

Friday, 19 July 2024

Our Ref: A23.122-RPT-BMPC\_Stage9\_1\_FINAL



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Name: Michael Mignacca                      Project No.: A23.122\_QPG  
Company: QUBE Property Group              Enquiries: Daniel Panickar  
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## **Bushfire Management Plan Compliance Certification: Stage 9 Apsley Estate, Mandogalup**

### **Document Purpose**

Western Environmental Approvals Pty Ltd (WEPL) has prepared this Bushfire Management Plan (BMP) compliance report for Stage 9 of Apsley Estate, Mandogalup (the subject site; Figure 1). Lots within Stage 9 are subject to Western Australian Planning Commission (WAPC) subdivision approval WAPC Ref. 155567.

This report provides a post-subdivisional works compliance assessment of bushfire management measures required to clear Condition 30 of subdivision approval as follows:

*30. Information is to be provided to demonstrate that the developer responsibilities contained in the approved Bushfire Management Plan have been implemented during subdivision works. Advice: The landowner/applicant is advised that the current plans referred to are: Bushfire Management Plan – Lot 682 Rowley Road, Mandogalup prepared by Strategen Environmental dated November 2017.*

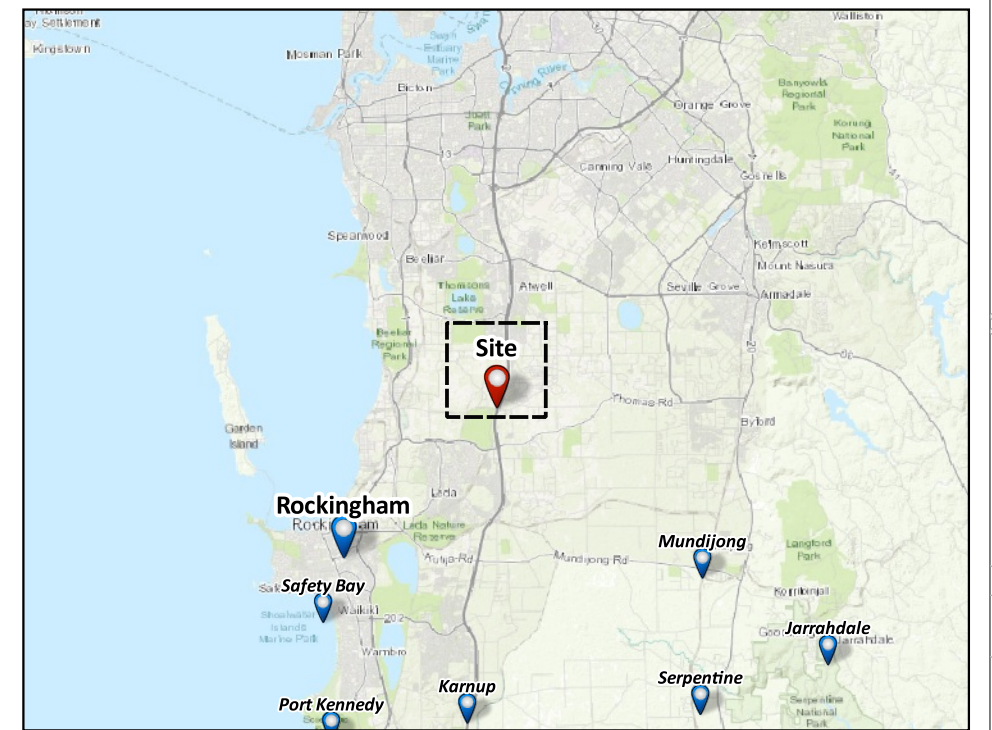
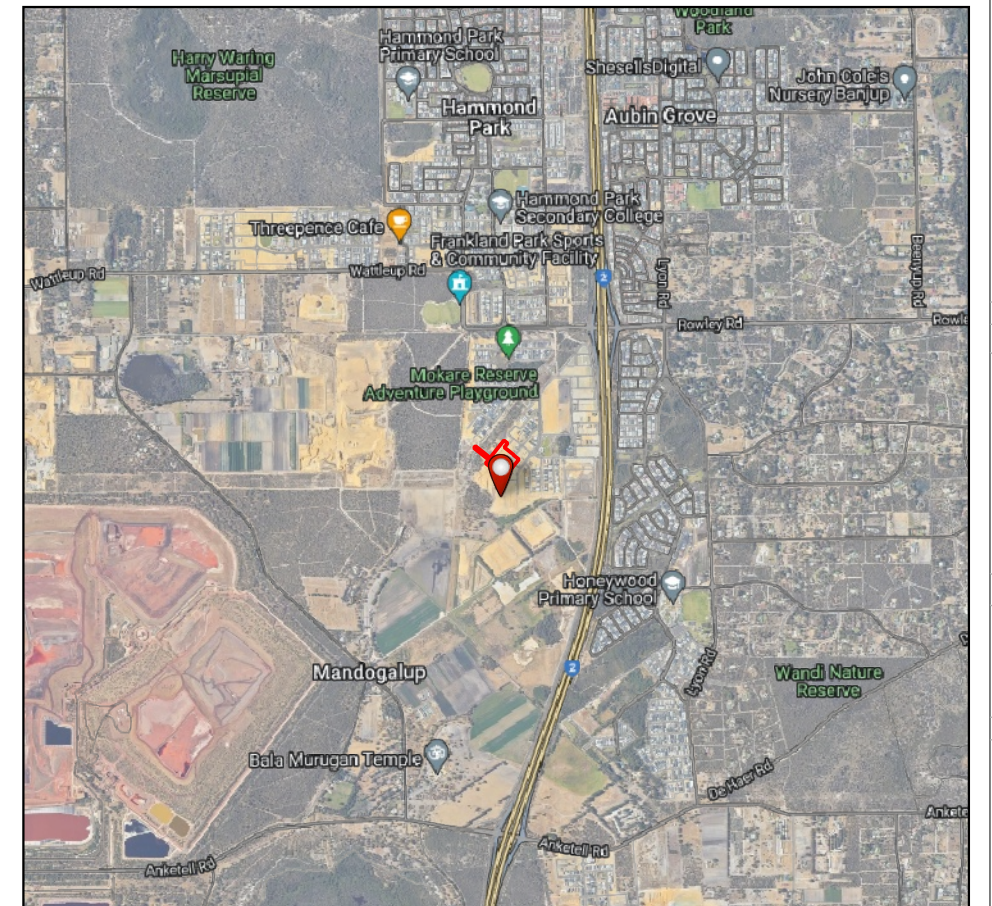
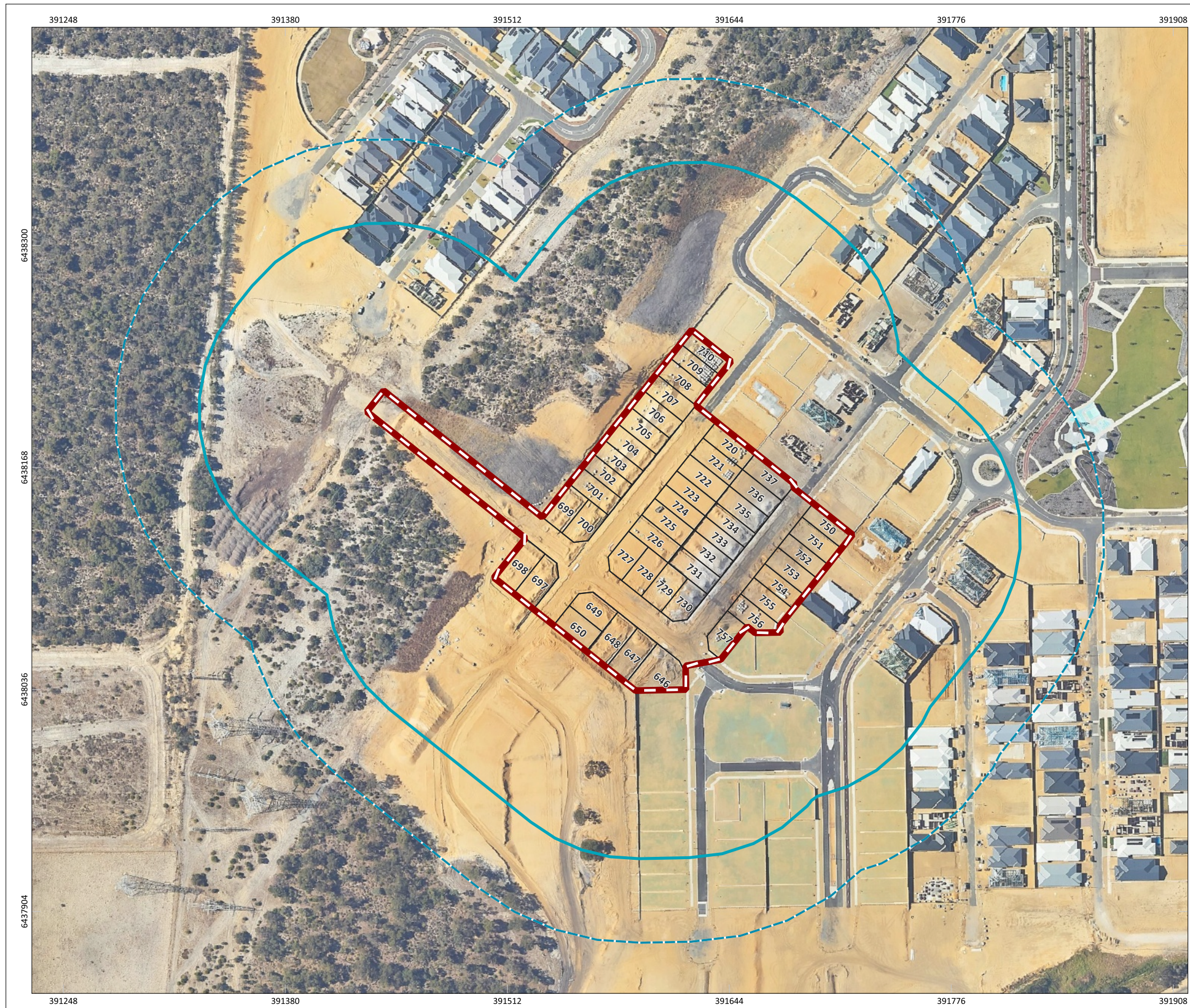
The approach for preparation of this BMP compliance report is consistent with Section 4.2 of the *Guidelines for Planning in Bushfire Prone Areas v 1.4* (the Guidelines; WAPC 2021).

### **Compliance Assessment**

Strategen (2017) includes 17 bushfire management measures that are required to ensure the proposed development will comply with the bushfire protection criteria in the Guidelines. A bushfire risk assessment and compliance assessment were undertaken to determine if the relevant bushfire management measures documented in the endorsed BMP have been implemented (Table 1).

Some of the management measures in Strategen (2017) are difficult to assess compliance against due to the way they are written. In addition, some subdivisional works were still being completed at the time of assessment. Based on our assessment however, WEPL can confirm that the relevant bushfire management measures detailed in the endorsed BMP have been implemented as intended, or have been progressed to a point that they are likely to be compliant, once completed.





**Figure 1: Site Overview**

	PROJECT/REPORT NAME Bushfire Attack Level Report Stage 9 Apsley Estate, Mandogalup		<b>Legend</b> Subject Site Lots Buffer 100m Buffer 150m	<table border="1"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original issue</td> <td>SM</td> <td>BF</td> <td>19/7/2024</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No	Description	Drawn	Approved	Date	A	Original issue	SM	BF	19/7/2024															
	No	Description			Drawn	Approved	Date																						
A	Original issue	SM	BF	19/7/2024																									
SCALE 1:2,644	SHEET SIZE A3 COLOUR	CLIENT QUBE Property Group	PROJECT NUMBER A23.122	VERSION 0																									
COORDINATE REFERENCE SYSTEM GDA2020 / MGA zone 50		DRAWN BY / REVIEWED BY SM/BF	DATE 19/7/2024																										
DATA SOURCE LANDGATE AERIAL IMAGERY Summer 2023		NOTES: Cadastral boundary (LGATE-002), Base map ESRI Topo, Townsites (LGATE-248).																											



**Table 1: BMP Compliance Assessment**

BMP Ref.	Action	Implementation status	Compliance assessment
1a	Establish and maintain bushfire fuels within all residential lots to achieve exclusion Clause 2.2.3.2 (f) of AS 3959.	All areas of land excluded as non-vegetated areas or low threat vegetation in the BMP were consistent with these exclusions at the time of assessment (refer to Plate 1 and Plate 2 in Appendix A).	<b>Compliant.</b>
1b	Establish and maintain portions of POS to be cleared/excluded as depicted on Figure 4 ( <i>of the BMP</i> ) in a low threat state to achieve exclusion Clause 2.2.3.2 (f) of AS 3959.	No Public Open Space (POS) areas exist within Stage 9.	<b>Not applicable.</b>
1c	Maintain new road verges in a low threat state to achieve exclusion Clause 2.2.3.2 (f) of AS 3959.	Road verges have been cleared and will be landscaped to achieve the desired exclusion clauses as per the Roadworks layout plan in Appendix B. Refer to Plate 3 in Appendix A which depicts managed road verges in the adjacent stage of Apsley Estate.	<b>Not complete, compliance likely.</b>
1d	Establish and maintain Western Power easement in a low threat state to achieve exclusion Clause 2.2.3.2 (f) of AS 3959.	The Western Power easement is subject to an approved landscaping plan that was developed post approval of the BMP (Strategen, 2017). This incorporates: areas to be maintained as Asset Protection Zones; low threat vegetation and non-vegetated areas; and retained banksia woodland. Retention of vegetation was not contemplated in Strategen (2017), however WEPL are comfortable that with the considered design of the landscaping plan, the intent of BMP action 1d (i.e. no lots in BAL-FZ or BAL-40 areas) will be met.	<b>Not applicable.</b>
1e	Establish and maintain Planning Control Area in a low threat state to achieve exclusion Clause 2.2.3.2 (f) of AS 3959.	The Planning Control Area does not exist within Stage 9.	<b>Not applicable.</b>
1f	Establish and maintain onsite low fuel buffers for development stages to achieve exclusion Clause 2.2.3.2 (f) of AS 3959.	All classifiable vegetation within 100 m of Stage 9 that is within neighbouring stages of Apsley Estate has been removed.	<b>Compliant.</b>



BMP Ref.	Action	Implementation status	Compliance assessment
1g	Implement staged building exclusion for lots adjoining the western, eastern and southwestern boundaries of the project area impacted by BAL-40 or BAL-FZ, as depicted on Figure 4 (of the BMP), based on progress of clearing within Lot 2 to the west, Lot 9033 to the east and balance Lot 682 to the southwest.	Development of lots at direct bushland interfaces have been delayed through staging and do not form part of Stage 9.	<b>Not applicable.</b>
2a	Undertake updated BAL assessment via BAL compliance checks.	Updated BAL assessment is included in Appendix C.	<b>Compliant.</b>
2b	Construct buildings in accordance with AS 3959, either in accordance with this BMP or future reassessment of the BAL to support the building permit stage.	This applies to construction of dwellings and not subdivision clearance.	<b>Not applicable.</b>
3a	Provide and maintain temporary emergency access way as right of way or public access easements in gross with sign posting and any gates unlocked.	The compliant temporary Emergency Access Way (EAW) has been constructed (refer to Plate 4 and Plate 5 in Appendix A and Figure 1).	<b>Compliant.</b>
3b	Construct public roads, cul-de-sacs, battle-axes and emergency access way in accordance with subdivision approval and relevant technical requirements of the Guidelines.	The road network had been constructed at the time of assessment (refer to Plate 6 in Appendix A).	<b>Compliant</b>
3c	Construct firebreaks around boundaries of relevant lots in accordance with requirements of the City of Kwinana annual firebreak order.	Lots within Stage 9 do not require firebreaks as per City of Kwinana Firebreak notice.	<b>Not applicable.</b>
4a	Construct reticulated water supply and network of hydrants in accordance with DA approval and water authority, DFES and City technical requirements.	Water supply and hydrant network had been constructed time of assessment (refer to Plate 7 in Appendix A).	<b>Compliant</b>
5a	Reassess BALs for individual lots.	This applies to construction of dwellings and not subdivision clearance.	<b>Not applicable.</b>



BMP Ref.	Action	Implementation status	Compliance assessment
5b	Place notification on the Certificates of Title of all proposed lots with a BAL rating of 12.5 or above.	Notifications on Titles for lots affected by BAL ratings included in the Deposited Plan in Appendix E.	<b>Compliant.</b>
5c	Comply with the City of Kwinana annual firebreak order.	Lots within Stage 9 are less than 1,499m <sup>2</sup> and do not require firebreaks (refer to Appendix E).	<b>Compliant.</b>
5d	Prepare Bushfire Emergency Evacuation Plans for any vulnerable land uses.	There are no vulnerable land uses within Stage 9.	<b>Not applicable.</b>



## References

Standards Australia (SA). (2018). *Construction of buildings in bushfire-prone areas (AS 3959: 2018)*.

Strategen. (2017). *Bushfire Management Plan: Lot 682 Rowley Road, Mandogalup*. Prepared for QUBE Property Group Pty Ltd.

Western Australian Planning Commission (WAPC). (2015). *State Planning Policy 3.7 Planning in Bushfire Prone Areas*. Government of Western Australia.

Western Australian Planning Commission (WAPC). (2021). *Guidelines for Planning in Bushfire Prone Areas Version 1.4 (including appendices)*. Government of Western Australia.



# **Appendix A: Photographic Evidence**





**Plate 1: Cleared areas within the subject site and surrounds**



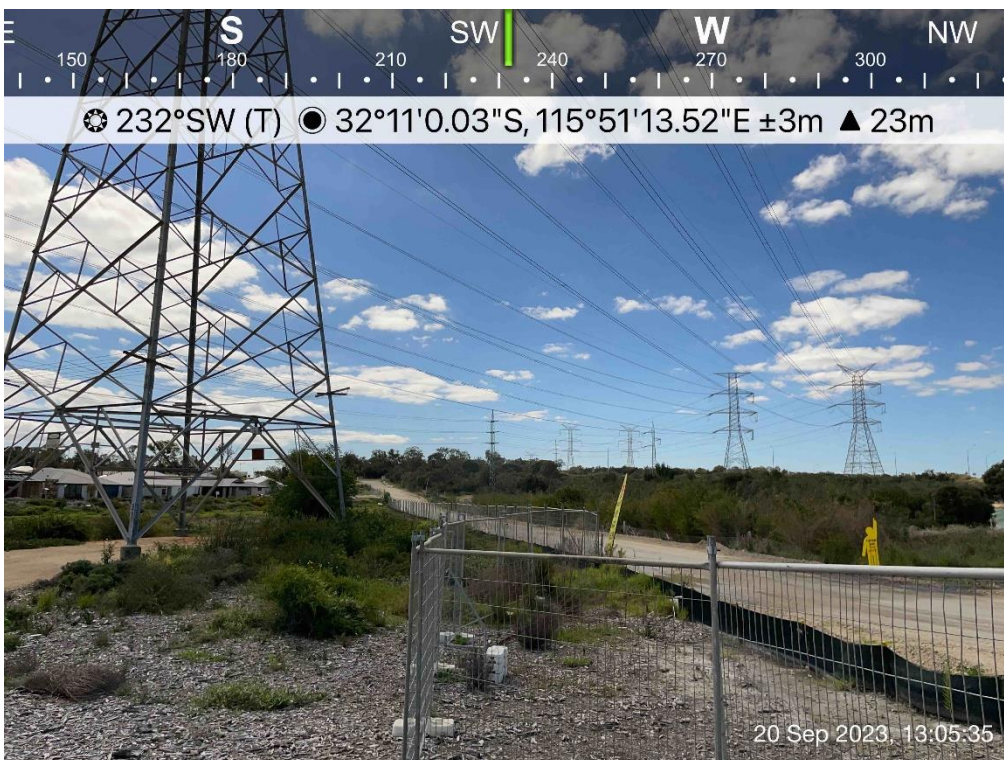
**Plate 2: Cleared areas and roads within the subject site and surrounds**







**Plate 3: Developed areas adjacent to the subject site**



**Plate 4: Emergency Access Way**





Plate 5: Entrance to Emergency Access Way showing unlocked gates



Plate 6: Roads within the subject site



Plate 7: Reticulated water connection throughout Stage 9.



# **Appendix B: Roadworks Plan**



**LEGEND**

- PROPOSED ROAD
- EXISTING ROAD
- FUTURE ROAD
- PROPOSED DRAINAGE
- EXISTING DRAINAGE
- FUTURE DRAINAGE
- PROPOSED SEWER
- EXISTING SEWER
- FUTURE SEWER
- PROPOSED WATER
- EXISTING WATER
- EXISTING POWER
- EXISTING TELSTRA
- EXISTING GAS
- DRAINAGE PIT LABEL

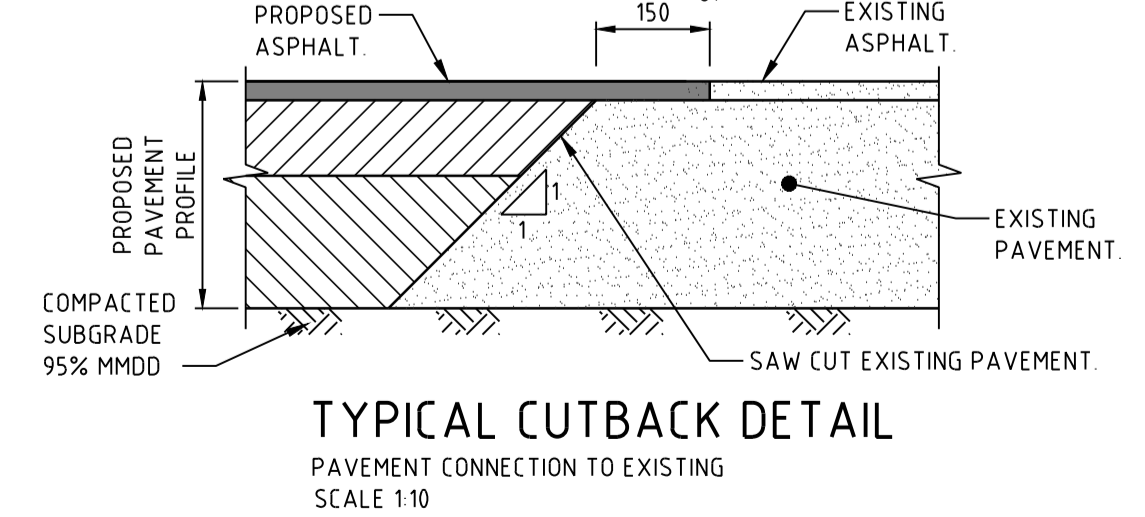
PROPOSED	EXISTING	FUTURE
U/S 22.40 300/158 26.8 D/S 22.23	U/S 22.40 300/158 26.8 D/S 22.23	U/S 22.40 300/158 26.8 D/S 22.23

- PROPOSED DUAL USE PATH WITH PRAM RAMP & TACTILE PAVERS
- BLACK ASPHALT PAVEMENT 25mm AC10
- BRICK PAVING
- RED ASPHALT PAVEMENT 25mm AC10
- RED ASPHALT PAVEMENT 25mm AC10 (CYCLEPATH)
- BLACK ASPHALT PAVEMENT 40mm AC10
- BLACK ASPHALT PAVEMENT 50mm AC10 INTERSECTION MIX
- ROAD BASE AND PRIME (3.0m PAST LIMIT OF PAVEMENT)
- CONSTRUCT FULL DESIGN TO PRIMER SEAL STAGE ONLY
- POST WITH STREET NAME PLATES
- CHEVRON BOARD
- STAGE BOUNDARY
- WATER RPPM
- MOUNTABLE KERB
- SEMI-MOUNTABLE KERB
- REINFORCED FLUSH KERB
- FLUSH KERB
- BARRIER KERB
- 12m KERB RAMP

**STAGE NOTES**

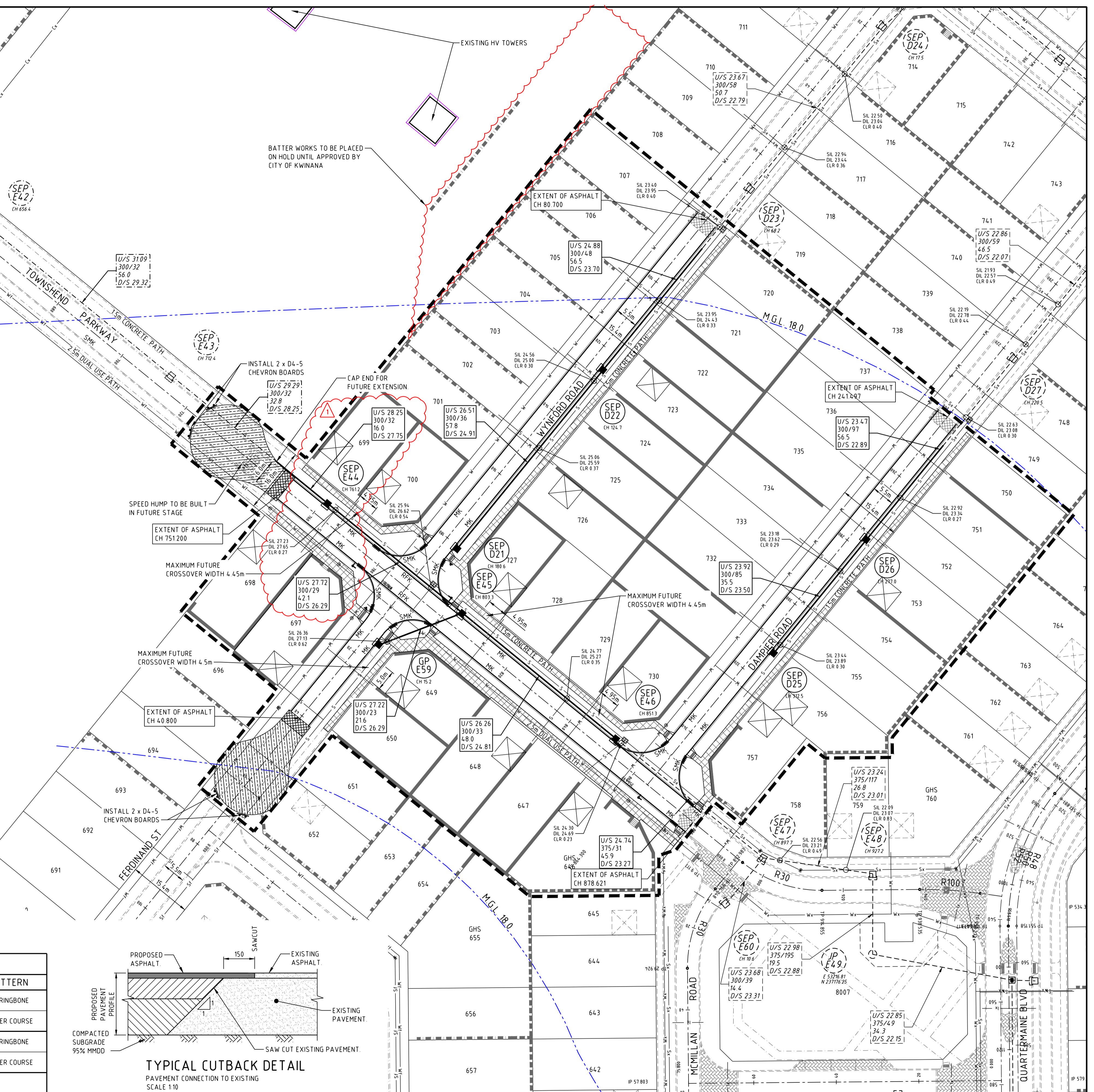
- LOCAL AUTHORITY - CITY OF KWINANA
- PROJECT SURVEYOR - MNG
- LANDSCAPE ARCHITECT - PLAN E
- REFERENCE DRAWINGS:
  - SEWERAGE RETICULATION PLAN 6027-09-400
  - WATER RETICULATION PLAN 6027-09-500
  - INTERSECTION DETAILS 6027-09-620
  - STREETSCAPE PLAN 6027-09-630
- DRAINAGE MANHOLES TO BE LAID ON 15m BEHIND THE FACE OF KERB UNLESS NOTED OTHERWISE
- THE CONTRACTOR TO HYDRO MULCH ALL VERGES AND LOT AREAS
- NO HYDRO MULCH TO P.O.S
- KERB TRANSITIONS TO ALLOW A MINIMUM 7.0m CLEARANCE FOR DRIVEWAY LOCATIONS
- CONTRACTOR TO USE CONCRETE TACTILE PAVERS IN BRICK PAVED AREAS.
- CONTRACTOR TO ENSURE VERGE IS GRADED AT 2% UNLESS OTHERWISE NOTED
- ALL PATHS TO BE CONSTRUCTED AS TYPE 3, AS SHOWN ON CITY OF KWINANA STD-R07
- REFER KERB GRADING PLANS FOR PARKING BAY SETOUT
- MINIMUM PAVEMENT
  - SUBGRADE - 95% MDD
  - LIMESTONE - 150mm AT 95% MDD
  - BASE COURSE - 100mm AT 98% MDD
  - PRIMER SEAL - 7mm

No	TYPE	COLOUR	PATTERN
①	BRICKMAKERS EASIPAVE 80 (220x110x80mm)	CHARCOAL	HERRINGBONE
	BRICKMAKERS EASIPAVE 80 (220x110x80mm)	CHARCOAL	HEADER COURSE
②	BRICKMAKERS EASIPAVE 80 (220x110x80mm)	SILVER	HERRINGBONE
	BRICKMAKERS EASIPAVE 80 (220x110x80mm)	SILVER	HEADER COURSE
③	BRICK PAVING BY OTHERS		



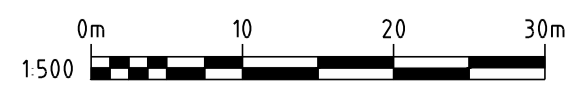
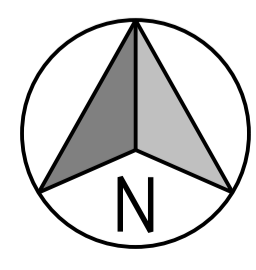
**STANDARD NOTES**

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATION AND REQUIREMENTS OF THE LOCAL AUTHORITIES
- THE CONTRACTOR SHALL LIAISE WITH ALL PUBLIC UTILITIES PRIOR TO COMMENCING WORK TO PHYSICALLY LOCATE ALL SERVICES WITHIN THE CONTRACT SITE
- ALL LEVELS SHALL BE LOCATED FROM ESTABLISHED BENCHMARKS AS ESTABLISHED BY THE PROJECT SURVEYOR
- ALL CONNECTIONS TO EXISTING WORK SHALL BE SMOOTH AND OF NEAT APPEARANCE
- REFER INTERSECTION DETAIL DRAWINGS FOR CORNER RADII AT INTERSECTIONS AND CUL-DE-SACS
- ALL KERBING TO BE MOUNTABLE TYPE UNLESS NOTED OTHERWISE
- TRANSITION BETWEEN DIFFERENT KERB TYPES SHALL BE MADE OVER A LENGTH OF 2m
- WHERE POSSIBLE, STREET SIGNS TO BE STRAPPED TO STREET LIGHT POLES
- ALL CUTS THROUGH LIMESTONE SHALL BE EXCAVATED TO A DEPTH OF 100mm BELOW SUB-GRADE LEVEL AND 200mm BELOW THE FINISHED LEVEL OF VERGES
- STORMWATER PIPES SHALL BE REINFORCED CONCRETE (CLASS 2) R.R.J. UNLESS NOTED OTHERWISE
- DRAINAGE PIPES TO BE INSTALLED IN ACCORDANCE WITH AS3725 CONTRACTOR TO CONSIDER GROUND CONDITIONS, HAUNCHING, TRENCH CONDITIONS, LOAD PARAMETERS AND COMPACTION METHODS TO ENSURE INTEGRITY OF PIPE
- MANHOLES AND SIDE ENTRY PITS SHALL BE LOCATED IN POSITIONS SHOWN IRRESPECTIVE OF THE INDICATED PIPE LENGTHS AND WHERE APPLICABLE THE PITS SHALL BE LOCATED AT THE ACTUAL LOW POINT
- MINIMUM COVER TO DRAINAGE PIPES TO BE 600mm UNLESS NOTED OTHERWISE. CLEARANCE WITH ALL OTHER SERVICES TO BE 150mm. CONTRACTOR TO ADVISE OF ANY DISCREPANCIES
- WHERE A SEWER LINE INTERSECTS WITH A STORMWATER DRAINAGE LINE AND THE SEWER PASSES OVER THE DRAIN THEN THE SEWER SHALL HAVE A TIMBER PILE AND KEEL PROVIDED FOR THE FULL EXTENT NECESSARY TO SUPPORT THE SEWER DURING EXCAVATION FOR THE DRAIN
- THE ROADWORKS AND DRAINAGE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SEWERAGE RETICULATION PLAN(S) AND THE STANDARD DRAWING(S)
- STORMWATER ACCESS CHAMBER LIDS IN VERGES ARE TO BE SET TO MATCH VERGE CROSSFALLS AND LEVELS
- PRAM RAMPS, ROAD CROSSINGS AND MEDIANS TO HAVE GLUE, STICK AND SCREW ON TACTILE PAVERS BY PERTH TACTILE PAVERS (OR SIMILAR APPROVED)
- LINE MARKING TO BE PROVIDED TO ALL LANEWAYS
- CONTRACTOR TO ENSURE ALL ROOTS OF ALL RETAINED TREES ARE PROTECTED DURING CONSTRUCTION
- FOOTPATHS TO BE 1.5m WITH 0.3m OFFSET TO ROAD RESERVE BOUNDARY OR 2.5m WITH 0.5m OFFSET. FOOTPATHS TO BE INCREASED IN WIDTH BY OFFSET WIDTH AND OFFSET REMOVED ADJACENT RETAINING WALLS



P:6027-Macquarie/6027-09-610.dwg, 28/10/2023 8:59:31 AM, Alistair, Digital Signing PDF, p3, 11, - CW Reference

REV	DATE	DRN	CKD	APP	AMENDMENT
1	26.10.23	ARH	MH		SEP E44 RE-LOCATED 3m
0	20.10.23	CT	A	A. THOMSON	ISSUED FOR CONSTRUCTION
B	18.08.23	AC	SM	A. THOMSON	ISSUED FOR APPROVAL
A	03.04.23	ARH	SM	A. THOMSON	ISSUED FOR APPROVAL



**COSWILL & WEBLEY CONSULTING ENGINEERS**

Mailing Address: PO Box 680, Subiaco WA 6004  
 Street Address: B12 (Level 2) 431 Roberts Road, Subiaco WA 6008

Copyright notice and disclaimer text.

**QUBE**

CLIENT: AVRIL THOMSON

DESIGNED: ARH

SCALE: 1:500

PROJECT: APSLEY - STAGE 09

TITLE: ROADWORKS AND DRAINAGE

WAPC No: 155567

DRAWING No: 6027-09-610

REVISION: 1

ORIGINAL SIZE: A1

# **Appendix C: Bushfire Attack Level (BAL) Assessment**



## Updated BAL assessment




An updated Bushfire Attack Level (BAL) assessment for Stage 9 Apsley Estate has been undertaken for the subject site to assist assessing compliance with the endorsed BMP. The assessment has been undertaken in accordance with *Australian Standard AS 3959: 2018 Construction of Buildings in Bushfire Prone Areas* (AS 3959: 2018; SA 2018) Simplified Procedure (Method 1).

### *Vegetation Classification Assessment*

All vegetation within 100 m of Stage 9 was classified in accordance with Clause 2.2.3 of AS 3959: 2018. Each distinguishable vegetation class with the potential to determine the BAL is identified in Table 2 and presented in Figure 2.




**Table 2: Vegetation Classification**

Plot 1	Class D Scrub
<p><b>Photo 1</b></p> <p>Trees up to 6 m in height, dominated by Banksia species. The vegetation structure is multi-tiered, with foliage cover exceeding 30%.</p> <p>The slope under this vegetation was assessed to be upslope / flat land.</p>	 <p>Apr 16, 2024 12:07:11 PM  -32°11'13.49015" S 115°50'53.6022" E ±3.83m  163° S</p>
<p><b>Photo 2</b></p> <p>Trees up to 6 m in height, dominated by Banksia species. The vegetation structure is multi-tiered, with foliage cover exceeding 30%.</p> <p>The slope under this vegetation was assessed to be upslope / flat land.</p>	 <p>Apr 16, 2024 11:53:35 AM  -32°11'10.13491" S 115°51'1.19389" E ±3.85m  18° N</p>
<p><b>Photo 3</b></p> <p>Trees up to 6 m in height, dominated by Banksia species. The vegetation structure is multi-tiered, with foliage cover exceeding 30%.</p> <p>The slope under this vegetation was assessed to be upslope/flat land.</p>	 <p>Apr 16, 2024 11:56:21 AM  -32°11'12.40584" S 115°50'59.39267" E ±2.89m  243° SW</p>





<b>Plot 1</b>	<b>Class D Scrub</b>
<p><b>Photo 4</b></p> <p>Trees up to 6 m in height, dominated by Banksia species. The vegetation structure is multi-tiered, with foliage cover exceeding 30%.</p> <p>The slope under this vegetation was assessed to be upslope/flat land.</p>	 <p>Apr 16, 2024 12:08:46 PM  -32°11'13.0384" S 115°50'53.38139" E ±3.84m  251° W</p>
<b>Plot 1</b>	<b>Class D Scrub</b>
<p><b>Photo 5 (shows vegetation to the west of the photo point)</b></p> <p>Trees up to 6 m in height, dominated by Banksia species. The vegetation structure is multi-tiered, with foliage cover exceeding 30%.</p> <p>The slope under this vegetation was assessed to be upslope/flat land.</p>	 <p>Apr 16, 2024 12:23:22 PM  -32°11'24.59034" S 115°50'59.59612" E ±2.95m  288° W</p>
<b>Plot 2</b>	<b>Excluded - clause 2.2.3.2 (f)</b>
<p><b>Photo 6</b></p> <p>This is land within Apsley Estate which has previously been cleared for development. There is some vegetation present in the form of grasses and herbs, however the density of the vegetation within this plot is highly unlikely to support the spread of a bushfire.</p> <p>This land is due to be developed.</p>	 <p>Apr 16, 2024 12:11:21 PM  -32°11'13.32253" S 115°50'53.47769" E ±3.77m  301° NW</p>



**Plot 2** **Excluded - clause 2.2.3.2 (f)**

**Photo 7**

This is land within Apsley Estate which has previously been cleared for development. There is some vegetation present in the form of grasses and herbs, however the density of the vegetation within this plot is highly unlikely to support the spread of a bushfire.

This land is due to be developed.



**Plot 2** **Excluded - clause 2.2.3.2 (e) & (f)**

**Photo 8**

Area east of the subject site which has been cleared and is being developed. These areas consist of roads, dwellings, buildings materials and other infrastructure.



**Plot 2** **Excluded - clause 2.2.3.2 (e) & (f)**

**Photo 9**

Low-threat vegetation in the form of parkland and public gardens. This vegetation is maintained regularly and the area is fully reticulated.



<p><b>Plot 2</b></p>	<p><b>Excluded - clause 2.2.3.2 (e) &amp; (f)</b></p>
<p><b>Photo 10</b> Cleared areas which are completely devoid of vegetation adjacent to the subject site.</p>	
<p><b>Plot 2</b></p>	<p><b>Excluded - clause 2.2.3.2 (e) &amp; (f)</b></p>
<p><b>Photo 11</b> Areas which are devoid of vegetation in the area surrounding the subject site.</p>	
<p><b>Plot 2</b></p>	<p><b>Excluded - clause 2.2.3.2 (e) &amp; (f)</b></p>
<p><b>Photo 12</b> Cleared areas and roads in other stages of the Estate which fall within 150 m of the subject site.</p>	



<p><b>Plot 2</b></p>	<p><b>Excluded - clause 2.2.3.2 (e) &amp; (f)</b></p>
<p><b>Photo 13</b> Cleared areas adjacent to the subject site with some retained trees. The trees constitute low-threat vegetation.</p>	<p>Apr 16, 2024 12:24:03 PM -32°11'24.50867"S 115°50'59.47694"E ±3.81m 335° NW</p> 
<p><b>Plot 2</b></p>	<p><b>Excluded - clause 2.2.3.2 (e) &amp; (f)</b></p>
<p><b>Photo 14</b> Surrounding areas which have been developed and contain residential dwellings along with associated infrastructure and maintained gardens.</p>	<p>Apr 16, 2024 12:09:09 PM -32°11'12.65976"S 115°50'53.82818"E ±4.02m 25° NE</p> 



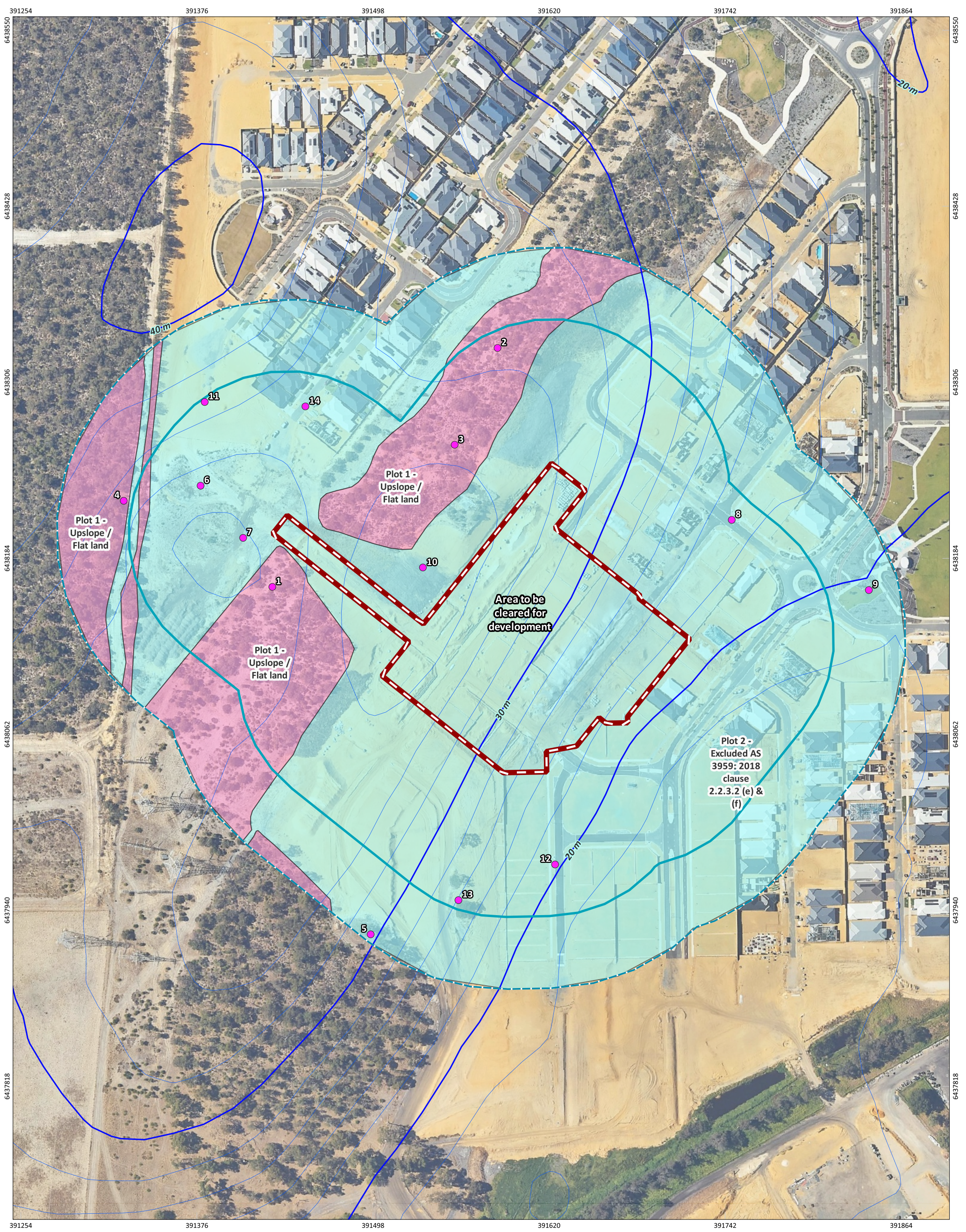


Figure 2: Vegetation Classification

	PROJECT/REPORT NAME Bushfire Attack Level Report Stage 9 Apsley Estate, Mandogalup		<b>Legend</b> Subject Site Buffer 100m Buffer 150m <b>2m Contours (DPIRD-072)</b> Each 10m Each 2m	Photos <b>VegetationBushfire150</b> Class D - Scrub Excluded AS 3959: 2018 2.2.3.2	<table border="1"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original issue</td> <td>SM</td> <td>BF</td> <td>19/7/2024</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No	Description	Drawn	Approved	Date	A	Original issue	SM	BF	19/7/2024															
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A	Original issue	SM	BF	19/7/2024																										
SCALE 1:2,449	SHEET SIZE A3 COLOUR	CLIENT QUBE Property Group	NOTES: Cadastral boundary (LGATE-002). Label corresponds to the vegetation association number.																											
COORDINATE REFERENCE SYSTEM GDA2020 / MGA zone 50	PROJECT NUMBER A23.122	VERSION 0	 Western Environmental Pty Ltd 08 6244 2310   enquiries@western.com.au Level 3/25 Prowse St, West Perth WA 6005 western.com.au																											
DATA SOURCE LANDGATE AERIAL IMAGERY Summer 2023	DRAWN BY / REVIEWED BY SM/BF	DATE 19/7/2024																												

### Relevant Fire Danger Index

The Fire Danger Index for this site has been determined in accordance with Table 2.1 of AS 3959: 2018 and is presented in Table 3.

**Table 3: Fire Danger Index (FDI)**

Relevant Fire Danger Index			
FDI 40 <input type="checkbox"/>	FDI 50 <input type="checkbox"/>	FDI 80 <input checked="" type="checkbox"/>	FDI 100 <input type="checkbox"/>
Table 2.4.5	Table 2.4.4	Table 2.4.3	Table 2.4.2

### Potential Bushfire Impacts

The potential bushfire impact to the site / proposed development from each of the identified vegetation plots are identified below in Table 4.

**Table 4: Method 1 BAL Calculation (BAL Contours)**

Plot	Vegetation classification	Effective slope	Separation distances required (m)				
			BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
1	Class D Scrub	All upslopes and flat land (0 degrees)	<10	10-<13	13-<19	19-<27	27-<100
3	Excluded - clause 2.2.3.2 (e) & (f)	-	No separation distances required - BAL-LOW				

### Determined Bushfire Attack Level (BAL)

The determined Bushfire Attack Level (highest BAL) for the proposed works has been determined in accordance with Clause 2.2.6 of AS 3959: 2018 relevant data from the site assessment shown in Figure 3 and Table 5.

**Table 5: BAL Assessment Summary**

Affected lot	BAL Rating	Construction sections to be consulted in AS 3959: 2018
646	BAL-LOW	3 and 4
647	BAL-LOW	3 and 4
648	BAL-12.5*	3 and 5
649	BAL-12.5	3 and 5
650	BAL-12.5	3 and 5
697	BAL-12.5	3 and 5

Affected lot	BAL Rating	Construction sections to be consulted in AS 3959: 2018
698	BAL-19*	3 and 6
699	BAL-12.5	3 and 5
700	BAL-12.5	3 and 5
701	BAL-12.5	3 and 5
702	BAL-12.5	3 and 5
703	BAL-12.5	3 and 5
704	BAL-12.5	3 and 5
705	BAL-12.5	3 and 5
706	BAL-12.5	3 and 5
707	BAL-12.5	3 and 5
708	BAL-12.5	3 and 5
709	BAL-12.5	3 and 5
710	BAL-12.5	3 and 5
720	BAL-12.5	3 and 5
721	BAL-12.5	3 and 5
722	BAL-12.5	3 and 5
723	BAL-12.5	3 and 5
724	BAL-12.5	3 and 5
725	BAL-12.5	3 and 5
726	BAL-12.5	3 and 5
727	BAL-12.5	3 and 5
728	BAL-12.5*	3 and 5



Affected lot	BAL Rating	Construction sections to be consulted in AS 3959: 2018
729	BAL-LOW	3 and 4
730	BAL-LOW	3 and 4
731	BAL-LOW	3 and 4
732	BAL-LOW	3 and 4
733	BAL-LOW	3 and 4
734	BAL-LOW	3 and 4
735	BAL-LOW	3 and 4
736	BAL-LOW	3 and 4
737	BAL-LOW	3 and 4
750	BAL-LOW	3 and 4
751	BAL-LOW	3 and 4
752	BAL-LOW	3 and 4
753	BAL-LOW	3 and 4
754	BAL-LOW	3 and 4
755	BAL-LOW	3 and 4
756	BAL-LOW	3 and 4
757	BAL-LOW	3 and 4

\*INDICATES THAT THE BAL RATING FOR A FUTURE DWELLING CAN BE REDUCED THROUGH AN APPROPRIATE SETBACK.





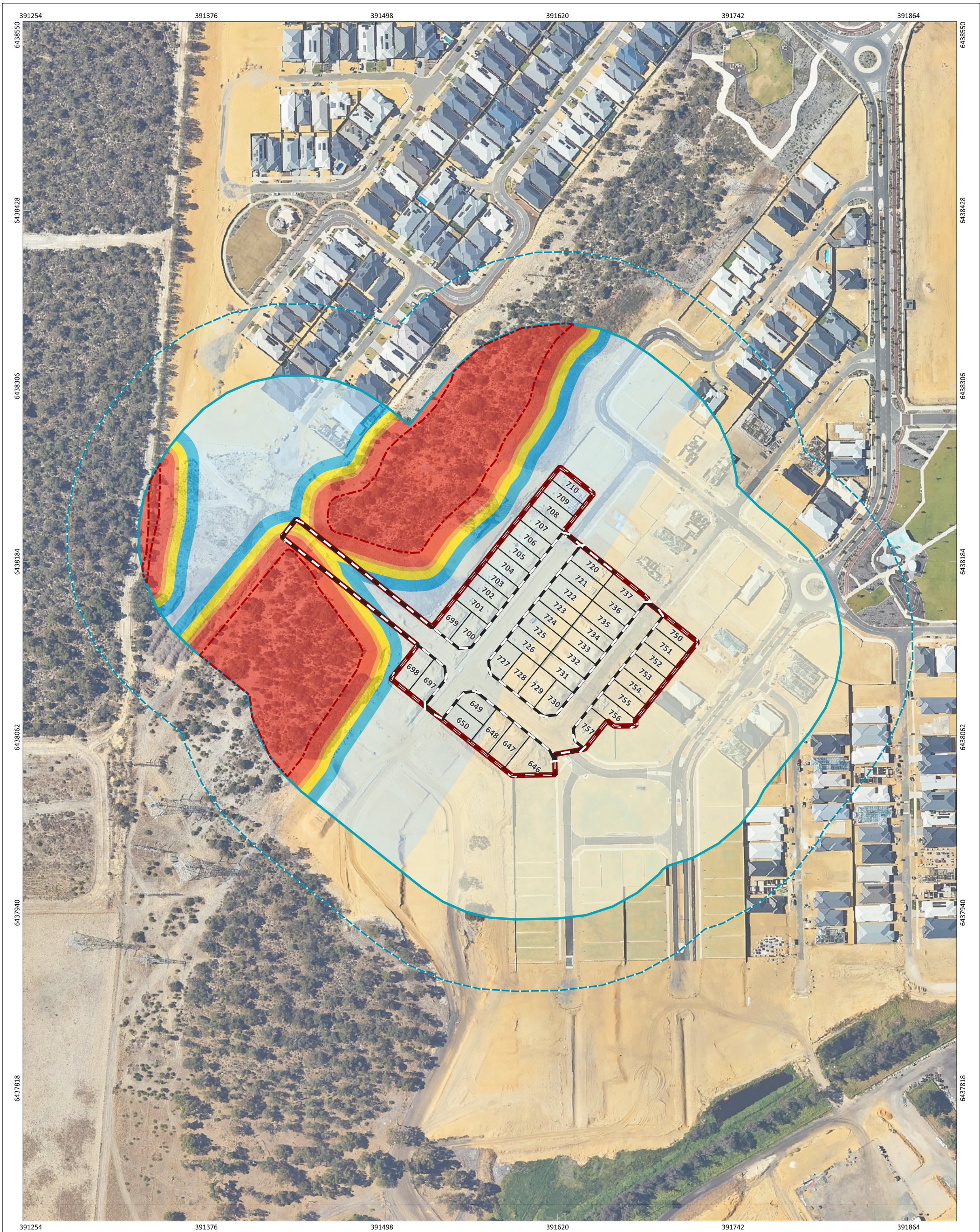


Figure 3: Bushfire Attack Level (BAL) Contours

	<b>PROJECT/REPORT NAME</b> Bushfire Attack Level Report Stage 9 Apsley Estate, Mandogalup		<b>Legend</b> 	<b>Bushfire Attack Level (BAL)</b> 	<table border="1"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original issue</td> <td>SM</td> <td>BF</td> <td>19/7/2024</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No	Description	Drawn	Approved	Date	A	Original issue	SM	BF	19/7/2024															
	No	Description			Drawn	Approved	Date																							
A	Original issue	SM	BF	19/7/2024																										
SCALE 1:2,449	SHEET SIZE A3 COLOUR	CLIENT QUBE Property Group	NOTES: Cadastral boundary (LGATE-002). Label corresponds to the vegetation association number.	<p>Western Environmental Pty Ltd          08 6244 2310   enquiries@western.com.au          Level 3/25 Prowse St, West Perth WA 6005          western.com.au</p>																										
COORDINATE REFERENCE SYSTEM GDA2020 / MGA zone 50	PROJECT NUMBER A23.122	VERSION 0	DRAWN BY / REVIEWED BY SM/BF		DATE 19/7/2024																									
DATA SOURCE LANDGATE AERIAL IMAGERY Summer 2023																														

# **Appendix D: Water Reticulation Plan**



DESCRIPTION	SYMBOL
RETICULATION AREA BOUNDARY	
PROPOSED MAINS	
PROPOSED VALVE (No = 5)	
PROPOSED HYDRANT (No = 2)	
PROPOSED PRELAI LONG SERVICE	
CHANGE IN PIPE SIZE	
FLUSHING POINT (No = 0)	
TEMPORARY BLANK END AND FLUSHING POINT (No = 2)	
CONNECTION BY WATER CORPORATION (No = 3)	
EXISTING MAIN, HYDRANT AND VALVE	
FUTURE MAIN, HYDRANT AND VALVE	
FUTURE DISTRIBUTION MAINS	
PROPOSED RETAINING WALL	
EXISTING RETAINING WALL	
DEFERRED SERVICE	
SERVICE LAID IN THIS STAGE FOR RELEASE IN FUTURE STAGE	
SERVICE LAID IN PREVIOUS STAGE TO BE RELEASED IN THIS STAGE	
SERVICE UNDER RETAINING WALL	
SERVICE IN BELOW GROUND PIT (REFER WC DWG BD62-2-9)	

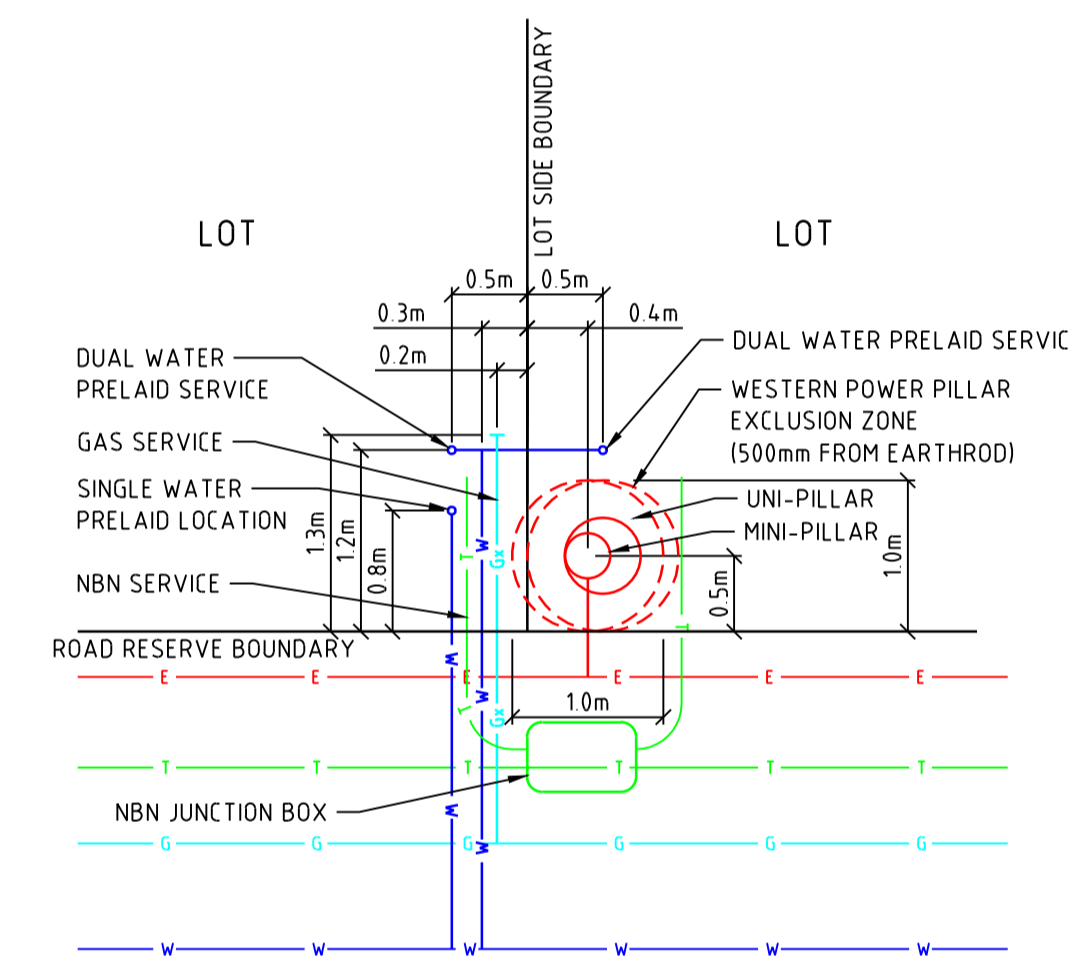
### CONTRACTOR'S RESPONSIBILITY

IT IS THE CONTRACTOR'S RESPONSIBILITY TO CO-ORDINATE THE INSTALLATION OF ALL SERVICES WITHIN THE SUBDIVISION. THE CONSULTANT SHOULD ENSURE THAT THERE IS NO CONFLICT BETWEEN THE POSITIONING OF FULLY PRE-LAI WATER SERVICES WITHIN THE LOT AND AND WESTERN POWER UNDERGROUND POWER CONNECTION PILLARS. THE SUPERINTENDENT SHOULD BE CONSULTED IF AMENDMENTS TO FULLY PRE-LAI SERVICES ARE REQUIRED.

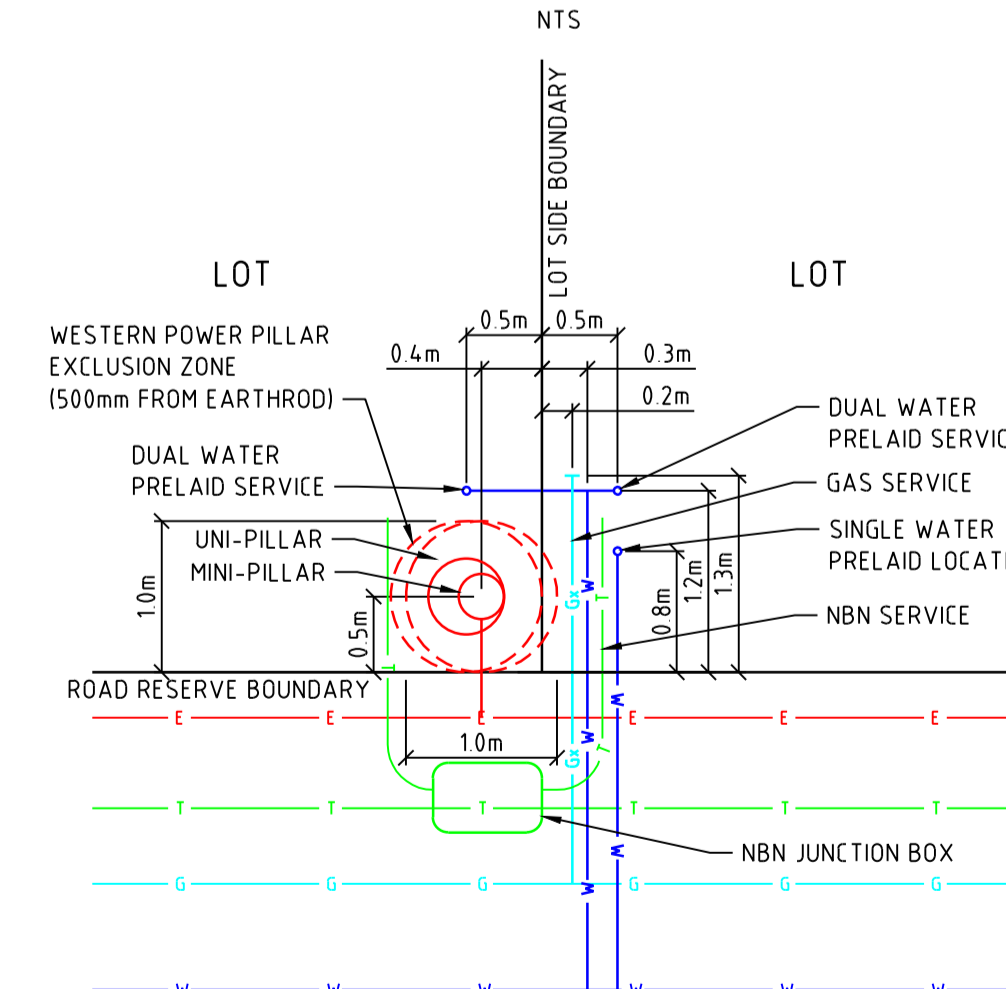
### SERVICES

- ALL WATER MAINS SHALL BE INSTALLED ON 2m ALIGNMENT EXCEPT AS OTHERWISE AGREED.
- FULLY PRE-LAI WATER SERVICES TO BE INSTALLED IN ACCORDANCE WITH W.C. WATER RETICULATION DESIGN STANDARD DS 63 VERSION 3 REVISION 15, DECEMBER 2021 AND READ IN CONJUNCTION WITH W.C. STANDARD ARRANGEMENT DRG No's BD 62-8-15 AND BD62-8-24.
- WATER SERVICE LOCATIONS SHALL BE IN ACCORDANCE WITH THE GUIDELINES FOR POSITIONING CONTAINED IN DRG No. BD62-8-14.
- WHERE POSSIBLE LOTS ARE ARRANGED IN PAIRS WITH A DUAL SERVICE PIPE ENTERING THE RIGHT HAND SIDE OF THE PAIR OF LOTS AND SPLITTING LEFT AND RIGHT TO SUPPLY EACH PAIR OF METERS.
- WHERE SHORT AND LONG SINGLE SERVICES ARE INDICATED THE SERVICE PIPE AND METER SHOULD, IF POSSIBLE, BE LOCATED AT THE LEFT HAND SIDE BOUNDARY OF LOTS.
- FOR A STRAIGHT ROAD RESERVE, SERVICE PIPES SHALL BE ALIGNED AT RIGHT ANGLES TO FRONT BOUNDARIES, RATHER THAN TO THE SUPPLY WATER MAINS.
- WHERE THERE IS A BEND IN THE ROAD RESERVE AT THE SIDE BOUNDARY, THE SERVICE PIPE SHALL BE POSITIONED PARALLEL TO THE LINE BISECTING THE ANGLE.
- FL AND FR (FULLY PRELAI LEFT & RIGHT) INDICATES THE SIDE OF THE LOT WHEN VIEWED FROM THE ROAD FRONTAGE WHICH IS SELECTED FOR ITS METER LOCATION.
- FULLY PRE-LAI WATER SERVICES INSTALLED IN STAIR LANDINGS ARE TO BE INSTALLED IN ACCORDANCE WITH STANDARD WATER CORPORATION DRG No. BD62-2-9.

SERVICES	QTY (No.)
PRELAI SHORT DUAL	8
PRELAI LONG DUAL	11
PRELAI SHORT SINGLE	2
PRELAI LONG SINGLE	0
TOTAL	21
TOTAL NUMBER OF LOTS SERVED	40
NUMBER OF DEFERRED SERVICES	0
EXTENSION	QTY (m)
100 P-16	2719
200 P-16	1204



TYPICAL ALTERNATE SERVICE LOCATIONS PLAN



TYPICAL SERVICE LOCATIONS PLAN

### NOTICE TO CONTRACTOR

IT IS THE CONTRACTORS RESPONSIBILITY TO INVESTIGATE THE NATURE AND LOCATION OF ALL SERVICES WHICH MAY BE ENCOUNTERED AND TO CONSULT WITH THE RELEVANT SERVICE AUTHORITIES PRIOR TO COMMENCEMENT OF EXCAVATIONS. FAILURE TO DO SO OR TO TAKE DUE CARE SHALL NOT LIMIT THE CONTRACTORS LIABILITY FOR REPAIR OF ALL SERVICES DAMAGED BY HIM DURING CONSTRUCTION WORKS. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY FOR THE PROTECTION OF ALL EXISTING SERVICES.

### MSWA RETICULATION SUBMISSION

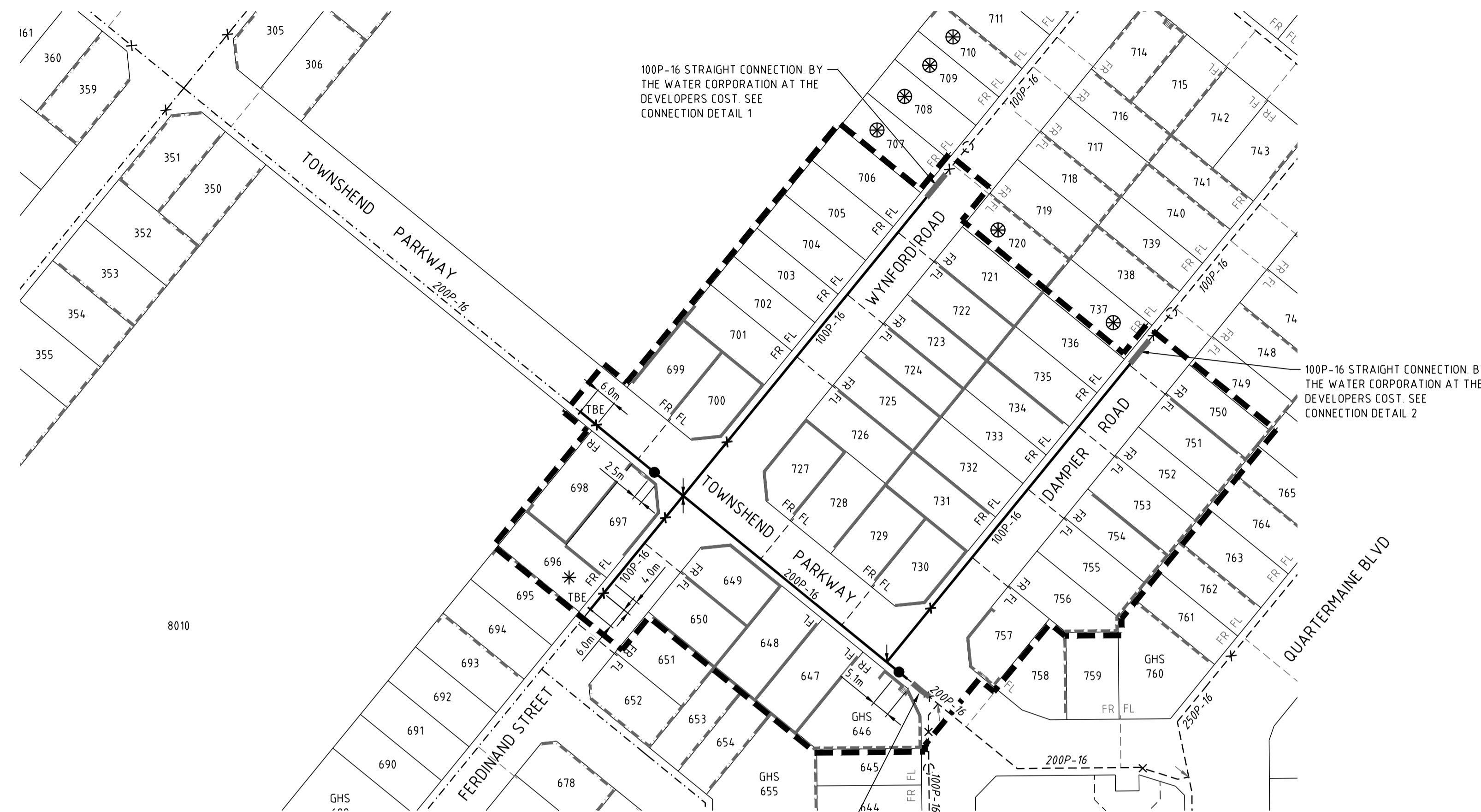
This plan is accepted as being in accordance with the endorsed Concept Plan: MW06-200-001-01B

Compliance with relevant design standards and manuals remains the responsibility of the Design Engineer.

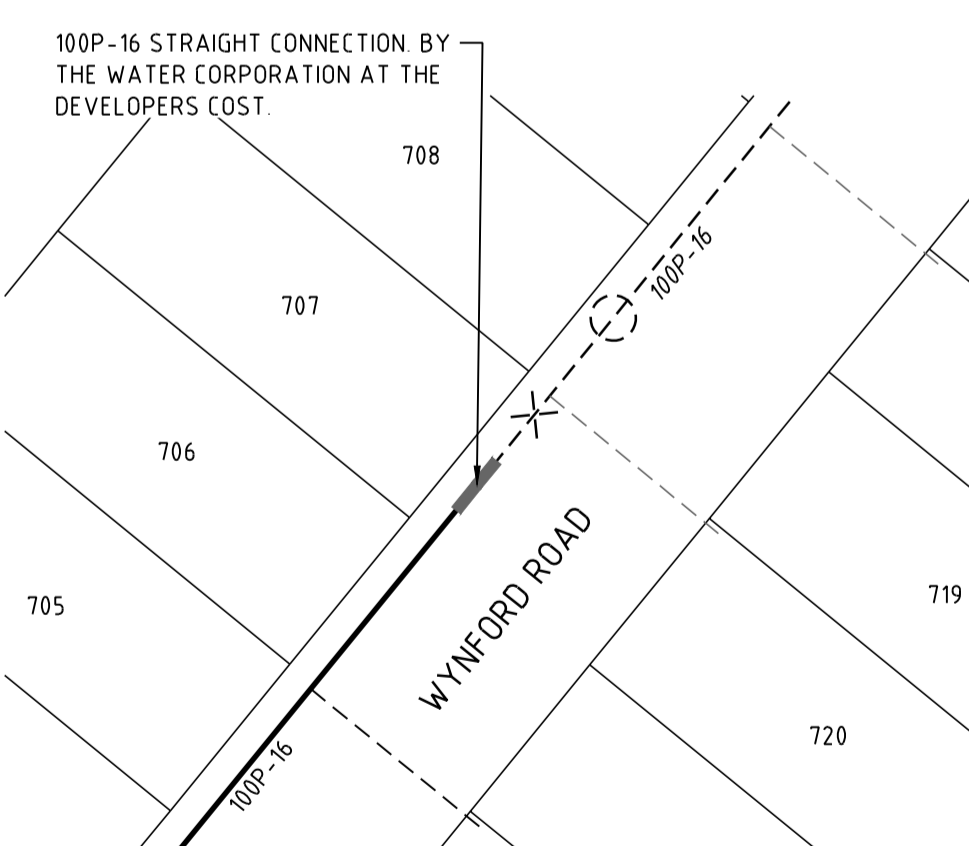
No works are to commence on site until start-up meeting requirements have been made with the relevant Asset Inspector. Refer to the Developers' Manual for contact details.

# OE62-103-001-01A

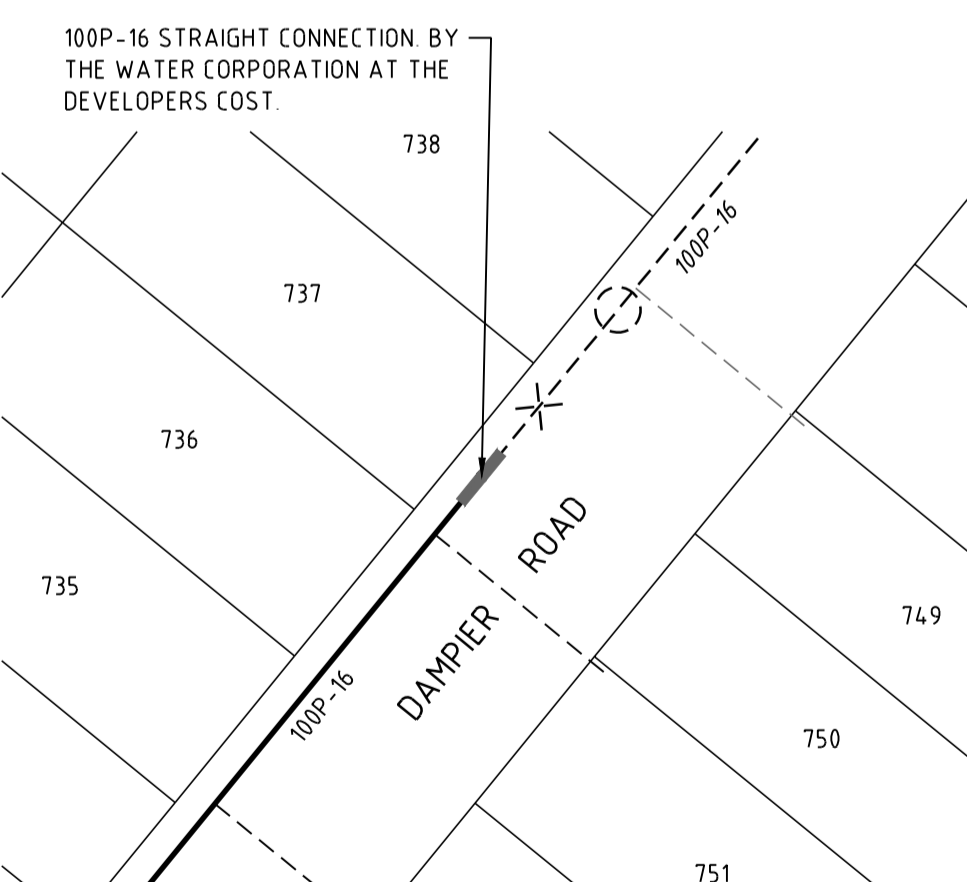
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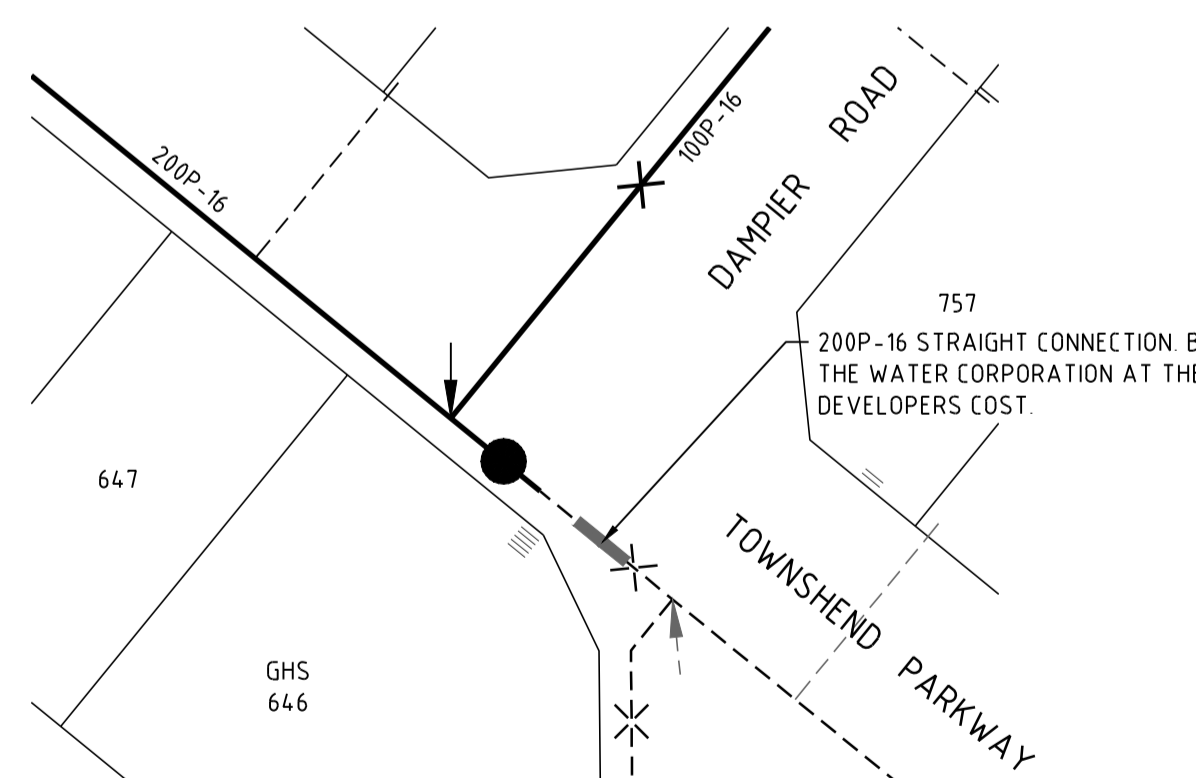
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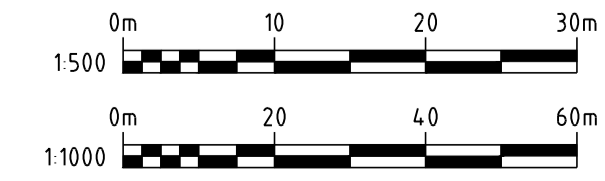
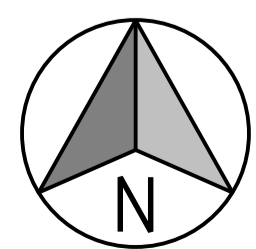
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CONNECTION DETAIL No. 2  
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CONNECTION DETAIL No. 3  
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**CW Cossill & Webley CONSULTING ENGINEERS**  
Mailing Address: PO Box 680, Subiaco WA 6904  
Street Address: B12 (Level 2) 431 Roberts Road, Subiaco WA 6008  
T (08) 9422 5800 F (08) 9422 5801 E admin@cosweb.com.au

**QUBE**  
APPROVED: *Shawson*  
DESIGNED: ARH  
SCALE: AS SHOWN

PROJECT	APLSLEY - STAGE 09		
TITLE	WATER RETICULATION PLAN		
WAPC No.	155567	DRAWING No.	6027-09-500
REVISION	0	ORIGINAL SIZE	A1

# **Appendix E: Deposited Plan**



**Plan Information**

Tenure Type	Freehold
Plan Type	Deposited Plan
Plan Purpose	Subdivision

**Plan Heading**

Lots 646-650, 697-710, 720-737, 750-757, 9016, 9017, Roads, Easements and Restrictive Covenant

**Locality & Local Government**

Locality	Mandogalup
Local Government	City of Kwinana

**Department of Planning, Lands and Heritage**

File Number	
-------------	--

**Examination**

Examined	Date
----------	------

**Planning Approval**

Planning Authority	Western Australian Planning Commission
Reference	155567

Delegated under S. 16 P&D Act 2005	Date
------------------------------------	------

**In Order For Dealings**

Subject To	
------------	--

For Inspector of Plans and Surveys	Date
------------------------------------	------

**Plan Approved** Reg. 26A (4)

Inspector of Plans and Surveys	Date
--------------------------------	------

**Survey Details**

Field Records	142336
Declared as Special Survey Area	Yes

**Survey Method Regulatory Statement**

Survey carried out under Reg. 26A Special Survey Area Guidelines. See survey sheet(s) to determine the true final position and type of all survey marks placed for this plan.

**Survey Method and Plan Content Variations**

Approved Variation Type	Reference
-------------------------	-----------

**Survey Certificate - Regulation 54**

I, Nigel J. SIMPSON hereby certify that this plan is accurate and is a correct representation of the -  
 (a) survey; and  
 (b) calculations from measurements recorded in the field records, undertaken for the purposes of this plan and that it complies with the relevant written law(s) in relation to which it is lodged.

**FINAL**

Licensed Surveyor	Date
-------------------	------

**Survey Organisation**

Name	MNG MCMULLEN NOLAN GROUP
Address	SUCCESS 6964
Phone	6436 1599
Fax	6436 1500
Email	info@mngsurvey.com.au
Reference	96755dp-222e

NOTE Z - The dimensions and position of this Easement are based on accurate surveyed alignments

**Amendments**

Version	Lodgement Type	Amendment Description	Authorised By	Date
---------	----------------	-----------------------	---------------	------

**Former Tenure**

New Lot / Land	Parent Plan Number	Parent Lot Number	Title Reference	Subject Land Description
646-650, 697-707, 720-737, 750-757 & 9017	DP 426328	PT LOT 9015	4044/897	
708-710	DP 423206	LOT 9507	4037/671	
9016	DP 423206	PT LOT 9013	4037/669	

**Former Tenure Interests and Notifications**

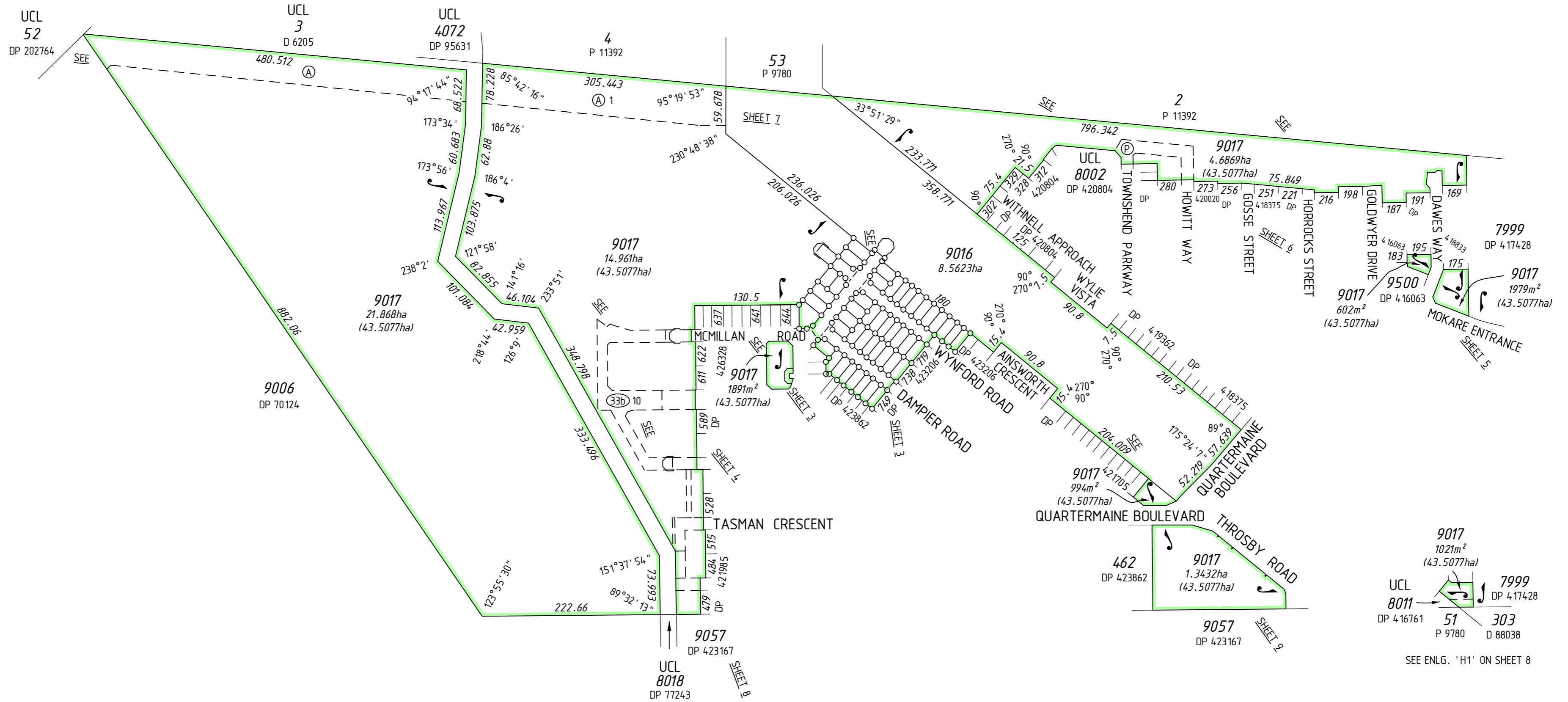
Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
(A), (A)1	EASEMENT		DOC C10720	LOT 9017	STATE ENERGY COMMISSION OF WESTERN AUSTRALIA	SEE 'Z' NOTE
	EASEMENT		DOC G402223	LOT 9016	ELECTRICITY NETWORK CORPORATION	AS MODIFIED ON DOC
(C)	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC O1724-10	LOT 9017	CITY OF KWINANA AND THE PUBLIC AT LARGE	PUBLIC ACCESS
(33b)1	EASEMENT (Sewerage)	SEC 167 OF THE P&D ACT 2005 Reg 33(b)	DP 418375	LOT 9017	WATER CORPORATION	
(P)	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC 0807722	LOT 9017	CITY OF KWINANA AND THE PUBLIC AT LARGE	PUBLIC ACCESS
(33b)2	EASEMENT (Sewerage)	SEC 167 OF THE P&D ACT 2005 Reg 33(b)	DP 421705	LOT 9017	WATER CORPORATION	
(H)	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC P204102	LOT 9017	CITY OF KWINANA AND THE PUBLIC AT LARGE	PUBLIC ACCESS
(33b)5	EASEMENT (Sewerage)	SEC 167 OF THE P&D ACT 2005 REG 33 (b)	DP 423862	LOT 9017	WATER CORPORATION	
(33b)4	EASEMENT (Water Supply)	SEC 167 OF THE P&D ACT 2005 REG 33 (b)	DP 423862	LOT 9017	WATER CORPORATION	
(33c)1	EASEMENT (Electricity Supply)	SEC 167 OF THE P&D ACT 2005 REG 33 (c)	DP 423862	LOT 9017	ELECTRICITY NETWORKS CORPORATION	
(L)	RESTRICTIVE COVENANT	SEC 129BA OF THE TLA 1893	DOC P472803	LOT 9017	ELECTRICITY NETWORKS CORPORATION	FIRE ZONE
(K)	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC P472805	LOT 9017	CITY OF KWINANA & PUBLIC AT LARGE	VEHICLE TURNING
(33a), (33a)1	EASEMENT (Drainage)	SEC 167 OF THE P&D ACT 2005 REG 33 (a)	DP 426328	LOT 9017	CITY OF KWINANA	
(33b)10	EASEMENT (Sewerage)	SEC 167 OF THE P&D ACT 2005 REG 33 (b)	DP 426328	LOT 9017	WATER CORPORATION	
(O), (Q)	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC P783447	LOT 9017	CITY OF KWINANA & PUBLIC AT LARGE	TEMPORARY TURN AROUND

**New Interests**

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
(33b)3	EASEMENT (Water Supply)	SEC 167 OF THE P&D ACT 2005 REG 33 (b)	THIS PLAN	LOT 9017	WATER CORPORATION	
(33b)	EASEMENT (Sewerage)	SEC 167 OF THE P&D ACT 2005 REG 33 (b)	THIS PLAN	LOT 9017	WATER CORPORATION	
	RESTRICTIVE COVENANT	SEC 136D OF THE TLA 1893	THIS PLAN & DOC	ALL LOTS EXCEPT LOTS 9016 & 9017	ALL LOTS EXCEPT LOTS 9016 & 9017	
(S)	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC	LOTS 9016 & 9017	CITY OF KWINANA & PUBLIC AT LARGE	TEMPORARY TURN AROUND

**New Notifications and Memorials**

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
	NOTIFICATION (Factors Affecting Use or Enjoyment of Land)	SEC 70A OF THE TLA 1893	DOC	ALL LOTS EXCEPT LOTS 9016 & 9017		RELATES TO ACCESS VIA THE ESTATE ENTRY AND ROWLEY ROAD
	NOTIFICATION (Factors Affecting Use or Enjoyment of Land)	SEC 70A OF THE TLA 1893	DOC	ALL LOTS EXCEPT LOTS 9016 & 9017		RELATES TO ACCESS VIA ANKETELL ROAD/HOFFMAN ROAD INTERSECTION
	NOTIFICATION	SEC 165 OF THE P&D ACT 2005	DOC	LOTS 648-650, 697-710, 720-728		BUSHFIRE MANAGEMENT PLAN



9017  
1021m<sup>2</sup>  
(43.5077ha)

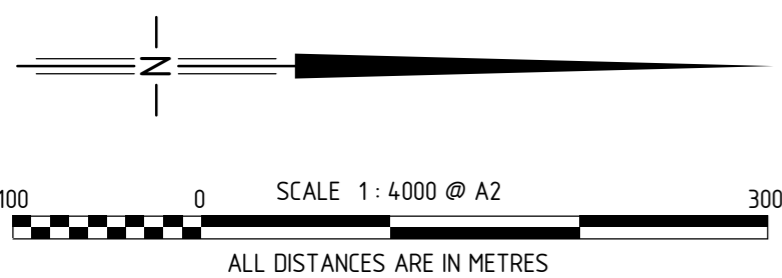
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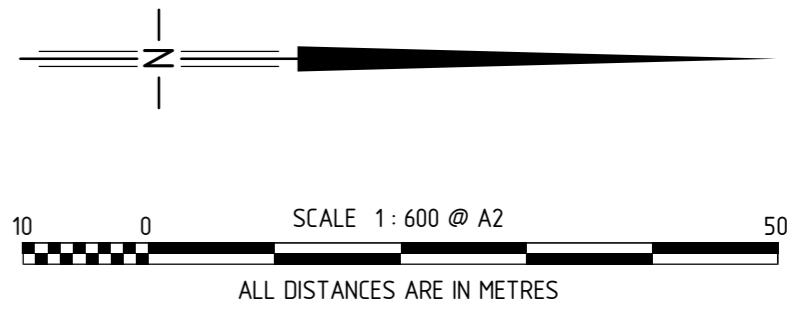
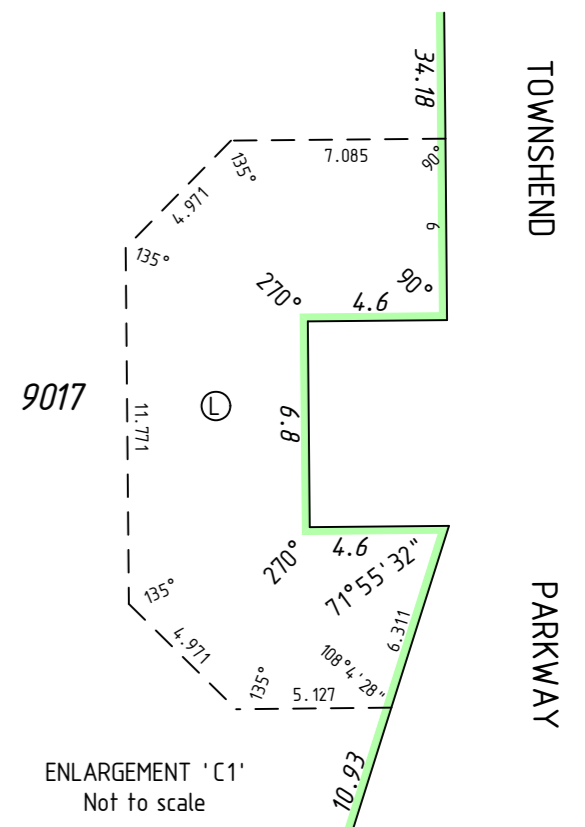
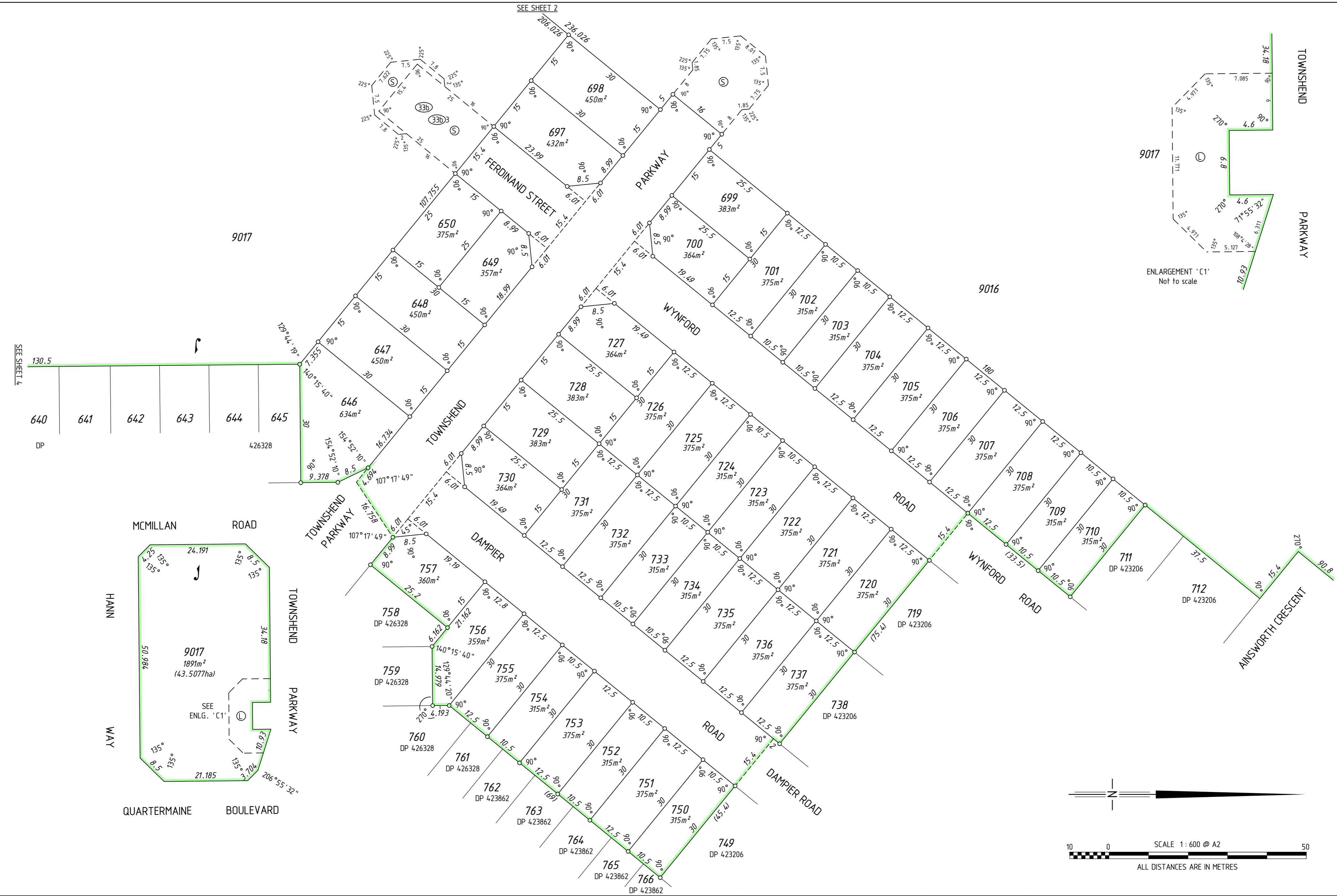
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51 P 9780

303 D 88038

SEE ENLG. 'H1' ON SHEET 8



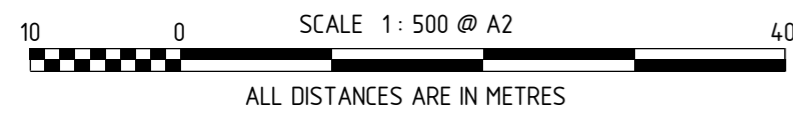
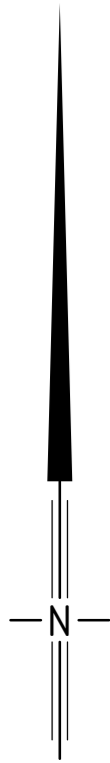
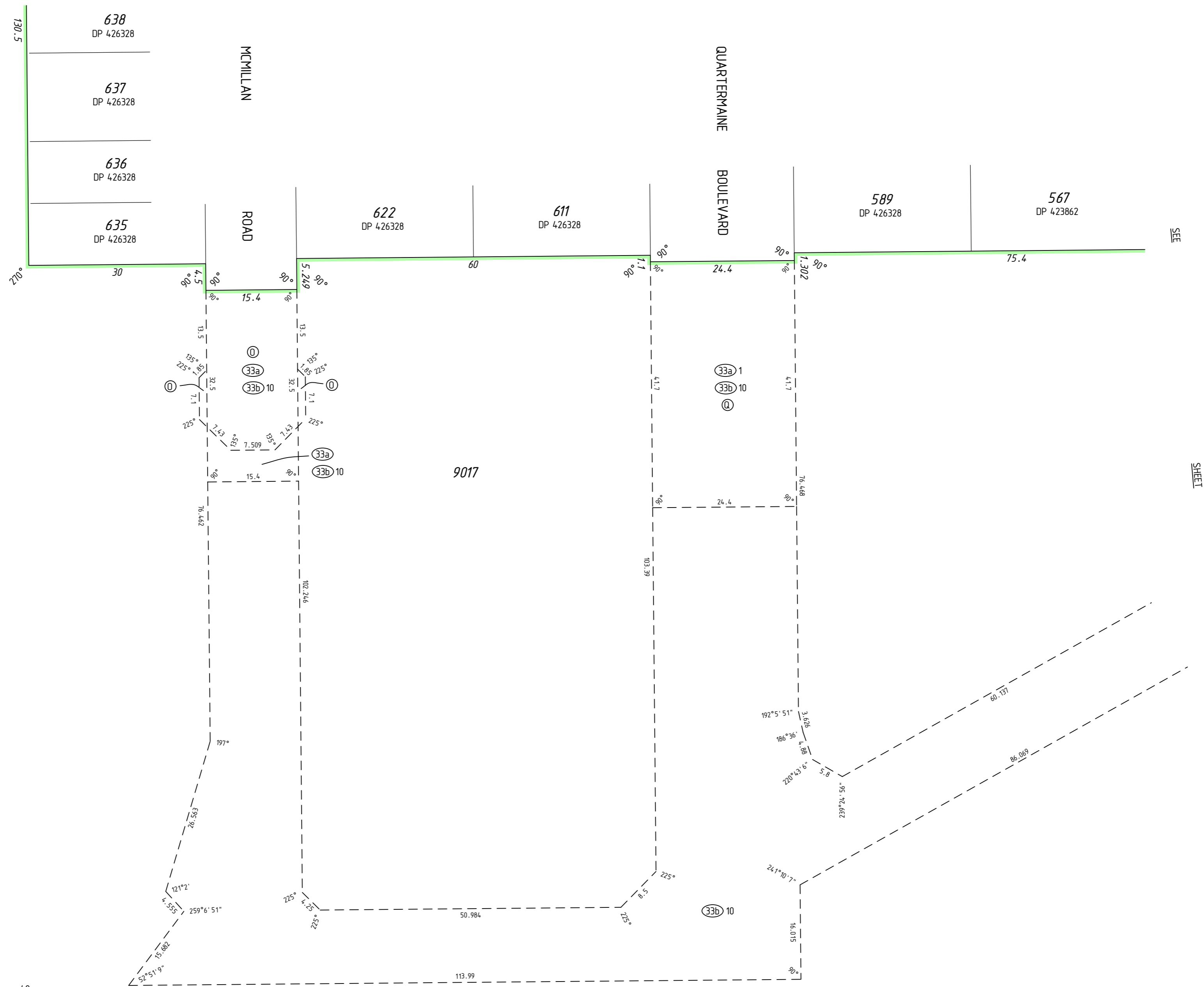


SEE SHEET 4

SEE SHEET 2

SEE SHEET 2

SEE SHEET 3



MC MULLEN NOLAN GROUP  
PO Box 3526, Success W.A. 6964  
Tel: (08) 6436 1599  
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Email: info@mngsurvey.com.au

MNG Ref : 96755dp-222e - Stage 9 - DP427296.CSD

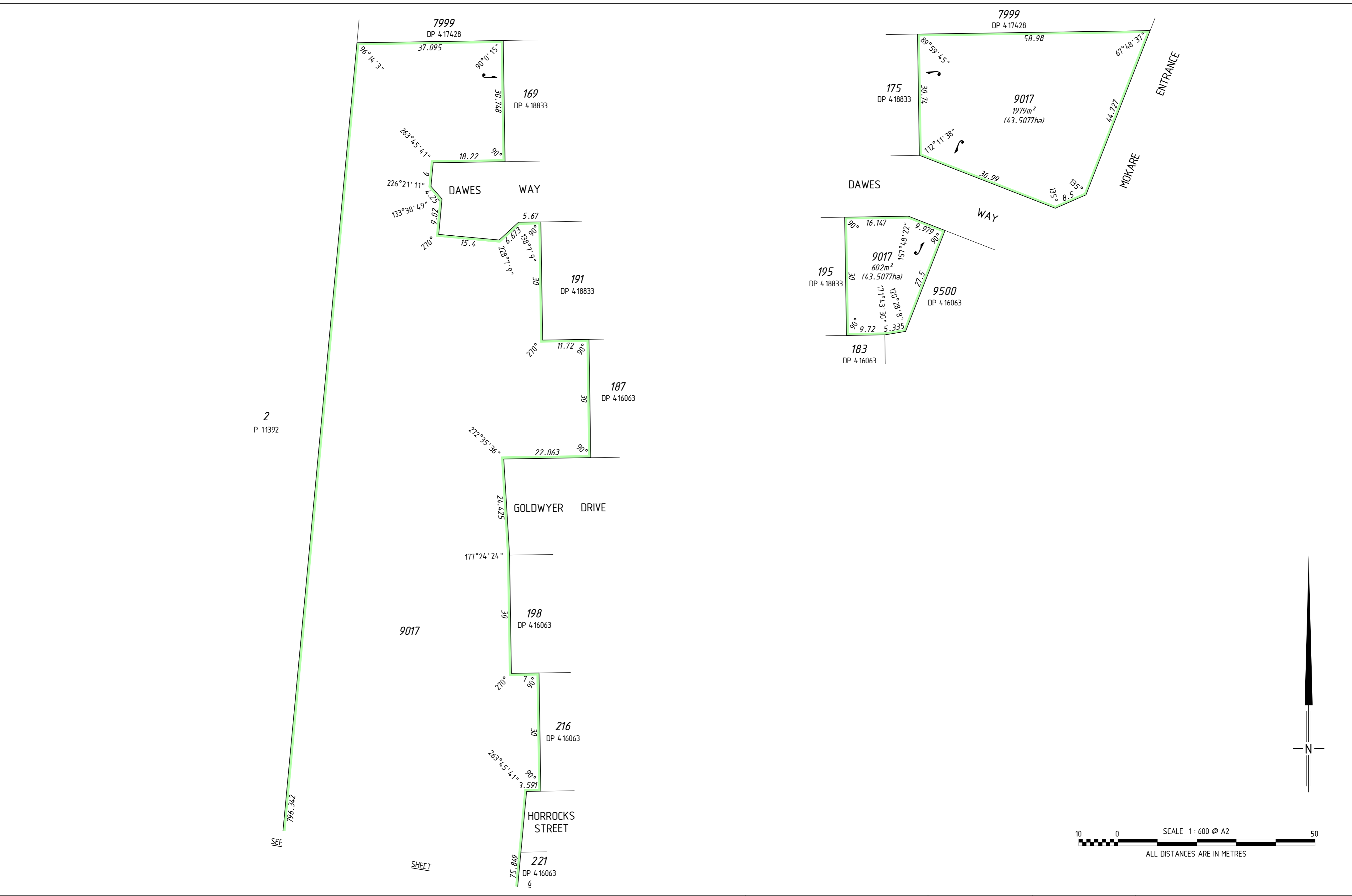
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SURVEY SHEET

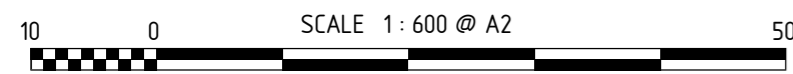
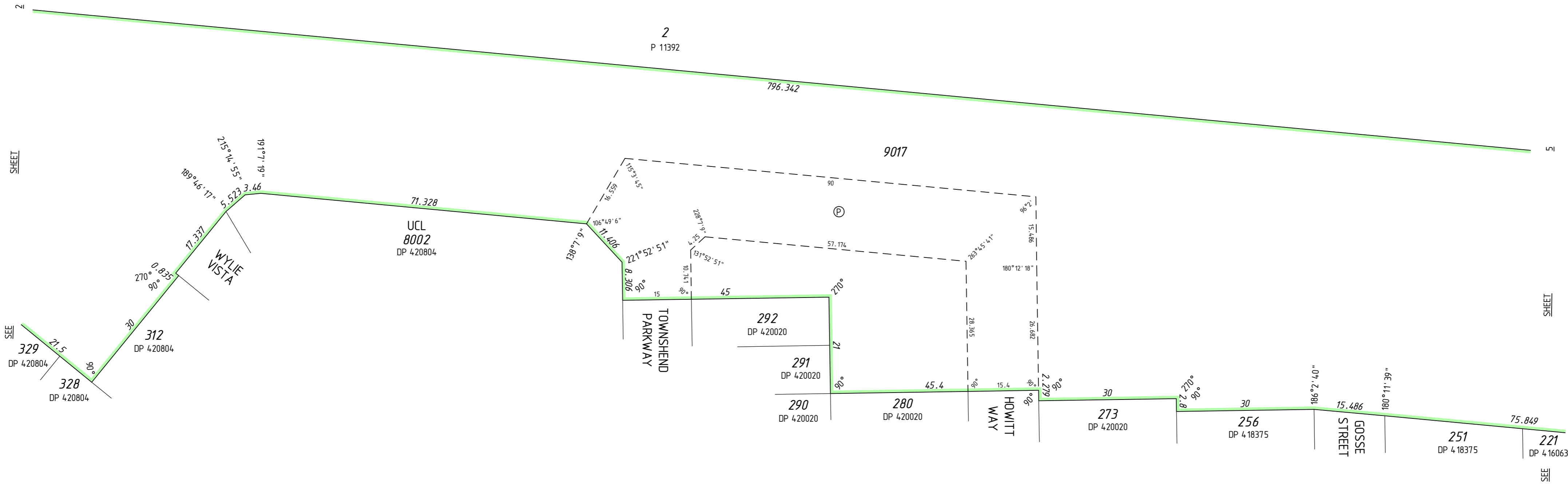
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VERSION NUMBER  
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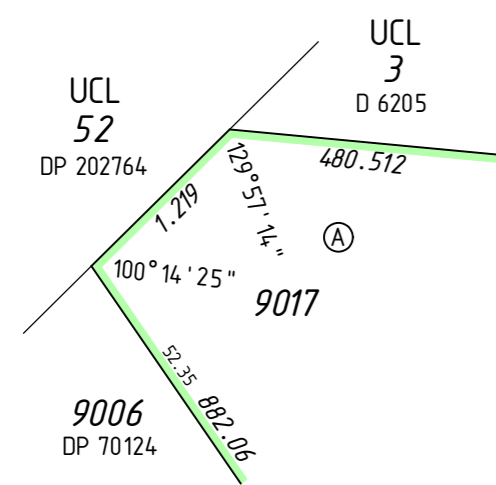
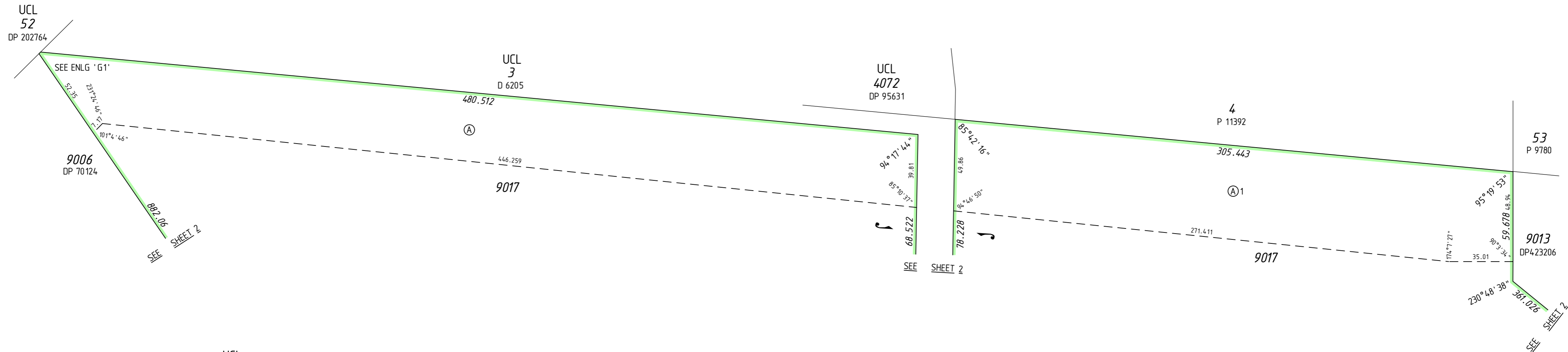
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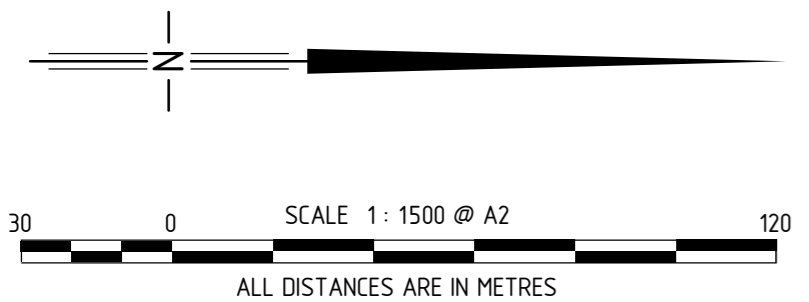


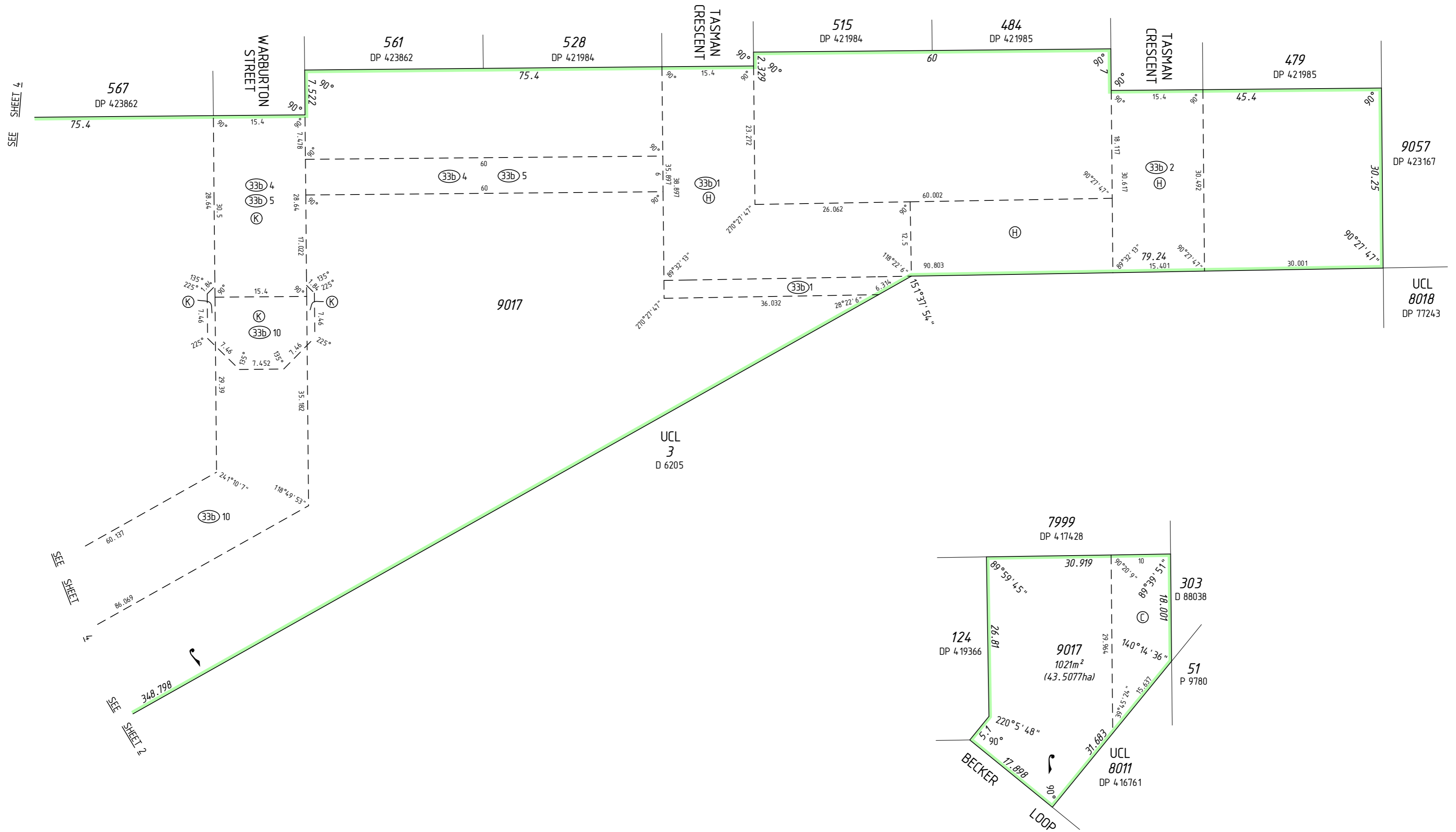


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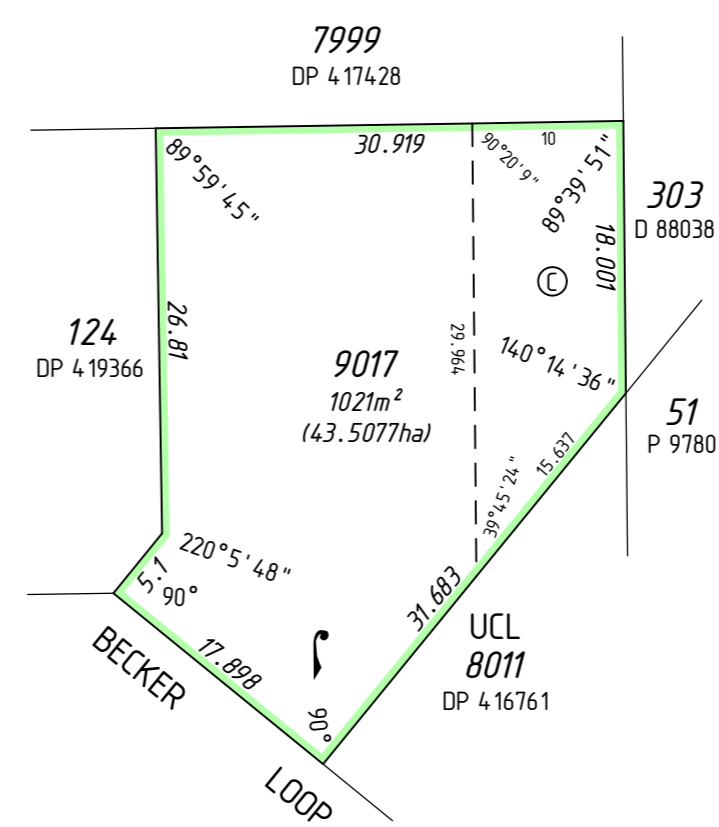




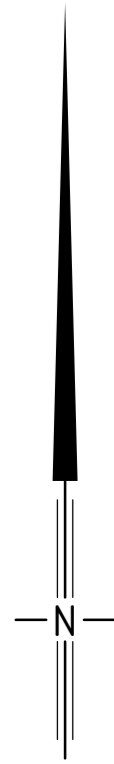
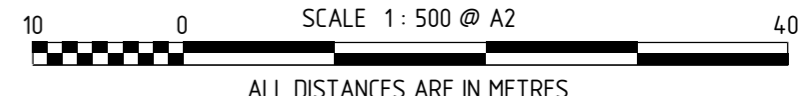
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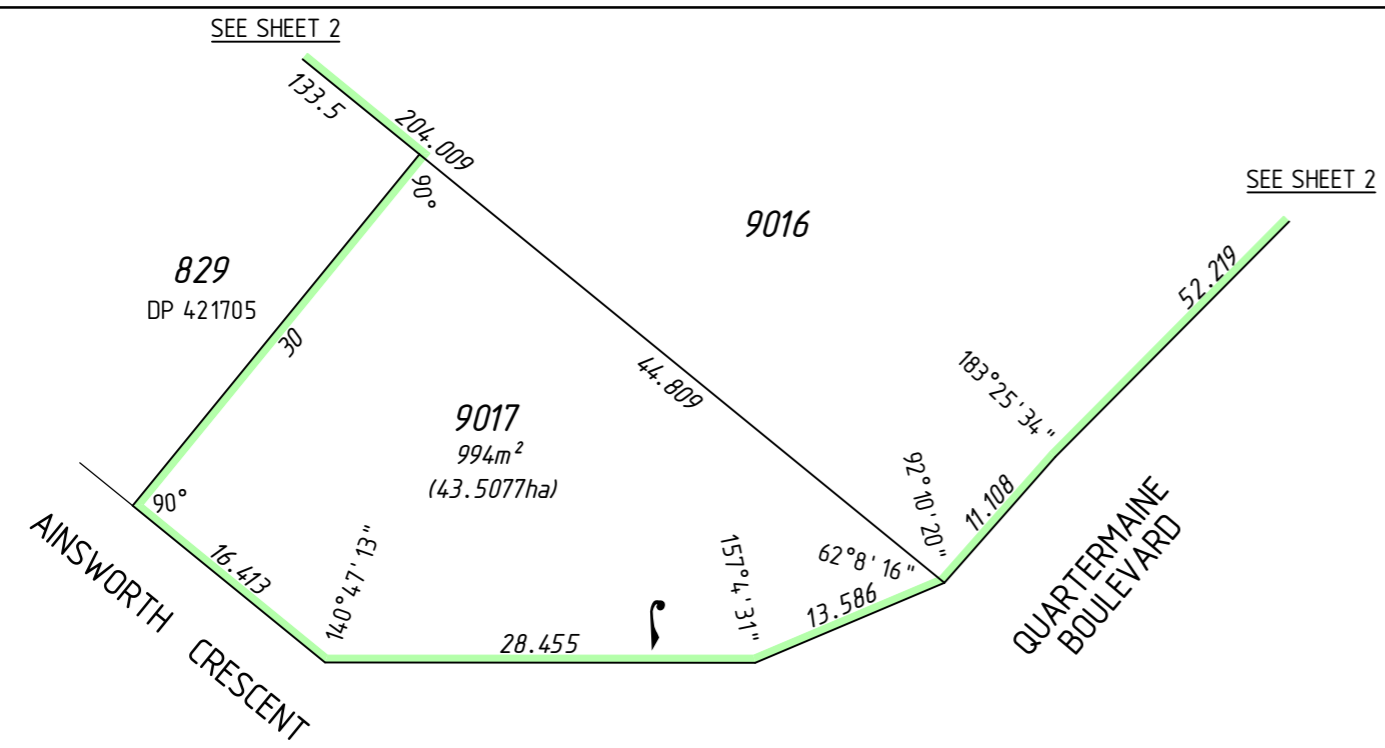
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SEE SHEET 2

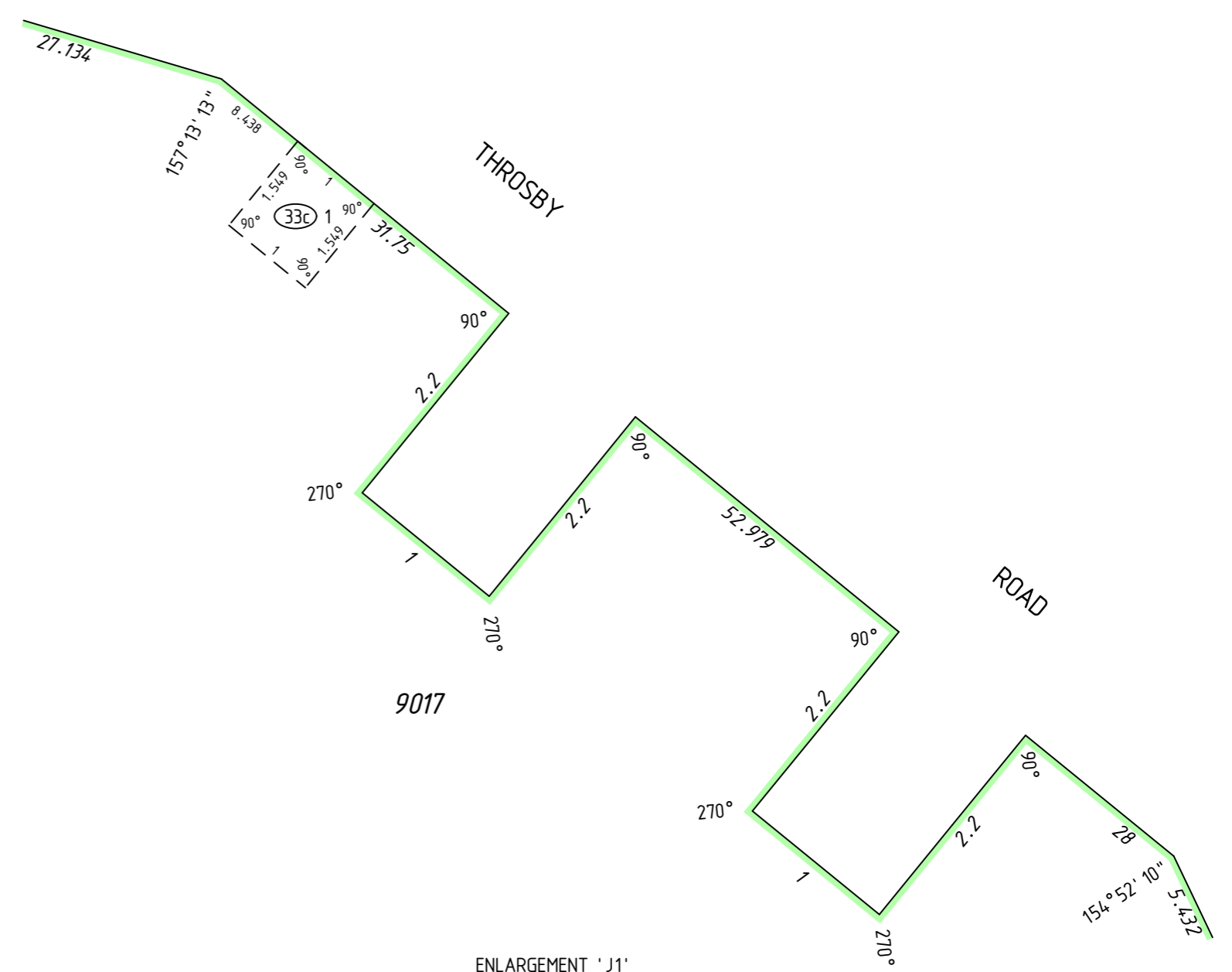


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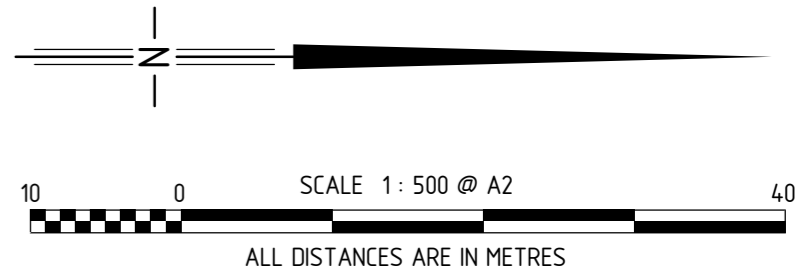
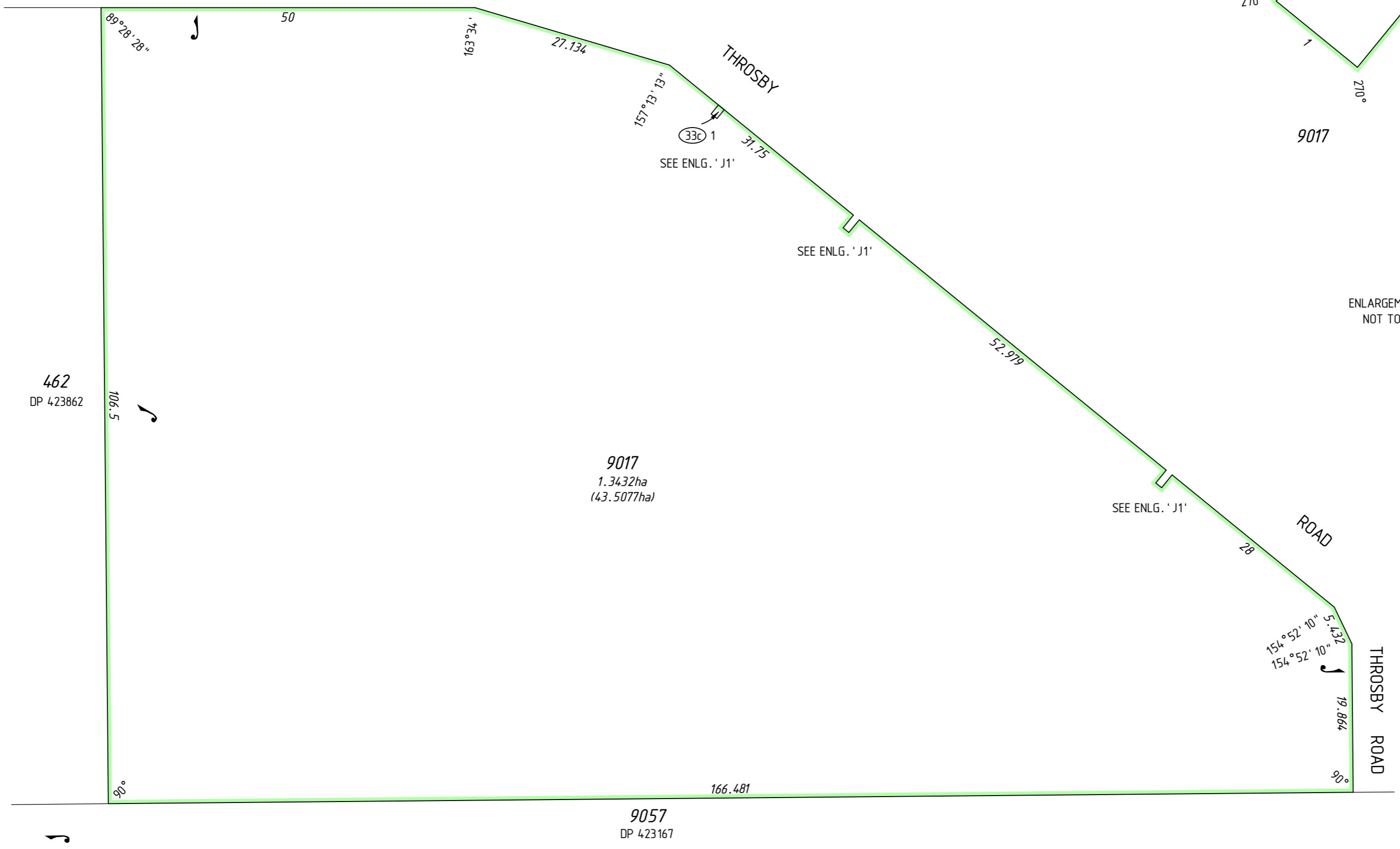




QUARTERMAINE BOULEVARD



ENLARGEMENT 'J1'  
NOT TO SCALE



THIS SURVEY SHEET WILL BE  
REPLACED BY THE SURVEY DATA



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Tel: (08) 6436 1500  
Fax: (08) 6436 1500  
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MNG Ref : 96755dp-222e

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DEPOSITED PLAN  
**427296**