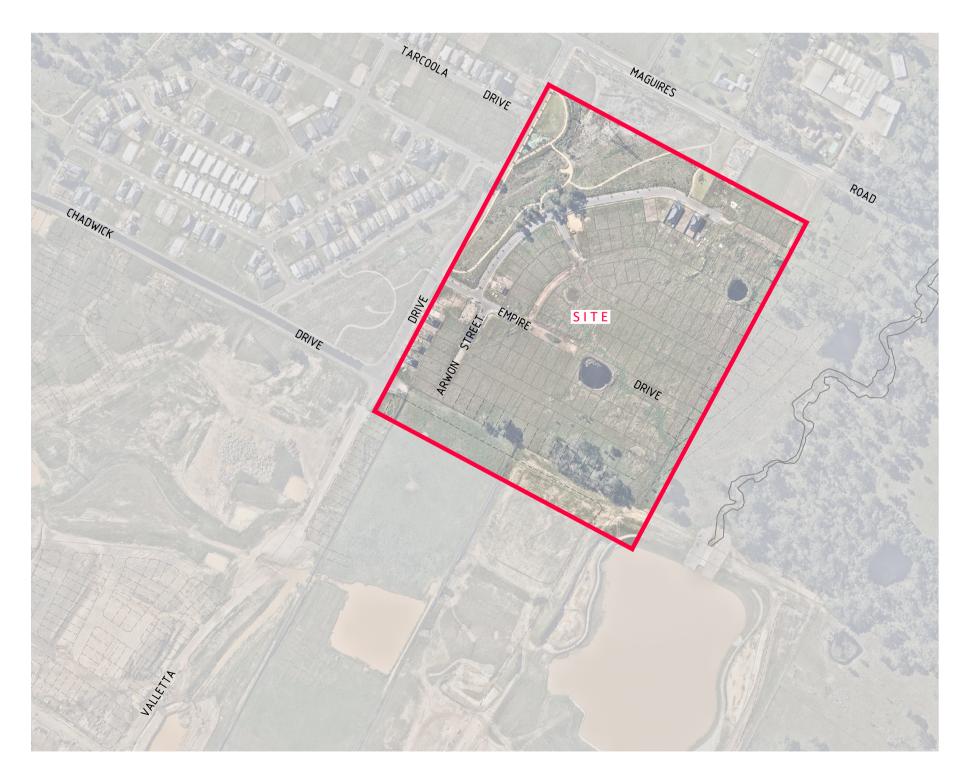


PRECINCTI

STAGE 3 PRESSURE SEWER & RECYCLED WATER

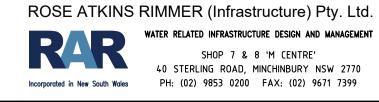


D R	DRAWING LIST					
SHEET 1	COVER SHEET					
SHEET 2	GENERAL NOTES					
SHEET 3	PRESSURE SEWER GENERAL ARRANGEMENT					
SHEET 4	PRESSURE SEWER DETAIL PLAN 1					
SHEET 5	PRESSURE SEWER DETAIL PLAN 2					
SHEET 6	COLLECTION TANK LEVEL DETAILS 1					
SHEET 7	COLLECTION TANK LEVEL DETAILS 2					
SHEET 8	RECYCLED WATER GENERAL ARRANGEMENT					
SHEET 9	RECYCLED WATER DETAIL PLAN 1					
SHEET 10	RECYCLED WATER DETAIL PLAN 2					

LOCALITY PLAN
(NOT TO SCALE)

No.	REVISION DESCRIPTION	BY	DATE
01	ORIGINAL ISSUE FOR APPROVAL	D.S.	5/5/21
02	WORK-AS-CONSTRUCTED	D.S.	29/6/22

SERVICE	DATE	REF.	WORK-AS-CONSTRUCTED CERTIFICATION
			DEVELOPER: STOCKLAND DEVELOPMENT Pty. Ltd.
			PROJECT SUPERVISOR: ROSE ATKINS RIMMER (INFRASTRUCTURE) Pty. Ltd.
			CONSTRUCTOR: SPRINGFIELD CIVIL
			COMPLETED: W.A.C. PREPARED: 29/6/2022







PLAN OF PROPOSED WATER INFRASTRUCTURE SERVICES
THE GABLES DEVELOPMENT - PRECINCT I (STAGE 3)
CHADWICK DRIVE, GABLES
L.G.A. THE HILLS

	COVER	SHEET 1 OF 10	WAC		
DRAFTED:	DESIGNED:	REVIEWED:	VERIFIED:	JOB No:	
D.SHEATHER	D.SHEATHER	K.GAO	K.GAO		
SCALE:	DATUM:	U.B.D. REFERENCE:	DATE OF ISSUE:	4/23645	5/13
-	-	-	29/6/2022	., _ 0 0 1 0	,

1. ALL WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DESIGN DRAWINGS, ALTOGETHER GROUP SUPPLEMENTARY MANUAL TO W.S.A.A., PRESSURE SEWERAGE CODE OF AUSTRALIA WSA 07-2007 VERSION 1.1 & POLYETHYLENE PIPELINE CODE WSA 01-2004.

SEWER NOTES

- 2. ALL EQUIPMENT, MATERIALS & ACCESSORIES USED IN THIS CONTRACT SHALL BE NEW & SHALL COMPLY WITH ALTOGETHER GROUP REQUIREMENTS. BUTT FUSION FITTINGS DENOTED HEREWITH HAVE BEEN DERIVED FROM THE GEORG FISCHER PIPING SYSTEMS BUTT FUSION PRODUCT RANGE. ELECTROFUSION FITTINGS DENOTED HEREWITH HAVE BEEN DERIVED FROM THE PLASSON 'POLYETHYLENE PIPING SYSTEMS' PRODUCT RANGE.
- 3. ALL SERVICES SHOWN ARE INDICATIVE ONLY. A CURRENT SERVICES SEARCH & SITE CHECK OF ALL EXISTING SERVICES WILL BE REQUIRED PRIOR TO COMMENCEMENT OF ANY WORKS. THE CONSTRUCTOR IS TO DETERMINE LEVELS & LOCATIONS EXISTING SERVICES IN THE VICINITY OF THE CONSTRUCTION SITE AND ANY CONSTRUCTED STRUCTURES FOR PROPOSED SERVICES, SUCH AS DUCTING FOR WATER OR ELECTRICITY WITHIN THE SUBDIVISION. THE CONTRACTOR MUST ENSURE ALL SERVICES ARE LOCATED BY THE RELEVANT AUTHORITY PRIOR TO COMMENCEMENT OF WORKS
- 4. PRESSURE SEWER MAINS SHALL BE BLACK POLYETHYLENE (PE100 PN16) WITH A CREAM STRIPE AS PER WSA 07-2007 & ALTOGETHER GROUP SUPPLEMENTARY MANUAL TO W.S.A.A.
- 5. ALL POLYETHYLENE MAINS ≤DN200 SHALL BE JOINED BY ELECTROFUSION TECHNIQUES IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS. ALL POLYETHYLENE MAINS >DN200 SHALL BE JOINED BY BUTTWELD TECHNIQUES IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS
- 6. MAIN TO BE LAID GENERALLY AS INDICATED IN SERVICE ALLOCATION DIAGRAMS. INSTRUCTION NOTES SHALL TAKE PRECEDENCE OVER DIAGRAMS WHERE PROVIDED. 600mm HORIZONTAL CLEARANCE TO BE MAINTAINED BETWEEN ALL SEWER & WATER MAINS. MINIMUM PIPE COVER SHALL BE 800mm IN FOOTWAYS & FOR ROADWAYS. MAXIMUM PIPE COVER SHALL GENERALLY BE 1.5m. WHERE COVER FOR A TRENCHED INSTALLATION EXCEEDS 1.5m, BUT LESS THAN 2.5m, THE MAIN AS A MINIMUM SHALL BE EMBEDDED IN STABILISED SAND. THE CONTRACTOR SHALL ENSURE THAT ALL PRESSURE SEWER & RECYCLED WATER MAINS HAVE SUFFICIENT VERTICAL SEPARATION AS PER THE CLEARANCE TABLE ADJACENT.
- 7. MAINS CROSSING UNDER EXISTING DRIVEWAYS (SEALED, PAVED OR DECORATIVE) SHALL BE CONDUCTED BY UNDER BORING ONLY UNLESS PERMISSION IS GRANTED BY THE AFFECTED PROPERTY OWNER
- 8. MAINS WITHIN 2m OF ELECTRICITY OR POWER POLES SHALL BE CONDUCTED BY BORING TECHNOLOGY (UNLESS AGREED TO BY THE BOX HILL WATER REPRESENTATIVE).
- 9. ALL PIPE BEDDING MATERIAL SHALL COMPLY WITH WSAA PRODUCT SPECIFICATION WSA-PS350 & WSA-PS351.
- 10. ALL BENDS SHALL BE <u>ELECTROFUSION OR BUTTWELD SWEEP BENDS</u>. FABRICATED BENDS SHALL NOT BE USED IN LIEU. KNUCKLE ELBOWS ARE NOT PERMITTED.
- 11. <u>MINIMUM</u> BENDING RADIUS FOR PN16 PE100 (SDR11) SHALL BE <u>20 x DN</u>. (ie. DN400:R8.0m, DN250:R5.0m, DN200: R4.0m, DN160:R3.2m, DN125:R2.5m, DN90:R1.8m, DN75:R1.5m, DN63:R1.3m, DN50: R1.0m, DN40: R0.8m
- 12. ALL HOUSE SERVICE LATERALS SHALL BE DN40 (PE100 PN16).
- 13. FLUSHING PITS SHALL CONFORM WITH ALTOGETHER GROUP STANDARD DRAWINGS. REFER TO WEBSITE FOR CURRENT VERSION.
- SMALL MAINS (

 DN110)

 https://information.altogethergroup.com.au/governance/Land Housing/PSS-1017A-FS.pdf

 ADSS MAINS (

 DN110)
- LARGE MAINS (>DN110)
 https://information.altogethergroup.com.au/governance/Land_Housing/PSS-1017B-FS.pdf
- 14. LOCALISED DEEPENING OF MAINS MAY BE REQUIRED TO FACILITATE AIR VALVE INSTALLATION. THE CONTRACTOR SHALL ENSURE THAT THE AIR VALVE OFFTAKE IS LOCATED AT A HIGH POINT (NATURAL OR ARTIFICIAL) IN THE MAIN (i.e. MAIN SHALL GRADE DOWNWARDS EITHER SIDE OF THE AIR VALVE).
- 15. DETECTABLE MARKING TAPE SHALL BE LAID ON TOP OF THE PIPE EMBEDMENT MATERIAL BEFORE BACKFILLING & CONNECTED TO SURFACE VALVES.
- 16. ALL SURFACE FITTINGS LOCATED IN TRAFFICABLE AREAS (ie ROADWAYS, PATHS etc) SHALL HAVE HEAVY DUTY SURROUNDS INSTALLED.
- 17. DURING CONSTRUCTION, ALL OPEN ENDS OF PIPE SHALL BE CAPPED OFF TO PREVENT ENTRY OF FOREIGN MATTER.
- 18. ALL VALVES SHALL BE RESILIENT SEATED SLUICE VALVES (CLOCKWISE CLOSING), SHALL BE RESTRAINED IN ACCORDANCE WITH WAT-1207 & SHALL COMPLY WITH ALTOGETHER GROUP STANDARD DRAWING PSS-1015-FS.
- 19. ALL MAINS SHALL BE TESTED IN ACCORDANCE WITH WSA 07-2007 Version 1.1.
- 20. FOR LOTS WITH TANKS IN THE REAR: 1 x 25mm INSTRUMENTATION CONDUIT (ORANGE) AND 1 x 25mm ELECTRICAL CONDUIT (ORANGE) [WITH DRAW WIRES] SHALL BE INSTALLED FROM THE COLLECTION TANK TO WATER METERS. THE CONDUITS SHALL BE LAID IN A COMMON TRENCH WITH THE SEWERAGE AND MAINTAIN A MINIMUM HORIZONTAL CLEARANCE OF 400mm.
- 21. THE CONSTRUCTOR SHALL PROVIDE BOX HILL WATER WITH MINIMUM OF 7 DAYS NOTICE IN WRITING OF INTENT TO CONNECT NEW MAINS TO EXISTING INFRASTRUCTURE. CONNECTIONS ARE NOT PERMITTED UNTIL COMPLIANT TEST RESULTS HAVE BEEN PROVIDED & CONFIRMATION IS PROVIDED BY THE BOX HILL WATER REPRESENTATIVE.
- 22. UPON COMPLETION OF WORKS, ALL SURFACES MUST BE RESTORED AS CLOSE AS POSSIBLE, TO THE CONDITION THAT EXISTED PRIOR TO COMMENCEMENT OF WORK.
- 23. PERMISSION OF ENTRY MUST BE OBTAINED BY THE CONTRACTOR FROM THE OWNER/OCCUPIER PRIOR TO COMMENCEMENT OF WORK IN PRIVATE PROPERTY.
- 24. BURIED FITTINGS ARE NOT TO BE BACKFILLED UNTIL W.A.C. DETAILS HAVE BEEN OBTAINED & APPROVAL FOR BACKFILLING GIVEN BY THE BOX HILL WATER REPRESENTATIVE. THE CONTRACTOR SHALL PROVIDE M.G.A. COORDINATED WORK-AS-CONSTRUCTED INFORMATION REGARDING THE INSTALLATION OF ALL BURIED FITTINGS.
- 25. THE MINIMUM NUMBER OF COMPACTION TESTS REQUIRED TO SATISFY THE PRESSURE SEWER CODE OF AUSTRALIA (CLAUSE 21.3.4) ARE:
 - TRAFFICABLE:
 PIPE EMBEDMENT ZONE: NIL TRENCH FILL ZONE: 1 TEST / CROSSING (3 Tests)
- NON-TRAFFICABLE:
 PIPE EMBEDMENT ZONE: NIL TRENCH FILL ZONE: 1 TEST / 100m (13 Tests)
- 26. BOUNDARY KITS (COMPLETE) SHALL BE eONE SUPPLIED. COLLECTION TANKS SHALL BE INSTALLED WITH BOUNDARY KIT (REFER ALTOGETHER GROUP STANDARD DRAWINGS PSS-1112-FS & PSS-1113-FS). PUMP TO BE INSTALLED BY OTHERS.
- 27. ALL MAINS (UP TO THE BOUNDARY KIT) SHALL BE PRESSURE TESTED TO 1600 kPa.
- 28. ALL MAINS SHALL BE FLUSHED WITH WATER TO REMOVE ANY DEBRIS PRIOR TO COMMISSIONING.
- 29. SURFACE IDENTIFICATION MARKERS ARE TO BE PROVIDED TO BOX HILL WATER REQUIREMENTS.
- 30. ROPE OFF ALL PRESSURE SEWER UNITS & FLUSHING POINTS TO LIMIT DAMAGE DURING CONSTRUCTION.
- 31. PRESSURE TRANSMITTER TO BE MEASUREX MRB21 GENERAL PURPOSE TRANSMITTER WITH MICROSPIDER LOGGING TELEMETRY AND ALARM PER ALTOGETHER GROUP REQUIREMENTS.
- 32. WORK-AS-CONSTRUCTED DOCUMENTATION SHALL BE PROVIDED BY THE CONTRACTOR

STRICTLY IN ACCORDANCE WITH THE ALTOGETHER GROUP Q.A. SUBMISSION CHECKLIST.

1. ALL WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DESIGN DRAWINGS, ALTOGETHER GROUP SUPPLEMENTARY MANUAL TO W.S.A.A. & WSA 03-2011-3.1 (SYDNEY WATER WATER EDITION - 2014).

RECYCLED WATER NOTES

- 2. POTABLE WATER SHALL BE UTILISED FOR FIRE FIGHTING PURPOSES.
- 3. ALL EQUIPMENT, MATERIALS & ACCESSORIES USED IN THIS CONTRACT SHALL BE NEW, SHALL CONFORM WITH THE APPROPRIATE CURRENT AUSTRALIAN STANDARDS & SHALL COMPLY WITH ALTOGETHER GROUP REQUIREMENTS.
- 4. ALL SERVICES SHOWN ARE INDICATIVE ONLY. A CURRENT SERVICES SEARCH & SITE CHECK OF ALL EXISTING SERVICES WILL BE REQUIRED PRIOR TO COMMENCEMENT OF ANY WORKS. THE CONSTRUCTOR IS TO DETERMINE LEVELS & LOCATIONS EXISTING SERVICES IN THE VICINITY OF THE CONSTRUCTION SITE AND ANY CONSTRUCTED STRUCTURES FOR PROPOSED SERVICES, SUCH AS DUCTING FOR WATER OR ELECTRICITY WITHIN THE SUBDIVISION. THE CONTRACTOR MUST ENSURE ALL SERVICES ARE LOCATED BY THE RELEVANT AUTHORITY PRIOR TO COMMENCEMENT OF WORKS.
- 5. THE CONSTRUCTOR SHALL VERIFY WITH THE SITE SURVEYOR THE POSITION & LEVEL OF ALL EXISTING & PROPOSED BOUNDARIES PERTINENT TO THE INFRASTRUCTURE INSTALLATIONS.
- 6. MAINS TO BE LAID GENERALLY AS INDICATED IN SERVICE ALLOCATION DIAGRAMS. INSTRUCTION NOTES SHALL TAKE PRECEDENCE OVER DIAGRAMS WHERE PROVIDED. 600mm HORIZONTAL CLEARANCE TO BE MAINTAINED BETWEEN ALL SEWER & WATER MAINS. MINIMUM PIPE COVER SHALL BE 600mm IN FOOTWAYS (TYPE B EMBEDMENT: WAT-1202-V) & FOR ROADWAYS (TYPE L EMBEDMENT: WAT-1204-V). MAXIMUM PIPE COVER SHALL GENERALLY BE 1.5m. WHERE COVER FOR A TRENCHED INSTALLATION EXCEEDS 1.5m, BUT IS LESS THAN 2.5m, THE MAIN AS A MINIMUM SHALL BE EMBEDDED IN STABILISED SAND. THE CONTRACTOR SHALL ENSURE THAT ALL RECYCLED WATER & PRESSURE SEWER MAINS HAVE SUFFICIENT VERTICAL SEPARATION AS PER THE CLEARANCE TABLE ADJACENT.
- 7. ALL RECYCLED WATER MAINS SHALL BE LILAC mPVC (PN16). DIFFERENTIATION OF POTABLE & RECYCLED WATER SYSTEMS SHALL BE AS PER TABLE 4.1 WSA03-2011 WITH BOTH SERVICES BEING CLASSIFIED AS WATERMAINS. RECYCLED WATER MAINS SHALL ALWAYS BE LOWER THAN POTABLE MAINS. 150mm VERTICAL CLEARANCE BETWEEN POTABLE WATER & RECYCLED WATER MAINS SHALL BE PROVIDED.
- 8. MAXIMUM JOINT DEFLECTION SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
- 9. LOCALLY LOWER PIPEWORK IN VICINITY OF STOP VALVES TO ENSURE SUFFICIENT COVER IS MAINTAINED OVER VALVES. LOWERING OF PIPEWORK SHALL ACHIEVED OVER A NUMBER OF PIPE LENGTHS EITHER SIDE OF VALVES TO ELIMINATE ANY SHARP DEFLECTIONS.
- 10. ALL PIPE BEDDING MATERIAL SHALL COMPLY WITH WSAA PRODUCT SPECIFICATION PS-350, 368 & 369. GEOTECHNICAL CONDITIONS SHOULD BE ASSESSED DURING CONSTRUCTION BY THE CONTRACTOR IN ASSOCIATION WITH THE BOX HILL WATER REPRESENTATIVE TO DETERMINE THE NEED TO MODIFY EMBEDMENT/TRENCHFILL TYPE & THE ROAD FOR TRENCH DRAINAGE/BULKHEADS.
- 11. DURING CONSTRUCTION, ALL OPEN ENDS OF PIPES SHALL BE CAPPED OFF TO PREVENT ENTRY OF FOREIGN MATTER.
- 12. HYDRANTS, STOP VALVES & ALL OTHER FITTINGS SHALL BE THE SAME SIZE AS THROUGH WATER MAIN & ANTICLOCKWISE CLOSING.
- 13. HYDRANTS MUST NOT BE INSTALLED IN POTENTIAL DRIVEWAY LOCATIONS. HYDRANTS & WATER SERVICES SHALL BE NOMINALLY AT LEAST 5m FROM EACH BOUNDARY OR ON BOUNDARIES. WHERE POSSIBLE, FITTINGS SHALL BE LOCATED BEHIND KERB INLET PITS.
- 14. THRUST BLOCKS SHALL BE INSTALLED IN ACCORDANCE WITH WAT-1205.
- 15. ALL PROPERTY (MAIN TO METER) SERVICE CONNECTIONS SHALL BE CONSTRUCTED STRICTLY IN ACCORDANCE ALTOGETHER GROUP REQUIREMENTS. REFER TO ALTOGETHER GROUP WEBSITE FOR CURRENT VERSIONS.
 - SINGLE SERVICE
 https://information.altogethergroup.com.au/governance/Land Housing/WAT-1854-FS.pdf

 DUAL SERVICE
 https://information.altogethergroup.com.au/governance/Land Housing/WAT-1855-FS.pdf
- 16. PROPERTY SERVICE CONNECTIONS SHALL BE FLUSHED & LOCKED (BY THE BOX HILL WATER REPRESENTATIVE) FOLLOWING SUCCESSFUL PRESSURE TESTING.
- 17. SURFACE FITTINGS LOCATED IN TRAFFICABLE AREAS (ie ROADWAYS, PATHS etc) SHALL HAVE HEAVY DUTY SURROUNDS INSTALLED.
- 18. ALL MAINS SHALL BE TESTED IN ACCORDANCE WITH WSA 03-2011-3.1 (SYDNEY WATER EDITION 2014).
- 19. ALL MAINS SHALL BE FLUSHED WITH WATER TO REMOVE ANY DEBRIS PRIOR TO COMMISSIONING.
- 20. WATER QUALITY TESTING SHALL BE IN ACCORDANCE WITH WSA 03-2011-3.1 (SYDNEY WATER EDITION 2014: CLAUSE 19.7).
- 21. THE CONSTRUCTOR SHALL PROVIDE BOX HILL WATER WITH MINIMUM OF 7 DAYS NOTICE IN WRITING OF INTENT TO CONNECT NEW MAINS TO EXISTING INFRASTRUCTURE. CONNECTIONS ARE NOT PERMITTED UNTIL COMPLIANT TEST RESULTS HAVE BEEN PROVIDED & CONFIRMATION IS PROVIDED BY THE BOX HILL WATER REPRESENTATIVE.
- 22. UPON COMPLETION OF WORKS, ALL SURFACES MUST BE RESTORED AS CLOSE AS POSSIBLE, TO THE CONDITION THAT EXISTED PRIOR TO COMMENCEMENT OF WORK.
- 23. PERMISSION OF ENTRY MUST BE OBTAINED BY THE CONTRACTOR FROM THE OWNER/OCCUPIER PRIOR TO COMMENCEMENT OF WORK IN PRIVATE PROPERTY.
- 24. BURIED FITTINGS ARE NOT TO BE BACKFILLED UNTIL W.A.C. DETAILS HAVE BEEN OBTAINED & APPROVAL FOR BACKFILLING GIVEN BY THE BOX HILL WATER REPRESENTATIVE. THE CONTRACTOR SHALL PROVIDE M.G.A. COORDINATED WORK-AS-CONSTRUCTED INFORMATION REGARDING THE INSTALLATION OF ALL BURIED FITTINGS.
- 25. THE MINIMUM NUMBER OF COMPACTION TESTS REQUIRED TO SATISFY THE WATER SUPPLY CODE OF AUSTRALIA ARE:

TRAFFICABLE:

PIPE EMBEDMENT ZONE: NIL TRENCH FILL ZONE: 1 TEST / CROSSING (4 Tests)

NON-TRAFFICABLE:

TESTING SHALL BE IN ACCORDANCE WITH TABLE 16.1 & 17.1 OF THE WATER SUPPLY CODE OF AUSTRALIA

TRENCH FILL ZONE: 1 TEST / 100m (14 Tests)

- 26. SURFACE IDENTIFICATION MARKERS ARE TO BE PROVIDED TO BOX HILL WATER REQUIREMENTS.
- 27. PRESSURE TRANSMITTER TO BE MEASUREX MRB21 GENERAL PURPOSE TRANSMITTER WITH MICROSPIDER LOGGING TELEMETRY AND ALARM PER ALTOGETHER GROUP REQUIREMENTS.
- 28. WORK-AS-CONSTRUCTED DOCUMENTATION SHALL BE PROVIDED BY THE CONTRACTOR STRICTLY IN ACCORDANCE WITH THE ALTOGETHER GROUP Q.A. SUBMISSION CHECKLIST.

ALTOGETHER GROUP STANDARD DRAWINGS CAN BE FOUND AT THE FOLLOWING ADDRESS:

PIPE EMBEDMENT ZONE: NIL

 $\underline{https://askus.altogethergroup.com.au/hc/en-us/articles/900004827263-Standard-drawings-for-land-developers-land-drawings-for-land-drawings-$

- 1. THIS DRAWING SET SHALL BE READ IN CONJUNCTION WITH THE HILLS SHIRE COUNCIL STANDARDS, ALTOGETHER GROUP SUPPLEMENTARY MANUAL TO W.S.A.A. & OTHER ASSOCIATED DRAWINGS AND TECHNICAL SPECIFICATIONS.
- 2. ALL PRESSURE SEWER LATERALS & RECYCLED WATER PROPERTY SERVICE CONNECTIONS CROSSING CARRIAGEWAYS SHALL BE INSTALLED WITHIN INDIVIDUAL SERVICE CONDUITS.
- 3. THE CONTRACTOR SHALL LOCATE AND IDENTIFY ALL UNDERGROUND SERVICES PRIOR TO COMMENCEMENT OF WORKS AND SHALL REPAIR ANY DAMAGE CAUSED TO SUCH SERVICES DURING THE COURSE OF WORKS. ANY SERVICE LOCATIONS ON THE FOLLOWING DRAWINGS ARE INDICATIVE ONLY
- 4. MAKE SMOOTH TRANSITION TO EXISTING WORKS (i.e. ROAD PAVEMENTS AND FOOTPATHS TO P.C.A. AND SUPERINTENDENTS REQUIREMENTS.
- 5. SUITABLE PROTECTION OF EXISTING ROAD PAVEMENT, KERB AND GUTTER, FOOTPATHS AND ANY EXISTING FEATURES SHALL BE PROVIDED UNTIL THE CONSTRUCTION WORKS ARE

CLEARANCES BETWEEN PIPELINES & UNDERGROUND SERVICES

Utility		ontal clearance m	Minimum vertical clearance ¹
(Existing or proposed service)	New m	ain size	mm
p. op 0000	≤DN200	>DN200	
Water mains ² > DN375	600	600	300
Water mains ² < DN375	300 ⁴	600	150
Gas mains	300 ⁴	600	150
Telecommunication conduits and cables	300 ⁴	600	150
Electricity conduits and cables	500	1000	225 *
Stormwater drains	300 4	600	150 °
Sewers - gravity	1000 6/ 600	1000 6/ 600	500 °
Sewers - pressure and vacuum	600 600		300 *
Kerbs	150	600 ⁵	150 (where possible)

NOTES:

1. Vertical clearances apply where pipelines cross other utility services, except in the case of water/sewer mains when a vertical separation shall always be maintained, even when the pressure sewer and water main are parallel. The pressure sewer should always be located below the water main to minimise the possibility of backflow contamination in the event

- Water mains includes mains supplying both potable and recycled water.
 For areas with existing water reticulation, clearances can be further reduced to 600mm with the approval of the water
- authority.

 4. Clearances can be further reduced to 150mm for distances up to 2m when passing installations such as poles, pits, and
- small structures, providing the structures is not destablised in the process.

 5. Clearances from kerbs shall be measured from the nearest point of the kerb. For water/sewer «DN375, clearances from
- kerbs can be progressively reduced until the minimum of 150mm is reached for water/sewer <DN200.

 6. Where a parallel sewer is at minimum vertical clearance lower than the water main (500mm), maintain a minimum horizontal of 1000mm. this minimum clearance can be progressively reduced to 600mm as the vertical clearance is increased
- to 750mm. 7. For pressure sewer laterals, minimum vertical clearances may be reduced to 150mm providing there is no joint in the lateral within 500mm of either side of the service being crossed. 8. An additional clearance from high voltage electrical installations should be maintained above the conduits or cables to
- allow for a protective barrier and marking to be provided.

 9. Water mains should always cross over sewers and stormwater drains. For cases where this is no alterative and the main must cross under the sewer, the design shall nominate an appropriate protection treatment (joint-free in the vicinity of
- * SHOULD THE RECOMMENDED CLEARANCES NOT BE ACHIEVED, NOTIFICATION SHALL

PRESSURE SEWER PIPE SCHEDULE

SIZE	TYPE	CLASS	LENGTH
DN75	PE100	PN16	145.4
DN63	PE100	PN16	734.4
DN50	PE100	PN16	432.3
DN40	PE100	PN16	2,755.0
		TOTAL	4,067.1

RECYCLED WATER PIPE SCHEDULE

SIZE	TYPE	CLASS	LENGTH
DN200	m.P.V.C.	PN16	40.0
DN150	m.P.V.C.	PN16	335.5
DN100	m.P.V.C.	PN16	824.8
DN100	o.P.V.C.	PN16	162.1
		TOTAL	1,362.4

ROSE ATKINS RIMMER (Infrastructure) Pty. Ltd.

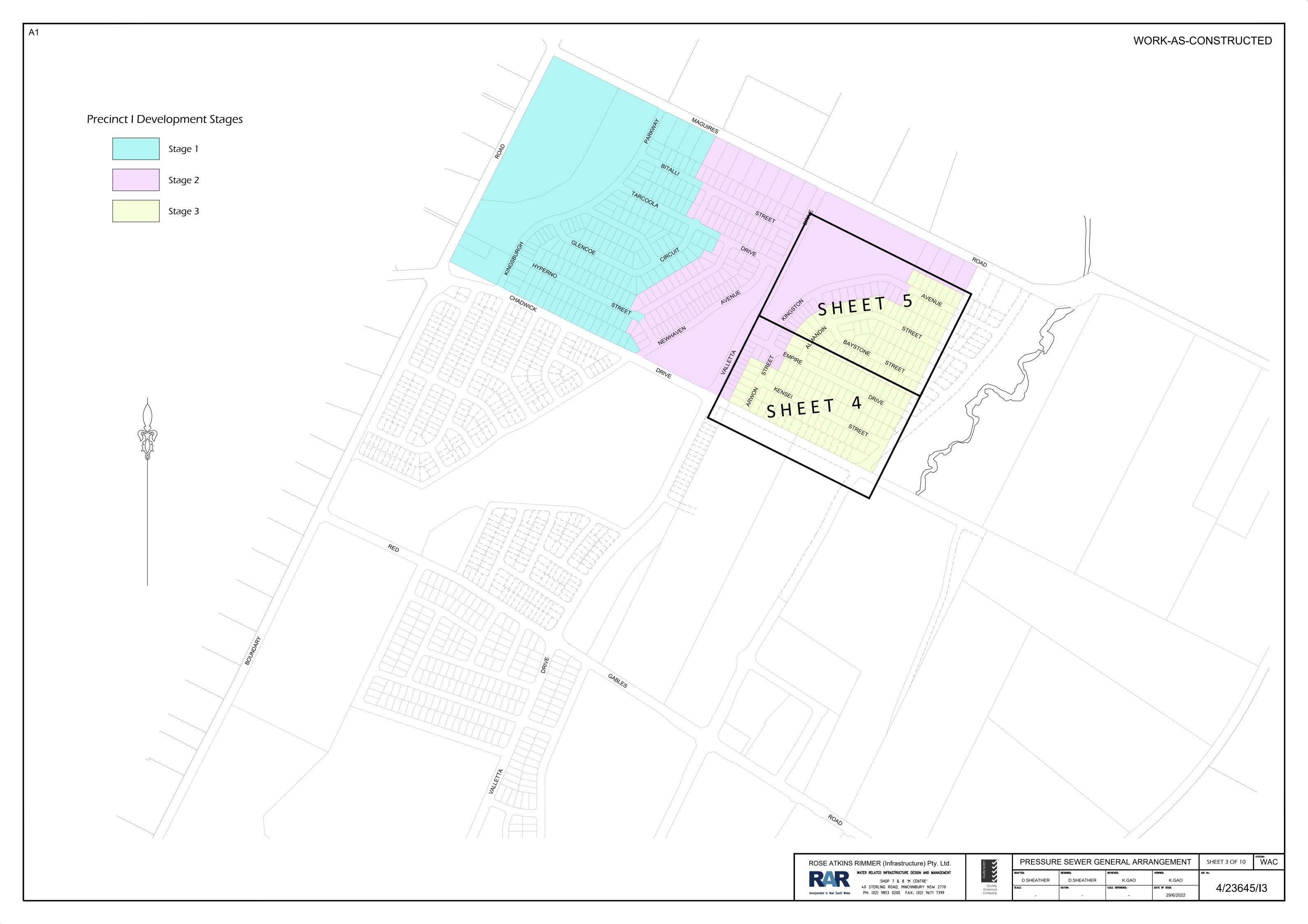
WATER RELATED INFRASTRUCTURE DESIGN AND MANAGEMENT

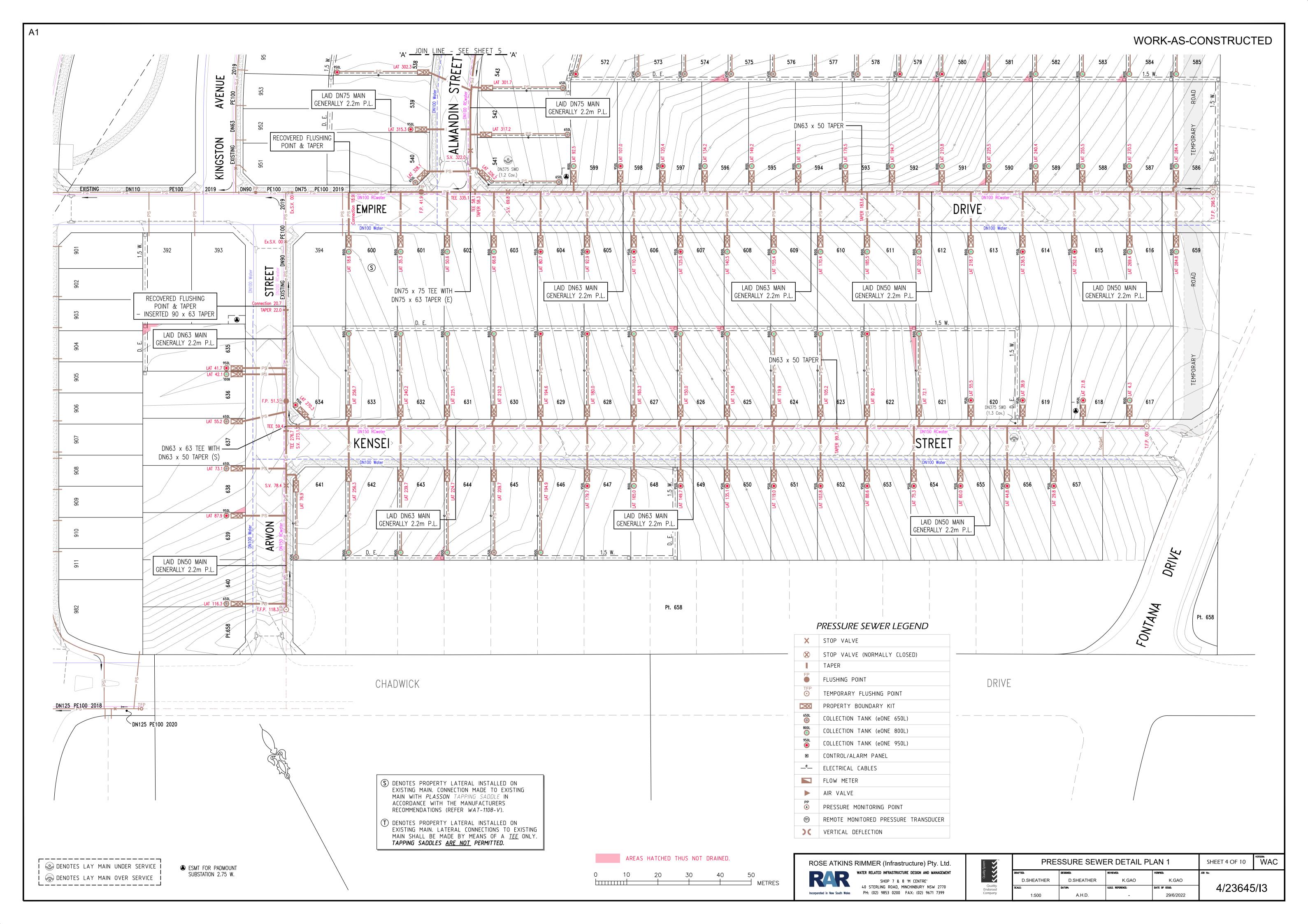
SHOP 7 & 8 'M CENTRE'

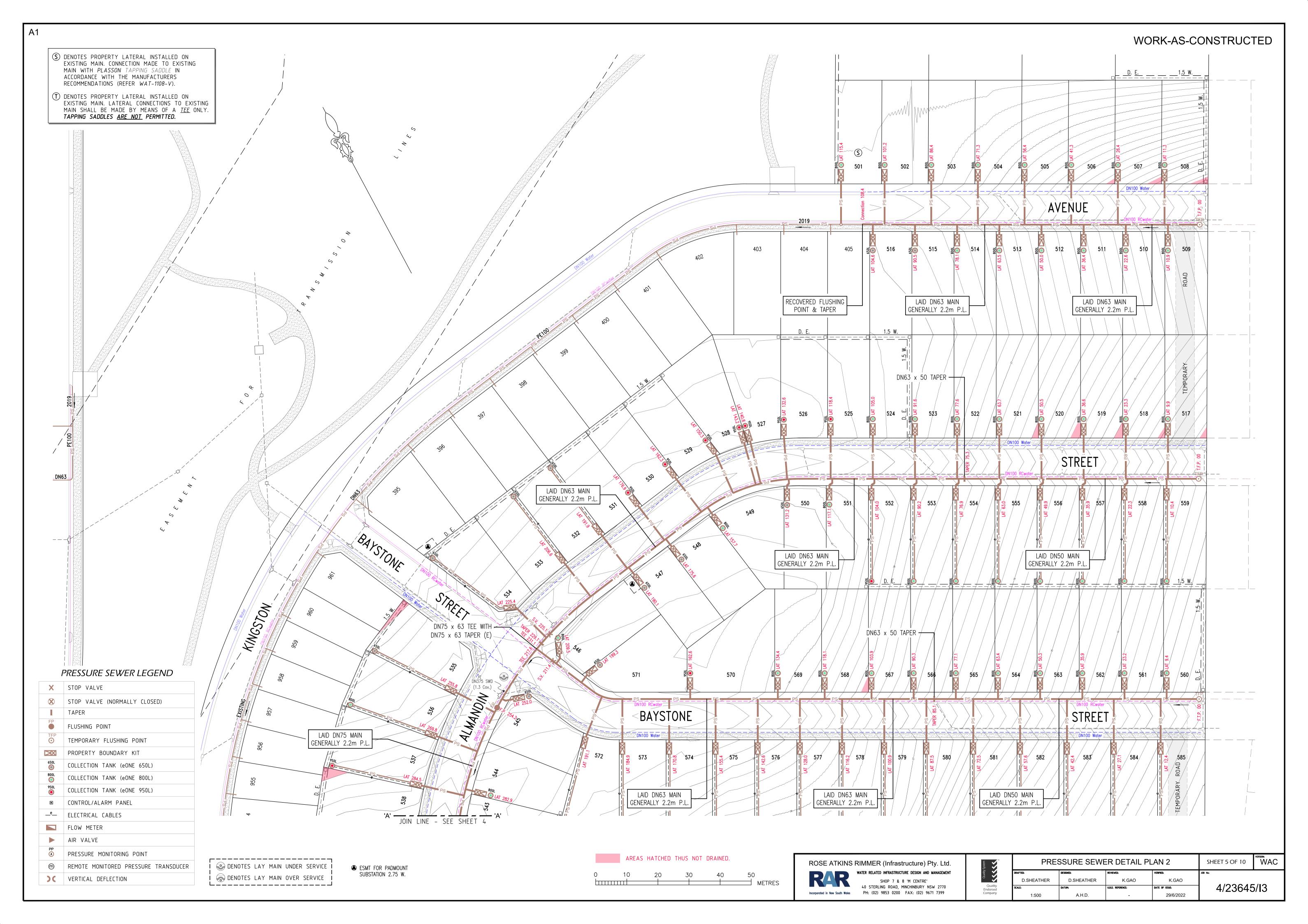
40 STERLING ROAD, MINCHINBURY NSW 2770

PH: (02) 9853 0200 FAX: (02) 9671 7399

System		GENERA	L NOTES		SHEET 2 OF 10	VERSION: WA
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✓	D.SHEATHER	D.SHEATHER	K.GAO	K.GAO		
Quality Endorsed	SCALE:	DATUM:	U.B.D. REFERENCE:	DATE OF ISSUE:	4/23645	5/13
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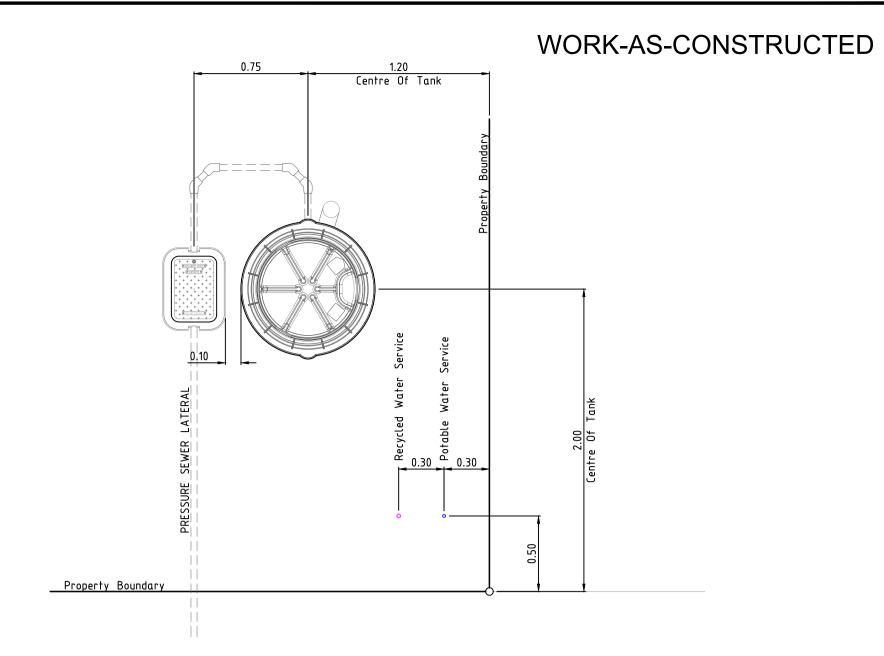






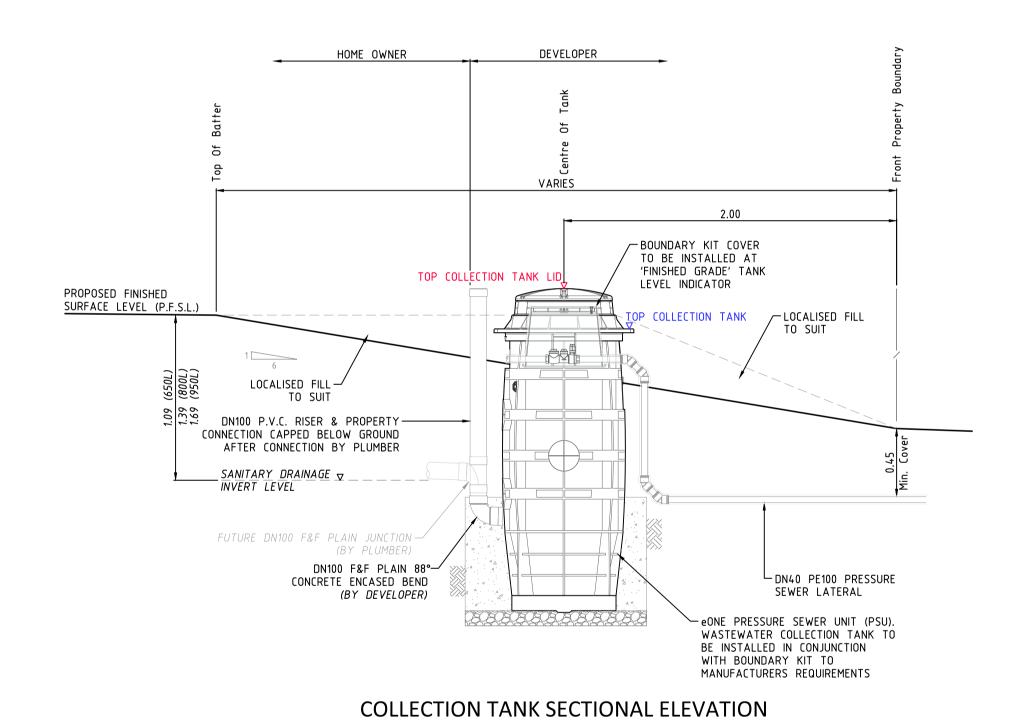
PRESSURE SEWER COLLECTION TANK LEVEL DETAILS								
		THE	GABLES	DEVELOPMENT	- PRECINCT	[STAGE 3]		
LOT NUMBER	COLLECTION TANK LOCATION	TANK SIZE	PFSLAT TANK LOCATION	TOP OF COLLECTION TANK	DESIGN SANITARY DRAINAGE INVERT LEVEL	TOP OF COLLECTION TANK LID*	CALCULATED SANITARY DRAINAGE INVERT LEVEL	WAC v's DESIGN INVER
	[FRONT/REAR]	[650L/800L/950L]		[Design R.L.]	[Design R.L.]	[Work-As-Constructed]	[Work-As-Constructed]	[- LOWER / + HIGHER]
501	FRONT FLAT	800L	37.88	37.84	36.54	38.11	36.54	0.00
502	FRONT FLAT	800L	37.89	37.85	36.55	38.14	36.57	0.02
503	FRONT FLAT	800L	37.69	37.65	36.35	37.91	36.34	-0.01
504	FRONT FLAT	800L	37.29	37.25	35.95	37.50	35.93	-0.02
505 506	FRONT FLAT FRONT FLAT	800L 800L	36.71 36.09	36.67 36.05	35.37 34.75	36.93 36.31	35.36 34.74	-0.01 -0.01
507	FRONT FLAT	800L	35.47	35.43	34.13	35.71	34.14	0.01
508	FRONT FLAT	800L	34.84	34.80	33.50	35.06	33.49	-0.01
509	FRONT FLAT	800L	34.63	34.59	33.29	34.85	33.28	-0.01
510	FRONT FLAT	800L	35.23	35.19	33.89	35.52	33.95	0.06
511	FRONT FLAT	800L	35.83	35.79	34.49	36.09	34.52	0.03
512	FRONT FLAT	800L	36.42	36.38	35.08	36.68	35.11	0.03
513	FRONT FLAT	800L	37.01	36.97	35.67	37.23	35.66	-0.01
514	FRONT FLAT	800L	37.48	37.44	36.14	37.72	36.15	0.01
515	FRONT FLAT	650L	37.79	37.75	36.75	38.04	36.77	0.02
516	FRONT FLAT	650L	37.99	37.95	36.95	38.25	<i>36.98</i>	0.03
517	FRONT FLAT	800L	33.93	33.89	32.59	34.14	32.57	-0.02
518	FRONT FLAT	800L	34.64	34.60	33.30	34.91	33.34	0.04
519	FRONT FLAT	800L	35.35	35.31	34.01	35.54	33.97	-0.04
520	FRONT FLAT	800L	36.07	36.03	34.73	36.31	34.74	0.01
521	FRONT FLAT	800L	36.78	36.74	35.44	37.00	35.43	-0.01
522	FRONT FLAT	800L	37.43	37.39	36.09	37.65	36.08	-0.01
523	FRONT FLAT	800L	37.94	37.90	36.60	38.18	36.61	0.01
524	FRONT FLAT	800L	38.29	38.25	36.95	38.51	36.94	-0.01
525	FRONT FLAT	950L	38.54	38.50	36.90	38.77	36.90	0.00
526 527	FRONT FLAT FRONT FLAT	950L 950L	38.75 38.77	38.71 38.73	37.11 37.13	39.04 39.05	37.17 37.18	0.06 0.05
527	FRONT FLAT	950L 950L	38.77	38.77	37.13	39.08	37.18	0.03
529	FRONT FLAT	950L	38.85	38.81	37.21	39.11	37.24	0.03
530	FRONT FLAT	950L	38.90	38.86	37.26	39.14	37.27	0.01
531	FRONT FLAT	950L	38.96	38.92	37.32	39.24	37.37	0.05
532	REAR	650L	38.45	38.41	37.41	38.72	37.45	0.04
533	REAR	650L	38.37	38.33	37.33	38.65	37.38	0.05
534	REAR BATTER	650L	37.85	38.06	37.06	38.34	37.07	0.01
535	REAR	650L	38.00	37.96	36.96	38.25	36.98	0.02
536	REAR	800L	38.40	38.36	37.06	38.60	37.03	-0.03
537	REAR	950L	39.21	39.17	37.57	39.50	37.63	0.06
538	REAR	950L	40.20	40.16	38.56	40.41	38.54	-0.02
539	FRONT FLAT	950L	40.77	40.73	39.13	41.01	39.14	0.01
540	FRONT FLAT	650L	41.05	41.01	40.01	41.33	40.06	0.05
541	REAR	650L	39.63	39.59	38.59	39.90	38.63	0.04
542	REAR	650L	39.46	39.42	38.42	39.73	38.46	0.04
543	REAR	650L	39.41	39.37	38.37	39.68	38.41	0.04
544	FRONT FLAT	800L	39.91	39.87	38.57	40.13	38.56	-0.01
545	FRONT BATTER	650L	39.00	39.21	38.21	39.52	38.25	0.04
546	FRONT BATTER	800L	39.11	39.16	37.86	39.43	37.86	0.00
547	FRONT FLAT	650L	39.26	39.22	38.22	39.49	38.22	0.00
548	FRONT FLAT	650L	39.22	39.18	38.18 37.78	39.45	38.18 37.75	0.00
549 550	FRONT FLAT FRONT FLAT	800L 650L	39.12 38.96	39.08 38.92	37.78	39.32 39.24	37.75	-0.03 0.05
551	FRONT FLAT	800L	38.65	38.61	37.31	38.87	37.30	-0.01
552	REAR	950L	38.38	38.34	36.74	38.57	36.70	-0.01
553	REAR	800L	37.56	37.52	36.22	37.74	36.17	-0.04
554	REAR	800L	36.94	36.90	35.60	37.17	35.60	0.00
555	REAR	800L	36.26	36.22	34.92	36.44	34.87	-0.05
556	REAR	800L	35.56	35.52	34.22	35.74	34.17	-0.05
557	REAR	800L	34.85	34.81	33.51	35.11	33.54	0.03
558	REAR	800L	34.15	34.11	32.81	34.39	32.82	0.01
559	REAR	800L	33.44	33.40	32.10	33.67	32.10	0.00
560	FRONT FLAT	800L	32.92	32.88	31.58	33.14	31.57	-0.01
561	FRONT FLAT	800L	33.61	33.57	32.27	33.84	32.27	0.00
562	FRONT FLAT	800L	34.31	34.27	32.97	34.53	32.96	-0.01
563	FRONT FLAT	800L	35.00	34.96	33.66	35.26	33.69	0.03
564	FRONT FLAT	800L	35.69	35.65	34.35	35.88	34.31	-0.04
565	FRONT FLAT	800L	36.38	36.34	35.04	36.60	35.03	-0.01
566	FRONT FLAT	800L	37.08	37.04	35.74	37.34	35.77	0.03
567	FRONT FLAT	800L	37.78	37.74	36.44	38.04	36.47	0.03
568	FRONT FLAT	800L	38.53	38.49	37.19	38.74	37.17	-0.02
569	FRONT FLAT	800L	39.08	39.04	37.74	39.30	37.73	-0.01
570	FRONT FLAT	950L	39.59	39.55	37.95	39.83	37.96	0.01
571	FRONT FLAT	650L	39.49	39.45	38.45	39.76	38.49	0.04
572	REAR	950L	39.39	39.35	37.75	39.61	37.74	-0.01
573	REAR	650L	38.67	38.63	37.63	38.90	37.63	0.00
574	REAR	650L	38.36	38.32	37.32	38.59	37.32	0.00
575	REAR	650L	37.95	37.91	36.91	38.18	36.91	0.00
576	REAR	650L	37.76	37.72	36.72	38.02	36.75	0.03
577	REAR	650L	37.68	37.64	36.64	37.95	36.68	0.04
578 579	REAR REAR	650L	37.56 37.18	37.52 37.14	36.52 35.54	37.83	36.56 35.56	0.04
579 580	REAR	950L 950L	37.18 36.13	37.14 36.09	35.54 34.49	37.43 36.39	35.56 34.52	0.02 0.03

* COLLECTION TANK LEVEL PROVIDED TO G.P.S. ACCURACY ONLY. THE BUILDER IS REQUIRED TO CONFIRM DRAINAGE CONSTRAINTS PRIOR TO MAKING CONNECTION TO TANK.



TYPICAL INFRASTRUCTURE SETOUT DIMENSIONS

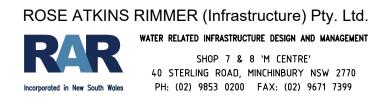
SCALE 1:25



COLLECTION TANK NOTES

SCALE 1:25

- 1. DESIGN SURFACE LEVELS WERE ELECTRONICALLY EXTRACTED FROM DIGITAL DATA SUPPLIED BY J.WYNDHAM PRINCE DATED 29/4/21 (1255ST3 DES CONT.dxf).
- DESIGN LEVELS CAN ONLY BE ASSUMED AS CURRENT AT TIME OF EXTRACTION. ALL LEVELS SHALL BE CONFIRMED WITH THE SITE SUPERINTENDENT PRIOR TO INSTALLATION OF TANKS. SHOULD THE PROPOSED FINISHED SURFACE LEVEL (P.F.S.L.) DIFFER FROM DESIGN BY MORE THAN 100mm, THE CONSTRUCTOR SHALL CONTACT THE DESIGNER IMMEDIATELY.
- 3. COLLECTION TANK SETOUT SHALL BE COMPLIANT WITH FSI-1000-FS & FSI-SK03A-FS. COLLECTION TANK INSTALLATION LEVELS DOCUMENTED ADJACENT SHALL SUPERSEDE ANY LEVELS ADVISED ON DRAWING FSI-SK03A-FS.
- 4. R.A.R. ACCEPT NO RESPONSIBILITY FOR INCONSISTENCIES IN EXTRACTED LEVELS RESULTING FROM CHANGES TO THE MODEL (SURFACE LEVEL) INFORMATION POST DATA EXTRACTION DATE.





COLLI	ECTION TAN	SHEET 6 OF 10	WAC		
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FRONT FLAT

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31.45

PRESSURE SEWER COLLECTION TANK LEVEL DETAILS THE GABLES DEVELOPMENT - PRECINCT [STAGE 3] **COLLECTION TANK** TOP OF COLLECTION TANK CALCULATED SANITARY WAC v's DESIGN INVERT PFSL AT TANK **DESIGN SANITARY LOT NUMBER TANK SIZE** TOP OF COLLECTION TANK LOCATION LOCATION DRAINAGE INVERT LEVEL LID* DRAINAGE INVERT LEVEL LEVEL COMPARISON [650L/800L/950L] [- LOWER / + HIGHER] [FRONT/REAR] [Design R.L.] [Work-As-Constructed] [Work-As-Constructed] [Design R.L. 581 REAR 800L 34.97 34.93 33.63 35.19 33.62 -0.01 582 800L 34.30 34.26 34.50 32.93 -0.03 REAR 32.96 583 800L 33.63 33.59 33.84 32.27 -0.02 REAR 32.29 REAR 32.95 32.91 33.11 31.54 -0.07 800L 31.61 585 REAR 800L 32.28 32.24 30.94 32.58 31.01 0.07 586 FRONT FLAT 800L 31.48 31.44 30.14 31.68 30.11 -0.03 587 FRONT FLAT 800L 32.05 32.01 30.71 32.26 30.69 -0.02 588 FRONT FLAT 800L 32.62 32.58 32.81 31.24 -0.04 31.28 589 FRONT FLAT 800L 33.19 33.15 31.85 33.36 31.79 -0.06 590 FRONT FLAT 800L 33.76 33.72 32.42 33.93 32.36 -0.06 591 800L 34.41 34.37 33.07 34.63 33.06 -0.01 FRONT FLAT 592 FRONT FLAT 800L 35.00 34.96 33.66 35.24 33.67 0.01 593 FRONT FLAT 800L 35.33 35.29 33.99 35.56 33.99 0.00 594 800L 35.71 34.42 0.01 FRONT FLAT 35.75 34.41 35.99 595 FRONT FLAT 800L 36.20 36.16 34.86 36.44 34.87 0.01 596 FRONT FLAT 800L 36.83 36.79 37.05 35.48 -*0.01* 35.49 950L 37.72 37.68 36.08 37.97 36.10 0.02 FRONT FLAT 598 FRONT FLAT 950L 38.53 38.49 36.89 38.77 36.90 0.01 599 FRONT FLAT 800L 39.21 39.45 37.88 -0.03 39.25 37.91 600 41.89 40.59 40.58 -0.01 FRONT FLAT 800L 41.93 42.15 601 FRONT FLAT 800L 41.51 41.47 40.17 41.75 40.18 0.01 602 800L 41.08 41.04 39.74 41.32 *39.75* 0.01 FRONT FLAT 603 800L 40.52 40.48 39.18 40.70 39.13 -0.05 FRONT FLAT 604 FRONT FLAT 950L 39.87 39.83 38.23 40.10 38.23 0.00 605 37.42 0.00 FRONT FLAT 950L 39.06 39.02 37.42 39.29 606 FRONT FLAT 950L 38.17 38.13 36.53 36.53 0.00 38.40 607 FRONT FLAT 950L 37.28 37.24 37.54 35.67 0.03 35.64 608 FRONT FLAT 800L 36.51 36.47 35.17 36.74 35.17 0.00 609 FRONT FLAT 800L 35.91 34.60 -0.01 35.95 34.61 36.17 610 FRONT FLAT 800L 35.50 35.46 34.16 35.74 34.17 0.01 611 800L 35.04 35.00 33.70 35.28 33.71 0.01 FRONT FLAT 612 34.54 34.50 34.75 33.18 -0.02 FRONT FLAT 800L 33.20 613 FRONT FLAT 800L 33.92 33.88 32.58 34.14 32.57 -0.01 614 950L 33.26 33.49 31.62 -0.04 FRONT FLAT 33.30 31.66 615 32.63 32.89 31.02 -0.01 FRONT FLAT 950L 32.67 31.03 616 FRONT FLAT 800L 32.01 31.97 30.67 32.23 30.66 -0.01 617 800L 31.73 31.69 30.39 31.92 30.35 -0.04 FRONT FLAT 618 950L 32.47 32.43 32.65 30.78 -0.05 FRONT FLAT 30.83 619 FRONT FLAT 950L 33.42 33.38 33.60 31.73 -0.05 31.78 FRONT FLAT 621 REAR 800L 34.82 34.78 33.48 35.03 33.46 -0.02 622 REAR 950L 34.19 36.07 34.20 0.01 35.83 35.79 623 36.29 36.57 35.00 0.01 REAR 800L 36.33 34.99 624 REAR 36.83 36.79 37.08 35.51 0.02 800L 35.49 625 37,40 37.36 36.06 37.59 36.02 -0.04 REAR 800L 626 800L 38.08 38.04 36.74 38.35 36.78 0.04 REAR 627 REAR 800L 38.77 38.73 37.43 39.00 37.43 0.00 628 39.42 37.82 39.73 37.86 0.04 REAR 950L 39.46 629 40.13 40.40 38.53 0.00 REAR 950L 40.17 38.53 630 REAR 800L 40.78 40.74 39.44 41.01 39.44 0.00 631 41.22 41.48 39.91 -0.01 REAR 800L 41.26 39.92 632 42.08 40.51 0.00 REAR 800L 41.85 41.81 40.51 633 REAR 42.51 42.47 41.17 42.78 41.21 0.04 800L 634 FRONT FLAT 43.17 43.13 41.53 43.41 41.54 0.01 950L 635 FRONT FLAT 43.36 43.32 43.59 41.72 0.00 950L 41.72 636 FRONT FLAT 43.39 43.35 42.05 43.61 42.04 -0.01 800L FRONT FLAT 43.35 43.61 42.34 -0.01 650L 43.39 42.35 638 FRONT FLAT 650L 43.12 42.12 43.38 42.11 -0.0143.16 639 FRONT FLAT 42.72 42.68 42.91 41.04 -0.04950L 41.08 640 40.77 39.80 0.03 FRONT FLAT 650L 40.81 39.77 41.07 42.47 41.20 0.02 641 REAR 650L 42.22 42.18 41.18 642 800L 42.04 42.00 40.70 42.29 40.72 0.02 REAR 643 800L 41.57 41.53 40.23 40.22 -0.01 REAR 41.79 -0.02 REAR 800L 40.91 40.87 39.57 41.12 39.55 40.44 40.73 39.46 0.02 645 REAR 650L 40.48 39.44 646 REAR 800L 40.21 40.17 38.87 40.41 38.84 -0.03 647 38.27 -0.04 FRONT BATTER 950L 40.04 39.91 38.31 40.14 648 FRONT BATTER 38.11 0.00 800L 39.47 39.41 38.11 39.68 *37.30* 0.00 649 FRONT FLAT 950L 38.94 38.90 37.30 39.17 650 36.51 -0.02 FRONT FLAT 950L 38.17 38.13 36.53 38.38

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35.79

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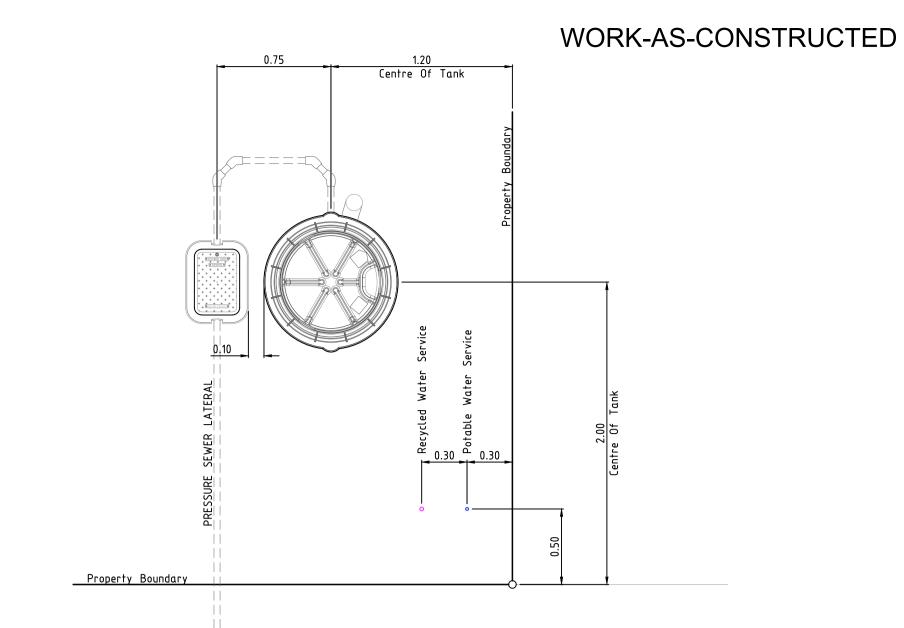
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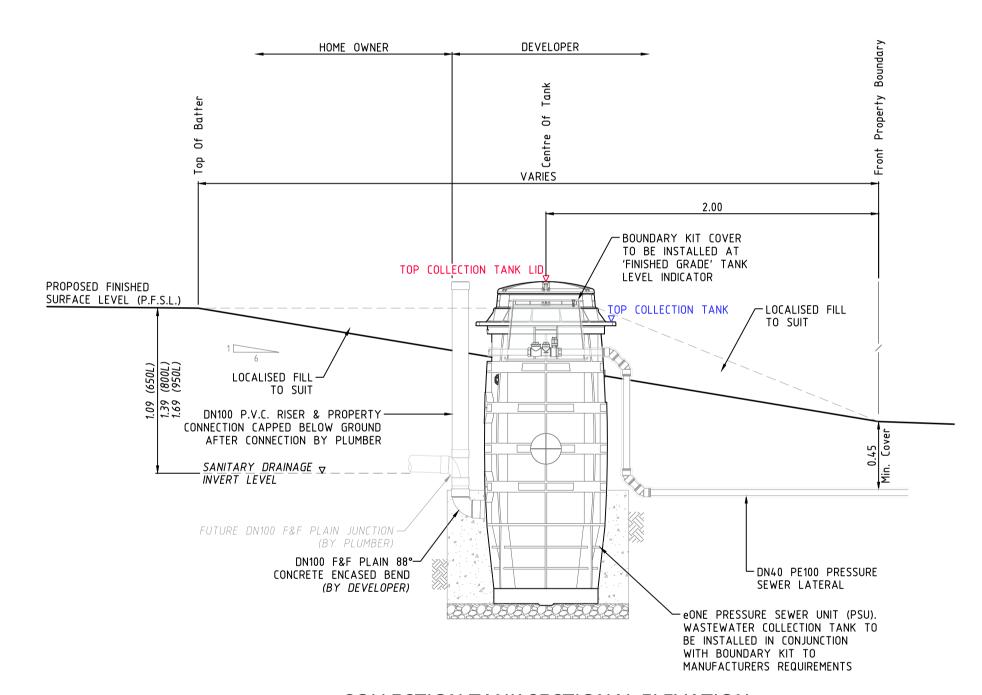
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TYPICAL INFRASTRUCTURE SETOUT DIMENSIONS

SCALE 1:25

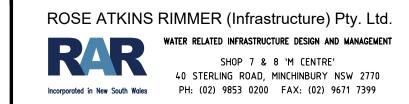


COLLECTION TANK SECTIONAL ELEVATION

SCALE 1:25

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	COLLECTION TANK LEVEL DETAILS 2				SHEET 7 OF 10	WA
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	D.SHEATHER	D.SHEATHER	K.GAO	K.GAO	 4/23645/I3	
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