Aspect Industrial Estate

Lot/Warehouse 4

SSD-98407710

99 Berriwerri Drive, Kemps Creek

Services Infrastructure Assessment

Mirvac

JANUARY 2026

18-596

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1. Introduction

This Services Infrastructure Assessment Report provides an overview of infrastructure servicing requirements to support SSD-98407710, for the intended operations of the facility to Lot/Warehouse 4 development for Mirvac, located at 788-882 Mamre Road, Kemps Creek (Lot 301 DP1305254, Lot 105 DP1305965, and Lot 104, DP1305965). Warehouse 4 / Lot 4 is located within Mirvac's Aspect Industrial Estate (AIE).

The SEARs document provided to the developer identifies key issues to be addressed as part of the Environmental Impact Statement to be submitted for SSD-98407710. AT&L have been engaged by Mirvac to address one of the identified SEARs being '*Infrastructure Requirements*'. This report outlines the key public utility infrastructure required to support the proposed development.

SEARs Item	AT&L Response
Infrastructure Requirements:	
▪ *an infrastructure plan that assesses impacts on existing utility infrastructure and service provider assets surrounding the site*	Refer Section 2.6, Section 3.1, 3.2, 3.3, 3.4 and 3.5
▪ *a detailed written and/or graphical description of infrastructure required on the site, including any electrical substation/s and on-site switch yard/s*	Refer Section 3
▪ *details of existing infrastructure capacity to service the development, any proposed augmentation for electricity, drinking water, wastewater and recycled water and details of how upgrades will be funded and delivered*	Refer Section 2.1, 2.2, 2.3, 2.4 and 2.5 Refer Section 3.1, 3.2, 3.3, 3.4 and 3.5
▪ *identification of any existing infrastructure or easements which may be impacted by the development and details of measures to address any impacts.*	Refer Section 2.9

1.1. Site Location

The location of proposed Lot/Warehouse 4 is presented in **Figure 1**. Lot/Warehouse 4 is located on Berriwerri Drive, and is bound by development works occurring by GPT to the north, future development works by Dexus and Frasers to the east, Berriwerri Drive (Estate Road 03) to the west, and the development works by Barrings to the south. Lot 4 has an approximate site area of 6.98 hectares, with a proposed warehouse and office area of approximately 3.10 hectares.

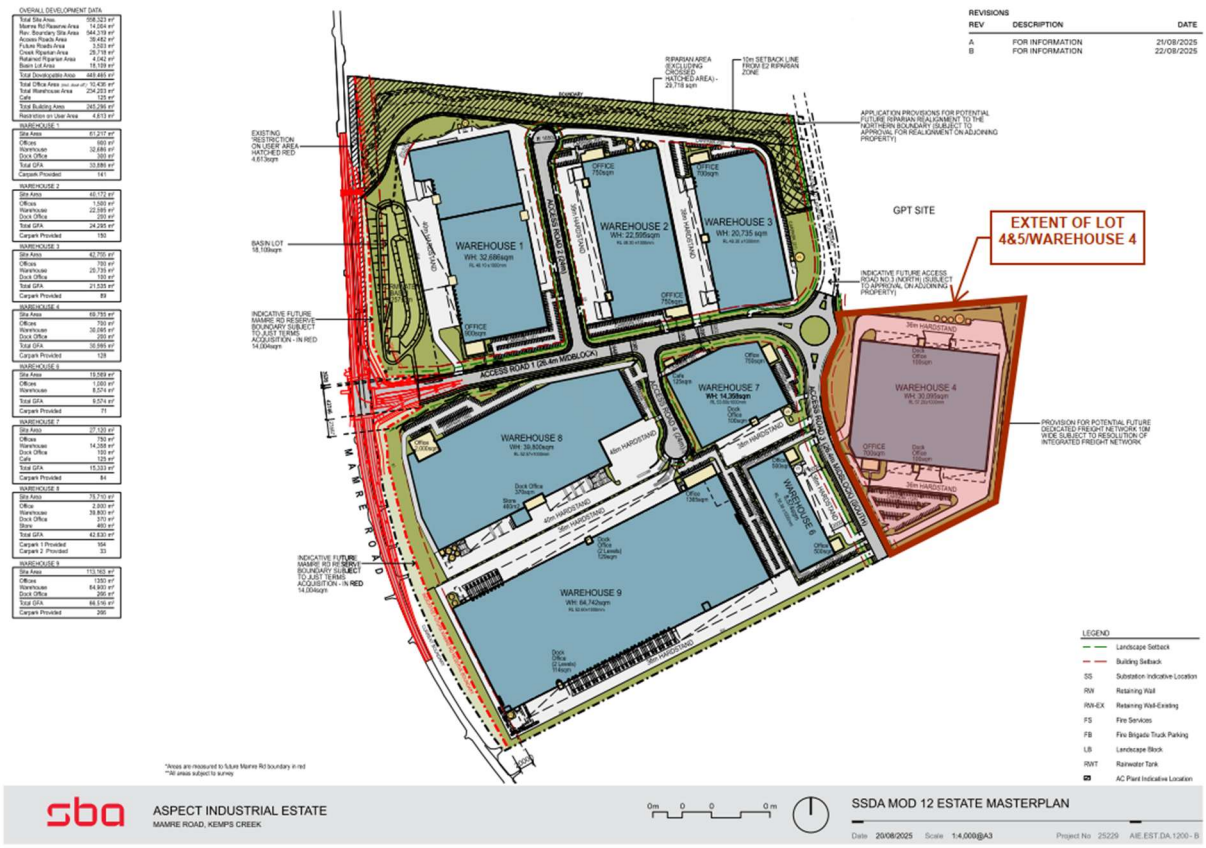


Figure 1: Lot/Warehouse 4 Locality Plan (prepared by SBA Architects, August 2025)

1.2. Scope of Work

Generally, the proposed development on Lot 4 within AIE includes minor on lot earthworks, installation of on-lot infrastructure, and the construction of a warehouse, landscaping, hardstand and car parking. This also includes the construction of three heavy vehicle crossings and one car park crossing to Berriwerri Drive (Access Road 3). The lot location and built form configuration will align with that intended to be established under SSD-10448.

Warehouse 4 on AIE Lot 4 will comprise one (1) warehouse building. It is proposed to be used for warehouse and distribution premises 24 hours a day, 7 days a week. The proposed development will comprise:

- Construction and fitout of a warehouse building, comprising 30,095sqm of Gross Floor Area (GFA)
- Ancillary two-level office space, comprising 700sqm of GFA
- Ancillary dock office space, comprising 200sqm of GFA
- Hardstand comprising of 21,950sqm
- Landscaped Area of 16,890sqm, comprising 24% of site area
- Car parking area, including 128 spaces on the southern side of the proposed warehouse.

It is noted that works have been previously completed to Lot 4 as contemplated under SSD-10448. These works generally include significant earthworks to construct the building pad, for which the on-lot warehouse is to be constructed upon. Further minor earthworks are contemplated under SSD-98407710 to suit the final site grading.

In addition, the estate road network and reticulated services have been constructed under SSD-10448.

The key public utility assets required to support the proposed development and as described in Section 2 of this report are:

- Potable Water reticulation

- Recycled Water reticulation
- Waste Water reticulation
- Stormwater discharge
- Electrical reticulation
- Telecommunications infrastructure

It shall be noted that reticulation of the above utility services has been undertaken at an Estate wide level and have been installed as part of the Estate Infrastructure works contemplated and approvals under SSD-10448.

Of note, the Estate Infrastructure works included the following:

- Potable Water reticulation within the internal road network, with connections to existing watermains within Mamre Road
- Recycled Water reticulation within the internal road network. Presently, the internal recycled watermain network is cross-connected to the Potable Watermain network as the regional Recycled Watermain network is not yet fully constructed and operational (to be completed by others, namely Sydney Water)
- Waste Water reticulation within the Estate, which presently drains to an Interim Operating Procedure (IOP) (pump out holding tank) located in the north-western corner of the Aspect Industrial Estate. This IOP is known as the Central IOP.
- Stormwater discharge within the Estate, with provision for two separate stormwater discharge locations for Lot 4 provided in the north-western corner, and south-western corner of Lot 4
- Electrical reticulation within the internal road network, including the provision of HV cabling. Site specific substation requirements will be delivered separately from the estate works as part of the works contemplated under SSD-80331959.
- Telecommunications infrastructure reticulation within the Estate, including both NBN pit and pipe and Telstra pit and pipe infrastructure

There are no proposed amplifications of offsite infrastructure to service this development. Of note:

- Potable Water reticulation with the Aspect Industrial Estate has been connected to existing watermains in Mamre Road as noted above.
- The Recycled Water the internal recycled watermain network is cross-connected to the Potable Watermain network as the regional Recycled Watermain network is not yet fully constructed and operational (to be completed by others, namely Sydney Water)
- Waste Water reticulation has been connected to the commissioned and operational Central IOP as noted above
- Stormwater discharge locations have been provided at an estate level
- Electrical reticulation is already present in the road network. Separate HV designs for Lot 4 are to be prepared during detailed design, which subject to advice from Endeavour Energy, may or may not require additional electrical feeders. It is not anticipated that Lot 4 would require additional electrical feeders.
- Telecommunications infrastructure for both NBN and Telstra would allow Lot 4 to connect to telecommunications as required.

2. Service Authorities – Existing Services Infrastructure

Based on a study conducted from information obtained from Before You Dig Australia (BYDA) records, utility design drawings for the Estate Infrastructure works under and approved as part of SSD-10448, the following utility services are located within the vicinity of Lot 4, consistent with the above:

- Potable and Recycled water (Sydney Water Corporation)
- Sewer (Sydney Water)
- Electrical (Endeavour Energy)
- Telecommunications (NBN, Telstra, Fibrepath, Optus and/or UECOMM)
- Stormwater (Penrith City Council)

No gas was noted to be located within the vicinity of the Site.

Refer **Appendix D –Before You Dig Australia Records**.

2.1. Potable Water – Existing

A DN200 potable watermain has been constructed under Sydney Water case CN198857PW along the western side of Road 03 (Berriwerri Drive), being the opposite side of Road 03 to where Lot 4 is located. Two DN200 potable conduits, branching off the DN200 potable watermain, have been provided, which cross under Berriwerri Drive (Access Road 03) to provide future water connection to Lot 4. The existing potable water infrastructure is shown in **Figure 2** below. The existing potable water mains are consistent with the existing assets shown on Sydney Water's BYDA plans (refer to **Appendix A**).

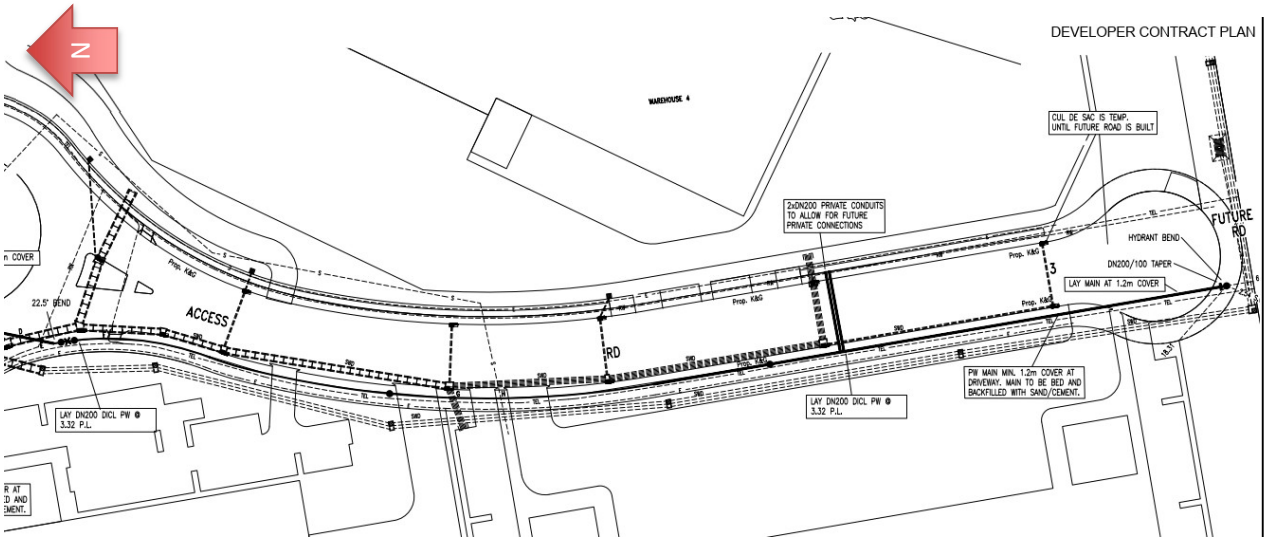


Figure 2 - Locations of Existing DN200 Potable Water Conduit Locations for Lot 4 Connection (Sydney Water CN198857PW, Jan 2023)

2.2. Recycled Water – Existing

Sydney water has proposed to reticulate recycled water from the Upper South Creek Advanced Water Recycling Centre and that the estate infrastructure will include recycled (purple) water mains. Sydney Water would provide trunk lead-in recycled water mains to the Aspect estate to allow connection to those reticulation mains. These recycled watermains were sized to service the Aspect Industrial Estate, including Lot 4.

The reticulated recycled water mains are ultimately intended to provide recycled water for use within the proposed Lot 4 development in place of what, traditionally, rainwater tanks would service, namely being non-potable water uses such as toilet flushing and landscape irrigation.

A DN300 recycled watermain has been constructed under Sydney Water case CN198856RW along the eastern side of Berriwerri Drive (Road 03), being the same side of Road 03 to where Lot 4 is located. The existing recycled water mains are consistent with the existing assets shown on Sydney Water's BYDA plans (refer to **Appendix A**).

The location of the recycled watermains is shown below in **Error! Reference source not found.**.

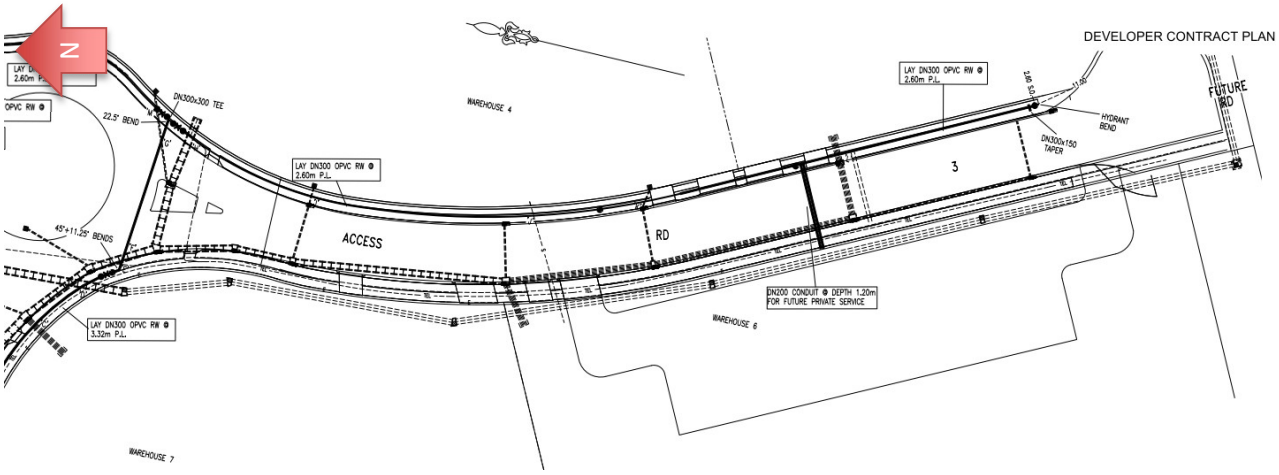


Figure 3 - Locations of Existing DN300 Recycled Water Conduit Locations for Lot 4 Connection (Sydney Water CN198856RW, Jul 2023)

2.3. Sewer

A DN225 sewermain has been constructed under Sydney Water case CN198855WW in the north-western corner of Lot 4, along the eastern side of Berriwerri Drive (Road 03). Two Property Connection Points (PCPs) have been provided along the sewermain on the western side of Lot 4, as indicated below within the blue circles, specifically with the black arrows. Refer Error! Reference source not found. below. The existing sewer mains are consistent with the existing assets shown on Sydney Water's BYDA plans (refer to **Appendix A**).

These sewer mains were sized to service the Aspect Industrial Estate, including Lot 4.

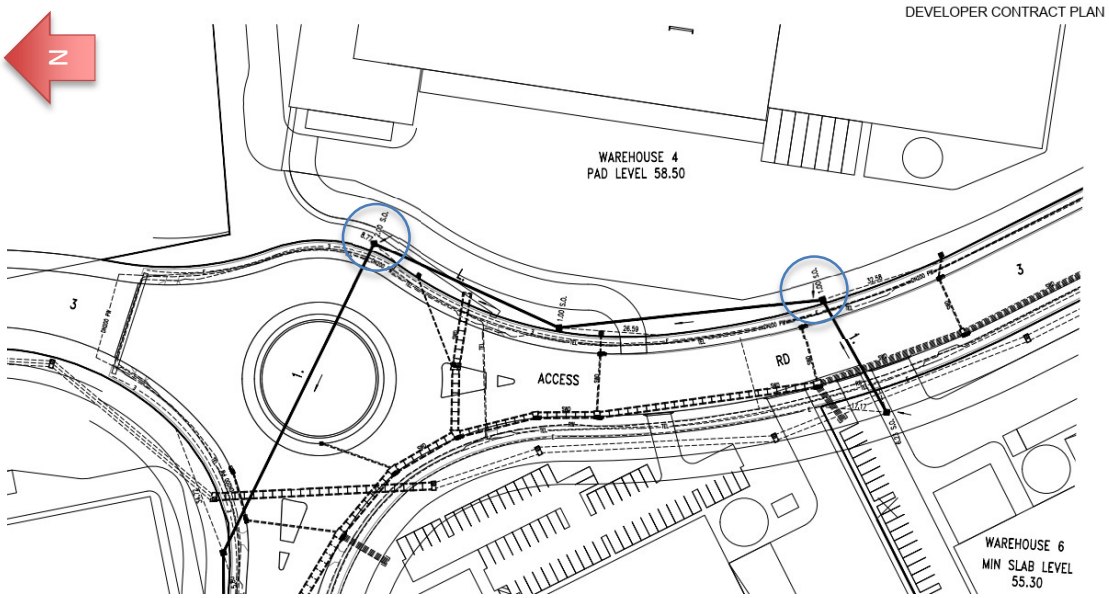


Figure 4 – Existing sewer to the west of Lot 4 and PCP locations

2.4. Electrical

Existing electrical conduits and HV cabling are present within Berriwerri Drive (Road 03). The electrical conduits and HV cabling were constructed under the Endeavour Energy case UIS0978 for Berriwerri Drive (Road 03). An existing switching station (no. 95869) was constructed under the same case south-west corner of Lot 4 adjacent to the proposed car park within Lot 4. The existing electrical conduits are consistent with the existing assets shown on Endeavour Energy's BYDA plans (refer to **Appendix A**).

Lot 4 site will connect to the existing electrical feeder SK2242 (Mirvac Estate No2) which has approximately 3.7MVA capacity. An electrical design for the proposed Warehouse 4 will be developed by a Level 3 ASP and submitted to Endeavour Energy for approval. However, it is anticipated that the HV electrical feeders in the estate have sufficient residual capacity to service Lot 4. The location of the future substation is not shown on the Architectural Site and Warehouse Plan, however, is anticipated to be located near to the proposed office for Lot 4. The location of the substation will be confirmed during detailed design.

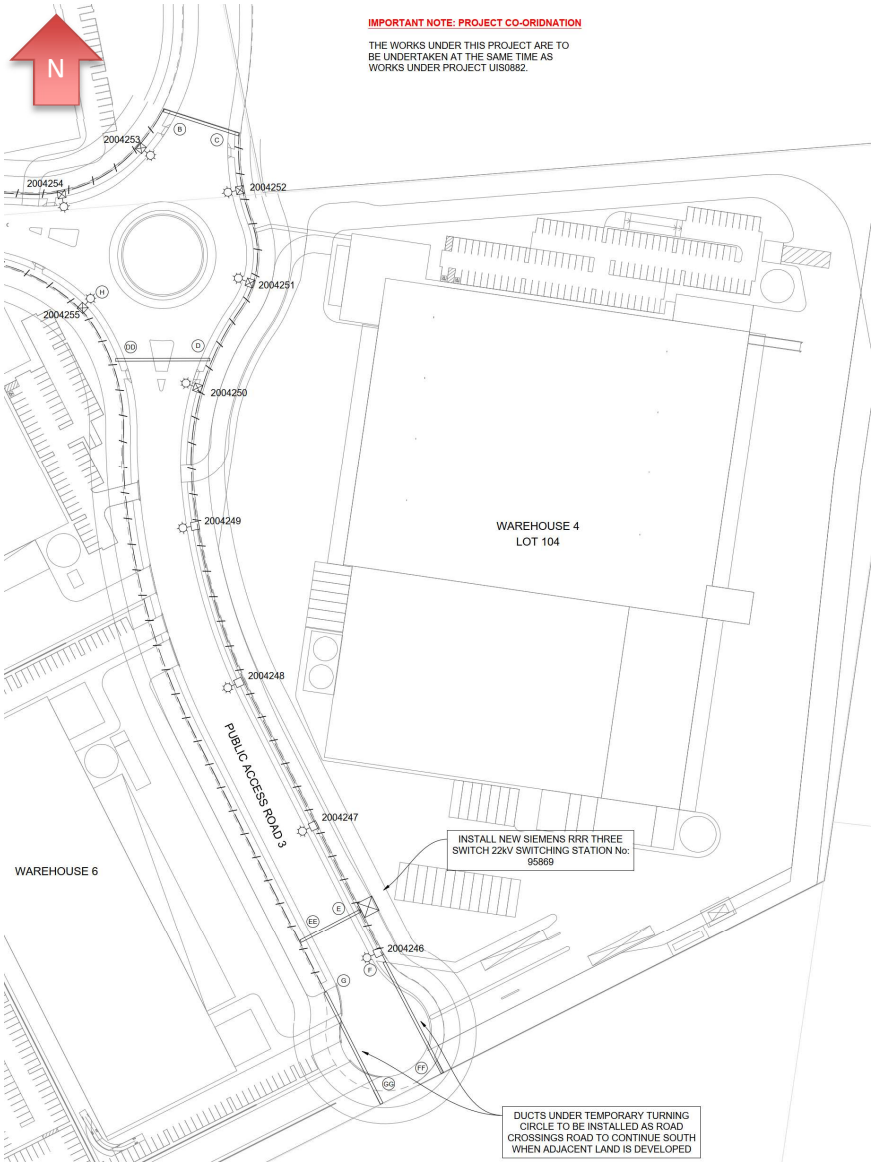


Figure 5 – Existing High-Voltage Circuit Reticulation Plan from UIS0978 (Edgewater, A526297_UIS0978 Rev A)

2.5. Telecommunications – NBN and Telstra

As part of the estate wide infrastructure, NBN and Telstra pit and pipe has been installed to service the lots, which include Lot 4.

Both NBN and Telstra pit and pipe have been installed along both sides of Berriwerri Drive (Road 03). A P100 and P50 conduit tail out has been provided north-west of Lot 4 along the eastern side of Berriwerri Drive (Road 03) adjacent to the roundabout as a future connection point for Lot 4. Refer to **Figure 6** below.

Noting that the pit and pipe infrastructure is new, minimal fibre installation/connections are likely to be in place at present. As such, it is expected that subject to the preferred telecommunications provider the Lot 4 occupier seeks to use, it is likely that additional fibre-optic cabling will need to be installed within the existing pit and pipe network.

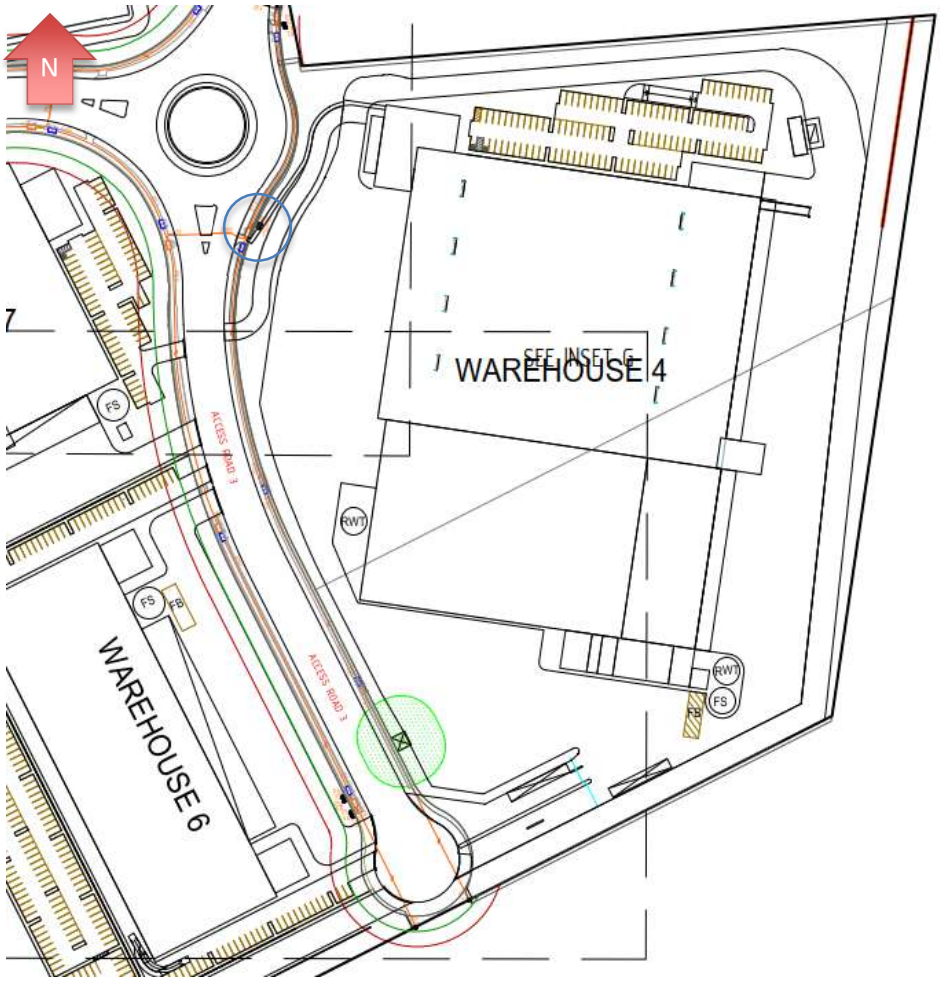


Figure 6 – NBN and Telstra Alignment with Tail-Out Locations Shown

2.6. Telecommunications – Other

From the completed Before You Dig (BYD) inquiry, other communication assets have been located within the vicinity of Lot 4. These are described below.

2.6.1. NBN – External

Designed/planned NBN pit and pipe, and cables, are shown to be located on Berriwerri Drive. These include:

- P100 conduit with 1 cable along western side of Berriwerri Drive (Road 03)
- Multiple NBN pits with P50 conduit lead-in to Lot 7 and Lot 6 along western side of Berriwerri Drive

Note the BYD plans did not show any existing/proposed cables on the eastern side of Berriwerri Drive adjacent to Lot 4. Refer BYD plans in **Appendix A** for more details.

These planned assets are located outside of the Lot 4 footprint and therefore are unaffected by the proposed development of Lot 4.

2.7. Gas

There are no existing gas mains (Jemena or other) located within the vicinity of the Site. There are no plans to provide Gas to the development.

2.8. Stormwater

The estate infrastructure works have made allowance for two connections to from the site to the street drainage system. The images below show a north-west 1.5m (W) x 0.9m (H) box culvert connection from Berriwerri Drive (Road 03) and a south-west 2 x DN600 pipe connection corner from Berriwerri Drive (Road 03). Combined, these drainage connections from the Estate have been sized to capture all the site stormwater from Lot 4. Refer **Figure 7** and **Figure 8** below.

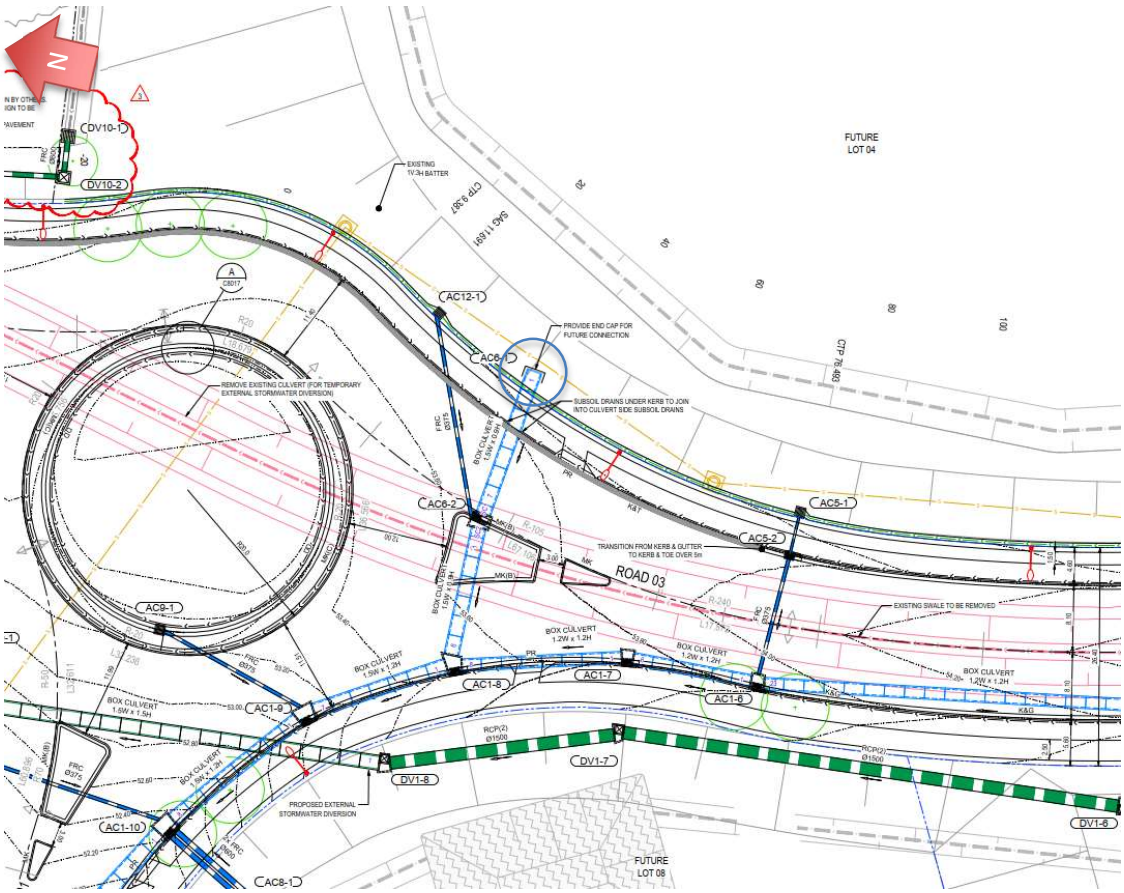


Figure 7 – North-west stormwater connection for Lot 4 from Berriwerri Drive

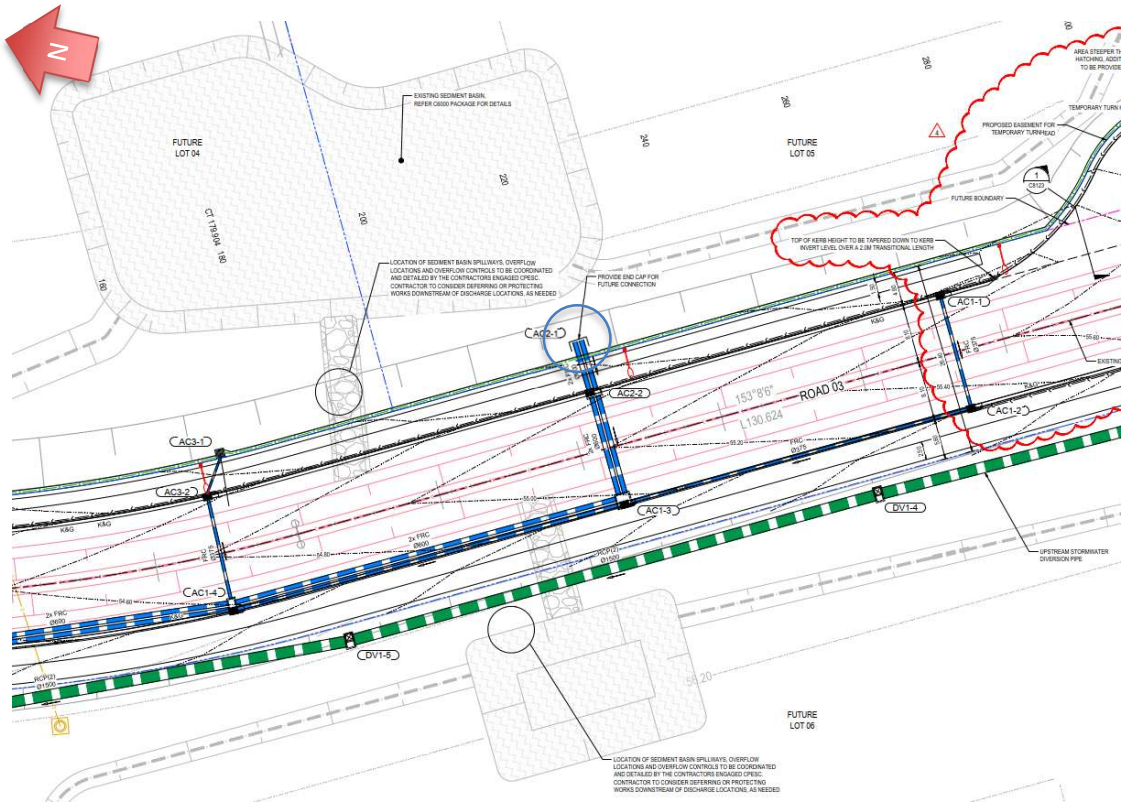


Figure 8 – South-west stormwater connection for Lot 4 from Berriwerri Drive

2.9. Existing Easements

With reference to the existing Deposited Plan that includes the land for which the Lot 4 development works are proposed to be located on, being Lot 104/DP1305965, there are currently four easements registered within this Lot. Refer **Figure 9** below which shows the DP plan, the relative location of the easements, and the relative location of Lot 4.

The four easements are outlined below:

1. Drainage easement (Y) in the south-western corner of Lot 4. Refer to the DP plan for easements B, C and Y. Easements B and C relate to a positive covenant and restriction on the use of land. The drainage easement and positive covenants/restrictions on land use, are to remain as these relate to existing stormwater infrastructure that is to remain within Lot 4.

2. Temporary cul-de-sac (X) in the south-western corner of Lot 4. Easement X refers to the right of access with variable width. Ultimately, Berriwerrie Drive is proposed to extend through to the Barrings site to the south of AIE. As such, this easement is temporary only and will be extinguished under SSD-10448, once the road has been constructed through and the temporary cul-de-sac demolished.

3. Switching station easement (M) in the south-western side of Lot 4. This easement will remain as the switching station is to be retained within Lot 4.

4. Wedge easement (A) in the north-western corner of Lot 4 adjacent to the Berriwerri Drive road corridor. Refer to DP plan for easements A and Z. Easement A refers to Water Dam Restrictions on the use of land and Easement Z refers to an Animal Farm Covenant. It is noted that Mirvac are currently seeking to remove these two affectations/easements on the title.

The Lot 104/DP1305965 DP plan is included for reference in Appendix C.

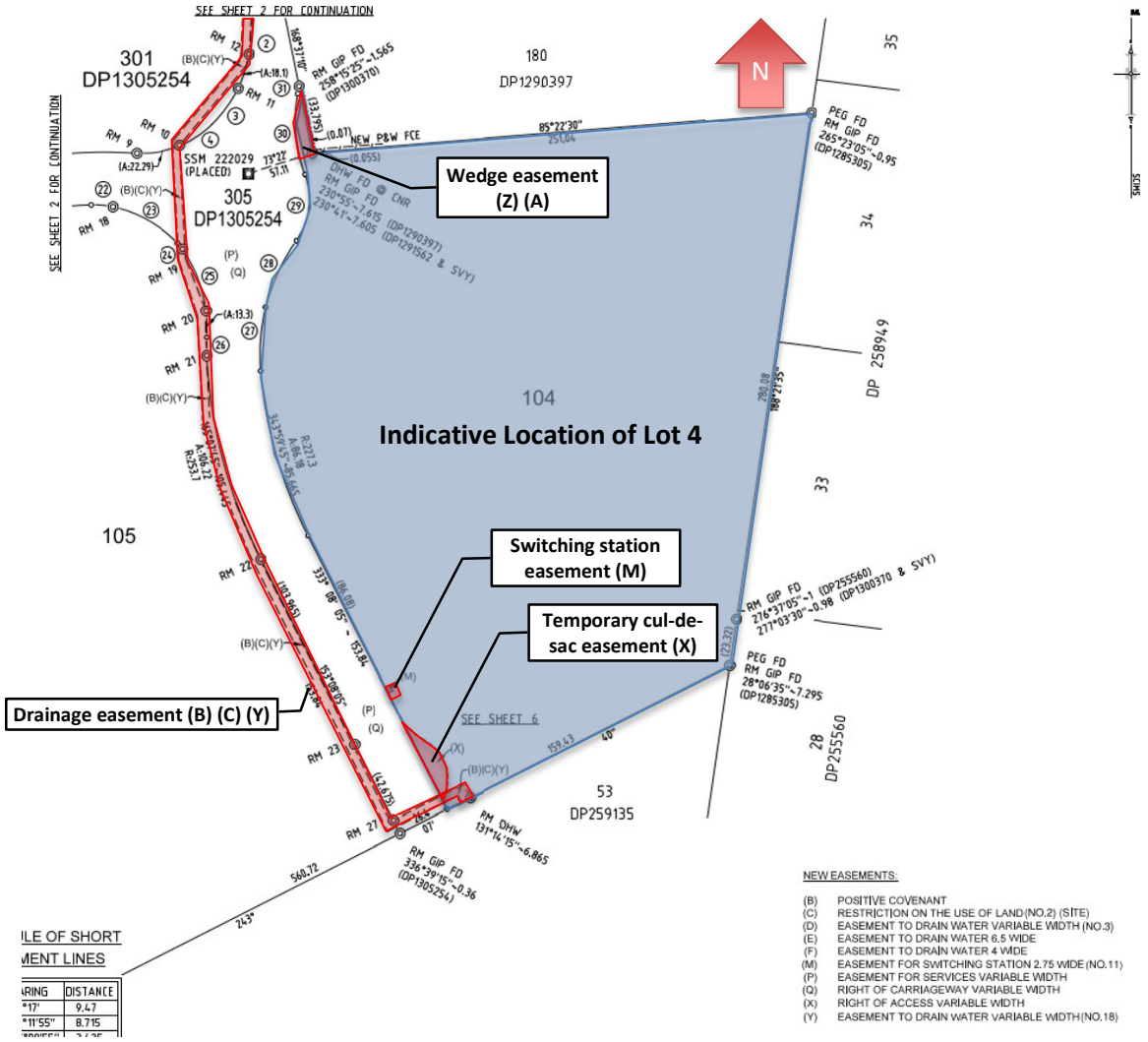


Figure 9 - Lot 104/DP1305965 DP Plan with Lot 4 and easement locations shown

3. Indicative Utility Servicing Strategy and Impacts

3.1. Potable Water

As noted above in **Section 2.1**, an existing potable watermain has been installed as part of the Estate Infrastructure works as part of SSD-10448, including the provision of conduit road crossing to facilitate potable water connection for Lot 4.

No further potable water reticulation works are anticipated to be required, other than the connection to the existing watermains located within Berriwerri Drive (Road 03). The location of the potable water connection point will be determined by the future builder of Lot 4. The connection works will be funded by the Applicant.

An application to Sydney Water will be required to facilitate the connection, which is expected to be able to occur via Sydney Water Tap-In.

The existing potable watermains are not affected by the proposed Lot 4 works, noting that there are no watermains located within Lot 4 itself.

3.2. Recycled Water

As noted above in **Section 2.2**, an existing recycled watermain has been installed as part of the Estate Infrastructure works as part of SSD-10448.

No further recycled water reticulation works are anticipated to be required, other than the connection to the existing recycled watermains located within Berriwerri Drive (Road 03). The location of the recycled water connection point will be determined by the future builder of Lot 4. The connection works will be funded by the Applicant.

An application to Sydney Water will be required to facilitate the connection, which is expected to be able to occur via Sydney Water Tap-In.

The existing recycled watermains are not affected by the proposed Lot 4 works, noting that there are no recycled watermains located within Lot 4 itself.

3.3. Wastewater

As noted above in **Section 2.3**, an existing sewer main has been installed as part of the Estate Infrastructure works as part of SSD-10448.

No further wastewater reticulation works are anticipated to be required, other than the connection to the existing wastewater main located along the west or eastern side of Lot 4. The connection works will be funded by the Applicant.

To allow for the construction and servicing of the proposed development of Lot 4, the following alteration works are potentially required:

- Protection of the concrete encased DN224 PP SN10 existing sewer main adjacent to the proposed stormwater pit connection the existing 1.5mx0.9m RCBC culvert stub. The proposed stormwater works in this location will be subject to further coordination with Sydney Water during BPA and detail design.

An application to Sydney Water will be required to facilitate the connection and to facilitate any manhole level adjustments, which is expected to be able to occur via Sydney Water Tap-In.

3.4. Electrical

As noted above in Section 2.4, existing electrical conduits and high-voltage cabling has been installed as part of the Estate Infrastructure works as part of SSD-10448. Lot 4 site will connect to the existing electrical feeder SK2242 (Mirvac Estate No2) which has approximately 3.7MVA capacity.

From a high-level electrical demand analysis for Lot 4 by Edgewater Connections, the base build (excluding tenant loads) will require approximately 850kVA. Edgewater have advised that it is anticipated that the existing high voltage electrical feeders in the estate have sufficient residual capacity to service Lot 4. If additional load is required due to tenant loadings, Edgewater Connections have advised that there is additional spare capacity in the existing high voltage feeder that may be sufficient to service additional electrical loading. Edgewater Connections have noted they estimate there is approximately 3.7MVa of spare capacity within the existing electrical high voltage feeder.

An electrical design for the proposed Warehouse 4 will be developed by a Level 3 ASP and submitted to Endeavour Energy for approval. Any proposed electrical works will be funded by the Applicant and are subject to any funding provided by Endeavour Energy. These electrical assets will be handed over to Endeavour Energy upon completion of the electrical works and will be maintained by Endeavour Energy thereafter.

Subject to the electrical design for Lot 4, easements in favour of Endeavour Energy will be established in and around the proposed electrical substation(s).

To allow for the construction and servicing of the proposed development of Lot 4, the following alteration works are potentially required:

- Protection of 2x 50mm and 3x2 125mm LV and HV electrical ducts under the temporary cul-de-sac under the eastern footpath along Berriwerri Drive during the construction of the through road and two industrial vehicular crossings.
- Protection of 2x 50mm and 3x2 125mm LV and HV electrical ducts (with 1x streetlight cable and 1x HV cable) under the eastern footpath along Berriwerri Drive for the construction of two proposed industrial vehicular crossings west of Warehouse 4
- Potential low height retaining wall to be constructed around the switching station. This is to be further coordinated and confirmed during detailed design.

Other than the electrical works described above, the remainder of the existing electrical network is not affected by the proposed Lot 4 works, noting that there is no existing electrical infrastructure located within Lot 4 itself.

3.5. Telecommunications

As noted above in **Section 2.5**, existing NBN and Telstra pit and pipe has been installed as part of the Estate Infrastructure works as part of SSD-10448.

Both NBN and Telstra pit and pipe have been installed along both sides of Berriwerri Drive (Road 03). A P100 and P50 conduit tail outs have been provided north-west of Lot 4 along the eastern side of Road 3 adjacent to the roundabout as a future connection point for Lot 4. Refer to **Figure 6** above.

Whilst fibre may need to be back-hauled to service Lot 4, it is not expected that any additional pit and pipe works will be required. Any required back-haul works will be subject to separate funding agreements between the preferred communications provider and the Applicant.

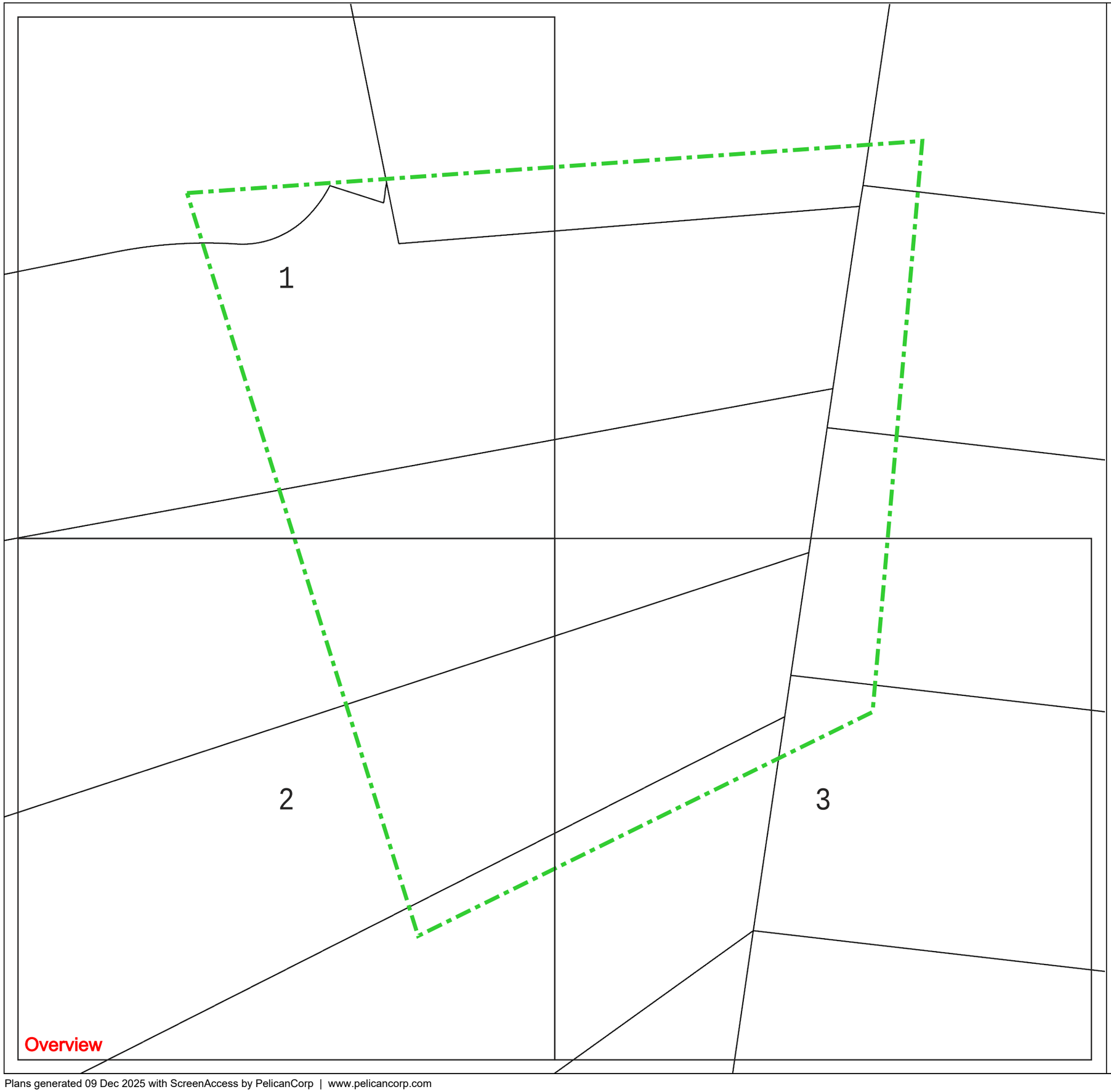
To allow for the construction and servicing of the proposed development of Lot 4, the following alteration works are potentially required:

- Protection of P100 NBN conduit under the temporary cul-de-sac under the eastern footpath along Berriwerri Drive during the construction of the through road and two industrial vehicular crossings.
- Protection of P100 NBN conduit under the eastern footpath along Berriwerri Drive for the construction of two proposed industrial vehicular crossings west of Warehouse 4.
- Protection and modification of Telstra pit to suit footpath restoration levels north of the northmost Lot 4 vehicular crossing on Berriwerri Drive .

3.6. Gas

There are no existing Jemena gas mains located within the vicinity of the Site. No contact has been made with Jemena to determine if there are plans to service the area in future.

APPENDIX A – Dial Before You Dig Records



WARNING

- **All electrical apparatus shall be regarded as live until proved de-energised.** Contact with live electrical apparatus will cause severe injury or death.
- Underground assets may be congested at the approach to bridges and other structures. Typical asset depths and alignment may vary substantially, rising and falling sharply and at much shallower depths than elsewhere as they are channelled into shared allocated spaces on bridges and other structures. Additional precautions and underground asset location methods will be required in proximity to bridges and other structures.
- In accordance with the *Electricity Supply Act 1995*, you are obliged to report any damage to Endeavour Energy Assets immediately by calling **131 003**.
- The customer must obtain a new set of plans from Endeavour Energy if work has not been started or completed within twenty **(20)** working days of the original plan issue date.
- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earthing and earth grids may exist and their location **may not** be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Our plans may not show the presence of all cables, pipes and plant. Endeavour Energy plans do not depict any underground consumer mains. These assets are the conductors between the connection point at a network operators' asset such as a pillar or column, and the customer Service Equipment Enclosure
- It should be noted that adjacent to any network operator asset, there may be multiple underground consumer mains that feed from a pillar or column. Those underground consumer mains and any other underground services will need to be positively identified prior to mechanical excavation in the vicinity. Please refer to the Work Near Underground Assets Guideline published in 2007 by the WorkCover Authority.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be made available at the worksite where excavation is to be undertaken in either printed or electronic format. If the plans are in an electronic format, they must be in a format visible on a screen size 10 inches or greater. Plans must be reviewed and understood by the crew on site prior to commencing excavation.
- Non-destructive water excavation must be operated at or below 2000PSI. Any operation exceeding 2000PSI must be classed and treated as a destructive excavation practice.

INFORMATION PROVIDED BY ENDEAVOUR ENERGY

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OVERVIEW ONLY
ASSETS ARE ONLY SHOWN ON DETAILED TILES (PAGES)

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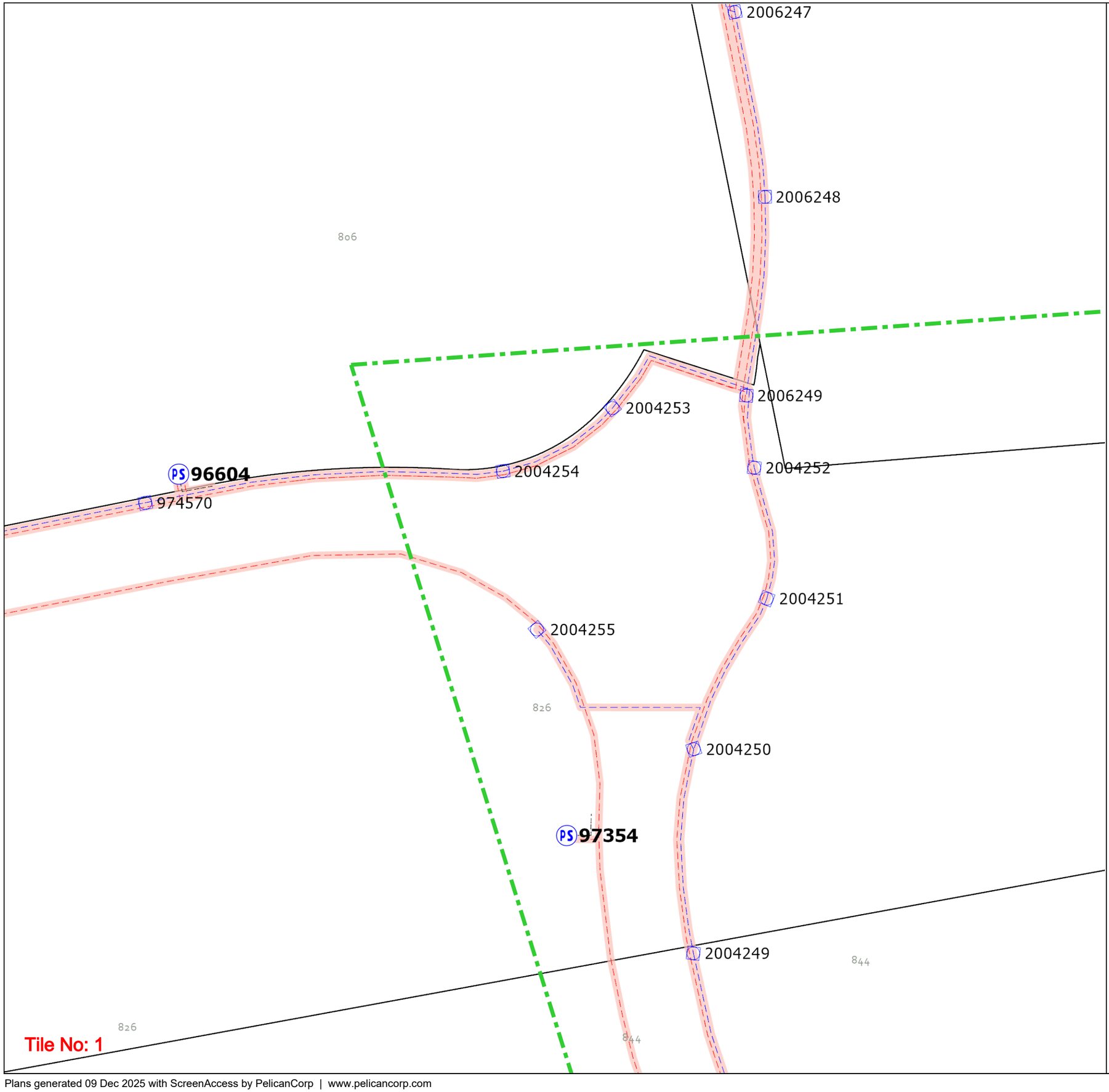
NOT TO SCALE

BYDA Sequence No.: 265422796

Issued Date: 09 Dec 2025

Endeavour Energy

Cadastre: © Land and Property Information 2015, 2016



WARNING

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ENDEAVOUR ENERGY MAP LEGEND

Hazard Area	Conductor	Column	Substation
Asbestos	HV, LV, SL, TR	Pole	Zone Substation
Cubicle	Pilot Cable	Pillar	
Pit	Earth Cable		

Note: Pink features may be in construction.

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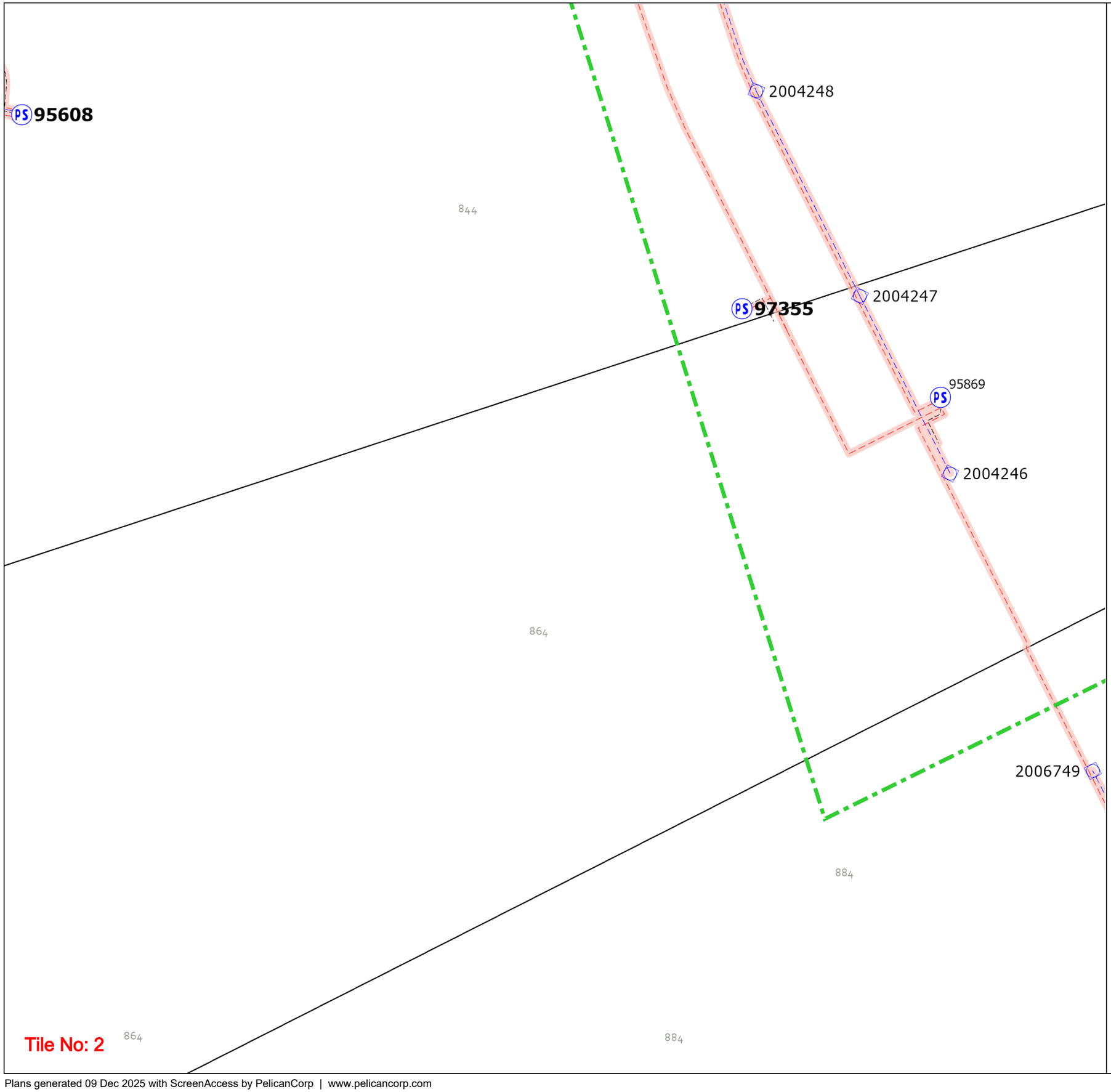
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BYDA Sequence No.: 265422796

Issued Date: 09 Dec 2025

Endeavour Energy

Cadastre: © Land and Property Information 2015, 2016



Tile No: 2

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ENDEAVOUR ENERGY MAP LEGEND

Hazard Area	Conductor	Column	Substation
	HV		PS
Asbestos	LV		
!	SL	Pole	Zone Substation
	TR		ZS
Cubicle	Pilot Cable	Pillar	
LV			
Pit	Earth Cable	*Note: Pink features may be in construction.*	

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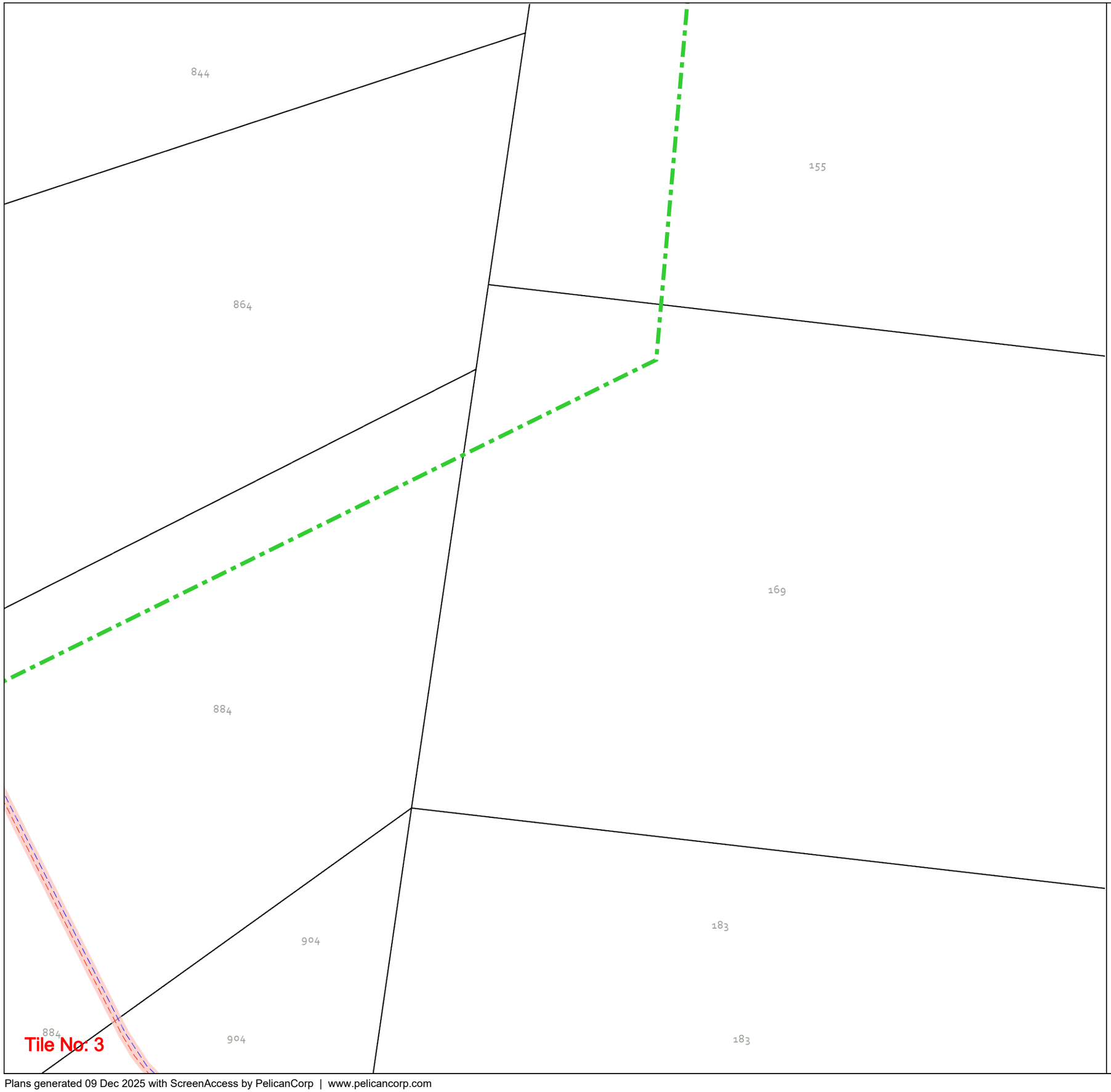
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Issued Date: 09 Dec 2025

Endeavour Energy

Cadastre: © Land and Property Information 2015, 2016



Tile No: 3

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ENDEAVOUR ENERGY MAP LEGEND

Hazard Area
Asbestos
Cubicle (LV)
Pit
Conductor: HV, LV, SL, TR
Pilot Cable
Earth Cable
Column
Pole
Pillar
Substation (PS)
Zone Substation (ZS)

Note: Pink features may be in construction.

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NOT TO SCALE

BYDA Sequence No.: 265422796

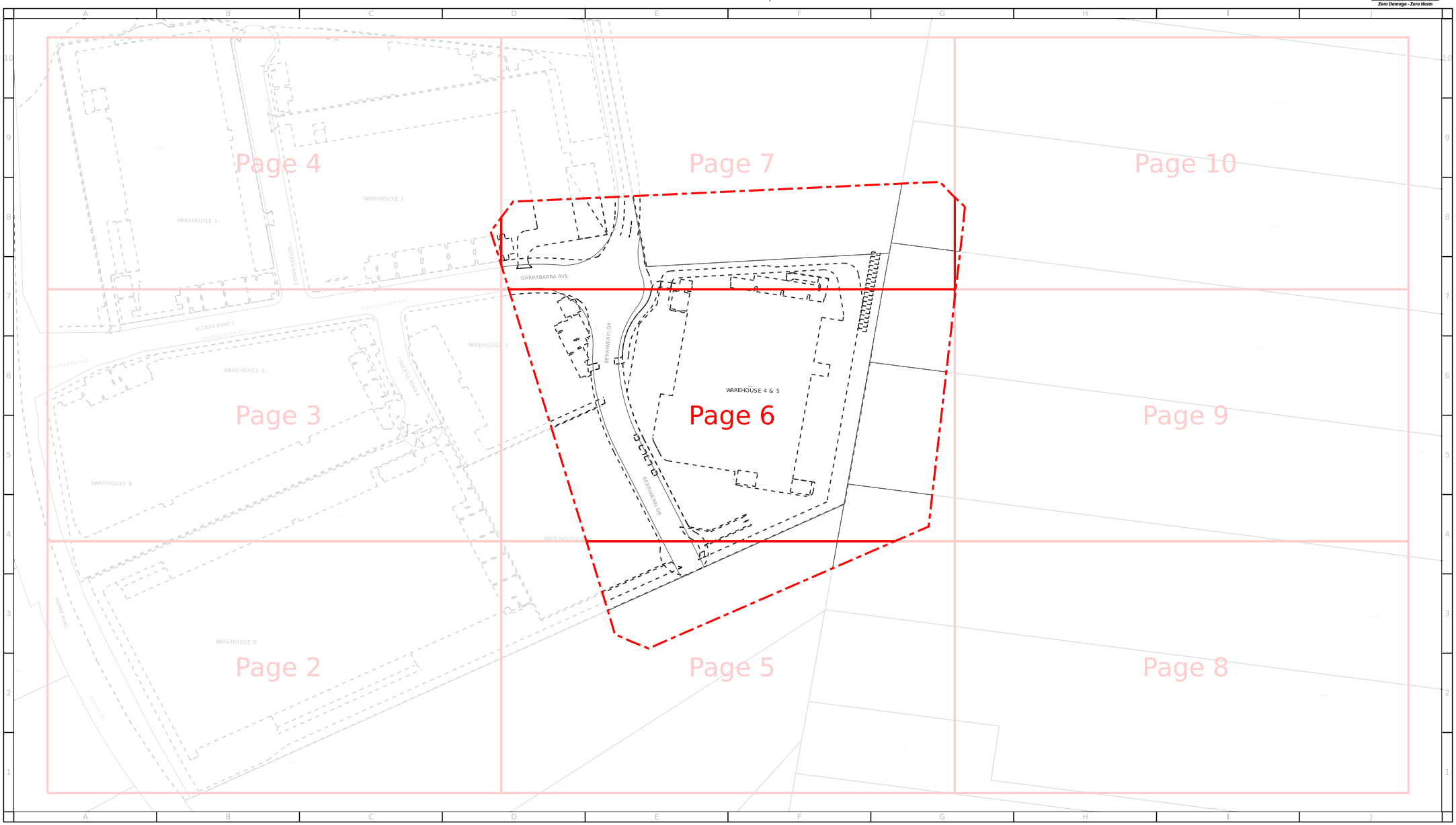
Issued Date: 09 Dec 2025

Endeavour Energy

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BYDA Authority: Jemena Gas Networks (NSW)

BYDA Location: 826-842 Mamre Road Kemps Creek NSW, 2178



Jemena
ABN 87 003 004 322

For legend details, please refer to the Coversheet attachment provided as part of this BYDA response.

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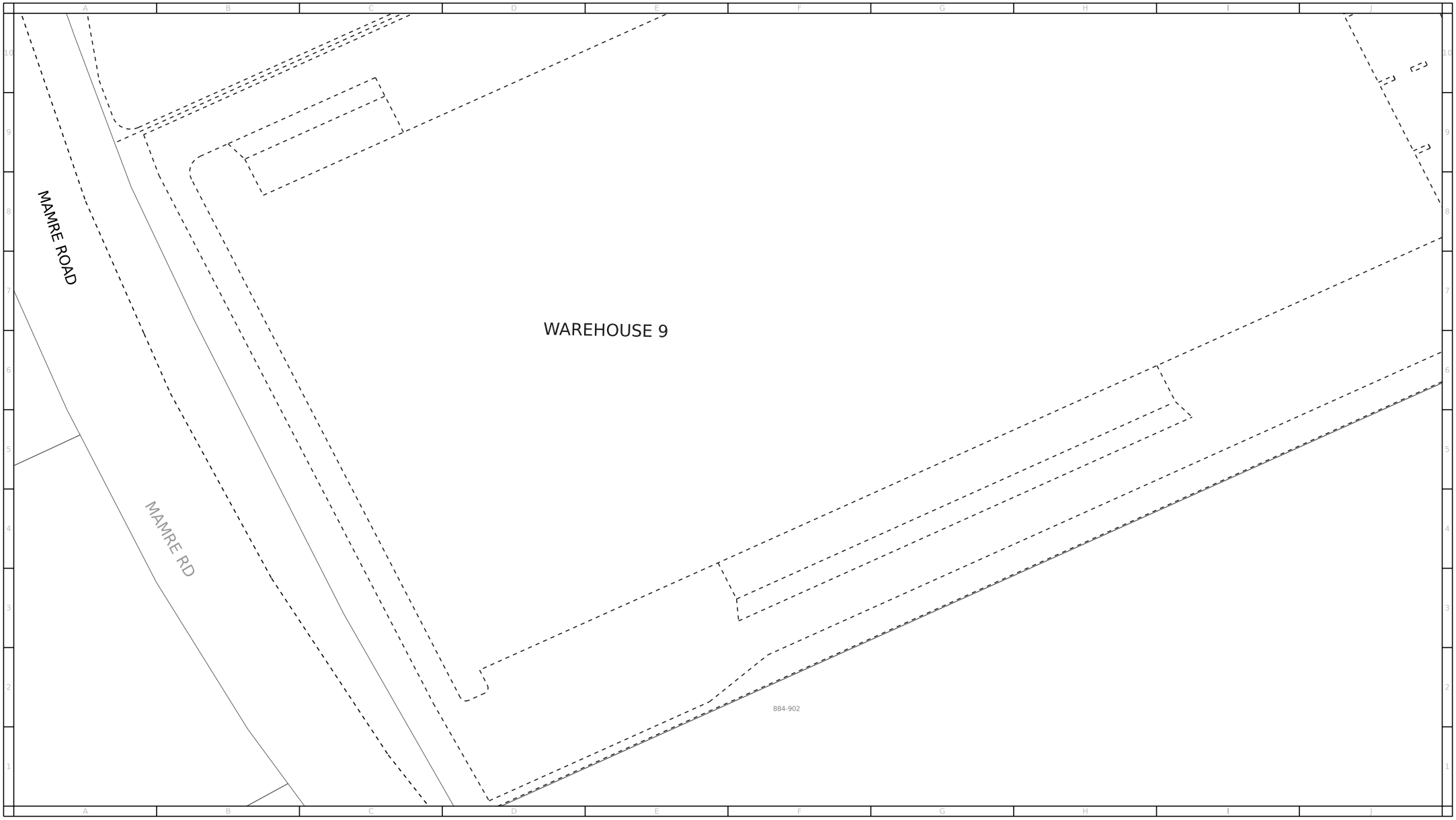
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Issue Date: 08/12/2025
BYDA Seq No: 265422793
BYDA Job No: 51898445
Overview Page:

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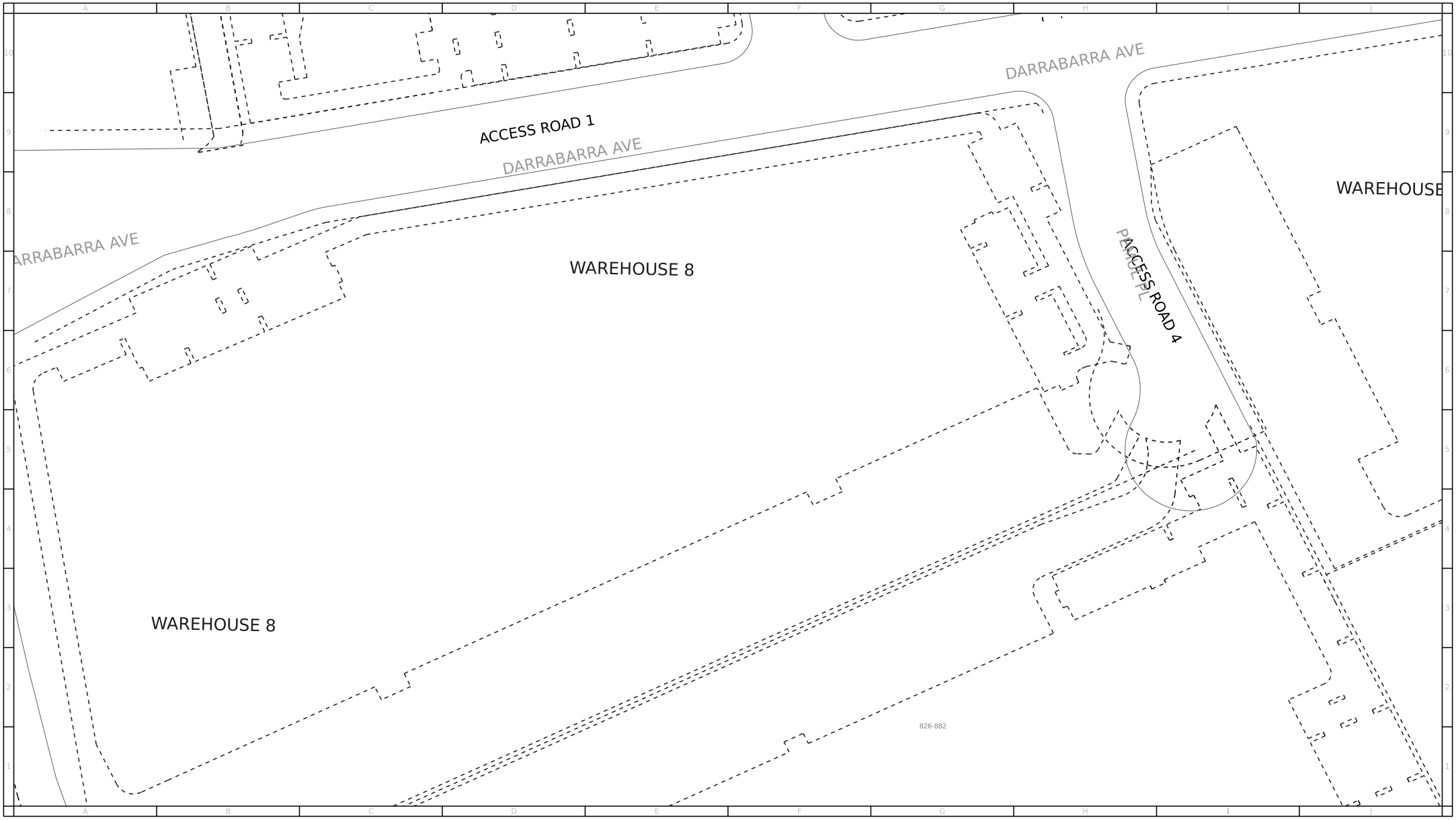
Issue Date: 08/12/2025
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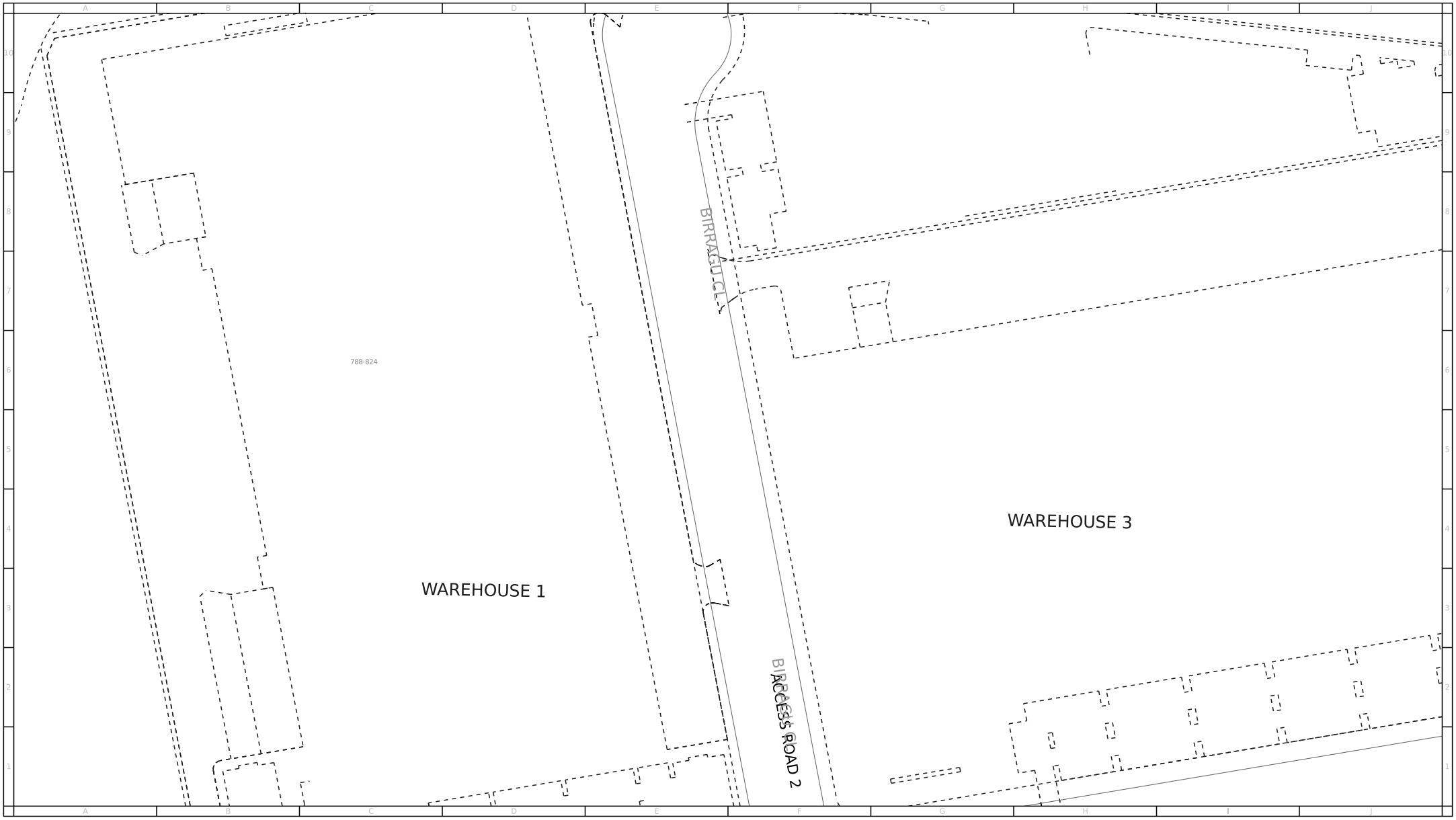
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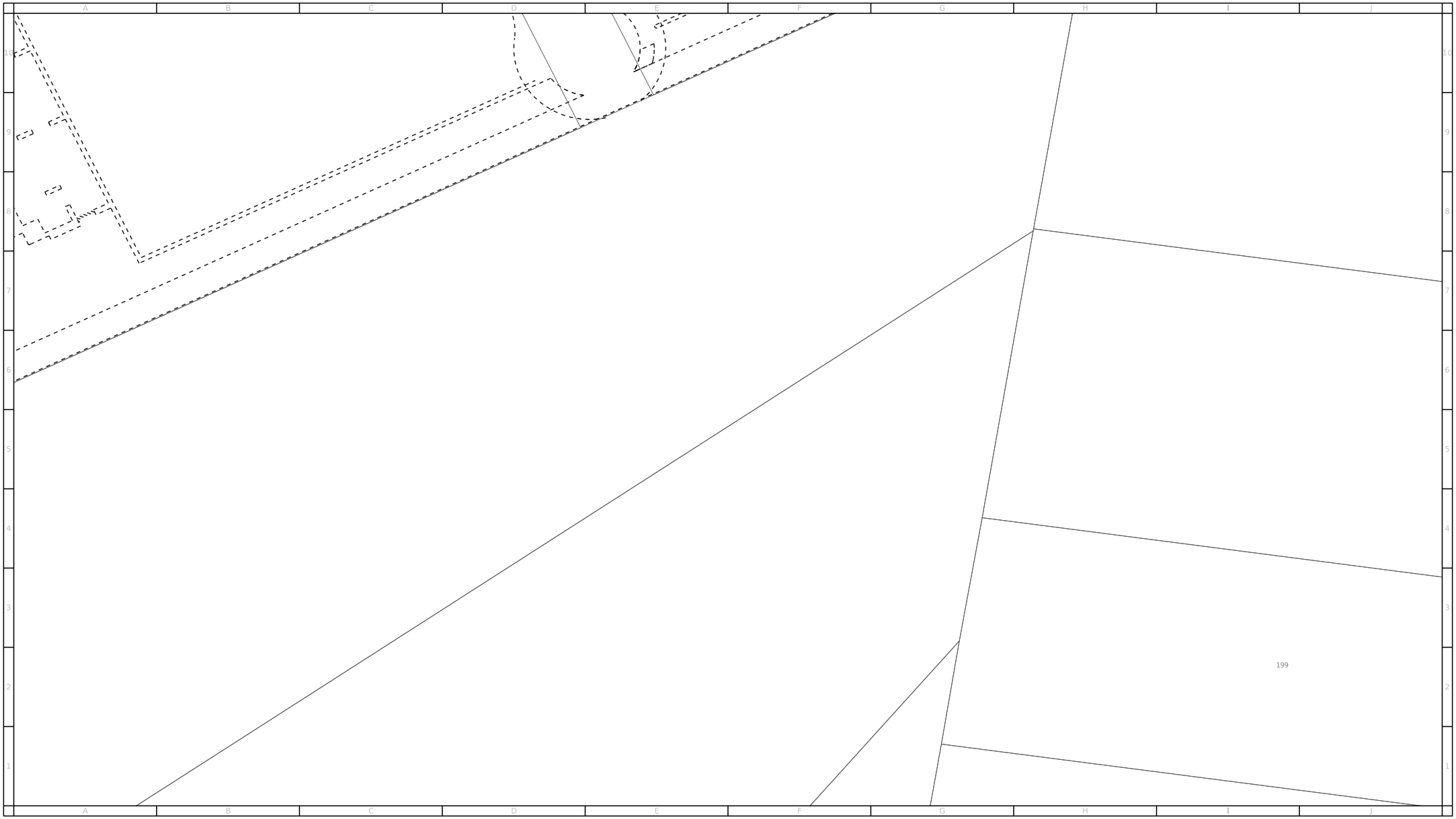
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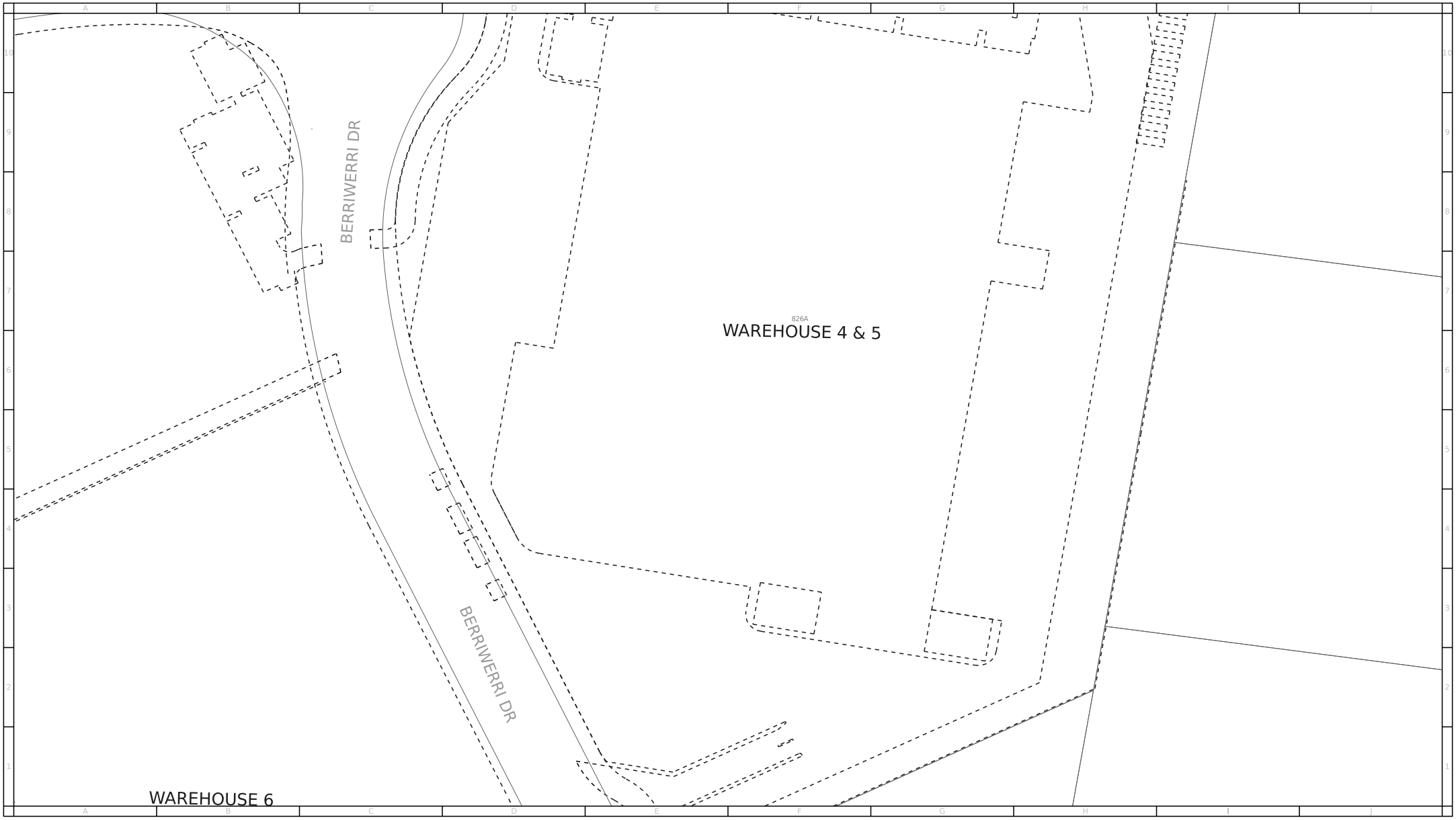
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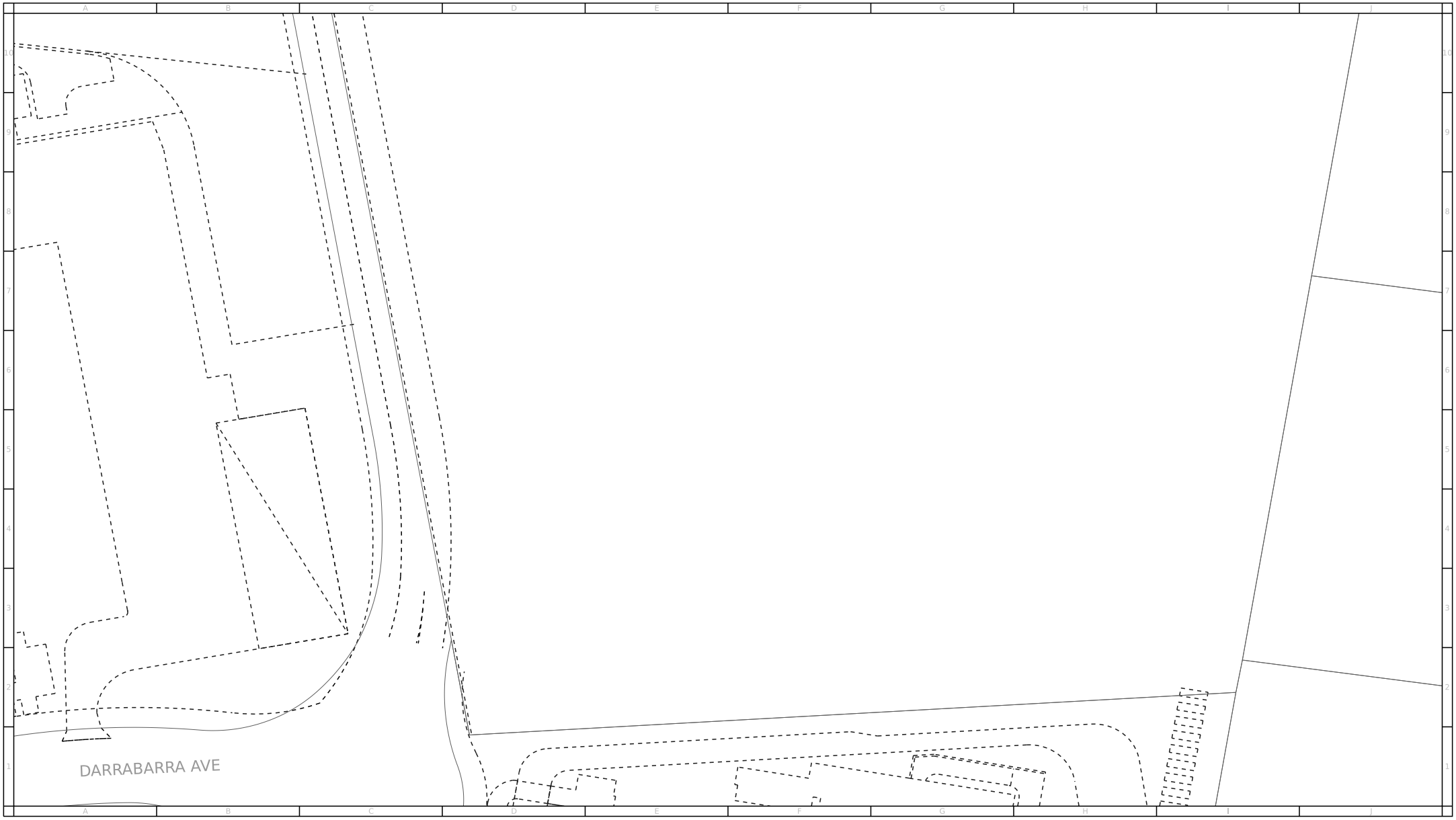
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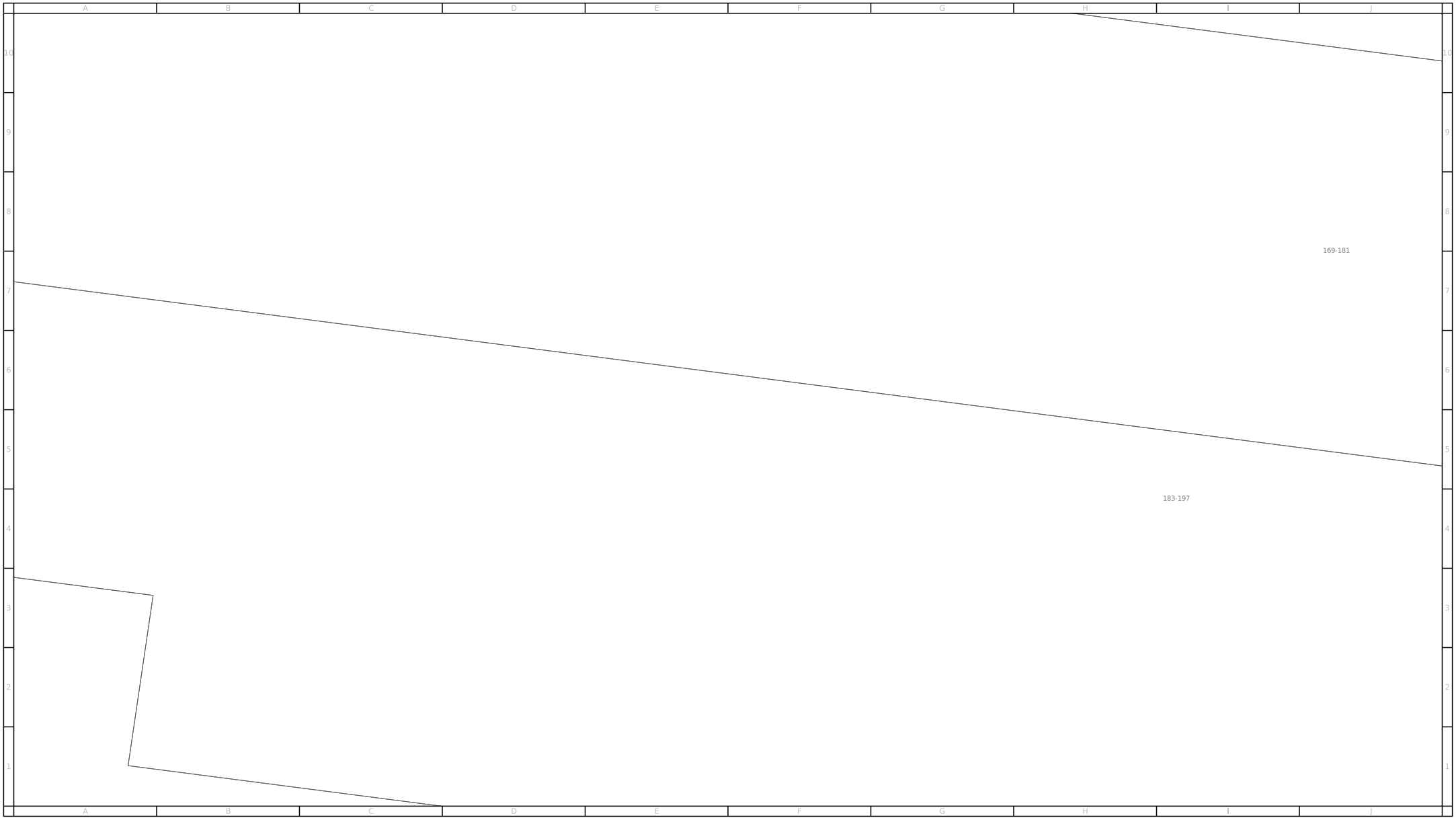
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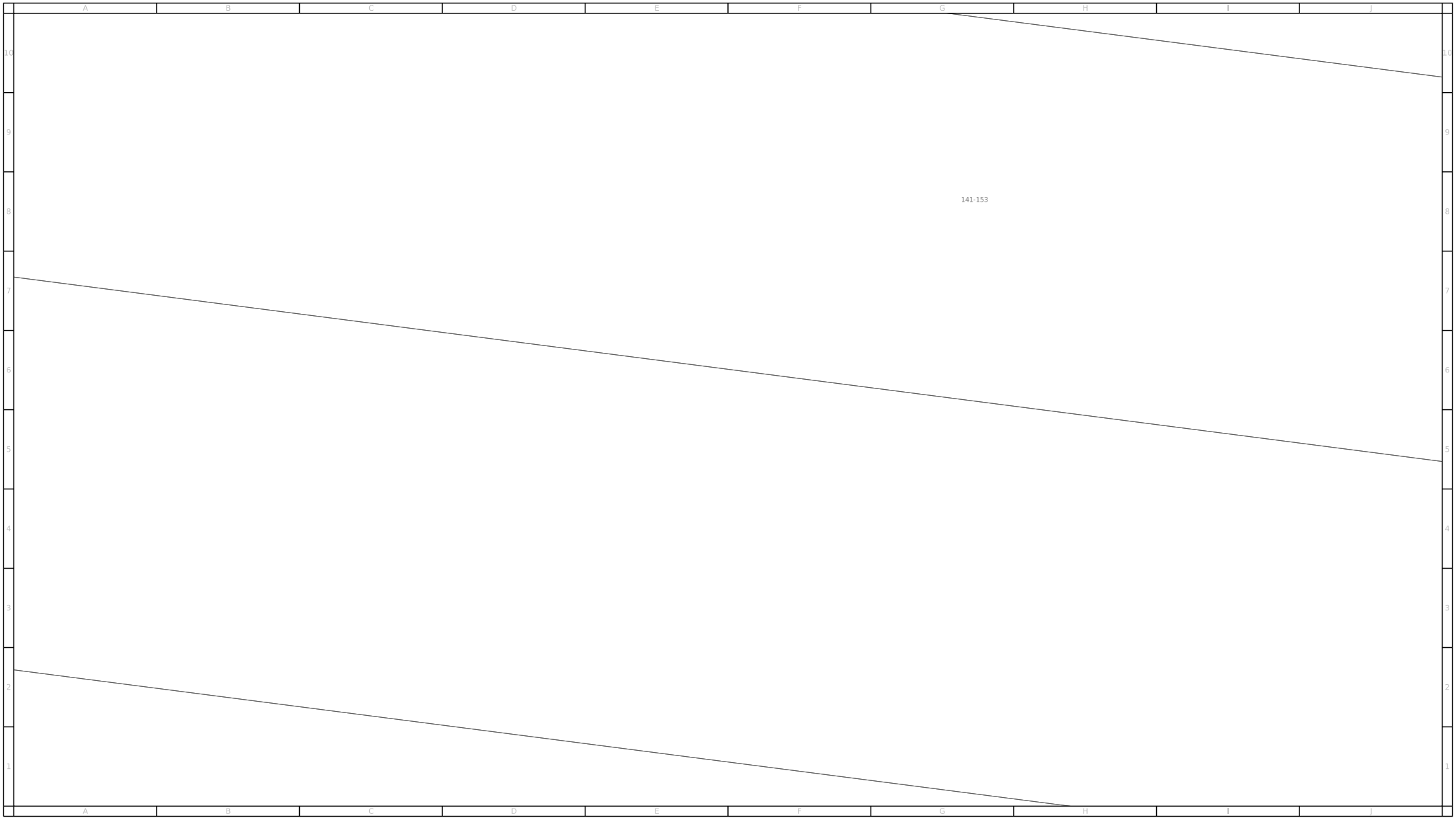
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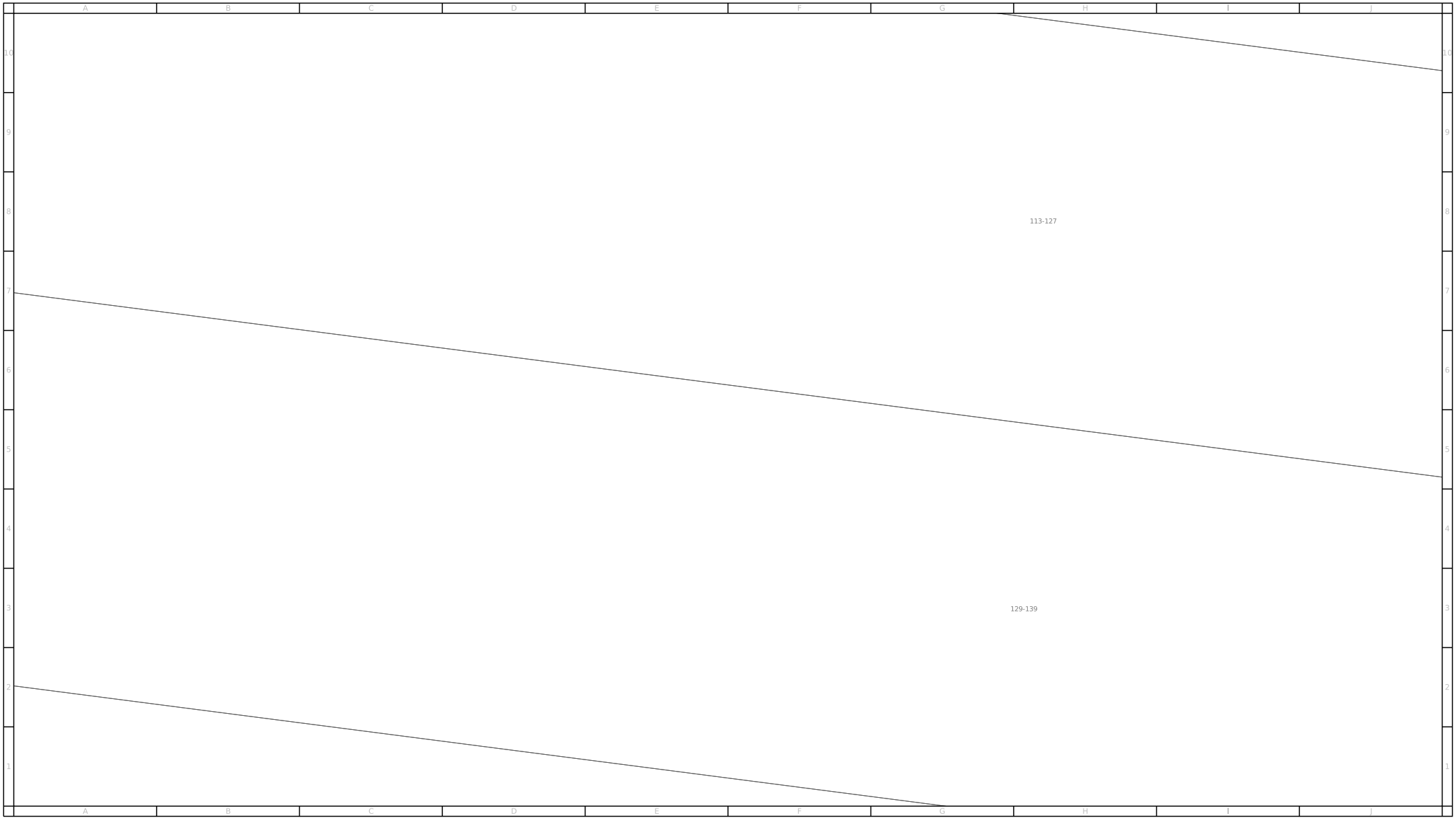
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Jemena Gas Network Protection

Jemena Asset Management Pty Ltd ABN 53 086 013 461
for and on behalf of Jemena Gas Networks (NSW) Ltd ABN 87 003 004 322

NO ASSETS AFFECTED

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Please note that there are N**o Gas Mains or Services** in the vicinity of your intended work, as generally illustrated on the attached map. For an explanation of the map, please see the legend attached and read the important information below.

Please note that you have duty of care to ensure that Jemena's assets are not compromised or damaged during any digging, future development or construction work.

Excavation Guidelines:
It is essential that the location of gas pipe/s are confirmed by carefully pot-holing by hand excavation prior to proceeding with mechanical excavation in the vicinity of gas pipes. If you cannot locate the pipe, contact the local Jemena depot.

Important Information:

1. The enclosed plans have been prepared solely for the use of Jemena Gas Networks (NSW) Ltd and Jemena Asset Management Pty Ltd (together "Jemena") and show the position of Jemena's underground gas mains and installations in public gazetted roads. If the enclosed plans show gas assets located on private property or other third party property, these are approximate locations.
2. There may be underground assets owned by other utilities in the vicinity of your work and it is your responsibility to identify and locate such assets.
3. The plans may show the position of underground mains and installations relative to fences, buildings and other structures as they existed at the time the assets were installed and may not have been updated to take account of any subsequent changes in the location or style of those features. Depth of underground assets may also vary as a result of changes to road, footpath or surface levels subsequent to asset installation.
4. While Jemena takes all reasonable care to ensure the accuracy and completeness of the information provided, it makes no warranty as to the accuracy or completeness of the enclosed plans and does not assume any duty of care to you nor any responsibility for the accuracy, adequacy, suitability or completeness of the plans or for any error or omission. It is intended to be indicative only and must not be solely relied upon when undertaking underground works.
5. Except to the extent that liability may not be capable of being lawfully excluded, Jemena, its employees, agents, officers and contractors will not be liable to any person for loss or damage (including indirect and consequential loss or damage) which may be suffered or incurred in connection with the provision of this information.
6. Persons excavating or carrying out other earthworks will be held responsible for any damage caused to Jemena's underground mains, service lines and equipment. In accordance with the *Work Near Underground Assets – Guide* published in 2007 by Work Cover Authority*, Jemena recommends that you carry out potholing by hand to accurately confirm the location of gas mains and installations prior to commencing excavations.

Jemena BYDA Administration: 1300 880 906 ***Guide** available via: www.safework.nsw.gov.au

In case of Emergency Phone 131 909 (24 hours)

Jemena Gas Networks

Before You Dig Australia Map Legend
Feb 2024

Network Mains

- Proposed New Main (coloured as per kPa)
- Proposed Isolate (coloured as per kPa)
- Unknown kPa
- 2kPa Low Pressure gas main
- 7kPa Low Pressure gas main
- 30kPa Medium pressure gas main
- 100kPa Medium Pressure gas main
- 210kPa Medium Pressure gas main
- 300kPa Medium Pressure gas main
- 400kPa Medium Pressure gas main
- 1050kPa High Pressure gas main
- 3500kPa High Pressure gas main
- 7000kPa High Pressure gas main
- >7000kPa Transmission pipeline
- Isolated Service - Former Med/High Pressure
- Isolated Steel Main -**Treat as High Pressure**
- Conduit or Casing
  100 PVC
  Size & Material (see conduit material codes)
- Critical Main -**Treat as High Pressure**
  (Main coloured as per kPa)
- EXPOSED — Exposed Main section
- SHALLOW-SP — Shallow Main section: see Protection Code below, no code assume no protection

SP	Steel Plate	CE	Concrete Encased
PP	PE Plate	UNK	Unknown Type
CS	Concrete Slab		

- Warning - Blue Jacket Coated gas main
  (Main coloured and styled as per kPa)

Gas Services

- Gas service – coloured by kPa
- Serviced Site indicator

Jemena has created service pipe features programmatically based on known pipe characteristics and cartographic principles. They may provide guidance to identify assets whilst in the field in addition to existing processes.

Network Assets

- Siphon
- Network Valve
- High Pressure Main Line Valve (=>1050kPa)
- High Pressure Automatic Line Break Valve (>1050kPa)
- Boundary Regulator Set (=<1050kPa)
- Distribution Regulator Set (=<1050kPa)
- High Pressure Regulating Station (>1050kPa)

Annotations

Pipe and Conduit Material Codes

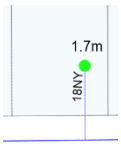
NY	Nylon	NB	Nominal Bore – Cast Iron
PE	Polyethylene	ST	Steel
P/PL	Plastic (undefined)	C/CO	Copper
PVC	Polyvinyl Chloride		

Pipe code combinations and dimension references

- **6NB 50MM NY** — 50mm Nylon main inserted into 6 inch (Nominal Bore) Cast Iron pipe
- **50MM 32MM NY** — 32mm Nylon main inserted into 50mm Steel pipe

~1.5 Distance (in metres) of main from Boundary Line (MBL)

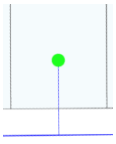
MBK	Distance in Metres Back of Kerb
MKL	Distance in Metres from Kerb Line
MEBL	Distance in Metres from Eastern Boundary Line (North/South/West)
MCL	Distance in Metres from Centre Line of Road
MFL	Distance in Metres from Fence Line



Distance (in metres) of service from side Boundary where the service pipe crosses from the road reserve into the private lot

Service placed towards left or right boundary

Service pipe size & material where known



For connected sites with insufficient asset details, service is shown down the centre of the lot with no attributes plotted

To:	Winston Phan
Phone:	Not Supplied
Fax:	Not Supplied
Email:	winston.p@atl.net.au

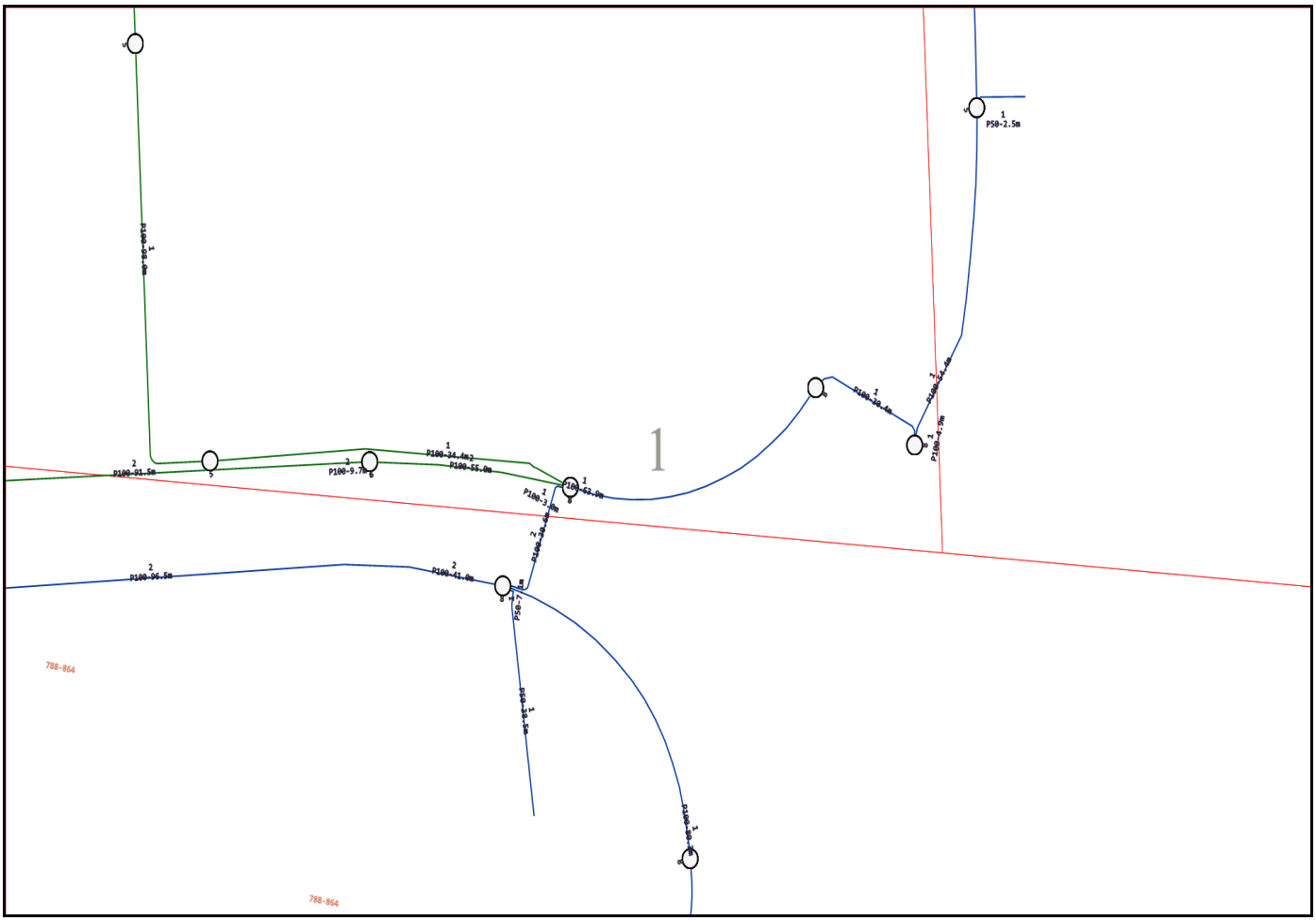
Dial before you dig Job #:	51898445	BEFORE YOU DIG www.byda.com.au Zero Damage - Zero Harm
Sequence #	265422792	
Issue Date:	08/12/2025	
Location:	826-842 Mamre Road , Kemps Creek , NSW , 2178	

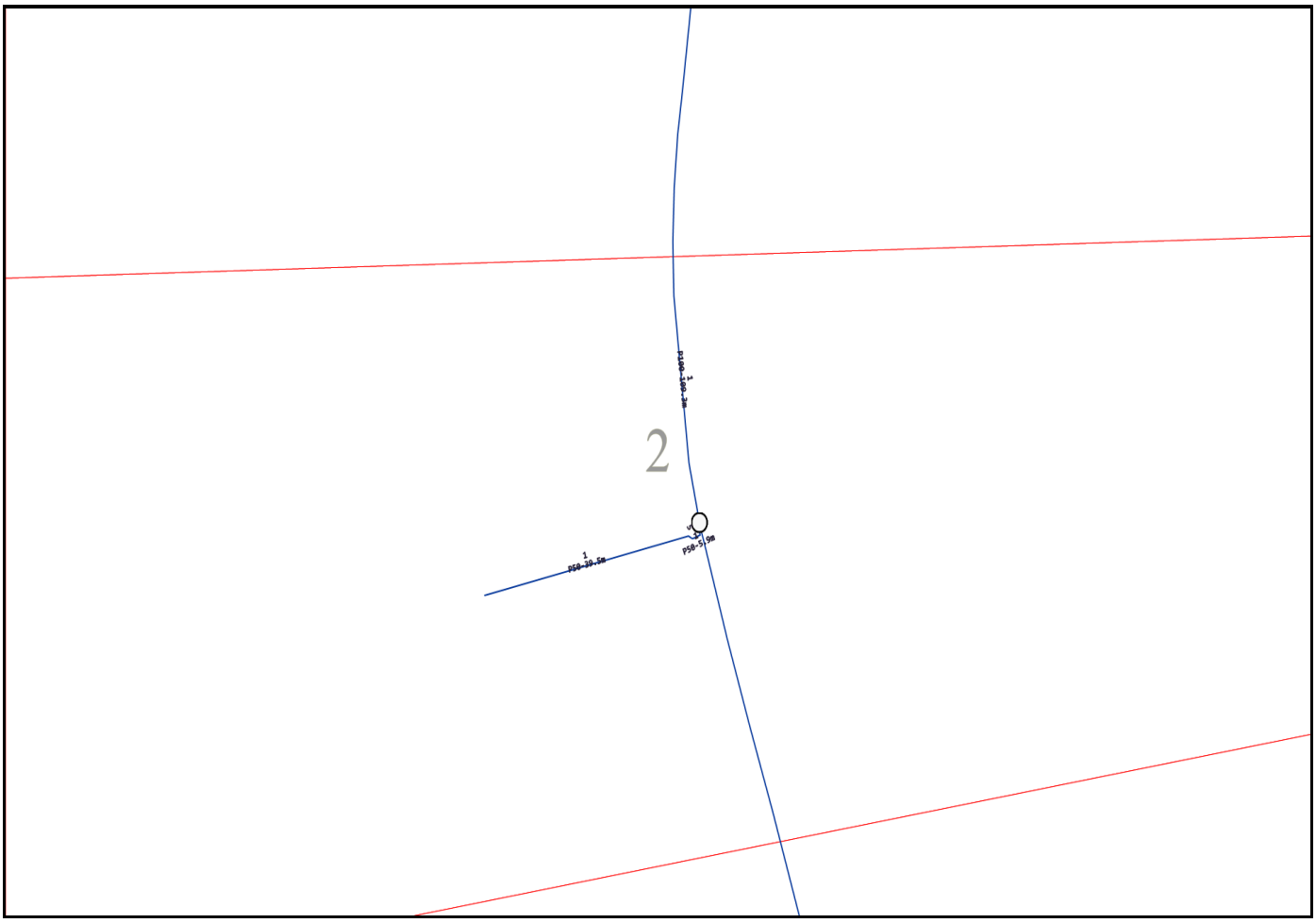
Indicative Plans are tiled below to demonstrate how to layout and read nbn asset plans

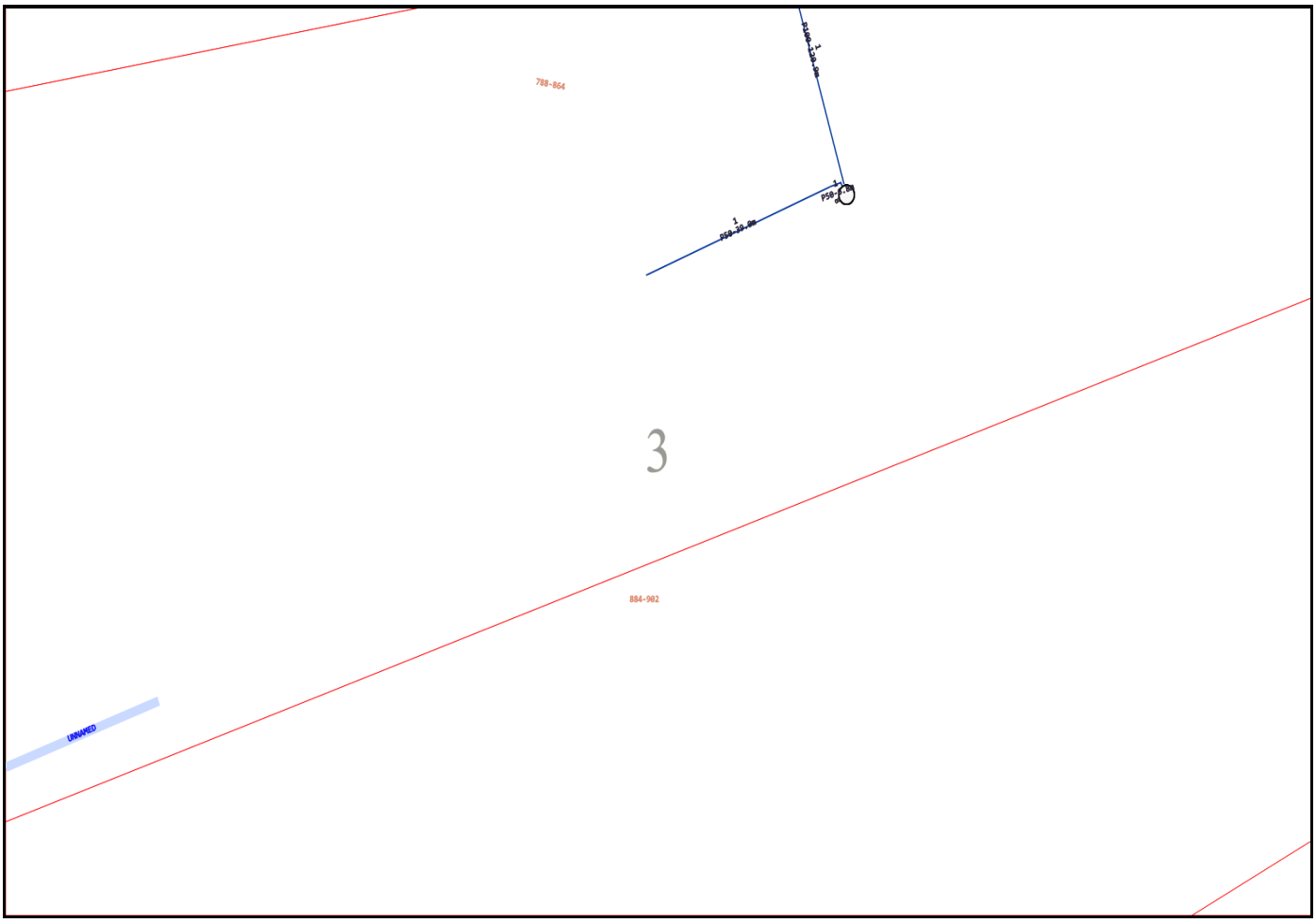
1	4
2	5
3	6

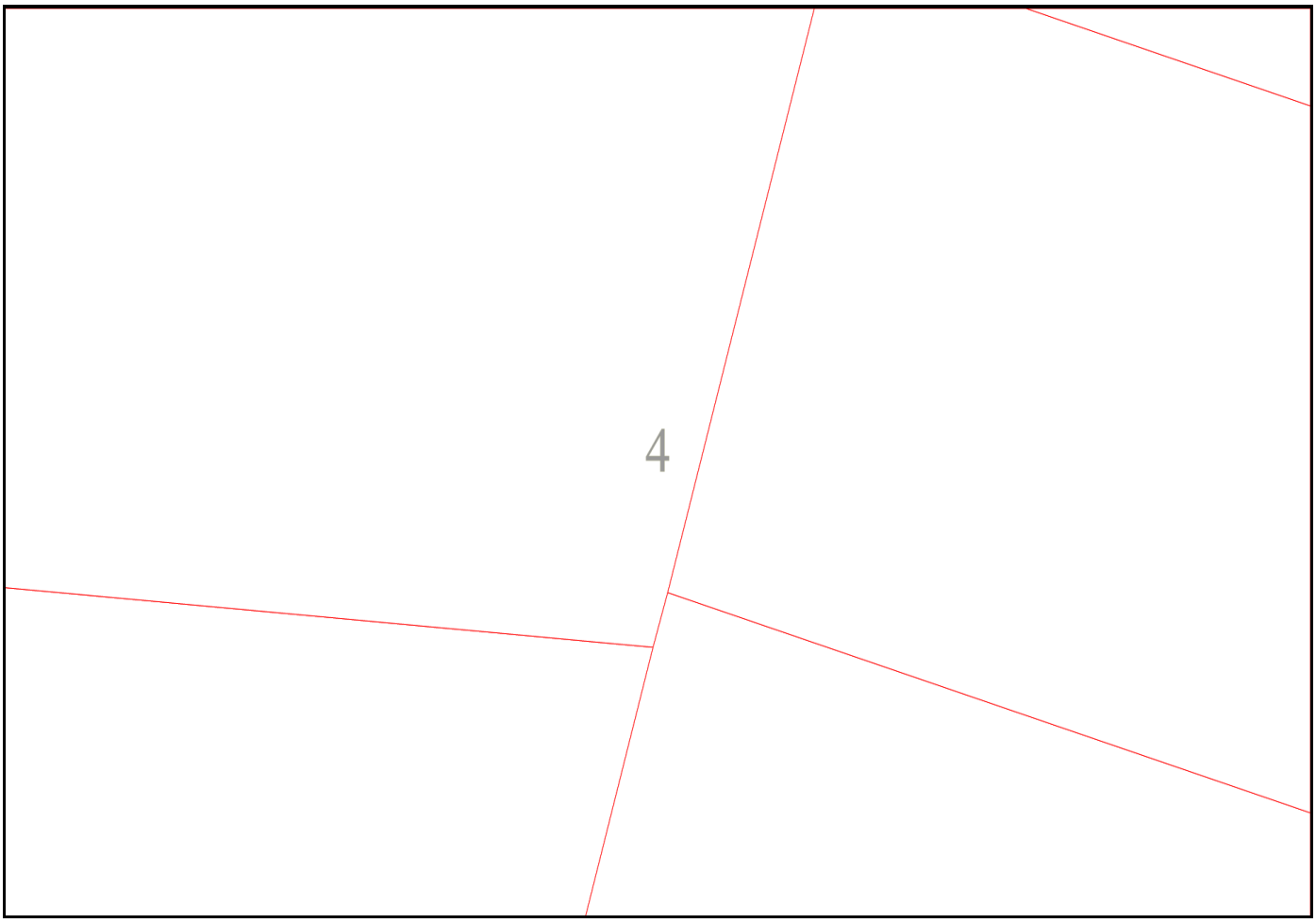
LEGEND

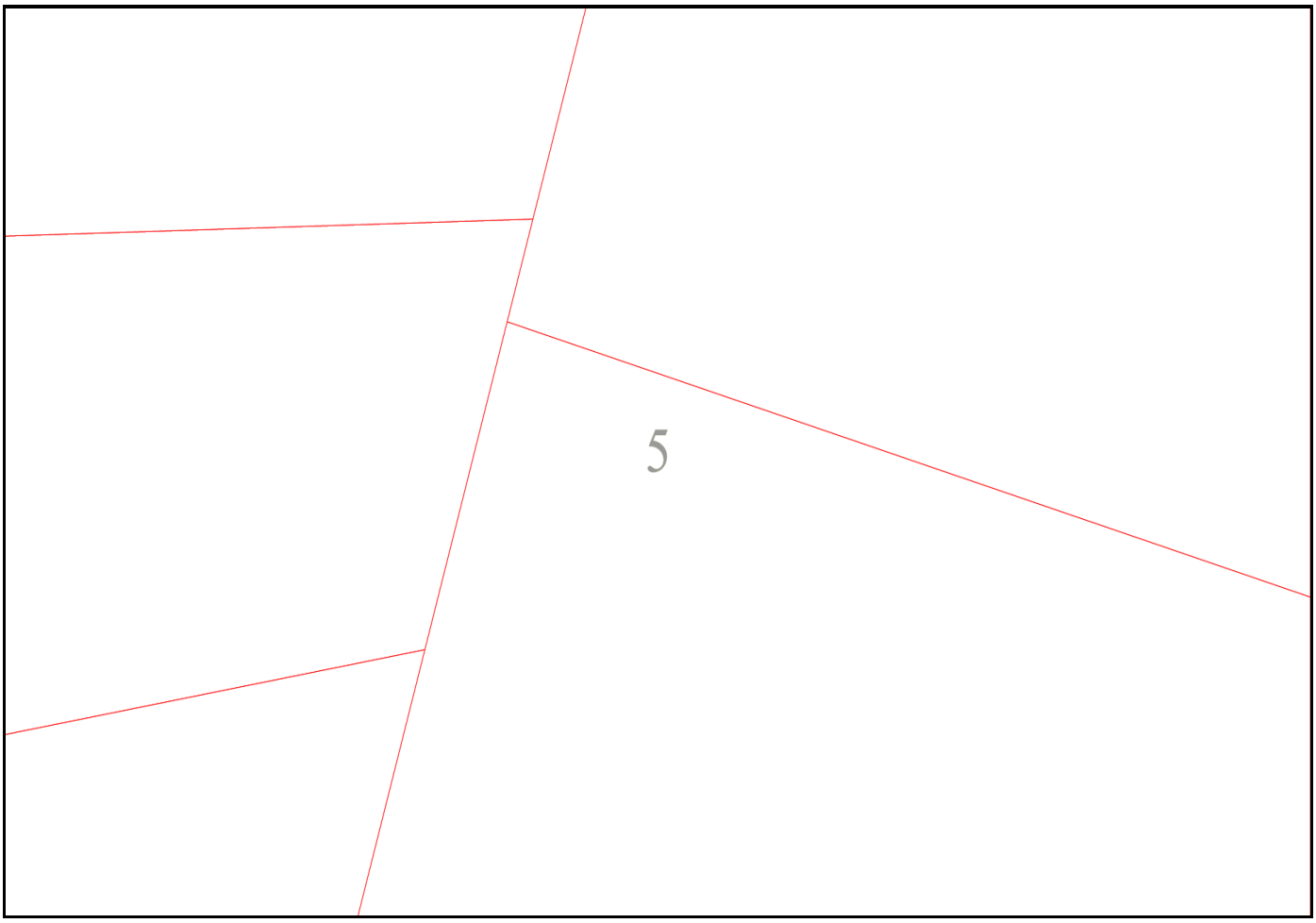
34	Parcel and the location
5	Pit with size "5"
2E	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
2 PO – T- 25.0m P40 – 20.0m 5 9	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
2 10.0m 5 9	2 Direct buried cables between pits of sizes ,"5" and "9" are 10.0m apart.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Copper/RF/Fibre) cables.
5 9	Trench containing only DESIGNED/PLANNED (Copper/RF/Fibre/Power) cables.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Power) cables.
BROADWAY ST	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000 1 cm equals 20 m

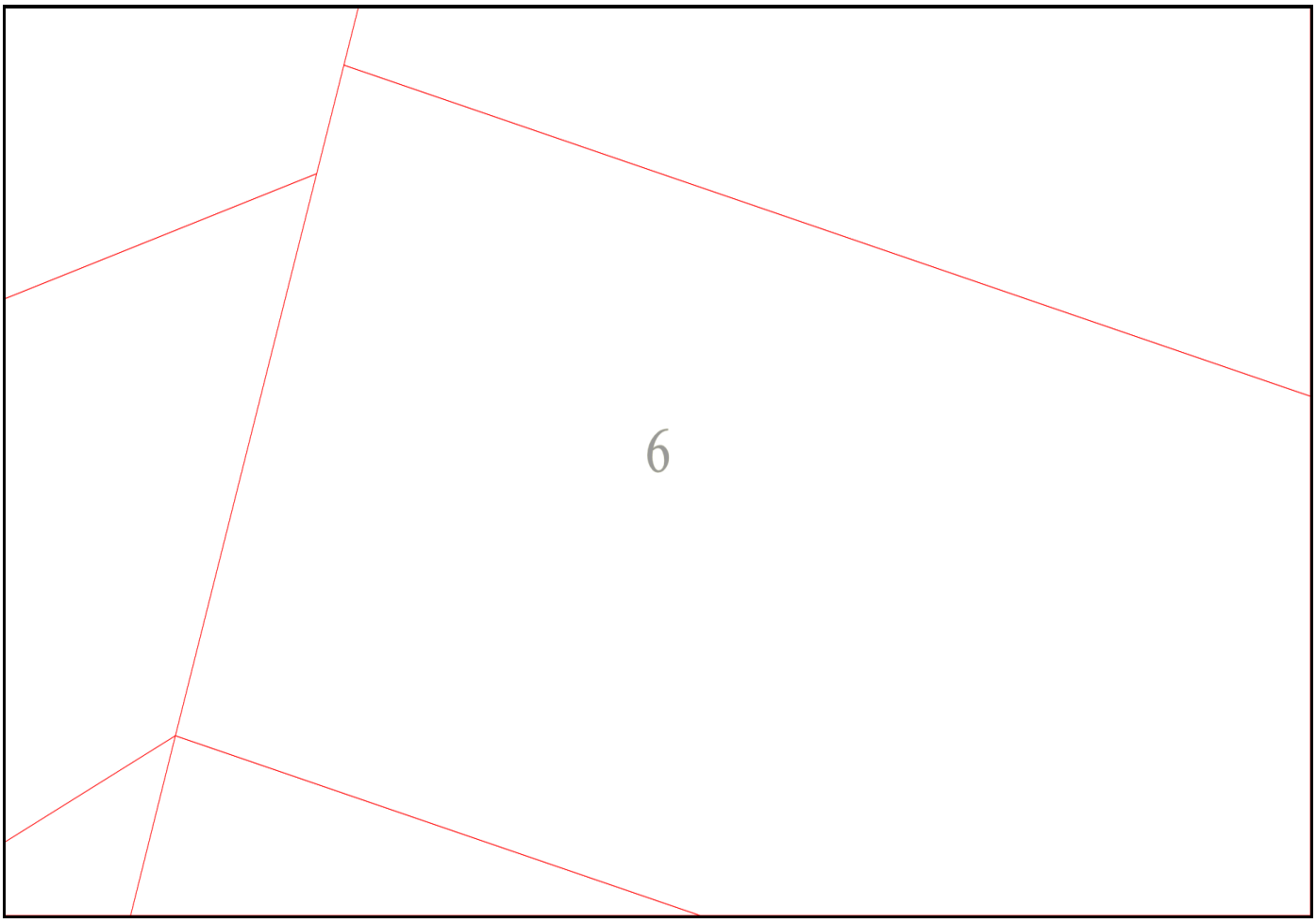

1
P50-2.5m
P100-34.4m2
P100-55.0m
P100-9.7m
P100-91.5m
P100-96.5m
P100-41.0m
P100-63.0m
P100-3.0m
P100-30.4m
P100-17.4m
P100-1.9m
P50-7.8m
P50-38.4m
P100-68.4m
788-864
788-864


2
1
PE100-SDR-17
1
PE100-SDR-17
1
PE100-SDR-17
1
PE100-SDR-17


788-864
P50-0-90
P50-19-90
3
884-902
UNNAMED


4


5



Emergency Contacts

You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.

PENRITH
CITY COUNCIL

Date: 08 Dec 2025

To: Winston Phan

Please DO NOT SEND A REPLY to this email as it has been automatically generated and replies are not monitored.

Thank you for your BYDA enquiry (referenced below).

SEQUENCE NO.:	265422795
JOB NO.:	51898445
LOCATION:	826-842 Mamre Road Kemps Creek NSW 2178

LODGE A ROAD OPENING PERMIT APPLICATION

You will need to lodge a Road Opening Permit Application and obtain Council's approval **prior to any excavations, potholing, and/or installation of private stormwater lines** that are required to be carried out within local and regional road reserves, as well as on the verges of state roads.

To lodge a new permit application, please click on the “Lodge a Road Opening Permit Application” hyperlink above and login/create a new account in the system. Once logged in, select “Submit an Application to proceed with the application process.

A road opening permit application is made under Section 138 of the Roads Act 1993 and is usually assessed within 10 business days. Council fees & charges may be applicable.

Council's infrastructure assets in the road reserve include but are not limited to road pavements, road furniture, kerb & gutters, footpaths, nature strips, and stormwater mains.

WARNING: When working in the vicinity of Penrith City Council's assets you have a legal *Duty of Care* that must be observed.

Works impacting Council assets that have not been authorised will be subject to penalties and restoration costs.

If you require temporary access to a Council reserve or park you will need to complete a vehicle access application form.

Please note our records do not include private stormwater assets, connections or private utility pipelines as these are not Council owned infrastructure. Complete accuracy of the plan(s) provided cannot be guaranteed and should be taken as indicative locations only. Details should be checked and proved on-site before any works are carried out. All other utility authorities should be contacted regarding the existence of any underground services.

If your excavation works are solely within a non-Council owned property, a Council road opening permit application is not required, though other Council procedures may need to be followed.

If you require further information, please contact Penrith City Council by emailing amadmin@penrith.city or by calling 02 4732 7777.

To best manage the risk of damage and liabilitiy, we recommend that you engage the services of a Certified Locator

Important Notice

This enquiry response, including any associated documentation, has been assessed and compiled from the information detailed within the BYDA enquiry outlined above. **Please ensure that the BYDA enquiry details and this response accurately reflect your proposed works.**

This response is intended for use only by the addressee. If you have received the enquiry response in error, please let us know by telephone and delete all copies; you are advised that copying, distributing, disclosing or otherwise acting in reliance on the response is expressly prohibited.

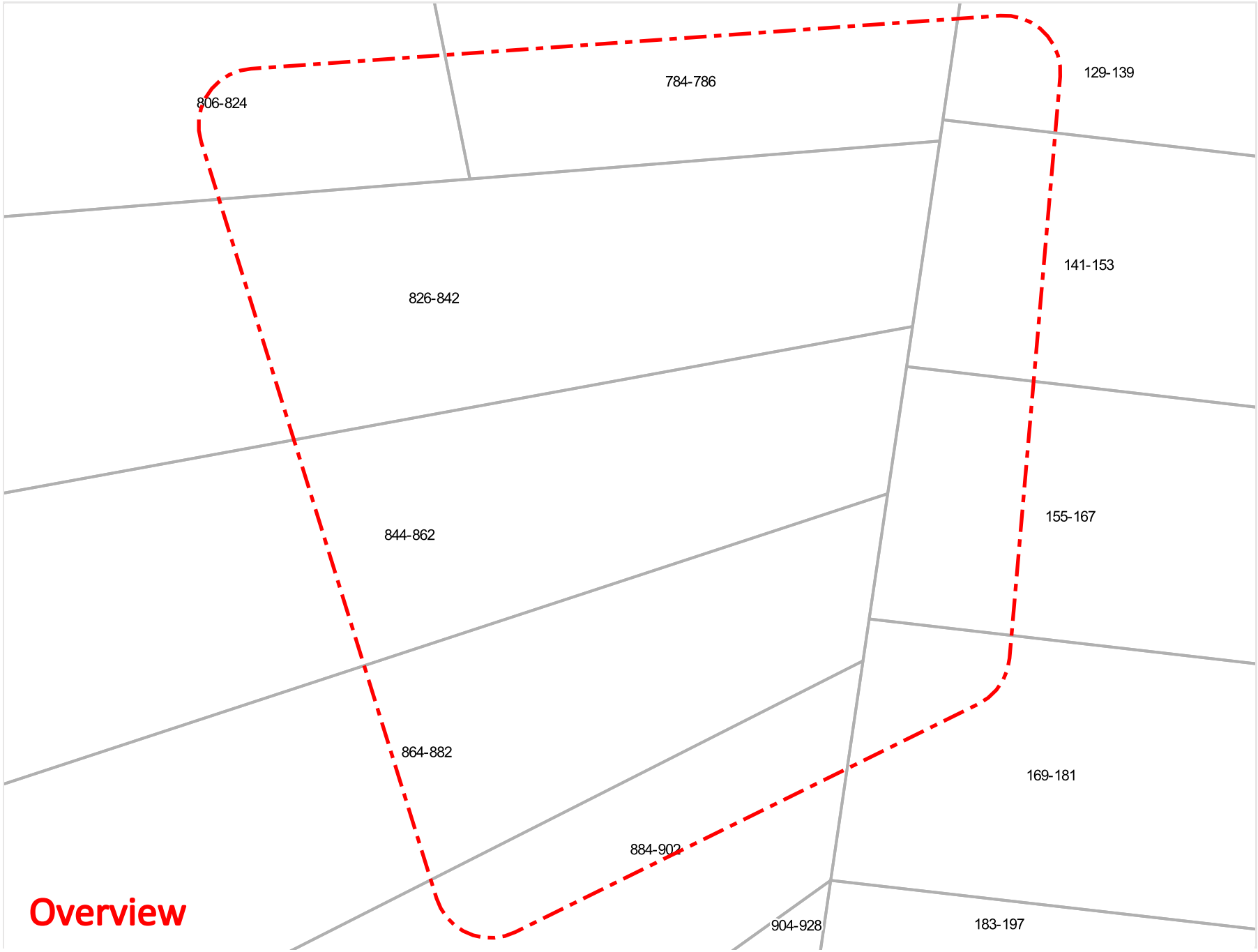
Disclaimer: While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Penrith City Council nor PelicanCorp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information contained in it or the completeness or accuracy of such information. Use of such information is subject to and constitutes acceptance of these terms.

If you are unable to launch any of the files for viewing and printing, you may need to download and install free viewing and printing software such as Adobe Acrobat Reader (for PDF files)

PENRITH CITY COUNCIL

Sequence No: 265422795
Job No: 51898445
Location: 826-842 Mamre Road, Kemps Creek, NSW 2178

BEFORE YOU DIG www.byda.com.au



Legend

- Stormwater Pit
- Stormwater Line
- Easement
- Groundwater Monitoring Well (PSM)
- Groundwater Monitoring Well (JB&G)

N

Scale: 1:2810
Expires: 06 Jan 2026

DISCLAIMER: While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Penrith City Council nor PelicanCorp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information contained in it or the completeness or accuracy of such information.

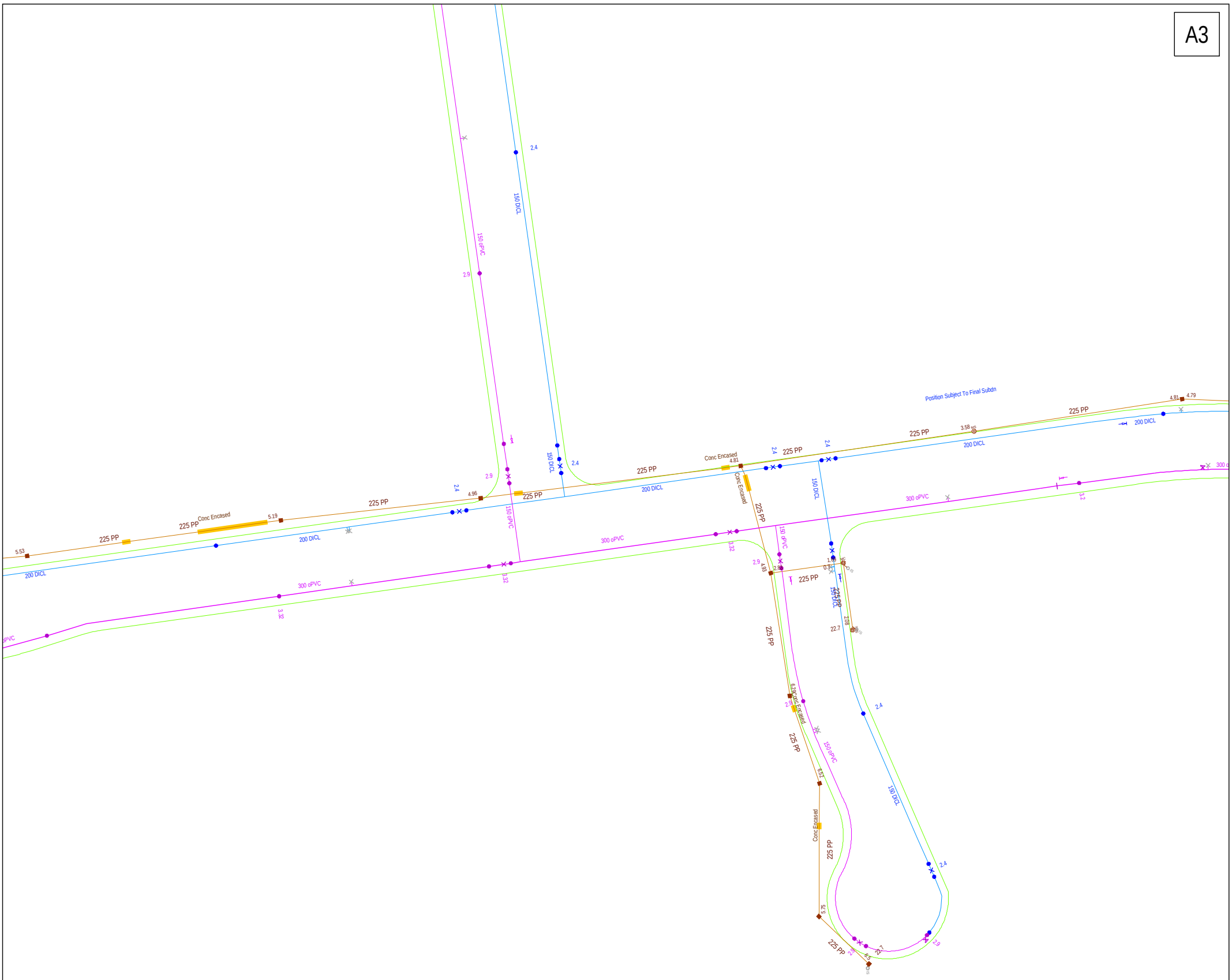
Penrith City Council does not warrant that the data does not contain errors and in no way shall be liable for any loss, damage or injury suffered by the user of this data or any other person or corporation consequent upon the existence of errors in the data.

The information presented may be subject to change and Penrith City Council is not responsible for providing updates to the user of this information.

Th user acknowledges that the information is neither accurate nor complete. The information was collected from a wide variety of sources that were not subject to verification. Prior to undertaking any excavation in the area or commitment of significant resources on the project the location of Council's underground assets must be positively identified.

Use of such information is subject to and constitutes acceptance of these terms.

A3



DBYD Address:
826-842 Mamre Road
Kemps Creek NSW 2178

DBYD Job No: 51898445

DBYD Sequence No: 265422794

Copyright Reserved Sydney Water 2025

No warranty is given that the information shown is complete or accurate.

SYDNEY WATER CORPORATION

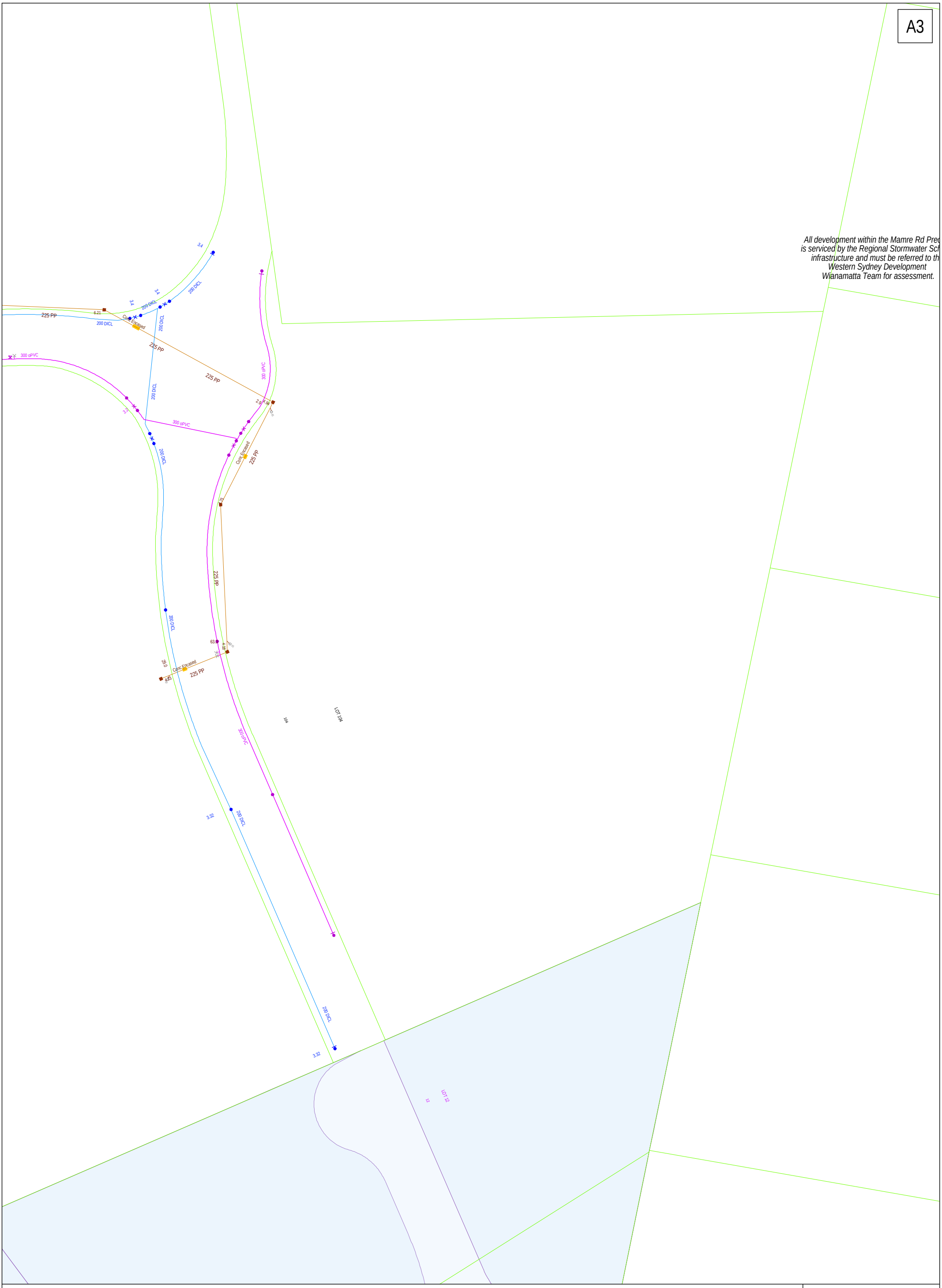
Scale: 1:1500

Date of Production: 09/12/2025

N

0m 7m 14m 21m 28m

A3



DBYD Address:
826-842 Mamre Road
Kemps Creek NSW 2178

DBYD Job No: 51898445

DBYD Sequence No: 265422794

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No warranty is given that the information shown is complete or accurate.

SYDNEY WATER CORPORATION

Scale: 1:1500

Date of Production: 09/12/2025

Plan 2 of 3

N

0m 7m 14m 21m 28m

A3

DBYD Address:
826-842 Mamre Road
Kemps Creek NSW 2178

DBYD Job No: 51898445

DBYD Sequence No: 265422794

Copyright Reserved Sydney Water 2025

No warranty is given that the information shown is complete or accurate.

SYDNEY WATER CORPORATION

Scale: 1:1500

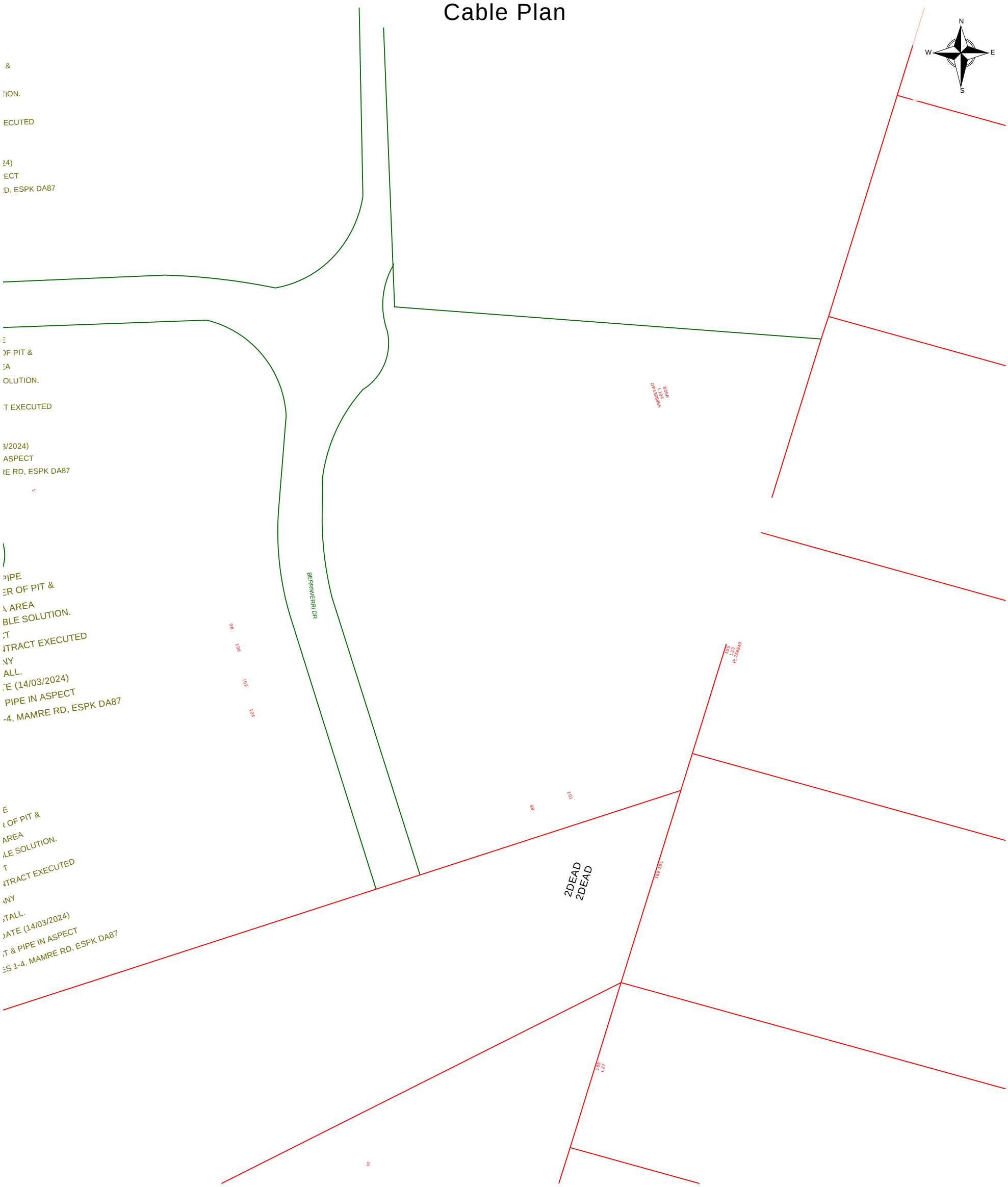
Date of Production: 09/12/2025

Plan 3 of 3

N

0m 7m 14m 21m 28m

Cable Plan



Report Damage:https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-c
Ph - 13 22 03
Email - Telstra.Plans@team.telstra.com
Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries

TELSTRA LIMITED A.C.N. 086 174 781

Generated On 09/12/2025 10:08:23

Sequence Number: 265422797

Please read Duty of Care prior to any excavating

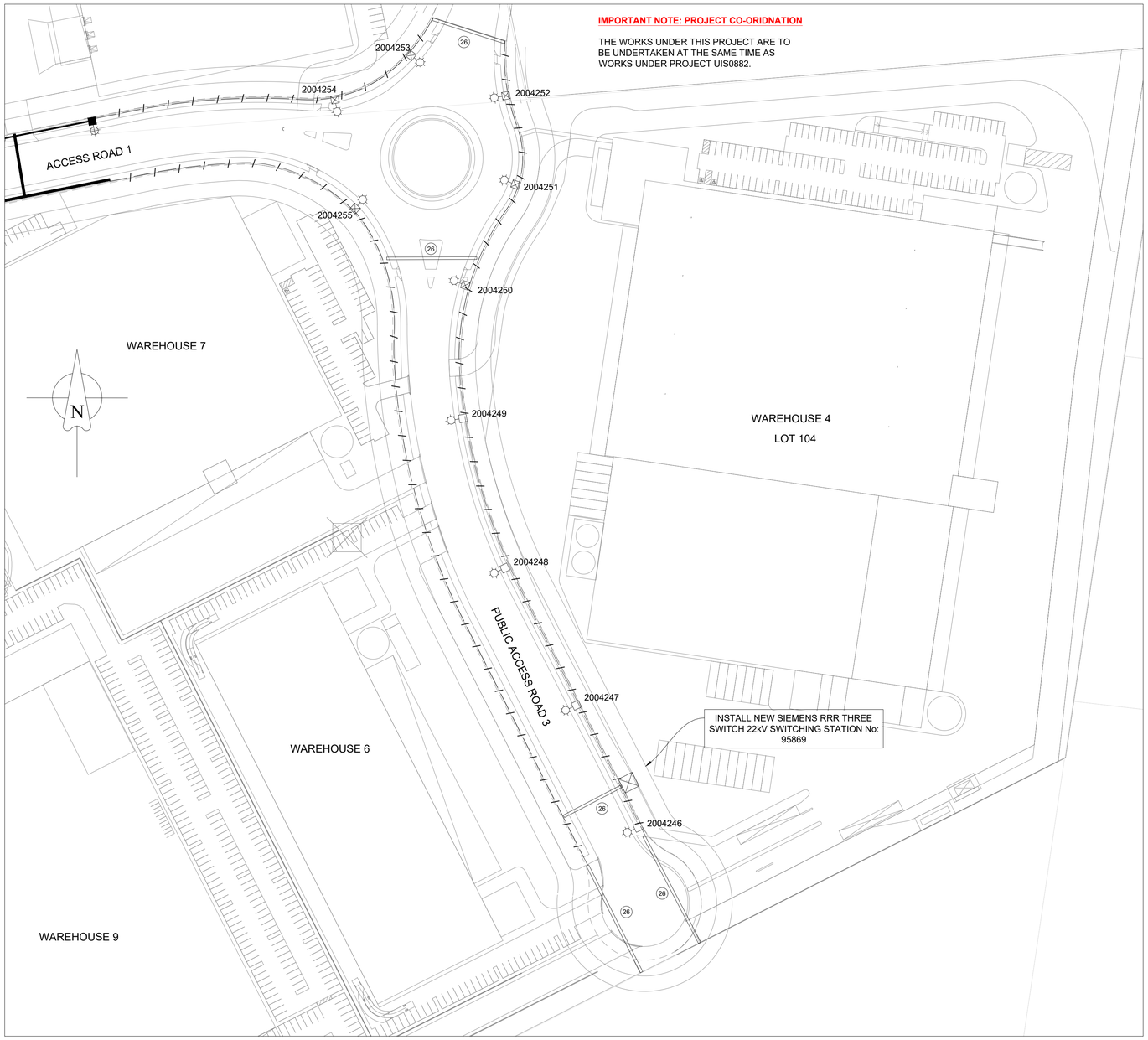
WARNING
Telstra plans and location information conform to Quality Level "D" of the Australian Standard AS 5488-Classification of Subsurface Utility Information.
As such,Telstra supplied location information is indicative only.Spatial accuracy is not applicable to Quality Level D.
Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing it.
Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy.
Further on site investigation is required to validate the exact location of Telstra plant prior to commencing construction work.
A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works.

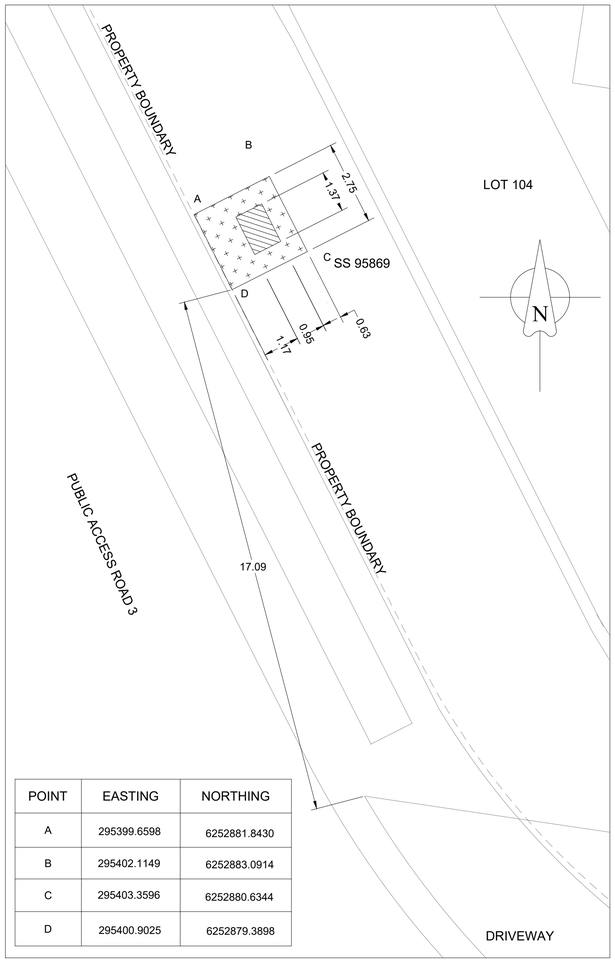
See the Steps- Telstra Duty of Care that was provided in the email response.

APPENDIX B – Relevant Utility Design Drawings

NB: Design drawings included are noted to not necessarily be the final version of the approved/constructed drawings for each service however key details discussed in this report are consistent with BYD records and the included drawings.

CHECK FOR OTHER SERVICES BEFORE BORING OR EXCAVATING





POINT	EASTING	NORTHING
A	295399.6598	6252881.8430
B	295402.1149	6252883.0914
C	295403.3596	6252880.6344
D	295400.9025	6252879.3898

SS 95869 EASEMENT AND RESTRICTION DIAGRAM

0 1 2 3 4 5 METRES

ORIGINAL SCALE - 1:100

EASEMENT FOR SWITCHING STATION 2.75m X 2.75m
(NO STRUCTURES OR SERVICES ALLOWED)

SWITCHING STATION FOOTING
(1.37m x 0.95m)

NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT ENDEAVOUR ENERGY'S NETWORK STANDARDS AND CONNECTION POLICY.
2. ACCREDITED DESIGNER IS TO BE CONTACTED REGARDING ISSUES RAISED WITH THIS DESIGN.
3. ENDEAVOUR ENERGY CONTACT PHONE: 131 081
4. DESIGN CERTIFICATION SHALL LAPSE WHERE:-
   (I) NOTICE OF INTENT HAS NOT BEEN RECEIVED WITHIN (6) SIX MONTHS OF THIS CERTIFICATION.
   (II) CONSTRUCTION HAS BEEN INTERRUPTED FOR MORE THAN (6) MONTHS.
   WHERE DESIGN CERTIFICATION HAS LAPSED THE DESIGN MUST BE RESUBMITTED BY THE ACCREDITED SERVICE PROVIDER FOR RE-CERTIFICATION.
5. DEVELOPER SHALL PEG ALL PROPERTY BOUNDARIES INCLUDING ANY EASEMENTS AND ESTABLISH FINAL LEVELS PRIOR TO COMMENCEMENT OF WORKS.
6. ATTENTION
   TELSTRA & OPTUS TO BE NOTIFIED OF PROPOSED WORK PRIOR TO CONSTRUCTION. TELSTRA & OPTUS UNDERGROUND ASSETS LOCATED IN THE AREA. CONTACTS
   TELSTRA NETWORK INTEGRITY HELP DESK: 1800 653 935
   OPTUS: 8082 0161
   NBN: RELOCATIONWORKS@NBNCO.COM.AU
7. ATTENTION
   SYDNEY WATER TO BE NOTIFIED OF PROPOSED WORK PRIOR TO CONSTRUCTION. CONTACTS
   SYDNEY WATER :(02) 8849 3800
8. ATTENTION
   PERMANENT SURVEY MARKS MAY EXIST IN THIS AREA. THESE ARE TO BE LOCATED PRIOR TO COMMENCEMENT OF WORK.
9. ATTENTION
   SERVICE PROVIDER TO NOTIFY ENDEAVOUR ENERGY'S ASSETS DATA CUSTOMER DEPT DAILY WHEN CABLE WORKS IS IN PROGRESS. TELEPHONE 131081.
10. WARNING
    LIVE ENDEAVOUR ENERGY CABLES AND OTHER SERVICES EXIST IN THIS AREA. PLEASE CONTACT DIAL BEFORE YOU DIG, TEL. 1100 FOR SEARCHES TWO DAYS PRIOR TO EXCAVATION.
11. DO NOT PLACE ANY RELIANCE ON ANY QUANTITIES OR DIMENSIONS GIVEN IN THIS DRAWING. QUANTITIES AND DIMENSIONS GIVEN ON THIS DRAWING ARE BASED ON DESIGN INFORMATION AND SITE CONDITIONS AT THE TIME OF DESIGN. AS QUANTITIES AND DIMENSIONS ARE SUBJECT TO CHANGE, THE BUILDER OF THIS PROJECT MUST CHECK ALL QUANTITIES AND DIMENSIONS ON SITE PRIOR TO TENDERING AND/ OR CONSTRUCTION.
12. THE PREPARATION OF THIS DESIGN HAS BEEN UNDERTAKEN GIVING DUE CONSIDERATION TO THE EXISTING SERVICES. THE PROJECT CONSTRUCTOR IS, HOWEVER, WHOLLY RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF EXISTING SERVICES AND PERMANENT SURVEY MARKS BEFORE CONSTRUCTION COMMENCES. NO RESPONSIBILITY NOR LIABILITY WILL BE ACCEPTED BY THE DESIGNER OF THIS PROJECT FOR DAMAGES TO EXISTING SERVICES AS A RESULT OF THIS DESIGN.
13. OPERATIONAL LIMITS.
    UNLESS APPROVED OTHERWISE, INTERRUPTION TO ANY CUSTOMER'S SUPPLY MUST BE AVOIDED. THE FOLLOWING ALTERNATIVES SHOULD BE CONSIDERED:
    -MOBILE GENERATORS AND SUBSTATIONS
    - LIVE LINE WORK
    - DESIGN ALTERNATIVES, LOW VOLTAGE PARALLELS
    - WORK PRACTICES/STANDARDS
    THE COST IS TO BE FUNDED BY THE CUSTOMER
14. ENVIRONMENT MANAGEMENT PLAN EMP ENDEAVOUR ENERGY COMPANY DOCUMENT EMS0001 IS PART OF THIS DESIGN.
15. HAVE ALL THE EXISTING ASSETS BEEN FIELD CHECKED AND ARE ACCURATE AT THE TIME OF DESIGN? YES
16. THE EASEMENT FOR THE SWITCHING SUBSTATION SITES (2.75m x 2.75m) IS TO BE CREATED IN FAVOUR OF ENDEAVOUR ENERGY WITHIN PROPOSED LOT 104 PROPOSED SUBDIVISION OF LOT 56 DP259135. THIS EASEMENT IS A MINIMUM SIZE ONLY, MUST BE LEVEL, AND MUST BE FREE OF ALL OTHER SERVICES.
17. FIRE HYDRANTS AND BOOSTER VALVES ARE NOT TO BE LOCATED WITHIN 10m MEASURED FROM THE SWITCHING STATION PLINTH.
18. THE SWITCHING STATION MUST BE LOCATED MORE THAN 5m FROM A TELECOMMUNICATIONS PIT.
19. FINAL LOCATION OF EASEMENT FOR SWITCHING STATION SITE TO BE SURVEYED, AND PEGGED BY PROPONENT (OR THEIR REPRESENTATIVE) PRIOR TO CONSTRUCTION.
20. EARTHING OF THE SWITCHING STATION TO BE CARRIED OUT IN ACCORDANCE WITH ENDEAVOUR ENERGY EDI 100. COMMON EARTHING TO BE ACHIEVED. THE EARTHING DIAGRAM IS A GUIDE ONLY AND SHOWS A MINIMUM REQUIREMENT. ADDITIONAL EARTHING MAY BE REQUIRED TO MEET THE REQUIRED MAXIMUM EARTH RESISTANCE MEASUREMENTS AS STATED IN ENDEAVOUR ENERGY'S EDI 100.
21. ALL SL COLUMNS ARE TO BE INSTALLED 350mm FROM THE FRONT PROPERTY BOUNDARIES, UNLESS SHOWN OTHERWISE.
22. A MINIMUM OF 500mm SEPARATION IS REQUIRED BETWEEN STREET LIGHT COLUMNS AND ADJACENT PILLARS.
23. ALL STREET LIGHTING CABLE TO BE INSTALLED IN 50mm DUCTS.

SITE PLAN

0 10 20 30 40 50 METRES

ORIGINAL SCALE - 1:1000

LEGEND

- NEW SWITCHING STATION LOCATION
- HV TRENCHING
- NEW DUCTS
- EXISTING DUCTS
- EXISTING STREET LIGHT COLUMN
- EXISTING STREET LIGHT LANTERN
- NEW STREET LIGHT COLUMN
- NEW STREET LIGHT LANTERN

DUCT DECLARATION

I

OF

CONTACT NUMBER

HEREBY CERTIFY THAT THE DUCTS SHOWN ON THIS DRAWING HAVE BEEN INSTALLED IN ACCORDANCE WITH THIS DRAWING & ENDEAVOR ENERGY STANDARDS MDI0028 & MCI0006. THE DUCT DEPTHS AND LOCATIONS AT EACH END HAVE BEEN CORRECTLY MARKED ON THIS DRAWING AS PER ENDEAVOR ENERGY STANDARD SAD0004.

THE INSTALLATION OF THE DUCTS WAS:

COMMENCED ON

& COMPLETED ON

SIGNATURE

IDENTIFICATION NUMBER:

DATE:

LAND SURVEYOR REGISTERED UNDER SURVEYING AND SPATIAL INFORMATION ACT 2002

DUCT INSTALLATION ACCEPTANCE BY THE ASP

I have accepted the conduits as marked up on this drawing in compliance to SAD0004 and confirm that:
All the conduits installed by the ASP are:

- in accordance with MDI0028 & MCI0006
- are correct as per the WAE marked up design drawing provided

All conduit groups installed by the developer where accessed by the ASP during construction have been checked by me and I verify that:

- string lines are installed within all the conduits
- continuity of all conduits was confirmed
- all ends of conduits have been sealed as per standards
- exposed ducts at open ends appear to be installed in accordance with MDI0028 & MCI0006

THE INSTALLATION OF DUCT WAS VERIFIED BY ME ON

NAME:

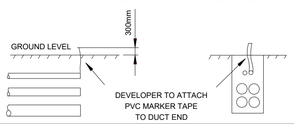
SIGNATURE:

DATE:

ASP COMPANY:

LEVEL 1 ASP COMPANY COMPETENT PERSON

DUCT END LOCATION DETAIL



CERTIFIED BY ENDEAVOUR ENERGY

Amendment: A
Date Approved: 09/11/2022
Examiner's Signature:
Print Name: Bhoomi Shah

This Certification is issued subject to Endeavour Energy's Standard Certification Terms

WORKS COMPLETED/FIELD BOOK

CONSTRUCTED BY:

WORKS COMPLETED:

SIGNATURE: DATE:

INSPECTED BY:

SIGNATURE: DATE:

ASSET RECORDING

I:

OF:

CONTACT No.:

HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOR ENERGY STANDARD SAD 0004.

SIGNATURE:

DATE:

DESIGN COMPLIANCE AND INDEMNITY

This design complies with Endeavour Energy's relevant standards as current at this time and as listed on the Endeavour Energy Accredited Service Provider's Internet site. These standards include, but are not limited to:

CP:	Connection Policy
EMS:	Environmental Management Standard
MCI:	Mains Construction Instruction
MDI:	Mains Design Instruction
PDI:	Protection Design Instruction
SDI:	Substation Design Instruction
SAD 0001:	Design Drawing Standard
MMI:	Mains Maintenance Instruction
SMI:	Substation Maintenance Instruction
LDI 0001:	Public lighting Electrical Design Element

Additionally, where relevant, the design complies with AS/NZS 7000 "Overhead Line Design - Detailed Procedures" published by The Australian Standards.

EDGEWATER CONNECTIONS indemnifies Endeavour Energy for any loss or damage resulting from non-compliance of the design with the above standards.

Signed: STEPHEN ALLAN

Name: STEPHEN ALLAN

Service Provider Number: 2508 Date: 09/11/2022

Cadastre: © Land and Property Information 2016

AMENDMENTS: ORIGINAL ISSUE — DRAFT No. 01 — A

Electricity and Comms Infrastructure and Building Engineering Consultants
Level 3 ASP #2508

35/5-7 Inglewood Place
Norwest NSW 2153

PO Box 8114
Norwest NSW 2153

P: +612 8814 1299
E: info@edgewaterconnections.com.au
W: www.edgewaterconnections.com.au

Design Ref: 4494

EDGEWATER CONNECTIONS

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TEMPLATE VERSION No.5.28

REFERENCE DRAWING'S

WORK ORDERS

GENERAL	
OVERHEAD	
UNDERGROUND	
SUBSTATIONS	

CAMS File No.	UIS0978
AM PROJ. No.	
HV SWITCHING	
EE DEPOT	PENRITH
EE REGION	NORTHERN
HV OP DIAG	STH ERKINE PARK ZS
LOCAL GOV AREA	PENRITH

ORIGINAL SCALE AS NOTED

DRAWN M.S.

DATE 09/11/2022

CH'D S.A

DESIGN M.S.

DO NOT SCALE
DIMENSIONS IN METRES

LOTS 54 - 58 DP 259135 MAMRE ROAD
KEMPS CREEK
ENDEAVOUR ENERGY PROJECT NO.: UIS0978
DUCT DRAWING

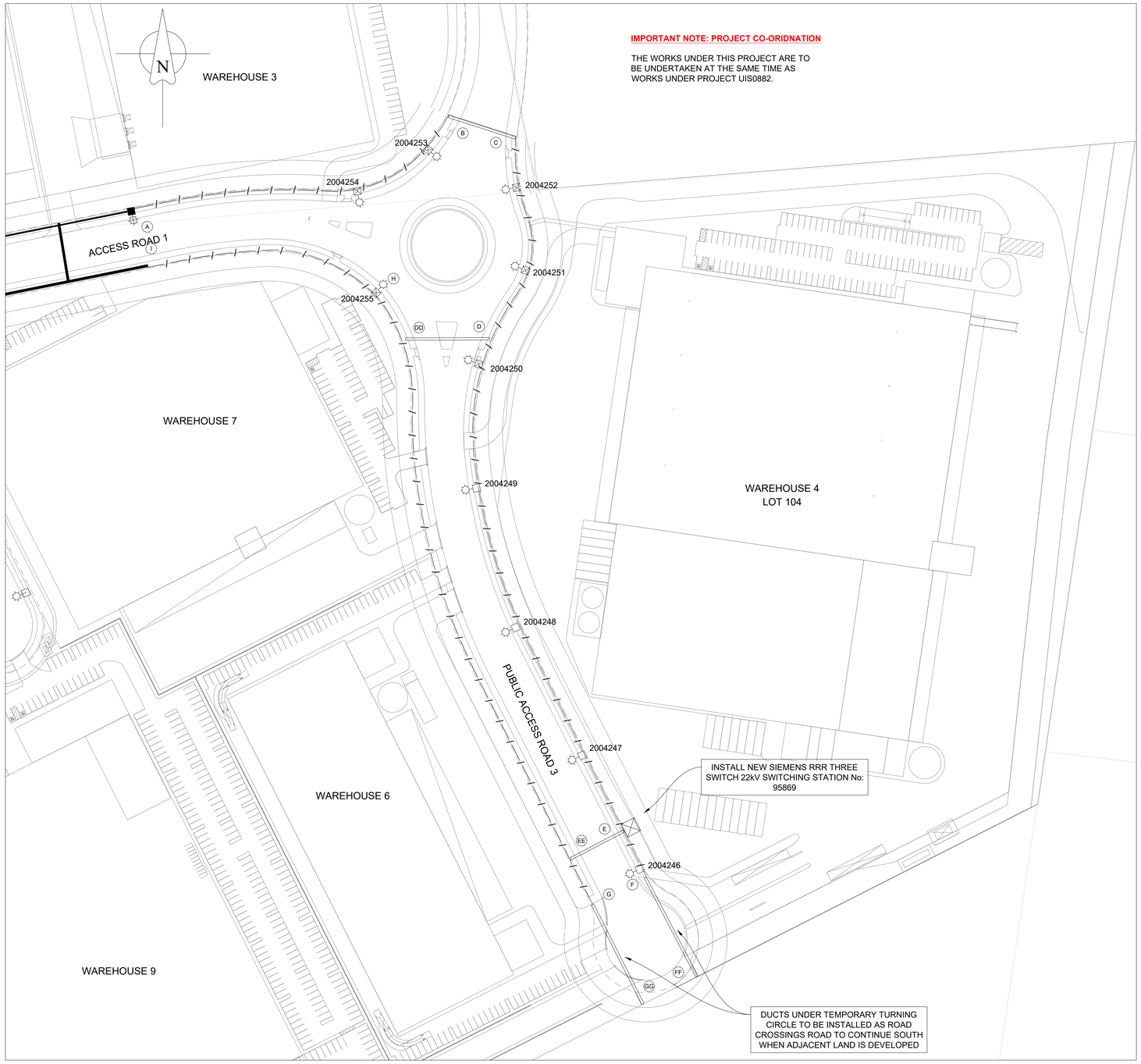
Endeavour Energy

A1 | 526296 | A

SHEET No. 1 OF 3 SHEETS

90906

CHECK FOR OTHER SERVICES BEFORE BORING OR EXCAVATING



SITE PLAN

0 10 20 30 40 50 METRES

ORIGINAL SCALE - 1:1000

LEGEND

- NEW SWITCHING STATION LOCATION
- HV TRENCHING
- NEW DUCTS
- EXISTING DUCTS
- EXISTING LV PILLAR
- EXISTING STREET LIGHT COLUMN
- EXISTING STREET LIGHT LANTERN
- NEW STREET LIGHT COLUMN
- NEW STREET LIGHT LANTERN

DESIGN COMPLIANCE AND INDEMNITY

This design complies with Endeavour Energy's relevant standards as current at this time and as listed on the Endeavour Energy Accredited Service Provider's Internet site. These standards include, but are not limited to:

CP:	Connection Policy
EMS:	Environmental Management Standard
MCI:	Mains Construction Instruction
MDI:	Mains Design Instruction
PDI:	Protection Design Instruction
SDI:	Substation Design Instruction
SAD 0001:	Design Drawing Standard
MMI:	Mains Maintenance Instruction
SMI:	Substation Maintenance Instruction
LDI 0001:	Public lighting Electrical Design Element

Additionally, where relevant, the design complies with AS/NZS 7000 "Overhead Line Design - Detailed Procedures" published by The Australian Standards.

EDGEWATER CONNECTIONS indemnifies Endeavour Energy for any loss or damage resulting from non-compliance of the design with the above standards.

Signed: STEPHEN ALLAN

Name: STEPHEN ALLAN

Service Provider Number: 2508 Date: 09/11/2022

WORKS COMPLETED/FIELD BOOK

CONSTRUCTED BY: _____

WORKS COMPLETED: _____

SIGNATURE: _____ DATE: _____

INSPECTED BY: _____

SIGNATURE: _____ DATE: _____

ASSET RECORDING

I: _____

OF: _____

CONTACT No.: _____

HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOR ENERGY STANDARD SAD 0004.

SIGNATURE: _____

DATE: _____

CERTIFIED BY ENDEAVOUR ENERGY

Amendment: A

Date Approved: 09/11/2022

Examiner's Signature: _____

Print Name: Bhoomi Shah

This Certification is issued subject to Endeavour Energy's Standard Certification Terms

APPROVAL TO CONNECT TO PUBLIC LIGHTING

Reviewers Name: Bhoomi Shah

Date Approved: 09/11/2022

Reviewers Signature: _____

This approval is issued subject to Endeavour Energy's General Terms & Conditions for connection of Public lighting and is specifically for Drawing No._ 526297A__

NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT ENDEAVOUR ENERGY'S NETWORK STANDARDS AND CONNECTION POLICY.
2. ACCREDITED DESIGNER IS TO BE CONTACTED REGARDING ISSUES RAISED WITH THIS DESIGN.
3. ENDEAVOUR ENERGY CONTACT PHONE: 131 081
4. DESIGN CERTIFICATION SHALL LAPSE WHERE:-
   (I) NOTICE OF INTENT HAS NOT BEEN RECEIVED WITHIN (6) SIX MONTHS OF THIS CERTIFICATION.
   (II) CONSTRUCTION HAS BEEN INTERRUPTED FOR MORE THAN (6) MONTHS.
   WHERE DESIGN CERTIFICATION HAS LAPSED THE DESIGN MUST BE RESUBMITTED BY THE ACCREDITED SERVICE PROVIDER FOR RE-CERTIFICATION.
5. DEVELOPER SHALL PEG ALL PROPERTY BOUNDARIES INCLUDING ANY EASEMENTS AND ESTABLISH FINAL LEVELS PRIOR TO COMMENCEMENT OF WORKS.
6. ATTENTION
   TELSTRA & OPTUS TO BE NOTIFIED OF PROPOSED WORK PRIOR TO CONSTRUCTION.
   TELSTRA & OPTUS UNDERGROUND ASSETS LOCATED IN THE AREA. CONTACTS
   TELSTRA NETWORK INTEGRITY HELP DESK: 1800 653 935
   OPTUS: 8082 0161
   NBN: RELOCATIONWORKS@NBNCO.COM.AU
7. ATTENTION
   SYDNEY WATER TO BE NOTIFIED OF PROPOSED WORK PRIOR TO CONSTRUCTION.
   CONTACTS
   SYDNEY WATER :(02) 8849 3800
8. ATTENTION
   PERMANENT SURVEY MARKS MAY EXIST IN THIS AREA. THESE ARE TO BE LOCATED PRIOR TO COMMENCEMENT OF WORK.
9. ATTENTION
   SERVICE PROVIDER TO NOTIFY ENDEAVOUR ENERGY'S ASSETS DATA CUSTOMER DEPT DAILY WHEN CABLE WORKS IS IN PROGRESS. TELEPHONE 131081.
10. WARNING
    LIVE ENDEAVOUR ENERGY CABLES AND OTHER SERVICES EXIST IN THIS AREA. PLEASE CONTACT DIAL BEFORE YOU DIG, TEL. 1100 FOR SEARCHES TWO DAYS PRIOR TO EXCAVATION.
11. DO NOT PLACE ANY RELIANCE ON ANY QUANTITIES OR DIMENSIONS GIVEN IN THIS DRAWING. QUANTITIES AND DIMENSIONS GIVEN ON THIS DRAWING ARE BASED ON DESIGN INFORMATION AND SITE CONDITIONS AT THE TIME OF DESIGN. AS QUANTITIES AND DIMENSIONS ARE SUBJECT TO CHANGE, THE BUILDER OF THIS PROJECT MUST CHECK ALL QUANTITIES AND DIMENSIONS ON SITE PRIOR TO TENDERING AND/ OR CONSTRUCTION.
12. THE PREPARATION OF THIS DESIGN HAS BEEN UNDERTAKEN GIVING DUE CONSIDERATION TO THE EXISTING SERVICES. THE PROJECT CONSTRUCTOR IS, HOWEVER, WHOLLY RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF EXISTING SERVICES AND PERMANENT SURVEY MARKS BEFORE CONSTRUCTION COMMENCES. NO RESPONSIBILITY NOR LIABILITY WILL BE ACCEPTED BY THE DESIGNER OF THIS PROJECT FOR DAMAGES TO EXISTING SERVICES AS A RESULT OF THIS DESIGN.
13. OPERATIONAL LIMITS.
    UNLESS APPROVED OTHERWISE, INTERRUPTION TO ANY CUSTOMER'S SUPPLY MUST BE AVOIDED. THE FOLLOWING ALTERNATIVES SHOULD BE CONSIDERED:
    -MOBILE GENERATORS AND SUBSTATIONS
    - LIVE LINE WORK
    - DESIGN ALTERNATIVES, LOW VOLTAGE PARALLELS
    - WORK PRACTICES/STANDARDS
    THE COST IS TO BE FUNDED BY THE CUSTOMER
14. ENVIRONMENT MANAGEMENT PLAN EMP ENDEAVOUR ENERGY COMPANY DOCUMENT EMS0001 IS PART OF THIS DESIGN.
15. HAVE ALL THE EXISTING ASSETS BEEN FIELD CHECKED AND ARE ACCURATE AT THE TIME OF DESIGN? YES
16. THE EASEMENT FOR THE SWITCHING STATION SITES (2.75m x 2.75m) IS TO BE CREATED IN FAVOUR OF ENDEAVOUR ENERGY WITHIN PROPOSED LOT 104 PROPOSED SUBDIVISION OF LOT 56 DP259135. THIS EASEMENT IS A MINIMUM SIZE ONLY, MUST BE LEVEL, AND MUST BE FREE OF ALL OTHER SERVICES.
17. A RESTRICTION ON USE OF LAND IN RELATION TO THE FIRE RATING OF THE BUILDING
18. ALL SL COLUMNS ARE TO BE INSTALLED 350mm FROM THE FRONT PROPERTY BOUNDARIES, UNLESS SHOWN OTHERWISE.
19. A MINIMUM OF 500mm SEPARATION IS REQUIRED BETWEEN STREET LIGHT COLUMNS AND ADJACENT PILLARS.
20. ALL STREET LIGHTING CABLE TO BE INSTALLED IN 50mm DUCTS.

HV TRENCH LENGTH: 1038 m
LV TRENCH LENGTH: 0 m
TOTAL TRENCH LENGTH: 1038m

THIS DRAWING SUPPLIES 1 LOT

C.A.P. No	FILE No	LOT Nos	No.of LOTS	DEVELOPER	DEVELOPERS REP	PHONE No.
UIS0978	-	104	1	MIRVAC INDUSTRIAL DEVELOPMENTS Pty Ltd	RUSSELL HOGAN	02 9080 8154

PIONEER COST SHARE REIMBURSEMENT SCHEME - Expiry Date dd/mmm/yyyy Pre-Calculated Reimbursement for Customer Load Over 50kVA

Asset	Asset Cost Estimate ($)	Unit Quantity (km)	Net Asset Capacity (kVA)	Original Customer Utilisation (kVA)	Maximum Reimbursement Amount ($)
HV Mains	N/A	N/A	N/A	N/A	N/A
LV Mains	N/A	N/A	N/A	N/A	N/A
Substation	N/A	N/A	N/A	N/A	N/A

Cadastre: © Land and Property Information 2016

AMENDMENTS: A ORIGINAL ISSUE; DRAFT No. 01

Electricity and Comms Infrastructure and Building Engineering Consultants
Level 3 ASP #2508
35/5-7 Inglewood Place
Norwest NSW 2153
PO Box 8114
Norwest NSW 2153
P: +612 8814 1299
E: info@edgewaterconnections.com.au
W: www.edgewaterconnections.com.au
Design Ref: 4494
EDGEWATER CONNECTIONS

TEMPLATE VERSION No:5.20
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REFERENCE DRAWING'S

WORK ORDERS

		CAMS File No.	UIS0978
		AM PROJ. No.	
GENERAL		HV SWITCHING	
OVERHEAD		EE DEPOT	PENRITH
UNDERGROUND		EE REGION	NORTHERN
SUBSTATIONS		HV OP DIAG	STH ERKINE PARK ZS
		LOCAL GOV AREA	PENRITH

ORIGINAL SCALE AS NOTED

DRAWN M.S.

DATE 09/11/2022

CH'D S.A

DO NOT SCALE DIMENSIONS IN METRES

DESIGN M.S.

LOTS 54 - 58 DP 259135 MAMRE ROAD
KEMPS CREEK
ENDEAVOUR ENERGY PROJECT NO.: UIS0978
ELECTRICAL RETICULATION

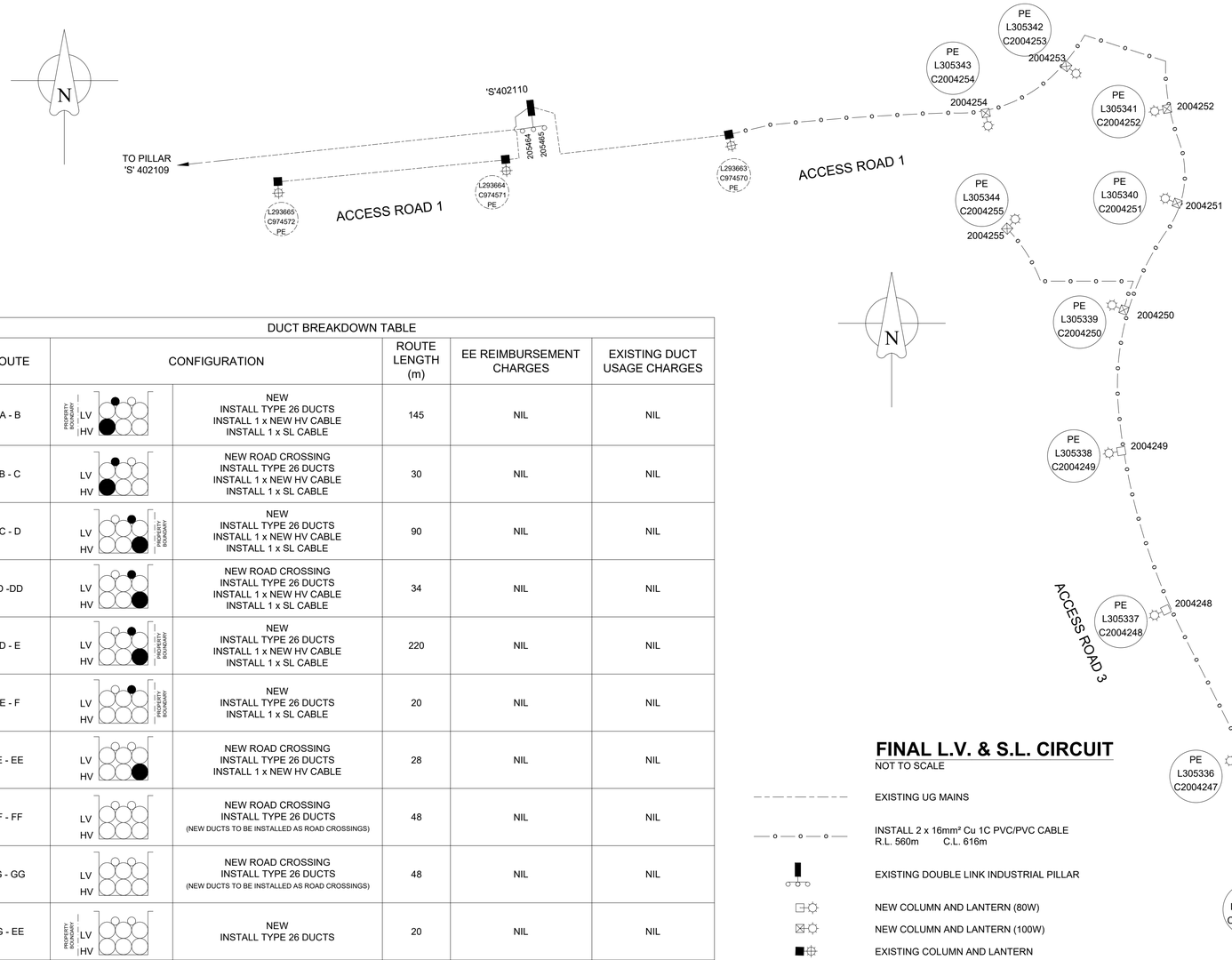
Endeavour Energy

A1 526297 A

SHEET No 1 OF 3 SHEETS

90906

CHECK FOR OTHER SERVICES BEFORE BORING OR EXCAVATING



FINAL L.V. & S.L. CIRCUIT

NOT TO SCALE

- EXISTING UG MAINS
- INSTALL 2 x 16mm² Cu 1C PVC/PVC CABLE R.L. 560m C.L. 616m
- EXISTING DOUBLE LINK INDUSTRIAL PILLAR
- NEW COLUMN AND LANTERN (80W)
- NEW COLUMN AND LANTERN (100W)
- EXISTING COLUMN AND LANTERN
- L293664 C974571 PE — EXISTING LANTERN NO. (PE CELL CONTROLLED) EXISTING COLUMN NO.
- PE L305335 C2004246 — NEW LANTERN NO.(PE CELL CONTROLLED) NEW COLUMN NO.

IMPORTANT NOTE: PROJECT CO-ORIDNATION

THE WORKS UNDER THIS PROJECT ARE TO BE UNDERTAKEN AT THE SAME TIME AS WORKS UNDER PROJECT UIS0882.

KEY DOCUMENTS TABLE

THE CERTIFICATION OF THIS DRAWING IS SUPPORTED BY THE FOLLOWING DOCUMENTS

DOCUMENT NAME	NOTIFICATION
SUMMARY ENVIRONMENTAL REPORT (SER) - FAT0038 PART OF EMS0001	31/10/2022
DESIGNER'S SAFETY REPORT	20/09/2022
AGREEMENT FOR ENTRY, GRANT and CREATION OF EASEMENT - FPJ5013	N/A
EQUIPMENT TO BE RETURNED TO ENDEAVOUR ENERGY - FPJ4252	N/A
EQUIPMENT TO BE RETURNED TO ENDEAVOUR ENERGY - FPJ4253	N/A
TELECOMMUNICATION ASSET AGREEMENT - FPJ4184	N/A
LIGHTING CERTIFICATION 8877E1	27/04/2022

WORKS COMPLETED/FIELD BOOK

CONSTRUCTED BY: _____

WORKS COMPLETED: _____

SIGNATURE: _____ DATE: _____

INSPECTED BY: _____

SIGNATURE: _____ DATE: _____

ASSET RECORDING

I: _____

OF: _____

CONTACT No.: _____

HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOR ENERGY STANDARD SAD 0004.

SIGNATURE: _____

DATE: _____

APPROVAL TO CONNECT TO PUBLIC LIGHTING

Reviewers Name: _____

Date Approved: _____

Reviewers Signature: _____

This approval is issued subject to Endeavour Energy's General Terms & Conditions for connection of Public lighting and is specifically for Drawing No._ 526297A__

CERTIFIED BY ENDEAVOUR ENERGY

Amendment: A

Date Approved: 09/11/2022

Examiner's Signature: [signature]

Print Name: Bhoomi Shah

This Certification is issued subject to Endeavour Energy's Standard Certification Terms

AUTHORISATION OF ESTIMATE VALUE OF ENDEAVOUR ENERGY FUNDED ASSETS

Signed: _____

Print Name: _____

Service Number: _____

Funding Amount: $ _____

Date: _____

FUNDING ARRANGEMENTS FOR SCOPE OF WORKS

ASP LEVEL 1 ELECTRICAL WORKS		CUSTOMER
ENDEAVOUR ENERGY SUPPLIED MATERIALS	**CUSTOMER FUNDED NON-CONTESTABLE WORKS**	**CUSTOMER FUNDED**
NIL	– MONOPOLY FEES INSPECTION AND ACCESS AUTHORITY - SYSTEM SWITCHING - PROVISION OF ACCESS AUTHORITY (AS PER FEE SENT BY EE'S CWA'S)	INCLUDES BUT IS NOT LIMITED TO: - PEGGING PROPERTY BOUNDARIES & INFRASTRUCTURE LOCATIONS - PROVIDING SITE ACCESS - OWN SERVICE & SERVICE CONNECTION - CONFIRM FINISHED GROUND LEVELS
ENDEAVOUR ENERGY FUNDED & CONSTRUCTED		
WORKS REQUIRED PRIOR TO COMPLETION OF CUSTOMER CONTESTABLE PROJECT: NIL	WORKS REQUIRED IN ASSOCIATION OF CUSTOMER CONTESTABLE PROJECT: NIL	
ENDEAVOUR ENERGY FUNDED & ASP L1 CONSTRUCTED - REIMBURSMENT (EXC GST)	**CUSTOMER FUNDED CONTESTABLE WORKS**	**EXISTING DUCT USAGE CHARGES (EXC GST)**
NIL	ALL OTHER WORKS AND MATERIALS INCLUDING BUT NOT LIMITED TO: - SWITCHING STATION INSTALLATION - TRENCHING - DUCT INSTALLATION - CABLE LAYING AND/OR INSTALLATIONS - TERMINATIONS - COLUMN INSTALLATION - STREET LIGHT INSTALLATION	NIL
		CO-ORDINATION SUPPLY REQUIRED DATE
		JANUARY 2023
		ASSET TO BE RETURNED TO NEAREST ENDEAVOUR ENERGY DEPOT BY LV 1 ASP
		NIL

DUCT BREAKDOWN TABLE

ROUTE	CONFIGURATION		ROUTE LENGTH (m)	EE REIMBURSEMENT CHARGES	EXISTING DUCT USAGE CHARGES
A - B	PROPERTY BOUNDARY, LV, HV	NEW INSTALL TYPE 26 DUCTS INSTALL 1 x NEW HV CABLE INSTALL 1 x SL CABLE	145	NIL	NIL
B - C	LV, HV	NEW ROAD CROSSING INSTALL TYPE 26 DUCTS INSTALL 1 x NEW HV CABLE INSTALL 1 x SL CABLE	30	NIL	NIL
C - D	LV, HV, PROPERTY BOUNDARY	NEW INSTALL TYPE 26 DUCTS INSTALL 1 x NEW HV CABLE INSTALL 1 x SL CABLE	90	NIL	NIL
D -DD	LV, HV	NEW ROAD CROSSING INSTALL TYPE 26 DUCTS INSTALL 1 x NEW HV CABLE INSTALL 1 x SL CABLE	34	NIL	NIL
D - E	LV, HV, PROPERTY BOUNDARY	NEW INSTALL TYPE 26 DUCTS INSTALL 1 x NEW HV CABLE INSTALL 1 x SL CABLE	220	NIL	NIL
E - F	LV, HV, PROPERTY BOUNDARY	NEW INSTALL TYPE 26 DUCTS INSTALL 1 x SL CABLE	20	NIL	NIL
E - EE	LV, HV	NEW ROAD CROSSING INSTALL TYPE 26 DUCTS INSTALL 1 x NEW HV CABLE	28	NIL	NIL
F - FF	LV, HV	NEW ROAD CROSSING INSTALL TYPE 26 DUCTS (NEW DUCTS TO BE INSTALLED AS ROAD CROSSINGS)	48	NIL	NIL
G - GG	LV, HV	NEW ROAD CROSSING INSTALL TYPE 26 DUCTS (NEW DUCTS TO BE INSTALLED AS ROAD CROSSINGS)	48	NIL	NIL
G - EE	PROPERTY BOUNDARY, LV, HV	NEW INSTALL TYPE 26 DUCTS	20	NIL	NIL
EE - DD	PROPERTY BOUNDARY, LV, HV	NEW INSTALL TYPE 26 DUCTS INSTALL 1 x NEW HV CABLE	230	NIL	NIL
DD - H	PROPERTY BOUNDARY, LV, HV	NEW INSTALL TYPE 26 DUCTS INSTALL 1 x NEW HV CABLE	25	NIL	NIL
H - I	PROPERTY BOUNDARY, LV, HV	NEW INSTALL TYPE 26 DUCTS INSTALL 1 x NEW HV CABLE	100	NIL	NIL
TOTAL			1038m	NIL	NIL

DUCT LEGEND

- SPARE DUCT (50mm)
- 50mm DUCT WITH NEW CABLE
- SPARE DUCT (125mm)
- 125mm DUCT WITH NEW CABLE

LIGHTING EQUIPMENT AND BILLING SCHEDULE

ITEM ID	STATE	SL NUMBER NEW	SL NUMBER EXISTING	SUPPORT NUMBER NEW	SUPPORT NUMBER EXISTING	LUMINAIRE DESCRIPTION	LUMINAIRE PART NO	LUMINAIRE QTY	LUMINAIRE RATE CODE	COLUMN/POLE DESCRIPTION	COLUMN/POLE PART NO	COLUMN/POLE FOOTING (BOLT/FOUNDATION)	COLUMN/POLE QTY	COLUMN/POLE RATE CODE	BRACKET/OUTREACH DESCRIPTION	BRACKET/OUTREACH PART NO	BRACKET/OUTREACH RATE CODE	UPCAST	CATEGORY	CHARGE TO	MOUNTING HEIGHT	COLOUR
□☼	NEW	305335 305336 305337 305338	-	2004246 2004247 2004248 2004249	-	SYLVANIA ROAD LED 80W	PL99G01L80	4	950	7.0m ENLARGED BASE COLUMN	IE/EB 7.0	TYPE 2 RAG BOLT / TYPE 2 FOUNDATION	4	995	4.5m OUTREACH	IE4.5CPS	991	5°	PR5	PENRITH CITY COUNCIL (100%)	9	STANDARD GALVANISED
⊠☼	NEW	305339 305340 305341 305342 305343 305344	-	2004250 2004251 2004252 2004253 2004254 2004255	-	SYLVANIA ROAD LED 100W	PL99G01L100	6	951	10.0m ENLARGED BASE COLUMN	IE/EB10.0	TYPE 2 RAG BOLT / TYPE 2 FOUNDATION	6	996	6.0m OUTREACH	IE1.5EXT	991	5°	PR3	PENRITH CITY COUNCIL (100%)	12	STANDARD GALVANISED

Cadastre: © Land and Property Information 2016

AMENDMENTS: ORIGINAL ISSUE A DRAFT No. 01

Electricity and Comms Infrastructure and Building Engineering Consultants
Level 3 ASP #2508
35/5-7 Inglewood Place
Norwest NSW 2153
PO Box 8114
Norwest NSW 2153
P: +612 8814 1299
E: info@edgewaterconnections.com.au
W: www.edgewaterconnections.com.au
Design Ref: 4404

EDGEWATER CONNECTIONS

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TEMPLATE VERSION No:5.20

REFERENCE DRAWING'S		WORK ORDERS		CAMS File No.	UIS0978
				AM PROJ. No.	
		GENERAL		HV SWITCHING	
		OVERHEAD		EE DEPOT	PENRITH
		UNDERGROUND		EE REGION	NORTHERN
		SUBSTATIONS		HV OP DIAG	STH ERKINE PARK ZS
				LOCAL GOV AREA	PENRITH

ORIGINAL SCALE AS NOTED

DRAWN M.S. | DATE 09/11/2022 | CH'D S.A

DO NOT SCALE DIMENSIONS IN METRES

DESIGN M.S.

LOTS 54 - 58 DP 259135 MAMRE ROAD
KEMPS CREEK
ENDEAVOUR ENERGY PROJECT NO.: UIS0978
ELECTRICAL RETICULATION

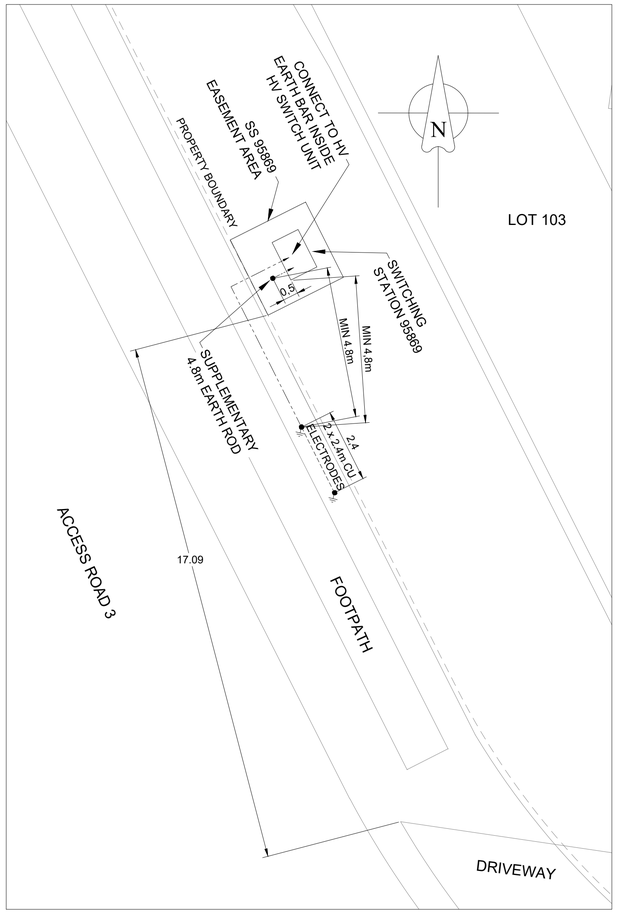
Endeavour Energy

A1 | 526297 | A

SHEET No 2 OF 3 SHEETS

90906

CHECK FOR OTHER SERVICES BEFORE BORING OR EXCAVATING



SWITCHING STATION 95869 COMMON EARTHING LAYOUTS

THIS EARTHING DIAGRAM IS A GUIDE ONLY AND SHOWS A MINIMUM REQUIREMENT. ADDITIONAL EARTHING MAY BE REQUIRED TO MEET THE REQUIRED MAXIMUM EARTH RESISTANCE MEASUREMENTS AS STATED IN ENDEAVOUR ENERGY'S EDI 100

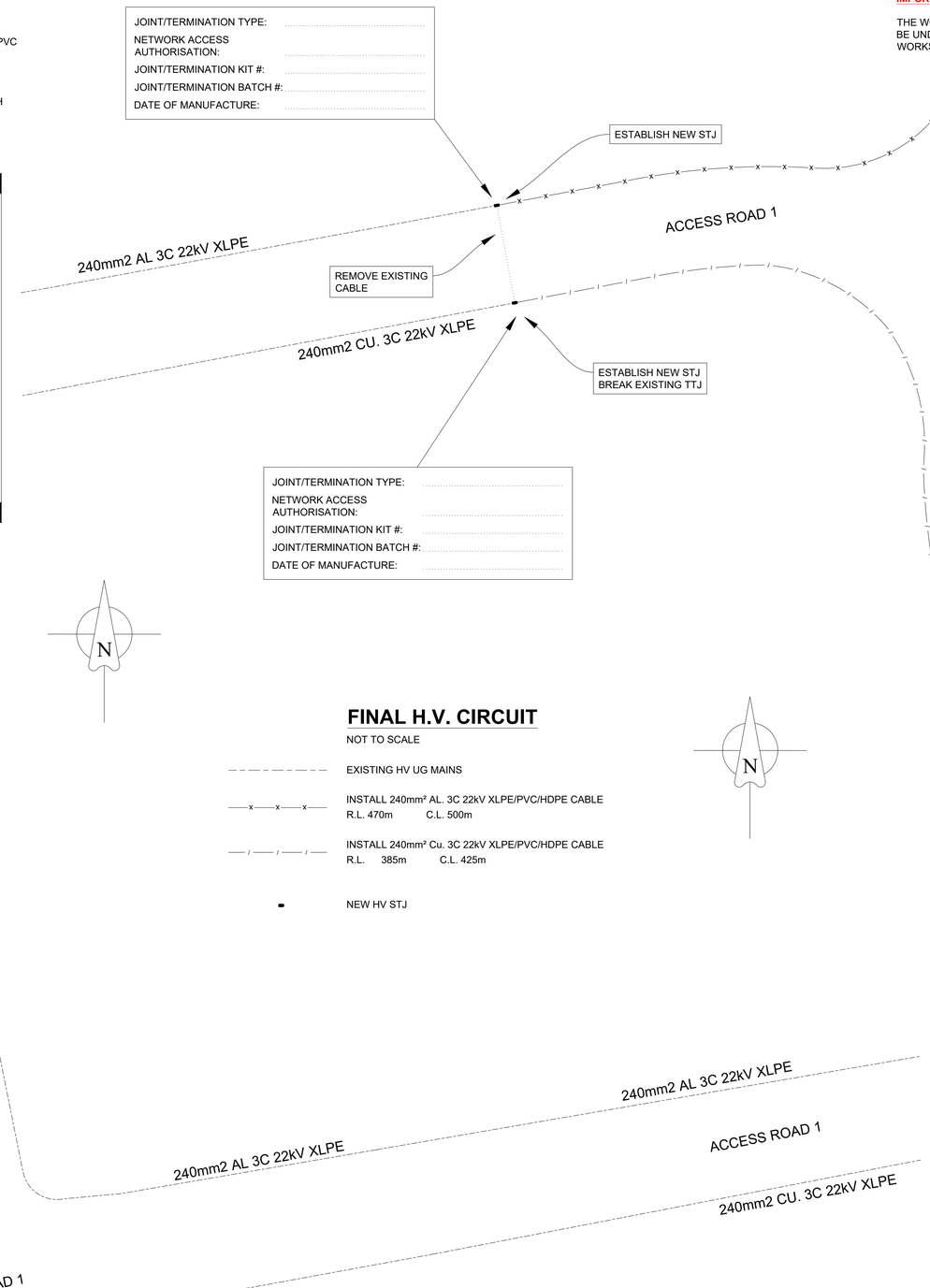
EARTHING CONSTRUCTION TO EDI-0006
INFORMATION UPDATED AFTER COMMISSIONING ON _____

EARTHING DETAILS FOR SWITCHING STATION 95869				
SOIL RESISTIVELY (ohms.m)	LAYER 1	36.40	DEPTH (m)	10.00
	LAYER 2	9.43		INFINITY
DESIGNED EARTH RESISTANCE LIMIT (ohms)				8.70
MEASURED EARTH RESISTANCE (ohms)				
NUMBER OF ELECTRODES EXCLUDING SUPPLEMENTARY EARTH ROD				2
LENGTH OF BARE ELECTRODE (m)				2.4
CONNECTION TYPE (CAD OR CRIMP)				CRIMP
LOCATION CATEGORY: F- FREQUENTED, R-REMOTE, S-SPECIAL				F
WHAT DESIGN TOOL USED?				3E
FAULT LEVEL (kA)				6.08
IS THIS 'FIRST ASSET OUT' FROM ZS				NO
ARE SCREENS OF INCOMING CABLES BONDED TO DISTRIBUTION SUBSTATION EARTH BAR				YES

LEGEND

- CABLE CU. ANNEALED 19/2.14 660V PVC/PVC
- CABLE CU. ANNEALED 19/2.14 BARE
- EARTH ELECTRODE LOCATION & LENGTH (LENGTH SHOWN IN METRES)





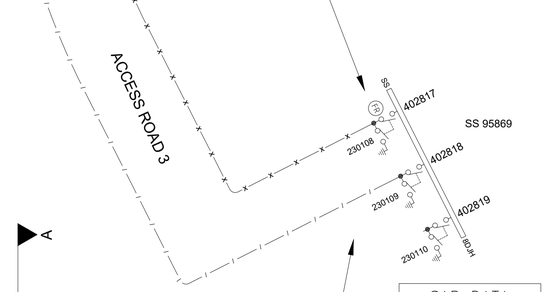
FINAL H.V. CIRCUIT

NOT TO SCALE

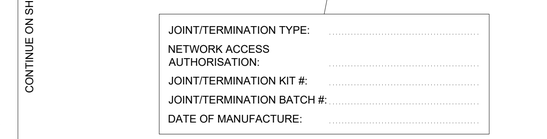
- EXISTING HV UG MAINS
- INSTALL 240mm² AL. 3C 22kV XLPE/PVC/HDPE CABLE R.L. 470m C.L. 500m
- INSTALL 240mm² Cu. 3C 22kV XLPE/PVC/HDPE CABLE R.L. 385m C.L. 425m
- NEW HV STJ

IMPORTANT NOTE: PROJECT CO-ORIDNATION

THE WORKS UNDER THIS PROJECT ARE TO BE UNDERTAKEN AT THE SAME TIME AS WORKS UNDER PROJECT UIS0882.



SAP DATA
SS 95869
HV BUSBAR 19553





WORKS COMPLETED/FIELD BOOK

CONSTRUCTED BY: _____
WORKS COMPLETED: _____
SIGNATURE: _____ DATE: _____
INSPECTED BY: _____
SIGNATURE: _____ DATE: _____

ASSET RECORDING

I: _____
OF: _____
CONTACT No.: _____

HEREBY CERTIFY THAT ASSETS MARKED AS-BUILT ON THIS DRAWING HAVE BEEN RECORDED AS PER ENDEAVOR ENERGY STANDARD SAD 0004.

SIGNATURE: _____
DATE: _____

CERTIFIED BY ENDEAVOUR ENERGY

Amendment: A
Date Approved: 09/11/2022
Examiner's Signature: _____
Print Name: Bhoomi Shah

This Certification is issued subject to Endeavour Energy's Standard Certification Terms

Cadastre: © Land and Property Information 2016

AMENDMENTS: ORIGINAL ISSUE A — DRAFT No. 01

Electricity and Comms Infrastructure and Building Engineering Consultants
Level 3 ASP #2508

35/5-7 Inglewood Place
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Norwest NSW 2153

P: +612 8814 1299
E: info@edgewaterconnections.com.au
W: www.edgewaterconnections.com.au

Design Ref: 4494

EDGEWATER CONNECTIONS

TEMPLATE VERSION No.5.20

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REFERENCE DRAWING'S		WORK ORDERS		CAMS File No.	UIS0978
				AM PROJ. No.	
		GENERAL		HV SWITCHING	
		OVERHEAD		EE DEPOT	PENRITH
		UNDERGROUND		EE REGION	NORTHERN
		SUBSTATIONS		HV OP DIAG	STH ERKINE PARK ZS
				LOCAL GOV AREA	PENRITH

ORIGINAL SCALE	AS NOTED	DO NOT SCALE DIMENSIONS IN METRES	
DRAWN	M.S.		
DATE	09/11/2022		
CH'D	S.A	DESIGN	M.S.

LOTS 54 - 58 DP 259135 MAMRE ROAD
KEMPS CREEK
ENDEAVOUR ENERGY PROJECT NO.: UIS0978
ELECTRICAL RETICULATION

Endeavour Energy

A1 | 526297 | A

SHEET No 2 OF 3 SHEETS

90906



SITE PLAN

SDU Development Information

Development Name: Aspect Industrial Estate	
Developer Company: Mirvac	
Development Address: 788 Mamre Road, Kemps Creek	
Authorised Rep: Frank Kranjc Phone: 0449591754 E-Mail: frank@edgewaterconnections.com.au	
nbn Reference Number: TELSTRA & NBN PITS	Stage Number: 1
	Design Revision: I

NOTES:

1. ALL PIT & PIPE INFRASTRUCTURE IS TO BE INSTALLED ACCORDING TO NBN Co's STANDARDS

2. ALL CONSTRUCTION TO BE INSTALLED IN SHARED TRENCH UNLESS OTHERWISE SHOWN.

3. CONDUITS INSTALLED IN SHARED TRENCHES MUST NOT BE VERTICALLY ABOVE OR BELOW OTHER UTILITIES.
MANDATORY SEPARATION IS TO BE MAINTAINED AT ALL TIMES.
MINIMUM SEPARATIONS ARE:
- LV CABLES ~ 100mm
- HV CABLES ~ 300mm
- GAS MAIN (≤Ø75mm) ~ 150mm
- GAS MAIN (≥Ø110mm) ~ 300mm

REFER FIGURE 1 - TYPICAL CROSS SECTION DIAGRAM.

4. NO PITS TO BE INSTALLED WITHIN 15m FROM ANY SUBSTATION.

5. PITS TO BE INSTALLED CLEAR OF PROPOSED DRIVEWAYS

6. PITS TO BE INSTALLED MIN 1M FROM STREET LIGHTS

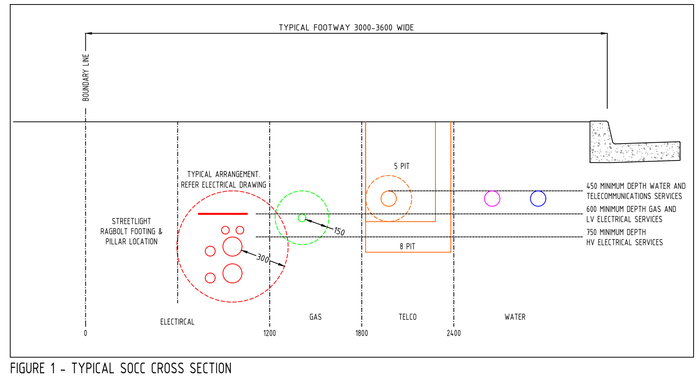
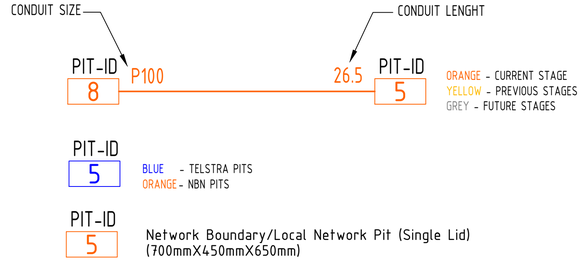


FIGURE 1 - TYPICAL SOCC CROSS SECTION



SAFETY FIRST
SAFETY STARTS WITH YOU

STAFF WORKING ON THIS ESTIMATE PLEASE NOTE:
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DANGER
LASER BEAM
EYE PROTECTION MUST BE WORN

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REV	DATE	DRAFTER	DESCRIPTION	APPROVED
I	21.08.2023	F.KRANJC	RESET COMMS ALIGNMENT NORTH ROAD 1 NEAR MAMRE RD INTERSECTION	F.KRANJC
G	23.03.2023	F.KRANJC	CORRECTED COMMS ALIGNMENT MAMRE RD NORTH BOUNDARY	F.KRANJC
F	01.02.2023	F.KRANJC	UPDATE VERGE TRENCH LOCATION ON ROAD1 & 3	F.KRANJC
E	25.11.2022	F.KRANJC	UPDATED CADASTRE	F.KRANJC
D	03.11.2022	F.KRANJC	FIX ALIGNMENT ON MAMRE RD SOUTH OF INTERSECTION AND ADD TELSTRA WEST SIDE	F.KRANJC
C	01.11.2022	F.KRANJC	REVISED CADASTRE AND ROAD CROSSING ON ROAD 1	F.KRANJC
B	11.10.2022	F.KRANJC	REVISED ROAD CROSSING AT ROAD 1 AND RELOCATE PIT-005 & PIT-004	F.KRANJC
A	05.09.2022	F.KRANJC	INITIAL ISSUE	F.KRANJC

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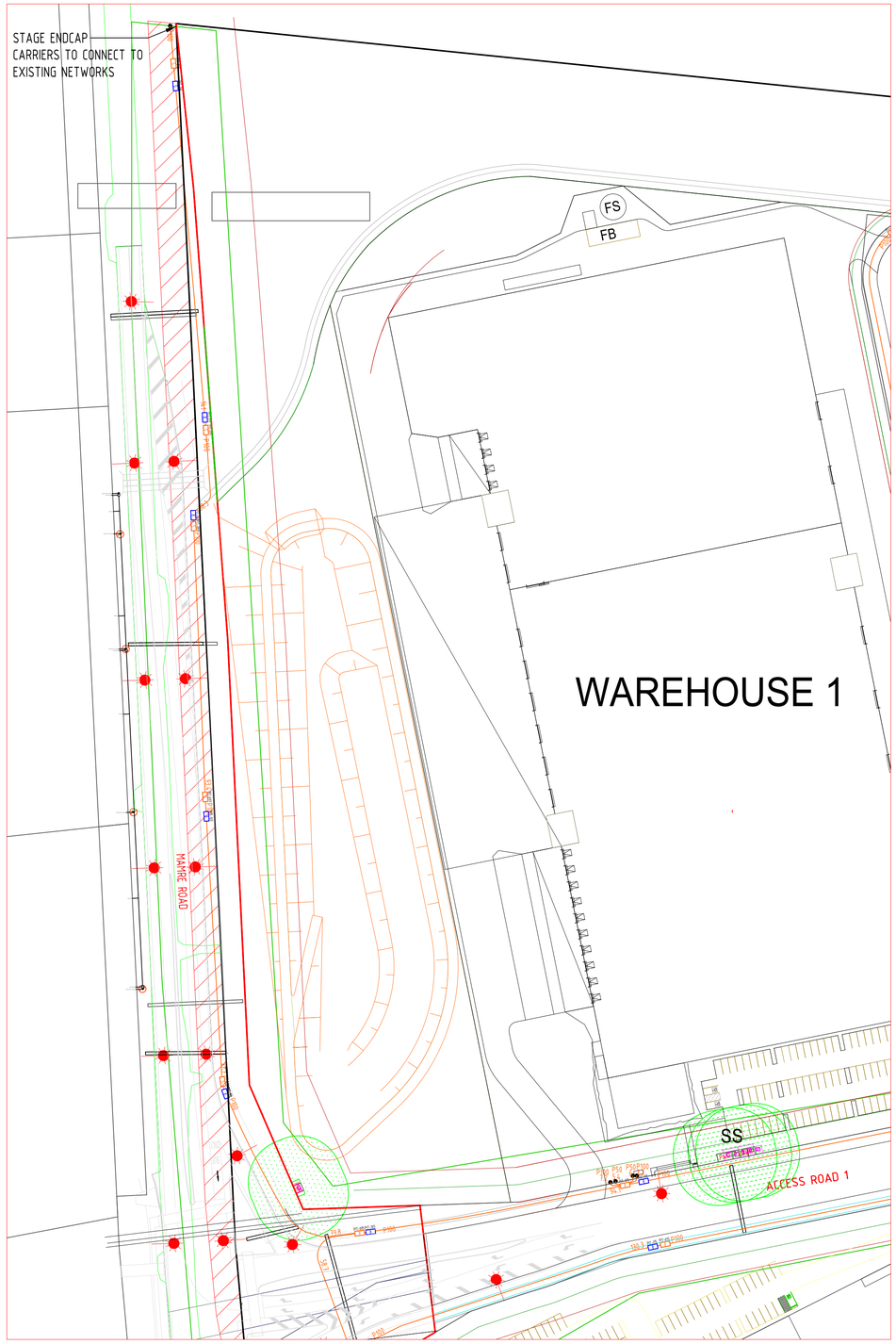
EDGEWATER CONNECTIONS

N KEY PLAN

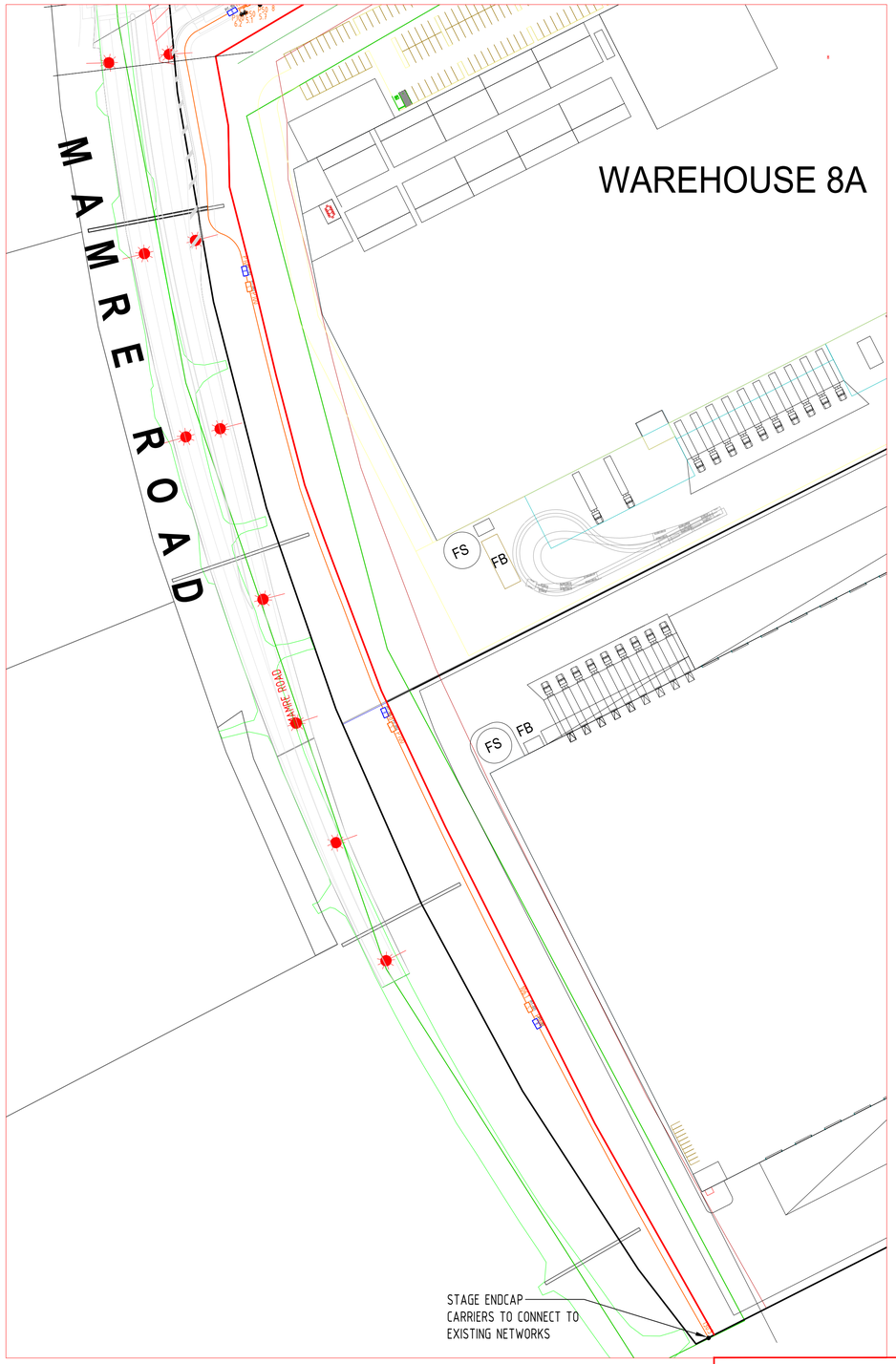


DRAWING TITLE:
COMBINED TELSTRA & NBN
ASPECT INDUSTRIAL ESTATE
STAGE 1 to 4 SAME ALIGNMENT

ENABLE#: 284898		
STATE: NSW	REGION:	
FSA:	SAM:	ADA:
PROJECT No: COMBINED TELSTRA & NBN		
CADREF No: EWC4494-TELSTRA		
SCALE N/A	SHEET No. 1 OF 5	REV. I



INSET A



INSET B

DANGER
LASER BEAM
EYE PROTECTION MUST BE WORN

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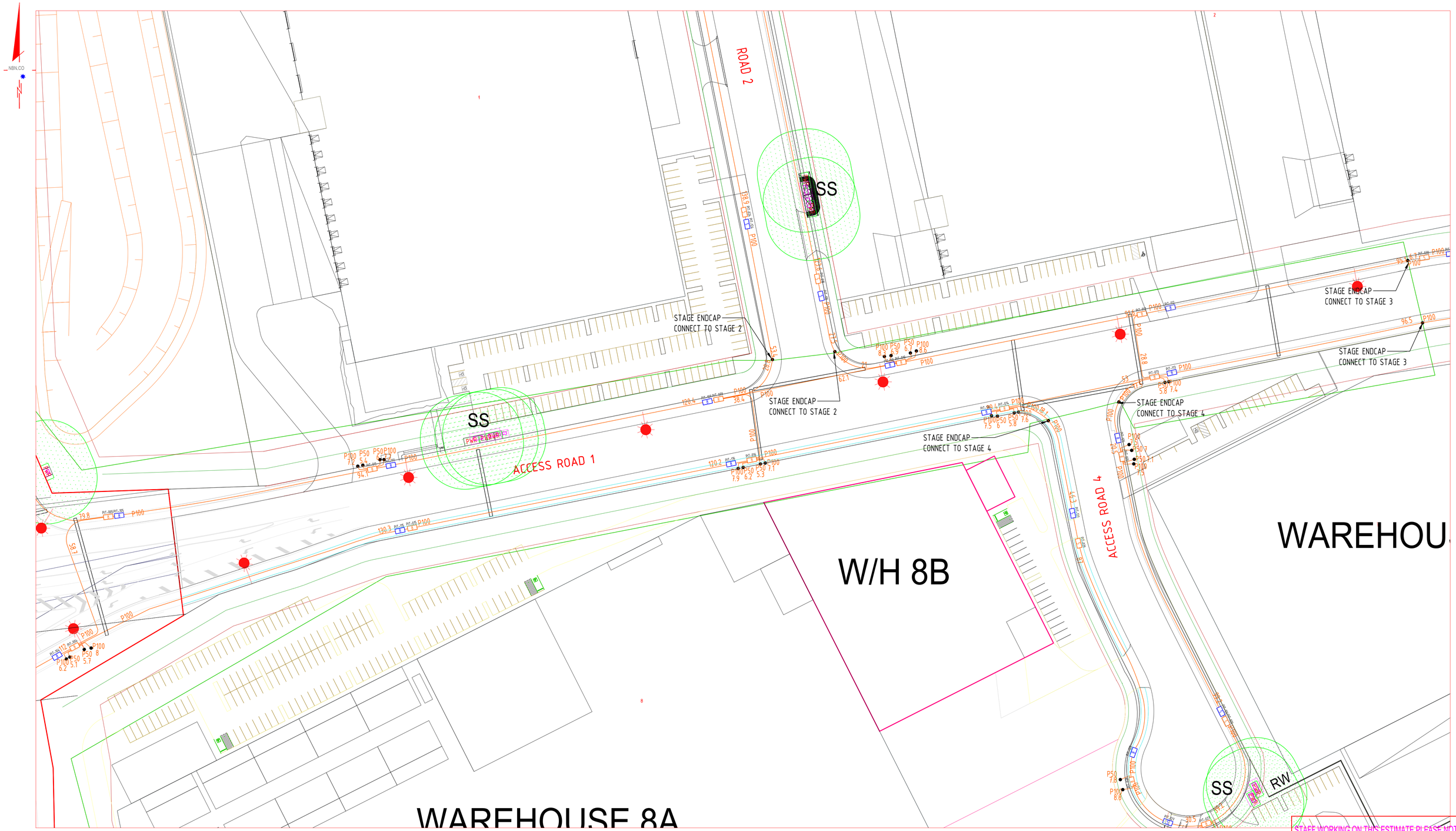
EDGEWATER CONNECTIONS

N KEY PLAN



DRAWING TITLE:
COMBINED TELSTRA & NBN
ASPECT INDUSTRIAL ESTATE
STAGE 1 to 4 SAME ALIGNMENT

ENABLE#: 284898		
STATE: NSW	REGION:	
FSA:	SAM:	ADA:
PROJECT No: COMBINED TELSTRA & NBN		
CADREF No: EWC4494-TELSTRA		
SCALE N/A	SHEET No. 2 OF 5	REV. I



INSET C

DANGER
LASER BEAM
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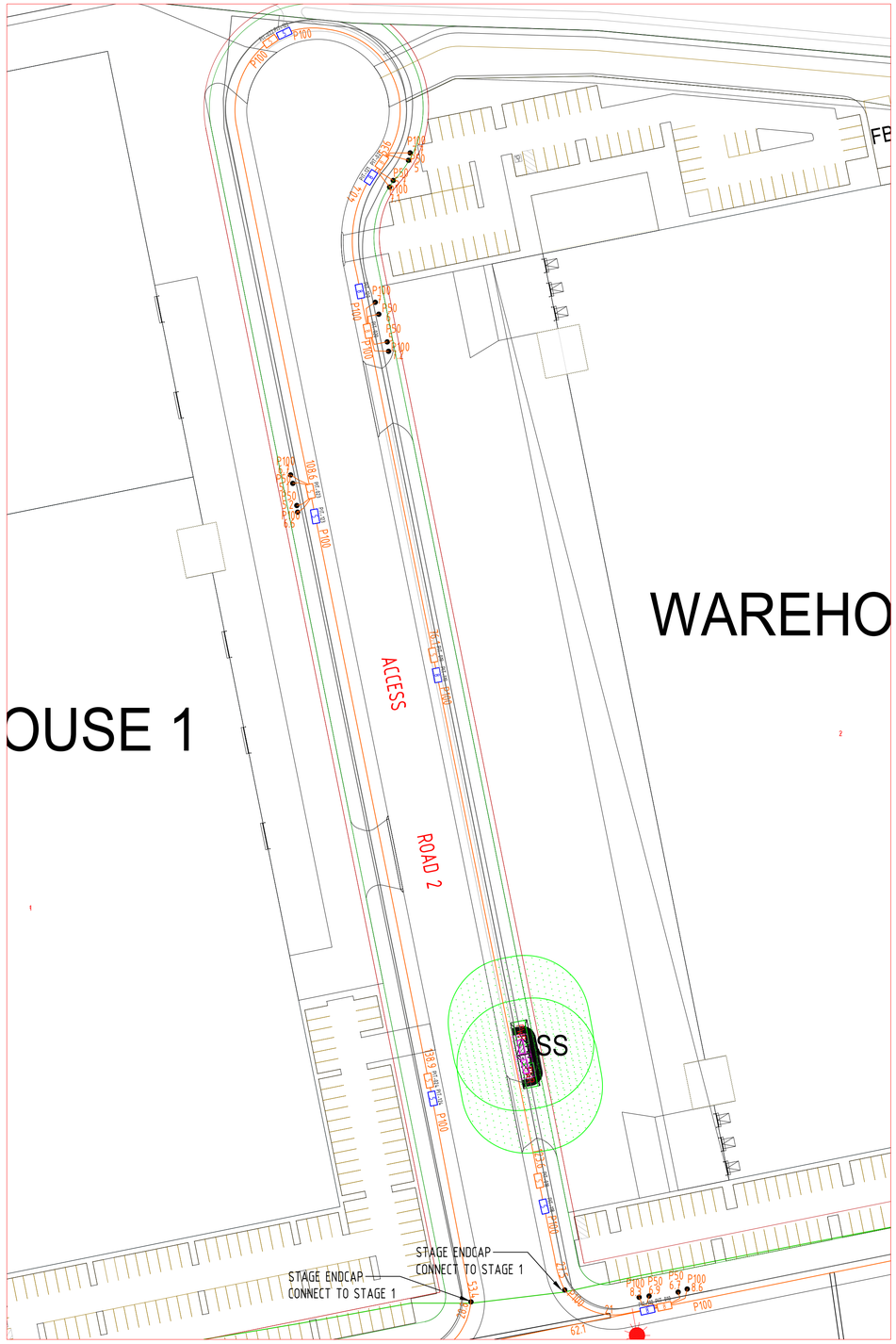
EDGEWATER CONNECTIONS

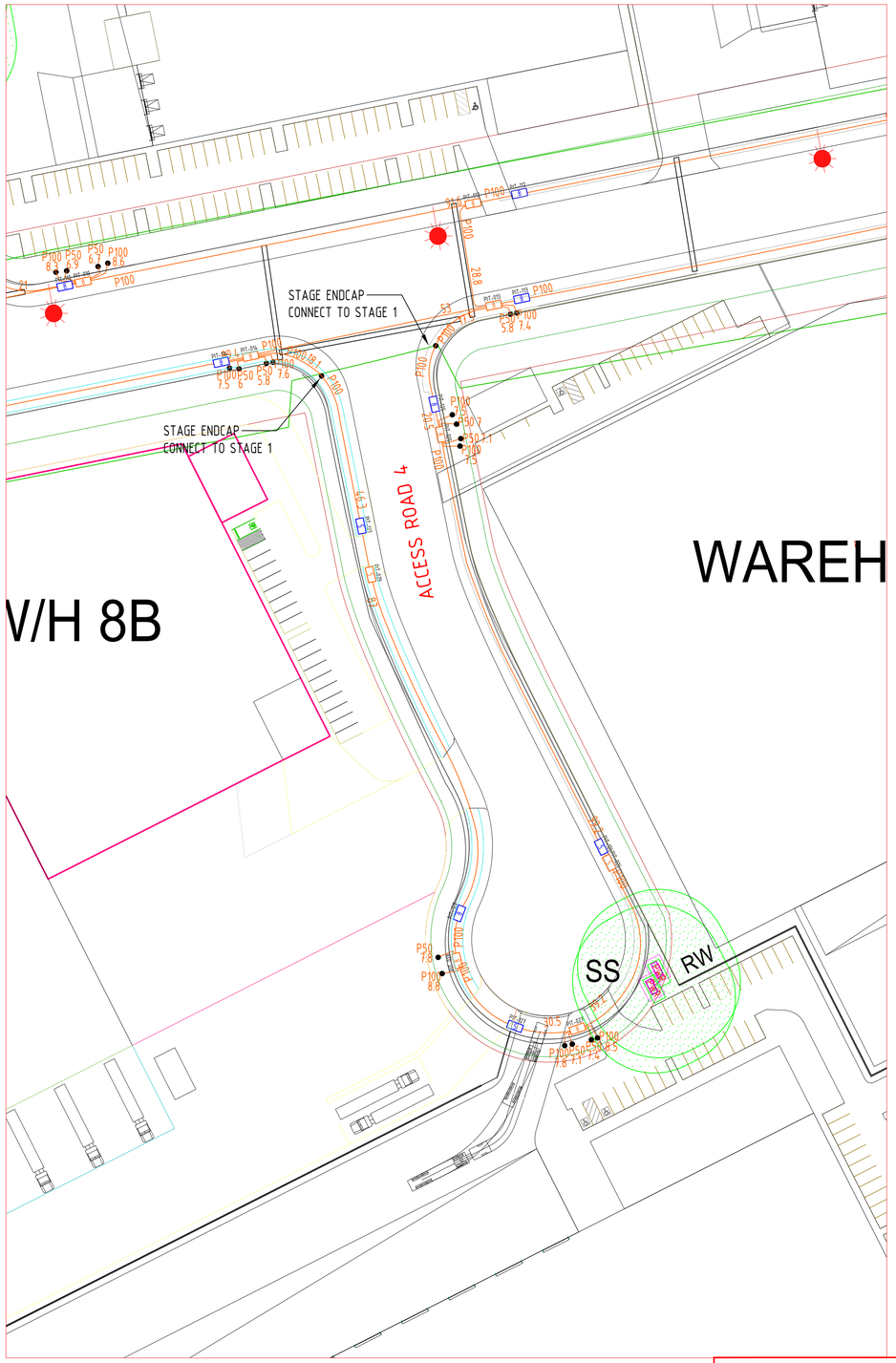
N KEY PLAN



DRAWING TITLE:
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ASPECT INDUSTRIAL ESTATE
STAGE 1 to 4 SAME ALIGNMENT

ENABLE#: 284898		
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FSA:	SAM:	ADA:
PROJECT No: COMBINED TELSTRA & NBN		
CADREF No: EWC4494-TELSTRA		
SCALE N/A	SHEET No. 3 OF 5	REV. I





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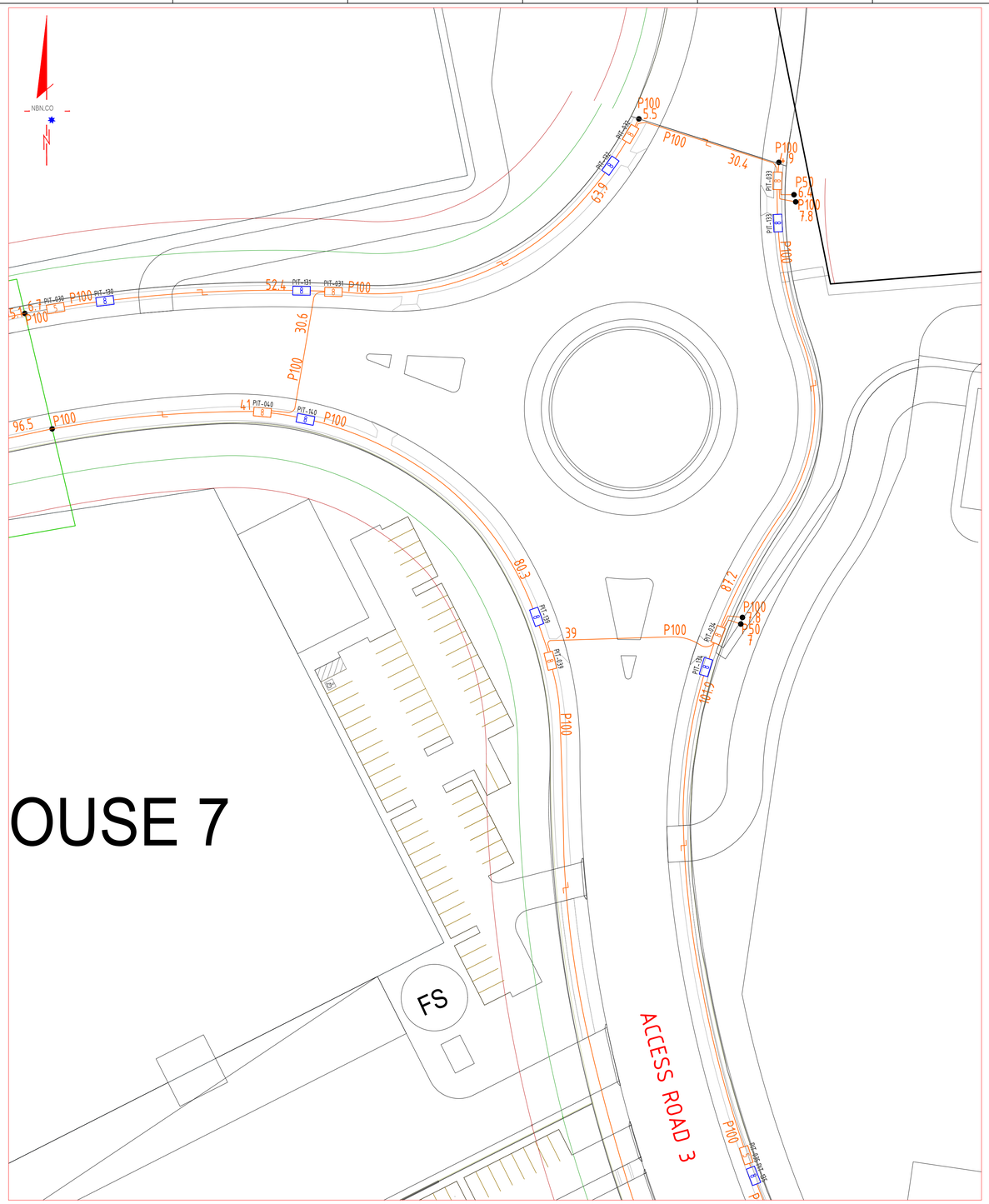
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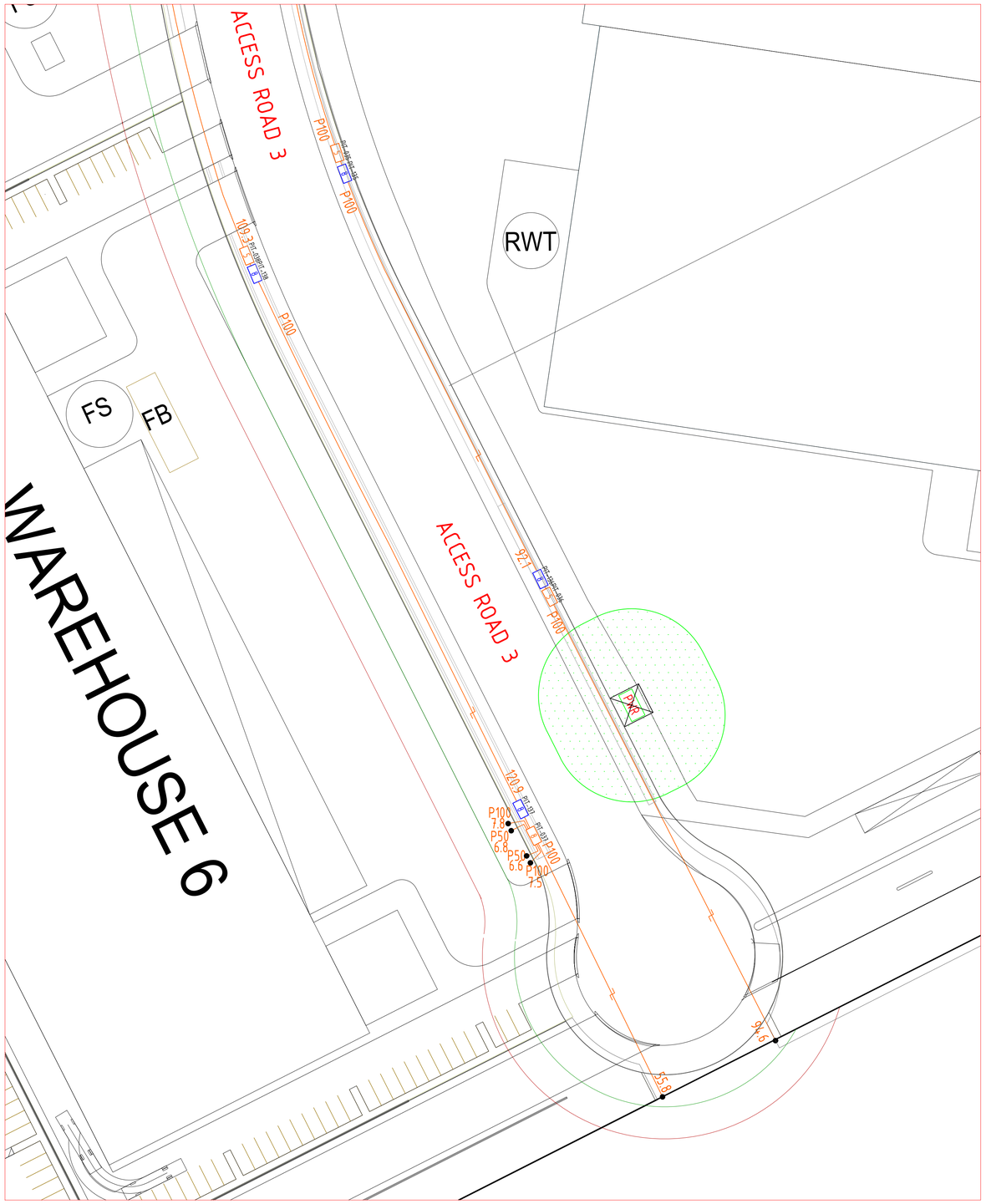


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ASPECT INDUSTRIAL ESTATE
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STATE:	NSW	REGION:	
FSA:		SAM:	ADA:
PROJECT No:	COMBINED TELSTRA & NBN		
CADREF No:	EWC4494-TELSTRA		
SCALE	SHEET No.		REV.
N/A	4	OF 5	I



INSET F



INSET G

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EDGEWATER CONNECTIONS

N KEY PLAN



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SCALE N/A	SHEET No. 5 OF 5	REV. I

A1

DEVELOPER CONTRACT PLAN

0 10 20 30 40 50 METRES

M.G.A. ZONE 56 M.G.A. DATUM: GDA2020

1. DESIGNER AND WATER SERVICING COORDINATOR:
   QALCHEK PTY LTD (CERTIFIED No.289)
   UNIT 2, LEVEL 1, 15-17 DAVID RD, EMU PLAINS NSW 2750
   PH. No. (02) 4722 8181
   FOR:
   MIRVAC PTY LTD
   LEVEL 28, 200 GEORGE STREET, SYDNEY 2000
   PH. No. (02) 9080 8053
2. THE PROPOSED WORKS AND MATERIALS SHALL BE IN ACCORDANCE WITH THE WATER SUPPLY CODE OF AUSTRALIA (WSA 03-2011-3.1) INCLUDING THE SYDNEY WATER SUPPLEMENT (2014) AND APPENDICES. THE CONTRACTOR MUST HAVE A COPY OF THESE DOCUMENTS ON SITE AT ALL TIMES.
3. MAIN TO BE LAID GENERALLY AS PER PLAN AT STANDARD DEPTH BELOW KERB INVERT (CLAUSE 7.4.2) EXCEPT WHERE OTHERWISE SHOWN.
4. MAIN LAYING NOT TO PROCEED PRIOR TO FORMATION OF FOOTWAYS TO FINISHED SURFACE LEVELS. IF FOR ANY REASON MAINS ARE TO BE LAID PRIOR TO THIS IT IS THE CONSTRUCTORS RESPONSIBILITY TO HAVE THE LOCATION AND FINISHED LEVELS OF THE KERB ETC. PEGGED.
5. PRIOR TO ANY EXCAVATION THE CONSTRUCTOR MUST HAVE A CURRENT COPY OF THE UNDERGROUND SERVICES SEARCH REPORT WHICH IS TO BE READ IN CONJUNCTION WITH THIS PLAN.
6. SERVICES SHOWN FROM 'DIAL BEFORE YOU DIG' SERVICES SEARCH ARE INDICATIVE ONLY. AUTHENTICITY AND ACCURACY SHOULD NOT BE PRESUMED AND SHOULD BE CONFIRMED BY THE CONSTRUCTOR PRIOR TO ANY EXCAVATION WORKS ON SITE.
7. ALL EXCAVATION, SHORING EXCAVATION AND STABILITY OF ADJACENT STRUCTURES/SERVICES/DWELLINGS IS THE RESPONSIBILITY OF THE CONSTRUCTOR. USE OF SHORING BOXES IS NOT A FORM OF STABILITY CONTROL, NEITHER IS SAND CEMENT BACKFILL OR CONCRETE ENCASEMENT.
8. ALL BUILDING LAYOUTS, FINISHED SURFACE LEVELS, STORMWATER INFORMATION, AND GENERAL CIVIL ENGINEERING DETAILS TAKEN FROM SBA ARCHITECTS MOD 4 ENGINEERING PLANS.
9. THE REVIEW OF ENVIRONMENTAL FACTORS IS AN INTEGRAL PART OF THIS DESIGN AND MUST BE READ IN CONJUNCTION WITH THIS PLAN.
10. CONDITIONS FOR EMBEDMENT, BACKFILL AND TESTING REQUIREMENTS ARE AS FOLLOWS:

    - ALL POTABLE WATER ROAD CARRIAGEWAY CROSSINGS FOR EXISTING AND PROPOSED ROADS TO BE BEDDED AND BACKFILLED WITH SAND/CEMENT. SAND/CEMENT RATIO TO BE 14:1 AND IS TO BE PLACED DRY.

    - FOR ANY WATERMAIN LOCATED WITHIN 1.0m OF A ROAD SHOULDER OR KERB AND GUTTER IN THE VERGE OR FOOTPATH THE EMBEDMENT AND BACKFILL (IF "COHESIVE" MATERIAL IS USED) IS TO BE COMPACTED TO A DENSITY INDEX OF 95%. ALL TESTS (EMBEDMENT AND BACKFILL) TO BE DONE AS FOR TRAFFICABLE AREA.

    THEREFORE THE MINIMUM NUMBER OF FIELD COMPACTION TESTS REQUIRED TO SATISFY THE CONDITIONS ABOVE AS WELL AS THE WATER SUPPLY CODE OF AUSTRALIA ARE:

    PIPE EMBEDMENT ZONE: 5 TESTS REQUIRED (UNLESS ALL CONDITIONS OF CLAUSE 19.3.4.1 ARE MET & DOCUMENTATION IS PROVIDED)

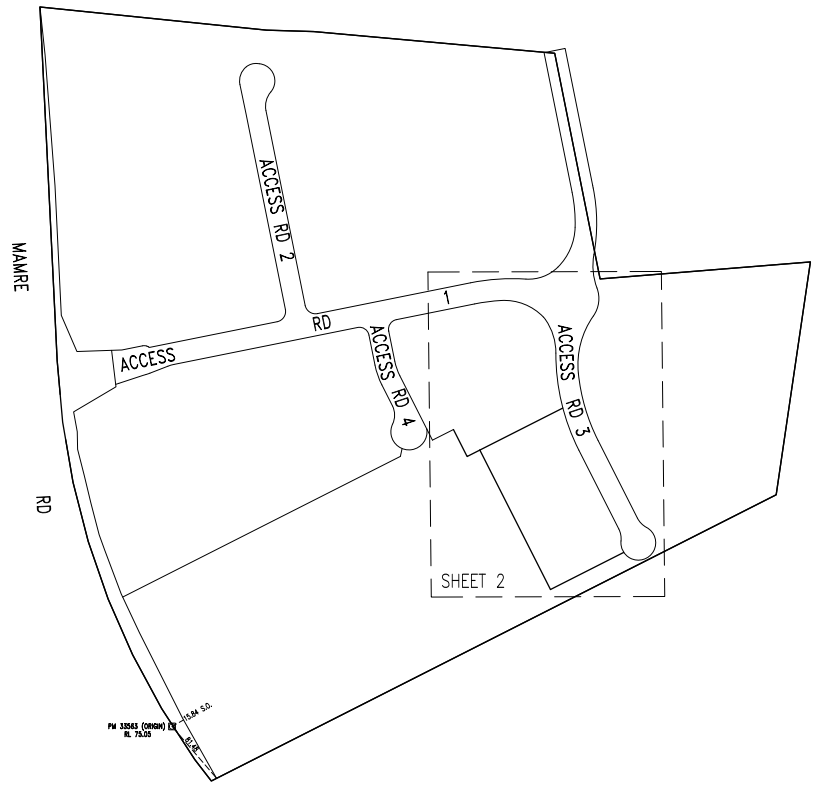
    TRENCH FILL ZONE (TRAFFICABLE): 36 TESTS REQUIRED

    TRENCH FILL ZONE PROPERTY SERVICES: 0 TESTS REQUIRED (UNLESS ALL CONDITIONS OF CLAUSE 19.3.4.1 & 19.3.4.2 ARE MET & DOCUMENTATION IS PROVIDED)

    COMPACTION TESTS - TOTAL: 36 TESTS REQUIRED

    ADDITIONAL CONDITIONS MAY BE REQUIRED TO COMPLY WITH COUNCIL SPECIFICATIONS. THE CONSTRUCTOR IS REQUIRED TO LIAISE WITH THE CIVIL CONTRACTOR AND/OR THE SITE SUPERINTENDENT REGARDING ANY ADDITIONAL REQUIREMENTS.

11. CONSTRUCTOR TO ENSURE THAT THERE IS A MINIMUM DISTANCE OF 5.0m FROM THE HY-SV-HY CONFIGURATION TO THE HYDRANT BEND (UNLESS NOTED OTHERWISE). DO NOT SCALE DISTANCES OFF THE PLAN. FITTINGS TO BE LOCATED IN FOOTWAY. IF IN DOUBT THE CONSTRUCTOR SHOULD CONTACT THE PROJECT SUPERVISOR OR DESIGNER TO OBTAIN CLARIFICATION.
12. CONSTRUCTOR TO ENSURE THAT WORKS ARE CONSTRUCTED IN ACCORDANCE WITH SYDNEY WATER'S DEEMED TO COMPLY DRAWINGS:
    - DTC-1110, DTC-1111, DTC-1112, DTC-1113, DTC-1114, DTC-1115



LOCALITY SKETCH
(NOT TO SCALE)

PLAN DRAWN DATE: 04/07/2023 VERSION: B SHEET 1 OF 3 SHEETS

Qalchek Pty Ltd
FOR CONSTRUCTION
IN ACCORDANCE WITH
PLAN 198856 RW ISSUE B
DATE 04 / 08 / 2023

No.	AMENDMENT DESCRIPTION	BY	DATE
B	SHORTENED END OF RW MAIN	CL	04.07.23
A	ISSUED FOR APPROVAL	CL	24.01.23

PLAN TO BE READ IN CONJUNCTION WITH CURRENT SYDNEY WATER STANDARDS
SYDNEY WATER CORPORATION

PRIOR TO COMMENCEMENT OF EXCAVATION FOR PROPOSED AND EXISTING SERVICES CONTACT :-

DIAL BEFORE YOU DIG		Ph. 1100
ELECTRICITY	ENDEAVOUR ENERGY	Ph. 131 003
GAS	JEMENA GAS	Ph. 1300 880 906
TELECOMMUNICATIONS	TELSTRA	Ph. 1800 114 918
SYDNEY WATER		Ph. 132 092

GIVING AT LEAST 48 HOURS NOTICE.

UTILITIES

TYPE	DATE	REF.	TYPE	DATE	REF.
PROP WATER: Water PW	19.01.23	DESIGN			
PROP SEWER: S S	09.11.22	DESIGN			
PROP TELSTRA: TEL TEL	24.02.22	ENG.			
PROP STORMWATER: SWD SWD	02.11.22	ENG.			
PROP ELECTRICAL: E E	09.11.22	ENG.			
PM 33563 (ORIGIN)	02.02.22	SCIMS			

WORK AS CONSTRUCTED CERTIFICATION

DEVELOPER

WATER SERVICE CO-ORDINATOR

CONSTRUCTOR

COMPLETED W.A.C. PREPARED

DESIGNER

I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS.

PIPE SCHEDULE

SIZE DN	TYPE	CLASS	LENGTH	PIPE JOINING METHOD / NOTES
300	O.P.V.C.	PN16	509.3	P23 LILAC / RRJ

DESIGN HEAD m BOUNDARY TRAPS REQUIRED.

AUSTRALIAN HEIGHT DATUM

SCALES

PLAN 1:500 SECTION { HOR. / VERT.

CROSS SECTIONS NATURAL

LENGTHS, DEPTHS & LEVELS ARE IN METRES

NO AMENDMENTS ARE TO BE MADE TO THIS PLAN WITHOUT REFERENCE TO SYDNEY WATER. THIS PLAN IS NOT NECESSARILY UP TO DATE OR CORRECT AND SYDNEY WATER ACCEPTS NO RESPONSIBILITY.

U.B. DIRECTORY MAP 225/N1 41st SYD Ed.

SHEET 1 OF 3 File No. N/A

SYDNEY WATER CORPORATION

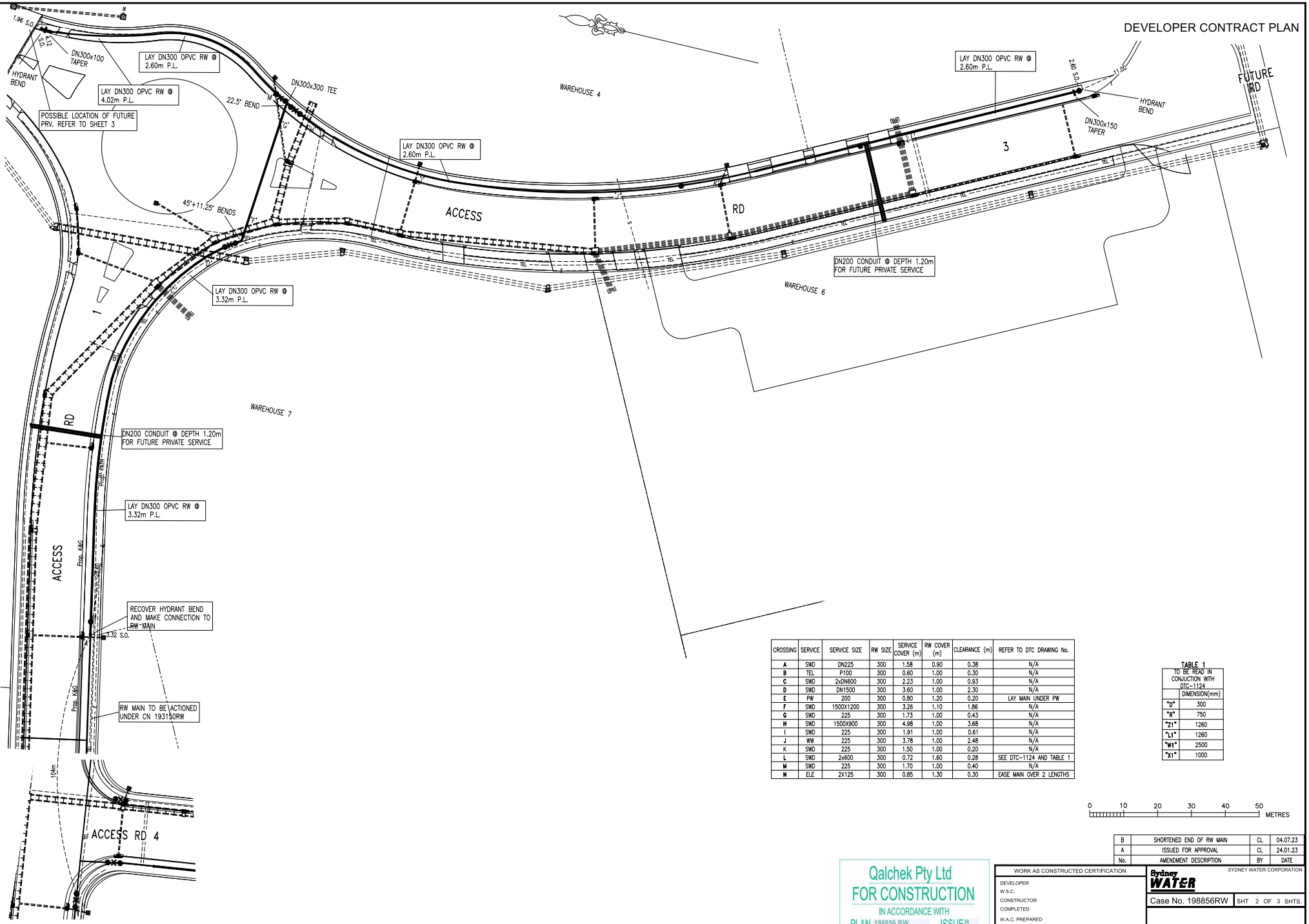
Case No. 198856RW

RECYCLED WATERMAIN EXTENSION
MAMRE ROAD
KEMPS CREEK

FILE LOCATION: PM30686RW-B DESIGNED: C.L. DRAFTED: C.L. VERIFIED: D.L. REVIEWED: D.L. APPROVED: D.L. ISSUED: 04/07/2023

A1F

DEVELOPER CONTRACT PLAN



CROSSING	SERVICE	SERVICE SIZE	RW SIZE	SERVICE COVER (m)	RW COVER (m)	CLEARANCE (m)	REFER TO DTC DRAWING No.
A	SWD	DN225	300	1.58	0.90	0.38	N/A
B	TEL	P100	300	0.60	1.00	0.30	N/A
C	SWD	2xDN600	300	2.23	1.00	0.93	N/A
D	SWD	DN1500	300	3.60	1.00	2.30	N/A
E	PW	200	300	0.80	1.20	0.20	LAY MAIN UNDER PW
F	SWD	1500X1200	300	3.26	1.10	1.86	N/A
G	SWD	225	300	1.73	1.00	0.43	N/A
H	SWD	1500X900	300	4.98	1.00	3.68	N/A
I	SWD	225	300	1.91	1.00	0.61	N/A
J	WW	225	300	3.78	1.00	2.48	N/A
K	SWD	225	300	1.50	1.00	0.20	N/A
L	SWD	2x600	300	0.72	1.60	0.28	SEE DTC-1124 AND TABLE 1
M	SWD	225	300	1.70	1.00	0.40	N/A
N	ELE	2X125	300	0.85	1.30	0.30	EASE MAIN OVER 2 LENGTHS

TABLE 1
TO BE READ IN CONJUCTION WITH DTC-1124

	DIMENSION(mm)
"D"	300
"R"	750
"Z1"	1260
"L1"	1260
"W1"	2500
"X1"	1000

0 10 20 30 40 50 METRES

No.	AMENDMENT DESCRIPTION	BY	DATE
B	SHORTENED END OF RW MAIN	CL	04.07.23
A	ISSUED FOR APPROVAL	CL	24.01.23

Qalchek Pty Ltd
FOR CONSTRUCTION
IN ACCORDANCE WITH
PLAN 198856 RW ISSUE B
DATE 04 / 08 / 2023

WORK AS CONSTRUCTED CERTIFICATION
DEVELOPER
W.S.C.
CONSTRUCTOR
COMPLETED
W.A.C. PREPARED
DESIGNER
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS

SYDNEY WATER CORPORATION
Sydney WATER
Case No. 198856RW | SHT 2 OF 3 SHTS.

SYDNEY WATER CORPORATION
FOR DETAILS OF SERVICES SEE SHEET 1

PLAN DRAWN DATE: 04/07/2023 VERSION: B
SHEET 2 OF 3 SHEETS

FILE LOCATION: PM30686RW-B | DESIGNED: C.L. | DRAFTED: C.L. | VERIFIED: D.L. | REVIEWED: D.L. | APPROVED: D.L. | ISSUED: 04/07/2023

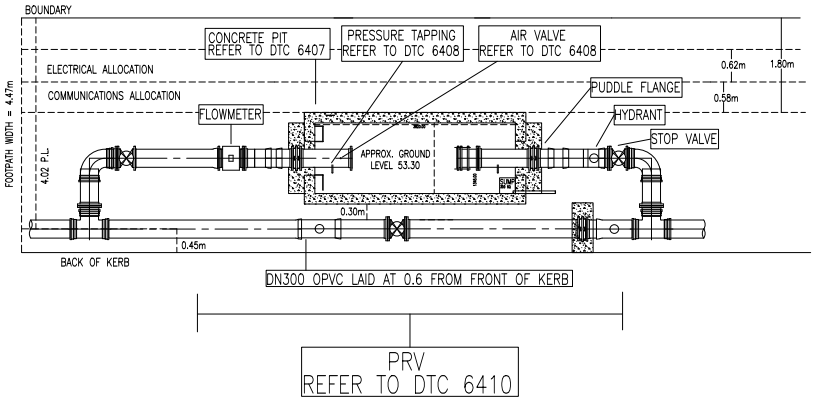
A1F

DEVELOPER CONTRACT PLAN

POSSIBLE FUTURE PRV PLAN VIEW & FOOTPATH WIDTH

NOT PART OF THESE WORKS. ONLY PROVIDED TO SHOW SWC POSSIBLE LOCATION

SCALE 1:50



No.	DESCRIPTION	BY	DATE
B	SHORTENED END OF RW MAIN	CL	04.07.23
A	ISSUED FOR APPROVAL	CL	24.01.23

Qalchek Pty Ltd
FOR CONSTRUCTION
IN ACCORDANCE WITH
PLAN 198856 RW ISSUE B
DATE 04 / 08 / 2023

WORK AS CONSTRUCTED CERTIFICATION

DEVELOPER
W.S.C.
CONSTRUCTOR
COMPLETED
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DESIGNER
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS

SYDNEY WATER CORPORATION

Case No. 198856RW | SHT 3 OF 3 SHTS.

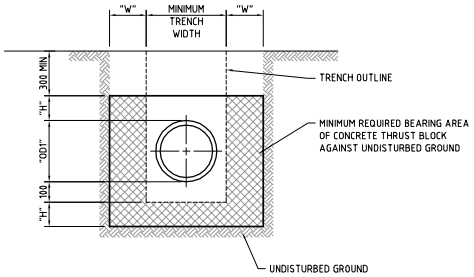
SYDNEY WATER CORPORATION
FOR DETAILS OF SERVICES SEE SHEET 1

FILE LOCATION: PM30686RW-B | DESIGNED: C.L. | DRAFTED: C.L. | VERIFIED: D.L. | REVIEWED: D.L. | APPROVED: D.L. | ISSUED: 04/07/2023

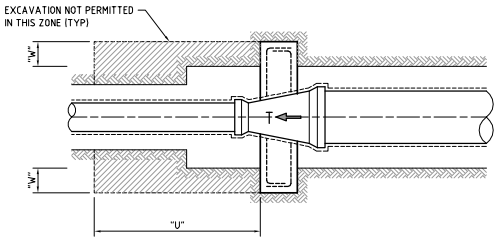
PLAN DRAWN DATE: 04/07/2023 VERSION: B SHEET 3 OF 3 SHEETS

A1

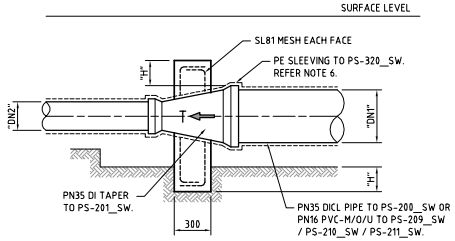
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DETAILS OF AREA TO BE CAST AGAINST UNDISTURBED GROUND
ELEVATION
SCALE 1:20



DETAILS OF AREA TO BE CAST AGAINST UNDISTURBED GROUND
PLAN
SCALE 1:20



THRUST BLOCK REINFORCEMENT DETAIL
SCALE 1:20

THRUST BLOCK AREAS & DIMENSIONS FOR TAPERS - TYPE 1 (m^2)

DN1	OD1	DN2	OD2	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	H	MINIMUM TRENCH WIDTH	W	U
(mm)	(mm)	(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)	(mm)
150	177	100	122	120	150	19.0	50	0.380	200	380	300	1550
150	177	100	122	120	150	19.0	100	0.190	100	380	300	1200
150	177	100	122	120	150	19.0	200	0.095	100	380	300	1200
200	232	100	122	120	150	45.0	50	0.900	400	530	350	2350
200	232	100	122	120	150	45.0	100	0.450	200	530	300	1650
200	232	100	122	120	150	45.0	200	0.225	100	530	300	1300
200	232	150	177	120	150	26.0	50	0.520	250	530	300	1850
200	232	150	177	120	150	26.0	100	0.260	100	530	300	1350
200	232	150	177	120	150	26.0	200	0.130	100	530	300	1350
250	286	100	122	120	150	77.3	50	1.546	400	590	650	2400
250	286	100	122	120	150	77.3	100	0.773	350	590	300	2200
250	286	100	122	120	150	77.3	200	0.386	150	590	300	1500
250	286	150	177	120	150	58.3	50	1.166	400	590	450	2400
250	286	150	177	120	150	58.3	100	0.583	250	590	300	1900
250	286	150	177	120	150	58.3	200	0.291	100	590	300	1400
250	286	200	232	120	150	32.3	50	0.646	300	590	300	2100
250	286	200	232	120	150	32.3	100	0.323	100	590	300	1450
250	286	200	232	120	150	32.3	200	0.162	100	590	300	1450
250	286	225	259	120	150	17.0	50	0.340	100	590	300	1450
250	286	225	259	120	150	17.0	100	0.170	100	590	300	1450
250	286	225	259	120	150	17.0	200	0.085	100	590	300	1450
300	345	100	122	120	150	120.3	50	2.406	500	650	800	2750
300	345	100	122	120	150	120.3	100	1.203	500	650	350	2750
300	345	100	122	120	150	120.3	200	0.601	250	650	300	1900
300	345	150	177	120	150	101.3	50	2.026	450	650	750	2650
300	345	150	177	120	150	101.3	100	1.013	450	650	300	2650
300	345	150	177	120	150	101.3	200	0.506	200	650	300	1800
300	345	200	232	120	150	75.3	50	1.506	450	650	500	2700
300	345	200	232	120	150	75.3	100	0.753	300	650	300	2150
300	345	200	232	120	150	75.3	200	0.377	100	650	300	1450
300	345	225	259	120	150	60.0	50	1.200	400	650	450	2550
300	345	225	259	120	150	60.0	100	0.600	250	650	300	2000
300	345	225	259	120	150	60.0	200	0.300	100	650	300	1500
300	345	250	286	120	150	43.0	50	0.860	350	650	300	2400
300	345	250	286	120	150	43.0	100	0.430	150	650	300	1700
300	345	250	286	120	150	43.0	200	0.215	100	650	300	1500

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES.
5. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP<50KPa.
6. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320__SW.
7. CONCRETE SHALL BE CLASS N25 TO PS-357__SW. SLUMP SHALL BE IN THE RANGE 80mm - 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
8. ALL REINFORCEMENT SHALL BE TO AS4671 SHAPE-D, STRENGTH GRATE= 500MPa, DUCTILITY CLASS-N.
9. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
10. CONCRETE SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa OR BE CURED FOR A MINIMUM OF 28 DAYS PRIOR TO APPLICATION OF THRUST LOADS.
11. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.

Sydney WATER

APPROVED

PETER GILLMAN

MANAGER E & ES

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ENGINEERING & ENVIRONMENTAL SERVICES

LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
B	DIMENSION OD2 CHANGED TO OD1	PJG	29\02\12
A	ORIGINAL ISSUE	PJG	31/01/12

DEEMED TO COMPLY DRAWINGS

THRUST BLOCK DETAILS DICL AND PVC WATER MAINS ≤ DN300 TAPERS

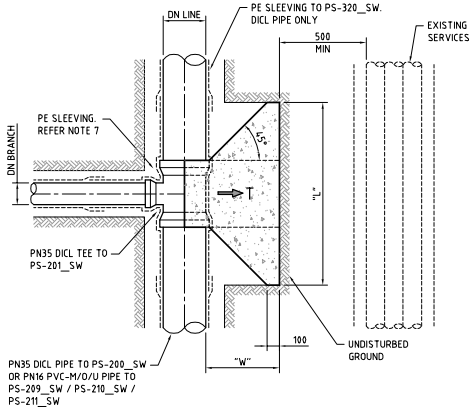
DTC
1112

ISSUE	DATE
B	29\02\12

OPENED DATE :- Mar 23, 2012 - 9:49am LOCATION PATH:- G:\21\20932\CADD\Drawings\DTC-1112.dwg

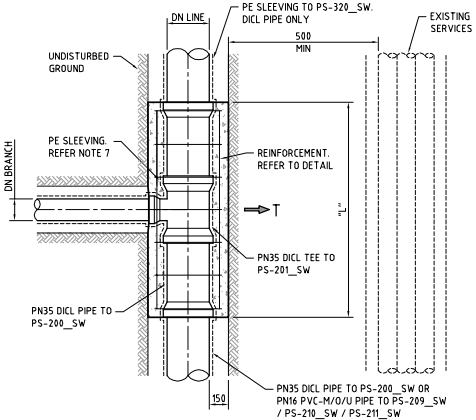
A1

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TEE THRUST BLOCK TYPE 1 PLAN

SCALE 1:20

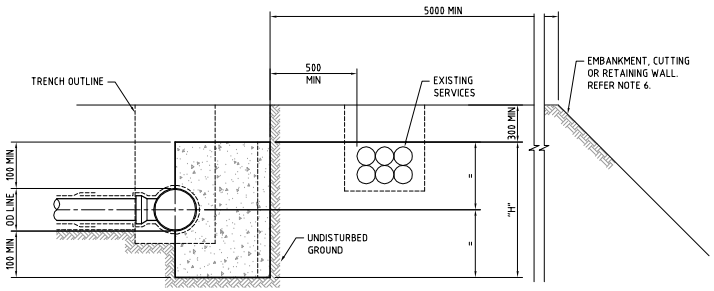


TEE THRUST BLOCK TYPE 2 PLAN

SCALE 1:20

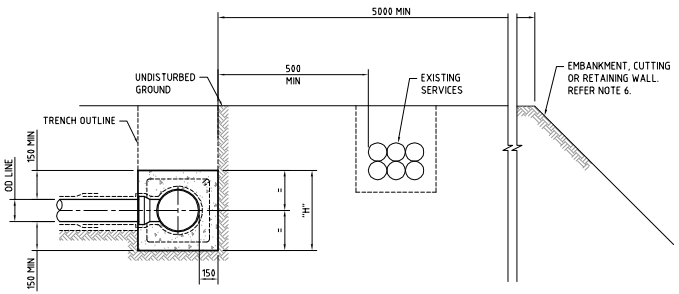
THRUST BLOCK AREAS & DIMENSIONS FOR TEES - TYPE 1 (m^2)

DN BRANCH	OD BRANCH	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	H	L	W	REQUIRED BEARING AREA
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(mm)	(mm)	(mm)	(m^2)
100	122	120	150	17.2	50	500	700	400	0.344
100	122	120	150	17.2	100	400	450	250	0.172
100	122	120	150	17.2	200	400	400	300	0.086
150	177	120	150	36.2	50	700	1100	600	0.724
150	177	120	150	36.2	100	500	750	400	0.362
150	177	120	150	36.2	200	450	600	350	0.181
200	232	120	150	62.2	50	850	1500	700	1.243
200	232	120	150	62.2	100	700	900	400	0.622
200	232	120	150	62.2	200	500	650	250	0.311
250	286	120	150	94.5	50	REFER TO TYPE 2			1.889
250	286	120	150	94.5	100	800	1200	500	0.945
250	286	120	150	94.5	200	600	800	300	0.472
300	345	120	150	137.5	50	REFER TO TYPE 2			2.749
300	345	120	150	137.5	100	1000	1400	550	1.375
300	345	120	150	137.5	200	700	1000	350	0.687



TEE THRUST BLOCK TYPE 1 ELEVATION

SCALE 1:20

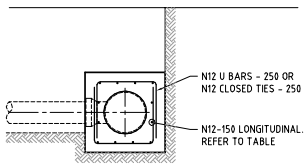


TEE THRUST BLOCK TYPE 2 ELEVATION

SCALE 1:20

THRUST BLOCK AREAS & DIMENSIONS FOR TEES - TYPE 2(m^2)

DN BRANCH	OD BRANCH	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	H	L	REQUIRED BEARING AREA
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(mm)	(mm)	(m^2)
100	122	120	150	17.2	50	650	1150	0.344
100	122	120	150	17.2	100	650	1150	0.172
100	122	120	150	17.2	200	650	1150	0.086
150	177	120	150	36.2	50	750	1200	0.724
150	177	120	150	36.2	100	650	1200	0.362
150	177	120	150	36.2	200	650	1200	0.181
200	232	120	150	62.2	50	800	1600	1.243
200	232	120	150	62.2	100	650	1250	0.622
200	232	120	150	62.2	200	650	1250	0.311
250	286	120	150	94.5	50	900	2150	1.889
250	286	120	150	94.5	100	900	1300	0.945
250	286	120	150	94.5	200	900	1300	0.472
300	345	120	150	137.5	50	1050	2700	2.749
300	345	120	150	137.5	100	1050	1400	1.375
300	345	120	150	137.5	200	1050	1400	0.687



TEE THRUST BLOCK TYPE 2 CONCRETE ENCASEMENT DETAIL

SCALE 1:20

CONCRETE ENCASEMENT REINFORCEMENT DETAILS

MAIN SIZE	LONGITUDINAL REINFORCEMENT
DN100	8N12
DN150	8N12
DN200	12N12
DN250	12N12
DN300	12N12

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES.
5. DO NOT USE THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP<50KPa.
6. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING. WITHIN 5m OF AN EMBANKMENT, CUTTING OR RETAINING WALL. A GEOTECHNICAL ASSESSMENT AND INDIVIDUAL DESIGN IS REQUIRED FOR THESE CONDITIONS.
7. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320__SW.
8. CONCRETE SHALL BE CLASS N25 TO PS-357__SW. ALL CONCRETE SHALL HAVE SLUMP IN THE RANGE OF 80mm TO 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
9. ALL REINFORCEMENT SHALL BE TO AS4671 SHAPE D, STRENGTH GRADE = 500MPa, DUCTILITY CLASS - N.
10. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
11. DO NOT APPLY ANY THRUST LOAD FOR AT LEAST 14 DAYS AFTER POURING THRUST BLOCKS.
12. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.

Sydney WATER

APPROVED

PETER GILLMAN

MANAGER E & ES

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ENGINEERING & ENVIRONMENTAL SERVICES

LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
B	THRUST BLOCK DIMENSIONS REVISED	PJG	29\02\12
A	ORIGINAL ISSUE	PJG	31/01/12

DEEMED TO COMPLY DRAWINGS

THRUST BLOCK DETAILS DICL AND PVC WATER MAINS ≤ DN300 TEES

DTC

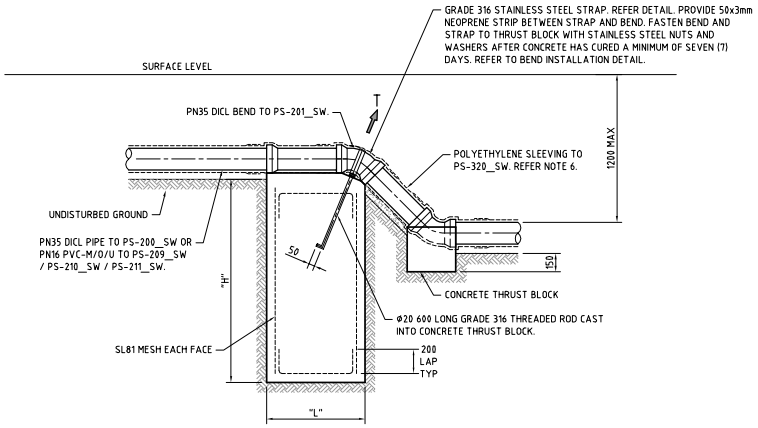
1113

ISSUE	DATE
B	29\02\12

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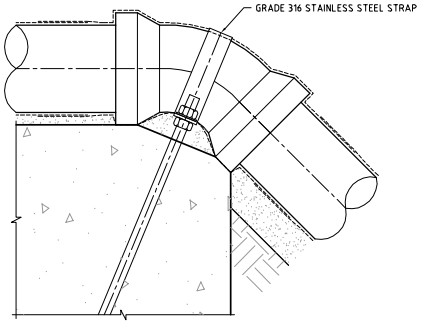
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THRUST BLOCK FOR DN100 & DN150 VERTICAL BENDS ELEVATION

SCALE 1:20

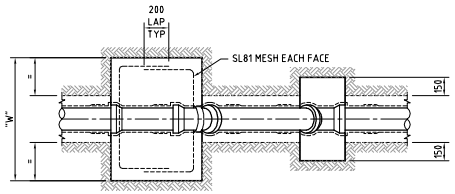


BEND INSTALLATION DETAIL

SCALE 1:5

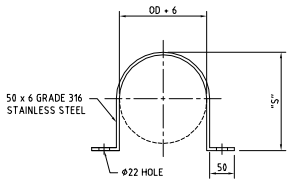
NOTES:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOUL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES.
5. DO NOT USE THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP<50KPa.
6. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320_SW.
7. CONCRETE SHALL BE CLASS N25 TO PS-357_SW. SLUMP SHALL BE IN THE RANGE 80mm - 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
8. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
9. CONCRETE SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa OR BE CURED FOR A MINIMUM OF 28 DAYS PRIOR TO APPLICATION OF THRUST LOADS.
10. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.



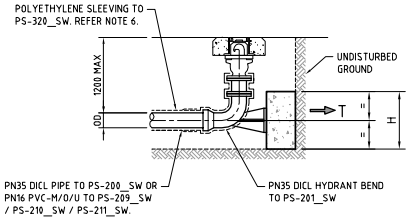
THRUST BLOCK FOR DN100 & DN150 VERTICAL BENDS PLAN

SCALE 1:20



ANCHOR STRAP DETAIL

SCALE 1:5



THRUST BLOCK FOR HYDRANT BEND UNRESTRICTED AREAS - ELEVATION

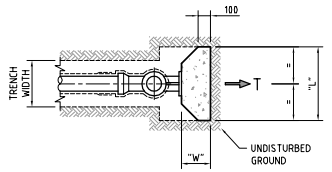
SCALE 1:20

MINIMUM THRUST BLOCK AREAS & DIMENSIONS FOR VERTICAL BENDS (m^2)

DN	OD	VERTICAL BEND	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	H	L	W	S	CONCRETE VOLUME
(mm)	(mm)	(degrees)	(m)	(m)	(kN)	(mm)	(mm)	(mm)	(mm)	(m^3)
100	122	11.25	120	150	3.4	700	250	1000	150	0.175
100	122	22.5	120	150	6.7	1000	350	1000	150	0.350
100	122	45	120	150	13.2	1100	600	1000	150	0.660
150	177	11.25	120	150	7.1	1200	300	1000	200	0.360
150	177	22.5	120	150	14.1	1550	500	1000	200	0.775
150	177	45	120	150	27.7	1650	800	1000	200	1.320

THRUST BLOCK AREAS & DIMENSIONS FOR HYDRANT BENDS (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	W	H	L	REQUIRED BEARING AREA
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(mm)	(mm)	(mm)	(m^2)
100	122	120	150	17.2	50	450	450	800	0.344
100	122	120	150	17.2	100	250	450	450	0.172
100	122	120	150	17.2	200	250	350	450	0.086
150	177	120	150	36.2	50	750	500	1500	0.724
150	177	120	150	36.2	100	400	500	750	0.362
150	177	120	150	36.2	200	250	400	500	0.181



THRUST BLOCK FOR HYDRANT BEND UNRESTRICTED AREAS - PLAN

SCALE 1:20

Sydney WATER

APPROVED

PETER GILLMAN

MANAGER E & ES

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LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
A	ORIGINAL ISSUE	PJG	31/01/12

DEEMED TO COMPLY DRAWINGS

THRUST BLOCK DETAILS
DICL AND PVC WATER MAINS DN100 & DN150
VERTICAL BENDS AND HYDRANT BENDS

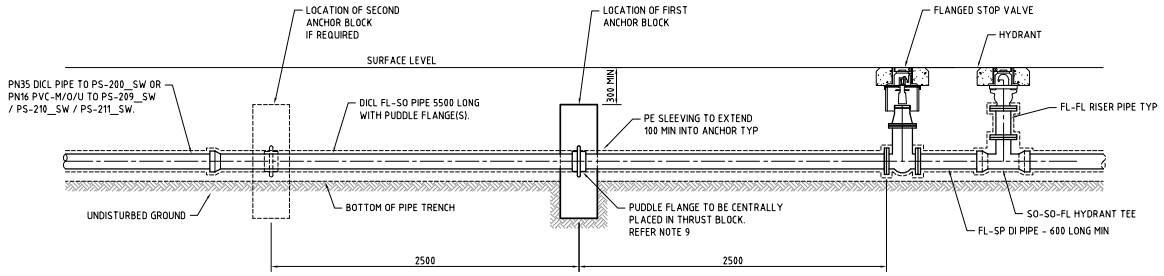
DTC 1114

ISSUE	DATE
A	31/01/12

OPENED DATE :- Mar 23, 2012 - 9:51am LOCATION PATH:- G:\21\20932\CADD\Drawings\DTC-1114.dwg

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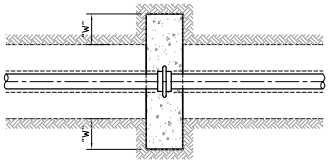


STOP VALVE THRUST BLOCKS
ELEVATION
SCALE 1:20

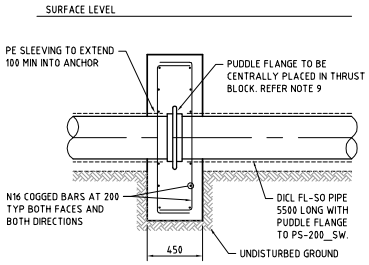
THRUST BLOCK AREAS & DIMENSIONS FOR STOP VALVES (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST	SOIL AHBP	REQUIRED BEARING AREA	NUMBER ANCHORS	H	W
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)		(mm)	(mm)
100	122	120	150	17.2	50	0.344	1	200	300
100	122	120	150	17.2	100	0.172	1	200	200
100	122	120	150	17.2	200	0.086	1	200	200
150	177	120	150	36.2	50	0.724	1	300	400
150	177	120	150	36.2	50	0.724	2	300	200
150	177	120	150	36.2	100	0.362	1	300	200
150	177	120	150	36.2	200	0.181	1	300	200
200	232	120	150	62.2	50	1.243	1	300	600
200	232	120	150	62.2	50	1.243	2	300	300
200	232	120	150	62.2	100	0.622	1	300	300
200	232	120	150	62.2	200	0.311	1	300	200
250	286	120	150	94.5	50	1.889	1	300	900
250	286	120	150	94.5	50	1.889	2	300	400
250	286	120	150	94.5	100	0.945	1	300	400
250	286	120	150	94.5	100	0.945	2	300	200
250	286	120	150	94.5	200	0.472	1	300	200
300	345	120	150	137.5	50	2.749	1	350	1200
300	345	120	150	137.5	50	2.749	2	350	600
300	345	120	150	137.5	100	1.375	1	350	600
300	345	120	150	137.5	100	1.375	2	350	300
300	345	120	150	137.5	200	0.687	1	350	300

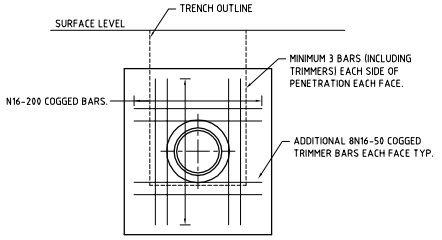
NOTE: SINGLE THRUST BLOCK TO BE USED WHEREVER POSSIBLE.



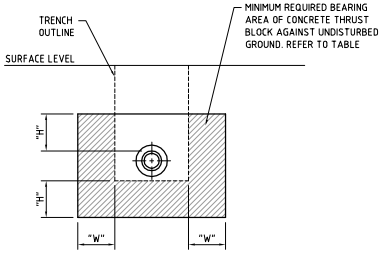
DETAILS OF AREA TO BE CAST AGAINST
UNDISTURBED GROUND - PLAN
SCALE 1:20



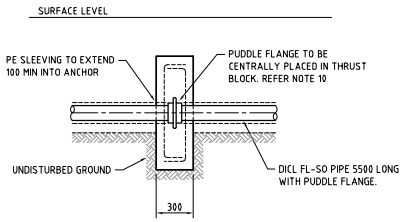
THRUST BLOCK DETAILS FOR DN200,
DN250 AND DN300 STOP VALVES
SCALE 1:20



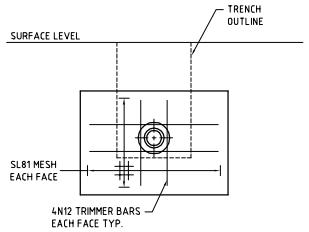
DN200, DN250 AND DN300 VALVE
THRUST BLOCK REINFORCEMENT DETAIL
SCALE 1:20



DETAILS OF AREA TO BE CAST AGAINST
UNDISTURBED GROUND - ELEVATION
SCALE 1:20



THRUST BLOCK DETAILS FOR DN100
AND DN150 STOP VALVES
SCALE 1:20



DN100 AND DN150 VALVE
THRUST BLOCK REINFORCEMENT DETAIL
SCALE 1:20

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL.
5. DO NOT USE THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP<50KPa.
6. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320_SW.
7. ALL DICL PIPES SHALL BE TO FLANGE CLASS U.N.O ALL DICL FITTINGS SHALL BE CLASS PN35.
8. DI FLANGES SHALL BE TO AS4087 CLASS 16. BOLTS AND WASHERS SHALL BE GRADE 316SS.
9. PUDDLE FLANGE SHALL BE FACTORY FITTED BOLT ON FULL THRUST RESTRAINT TYPE IN ACCORDANCE WITH AS2280.
10. CONCRETE SHALL BE CLASS N25 TO PS-357_SW SLUMP SHALL BE IN THE RANGE OF 80mm TO 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
11. ALL REINFORCEMENT SHALL BE TO AS4671 SHAPE-D, STRENGTH GRADE= 500MPa, DUCTILITY CLASS-N.
12. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
13. CONCRETE SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa OR BE CURED FOR 28 DAYS PRIOR TO APPLICATION OF THRUST LOADS.
14. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.
15. DO NOT LOCATE STOP VALVES, HYDRANTS OR ANCHOR BLOCKS IN DRIVEWAYS.
16. NUMBER AND LOCATION OF ANCHOR BLOCKS SHALL BE RECORDED ON WORK AS CONSTRUCTED DRAWINGS.

Sydney WATER

APPROVED
PETER GILLMAN
MANAGER E & ES

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LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
B	THRUST BLOCK DIMENSIONS REVISED	PJG	29\02\12
A	ORIGINAL ISSUE	PJG	31/01/12

DEEMED TO COMPLY DRAWINGS

ANCHORAGE DETAILS DICL AND PVC WATER MAINS ≤ DN300 STOP VALVES

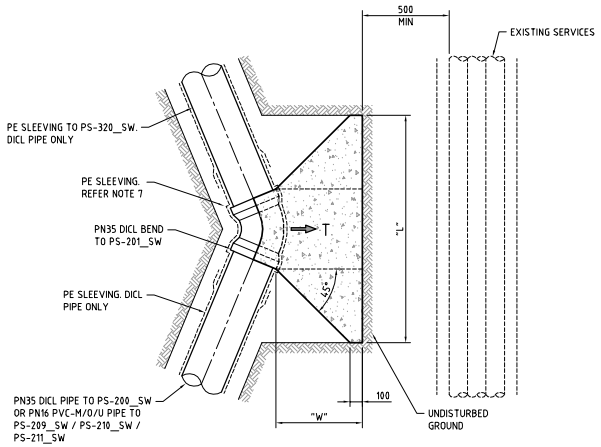
DTC
1115

ISSUE	DATE
B	29\02\12

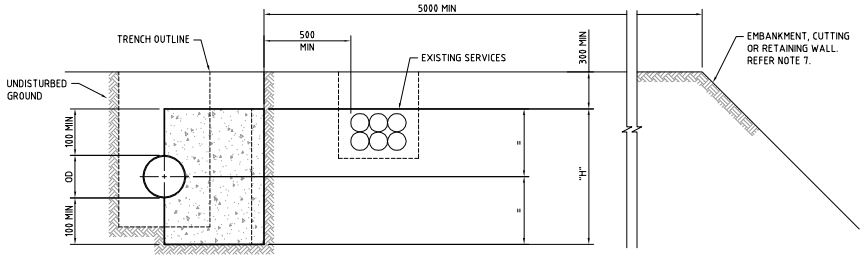
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HORIZONTAL BEND THRUST BLOCK TYPE 1
PLAN
SCALE 1:20



HORIZONTAL BEND THRUST BLOCK TYPE 1
ELEVATION
SCALE 1:20

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. REFER TO DTC/1111 FOR TYPE 2 THRUST BLOCKS FOR HORIZONTAL BENDS..
4. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
5. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL.
6. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP<50KPa.
7. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING. WITHIN 5m OF AN EMBANKMENT, CUTTING OR RETAINING WALL.
8. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320_SW.
9. CONCRETE SHALL BE CLASS N25 TO PS-357_SW. SLUMP SHALL BE IN THE RANGE 80mm - 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
10. DO NOT APPLY ANY THRUST LOAD FOR AT LEAST 14 DAYS AFTER POURING THRUST BLOCKS.
11. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.

THRUST BLOCK AREAS & DIMENSIONS FOR 11.25° HORIZONTAL BENDS - TYPE 1 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)
100	122	120	150	3.4	50	0.067	250	350	500
150	177	120	150	7.1	50	0.142	300	400	600
200	232	120	150	12.2	50	0.244	300	450	700
250	286	120	150	18.5	50	0.370	300	500	800
300	345	120	150	26.9	50	0.539	400	600	1000

THRUST BLOCK AREAS & DIMENSIONS FOR 22.5° HORIZONTAL BENDS - TYPE 1 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)
100	122	120	150	6.7	50	0.134	250	350	500
150	177	120	150	14.1	50	0.282	350	450	700
200	232	120	150	24.3	50	0.485	450	500	1000
250	286	120	150	36.9	50	0.737	450	750	1000
300	345	120	150	53.6	50	1.073	500	900	1200

THRUST BLOCK AREAS & DIMENSIONS FOR 45° HORIZONTAL BENDS - TYPE 1 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)
100	122	120	150	13.2	50	0.263	300	450	650
150	177	120	150	27.7	50	0.554	400	600	950
150	177	120	150	27.7	100	0.277	300	400	700
200	232	120	150	47.6	50	0.952	500	800	1200
200	232	120	150	47.6	100	0.476	400	500	1000
250	286	120	150	72.3	50	1.446	600	1000	1500
250	286	120	150	72.3	100	0.723	400	700	1100
300	345	120	150	105.2	50	2.104	REFER TO TYPE 2		
300	345	120	150	105.2	100	1.052	450	850	1250

THRUST BLOCK AREAS & DIMENSIONS FOR 90° HORIZONTAL BENDS - TYPE 1 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)
100	122	120	150	24.3	50	0.486	400	600	900
100	122	120	150	24.3	100	0.243	300	400	650
150	177	**120**	**150**	51.2	50	1.023	550	800	1300
150	177	120	150	51.2	100	0.512	350	600	900
200	232	120	150	87.9	50	1.758	REFER TO TYPE 2		
200	232	120	150	87.9	100	0.879	450	700	1300
200	232	120	150	87.9	200	0.440	250	500	900
250	286	120	150	133.6	50	2.672	REFER TO TYPE 2		
250	286	120	150	133.6	100	1.336	REFER TO TYPE 2		
250	286	120	150	133.6	200	0.668	300	650	1100
300	345	120	150	194.4	50	3.888	REFER TO TYPE 2		
300	345	120	150	194.4	100	1.944	REFER TO TYPE 2		
300	345	120	150	194.4	200	0.972	350	750	1300

Sydney WATER

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PETER GILLMAN

MANAGER E & ES

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LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
A	ORIGINAL ISSUE	PJG	31/01/12

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THRUST BLOCK DETAILS
DICL AND PVC WATER MAINS ≤ DN300
HORIZONTAL BENDS TYPE 1

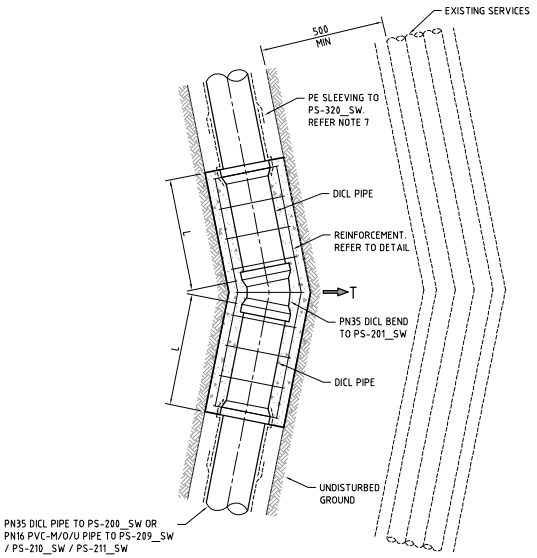
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1110

ISSUE	DATE
A	31/01/12

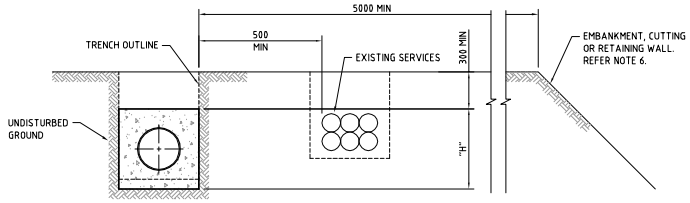
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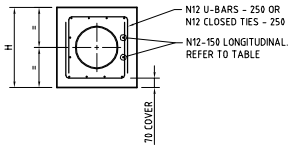
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HORIZONTAL BEND THRUST BLOCK TYPE 2
PLAN
SCALE 1:20



HORIZONTAL BEND THRUST BLOCK TYPE 2
ELEVATION
SCALE 1:20



CONCRETE ENCASEMENT DETAIL
SCALE 1:20

CONCRETE ENCASEMENT
REINFORCEMENT DETAILS

MAIN SIZE	LONGITUDINAL REINFORCEMENT
DN100	8N12
DN150	8N12
DN200	12N12
DN250	12N12
DN300	12N12

THRUST BLOCK AREAS & DIMENSIONS FOR 11.25° HORIZONTAL BENDS - TYPE 2 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)
100	122	120	150	3.4	50	0.067	600	450
150	177	120	150	7.1	50	0.142	600	500
200	232	120	150	12.2	50	0.244	600	550
250	286	120	150	18.5	50	0.370	600	600
300	345	120	150	26.9	50	0.539	600	650

THRUST BLOCK AREAS & DIMENSIONS FOR 22.5° HORIZONTAL BENDS - TYPE 2 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)
100	122	120	150	6.7	50	0.134	600	450
150	177	120	150	14.1	50	0.282	600	500
200	232	120	150	24.3	50	0.485	600	550
250	286	120	150	36.9	50	0.737	600	600
300	345	120	150	53.6	50	1.073	850	650

THRUST BLOCK AREAS & DIMENSIONS FOR 45° HORIZONTAL BENDS - TYPE 2 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)
100	122	120	150	13.2	50	0.263	600	450
150	177	120	150	27.7	50	0.554	600	500
200	232	120	150	47.6	50	0.952	850	550
250	286	120	150	72.3	50	1.446	1200	600
300	345	120	150	105.2	50	2.104	1600	650

THRUST BLOCK AREAS & DIMENSIONS FOR 90° HORIZONTAL BENDS - TYPE 2 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)
100	122	120	150	24.3	50	0.486	700	450
150	177	120	150	51.2	50	1.023	1300	500
200	232	120	150	87.9	50	1.758	2000	550
250	286	120	150	133.6	50	2.672	2300	700
300	345	120	150	194.4	50	3.888	2600	900

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL.
5. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP<50KPa.
6. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING. WITHIN 5m OF AN EMBANKMENT, CUTTING OR RETAINING WALL.
7. ALL DI FITTINGS AND PIPES TO NE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320_SW.
8. CONCRETE SHALL BE CLASS N25 TO PS-357_SW. SLUMP SHALL BE IN THE RANGE 80mm - 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
9. ALL REINFORCEMENT SHALL BE TO AS4671, SHAPE - D, STRENGTH GRADE = 500 MPa, DUCTILITY CLASS - N.
10. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
11. DO NOT APPLY ANY THRUST LOAD FOR AT LEAST 14 DAYS AFTER POURING THRUST BLOCKS.
12. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.

Sydney WATER

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PETER GILLMAN

MANAGER E & ES

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ENGINEERING & ENVIRONMENTAL SERVICES

LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
B	THRUST BLOCK DIMENSIONS REVISED	PJG	29\02\12
A	ORIGINAL ISSUE	PJG	31/01/12

DEEMED TO COMPLY DRAWINGS

THRUST BLOCK DETAILS
DICL AND PVC WATER MAINS ≤ DN300
HORIZONTAL BENDS TYPE 2

DTC
1111

ISSUE	DATE
B	29\02\12

OPENED DATE :- Mar 23, 2012 - 9:49am LOCATION PATH:- G:\21\20932\CADD\Drawings\DTC-1111.dwg

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DEVELOPER CONTRACT PLAN

0 10 20 30 40 50 METRES

M.G.A. ZONE 56 M.G.A. DATUM: GDA2020

1. DESIGNER AND WATER SERVICING COORDINATOR:
QALCHEK PTY LTD (CERTIFIED No.289)
UNIT 2, LEVEL 1, 15-17 DAVID RD, EMU PLAINS NSW 2750
PH. No. (02) 4722 8181
FOR:
MIRVAC PTY LTD
LEVEL 28, 200 GEORGE STREET, SYDNEY 2000
PH. No. (02) 9080 8053

2. THE PROPOSED WORKS AND MATERIALS SHALL BE IN ACCORDANCE WITH THE WATER SUPPLY CODE OF AUSTRALIA (WSA 03-2011-3.1) INCLUDING THE SYDNEY WATER SUPPLEMENT (2014) AND APPENDICES. THE CONTRACTOR MUST HAVE A COPY OF THESE DOCUMENTS ON SITE AT ALL TIMES.

3. MAIN TO BE LAID GENERALLY 1.42m FROM BACK OF KERB WITH 0.90m COVER EXCEPT WHERE OTHERWISE SHOWN.

4. MAIN LAYING NOT TO PROCEED PRIOR TO FORMATION OF FOOTWAYS TO FINISHED SURFACE LEVELS. IF FOR ANY REASON MAINS ARE TO BE LAID PRIOR TO THIS IT IS THE CONSTRUCTORS RESPONSIBILITY TO HAVE THE LOCATION AND FINISHED LEVELS OF THE KERB ETC. PEGGED.

5. PRIOR TO ANY EXCAVATION THE CONSTRUCTOR MUST HAVE A CURRENT COPY OF THE UNDERGROUND SERVICES SEARCH REPORT WHICH IS TO BE READ IN CONJUNCTION WITH THIS PLAN.

6. SERVICES SHOWN FROM 'DIAL BEFORE YOU DIG' SERVICES SEARCH ARE INDICATIVE ONLY. AUTHENTICITY AND ACCURACY SHOULD NOT BE PRESUMED AND SHOULD BE CONFIRMED BY THE CONSTRUCTOR PRIOR TO ANY EXCAVATION WORKS ON SITE.

7. ALL EXCAVATION, SHORING EXCAVATION AND STABILITY OF ADJACENT STRUCTURES/SERVICES/DWELLINGS IS THE RESPONSIBILITY OF THE CONSTRUCTOR. USE OF SHORING BOXES IS NOT A FORM OF STABILITY CONTROL, NEITHER IS SAND CEMENT BACKFILL OR CONCRETE ENCASEMENT.

8. PRECAUTIONS MAY BE NECESSARY IN THE VICINITY OF SUB-STATION EARTHING.

9. ALL BUILDING LAYOUTS, FINISHED SURFACE LEVELS, STORMWATER INFORMATION, AND GENERAL CIVIL ENGINEERING DETAILS TAKEN FROM SBA ARCHITECTS ENGINEERING PLANS REVISION M DATED 15.02.2022.

10. THE REVIEW OF ENVIRONMENTAL FACTORS IS AN INTEGRAL PART OF THIS DESIGN AND MUST BE READ IN CONJUNCTION WITH THIS PLAN.

11. CONDITIONS FOR EMBEDMENT, BACKFILL AND TESTING REQUIREMENTS ARE AS FOLLOWS:

– ALL POTABLE WATER ROAD CARRIAGEWAY CROSSINGS FOR EXISTING AND PROPOSED ROADS TO BE BEDDED AND BACKFILLED WITH SAND/CEMENT. SAND/CEMENT RATIO TO BE 14:1 AND IS TO BE PLACED DRY.

– FOR ANY WATERMAIN LOCATED WITHIN 1.0m OF A ROAD SHOULDER OR KERB AND GUTTER IN THE VERGE OR FOOTPATH THE EMBEDMENT AND BACKFILL (IF "COHESIVE" MATERIAL IS USED) IS TO BE COMPACTED TO A DENSITY INDEX OF 95%. ALL TESTS (EMBEDMENT AND BACKFILL) TO BE DONE AS FOR TRAFFICABLE AREA.

THEREFORE THE MINIMUM NUMBER OF FIELD COMPACTION TESTS REQUIRED TO SATISFY THE CONDITIONS ABOVE AS WELL AS THE WATER SUPPLY CODE OF AUSTRALIA ARE:

PIPE EMBEDMENT ZONE: 5 TESTS REQUIRED (UNLESS ALL CONDITIONS OF CLAUSE 19.3.4.1 ARE MET & DOCUMENTATION IS PROVIDED)

TRENCH FILL ZONE (TRAFFICABLE): 15 TESTS REQUIRED

TRENCH FILL ZONE PROPERTY SERVICES: 0 TESTS REQUIRED (UNLESS ALL CONDITIONS OF CLAUSE 19.3.4.1 & 19.3.4.2 ARE MET & DOCUMENTATION IS PROVIDED)

COMPACTION TESTS – TOTAL: 15 TESTS REQUIRED

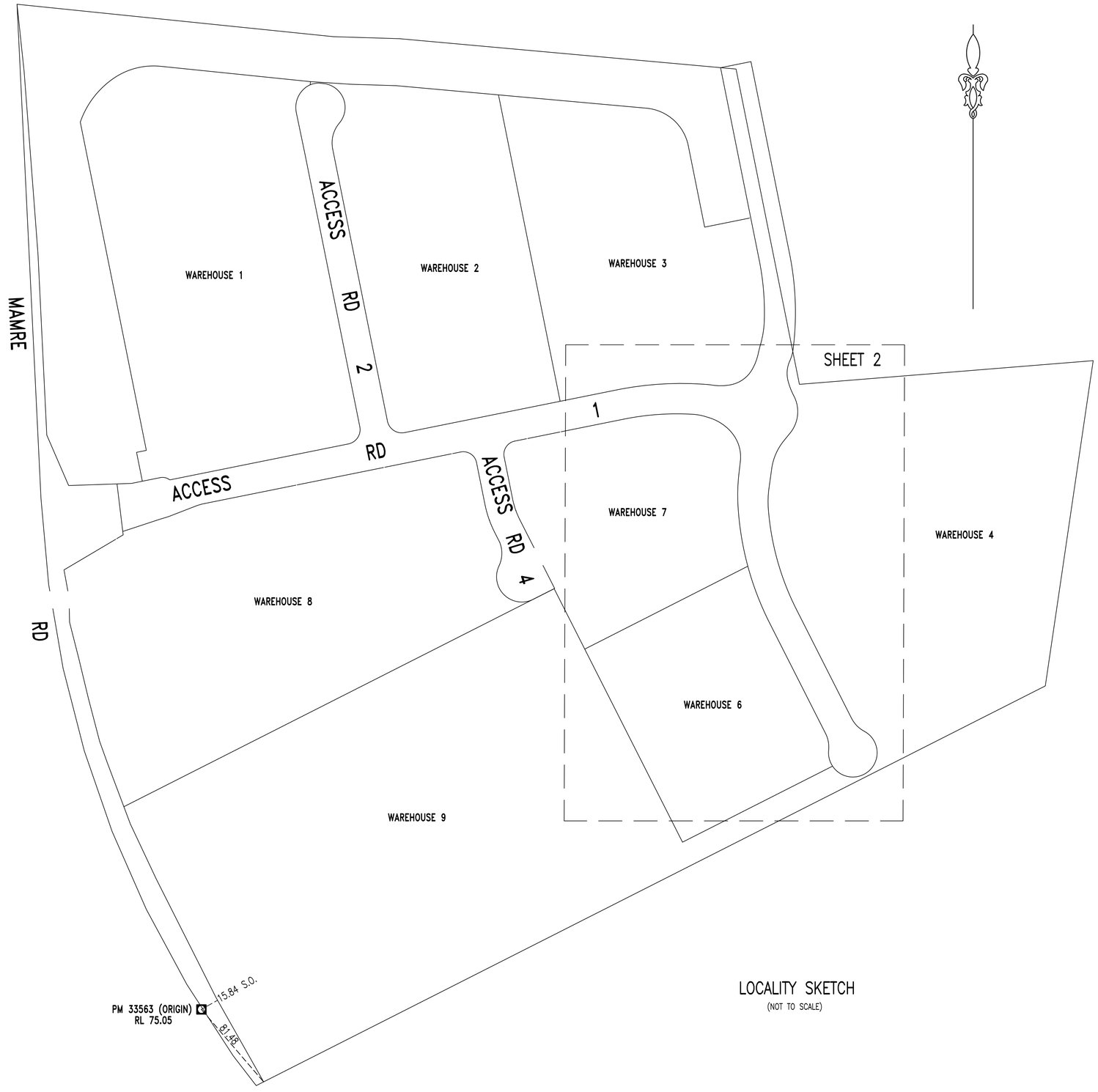
ADDITIONAL CONDITIONS MAY BE REQUIRED TO COMPLY WITH COUNCIL SPECIFICATIONS. THE CONSTRUCTOR IS REQUIRED TO LIAISE WITH THE CIVIL CONTRACTOR AND/OR THE SITE SUPERINTENDENT REGARDING ANY ADDITIONAL REQUIREMENTS.

12. CONSTRUCTOR TO ENSURE THAT THERE IS A MINIMUM DISTANCE OF 5.0m FROM THE HY-SV-HY CONFIGURATION TO THE HYDRANT BEND (UNLESS NOTED OTHERWISE). DO NOT SCALE DISTANCES OFF THE PLAN. FITTINGS TO BE LOCATED IN FOOTWAY. IF IN DOUBT THE CONSTRUCTOR SHOULD CONTACT THE PROJECT SUPERVISOR OR DESIGNER TO OBTAIN CLARIFICATION.

13. CONSTRUCTOR TO ENSURE THAT WORKS ARE CONSTRUCTED IN ACCORDANCE WITH SYDNEY WATER'S DEEMED TO COMPLY DRAWINGS: – FOR HORIZONTAL BENDS TYPE 1 DTC-1110 (ISSUE A 31.01.12) – FOR HORIZONTAL BENDS TYPE 2 DTC-1111 (ISSUE B 29.02.12) – FOR TAPERS DTC-1112 (ISSUE B 29.02.12) – FOR TEES DTC-1113 (ISSUE B 29.02.12) – FOR VERTICAL BENDS & HYDRANT BENDS DTC-1114 (ISSUE A 31.01.12) – FOR STOP VALVES DTC-1115 (ISSUE B 29.02.12) (NOTE THAT VALVES DN200 AND UNDER DO NOT REQUIRE ANCHORING AS NOTED IN SYDNEY WATER'S EMAIL 08.08.14) – FOR STEEL JOINTING DTC-1130 (ISSUE A 31.01.12)

14. BULKHEADS &/OR TRENCH STOPS REQUIRED AT EACH KERB CROSSING/EDGE OF BITUMEN CROSSING TO WAT-1209. THIS APPLIES TO ANY ACCESSROADS, CARPARKS, ETC.

15. EXISTING SURFACE FITTINGS AND INDICATOR PLATES TO BE REMOVED.



LOCALITY SKETCH
(NOT TO SCALE)

No.	AMENDMENT DESCRIPTION	BY	DATE
B	NEW ALIGNMENT TO MAKE ROOM FOR PRV	CL	19.01.23
A	ISSUED FOR APPROVAL	CL	09.11.22

PLAN TO BE READ IN CONJUNCTION WITH CURRENT SYDNEY WATER STANDARDS
SYDNEY WATER CORPORATION

PRIOR TO COMMENCEMENT OF EXCAVATION FOR PROPOSED AND EXISTING SERVICES CONTACT :-
DIAL BEFORE YOU DIG . . . . . Ph. 1100
ELECTRICITY, ENDEAVOUR ENERGY . . . Ph. 131 003
GAS . . . . . JEMENA GAS . . . . . Ph. 1300 880 906
TELECOMMUNICATIONS . TELSTRA . . Ph. 1800 114 918
SYDNEY WATER . . . . . Ph. 132 092
GIVING AT LEAST 48 HOURS NOTICE.

UTILITIES

TYPE	DATE	REF.	TYPE	DATE	REF.
PROP RCWATER: RCWater- – – – –RW	09.11.22	DESIGN			
PROP SEWER: S – – – – – – – – S	09.11.22	DESIGN			
PROP ELECTRICAL: E – – – – E	09.11.22	DESIGN			
PROP STORMWATER: SWD – – – SWD	02.11.22	ENG.			
PROP TELSTRA: TEL – – – – – TEL	24.02.22	ENG.			

WORK AS CONSTRUCTED CERTIFICATION

DEVELOPER . . . . . .
WATER SERVICE CO-ORDINATOR . . . . . .
CONSTRUCTOR . . . . . .
COMPLETED . . . . . W.A.C. PREPARED . . . . . .

DESIGNER . . . . . .

I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS.

PIPE SCHEDULE

SIZE DN	TYPE	CLASS	LENGTH	PIPE JOINING METHOD / NOTES
200	D.I.C.L.	PN35	478.85	RRJ
100	D.I.C.L.	PN35	2.0	RRJ

DESIGN HEAD 120 m
BOUNDARY TRAPS REQUIRED.

AUSTRALIAN HEIGHT DATUM

SCALES
PLAN 1:500 SECTION HOR. / VERT.
CROSS SECTIONS . . . . . NATURAL
LENGTHS, DEPTHS & LEVELS ARE IN METRES.

NO AMENDMENTS ARE TO BE MADE TO THIS PLAN WITHOUT REFERENCE TO SYDNEY WATER. THIS PLAN IS NOT NECESSARILY UP TO DATE OR CORRECT AND SYDNEY WATER ACCEPTS NO RESPONSIBILITY.

U.B. DIRECTORY . MAP 225/N1 41st Edition

SHEET 1 OF 2 . File No. N/A

Sydney WATER SYDNEY WATER CORPORATION

Case No. 198857PW

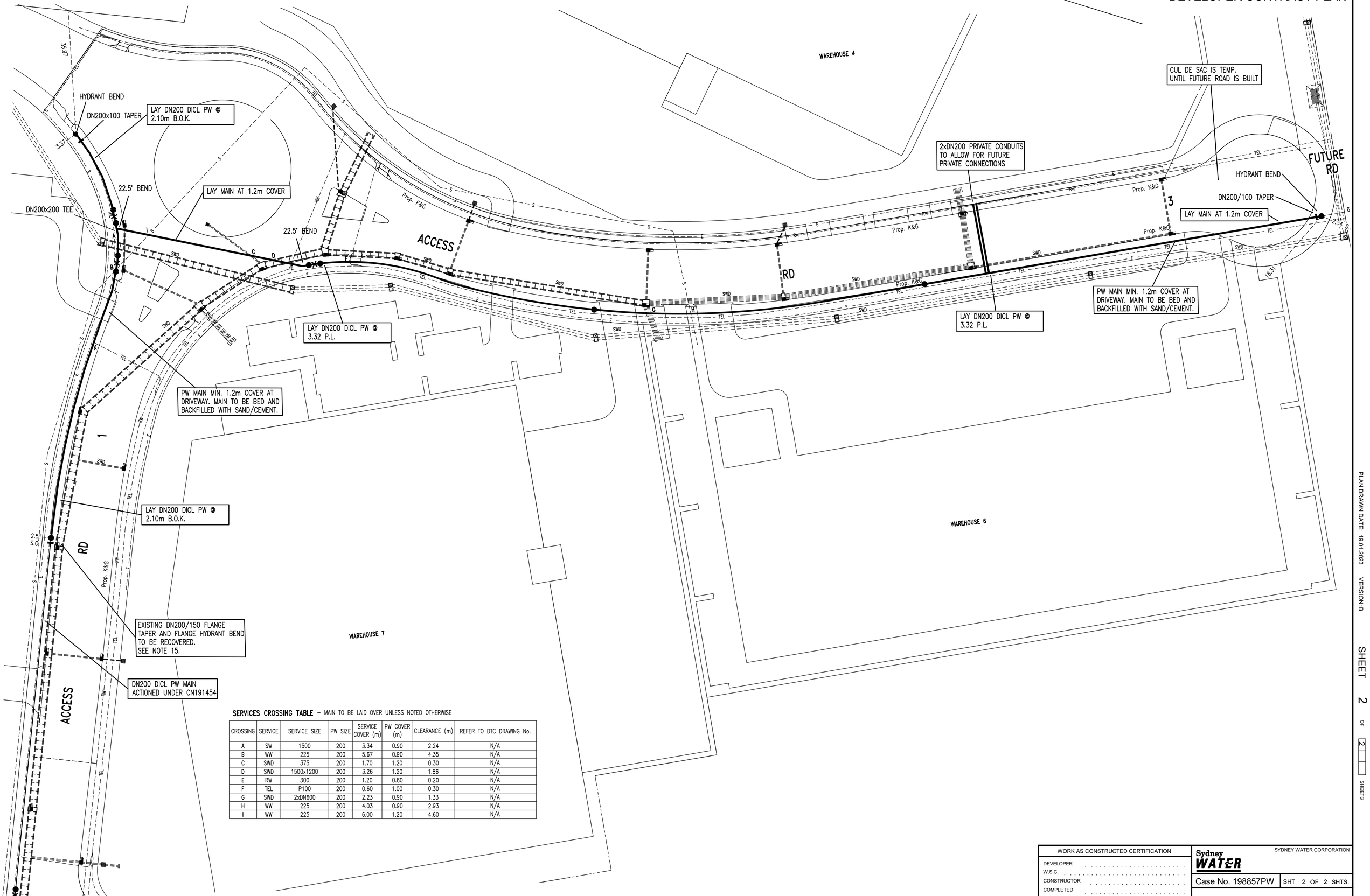
POTABLE WATERMAIN EXTENSION
MAMRE ROAD
KEMPS CREEK

PLAN DRAWN DATE: 19.01.2023 VERSION: B SHEET 1 OF 2 SHEETS

FILE LOCATION: PM30687PW-B DESIGNED: C.L. DRAFTED: C.L. VERIFIED: D.L. REVIEWED: D.L. APPROVED: D.L. ISSUED: 19.01.2023

A1F 0 10 20 30 40 50 METRES

DEVELOPER CONTRACT PLAN



SERVICES CROSSING TABLE – MAIN TO BE LAID OVER UNLESS NOTED OTHERWISE

CROSSING	SERVICE	SERVICE SIZE	PW SIZE	SERVICE COVER (m)	PW COVER (m)	CLEARANCE (m)	REFER TO DTC DRAWING No.
A	SW	1500	200	3.34	0.90	2.24	N/A
B	WW	225	200	5.67	0.90	4.35	N/A
C	SWD	375	200	1.70	1.20	0.30	N/A
D	SWD	1500x1200	200	3.26	1.20	1.86	N/A
E	RW	300	200	1.20	0.80	0.20	N/A
F	TEL	P100	200	0.60	1.00	0.30	N/A
G	SWD	2xDN600	200	2.23	0.90	1.33	N/A
H	WW	225	200	4.03	0.90	2.93	N/A
I	WW	225	200	6.00	1.20	4.60	N/A

No.	AMENDMENT DESCRIPTION	BY	DATE
B	NEW ALIGNMENT TO MAKE ROOM FOR PRV	CL	19.01.23
A	ISSUED FOR APPROVAL	CL	09.11.22

WORK AS CONSTRUCTED CERTIFICATION

DEVELOPER . . . . . .
W.S.C. . . . . .
CONSTRUCTOR . . . . . .
COMPLETED . . . . . .
W.A.C. PREPARED . . . . . .
DESIGNER . . . . . .
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS

SYDNEY WATER CORPORATION

Sydney WATER

Case No. 198857PW | SHT 2 OF 2 SHTS.

SYDNEY WATER CORPORATION

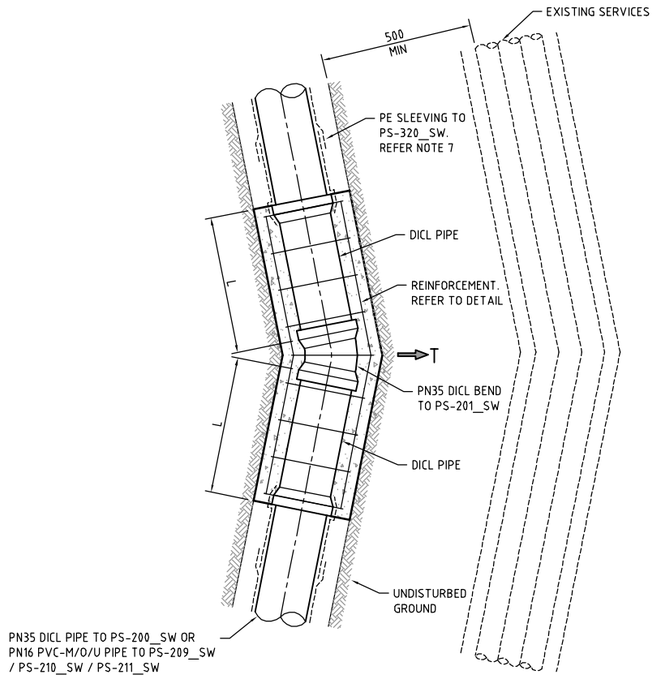
FOR DETAILS OF SERVICES SEE SHEET 1

PLAN DRAWN DATE: 19.01.2023 VERSION: B SHEET 2 OF 2 SHEETS

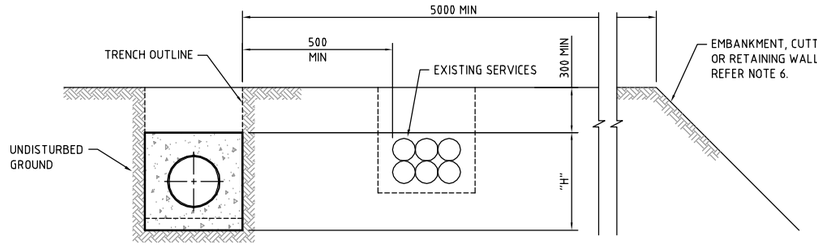
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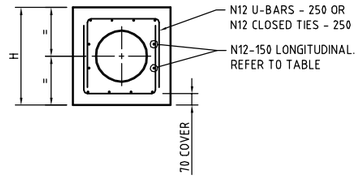
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HORIZONTAL BEND THRUST BLOCK TYPE 2
PLAN
SCALE 1:20



HORIZONTAL BEND THRUST BLOCK TYPE 2
ELEVATION
SCALE 1:20



CONCRETE ENCASEMENT DETAIL
SCALE 1:20

CONCRETE ENCASEMENT
REINFORCEMENT DETAILS

MAIN SIZE	LONGITUDINAL REINFORCEMENT
DN100	8N12
DN150	8N12
DN200	12N12
DN250	12N12
DN300	12N12

THRUST BLOCK AREAS & DIMENSIONS FOR 11.25° HORIZONTAL BENDS - TYPE 2 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)
100	122	120	150	3.4	50	0.067	600	450
150	177	120	150	7.1	50	0.142	600	500
200	232	120	150	12.2	50	0.244	600	550
250	286	120	150	18.5	50	0.370	600	600
300	345	120	150	26.9	50	0.539	600	650

THRUST BLOCK AREAS & DIMENSIONS FOR 22.5° HORIZONTAL BENDS - TYPE 2 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)
100	122	120	150	6.7	50	0.134	600	450
150	177	120	150	14.1	50	0.282	600	500
200	232	120	150	24.3	50	0.485	600	550
250	286	120	150	36.9	50	0.737	600	600
300	345	120	150	53.6	50	1.073	850	650

THRUST BLOCK AREAS & DIMENSIONS FOR 45° HORIZONTAL BENDS - TYPE 2 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)
100	122	120	150	13.2	50	0.263	600	450
150	177	120	150	27.7	50	0.554	600	500
200	232	120	150	47.6	50	0.952	850	550
250	286	120	150	72.3	50	1.446	1200	600
300	345	120	150	105.2	50	2.104	1600	650

THRUST BLOCK AREAS & DIMENSIONS FOR 90° HORIZONTAL BENDS - TYPE 2 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)
100	122	120	150	24.3	50	0.486	700	450
150	177	120	150	51.2	50	1.023	1300	500
200	232	120	150	87.9	50	1.758	2000	550
250	286	120	150	133.6	50	2.672	2300	700
300	345	120	150	194.4	50	3.888	2600	900

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL.
5. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP<50KPa.
6. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING. WITHIN 5m OF AN EMBANKMENT, CUTTING OR RETAINING WALL.
7. ALL DI FITTINGS AND PIPES TO NE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320_SW.
8. CONCRETE SHALL BE CLASS N25 TO PS-357_SW. SLUMP SHALL BE IN THE RANGE 80mm - 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
9. ALL REINFORCEMENT SHALL BE TO AS4671, SHAPE - D, STRENGTH GRADE = 500 MPa, DUCTILITY CLASS - N.
10. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
11. DO NOT APPLY ANY THRUST LOAD FOR AT LEAST 14 DAYS AFTER POURING THRUST BLOCKS.
12. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.

Sydney WATER

APPROVED

PETER GILLMAN

MANAGER E & ES

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DICL AND PVC WATER MAINS ≤ DN300
HORIZONTAL BENDS TYPE 2

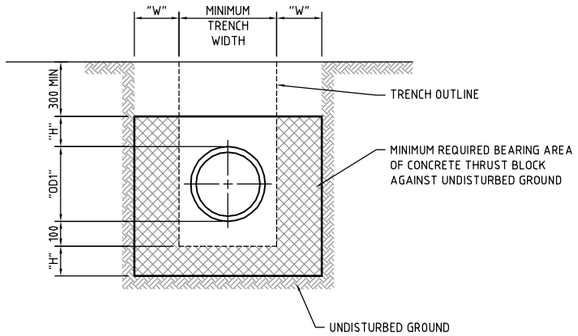
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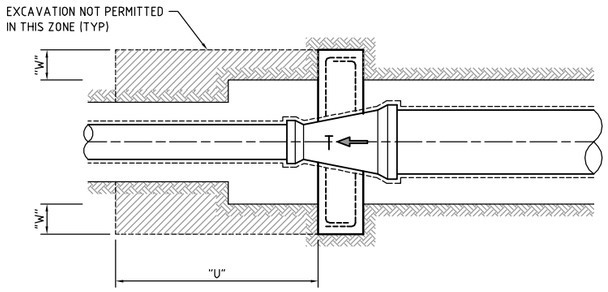
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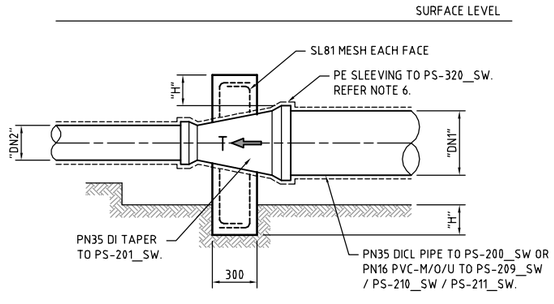
DETAILS OF AREA TO BE CAST AGAINST UNDISTURBED GROUND ELEVATION

SCALE 1:20



DETAILS OF AREA TO BE CAST AGAINST UNDISTURBED GROUND PLAN

SCALE 1:20



THRUST BLOCK REINFORCEMENT DETAIL

SCALE 1:20

THRUST BLOCK AREAS & DIMENSIONS FOR TAPERS - TYPE 1 (m^2)

DN1	OD1	DN2	OD2	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	H	MINIMUM TRENCH WIDTH	W	U
(mm)	(mm)	(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)	(mm)
150	177	100	122	120	150	19.0	50	0.380	200	380	300	1550
150	177	100	122	120	150	19.0	100	0.190	100	380	300	1200
150	177	100	122	120	150	19.0	200	0.095	100	380	300	1200
200	232	100	122	120	150	45.0	50	0.900	400	530	350	2350
200	232	100	122	120	150	45.0	100	0.450	200	530	300	1650
200	232	100	122	120	150	45.0	200	0.225	100	530	300	1300
200	232	150	177	120	150	26.0	50	0.520	250	530	300	1850
200	232	150	177	120	150	26.0	100	0.260	100	530	300	1350
200	232	150	177	120	150	26.0	200	0.130	100	530	300	1350
250	286	100	122	120	150	77.3	50	1.546	400	590	650	2400
250	286	100	122	120	150	77.3	100	0.773	350	590	300	2200
250	286	100	122	120	150	77.3	200	0.386	150	590	300	1500
250	286	150	177	120	150	58.3	50	1.166	400	590	450	2400
250	286	150	177	120	150	58.3	100	0.583	250	590	300	1900
250	286	150	177	120	150	58.3	200	0.291	100	590	300	1400
250	286	200	232	120	150	32.3	50	0.646	300	590	300	2100
250	286	200	232	120	150	32.3	100	0.323	100	590	300	1450
250	286	200	232	120	150	32.3	200	0.162	100	590	300	1450
250	286	225	259	120	150	17.0	50	0.340	100	590	300	1450
250	286	225	259	120	150	17.0	100	0.170	100	590	300	1450
250	286	225	259	120	150	17.0	200	0.085	100	590	300	1450
300	345	100	122	120	150	120.3	50	2.406	500	650	800	2750
300	345	100	122	120	150	120.3	100	1.203	500	650	350	2750
300	345	100	122	120	150	120.3	200	0.601	250	650	300	1900
300	345	150	177	120	150	101.3	50	2.026	450	650	750	2650
300	345	150	177	120	150	101.3	100	1.013	450	650	300	2650
300	345	150	177	120	150	101.3	200	0.506	200	650	300	1800
300	345	200	232	120	150	75.3	50	1.506	450	650	500	2700
300	345	200	232	120	150	75.3	100	0.753	300	650	300	2150
300	345	200	232	120	150	75.3	200	0.377	100	650	300	1450
300	345	225	259	120	150	60.0	50	1.200	400	650	450	2550
300	345	225	259	120	150	60.0	100	0.600	250	650	300	2000
300	345	225	259	120	150	60.0	200	0.300	100	650	300	1500
300	345	250	286	120	150	43.0	50	0.860	350	650	300	2400
300	345	250	286	120	150	43.0	100	0.430	150	650	300	1700
300	345	250	286	120	150	43.0	200	0.215	100	650	300	1500

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES.
5. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP<50KPa.
6. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320_SW.
7. CONCRETE SHALL BE CLASS N25 TO PS-357_SW. SLUMP SHALL BE IN THE RANGE 80mm - 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
8. ALL REINFORCEMENT SHALL BE TO AS4671 SHAPE-D, STRENGTH GRATE= 500MPa, DUCTILITY CLASS-N.
9. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
10. CONCRETE SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa OR BE CURED FOR A MINIMUM OF 28 DAYS PRIOR TO APPLICATION OF THRUST LOADS.
11. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.

Sydney WATER

APPROVED

PETER GILLMAN

MANAGER E & ES

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LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
B	DIMENSION OD2 CHANGED TO OD1	PJG	29\02\12
A	ORIGINAL ISSUE	PJG	31/01/12

DEEMED TO COMPLY DRAWINGS

THRUST BLOCK DETAILS DICL AND PVC WATER MAINS ≤ DN300 TAPERS

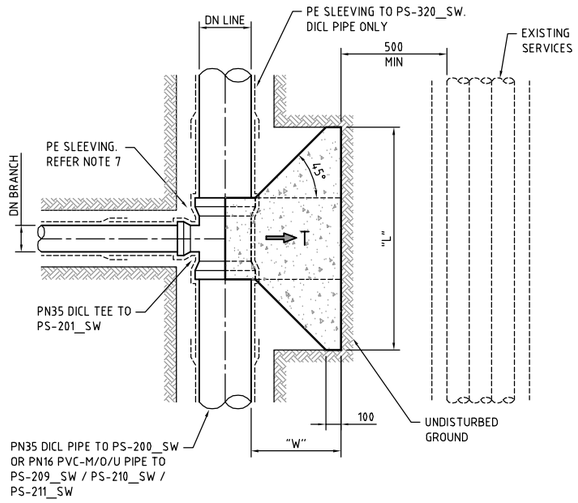
DTC 1112

ISSUE	DATE
B	29\02\12

OPENED DATE :- Mar 23, 2012 - 9:49am LOCATION PATH:- G:\21\20932\CADD\Drawings\DTC-1112.dwg

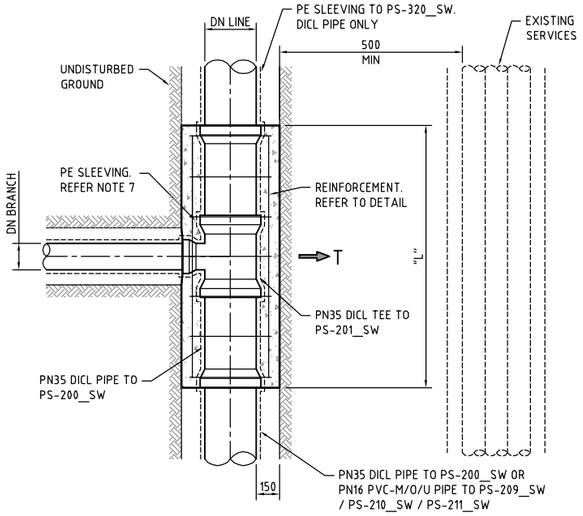
A1

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TEE THRUST BLOCK TYPE 1 PLAN

SCALE 1:20



TEE THRUST BLOCK TYPE 2 PLAN

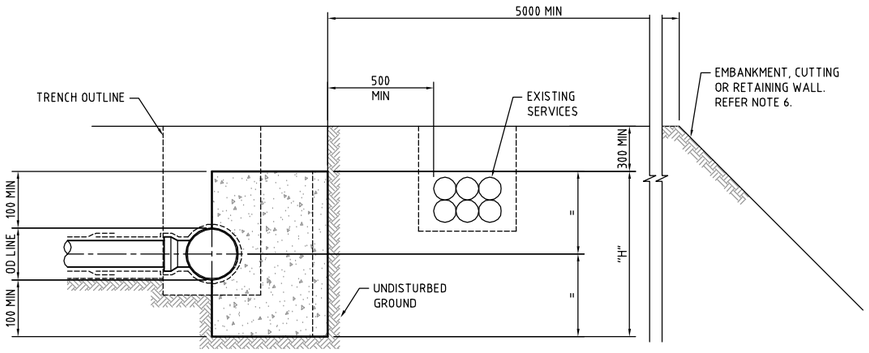
SCALE 1:20

THRUST BLOCK AREAS & DIMENSIONS FOR TEES - TYPE 1 (m^2)

DN BRANCH	OD BRANCH	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	H	L	W	REQUIRED BEARING AREA
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(mm)	(mm)	(mm)	(m^2)
100	122	120	150	17.2	50	500	700	400	0.344
100	122	120	150	17.2	100	400	450	250	0.172
100	122	120	150	17.2	200	400	400	300	0.086
150	177	120	150	36.2	50	700	1100	600	0.724
150	177	120	150	36.2	100	500	750	400	0.362
150	177	120	150	36.2	200	450	600	350	0.181
200	232	120	150	62.2	50	850	1500	700	1.243
200	232	120	150	62.2	100	700	900	400	0.622
200	232	120	150	62.2	200	500	650	250	0.311
250	286	120	150	94.5	50	REFER TO TYPE 2			1.889
250	286	120	150	94.5	100	800	1200	500	0.945
250	286	120	150	94.5	200	600	800	300	0.472
300	345	120	150	137.5	50	REFER TO TYPE 2			2.749
300	345	120	150	137.5	100	1000	1400	550	1.375
300	345	120	150	137.5	200	700	1000	350	0.687

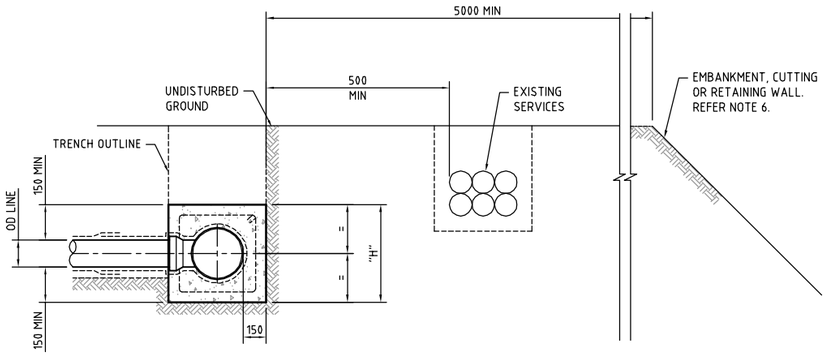
THRUST BLOCK AREAS & DIMENSIONS FOR TEES - TYPE 2(m^2)

DN BRANCH	OD BRANCH	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	H	L	REQUIRED BEARING AREA
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(mm)	(mm)	(m^2)
100	122	120	150	17.2	50	650	1150	0.344
100	122	120	150	17.2	100	650	1150	0.172
100	122	120	150	17.2	200	650	1150	0.086
150	177	120	150	36.2	50	750	1200	0.724
150	177	120	150	36.2	100	650	1200	0.362
150	177	120	150	36.2	200	650	1200	0.181
200	232	120	150	62.2	50	800	1600	1.243
200	232	120	150	62.2	100	650	1250	0.622
200	232	120	150	62.2	200	650	1250	0.311
250	286	120	150	94.5	50	900	2150	1.889
250	286	120	150	94.5	100	900	1300	0.945
250	286	120	150	94.5	200	900	1300	0.472
300	345	120	150	137.5	50	1050	2700	2.749
300	345	120	150	137.5	100	1050	1400	1.375
300	345	120	150	137.5	200	1050	1400	0.687



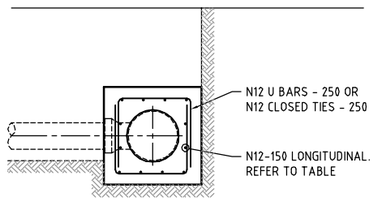
TEE THRUST BLOCK TYPE 1 ELEVATION

SCALE 1:20



TEE THRUST BLOCK TYPE 2 ELEVATION

SCALE 1:20



TEE THRUST BLOCK TYPE 2 CONCRETE ENCASEMENT DETAIL

SCALE 1:20

CONCRETE ENCASEMENT REINFORCEMENT DETAILS

MAIN SIZE	LONGITUDINAL REINFORCEMENT
DN100	8N12
DN150	8N12
DN200	12N12
DN250	12N12
DN300	12N12

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES.
5. DO NOT USE THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP<50KPa.
6. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING. WITHIN 5m OF AN EMBANKMENT, CUTTING OR RETAINING WALL. A GEOTECHNICAL ASSESSMENT AND INDIVIDUAL DESIGN IS REQUIRED FOR THESE CONDITIONS.
7. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320__SW.
8. CONCRETE SHALL BE CLASS N25 TO PS-357__SW. ALL CONCRETE SHALL HAVE SLUMP IN THE RANGE OF 80mm TO 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
9. ALL REINFORCEMENT SHALL BE TO AS4671 SHAPE D, STRENGTH GRADE = 500MPa, DUCTILITY CLASS - N.
10. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
11. DO NOT APPLY ANY THRUST LOAD FOR AT LEAST 14 DAYS AFTER POURING THRUST BLOCKS.
12. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.

Sydney WATER

APPROVED

PETER GILLMAN

MANAGER E & ES

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ENGINEERING & ENVIRONMENTAL SERVICES

LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
B	THRUST BLOCK DIMENSIONS REVISED	PJG	29\02\12
A	ORIGINAL ISSUE	PJG	31/01/12

DEEMED TO COMPLY DRAWINGS

THRUST BLOCK DETAILS DICL AND PVC WATER MAINS ≤ DN300 TEES

DTC

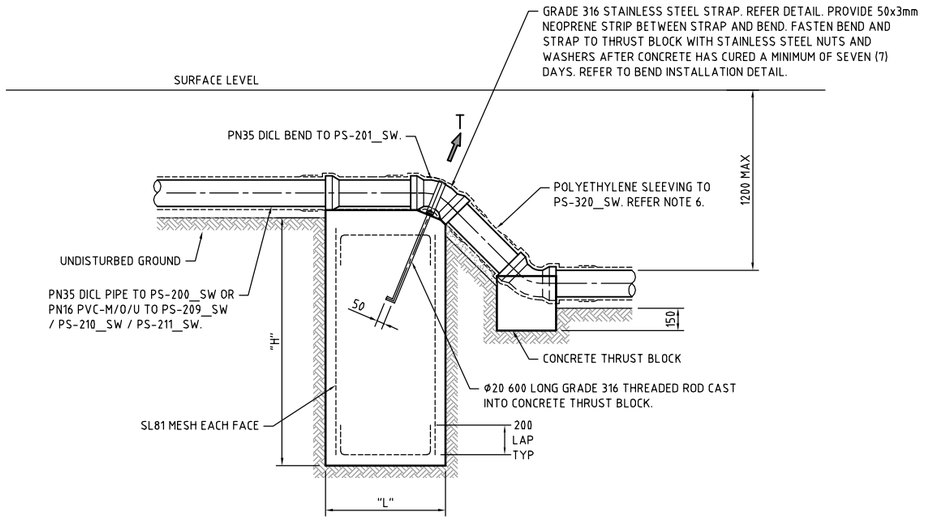
1113

ISSUE	DATE
B	29\02\12

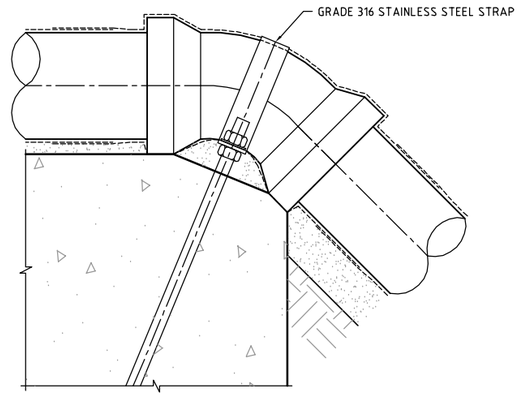
OPENED DATE :- Mar 23, 2012 - 9:48am LOCATION PATH:- G:\21\20932\CADD\Drawings\DTC-1113.dwg

A1

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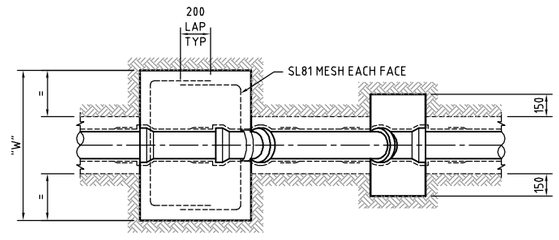
THRUST BLOCK FOR DN100 & DN150 VERTICAL BENDS
ELEVATION
SCALE 1:20



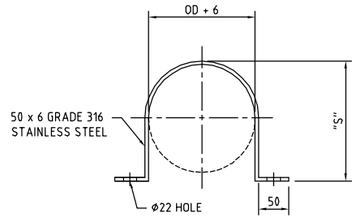
BEND INSTALLATION DETAIL
SCALE 1:5

NOTES:

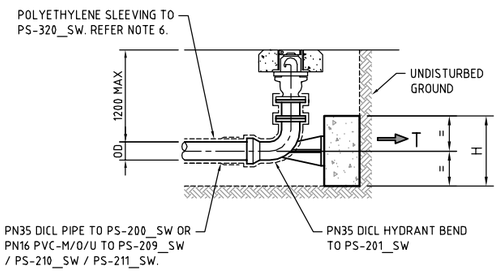
1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOUL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES.
5. DO NOT USE THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP<50KPa.
6. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320_SW.
7. CONCRETE SHALL BE CLASS N25 TO PS-357_SW. SLUMP SHALL BE IN THE RANGE 80mm - 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
8. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
9. CONCRETE SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa OR BE CURED FOR A MINIMUM OF 28 DAYS PRIOR TO APPLICATION OF THRUST LOADS.
10. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.



THRUST BLOCK FOR DN100 & DN150 VERTICAL BENDS
PLAN
SCALE 1:20



ANCHOR STRAP DETAIL
SCALE 1:5



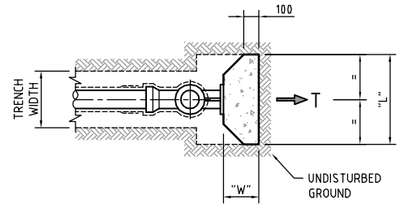
THRUST BLOCK FOR HYDRANT BEND
UNRESTRICTED AREAS - ELEVATION
SCALE 1:20

MINIMUM THRUST BLOCK AREAS & DIMENSIONS FOR VERTICAL BENDS (m^2)

DN	OD	VERTICAL BEND	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	H	L	W	S	CONCRETE VOLUME
(mm)	(mm)	(degrees)	(m)	(m)	(kN)	(mm)	(mm)	(mm)	(mm)	(m^3)
100	122	11.25	120	150	3.4	700	250	1000	150	0.175
100	122	22.5	120	150	6.7	1000	350	1000	150	0.350
100	122	45	120	150	13.2	1100	600	1000	150	0.660
150	177	11.25	120	150	7.1	1200	300	1000	200	0.360
150	177	22.5	120	150	14.1	1550	500	1000	200	0.775
150	177	45	120	150	27.7	1650	800	1000	200	1.320

THRUST BLOCK AREAS & DIMENSIONS FOR HYDRANT BENDS (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	W	H	L	REQUIRED BEARING AREA
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(mm)	(mm)	(mm)	(m^2)
100	122	120	150	17.2	50	450	450	800	0.344
100	122	120	150	17.2	100	250	450	450	0.172
100	122	120	150	17.2	200	250	350	450	0.086
150	177	120	150	36.2	50	750	500	1500	0.724
150	177	120	150	36.2	100	400	500	750	0.362
150	177	120	150	36.2	200	250	400	500	0.181



THRUST BLOCK FOR HYDRANT BEND
UNRESTRICTED AREAS - PLAN
SCALE 1:20

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LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
A	ORIGINAL ISSUE	PJG	31/01/12

DEEMED TO COMPLY DRAWINGS

THRUST BLOCK DETAILS
DICL AND PVC WATER MAINS DN100 & DN150
VERTICAL BENDS AND HYDRANT BENDS

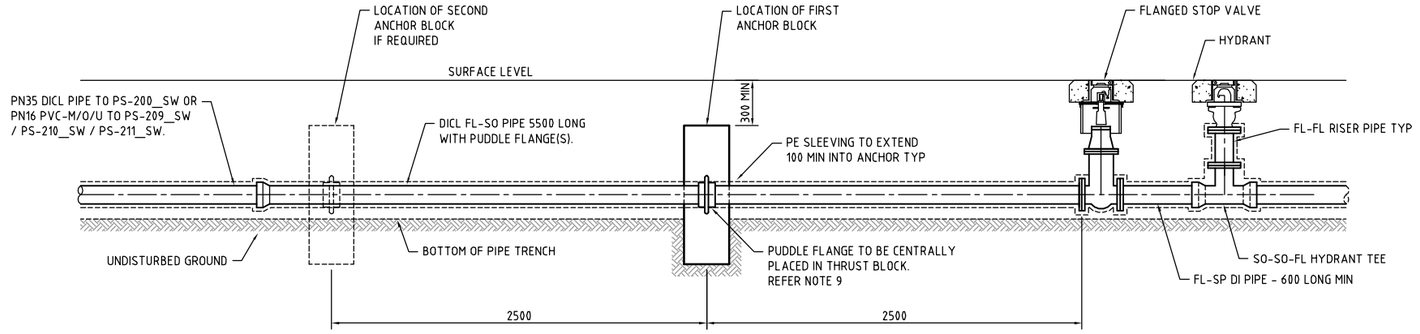
DTC
1114

ISSUE	DATE
A	31/01/12

OPENED DATE :- Mar 23, 2012 - 9:51am LOCATION PATH:- G:\21\20932\CADD\Drawings\DTC-1114.dwg

A1

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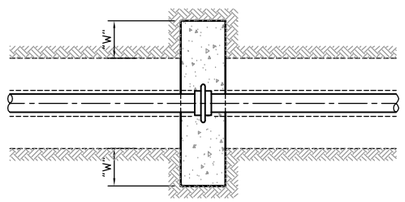


STOP VALVE THRUST BLOCKS
ELEVATION
SCALE 1:20

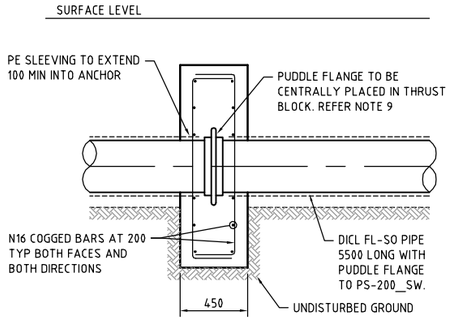
THRUST BLOCK AREAS & DIMENSIONS FOR STOP VALVES (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST	SOIL AHBP	REQUIRED BEARING AREA	NUMBER ANCHORS	H	W
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)		(mm)	(mm)
100	122	120	150	17.2	50	0.344	1	200	300
100	122	120	150	17.2	100	0.172	1	200	200
100	122	120	150	17.2	200	0.086	1	200	200
150	177	120	150	36.2	50	0.724	1	300	400
150	177	120	150	36.2	50	0.724	2	300	200
150	177	120	150	36.2	100	0.362	1	300	200
150	177	120	150	36.2	200	0.181	1	300	200
200	232	120	150	62.2	50	1.243	1	300	600
200	232	120	150	62.2	50	1.243	2	300	300
200	232	120	150	62.2	100	0.622	1	300	300
200	232	120	150	62.2	200	0.311	1	300	200
250	286	120	150	94.5	50	1.889	1	300	900
250	286	120	150	94.5	50	1.889	2	300	400
250	286	120	150	94.5	100	0.945	1	300	400
250	286	120	150	94.5	100	0.945	2	300	200
250	286	120	150	94.5	200	0.472	1	300	200
300	345	120	150	137.5	50	2.749	1	350	1200
300	345	120	150	137.5	50	2.749	2	350	600
300	345	120	150	137.5	100	1.375	1	350	600
300	345	120	150	137.5	100	1.375	2	350	300
300	345	120	150	137.5	200	0.687	1	350	300

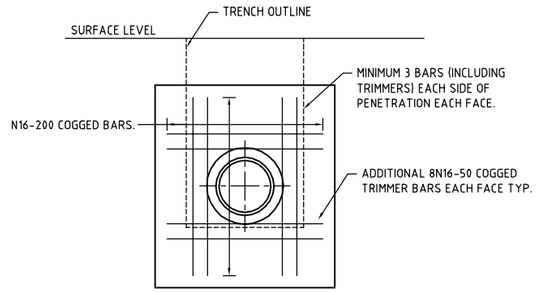
NOTE: SINGLE THRUST BLOCK TO BE USED WHEREVER POSSIBLE.



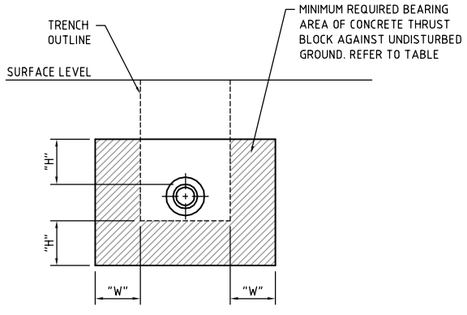
DETAILS OF AREA TO BE CAST AGAINST
UNDISTURBED GROUND - PLAN
SCALE 1:20



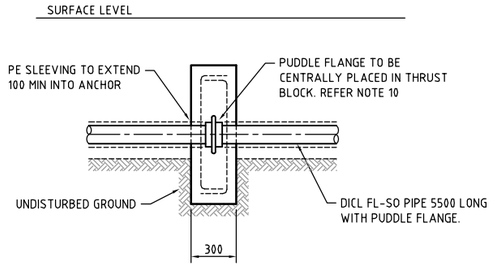
THRUST BLOCK DETAILS FOR DN200,
DN250 AND DN300 STOP VALVES
SCALE 1:20



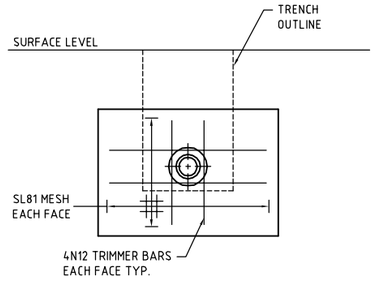
DN200, DN250 AND DN300 VALVE
THRUST BLOCK REINFORCEMENT DETAIL
SCALE 1:20



DETAILS OF AREA TO BE CAST AGAINST
UNDISTURBED GROUND - ELEVATION
SCALE 1:20



THRUST BLOCK DETAILS FOR DN100
AND DN150 STOP VALVES
SCALE 1:20



DN100 AND DN150 VALVE
THRUST BLOCK REINFORCEMENT DETAIL
SCALE 1:20

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL.
5. DO NOT USE THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP<50KPa.
6. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320__SW.
7. ALL DICL PIPES SHALL BE TO FLANGE CLASS U.N.O ALL DICL FITTINGS SHALL BE CLASS PN35.
8. DI FLANGES SHALL BE TO AS4087 CLASS 16. BOLTS AND WASHERS SHALL BE GRADE 316SS.
9. PUDDLE FLANGE SHALL BE FACTORY FITTED BOLT ON FULL THRUST RESTRAINT TYPE IN ACCORDANCE WITH AS2280.
10. CONCRETE SHALL BE CLASS N25 TO PS-357__SW SLUMP SHALL BE IN THE RANGE OF 80mm TO 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
11. ALL REINFORCEMENT SHALL BE TO AS4671 SHAPE-D, STRENGTH GRADE= 500MPa, DUCTILITY CLASS-N.
12. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
13. CONCRETE SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa OR BE CURED FOR 28 DAYS PRIOR TO APPLICATION OF THRUST LOADS.
14. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.
15. DO NOT LOCATE STOP VALVES, HYDRANTS OR ANCHOR BLOCKS IN DRIVEWAYS.
16. NUMBER AND LOCATION OF ANCHOR BLOCKS SHALL BE RECORDED ON WORK AS CONSTRUCTED DRAWINGS.

Sydney WATER

APPROVED

PETER GILLMAN

MANAGER E & ES

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ENGINEERING & ENVIRONMENTAL SERVICES

LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
B	THRUST BLOCK DIMENSIONS REVISED	PJG	29\02\12
A	ORIGINAL ISSUE	PJG	31/01/12

DEEMED TO COMPLY DRAWINGS

ANCHORAGE DETAILS
DICL AND PVC WATER MAINS ≤ DN300
STOP VALVES

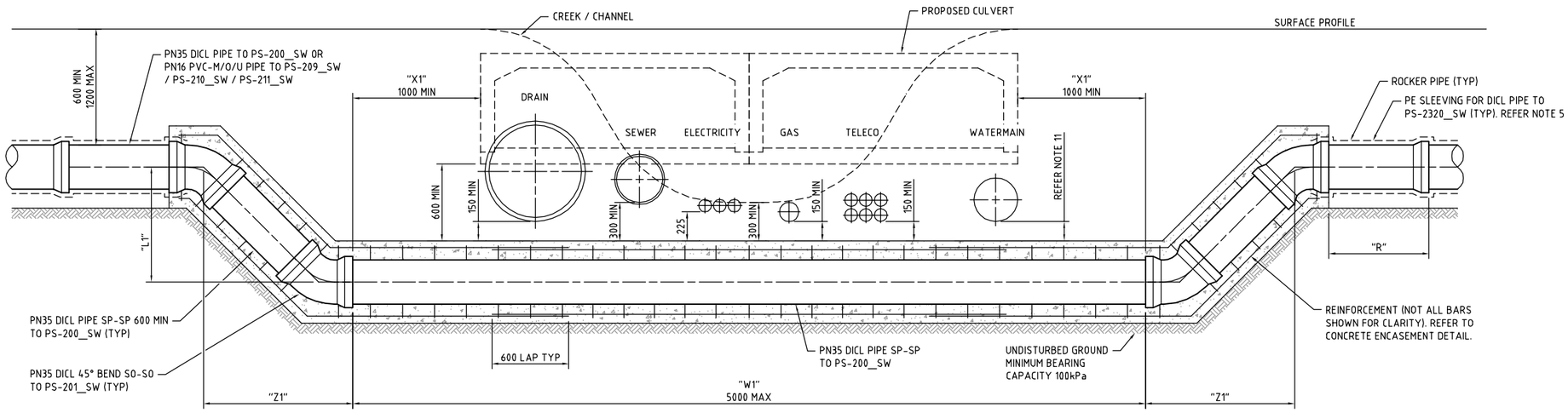
DTC
1115

ISSUE	DATE
B	29\02\12

OPENED DATE :- Mar 23, 2012 - 9:56am LOCATION PATH:- G:\21\20932\CADD\Drawings\DTC-1115.dwg

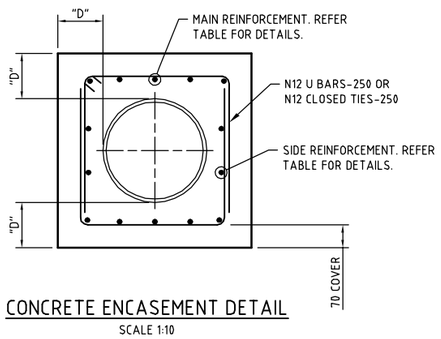
A1

THIS DRAWING MAY ONLY BE USED IN THE COURSE OF AND FOR THE PURPOSE OF CREATING SYDNEY WATER ASSETS. USE THIS DRAWING WITH CARE. THE USER IS RESPONSIBLE FOR THE CORRECT APPLICATION OF THIS DRAWING.



TYPICAL RESTRICTED ACCESS CROSSING - TYPE 1
TRENCHED DICL PIPE CONCRETE ENCASED

SCALE 1:20



CONCRETE ENCASEMENT DETAIL

SCALE 1:10

CONCRETE ENCASEMENT REINFORCEMENT DETAILS FOR 45° VERTICAL BENDS			
MAIN SIZE	MAIN REO (T&B)	SIDE REO (EF)	"D"
DN100	3N20	NIL	150
DN150	4N20	NIL	200
DN200	5N20	NIL	250
DN250	5N20	2N16	300
DN300	5N24	2N16	300

REFER NOTE 3

ROCKER PIPE DIMENSIONS		
PIPE SIZE (DN)	"R" MIN	"R" MAX
150	300	450
200	400	600
250	500	750
300	600	900

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. CROSSING TYPE 1 NOT SUITABLE FOR INSTALLATION IN AGGRESSIVE SOILS.
3. THRUST RESTRAINT PROVIDED BY CONCRETE ENCASEMENT. ULTIMATE LIMIT STATE BASED ON TEST PRESSURE OF 150m HEAD OF WATER. THIS DESIGN MAY ONLY BE USED WHERE DIMENSION "L1" IS LESS THAN 2500.
4. SHOW DIMENSIONS "W", "X1", "Z1", "L1" IN DESIGN AND WORK AS CONSTRUCTED DRAWINGS.
5. TAPE 700 LONG PE SLEEVING TO FITTING 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE.
6. CONCRETE TO BE NORMAL CLASS N25 TO PS-357_SW. SLUMP SHALL BE 80mm - 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
7. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
8. ALL REINFORCEMENT SHALL BE TO AS4671 SHAPE - D, STRENGTH GRADE = 500MPa, DUCTILITY CLASS - N.
9. DO NOT APPLY ANY THRUST LOADS FOR AT LEAST 28 DAYS AFTER POURING CONCRETE.
10. FORM ALL CONSTRUCTION JOINTS. SCABBLE JOINT TO EXPOSE AGGREGATE TO 5mm DEPTH AND WIRE BRUSH CLEAN PRIOR TO FORMING. SOAK EXISTING CONCRETE SURFACE WITH WATER AND REMOVE ALL EXCESS WATER IMMEDIATELY PRIOR TO PLACING CONCRETE.
11. WHEN CROSSING UNDER A WATER MAIN ≤ DN375 THE MINIMUM VERTICAL CLEARANCE SHALL BE 150mm. WHEN CROSSING UNDER A WATER MAIN >DN375 THE MINIMUM VERTICAL CLEARANCE SHALL BE 500mm.
12. THE DESIGNER SHALL LOCATE ALL EXISTING AND PROPOSED SERVICES AND RECORD DETAILS ON THE DESIGN DRAWINGS.
13. THE CONSTRUCTOR SHALL LOCATE AND CONFIRM THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION OF THE CROSSING.
14. CONSTRUCTOR TO SUPPORT ALL EXISTING SERVICES DURING CONSTRUCTION OF CROSSING.

Sydney WATER

APPROVED

PETER GILLMAN

MANAGER E & ES

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ENGINEERING & ENVIRONMENTAL SERVICES

LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
A	ORIGINAL ISSUE	PJG	31/01/12

DEEMED TO COMPLY DRAWINGS

CROSSINGS UNDER OBSTRUCTIONS
WATER MAINS ≤ DN300
TYPE 1 - TRENCHED INSTALLATION
DICL CONCRETE ENCASED

DTC

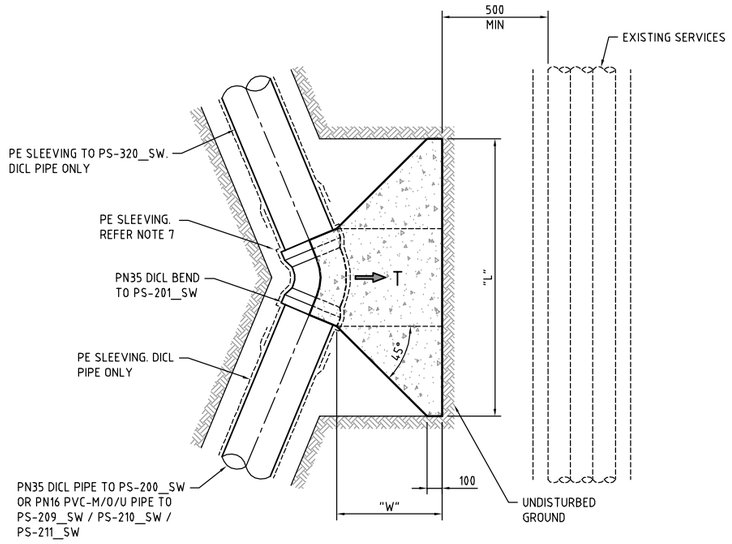
1124

ISSUE	DATE
A	31/01/12

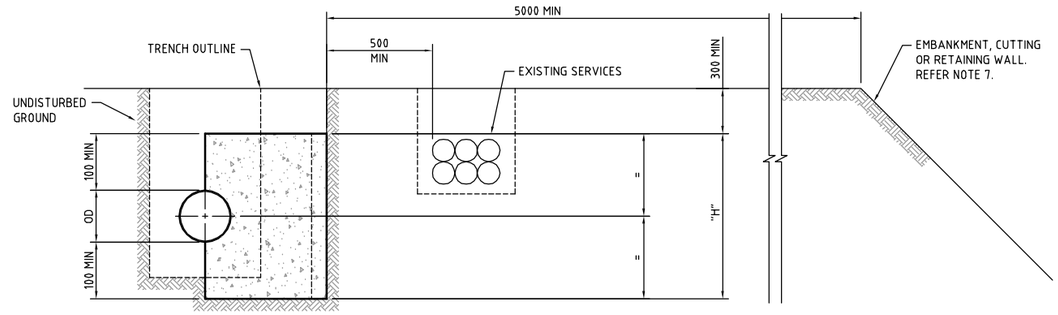
OPENED DATE :- Mar 23, 2012 - 9:57am LOCATION PATH:- G:\21\20932\CADD\Drawings\DTC-1124.dwg

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THIS DRAWING MAY ONLY BE USED IN THE COURSE OF AND FOR THE PURPOSE OF CREATING SYDNEY WATER ASSETS. USE THIS DRAWING WITH CARE. THE USER IS RESPONSIBLE FOR THE CORRECT APPLICATION OF THIS DRAWING.



HORIZONTAL BEND THRUST BLOCK TYPE 1
PLAN
SCALE 1:20



HORIZONTAL BEND THRUST BLOCK TYPE 1
ELEVATION
SCALE 1:20

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. REFER TO DTC/1111 FOR TYPE 2 THRUST BLOCKS FOR HORIZONTAL BENDS..
4. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
5. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL.
6. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP<50KPa.
7. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING. WITHIN 5m OF AN EMBANKMENT, CUTTING OR RETAINING WALL.
8. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320__SW.
9. CONCRETE SHALL BE CLASS N25 TO PS-357__SW. SLUMP SHALL BE IN THE RANGE 80mm - 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
10. DO NOT APPLY ANY THRUST LOAD FOR AT LEAST 14 DAYS AFTER POURING THRUST BLOCKS.
11. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.

THRUST BLOCK AREAS & DIMENSIONS FOR 11.25° HORIZONTAL BENDS - TYPE 1 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)
100	122	120	150	3.4	50	0.067	250	350	500
150	177	120	150	7.1	50	0.142	300	400	600
200	232	120	150	12.2	50	0.244	300	450	700
250	286	120	150	18.5	50	0.370	300	500	800
300	345	120	150	26.9	50	0.539	400	600	1000

THRUST BLOCK AREAS & DIMENSIONS FOR 22.5° HORIZONTAL BENDS - TYPE 1 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)
100	122	120	150	6.7	50	0.134	250	350	500
150	177	120	150	14.1	50	0.282	350	450	700
200	232	120	150	24.3	50	0.485	450	500	1000
250	286	120	150	36.9	50	0.737	450	750	1000
300	345	120	150	53.6	50	1.073	500	900	1200

THRUST BLOCK AREAS & DIMENSIONS FOR 45° HORIZONTAL BENDS - TYPE 1 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)
100	122	120	150	13.2	50	0.263	300	450	650
150	177	120	150	27.7	50	0.554	400	600	950
150	177	120	150	27.7	100	0.277	300	400	700
200	232	120	150	47.6	50	0.952	500	800	1200
200	232	120	150	47.6	100	0.476	400	500	1000
250	286	120	150	72.3	50	1.446	600	1000	1500
250	286	120	150	72.3	100	0.723	400	700	1100
300	345	120	150	105.2	50	2.104	REFER TO TYPE 2		
300	345	120	150	105.2	100	1.052	450	850	1250

THRUST BLOCK AREAS & DIMENSIONS FOR 90° HORIZONTAL BENDS - TYPE 1 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)
100	122	120	150	24.3	50	0.486	400	600	900
100	122	120	150	24.3	100	0.243	300	400	650
150	177	120	150	51.2	50	1.023	550	800	1300
150	177	120	150	51.2	100	0.512	350	600	900
200	232	120	150	87.9	50	1.758	REFER TO TYPE 2		
200	232	120	150	87.9	100	0.879	450	700	1300
200	232	120	150	87.9	200	0.440	250	500	900
250	286	120	150	133.6	50	2.672	REFER TO TYPE 2		
250	286	120	150	133.6	100	1.336	REFER TO TYPE 2		
250	286	120	150	133.6	200	0.668	300	650	1100
300	345	120	150	194.4	50	3.888	REFER TO TYPE 2		
300	345	120	150	194.4	100	1.944	REFER TO TYPE 2		
300	345	120	150	194.4	200	0.972	350	750	1300

Sydney WATER

APPROVED

PETER GILLMAN
MANAGER E & ES

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LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
A	ORIGINAL ISSUE	PJG	31/01/12

DEEMED TO COMPLY DRAWINGS

THRUST BLOCK DETAILS
DICL AND PVC WATER MAINS ≤ DN300
HORIZONTAL BENDS TYPE 1

DTC
1110

ISSUE	DATE
A	31/01/12

OPENED DATE :- Mar 23, 2012 - 9:50am LOCATION PATH:- G:\21\20932\CADD\Drawings\DTC-1110.dwg

A1 0 10 20 30 40 50 METRES

DEVELOPER CONTRACT PLAN

M.G.A. ZONE 56 M.G.A. DATUM: GDA2020

1. DESIGNER AND WATER SERVICING COORDINATOR:
   QALCHEK PTY LTD (CERTIFIED No.289)
   UNIT 2, LEVEL 1, 15–17 DAVID RD, EMU PLAINS NSW 2750
   PH. No. (02) 4722 8181
   FOR:
   MIRVAC PTY LTD
   LEVEL 28, 200 GEORGE STREET, SYDNEY 2000
   PH. No. (02) 9080 8053
2. THE PROPOSED WORKS AND MATERIALS SHALL BE IN ACCORDANCE WITH THE SEWERAGE CODE OF AUSTRALIA WSA 02–2002–2.2 SYDNEY WATER EDITION VERSION 4 (2017) INCLUDING THE SYDNEY WATER SUPPLEMENT & APPENDICES. THE CONTRACTOR MUST HAVE A COPY OF THESE ON SITE AT ALL TIMES.
3. ALL STRUCTURES TO BE CONSTRUCTED TO PROPOSED FINISHED SURFACE LEVELS. ALL LEVELS REFER TO PROPOSED FINISHED SURFACE LEVEL. SEWER CONSTRUCTOR TO LIASE WITH ROAD AND/OR CIVIL CONTRACTOR TO VERIFY ALL LEVELS IN PARTICULAR IN OR ADJACENT TO ROADS. PROJECT SUPERVISOR/DESIGNER TO BE INFORMED OF ANY DISCREPANCIES.
4. ALL BUILDING LAYOUTS, FINISHED SURFACE LEVELS, STORMWATER INFORMATION, AND GENERAL CIVIL ENGINEERING DETAILS TAKEN FROM SBA ARCHITECTS MOD 4 ENGINEERING PLANS.
5. THE MINIMUM NUMBER OF FIELD COMPACTION TESTS REQUIRED TO SATISFY THE SEWERAGE CODE OF AUSTRALIA ARE: IF SAND/CEMENT BACKFILL IS USED AT ROAD CROSSINGS, THE NUMBER OF TRENCHFILL COMPACTION TESTS MAY BE REDUCED BY 0 IF THE CONSTRUCTOR PROVIDES DOCUMENTATION FROM THEM SELF AND THE TESTING COMPANY STATING EXTENTS AND COMPLIANCE.

   PIPE EMBEDMENT ZONE: 4 TESTS REQUIRED (SEE NOTES A & B)

   TRENCH FILL ZONE (TRAFFICABLE): 64 TESTS REQUIRED

   TRENCH FILL ZONE (NON TRAFFICABLE): 19 TESTS REQUIRED

   TRENCH FILL ZONE (MAINTENANCE STRUCTURES): 28 TESTS REQUIRED

   TRENCH FILL ZONE – TOTAL: 115 TESTS REQUIRED

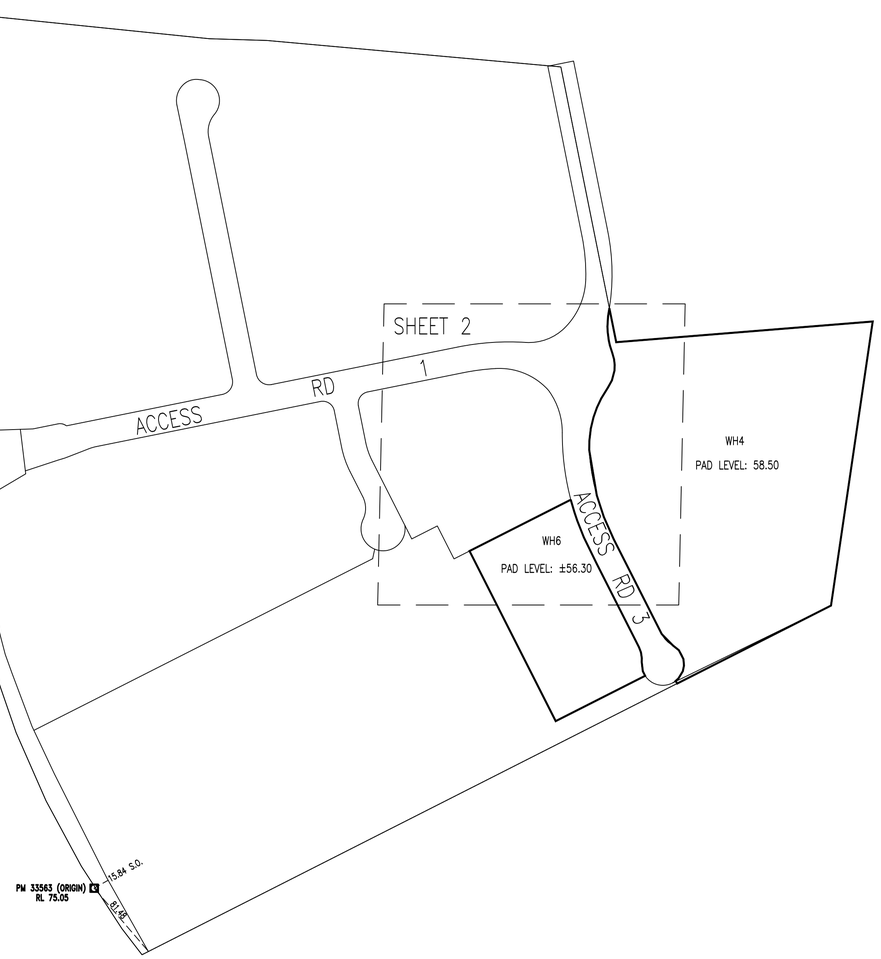
   PIPE EMBEDMENT COMPACTION
   NUMBER OF TESTS TO BE VERIFIED BY ACCREDITED FIELD TESTER. NUMBER ABOVE ARE A GUIDE ONLY.)

   A). FOR RETICULATION SEWERS (UP TO DN300), NO COMPACTION TEST IS REQUIRED PROVIDED THAT 7mm, 10mm OR 14mm NOMINAL SINGLE–SIZE AGGREGATES ARE PLACED, SPREAD, AND TAMPED IN LAYERS NOT GREATER THAN 200mm TO FILL UP ALL THE VOIDS AROUND THE PIPE. SYDNEY WATER APPROVAL IS REQUIRED FOR SEWERS LARGER THAN DN300 PRIOR TO CONSTRUCTION. THE CONSTRUCTOR IS REQUIRED TO PROVIDE EVIDENCE THAT THE CORRECT SIZE AGGREGATE HAS BEEN USED OVER THE ENTIRE TRENCH AREA. THIS MAY BE IN THE FORM OF DELIVERY DOCKETS.

   B). IF EMBEDMENT MATERIAL OTHER THAN SINGLE–SIZE AGGREGATES ARE USED, COMPACTION TESTS EITHER IN THE FORM OF PRE–QUALIFICATION TESTING OR IN SITU TESTING AS NOMINATED IN THE CODE SHALL BE UNDERTAKEN FOR ALL SEWERS.

   NOTE: A HIGHER LEVEL OF COMPACTION MAY BE REQUIRED TO COMPLY. THE CONSTRUCTOR WILL HAVE TO LIASE WITH THE CIVIL CONTRACTOR/SUPERINTENDENT TO ENSURE TESTING COMPLIES WITH COUNCIL SPECIFICATION.
6. ALL LEVELS ELECTRONICALLY GENERATED. NO LEVEL BOOK AVAILABLE.
7. THE REVIEW OF ENVIRONMENTAL FACTORS IS AN INTEGRAL PART OF THIS DESIGN AND MUST BE READ IN CONJUNCTION WITH THIS PLAN.
8. PRIOR TO ANY EXCAVATION THE CONSTRUCTOR MUST HAVE A CURRENT COPY OF THE UNDERGROUND SERVICES REPORT WHICH IS TO BE READ IN CONJUNCTION WITH THIS PLAN.
9. SERVICES SHOWN FROM 'DIAL BEFORE YOU DIG' SERVICES SEARCH ARE INDICATIVE ONLY. AUTHENTICITY AND ACCURACY SHOULD NOT BE PRESUMED AND SHOULD BE CONFIRMED BY THE CONSTRUCTOR PRIOR TO ANY EXCAVATION WORKS ON SITE.
10. BUILDING OVER/ADJACENT TO SEWER – CONDITIONS MAY APPLY. REFER TO QALCHEK FOR DETAILS.
11. ALL EXCAVATION, SHORING EXCAVATION AND STABILITY OF ADJACENT STRUCTURES/SERVICES/DWELLINGS IS THE RESPONSIBILITY OF THE CONSTRUCTOR. USE OF SHORING BOXES IS NOT A FORM OF STABILITY CONTROL, NEITHER IS SAND CEMENT BACKFILL OR CONCRETE ENCASEMENT.
12. ALL JUNCTIONS FOR THE PCS'S ARE TO BE LOCATED 0.7m MIN. OFF THE DOWNSTREAM PROPERTY BOUNDARY (CURRENT AND FUTURE) OR DOWNSTREAM EASEMENT BOUNDARY OR 1.0m MIN. OFF THE DOWNSTREAM STRUCTURE.
    DENOTES STANDARD PCS CONNECTION (REFER DTC–2120 ISSUE A DATE 18.03.15)
13. IT IS THE CONSTRUCTORS RESPONSIBILITY TO PROVIDE THE CHAINAGES FOR THE PCS's, THE LENGTH OF THE PCS's, THE TYPE OF CONNECTION USED, THE LENGTH OF THE IO AND THE INVERT LEVEL AT THE PCP (IF APPLICABLE) TO THE WSC FOR WORK AS CONSTRUCTED PURPOSES.
14. THE TOTAL LENGTH OF THE DN225 PCS's EXCLUDING RISERS IS APPROXIMATELY 1.20m. PCS's TO HAVE MINIMUM STIFFNESS RATING OF SN10. JOINTING TO BE SOLVENT WELDED.
15. CONSTRUCTOR TO ENSURE THAT WORKS ARE CONSTRUCTED IN ACCORDANCE WITH SYDNEY WATER'S DEEMED TO COMPLY DRAWINGS:
    – FOR ALL MH'S DTC–2000 (ISSUE C 18.03.15), DTC–2220 (ISSUE D 18.03.15), DTC–2221 (ISSUE B 01.03.13), DTC–2222 (ISSUE C 18.03.15), DTC–2223 (ISSUE B 18.03.15)
    – FOR MH'S WHERE DEPTH TO IL IS 1.2m–10m, SEWERS ≤DN450 USE DTC–2200 (ISSUE F 18.03.15)
    – FOR MH'S WHERE DEPTH TO IL IS 1.6m–10m, SEWERS DN500–DN750 USE DTC–2201 (ISSUE E 18.03.15)
    – FOR MH'S WHERE DEPTH TO IL IS 1.2m–6m, SEWERS ≤450 USE DTC–2202 (ISSUE E 18.03.15)
    – FOR MH'S WHERE DEPTH TO IL IS 1.2m–6m, SEWERS ≤DN300 IN A RESIDENTIAL AREA NOT SUBJECT TO VEHICULAR WHEEL LOADS USE DTC–2203 (ISSUE B 18.03.15)
16. PIPES TO BE CONCRETE ENCASED SHOWN ACCORDINGLY:– REFER TO SEW–1205–V

    EACH SECTION OF PIPE SHALL BE CONCRETE ENCASED IN THE FOLLOWING MANNER
    EACH PIPE JOINT REQUIRES A 12mm THICK COMPRESSIBLE MEMBRANE TO BE INSERTED
    EACH PIPE JOINT IS REQUIRED TO HAVE 2 R16 DOWEL PINS, ONE EITHER SIDE OF THE PIPE,
    DOWEL PINS ARE TO BE CENTRALLY PLACED IN CONCRETE WITH A MINIMUM BAR LENGTH OF 600mm
    THE DOWEL PIN IS TO BE EITHER GALVANISED OR STAINLESS STEEL.
    AT THE ENDS OF EACH SECTION OF ENCASEMENT A 600mm ROCKER PIPE IS TO BE INSTALLED.



LOCALITY SKETCH & DRAINAGE LIMIT PLAN

(NOT TO SCALE)

PLAN DRAWN DATE: 13.01.2023 VERSION: B SHEET 1 OF 3 SHEETS

Qalchek Pty Ltd
FOR CONSTRUCTION
IN ACCORDANCE WITH
PLAN 198855WW ISSUE B
DATE 17 / 01 / 2023

No.	AMENDMENT DESCRIPTION	BY	DATE
B	UPDATING NOTE 14	CL	13.01.23
A	ISSUED FOR APPROVAL	CL	22.11.22

PLAN TO BE READ IN CONJUNCTION WITH CURRENT SYDNEY WATER STANDARDS
SYDNEY WATER CORPORATION

PRIOR TO COMMENCEMENT OF EXCAVATION FOR PROPOSED AND EXISTING SERVICES CONTACT :-
DIAL BEFORE YOU DIG Ph. 1100
ELECTRICITY Ph. 041288141299
GAS Ph.
TELECOMMUNICATIONS Ph. 041288141299
SYDNEY WATER Ph. 132 092
GIVING AT LEAST 48 HOURS NOTICE.

UTILITIES

TYPE	DATE	REF.	TYPE	DATE	REF.
PROP RCWATER: RCWater– – – – –RW	04.04.22	DESIGN			
PROP WATER: DN100 Water – – –	04.04.22	DESIGN			
PROP ELECTRICAL: E – – – – – E	12.05.22	ENG.			
PROP STORMWATER: SWD – – – SWD	12.05.22	ENG.			
PROP TELSTRA: TEL – – – – – TEL	12.05.22	ENG.			
PM 33563 (ORIGIN)	21.12.21	SCIMS			

WORK AS CONSTRUCTED CERTIFICATION

DEVELOPER . . . . . .
WATER SERVICE CO-ORDINATOR . . . . . .
CONSTRUCTOR . . . . . .
COMPLETED . . . . . W.A.C. PREPARED . . . . . .

DESIGNER . . . . . .

I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS.

PIPE SCHEDULE

SIZE DN	TYPE	CLASS	LENGTH	PIPE JOINING METHOD / NOTES
225	PVCP	SN10	295.85	RRJ
225	U.P.V.C.	SN10	1.20	SEE NOTE 12-14

DESIGN HEAD . . . m

NO BOUNDARY TRAPS REQUIRED.

AUSTRALIAN HEIGHT DATUM

SCALES
PLAN 1:500 SECTION HOR. 1:500 VERT. 1:125
CROSS SECTIONS – NATURAL
LENGTHS, DEPTHS & LEVELS ARE IN METRES.

NO AMENDMENTS ARE TO BE MADE TO THIS PLAN WITHOUT REFERENCE TO SYDNEY WATER. THIS PLAN IS NOT NECESSARILY UP TO DATE OR CORRECT AND SYDNEY WATER ACCEPTS NO RESPONSIBILITY.

U.B. DIRECTORY MAP 225/N1 41st SYD Ed.

SHEET 1 OF 3 File No. N/A

Sydney WATER SYDNEY WATER CORPORATION

Case No. 198855WW

DRAINS TO
MAMRE ROAD WASTEWATER NETWORK
WESTERN SYDNEY AEROTROPLIS
GROWTH AREA

FILE LOCATION: PM30849WW–B DESIGNED: C.L. DRAFTED: C.L. VERIFIED: D.L. REVIEWED: D.L. APPROVED: D.L. ISSUED: 13.01.2023

A1F

0 10 20 30 40 50 METRES

DEVELOPER CONTRACT PLAN

WAREHOUSE 4
PAD LEVEL 58.50

ACCESS

RD

3

1.

ACCESS

RD

3

WAREHOUSE 6
MIN SLAB LEVEL
55.30

ACCESS

RD

1

PROPOSED M.H. WITH DN225 INLET.
ACTION ON CASE No. 191456WW

DN225 PP SEWER ACTIONED
UNDER CN191456WW

WAREHOUSE 3
MIN. SLAB LEVEL 48.30

WAREHOUSE 7

LOT SERVICED UNDER CN198860WW

No.	AMENDMENT DESCRIPTION	BY	DATE
B	UPDATING NOTE 14	CL	13.01.23
A	ISSUED FOR APPROVAL	CL	22.11.22

Qalchek Pty Ltd
FOR CONSTRUCTION
IN ACCORDANCE WITH
PLAN 198855WW ISSUE B
DATE 17 / 01 / 2023

WORK AS CONSTRUCTED CERTIFICATION

DEVELOPER . . . . . .
W.S.C. . . . . .
CONSTRUCTOR . . . . . .
COMPLETED . . . . . .
W.A.C. PREPARED . . . . . .
DESIGNER . . . . . .

I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS

SYDNEY WATER CORPORATION

Sydney WATER

Case No. 198855WW | SHT 2 OF 3 SHTS.

SYDNEY WATER CORPORATION

FOR DETAILS OF SERVICES SEE SHEET 1

FILE LOCATION: PM30849WW-B | DESIGNED: C.L. | DRAFTED: C.L. | VERIFIED: D.L. | REVIEWED: D.L. | APPROVED: D.L. | ISSUED: 13.01.2023

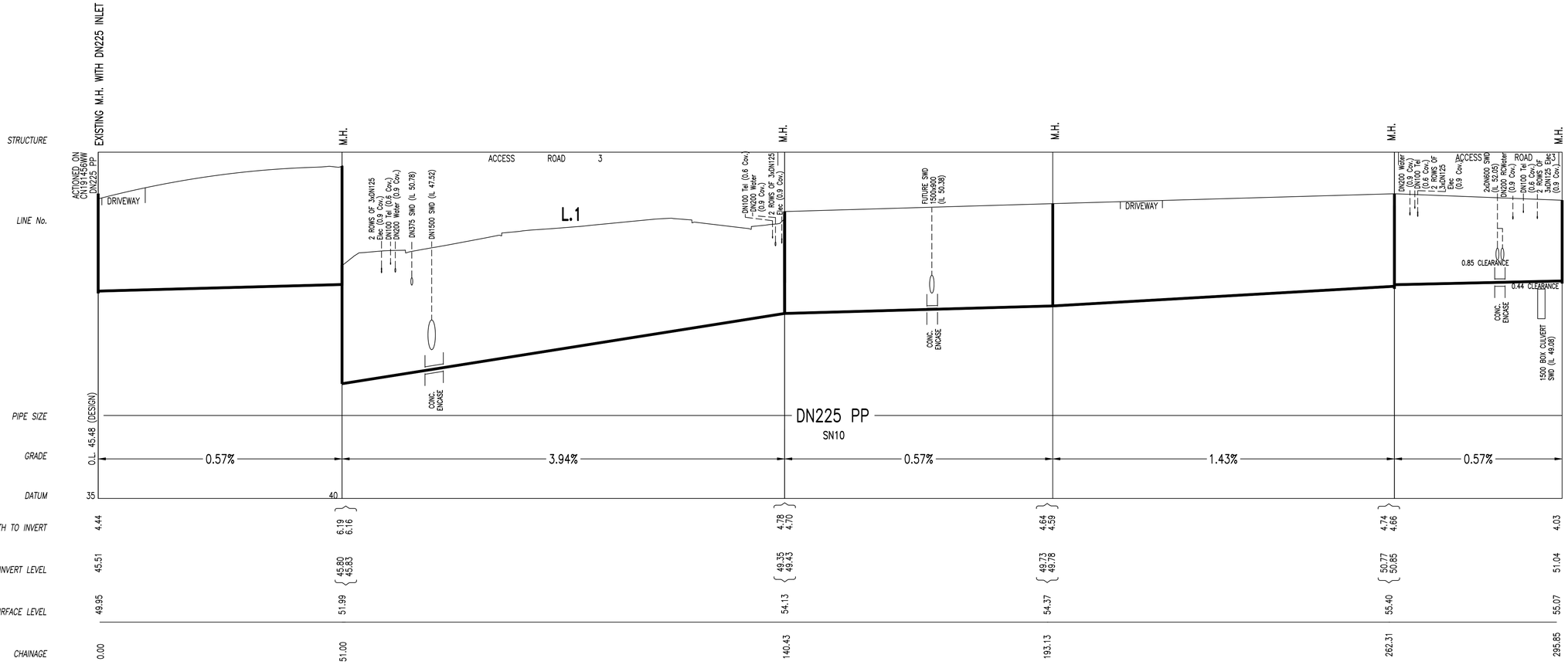
PLAN DRAWN DATE: 13.01.2023 VERSION: B

SHEET 2 OF 3 SHEETS

A1F

0 10 20 30 40 50 METRES

DEVELOPER CONTRACT PLAN



LINE No.	CHAINAGE	TYPE (M.H/M.S./M.C.)	DN RISER	CLASS OF COVER	MATERIAL (PVC-U, PE, PP, GRP, CAST IN SITU CONC, PRE-CAST CONC, OTHER -SPECIFY)	COMMENTS (BRAND/DTC No.ISSUE, DATE/NA, OTHER AS REQUIRED)
1	0.00	M.H.	1200	B	CONC	DTC-2200
1	51.00	M.H.	1200	B	CONC	DTC-2200
1	140.43	M.H.	1200	B	CONC	DTC-2200
1	193.13	M.H.	1200	B	CONC	DTC-2200
1	262.31	M.H.	1200	B	CONC	DTC-2200
1	295.85	M.H.	1200	D	CONC	DTC-2200 - CLASS D LID

No.	AMENDMENT DESCRIPTION	BY	DATE
B	UPDATING NOTE 14	CL	13.01.23
A	ISSUED FOR APPROVAL	CL	22.11.22

Qalchek Pty Ltd
FOR CONSTRUCTION
IN ACCORDANCE WITH
PLAN 198855WW ISSUE B
DATE 17 / 01 / 2023

WORK AS CONSTRUCTED CERTIFICATION

DEVELOPER . . . . . .
W.S.C. . . . . .
CONSTRUCTOR . . . . . .
COMPLETED . . . . . .
W.A.C. PREPARED . . . . . .

DESIGNER . . . . . .
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS

Sydney WATER
SYDNEY WATER CORPORATION

Case No. 198855WW | SHT 3 OF 3 SHTS.

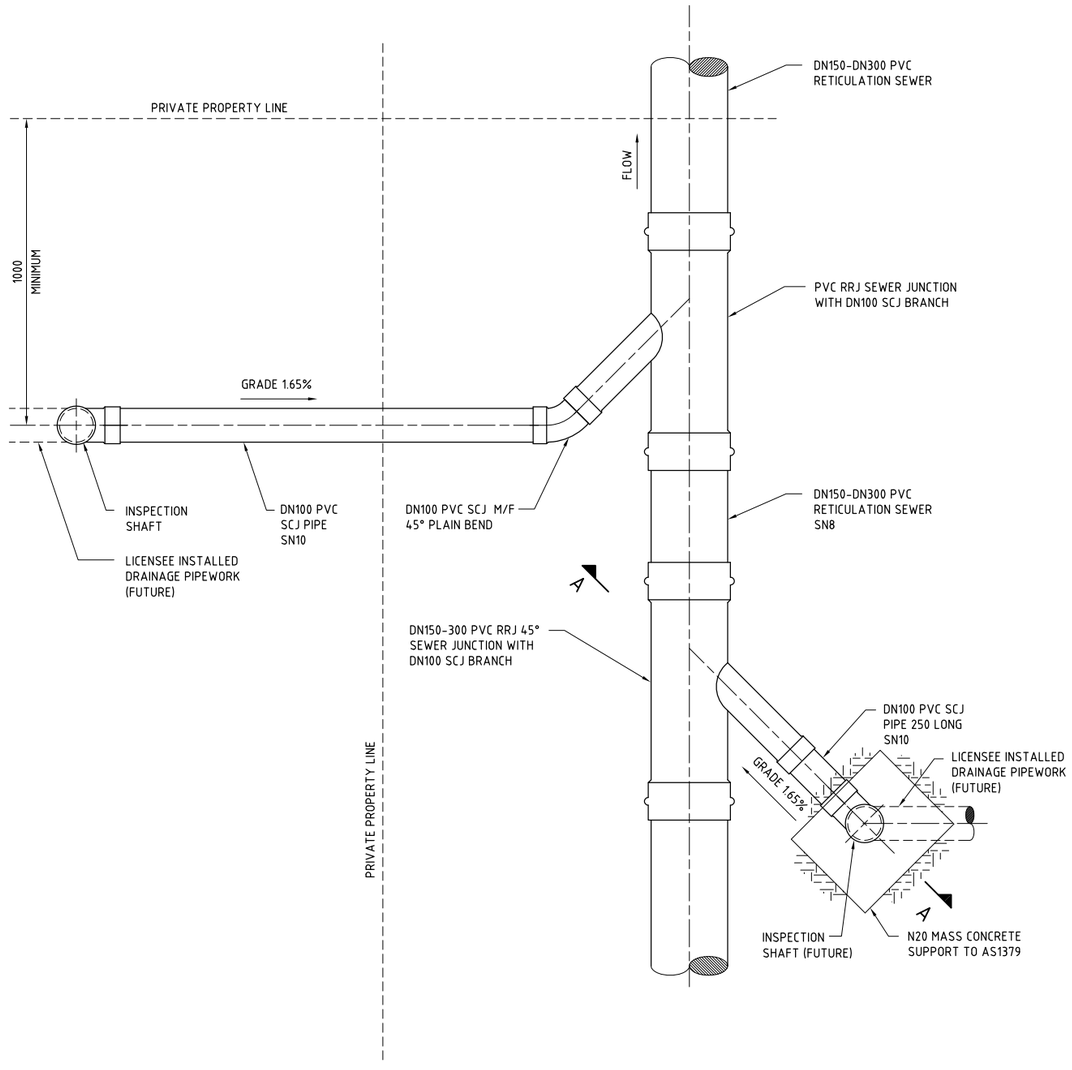
SYDNEY WATER CORPORATION
FOR DETAILS OF SERVICES SEE SHEET 1

FILE LOCATION: PM30849WW-B | DESIGNED: C.L. | DRAFTED: C.L. | VERIFIED: D.L. | REVIEWED: D.L. | APPROVED: D.L. | ISSUED: 13.01.2023

PLAN DRAWN DATE: 13.01.2023 VERSION: B SHEET 3 OF 3 SHEETS

A1

THIS DRAWING MAY ONLY BE USED IN THE COURSE OF AND FOR THE PURPOSE OF CREATING SYDNEY WATER ASSETS. USE THIS DRAWING WITH CARE. THE USER IS RESPONSIBLE FOR THE CORRECT APPLICATION OF THIS DRAWING.



PLAN

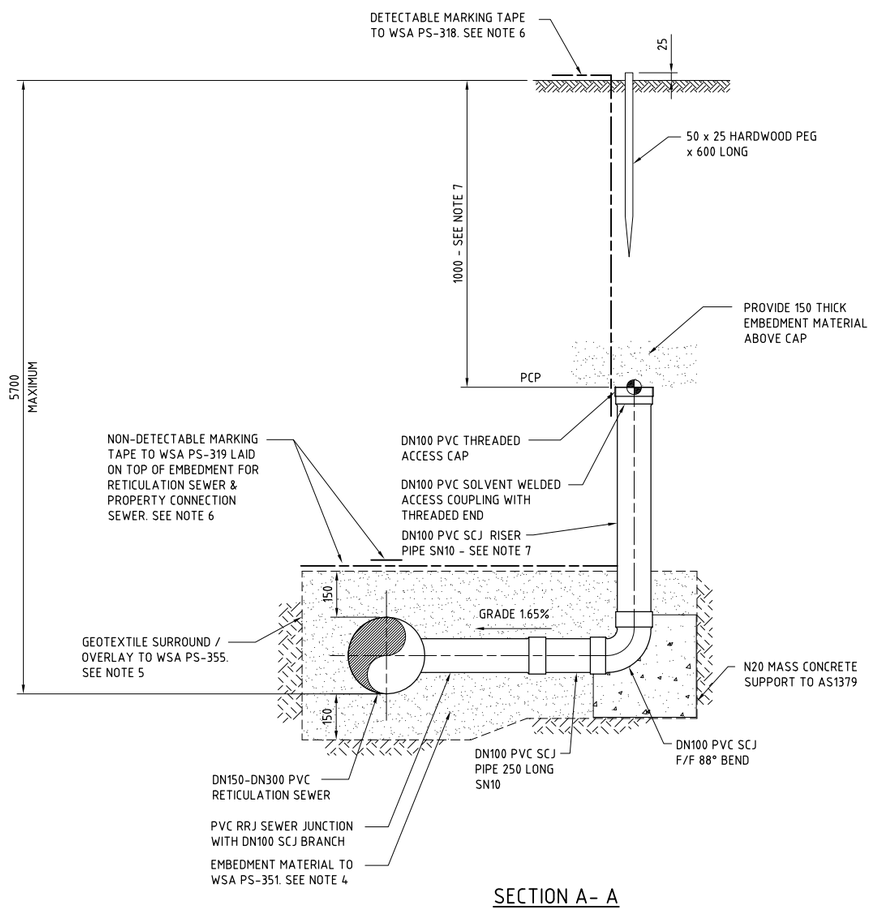
SCALE - 1:10

LEGEND

RRJ ____ RUBBER RING JOINT
SCJ ____ SOLVENT CEMENT JOINT

500 0 500

SCALE - 1:10



SECTION A- A

SCALE - 1:10

NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE SEWERAGE CODE OF AUSTRALIA WSA 02 - 2002 - 2.2 SYDNEY WATER EDITION 1 - VERSION 3 - PART 3.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. ALL PIPEWORK SHALL COMPLY WITH REQUIREMENTS OF AS/NZS 1260:2009 PVC U PIPES AND FITTINGS FOR DRAIN, WASTE AND VENT APPLICATION. RETICULATION SEWER PIPEWORK SHALL BE CLASS SN8. PROPERTY CONNECTION SEWER PIPEWORK SHALL BE CLASS SN10. SOLVENT CEMENTS & PRIMING FLUIDS SHALL COMPLY WITH THE REQUIREMENTS OF AS1379.
4. EMBEDMENT MATERIAL SHALL BE EITHER:
   a. SINGLE SIZE AGGREGATE TO WSA PS - 351 - NOMINAL SIZE 7 OR 10mm
   b. GRADED AGGREGATE TO WSA PS - 351 - NOMINAL SIZE 10mm
5. MINIMUM LAP AT ALL JOINTS IN GEOTEXTILE FABRIC SHALL BE 300MM. A GEOTEXTILE OVERLAY MAY BE USED IN LIEU OF A GEOTEXTILE SURROUND WHERE THE NATIVE SOIL IS NON-DISPERSIVE VERY STIFF OR HARD CLAY, OR ROCK. THE OVERLAY SHALL BE PLACED DIRECTLY OVER THE EMBEDMENT AND EXTEND THE FULL WIDTH OF THE TRENCH.
6. TAPE MESSAGE SHALL BE "CAUTION - SEWER BURIED BELOW". TAPE TO EXTEND 300 BEYOND GROUND LEVEL
7. THE MINIMUM LENGTH OF RISER PIPE SHALL BE 250mm. DEPTH TO PROPERTY CONNECTION POINT (PCP) MAY BE REDUCED FOR SHALLOW INSTALLATIONS TO PROVIDE THE MINIMUM LENGTH OF RISER PIPE.
8. THE USE OF STANDARD DESIGNS MAY INTRODUCE UNINTENDED SAFETY RISKS FOR SITE SPECIFIC APPLICATION. THE USER SHALL ADDRESS SAFETY RISKS THROUGH SITE SPECIFIC ASSESSMENT.
9. THE USER SHALL BE RESPONSIBLE FOR DESIGN OF ANY TEMPORARY WORKS.

Sydney WATER

APPROVED

KEN WIGGINS

MANAGER E & ES

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ENGINEERING & ENVIRONMENTAL SERVICES

LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
A	ORIGINAL ISSUE	K.W.	18.03.15

DEEMED TO COMPLY DRAWINGS

DN100 PVC-U PROPERTY CONNECTION SEWER FOR SINGLE PROPERTY

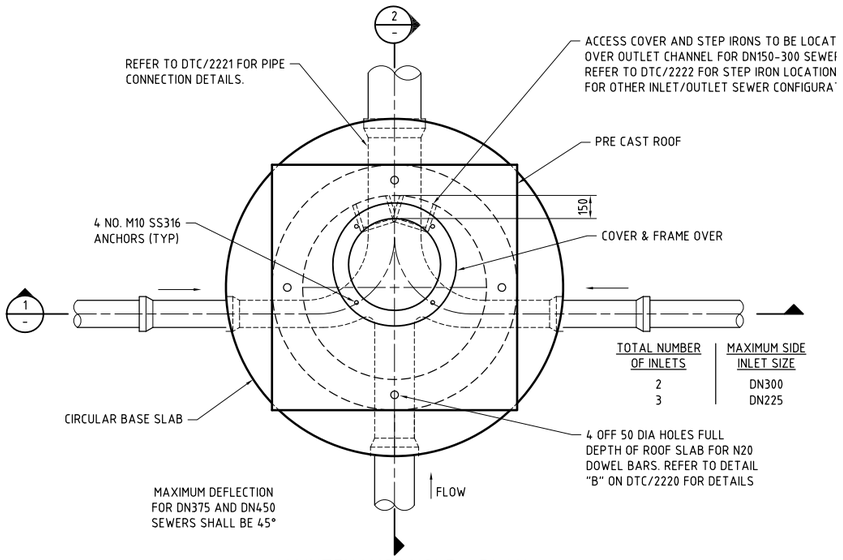
DTC

2120

ISSUE	DATE
A	18/03/15

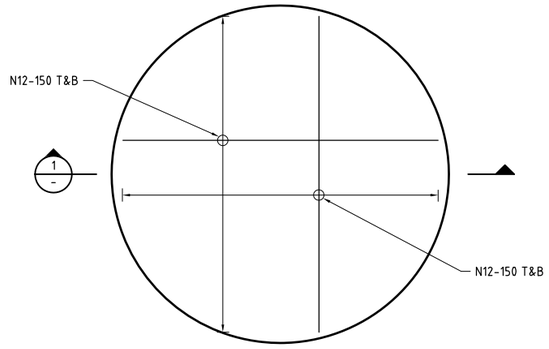
A1

THIS DRAWING MAY ONLY BE USED IN THE COURSE OF AND FOR THE PURPOSE OF CREATING SYDNEY WATER ASSETS. USE THIS DRAWING WITH CARE. THE USER IS RESPONSIBLE FOR THE CORRECT APPLICATION OF THIS DRAWING.



MAINTENANCE HOLE - PLAN

SCALE 1:20



ALL REINFORCEMENT N12-150 COGGED TYP. U.N.O.
STARTERS BARS NOT SHOWN FOR CLARITY

MAINTENANCE HOLE BASE SLAB - REINFORCEMENT

SCALE 1:20

GENERAL NOTES

G1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING:

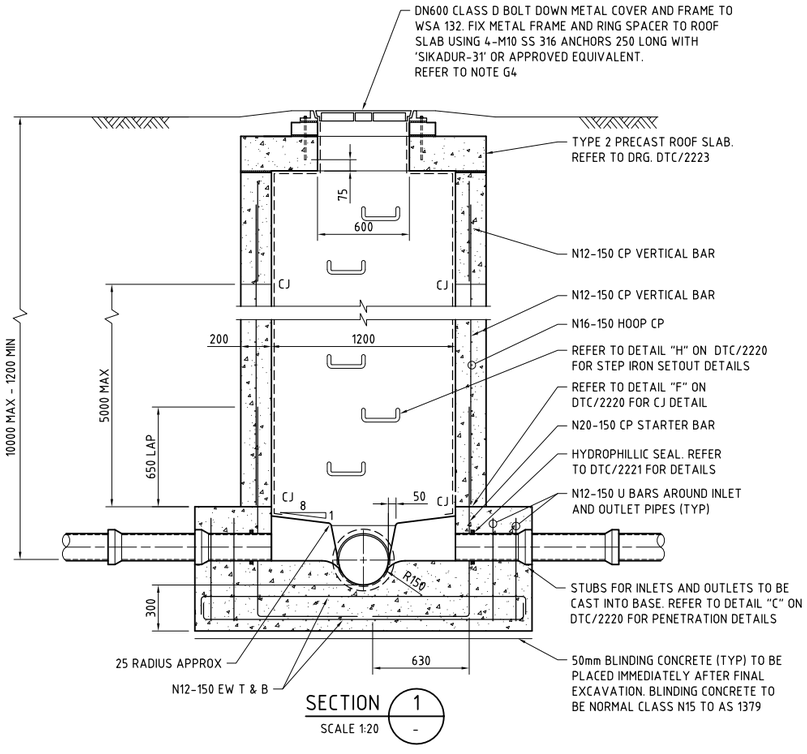
A. DTC/2000 MAINTENANCE HOLES CONSTRUCTION NOTES
B. DTC/2220 MAINTENANCE HOLES DETAILS - SHEET 1
C. DTC/2221 MAINTENANCE HOLES DETAILS - SHEET 2
D. DTC/2222 MAINTENANCE HOLES DETAILS - SHEET 3
E. DTC/2223 MAINTENANCE HOLES DETAILS - SHEET 4

G2. NUMBER, SIZE, LOCATION AND LEVEL OF INLETS AND OUTLET ARE INDICATIVE ONLY.

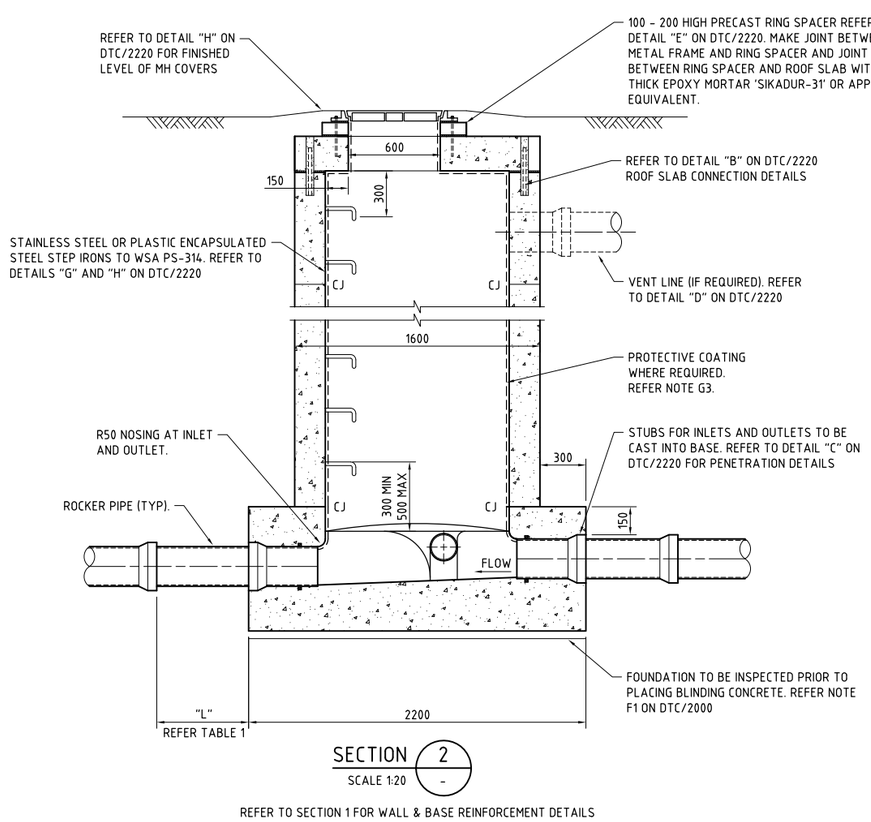
G3. FOR DN375 AND DN450 SEWERS, ALL INTERNAL SURFACES (EXCLUDING BENCHING) OF MAINTENANCE HOLES SHALL BE PROVIDED WITH A PROTECTIVE COATING IN ACCORDANCE WITH WSA 201 AND SYDNEY WATER SUPPLEMENT. COATING SYSTEM SHALL BE CPL, EUH OR NOV.

FOR DN150 - DN300 SEWERS, ALL INTERNAL SURFACES (EXCLUDING BENCHING) OF MAINTENANCE HOLES AT THE DISCHARGE OF PUMPED FLOWS AND THE NEXT TWO MAINTENANCE HOLES DOWNSTREAM OF A PUMPED DISCHARGE SHALL BE PROVIDED WITH A PROTECTIVE COATING / LINING IN ACCORDANCE WITH WSA 201 AND SYDNEY WATER SUPPLEMENT. COATING SYSTEM SHALL BE CPL, EUH OR NOV.

G4. THIS DESIGN IS SUITABLE FOR RESIDENTIAL, COMMERCIAL & INDUSTRIAL AREAS INCLUDING:
- PUBLIC & PRIVATE PROPERTIES
- PARKLAND & FOOTWAYS
- ROAD CARRIAGEWAYS & DRIVEWAYS



SECTION 1 – SCALE 1:20



SECTION 2 – SCALE 1:20

REFER TO SECTION 1 FOR WALL & BASE REINFORCEMENT DETAILS

TABLE 1		
ROCKER PIPE DIMENSIONS		
SIZE (DN)	"L" MIN	"L" MAX
150	300	450
225	450	675
300	600	900
375	750	1150
450	900	1350

Sydney WATER

APPROVED

PETER GILLMAN

MANAGER E & ES

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ENGINEERING & ENVIRONMENTAL SERVICES

LETTER	DETAILS OF ISSUE / AMENDMENT	APP'D	DATE
F	REVISED PROTECTIVE COATING SPECIFICATION. INLET SEWER SIZE LIMITATION ADDED. GENERAL REVISION	RL	18/03/15
E	NOTE G3 AMENDED	RL	22/04/13
D	GENERAL REVISION. REVISED ROOF SLAB. INCREASED SIZE RANGE TO DN450	RL	01/03/13
C	MINOR REVISION	RL	04/07/12
B	GENERAL REVISION	PJG	29/03/12
A	ORIGINAL ISSUE	PJG	31/01/12

DEEMED TO COMPLY DRAWINGS

DN1200 MAINTENANCE HOLES CAST IN-SITU REINFORCED CONCRETE

SEWERS ≤ DN450

DEPTH TO INVERT 1.2m TO 10m

DTC

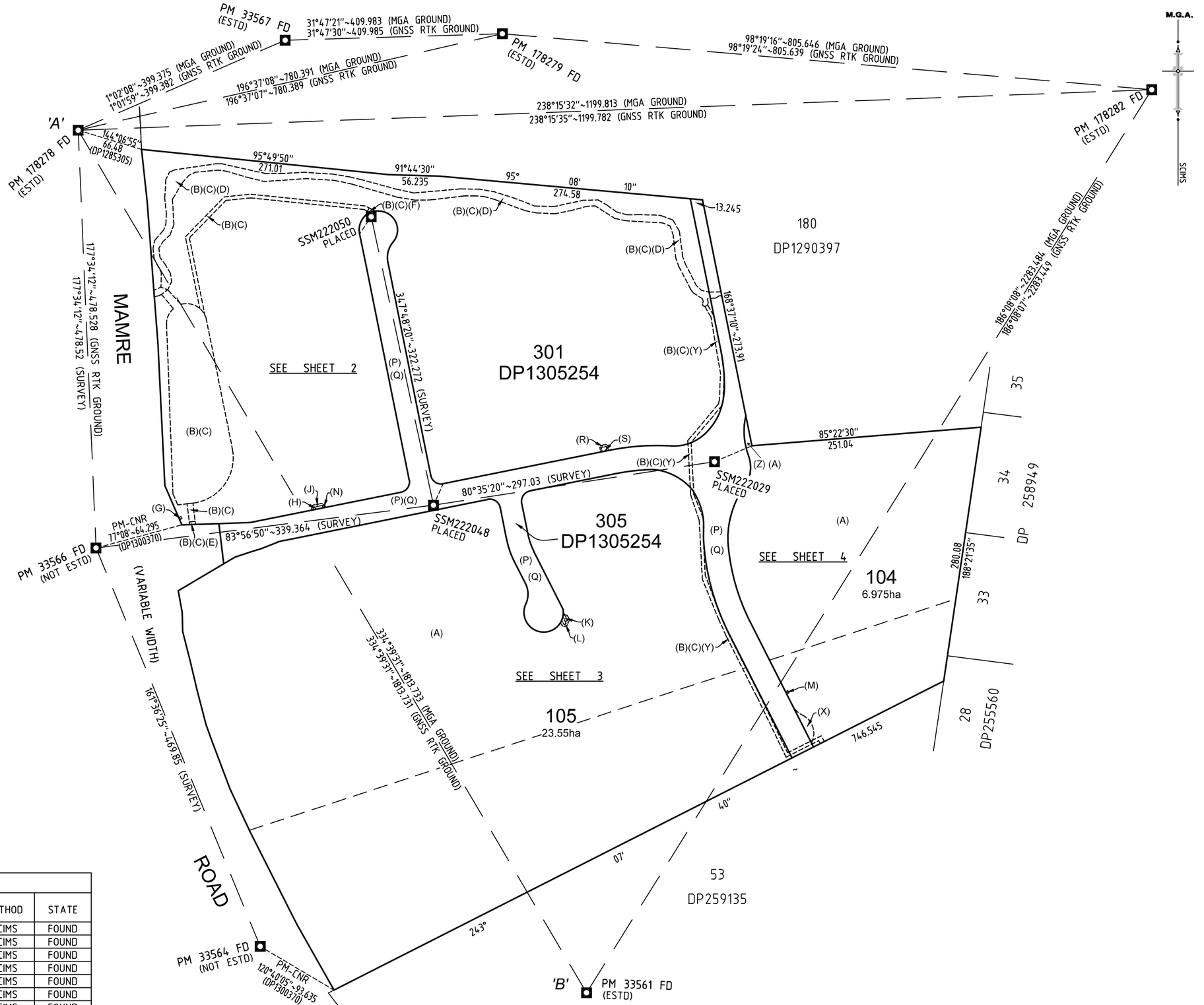
2200

ISSUE	DATE
F	18/03/15

APPENDIX C – 104/DP1305965 DP Plan

SCHEDULE OF SHORT & CURVED BOUNDARY LINES

No.	BEARING	DISTANCE	ARC	RADIUS
1	175°03'	41.66	41.75	186.3
2	193°20'25"	30.27	30.46	78.4
3	216°00'20'	22.395	22.495	69.48
4	249°29'35"	40.515	41.745	49.4
5	303°37'10"	16.265	18.065	11.5
6	338°05'25"	36.315	44.61	20.5
7	275°44'50"	2.45		
8	253°32'25"	13.605	13.955	18
9	199°46'50"	22.5	23.68	21.5
10	213°37'10"	16.265	18.065	11.5
11	71°45'35"	17.3		
12	72°45'30"	8.135	8.135	233.4
13	71°16'30"	4.86	4.86	56.1
14	68°47'35"	18.31		
15	73°42'20"	7.52	7.53	43.9
16	123°37'05"	16.265	18.065	11.5
17	160°52'35"	24.92	24.995	92.5
18	179°48'50"	21.55	22.275	25.015
19	340°52'35"	18.455	18.51	68.5
20	33°37'05"	16.265	18.065	11.5
21	83°21'25"	37.38	37.425	226.3
22	95°11'55"	10.985	11.01	44.4
23	119°15'50"	37.575	38.13	64.4
24	140°42'05"	3.81	3.815	24.4
25	164°27'45"	45.835	46.715	69.4
26	180°26'05"	9.195	9.2	79.6
27	4°31'15"	32.025	32.18	95.4
28	24°41'15"	36.605	36.81	100.4
29	7°18'35"	33.67	35.035	36
30	354°53'15"	40.195	40.685	75.4
31	9°49'05"	3.915	3.915	212.3



NEW EASEMENTS:

(B) POSITIVE COVENANT
(C) RESTRICTION ON THE USE OF LAND (NO.2) (SITE)
(D) EASEMENT TO DRAIN WATER VARIABLE WIDTH (NO.3)
(E) EASEMENT TO DRAIN WATER 6.5 WIDE
(F) EASEMENT TO DRAIN WATER 4 WIDE
(G) EASEMENT FOR SWITCHING STATION 2.75 WIDE (NO.6)
(H) EASEMENT FOR PADMOUNT SUBSTATION 10.69 WIDE
(J) RESTRICTION ON THE USE OF LAND (NO.8)
(K) EASEMENT FOR PADMOUNT SUBSTATION 2.75 WIDE (NO.9)
(L) RESTRICTION ON THE USE OF LAND (NO.10)
(M) EASEMENT FOR SWITCHING STATION 2.75 WIDE (NO.11)
(N) EASEMENT FOR SWITCHING STATION 2.75 WIDE (NO.12)
(P) EASEMENT FOR SERVICES VARIABLE WIDTH
(Q) RIGHT OF CARRIAGEWAY VARIABLE WIDTH
(R) RESTRICTION ON THE USE OF LAND (NO.15)
(S) EASEMENT FOR PADMOUNT SUBSTATION 5.5 WIDE
(X) RIGHT OF ACCESS VARIABLE WIDTH
(Y) EASEMENT TO DRAIN WATER VARIABLE WIDTH (NO.18)

(A) RESTRICTION(S) ON THE USE OF LAND (DP259135)
(Z) COVENANT (V65431)

COORDINATE SCHEDULE

MARK	MGA CO-ORDINATES EASTING	MGA CO-ORDINATES NORTHING	CLASS	PU	METHOD	STATE
PM 33561	295 433.848	6251 888.432	B		SCIMS	FOUND
PM 33564	294 825	6252 603	U		SCIMS	FOUND
PM 33566	294 678	6253 051	U		SCIMS	FOUND
PM 33567	294 664.682	6253927.169	B	0.02	SCIMS	FOUND
PM 178278	294 657.463	6253 527.815	B	0.02	SCIMS	FOUND
PM 178279	294 880.683	6254 275.690	B	0.02	SCIMS	FOUND
PM 178282	295 677.936	6254 159.085	B	0.02	SCIMS	FOUND
SSM 222029	295 308.33	6253 134.04	U		CAD. TRAV	PLACED
SSM 222048	295 015.26	6253 085.46	U		CAD. TRAV	PLACED
SSM 222050	294 947.18	6253 400.49	U		CAD. TRAV	PLACED

DATE OF SCIMS COORDINATES: 20-03-2024 MGA ZONE: 56 MGA DATUM: GDA2020
COMBINED SCALE FACTOR: 1.000110 @ PM 178278

SURVEYOR
Name: SCOTT PETER LINDSAY LORD
Date of Survey: 10th APRIL 2024
Surveyor's Reference: 50708 034DP-E

PLAN OF SUBDIVISION OF LOTS 302, 303 & 304 IN DP1305254 AND EASEMENTS AFFECTING LOTS 301 & 305 IN DP1305254

LGA: PENRITH
Locality : KEMPS CREEK
Reduction Ratio 1: 3000
Lengths are in metres.

Registered
06/06/2024

DP1305965

Req:R537946 /Doc:DP 1305965 P /Rev:06-Jun-2024 /NSW LRS /Prt:07-Jun-2024 04:01 /Seq:1 of 10
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Reg:R537946 /Doc:DP 1305965 P /Rev:06-Jun-2024 /NSW LRS /Prt:07-Jun-2024 04:01 /Seq:2 of 10
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NEW EASEMENTS:

(B) POSITIVE COVENANT
(C) RESTRICTION ON THE USE OF LAND (NO.2) (SITE)
(D) EASEMENT TO DRAIN WATER VARIABLE WIDTH (NO.3)
(E) EASEMENT TO DRAIN WATER 6.5 WIDE
(F) EASEMENT TO DRAIN WATER 4 WIDE
(G) EASEMENT FOR SWITCHING STATION 2.75 WIDE (NO.6)
(H) EASEMENT FOR PADMOUNT SUBSTATION 10.69 WIDE
(J) RESTRICTION ON THE USE OF LAND (NO.8)
(N) EASEMENT FOR SWITCHING STATION 2.75 WIDE (NO.12)
(P) EASEMENT FOR SERVICES VARIABLE WIDTH
(Q) RIGHT OF CARRIAGEWAY VARIABLE WIDTH
(R) RESTRICTION ON THE USE OF LAND (NO.15)
(S) EASEMENT FOR PADMOUNT SUBSTATION 5.5 WIDE
(Y) EASEMENT TO DRAIN WATER VARIABLE WIDTH (NO.18)

M.G.A. SCIMS

PM 178278 FD (ESTD)
144°06'55" 66.48 (DP1285305)
RM GIP FD 94°24'35"~8.935 (DP1300370)
95°49'50" 271.01
PEG FD
91°44'30" 56.235
PEG FD
95°
08" 274.58
10"
RM GIP FD 168°37'40"~1 (DP259135)
13.245
353°55'55" 57.29
355°39' 95.3
MAMRE ROAD (VARIABLE WIDTH)
(B) (C) (D)
(B)(C)
(B)(C)(D)
RM GIP 316°32'30"~7.295
355°40'35"~60.985 (52.195)
PEG FD
RM GIP FD 86°36'05"~0.425 (DP1305254)
SEE SHEET 4 DIAGRAM 1
(B)(C)
357°12'45" 154.285
RM GIP FD 78°40'10"~0.655 (DP1305254)
336°35'40" 146.855
SEE SHEET 7 DIAGRAM 2
(G)
(B)(C)
(B)(C)(E) 74.935
268° 02' 20"
(8.385)
PM 33566 FD (NOT EST'D)
77°08'~64.295 (DP1300370)
RM DHW 334°47'35"13.815
173°08' 18.44
(14.285)
RM GIP FD 287°59'15"~3.23 (DP1305254)
59° 22' 71.94
RM DHW'S FD 150°00'20"~8.76 149°17'55"~25.405 (DP1305254)
SEE SHEET 3 FOR CONTINUATION
(68.5)
(34.53)
DH&W FD @ CNR RM DHW FD 337°24'45"~9.97 (DP1300370)
SEE SHEET 7 DIAGRAM 3
(J) (H) (N) 167.635 258°37'10"
SSM 222048 (PLACED)
RM 1
180 DP1290397
SEE SHEET 5 FOR EASEMENT
(B)(C)(F)
8 7 SSM 222050 (PLACED)
RM 3
(A:4.54)
9 6
214°10'20" 22.73
RM 2
168°13'40" 36.085
R:28 A:23.51 14°37'40"~22.72
RM 4
348° (P) (Q) (118.755)
168°
37" 231.825
37" RM 5
15" 237.505
15"
RM 6
5 RM 7
24°08'35" 25.1
(P) (Q)
186.595 258°37'10"
78°37'10" 227.5
RM 15 16 RM 16 35.67 168°37'05"
RM 17 20
348°37'05" 35.67
78°37'10" 95.96
RM 18 21 22 23
RM 19 24
(B)(C)(Y)
RM 20 25
RM 21 (A:13.3)
(P) (Q) 28
105
301 DP1305254
305 DP1305254
104
180 DP1290397
SEE SHEET 5 FOR EASEMENT
168°37'50"~169.985 (102.52)
(B) (C) (D)
RM STAR PICKET 123°50'~1.36
168°37'10"~213.91
RM 13
(39.65)
(B)(C)(Y)
1
RM 12 2
RM 11 31
(A:18.1)
RM GIP FD 258°15'25"~1.565 (DP1300370)
3
RM 10 4
RM 9
(A:22.29)
(B)(C)(Y)
SSM 222029 (PLACED)
73°22' 51.11
30
(0.07)
NEW P&W FCE
85°22'30" 251.04
(0.055)
29
DHW FD @ CNR RM GIP FD 230°55'~7.615 (DP1290397) 230°41'~7.605 (DP1291562 & SVY)
RM DHW FD 40°49'50"~7.13 (DP1300370) RM 8
(S) (R)
R:252.3 A:66.42
266°09'35"~66.225
(175.595)
166°32'25" 26.41
SEE SHEET 7 DIAGRAM 4
SEE SHEET 4 FOR CONTINUATION
SEE SHEET 3 FOR CONTINUATION
FOR BOUNDARY SHORT LINES SEE SHEET 1
FOR REFERENCE MARKS SEE SHEET 7

SURVEYOR Name: SCOTT PETER LINDSAY LORD Date of Survey: 10th APRIL 2024 Surveyor's Reference: 50708 034DP-E	PLAN OF SUBDIVISION OF LOTS 302, 303 & 304 IN DP1305254 AND EASEMENTS AFFECTING LOTS 301 & 305 IN DP1305254	LGA: PENRITH Locality : KEMPS CREEK Reduction Ratio 1: 1500 Lengths are in metres.	Registered 06/06/2024	DP1305965

Reg:R537946 /Doc:DP 1305965 P /Rev:06-Jun-2024 /NSW LRS /Prt:07-Jun-2024 04:01 /Seq:3 of 10
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SEE SHEET 2 FOR CONTINUATION

301
DP1305254

305
DP1305254

104

105

53
DP259135

MAMRE ROAD (VARIABLE WIDTH)

(B)(C)
DH&W FD @ CNR
RM DHW FD
337°24'45"~9.97
(DP1300370)
(B)(C)(E)
74.935
(34.53)
268° 02' 20"
(G)
PEG FD
RM DHW
334°47'35"~13.815
336°35'40" 46.855
173°08" 44.18
55" 22' (14.285)
59° 71.94
RM DHW'S FD
150°00'20"~8.76
149°17'55"~25.405
(DP1305254)
RM GIP FD
287°59'15"~3.23
(DP1305254)
349°38'40" 24.045
358°52'10" 20.94
345°42'30" 32.685
346°29'35" 33.37
PEG FD
345°27'40" 38.725
340°12'05" 19.27
339°22' 55.745
PEG FD
334°47'55" 51.225
GI NAIL FD IN BITUMEN
RM GIP FD
64°43'45"~4.445
(DP1300370)
333°15' 113.425
GI NAIL FD IN BITUMEN
330°32'40" 82.645
PM33564 FD
(NOT ESTD)
120°40'05"~93.635
PM-CNR
(DP1300370)
RM GIP FD
325°22'15"~3.4
(DP1300370)

(H) (J) (N) 167.635 258°37'10"
SSM 222048
(PLACED)
(P) (Q) RM 1 RM 6 RM 7 186.595 258°37'10"
24°08'35" 25.7
(P) (Q) 78°37'10" 227.5
RM 14 RM 15 RM 16 35.67 168°37'05"
RM 24 RM 25 28.16 153°08'05"
(P) (Q) 70.91 333°08'05"
DHW FD @ CNR.
RM 26
(K) (L)
98°02'30"~41.06
A:80.505
R:21.5
SEE SHEET 7
DIAGRAM 5

RM 17 78°37'10" 95.96 RM 18 RM 19 RM 20 (A:13.3) RM 21
(B)(C)(Y) 165°07'45"~105.445
A:106.22
R:253.7
RM 22 (103.965)
SEE SHEET 6
FOR EASEMENT
(P) (Q) 153.84 153°08'05"
(B)(C)(Y) RM 23 (42.675)
(B)(C)(Y) 26.4 RM 27
(X) (B)(C)(Y) 159.43 40"
RM DHW
131°14'15"~6.865
RM GIP FD
336°39'15"~0.36
(DP1305254)
(P) (Q) R:227.3
A:86.18
343°59'45"~85.665
(86.08) 153.84 333°08'05"
(M) SEE SHEET 7
DIAGRAM 6
SEE SHEET 6
SEE SHEET 4

560.72 243° 07'

M.G.A.
SCIMS

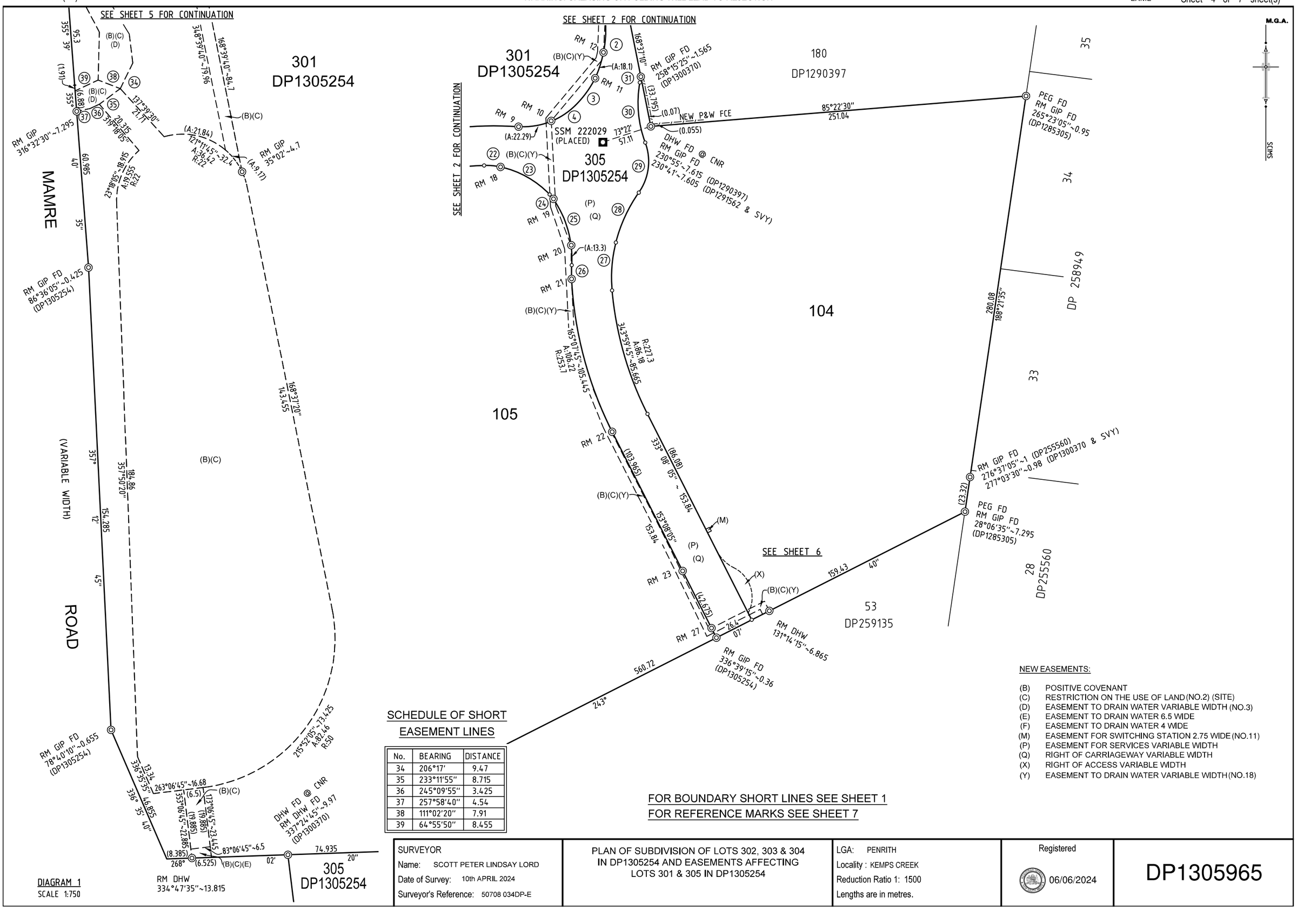
NEW EASEMENTS:

(B) POSITIVE COVENANT
(C) RESTRICTION ON THE USE OF LAND (NO.2) (SITE)
(E) EASEMENT TO DRAIN WATER 6.5 WIDE
(G) EASEMENT FOR SWITCHING STATION 2.75 WIDE (NO.6)
(H) EASEMENT FOR PADMOUNT SUBSTATION 10.69 WIDE
(J) RESTRICTION ON THE USE OF LAND (NO.8)
(K) EASEMENT FOR PADMOUNT SUBSTATION 2.75 WIDE (NO.9)
(L) RESTRICTION ON THE USE OF LAND(NO.10)
(M) EASEMENT FOR SWITCHING STATION 2.75 WIDE (NO.11)
(N) EASEMENT FOR SWITCHING STATION 2.75 WIDE (NO.12)
(P) EASEMENT FOR SERVICES VARIABLE WIDTH
(Q) RIGHT OF CARRIAGEWAY VARIABLE WIDTH
(X) RIGHT OF ACCESS VARIABLE WIDTH
(Y) EASEMENT TO DRAIN WATER VARIABLE WIDTH (NO.18)

FOR BOUNDARY SHORT LINES SEE SHEET 1
FOR REFERENCE MARKS SEE SHEET 7

SURVEYOR	PLAN OF SUBDIVISION OF LOTS 302, 303 & 304 IN DP1305254 AND EASEMENTS AFFECTING LOTS 301 & 305 IN DP1305254	LGA: PENRITH	Registered	DP1305965
Name: SCOTT PETER LINDSAY LORD		Locality : KEMPS CREEK	06/06/2024	
Date of Survey: 10th APRIL 2024		Reduction Ratio 1: 1500		
Surveyor's Reference: 50708 034DP-E		Lengths are in metres.		

Req:R537946 /Doc:DP 1305965 P /Rev:06-Jun-2024 /NSW LRS /Prt:07-Jun-2024 04:01 /Seq:4 of 10
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SCHEDULE OF SHORT EASEMENT LINES

No.	BEARING	DISTANCE
34	206°17′	9.47
35	233°11′55″	8.715
36	245°09′55″	3.425
37	257°58′40″	4.54
38	111°02′20″	7.91
39	64°55′50″	8.455

NEW EASEMENTS:

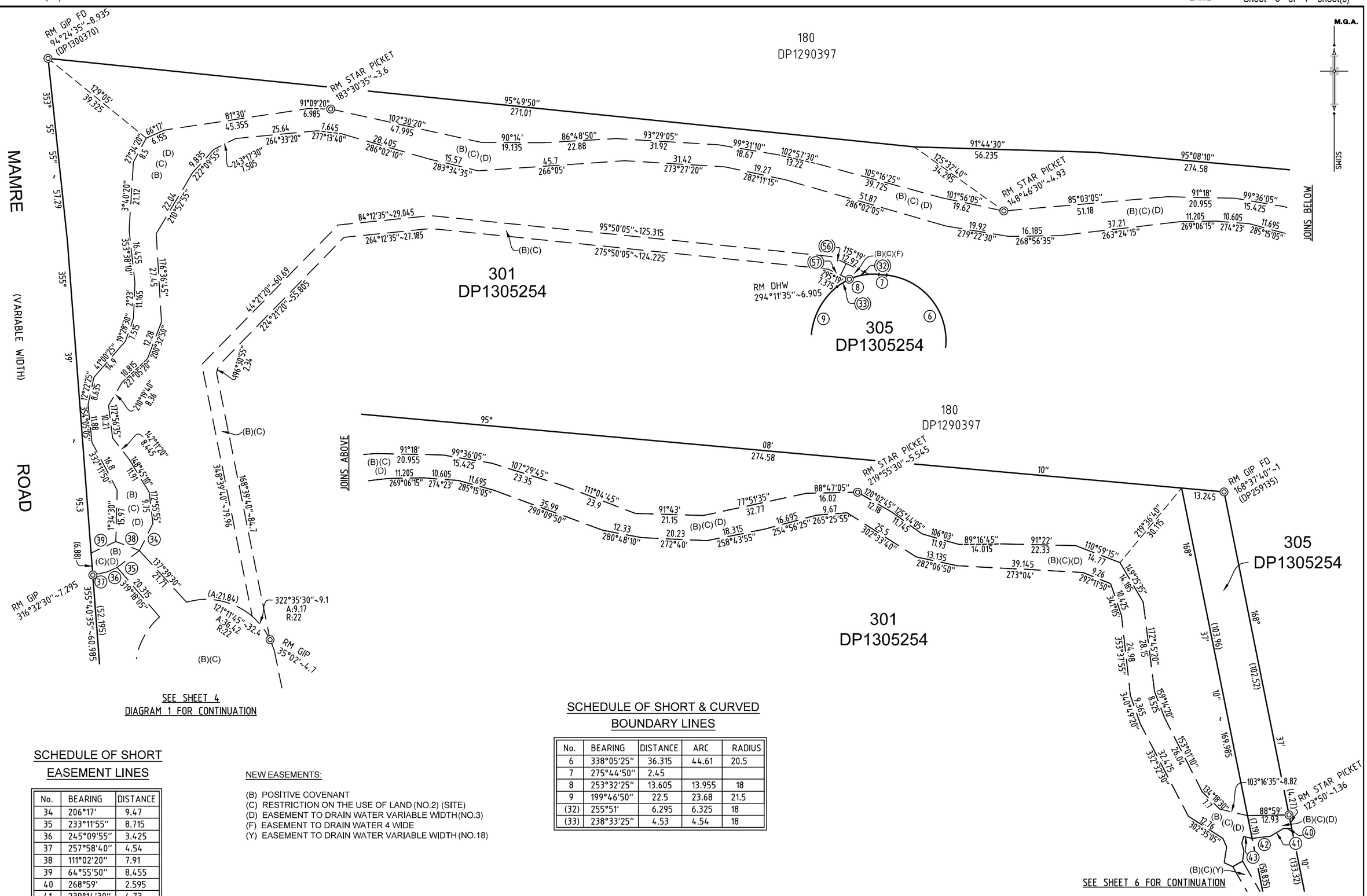
- (B) POSITIVE COVENANT
- (C) RESTRICTION ON THE USE OF LAND (NO.2) (SITE)
- (D) EASEMENT TO DRAIN WATER VARIABLE WIDTH (NO.3)
- (E) EASEMENT TO DRAIN WATER 6.5 WIDE
- (F) EASEMENT TO DRAIN WATER 4 WIDE
- (M) EASEMENT FOR SWITCHING STATION 2.75 WIDE (NO.11)
- (P) EASEMENT FOR SERVICES VARIABLE WIDTH
- (Q) RIGHT OF CARRIAGEWAY VARIABLE WIDTH
- (X) RIGHT OF ACCESS VARIABLE WIDTH
- (Y) EASEMENT TO DRAIN WATER VARIABLE WIDTH (NO.18)

FOR BOUNDARY SHORT LINES SEE SHEET 1
FOR REFERENCE MARKS SEE SHEET 7

DIAGRAM 1
SCALE 1:750

SURVEYOR Name: SCOTT PETER LINDSAY LORD Date of Survey: 10th APRIL 2024 Surveyor's Reference: 50708 034DP-E	PLAN OF SUBDIVISION OF LOTS 302, 303 & 304 IN DP1305254 AND EASEMENTS AFFECTING LOTS 301 & 305 IN DP1305254	LGA: PENRITH Locality : KEMPS CREEK Reduction Ratio 1: 1500 Lengths are in metres.	Registered 06/06/2024	DP1305965

Req:R537946 /Doc:DP 1305965 P /Rev:06-Jun-2024 /NSW LRS /Prt:07-Jun-2024 04:01 /Seq:5 of 10
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SCHEDULE OF SHORT EASEMENT LINES

No.	BEARING	DISTANCE
34	206°17'	9.47
35	233°11'55"	8.715
36	245°09'55"	3.425
37	257°58'40"	4.54
38	111°02'20"	7.91
39	64°55'50"	8.455
40	268°59'	2.595
41	239°14'30"	4.73
42	263°45'05"	5.73
43	281°04'50"	2.65
(56)	115°19'	5.06
(57)	295°19'	4.375

NEW EASEMENTS:

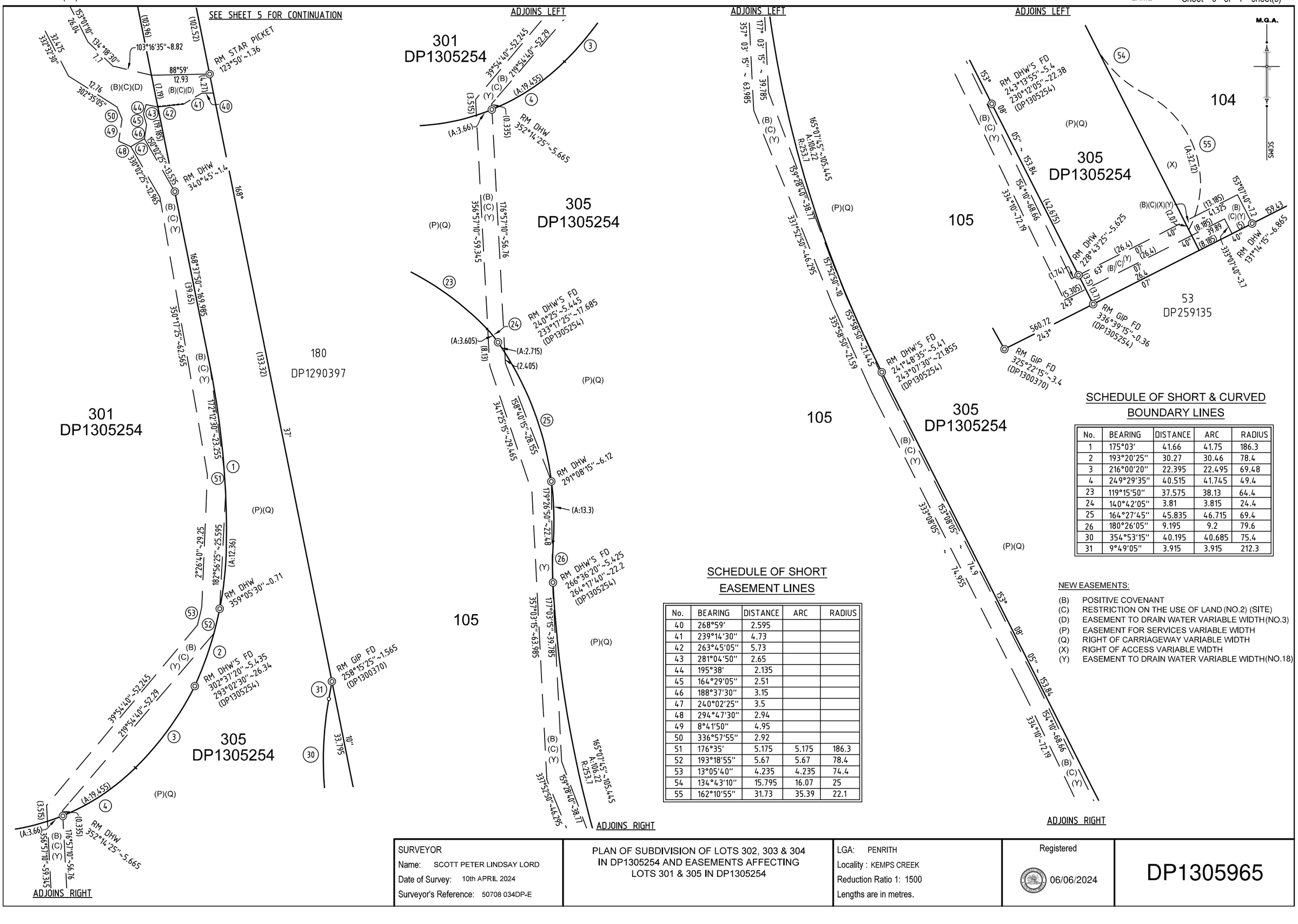
(B) POSITIVE COVENANT
(C) RESTRICTION ON THE USE OF LAND (NO.2) (SITE)
(D) EASEMENT TO DRAIN WATER VARIABLE WIDTH (NO.3)
(F) EASEMENT TO DRAIN WATER 4 WIDE
(Y) EASEMENT TO DRAIN WATER VARIABLE WIDTH (NO.18)

SCHEDULE OF SHORT & CURVED BOUNDARY LINES

No.	BEARING	DISTANCE	ARC	RADIUS
6	338°05'25"	36.315	44.61	20.5
7	275°44'50"	2.45		
8	253°32'25"	13.605	13.955	18
9	199°46'50"	22.5	23.68	21.5
(32)	255°51'	6.295	6.325	18
(33)	238°33'25"	4.53	4.54	18

SURVEYOR Name: SCOTT PETER LINDSAY LORD Date of Survey: 10th APRIL 2024 Surveyor's Reference: 50708 034DP-E	PLAN OF SUBDIVISION OF LOTS 302, 303 & 304 IN DP1305254 AND EASEMENTS AFFECTING LOTS 301 & 305 IN DP1305254	LGA: PENRITH Locality : KEMPS CREEK Reduction Ratio 1: 1500 Lengths are in metres.	Registered 06/06/2024	DP1305965

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SCHEDULE OF SHORT & CURVED BOUNDARY LINES

No.	BEARING	DISTANCE	ARC	RADIUS
1	175°03'	41.66	41.75	186.3
2	193°20'25"	30.27	30.46	78.4
3	216°00'20"	22.395	22.495	69.48
4	249°29'35"	40.515	41.745	49.4
23	119°15'50"	37.575	38.13	64.4
24	140°42'05"	3.81	3.815	24.4
25	164°27'45"	45.835	46.715	69.4
26	180°26'05"	9.195	9.2	79.6
30	354°53'15"	40.195	40.685	75.4
31	9°49'05"	3.915	3.915	212.3

SCHEDULE OF SHORT EASEMENT LINES

No.	BEARING	DISTANCE	ARC	RADIUS
40	268°59'	2.595		
41	239°14'30"	4.73		
42	263°45'05"	5.73		
43	281°04'50"	2.65		
44	195°38'	2.135		
45	164°29'05"	2.51		
46	188°37'30"	3.15		
47	240°02'25"	3.5		
48	294°47'30"	2.94		
49	8°41'50"	4.95		
50	336°57'55"	2.92		
51	176°35'	5.175	5.175	186.3
52	193°18'55"	5.67	5.67	78.4
53	13°05'40"	4.235	4.235	74.4
54	134°43'10"	15.795	16.07	25
55	162°10'55"	31.73	35.39	22.1

NEW EASEMENTS:

(B) POSITIVE COVENANT
(C) RESTRICTION ON THE USE OF LAND (NO.2) (SITE)
(D) EASEMENT TO DRAIN WATER VARIABLE WIDTH (NO.3)
(P) EASEMENT FOR SERVICES VARIABLE WIDTH
(Q) RIGHT OF CARRIAGEWAY VARIABLE WIDTH
(X) RIGHT OF ACCESS VARIABLE WIDTH
(Y) EASEMENT TO DRAIN WATER VARIABLE WIDTH (NO.18)

SURVEYOR	PLAN OF SUBDIVISION OF LOTS 302, 303 & 304 IN DP1305254 AND EASEMENTS AFFECTING LOTS 301 & 305 IN DP1305254	LGA: PENRITH	Registered	DP1305965
Name: SCOTT PETER LINDSAY LORD		Locality : KEMPS CREEK	06/06/2024	
Date of Survey: 10th APRIL 2024		Reduction Ratio 1: 1500		
Surveyor's Reference: 50708 034DP-E		Lengths are in metres.		

Req:R537946 /Doc:DP 1305965 P /Rev:06-Jun-2024 /NSW LRS /Prt:07-Jun-2024 04:01 /Seq:7 of 10
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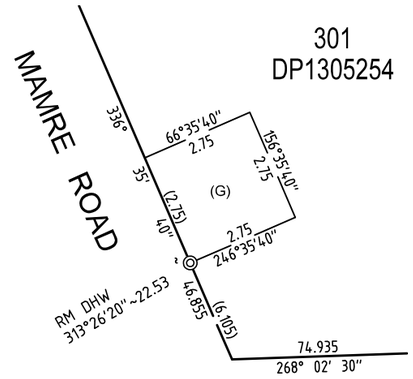


DIAGRAM 2
SCALE 1:100

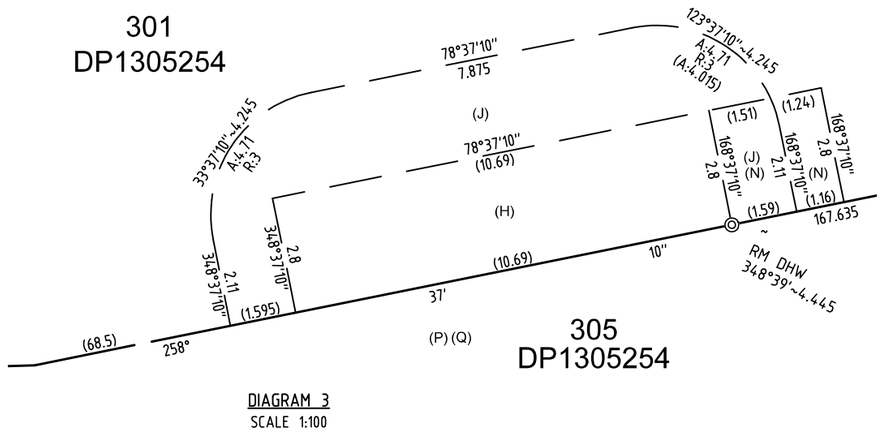


DIAGRAM 3
SCALE 1:100

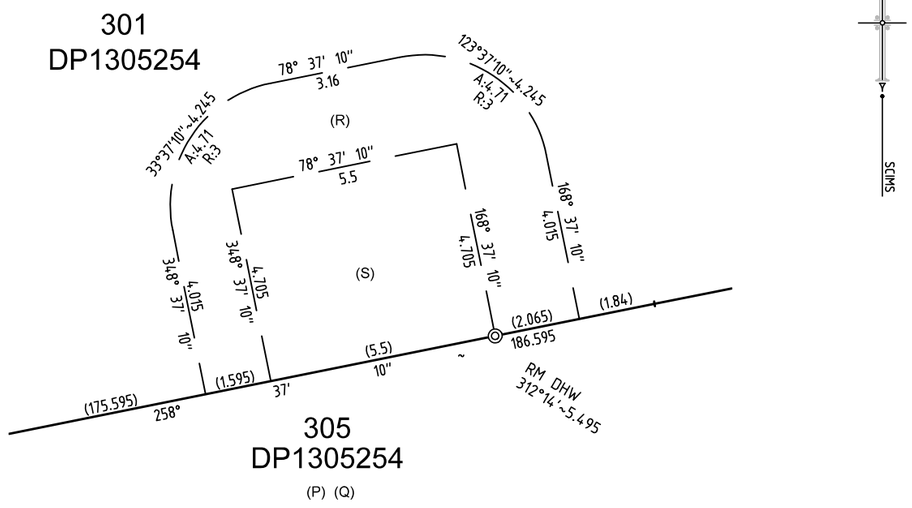


DIAGRAM 4
SCALE 1:100

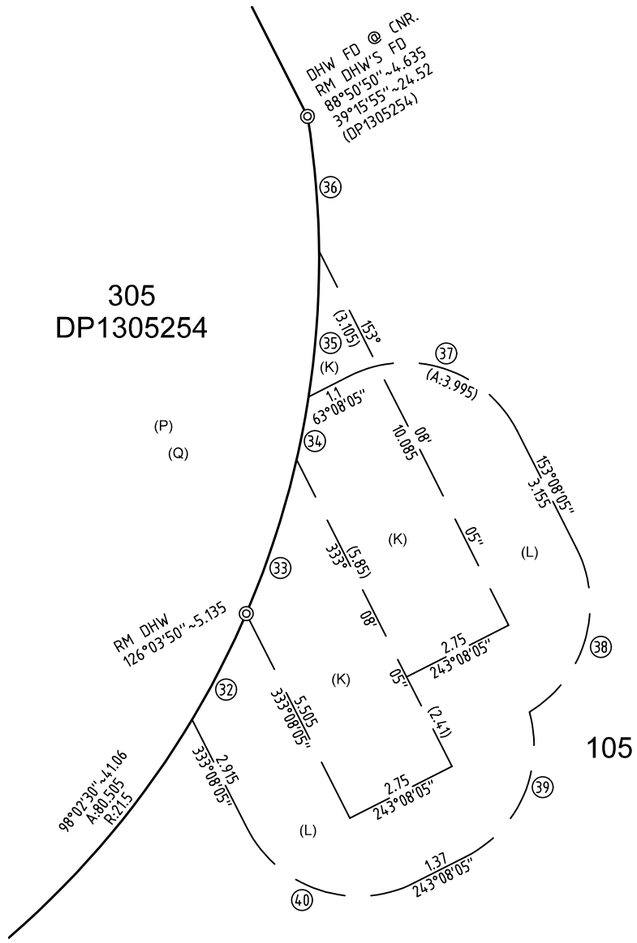


DIAGRAM 5
SCALE 1:100

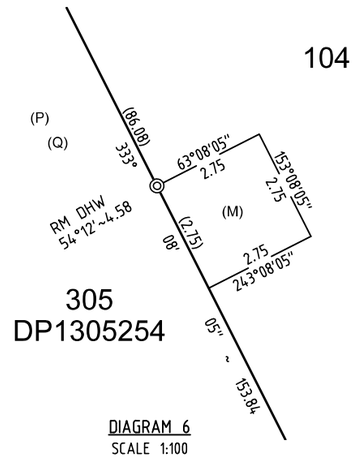


DIAGRAM 6
SCALE 1:100

SCHEDULE OF SHORT EASEMENT LINES

No.	BEARING	DISTANCE	ARC	RADIUS
32	27°05'10"	2.855	2.86	21.5
33	18°05'	3.895	3.9	21.5
34	10°50'35"	1.535	1.535	21.5
35	4°06'05"	3.52	3.525	21.5
36	355°05'25"	3.235	3.24	21.5
37	108°08'05"	4.245	4.71	3
38	196°06'15"	4.09	4.5	3
39	203°45'25"	3.805	4.125	3
40	288°08'05"	4.245	4.71	3

NEW EASEMENTS:

(G) EASEMENT FOR SWITCHING STATION 2.75 WIDE (NO.6)
(H) EASEMENT FOR PADMOUNT SUBSTATION 10.69 WIDE
(J) RESTRICTION ON THE USE OF LAND (NO.8)
(K) EASEMENT FOR PADMOUNT SUBSTATION 2.75 WIDE (NO.9)
(L) RESTRICTION ON THE USE OF LAND (NO.10)
(M) EASEMENT FOR SWITCHING STATION 2.75 WIDE (NO.11)
(N) EASEMENT FOR SWITCHING STATION 2.75 WIDE (NO.12)
(P) EASEMENT FOR SERVICES VARIABLE WIDTH
(Q) RIGHT OF CARRIAGEWAY VARIABLE WIDTH
(R) RESTRICTION ON THE USE OF LAND (NO.15)
(S) EASEMENT FOR PADMOUNT SUBSTATION 5.5 WIDE

SCHEDULE OF REFERENCE MARKS

No.	BEARING	DISTANCE	MARK	No.	BEARING	DISTANCE	MARK
1	249°25'05" 255°02'25"	9.915 20.165	RM DHW's FD (DP1305254)	15	181°03'50" 173°21'40"	5.565 21.995	RM DHW's FD (DP1305254)
2	228°03'20" 224°20'20"	9.915 29.235	RM DHW's FD (DP1305254)	16	271°26' 258°37'10"	4.905 19.995	RM DHW's FD (DP1305254)
3	294°11'35"	6.905	RM DHW PLACED	17	166°24'05" 163°15'	5.47 22.03	RM DHW's FD (DP1305254)
4	83°16' 80°04'50"	3.85 19.115	RM DHW's FD (DP1305254)	18	188°25' 207°47'20"	5.425 25.46	RM DHW's FD (DP1305254)
5	78°37'15" 78°31'30"	3.83 19.06	RM DHW's FD (DP1305254)	19	240°25' 233°17'25"	5.445 17.685	RM DHW's FD (DP1305254)
6	96°35'35" 80°58'05"	4.075 19.16	RM DHW's FD (DP1305254)	20	291°08'15"	6.12	RM DHW PLACED
7	352°30'30" 350°07'50"	4.39 20.885	RM DHW's FD (DP1305254)	21	266°36'20" 264°17'40"	5.425 22.2	RM DHW's FD (DP1305254)
8	351°41' 344°42'10"	4.495 20.995	RM DHW'S PLACED	22	241°48'35" 243°07'30"	5.41 21.855	RM DHW's FD (DP1305254)
9	1°52'40" 27°35'35"	4.305 24.215	RM DHW's FD (DP1305254)	23	243°13'55" 230°12'05"	5.4 22.38	RM DHW's FD (DP1305254)
10	352°14'25"	5.665	RM DHW PLACED	24	259°18'40" 259°04'	4.785 20.06	RM DHW's FD (DP1305254)
11	302°37'20" 293°02'30"	5.435 26.34	RM DHW's FD (DP1305254)	25	243°34'45" 243°38'05"	4.795 20.015	RM DHW's FD (DP1305254)
12	359°05'30"	0.71	RM DHW PLACED	26	88°50'50" 39°15'55"	4.635 24.52	RM DHW's FD (DP1305254)
13	340°45'	1.4	RM DHW PLACED	27	228°43'25"	5.625	RM DHW PLACED
14	119°42'15" 167°25'20"	7.71 21.895	RM DHW's FD (DP1305254)				

M.G.A.
SKIMS

SURVEYOR Name: SCOTT PETER LINDSAY LORD Date of Survey: 10th APRIL 2024 Surveyor's Reference: 50708 034DP-E	PLAN OF SUBDIVISION OF LOTS 302, 303 & 304 IN DP1305254 AND EASEMENTS AFFECTING LOTS 301 & 305 IN DP1305254	LGA: PENRITH Locality : KEMPS CREEK Reduction Ratio 1: 1500 Lengths are in metres.	Registered 06/06/2024	DP1305965

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PLAN FORM 6 (2020) **WARNING: Creasing or folding will lead to rejection**

DEPOSITED PLAN ADMINISTRATION SHEET

Office Use Only

Registered: 06/06/2024

Title System: TORRENS

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DP1305965

PLAN OF SUBDIVISION OF LOTS 302, 303 & 304 IN DP1305254 AND EASEMENTS AFFECTING LOTS 301 & 305 IN DP1305254

LGA: PENRITH

Locality: KEMPS CREEK

Parish: MELVILLE

County: CUMBERLAND

Survey Certificate

I, SCOTT PETER LINDSAY LORD

of LTS SURVEYORS PO BOX 564 ST LEONARDS NSW 1590

a surveyor registered under the *Surveying and Spatial Information Act 2002*, certify that:

*(a) The land shown in the plan was surveyed in accordance with the *Surveying and Spatial Information Regulation 2017*, is accurate and the survey was completed on 10th April 2024, or

~~*(b) The part of the land shown in the plan (*being/*excluding ** .....) was surveyed in accordance with the *Surveying and Spatial Information Regulation 2017*, the part surveyed is accurate and the survey was completed on, ... the part not surveyed was compiled in accordance with that Regulation, or~~

~~*(c) The land shown in this plan was compiled in accordance with the *Surveying and Spatial Information Regulation 2017*.~~

Datum Line: 'A - B'

Type: *Urban/*~~Rural~~

The terrain is *Level-Undulating / *~~Steep-Mountainous~~.

Signature: Dated: 10-5-2024

Surveyor Identification No: 8627
Surveyor registered under
the *Surveying and Spatial Information Act 2002*

*Strike out inappropriate words.

**Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.

Crown Lands NSW/Western Lands Office Approval

I, ... (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.

Signature: .....

Date: .....

File Number: .....

Office:

Subdivision Certificate

I, Gavin Cherry

Authorised Person/~~General Manager~~/*~~Registered Certifier~~, certify that the provisions of s.6.15 of the *Environmental Planning and Assessment Act 1979* have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.

Signature: Electronic signature affixed by me, or at my direction, on 03/06/2024

~~Registration number~~: .....

Consent Authority: Penrith City Council

Date of endorsement: 03/06/2024

Subdivision Certificate number: SC24/0013

File number: MDA21/0009

*Strike through if inapplicable.

Plans used in the preparation of survey/~~compilation~~.

DP255560 DP1305254

DP259135 DP1305759

DP1285305

DP1290397

DP1300370

Statements of intention to dedicate public roads create public reserves and drainage reserves, acquire/resume land.

Surveyor's Reference: 50708 034DP-E

Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A

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PLAN FORM 6A (2019) **DEPOSITED PLAN ADMINISTRATION SHEET** Sheet 2 of 3 sheet(s)

Office Use Only

Registered: 06/06/2024

Office Use Only

DP1305965

PLAN OF SUBDIVISION OF LOTS 302, 303 & 304 IN DP1305254 AND EASEMENTS AFFECTING LOTS 301 & 305 IN DP1305254

Subdivision Certificate number: SC24/0013

Date of Endorsement: 03/06/2024

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2017*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

LOT	STREET NUMBER	STREET NAME	STREET TYPE	LOCALITY
104	UNKNOWN	MAMRE	ROAD	KEMPS CREEK
105	UNKNOWN	MAMRE	ROAD	KEMPS CREEK

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919, IT IS INTENDED TO CREATE:

1. POSITIVE COVENANT (B)
2. RESTRICTION ON THE USE OF LAND (C)
3. EASEMENT TO DRAIN WATER VARIABLE WIDTH (D)
4. EASEMENT TO DRAIN WATER 6.5 WIDE (E)
5. EASEMENT TO DRAIN WATER 4 WIDE (F)
6. EASEMENT FOR SWITCHING STATION 2.75 WIDE (G)
7. EASEMENT FOR PADMOUNT SUBSTATION 10.69 WIDE (H)
8. RESTRICTION ON THE USE OF LAND (J)
9. EASEMENT FOR PADMOUNT SUBSTATION 2.75 WIDE (K)
10. RESTRICTION ON THE USE OF LAND (L)
11. EASEMENT FOR SWITCHING STATION 2.75 WIDE (M)
12. EASEMENT FOR SWITCHING STATION 2.75 WIDE (N)
13. EASEMENT FOR SERVICES VARIABLE WIDTH (P)
14. RIGHT OF CARRIAGEWAY VARIABLE WIDTH (Q)
15. RESTRICTION ON THE USE OF LAND (R)
16. EASEMENT FOR PADMOUNT SUBSTATION 5.5 WIDE (S)
17. RIGHT OF ACCESS VARIABLE WIDTH (X)
18. EASEMENT TO DRAIN WATER VARIABLE WIDTH (Y)

If space is insufficient use additional annexure sheet

Surveyor's Reference: 50708 034DP-E

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PLAN FORM 6A (2019) **DEPOSITED PLAN ADMINISTRATION SHEET** Sheet 3 of 3 sheet(s)

Office Use Only

Registered: 06/06/2024

Office Use Only

DP1305965

PLAN OF SUBDIVISION OF LOTS 302, 303 & 304 IN DP1305254 AND EASEMENTS AFFECTING LOTS 301 & 305 IN DP1305254

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2017*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

Subdivision Certificate number: SC24/0013

Date of Endorsement: 03/06/2024

EXECUTED by
MIRVAC FUNDS MANAGEMENT LIMITED
ACN 067 417 663 as trustee for the
Mirvac Kemps Creek Trust
in accordance with Section 127(1)
of the Corporations Act 2001 (Cth) in the
presence of:

DocuSigned by:
Vicki Vordis
925728D3A0BC466...

Company Secretary/ Director

Vicki Vordis

NAME of Company Secretary/ Director (print)

3/6/2024 | 13:56 AEST

Date

If this contract was signed electronically, I certify that my electronic signature was affixed by me, or at my direction, on the date specified.

DocuSigned by:
4C839A9845624F7...

Company Director

Belinda Festa

NAME of Company Director (print)

3/6/2024 | 14:48 AEST

Date

If this contract was signed electronically, I certify that my electronic signature was affixed by me, or at my direction, on the date specified.

If space is insufficient use additional annexure sheet

Surveyor's Reference: 50708 034DP-E

at&l

SYDNEY
LEVEL 7 153 WALKER STREET
NORTH SYDNEY NSW 2060
02 9439 1777
INFO@ATL.NET.AU

BRISBANE
SUITE A LEVEL 11
127 CREEK STREET
BRISBANE QLD 4000
07 3211 9581
INFO-QLD@ATL.NET.AU

atl.net.au