENDED SOLIDS	TOTAL NITROGEN	TOTAL PHOSPHOROUS
TARGET RETENTION	80%	65%	65%
ESTIMATED RETENTION	93%	69%	65%

DETENTION BASIN

DETENTION SYSTEM	CATCHMENT	DETENTION VOLUME (m^3)	TOTAL DEPTH (m)	OUTLET STRUCTURES
DETENTION BASIN C09 (MONTGOMERY CREEK ONLINE BASIN)	SOUTH-EAST	60,000	3.8	6 x 750mm DIAMETER CIRCULAR CULVERT
SQID AND DETENTION BASIN C (TOWN CENTRE LAKE)	NORTHERN	19,000	3.25	2100mm x 900mm RECTANGULAR BOX CULVERT
SQID AND DETENTION BASIN G	SOUTH-WEST	3,000	1.0	900mm x 600mm RECTANGULAR BOX CULVERT



NOTE:

1. REFER TO DRAWING 16-001756-D240+ FOR NOTES AND LEGEND.
2. CONTOURS AT 0.5m INTERVALS.
3. CDS GPT LOCATIONS ARE INDICATIVE. UNITS ARE TO BE INCORPORATED AND LOCATED IN A SAFE LOCATION FOR MAINTENANCE. SIZING AND LOCATION OF UNITS WILL BE FINALISED IN DETAIL DESIGN.

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS
AMENDMENTS	BC	VVB			23/03/2017	
A	BC	KC			29/09/2017	QPRC COMMENTS ADDRESSED

WAE No. .....

PROJECT No. .....

A3 PLOT 1:2000 SCALE (METRES) 10 5 0 10 20 30 40 50 A1 PLOT 1:1000

CLIENT

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

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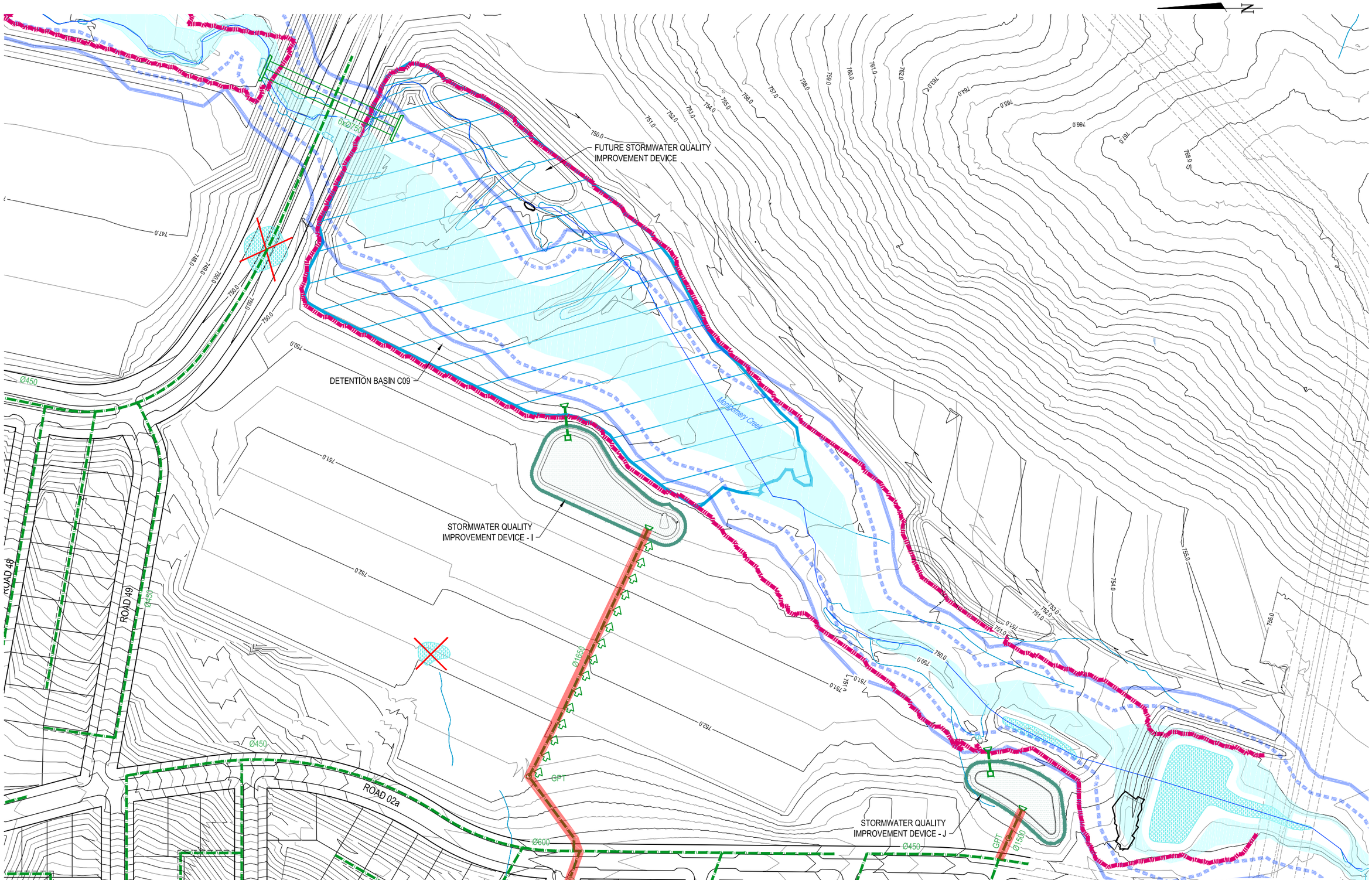
DRAWING TITLE
WSUD POND DETAILS
SHEET 1 OF 5

DRAWING NUMBER 16-001756-D241+

AMEND. A



NOTE:

1. REFER TO DRAWING 16-001756-D240+ FOR NOTES AND LEGEND.
2. CONTOURS AT 0.5m INTERVALS.

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS
	BC	VVB			23/03/2017	
A	BC	KC			29/09/2017	QPRC COMMENTS ADDRESSED

WAE No.

PROJECT No.

A3 PLOT 1:2000 — SCALE (METRES) 10 5 0 10 20 30 40 50 — A1 PLOT 1:1000

CLIENT

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

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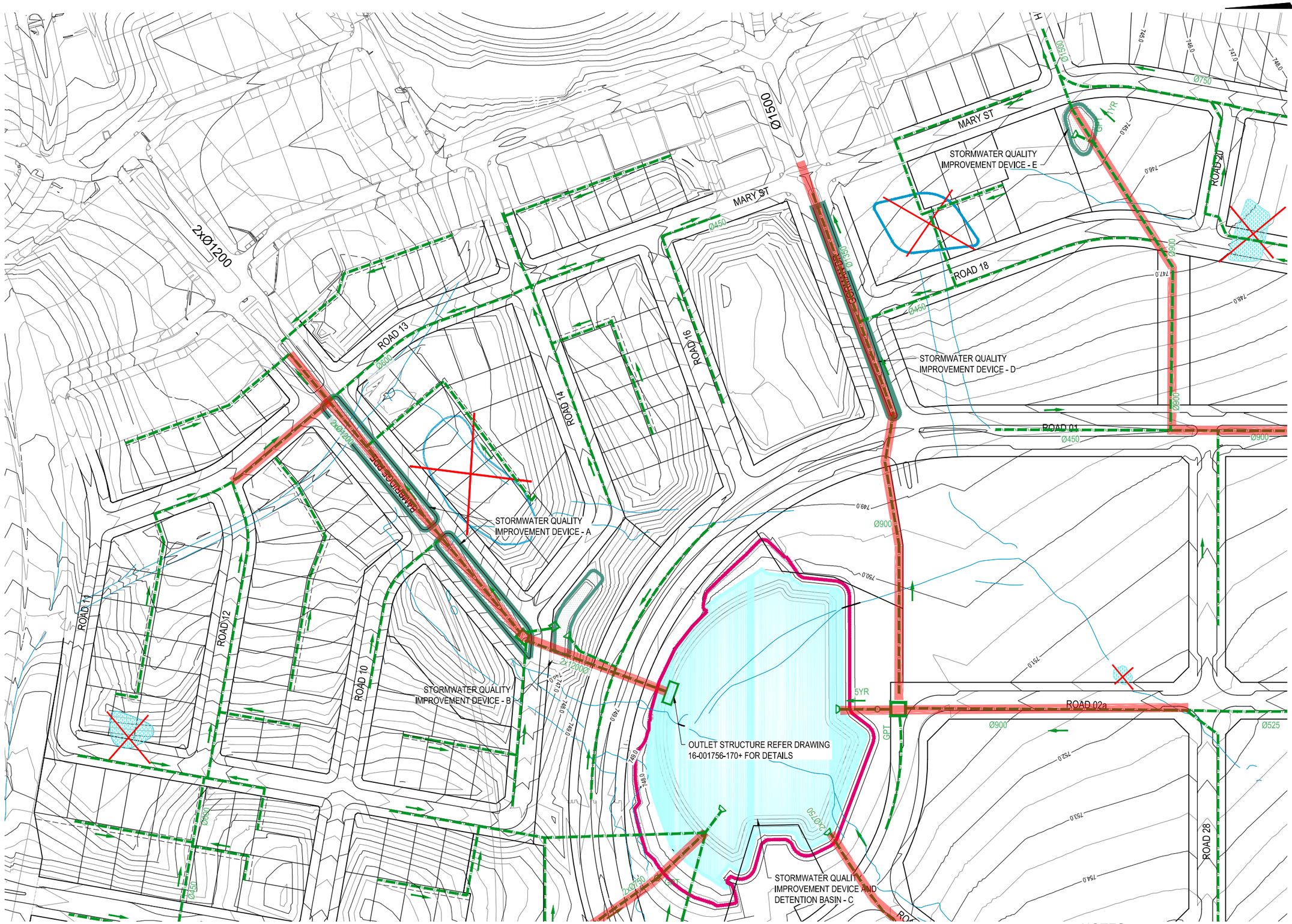
DRAWING TITLE
WSUD POND DETAILS
SHEET 2

DRAWING NUMBER
16-001756-D242+

AMEND.
A



NOTES:

1. CONTOURS AT 0.5m INTERVALS.
2. REFER TO DRAWING 16-001756-D240+ FOR NOTES AND LEGEND

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE
	BC	VVB			23/03/2017

AMENDMENTS							AMENDMENT DETAILS
A	BC	KC			29/09/2017	QPRC COMMENTS ADDRESSED

WAE No. .....

PROJECT No. .....

A3 PLOT 1:2000 SCALE (METRES) 10 5 0 10 20 30 40 50 A1 PLOT 1:1000

CLIENT

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

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DRAWING TITLE
WSUD POND DETAILS SHEET 3

DRAWING NUMBER
16-001756-D243+

AMEND.
A