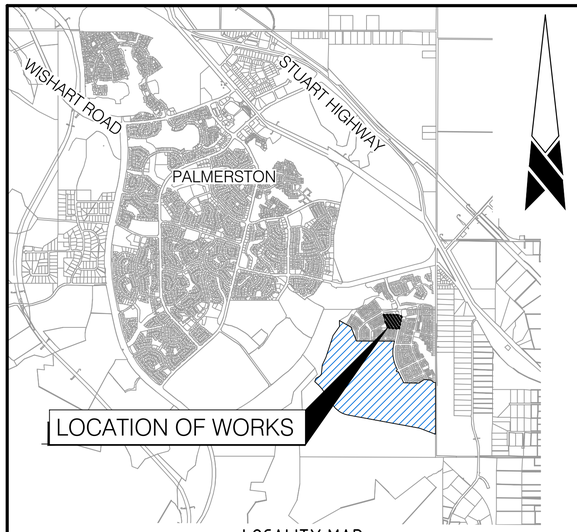

LOCALITY MAP

N.T.S

SCHEDULE OF DRAWINGS

DRAWING NO.	DRAWING TITLE
B20-12357	ZUCCOLI ASPIRE LOT 13356 SUBDIVISION SEWER - DRAWING SCHEDULE & NOTES
B20-12358	ZUCCOLI ASPIRE LOT 13356 SUBDIVISION SEWER - NOTES & DETAILS
B20-12359	ZUCCOLI ASPIRE LOT 13356 SUBDIVISION SEWER - LAYOUT PLAN
B20-12360	ZUCCOLI ASPIRE LOT 13356 SUBDIVISION SEWER - LONGITUDINAL PLAN

STANDARD DRAWINGS

DRAWING NO.	REVISION	DRAWING TITLE
W2-1-01	8	TYPE 1 SEWER CONNECTION DN150
W2-1-04	7	SEWER CONNECTION LAYOUTS DN150
W2-1-05	6	INTERMEDIATE & TERMINAL INSPECTION OPENINGS LIGHT & HEAVY DUTY ARRANGEMENTS
W2-1-06	2	TERMINAL MAINTENANCE SHAFT AND PROPERTY CONNECTION DETAIL
W2-1-07	1	INTERMEDIATE AND TERMINAL INSPECTION OPENING ARRANGEMENTS
W2-1-09	4	MAINTENANCE SHAFT SEWER CONNECTIONS DN 150
W2-1-10	2	TYPE 5 SEWER CONNECTIONS DN 150
W2-1-11	1	ACCESS CHAMBER CONNECTION DN150 - DN225
W2-2-01A	3	ACCESS CHAMBERS CIRCULAR CHAMBERS (UP TO 6.0M DEEP)
W2-2-01D	3	ACCESS CHAMBERS NOTES FOR CONSTRUCTION
W2-2-02	6	ACCESS CHAMBERS PRECAST CHAMBERS (UP TO 6.0M DEEP WITH MAINS LESS THAN DN450)
W2-2-03	5	ACCESS CHAMBERS EXTERNAL & INTERNAL DROPS TYPES 1-4
W2-2-07	4	MAINTENANCE SHAFT TYPICAL ARRANGEMENT
W2-2-08	2	MAINTENANCE SHAFT PIPELINE CONNECTION DETAILS
W1-1-33	1	SERVICES PROPERTY CONNECTIONS - THRUST/DIRECTIONAL DRILLING

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

DESIGN CERTIFICATION

CERTIFIER'S NAME: SAM WARNER

PWC ACCREDITATION CODE: DESCERTBL69

DATE: 20.05.21 SIGNATURE: .....

LEGEND

PROPOSED WORKS

- 12.00 — DESIGN SURFACE CONTOURS
- 12.00 — EXISTING SURFACE CONTOURS
- EXISTING BATTER
- EXISTING ROAD CENTER LINE
- EXISTING KERB
- S — EXISTING SEWER MAIN
- RM — EXISTING SEWER RISING MAIN
- SWD — EXISTING STORMWATER MAIN
- W — EXISTING WATER MAIN
- EXISTING WATER PROPERTY CONNECTION
- E — EXISTING ELECTRICAL
- DEVELOPMENT BOUNDARY
- LOT BOUNDARY
- PROPOSED BATTER
- S — SEWER MAIN
- AC — S — SEWER ACCESS CHAMBER
- TMS — S — SEWER TERMINAL MAINTENANCE SHAFT
- PROPOSED WATER PROPERTY CONNECTION
- RWD — PROPOSED STORMWATER PROPERTY CONNECTION
- PROPOSED STORMWATER PROPERTY CONNECTION
- PROPOSED ELECTRICAL PILLAR
- E — PROPOSED ELECTRICAL (UNDERGROUND)
- DRIVEWAY (FUTURE)
- EXISTING FOOTPATH
- EXISTING STORMWATER SIDE ENTRY PIT
- EXISTING STORMWATER PROPERTY CONNECTION
- EXISTING ELECTRICAL DISTRIBUTION PILLAR
- P — EXISTING ELECTRICAL SUBSTATION

ABBREVIATION

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

EP ALLOCATION

ZONE	ALLOWANCE (EP)	LOTS/UNITS	AREA (m^2)	POPULATION ALLOCATION
		SUBDIVISION	SUBDIVISION	TOTAL
SINGLE DWELLING	3.5 EP / LOT	10	4,131.1	35 EP
TOTAL				35 EP

AS CONSTRUCTED

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, 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 SERVICES 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 MGA 94 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 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.

SEWER

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

S.2. SEWER SHALL BE 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 IN MGA AND LEVELS TO AHD OF ALL MAINTENANCE HOLES, MAINTENANCE SHAFTS, INSPECTION OPENINGS, SEPARATION DISTANCES/LEVELS TO CROSSING SERVICES AND ALL OTHER VALUES REQUIRED TO CERTIFY COMPLIANCE OF THE DRAWINGS.

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

S.5. MAINTENANCE HOLES/MAINTENANCE 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 HOLES OR MAINTENANCE SHAFT COVER WITH THE IDENTIFYING NUMBER AS SHOWN ON THE DRAWINGS.

S.7. FLEXIBLE JOINTS WITH CONCRETE SURROUND SHALL BE CONSTRUCTED ON BOTH UPSTREAM AND DOWNSTREAM SIDES OF THE MAINTENANCE HOLES. CONCRETE SURROUND CONSTRUCTED 300mm THICK WITH 4 x N12 BAR AT EACH CORNER. EACH N12 BAR TO BE COGGED AND EPOXIED MIN 50mm INTO MAINTENANCE HOLE WALL WITH A MIN 50mm COVER.

S.8. DEPTH TO INVERT AT MAINTENANCE HOLES ARE 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) OF DIFBL BENDS FOR SEWER RISING MAINS, UNLESS NOTED OTHERWISE.

S.13. MARKING TAPE COLOURED ORANGE AND MARKED 'SEWER MAIN' SHALL BE LAID CONTINUOUSLY AND LOCATED 300mm ABOVE THE SEWER PIPEWORK

S.14. 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.

MINIMUM REQUIRED INSPECTIONS BY HYDRAULIC CERTIFIER - SEWER

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 MAIN/MAINTENANCE HOLE/SHAFT WITH DOUBLE ISOLATION, OR MAIN/SERVICE COMPLETED WAITING FOR CONNECTION TO MAIN/MAINTENANCE HOLE/ SHAFT. ALL THRUST BLOCKS INSTALLED (RISING MAINS). VERIFY AS CONSTRUCTED INFORMATION.

INSPECTION 3

ALL JOINTS EXPOSED, CARRY OUT AIR TEST BEFORE UNDERGOING HYDROSTATIC (GRAVITY OR PRESSURE (RISING MAINS), AND CCTV INSPECTION (GRAVITY) INSPECTION 3 NOT REQUIRED IF TOTAL LENGTH IS LESS THAN 6m AND THERE ARE NO MAINTENANCE HOLES/SHAFTS.

INSPECTION 4

CONDUCT HANDOVER WITH POWER AND WATER.

INSPECTION 5

FINAL INSPECTION TO ENSURE ALL OUTSTANDING ITEMS/DEFECTS ARE COMPLETE FOR CLEARANCE.

ADG PROJECT **20696** DRG No. **13356_500**

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

AMENDMENTS

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ZUCCOLI aspire

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.

PowerWater
NORTHERN TERRITORY

DES	DT
DRN	DT
CHK	SW
APPD	SW
SCALE	N.T.S
ISSUED	A1
ALL DIM. IN m	
DRAFTING STANDARD TO A.S.1100	

DARWIN REGION - ZUCCOLI ASPIRE
LOT 13356 SUBDIVISION
SEWER
DRAWING SCHEDULE & NOTES

DRAWING NUMBER B20-12357

CAD PRODUCT - DO NOT AMEND MANUALLY

1 AMDT