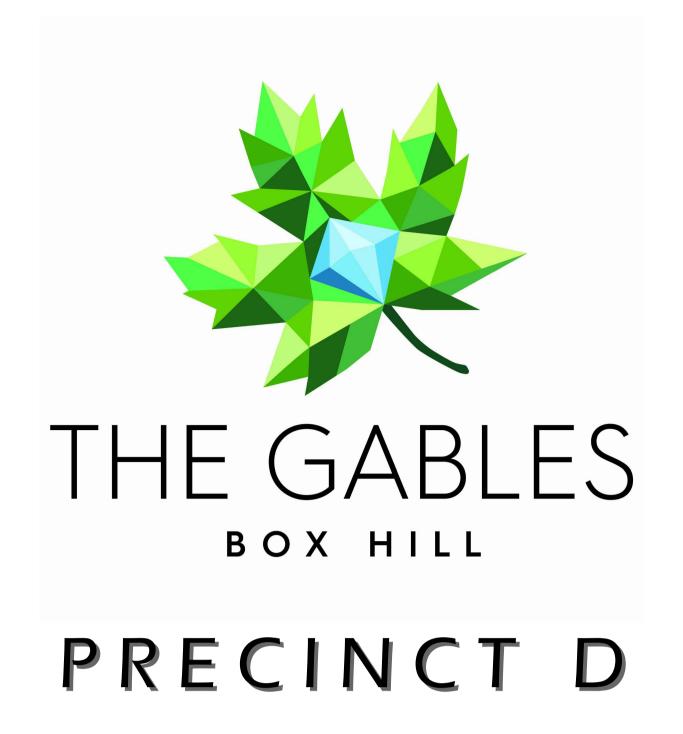
# WORK-AS-CONSTRUCTED



# STAGE 2 PRESSURE SEWER & RECYCLED WATER



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DRAWING LIST					
SHEET 1	COVER SHEET				
SHEET 2	GENERAL NOTES				
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04	WORK-AS-CONSTRUCTED	D.S.	10/8/23
03α	TANK ADJUSTMENT (2093)	D.S.	6/10/22
03	SERVICE LOCATIONS AMENED AT CLIENT REQUEST	D.S.	17/8/22
02	ISSUE FOR APPROVAL	D.S.	12/10/21
01	ORIGINAL ISSUE FOR TENDER	D.S.	27/9/21
No.	REVISION DESCRIPTION	BY	DATE

SERVICE	DATE	REF.	WORK-AS-CONSTRUCTED CERTIFICATION		
			DEVELOPER:		
			PROJECT SUPERVISOR: ROSE ATKINS RIMMER (INFRASTRUCTURE) Pty. Ltd.		
			CONSTRUCTOR: SPRINGFIELD CIVIL		
			COMPLETED		



ROSE ATKINS RIMMER (Infrastructure) Pty. Ltd. WATER RELATED INFRASTRUCTURE DESIGN AND MANAGEMENT Incorporated in New South Wales PH: (02) 9853 0200 FAX: (02) 9671 7399





PLAN OF PROPOSED WATER INFRASTRUCTURE SERVICES
THE GABLES DEVELOPMENT - PRECINCT D (STAGE 2)
RED GABLES ROAD, GABLES
L.G.A. THE HILLS

	COVER	SHEET 1 OF 11	WAC		
DRAFTED:	DESIGNED:	REVIEWED:	VERIFIED:	JOB No:	
D.SHEATHER	D.SHEATHER	K.GAO	K.GAO	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<b></b>
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- 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.
- 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 ALTOGETHER GROUP 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
  LARGE MAINS (S DN40)
- LARGE MAINS (>DN110)
  <a href="https://information.altogethergroup.com.au/governance/Land\_Housing/PSS-1017B-FS.pdf">https://information.altogethergroup.com.au/governance/Land\_Housing/PSS-1017B-FS.pdf</a>
- 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.

PRIOR TO COMMENCEMENT OF WORK IN PRIVATE PROPERTY.

- 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 ALTOGETHER GROUP WITH MINIMUM OF 7 DAYS NOTICE <u>IN WRITING</u> 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 ALTOGETHER GROUP 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
- 24. BURIED FITTINGS ARE NOT TO BE BACKFILLED UNTIL W.A.C. DETAILS HAVE BEEN OBTAINED & APPROVAL FOR BACKFILLING GIVEN BY THE ALTOGETHER GROUP 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 (8 Tests)
- NON-TRAFFICABLE:
  PIPE EMBEDMENT ZONE: NIL TRENCH FILL ZONE: 1 TEST / 100m (12 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 ALTOGETHER GROUP 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).
- 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 ALTOGETHER GROUP REPRESENTATIVE TO DETERMINE THE NEED TO MODIFY EMBEDMENT/TRENCHFILL TYPE & THE ROAD FOR TRENCH
- 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
    <a href="https://information.altogethergroup.com.au/governance/Land">https://information.altogethergroup.com.au/governance/Land</a> Housing/WAT-1854-FS.pdf

    DUAL SERVICE
    <a href="https://information.altogethergroup.com.au/governance/Land">https://information.altogethergroup.com.au/governance/Land</a> Housing/WAT-1855-FS.pdf
- 16. PROPERTY SERVICE CONNECTIONS SHALL BE FLUSHED & LOCKED (BY THE ALTOGETHER GROUP 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 ALTOGETHER GROUP 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 ALTOGETHER GROUP 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 ALTOGETHER GROUP 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 (8 Tests)
NON-TRAFFICABLE:

PIPE EMBEDMENT ZONE: NIL TRENCH FILL ZONE: 1 TEST / 100m (12 Tests)

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

  27. PRESSURE TRANSMITTER TO BE MEASUREX MRB21 GENERAL PURPOSE TRANSMITTER WITH

26. SURFACE IDENTIFICATION MARKERS ARE TO BE PROVIDED TO ALTOGETHER GROUP

- 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:

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

 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.

GENERAL NOTES

- 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	Minimum horizontal clearance mm		Minimum vertical clearance <sup>1</sup>	
(Existing or proposed service)	New m	ain size	mm	
p. 0p. 0000. 00. 1100,	≤DN200	>DN200		
Water mains <sup>2</sup> > DN375	600	600	300	
Water mains <sup>2</sup> < DN375	300 4	600	150	
Gas mains	300 4 600		150	
Telecommunication conduits and cables	300 <sup>4</sup>	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 <sup>5</sup>	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

- of a pressure main break.

  2. 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.
   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 destabilised 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 <0N200.

  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.

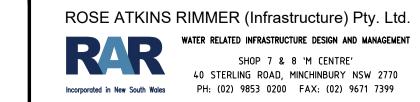
  9. Water mains should always cross over sewers and stormwater drains. For cases where this is no alterative and the main must cross under the sewer, the design shall nominate an appropriate protection treatment (igint-free in the vicinity of
  - \* SHOULD THE RECOMMENDED CLEARANCES NOT BE ACHIEVED, NOTIFICATION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

#### RECYCLED WATER PIPE SCHEDULE

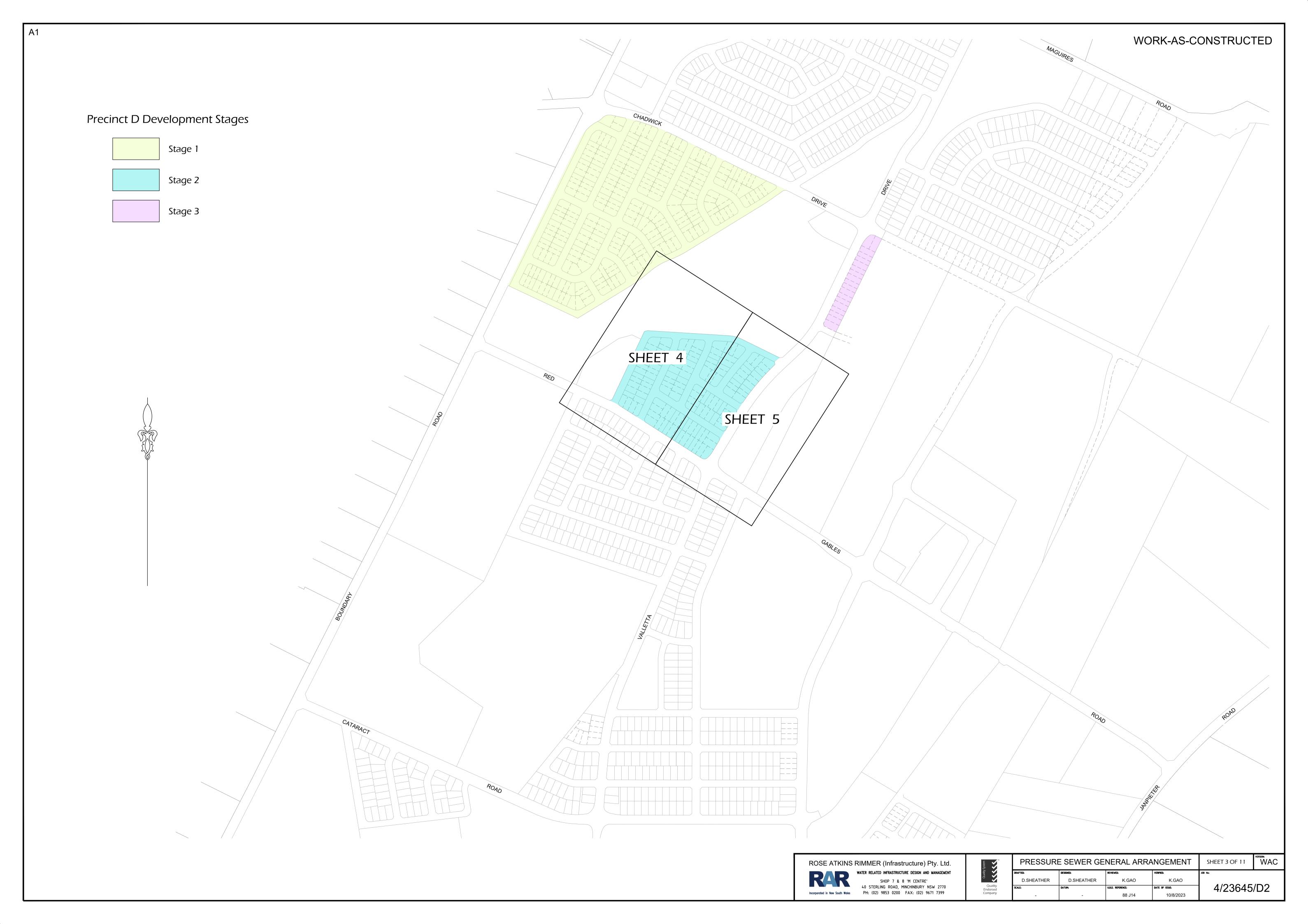
SIZE	TYPE	CLASS	LENGTH
DN100	m.P.V.C.	PN16	1,258.3

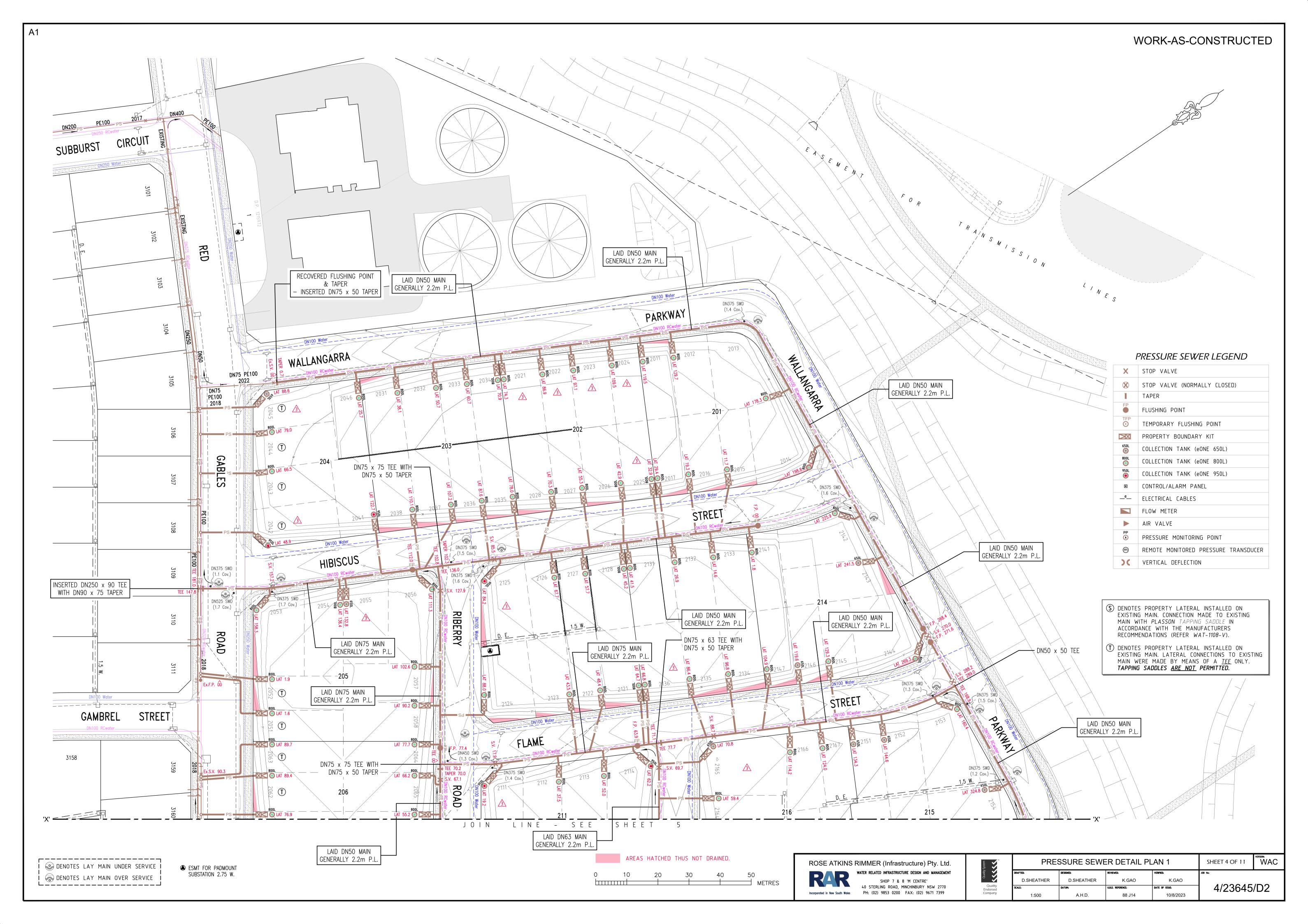
### PRESSURE SEWER PIPE SCHEDULE

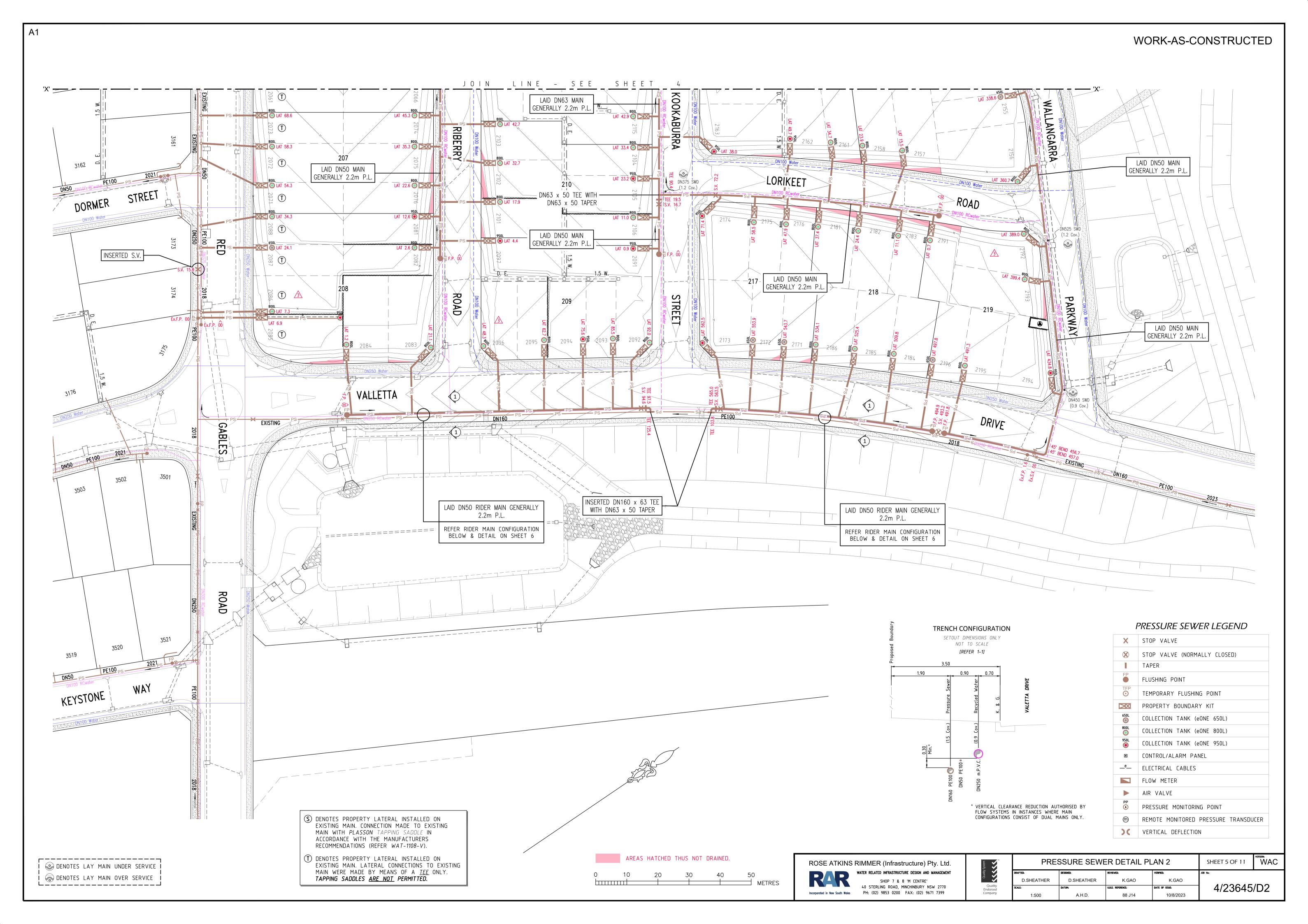
SIZE	TYPE	CLASS	LENGTH
DN75	PE100	PN16	215.8
DN63	PE100	PN16	58.2
DN50	PE100	PN16	1,041.8
DN40	PE100	PN16	1,436.0
		TOTAL	2,751.8

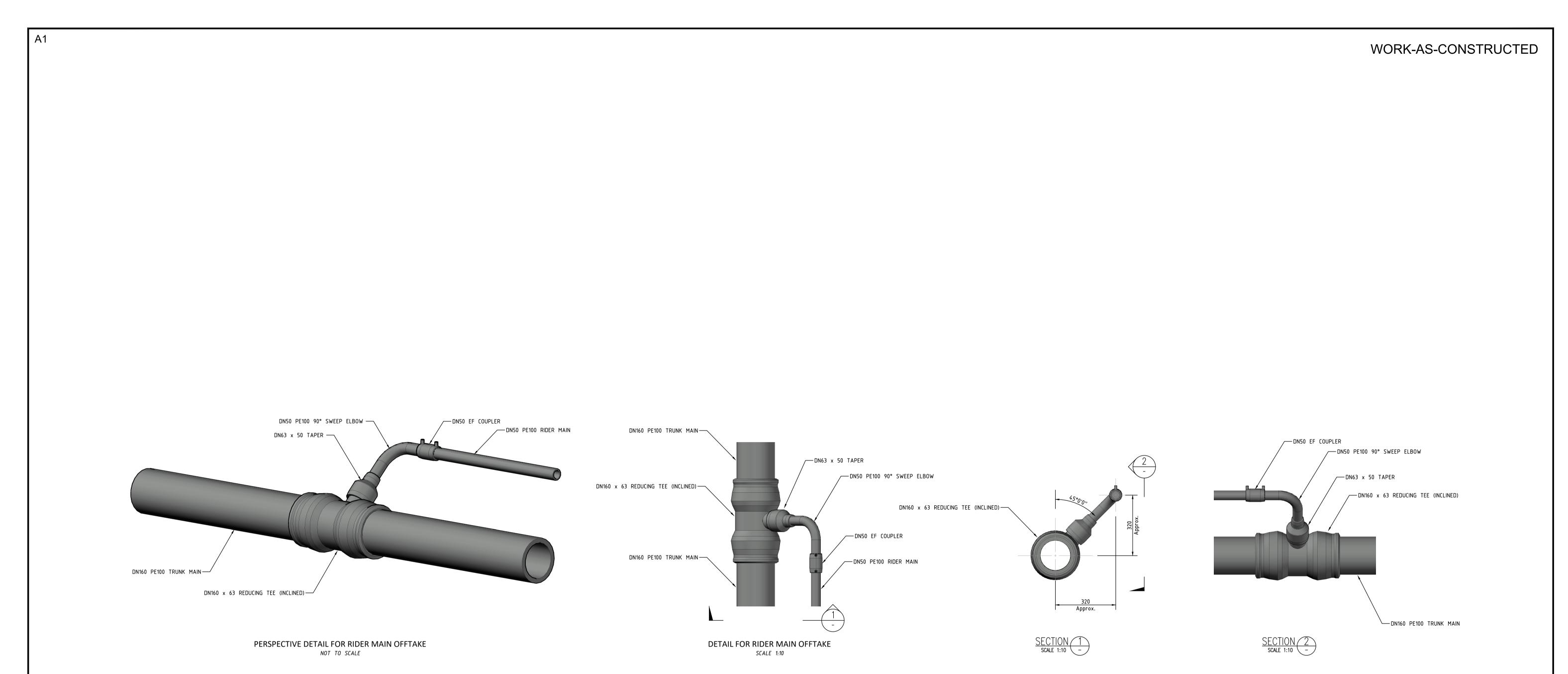


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Quality Endorsed	SCALE:	DATUM:	U.B.D. REFERENCE:	DATE OF ISSUE:	4/23645	/D2
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2094

2095

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FRONT FLAT

FRONT FLAT

FRONT BATTER

FRONT BATTER

950L

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800L

950L

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35.99

35.48

35.85

36.26

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34.65

34.29

34.61

#### PRESSURE SEWER COLLECTION TANK LEVEL DETAILS THE GABLES DEVELOPMENT - PRECINCT D [STAGE 2] **COLLECTION TANK** TOP OF COLLECTION TANK | CALCULATED SANITARY WAC v's DESIGN INVERT LOT NUMBER **TANK SIZE** TOP OF COLLECTION TANK LOCATION DRAINAGE INVERT LEVEL LID\* LOCATION DRAINAGE INVERT LEVEL LEVEL COMPARISON [FRONT / REAR] [650L/800L/950L] [Design R.L. [Work-As-Constructed] [Work-As-Constructed] [- LOWER / + HIGHER] [Design R.L.] 37.56 2011 FRONT BATTER 800L 38.43 38.86 39.05 37.48 -0.08 2012 FRONT BATTER 800L 38.27 38.41 37.11 38.60 37.03 -0.08 2013 FRONT BATTER 800L 37.97 38.37 37.07 38.56 36.99 -0.08 2014 FRONT BATTER 800L 37.68 38.11 36.81 38.32 36.75 -0.06 2015 FRONT BATTER 800L 37.97 38.35 37.05 38.54 36.97 -0.08 2016 FRONT BATTER 800L 38.18 38.48 37.18 38.70 37.13 -0.05 2017 FRONT BATTER 800L 38.40 38.86 37.56 39.09 37.52 -0.042021 FRONT BATTER 800L 38.64 38.86 37.56 39.05 37.48 -0.08 2022 FRONT BATTER 800L 38.59 38.87 37.57 39.03 37.46 *-0.11* 2023 FRONT BATTER 800L 38.54 38.85 37.55 39.04 37.47 -0.08 2024 FRONT BATTER 800L 38.45 38.86 37.56 39.05 37.48 -0.08 2025 FRONT BATTER 800L 38.42 38.77 37.47 38.98 37.41 -0.06 FRONT BATTER 2026 800L 38.40 38.77 37.47 38.95 37.38 -0.09 2027 FRONT BATTER 800L 38.28 38.64 37.34 38.87 37.30 -0.04 2028 FRONT BATTER 800L 38.16 38.54 37.24 38.77 37.20 -0.04 2031 FRONT BATTER 800L 38.35 38.68 37.38 38.90 37.33 -0.05 2032 FRONT BATTER 800L 38.54 38.82 37.52 39.00 37.43 -0.09 2033 FRONT BATTER 800L 38.62 38.87 37.57 39.10 37.53 -0.04 2034 FRONT BATTER 800L 38.65 38.87 37.57 39.07 37.50 -0.07 2035 FRONT BATTER 800L 38.01 38.42 37.12 38.63 37.06 -0.06 2036 800L 37.89 38.31 37.01 38.54 36.97 -0.04 FRONT BATTER 2037 FRONT BATTER 800L 37.78 38.22 36.92 38.43 36.86 -0.06 2038 FRONT BATTER 800L 37.63 38.09 36.79 38.29 36.72 -0.07 2041 950L 37.48 37.97 36.37 36.32 -0.05 FRONT BATTER 38.19 2042 FRONT BATTER 950L 37.17 37.58 35.98 37.76 35.89 -0.09 2043 FRONT BATTER 800L 37.61 37.84 36.54 38.09 36.52 -0.02 2044 FRONT BATTER 800L 37.69 37.84 36.54 38.11 36.54 0.00 2045 FRONT BATTER 650L 37.66 37.77 36.77 38.06 36.79 0.02 2046 FRONT BATTER 800L 38.05 38.27 36.97 38.53 36.96 -0.01 2051 FRONT BATTER 800L 36.88 37.24 35.94 37.45 35.88 -0.06 2052 FRONT BATTER 800L 37.05 37.54 36.24 37.76 36.19 -0.05 2053 FRONT BATTER 800L 37.00 37.31 36.01 37.46 35.89 -0.122054 FRONT BATTER 800L 37.24 37.54 36.24 37.77 -0.0436.20 2055 FRONT FLAT 650L 37.26 37.22 36.22 37.42 36.15 -0.0737.36 37.32 -0.08 2056 FRONT FLAT 800L 36.02 37.51 35.94 2057 FRONT BATTER 800L 37.16 37.50 36.20 37.69 36.12 -0.08 2058 **FRONT BATTER** 800L 37.00 37.25 35.95 37.47 35.90 -0.05 2061 FRONT BATTER 800L 36.56 36.90 35.60 37.09 35.52 -0.08 2062 FRONT BATTER 800L 36.68 37.04 35.74 37.26 35.69 -0.05 2063 FRONT BATTER 800L 36.78 37.14 35.84 37.34 35.77 -0.07 2064 FRONT BATTER 800L 36.87 37.13 35.83 37.39 35.82 -0.01 2065 **FRONT BATTER** 800L 36.77 37.04 35.74 37.27 35.70 -0.042066 FRONT BATTER 800L 36.65 36.91 35.61 37.13 35.56 -0.05 2071 FRONT BATTER 800L 36.24 36.60 35.30 36.79 35.22 -0.08 2072 FRONT BATTER 800L 36.36 36.72 35.42 36.94 35.37 -0.05 2073 FRONT BATTER 800L 36.46 36.82 35.52 36.94 35.37 -0.15 2074 FRONT BATTER 800L 36.54 36.82 35.52 37.04 35.47 -0.05 2075 FRONT BATTER 800L 36.72 35.42 36.94 35.37 -0.05 36.41 2076 FRONT BATTER 800L 36.21 36.60 35.30 36.85 35.28 -0.02 2081 FRONT BATTER 950L 36.04 36.50 34.90 36.70 34.83 -0.0734.77 -0.04 2082 FRONT BATTER 800L 35.79 36.11 34.81 36.34 2083 FRONT BATTER 800L 35.13 35.45 34.15 35.68 34.11 -0.04 2084 FRONT BATTER 800L 34.93 35.44 34.14 35.68 34.11 -0.03 2085 REAR 950L 35.63 35.59 33.99 35.81 33.94 -0.05 -0.07 2086 FRONT BATTER 800L 35.71 35.91 34.61 36.11 34.54 2087 FRONT BATTER 650L 35.95 36.09 35.09 36.30 35.03 -0.06 2088 FRONT BATTER 800L 36.14 36.49 35.19 36.71 35.14 -0.05 2091 FRONT FLAT 950L 36.61 36.57 34.97 36.80 34.93 -0.042092 FRONT FLAT 800L 36.48 36.44 35.14 36.66 35.09 -0.05 2093 FRONT FLAT 800L 36.45 36.41 35.11 36.66 35.09 -0.02

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

34.62

34.66

34.24

34.55

-0.04

0.01

-0.05

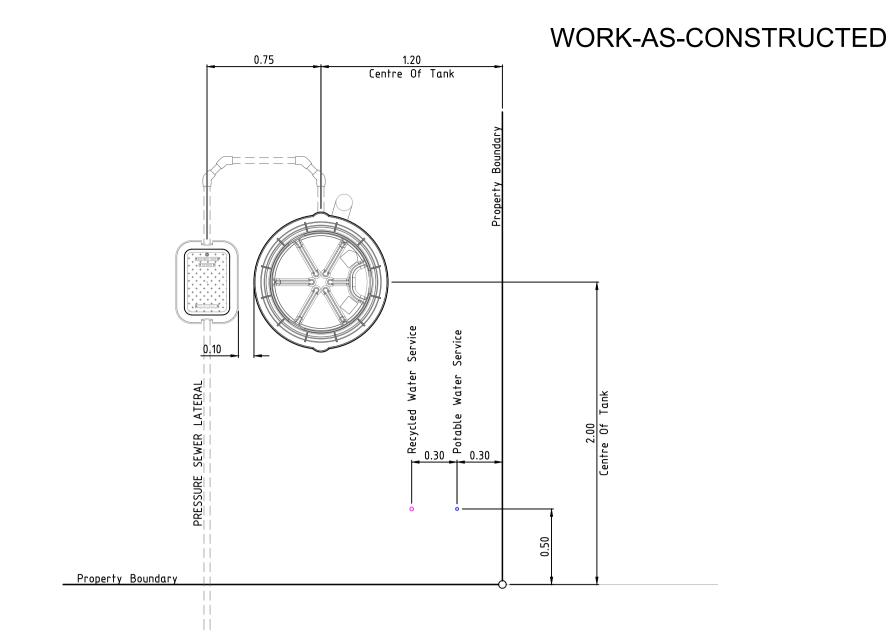
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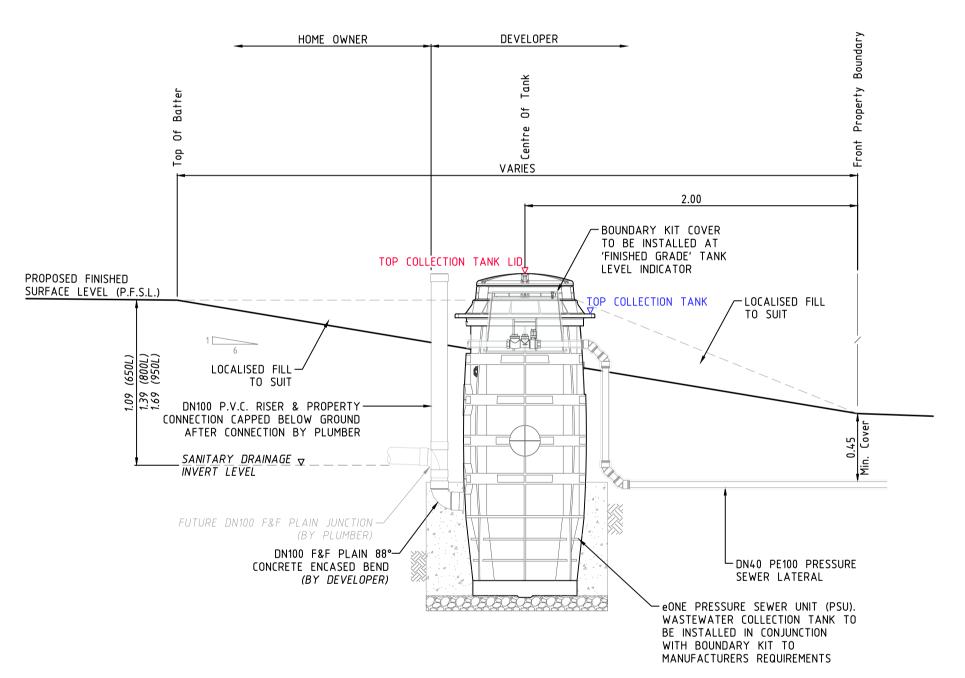
35.81

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#### TYPICAL INFRASTRUCTURE SETOUT DIMENSIONS

SCALE 1:25

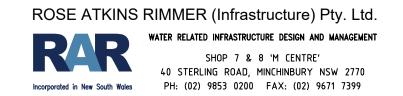


#### COLLECTION TANK SECTIONAL ELEVATION

SCALE 1:25

#### COLLECTION TANK NOTES

- 1. DESIGN SURFACE LEVELS WERE ELECTRONICALLY EXTRACTED FROM DIGITAL DATA SUPPLIED BY ENSPIRE DATED 11/7/22 (220607 Precinct D Design TIN.daz).
- 2. 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.

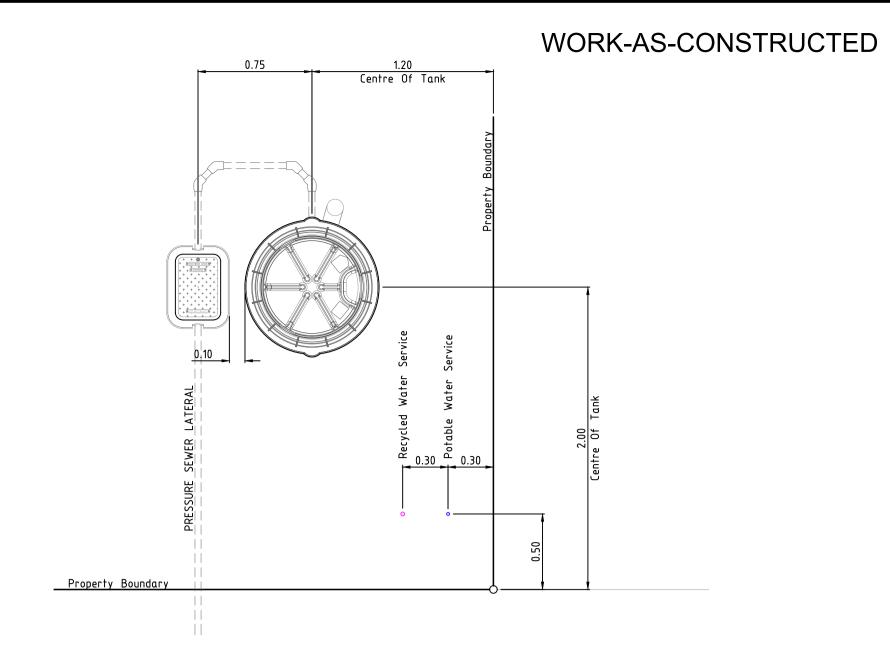


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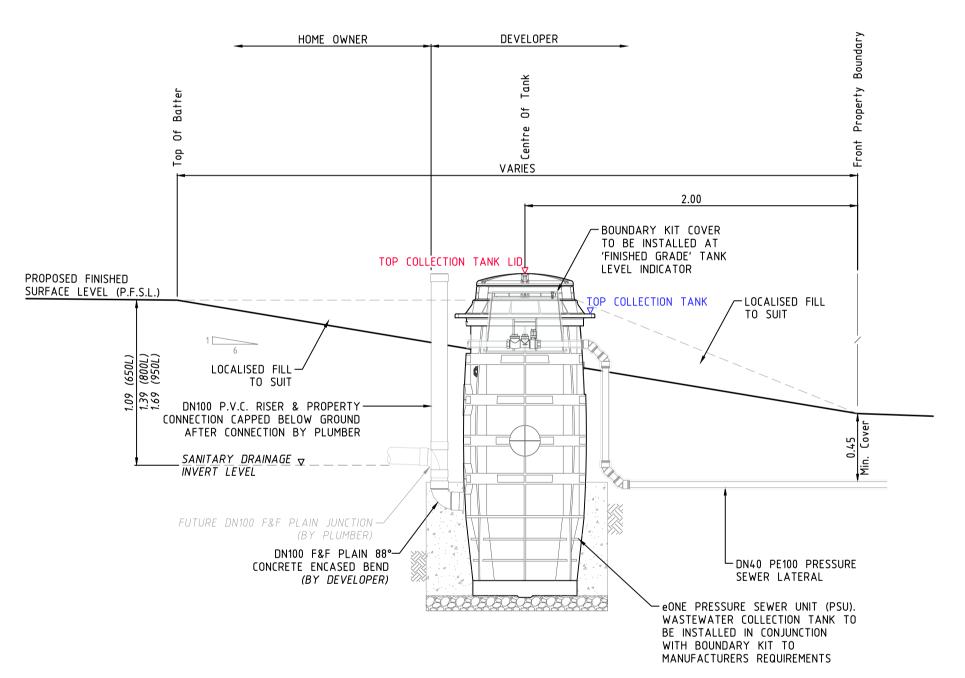
		THE	<b>GABLES</b>	<b>DEVELOPMENT</b>	- PRECINCT D	[STAGE 2]		
OT NUMBER	COLLECTION TANK LOCATION	TANK SIZE	PFSL AT TANK LOCATION	TOP OF COLLECTION TANK	DESIGN SANITARY DRAINAGE INVERT LEVEL	TOP OF COLLECTION TANK	CALCULATED SANITARY DRAINAGE INVERT LEVEL	WAC v's DESIGN INVER
	[FRONT / REAR]	[650L / 800L / 950L]		[Design R.L.]	[Design R.L.]	[Work-As-Constructed]	[Work-As-Constructed]	[- LOWER / + HIGHER]
2101	FRONT BATTER	800L	36.06	36.33	35.03	36.54	34.97	-0.06
2102	FRONT BATTER	800L	36.35	36.75	35.45	36.95	35.38	-0.07
2103	FRONT BATTER	800L	36.53	36.87	35.57	37.11	35.54	-0.03
2104	FRONT BATTER	800L	37.03	37.21	35.91	37.44	35.87	-0.04
2105	FRONT BATTER	950L	36.93	37.12	35.52	37.31	35.44	-0.08
2106	FRONT FLAT	800L	36.72	36.68	35.38	36.90	35.33	-0.05
2111 2112	FRONT BATTER FRONT BATTER	950L 800L	36.63 37.07	37.07 37.29	35.47 35.99	37.28 37.50	35.41 35.93	-0.06 -0.06
2112	FRONT BATTER	800L	37.36	37.45	36.15	37.65	35.93 36.08	-0.07
2113	FRONT FLAT	950L	37.51	37.47	35.87	37.73	35.86	-0.01
2115	FRONT BATTER	800L	37.13	37.32	36.02	37.53	35.96	-0.06
2121	FRONT BATTER	800L	37.76	38.19	36.89	38.43	36.86	-0.03
2122	FRONT BATTER	800L	37.51	37.89	36.59	38.06	36.49	-0.10
2123	FRONT BATTER	800L	37.26	37.58	36.28	37.83	36.26	-0.02
2124	FRONT BATTER	800L	36.93	37.36	36.06	37.63	36.06	0.00
2125	FRONT BATTER	950L	37.73	37.80	36.20	38.03	36.16	-0.04
2126	FRONT FLAT	800L	37.97	37.93	36.63	38.16	36.59	-0.04
2127	FRONT BATTER	800L	38.15	38.27	36.97	38.51	36.94	-0.03
2128	FRONT BATTER	800L	38.34	38.60	37.30	38.84	37.27	-0.03
2131 2132	FRONT BATTER FRONT BATTER	800L 800L	38.35 38.24	38.60 38.35	37.30 37.05	38.83 38.59	37.26 37.02	-0.04 -0.03
2132	FRONT BATTER	800L	38.06	38.28	36.98	38.49	36.92	-0.03
2134	FRONT BATTER	800L	37.75	38.21	36.91	38.45	36.88	-0.03
2135	FRONT BATTER	800L	37.86	38.36	37.06	38.61	37.04	-0.02
2136	FRONT BATTER	800L	37.78	38.16	36.86	38.40	36.83	-0.03
2141	FRONT BATTER	800L	37.83	38.09	36.79	38.33	36.76	-0.03
2142	FRONT BATTER	800L	37.49	37.61	36.31	37.86	36.29	-0.02
2143	FRONT BATTER	650L	37.36	37.57	36.57	37.83	36.56	-0.01
2144	FRONT BATTER	800L	36.96	37.27	35.97	37.53	35.96	-0.01
2145	FRONT BATTER	800L	37.23	37.52	36.22	37.80	36.23	0.01
2146	FRONT BATTER	650L	37.38	37.62	36.62	37.87	36.60	-0.02
2147	FRONT BATTER	800L	37.62	38.09	36.79	38.37	36.80	0.01
2151	FRONT FLAT	650L	37.03	36.99	35.99	37.26	35.99	0.00
2152 2153	FRONT FLAT FRONT FLAT	650L 800L	36.88 36.62	36.84 36.58	35.84 35.28	37.17 36.89	35.90 35.32	0.06 0.04
2154	FRONT FLAT	650L	36.38	36.34	35.34	36.63	35.36	0.02
2155	FRONT FLAT	650L	36.22	36.18	35.18	36.51	35.24	0.06
2156	FRONT FLAT	800L	35.92	35.88	34.58	36.18	34.61	0.03
2157	FRONT BATTER	800L	36.07	36.51	35.21	36.76	35.19	-0.02
2158	FRONT BATTER	800L	36.20	36.66	35.36	36.92	35.35	-0.01
2161	FRONT BATTER	800L	36.31	36.78	35.48	37.04	35.47	-0.01
2162	FRONT BATTER	950L	36.45	36.92	35.32	37.17	35.30	-0.02
2163	FRONT FLAT	950L	36.94	36.90	35.30	37.16	35.29	-0.01
2164	FRONT FLAT	800L	37.26	37.22	35.92	37.49	35.92	0.00
2165	FRONT FLAT	650L	37.44	37.40	36.40	37.67	36.40	0.00
2166	FRONT FLAT	800L	37.34	37.30	36.00	37.56	35.99	-0.01
2167 2171	FRONT FLAT FRONT BATTER	800L 650L	37.19 36.65	37.15 36.86	35.85 35.86	37.42 37.10	35.85 35.83	0.00 -0.03
2171	FRONT BATTER	650L	36.74	36.86	35.86	37.20	35.83 35.93	-0.03
2172	FRONT BATTER	950L	36.71	37.07	35.47	37.27	35.40	-0.03
2174	FRONT BATTER	950L	36.71	37.04	35.44	37.24	35.37	-0.07
2175	FRONT BATTER	800L	36.52	36.96	35.66	37.17	35.60	-0.06
2176	FRONT BATTER	800L	36.43	36.89	35.59	37.09	35.52	-0.07
2181	FRONT BATTER	800L	36.32	36.78	35.48	37.02	35.45	-0.03
2182	FRONT BATTER	800L	36.19	36.65	35.35	36.88	35.31	-0.04
2183	FRONT BATTER	800L	36.06	36.53	35.23	36.75	35.18	-0.05
2184	FRONT BATTER	800L	36.30	36.49	35.19	36.69	35.12	-0.07
2185	FRONT BATTER	800L	36.43	36.63	35.33	36.89	35.32	-0.01
2186	FRONT BATTER	800L	36.55	36.75	35.45	36.99	35.42	-0.03
2191	FRONT BATTER	800L	35.95 35.70	36.43	35.13 34.61	36.66 26.16	35.09 24.50	-0.04
2192 2193	FRONT BATTER FRONT BATTER	800L 800L	35.79 35.65	35.91 36.00	34.61 34.70	36.16 36.22	34.59 34.65	-0.02 -0.05
2193	FRONT BATTER	950L	35.27	36.05	34.70	36.26	34.39	-0.05
2195	FRONT BATTER	800L	36.08	36.25	34.95	36.49	34.92	-0.03
2196	FRONT BATTER	650L	36.18	36.36	35.36	36.56	35.29	-0.07

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#### TYPICAL INFRASTRUCTURE SETOUT DIMENSIONS

SCALE 1:25

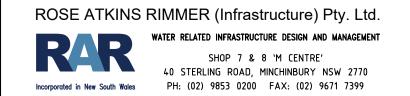


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SCALE 1:25

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***	DRAFTED:	DESIGNED:	REVIEWED:			
Quality Endorsed Company	SCALE:	DATUM:	U.B.D. REFER			

COLLI	ECTION TANK	SHEET 8 OF 11	WAC		
FTED:	DESIGNED:	REVIEWED:	VERIFIED:	JOB No:	
D.SHEATHER	D.SHEATHER	K.GAO	K.GAO	4 / 0 0 0 4 5	<b>/</b> D 0
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