

MEMORANDUM

TO City of Rockingham

FROM Eva Cronin and Maitland Ely (Eco Logical Australia) on behalf of Parcel Property



DATE 21/12/2023

PURPOSE For Information

SUBJECT Bushfire Management Plan Compliance Certification: Stage 11A Brightwood Estate, Baldivis

**Document purpose**

Eco Logical Australia (ELA) has prepared this Bushfire Management Plan (BMP) compliance report for 28 lots within Stage 11A Brightwood Estate, Baldivis (the subject site; Figure 1). Lots within the subject site are subject to Western Australian Planning Commission (WAPC) subdivision approval WAPC Ref. 163509.

This report provides a post-subdivisional works compliance assessment of bushfire management measures required to clear Condition 8 and Condition 9 of subdivision approval as follows:

*8. Information is to be provided to demonstrate that the measures contained in Section 4; Table 4 of the Bushfire Management Plan Prepared by Eco Logical Australia, Version 1, dated the 11th April 2023 have been implemented during subdivisional works. This information should include a completed 'Certification by Bushfire Consultant' from the Bushfire Management Plan. (Local Government)*

*9. A notification, pursuant to Section 165 of the Planning and Development Act 2005, is to be placed on the certificate(s) of title of the proposed lot(s) with a Bushfire Attack Level (BAL) rating of 12.5 or above, advising of the existence of a hazard or other factor. Notice of this notification is to be included on the diagram or plan of survey (deposited plan).*

*The notification is to state as follows:*

*"This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and is subject to a Bushfire Management Plan. Additional planning and building requirements may apply to development on this land"*  
*(Western Australia Planning Commission)*

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

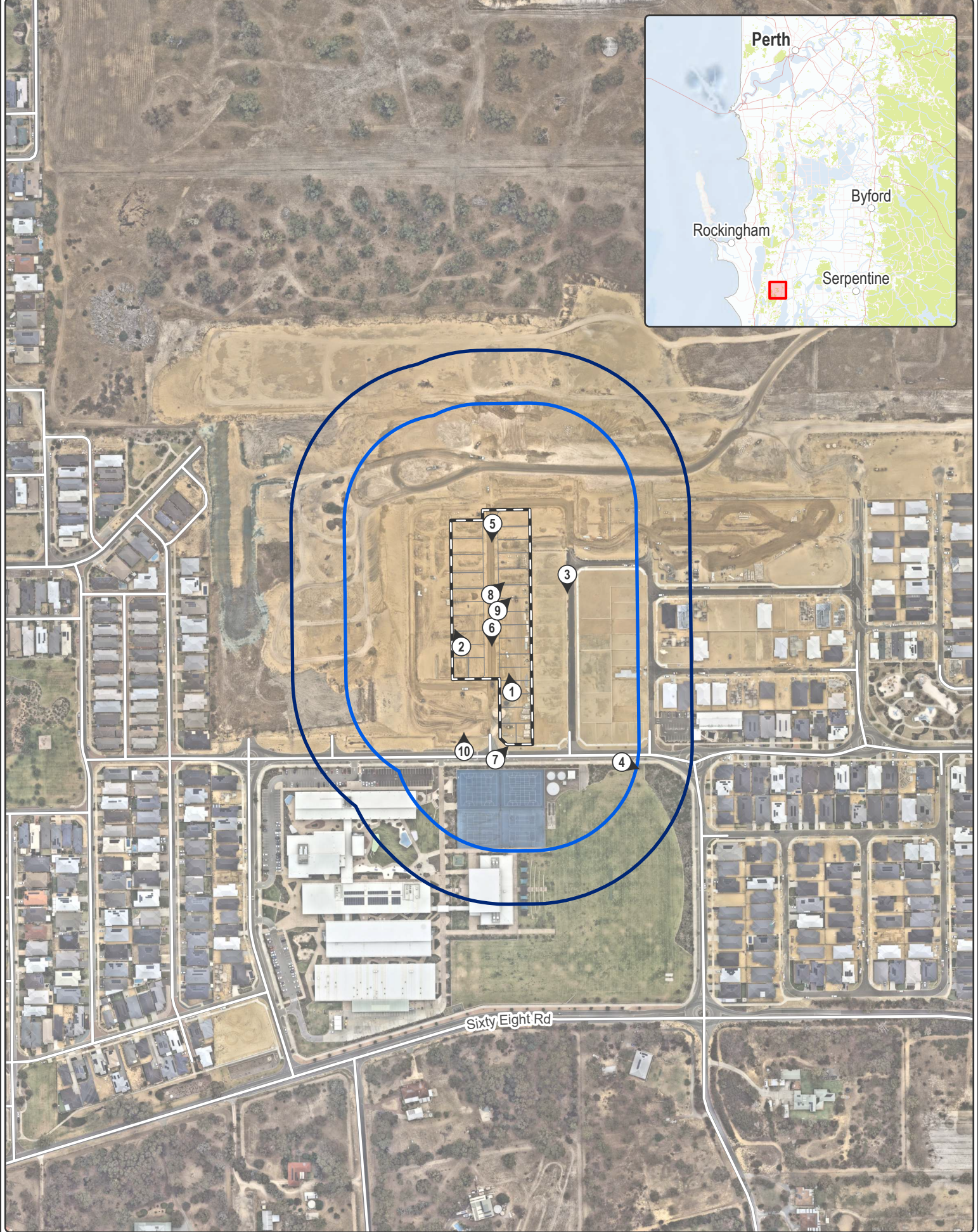
### Compliance assessment

The endorsed BMP (ELA 2023) included nine bushfire management strategies that are required to ensure the proposed subdivision will comply with the bushfire protection criteria in the Guidelines. Three of these strategies are not relevant to progress subdivision clearance and have been excluded from this report.





ELA has undertaken a bushfire risk assessment and compliance assessment to determine if the relevant bushfire management measures documented in the endorsed BMP have been undertaken (Table 1).

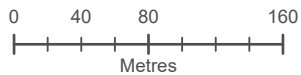
Based on our assessment, ELA can confirm that the relevant bushfire management measures detailed in the endorsed BMP have been implemented as intended to a satisfactory level or have been progressed to a point that these measures are likely to be compliant, once completed.





**Figure 1: Site Overview**

-  Subject site
-  100m site assessment
-  150m site assessment
-  Photo location



Datum/Projection:  
GDA 1994 MGA Zone 50  
23PER6977-SM Date: 21/12/2023





**Table 1: Bushfire compliance assessment against Bushfire Management Plan ELA (2023)**

| BMP reference   | Action  | Implementation status   | Compliance assessment   |
|---|---|---|---|
| Bushfire Management Measure No 1 - Table 4 <sup>1</sup> | Ensure that APZs <sup>2</sup> are cleared around each stage of subdivision if the entirety of the development depicted in Figure 6 <sup>3</sup> is not developed in a single stage. | The subject site and surrounding areas have been cleared to an extent that all proposed lots achieve BAL-LOW.   | <p><b>Compliant</b></p> <p>All proposed lots are located in areas subject to BAL ratings of BAL-LOW as per the endorsed BMP (ELA 2023).</p> <p>Refer to Plate 1, Plate 2 and Plate 3 in Appendix A for evidence of internal and external management.</p> <p>The updated BAL assessment specific to Stage 11a can be seen in Appendix B.</p>   |
| Bushfire Management Measure No 2 – Table 4              | Reassess BAL ratings for all lots within the subject site if neighbouring land to the west has been cleared/managed.  | Previously assessed Class G Grassland located to the west of the site has now been cleared.   | <p><b>Compliant</b></p> <p>Neighbouring land to the west has been cleared and maintained to low threat.</p> <p>The updated BAL assessment can be seen in Appendix B.</p>  |
| Bushfire Management Measure No 3 - Table 4              | Ensure all APZs depicted in Figure 6 are established and maintained.  | The subject site and surrounding areas have been cleared and maintained to an APZ standard as per the depicted areas in Figure 6 of the endorsed BMP (ELA 2023).              | <p><b>Compliant</b></p> <p>The APZs depicted in the endorsed BMP (ELA 2023) have been established, with additional clearing of vegetation located adjacent to the west side of the site being completed and managed to a low threat state.</p> <p>Refer to Plate 1, Plate 2, Plate 3 and Plate 4 in Appendix A for evidence of APZ management as well as internal and external management to a low threat state.</p> <p>The updated BAL assessment can be seen in Appendix B.</p> |
| Bushfire Management Measure No 4 – Table 4              | Place Section 165 Notification on Title for all lots within Bushfire Prone Areas.   | As all lots within the subject site achieve a rating of BAL-LOW, no Notification on Title is required.  | <p>Refer to Appendix C for a copy of the Deposited Plan.</p>  |
| Bushfire Management Measure No 5 – Table 4              | Construct road networks as per plan in Figure 6.  | <p>Roads not fully constructed at the time of assessment.</p> <p>Construction of proposed public roads in accordance with the approved Roadworks Layout Plan is underway.</p> | <p><b>Will be Compliant</b></p> <p>Roads within the subdivision have not fully been constructed at the time of assessment, however if constructed in accordance with Roadworks Layout Plan in Appendix D (including establishing secondary access/egress via</p>  |

| BMP reference                                     | Action  | Implementation status   | Compliance assessment   |
|---|---|---|---|
|   |   |   | <p>Novo Way), this will likely be compliant.</p> <p>Refer to Plate 5, Plate 6 and Plate 7 in Appendix A, which shows construction of roads is underway.</p>   |
| <p>Bushfire Management Measure No 6 – Table 4</p> | <p>Provide reticulated water supply to all lots and hydrants in accordance with Figure 6.</p> | <p>Water supply not fully constructed at the time of assessment.</p> <p>Construction of reticulated water supply and network of hydrants in accordance with the approved Water Reticulation Plan in underway.</p> | <p><b>Will be Compliant</b></p> <p>Water supply not fully constructed at the time of assessment, however if constructed in accordance with Water Reticulation Plan in Appendix E, this will likely be compliant.</p> <p>Refer to Plate 8 and Plate 9 in Appendix A which shows installation of reticulated water supply and hydrants is underway. Evidence of external hydrants present in surrounding area is shown in Plate 10.</p> |

1. TABLE 4 OF THE ENDORSED BUSHFIRE MANAGEMENT PLAN (ELA 2023)
2. ASSET PROTECTION ZONES
3. FIGURE 6 OF THE ENDORSED BUSHFIRE MANAGEMENT PLAN (ELA 2023)

## References

City of Rockingham (CoR). 2023. Fire Control Notice 2023-2024. Available from: [Fire Control Notice 2023/2024 \(rockingham.wa.gov.au\)](https://www.rockingham.wa.gov.au)

Department of Planning (DoP), 2016, *Visual guide for bushfire risk assessment in Western Australia*. DoP, Perth.

Eco Logical Australia 2023. Bushfire Management Plan: Subdivision: Lot 9014, 68 Solis Road, Baldivis. Prepared for Parcel Property.

Standards Australia, 2018, *Construction of buildings in bushfire-prone areas, AS 3959: 2018*. SAI Global, Sydney.

Water Corporation, 2021, *Water Reticulation Standard Design and Construction Requirements for Water Reticulation Systems up to DN250, Design Standard DS 63 (Version 3, Revision 15)*. Water Corporation, Western Australia.

Western Australian Planning Commission, 2015, *State Planning Policy 3.7 Planning in Bushfire Prone Areas*. WAPC, Perth.

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

## Appendix A Photographic evidence of compliance



**Plate 1: Evidence of site internals being cleared and maintained to low threat.**



**Plate 2: Evidence of site internals being cleared and maintained to low threat.**





Plate 3: Evidence of sites external surrounding areas being cleared and maintained to low threat.



Plate 4: Evidence of external vegetation being maintained to low threat.





Plate 5: Evidence of construction of internal roads is underway in accordance with Roadworks Layout Plan.



Plate 6: Evidence of construction of internal roads is underway in accordance with Roadworks Layout Plan.





Plate 7: Evidence of construction of internal road connection to external road network is underway in accordance with Roadworks Layout Plan.



Plate 8: Evidence of installation of reticulated water within construction site is underway in accordance with the Water Reticulation Plan.



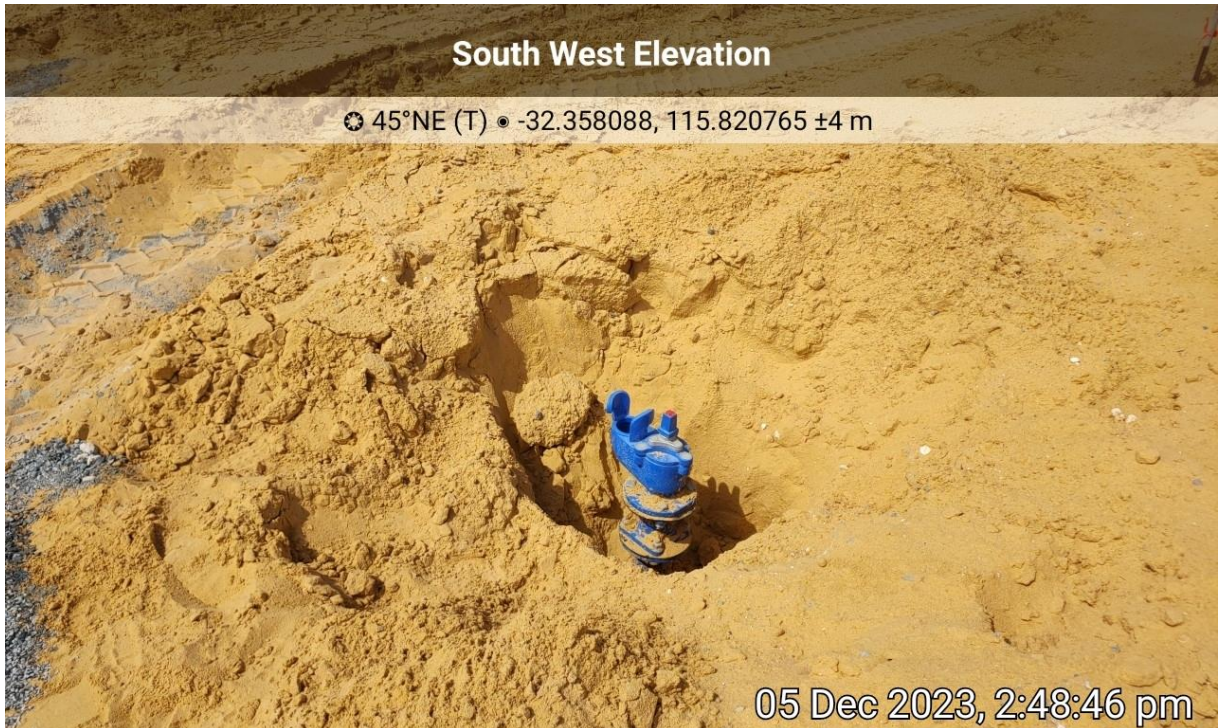


Plate 9: Evidence of installation of hydrants within the site is underway in accordance with the Water Reticulation Plan.



Plate 10: Evidence of external hydrants present in surrounding area.

## Appendix B Bushfire Attack Level (BAL) Assessment Report



## Bushfire Attack Level (BAL) Assessment Report for Stage 11A (Lots 722-738, 781-790) Brightwood Estate, Baldivis

### Site Details

**Address:** Stage 11A (Lots 722-738, 781-790) Brightwood Estate, Baldivis

**Suburb:** Baldivis, 6171 **State:** Western Australia

**Local Government Area:** City of Rockingham

**Description of building works:** Residential development

### Report details

|                           |              |                        |                                 |
|---------------------------|--------------|------------------------|---------------------------------|
| <b>Report/Job number:</b> | 23PER6977    | <b>Report version:</b> | v1                              |
| <b>Assessment date:</b>   | 5/12/2023    | <b>Report date:</b>    | 21/12/2023                      |
| <b>Author:</b>            | Maitland Ely | <b>Review:</b>         | Eva Cronin (BPAD Level 2-45482) |



### SITE ASSESSMENT AND SITE PLAN

The assessment of the 28 proposed lots was undertaken on 5 December 2023 for the purpose of determining the Bushfire Attack Level (BAL) in accordance with *Australian Standard AS 3959: 2018 Construction of Buildings in Bushfire Prone Areas (SA 2018) Simplified Procedure (Method 1)*. An overview of the site is presented in Figure 1.

### VEGETATION CLASSIFICATION

All vegetation within 100 m of the subject site 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 below and presented in Figure 1.

**Plot 1 Classification or Exclusion Clause**

**Excluded AS 3959: 2018 2.2.3.2 (e)**

**Photo Point 1**

Non-vegetated area that is permanently cleared of classifiable vegetation (i.e., cleared areas for future roads and residential development).



**Plot 1 Classification or Exclusion Clause**

**Excluded AS 3959: 2018 2.2.3.2 (e)**

**Photo Point 2**

Non-vegetated area that is permanently cleared of classifiable vegetation (i.e., cleared areas for future roads and residential development).



**Plot 1 Classification or Exclusion Clause**

**Excluded AS 3959: 2018 2.2.3.2 (e)**

**Photo Point 3**

Non-vegetated area that is permanently cleared of classifiable vegetation (i.e., roads and cleared areas for future residential development).





**Plot 1 Classification or Exclusion Clause Excluded AS 3959: 2018 2.2.3.2 (e)**

**Photo Point 4**

Non-vegetated area that is permanently cleared of classifiable vegetation (i.e., cleared areas for future roads and residential development).



**Plot 1 Classification or Exclusion Clause Excluded AS 3959: 2018 2.2.3.2 (e)**

**Photo Point 5**

Non-vegetated area that is permanently cleared of classifiable vegetation (i.e., cleared areas for future roads and residential development).



**Plot 1 Classification or Exclusion Clause Excluded AS 3959: 2018 2.2.3.2 (e) & (f)**

**Photo Point 6**

Non-vegetated area this permanently cleared of vegetation (i.e., roads, residential development and a school).

Vegetation present within this plot is regarded as low threat due to factors such as flammability, moisture content and fuel load as it managed landscaping.



**Photo Point 7**

Non-vegetated area this permanently cleared of vegetation (i.e., roads, footpaths, residential development and a school).

Vegetation present within this plot is regarded as low threat due to factors such as flammability, moisture content and fuel load as it is managed landscaping and a sporting oval.





## RELEVANT FIRE DANGER INDEX

The fire danger index for this site has been determined in accordance with Table 2.1 of AS 3959: 2018.

| 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"/> |
| <i>Table 2.4.5</i>              | <i>Table 2.4.4</i>              | <i>Table 2.4.3</i>                         | <i>Table 2.4.2</i>               |

## POTENTIAL BUSHFIRE IMPACTS

The potential bushfire impact to the site / proposed development from each of the identified vegetation plots are identified below, Table 1 and Figure 1.

**Table 1: BAL Analysis AS 3959: 2018**

| Plot | Vegetation Classification                   | Effective Slope | Separation distances required              |        |        |        |          |
|------|---|-----------------|--|--------|--------|--------|----------|
|      |   |                 | BAL-FZ                                     | BAL-40 | BAL-29 | BAL-19 | BAL-12.5 |
| 1    | Excluded AS 3959: 2018<br>2.2.3.2 (e) & (f) | -               | No separation distances required – BAL-LOW |        |        |        |          |

**DETERMINED BUSHFIRE ATTACK LEVEL (BAL)**

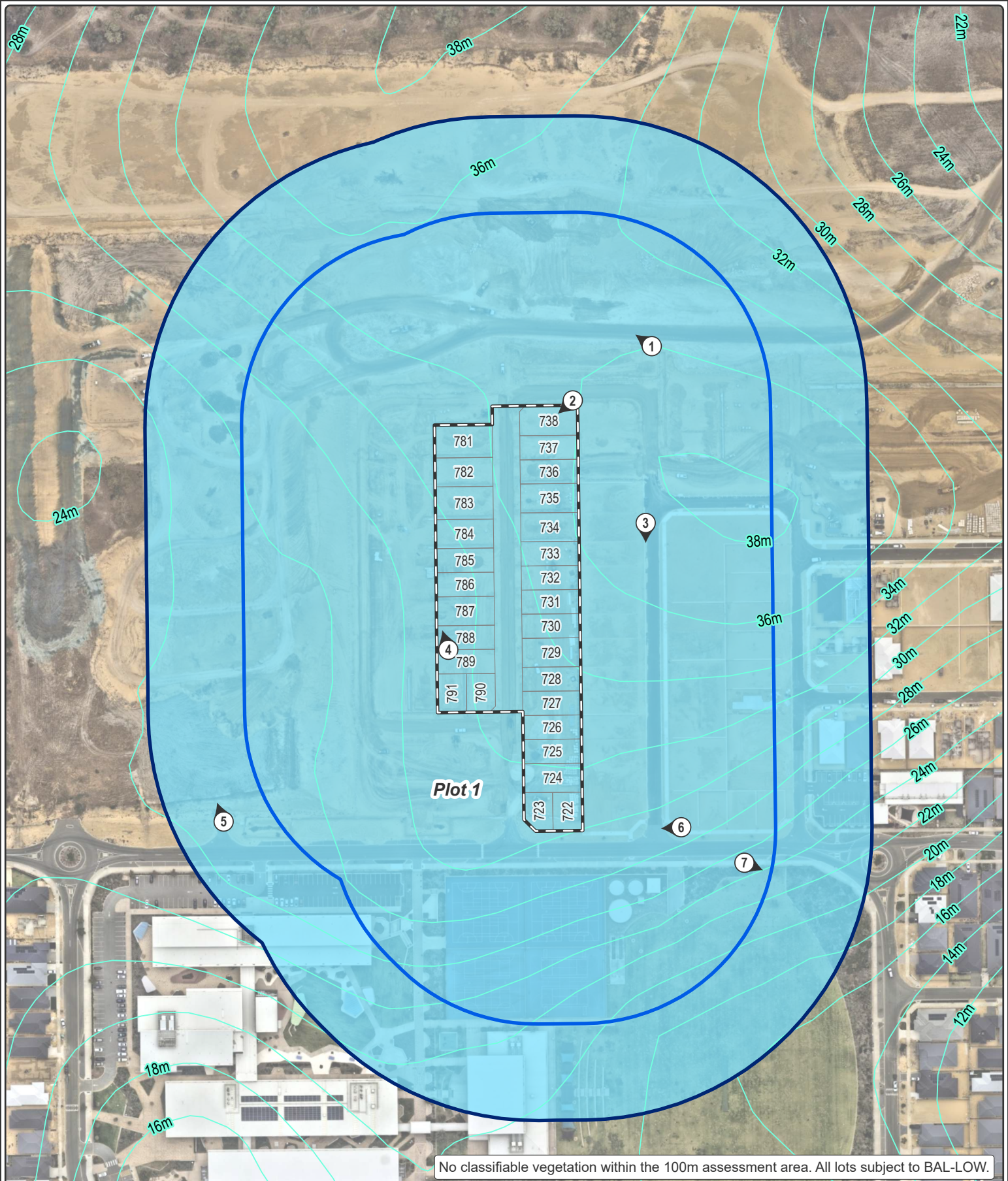
The determined Bushfire Attack Level (highest BAL) for the proposed works has been determined in accordance with Clause 2.2.6 of AS 3959: 2018 relevant data from the site assessment shown in Table 2 and Figure 2.

**Table 2: BAL Assessment summary**

| BAL     | Affected lots     | Construction sections to be consulted in AS 3959-2018 |
|---------|-------------------|---|
| BAL-LOW | All proposed lots | 4   |

Note: This BAL rating is based on the information current at the date of this document and is valid for 12 months.

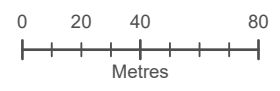




**Figure 1: Vegetation Classification**

- Subject site
- 100m site assessment
- 150m site assessment
- Lot boundary
- Contour (2m)

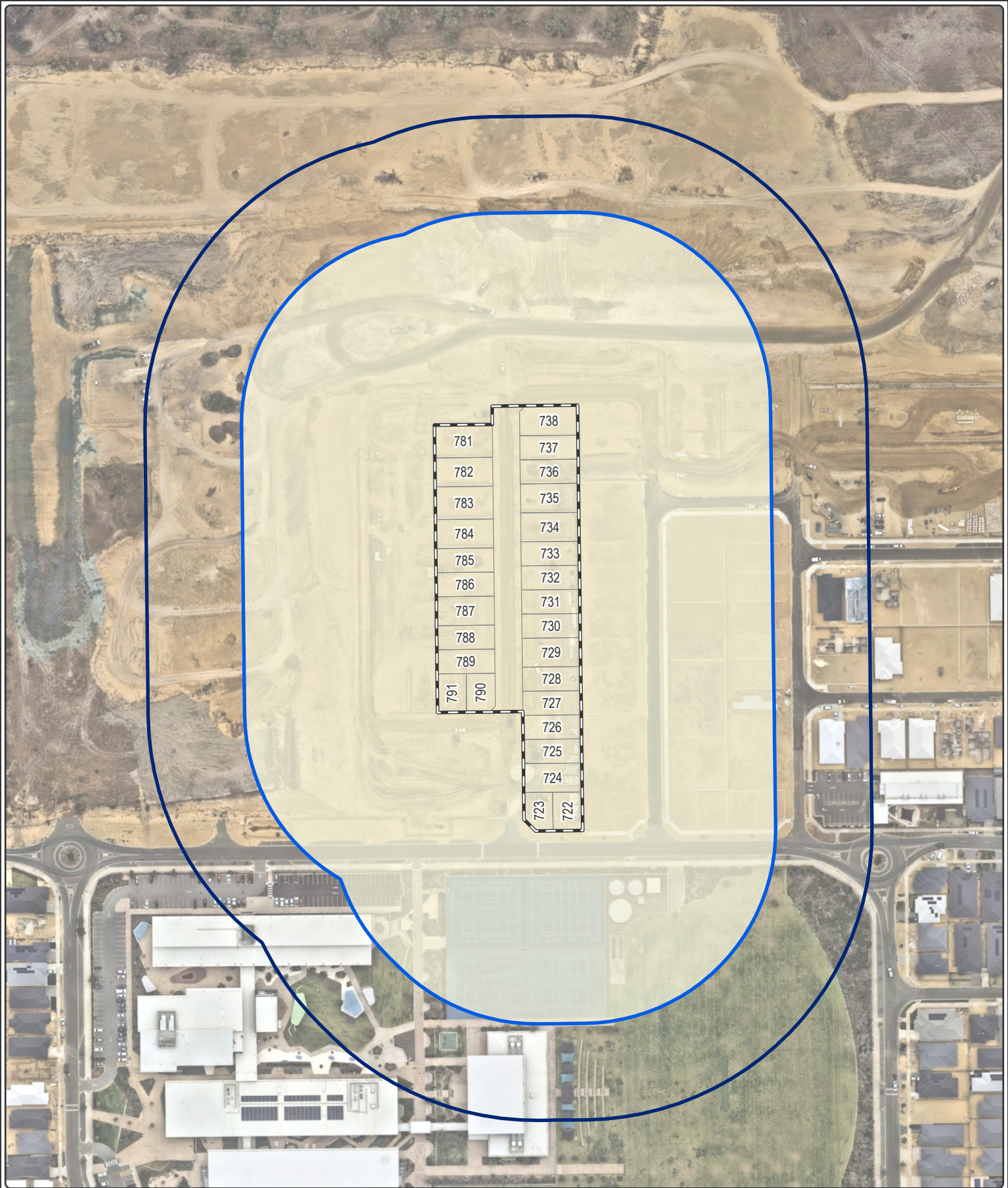
- Photo location
- Vegetation classification**
- Excluded as per clause 2.2.3.2 (e) and (f)



Datum/Projection:  
GDA 1994 MGA Zone 50  
23PER6977-SM Date: 20/12/2023



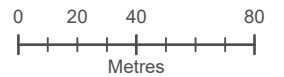




|     |     |
|-----|-----|
| 781 | 738 |
| 782 | 737 |
| 783 | 736 |
| 784 | 735 |
| 785 | 734 |
| 786 | 733 |
| 787 | 732 |
| 788 | 731 |
| 789 | 730 |
| 791 | 729 |
| 790 | 728 |
|     | 727 |
|     | 726 |
|     | 725 |
|     | 724 |
|     | 723 |
|     | 722 |

**Figure 2: Bushfire Attack Level (BAL) Contours**

- |                           |                                    |
|---------------------------|------------------------------------|
| Subject site              | <b>Bushfire Attack Level (BAL)</b> |
| 100m site assessment      | BAL - FZ                           |
| 150m site assessment      | BAL - 40                           |
| Lot boundary              | BAL - 29                           |
| Bushfire hazard interface | BAL - 19                           |
|                           | BAL - 12.5                         |
|                           | BAL - LOW                          |



Datum/Projection:  
GDA 1994 MGA Zone 50  
23PER6977-SM Date: 14/12/2023



## Appendix A – Additional Information / Advisory Notes

This assessment was undertaken as per AS 3959: 2018. It is important that the current version of AS 3959, is consulted for construction purposes.

This BAL rating is based on the information current at the date of this letter and is valid for 12 months from the date of this letter.

Bushfire Attack Level (BAL) as set out in the *Australian Standard 3959 Construction of Buildings in Bushfire-Prone Areas* (AS 3959), as referenced in the *Building Code of Australia*.

| Bushfire Attack Level (BAL) | Classified vegetation within 100 m of the site and radiant heat flux exposure thresholds | Description of predicted bush fire attack and levels of exposure   | Construction Section as per AS 3959 |
|-----------------------------|--|--|-------------------------------------|
| BAL-LOW                     |  | There is insufficient risk to warrant specific construction requirements.  | 4                                   |
| BAL-12.5                    | ≤12.5 kW/m <sup>2</sup>  | Ember attack   | 3 and 5                             |
| BAL-19                      | >12.5 kW/m <sup>2</sup> ≤19 kW/m <sup>2</sup>  | Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux.   | 3 and 6                             |
| BAL-29                      | >19 kW/m <sup>2</sup> ≤29 kW/m <sup>2</sup>  | Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux  | 3 and 7                             |
| BAL-40                      | >29 kW/m <sup>2</sup> ≤40 kW/m <sup>2</sup>  | Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux with the increased likelihood of exposure to flames. | 3 and 8                             |
| BAL-FZ                      | >40 kW/m <sup>2</sup>  | Direct exposure to flames from fire front in addition to radiant heat flux and ember attack  | 3 and 9                             |

Source: “AS 3959: 2018 Construction of buildings in bushfire-prone areas” published by Standards Australia, Sydney



## Appendix C Deposited Plan

| Plan Information |                |
|------------------|----------------|
| Tenure Type      | Freehold       |
| Plan Type        | Deposited Plan |
| Plan Purpose     | Subdivision    |

**Plan Heading**  
Lots 722-738, 781-791, 9039, Roads & Easements

| Locality & Local Government |                    |
|-----------------------------|--------------------|
| Locality                    | Baldivis           |
| Local Government            | City of Rockingham |

**Department of Planning, Lands and Heritage**  
File Number

| Examination |      |
|-------------|------|
| Examined    | Date |

| Planning Approval  |        |
|--------------------|--------|
| Planning Authority | WAPC   |
| Reference          | 155639 |

Delegated under S. 16 P&D Act 2005 Date

| In Order For Dealings |  |
|-----------------------|--|
| Subject To            |  |

For Registrar of Titles Date

**Plan Approved**  
REG 26A(1)(4)

Inspector of Plans and Surveys / Authorised Land Officer Date

| Survey Details                  |                |
|---------------------------------|----------------|
| Field Records                   | 137187, 131385 |
| Declared as Special Survey Area | Yes            |

**Survey and Plan Notation**  
Survey carried out under Reg. 26A(1) Deferred Final Marking Approval. Approval ID xxxx-xx dated Day Month Year : Landgate File xxxx-xxxx  
Limited in Depth to 60.96 metres

**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 Certificate - Regulation 54**  
I, Paul C. C. Rhodes  
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.

Licensed Surveyor Date

| Survey Organisation |                            |
|---------------------|----------------------------|
| Name                | VERIS                      |
| Address             | JOLIMONT 6014              |
| Phone               | 6241 3333                  |
| Fax                 | 6241 3300                  |
| Email               | lodgements.wa@veris.com.au |
| Reference           | 611606-S011A-PCCR          |

| Former Tenure                |                    |                   |                 |                          |
|------------------------------|--------------------|-------------------|-----------------|--------------------------|
| New Lot / Land               | Parent Plan Number | Parent Lot Number | Title Reference | Subject Land Description |
| Lots 722-738, 781-791 & 9039 | DP 415073          | Lot 9014          | C/T 2959/973    |                          |

| Former Tenure Interests and Notifications |                     |                                    |           |               |                    |          |
|---|---------------------|------------------------------------|-----------|---------------|--------------------|----------|
| Subject                                   | Purpose             | Statutory Reference                | Origin    | Land Burdened | Benefit To         | Comments |
| (33a)L                                    | Easement (Drainage) | Sec 167 of the P & D Act Reg 33(a) | DP 415073 | Lot 9039      | City of Rockingham |          |

| New Interests |                      |                                    |           |               |                                  |                 |
|---------------|----------------------|------------------------------------|-----------|---------------|----------------------------------|-----------------|
| Subject       | Purpose              | Statutory Reference                | Origin    | Land Burdened | Benefit To                       | Comments        |
| (X)           | Restrictive Covenant | Sec 129BA of the TLA               | Doc       | Lot 9039      | Electricity Networks Corporation | Fire Separation |
| (33b) (33b)A  | Easement (Sewerage)  | Sec 167 of the P & D Act Reg 33(b) | This Plan | Lot 9039      | Water Corporation                |                 |

**PRELIMINARY ONLY UNLOADED VERSION  
SUBJECT TO LANDGATE AUDIT**  
This plan is  
-Current as at 01.11.2023  
-Subject to change without notice  
-Not intended for design use, a LANDGATE CERTIFIED  
CORRECT copy should be obtained for such purposes.



VERIS  
(08) 8241 3333  
www.veris.com.au

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ADDITIONAL SHEETS  
Survey Sheet(s)

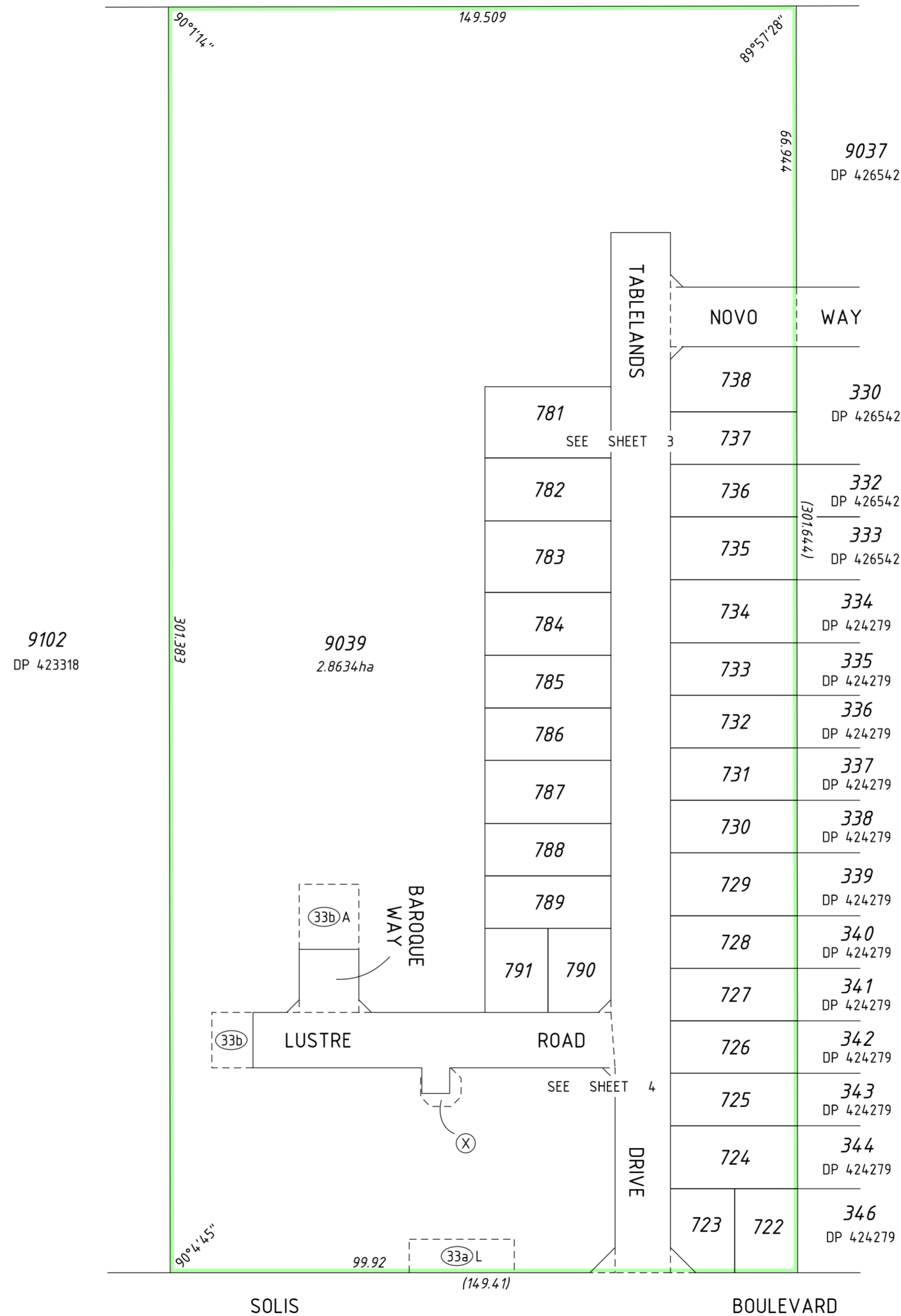
SHEET SHEETS  
1 OF 4

VERSION NUMBER  
1

DEPOSITED PLAN  
426543

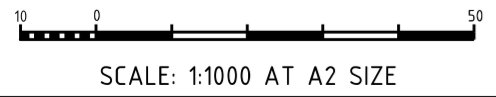
LIMITED IN DEPTH TO 60.96 METRES

9000  
DP 413787



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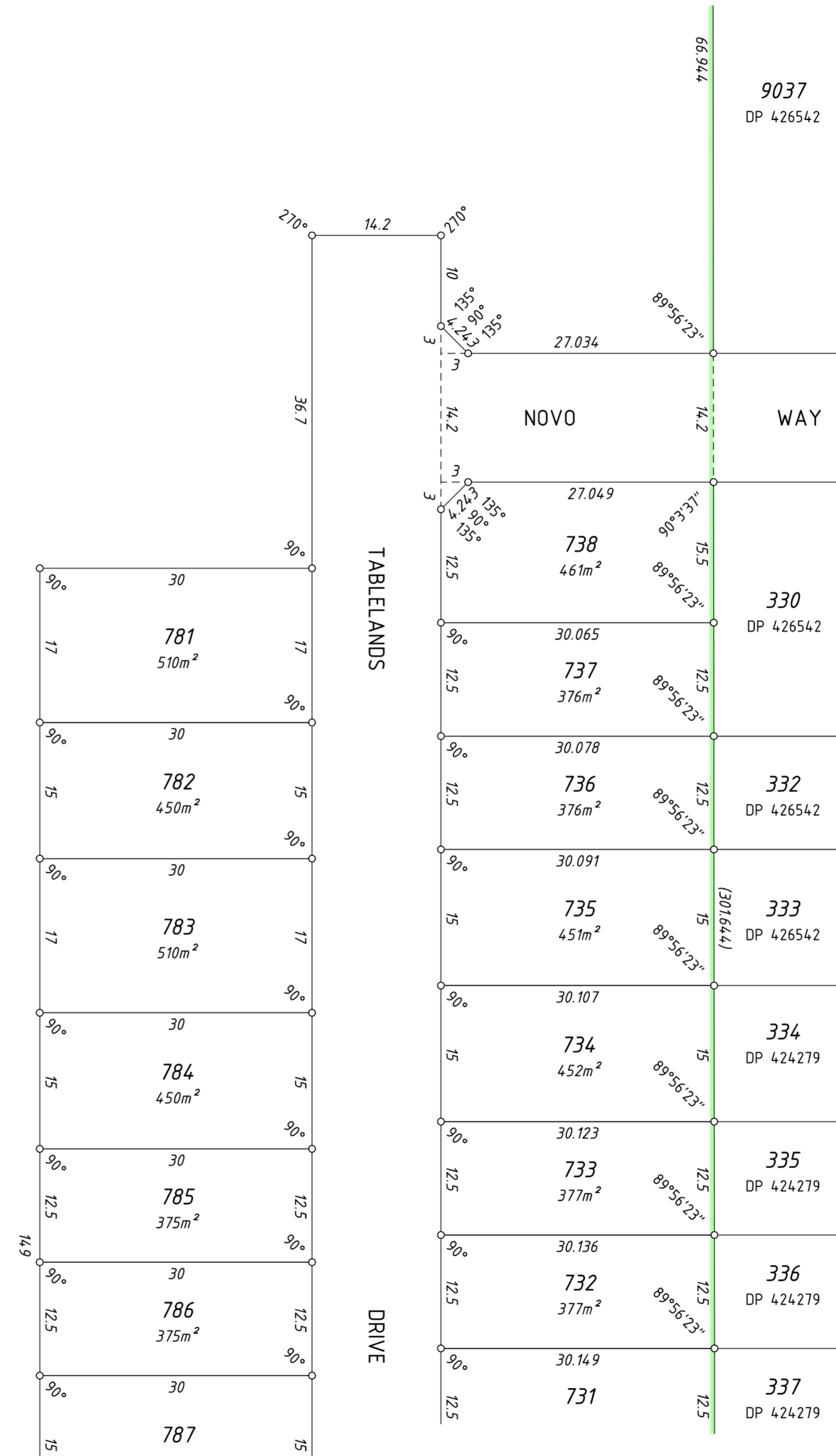
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|--------------------------------------|------------|----------------|---------------------|--------------------------|
| ADDITIONAL SHEETS<br>Survey Sheet(s) | SHEET<br>2 | SHEETS<br>OF 4 | VERSION NUMBER<br>1 | DEPOSITED PLAN<br>426543 |
|--------------------------------------|------------|----------------|---------------------|--------------------------|



LIMITED IN DEPTH TO 60.96 METRES

SEE SHEET 2

9039  
SEE SHEET 2



SEE SHEET 4

SEE SHEET 4



SCALE: 1:500 AT A2 SIZE

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ADDITIONAL SHEETS  
Survey Sheet(s)

SHEET SHEETS  
3 OF 4

VERSION NUMBER  
1

DEPOSITED PLAN  
426543

LIMITED IN DEPTH TO 60.96 METRES

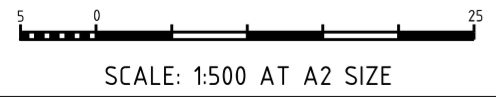
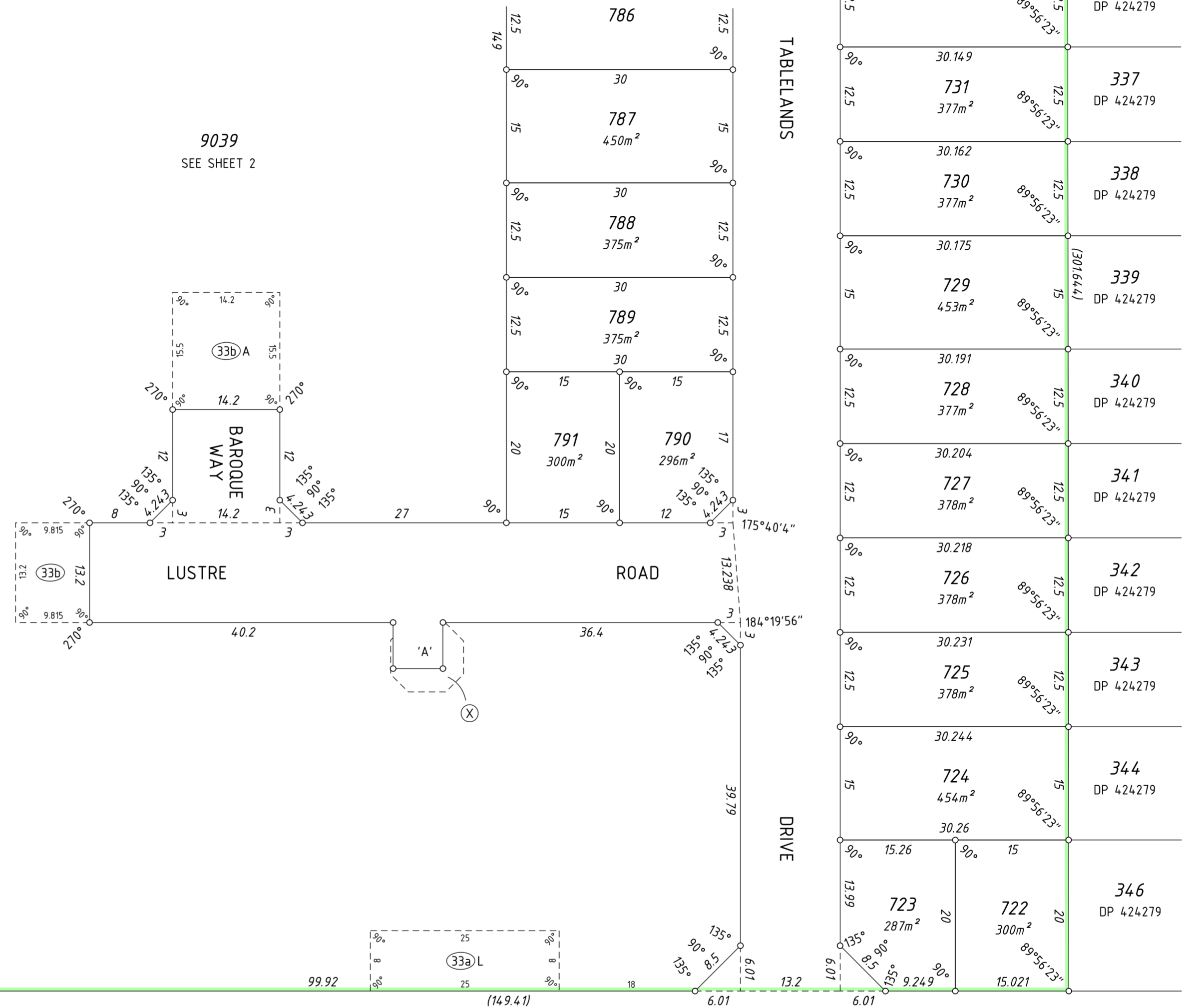
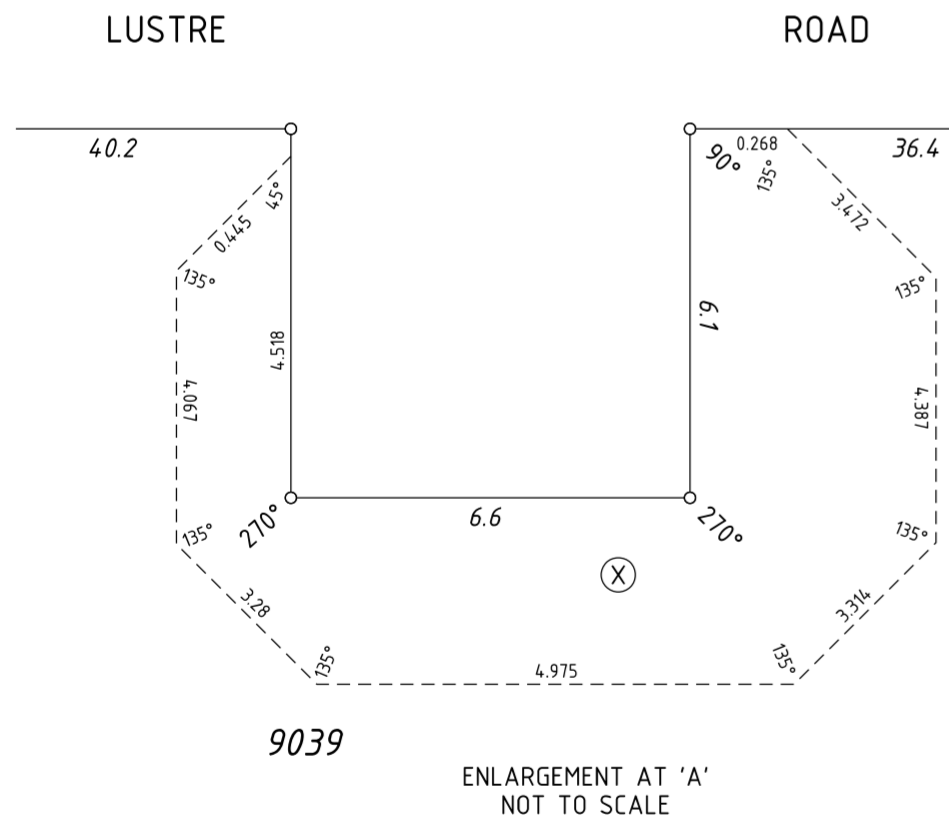
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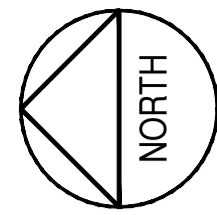


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## Appendix D Roadworks Layout Plan



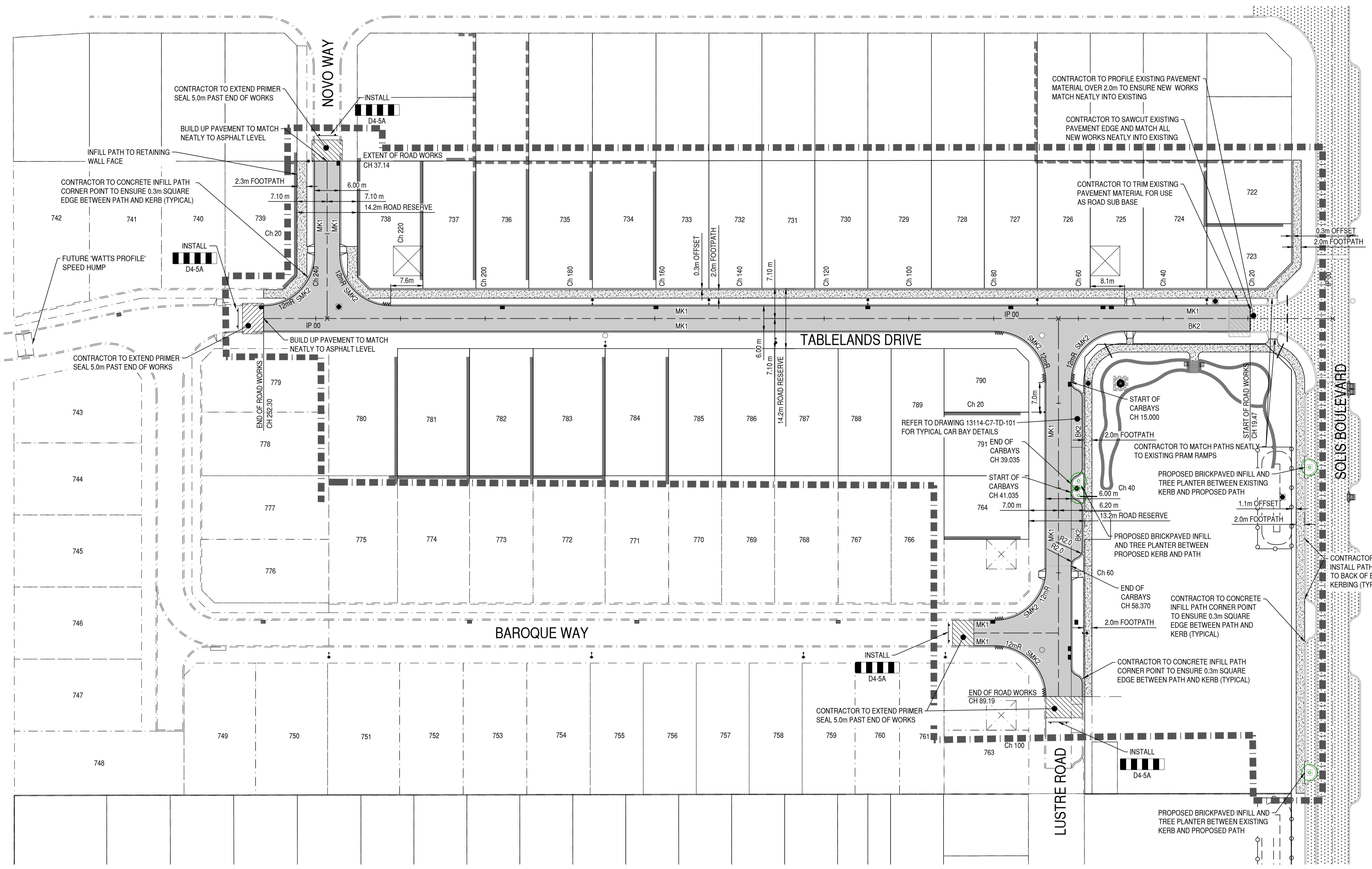


**NOTES**

1. ALL CO-ORDINATES SHOWN ON THIS DRAWING SHALL BE VERIFIED BY CONTRACTOR PRIOR TO COMMENCEMENT OF WORKS. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
2. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE SPECIFICATION AND ALSO THE REQUIREMENTS OF THE CITY OF ROCKINGHAM.
3. THE CONTRACTOR SHALL LIAISE WITH ALL RELEVANT AUTHORITIES TO LOCATE ALL EXISTING SERVICES WITHIN THE CONTRACT AREA PRIOR TO THE COMMENCEMENT OF WORK. SERVICES INFORMATION SHOWN ON THE DRAWINGS IS INDICATIVE ONLY AND MAY NOT BE COMPLETE. WHERE EXISTING AND PROPOSED WORKS CONFLICT, LEVELS ARE TO BE TAKEN AND SUPPLIED TO THE SUPERINTENDENT IMMEDIATELY.
4. ALL HEIGHTS ARE TO AHD AND ALL LEVELS SHALL BE DERIVED FROM ESTABLISHED BENCHMARKS.
5. ALL BENCHMARKS ARE TO BE PROTECTED AND PRESERVED.
6. THE CONTRACTOR SHALL INSTALL ALL DUCTS FOR ROAD CROSSINGS 1m BEHIND BACK OF KERB EDGE OF PATH.
7. ALL KERB RETURNS AT INTERSECTIONS TO BE 12m RADIUS U.S.O..
8. ALL KERBING TO BE MOUNTABLE TYPE U.S.O.. KERBING ON CORNER SWEEPS TO BE SEMI MOUNTABLE U.S.O.. (REFER TO KERB DETAILS FOR KEYING REQUIREMENTS).
9. TRANSITIONS BETWEEN DIFFERENT KERB TYPES SHALL BE MADE OVER A LENGTH OF 2m AND SHALL COMMENCE AT THE TANGENT POINT OF KERB RETURNS IN THE CASE OF INTERSECTIONS U.S.O..
10. ALL SETOUT POINTS AND RADII ARE TO FACE OF KERB.
11. ALL CONSTRUCTION SHALL MAKE SMOOTH CONNECTION TO EXISTING WORK.
12. ALL PAVEMENT TO BE CONSTRUCTED USING BLACK ASPHALT U.S.O..
13. HYDROMULCH ALL LOTS PRIOR TO PRACTICAL COMPLETION WITH GREEN DYE.
14. 'AS CONSTRUCTED' DRAWINGS ARE TO BE PREPARED TO THE REQUIREMENTS OF THE CITY OF ROCKINGHAM.

**LEGEND**

- LIMITS OF WORKS BOUNDARY
- PROPOSED ROAD CENTRELINE
- PROPOSED PAVEMENT AND KERBING
- PROPOSED GREY TRAFFICABLE PAVERS
- PROPOSED PRIMER SEAL PAVEMENT
- EXISTING PAVEMENT AND KERBING
- KERB TRANSITION
- PROPOSED KERBING (TYPE DEFINED BY TEXT)
- SMK
- MK1
- FK1
- SMK2
- BK1
- BK2
- FUTURE KERBING
- PROPOSED CONCRETE PATH
- PROPOSED KERB RAMP
- REFER TO 13114-C7-TD-1112 STANDARD DETAIL DRAWING
- FUTURE CONCRETE PATH
- EXISTING CONCRETE PATH
- SIGN AND POST
- SIGN AND DOUBLE POST
- PROPOSED STREET LIGHT
- SUGGESTED GARAGE LOCATION
- RETAINING WALL
- PROPOSED PVC CLASS 9 200mm IRRIGATION DUCT. CONSTRUCT WITH MIN. 600mm COVER. RISE 300mm TO FINISHED GROUND LEVEL AND END 1.0m FROM HARD EDGES (PATH OR KERBING) DUCTS SHALL BE MARKED WITH PVC UPRIGHTS AND LABELLED 'IRRIGATION' WHERE POSSIBLE.
- PROPOSED TREE WELL (PLANTING BY OTHERS) REFER TO LANDSCAPE ARCHITECTS DRAWINGS



SCALE 1:500 0m 10m 20m



| REV | DATE     | DESCRIPTION                   | BY | CHKR | REV | DATE | DESCRIPTION | BY | CHKR |
|-----|----------|-------------------------------|----|------|-----|------|-------------|----|------|
| 2   | 26/10/23 | REISSUED FOR COUNCIL APPROVAL | YK | BK   |     |      |             |    |      |
| 1   | 07/09/23 | ISSUED FOR CONSTRUCTION       | YK | BK   |     |      |             |    |      |



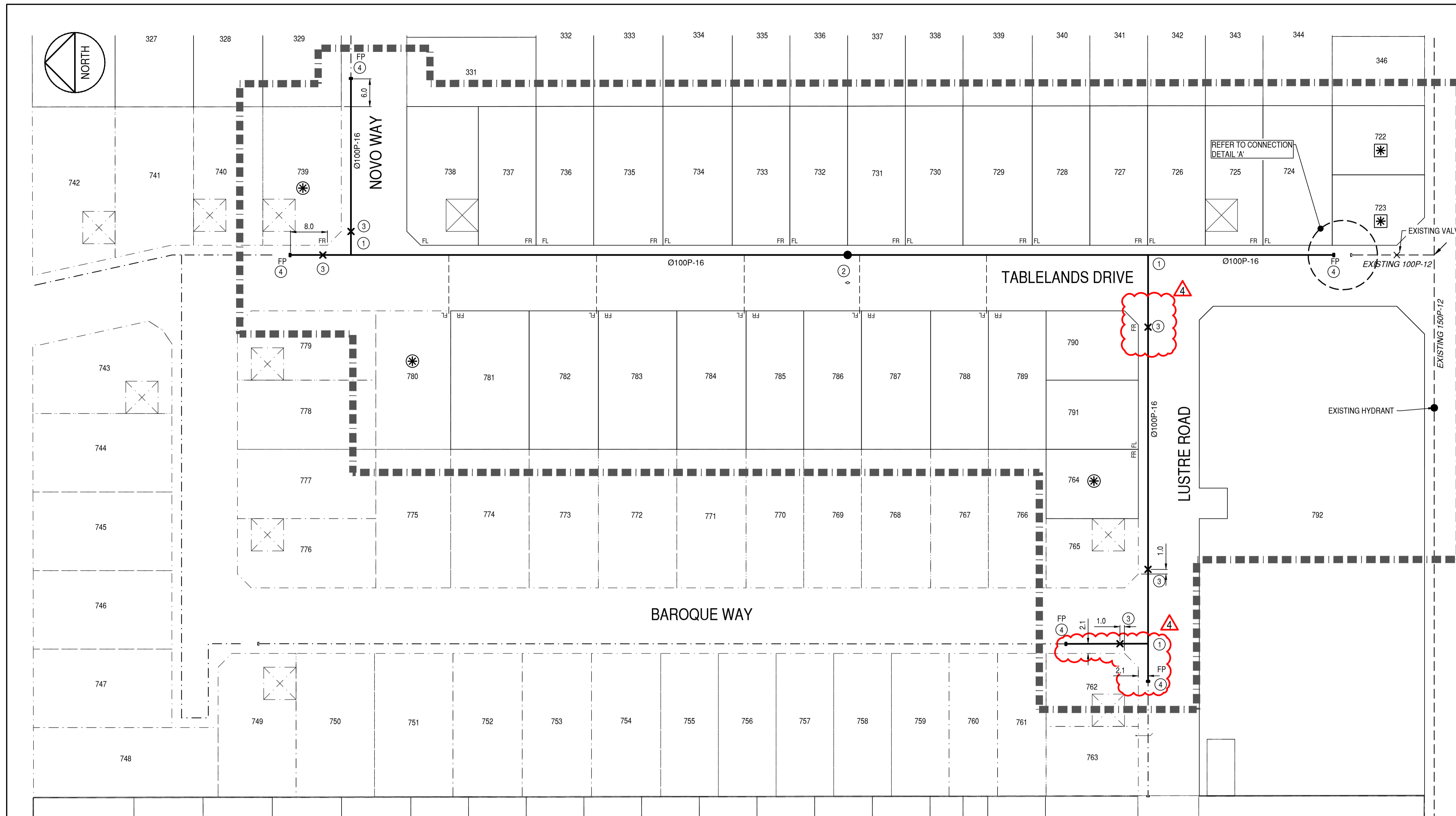
430 Roberts Road  
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Telephone: (08) 9382 5111  
admin@pfrang.com.au

|                             |              |             |              |
|-----------------------------|--------------|-------------|--------------|
| DRAWING STATUS              |              |             |              |
| <b>NOT FOR CONSTRUCTION</b> |              |             |              |
| DATE                        | GRD          | DATUM       |              |
| APRIL 2023                  | PCG94        | AHD         |              |
| DESIGNED JS                 | DRAWN DL     | CHECKED MRI | APPROVED MRI |
| SCALE D.N.G.                | SCALE D.N.G. | SHEET SIZE  |              |
| 155639                      | 1:500        | @ A1        |              |

|              |   |
|--------------|---|
| CLIENT & JOB | ABN BALDIVIS JOINT VENTURE<br>BRIGHTWOOD STAGE 11.1 |
| TITLE        | ROADWORKS<br>ROAD LAYOUT PLAN                       |
| DWG No.      | 13114-C5-RL-1111                                    |
| REVISION     | 2   |

## Appendix E Water Reticulation Plan





**NOTES**

- ALL CO-ORDINATES SHOWN ON THIS DRAWING SHALL BE VERIFIED BY CONTRACTOR PRIOR TO COMMENCEMENT OF WORKS. ANY DISCREPANCIES TO BE REPORTED TO THE SUPERINTENDENT IMMEDIATELY.
- THIS CONTRACT INCLUDES CONSTRUCTION OF WATER MAINS AND PRELAIID WATER SERVICES.
- THIS DESIGN HAS BEEN COMPLETED IN ACCORDANCE WITH THE WATER CORPORATION OF WESTERN AUSTRALIA WATER RETICULATION MANUAL (DS63).
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST WATER CORPORATION OF WESTERN AUSTRALIA WATER RETICULATION MANUAL (DS63). SHOULD DISCREPANCIES EXIST BETWEEN THESE NOTES AND THE WATER CORPORATION MANUAL, THE WATER CORPORATION MANUAL TAKES PRECEDENCE.
- ALL NEW CONNECTIONS TO EXISTING WATER MAINS SHALL BE CONSTRUCTED BY THE WATER CORPORATION AT THE DEVELOPER'S EXPENSE. THE CONTRACTOR SHALL CONFIRM THE LINE AND LEVELS OF THE EXISTING WATER MAINS AND NOTIFY THE SUPERINTENDENT PRIOR TO CONSTRUCTION COMMENCING/CONTINUING TO CONFIRM THE PROPOSED CONNECTION DETAIL.
- ALL NEW MAINS ARE TO BE LAID WITHIN 4.0m OF EXISTING MAINS FOR WATER CORPORATION CONNECTION.
- FOR CONNECTION AND INSTALLATION DETAILS REFER TO WATER CORPORATION OF WESTERN AUSTRALIA STANDARD DRAWINGS.
- FLUSHING POINTS TO BE INSTALLED AT ALL TEMPORARY AND PERMANENT DEAD ENDS.
- FL OR FR INDICATES THE SIDE OF THE LOT WHEN VIEWED FROM THE ROAD FRONTAGE WHICH IS SELECTED FOR THE WATER METER.
- ROAD CROSSINGS FOR SINGLE SERVICES SHALL BE 25mm & DUAL SERVICES 32mm P.E. LAID PRIOR TO CONSTRUCTION OF THE ROAD.
- ALL D.I. PIPE FITTINGS TO BE WRAPPED IN POLYETHYLENE SHEETING.
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH WATER CORPORATION OF WESTERN AUSTRALIA STANDARD SPECIFICATIONS.
- ALL MAINS TO BE LAID ON 2.1m ALIGNMENT (U.S.O.).
- BLUE RPPM TO BE INSTALLED PERPENDICULAR TO AND OFFSET 170mm FROM THE ROAD CENTRELINE ON HYDRANT SIDE BY CONTRACTOR.
- ALL FITTINGS FOR PIPES TO CONFORM TO AS2544.
- THRUST BLOCKS SHALL BE POSITIONED AND FORMED IN ACCORDANCE WITH MANUFACTURER'S AND WATER CORPORATION OF WESTERN AUSTRALIA SPECIFICATIONS. THE CONTRACTOR SHALL ALLOW FOR THE SUPPLY AND INSTALLATION OF ANY ADDITIONAL FLUSHING POINTS NECESSARY FOR PRESSURE TESTING AT CONTRACTOR'S EXPENSE.

**LEGEND**

- LIMIT OF WORKS BOUNDARY
- PROPOSED WATER MAINS TO BE CONSTRUCTED
- PROPOSED HYDRANTS/VALVES TO BE INSTALLED
- PROPOSED SINGLE/DUAL LONG SERVICE
- Ø100P-16 PROPOSED PIPE SIZE AND CLASS
- (1.5) NON-STANDARD ALIGNMENT SHOWN.
- CHANGE OF PIPE SIZE/MATERIAL/ALIGNMENT
- EXISTING MAINS AND ASSOCIATED FITTINGS
- FUTURE MAINS AND ASSOCIATED FITTINGS
- "FL" OR "FR" SERVICE LOCATION
- FP DENOTES FLUSHING POINT WITH CAPPED END
- F.E.S.A HYDRANT MARKER (BLUE RPPM) (TO BE INSTALLED 170mm OFFSET FROM CENTRELINE)
- ① FITTING ITEM NUMBER
- ⊗ LOT SERVICED THIS STAGE FOR FUTURE RELEASE
- ⊗ LOT PREVIOUSLY SERVICED FOR RELEASE THIS STAGE
- ⊗ SUGGESTED GARAGE LOCATION

**SCHEDULE OF FITTINGS**

| ITEM NO. | DESCRIPTION                             | NO. OF |
|----------|---|--------|
| 1        | Ø100 x Ø100 TEE (soc/soc/soc)           | 3      |
| 2        | Ø100 HYDRANT TEE (soc/soc/ff) & HYDRANT | 1      |
| 3        | Ø100 SLUICE VALVE (soc/soc)             | 4      |
| 4        | Ø100 CAPPED END & FLUSHING POINT        | 5      |

**CONNECTIONS**

CONNECTIONS (1) TO EXISTING MAINS SHALL BE BY THE WATER CORPORATION AT DEVELOPER'S EXPENSE.

**SERVICES**

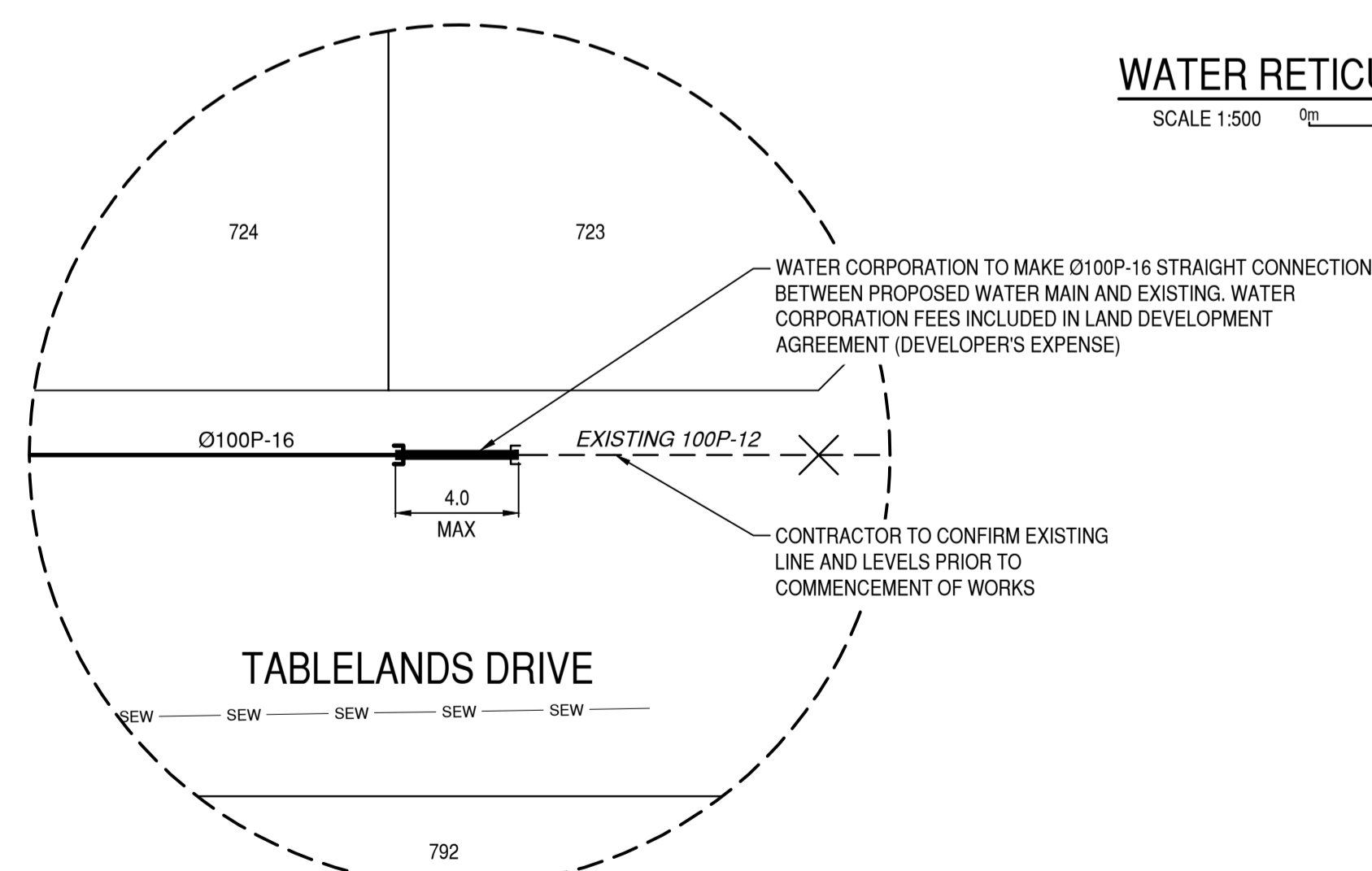
|                         |      |
|-------------------------|------|
| PRELAIID SHORT DUAL     | = 8  |
| PRELAIID SHORT SINGLE   | = 3  |
| PRELAIID LONG DUAL      | = 5  |
| PRELAIID LONG SINGLE    | = 0  |
| TOTAL SERVICES          | = 16 |
| NUMBER OF LOTS SERVICED | = 29 |
| DEFERRED SERVICES       | = 0  |

**MAINS EXTENSION**

CONTRACTOR TO LAY 327.5m OF 100P-16

**WATER RETICULATION PLAN**

SCALE 1:500 0m 10m 20m



**CONNECTION DETAIL 'A'**

SCALE 1:200 0m 4m 8m



The Essential First Step.

| REV | DATE     | DESCRIPTION                             | BY | CHKR | REV | DATE | DESCRIPTION | BY | CHKR |
|-----|----------|---|----|------|-----|------|-------------|----|------|
| 4   | 09/11/23 | REISSUED FOR CONSTRUCTION               | YK | BK   |     |      |             |    |      |
| 3   | 25/10/23 | REISSUED FOR WATER CORPORATION APPROVAL | DL | BK   |     |      |             |    |      |
| 2   | 19/10/23 | REISSUED FOR WATER CORPORATION APPROVAL | YK | BK   |     |      |             |    |      |
| 1   | 29/08/23 | ISSUED FOR CONSTRUCTION                 | JS | BK   |     |      |             |    |      |



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DRAWING STATUS

**FOR CONSTRUCTION**

|          |            |       |        |            |     |
|----------|------------|-------|--------|------------|-----|
| DATE     | APRIL 2023 | GRD   | PCG94  | DATUM      | AHD |
| DESIGNED | JS         | DRAWN | DL     | CHECKED    | MRI |
| APPROVED | MRI        | SCALE | D.N.G. | SHEET SIZE | A1  |
| W.A.P.C. | 155639     | SCALE | 1:500  | DRG No.    | @   |

|  |                            |                              |                  |
|--|----------------------------|------------------------------|------------------|
| CLIENT & JOB   |                            | MSWA RETICULATION SUBMISSION |                  |
| THIS PLAN IS ACCEPTED AS BEING IN ACCORDANCE WITH THE ENDORSED MSWA CONCEPT PLAN:  |                            | MA72-100-001-01D             |                  |
| COMPLIANCE WITH THIS CONCEPT PLAN AND WATER CORPORATION MANUALS HAVE NOT BEEN CHECKED AND REMAINS THE RESPONSIBILITY OF THE CONSULTING ENGINEER. |                            | FOR: MANAGER LAND SERVICING  |                  |
| PLAN:  | OE92-103-001-01C           | FILE:                        | 151149980        |
| CLIENT & JOB   | ABN BALDIVIS JOINT VENTURE | BRIGHTWOOD STAGE 11.1        |                  |
| TITLE  |                            |                              |                  |
| WATER RETICULATION PLAN  |                            |                              |                  |
| SHEET SIZE   | A1                         | DRG No.                      | 13114-C4-WR-1111 |
| REVISION   |                            |                              | 4                |

