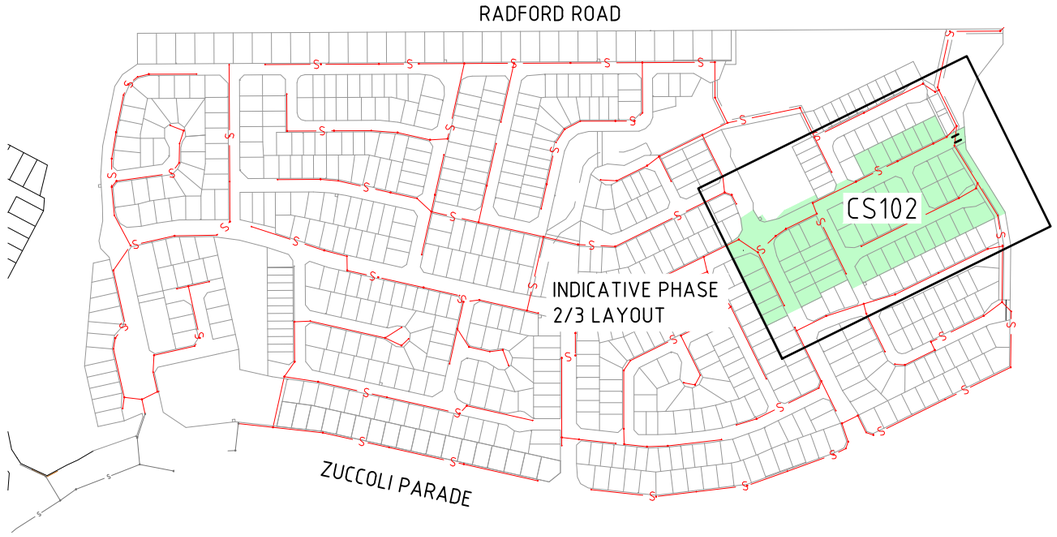

SEWERAGE RETICULATION LOCALITY PLAN

SCALE 1:4000

LEGEND

——S——	AS CONSTRUCTED SEWERAGE RETICULATION
——S——	EXISTING SEWERAGE RETICULATION
——S——	FUTURE SEWERAGE RETICULATION

HOUSE CONNECTION LEGEND

REFER LAYOUT PLANS

LOT NUMBER
HC TYPE

HC 250 - 2	'HC' HOUSE CONNECTION
IL 15.233	HC INVERT LEVEL
SL 16.182	SURFACE LEVEL AT HC
DIST 2.097	DISTANCE FROM DOWNSTREAM MANHOLE

MANHOLE DETAILS U.N.O.

REFER LONGITUDINAL SECTIONS

C: CIRCULAR MANHOLE
R: RECTANGULAR LID
D: CLASS D TRAFFICABLE LID

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED: _____ DATED: 03/07/2018

WARNING

BEWARE OF SERVICES

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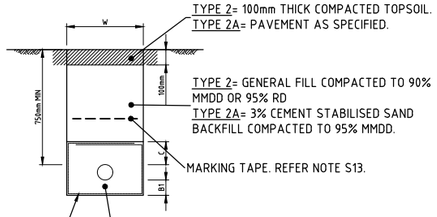
On behalf of WATER SERVICES, for incorporation into POWER WATER CORP'S network.

THIS DRAWING IS APPROVED FOR THE CONSTRUCTION OF ALL WATER & SEWER COMPONENTS AS SHOWN ON THE DRAWINGS
This approval does not relieve the developer and consultant from full responsibility for the correctness of the design and associated documents
This drawing is valid only for 2 years from date of signing

SIGNED DATE

NOMINAL PIPE DIAMETER (DN)	W (mm)
100 & 150	450
200-300	600
375	750
450	900
450-900	PIPE OD + 600
1050-1500	PIPE OD + 700
1650-4000	1.5 x PIPE OD

NOMINAL PIPE SIZE (mm)	B1 (mm)	C (mm)
20-50	100	150
80-100	100	150
150-600	150	150
750 & LARGER	200	200



GEOTEXTILE FABRIC WITH AUSTROADS G RATING OF 1200 MIN. & NOMINAL OPENING SIZE 220uM MAX. MINIMUM OVERLAP OF 500mm AT ALL JOINTS

TYPE 2 EMBEDMENT MATERIAL SINGLE SIZE QUARRY GRAVEL. TYPE 2A (10mm NOM.) MUST BE USED FOR PIPE DN300 OR LESS (REFER TO SPECIFICATION SECTION 2.7.2) COMPACTION OF BEDDING. SIDE SUPPORT & OVERLAY TO BE AS SPECIFIED IN SPECIFICATION SECTION 2.8.2

TYPE 2/2A TRENCH DETAIL

SCALE 1:20

0 80 160 240 320 400m
80 60 40 20

SCALE 1:4000 (A1) 1:8000 (A3)
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

POWER AND WATER STANDARD NOTES

GENERAL

WS.1. CONSTRUCTION OF THE WATER AND SEWERAGE WORKS ARE CARRIED OUT IN ACCORDANCE WITH THE LATEST AMENDMENT OF THE APPROVED PROJECT DRAWINGS AND SPECIFICATION, AS SIGNED BY A SERVICES DEVELOPMENT OFFICER, AND THE POWER AND WATER CONNECTION CODE POWER AND WATER MASTER SPECIFICATION AND ASSOCIATED DOCUMENTS.

WS.2. CONSTRUCTION SITE DESIGN DRAWINGS MUST BE SIGNED AS 'APPROVED FOR CONSTRUCTION' BY A POWER AND WATER SERVICES DEVELOPMENT OFFICER.

WS.3. PRIOR TO COMMENCEMENT OF WORKS THE CONSTRUCTOR SHALL CHECK THE LOCATION OF ALL UNDERGROUND SERVICES, AND CONFIRM FINISHED SURFACE LEVELS AND CHECK THE MATERIAL, DIAMETER, ALIGNMENT, LEVEL AND LOCATION OF EXISTING PIPEWORK AT THE CONNECTION POINT. IT IS NOT GUARANTEED THAT ALL SERVICES HAVE BEEN SHOWN ON THE DRAWINGS.

WS.4. CHANGES REQUESTED BY ANY PARTY TO THE DESIGN OF THE WORKS DURING ANY STAGE OF THE DEVELOPMENT MUST BE ENDORSED BY THE CERTIFYING HYDRAULIC CONSULTING ENGINEER/DESIGNER WITH AMENDED DRAWINGS SUBMITTED TO POWER AND WATER FOR APPROVAL PRIOR TO THE CHANGE BEING CARRIED OUT.

WS.5. SEVEN (7) DAYS WRITTEN NOTICE MUST BE GIVEN TO SERVICES DEVELOPMENT, POWER AND WATER, WITH A 'NOTICE OF INTENTION TO START WORK' PRIOR TO COMMENCEMENT OF WORK (FORM AVAILABLE ON THE CONNECTION CODE WEBSITE).

WS.6. THE CONTRACTOR SHOULD CONFIRM WITH SERVICES DEVELOPMENT IF A MEETING IS REQUIRED WITH POWER AND WATER, THE HYDRAULIC CERTIFIER AND THE DEVELOPER PRIOR TO COMMENCEMENT OF SITE WORKS.

WS.7. EXISTING SERVICE CONNECTIONS TO REMAIN IN SERVICE UNTIL THE CONSTRUCTION OF THE NEW SERVICE IS COMPLETED TO THE SATISFACTION OF POWER AND WATER.

WS.8. ALL LEVELS GIVEN ARE TO AUSTRALIAN HEIGHT DATUM (AHD) IN METRES TO THREE DECIMAL PLACES. PROJECTION ARE BASED ON MGA94 MAP GRID OF AUSTRALIA ZONE 52 OR 53 COORDINATE SYSTEM.

WS.9. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL CHAINAGES AND LEVELS LEVEL IN METRES UNLESS SHOWN OTHERWISE.

WS.10. MINIMUM COVER TO PIPE IS 750MM IN TRAFFICABLE AREAS, 600mm IN OTHER AREAS. 1500mm COVER REQUIRED FOR THRUST BORING UNDER ROAD.

WS.11. MINIMUM CLEARANCES BETWEEN UNDERGROUND SERVICES IS AS PER WSA 02-2003 TABLE 4.2 FOR SEWER, AND WSA 03-2003 TABLE 4.1 FOR WATER. A MINIMUM VERTICAL CLEARANCE OF 300mm FOR ALL SERVICE CROSSINGS IS TO BE MAINTAINED.

EXCAVATION AND FILLING

WS.12. OBTAIN PERMIT/S FROM THE RELEVANT ROAD AUTHORITY OR COUNCIL PRIOR TO ANY EXCAVATION WITHIN THE ROAD RESERVE. THE CONTRACTOR/DEVELOPER IS REQUIRED TO SEEK A WRITTEN APPROVAL FORM THE LAND OWNER OF THE EXISTING EASEMENT TO ACCESS AND EXCAVATE WITHIN THEIR PROPERTY. THE CONTRACTOR/DEVELOPER IS REQUIRED TO SUPPLY THAT WRITTEN APPROVAL TO POWER AND WATER SEVEN (7) DAYS PRIOR TO THE START OF CONSTRUCTION WORKS.

WS.13. BACKFILLING MATERIAL, OUTSIDE ROAD PAVEMENT OR DRAIN, MUST COMPLY WITH THE POWER AND WATER MASTER SPECIFICATION REQUIREMENTS FOR GENERAL BACKFILL. USE TYPE 2 EMBEDMENT WRAPPED WITH GEOTEXTILE WITH SELECTED BACKFILL OR 3% CEMENT STABILISED SAND BACKFILL FOR ALL ROAD CROSSINGS. USE 5% CEMENT STABILISED GRAVEL BACKFILL BENEATH ALL OUD CROSSING.

WS.14. PROVIDE A MINIMUM OF TYPE 2 EMBEDMENT FOR PVC PIPE OR TYPE 4 EMBEDMENT FOR STEEL PIPE UNLESS GEOTECHNICAL INVESTIGATIONS HAVE BEEN COMPLETED AND THE CONSULTANT REPORT SUPPORTS THE USE OF LOWER QUALITY EMBEDMENT. ANY CHANGE TO THE PROPOSED BEDDING TYPE MUST BE APPROVED BY POWER AND WATER.

WS.15. WHEN EMBEDMENT TYPE CHANGES, A VERTICAL GEOTEXTILE BARRIER ARE INSERTED BETWEEN THE EMBEDMENT TYPES.

WS.16. REINSTATE ALL SURFACES UPON COMPLETION OF THE WORKS AS SPECIFIED OR AS GOOD AS EXISTING TO THE SATISFACTION OF THE RELEVANT AUTHORITY.

COMMISSIONING

WS.17. SIGNED HARD COPY (A3 SIZE - REQUIRED FOR ALL SUBDIVISIONS) AND ELECTRONIC FORMAT (BOTH x.PDF AND CAD x.DGN/x.DWG) 'AS-CONSTRUCTED' DRAWINGS, OTHER INSTALLATION DOCUMENTATION, AND APPROPRIATE RECORDS OF CONSTRUCTION PROGRESS (PHOTOS) MUST BE PROVIDED TO SERVICES DEVELOPMENT, POWER AND WATER PRIOR TO HANDOVER INSPECTION. ENSURE ALL AS-CONSTRUCTED INFORMATION HAS BEEN PICKED UP BY THE SURVEYOR PRIOR TO BACKFILLING.

WS.18. 'AS-CONSTRUCTED' DRAWINGS TO BE CERTIFIED BY THE CERTIFYING ENGINEER. 'AS-CONSTRUCTED' SURVEY BY A REGISTERED SURVEYOR.

WS.19. DESIGNER TO CONTACT SERVICES DEVELOPMENT, POWER AND WATER, TO ARRANGE FOR HANDOVER INSPECTIONS. SEVEN (7) DAYS NOTICE MUST BE PROVIDED PRIOR TO HANDOVER INSPECTIONS.

WS.20. THE CONSTRUCTOR IS RESPONSIBLE FOR ALL CONNECTION FEES, ALL EXCAVATION, SHORING IF REQUIRED, BACKFILLING, REINSTATEMENT OF AREA, SUPPLY OF DIGGING AND LIFTING MACHINERY WHERE REQUIRED, PERMITS, TRAFFIC CONTROL, SUPPLY OF ALL MATERIALS, PIPES AND FITTINGS.

WS.21. POWER AND WATER PERSONNEL SHALL INSTALL ALL NEW WATER CONNECTIONS TO EXISTING MAINS. ENSURE REQUIRED WATER CONNECTION FITTINGS ARE BOLTED TOGETHER AND READY TO BE INSTALLED UPON SHUTDOWN. THE WATER CONNECTION ARE COMPLETED PRIOR TO THE CONSTRUCTION OF THE NEW WATER SERVICE. THIS IS ONLY ALLOWED IF A VALVE LOCK IS INSTALLED BY POWER AND WATER CORPORATION ON THE SLUICE VALVE TO THE WATER MAIN. PRESSURE TESTING AGAINST THE SLUICE VALVE IS PERMITTED TO A MINIMUM OF 1000KPA AND A MAXIMUM PRESSURE OF 1200KPA UNLESS PREVIOUSLY SPECIFIED. IF THE CONSTRUCTOR SUSPECTS THE SLUICE VALVE IS LEAKING UNDER PRESSURE TESTING THEN CONTACT THE SUPPLIER FOR REPLACEMENT. THE VALVE LOCK WILL BE REMOVED BY POWER AND WATER AFTER THE HANDOVER OF THE ASSET HAS BEEN ACHIEVED.

WS.22. POWER AND WATER PERSONNEL SHALL INSTALL ALL NEW SEWER CONNECTIONS TO EXISTING MAINS. A PHYSICAL ISOLATION MUST BE IN PLACE BETWEEN THE EXISTING LIVE SEWER AND THE PROPOSED GIFTED ASSET. THE PHYSICAL ISOLATION DEVICE WILL BE REMOVED BY POWER AND WATER AFTER THE HANDOVER OF THE ASSET HAS BEEN ACHIEVED.

WS.23. AT NO STAGE SHALL ANY CONTRACTOR CARRY OUT WORK ON POWER AND WATER INFRASTRUCTURE.

ACCEPTANCE AND DEFECTS LIABILITY PERIOD

WS.24. AT LEAST SEVEN (7) WORKING DAYS NOTICE MUST BE PROVIDED TO SERVICES DEVELOPMENT, POWER AND WATER FOR APPLICATION OF A CERTIFICATE OF FINAL COMPLIANCE/DEVELOPMENT PERMIT CLEARANCE ALLOWING FOR AN INSPECTION AND REPORT OF OUTSTANDING DEFECTS/ISSUES. UPON NOTICE TO SERVICES DEVELOPMENT THAT RECTIFICATION OF OUTSTANDING DEFECTS/ISSUES HAS BEEN ADDRESSED, AN ADDITIONAL SEVEN (7) WORKING DAYS SHOULD BE ALLOWED FOR.

WS.25. A TWENTY-FOUR (24) MONTH DEFECTS LIABILITY PERIOD FOR EXTENSIONS AND SUBDIVISIONS, AND A TWELVE (12) MONTH DEFECTS LIABILITY PERIOD FOR BUILDING DEVELOPMENTS, WILL COMMENCE ONCE THE CERTIFICATE OF FINAL COMPLIANCE/DEVELOPMENT PERMIT CLEARANCE HAS BEEN ISSUED. ALL DEFECT LIABILITIES IDENTIFIED WITHIN THIS PERIOD IS THE RESPONSIBILITY OF THE DEVELOPER. ANY WORKS SUBJECT TO A DEFECT DURING THE DEFECT PERIOD THAT REQUIRES POWER AND WATER TO UNDERTAKE AN EMERGENCY REPAIR, ARE SUBJECT TO AN EXTENDED DEFECT PERIOD OF 5 YEARS.

POWER AND WATER (SEWER NOTES)

S.1. ALL GRAVITY SEWER PIPES ARE UPVC DWV CLASS SN8 WITH STYRENE-BUTADIENE RUBBER RING JOINTS (SBR), UNLESS NOTED OTHERWISE.

S.2. SEWERS ARE OFFSET FROM PROPERTY BOUNDARIES A DISTANCE OF 1.6m IN ROAD RESERVES AND 1.5m IN PRIVATE PROPERTY, EXCEPT WHERE SHOWN OTHERWISE ON THE DRAWINGS.

S.3. FOR SEWER SHOW POSITION (MGA AND LEVELS TO AHD) OF ALL MAINTENANCE HOLES, MAINTENANCE SHAFTS, INSPECTION OPENINGS, SEPARATION DISTANCES/LEVELS TO CROSSING SERVICES, ALL OTHER VALUES REQUIRED TO CERTIFY COMPLIANCE OF THE DRAWINGS.

S.4. ALL GRAVITY SEWERS ARE TO BE A MINIMUM OF DN150, UNLESS NOTED OTHERWISE.

S.5. MAINTENANCE HOLE/SHAFT COVERS AND SLABS SHALL FINISH AT: FINISHED SURFACE LEVEL IN ROAD RESERVES AND FOOTPATHS AND MATCH CROSS FALL AWAY FROM MAINTENANCE HOLES, 150mm ABOVE SURFACE LEVEL IN PRIVATE PROPERTY AND OPEN SPACE (BACKFILL TO BE GRADED AT 1 IN 10 FROM MAINTENANCE HOLES TO FINISHED SURFACE LEVEL).

S.6. THE CONSTRUCTOR SHALL EITHER INSCRIBE OR ATTACH A PLATE TO THE MAINTENANCE HOLE OR MAINTENANCE SHAFT COVER WITH THE IDENTIFYING NUMBER AS SHOWN ON THE DRAWINGS.

S.7. FLEXIBLE JOINTS WITH CONCRETE SURROUND ARE CONSTRUCTED ON BOTH UPSTREAM AND DOWNSTREAM SIDES OF THE MAINTENANCE HOLES.

S.8. DEPTH TO INVERT AT MAINTENANCE HOLES IS CALCULATED FROM THE TOP OF MAINTENANCE HOLES.

S.9. MINIMUM CONCRETE STRENGTH FOR ALL SEWERAGE STRUCTURES INCLUDING MAINTENANCE HOLES SHALL BE N50. USE GP CEMENT WITH SILICA FUME CONTENT AS SPECIFIED.

S.10. ALIGN MAINTENANCE HOLE COVER SUCH THAT THE LONG SIDE OF THE LID IS PARALLEL WITH THE SEWER MAIN.

S.11. ALL SEWER RISING MAINS SHALL BE PVC-O CLASS 16 RRJ, UNLESS NOTED OTHERWISE.

S.12. USE DIFBL SO-SO CONNECTORS (OF MAXIMUM 2 DEGREE DEFLECTION) OR DIFBL BENDS FOR SEWER RISING MAINS, UNLESS NOTED OTHERWISE.

S.13. MARKING TAPE COLOURED ORANGE AND MARKED 'SEWER MAIN' ARE LAID CONTINUOUSLY AND LOCATED 300MM ABOVE THE SEWER PIPEWORK.

S.14.1. LIVE CONNECTIONS TO EXISTING SEWER MAINS WILL ONLY BE CARRIED OUT WHEN ALL WORKS AND TESTING (HYDROSTATIC AND CCTV) ARE COMPLETE IN ACCORDANCE WITH THE APPROVED DESIGN DRAWINGS AND PROCEDURES, AND HAVE SATISFACTORILY PASSED FINAL HANDOVER INSPECTION.

ADDITIONAL SEWER NOTES

S.101. THE SUPERINTENDENT IN CONSULTATION WITH GEOTECHNICAL PERSONNEL SHALL DETERMINE WATER PIPE BEDDING TYPE AFTER INSPECTION OF THE EXCAVATED TRENCH. TYPE 2A BEDDING AND GEOTEXTILE FABRIC ARE USED UNDER ROADS AND AT OTHER LOCATIONS AS SHOWN ON THE DRAWINGS. ALL ROAD CROSSINGS ARE BACKFILLED TO A STRINGENT COMPACTION STANDARD, USING A NATURAL GRAVEL FOR THE FULL WIDTH OF THE TRENCH TO SUBGRADE LEVEL.

S.102. ALL SEWER MAINS ARE SUBJECT TO CCTV INSPECTION IN ACCORDANCE WITH PWC CONNECTION CODE.

S.103. UNDERTAKE 2 DISTORTION TESTS OF MAINS. ONE 3 MONTHS AFTER COMPLETION AND THE SECOND AFTER THE FIRST WET SEASON.

S.104. PROVIDE CEMENT STABILISED BACKFILL UNDER DRAINAGE PATHS OR OPEN DRAINS.

S.105. THE DISTANCE TO DOWNSTREAM MANHOLE IS THE PERPENDICULAR DISTANCE TO THE MAIN FROM THE LOT CONNECTION.

S.106. THE DISTANCE TO DOWNSTREAM MANHOLE IS THE PERPENDICULAR DISTANCE TO THE MAIN FROM THE LOT CONNECTION.

S.107. TRENCHSTOPS OR BULKHEADS TO BE CONSTRUCTED IN ACCORDANCE WITH WSAA STANDARD DRAWING WAT-1209 WHERE WATERMAIN GRADE EXCEEDS 5%.

POWER WATER CORPORATION - SEWER

W2-1-01/7	TYPE 1 SEWER CONNECTION DN 100 AND DN 150
W2-1-02/6	TYPE 2 SEWER CONNECTION DN 100 AND DN 150
W2-1-04/6	SEWER CONNECTION LAYOUTS DN 100 AND DN 150
W2-1-05/5	INTERMEDIATE AND TERMINAL INSPECTION OPENINGS LIGHT AND HEAVY DUTY ARRANGEMENTS
W2-1-06/1	TERMINAL MAINTENANCE SHAFT AND PROPERTY CONNECTION DETAIL
W2-1-07/1	SANITARY PLUMBING AND DRAINAGE INFORMATION DRAWING ONLY
W2-1-08/5	TYPE 4 AND 5 SEWER CONNECTIONS DN100 AND DN 150
W2-2-01A/1	ACCESS CHAMBERS CAST INSITU CIRCULAR CHAMBERS (UP TO 6.0m DEEP) SHEET 1 OF 4
W2-2-01D/1	ACCESS CHAMBERS CAST INSITU AND PRECAST NOTES FOR CONSTRUCTION SHEET 4 OF 4
W2-2-02/4	ACCESS CHAMBERS PRECAST CHAMBERS (UP TO 6.0m DEEP)
W2-2-03/4	ACCESS CHAMBERS EXTERNAL AND INTERNAL DROPS TYPES 1-4
W2-1-10/1	TYPE 5 SEWER CONNECTION
W2-2-07/3	MAINTENANCE SHAFT TYPICAL ARRANGEMENT
W2-2-08/1	MAINTENANCE SHAFT PIPELINE CONNECTION DETAILS

CONTRACTOR TO CONFIRM THAT THE LATEST REVISIONS ARE USED FOR CONSTRUCTION

POWER WATER CORP. DRG No. B17-9034

No.	Amendments	Drawn	Design	Appd	Registered Engineer	Reg No.	Date
1	AS CONSTRUCTED	MC	LW	WS			21/06/18
0	FOR CONSTRUCTION	MC	LW	WS			22/01/18

LAND DEVELOPMENT CORPORATION
urbex

Empower ENGINEERS & PROJECT MANAGERS ABN 23 010 743 692

Client: URBEX AND LAND DEVELOPMENT CORP. (JV)
Project: ZUCCOLI PHASE 3.3
Title: SEWERAGE RETICULATION LOCALITY PLAN AND NOTES

Datum: AHD PSM . RL . (MGA) COORD

AS CONSTRUCTED

Project No. B00176-CS001 | Drawing No. | Rev 1

LEGEND

- LAYBACK KERB AND CHANNEL FACE
- UPRIGHT KERB FACE
- S — AS CONSTRUCTED SEWERAGE RETICULATION
- S — AC — AS CONSTRUCTED ACCESS CHAMBER
- S — MS — AS CONSTRUCTED MAINTENANCE SHAFT
- S — TMS — AS CONSTRUCTED TERMINAL MAINTENANCE SHAFT
- PHASE BOUNDARIES

On behalf of WATER SERVICES, for incorporation into POWER WATER CORP'S network.

THIS DRAWING IS APPROVED FOR THE CONSTRUCTION OF ALL WATER & SEWER COMPONENTS AS SHOWN ON THE DRAWINGS
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This drawing is valid only for 2 years from date of signing

SIGNED DATE

WARNING

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AS CONSTRUCTED INFORMATION CERTIFIED BY BMD URBAN PTY LTD

SIGNED: DATED: 03/07/2018

POWER WATER CORP. DRG No. B17-9035

No.	Amendments	Drawn	Design	Appd	Registered Engineer	Reg No.	Date
1	AS CONSTRUCTED	MC	LW	WS			21/06/18
0	FOR CONSTRUCTION	MC	LW	WS			22/01/18

LAND DEVELOPMENT CORPORATION
urbex

Empower ENGINEERS & PROJECT MANAGERS ABN 23 010 743 692

Client: URBEX AND LAND DEVELOPMENT CORP. (JV)
Project: ZUCCOLI PHASE 3.3
Title: SEWERAGE RETICUALTION LAYOUT PLAN

Datum: AHD PSM . RL . (MGA) COORD

AS CONSTRUCTED

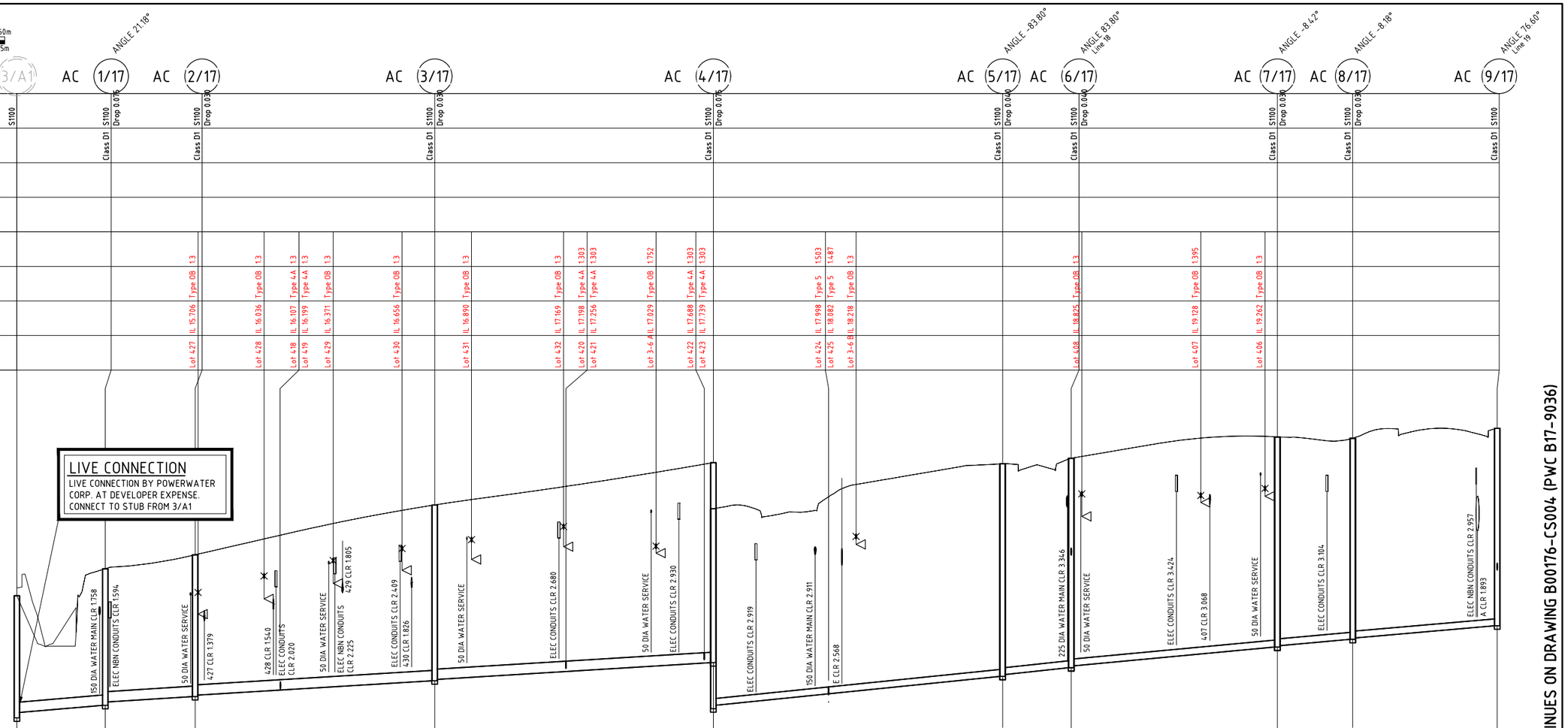
Project No. B00176 | Drawing No. CS002 | Rev 1

Plot Date: 4/07/2018 2:55:38 PM User: ETHAN SCHAFER-SHRW File Name: C:\synergy\11\b00176_2614 civil-drgs\4.4 as con\B00176-AS CON-3-3-SEW

SCALE 1:500 (A1) 1:1000 (A3)

SCALE 1:50 (A1) 1:100 (A3)

DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.



MANHOLE TYPE/DROP	S1100	S1100 Drop 0.076	S1100 Drop 0.030	S1100 Drop 0.030	S1100 Drop 0.076	S1100 Drop 0.040	S1100 Drop 0.040	S1100 Drop 0.030	S1100 Drop 0.030	S1100
MANHOLE COVER	Class D1	Class D1	Class D1	Class D1	Class D1	Class D1	Class D1	Class D1	Class D1	Class D1
JUNCTION LINE No.										
JUNCTION DROP										
HC DEPTH			1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.752	1.303	1.303	1.503	1.487	1.3	1.395	1.3		
HC TYPE			Type 0B	Type 0B	Type 4A	Type 4A	Type 0B	Type 0B	Type 0B	Type 4A	Type 4A	Type 0B	Type 4A	Type 4A	Type 5	Type 5	Type 0B	Type 0B	Type 0B		
HC IL			IL 15.706	IL 16.036	IL 16.107	IL 16.199	IL 16.371	IL 16.656	IL 16.890	IL 17.169	IL 17.198	IL 17.256	IL 17.029	IL 17.688	IL 17.739	IL 17.998	IL 18.082	IL 18.218	IL 18.825	IL 19.128	IL 19.262		
HC LOT No.			Lot 427	Lot 428	Lot 418	Lot 419	Lot 429	Lot 430	Lot 431	Lot 432	Lot 420	Lot 421	Lot 3-6 A	Lot 422	Lot 423	Lot 424	Lot 425	Lot 3-6 B	Lot 408	Lot 407	Lot 406		
BEDDING/BACKFILL		TYPE 2/GEO-WRAP BED, GENERAL FILL.	TYPE 2/GEO-WRAP BED, GENERAL FILL.	TYPE 2/GEO-WRAP BEDDING, GENERAL FILL.					TYPE 2/GEO-WRAP BEDDING, GENERAL FILL.					** TYPE 2A/GEO-WRAP BED, CEMENT STAB. SAND		TYPE 2/GEO-WRAP BEDDING, GENERAL FILL.			** TYPE 2A/GEO-WRAP BED, CEMENT STAB. SAND		TYPE 2/GEO-WRAP BEDDING, GENERAL FILL.			** TYPE 2A/GEO-WRAP BED, CEMENT STAB. SAND		
PROP. DESCRIPTION		LOT	LOT	LOT					LOT					LOT		LOT			LOT		LOT		LOT		LOT
DIAMETER/TYPE		Ø225uPVC SN8	Ø225uPVC SN8	Ø225uPVC SN8					Ø225uPVC SN8					Ø150uPVC SN8		Ø150uPVC SN8			Ø150uPVC SN8		Ø150uPVC SN8		Ø150uPVC SN8		Ø150uPVC SN8
GRADE (%) (mm/m)		(8.0) 0.80%	(6.0) 0.60%	(6.0) 0.60%					(6.0) 0.60%					(10.0) 1.00%		(10.0) 1.00%			(9.1) 0.91%		(8.7) 0.87%		(8.7) 0.87%		
LENGTH (1 in X)		(1 in 125) 19.197 19.197	(1 in 167) 19.5 19.500	(1 in 167) 52 52.000					(1 in 167) 60.5 60.500					(1 in 100) 62.792 62.792		(1 in 100) 14.887 14.887			(1 in 110) 44.763 44.763		(1 in 115) 16.351 16.351		(1 in 115) 31.37 31.370		
DATUM (m)	9.0													10.0											
JUNCTION INVERT LEVEL																									
DEPTH BELOW F.S.L.	2.650	2.533	2.964	2.889	3.076	3.046			3.815	3.785				4.340	4.265			4.614	4.574	4.543	4.503		4.558	4.528	4.358	4.328	4.271
INVERT LEVEL	13.453	13.570	13.760 13.724	13.799 13.811	13.922 13.916	13.946 13.961			14.265 14.258	14.288 14.285				14.639 14.651	14.726 14.713			15.282 15.354	15.394 15.369	15.531 15.543	15.583 15.580		15.988 15.990	16.020 16.027	16.176 16.162	16.192 16.203	16.465
FINISHED SURFACE LEVEL	16.103		16.687		16.991				18.073					18.991				19.967		20.086			20.548		20.521		20.737
CHAINAGE	0.000		19.197		38.697				90.697					151.197				213.990		228.877			273.639	16.351	289.990	31.370	321.360
LINE	17																										

MANHOLE TYPES

AC ACCESS CHAMBER

TMS TERMINAL MAINTENANCE SHAFT

MS MAINTENANCE SHAFT

On behalf of WATER SERVICES, for incorporation into POWER WATER CORP'S network.

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This drawing is valid only for 2 years from date of signing

SIGNED DATE

LIVE CONNECTION

LIVE CONNECTION BY POWERWATER CORP. AT DEVELOPER EXPENSE. CONNECT TO STUB FROM 3/A1

AS CONSTRUCTED INFORMATION CERTIFIED BY BMD URBAN PTY LTD

SIGNED: DATED: 03/07/2018

LEGEND

× ALLOTMENT CONTROL LEVEL

◁ HOUSE CONNECTION

Conc CONCRETE COVER

C.I. CAST IRON COVER

Bolt BOLT DOWN COVER

CONTINUES ON DRAWING B00176-CS004 (PWC B17-9036)

POWER WATER CORP. DRG No. B17-9036

No.	Amendments	Drawn	Design	Appd	Registered Engineer	Reg No.	Date
1	AS CONSTRUCTED	MC	LW	WS			21/06/18
0	FOR CONSTRUCTION	MC	LW	WS			22/01/18

LAND DEVELOPMENT CORPORATION

urbex

Empower ENGINEERS & PROJECT MANAGERS ABN 23 010 743 692

Client: URBEX AND LAND DEVELOPMENT CORP. (JV)

Project: ZUCCOLI PHASE 3.3

Title: SEWERAGE RETICUALTION LONGITUDINAL SECTION SHEET 1 OF 3

Datum: AHD PSM . RL . (MGA) COORD

AS CONSTRUCTED

Project No. / Drawing No.: B00176-CS003

Rev: 1

Plot Date 4/07/2018 2:55:42 PM User: ETHAN.SCHAEFER-SHW File Name: C:\synergy\11\B00176_26\4 civil-drgs\4.4 as con\B00176-AS CON-3.3-SEWL

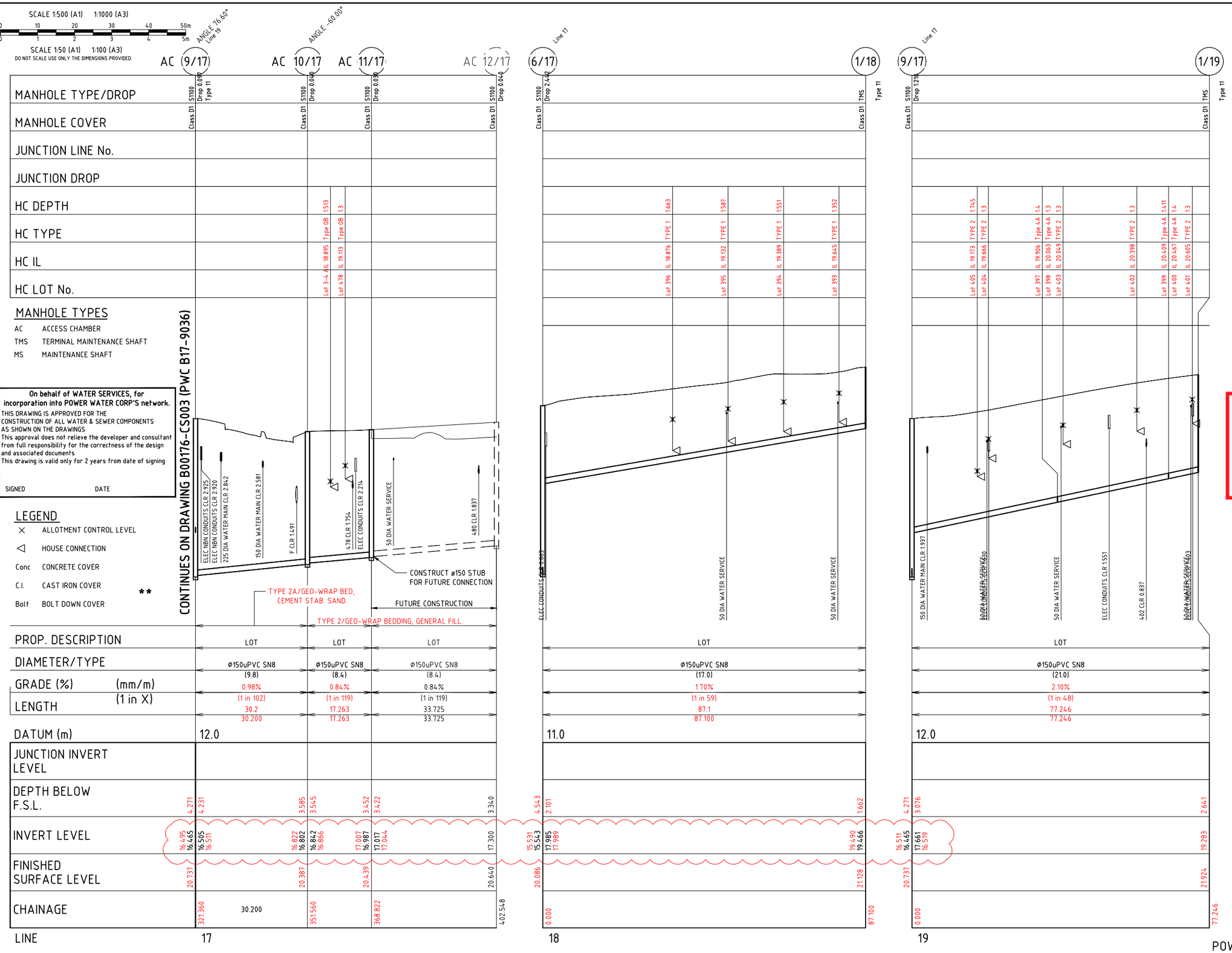
SCALE 1:500 (A1) 1:1000 (A3)

10 7.5 5 2.5 0 10 20 30 40 50m

1.0 0.75 0.5 0.25 0 1 2 3 4 5m

SCALE 1:50 (A1) 1:100 (A3)

DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.



On behalf of WATER SERVICES, for incorporation into POWER WATER CORP'S network.

THIS DRAWING IS APPROVED FOR THE CONSTRUCTION OF ALL WATER & SEWER COMPONENTS AS SHOWN ON THE DRAWINGS

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This drawing is valid only for 2 years from date of signing

SIGNED DATE

MANHOLE TYPES

AC ACCESS CHAMBER

TMS TERMINAL MAINTENANCE SHAFT

MS MAINTENANCE SHAFT

LEGEND

× ALLOTMENT CONTROL LEVEL

◁ HOUSE CONNECTION

Conc CONCRETE COVER

C.I. CAST IRON COVER **

Bolt BOLT DOWN COVER

AS CONSTRUCTED INFORMATION CERTIFIED BY BMD URBAN PTY LTD

SIGNED: DATED: 03/07/2018

POWER WATER CORP. DRG No. B17-9037

No.	Amendments	Drawn	Design	Appd	Registered Engineer	Reg No.	Date
1	AS CONSTRUCTED	MC	LW	WS			21/06/18
0	FOR CONSTRUCTION	MC	LW	WS			22/01/18

LAND DEVELOPMENT CORPORATION

urbex

Empower ENGINEERS & PROJECT MANAGERS ABN 23 010 743 692

Client: URBEX AND LAND DEVELOPMENT CORP. (JV)

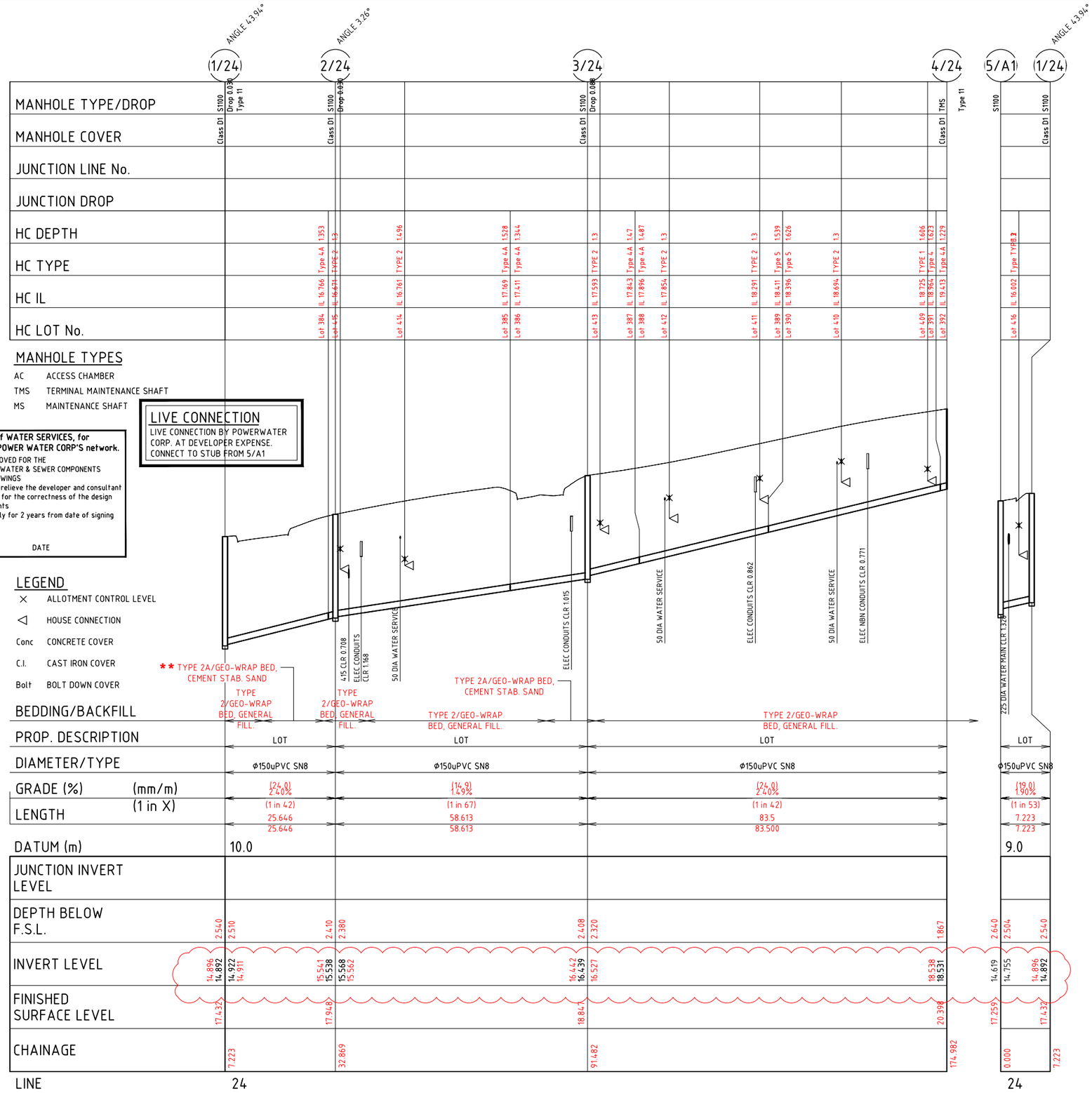
Project: ZUCCOLI PHASE 3.3

Title: SEWERAGE RETICUALTION LONGITUDINAL SECTION SHEET 2 OF 3

Datum: AHD PSM . RL . (MGA) COORD

AS CONSTRUCTED

Project No. B00176 Drawing No. CS004 Rev 1



MANHOLE TYPES

AC	ACCESS CHAMBER
TMS	TERMINAL MAINTENANCE SHAFT
MS	MAINTENANCE SHAFT

LIVE CONNECTION

LIVE CONNECTION BY POWERWATER CORP. AT DEVELOPER EXPENSE. CONNECT TO STUB FROM 5/A1

On behalf of WATER SERVICES, for incorporation into POWER WATER CORP'S network.

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SIGNED DATE

LEGEND

×	ALLOTMENT CONTROL LEVEL
◁	HOUSE CONNECTION
Conc	CONCRETE COVER
C.I.	CAST IRON COVER
Bolt	BOLT DOWN COVER

AS CONSTRUCTED INFORMATION CERTIFIED BY BMD URBAN PTY LTD

SIGNED: DATED: 03/07/2018

On behalf of WATER SERVICES, for incorporation into POWER WATER CORP'S network.

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SIGNED DATE

SCALE 1:500 (A1) 1:1000 (A3)

10 7.5 5 2.5 0 10 20 30 40 50m

1.0 0.75 0.5 0.25 0 1 2 3 4 5m

SCALE 1:50 (A1) 1:100 (A3)

DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

POWER WATER CORP. DRG No. B17-9038

No.	Amendments	Drawn	Design	Appd	Registered Engineer	Reg No.	Date
1	AS CONSTRUCTED	MC	LW	WS			21/06/18
0	FOR CONSTRUCTION	MC	LW	WS			22/01/18

LAND DEVELOPMENT CORPORATION

urbex

Empower ENGINEERS & PROJECT MANAGERS ABN 23 010 743 692

Client: URBEX AND LAND DEVELOPMENT CORP. (JV)

Project: ZUCCOLI PHASE 3.3

Title: SEWERAGE RETICUALTION LONGITUDINAL SECTION SHEET 3 OF 3

Datum: AHD PSM . RL . (MGA) COORD

AS CONSTRUCTED

Project No. B00176 Drawing No. CS005 Rev 1

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED: _____ DATED: 03/07/2018

On behalf of WATER SERVICES, for incorporation into POWER WATER CORP'S network.

THIS DRAWING IS APPROVED FOR THE CONSTRUCTION OF ALL WATER & SEWER COMPONENTS AS SHOWN ON THE DRAWINGS
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This drawing is valid only for 2 years from date of signing

SIGNED DATE

POWER WATER CORP. DRG No. B17-9039

No.	Amendments	Drawn	Design	Appd	Registered Engineer	Reg No.	Date
1	AS CONSTRUCTED	MC	LW	WS			21/06/18
0	FOR CONSTRUCTION	MC	LW	WS			22/01/18

LAND DEVELOPMENT CORPORATION
urbex

Empower ENGINEERS & PROJECT MANAGERS ABN 23 010 743 632

Client: URBEX AND LAND DEVELOPMENT CORP. (JV)
Project: ZUCCOLI PHASE 3.3
Title: SEWERAGE RETICULATION HOUSE CONNECTION DETAILS

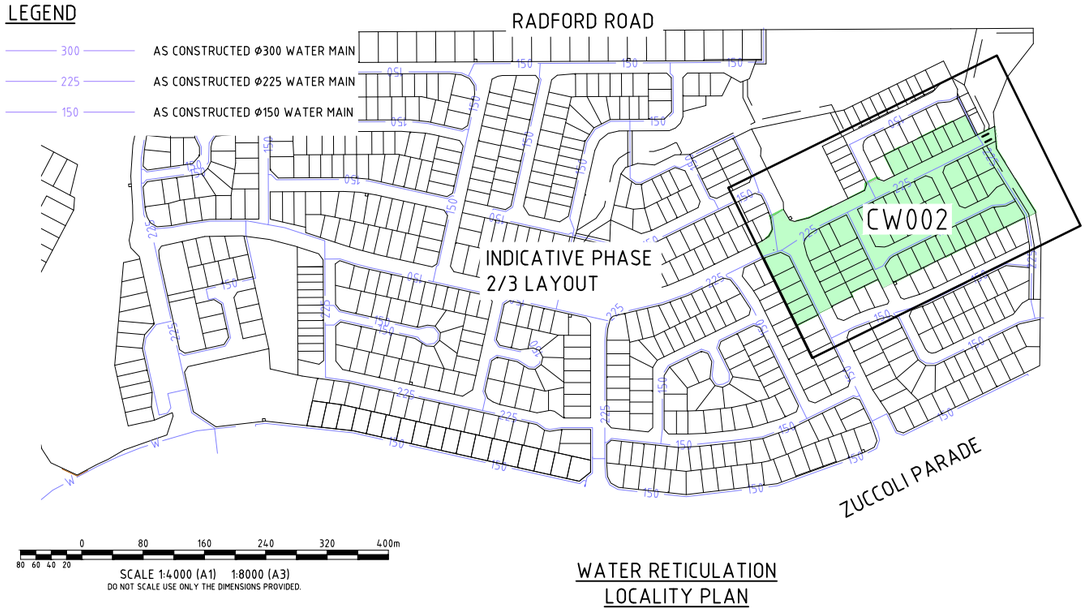
Datum: AHD PSM . RL . (MGA) COORD

AS CONSTRUCTED

Project No. B00176 | Drawing No. CS006 | Rev 1

LEGEND

- 300 — AS CONSTRUCTED Ø300 WATER MAIN
- 225 — AS CONSTRUCTED Ø225 WATER MAIN
- 150 — AS CONSTRUCTED Ø150 WATER MAIN



SCALE 1:4000 (A1) 1:8000 (A3)
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

WATER RETICULATION LOCALITY PLAN

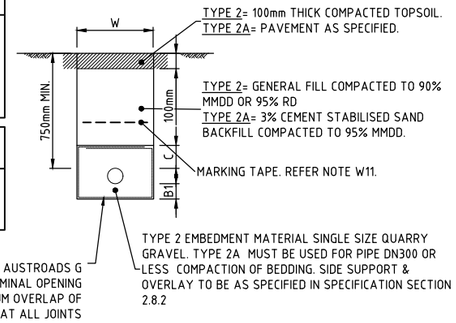
SCALE 1:4000

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED: _____ DATED: 03/07/2018

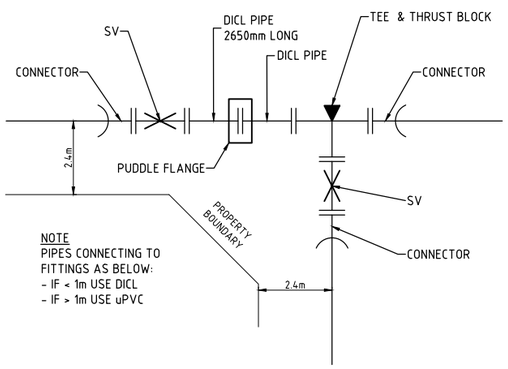
NOMINAL PIPE DIAMETER	W
100 & 150	450
200-300	600
375	750
450	900
450-900	PIPE OD + 600
1050-1500	PIPE OD + 700
1650-4000	1.5 x PIPE OD

NOMINAL PIPE SIZE	B1	C
20-50	100	150
80-100	100	150
150-600	150	150
750 & LARGER	200	200



TYPE 2/2A TRENCH DETAIL

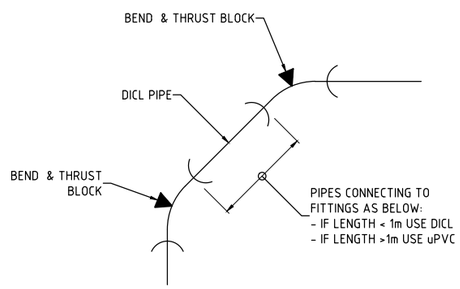
SCALE N.T.S



TYPICAL BRANCH DETAIL

N.T.S.

ALL BENDS ARE DICL (SOC-SOC) UNLESS SHOWN OTHERWISE IN A SCHEMATIC DETAIL.



TYPICAL MULTI-BEND DETAIL

N.T.S.

NOTE: FOR MAIN & FITTINGS REFER PLAN DRG'S

POWER AND WATER STANDARD NOTES

GENERAL

WS.1. CONSTRUCTION OF THE WATER AND SEWERAGE WORKS ARE CARRIED OUT IN ACCORDANCE WITH THE LATEST AMENDMENT OF THE APPROVED PROJECT DRAWINGS AND SPECIFICATION, AS SIGNED BY A SERVICES DEVELOPMENT OFFICER, AND THE POWER AND WATER CONNECTION CODE POWER AND WATER MASTER SPECIFICATION AND ASSOCIATED DOCUMENTS.

WS.2. CONSTRUCTION SITE DESIGN DRAWINGS MUST BE SIGNED AS 'APPROVED FOR CONSTRUCTION' BY A POWER AND WATER SERVICES DEVELOPMENT OFFICER.

WS.3. PRIOR TO COMMENCEMENT OF WORKS THE CONSTRUCTOR CHECKED THE LOCATION OF ALL UNDERGROUND SERVICES, AND CONFIRM FINISHED SURFACE LEVELS AND CHECK THE MATERIAL, DIAMETER, ALIGNMENT, LEVEL AND LOCATION OF EXISTING PIPEWORK AT THE CONNECTION POINT. IT IS NOT GUARANTEED THAT ALL SERVICES HAVE BEEN SHOWN ON THE DRAWINGS.

WS.4. CHANGES REQUESTED BY ANY PARTY TO THE DESIGN OF THE WORKS DURING ANY STAGE OF THE DEVELOPMENT ARE ENDORSED BY THE CERTIFYING HYDRAULIC CONSULTING ENGINEER/DESIGNER WITH AMENDED DRAWINGS SUBMITTED TO POWER AND WATER FOR APPROVAL PRIOR TO THE CHANGE BEING CARRIED OUT.

WS.5. SEVEN (7) DAYS WRITTEN NOTICE HAS BEEN GIVEN TO SERVICES DEVELOPMENT, POWER AND WATER, WITH A 'NOTICE OF INTENTION TO START WORK' PRIOR TO COMMENCEMENT OF WORK (FORM AVAILABLE ON THE CONNECTION CODE WEBSITE).

WS.6. THE CONTRACTOR CONFIRMED WITH SERVICES DEVELOPMENT IF A MEETING IS REQUIRED WITH POWER AND WATER, THE HYDRAULIC CERTIFIER AND THE DEVELOPER PRIOR TO COMMENCEMENT OF SITE WORKS.

WS.7. EXISTING SERVICE CONNECTIONS REMAINED IN SERVICE UNTIL THE CONSTRUCTION OF THE NEW SERVICE IS COMPLETED TO THE SATISFACTION OF POWER AND WATER.

WS.8. ALL LEVELS GIVEN ARE TO AUSTRALIAN HEIGHT DATUM (AHD) IN METRES TO THREE DECIMAL PLACES. PROJECTION BASED ON MGA94 MAP GRID OF AUSTRALIA ZONE 52 OR 53 COORDINATE SYSTEM.

WS.9. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL CHAINAGES AND LEVELS LEVEL IN METRES UNLESS SHOWN OTHERWISE.

WS.10. MINIMUM COVER TO PIPE IS 750MM IN TRAFFICABLE AREAS, 600mm IN OTHER AREAS. 1500mm COVER REQUIRED FOR THRUST BORING UNDER ROAD.

WS.11. MINIMUM CLEARANCES BETWEEN UNDERGROUND SERVICES IS AS PER WSA 02-2003 TABLE 4.2 FOR SEWER, AND WSA 03-2003 TABLE 4.1 FOR WATER. A MINIMUM VERTICAL CLEARANCE OF 300mm FOR ALL SERVICE CROSSINGS IS TO BE MAINTAINED.

EXCAVATION AND FILLING

WS.12. OBTAIN PERMIT/S FROM THE RELEVANT ROAD AUTHORITY OR COUNCIL PRIOR TO ANY EXCAVATION WITHIN THE ROAD RESERVE. THE CONTRACTOR/DEVELOPER IS REQUIRED TO SEEK A WRITTEN APPROVAL FORM THE LAND OWNER OF THE EXISTING EASEMENT TO ACCESS AND EXCAVATE WITHIN THEIR PROPERTY. THE CONTRACTOR/DEVELOPER IS REQUIRED TO SUPPLY THAT WRITTEN APPROVAL TO POWER AND WATER SEVEN (7) DAYS PRIOR TO THE START OF CONSTRUCTION WORKS.

WS.13. BACKFILLING MATERIAL, OUTSIDE ROAD PAVEMENT OR DRAIN, MUST COMPLY WITH THE POWER AND WATER MASTER SPECIFICATION REQUIREMENTS FOR GENERAL BACKFILL. USE TYPE 2 EMBEDMENT WRAPPED WITH GEOTEXTILE WITH SELECTED BACKFILL OR 3% CEMENT STABILISED SAND BACKFILL FOR ALL ROAD CROSSINGS. USE 5% CEMENT STABILISED GRAVEL BACKFILL BENEATH ALL OUD CROSSING.

WS.14. PROVIDE A MINIMUM OF TYPE 2 EMBEDMENT FOR PVC PIPE OR TYPE 4 EMBEDMENT FOR STEEL PIPE UNLESS GEOTECHNICAL INVESTIGATIONS HAVE BEEN COMPLETED AND THE CONSULTANT REPORT SUPPORTS THE USE OF LOWER QUALITY EMBEDMENT. ANY CHANGE TO THE PROPOSED BEDDING TYPE MUST BE APPROVED BY POWER AND WATER.

WS.15. WHEN EMBEDMENT TYPE CHANGES, A VERTICAL GEOTEXTILE BARRIER ARE INSERTED BETWEEN THE EMBEDMENT TYPES.

WS.16. REINSTATE ALL SURFACES UPON COMPLETION OF THE WORKS AS SPECIFIED OR AS GOOD AS EXISTING TO THE SATISFACTION OF THE RELEVANT AUTHORITY.

COMMISSIONING

POWER WATER CORPORATION - WATER STANDARD DRAWINGS

W1-1-01/7	WATER 20mm WATER SERVICE COPPER
W1-1-02/7	WATER 25mm WATER SERVICE COPPER
W1-1-04/10	WATER 50mm WATER SERVICE COPPER
W1-1-16/1	DN100 - 300 WATER MAINS TYPICAL DETAILS BRANCH OFF MAINS
W1-1-23/1	CONNECTIONS TO MAINS DN20, DN25 AND DN50
W1-1-24/3	PROPERTY CONNECTIONS DN80, DN100 AND DN150
W1-2-03A/4	BS750 SCREW DOWN HYDRANT INSTALLATION IN NATURE STRIP OFF DN100 - DN 300 MAINS
W1-2-03C/3	BS750 SCREW DOWN HYDRANT AND SLUICE VALVE INSTALLATION IN ROADWAY
W1-2-03D/1	STOP (ISOLATING) VALVES LOCATION MARKING
W1-2-03F/3	BS750 SCREW DOWN HYDRANT KERB MARKING AND MARKER POST DETAILS
W1-2-03H/2	WATER MAINS LOCATION MARKING
W1-2-03J/2	SLUICE VALVE INSTALLATION IN NATURE STRIP
W1-2-05/0	THRUST BLOCK AND TRENCH DETAILS FOR DN100 -225 PRESSURE MAIN
W1-2-06/0	STANDARD WELDED STEEL PIPE FITTINGS
W1-2-07/1	HYDROSTATIC TESTING PROCEDURE FOR WATER MAINS
W1-2-17A/1	APPLICATION OF POLYETHYLENE SLEEVING FOR CORROSION PROTECTION OF DICL PIPE
W1-2-17B/2	APPLICATION OF POLYETHYLENE SLEEVING FOR CORROSION PROTECTION OF DICL FITTINGS
W1-2-18/0	WATER MAINS AND SERVICES KERB MARKERS FOR ROAD CROSSINGS
W1-2-19/1	TEMPORARY DEAD ENDS DN100 - DN450

CONTRACTOR TO CONFIRM THAT THE LATEST REVISIONS ARE USED FOR CONSTRUCTION

WS.17. SIGNED HARD COPY (A3 SIZE - REQUIRED FOR ALL SUBDIVISIONS) AND ELECTRONIC FORMAT (BOTH x.PDF AND CAD x.DGN/x.DWG) 'AS-CONSTRUCTED' DRAWINGS, OTHER INSTALLATION DOCUMENTATION, AND APPROPRIATE RECORDS OF CONSTRUCTION PROGRESS (PHOTOS) MUST BE PROVIDED TO SERVICES DEVELOPMENT, POWER AND WATER PRIOR TO HANDOVER INSPECTION. ENSURE ALL AS-CONSTRUCTED INFORMATION HAS BEEN PICKED UP BY THE SURVEYOR PRIOR TO BACKFILLING.

WS.18. 'AS-CONSTRUCTED' DRAWINGS TO BE CERTIFIED BY THE CERTIFYING ENGINEER. 'AS-CONSTRUCTED' SURVEY BY A REGISTERED SURVEYOR.

WS.19. DESIGNER TO CONTACT SERVICES DEVELOPMENT, POWER AND WATER, TO ARRANGE FOR HANDOVER INSPECTIONS. SEVEN (7) DAYS NOTICE MUST BE PROVIDED PRIOR TO HANDOVER INSPECTIONS.

WS.20. THE CONSTRUCTOR IS RESPONSIBLE FOR ALL CONNECTION FEES, ALL EXCAVATION, SHORING IF REQUIRED, BACKFILLING, REINSTATEMENT OF AREA, SUPPLY OF DIGGING AND LIFTING MACHINERY WHERE REQUIRED, PERMITS, TRAFFIC CONTROL, SUPPLY OF ALL MATERIALS, PIPES AND FITTINGS.

WS.21. POWER AND WATER PERSONNEL SHALL INSTALL ALL NEW WATER CONNECTIONS TO EXISTING MAINS. ENSURE REQUIRED WATER CONNECTION FITTINGS ARE BOLTED TOGETHER AND READY TO BE INSTALLED UPON SHUTDOWN. THE WATER CONNECTION ARE COMPLETED PRIOR TO THE CONSTRUCTION OF THE NEW WATER SERVICE. THIS IS ONLY ALLOWED IF A VALVE LOCK IS INSTALLED BY POWER AND WATER CORPORATION ON THE SLUICE VALVE TO THE WATER MAIN. PRESSURE TESTING AGAINST THE SLUICE VALVE IS PERMITTED TO A MINIMUM OF 1000KPA AND A MAXIMUM PRESSURE OF 1200KPA UNLESS PREVIOUSLY SPECIFIED. IF THE CONSTRUCTOR SUSPECTS THE SLUICE VALVE IS LEAKING UNDER PRESSURE TESTING THEN CONTACT THE SUPPLIER FOR REPLACEMENT. THE VALVE LOCK WILL BE REMOVED BY POWER AND WATER AFTER THE HANDOVER OF THE ASSET HAS BEEN ACHIEVED.

WS.22. POWER AND WATER PERSONNEL SHALL INSTALL ALL NEW SEWER CONNECTIONS TO EXISTING MAINS. A PHYSICAL ISOLATION MUST BE IN PLACE BETWEEN THE EXISTING LIVE SEWER AND THE PROPOSED GIFTED ASSET. THE PHYSICAL ISOLATION DEVICE WILL BE REMOVED BY POWER AND WATER AFTER THE HANDOVER OF THE ASSET HAS BEEN ACHIEVED.

WS.23. AT NO STAGE SHALL ANY CONTRACTOR CARRY OUT WORK ON POWER AND WATER INFRASTRUCTURE.

ACCEPTANCE AND DEFECTS LIABILITY PERIOD

WS.24. AT LEAST SEVEN (7) WORKING DAYS NOTICE MUST BE PROVIDED TO SERVICES DEVELOPMENT, POWER AND WATER FOR APPLICATION OF A CERTIFICATE OF FINAL COMPLIANCE/DEVELOPMENT PERMIT CLEARANCE ALLOWING FOR AN INSPECTION AND REPORT OF OUTSTANDING DEFECTS/ISSUES. UPON NOTICE TO SERVICES DEVELOPMENT THAT RECTIFICATION OF OUTSTANDING DEFECTS/ISSUES HAS BEEN ADDRESSED, AN ADDITIONAL SEVEN (7) WORKING DAYS SHOULD BE ALLOWED FOR.

WS.25. A TWENTY-FOUR (24) MONTH DEFECTS LIABILITY PERIOD FOR EXTENSIONS AND SUBDIVISIONS, AND A TWELVE (12) MONTH DEFECTS LIABILITY PERIOD FOR BUILDING DEVELOPMENTS, WILL COMMENCE ONCE THE CERTIFICATE OF FINAL COMPLIANCE/DEVELOPMENT PERMIT CLEARANCE HAS BEEN ISSUED. ALL DEFECT LIABILITIES IDENTIFIED WITHIN THIS PERIOD IS THE RESPONSIBILITY OF THE DEVELOPER. ANY WORKS SUBJECT TO A DEFECT DURING THE DEFECT PERIOD THAT REQUIRES POWER AND WATER TO UNDERTAKE AN EMERGENCY REPAIR, ARE SUBJECT TO AN EXTENDED DEFECT PERIOD OF 5 YEARS.

POWER AND WATER (WATER NOTES)

W.1. WATER PIPES ARE BURIED PVC-M SERIES 2 CLASS 16, WITH DICL FITTINGS, UNLESS NOTED OTHERWISE.

W.2. ALL DUCTILE IRON CEMENT LINED (DICL) PIPES ARE CLASS PN16 FLANGED OR CLASS 35 RUBBER RING JOINTED (RRJ). ALL BURIED DICL PIPES AND FITTINGS ARE WRAPPED IN POLYETHYLENE SLEEVING BEFORE AND DURING INSTALLATION. MARKINGS ON PIPES SHALL FACE UPWARDS.

W.3. PIPES UNDER ROAD PAVEMENT, OPEN DRAIN AND DRAINAGE STRUCTURES ARE DICL CLASS 16 FLANGE JOINTED OR CLASS 35 TYTON-LOK, RRJ.

W.4. PROVIDE ANCHORAGE FOR ALL VALVES, REDUCERS, VERTICAL BENDS AND TERMINAL /END POINTS. PROVIDE THRUST BLOCK FOR ALL HORIZONTAL BENDS AND TEES.

W.5. ALL SLUICE VALVES ARE RESILIENT SEATED FLANGED CLASS 16 TO POWER AND WATER STANDARDS WITH RAISED FLANGES, UNLESS NOTED OTHERWISE.

W.6. ALL FLANGES ARE CLASS 16 RAISED TYPE COMPLYING WITH AS.4087 FIGURE B5 FOR DICL AND FIGURE B7 FOR MSCL, UNLESS NOTED OTHERWISE.

W.7. WATER MAINS ARE OFFSET FROM PROPERTY BOUNDARIES A DISTANCE OF 2.4m IN ROAD RESERVES AND 1.5m IN PRIVATE PROPERTY, EXCEPT WHERE SHOWN OTHERWISE ON THE DRAWINGS.

W.8. THE COATING ON THE FITTINGS ARE FULLY PROTECTED BY A FELT OR GEOTEXTILE BARRIER WHEN THE THRUST BLOCK IS POURED AND THRUST BLOCKS MUST NOT OVERLAP THE JOINT.

W.9. WATERMAINS ARE LAID OVER STORM WATER, SEWER, NON-POTABLE AND RECYCLED WATER PIPES.

W.10. OINT DEFLECTION AND BENDING ARE NOT ALLOWED FOR PVC PIPES. USE SO-SO DICL CONNECTORS TO ACHIEVE A MAXIMUM 2 DEGREE JOINT DEFLECTION OR BENDS FOR LARGER DEFLECTION.

W.11. MARKING TAPE COLOURED GREEN AND MARKED 'WATER MAIN' ARE LAID CONTINUOUSLY AND LOCATED 300MM ABOVE THE WATER PIPEWORK.

W.12. HYDROSTATIC TEST PRESSURE ARE 1000KPA FOR RETICULATION MAINS AND 1200KPA FOR DICL OR MSCL DISTRIBUTION MAINS OVER A 4 HOUR PERIOD. HYDROSTATIC TEST ARE IN ACCORDANCE WITH POWER AND WATER STANDARD DRAWING W1-2-07.

W.13. CONNECTIONS TO EXISTING WATER MAINS WILL ONLY BE CARRIED OUT WHEN ALL WORKS AND TESTING (HYDROSTATIC TESTING, DISINFECTION FLUSHING AND MICROBIOLOGICAL TEST) ARE COMPLETE IN ACCORDANCE WITH THE APPROVED DESIGN DRAWINGS AND PROCEDURES, AND HAVE SATISFACTORILY PASSED FINAL HANDOVER INSPECTION.

ADDITIONAL WATER NOTES

W.101. THE SUPERINTENDENT IN CONSULTATION WITH GEOTECHNICAL PERSONNEL DETERMINED WATER PIPE BEDDING TYPE AFTER INSPECTION OF THE EXCAVATED TRENCH. TYPE 2A BEDDING AND GEOTEXTILE FABRIC ARE USED UNDER ROADS AND AT OTHER LOCATIONS AS SHOWN ON THE DRAWINGS. **ALL ROAD CROSSINGS ARE BACKFILLED TO A STRINGENT COMPACTION STANDARD, USING A CEMENT STABILISED SAND FOR THE FULL WIDTH OF THE TRENCH TO SUBGRADE LEVEL.**

W.102. HYDRANTS ARE BS750 SCREW-DOWN TYPE - BS750 - 1977 THREAD IN ACCORDANCE WITH PWC STD DRG W1-2-03A.

W.103. ALL SERVICE CONNECTIONS ARE DN20 U.N.O. REFER PWC STD DRG W1-1-01.

W.104. DUPLEX SERVICE CONNECTION ARE DN 25, FOR DETAILS REFER PWC STD DRG W1-1-29. WHERE DUPLEX SITE IS GREATER THAN 800m² IN AREA, THE CONNECTION ARE DN50. REFER PWC STD DRG W1-1-27.

W.105. TRIPLEX SERVICE CONNECTION ARE DN 50, FOR DETAILS REFER PWC STD DRG W1-1-27.

W.106. TRENCHSTOPS OR BULKHEADS ARE CONSTRUCTED IN ACCORDANCE WITH WSAA STANDARD DRAWING WAT-1209 WHERE WATERMAIN GRADE EXCEEDS 5%.

WARNING

BEWARE OF SERVICES

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

On behalf of WATER SERVICES, for incorporation into POWER WATER CORP'S network.

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SIGNED DATE

POWER WATER CORP. DRG No. B17-9040

No.	Amendments	Drawn	Design	Appd	Registered Engineer	Reg No.	Date
1	AS CONSTRUCTED	AQ	LW	WS			21/06/18
0	FOR CONSTRUCTION	MC	LW	WS			22/01/18

LAND DEVELOPMENT CORPORATION
urbex

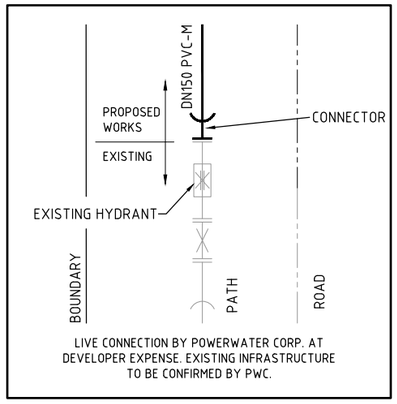
Empower ENGINEERS & PROJECT MANAGERS ABN 23 010 743 632

Client: URBEX AND LAND DEVELOPMENT CORP. (JV)
Project: ZUCCOLI PHASE 3.3
Title: WATER RETICULATION LOCALITY PLAN AND NOTES

Datum: AHD PSM . RL . (MGA) COORD

AS CONSTRUCTED

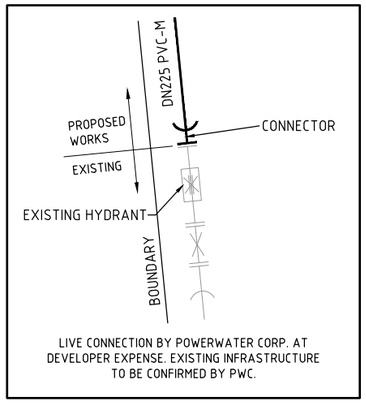
Project No. B00176-CW001 | Drawing No. | Rev 1



LIVE CONNECTION BY POWERWATER CORP. AT DEVELOPER EXPENSE. EXISTING INFRASTRUCTURE TO BE CONFIRMED BY PWC.

CONNECTION DETAIL A

N.T.S.



LIVE CONNECTION BY POWERWATER CORP. AT DEVELOPER EXPENSE. EXISTING INFRASTRUCTURE TO BE CONFIRMED BY PWC.

CONNECTION DETAIL B

N.T.S.

AS CONSTRUCTED INFORMATION CERTIFIED BY BMD URBAN PTY LTD

SIGNED: _____ DATED: 03/07/2018

On behalf of WATER SERVICES, for incorporation into POWER WATER CORP'S network.

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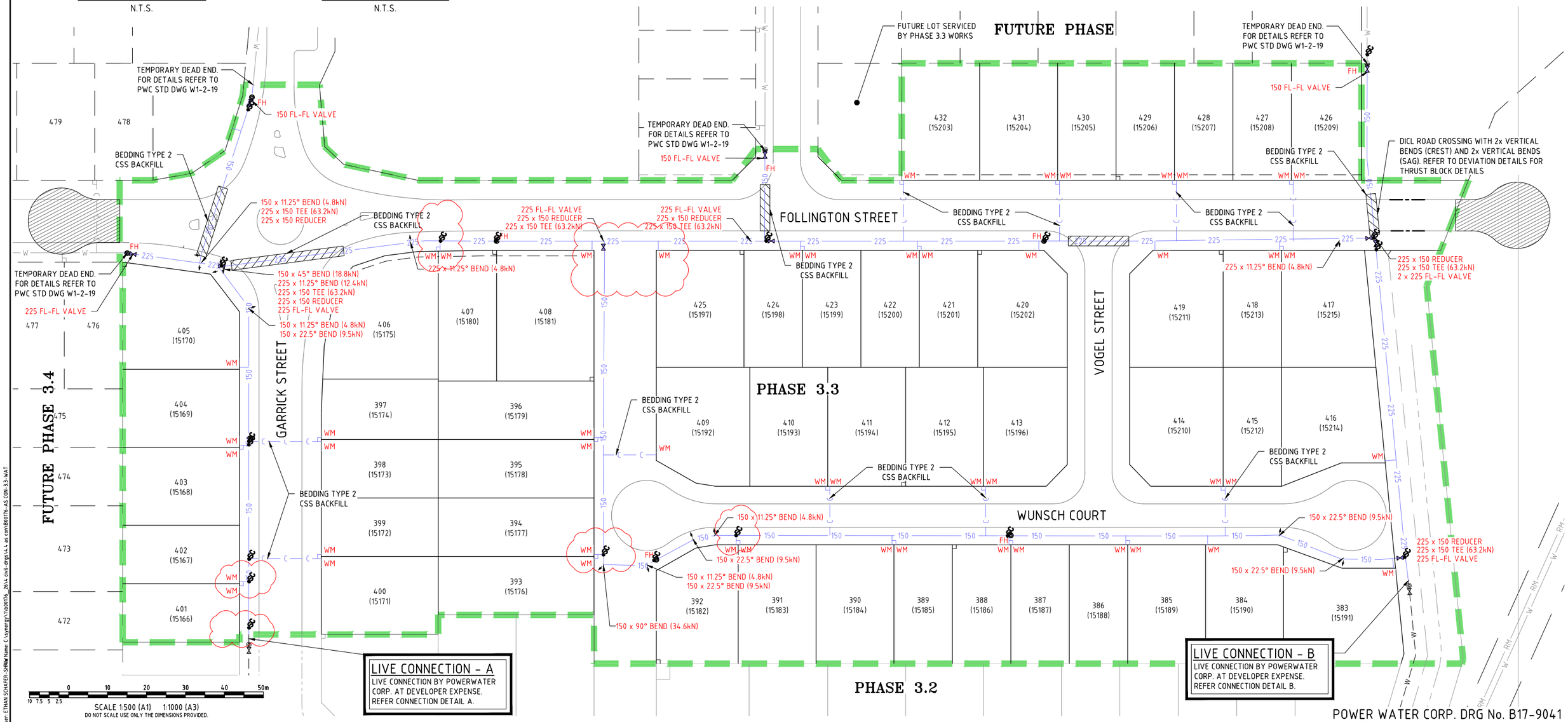
LEGEND

- 225 — AS CONSTRUCTED PROPOSED Ø225 DICL WATER MAIN
- 225 — AS CONSTRUCTED PROPOSED Ø225 WATER MAIN
- 150 — AS CONSTRUCTED PROPOSED Ø150 DICL WATER MAIN
- 150 — AS CONSTRUCTED PROPOSED Ø150 WATER MAIN
- W — FUTURE WATER MAIN
- W — EXISTING TRUNK WATER MAIN
- C — WATER CONDUIT CROSSINGS
- NOMINAL FACE OF KERB
- WM — AS CONSTRUCTED WATER SERVICE POINT OF ENTRY (INDICATIVE ONLY)
- 150 — AS CONSTRUCTED SLUICE VALVE
- 150 FH — AS CONSTRUCTED FIRE HYDRANT
- AS CONSTRUCTED PHASE BOUNDARIES



POWER WATER CORP. DRG No. B17-9041

No.	Amendments	Drawn	Design	Appd	Registered Engineer	Reg No.	Date
1	AS CONSTRUCTED	AQ	LW	WS			21/06/18
0	FOR CONSTRUCTION	MC	LW	WS			22/01/18

LAND DEVELOPMENT CORPORATION
urbex

Empower ENGINEERS & PROJECT MANAGERS ABN 23 010 743 692

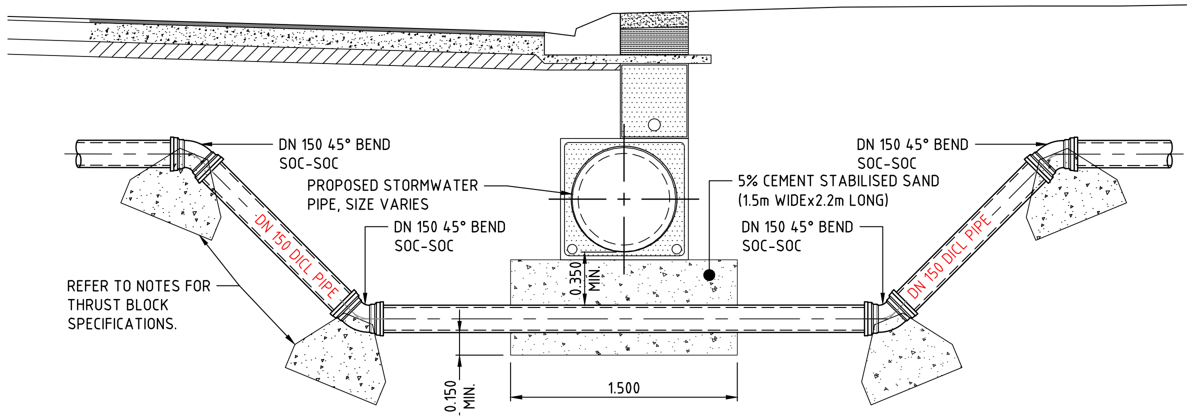
Client: URBEX AND LAND DEVELOPMENT CORP. (JV)
Project: ZUCCOLI PHASE 3.3
Title: WATER RETICULATION LAYOUT PLAN

Datum: AHD
PSM .
RL .
(MGA) COORD

AS CONSTRUCTED

Project No. B00176-CW002 | Drawing No. | Rev 1

User: ETHAN SCHAEFER-SIRKA Name: C:\synergy\110\00176_2014 civil-drgs\4.4 as con\B00176-AS CON-33-WAT
Plot Date: 4/07/2018 2:55:57 PM



TYPICAL WATER MAIN DEVIATION DETAIL

SCALE 1:25

THRUST BLOCK NOTES

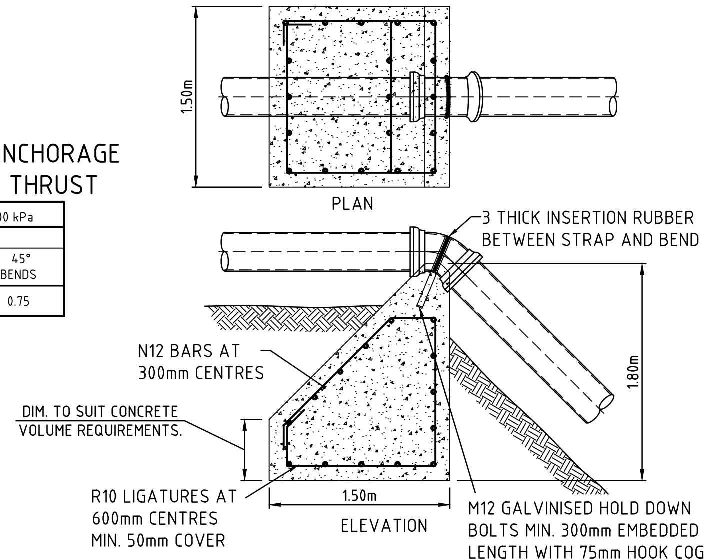
1. REFER PWC STD. DWG. W1-2-05 FOR DN150 THRUST BLOCK DETAILS.
2. UNLESS NOTED OTHERWISE, REFER TO DETAILS ON THIS DRAWING AND WSAA STD. DWG. WAT-1205 AND WAT-1207 FOR DN150 THRUST BLOCK DETAILS.
3. CONTRACTOR TO CONFIRM THE SOIL BEARING CAPACITY PRIOR TO THE CONSTRUCTION OF THE THRUST BLOCK

MINIMUM THRUST AREA FOR ANCHORAGE IN m² WITH TEST PRESSURE 1000 kPa

FOR HORIZONTAL THRUST ON TRENCH WALLS WHERE THE COVER OVER PIPES IS 450mm OR GREATER	90° & 60° HORIZ. BENDS			45° & 30° HORIZ. BENDS			22.5° HORIZ. BENDS			11.25° HORIZ. BENDS			TEES & DEAD ENDS		
	STIFF CLAY, MEDIUM DENSE CLEAN SAND	VERY STIFF CLAY, DENSE SAND / GRAVEL, DECOMPOSED ROCK	HARD CLAY SOUND ROCK	STIFF CLAY, MEDIUM DENSE CLEAN SAND	VERY STIFF CLAY, DENSE SAND / GRAVEL, DECOMPOSED ROCK	HARD CLAY SOUND ROCK	STIFF CLAY, MEDIUM DENSE CLEAN SAND	VERY STIFF CLAY, DENSE SAND / GRAVEL, DECOMPOSED ROCK	HARD CLAY SOUND ROCK	STIFF CLAY, MEDIUM DENSE CLEAN SAND	VERY STIFF CLAY, DENSE SAND / GRAVEL, DECOMPOSED ROCK	HARD CLAY SOUND ROCK	STIFF CLAY, MEDIUM DENSE CLEAN SAND	VERY STIFF CLAY, DENSE SAND / GRAVEL, DECOMPOSED ROCK	HARD CLAY SOUND ROCK
PBH kPa	50	100	200	50	100	200	50	100	200	50	100	200	50	100	200
⌀150	0.70	0.35	0.18	0.38	0.19	0.10	0.20	0.10	N	0.10	N	N	0.50	0.25	0.13

MINIMUM BLOCK VOLUME FOR ANCHORAGE OF VERTICAL COMPONENT OF THRUST

VERTICAL BENDS FOR TEST PRESSURE OF 1000 kPa			
PIPE DN	CONCRETE VOLUME m³		
	11.25° BENDS	22.5° BENDS	45° BENDS
⌀150	0.2	0.4	0.75

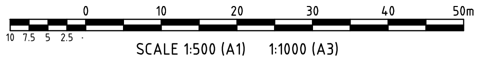


45° VERTICAL BEND

SCALE N.T.S

AS CONSTRUCTED
INFORMATION CERTIFIED BY
BMD URBAN PTY LTD

SIGNED: DATED: 03/07/2018



SCALE 1:500 (A1) 1:1000 (A3)
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

User: ETHAN SCHAFER-SHAW File Name: C:\synergy\1\b00176_26\4 civil-drgs\4.4 as con\B00176-AS CON-3.3-WAT

Plot Date: 4/07/2018 2:56:04 PM

POWER WATER CORP. DRG No. B17-13293

No.	Amendments	Drawn	Design	Appd	Registered Engineer Reg No.	Date
1	AS CONSTRUCTED	AQ	LW	WS		21/06/18
0	FOR CONSTRUCTION	MC	LW	WS		22/01/18

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ENGINEERS & PROJECT MANAGERS
ABN 23 010 743 692

Client **URBEX AND LAND DEVELOPMENT CORP. (JV)**
Project **ZUCCOLI PHASE 3.3**
Title **WATER RETICULATION DETAILS PLAN**

Datum
AHD
PSM .
RL .
(MGA) COORD

AS CONSTRUCTED

Project No. *Drawing No.* **B00176-CW003**
Rev **1**