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INFRASTRUCTURE REPORT
PROPOSED FOOD MANUFACTURING FACILITY
DISTRIBUTION DRIVE, ORCHID HILLS, 2748, NSW

Revision 01
JULY 2021

Our Job No. 21C51



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APPENDIX A – DIAL BEFORE YOU DIG PLANS (ENDEAVOUR ENERGY, JEMENA, NBN, OPTUS, SYDNWAY WATER)



1. INTRODUCTION

1.1. Aim of report

Henry & Hymas Consulting Engineers Pty Ltd has been engaged by Snackbrands to provide an Infrastructure report to investigate the Authorities services available to service the proposed new Snackbrands development; a food manufacturing facility and associated carpark located at Distribution Drive, Orchid Hills.

1.2. Objective

The objective of this infrastructure report is to summarise the utility connections available/ required for the proposed development.

1.3. Limitations

The design approach is based upon preliminary estimates of hydraulic and electrical load as defined in the architectural drawings and project findings. Information regarding the electrical and hydraulic service connections has been provided by Edgewater Connections and Sparks and Partners Consulting Engineers respectively.

1.4. Source information

This brief is based upon the following information:

1. Dial Before You Dig (DBYD)
 - a. Endeavour Energy (electrical)
 - b. Jemena (gas)
 - c. NBN (telecommunications)
 - d. Optus (telecommunications)
 - e. Sydney Water (water and sewer)
 - f. Telstra (telecommunications)
2. Consultants
 - a. Edgewater Connections – electrical services advice
 - b. Sparks and Partners Consulting Engineers – Sewer, water, gas services advice
 - c. JHA Engineers – Electrical, Telecommunications advice
 - d. Omnii – Fire Engineering advice

1.5. General

The site is located at 685-649 Mamre Road, Orchard Hills, and is bounded by Distribution Drive to the east, Mamre Road to the west, and the existing stage 1 development to the south.

The subject site is located in the Western Sydney suburb of Orchid Hills and is approximately 5.1ha in area. The locality sketch of the site is shown in Figure 1.



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Figure 1.5 - Locality sketch



INFRASTRUCTURE SERVICES

1.6. Electrical Services – High Voltage

The high voltage connection point for the Snackbrands development will be from the two switching stations locating within the site adjacent to the western boundary off Distribution Drive. These two switching stations represent the delineation of the private internal HV infrastructure to the Endeavour Energy assets. Refer to Figure 1.6a below showing the location of the switching station in relation to the development and Distribution Drive.

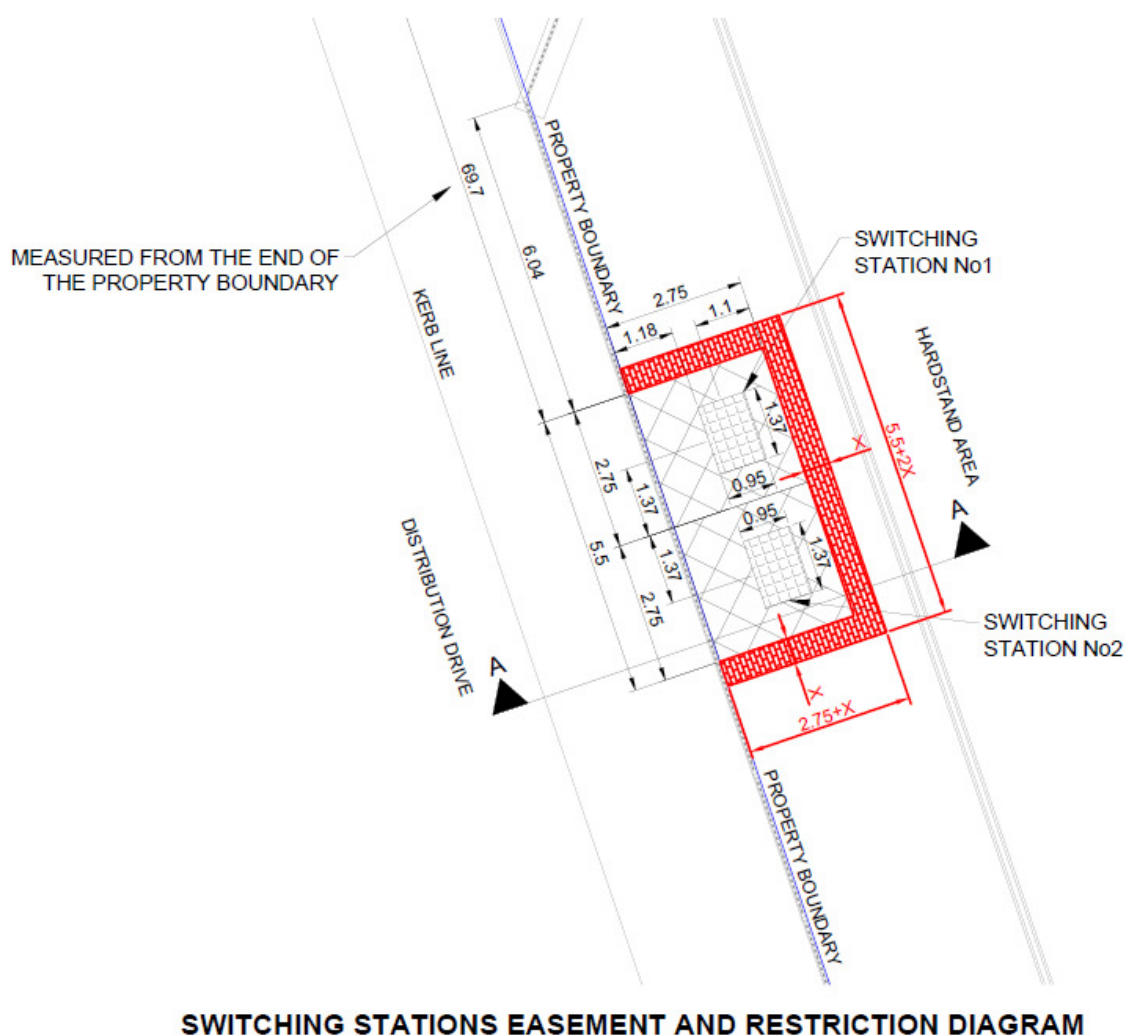


Figure 1.6a – Switching Station Design by Edgewater Connections

Adjacent to the two endeavour Energy owned switching station will be another switching station, which will be privately owned and maintained. This is the connection point for the high voltage ring main, which links up to the internal substations and main switchboard within the development.



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There are significant upgrades required to the Endeavour Energy infrastructure in order to ensure the required power can be provided to the development site. Power will be supplied from Mamre Zone Substation (located off John Morphett Drive, Erskine Park) to the two Endeavour Energy switching stations previously discussed.

To facilitate the works mentioned above, two x 11kV feeders from the Zone Substation will be required to be installed along Lenore Drive, Erskine Park Road, Mamre Road and Distribution Drive. This route is approximately 3,240 meters long and requires the following:

- Approx. 1,000m of the route has spare conduits which can be used;
- Approx. 2,300m of Trenching/conduit installation is required;
- Approx. 9,080m of 300mm² CU 3C Cable;
- Approx. 2,310m of 240mm² CU 3C Cable;
- 2 new Switching Stations.

Refer to the electrical drawings by Edgewater Connections titled “SBA Feeder Route_v5.pdf” for further detail regarding the high voltage infrastructure upgrade works required for the development. Additionally, refer to Figure 1.6b below showing the scope of the required infrastructure upgrade works (new ducts/ connections shown in red).

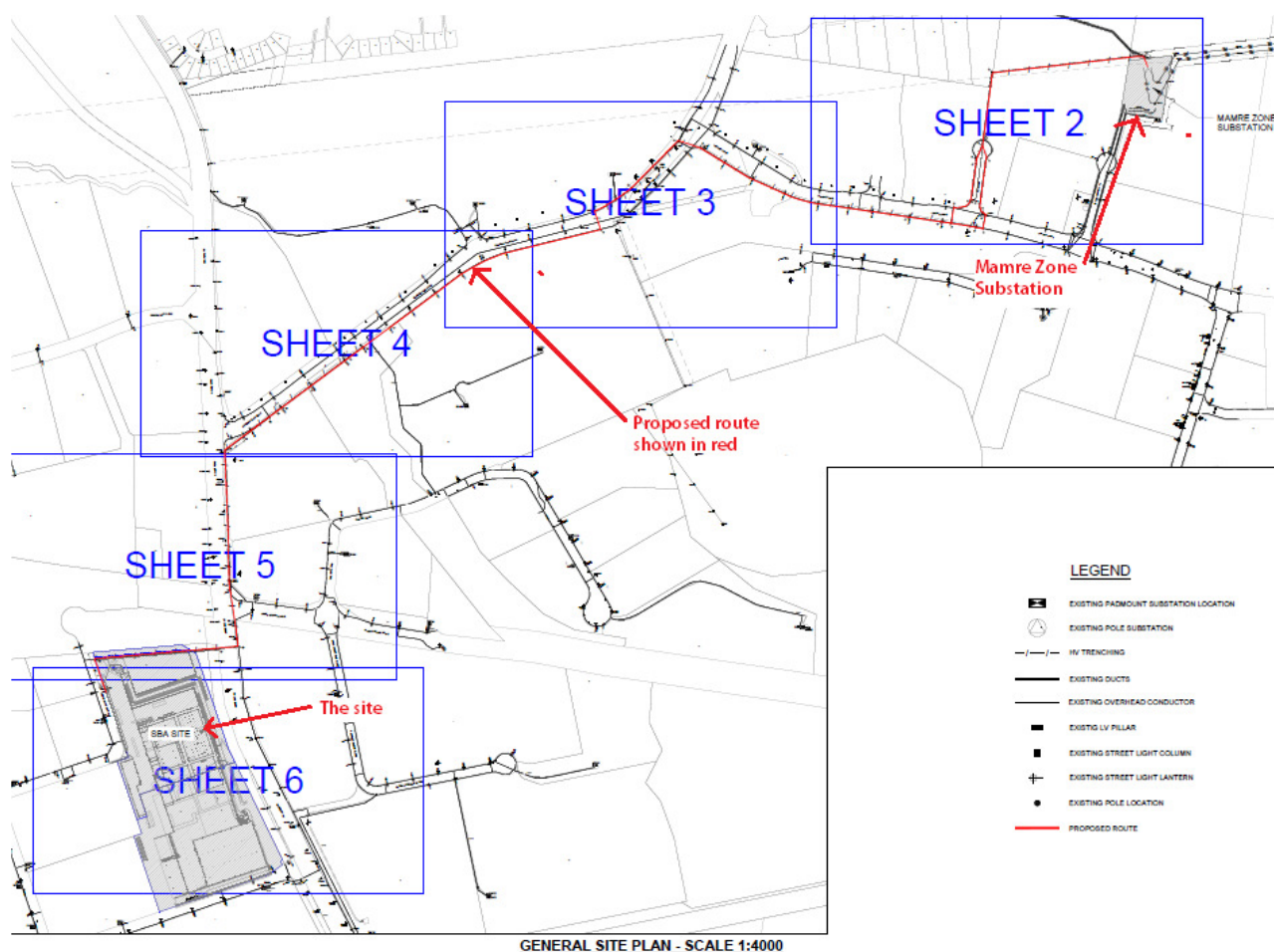


Figure 1.6b – Proposed HV Route - Design by Edgewater Connections



Refer to the Dial Before You Dig plans from Endeavour Energy included in the figure below, as well as within the Appendices, which summarise the current electrical infrastructure in place adjacent to the site. As discussed, this infrastructure does not have the capacity to meet the demand from the proposed development and therefore the works as outlined above will be required to be undertaken.

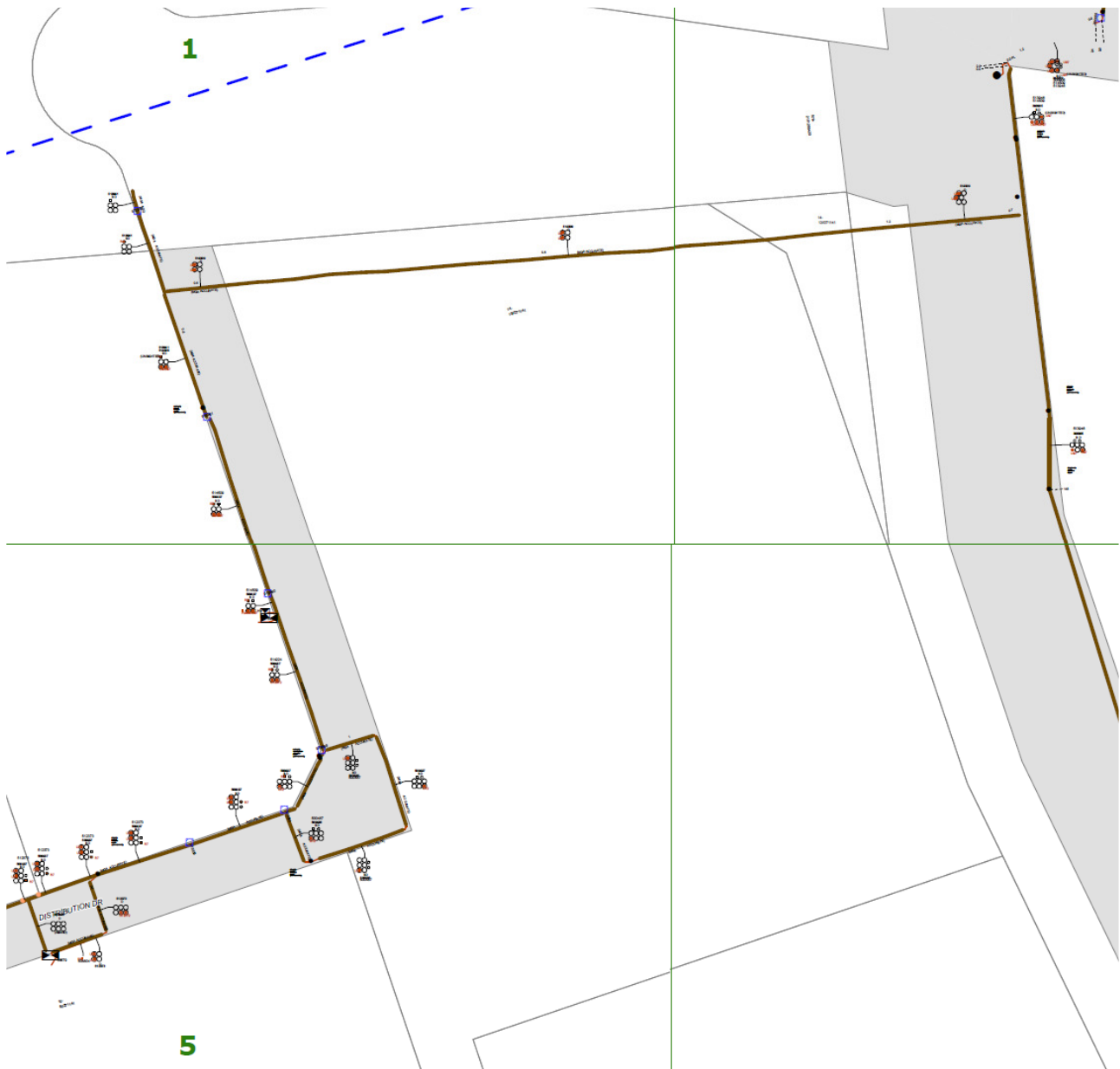


Figure 1.6c – Endeavour Energy DBYD



Overview of Proposed Electrical Design with the development site

A private 11kV switching station will be provided beside the Endeavour 11kV switching station on the Distribution Drive boundary. The incoming power supply has been negotiated with Endeavour Energy. An internal 11kV ring main will be established from this switching station that will connect 7-off 1500kVA transformers in the first instance, with a space for one additional 1500kVA transformer. 5-off transformers will be located (under cover) on the roof of the building to serve the equipment within the building, one transformer will be located adjacent to the Waste Water plant to supply it and another will be located on the property boundary to serve the corn processing area. Each transformer will be provided with a Ring Main Unit to enable it to be turned off without affecting other transformers.

Each transformer will supply a dedicated main switchboard with associated automatic power factor correction equipment. Power factor will be retained above 0.9. Each main switchboard will supply general light and power as well as the processing plant equipment.

Lighting will be provided internally to comply with the relevant section of AS1680 and externally to comply with the relevant section of AS1158. External lighting will comply with AS4282 to ensure that there are no, or at least acceptable, obtrusive effects.

1.7. Telecommunications

Refer to figures 1.7a and 1.7b below showing the nearby telecommunications infrastructure. The full set of Dial Before You Dig plans can be found within Appendix A.

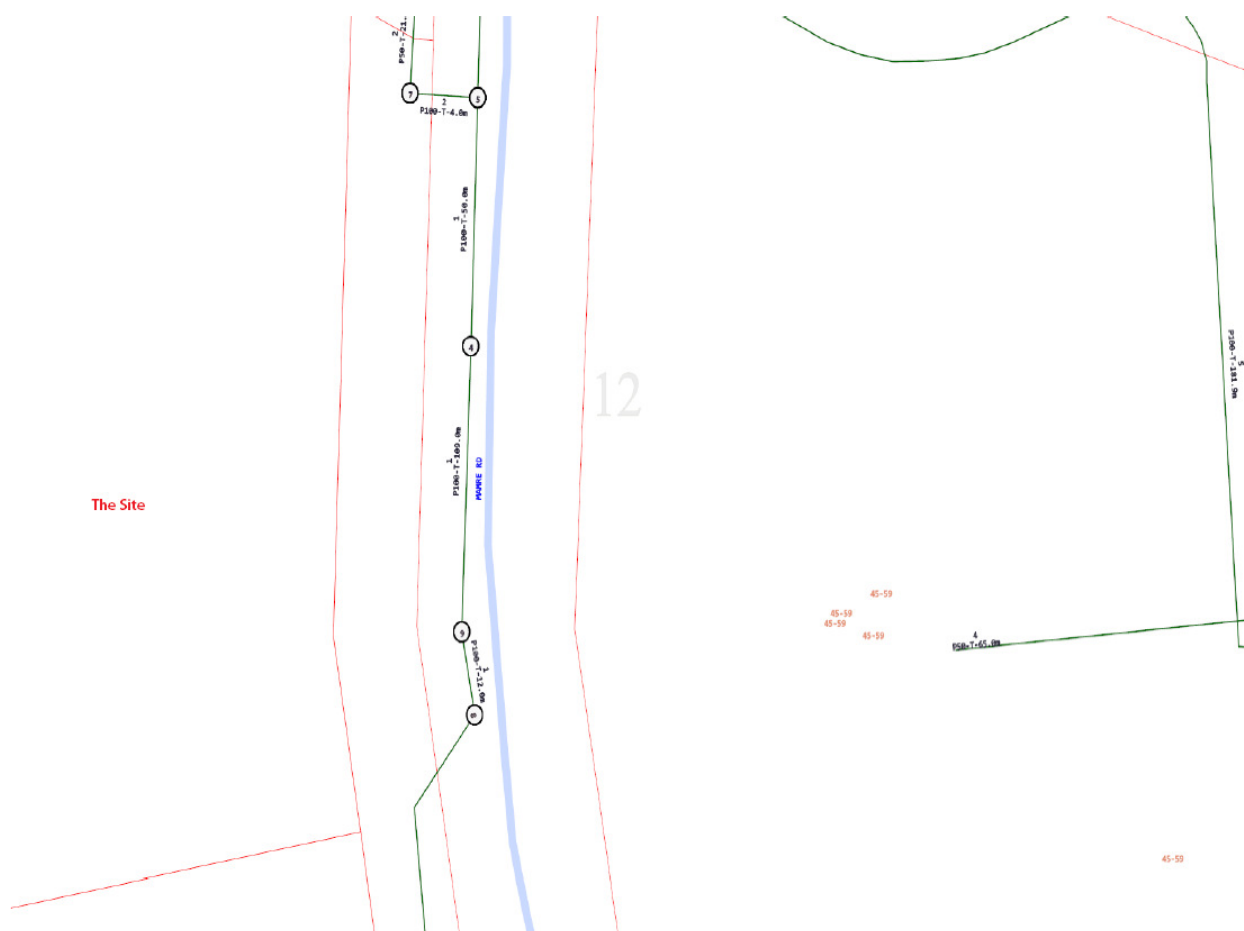


Figure 1.7a - NBN DBYD Plan

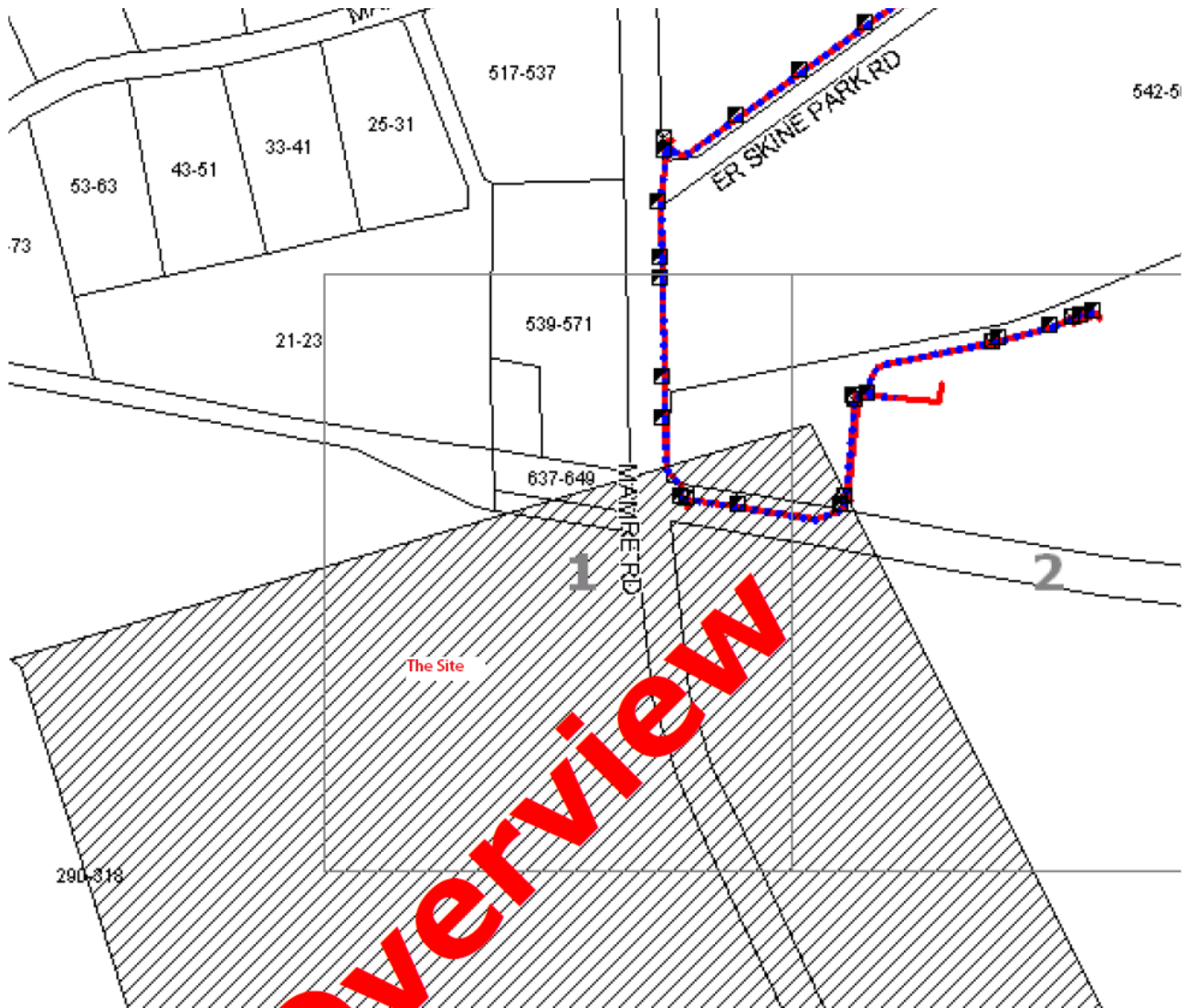


Figure 1.7b - Optus DBYD Plan

There are two (2) 100mm diameter and one (1) 50mm diameter telecommunications lead-in conduits proposed as a part of the development works. These conduits are proposed to be marked and capped at the Mamre Road property boundary, for future connection and extension by Telco. All infrastructure works within the road reserve are to be finalised by Telco. Refer to figure 1.7c below showing the proposed telecommunication lead-in works.



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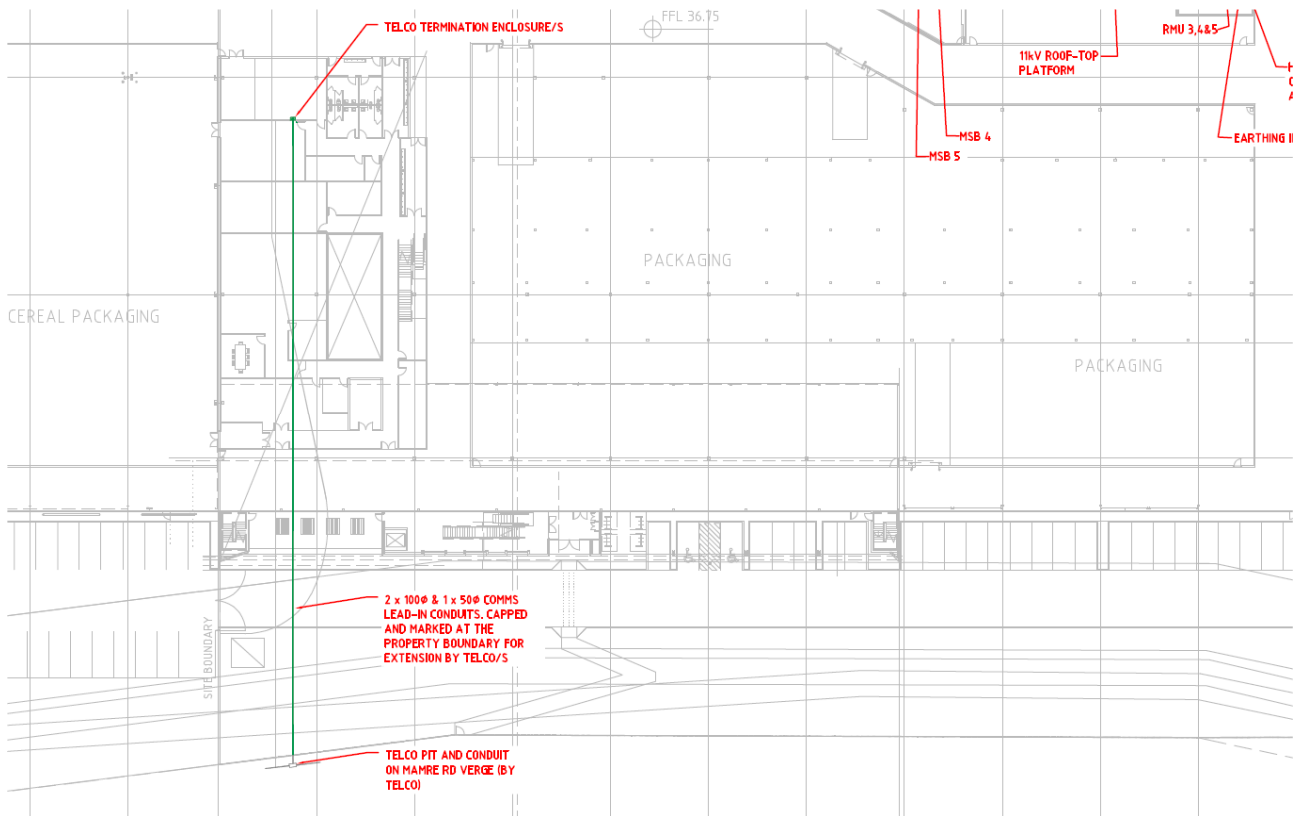


Figure 1.7c – Comms Lead-in Works

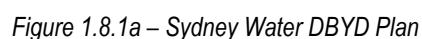
1.8. Hydraulic Services

The hydraulic infrastructure connections required for the Snackbrands development shall include the following:

- Sewer Drainage (Sydney water)
- Potable Water (Sydney water)
- Stormwater Drainage (Council)
- Gas (Jemena)
- Fire Hydrant (Sydney water)
- Fire Sprinkler (Sydney water)

1.8.1. Sewer Drainage

From services search, Sydney Water has provided a plan depicting all water services surrounding the subject site. Refer to Figure 1.8.1 below.



As agreed in principle with Sydney Water, a new sewer gravity pipe will be required to connect to the existing Sydney Water DN600mm sewer main within Mamre Road. This proposed pipe will be approximately 950m in length. Refer to Figure 1.8.1b below showing the approximate location of this sewer infrastructure works (shown in green).



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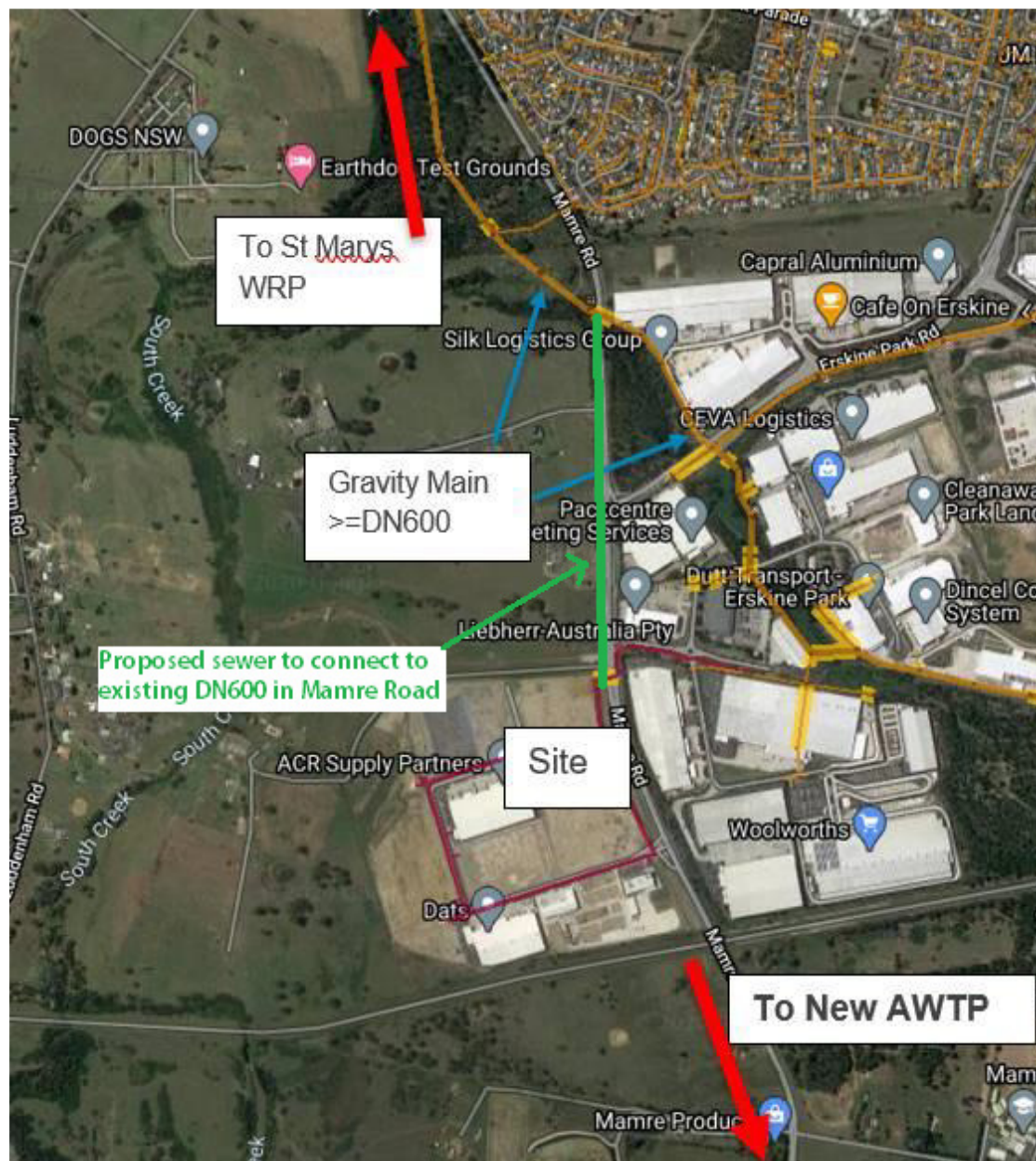


Figure 1.8.1b – Proposed Sewer infrastructure upgrade works

Based on the above, the internal wastewater design for the development is to connect to a future stub within Mamre Road. The details of this sewer connection point, in addition to the sewer infrastructure works, are to be confirmed by Sydney Water. Refer to Figure 1.8.1c below showing a concept sketch of the hydraulic connection point for the site.



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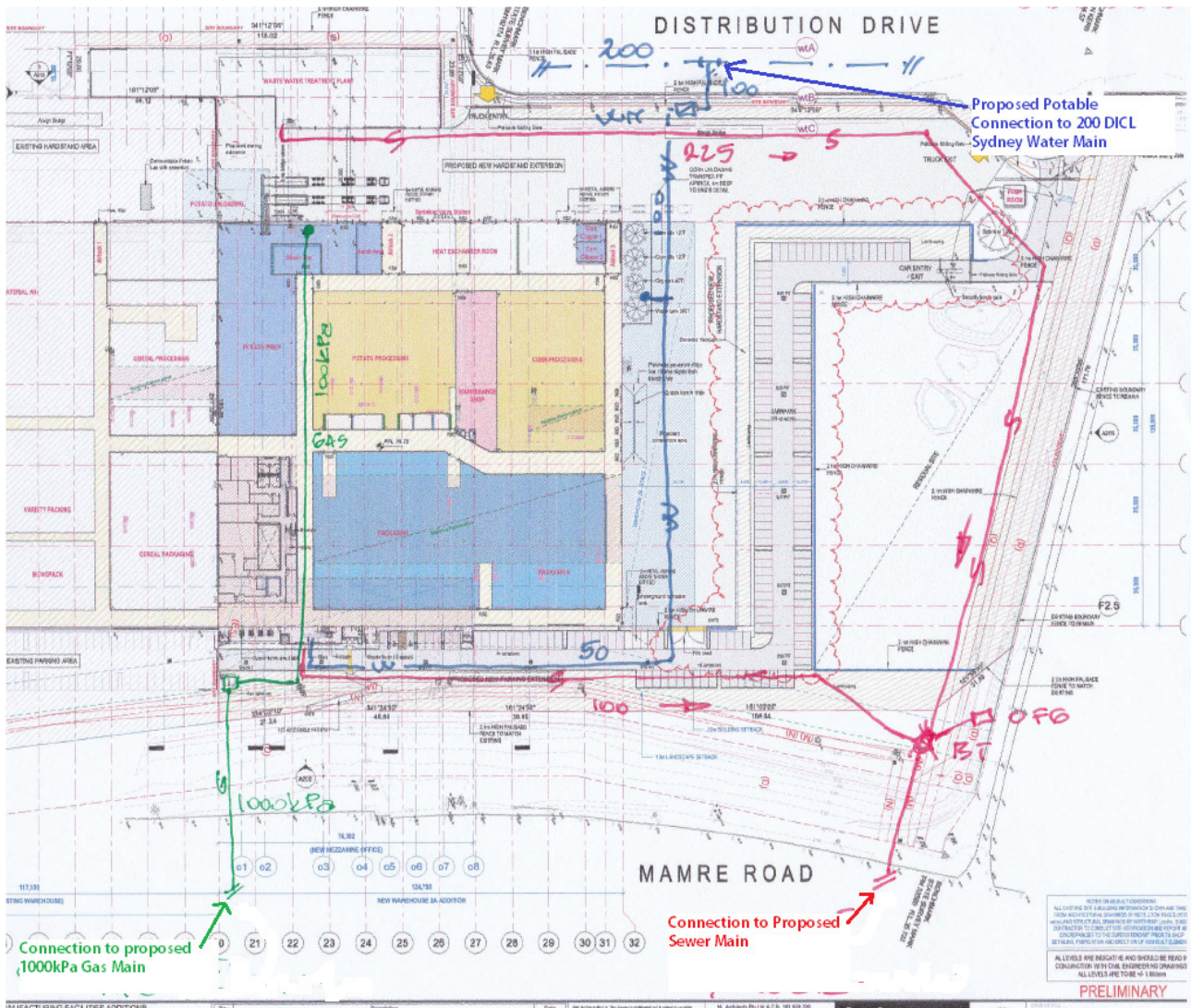


Figure 1.8.1c – Mark up of hydraulic Connections

1.8.2. Potable Water

Refer to Figure 1.8.1a above showing the Sydney Water Dial Before You Dig plan. The plan shows a 200mm Ductile Iron Cement Lined (DICL) service within Distribution Drive, as well as a 200mm DICL service on the far side of Mamre Road. The connection point for the potable and water services will be to the 200mm DICL service in Distribution Drive.

Refer to Figure 1.8.1c above showing the proposed connection point into the potable service.



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Refer to the feasibility letter from Sydney water (dated September 2020) for the advice from Sydney water in relation to the potable water connection requirements. Sydney Water advises that the potable connection for the development will be into a future DN300 potable water main in Mamre Road (proposed to be designed and constructed by others). However, the hydraulic consultant from Sparks and Partners has advised that the proposed connection point for the site is instead the 200mm DICL service within Distribution Drive, as stated above.

There are no recycled water services available at or near the development site, therefore no recycled water connection will be proposed for the development.

1.8.3. Natural Gas Services

The services map provided by Jemena Gas shows a 110 NY 210 kPa medium pressure gas main along Mamre Road along the front of the property and a polyethylene 50 NY 210 kPa medium pressure gas main & 110 polyethylene 210 kPa medium pressure gas main on James Erskine Drive across from the Development. The map for the site can be found in Appendix A and in Figure 1.8.3a below.



Figure 1.8.3a – Jemena DBYD Plan

As per discussions with Jemena, the proposed gas services for the development will not connect into any of the existing infrastructure, but will instead connect into a proposed 1000kPa dedicated gas main which is to be installed by Jemena.



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Refer to figure 1.8.3b below showing the proposed 1000kPa gas main (shown in blue) in relation to the development site. The proposed stub connection into the 1000kPa gas main is shown in red.



Figure 2.3.3b – Jemena Proposed 1000kPa Gas Main

Refer to figure 1.8.3c below showing the location of the gas meter along the Mamre Road boundary, as per the architectural drawings by HLA architects. Additionally, refer to figure 1.8.1c which is a sketch by Sparks and Partners showing the proposed gas connection to the 1000kPa main.



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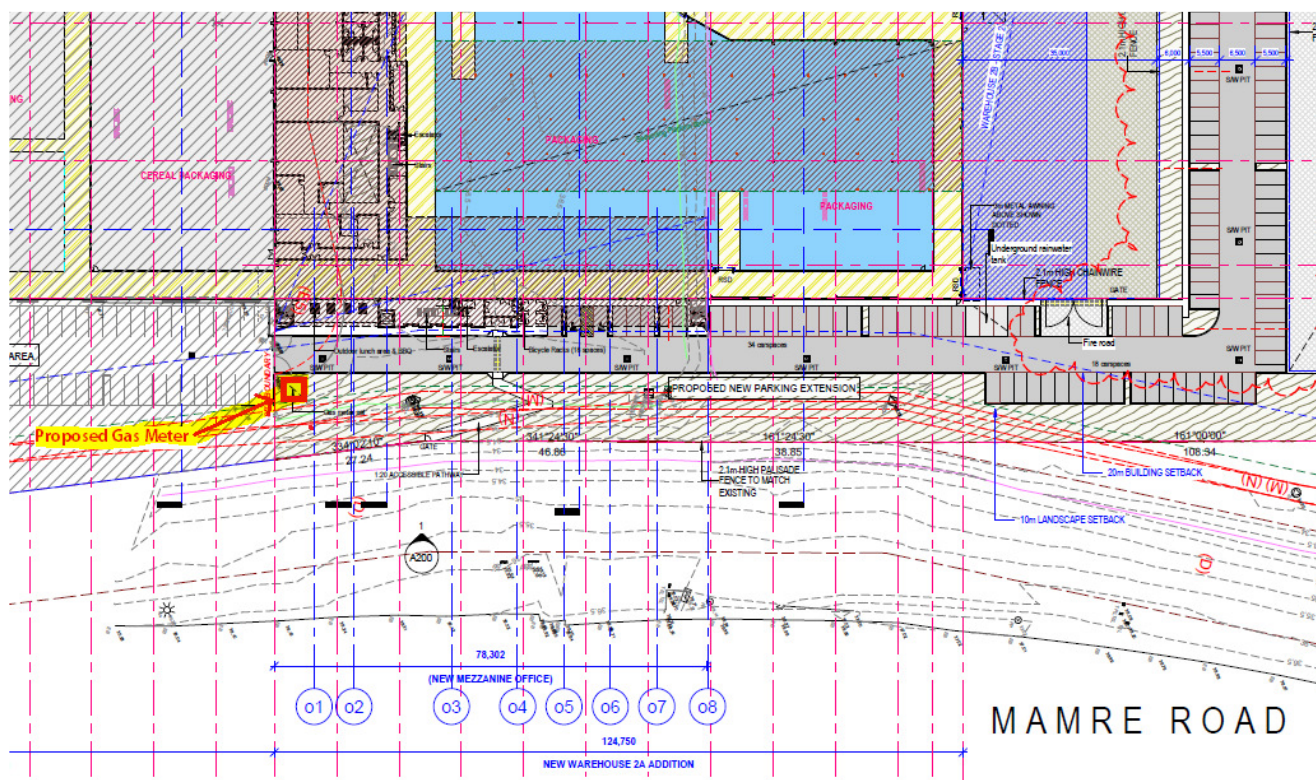


Figure 1.8.3c – Proposed Gas Meter – Shown on Architectural Plan by HLA Architects

1.8.4. Fire Hydrant System

The building is required to be covered by a fire hydrant system throughout in accordance with NCC / BCA Volume 1 Section E1.3 and complying with AS 2419.1 – 2005. An existing hydrant system and hose reel system that was installed as a part of the previous stage has a direct feed water supply system from town main connection with a 150mm hydrant ring main around the building. This is to be extended around the proposed manufacturing development and has sufficient capacity to supply the fire hydrant system for the entire site. Refer to figures 1.8.4a and 1.8.4b below for further details.



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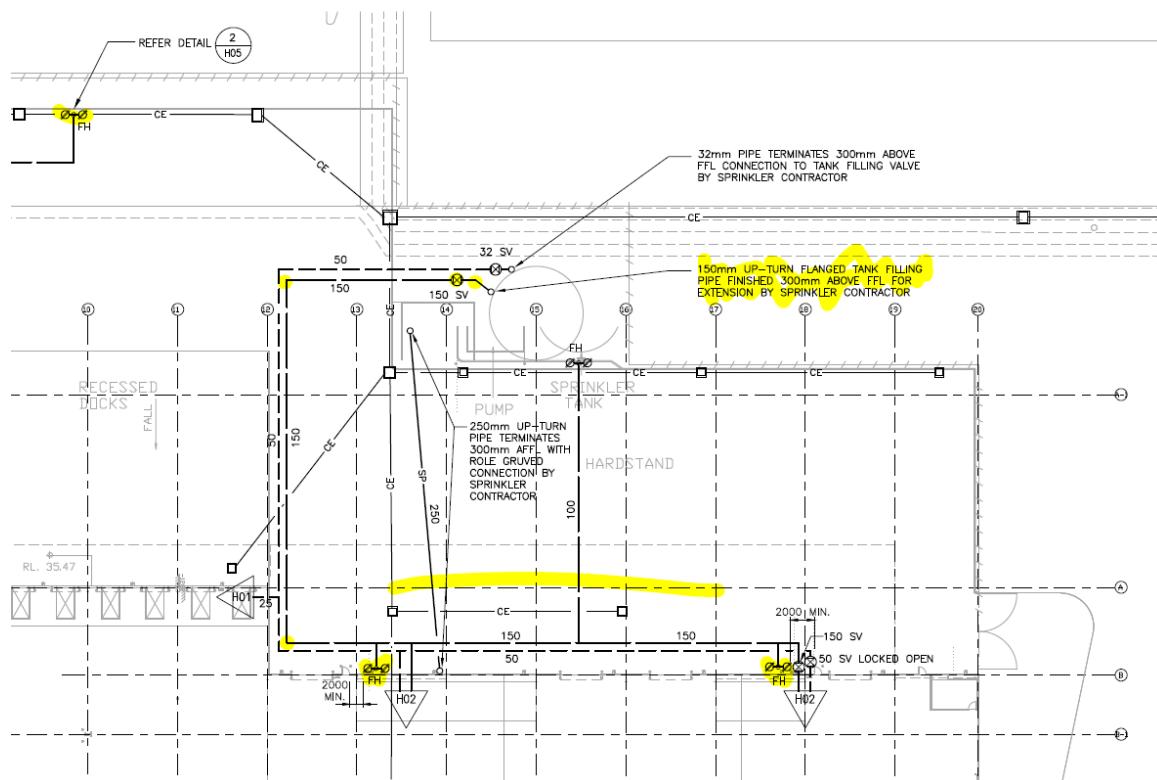


Figure 1.8.4a – Existing Fire Services for previous stage

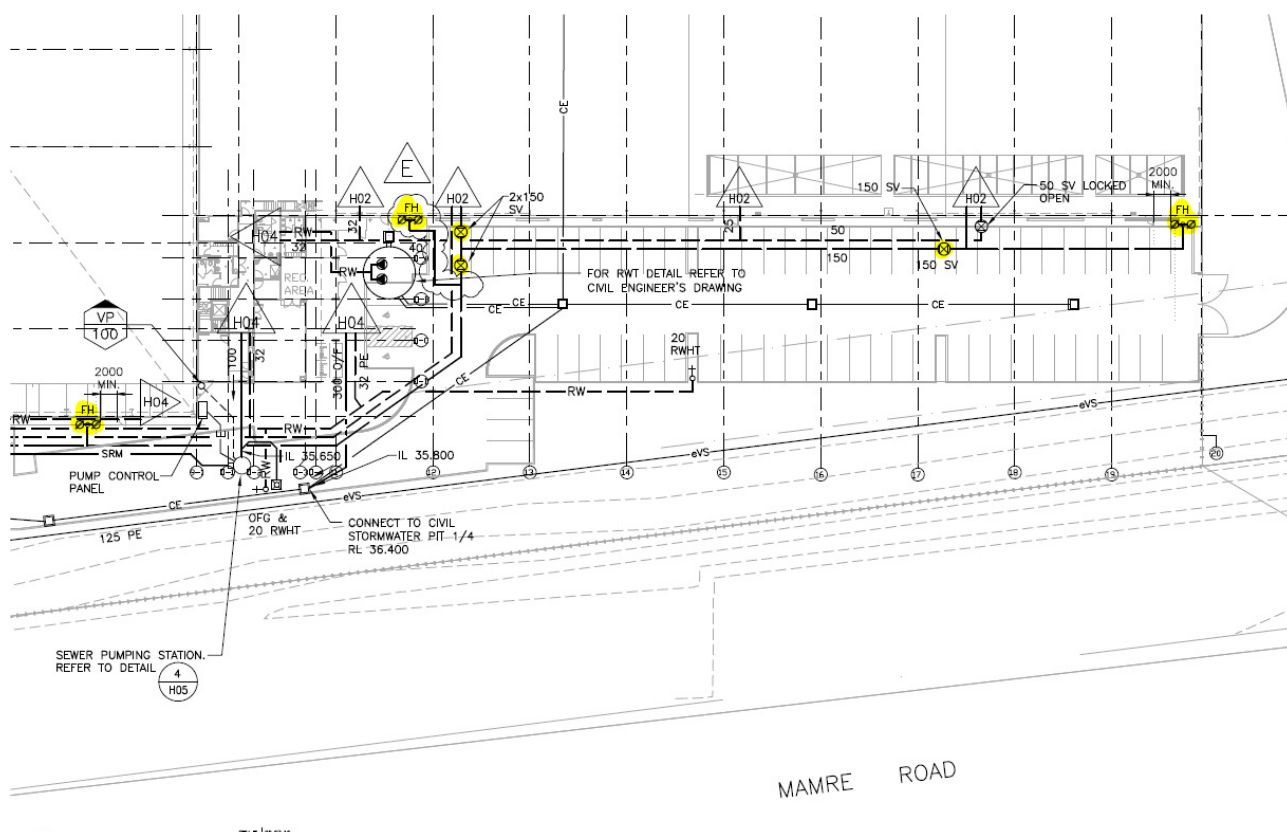


Figure 1.8.4b – Existing Fire Services for previous stage



1.8.5. Fire Sprinkler System

Sprinkler protection for all areas of the existing warehouse is to be designed in accordance with FM Global Data Sheets and/or hydraulically proven to satisfy FM Global guidelines. The sprinkler design for areas of the existing building that are relevant to the new manufacturing extension are as follows.

- Low bay warehouse – 12 x K22 (K320 metric) @ 350 kPa.
- Low bay awning – 12 mm/min over 230 m² (HC-3)
- Dock offices – 4 mm/min over 140 m² (HC-1)

The proposed fire sprinkler systems shall be supplied by the existing fire pumps and tanks available at site, refer to below:

- Existing tanks capacity – 540kL.
- Existing pumps– two diesel duty and standby Pumps, one (1) pump is to FM Global and one pump appears to have been installed to AS 2941.

The fire sprinkler system will be provided with five sprinkler control valve sets on the valve room located at the façade of the proposed new building.

A proposed water mist system shall have a separate pump to boost the ring main water supply.

1.9. Stormwater

There is an existing ø900mm stormwater stub at the North-West corner of the site with an approximate invert level of IL 32.40m. The stub connects into the existing stormwater within Distribution Drive. A proposed pit will be constructed over the existing stub at this location with a reduced level of RL 35.30m. There will be no need for on-site detention or on-site water quality treatment as there is a downstream detention structure and bio-retention basin that will address these issues respectively. The existing 900mm stormwater pipe has sufficient capacity to convey the post-developed flows from the development site.

There will be a 50kL underground rainwater tank in the Eastern carpark for the purpose of maximising re-use and minimising potable use of rainwater. 2930m² of the roof area will be directed towards the 50kL rainwater tank.

Refer to Figure 1.9 below showing the proposed stormwater connection point.

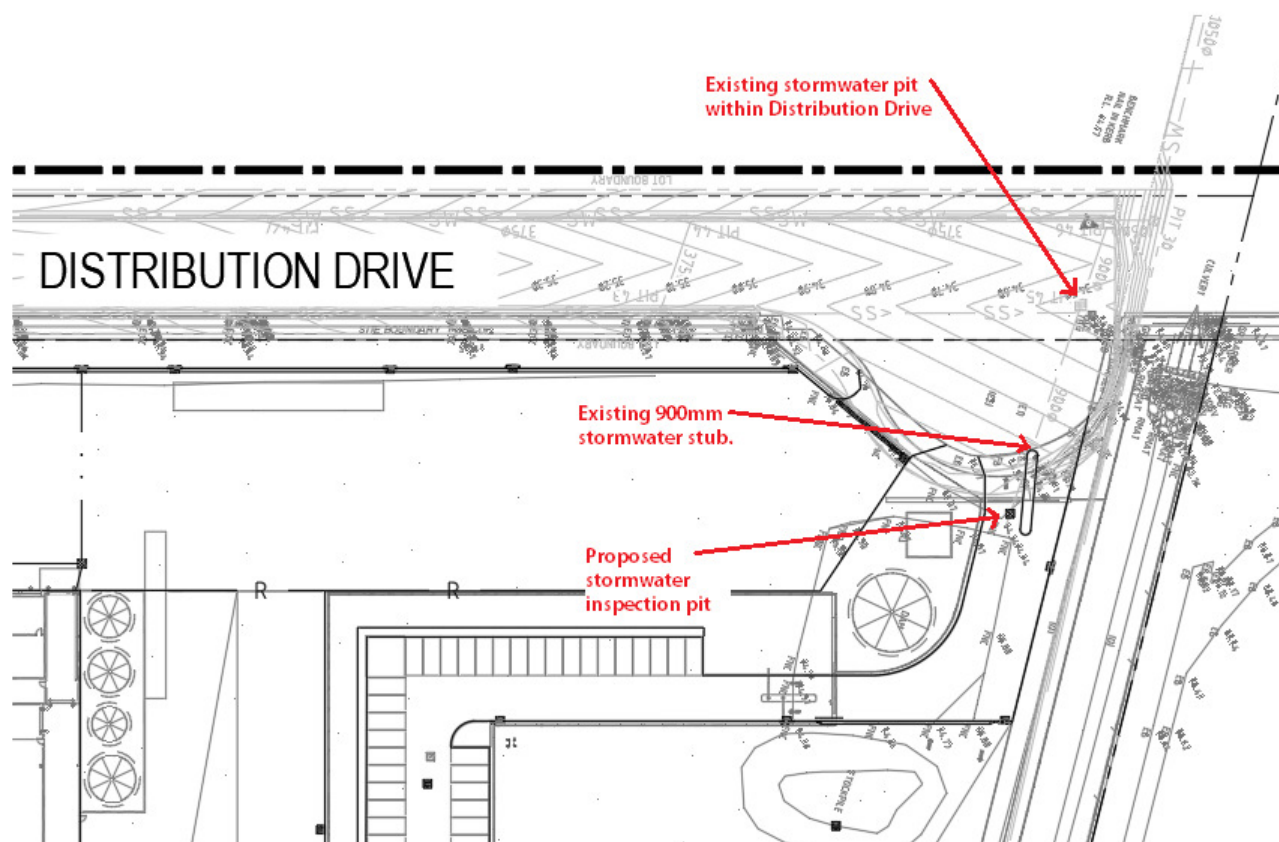
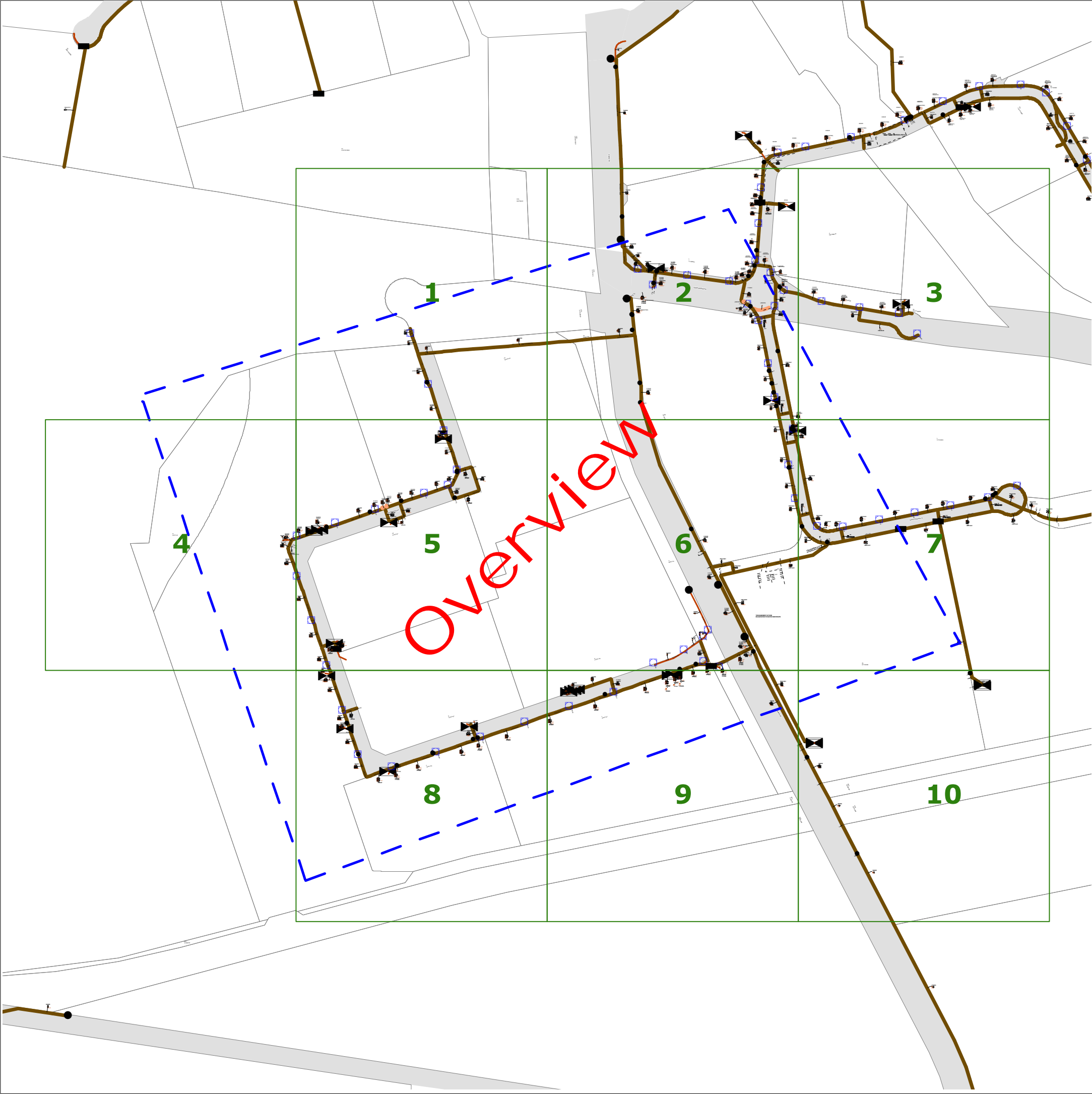


Figure 1.9 – Proposed Stormwater Connection Point – Design by Henry & Hymas



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APPENDIX A – Dial Before You Dig Plans



WARNING

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- 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 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.
- Endeavour Energy plans **do not** show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
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- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

DISCLAIMER

Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in the plans is as accurate as possible it will accept no liability for inaccuracies in the information shown on such plans.

LEGEND

- or ■ Street light column
- ▤ Padmount substation
- or ■ Overground pillar (O.G.Box)
- ▤ Underground pit
- Duct run
- Cable run
- Typical duct section
- ▲ Asbestos warning



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






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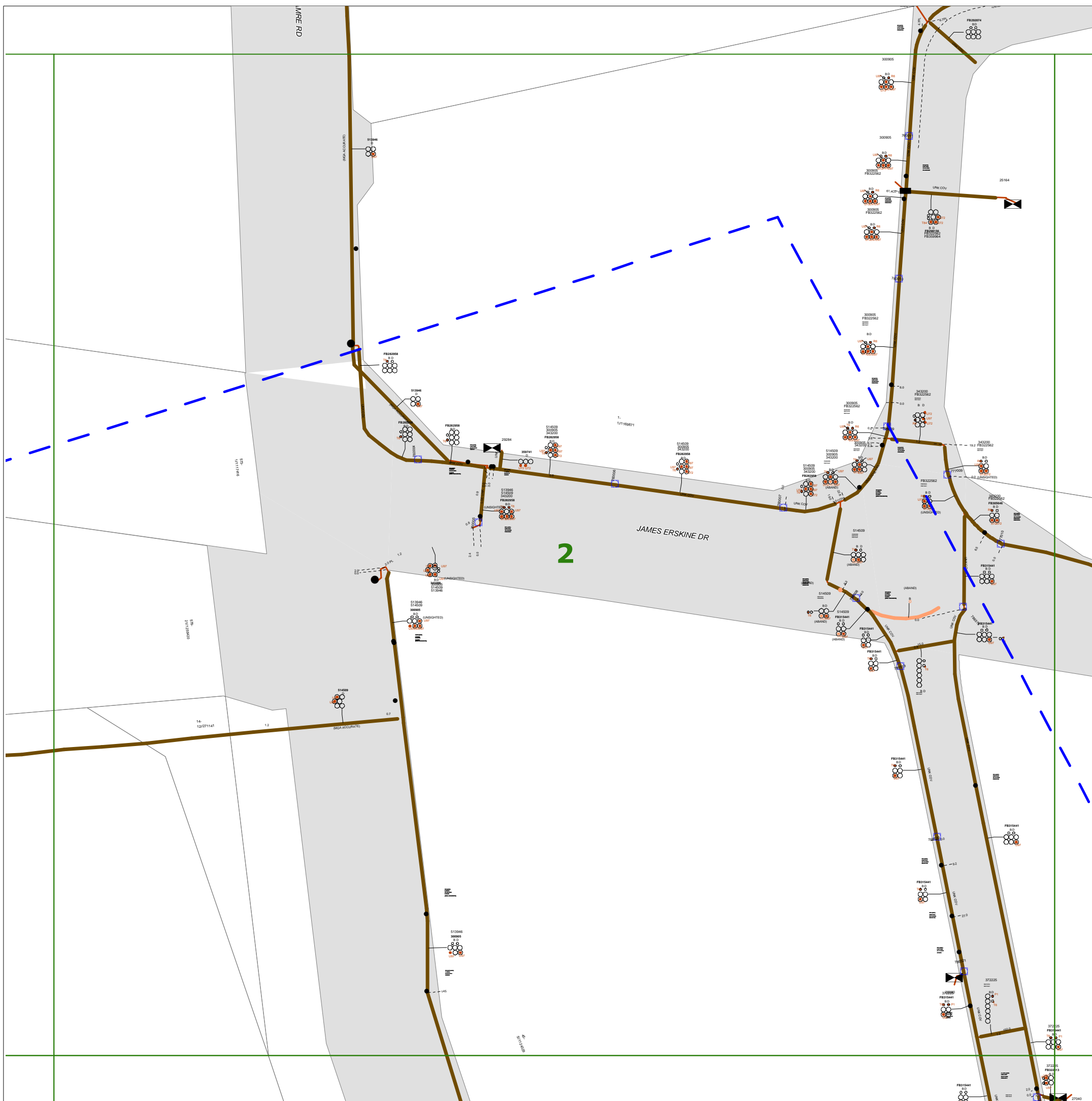
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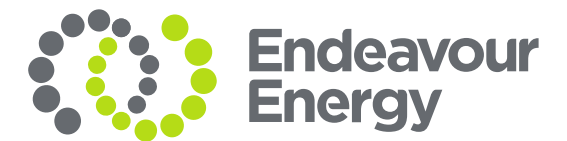
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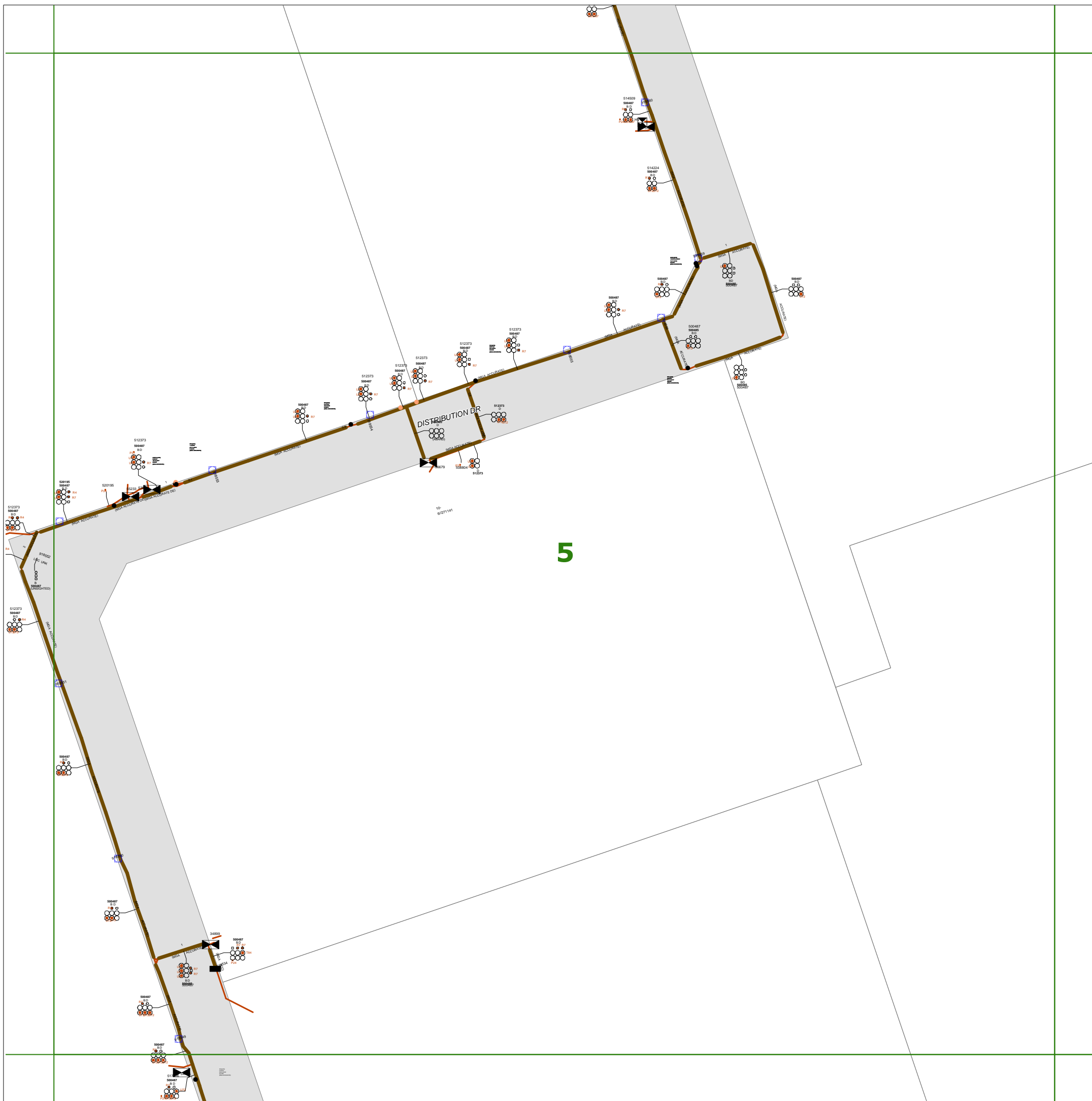
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LEGEND

- or ■ Street light column
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- or ■ Overground pillar (O.G.Box)
- ▤ Underground pit
- Duct run
- Cable run
- ⊙ Typical duct section
- ▲ Asbestos warning

**NOT TO SCALE**

DBYD Sequence No.:	111079804
Issued Date:	23/06/2021



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






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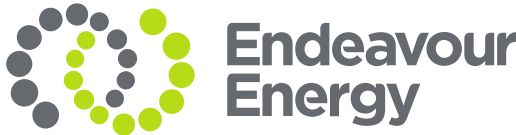
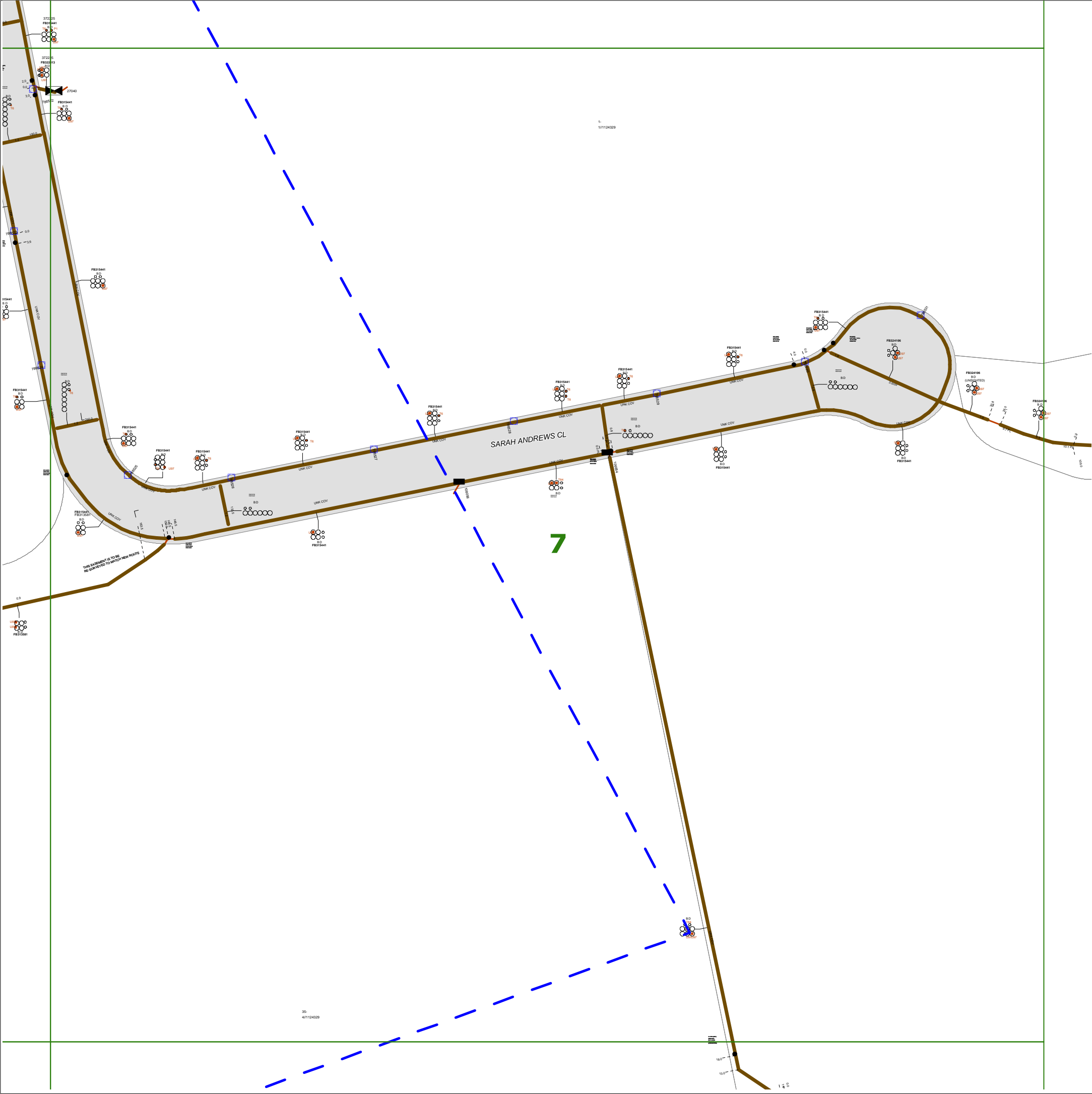
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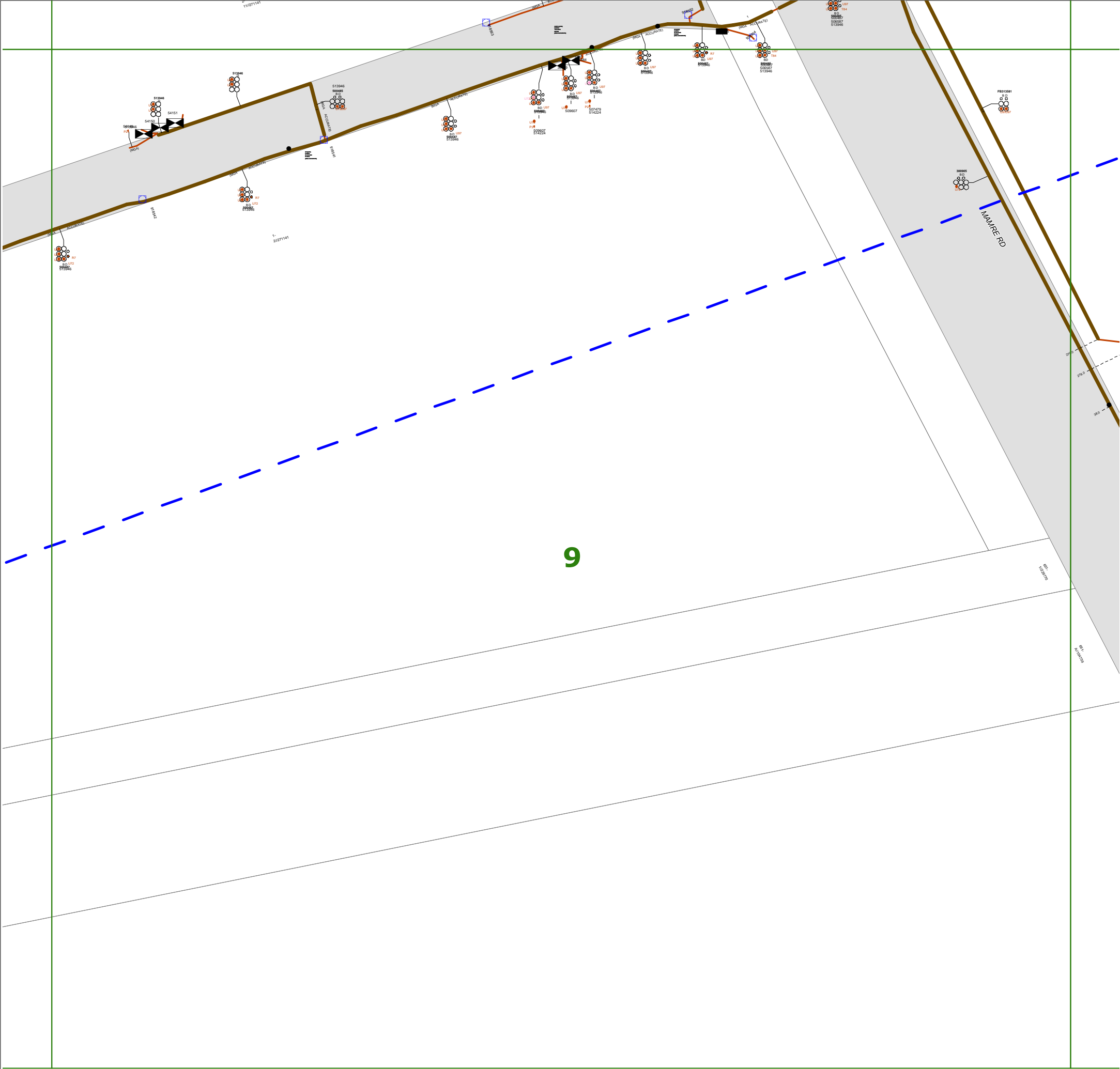
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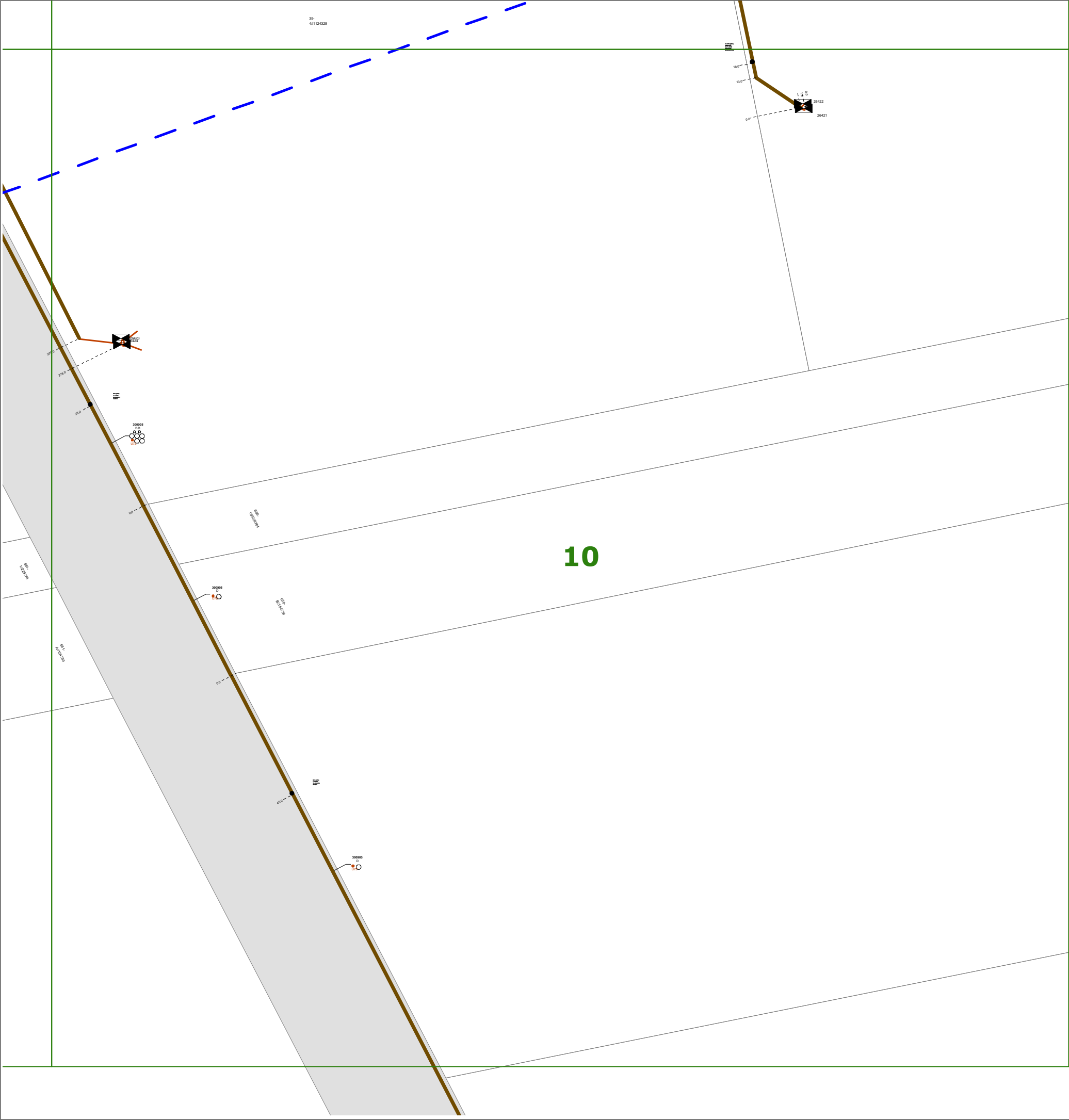
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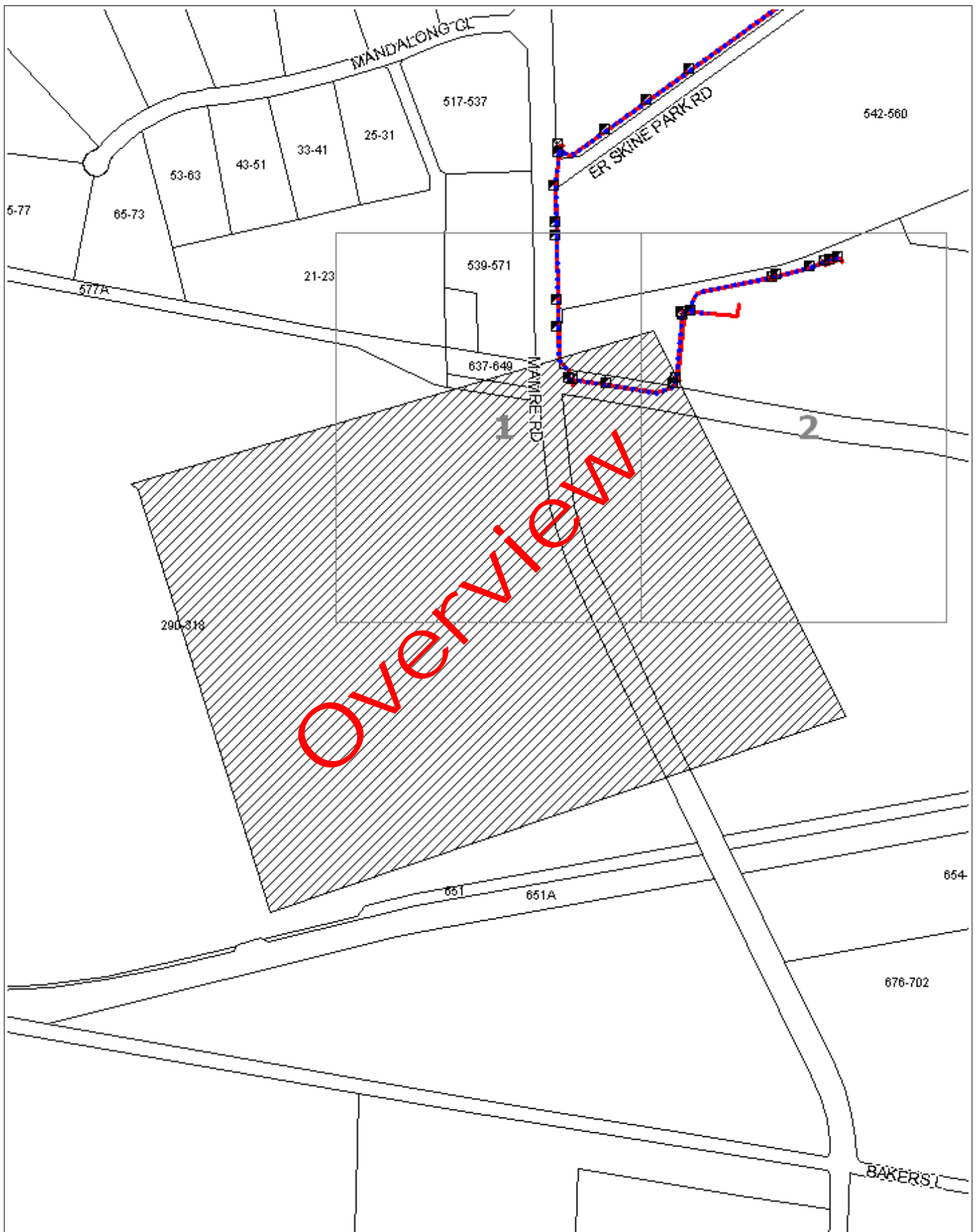
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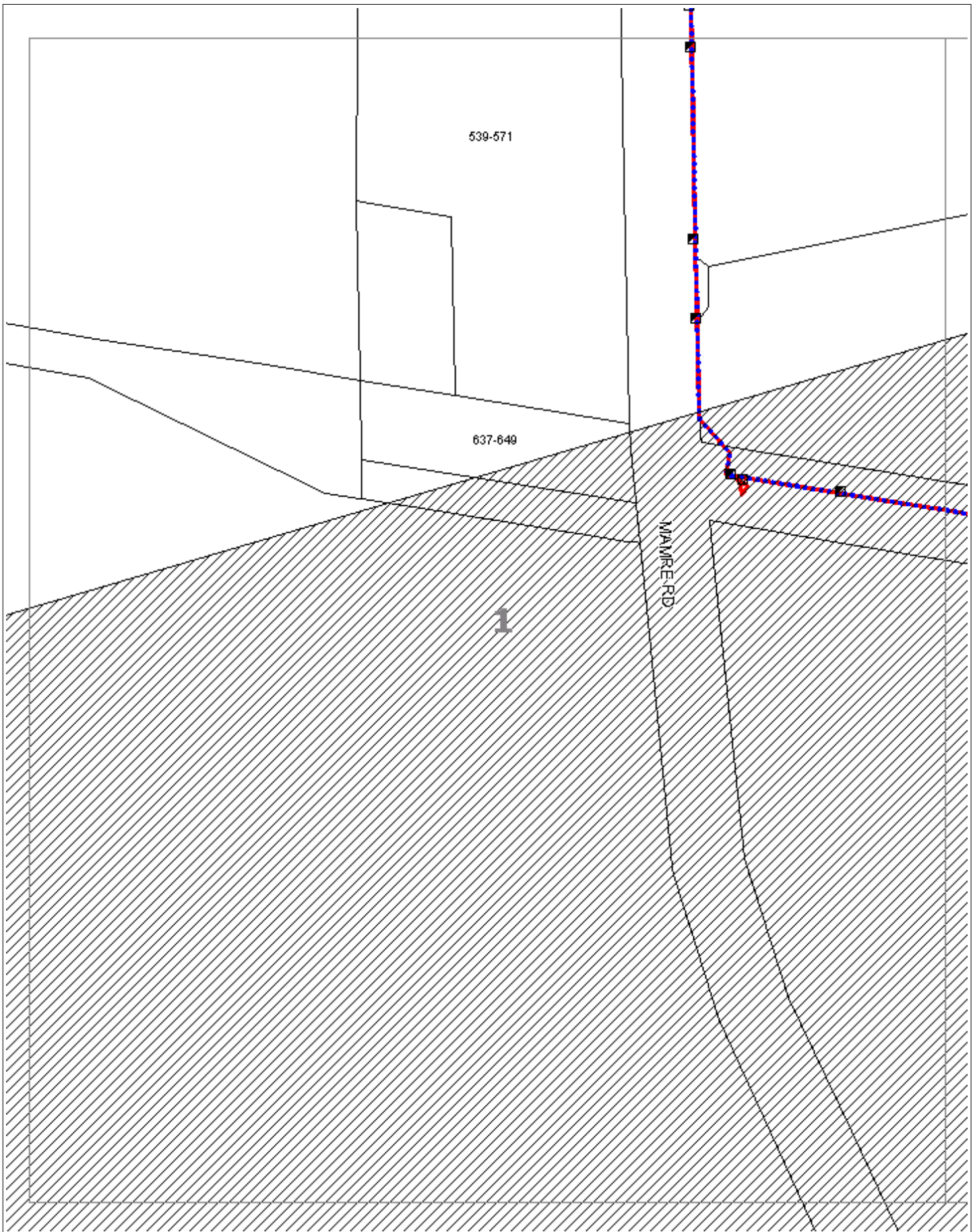
Sequence Number: 111079806

Date Generated: 22/06/2021



For all Optus DBYD plan enquiries –
Email: Fibre.Locations@optus.net.au
For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208





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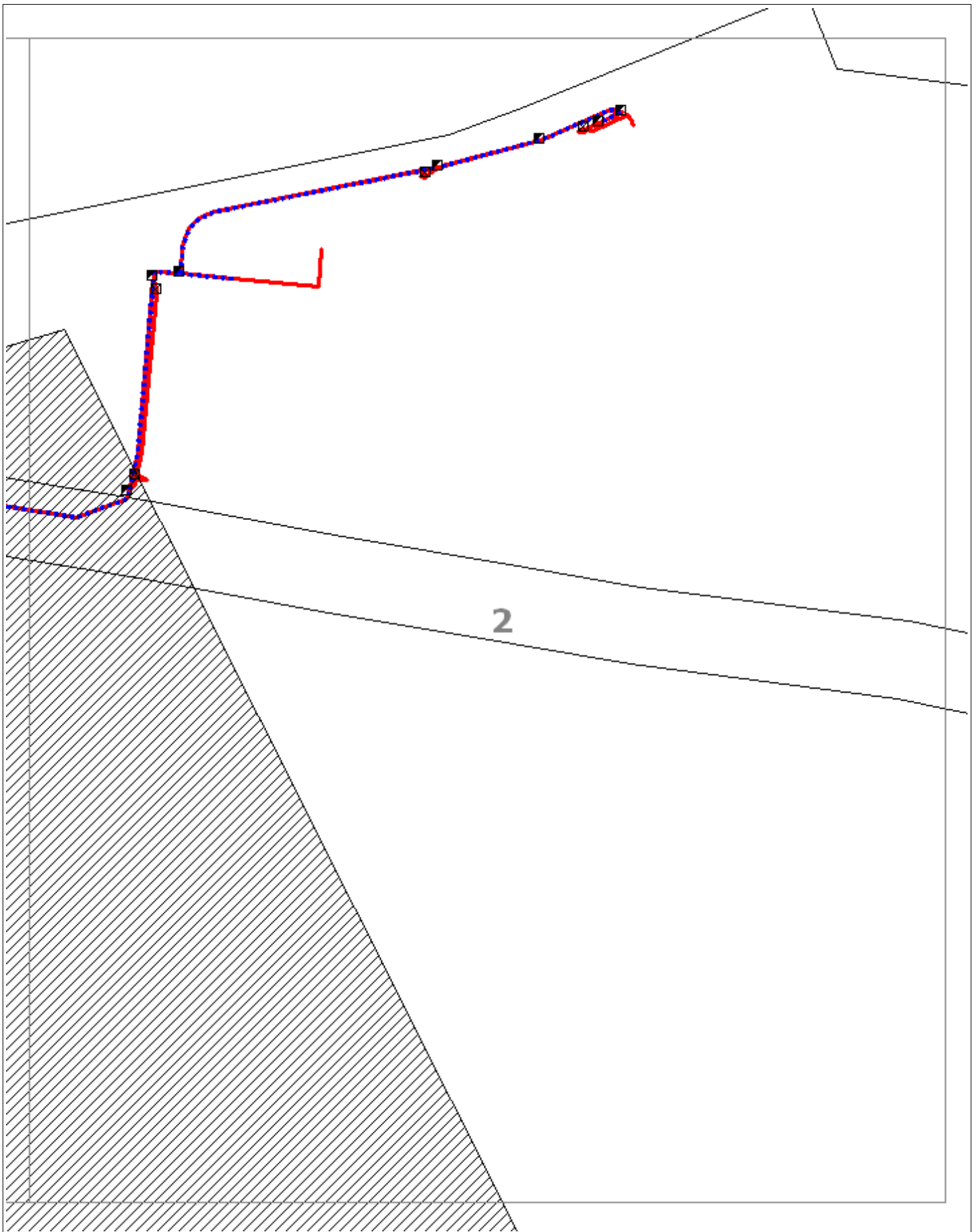
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To: Mr Matthew Mishevski
Phone: Not Supplied
Fax: Not Supplied
Email: mmishevski@hhconsult.com.au

Dial before you dig Job #:	21855071	 DIAL BEFORE YOU DIG www.1100.com.au
Sequence #	111079809	
Issue Date:	22/06/2021	
Location:	Distribution Dr. , Orchard Hills , NSW , 2748	

Indicative Plans

1	6	11	16
2	7	12	17
3	8	13	18
4	9	14	19
5	10	15	20

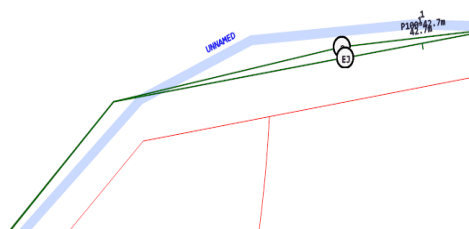


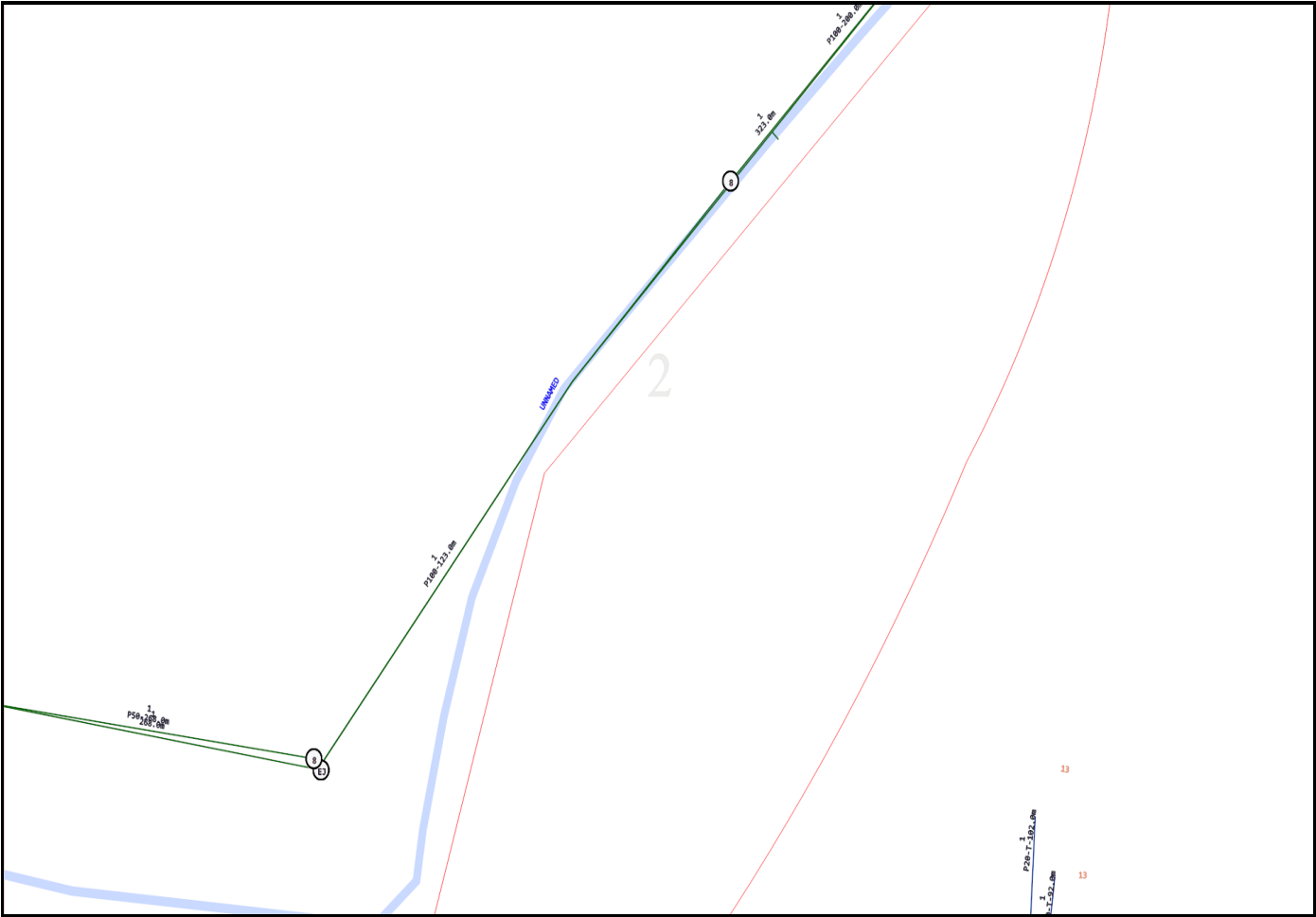
LEGEND

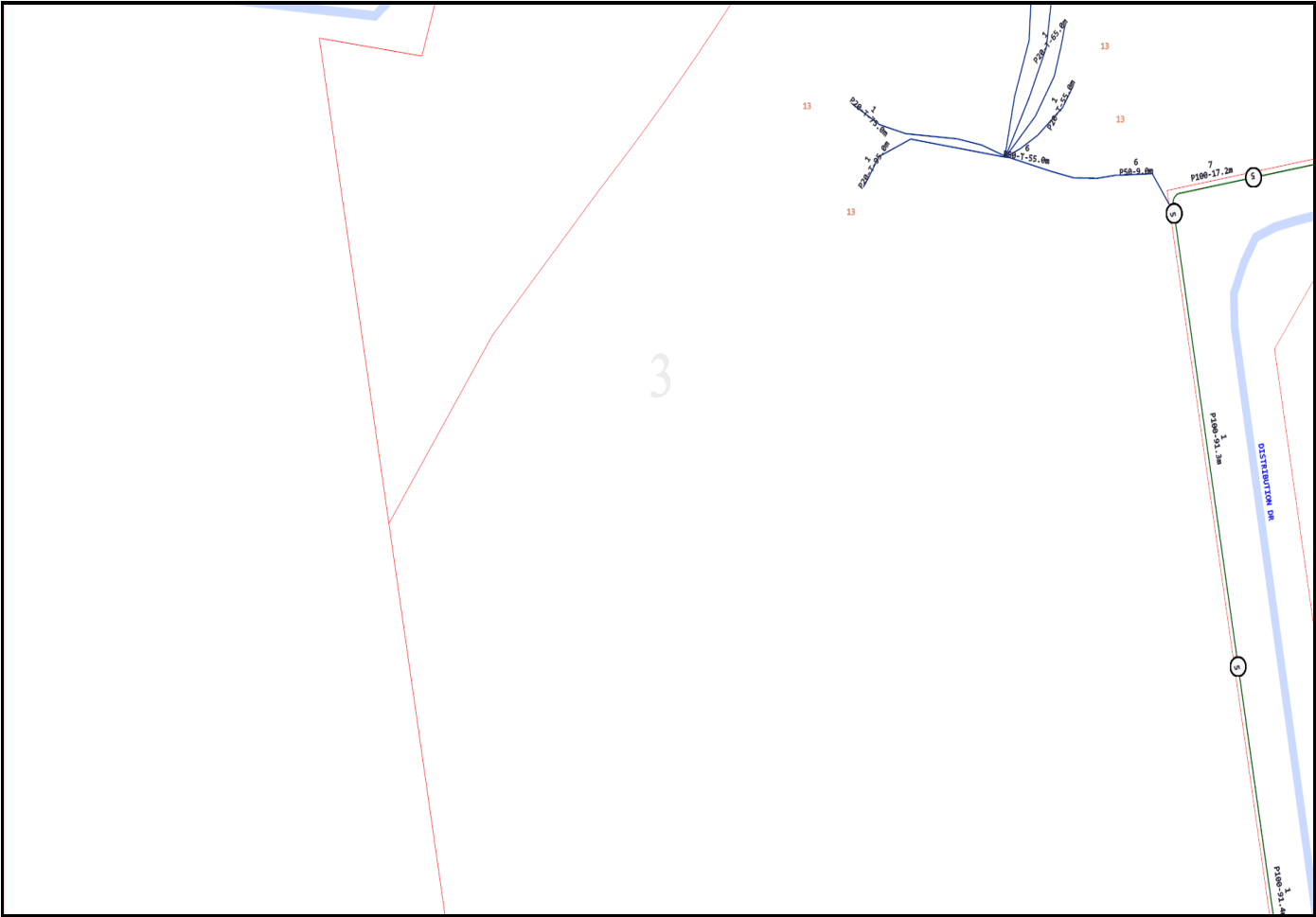


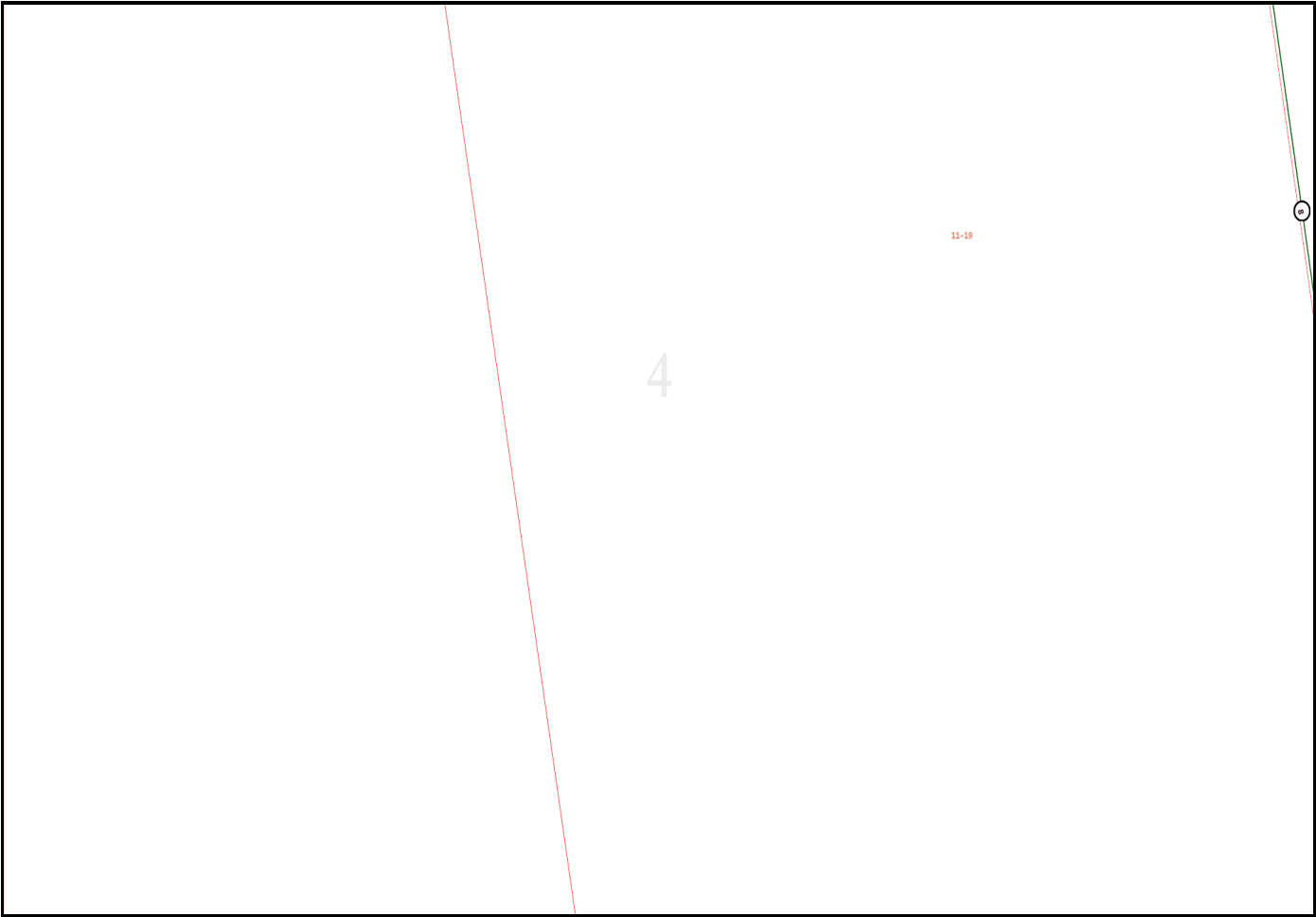
	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40)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

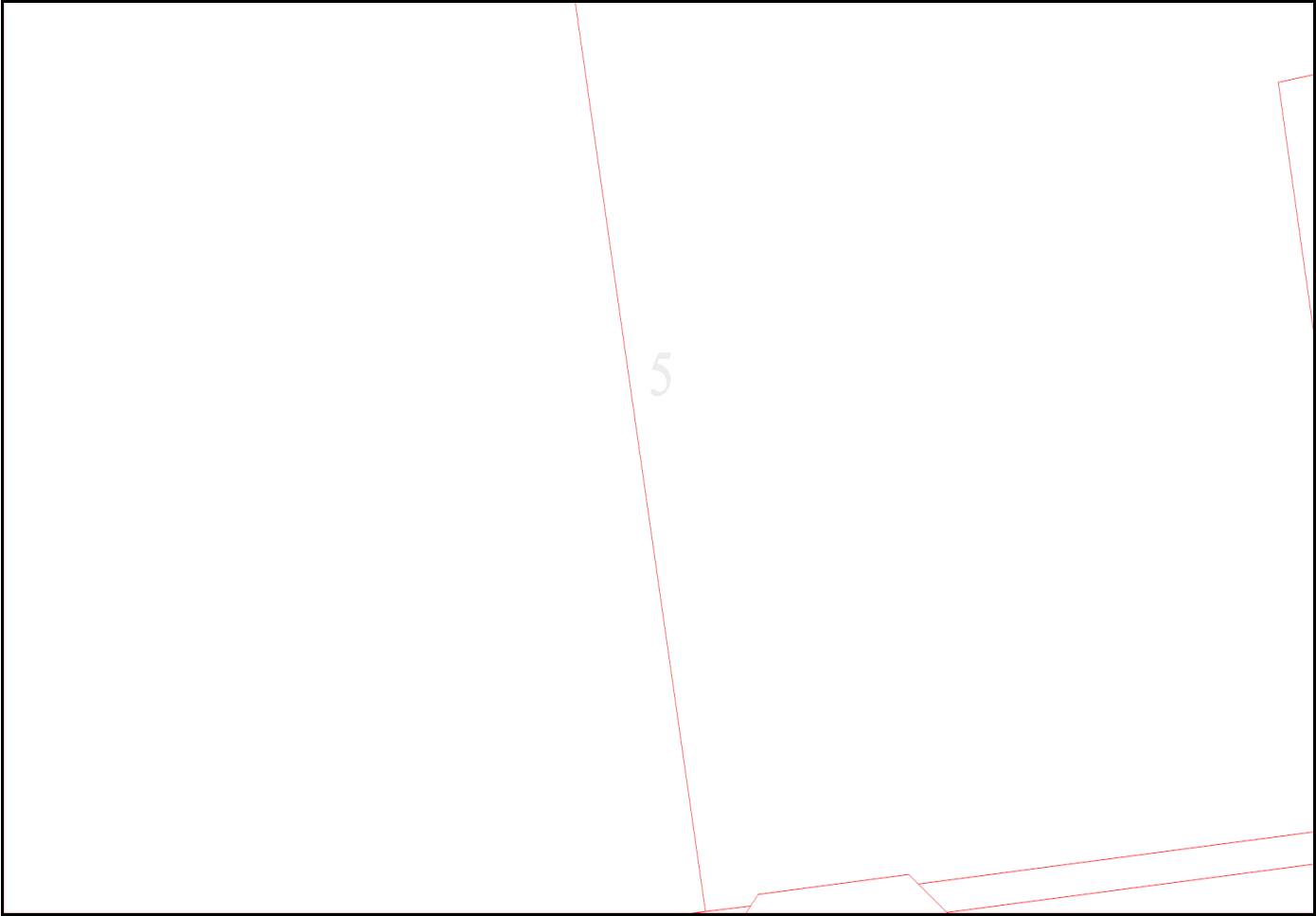
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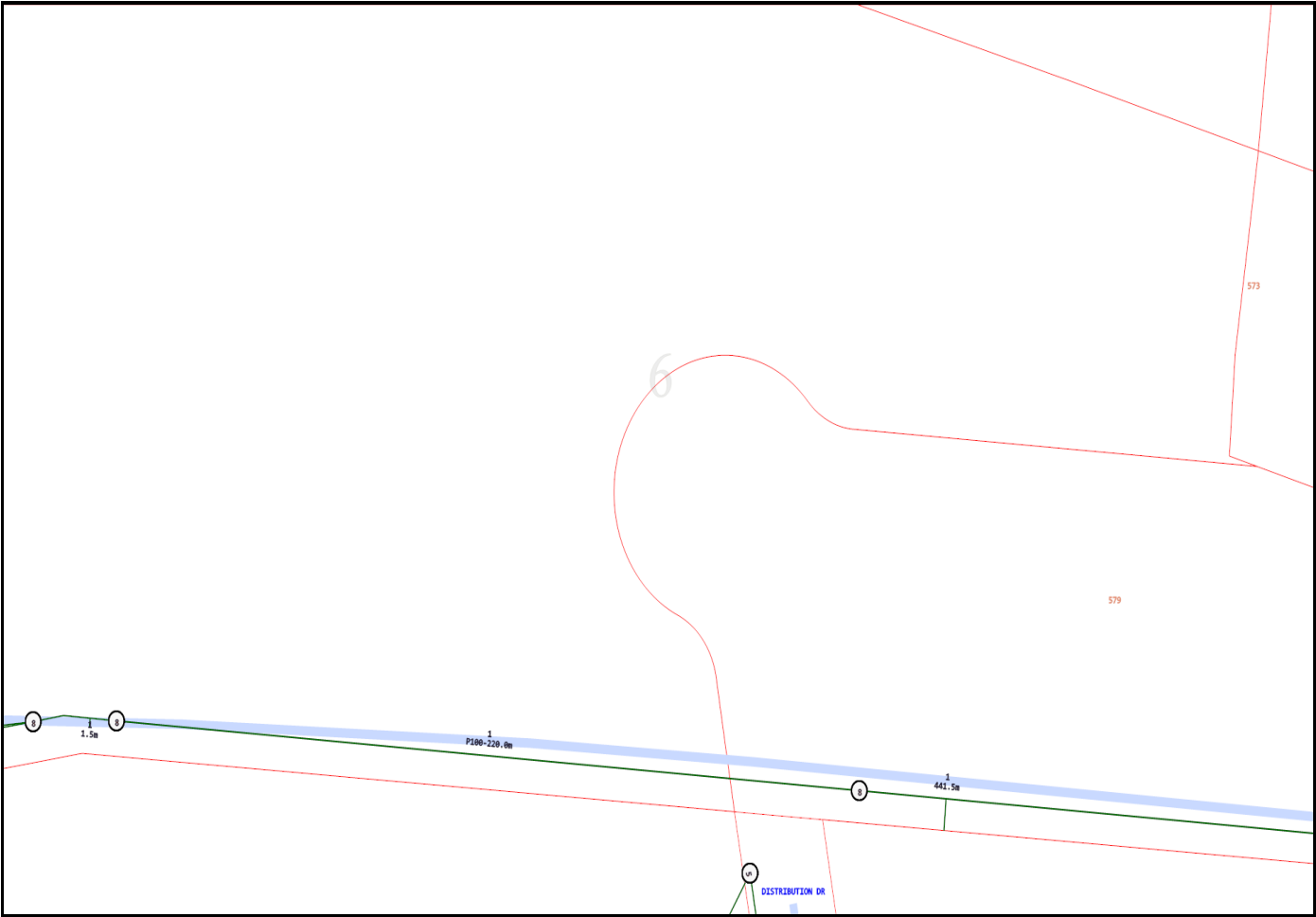




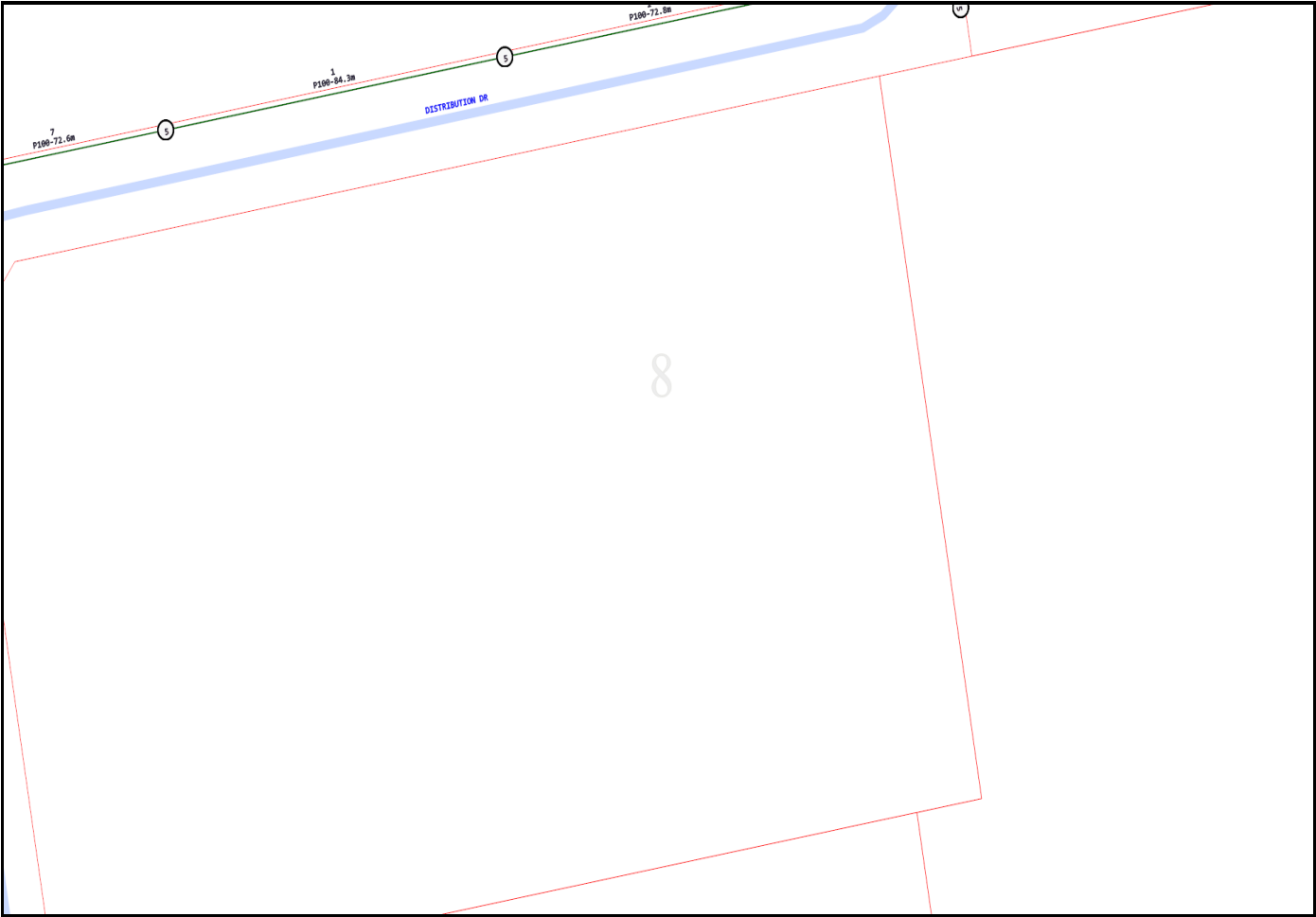


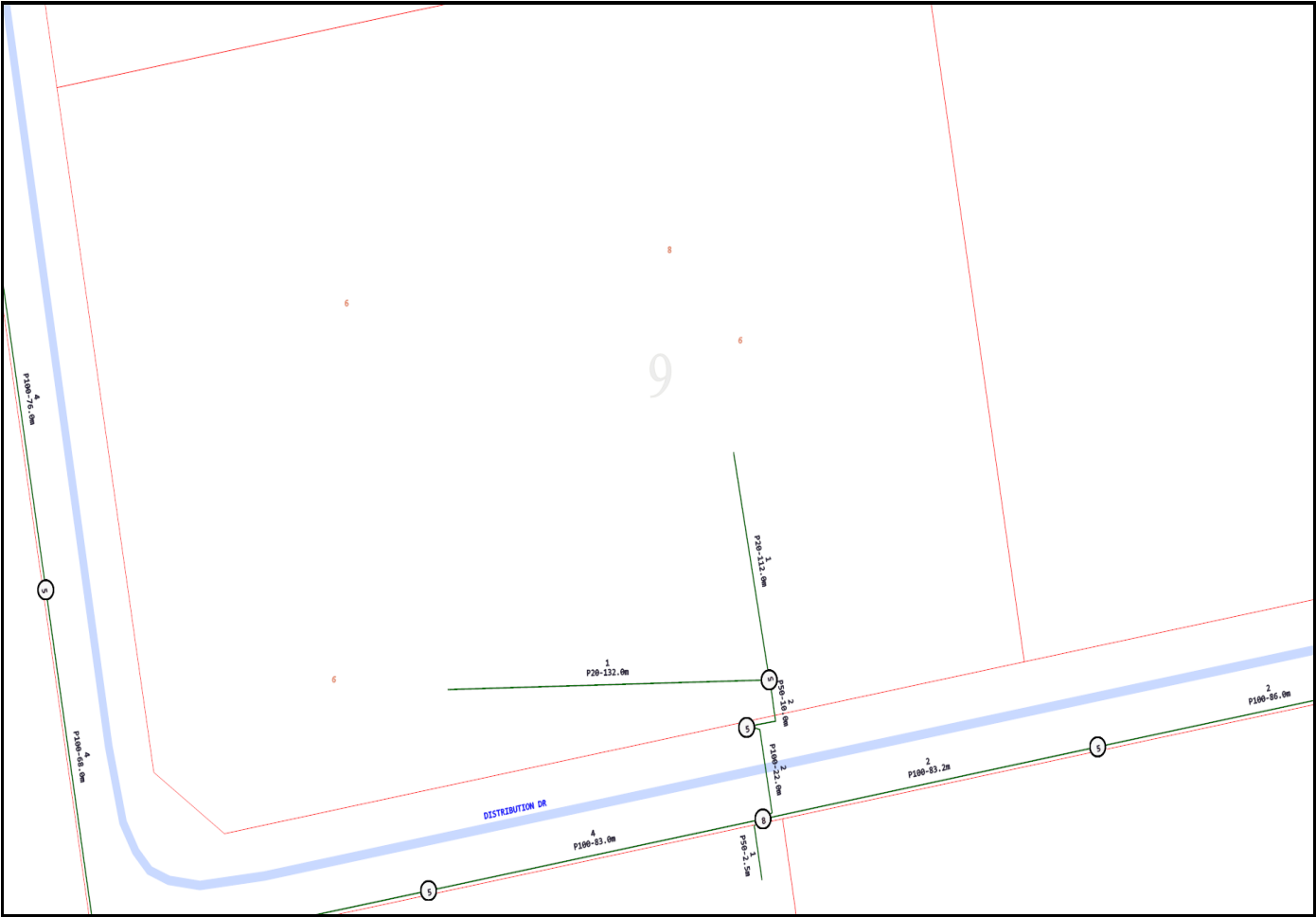


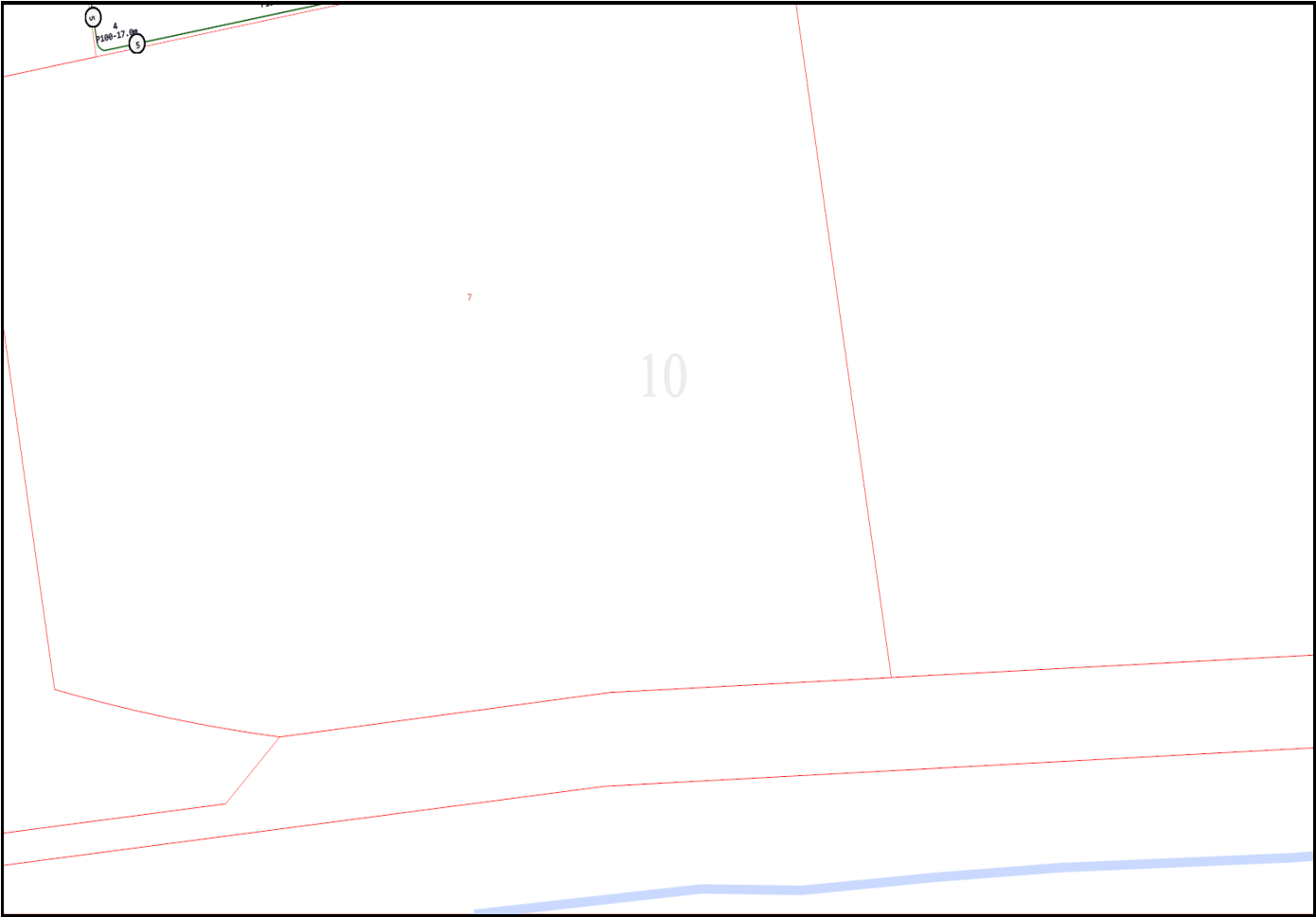


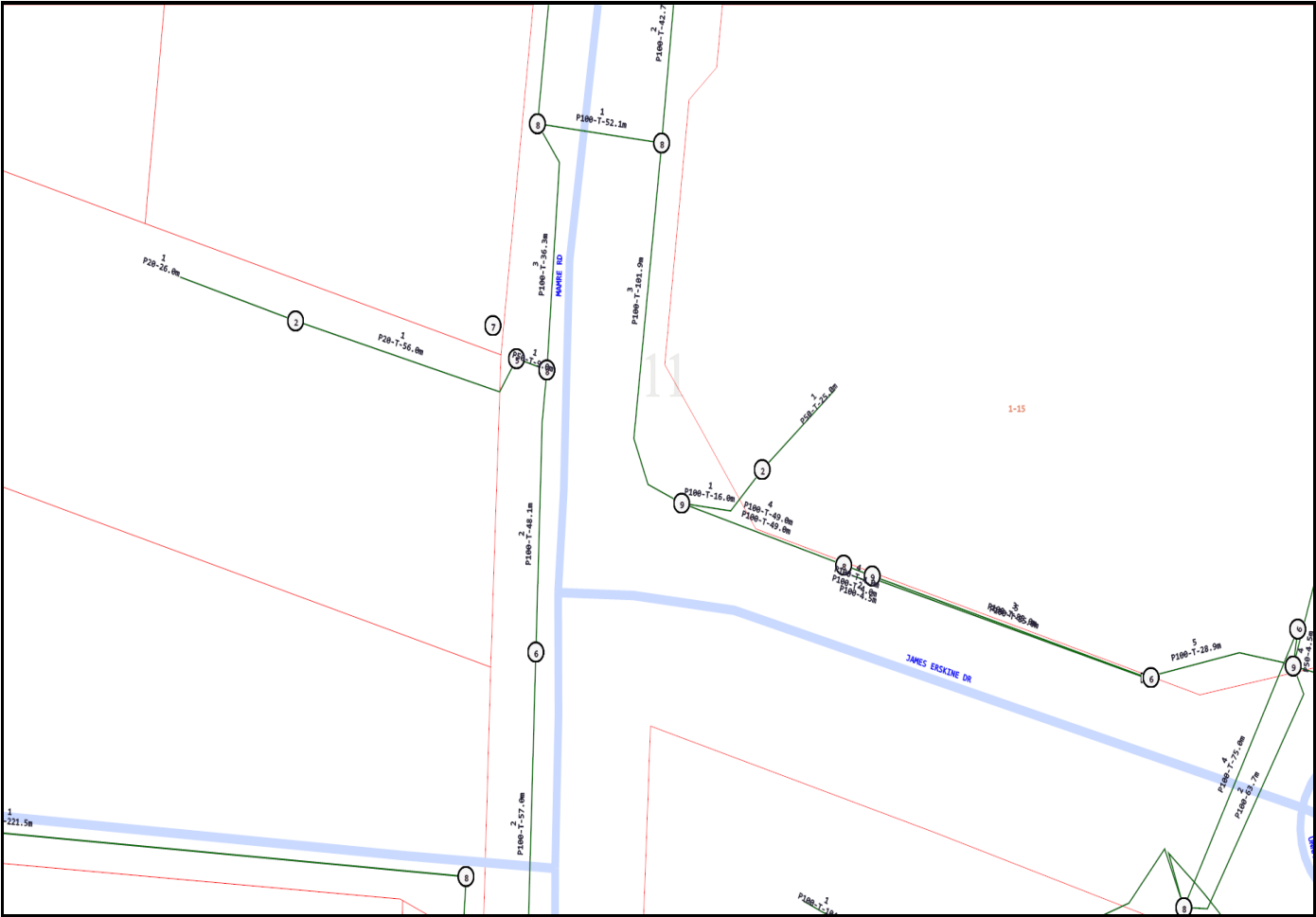


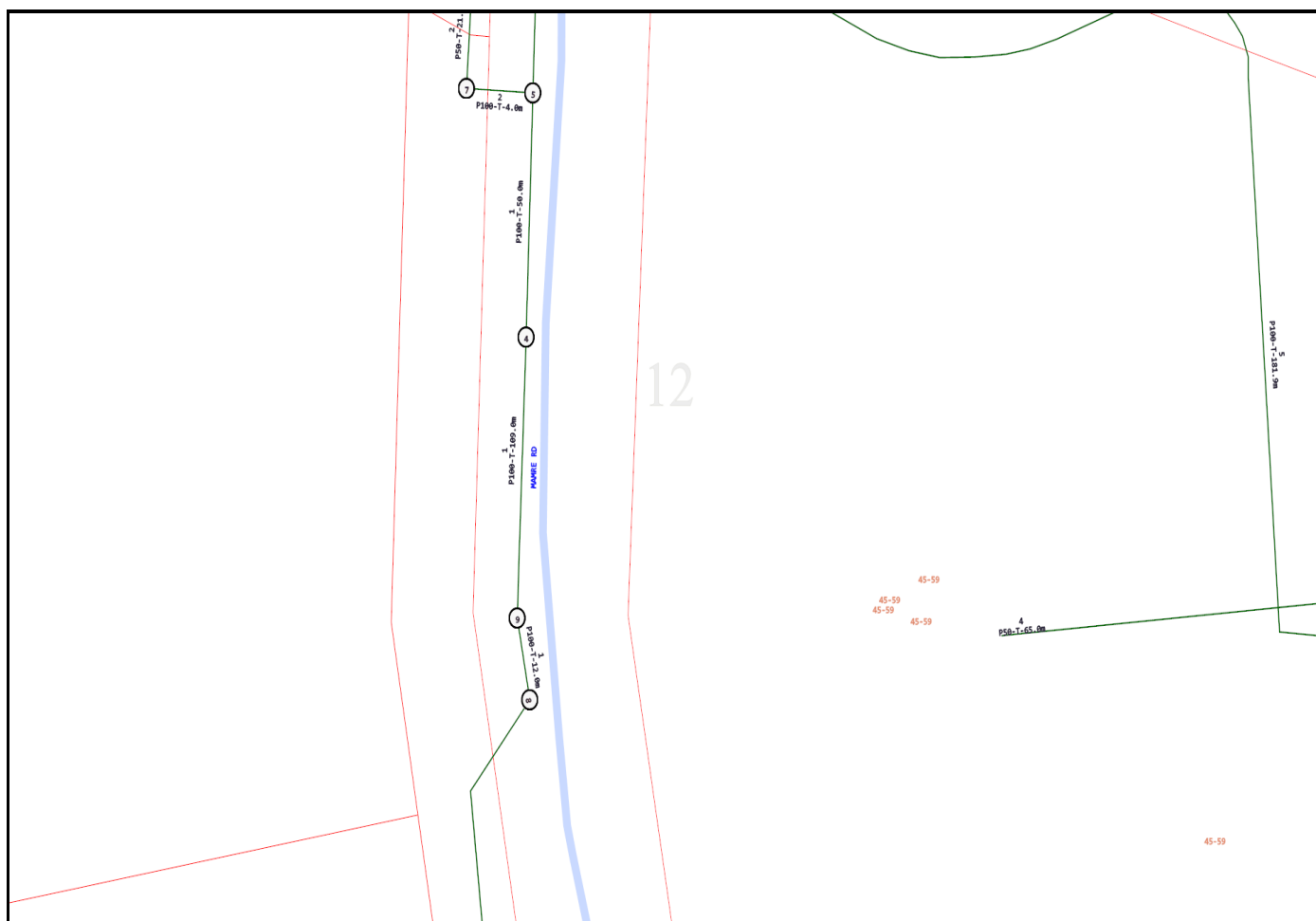








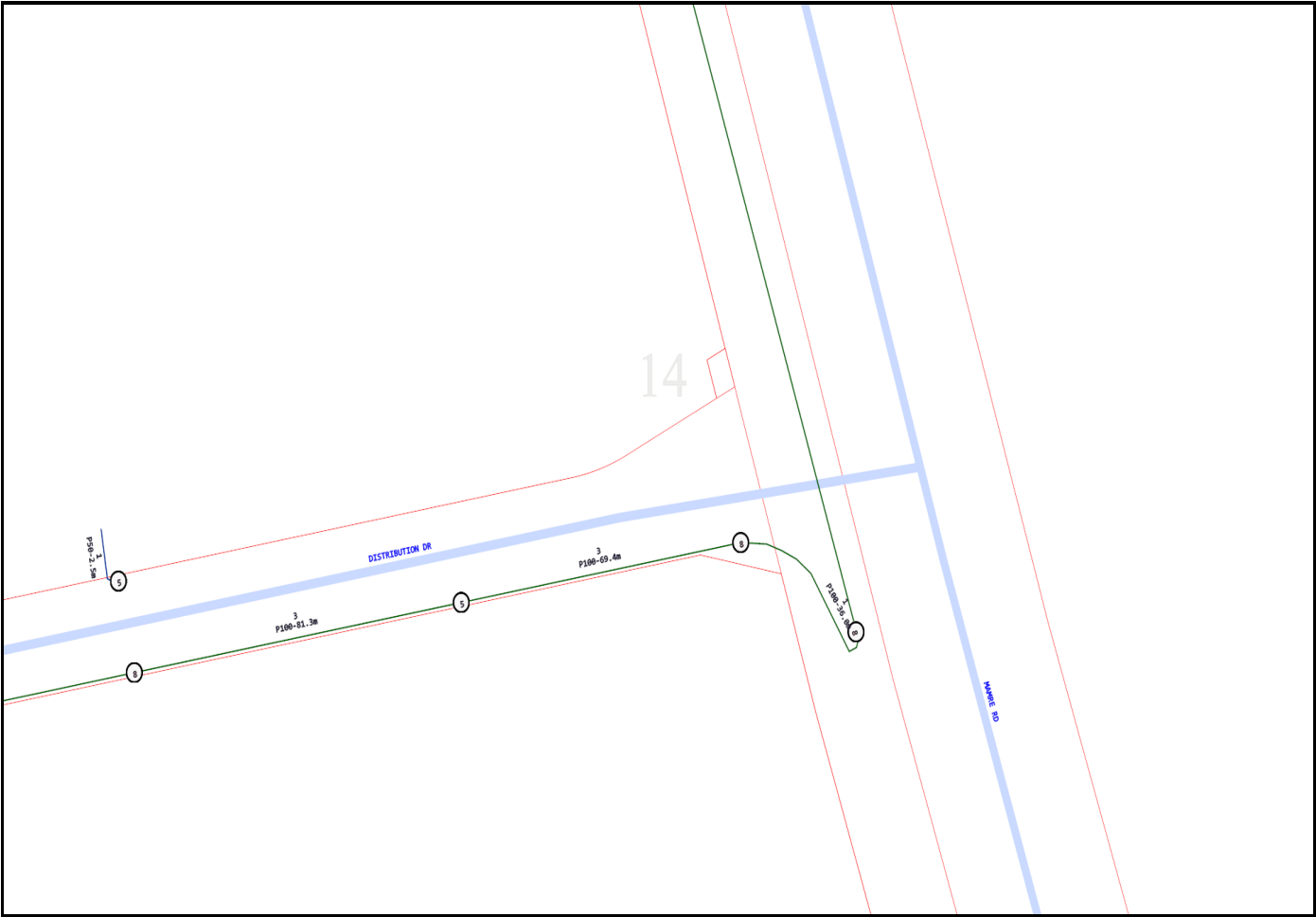


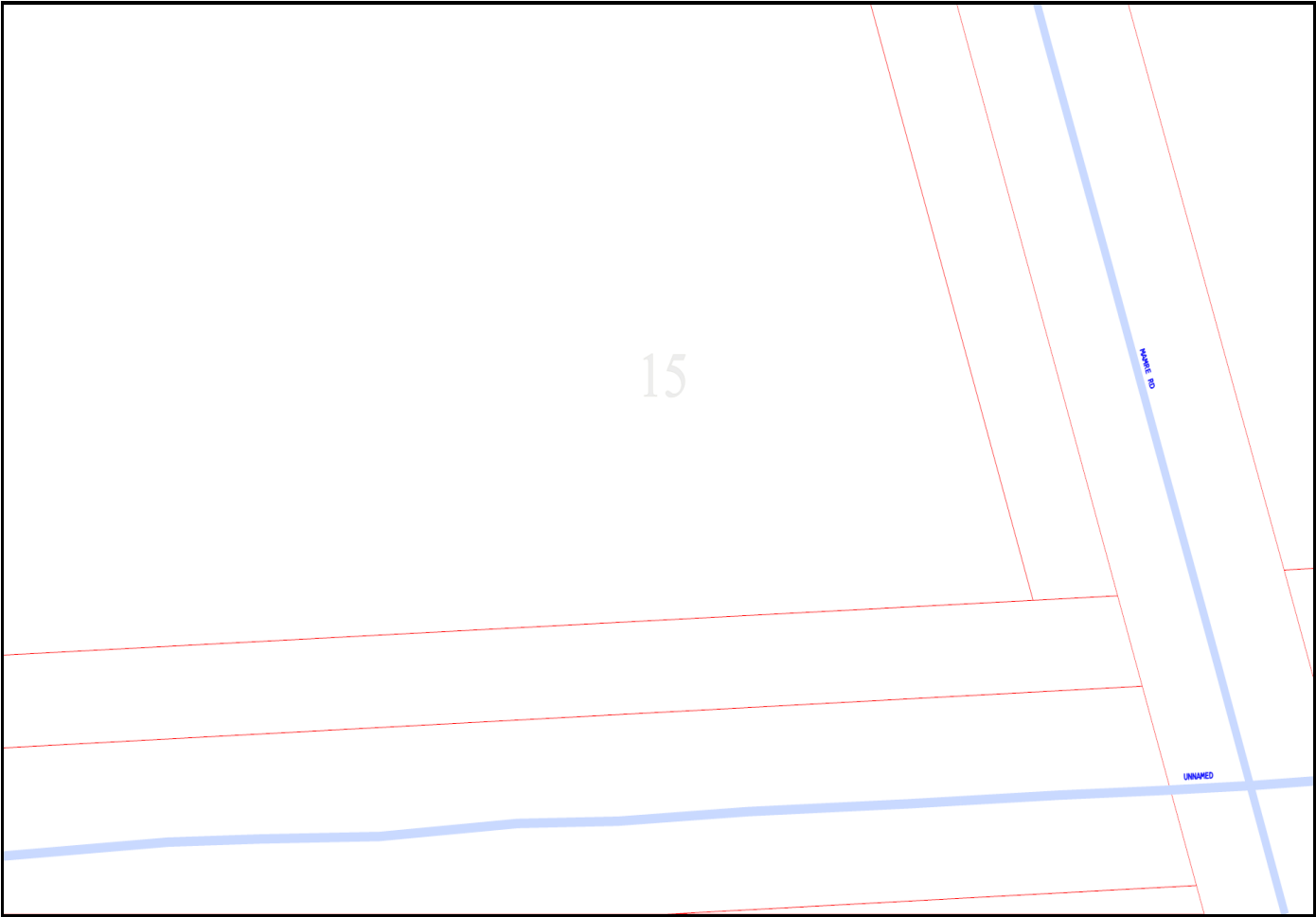


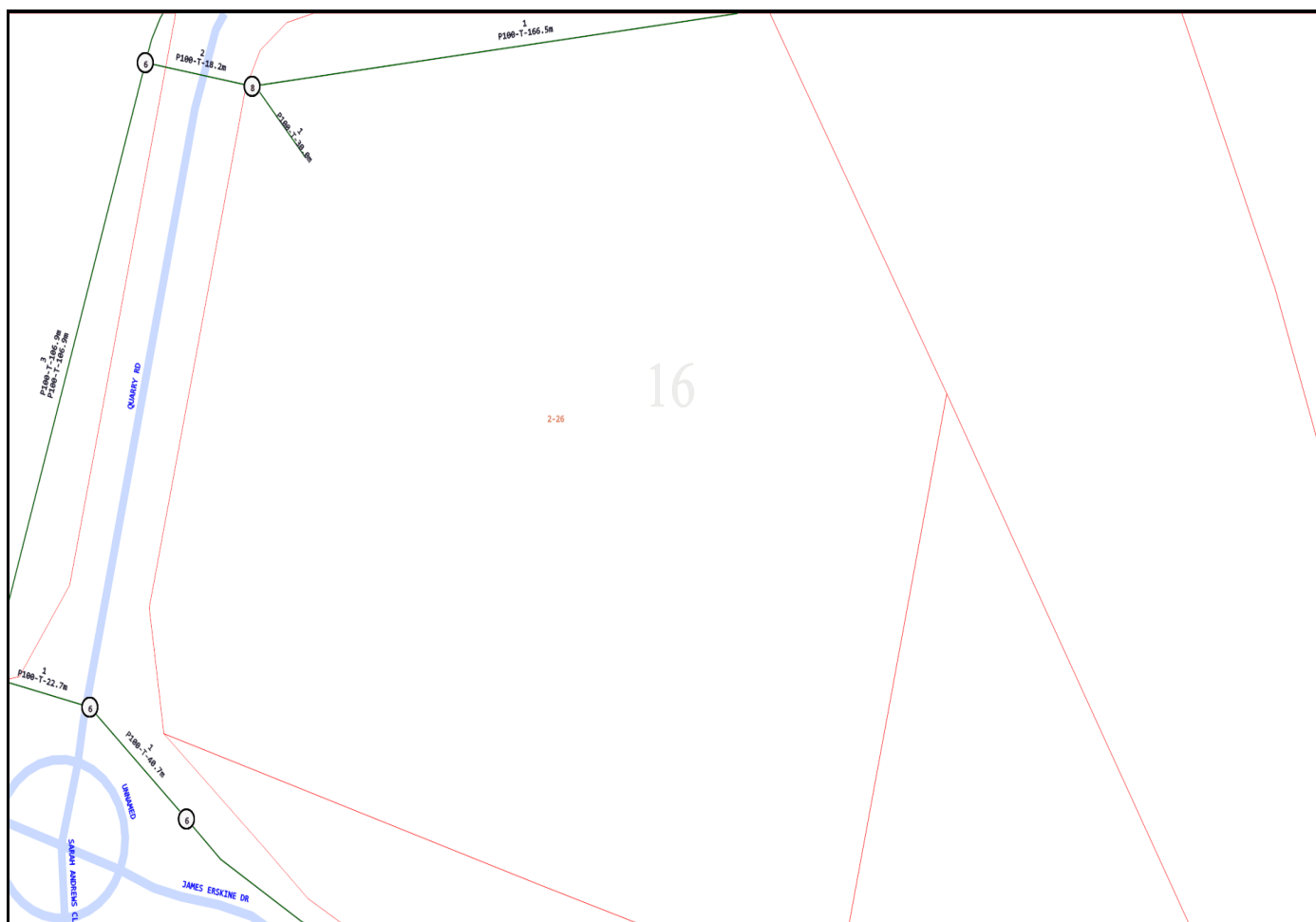
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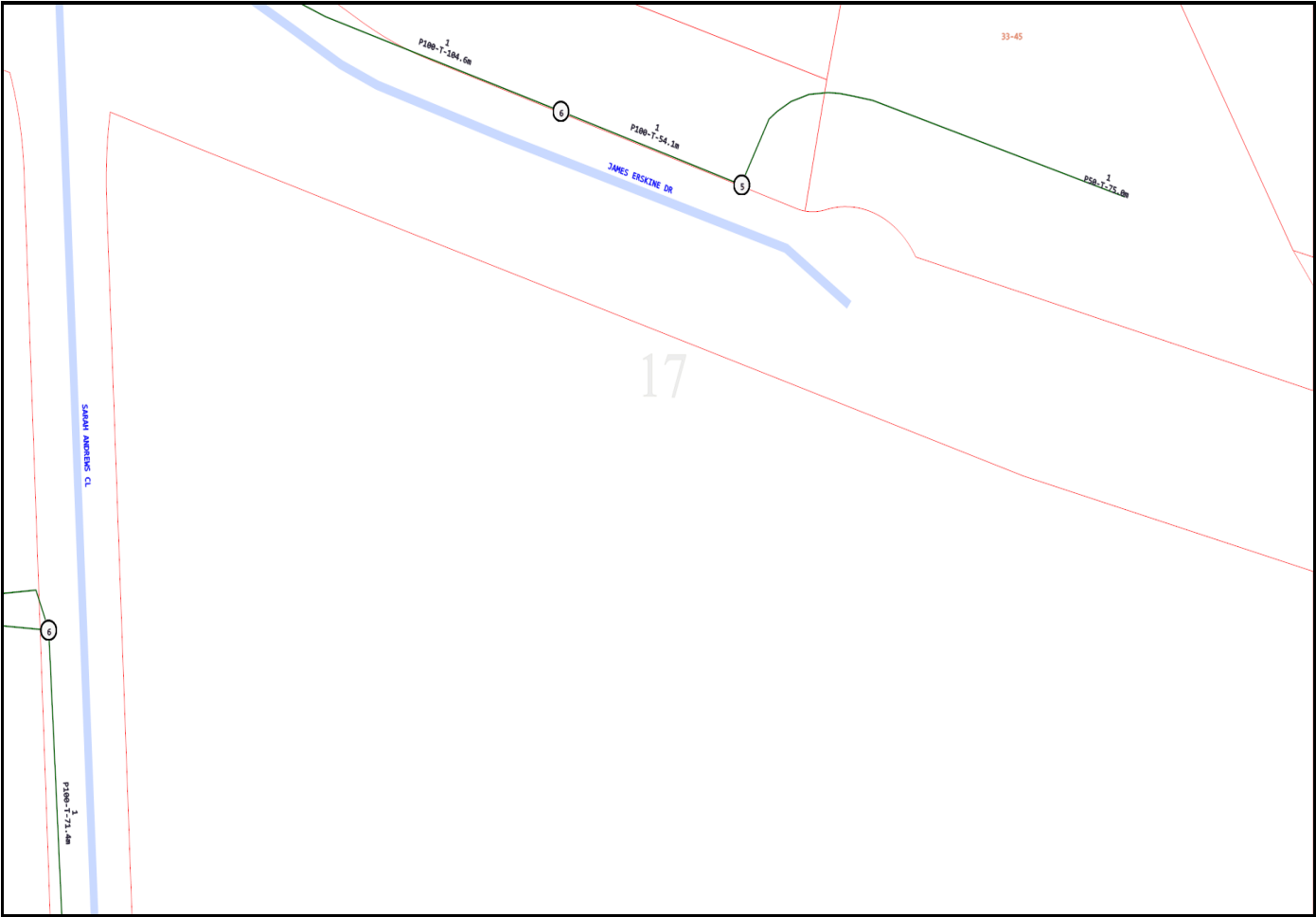
WATER RD

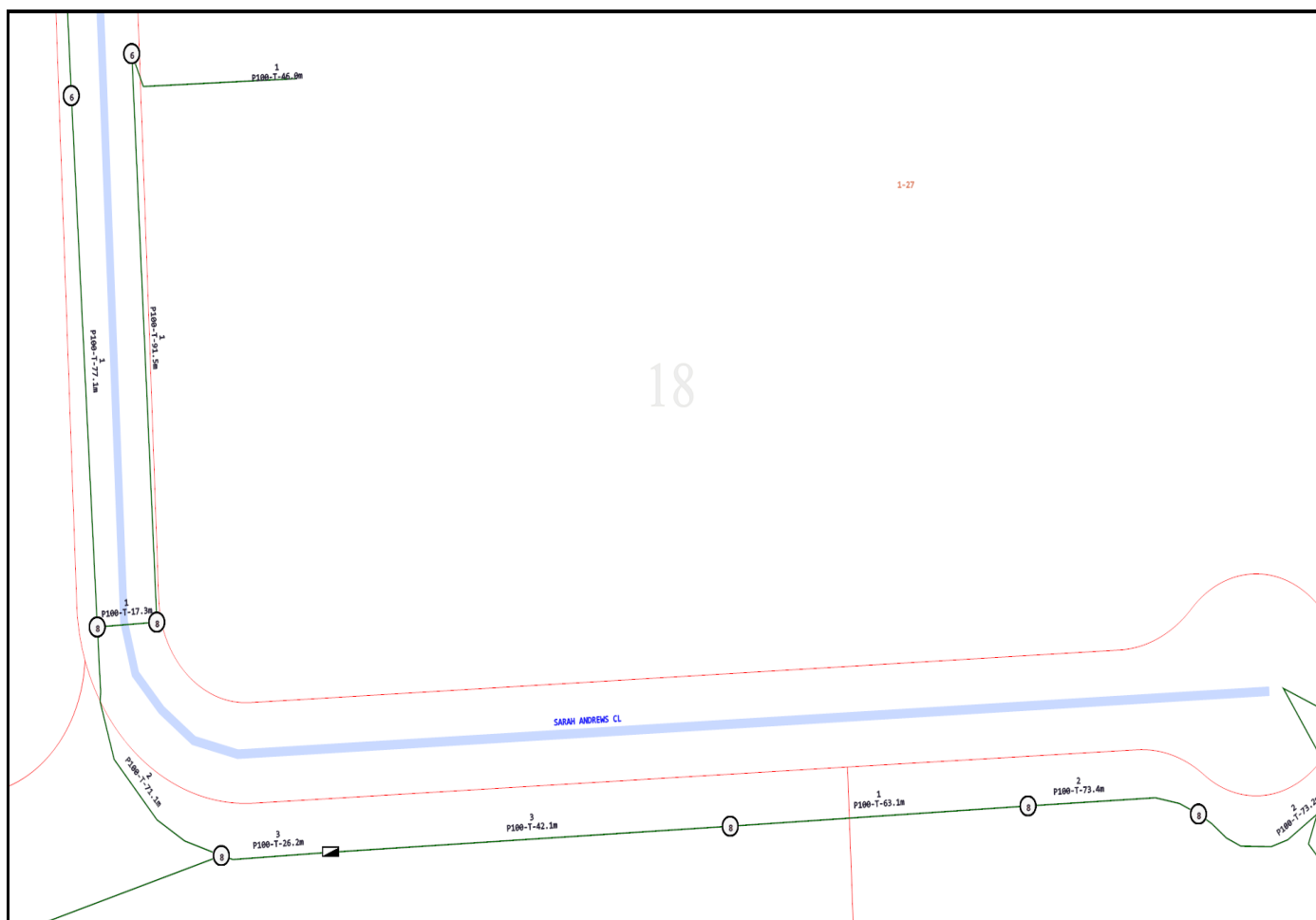
100' DISC. 1/2 MILE

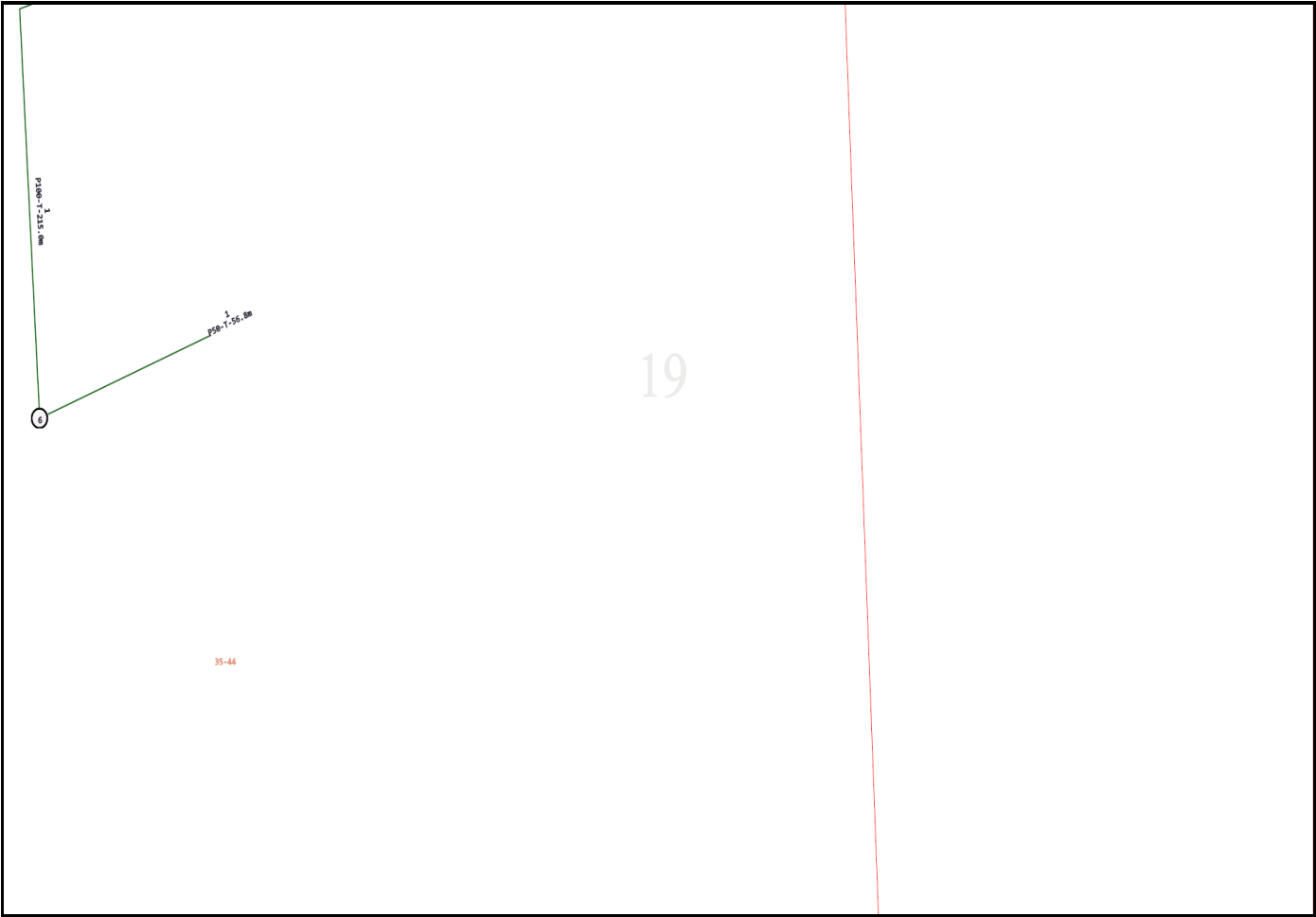


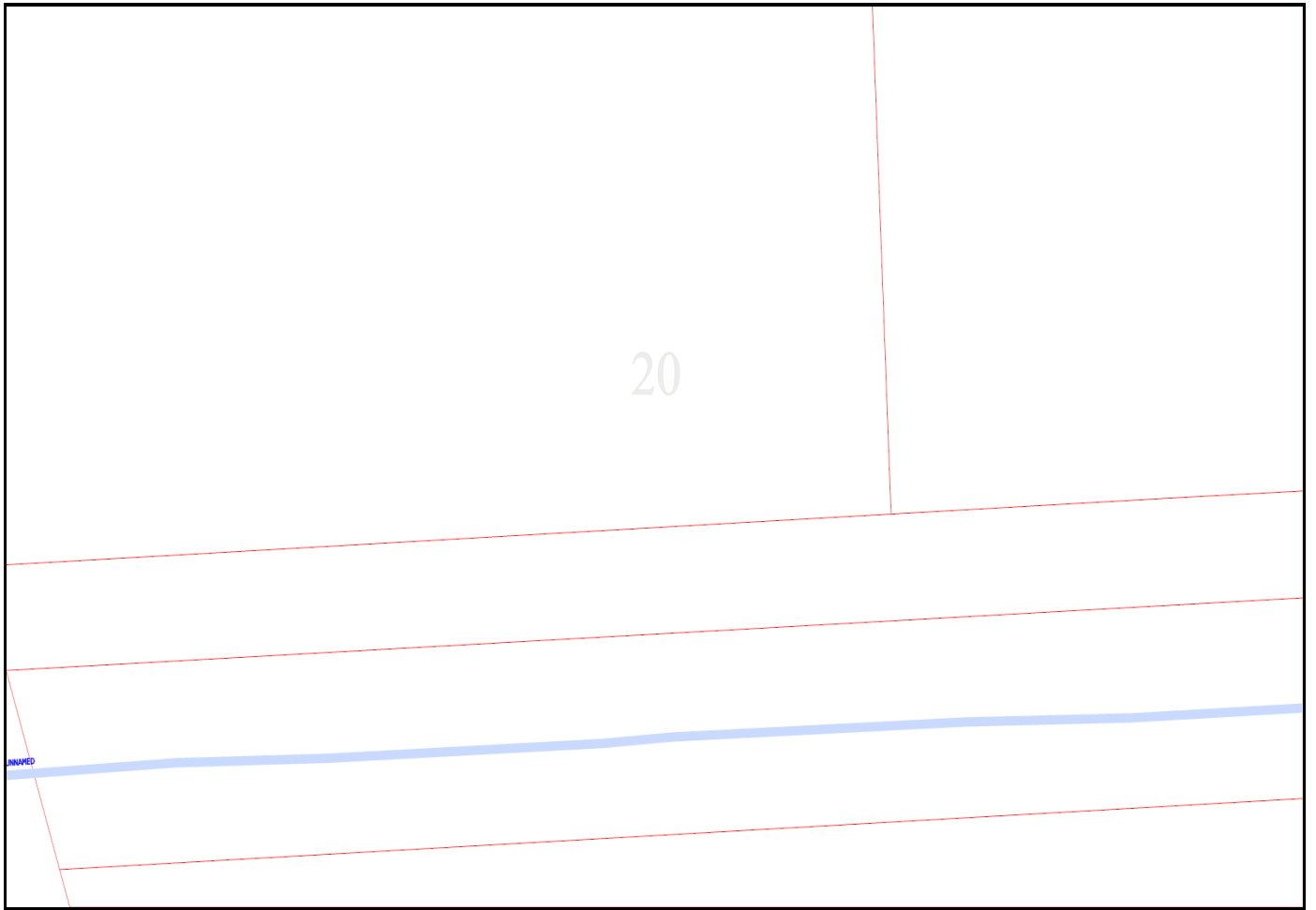






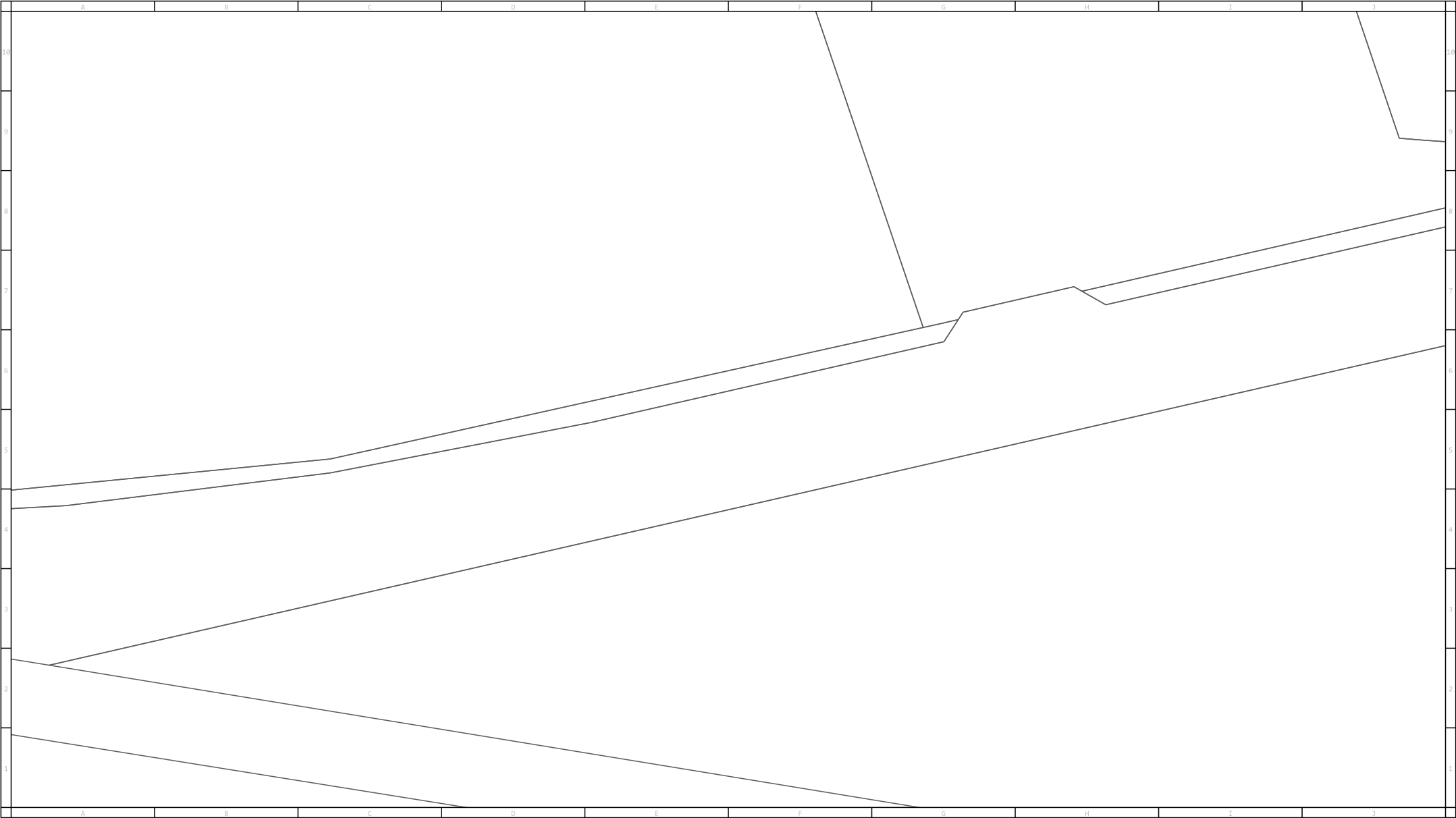






Emergency Contacts

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



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



Scale:1:2000

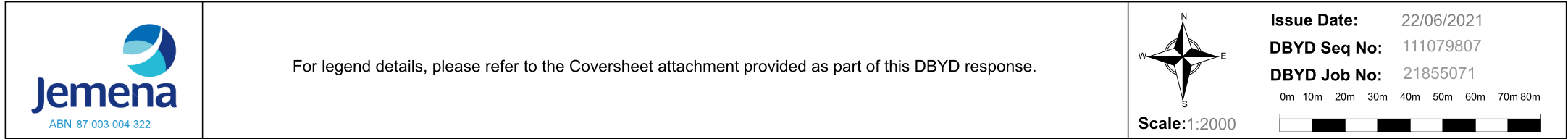
Issue Date: 22/06/2021

DBYD Seq No: 111079807

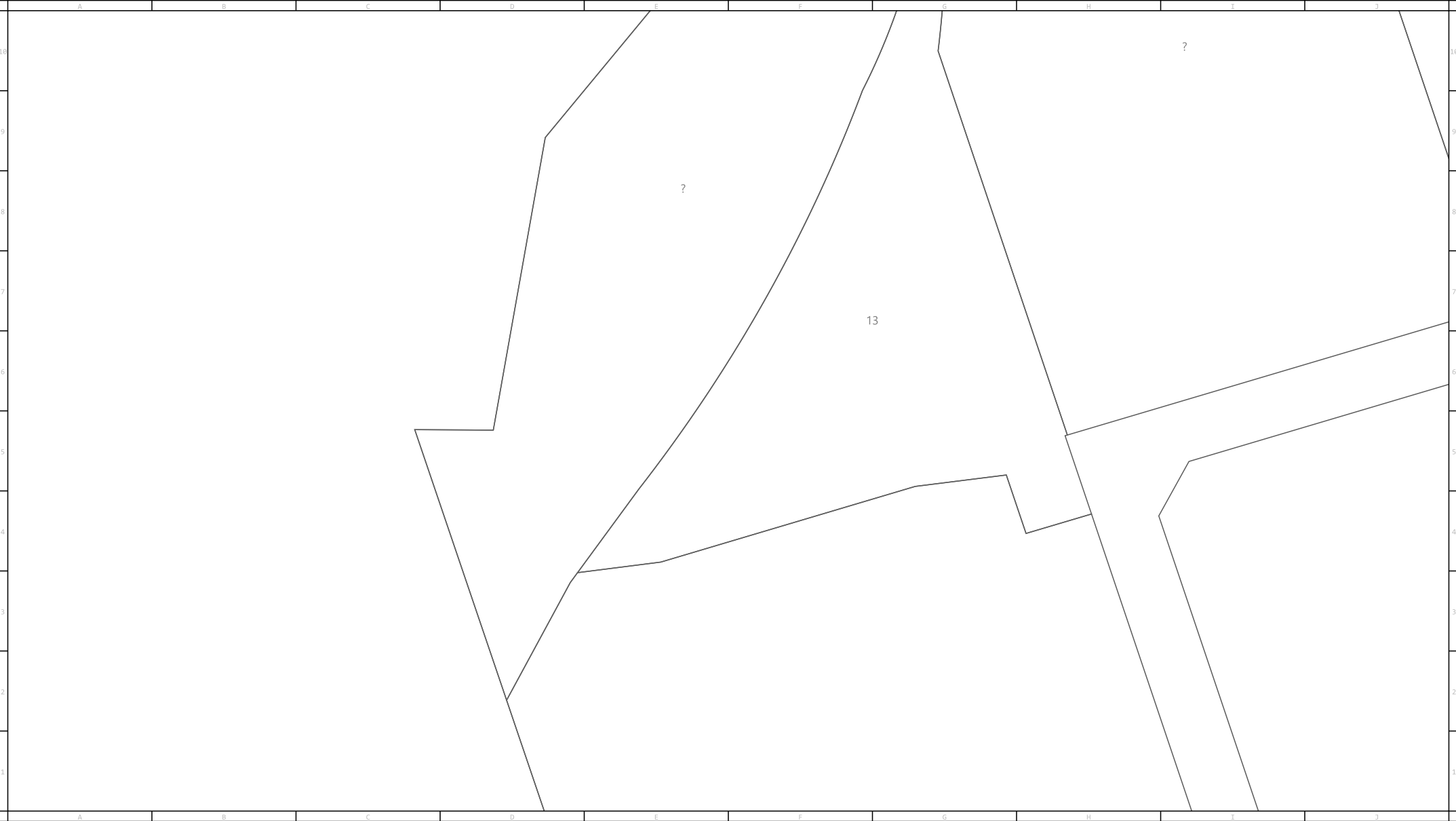
DBYD Job No: 21855071

0m 10m 20m 30m 40m 50m 60m 70m 80m

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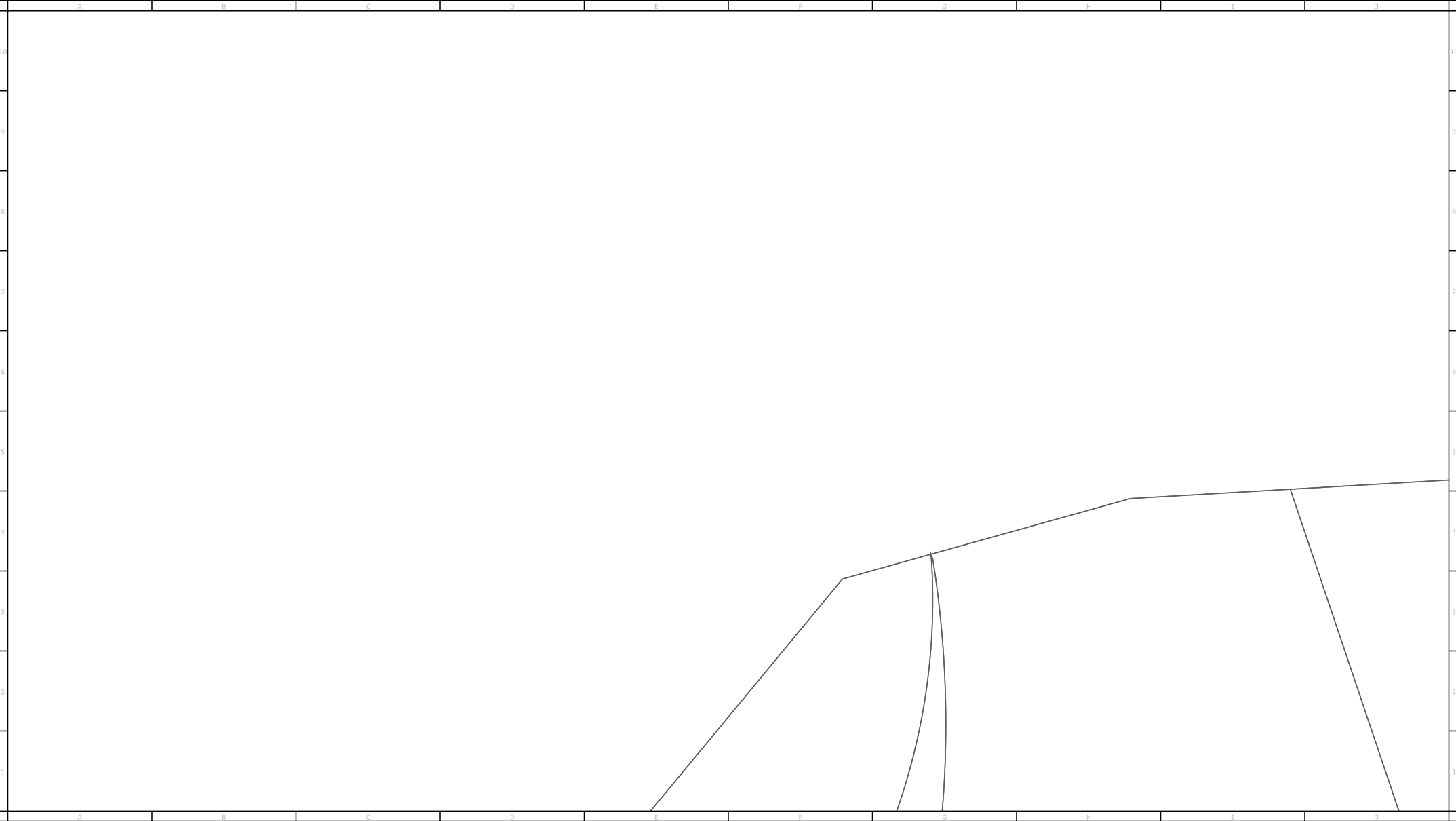
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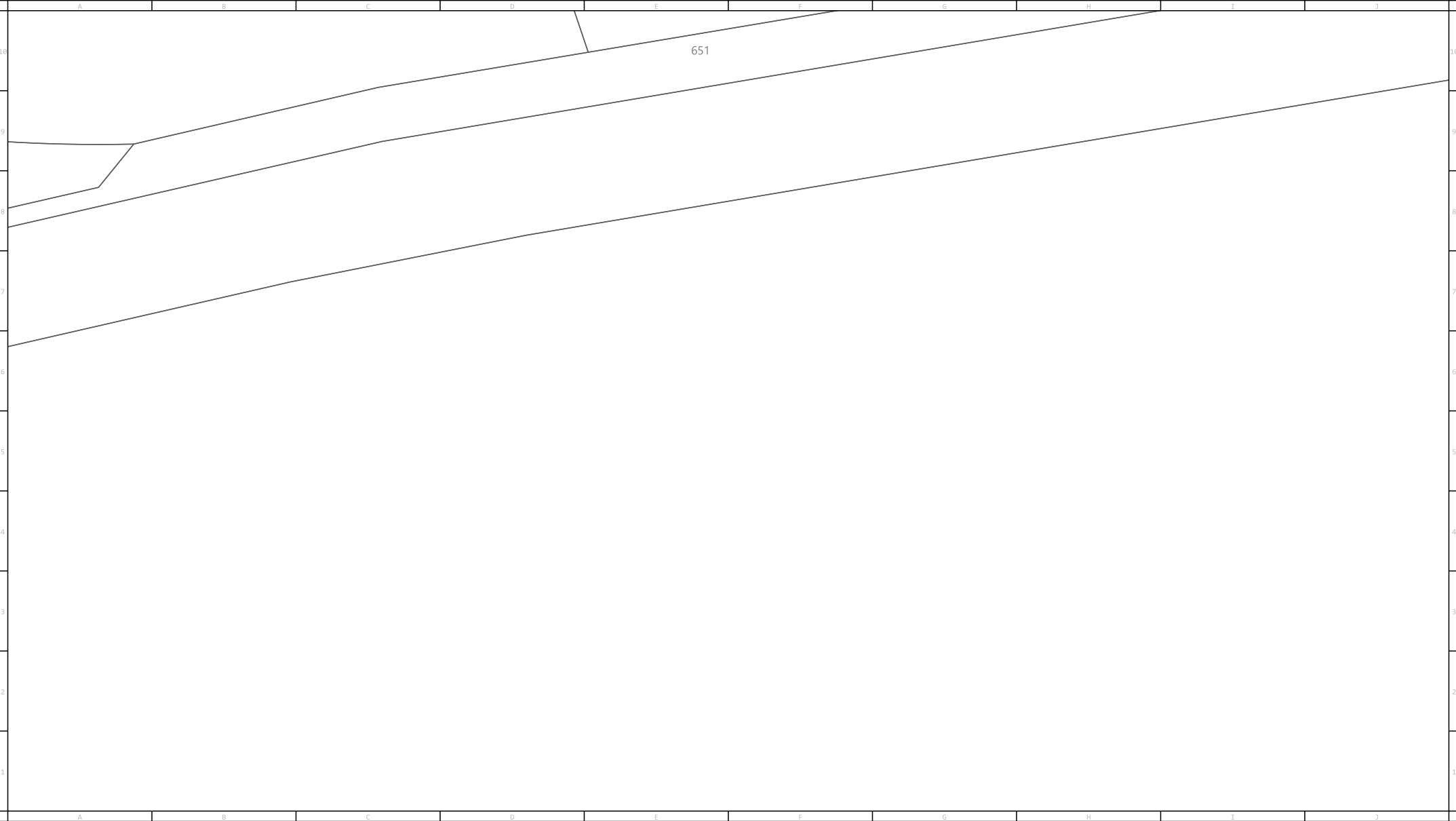
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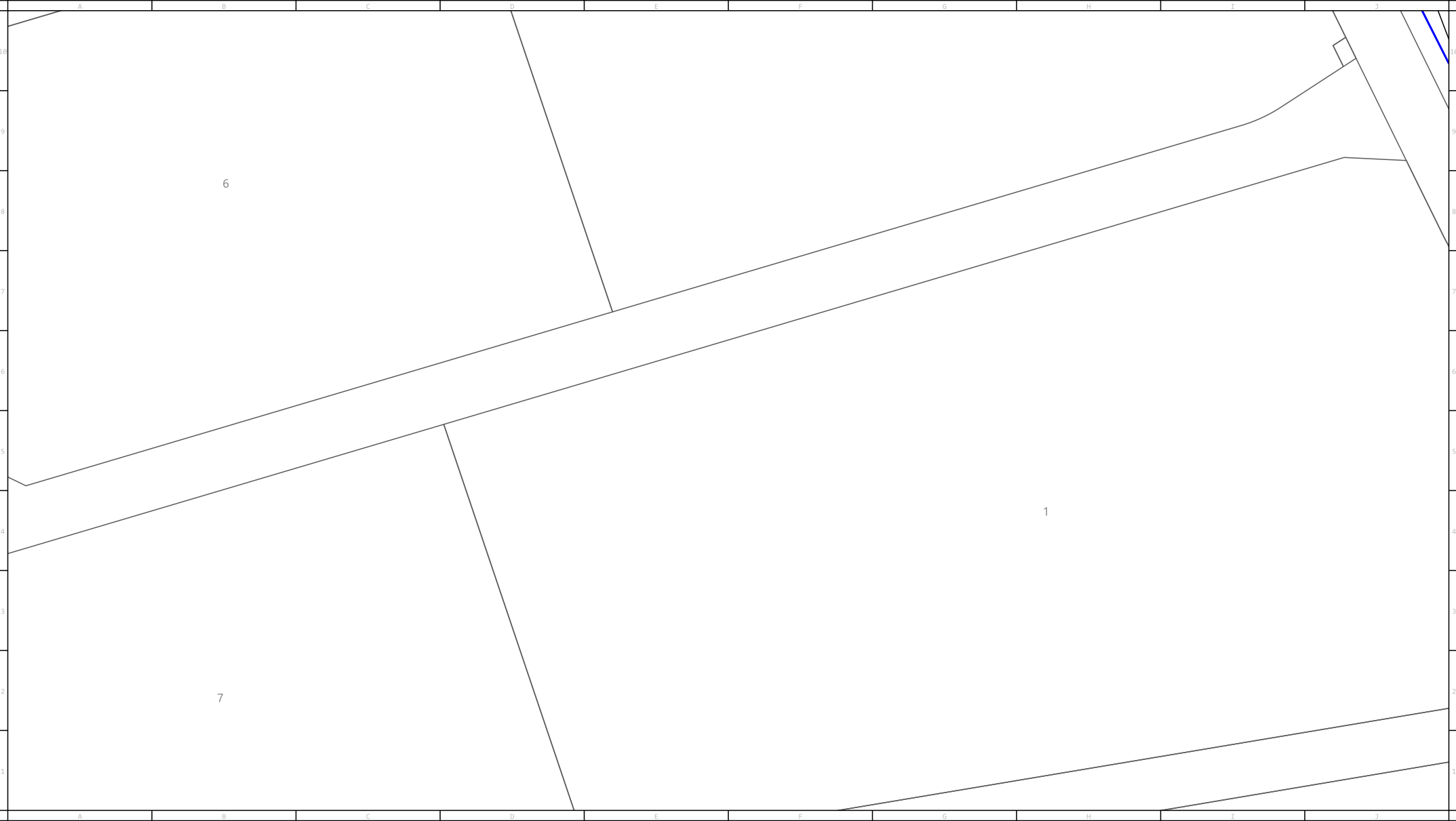
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Scale:1:2000

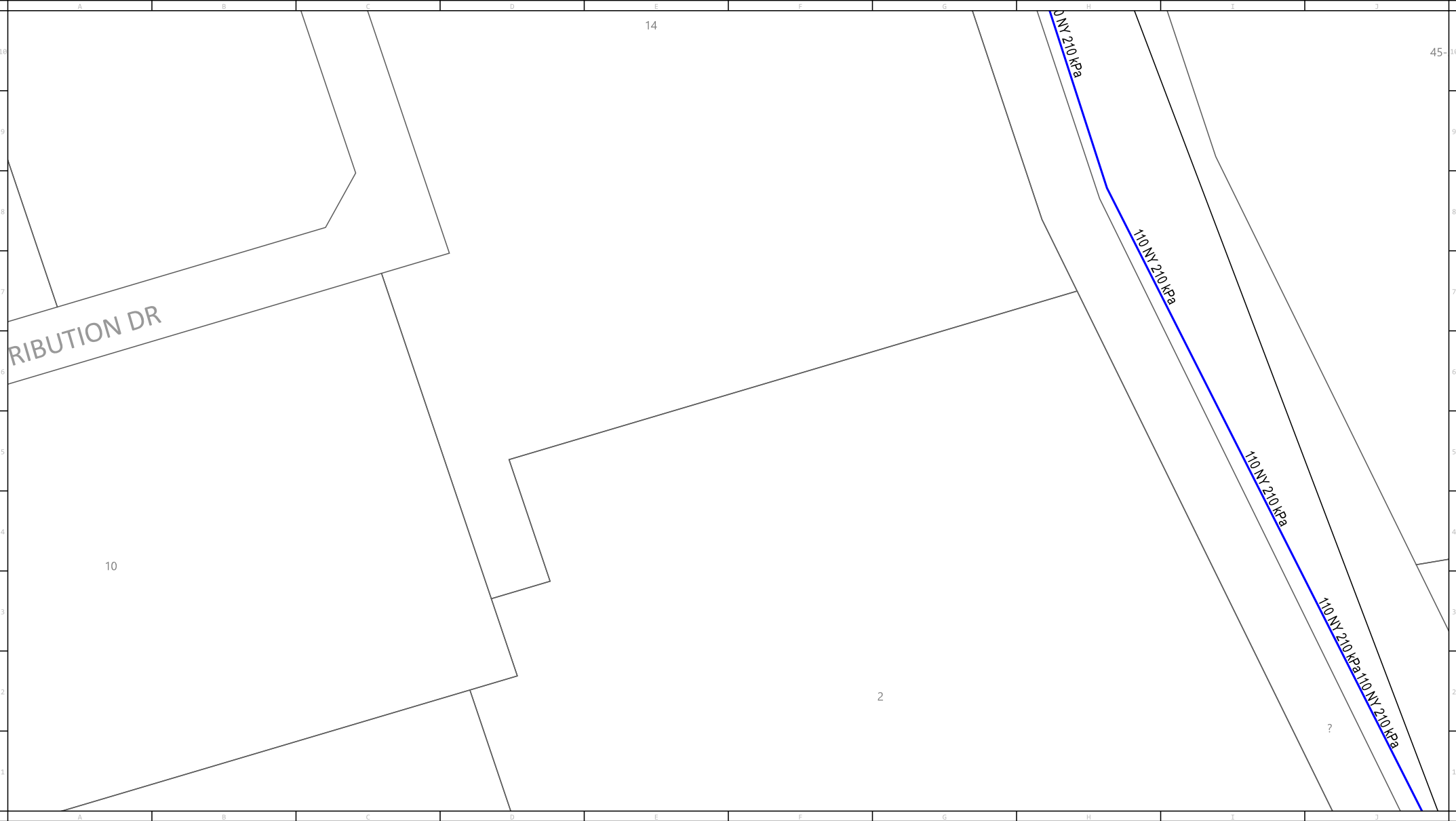
Issue Date: 22/06/2021

DBYD Seq No: 111079807

DBYD Job No: 21855071

0m 10m 20m 30m 40m 50m 60m 70m 80m

WARNING:This is a representation of Jemena Gas Networks underground assets only and may not indicate all assets in the area. It must not be used for the purpose of exact asset location in order to undertake any type of excavation. This plan is diagrammatic only, and distances scaled from this plan may not be accurate. Please read all conditions and information on the attached information sheet. This extract is subject to those conditions. The information contained on this plan is only valid for 28 days from the date of issue.



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Scale:1:2000

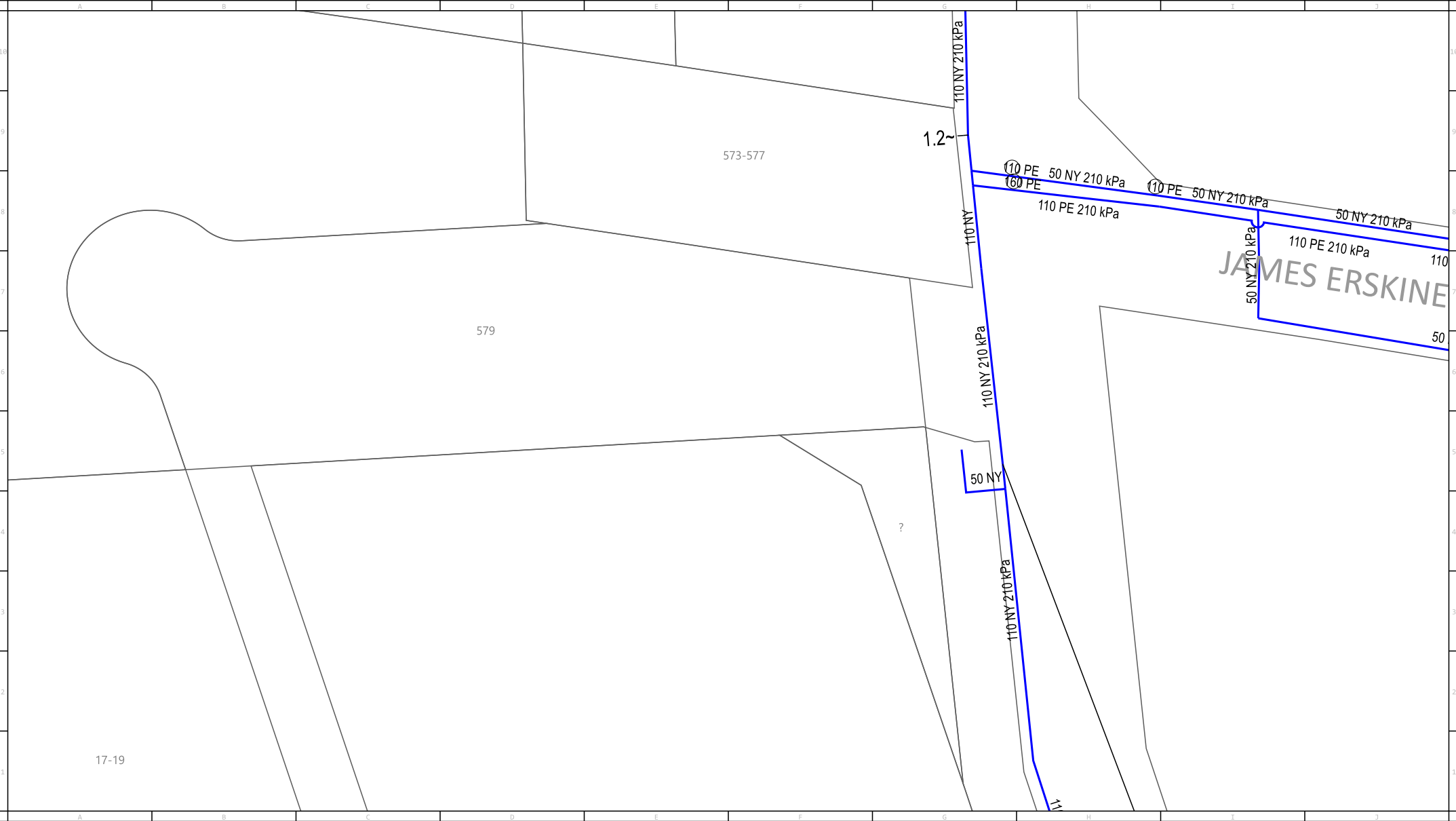
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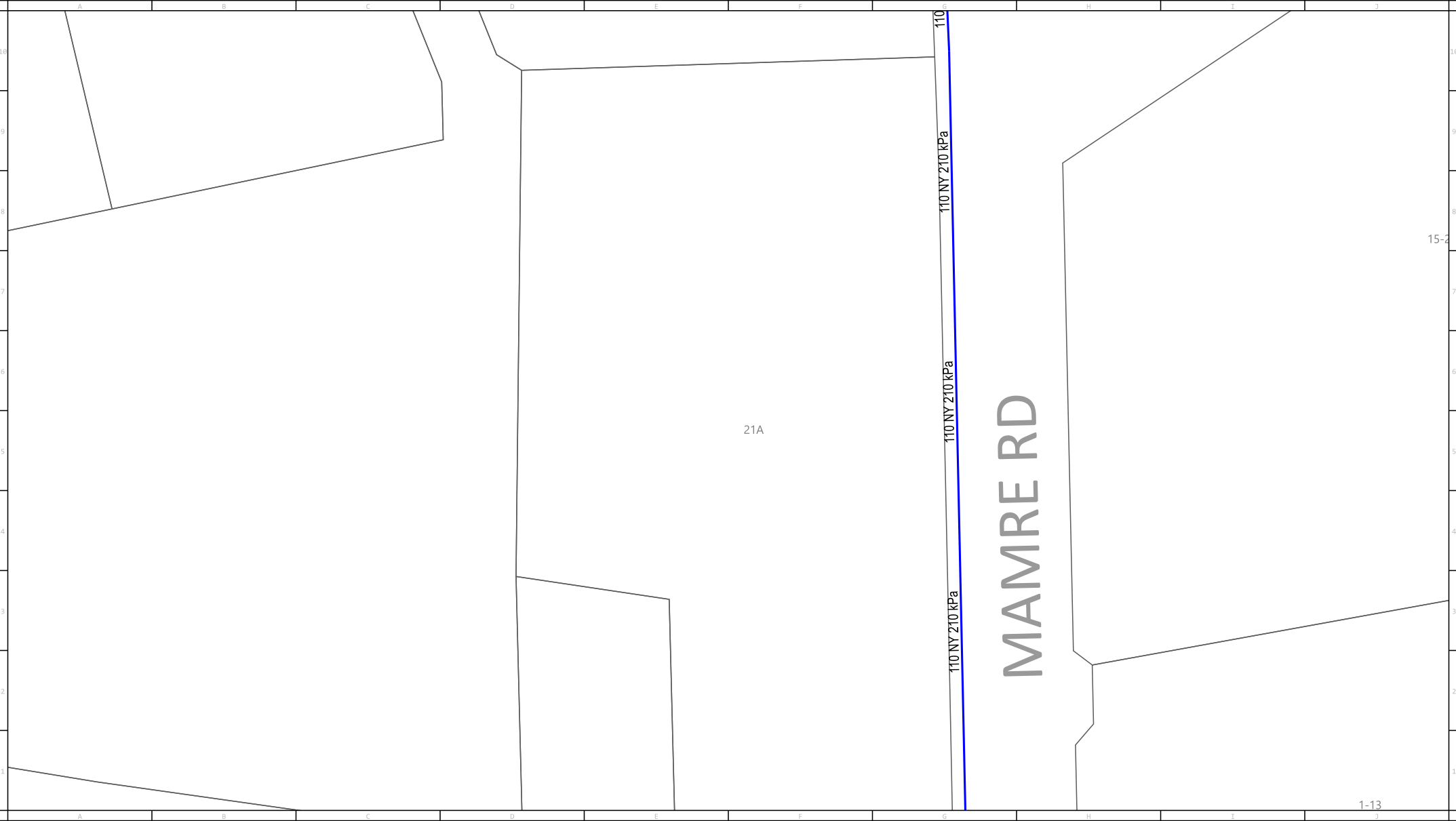


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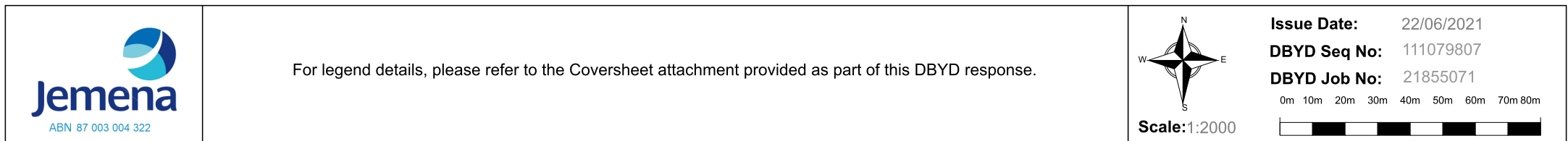
Issue Date: 22/06/2021

DBYD Seq No: 111079807

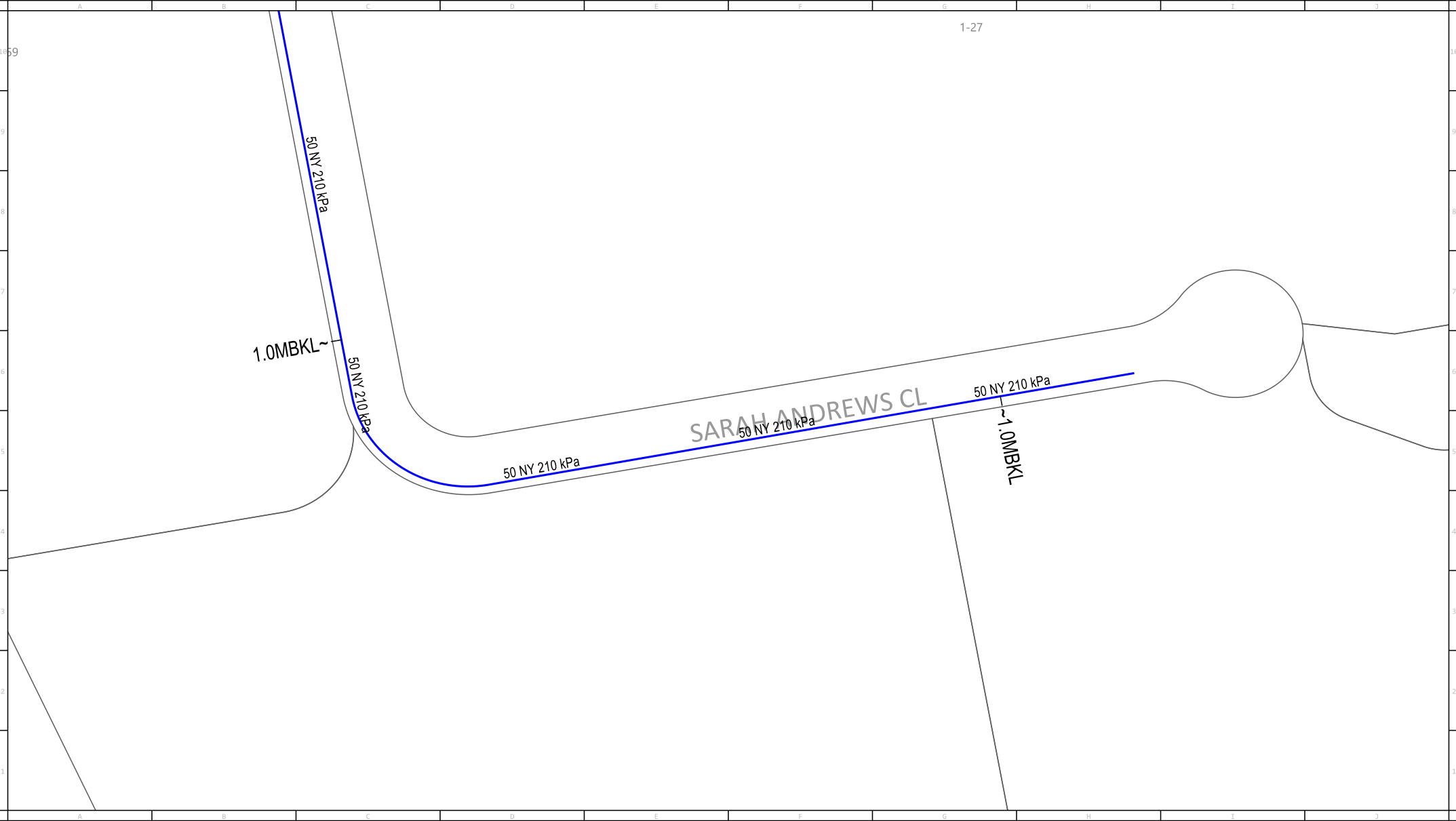
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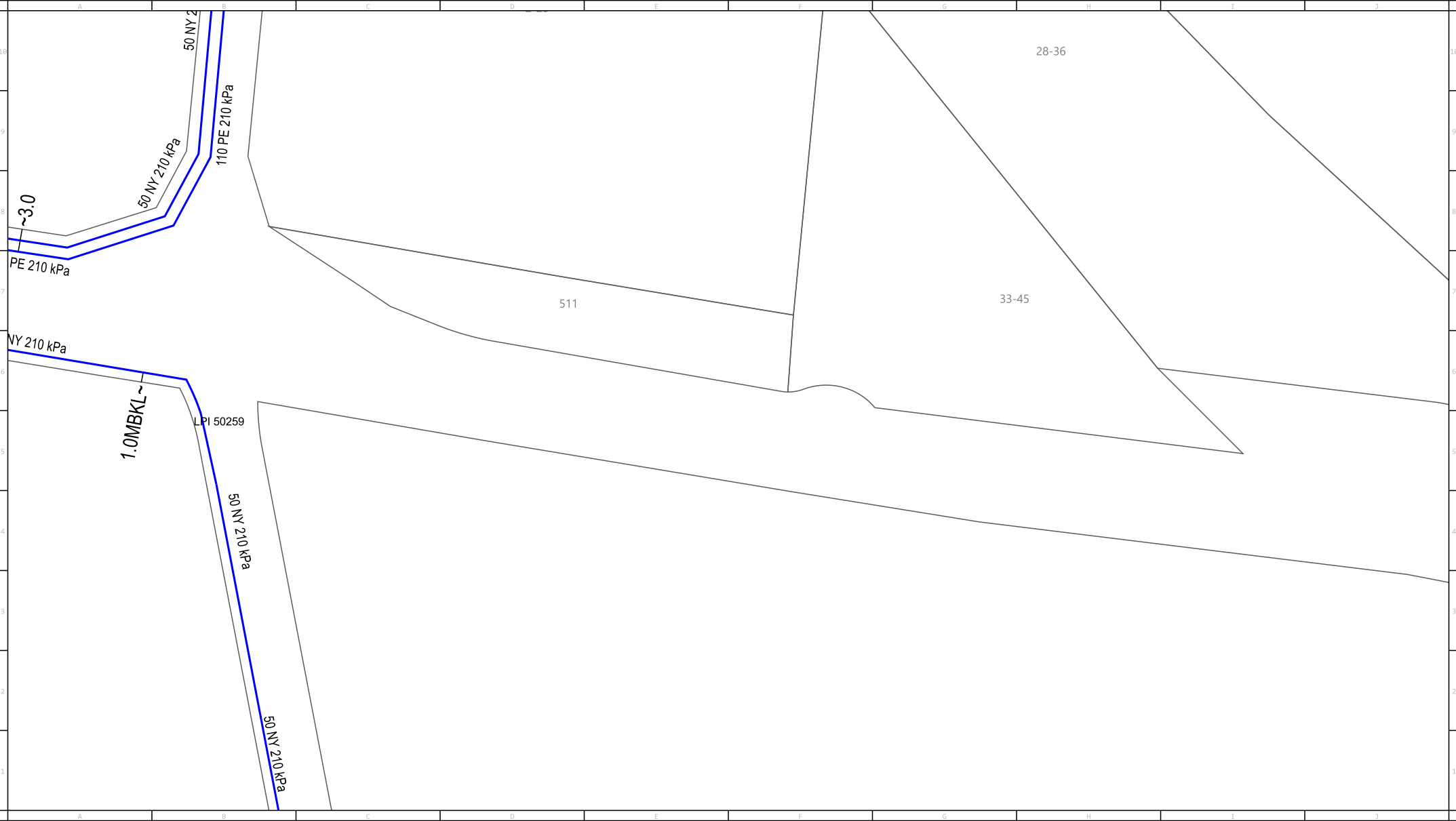
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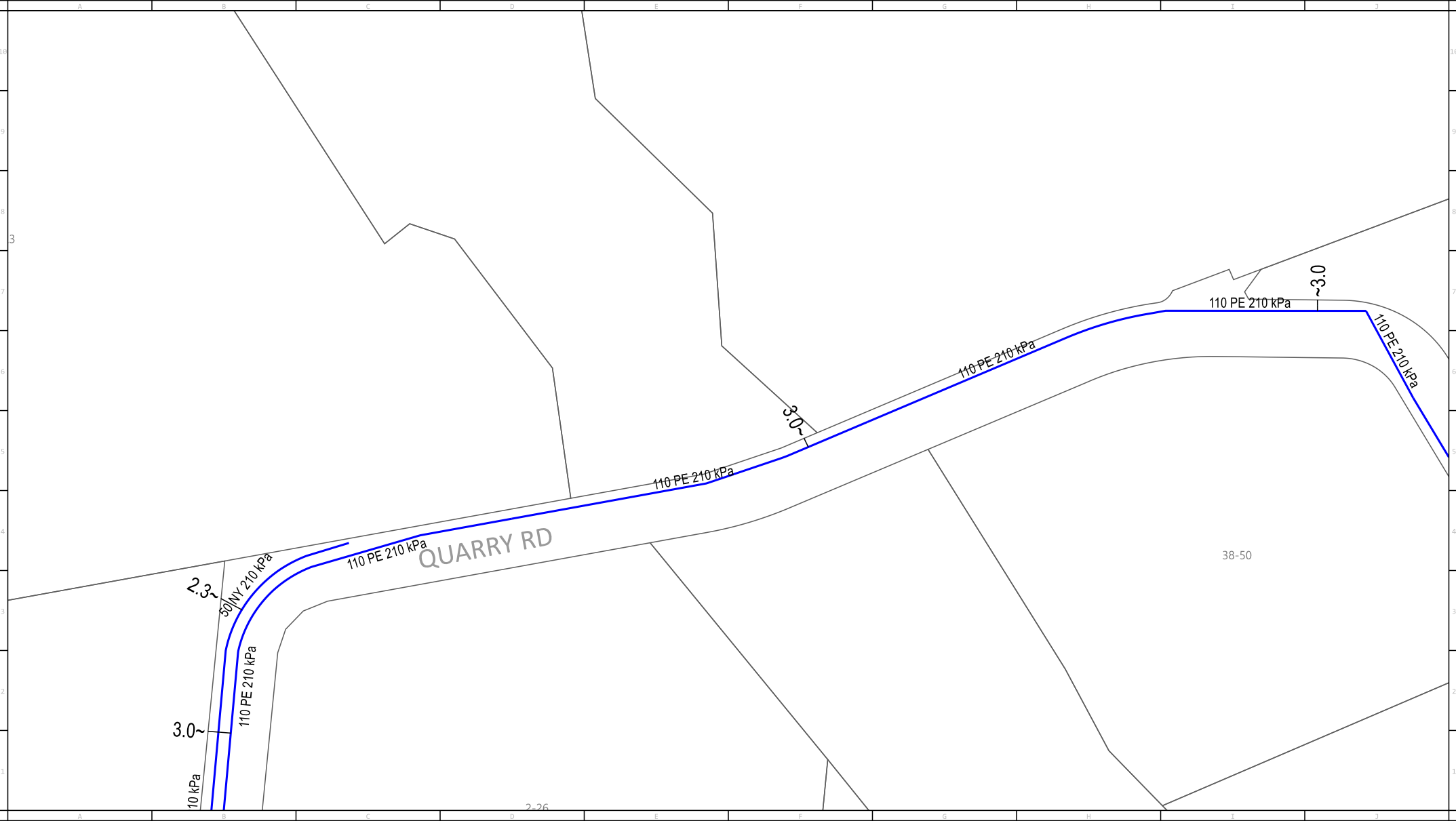


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