



LOCALITY MAP
N.T.S

SCHEDULE OF DRAWINGS

DRAWING NO.	DRAWING TITLE
B20-12361	ZUCCOLI ASPIRE LOT 13356 WATER - DRAWING SCHEDULE & NOTES
B20-12362	ZUCCOLI ASPIRE LOT 13356 WATER- LAYOUT PLAN

STANDARD DRAWINGS

DRAWING NO.	REVISION	DRAWING TITLE
W1-1-01A	1	DN20 WATER SERVICE - COPPER - LOW HAZARD
W1-1-33	1	SERVICES PROPERTY CONNECTIONS - THRUST/DIRECTIONAL DRILLING
W1-2-03J	2	SLUICE VALVE INSTALLATION IN NATURE STRIP

PERMISSION TO USE FOR CONSTRUCTION PURPOSES ONLY
SIGNED _____ DATE _____
ON BEHALF OF WATER SERVICES FOR THE INCORPORATION
INTO POWER AND WATER CORPORATION'S NETWORK.

This permission to use this approved design is given on the
Basis that the developer and/or consultant is not absolved
From full responsibility for the correctness and accuracy or
Of the design and/or documents so associated.

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

LEGEND

PROPOSED WORKS

	12.00	DESIGN SURFACE CONTOURS
	12.00	EXISTING SURFACE CONTOURS
		EXISTING BATTER
		EXISTING ROAD CENTER LINE
		EXISTING KERB
		EXISTING SEWER MAIN
		EXISTING SEWER RISING MAIN
		EXISTING STORMWATER MAIN
		EXISTING WATER MAIN
		EXISTING WATER PROPERTY CONNECTION
		EXISTING ELECTRICAL
		LOT BOUNDARY
		DEVELOPMENT BOUNDARY
		PROPOSED BATTER
		SEWER MAIN
		SEWER STRUCTURE
		PROPOSED WATER PROPERTY CONNECTION
		PROPOSED STORMWATER PROPERTY CONNECTION
		PROPOSED STORMWATER PROPERTY CONNECTION
		PROPOSED ELECTRICAL PILLAR
		PROPOSED ELECTRICAL (UNDERGROUND)
		DRIVEWAY (FUTURE)
		EXISTING FOOTPATH
		EXISTING STORMWATER SIDE ENTRY PIT
		EXISTING STORMWATER PROPERTY CONNECTION
		EXISTING ELECTRICAL DISTRIBUTION PILLAR
		EXISTING ELECTRICAL SUBSTATION

ABBREVIATION

AC	ACCESS CHAMBER	LD	LIGHT DUTY
A/G	ABOVE GROUND	MH	MAINTENANCE HOLE
BM	BENCH MARK	MMDD	MAXIMUM MODIFIED DRY DENSITY
DE	WATERMAIN DEAD END	MS	MAINTENANCE SHAFT
DICL	DUCTILE IRON CEMENT LINED	NIC	NOT IN CONTRACT
DN	NOMINAL BORE	NTS	NOT TO SCALE
D/S	DOWNSTREAM	ODD	OPEN UNLINED DRAIN
EW	ENDWALL	PP	POWER POLE
FH	FIRE HYDRANT	PVC	uPVC PIPEWORK
FL	FLANGED JOINT	RCBC	REINFORCED CONCRETE BOX CULVERT
FSL	FINISHED SURFACE LEVEL	RCP	REINFORCED CONCRETE PIPE
HD	HEAVY DUTY	RRJ	RUBBER RING JOINT
HW	HEADWALL	SEP	SIDE ENTRY PIT
GIP	GRATED INLET PIT	SL	SURFACE LEVEL
GP	GUIDE POST	SO	SOCKET
GPT	GROSS POLLUTANT TRAP	SP	SPIGOT
IL	INVERT LEVEL	STN	SURVEY STATION
INCL	INCLUSIVE	SV	SLUICE VALVE
IP	INTERSECTION POINT	TC	TANGENT TO CURVE
LBP	LETTER BOX PIT	TMS	TERMINAL MAINTENANCE SHAFT
U/G	UNDERGROUND	TP	TANGENT POINT
UNO	UNLESS NOTED OTHERWISE	TPIT	TELSTRA PIT
U/S	UPSTREAM		

POWER AND WATER STANDARD NOTES

GENERAL

- WS.1. CONSTRUCTION OF THE WATER AND SEWERAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST AMENDMENT OF THE APPROVED PROJECT DRAWINGS AND SPECIFICATION, ASSIGNED 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 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 SHALL BE 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 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 BACKFILLING

- 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 FROM 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'S 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 SHALL BE INSERTED BETWEEN THE EMBEDMENT TYPES.
- WS.16. REINSTATE ALL SURFACES UPON COMPLETION OF THE WORKS AS SPECIFIED OR AS GOOD AS EXISTING TO THEN 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 WATER CONNECTIONS TO EXISTING MAINS. ENSURE REQUIRED WATER CONNECTION FITTINGS ARE BOLTED TOGETHER AND READY TO BE INSTALLED UPON SHUTDOWN. THE WATER CONNECTION SHALL BE COMPLETED PRIOR TO THE CONSTRUCTION OF THE NEW WATER SERVICE. THIS IS ONLY ALLOWED IF A VALVE LOCK IS INSTALLED BY POWER AND WATER 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, SHALL BE SUBJECT TO AN EXTENDED DEFECT PERIOD OF 5 YEARS.

WATER

- W.1. WATER PIPES SHALL BE BURIED PVC-M SERIES 2 CLASS 16, WITH DICL FITTINGS, UNLESS NOTED OTHERWISE.
- W.2. ALL DUCTILE IRON CEMENT LINED (DICL) PIPES SHALL BE CLASS PN16 FLANGED OR CLASS 35 RUBBER RING JOINTED (RRJ). ALL BURIED DICL PIPES AND FITTINGS SHALL BE WRAPPED IN POLYETHYLENE SLEEVING BEFORE AND DURING INSTALLATION. MARKING ON PIPES SHALL FACE UPWARDS.
- W.3. PIPES UNDER ROAD PAVEMENT, OPEN DRAIN AND DRAINAGE STRUCTURES SHALL BE DICL CLASS 16 FLANGE JOINTED OR CLASS 35 TYTON-LOK, RRJ.
- W.4. PROVIDE ANCHORAGE FOR ALL VALVES, REDUCERS, VERTICAL BENDS AND TERMINAL/ENDPOINTS. PROVIDE THRUST BLOCK FOR ALL HORIZONTAL BENDS AND TEES.
- W.5. ALL SLUICE VALVES SHALL BE RESILIENT SEATED FLANGED CLASS 16 TO POWER AND WATER STANDARDS WITH RAISED FLANGES, UNLESS NOTED OTHERWISE.
- W.6. ALL FLANGES SHALL BE CLASS 16 RAISED TYPE COMPLYING WITH AS 4087 FIGURE B5 FOR DICL AND FIGURE B7 FOR MSCL, UNLESS NOTED OTHERWISE.
- W.7. WATER MAINS SHALL BE OFFSET FROM PROPERTY BOUNDARIES A DISTANCE OF 2.4m IN ROAD RESERVES AND 15m IN PRIVATE PROPERTY, EXCEPT WHERE SHOWN OTHERWISE ON THE DRAWINGS.
- W.8. THE COATING ON THE FITTINGS SHALL BE 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 SHALL BE LAID OVER STORM WATER, SEWER, NON-POTABLE AND RECYCLED WATER PIPES.
- W.10. JOINT 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' SHALL BE LAID CONTINUOUSLY AND LOCATED 300MM ABOVE THE WATER PIPEWORK.
- W.12. HYDROSTATIC TEST PRESSURE SHALL BE 1000KPa FOR RETICULATION MAINS AND 1200kPa FOR DICL OR MSCL DISTRIBUTION MAINS OVER A 4 HOUR PERIOD. HYDROSTATIC TEST SHALL BE 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.

MINIMUM REQUIRED INSPECTIONS BY HYDRAULIC CERTIFIER - WATER

- INSPECTION 1**
INSPECT EXCAVATED TRENCH AND VERIFY BEDDING TYPE REQUIRED FOR THE SUBSOIL CONDITION. TAKE ADVICE OF A GEOTECHNICAL ENGINEER BEFORE ACCEPTING AN ALTERNATIVE BEDDING MATERIAL. GET APPROVAL FROM POWER AND WATER.
- INSPECTION 2**
MAIN/SERVICE COMPLETED WITH CONNECTION TO EXISTING MAIN AND SERVICE SLUICE VALVE SPINDLE IS LOCKED IN THE CLOSED POSITION. ALL THRUST BLOCKS INSTALLED. VERIFY AS CONSTRUCTED . INFORMATION.
- INSPECTION 3**
ALL JOINTS EXPOSED, CARRY OUT AIR TEST BEFORE UNDERGOING PRESSURE TEST. NOT REQUIRED FOR LENGTHS GREATER THAN 6m AND FOR ALL ROAD CROSSINGS.
- INSPECTION 4**
WITNESS OF DISINFECTION, FLUSHING AND WATER SAMPLING.
- INSPECTION 5**
CONDUCT HANDOVER WITH POWER AND WATER.
- INSPECTION 6**
FINAL INSPECTION TO ENSURE ALL OUTSTANDING ITEMS/ DEFECTS ARE COMPLETE

AS CONSTRUCTED

DESIGN CERTIFICATION

CERTIFIER'S NAME: SAM WARNER
PWC ACCREDITATION CODE: DESCRTBL69
DATE: 20.05.21 SIGNATURE:

1	AS CONSTRUCTED		SFH	20.05.21	JL SW
0	ISSUED FOR CONSTRUCTION		DT	28.09.20	SW SW
NO	DESCRIPTION	DRN	DATE	CKD	APPD
AMENDMENTS					



WARNING
BEWARE OF SERVICES

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



DES	DT	DARWIN REGION – ZUCCOLI ASPIRE LOT 13356 SUBDIVISION WATER DRAWING SCHEDULE & NOTES		
DRN	DT			
CHK	SW			
APPD	SW			
SCALE	N.T.S			
ISSUED		A1	DRAWING NUMBER B20-12361	1 AMDT
ALL DIM. IN m				
DRAFTING STANDARD TO A.S.1100		CAD PRODUCT – DO NOT AMEND MANUALLY		