

Services Infrastructure Report

Warra Warra Rd, South Nowra, NSW

Lot 1 DP 1010322 & Lot 22 DP 1043769

Planning Proposal: Proposed Residential Development

LGA: Shoalhaven City Council

Report No: 20241114_24047_002

Revision: 1

Field / Inspection Date: 26th August 2024

Report Date: 1st June 2026



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References:

- BYDA Resources (1100.com.au)
- Shoalhaven City Council LEP 2014 and Online LEP Mapping via ArcGIS
- Shoalhaven City Council DCP 2014
- Endeavour Energy Release of easement policy 9.2.3
- WSA 02-2014-3.1 Gravity Sewerage Code
- WSA 03-2011-3.1 Water Supply Code
- WSA-04 - 2022 -3.1 Sewage Pumping Station Code
 - Respective Shoalhaven Supplements to the above WSA codes

Contents:

1. Introduction	4
1.1 Purpose & Site Description	4
1.2 Scope and Limitations	7
1.3 Proposed Development and/or Land Use.....	7
2. Utility Providers.....	8
2.1 Authorities	8
2.2 Reporting Methodology.....	8
3. Utilities & Servicing Infrastructure.....	9
3.1 Potable Water	9
3.2 Wastewater.....	11
3.3 Electricity.....	15
3.4 Communications	17
4. Conclusion.....	18

Appendixes:

- Appendix A – Sewer and Water Servicing Plan
- Appendix B – Shoalhaven Water BYDA and Summaries
- Appendix C – Electrical BYDA outputs and PLD Report
- Appendix D – Telecommunications BYDA outputs and Design IT Telco advice

1. Introduction

1.1 Purpose & Site Description

CivPlan Pty Ltd were engaged by Lysand Pty Ltd and Lyrock Pty Ltd to undertake a high-level utility services infrastructure assessment of the surrounding utility networks and prepare this Services Infrastructure Report (SIR) to support a planning proposal for Lot 224 DP 755952 and Lot 2 DP 1126288.

The site is situated between The Princes Highway on the West of the site, the unformed Old Southern Road casement along the North-Western fringe and the unsealed Warra Warra Road to the South of the site. The subject site, surrounding road reserves, and properties to immediate the north and west will be designated in this report as the '*study area*', and will be examined with the following aspects of analysis:

- Availability of utilities services and impact of existing assets along the study area as/if required including:
 - Potable Water;
 - Wastewater;
 - Reclaimed Water;
 - Electrical and Lighting;
 - Communications; and
 - Gas.

The site is located on Lot 224 DP 755952 & Lot 2 DP 1126288 between The Princes Highway, Warra Warra Road (unsealed), and Old Southern Road (unformed) within the Shoalhaven City Council LGA and the Shoalhaven Water catchment area. Access is via Warra Warra Road which is aligned East – West along the site's Southern Boundary. Additionally, the Princes Highway runs North-South along the sites' Western boundary and an unformed road reserve for Old Southern Road runs along the North-western side of the site.

The surrounding area is a blend between general industrial land use (E3/E4, residential land (R1/R2/RU2) and vegetated areas (C2). There are currently no dwellings or structures on the site however, the site is burdened by high voltage electrical transmission lines running North-South on the western portion of the site. There is an approved development (SF10743) to the North of the site. Lot 224 DP 755952 & Lot 2 DP 1126288 is approximately 32.4ha in area with no existing dwellings or structures.



Figure 1: Site and surrounding context (NSW Base Map)

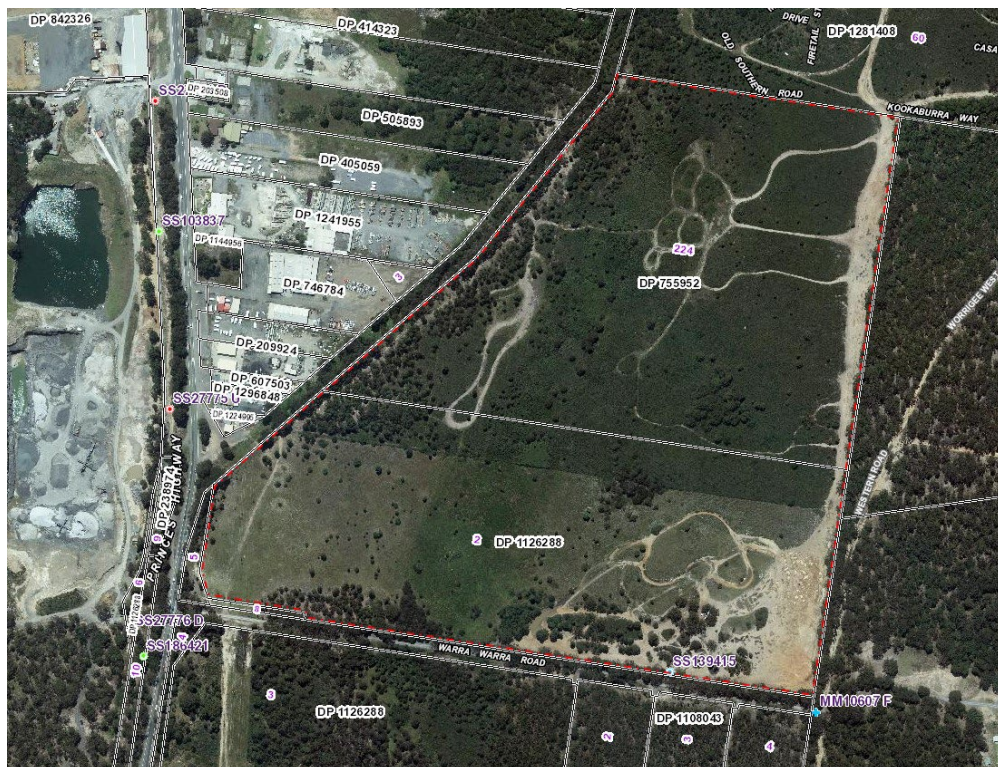


Figure 2: Site Location - NSW Imagery (SIX Maps)

Browns Creek runs through the site flowing from the South to the North, flowing into Nowra Creek and then to the Shoalhaven River. Browns Creek is a named waterway within a riparian corridor with fluctuating flows and the typical condition is a marshy swamp area.

The site is moderately vegetated and relatively flat, however generally dips towards Browns Creek which then flows towards the North of the site at 0.5% from the Southern extent at approximately RL40.5 to RL37.5 over approximately 660m. The Western portion of the site relative to Browns Creek falls from the Princes Highway to the creek at approximately 3%. The Eastern portion of the site falls towards Browns Creek at 1.7% towards the North-West. There is a crest at RL43.5 in the South-Eastern corner of the site.

Figure 3 shows the extent and location of Browns Creek within the site. The portion of Browns Creek within the site sits within the upper to middle catchment area of the creek and at the starts of the 1% flood mapping.

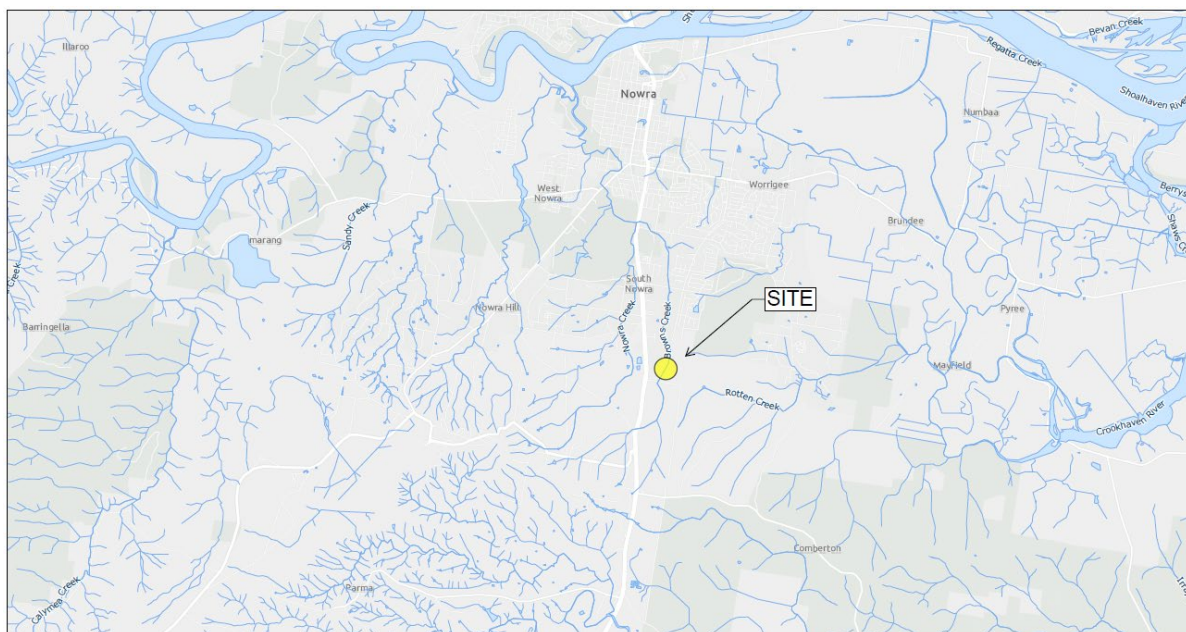


Figure 3: Surrounding Waterways - NSW Spatial Mapping (Hydrolines)

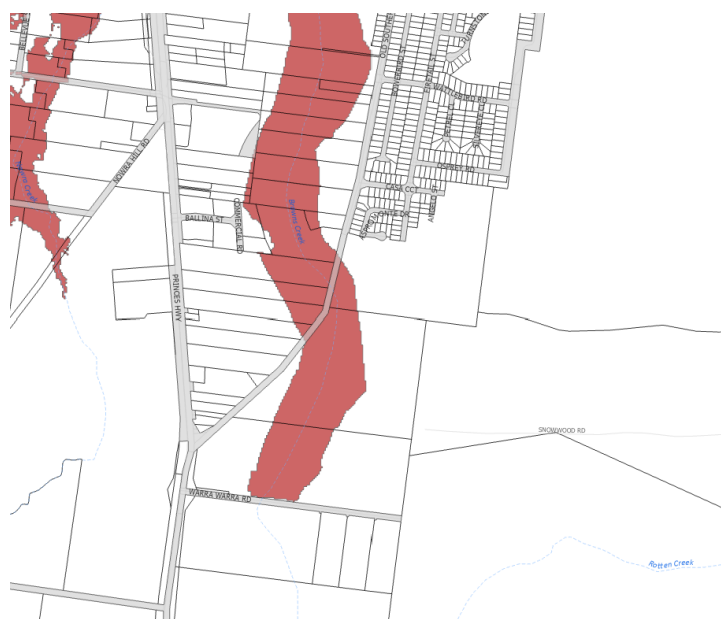


Figure 4: Flood Depths – (Floodplain Study- SCC GIS)

This report examines the availability of existing utilities services to assist with the suitability and viability for the study area to be considered as in industrial subdivision. The report must be read in conjunction with the associated and referenced appendices enclosed within this document.

- Before you Dig Australia (BYDA) outputs provided by the relevant utility authorities.
- Utility authority consultation and formalised feedback.
- Consultation with specialist utility consultants in the relevant fields.
- Council and utility authority policies and strategy documents where available.

The Planning Proposal aims to rezone part of the site from being entirely 'E3' zoning to the following categories:

- Figure 5 is a masterplan showing the location of the above changes to the zoning as part of the Planning Proposal.



The site has been split into two precincts, the Eastern and Western Precinct. The Browns Creek corridor divided the two precincts with the Eastern Precinct being residential and the Western Precinct being retained as Productivity Support Zoning.

Given that this is a high-level planning proposal the discrete lots shown in the civils sheet set and throughout the report are subject to change at the development application stage.

2. Utility Providers

2.1 Authorities

The relevant utility authorities who provide services infrastructure to the study area and its surrounding area is listed below with relevant descriptions:

- **Shoalhaven Water**
Authority for potable water, recycled/reclaimed water, and wastewater to the local area. Generally, reticulation works within a subject development site are funded by the developer, whilst lead-in works that extend, upgrade and/or augment existing mains are funded by the authority, though this is not always guaranteed. It is noted that no reclaimed water services are within the study area.
- **Endeavour Energy**
Supply, maintain and distribute electricity to the local area as well as maintain lighting to the road reserve.
- **NBN Co**
Provides communications connections to the local area. Owns underground communications assets, specifically cabling, in the vicinity of the site, though new (post-2009) pit and pipe is generally under the ownership, care, and maintenance of NBN Co.
- **Telstra**
Owns underground communications assets, specifically legacy (pre-2009) pit, and conduit networks, in the vicinity of the site.
- **Optus/Uecomm**
Owns underground fibre communication asset and supply around the state.
- **TPG**
Owns underground fibre communication asset and supply around the state.
- **Shoalhaven City Council**
Authority for road and stormwater drainage infrastructure assets.

2.2 Reporting Methodology

The servicing methods outlined in this report are based on the existing infrastructure, information supplied by specialist utility consultants where time allows, authority information provided from directly consultation in conjunction with BYDA searches and the requirements of the proposed development or land use area. The requirements for the development have been derived from client and consultant input based on engineering servicing requirements.

As the information provided is theoretical and/or preliminary, no reliance should be placed on the contents of this report and must be reviewed and confirmed during the subsequent phases of design and assessment, including but not limited to planning proposal (preliminary design), development application (concept design) and subsequent detailed design.

3. Utilities & Servicing Infrastructure

3.1 Potable Water

There is currently an existing 150mm AC potable water main aligned along The Princes Highway to the western corner of the subject site. The approved development (SF10743) to the north of the site has additional connections to be constructed with a 180mm HDPE water main aligned along Old Southern Road. The BYDA output from the Shoalhaven Water GIS is shown in figure 6.

Upon consultation with the Development Manager at Shoalhaven Water, on 1st October 2024 we were advised the following:

- The current water main assets have capacity and pressure to service the planning proposal.
- Advised that the 150mm AC main and the 180mm main be connected via a loop through the development site.
- The internal pipe network should be a 125mm HDPE main.

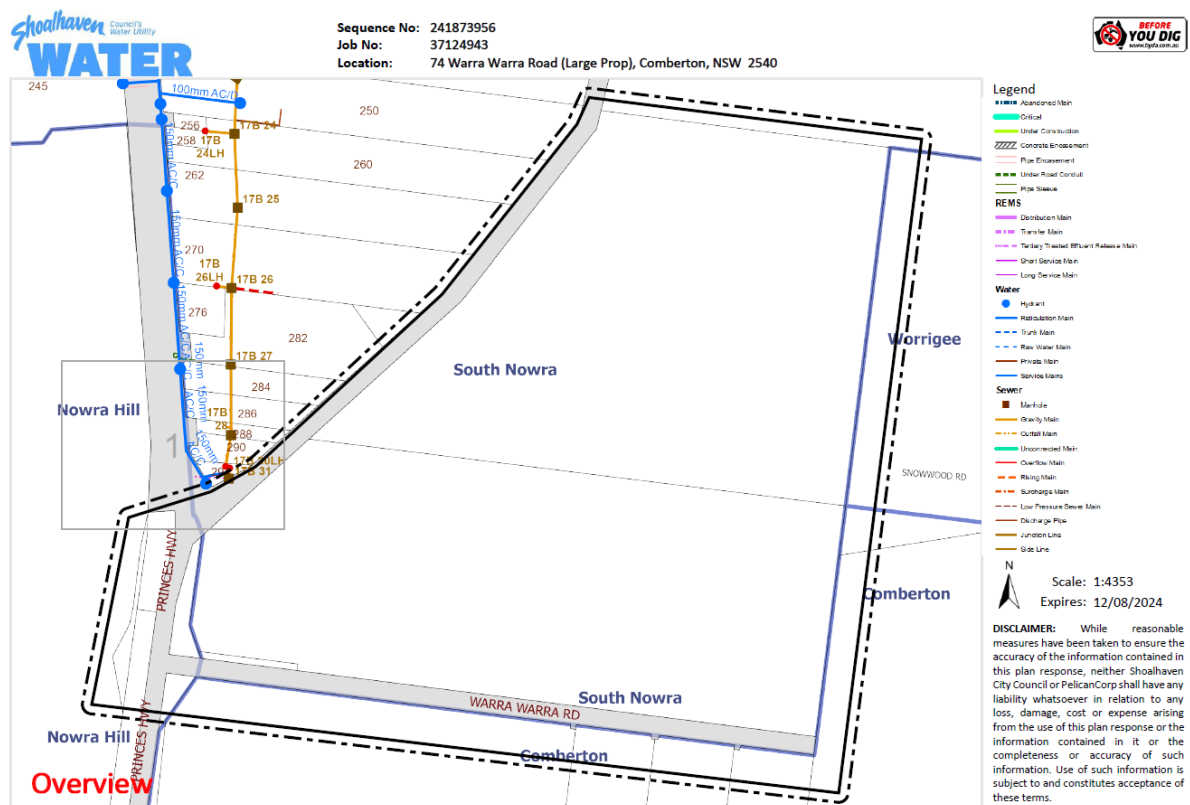


Figure 6: Subject Land – Water Assets – BYDA - Shoalhaven City Council GIS

Based on the presence of trunk and reticulation mains, with the initial advice given by Shoalhaven Water, it is anticipated that there will be no impediments to potable water reticulation for the planning proposal in the study area. Depending on the development layout proposed at the DA stage, potable water reticulation can be undertaken using the existing mains to form a loop and additional DN125mm HDPE mains networks with long and short services to each lot. It is proposed that the network be looped between the existing watermain to the north of the site brought in by the adjoining development and the 180mm OD HDPE main within the Princes Highway corridor.

The planning proposal layout plan, figure 7, shows the water reticulation for the preliminary layout.

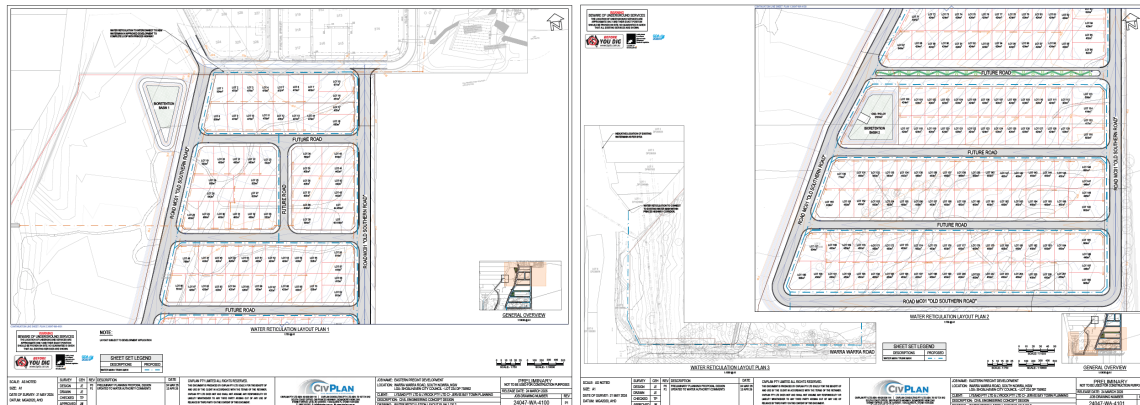


Figure 7: Proposed Servicing Plan (see Appendix A for clarity)

Water authorities generally require a minimum of 20m of pressure head at the point of supply, with a standard rule of thumb being a pressure loss of approximately 3m per kilometre. It is not anticipated that pressure will be an issue, however it will be ideal for pressure tests on the mains or direct enquiries be made with Shoalhaven Water to confirm adequate pressure during the detailed design process, noting that reticulation loops will need to be closed and avoidance of dead ends. Water authorities will require average, maximum and peak daily water demands in kL/day at the time of application lodgement to service any subject development.

The preliminary water and sewer plans shown in figures 7 can be found in Appendix A, Shoalhaven Water GIS outputs from BYDA resources can be found at Appendix B including a summary of the discussions with Shoalhaven Water.

3.2 Wastewater

There is currently no feasible gravity wastewater reticulation infrastructure within the study area, which can be seen in the Shoalhaven Water GIS output in figure 6. The current nearest connection point is Manhole 17B/31 which sits within the road reserve of Old Southern Road (unformed). As a result, a meeting was held on 1st October 2024 with Shoalhaven Water to ascertain the wastewater servicing strategy for the study area and potential requirements for wastewater infrastructure to allow for servicing of the planning proposal.

The outcome was that the site would need to be serviced by a sewer pump station (SPS) not currently within Shoalhaven Waters' strategic planning. The interconnection point would be determined once the new Shoalhaven Wastewater modelling was completed, and capacity was determined in the network for the additional EP's. Calculations for the proposed effluent loading have been provided to Shoalhaven Water to allow the assessment. Figures 8 and 9 details the summary and discussion with Shoalhaven Water.

Subsequent discussions with the Director of Shoalhaven Water and key staff were held following an update to the development layout on the 24th of February 2026 which reduced the overall effluent loading, the minutes and critical items of which are below in figure 10.

On Tue, Oct 1, 2024 at 3:46 PM Theo Prakash <theo.prakash@civplan.com.au> wrote:

Hey Andrew and Manali,

Thanks for taking the time to meet with us today, as discussed we are writing up the services infrastructure report for the planning proposal for the Warra Warra Road development.

These minutes and responses will be included as appendices to the report, I have attached the marked up plans.

The following was discussed:

Water:

- Shoalwaters' preference is to extend and loop the water main from the 180mm HDPE line (future) on Old Southern Road around the perimeter road and through to the 150mm AC main on the Princes Highway
- This would require a mild steel sleeve in the bridged area along Warra Warra Road
- 125mm HDPE mains will be sufficient for the other lines outside of the perimeter road and overall loop.
- The 180mm HDPE loop and a new 125mm HDPE line in the cul-de-sac will be sufficient servicing for the commercial area

Sewer:

- A pump station will be required for a development of this scale (assumed invert 5m depth)
- The development area is currently outside of Councils' sewer servicing strategy
- Shoalwater is currently upgrading sewer mains based on the current strategy and there are concerns about capacity
- The existing pump currently under construction (SPS32 / 1790) has a remaining capacity of 30ETs
- If additional capacity is required in SPS32 then an upgrade of the pumps to high flow rate pumps could be undertaken (this would not service the entire Warra Warra development).
- A gravity stub has been constructed at MH J/5 at invert RL37.5
- This gravity stub drains to the SPS32
- A new sewer pump station will very be required for the development
- The overflow for the pump station could discharge to Browns Creek (reference existing situation with PS19)
- Due to servicing concerns the pump station rising main discharge for the site may need to be further upstream than 17B/31
- The exact location of the discharge point will be determined after the submission of further details, however the discharge may be the new pump station at Lyrebird Park - pending analysis of Councils' capacity model.
- QMAX will be approached for the SPS design and footprint

Could you please confirm the following item:

- The commercial area on the eastern side of the riparian corridor to be serviced via a commercial private pump/RM arrangement to MH17B/31
- If SPS32 were to be upgraded what would be the approximate ET allowance.

Kind regards,

Theo Prakash
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BEng (Civil)
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390 Princes Hwy Bomaderry NSW
civplan.com.au
civplan



Figure 8: Comments and discussion details with Shoalhaven Water (see Appendix B for clarity)

SW advice - 24047 - Warra Warra Road - Planning Proposal - Meeting Minutes - Shoalwater

1 message

Andrew Solari <Andrew.Solari@shoalhaven.nsw.gov.au>
To: Theo Prakash <theo.prakash@civplan.com.au>; Manali Kherodiy <manali.kherodiy@shoalhaven.nsw.gov.au>
Cc: John Weil <john@civplan.com.au>; Josh Eves <josh.eves@civplan.com.au>; CivPlan Info <info@civplan.com.au>; Jervis Bay Town Planning <mail@jervisbaytownplanning.com.au>

Mon, Oct 28, 2024

Theo

See our comments to the 2 points raised below.



Andrew Solari
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Bridge Road (PO Box 42) Nowra NSW 2541
shoalwater.nsw.gov.au

RESPECT | INTEGRITY | ADAPTABILITY | COLLABORATION

From: Theo Prakash <theo.prakash@civplan.com.au>
Sent: Monday, 21 October 2024 11:43 AM
To: Andrew Solari <Andrew.Solari@shoalhaven.nsw.gov.au>; Manali Kherodiy <manali.kherodiy@shoalhaven.nsw.gov.au>
Cc: John Weil <john@civplan.com.au>; Josh Eves <josh.eves@civplan.com.au>; CivPlan Info <info@civplan.com.au>; Jervis Bay Town Planning <mail@jervisbaytownplanning.com.au>
Subject: Re: 24047 - Warra Warra Road - Planning Proposal - Meeting Minutes - Shoalwater

EXTERNAL: Be cautious opening links or attachments.

Hey Andrew and Manali,

Just following up on this:

- The commercial area on the eastern side of the riparian corridor to be serviced via a commercial private pump/PM arrangement to MH17B/31 Connection can be either via private owned and maintained SPS or by Council owned Ecore pump(s).
- If SPS32 were to be upgraded what would be the approximate ET allowance. Based off our designs for SPS32 which is about to be constructed, there could be a max allowance of approximately 300 ET. This would see around 100 ET allocated for any further development of the lots as referred in this planning proposal. This increase would require a minor upgrade to the pumps.

Update from our end:

We've reached out and are working with Ceres to provide some more details on pumping options for the proposal, once we have some more details I can forward through a revised proposal and we can discuss as required.

Any questions please let me know.

Kind regards,

Theo Prakash
Senior Civil Engineer
Shoalwater
1800 318 002 | 0457 782 525



Figure 9: Comments and discussion details with Shoalhaven Water (see Appendix B for clarity)

Critical points noted:

- The location was serviced as part of the strategic planning as commercial zoning
- There are currently no options on the table for matching grant funding
- Noted that existing zoned locations are the current priority for infrastructure funding
- Maximum of 1 pump station and consolidation onto one side of Browns Creek (*critical success factor for SW*)
- Approximately 30 ETs to be directed to the northern SPS
- The total yield will be around 200ET's - 230ET's to the proposed SPS within the site (*TBC*)
- Options for a closer connection are feasible with the relative reduction in ET's between the previous revision and the current one.
- Possible option for connection to the SPS17 gravity network to be explored.

Contact points were established as:

- Shoalhaven Water: Andrew Solari
- CivPlan/Consultants: Theo Prakash.

Actions:

- CivPlan team to determine feasibility of gravity sewer connection via a proposed pedestrian link between the eastern and western sides of Browns Creek
- Nominate a single pump station location (east or west side - pending gravity calculations)
- Ensure the water mains retain the loop between mains on the highway and mains within the Old Southern Road reserve
- Touch base with Shoalhaven Water following determination of consolidated pump station location and provide the following:
 - Number of ET's to drain to existing SPS north of the site
 - Number of ET's to drain to the proposed SPS within the site
 - Location of the proposed SPS to service the site
- Following this the Shoalwater team will provide possible options for interconnection into the sewer network such as the gravity network around SPS17 or other locations which have capacity.

Figure 10: Minutes and Critical Points - Shoalhaven Water Meeting - 24th February 2026

Sewer feasibility via gravity servicing, pump station nomination, determination of the effluent loading based on the updated layout have been sent to Shoalhaven Water.

It was noted that there may be capacity in the existing network around SPS 17 which is approximately 2.7km from the nominated pump station located in the western precinct, the original alternative location is also shown as an option which is the surcharge main currently under construction near the intersection of Old Southern Road and Hillcrest Avenue which is approximately 2.5km as shown in figure 11.

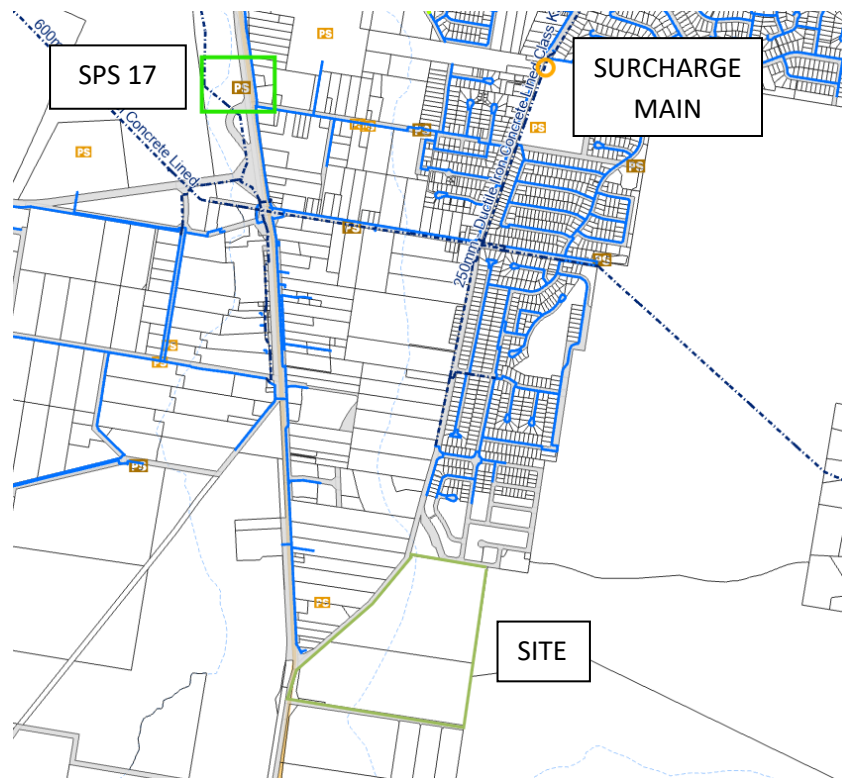


Figure 11: Sewer Interconnection Options – SPS17 and Hillcrest Avenue Surcharge Main

It is noted that a response from Shoalhaven Water is pending and that the confirmed interconnection point to the catchment which drains to SPS 17 may be closer pending modelling checks relative to the effluent loading provided. Possible alternative interconnection points could be MH17B/31 on the unformed Old Southern Road reserve, MH17B/20 on Ballina Street or MH17A/4 near the intersection of Flinders Road and the Princes Highway. It is noted that a pressurised line from the pump station aligned within the Princes Highway Corridor is suboptimal and it is recommended that the options assessment for the outlet be performed and the interconnection point be confirmed at the DA stage noting that capacity in the network can be confirmed for the two options noted in figure 11.

As part of the planning proposal, CivPlan have reached out to QMax to determine the details of a potential pump arrangement for the development and as part of those discussions the assumption can be made that the SPS sizing would be similar to the development north of the site. As such an invert level of 5.5m depth was adopted, in line with the adjacent development, and serviceability checks were undertaken for the site. The SPS location can be seen in figure 12 alongside the sewer catchments.

3.3 Electricity

The site is constrained by the presence of an electrical easement that is ~30m wide running north to south along the western side of the site, over the Western Precinct as indicated in figure 13. As noted in the advice provided by Power Line Design (PLD), multiple 33kV and 11kV overhead power lines run through the easement.

PLD was engaged to discuss the supply of the planning proposal with Endeavour Energy. It is to be noted that the planning proposal could utilise approximately 2.5MVA of electrical load. As per the masterplan in figure 5, carparking may be proposed in the easement subject to a future development application.

From discussions between PLD and Endeavour Energy it has been confirmed that the planning proposal can be supplied by the existing network by installing a new cable between the site and the South Nowra Zone Substation.

Subsequently a new layout has been proposed which reduces the overall site density and it is assumed that the total required loading will be lower than the assessed with the new scheme.

In summary as part of the planning proposal:

- No buildings or significant structures are proposed within the site except for landscaping, circulating lanes and parking.
- No adjustments or pole relocations are proposed.
- Minor earthworks and roads/parking bays would be part of the construction works for the planning proposal.
- The planning proposal concept design will need to complement the existing levels to minimise any if all earthworks around the power-poles, and clearance from the powerlines will need to be surveyed and analysed in 3D to determine if adjustments are required.

A preliminary plan markup has been provided by the Level 3 designer and the full PLD electrical infrastructure report is available in Appendix C.

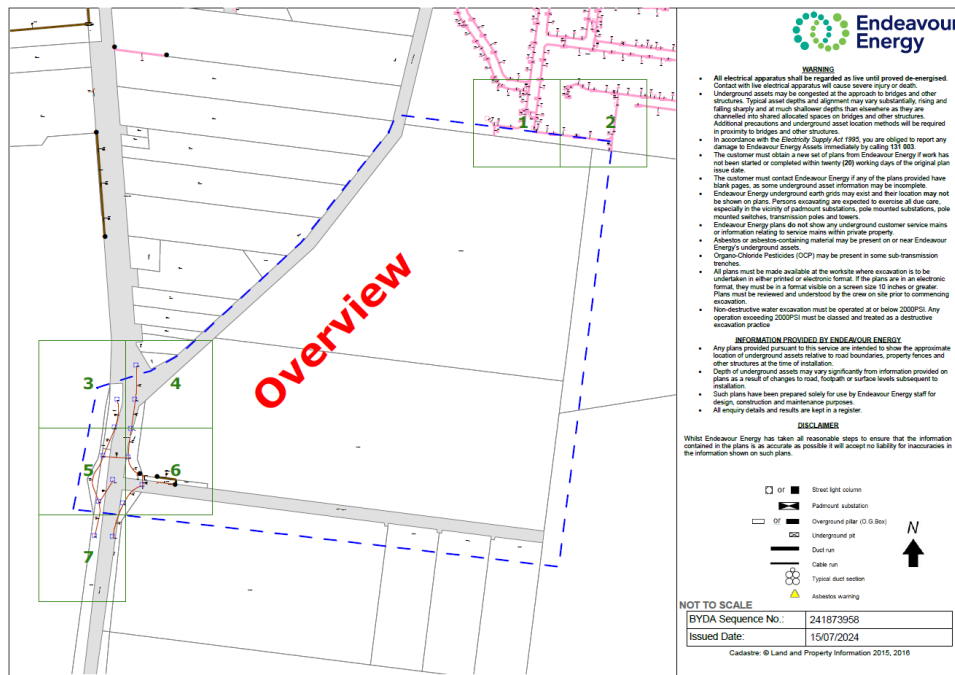


Figure 13: Endeavour Energy BYDA overview



Figure 14: Nearmaps Imagery with Electrical Lines

Endeavour Energy correspondence, connection offers, relevant policy documents, and the BYDA Endeavour Energy GIS outputs can be found at Appendix C.

3.4 Communications

There are multiple existing communications assets along The Princes Highway corridor. These include assets owned by Telstra, NBN Co, Optus and TPG. Typically, these are underground fibre-optic cable assets and are some of these assets service various area of NSW. Appendix D shows the BYDA outputs for the various telecommunication asset owners.

Design IT Telco were engaged to undertake servicing checks with Telstra and NBN Co. A letter has been provided and included in Appendix D which states that the planning proposal site is located within the NBN Co fixed wireless area and that adjacent sites are currently connected to the NBN Co Fibre to the Premises (FTTP) network.

NBN Co is currently utilising the Telstra pit and pipe network and can provide backhaul through the infrastructure to provide FTTP to the planning proposal, provided the developer installs a fibre ready pit and pipe network and enters into a master development agreement with NBN Co, which would occur after determination of a development application.

The telecommunication assets along The Princes Highway fronting the subject site will need to remain in place and will likely not form part of the reticulation design. It is likely that they will not require adjustment or alteration based on the current access arrangement of the planning proposal.

Backhaul costs and further advice can be obtained at the development application stage.

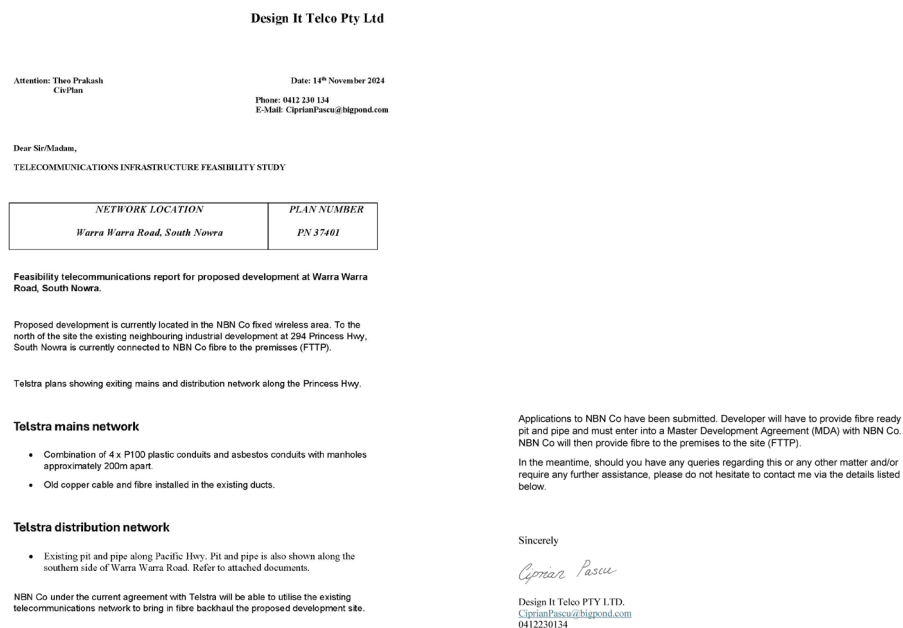


Figure 15: Communications Supply - Statement from Design IT Telco - Advice received 14th November 2024 (see Appendix D for clarity)

4. Conclusion

This SIR concludes the following in relation to the study area of Warra Warra Rd, South Nowra:

- Potable water supply, capacity, and pressure are adequate to service the proposed development, with local interconnection locations available.
- Wastewater servicing for the planning proposal can be achieved by directing 22ET's to the new sewer pump station north of the site and installation of a new sewer pump station
- Gravity sewer servicing to the new SPS can be achieved based on the anticipated ET's and grades from the Shoalhaven Supplement to the WSA.
- The pressure sewer rising main outlet from a SPS within the planning proposal site may need to be extended to a point in the existing network with capacity. This location will be determined in conjunction with Shoalhaven Water.
- The interconnection point to the existing network is to be confirmed by Shoalhaven Water but it was noted that there are two options that may be able to cater for the proposed effluent load being the network going into sewer pump station 17 and the proposed surcharge main currently under construction.
- It will be necessary to tie into the approved development north of the planning proposal site regarding roads, drainage, water and sewer servicing.
- There are no requirements or provisions for reclaimed/recycled water.
- Electrical supply and capacity are currently available for the site; and extents of the requirements and anticipated load have been determined.
- The existing electrical easement 30m wide contained to the western side of the site restricts construction to only roads, carparks, and landscaping. No buildings can be constructed within the easement.
- The 3D geometry of the conductors will need to be analysed during the detailed design phase to ensure clearances (horizontally and vertically) comply with Endeavour Energy standards.
- NBN fibre communications supply is available to service the proposed development with local reticulation locations available.
- There are no gas reticulation assets available in the local area, nor is there a requirement to provide it to the proposed development.

APPENDIX A:

Sewer and Water Servicing Plan



CONTINUATION LINE SHEET: PLAN 2 24047-SE-3101

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

Liability limited by a scheme approved under Professional Standards Legislation.

NOTE:
LAYOUT SUBJECT TO DEVELOPMENT APPLICATION

SHEET LEGEND	
EXISTING SEWER MAIN	
PROPOSED SEWER MAIN	
PROPOSED SEWER MANHOLE	
UNDERBORE PIT LOCATION	

SEWER LAYOUT PLAN 1
1:750 @ A1

SCALE: AS NOTED
SIZE: A1
DATE OF SURVEY: 31 MAY 2024
DATUM: MGA2020, AHD

SURVEY	CEH	REV	DESCRIPTION	DATE
DESIGN	JE	P0	PRELIMINARY PLANNING PROPOSAL DESIGN	24 MAR 26
DRAWN	JE	P1	UPDATED TO WATER AUTHORITY COMMENTS	13 APR 26
CHECKED	TP			
APPROVED	JW			

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T: 1800 318 052 E: info@civplan.com.au W: www.civplan.com.au

JOB NAME: EASTERN PRECINT DEVELOPMENT LOCATION: WARRA WARRA ROAD, SOUTH NOWRA, NSW LGA: SHOALHAVEN CITY COUNCIL - LOT 224 DP 755952		PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES	
CLIENT: LYSAND PTY LTD & LYROCK PTY LTD C/- JERVIS BAY TOWN PLANNING		RELEASE DATE: 24 MARCH 2026	
DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN		JOB-DRAWING NUMBER	
DRAWING: SEWER NETWORK LAYOUT PLAN		24047-SE-3100	
		REV P1	

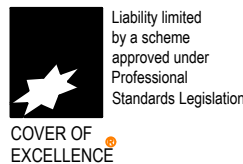
0 5 10 15 20 25
SCALE:- 1:750

0 100 200 300 400 500
SCALE:- 1:10000



SEWER LAYOUT PLAN 2
1:750 @ A1

WARNING
BEWARE OF UNDERGROUND SERVICES
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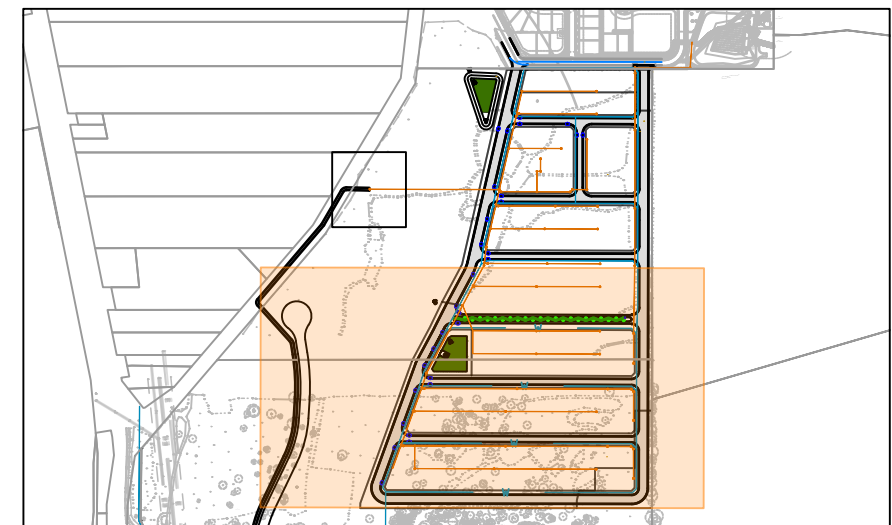
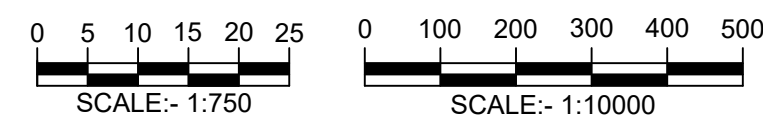


NOTE:

LAYOUT SUBJECT TO DEVELOPMENT APPLICATION

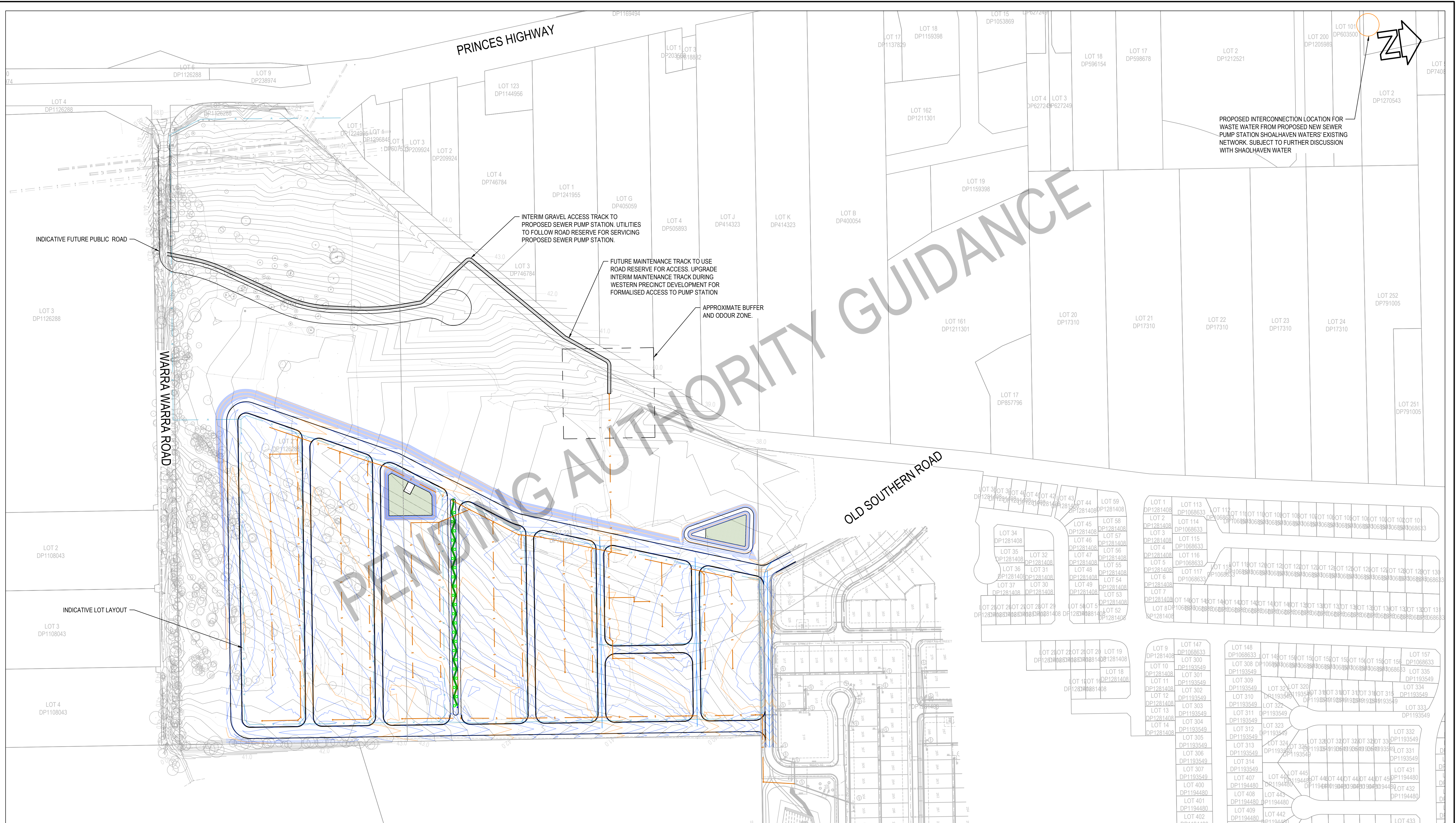
SHEET LEGEND

EXISTING SEWER MAIN	---
PROPOSED SEWER MAIN	---
PROPOSED SEWER MANHOLE	●



GENERAL OVERVIEW
1:10000 @ A1

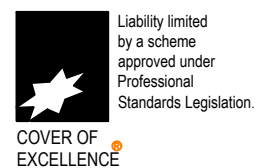
SCALE: AS NOTED	SURVEY	CEH	REV	DESCRIPTION	DATE	CIVPLAN PTY LIMITED ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY CIVPLAN PTY LTD SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. CIVPLAN PTY LTD DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OF RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.	 CIVPLAN PTY LTD ABN: 49 620 926 114 CIVPLAN CONSULTING PTY LTD ABN: 79 157 731 912 SOUTH COAST OFFICE: 390 PRINCES HIGHWAY, BOMADERRY NSW 2541 SYDNEY OFFICE: LEVEL 36, GATEWAY 1, MACQUARIE PL, SYDNEY NSW 2000 T: 1800 318 052 E: info@civplan.com.au W: www.civplan.com.au	JOB NAME: EASTERN PRECINT DEVELOPMENT		PRELIMINARY	
SIZE: A1	DESIGN	JE	P0	PRELIMINARY PLANNING PROPOSAL DESIGN	24 MAR 26			LOCATION: WARRA WARRA ROAD, SOUTH NOWRA, NSW		NOT TO BE USED FOR CONSTRUCTION PURPOSES	
DATE OF SURVEY: 31 MAY 2024	DRAWN	JE	P1	UPDATED TO WATER AUTHORITY COMMENTS	13 APR 26			LGA: SHOALHAVEN CITY COUNCIL - LOT 224 DP 755952		RELEASE DATE: 24 MARCH 2026	
	CHECKED	TP						CLIENT: LYSAND PTY LTD & LYROCK PTY LTD C/- JERVIS BAY TOWN PLANNING		JOB-DRAWING NUMBER	REV
	DATUM: MGA2020, AHD	APPROVED	JW						DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN		24047-SE-3101
							DRAWING: SEWER NETWORK LAYOUT PLAN				



SEWER CONNECTION PLAN

1:4000 @ A1

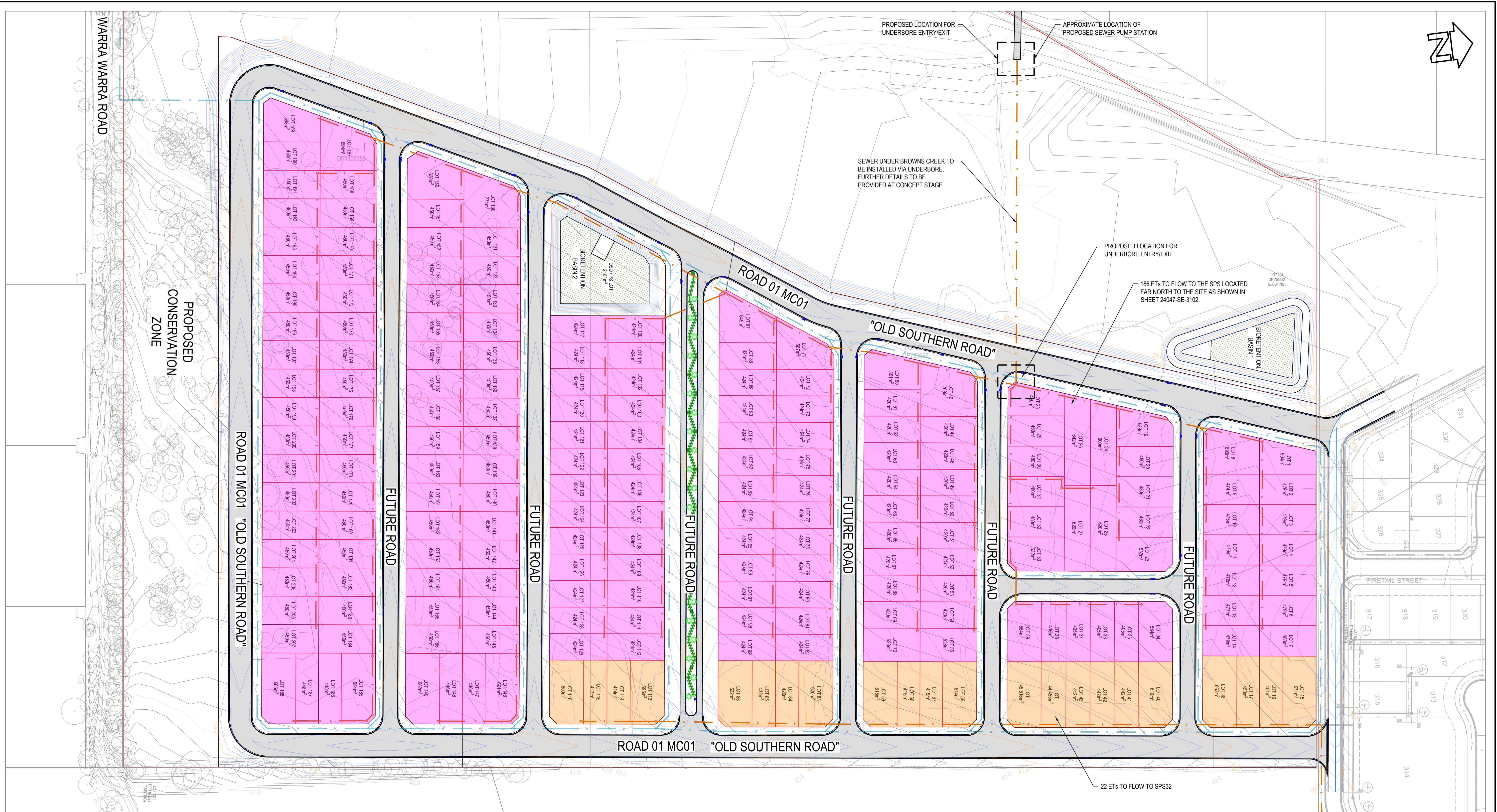
WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.



SHEET LEGEND	
EXISTING SEWER MAIN	
PROPOSED SEWER MAIN	
PROPOSED SEWER MANHOLE	



SCALE: AS NOTED SIZE: A1 DATE OF SURVEY: 31 MAY 2024 DATUM: MGA2020, AHD	SURVEY	CEH	REV	DESCRIPTION	DATE	CIVPLAN PTY LIMITED ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY CIVPLAN PTY LTD SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. CIVPLAN PTY LTD DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OF RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.	 CIVPLAN PTY LTD ABN: 49 620 926 114 CIVPLAN CONSULTING PTY LTD ABN: 79 157 731 912 SOUTH COAST OFFICE: 390 PRINCES HIGHWAY, BOMADERRY NSW 2541 SYDNEY OFFICE: LEVEL 36, GATEWAY, 1 MACQUARIE PL, SYDNEY NSW 2000 T: 1800 318 052 E: info@civplan.com.au W: www.civplan.com.au	JOB NAME: EASTERN PRECINT DEVELOPMENT LOCATION: WARRA WARRA ROAD, SOUTH NOWRA, NSW LGA: SHOALHAVEN CITY COUNCIL - LOT 224 DP 755952	PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES	
	DESIGN	JE	P0	PRELIMINARY PLANNING PROPOSAL DESIGN	24 MAR 26				RELEASE DATE: 24 MARCH 2026	
	DRAWN	JE	P1	UPDATED TO WATER AUTHORITY COMMENTS	13 APR 26				JOB-DRAWING NUMBER	
	CHECKED	TP							24047-SE-3102	
	APPROVED	JW						CLIENT: LYSAND PTY LTD & LYROCK PTY LTD C/- JERVIS BAY TOWN PLANNING	REV	P1
								DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN		
								DRAWING: SEWER CONNECTION PLAN		



SEWER CATCHMENT PLAN
1:1500 @ A1

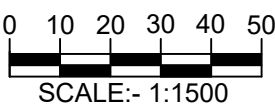
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SHEET LEGEND	
EXISTING SEWER MAIN	
PROPOSED SEWER MAIN	
PROPOSED SEWER MANHOLE	

NOTE:
LAYOUT SUBJECT TO DEVELOPMENT APPLICATION

- LOTS PROPOSED TO NEW PUMP STATION (186ETs)
- LOTS PROPOSED TO EXISTING PUMP STATION (22ETs)



SCALE: AS NOTED SIZE: A1 DATE OF SURVEY: 31 MAY 2024 DATUM: MGA2020, AHD	SURVEY	CEH	REV	DESCRIPTION	DATE	CIVPLAN PTY LIMITED ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY CIVPLAN PTY LTD SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. CIVPLAN PTY LTD DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OF RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.	 CIVPLAN PTY LTD ABN: 49 620 926 114 CIVPLAN CONSULTING PTY LTD ABN: 79 157 731 912 SOUTH COAST OFFICE: 390 PRINCES HIGHWAY, BOMADERRY NSW 2541 SYDNEY OFFICE: LEVEL 36, GATEWAY 1, MACQUARIE PL, SYDNEY NSW 2000 T: 1800 318 052 E: info@civplan.com.au W: www.civplan.com.au	JOB NAME: EASTERN PRECINT DEVELOPMENT LOCATION: WARRA WARRA ROAD, SOUTH NOWRA, NSW LGA: SHOALHAVEN CITY COUNCIL - LOT 224 DP 755952	PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES
	DESIGN	JE	P0	PRELIMINARY PLANNING PROPOSAL DESIGN	24 MAR 26			CLIENT: LYSAND PTY LTD & LYROCK PTY LTD C/- JERVIS BAY TOWN PLANNING	RELEASE DATE: 24 MARCH 2026
	DRAWN	JE	P1	UPDATED TO WATER AUTHORITY COMMENTS	13 APR 26			DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN	JOB-DRAWING NUMBER
	CHECKED	TP						24047-SE-3101	REV
	APPROVED	JW						DRAWING: SEWER NETWORK LAYOUT PLAN	P1



CONTINUATION LINE SHEET: PLAN 2 24047-WA-4101

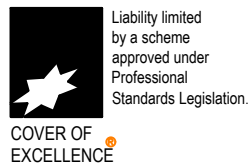
WATER RETICULATION LAYOUT PLAN 1

1:750 @ A1

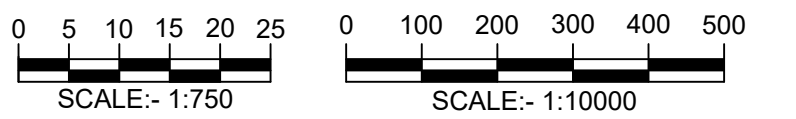
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NOTE:

LAYOUT SUBJECT TO DEVELOPMENT APPLICATION

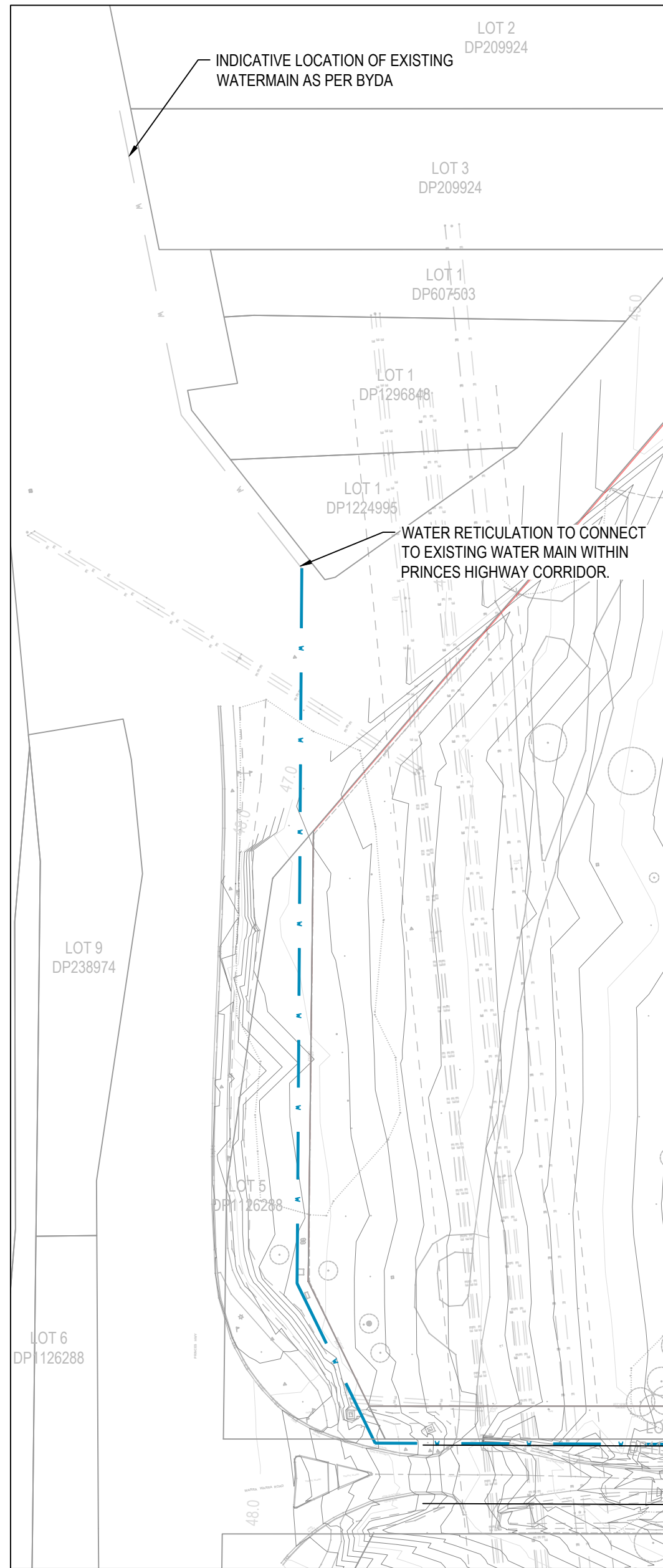


SHEET SET LEGEND	
DESCRIPTIONS	PROPOSED
WATER MAIN / TRUNK MAIN	



SCALE: AS NOTED SIZE: A1 DATE OF SURVEY: 31 MAY 2024 DATUM: MGA2020, AHD	SURVEY	CEH	REV	DESCRIPTION	DATE	CIVPLAN PTY LIMITED ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY CIVPLAN PTY LTD SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. CIVPLAN PTY LTD DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OF RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.	 CIVPLAN PTY LTD ABN: 49 620 826 114 CIVPLAN CONSULTING PTY LTD ABN: 79 157 731 912 SOUTH COAST OFFICE: 390 PRINCES HIGHWAY, BOMADERRY NSW 2541 SYDNEY OFFICE: LEVEL 36, GATEWAY, 1 MACQUARIE PL, SYDNEY NSW 2000 T: 1800 318 052 E: info@civplan.com.au W: www.civplan.com.au	JOB NAME: EASTERN PRECINT DEVELOPMENT LOCATION: WARRA WARRA ROAD, SOUTH NOWRA, NSW LGA: SHOALHAVEN CITY COUNCIL - LOT 224 DP 755952 CLIENT: LYSAND PTY LTD & LYROCK PTY LTD C/- JERVIS BAY TOWN PLANNING DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN DRAWING: WATER RETICULATION LAYOUT PLAN 1 OF 2	PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES	
	DESIGN	JE	P0	PRELIMINARY PLANNING PROPOSAL DESIGN	24 MAR 26				RELEASE DATE: 24 MARCH 2026	
	DRAWN	JE	P1	UPDATED TO WATER AUTHORITY COMMENTS	13 APR 26				JOB-DRAWING NUMBER	
	CHECKED	TP							24047-WA-4100	
	APPROVED	JW							REV	P1

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WATER RETICULATION LAYOUT PLAN 3

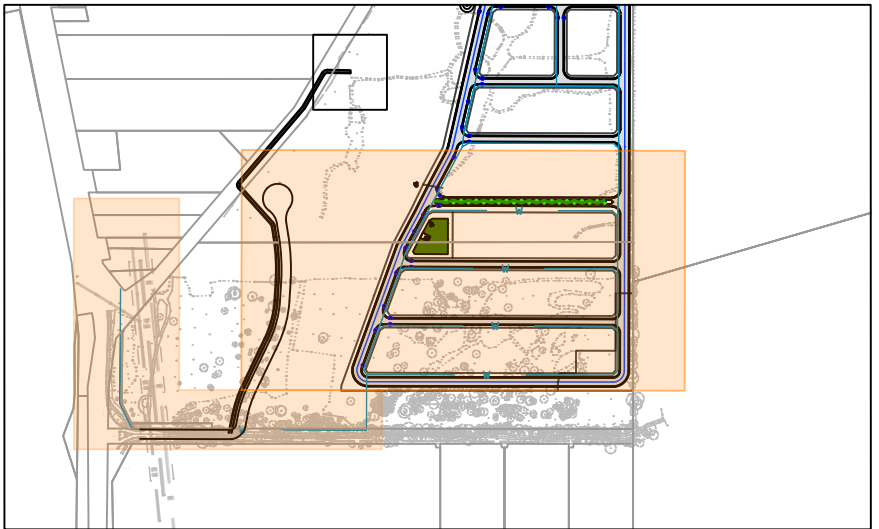
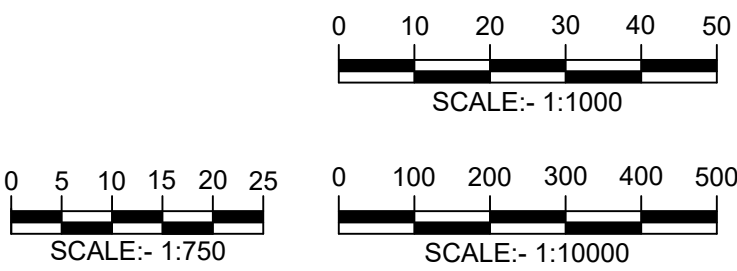
1:1000 @ A1



WATER RETICULATION LAYOUT PLAN 2

1:750 @ A1

SHEET SET LEGEND	
DESCRIPTIONS	PROPOSED
WATER MAIN / TRUNK MAIN	



GENERAL OVERVIEW

1:10000 @ A1

SCALE: AS NOTED SIZE: A1 DATE OF SURVEY: 31 MAY 2024 DATUM: MGA2020, AHD	SURVEY	CEH	REV	DESCRIPTION	DATE	CIVPLAN PTY LIMITED ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY CIVPLAN PTY LTD SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. CIVPLAN PTY LTD DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OF RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.	 CIVPLAN PTY LTD ABN: 49 620 926 114 CIVPLAN CONSULTING PTY LTD ABN: 79 157 731 912 SOUTH COAST OFFICE: 390 PRINCES HIGHWAY, BOMADERRY NSW 2541 SYDNEY OFFICE: LEVEL 36, GATEWAY 1 MACQUARIE PL, SYDNEY NSW 2000 T: 1800 318 052 E: info@civplan.com.au W: www.civplan.com.au	JOB NAME: EASTERN PRECINT DEVELOPMENT LOCATION: WARRA WARRA ROAD, SOUTH NOWRA, NSW LGA: SHOALHAVEN CITY COUNCIL - LOT 224 DP 755952 CLIENT: LYSAND PTY LTD & LYROCK PTY LTD C/- JERVIS BAY TOWN PLANNING DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN DRAWING: WATER RETICULATION LAYOUT PLAN 2 OF 2	PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES	
	DESIGN	JE	P0	PRELIMINARY PLANNING PROPOSAL DESIGN	24 MAR 26				RELEASE DATE: 24 MARCH 2026	
	DRAWN	JE	P1	UPDATED TO WATER AUTHORITY COMMENTS	13 APR 26				JOB-DRAWING NUMBER	
	CHECKED	TP							24047-WA-4101	
	APPROVED	JW							REV	P1

APPENDIX B:

Shoalhaven Water BYDA and Summaries



Theo Prakash <theo.prakash@civplan.com.au>

SW advice - 24047 - Warra Warra Road - Planning Proposal - Meeting Minutes - Shoalwater

1 message

Andrew Solari <Andrew.Solari@shoalhaven.nsw.gov.au>

Mon, Oct 28, 2024 at 11:58 AM

To: Theo Prakash <theo.prakash@civplan.com.au>, Manali Kherodiya <manali.kherodiya@shoalhaven.nsw.gov.au>

Cc: John Weil <john@civplan.com.au>, Josh Eves <josh.eves@civplan.com.au>, CivPlan Info <info@civplan.com.au>, Jervis Bay Town Planning <mail@jervisbaytownplanning.com.au>

Theo

See our comments to the 2 points raised below.

**Andrew Solari**
Water Regulatory Manager[+61 2 4429 3255](tel:+61244293255) | [+61 402 892 102](tel:+61402892102)
Bridge Road (PO Box 42) Nowra NSW 2541
shoalwater.nsw.gov.au**RESPECT | INTEGRITY | ADAPTABILITY | COLLABORATION****From:** Theo Prakash <theo.prakash@civplan.com.au>**Sent:** Monday, 21 October 2024 11:45 AM**To:** Andrew Solari <Andrew.Solari@shoalhaven.nsw.gov.au>; Manali Kherodiya <manali.kherodiya@shoalhaven.nsw.gov.au>**Cc:** John Weil <john@civplan.com.au>; Josh Eves <josh.eves@civplan.com.au>; CivPlan Info <info@civplan.com.au>; Jervis Bay Town Planning <mail@jervisbaytownplanning.com.au>**Subject:** Re: 24047 - Warra Warra Road - Planning Proposal - Meeting Minutes - Shoalwater**EXTERNAL:** Be cautious opening links or attachments.

Hey Andrew and Manali,

Just following up on this:

- The commercial area on the eastern side of the riparian corridor to be serviced via a commercial private pump/RM arrangement to MH17B/31 **Connection can be either via private owned and maintained SPS or by Council owned Eone pump(s).**
- If SPS32 were to be upgraded what would be the approximate ET allowance. **Based off our designs for SPS32 which is about to be constructed, there could be a max allowance of approximately 300 ET. This would see around 100 ET allocated for any further development of the lots as referred in this planning proposal. This increase would require a minor upgrade to the pumps.**

Update from our end:

We've reached out and are working with Qmax to provide some more details on pumping options for the proposal, once we have some more details I can forward through a revised proposal and we can discuss as required.

Any questions please let me know.

Kind regards,

Theo Prakash

Senior Civil Engineer

BEng (Civil)



1800 318 052 | 0451 782 525



theo.prakash@civplan.com.au



390 Princes HWY Bomaderry NSW



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On Tue, Oct 1, 2024 at 3:46 PM Theo Prakash <theo.prakash@civplan.com.au> wrote:

Hey Andrew and Manali,

Thanks for taking the time to meet with us today, as discussed we are writing up the services infrastructure report for the planning proposal for the Warra Warra Road development.

These minutes and responses will be included as appendices to the report, I have attached the marked up plans.

The following was discussed:

Water:

- Shoalwaters' preference is to extend and loop the water main from the 180mm HDPE line (future) on Old Southern Road around the perimeter road and through to the 150mm AC main on the Princes Highway
- This would require a mild steel sleeve in the bridged area along Warra Warra Road
- 125mm HDPE mains will be sufficient for the other lines outside of the perimeter road and overall loop.
- The 180mm HDPE loop and a new 125mm HDPE line in the cul-de-sac will be sufficient servicing for the commercial area

Sewer:

- A pump station will be required for a development of this scale (assumed invert 5m depth)
- The development area is currently outside of Councils' sewer servicing strategy
- Shoalwater is currently upgrading sewer mains based on the current strategy and there are concerns about capacity
- The existing pump currently under construction (SPS32 / 179D) has a remaining capacity of 30ETs
- If additional capacity is required in SPS32 then an upgrade of the pumps to high flow rate pumps could be undertaken (this would not service the entire Warra Warra development).
- A gravity stub has been constructed at MH J/5 at invert RL37.5
- This gravity stub drains to the SPS32
- A new sewer pump station will very be required for the development
- The overflow for the pump station could discharge to Browns Creek (reference existing situation with PS19)
- Due to servicing concerns the pump station rising main discharge for the site may need to be further upstream than 17B/31
- The exact location of the discharge point will be determined after the submission of further details, however the discharge may be the new pump station at Lyrebird Park - pending analysis of Councils' capacity model.
- QMAX will be approached for the SPS design and footprint

Could you please confirm the following item:

- The commercial area on the eastern side of the riparian corridor to be serviced via a commercial private pump/RM arrangement to MH17B/31
- If SPS32 were to be upgraded what would be the approximate ET allowance.

Kind regards,

Theo Prakash

Senior Civil Engineer
BEng (Civil)



1800 318 052 | 0451 782 525



theo.prakash@civplan.com.au



390 Princes HWY Bomaderry NSW



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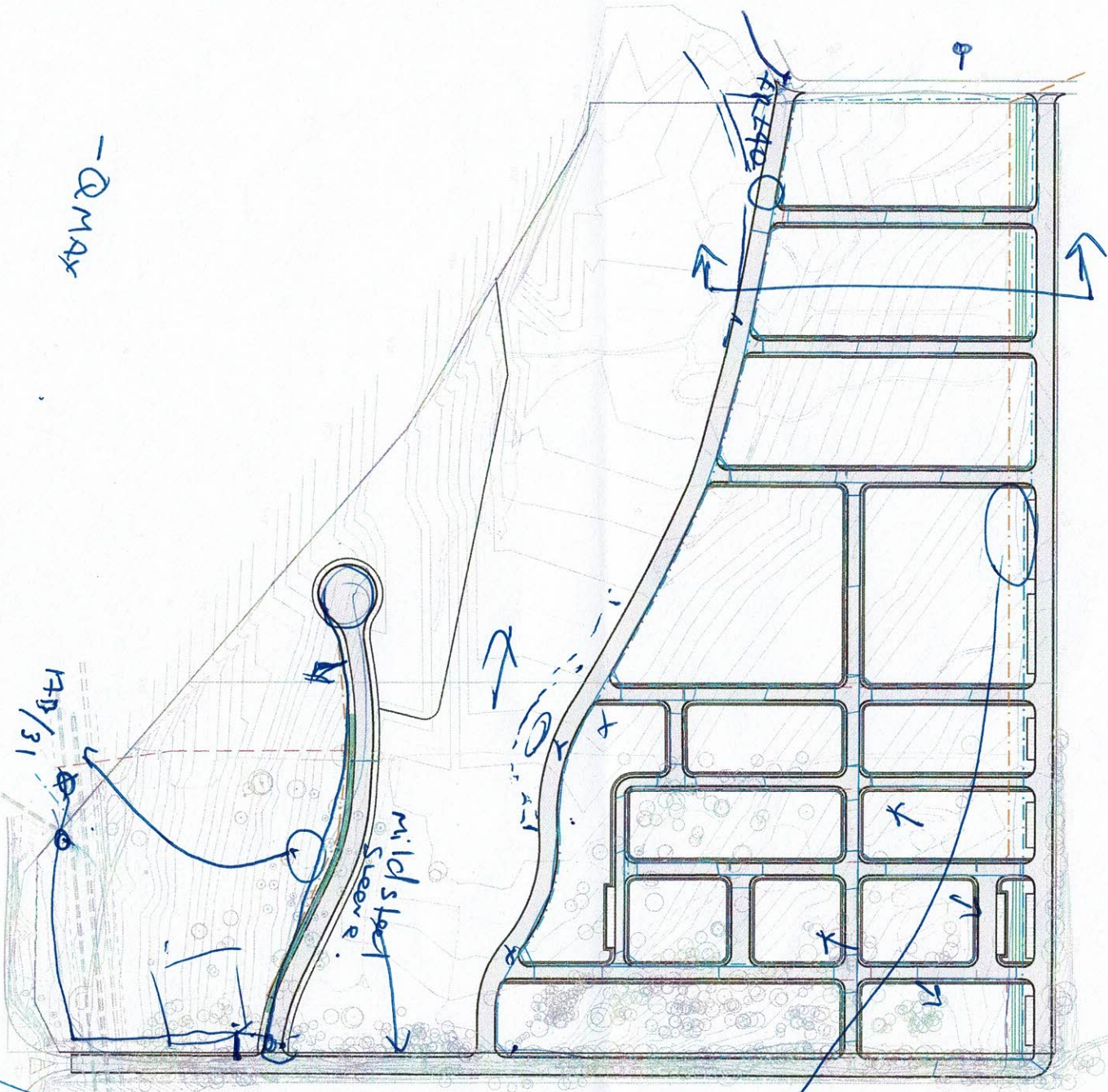
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30 ETS



[Hybrid part (PS)] → worst case for capacity.

-Qmax



- Water: hoop 180 HDPE from old Southern to ISO AC on Hwy & interconnect.
- 125 HDPE internal.
- Sewer: Pump station.
- Ex Pumps (SPS32) (1790) Has 130 ETS of capacity.
- Gravity stub @ J15 RL 37.5.
- Pump (SW) New not in strategy may need to be taken farther U/S to area with capacity.

→ Theo to provide approx yield & loadings.

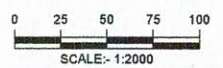
→ QMAX prelim design for pump.

→ Shoalwater to check for capacity.

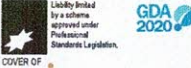
GENERAL ARRANGEMENT PLAN
1:2000 @ A1

SHEET LEGEND

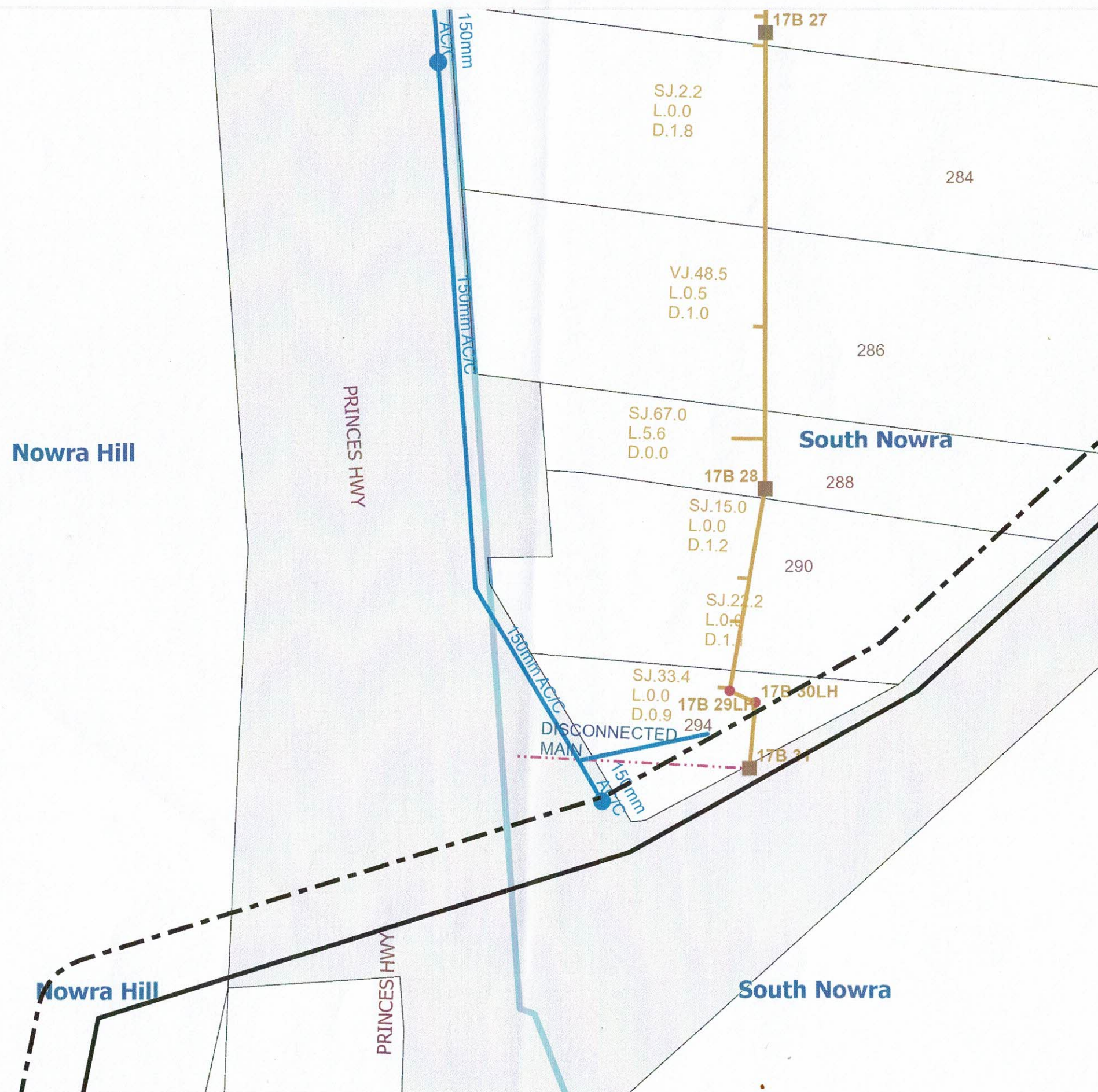
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ROLL KERB 'RK'	RK	NOMINAL CONTROL LINE		KERB ADAPTOR / OUTLET		SEWER LOCATION (EXISTING)		PROPOSED WATER MAIN		PROPOSED SEWER MAIN	
EDGE STRIP 'ES'	ES	ROAD PAVEMENT		LIMIT OF WORKS		WATER LOCATION (EXISTING)		PROPOSED HYDRANT		PROPOSED SEWER MANHOLE	
KERB ONLY 'KO'	KO	PATH PAVING (CONCRETE)		PROPOSED LOT BOUNDARIES		TELSTRA LOCATION (EXISTING)		PROPOSED STOP VALVE		PROPOSED THRUST CONNECTOR	
MOUNTABLE SF TYPE KERB 'SF'	SF	CONTOURS (MAJOR)	25	TREE AND LANDSCAPING		FIBRE OPTICS LOCATION (EXISTING)		PROPOSED THRUST CONNECTOR		PROPOSED SCOUR VALVE ASSEMBLY	
DISH DRAIN 'DD'	DD	CONTOURS (MINOR)		DRAINAGE PIT - 1.8m PIT WITH LINTEL		ELECTRICAL LOCATION (EXISTING)		PROPOSED WATER SERVICE/METER		PROPOSED SEWER JUNCTION (I.O.)	
VEHICULAR CROSSING		RETAINING WALL STRUCTURES		DRAINAGE PIT - 2.4m SAG WITH LINTEL		GAS LOCATION (EXISTING)		PROPOSED THRUST BLOCK		PROPOSED THRUST BLOCK	



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SCALE: AS NOTED SIZE: A1 DATE OF SURVEY: 31 MAY 2024 DATUM: MGA2020, AHD	SURVEY DESIGN DRAWN CHECKED APPROVED	CEH JE JE TP JW	REV PO	DESCRIPTION PRELIMINARY PLANNING PROPOSAL DESIGN	DATE 19 SEP 24	CIVPLAN PTY LIMITED ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY CIVPLAN PTY LTD SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. CIVPLAN PTY LTD DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OF RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.	 CIVPLAN PTY LTD ABN: 49 620 926 114 CIVPLAN CONSULTING PTY LTD ABN: 79 157 734 912 SOUTH COAST OFFICE: 390 PRINCES HIGHWAY, BOMADERRY NSW 2541 SYDNEY OFFICE: 152 SAILORS BAY ROAD, NORTHBRIDGE NSW 2063 T: 1800 318 052 E: info@civplan.com.au W: www.civplan.com.au	JOB NAME: JOB NAME LOCATION: WARRA WARRA ROAD, SOUTH NOWRA, NSW LGA: SHOALHAVEN CITY COUNCIL - LOT 2 DP 1126288 & LOT 224 755952 CLIENT: TEXI PTY LTD C/- JERVIS BAY TOWN PLANNING DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN DRAWING: GENERAL ARRANGEMENT PLAN	FOR CONCEPT APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES RELEASE DATE: 19 SEPTEMBER 2024 JOB-DRAWING NUMBER 24047-GA-1005 REV PO
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Legend

- Abandoned Main
- Critical
- Under Construction
- Concrete Encasement
- Pipe Encasement
- Under Road Conduit
- Pipe Sleeve
- REMS
- Distribution Main
- Transfer Main
- Tertiary Treated Effluent Release Main
- Short Service Main
- Long Service Main
- Water
- Hydrant
- Reticulation Main
- Trunk Main
- Raw Water Main
- Private Main
- Service Mains
- Sewer
- Manhole
- Gravity Main
- Outfall Main
- Unconnected Main
- Overflow Main
- Rising Main
- Surcharge Main
- Low Pressure Sewer Main
- Discharge Pipe
- Junction Line
- Side Line

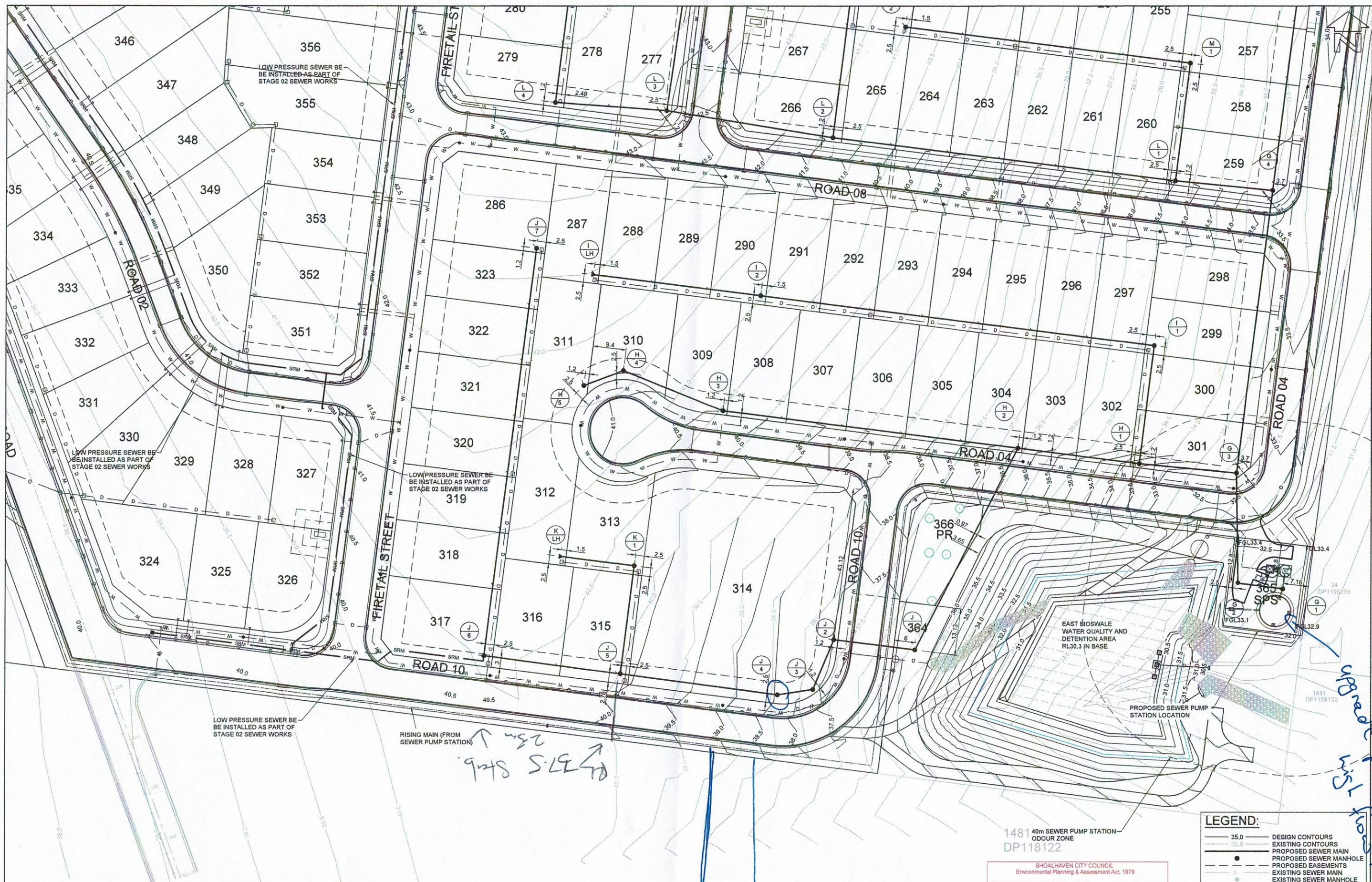


Scale: 1:1000

Expires: 12/08/2024

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Tile No: 1



BEWARE!

THE CONTRACTOR IS TO VERIFY THE LOCATION OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL BE RESPONSIBLE, AT THE CONTRACTOR'S EXPENSE, FOR ANY REPAIRS TO DAMAGE CAUSED DURING CONSTRUCTION.

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RATIO:
1:500
(AT A1 ORIGINAL)

DATUM:
AUSTRALIAN HEIGHT DATUM
ORIGIN: SSM141923
RL35.42
DATE OF PLAN: FEBRUARY 2018

SURVEY	APS	REV	DESCRIPTION	BY	DATE
P0			PRELIMINARY ISSUE FOR APPROVAL	CJG	24/02/2018
P1			DRAWING UPDATED WITH NEW LOT LAYOUT	CJG	07/08/2018
P2			ROAD AND LOT LAYOUT UPDATED	CJG	07/11/2019
P3			ROAD & LOT LAYOUT UPDATED + WQ ADDED	CEG	12/05/2021
P4			DRAINAGE AND WQ AMENDED	CEG	10/09/2021
P5			DRAINAGE & WQ AMENDED	CEG	16/02/2022
P7			DRAINAGE AND WQ DETAILS ADDED	RMH	11/05/2022

allen price & scarratts pty ltd
land and development consultants
Nowra Office: 75 Plunkett Street, Nowra NSW 2541
Kilma Office: 1/28 Bong Bong Street, Kilma NSW 2533
phone: (02) 4421 6544
consultants@allenprice.com.au www.allenprice.com.au

SEWER RETICULATION LAYOUT PLAN SHEET 02
PRELIMINARY RD, DRAINAGE & SEWER DESIGN STAGE 02
RESIDENTIAL SUBDIVISION OVER LOT 188 DP 755952
AT OLD SOUTHERN ROAD, SOUTH NOWRA
FOR TWIN NOWRA ESTATE PTY LTD

DRAWING STATUS
PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

DRAWING NUMBER
N26982-465

SHEET **16** OF **39** REVISION
P7

SHOALHAVEN CITY COUNCIL
Environmental Planning & Assessment Act, 1979
DEVELOPMENT CONSENT NO: SF10743 Dated: 31/01/2023
These are the plans referred to in the above Development Consent
Note: Approval of the works shown on this plan is subject to compliance with the conditions of the Development Consent.

LEGEND:

- 35.0 DESIGN CONTOURS
- EXISTING CONTOURS
- PROPOSED SEWER MAIN
- PROPOSED SEWER MANHOLE
- PROPOSED EASEMENTS
- EXISTING SEWER MAIN
- EXISTING SEWER MANHOLE

0 5 10 15 20 25
SCALE: 1:500

PROFESSIONAL STANDARDS SCHEME
Liability limited by a scheme approved under Professional Standards Legislation

Handwritten note: upgrade pump station

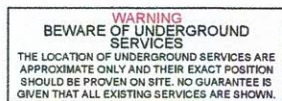
The diagram illustrates four different road cross-sections, each with a corresponding label on the right:

- TB1 - GIVE WAY LINE:** Represented by a dashed line.
- B6 - BARRIER LINE:** Represented by a solid line.
- TB - GIVEWAY LINE:** Represented by a dashed line with rectangular markers.
- C3 - NO STOPPING LINE:** Represented by a solid yellow line.

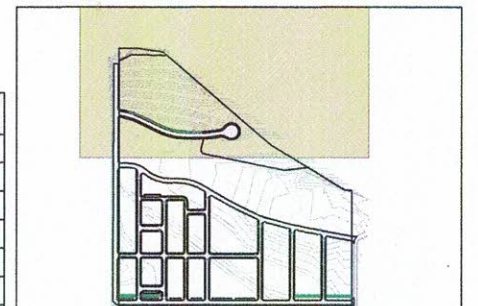
1. LINE MARKING AND PROVISION OF BOLLARDS TO ACCESSIBLE PARKING SPACES SHALL BE IN ACCORDANCE WITH A.S. 2890.8
2. LINE MARKING SHALL BE 80-100mm WIDE IN ACCORDANCE WITH AS 2890.
3. SIGNAGE INDICATED SHALL BE SUPPLIED & INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS AS 1742 / 1742.1 / 1742.2 / 1742.11 AND 1743 AND REFERENCED DOCUMENTS.
4. ALL SIGNAGE TO BE FIXED TO GALV. STEEL POSTS, BOLT AND/OR SPIGOT SLEEVE FIXED INTO CONCRETE PAVEMENTS / PAD FOOTING AND/OR WALL MOUNTED WHERE APPLICABLE.

[illegible]

1:1000 @ A1



SHEET LEGEND											
DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL
BARRIER KERB 'KG'		KERB / PEDESTRIAN RAMP		SUB-SOIL AND FLUSH POINTS		STORMWATER LOCATION (EXISTING)		EXISTING WATER MAIN		EXISTING SEWER MAIN	
ROLL KERB 'RK'		NOMINAL CONTROL LINE		KERB ADAPTOR / OUTLET		SEWER LOCATION (EXISTING)		PROPOSED WATER MAIN		PROPOSED SEWER MAIN	
EDGE STRIP 'ES'		ROAD PAVEMENT		LIMIT OF WORKS		WATER LOCATION (EXISTING)		PROPOSED HYDRANT		PROPOSED SEWER MANHOLE	
KERB ONLY 'KO'		PATH PAVING (CONCRETE)		PROPOSED LOT BOUNDARIES		TELSTRA LOCATION (EXISTING)		PROPOSED STOP VALVE		PROPOSED THRUST CONNECTOR	
MOUNTABLE SF TYPE KERB 'SF'		CONTOURS (MAJOR)		TREE AND LANDSCAPING		FIBRE OPTICS LOCATION (EXISTING)		PROPOSED THRUST CONNECTOR		PROPOSED SCOUR VALVE ASSEMBLY	
DISH DRAIN 'DD'		CONTOURS (MINOR)		DRAINAGE PIT - 1.8m PIT WITH Lintel		ELECTRICAL LOCATION (EXISTING)		PROPOSED WATER SERVICEMETER		PROPOSED SEWER JUNCTION (I.O.)	
VEHICULAR CROSSING		RETAINING WALL STRUCTURES		DRAINAGE PIT - 2.4m SAG WITH Lintel		GAS LOCATION (EXISTING)		PROPOSED THRUST BLOCK		PROPOSED THRUST BLOCK	



LOCALITY OVERVIEW

1:10000 @ A1

SCALE: AS NOTED SIZE: A1 DATE OF SURVEY: 31 MAY 2024 DATUM: MGA2020, AHD	SURVEY	CEH	REV	DESCRIPTION	DATE	CIVPLAN PTY LIMITED ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY CIVPLAN PTY LTD SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. CIVPLAN PTY LTD DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OF RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.	 CIVPLAN PTY LTD ABN: 49 620 926 114 CIVPLAN CONSULTING PTY LTD ABN: 79 157 741 912 SOUTH COAST OFFICE: 390 PRINCES HIGHWAY, BOMADERRY NSW 2541 SYDNEY OFFICE: 152 SAILORS BAY ROAD, NORTHBRIDGE NSW 2063 T: 1800 318 052 E: info@civplan.com.au	JOB NAME: JOB NAME LOCATION: WARRA WARRA ROAD, SOUTH NOWRA, NSW LGA: SHOALHAVEN CITY COUNCIL - LOT 2 DP 1126288 & LOT 224 755952	FOR CONCEPT APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES	
	DESIGN	JE	PD	PRELIMINARY PLANNING PROPOSAL DESIGN	19 SEP 24			CLIENT: TEXI PTY LTD C/- JERVIS BAY TOWN PLANNING	RELEASE DATE: 19 SEPTEMBER 2024	
	DRAWN	JE							JOB-DRAWING NUMBER	REV
	CHECKED	TP							DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN	
	APPROVED	JW							DRAWING: ROAD LAYOUT PLAN 1 OF 2	
							24047-RD-1200		0	

IMPORTANT INFORMATION FOR CUSTOMERS

The information contained in this document is from Shoalhaven Water regarding its underground assets. It does not cover assets by any other authorities.

Please read and understand all the information below.

- Plans provided by Shoalhaven Water only show assets owned or controlled by the Shoalhaven Water. Please note, water service lines between the main and property meters are not shown but are generally perpendicular to the water main between the main and the water meter.
- The completeness and accuracy of Shoalhaven Water's infrastructure cannot be guaranteed, and the plans provided are indicative only.
- Shoalhaven Water may provide a more accurate site location and marking service. To request this service or to obtain details please phone Shoalhaven Water on **(02) 4429 3214**. Fees & charges may apply.
- Private sewer and drainage plans for residential properties may be available from The Council Building Services. Please contact Development and Environmental Health Group **(02) 4429 3111**.
- Please also note that a Section 138 Roads Act Approval is required prior to any works in the road(s). This form is available on at the website (<http://www.shoalhaven.nsw.gov.au/SCC-Forms>)
- For the location of utility services, Shoalhaven Water suggests contracting a qualified services locator.

DUTY OF CARE

- When digging in the vicinity of underground assets, persons should observe the requirements of the Work Near Underground Assets Guideline published by the Work Cover Authority and other relevant guidelines and legislation.
- When excavating in The Council area, it is the responsibility of the owner or any consultant or contractor engaged by the owner to always obtain plans from the Council at least five days prior to the commencement of work.
- Dig safely. Prior to commencement of mechanical excavation, underground assets must be located by non-evasive excavation e.g. pot holing, vacuum excavation.
- It is an offence to pollute waters. In the case of contamination of the excavation with sediment or de-watering, you will need to refer to Section 120 of Protection of the Environment Operations Act, 1997. If De-watering, an application for a groundwater licence (under part 5 of the Water Act 1912) is required from the NSW Office of Water.
- Any information displayed incorrectly on Shoalhaven Water's plans should immediately be reported to Shoalhaven Water on **(02) 4429 3214**.

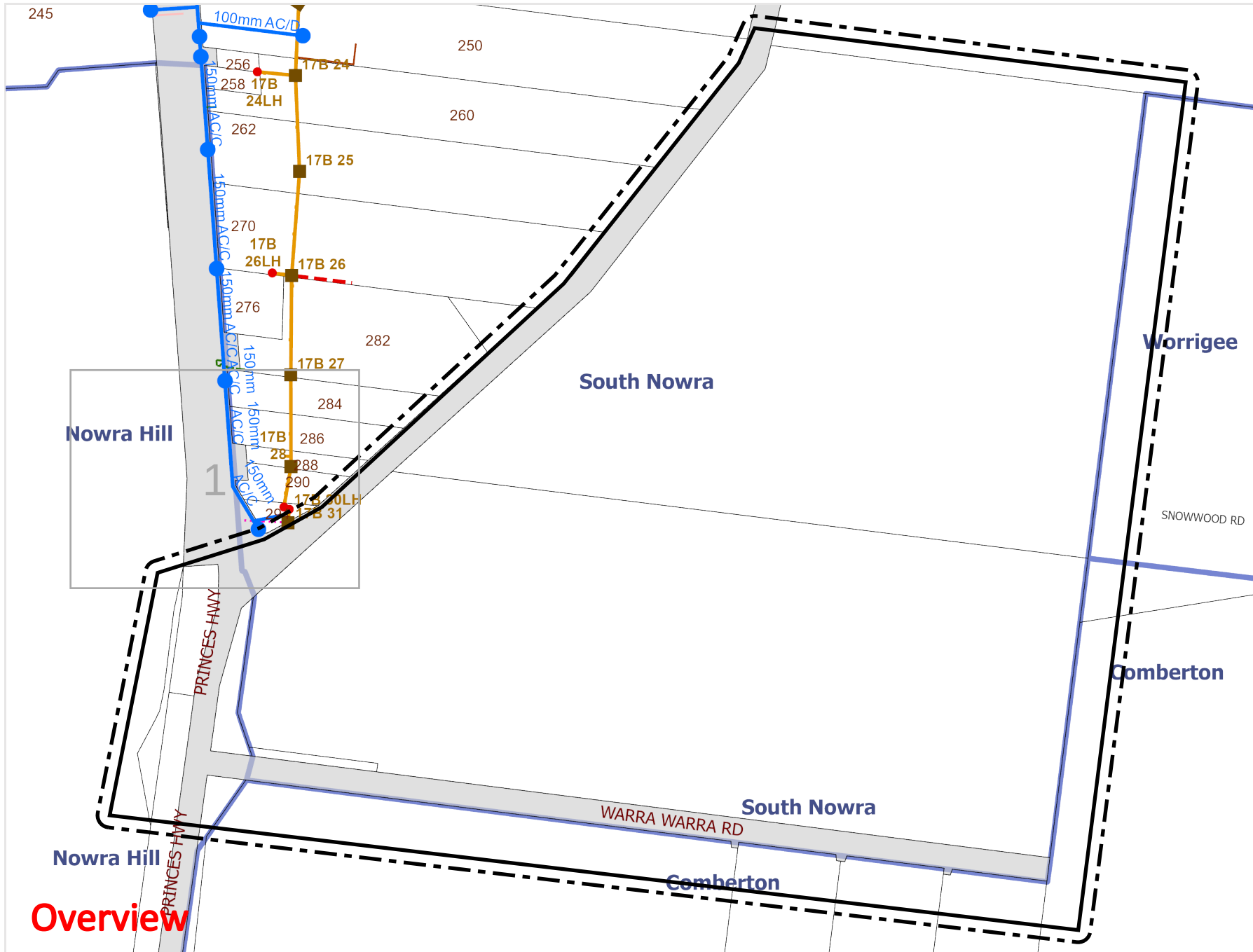
ANY DAMAGE TO A SHOALHAVEN WATER/COUNCIL ASSET MUST BE IMMEDIATELY REPORTED TO SHOALHAVEN CITY COUNCIL ON (02) 4429 3214

Shoalhaven Water and Council reserves the right to recover compensation for loss or damage and repairs costs to any of its assets irrespective of provision of plans or undertaking locations on site.

FURTHER ASSISTANCE

Any further assistance in locating Shoalhaven Water's underground assets can be obtained by calling Shoalhaven Water on **(02) 4429 3214**.





Legend

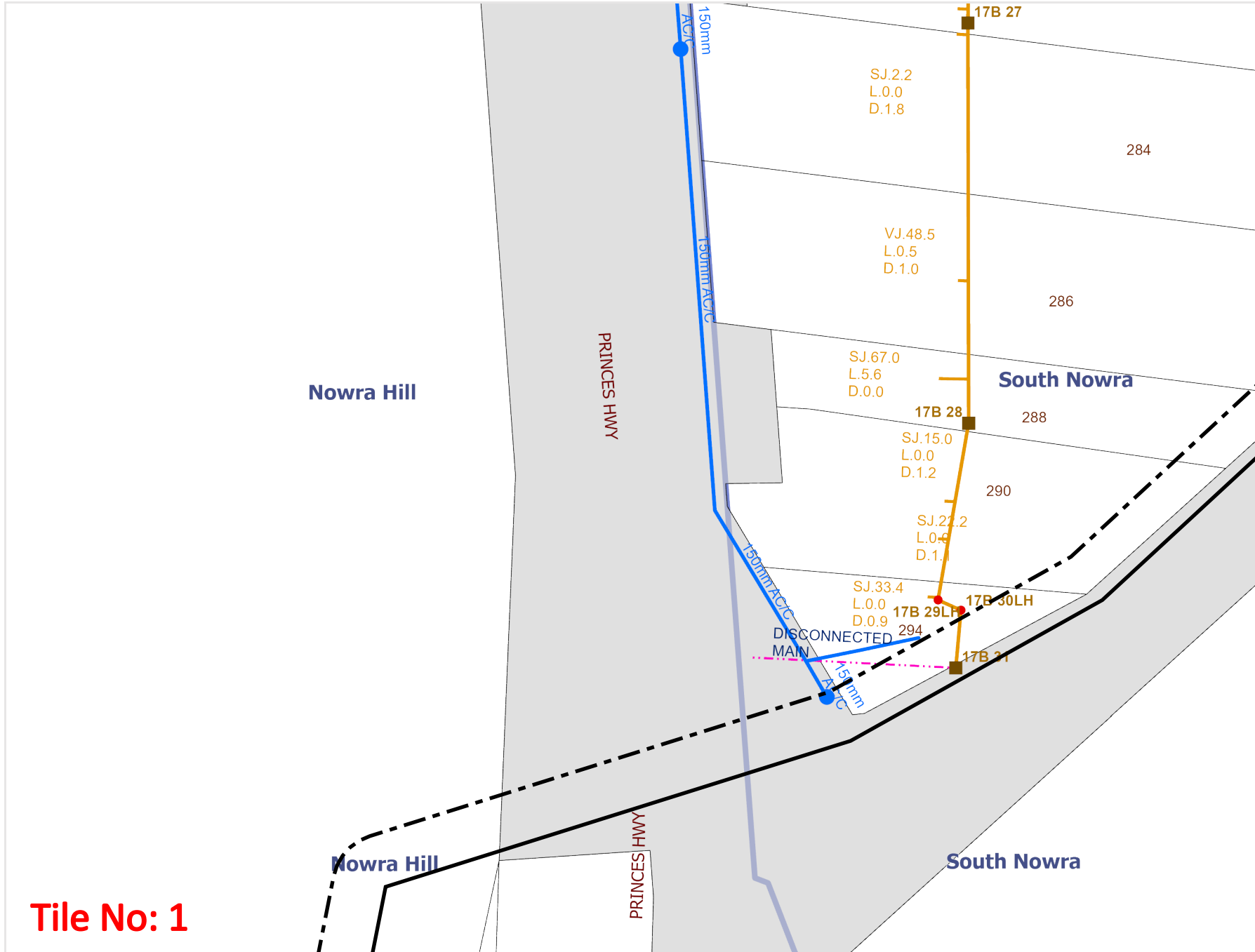
- Abandoned Main
- Critical
- Under Construction
- Concrete Encasement
- Pipe Encasement
- Under Road Conduit
- Pipe Sleeve
- REMS**
- Distribution Main
- Transfer Main
- Tertiary Treated Effluent Release Main
- Short Service Main
- Long Service Main
- Water**
- Hydrant
- Reticulation Main
- Trunk Main
- Raw Water Main
- Private Main
- Service Mains
- Sewer**
- Manhole
- Gravity Main
- Outfall Main
- Unconnected Main
- Overflow Main
- Rising Main
- Surcharge Main
- Low Pressure Sewer Main
- Discharge Pipe
- Junction Line
- Side Line



Scale: 1:4353
Expires: 12/08/2024

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Overview



Legend

- Abandoned Main
- Critical
- Under Construction
- Concrete Encasement
- Pipe Encasement
- Under Road Conduit
- Pipe Sleeve
- REMS**
- Distribution Main
- Transfer Main
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- Discharge Pipe
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- Side Line



Scale: 1:1000
Expires: 12/08/2024

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Tile No: 1

Date: 11th February 2025
Project No: 20250211_24047

Jervis Bay Town Planning

Att: Lee Carmichael

E: mail@jervisbaytownplanning.com.au

Dear Lee,

Planning Proposal Warra Warra Road, South Nowra – Sewer Pump Station Outlet Meeting Summary

Dear Lee,

I write with regards to the meeting held on the 15th of January 2025 with Shoalhaven Water as a summary of the findings.

I met with Andrew Solari from Shoalhaven Water to discuss the possible outlet locations for the Sewer Rising Main from the pump station within the subject site. We discussed the potential outlet points, and they are detailed below. We also discussed the strategic background for the site, as it is currently zoned as E1, and the options for the outlet as per strategy, a summary of this is also below.

It was noted in the meeting that the outlet point would be further investigated by Shoalwater as part of their processes once the Planning Proposal was lodged.

Strategic Background Summary

It was noted with Shoalwater that this land was previously zoned as E1 and that there should have already been a strategy or plan in place to treat the effluent from this location. I was informed that as part of a superseded strategic plan, a gravity main from site, along the Browns Creek alignment was planned but given environmental constraints was not further considered. From what can be ascertained the site is not included in any current strategic plans.

Given the recent developments upstream of the subject site in Worrigea and South Nowra there is very little capacity for additional sewer. It was noted in the meeting that the gravity discharge points along Old Southern Road run towards the same point and that Shoalwater is currently constructing a gravity surcharge main to cater for the existing lack of capacity but was not envisioned to cater for the increase in the subject site. The nearest gravity line that is directed towards SPS18 (Quinns) does not have capacity due to the discharge from SPS32, which is the recently constructed pump station just north of the subject site.

The original strategic intent was to convey the sewer flows to SPS18 which is located on Quinns Lane, to the western side of Browns Creek. The originally strategised sewer generation of the site was 180ET's, the total site following the planning proposal would generate around 300ET's.

It was also discussed that the existing line 17 running parallel to the high, that was originally assumed to be able to cater for the Western Precinct, is also at capacity and will not be able to handle flows from the Western Precinct. As such the Western Precinct would need to discharge to the proposed Sewer Pump station in the Eastern Precinct.

Rising Main Outlet Options

It was confirmed that 30ET's of the residential portion of the subject site could be taken to SPS32 (adjacent development) without the need for an upgrade. It should be noted that the original option provided to us by Shoalwater was discharging the rising main to a gravity main in Lyrebrid Park which is located approximately 6km from the site, this is no longer the case. From an interrogation of their modelling the following options were determined:

Option 1:

Discharge to SPS 18 (Quinns Lane) which is approximately 2.3km by road reserve or 1.9km by Browns Creek. It is to be noted that this option would require the augmentation of the existing pump station to cater for the additional flows. Augmentation of the existing may be a costly endeavour and there are significant services conflicts to avoid if traversing the road reserve or environmental constraints to determine if the Browns Creek alignment is planned.

Option 2:

Discharge to SPS29 (Links Road) location on the west of the Princes Highway, which is approximately 2.5km via road reserve as there is no alternative alignments. The challenges on this option would be traversal of the Princes Highway and SPS29 would also require augmentation of the existing pump station to cater for the additional flows, however there would be a lower risk for services interaction as there is more width within the highway corridor.

Option 3:

Discharge to the Surcharge Gravity Main currently under construction, this would be an interconnection around Hillcrest Avenue which is approximately 2.9km via the Old Southern Road corridor. As with option 1 there is services which will need to be located in detail along the road reserve to ensure that clearances to the pressure main can be maintained, unless the main were to be a significant depth. This option however would not require the augmentation of an existing pump.

Recommendation

In my opinion, I would recommend that option 3 be further considered given the current stage as whilst it more pipework than options 1 or 2 there is no need for augmenting an existing pump station. We will be including the recommended option as part of the cost estimate.

If you have any questions or require further clarification, please don't hesitate to contact me via phone or email.

Regards,



Theo Prakash

Senior Civil Engineer

BEng MIEAust

Ph: 0451 782 525

SW Comments - 24047 - Warra Warra - Planning Proposal - Sewer Outlet Discussion

1 message

Andrew Solari <Andrew.Solari@shoalhaven.nsw.gov.au>

Thu, Jan 30, 2025 at 1:04 PM

To: Theo Prakash <theo.prakash@civplan.com.au>

Cc: John Weil <john@civplan.com.au>

Theo

I am a little unsure in regard to your question in the last part of the email below.

There is very limited scope to have the about to be constructed SPS32 upgraded. This is due to the capacity of the gravity sewer system further down Old Southern Road.

Are you referring to connecting/diverting the gravity sewer from manhole 19A/12 to SPS 18 in Quinns Lane? This would not be possible for the fact it would have to cross Browns Creek, but the major point is this is completely different sized catchments and would require the complete rebuild of SPS 18. Lastly we are already underway with planned upgrade works further downstream of 19A/12 to cater for the increased flows from all of the housing/development in South Nowra.



Andrew Solari
Water Regulatory Manager

+61 2 4429 3255 | +61 402 892 102
Bridge Road (PO Box 42) Nowra NSW 2541
shoalwater.nsw.gov.au

RESPECT | INTEGRITY | ADAPTABILITY | COLLABORATION

From: Theo Prakash <theo.prakash@civplan.com.au>

Sent: Wednesday, 15 January 2025 2:45 PM

To: Andrew Solari <Andrew.Solari@shoalhaven.nsw.gov.au>

Cc: John Weil <john@civplan.com.au>

Subject: MFCM: 24047 - Warra Warra - Planning Proposal - Sewer Outlet Discussion

EXTERNAL: Be cautious opening links or attachments.

Hey Andrew,

Thanks for your time meeting today.

Please see my notes from our discussion today.

Background/Strategic Planning:

The subject site was zoned for E3 (typically light industrial/commercial and approx 150EP/Ha) and an allowance for 180 ETs (720EP's) was made. As part of an older strategy there were plans to design and construct a gravity sewer line to SPS18 which is located on Quinns Lane. This strategic plan was not rolled into subsequent and adopted strategies - i.e. is not part of the current strategy.

Following a preliminary assessment of the existing capacity in the sewer network the option of upgrading and connecting to SPS29 was provided. SPS29 is located near the intersection of The Links Road and Oxford Street. SPS29 is located on the western side of The Princes Highway.

It was mentioned that the outlet point for the proposed SPS would be investigated in further detail and formally provided when a planning proposal was lodged as part of the assessment undertaken by Council.

The following options were discussed:

- *Commercial outlet point confirmation:* Line 17 (running parallel to The Princes Highway, west of the subject site) does not have capacity for the Western Precinct to be serviced.
- *Alternate Outlet for a portion of the eastern precinct:* Confirmed that SPS32 (currently being constructed) has the capacity for approx 30 ETs
- *SPS Outlet Point:* The outlet point of the proposed sewer pump station will not have to be taken to Lyrebird Park as a discharge point (~6km away).
- The existing nearest gravity line that is going towards SPS18 as the original strategy intended does not have capacity due to SPS32
- The following potential discharge points were noted:
 - SPS18, located on Quinns Lane, which is approximately 2.3km by road reserve or 1.9km via Browns Creek - this option would require the upgrade of SPS18 to cater for the additional flow from the site.
 - SPS29, located on The Links Road, which is approximately 2.5km by road reserve (no alternate alignment) - this option would also require the upgrade of the SPS to cater for the additional flow from the site.
 - Surcharge Gravity Main, located on Old Southern Road, connecting in around Hillcrest Avenue. This is approximately 2.9km by road reserve but will not require an upgrade of the discharge point.

Following on from the meeting:

Could you advise if SPS32 were to be upgraded and an additional gravity line added between SPS18 at MH19A/12, would there be an allowance for the subject site to connect to mains via that pump station? Noting that the flows would then be split between the original discharge for adjacent development and the previously strategised outlet for the subject site.

Any questions or adjustments to the above please let me know.

Kind regards,

Theo Prakash

Senior Civil Engineer

BEng (Civil)



1800 318 052 | 0451 782 525



theo.prakash@civplan.com.au



390 Princes HWY Bomaderry NSW



civplan.com.au



civplan



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HILLCREST AVENUE

SURCHARGE
INTERCONNECTION

South Nowra

Flinders Rd

Rugby Parks

Flinders Rd

SPS18

QUINNS
LANE

The Links Rd

SPS29

OLD
SOUTHERN
ROAD

Worrigei
National
Reserve

SPS32

Nowra State
Forest

SITE

Princes Hwy

Princes Hwy

Princes Hwy



Outlook

24047 - Warra Warra Road - Planning Proposal - Shoalhaven Water Meeting Minutes and Actions

From Theo Prakash <theo.prakash@civplan.com.au>

Date Tue 2026-02-24 4:32 PM

To andrew.mcvey@shoalhaven.nsw.gov.au <andrew.mcvey@shoalhaven.nsw.gov.au>; Andrew Solari <andrew.solari@shoalhaven.nsw.gov.au>; Matthew.Kidd@shoalhaven.nsw.gov.au <Matthew.Kidd@shoalhaven.nsw.gov.au>; John Weil <john@civplan.com.au>; Jervis Bay Town Planning <mail@jervisbaytownplanning.com.au>

Bcc Josh Eves <josh.eves@civplan.com.au>; Emma Truran <emma.truran@civplan.com.au>

Hi Andrew, Andrew and Matt,

Thanks for meeting with us regarding the sewer constraints for the Warra Warra Road planning proposal.

Critical points noted:

- The location was serviced as part of the strategic planning as commercial zoning
- There are currently no options on the table for matching grant funding
- Noted that existing zoned locations are the current priority for infrastructure funding
- Maximum of 1 pump station and consolidation onto one side of Browns Creek (*critical success factor for SW*)
- Approximately 30 ETs to be directed to the northern SPS
- The total yield will be around 200ET's - 230ET's to the proposed SPS within the site (*TBC*)
- Options for a closer connection are feasible with the relative reduction in ET's between the previous revision and the current one.
- Possible option for connection to the SPS17 gravity network to be explored.

Contact points were established as:

- Shoalhaven Water: Andrew Solari
- CivPlan/Consultants: Theo Prakash.

Actions:

- CivPlan team to determine feasibility of gravity sewer connection via a proposed pedestrian link between the eastern and western sides of Browns Creek
- Nominate a single pump station location (east or west side - pending gravity calculations)
- Ensure the water mains retain the loop between mains on the highway and mains within the Old Southern Road reserve
- Touch base with Shoalhaven Water following determination of consolidated pump station location and provide the following:
 - Number of ET's to drain to existing SPS north of the site
 - Number of ET's to drain to the proposed SPS within the site
 - Location of the proposed SPS to service the site
- Following this the Shoalwater team will provide possible options for interconnection into the sewer network such as the gravity network around SPS17 or other locations which have capacity.

We will include the options provided as part of the updated Services and Infrastructure Report in the lodgement package.

If there are any questions please just give me a call.

Kind regards,

Theo Prakash

Senior Civil Engineer

BEng (Civil), MIEAust, NER

P: [1800 318 052](tel:1800318052) **M:** [0451 782 525](tel:0451782525)

E: theo.prakash@civplan.com.au

[390 Princes Hwy, Bomaderry NSW 2541](#)

[Level 36, Gateway, 1 Macquarie Pl, Sydney NSW 2000](#)

www.civplan.com.au

linkedin.com/company/civplan



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RE: SW Advice for gravity sewer WAE and SRM WAE for adjoining development - 24047 - Warra Warra Road - Planning Proposal - Shoalhaven Water Meeting Minutes and Actions

From Theo Prakash <theo.prakash@civplan.com.au>

Date Mon 2026-03-09 12:41 PM

To Andrew Solari <Andrew.Solari@shoalhaven.nsw.gov.au>

Cc Emma Truran <emma.truran@civplan.com.au>; Josh Eves <josh.eves@civplan.com.au>

Hey Andrew,

Thanks for your time on the phone.

As discussed, the connection point at X/1 from the WAE markup only allows for 5-10 ET's of flow and we're concerned with grades at this preliminary level. From our discussions we will be aiming for manhole J/1 from the WAE plans as it has a lower interconnection RL which may allow us to maximise ET's.

If you could also confirm pipe sizing and approximate locations for interconnection near SPS17 it would be appreciated. Happy to use the Shoalwater GIS, if that's the best location to obtain the information, we will just need to know which MH will be able to accept the pressurised flow. If there is an upper limit on ET's please advise.

Kind regards,

Theo Prakash

Senior Civil Engineer

BEng (Civil), MIEAust, NER

P: 1800 318 052 **M:** 0451 782 525

E: theo.prakash@civplan.com.au

[390 Princes Hwy, Bomaderry NSW 2541](#)

[Level 36, Gateway, 1 Macquarie Pl, Sydney NSW 2000](#)

www.civplan.com.au

[linkedin.com/company/civplan](https://www.linkedin.com/company/civplan)



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From: Andrew Solari <Andrew.Solari@shoalhaven.nsw.gov.au>

Sent: Wednesday, 4 March 2026 12:43 PM

To: 'Theo Prakash' <theo.prakash@civplan.com.au>

Subject: SW Advice for gravity sewer WAE and SRM WAE for adjoining development - 24047 - Warra Warra Road - Planning Proposal - Shoalhaven Water Meeting Minutes and Actions

Theo

As requested please see attached accepted Sewer WAE for the sewer reticulation as part of the adjoining subdivision.

Also attached are the Draft sewer SRM WAE plans, noting they have not been accepted by us as yet.



Andrew Solari

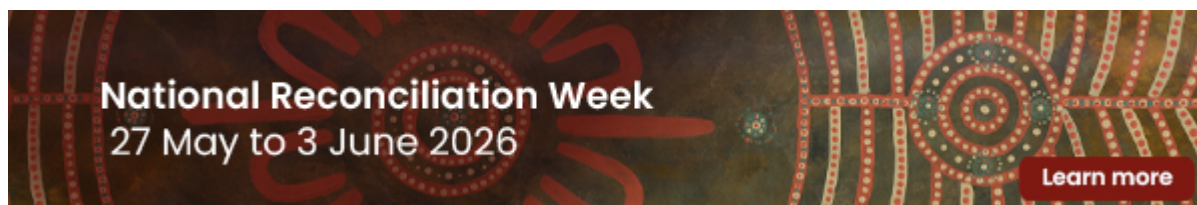
Water Regulatory Manager

+61 2 4429 3255 | +61 402 892 102

Bridge Road (PO Box 42) Nowra NSW 2541

shoalwater.nsw.gov.au

RESPECT | INTEGRITY | ADAPTABILITY | COLLABORATION



Walawaani (welcome). Shoalhaven City Council recognises the First Peoples of the Shoalhaven and their ongoing connection to culture and country. We acknowledge Aboriginal people as the Traditional Owners, Custodians and Lore Keepers of the world's oldest living culture and pay respects to their Elders past, present and emerging. Walawaani njindiwan (safe journey to you all).

From: Theo Prakash <theo.prakash@civplan.com.au>

Sent: Wednesday, 4 March 2026 9:30 AM

To: Andrew Solari <Andrew.Solari@shoalhaven.nsw.gov.au>

Subject: Fwd: 24047 - Warra Warra Road - Planning Proposal - Shoalhaven Water Meeting Minutes and Actions

EXTERNAL: Be cautious opening links or attachments.

Hey Andrew,

Just touching base on the sewer WAE invert level for the junction north of the Warra Warra site.

Could you please send that and any other relevant information from the development to the north, such as WAE levels on the pressure line within the verge. We're currently running the gravity checks.

Much appreciated!

Theo Prakash

Senior Civil Engineer

BEng (Civil), MIEAust, NER

P: [1800 318 052](tel:1800318052) **M:** [0451 782 525](tel:0451782525)

E: theo.prakash@civplan.com.au

[390 Princes Hwy, Bomaderry NSW 2541](#)

APPENDIX D:

Telecommunications BYDA outputs and Design IT Telco advice

Design It Telco Pty Ltd

Attention: Theo Prakash
CivPlan

Date: 14th November 2024

Phone: 0412 230 134

E-Mail: CiprianPascu@bigpond.com

Dear Sir/Madam,

TELECOMMUNICATIONS INFRASTRUCTURE FEASIBILITY STUDY

<i>NETWORK LOCATION</i>	<i>PLAN NUMBER</i>
<i>Warra Warra Road, South Nowra</i>	<i>PN 37401</i>

Feasibility telecommunications report for proposed development at Warra Warra Road, South Nowra.

Proposed development is currently located in the NBN Co fixed wireless area. To the north of the site the existing neighbouring industrial development at 294 Princess Hwy, South Nowra is currently connected to NBN Co fibre to the premisses (FTTP).

Telstra plans showing exiting mains and distribution network along the Princess Hwy.

Telstra mains network

- Combination of 4 x P100 plastic conduits and asbestos conduits with manholes approximately 200m apart.
- Old copper cable and fibre installed in the existing ducts.

Telstra distribution network

- Existing pit and pipe along Pacific Hwy. Pit and pipe is also shown along the southern side of Warra Warra Road. Refer to attached documents.

NBN Co under the current agreement with Telstra will be able to utilise the existing telecommunications network to bring in fibre backhaul the proposed development site.

Applications to NBN Co have been submitted. Developer will have to provide fibre ready pit and pipe and must enter into a Master Development Agreement (MDA) with NBN Co. NBN Co will then provide fibre to the premises to the site (FTTP).

In the meantime, should you have any queries regarding this or any other matter and/or require any further assistance, please do not hesitate to contact me via the details listed below.

Sincerely

Ciprian Pascu

Design It Telco PTY LTD.
CiprianPascu@bigpond.com
0412230134

To: Julie Pascu
Phone: Not Supplied
Fax: Not Supplied
Email: juliepascu@bigpond.com

Dial before you dig Job #:	37670533	
Sequence #	245138580	
Issue Date:	25/09/2024	
Location:	268 Princes Highway , South Nowra , NSW , 2541	

Indicative Plans

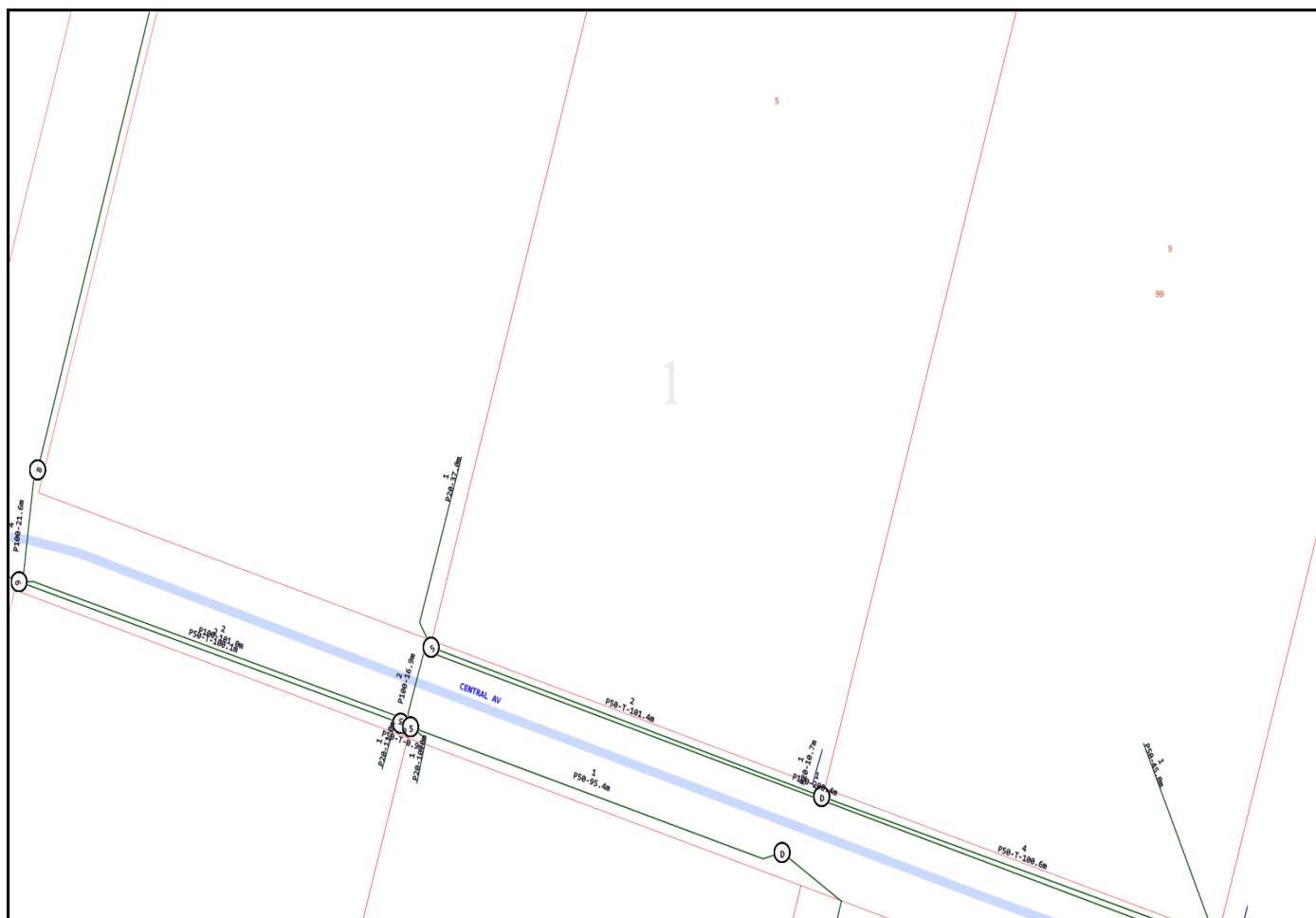
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3	19	35	51	67	83	99	115
4	20	36	52	68	84	100	116
5	21	37	53	69	85	101	117
6	22	38	54	70	86	102	118
7	23	39	55	71	87	103	119
8	24	40	56	72	88	104	120
9	25	41	57	73	89	105	121
10	26	42	58	74	90	106	122
11	27	43	59	75	91	107	123
12	28	44	60	76	92	108	124
13	29	45	61	77	93	109	125
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15	31	47	63	79	95	111	127
16	32	48	64	80	96	112	128

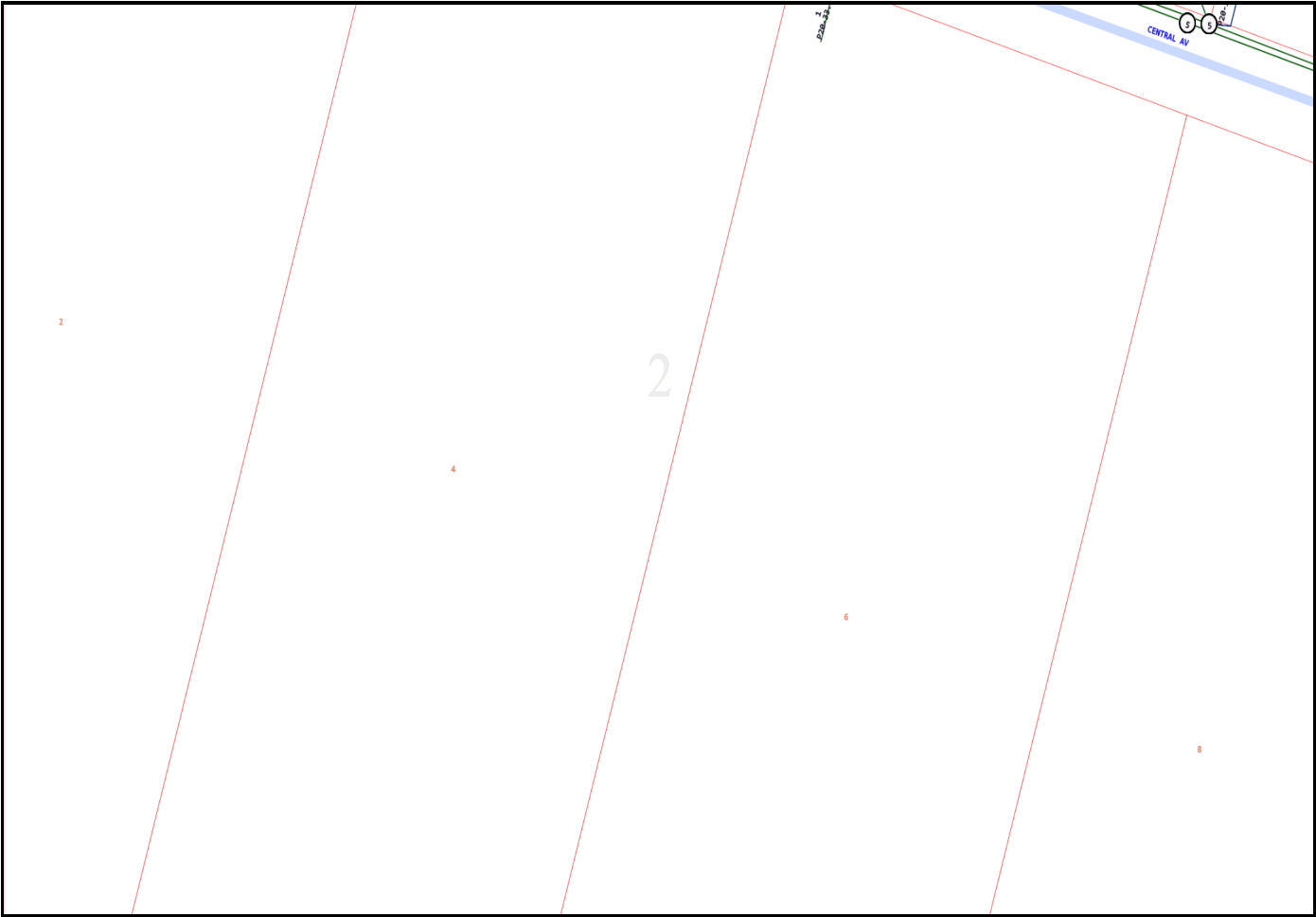


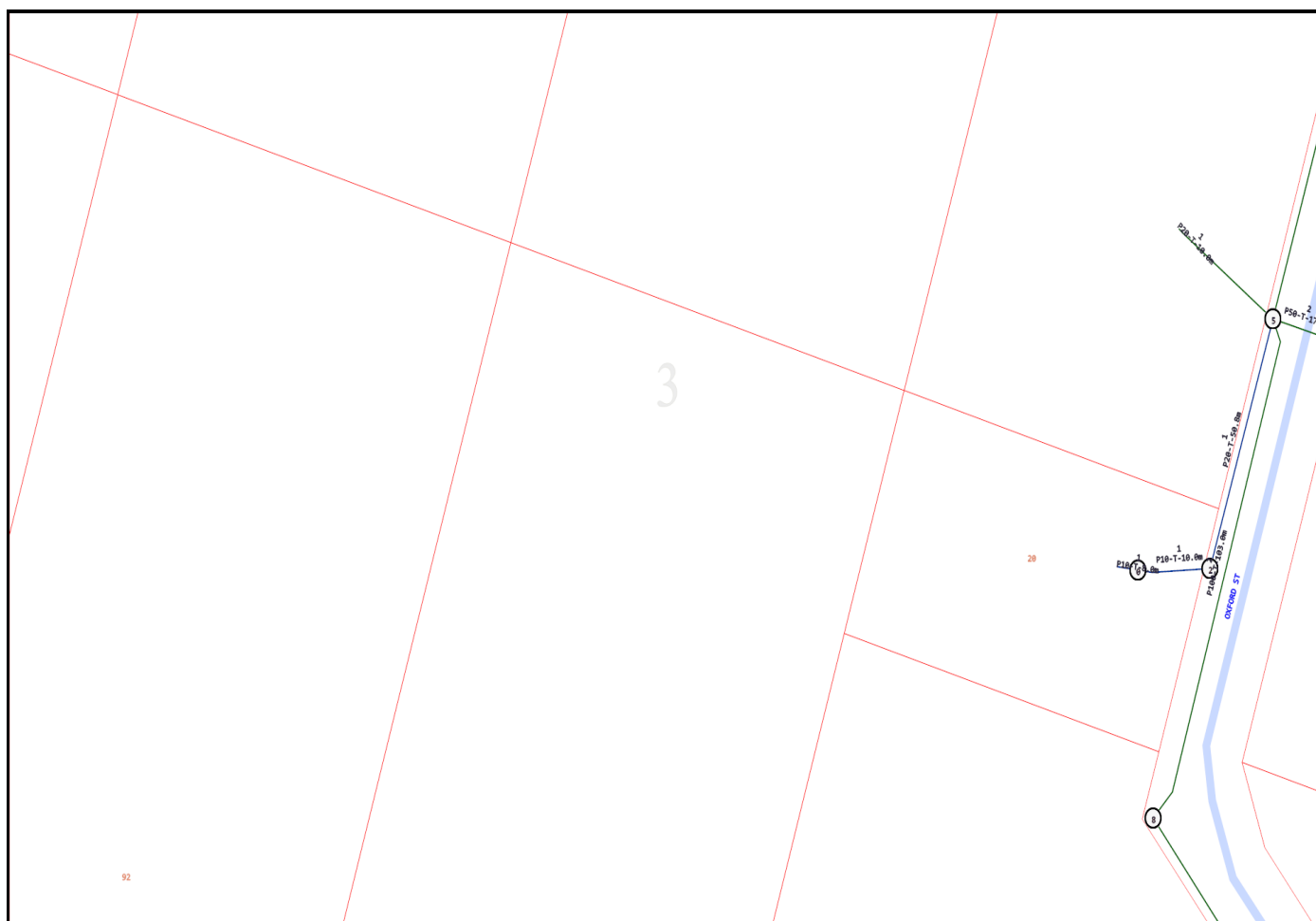
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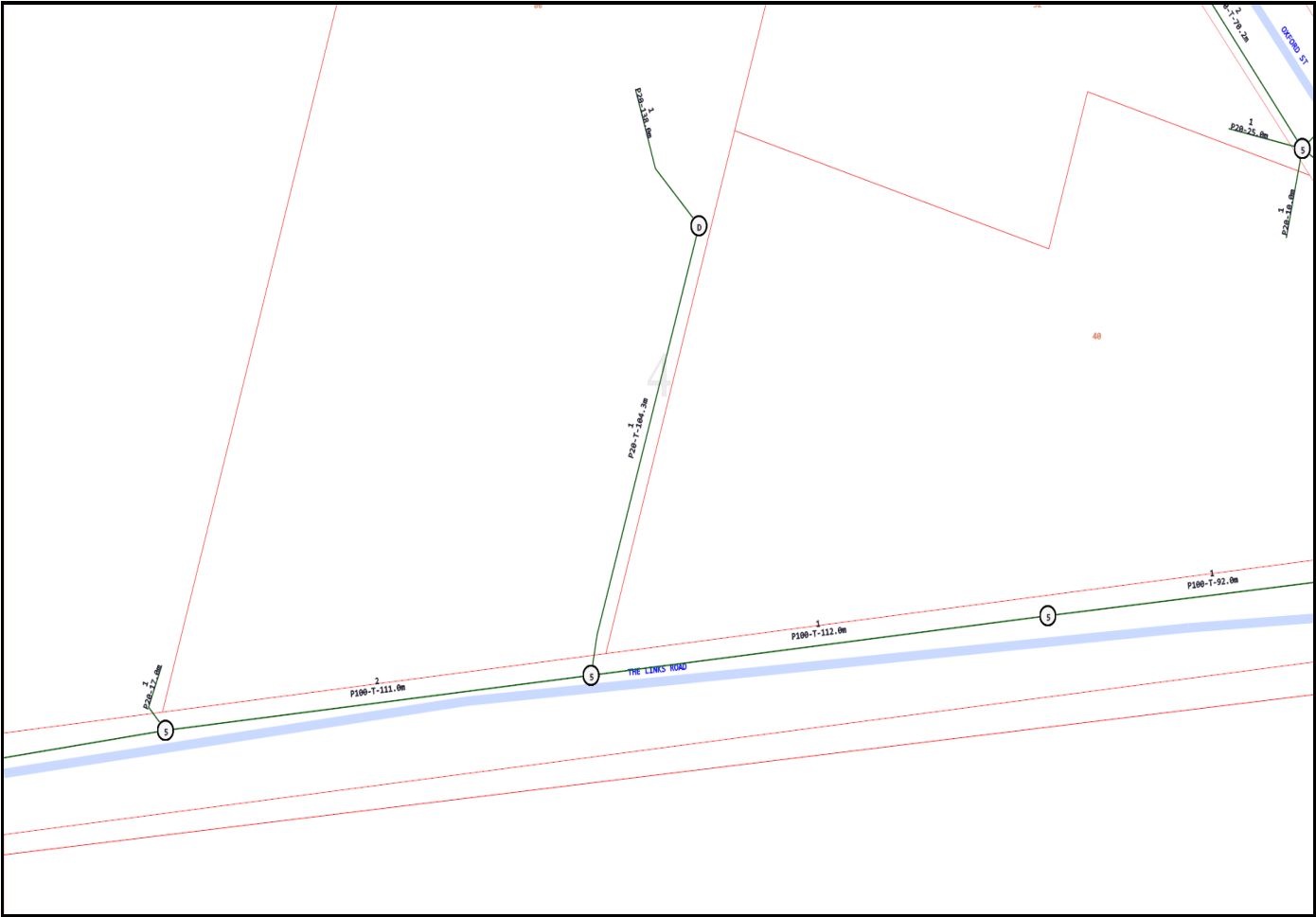


	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) 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



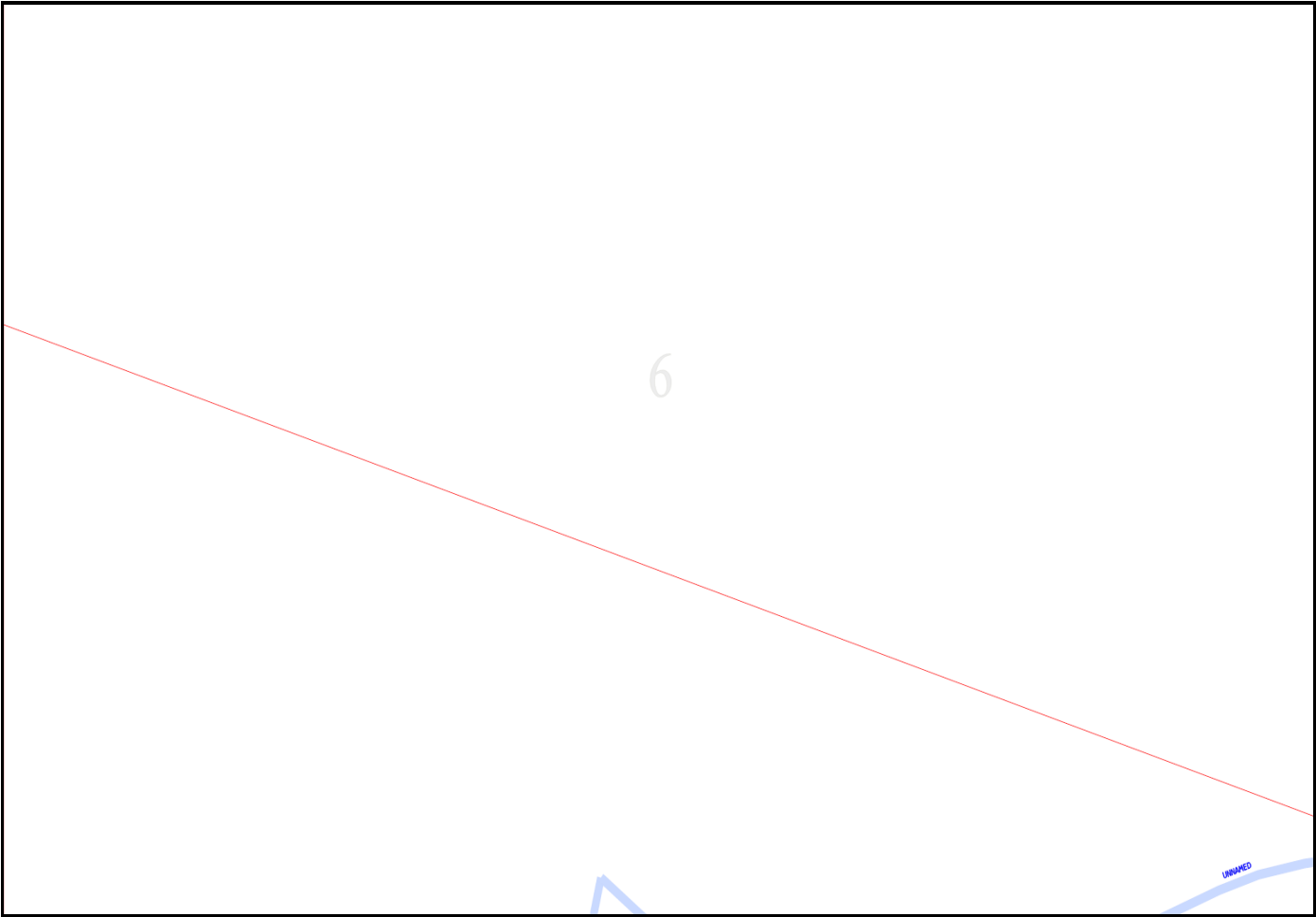


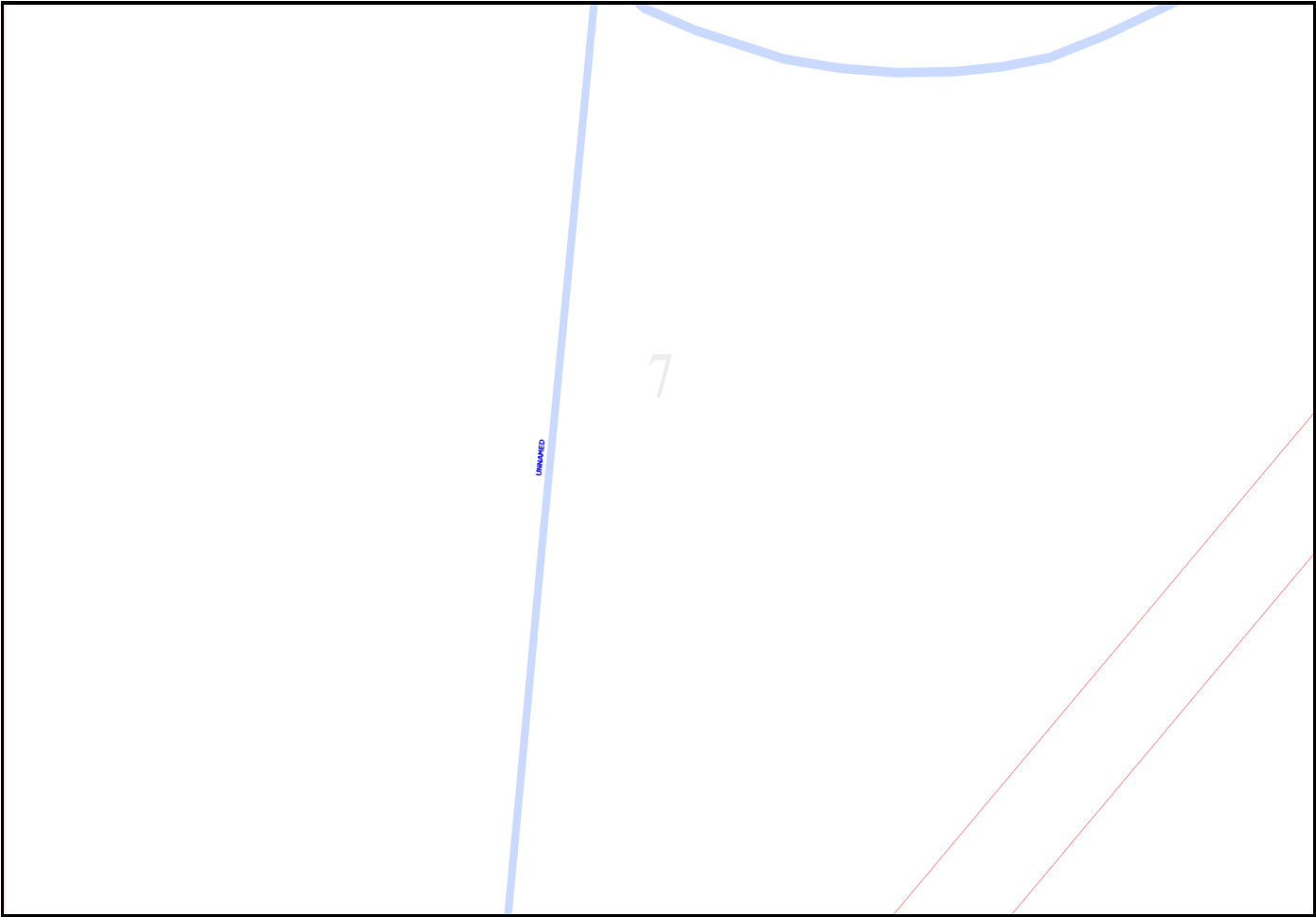


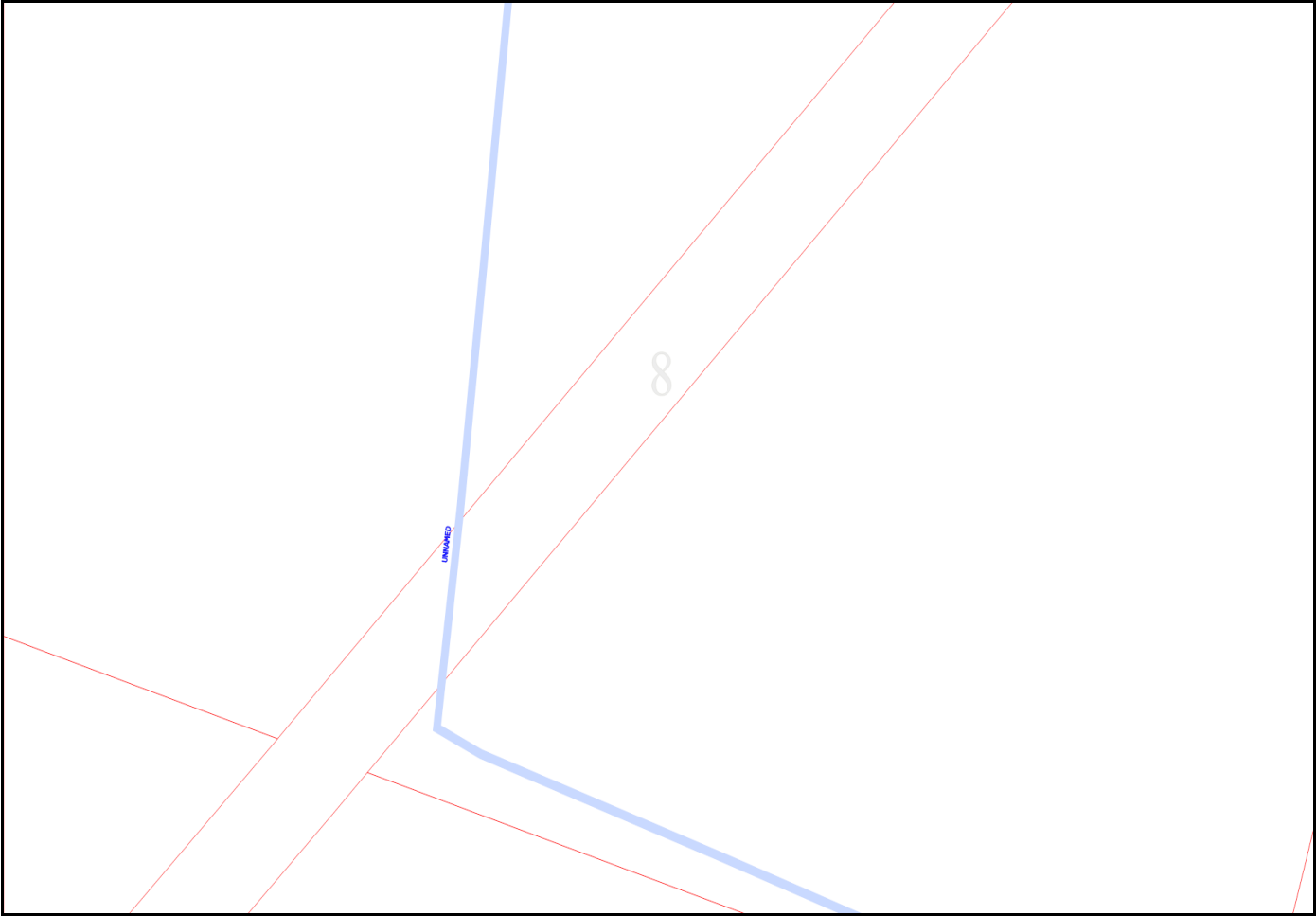


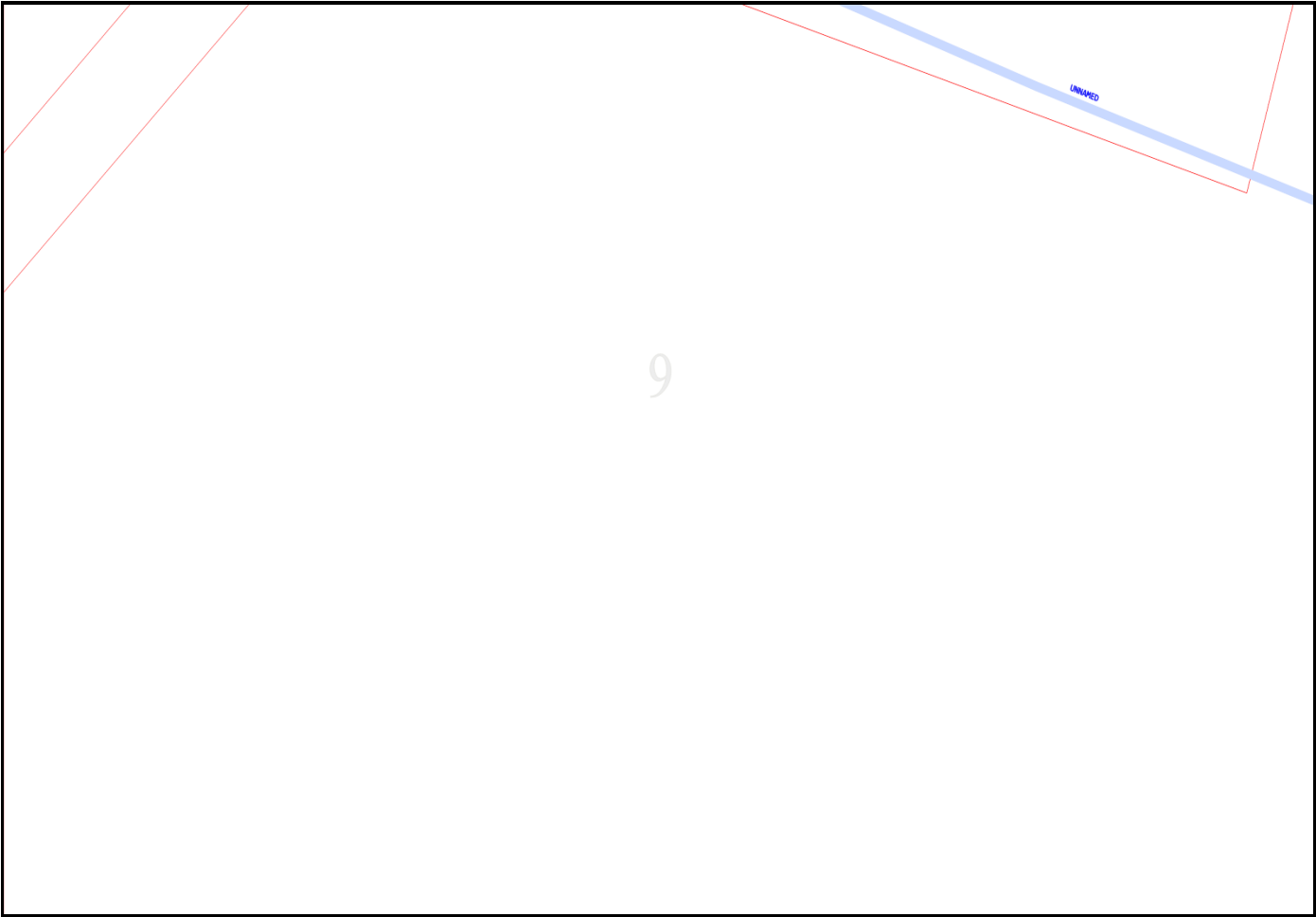
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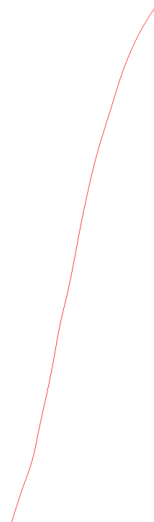
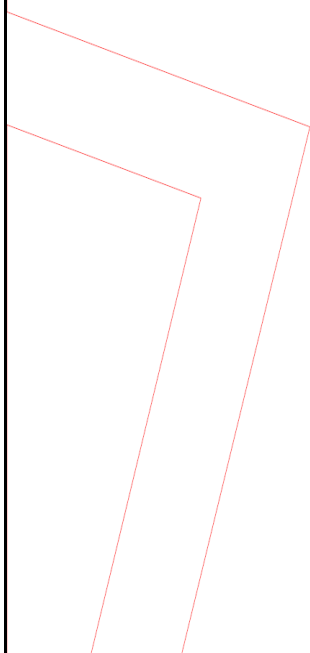


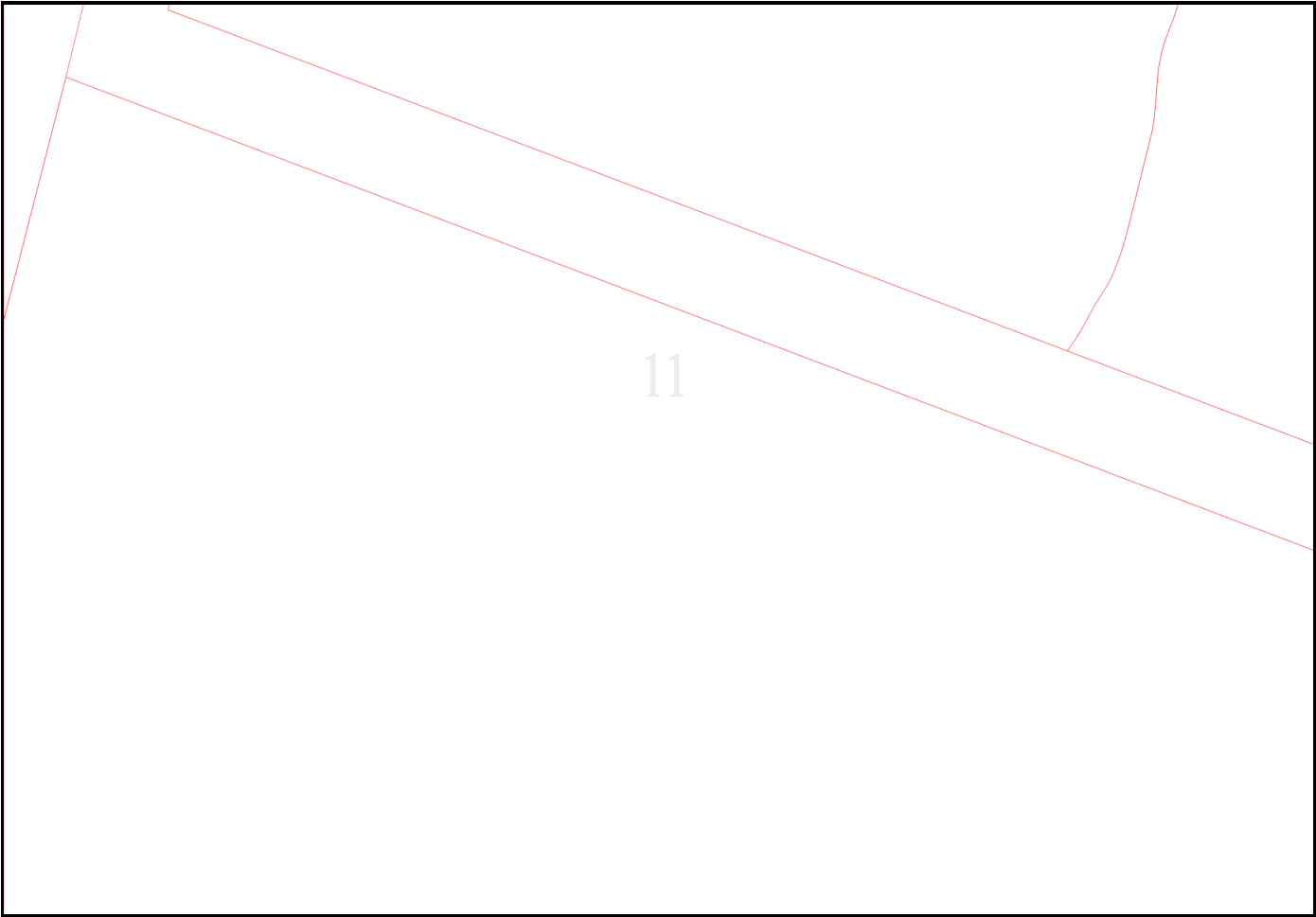


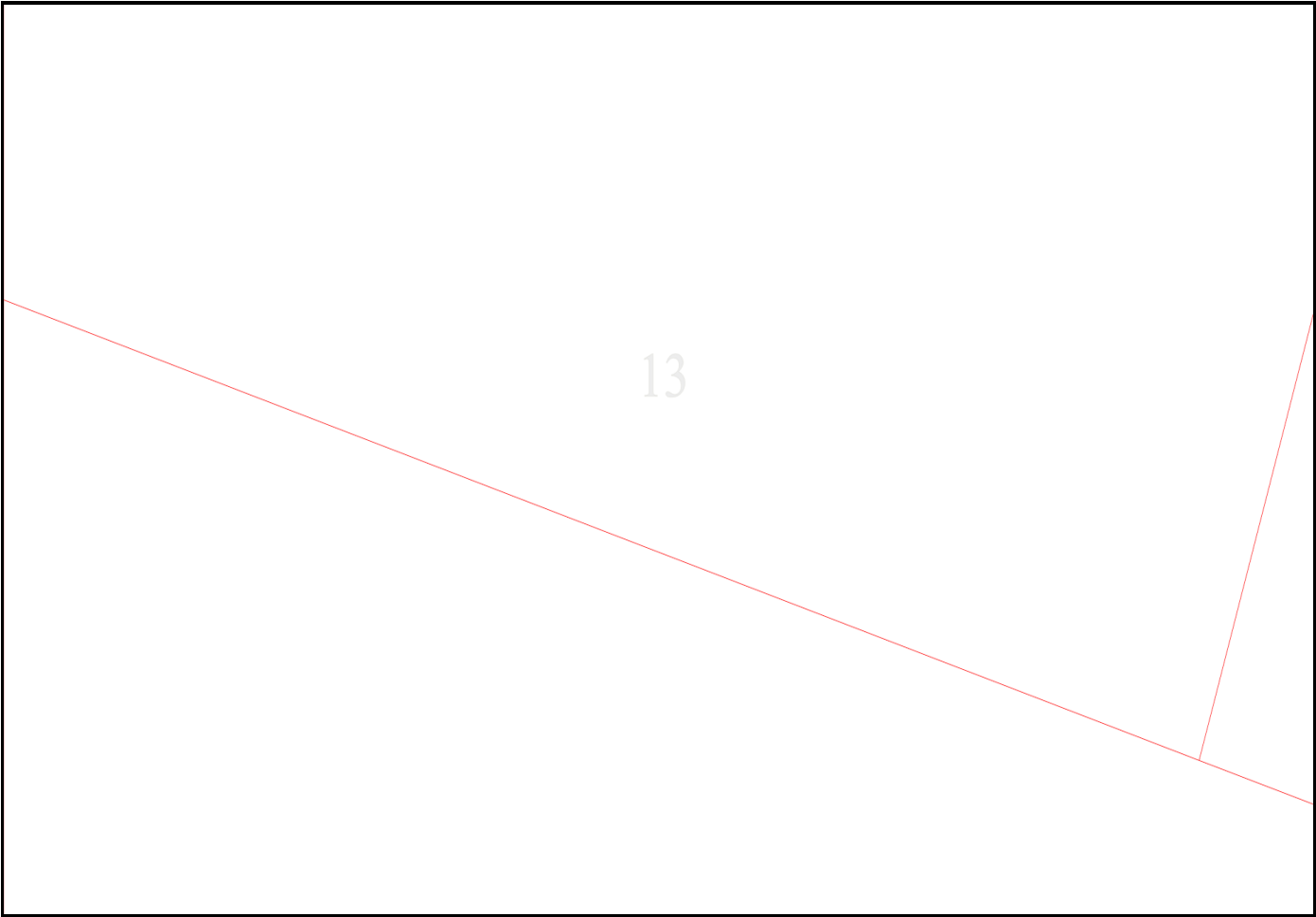


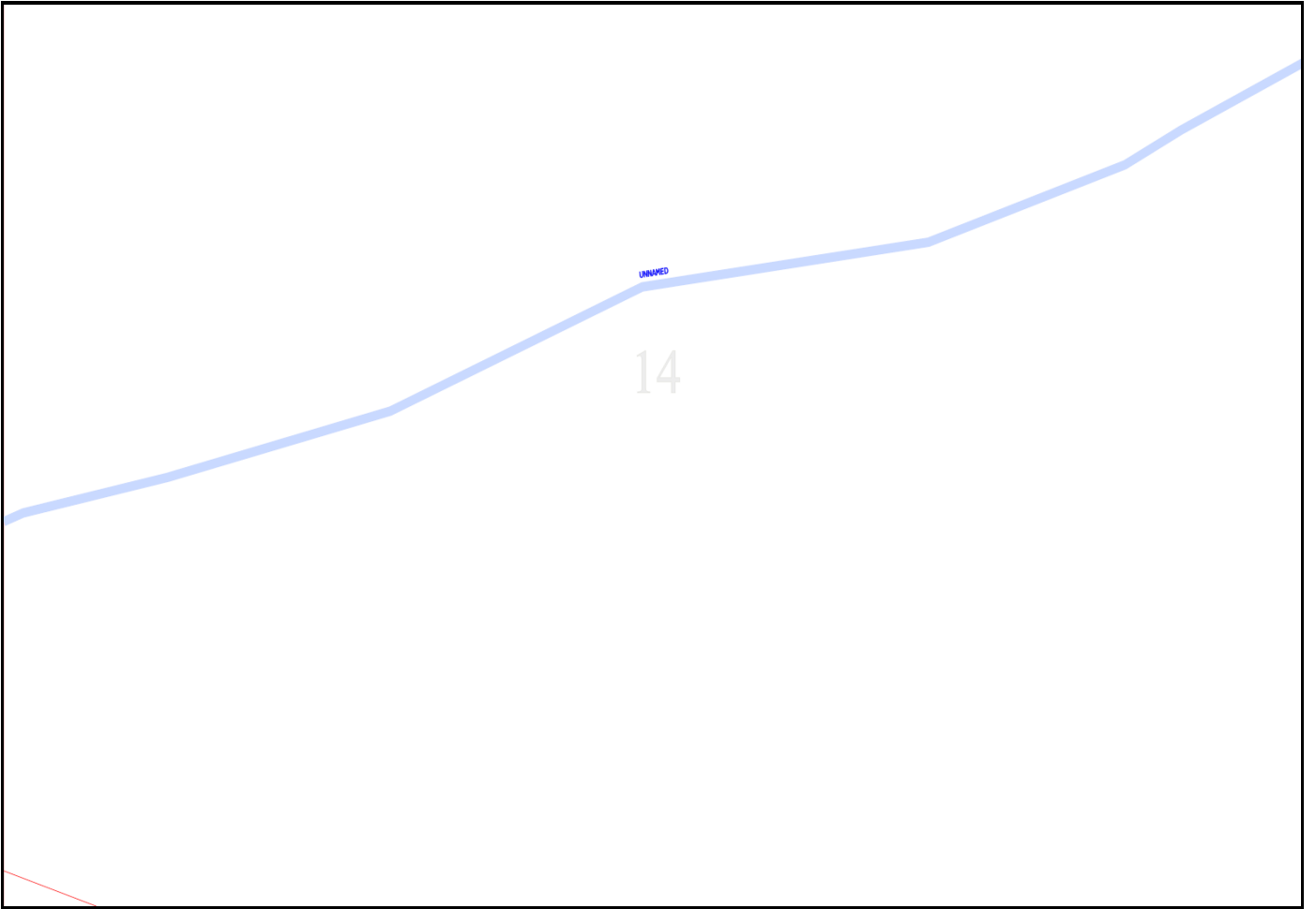


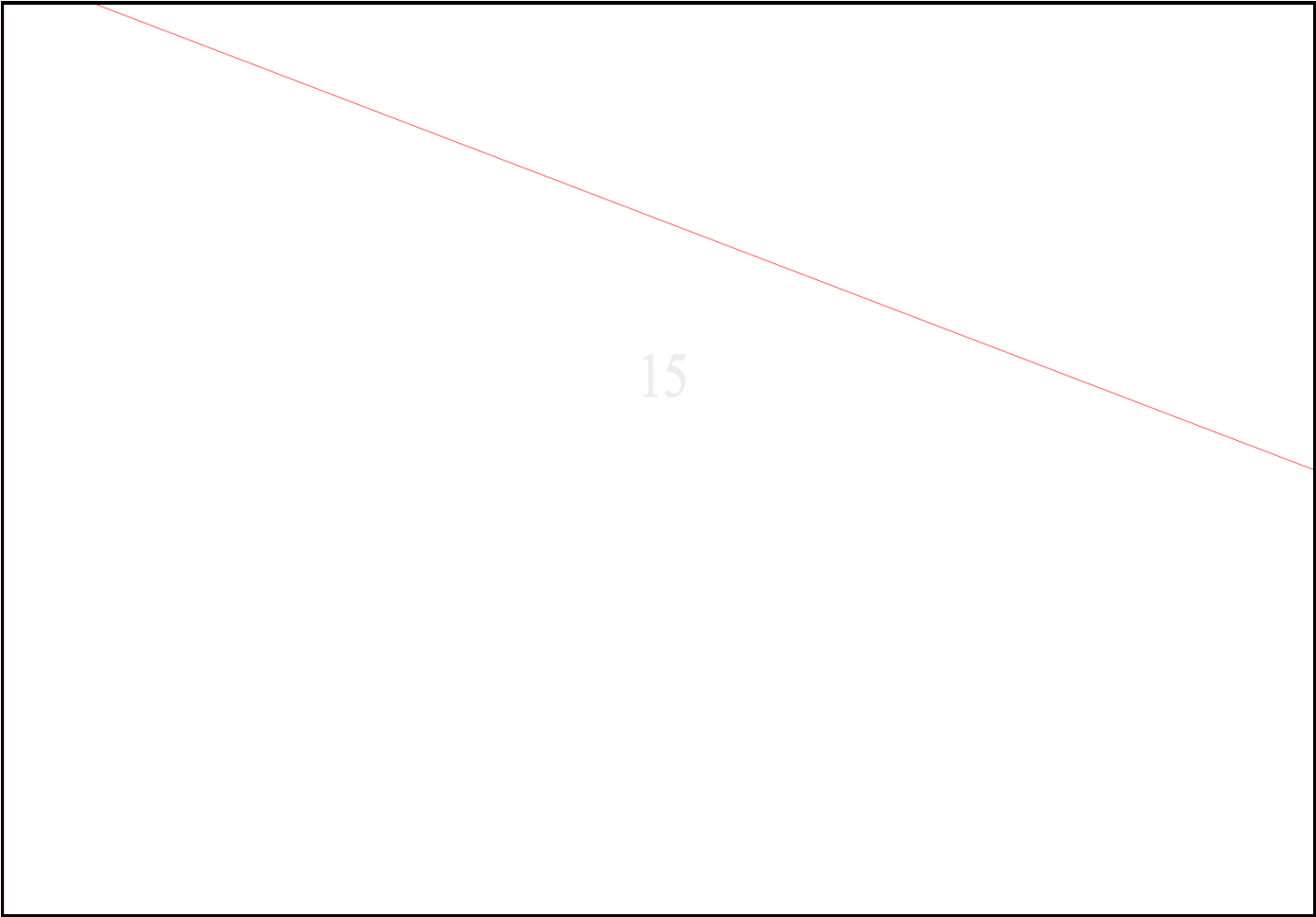
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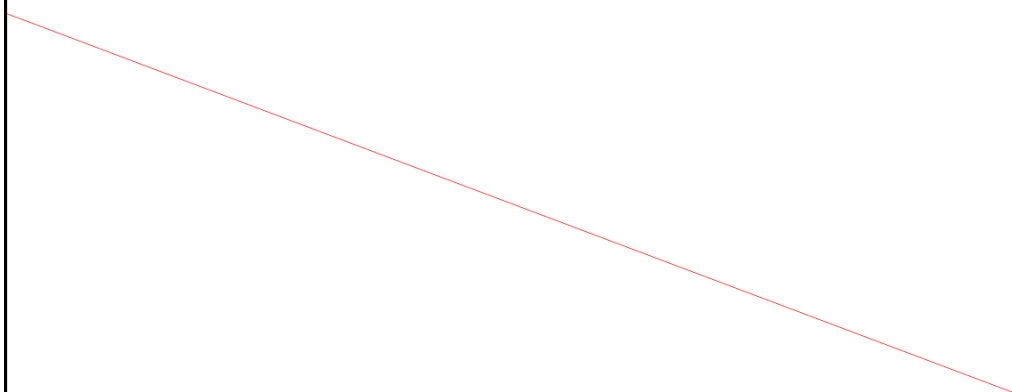


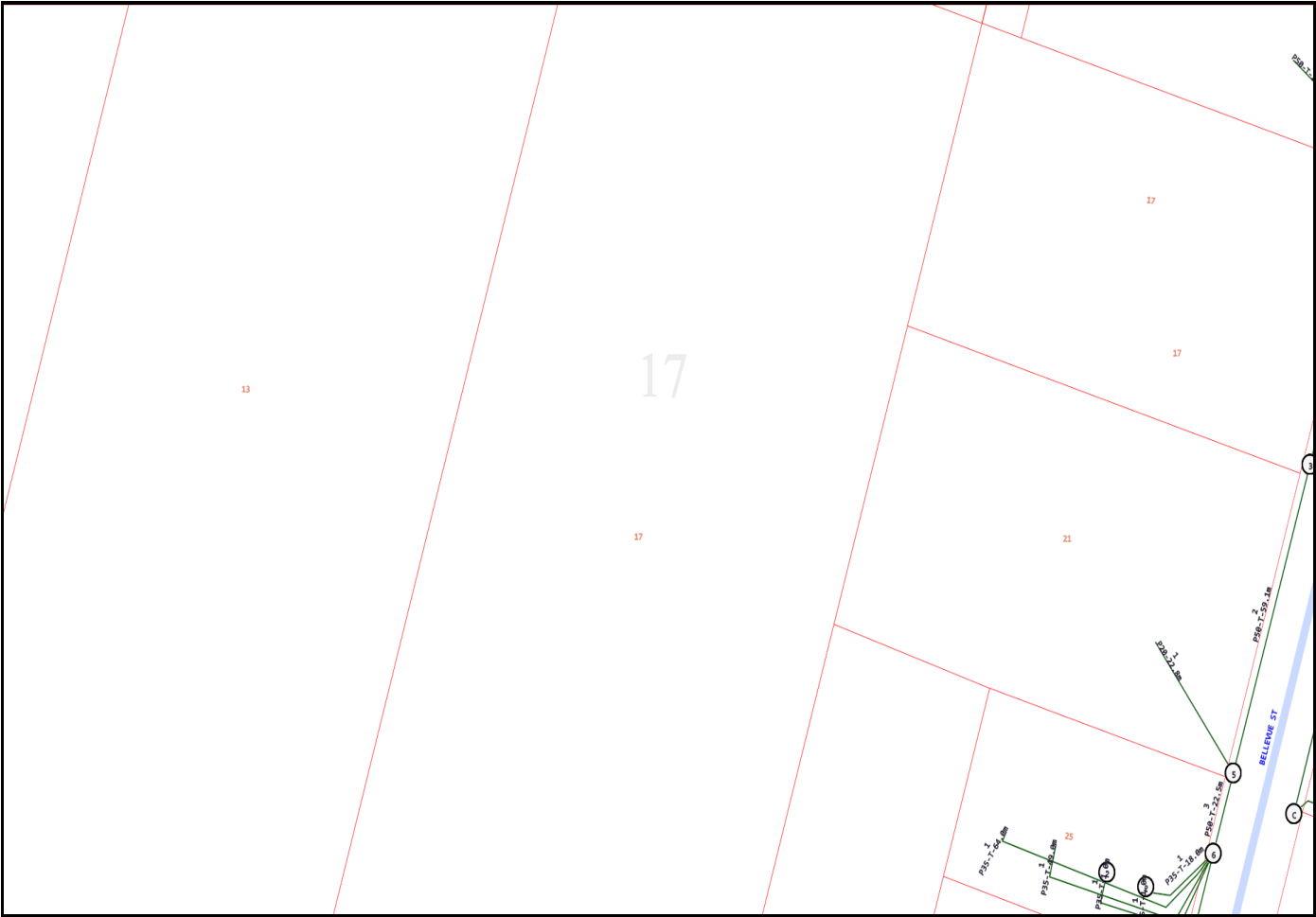


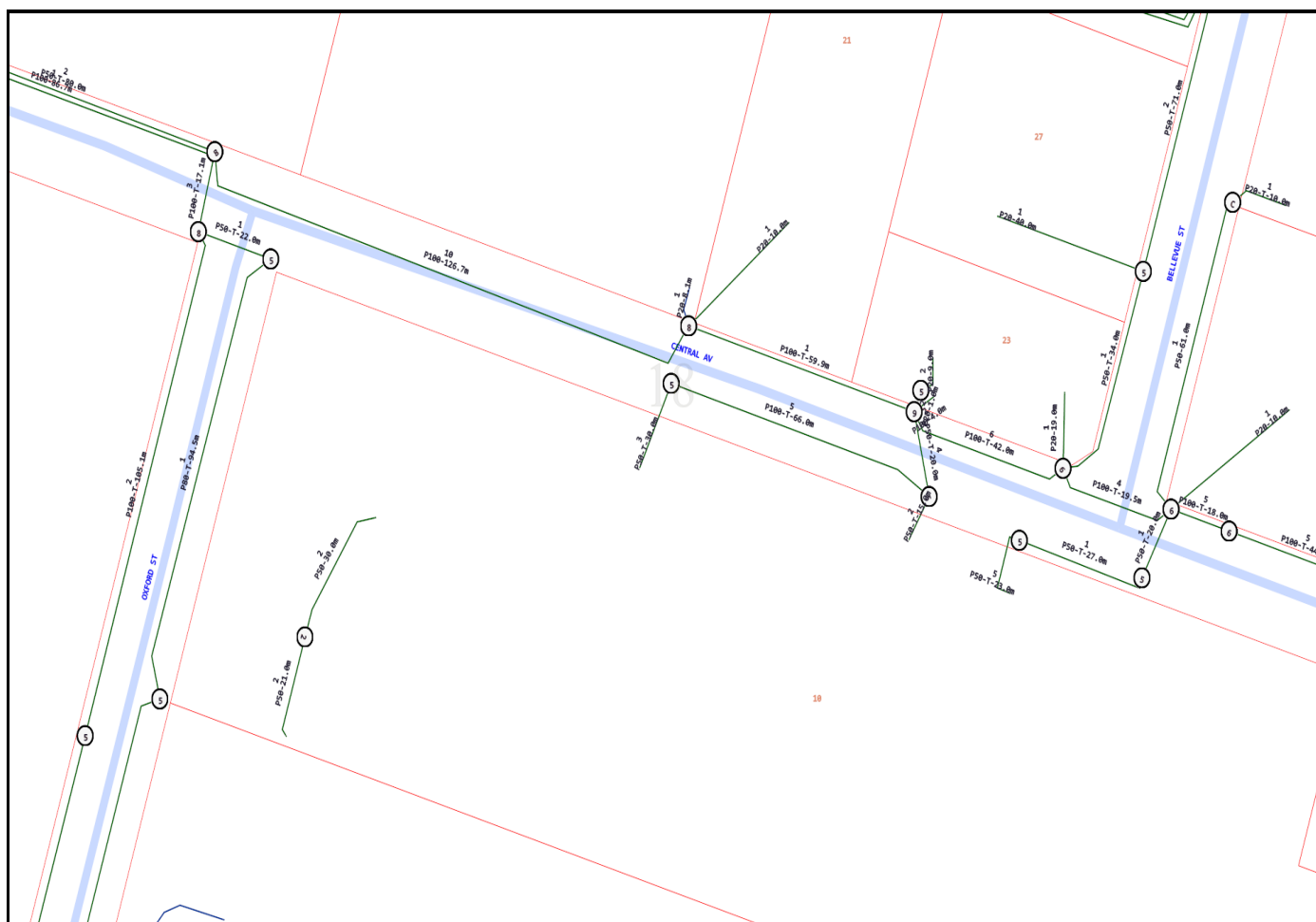




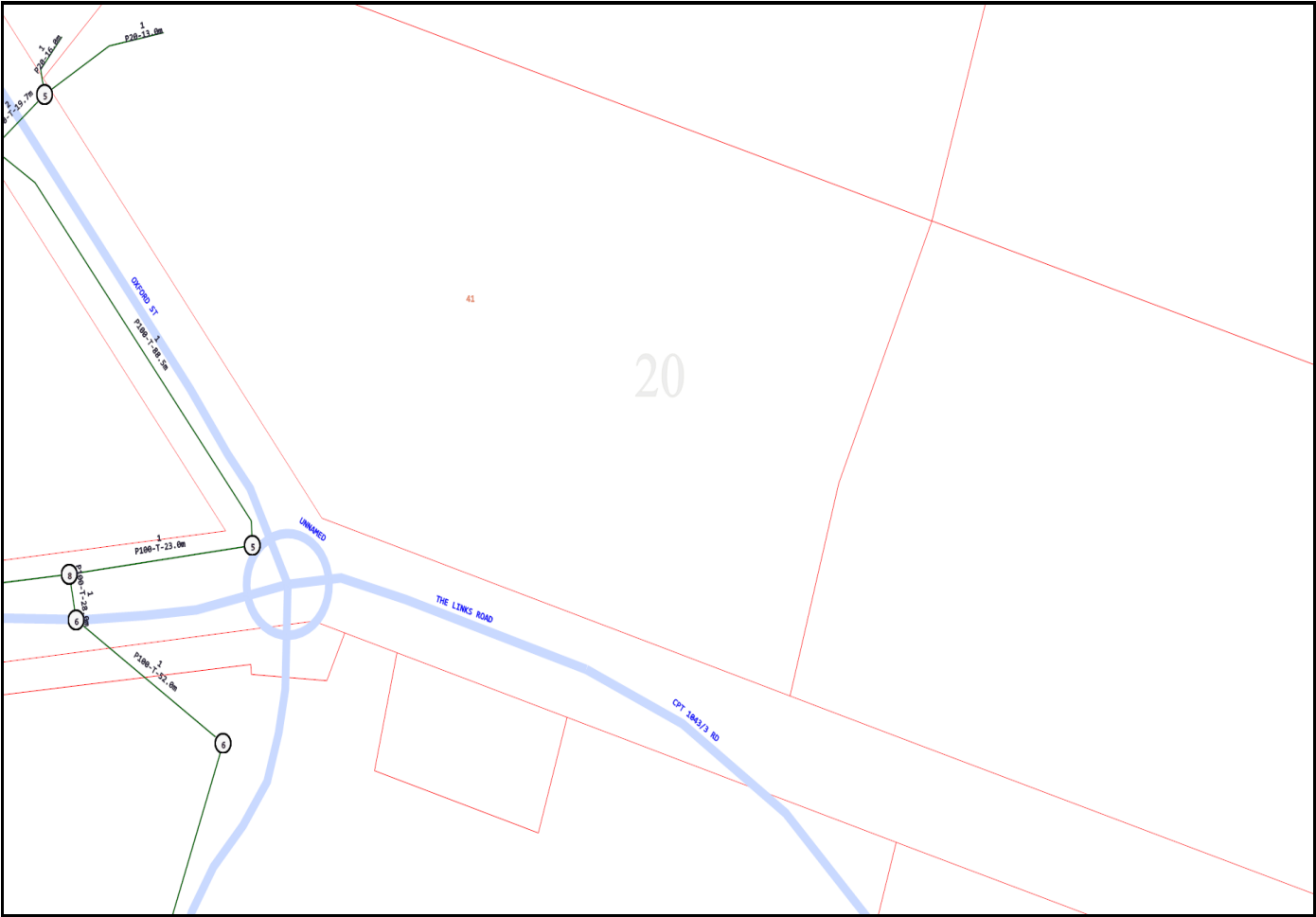
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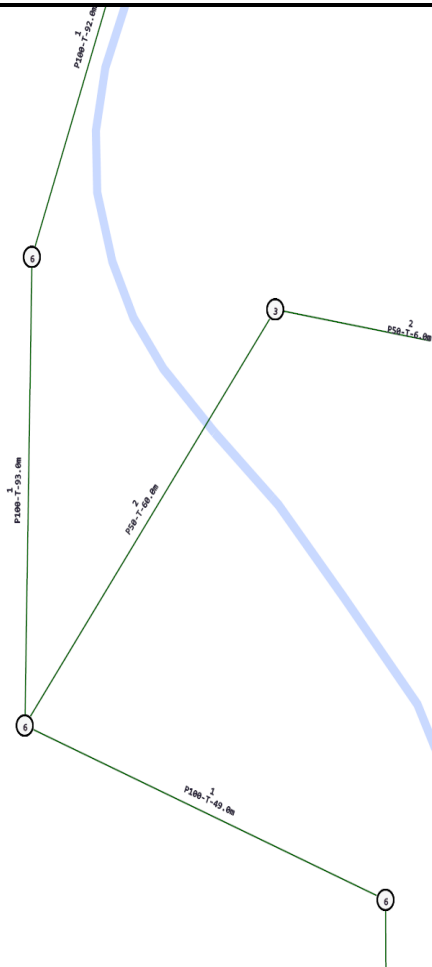




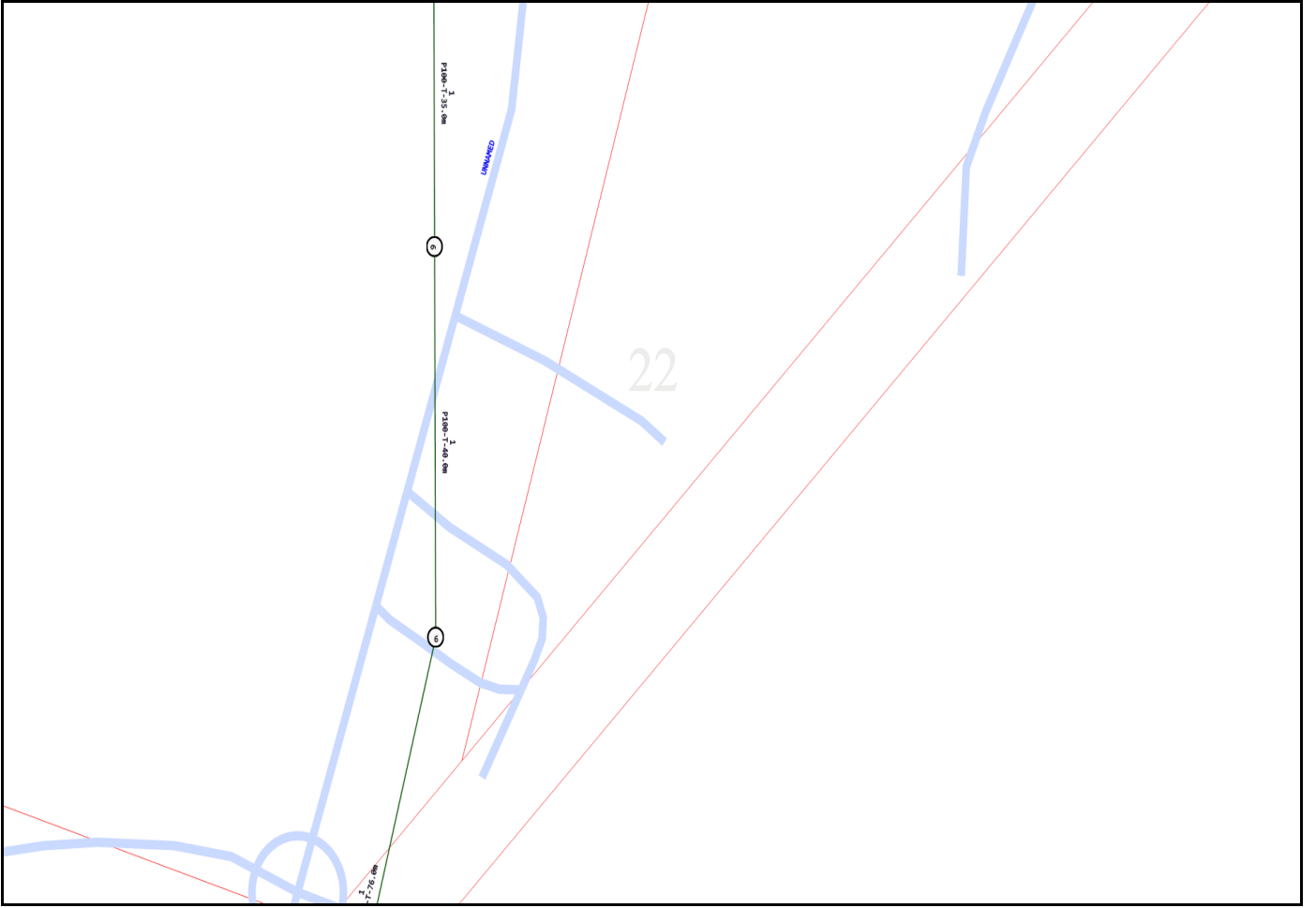


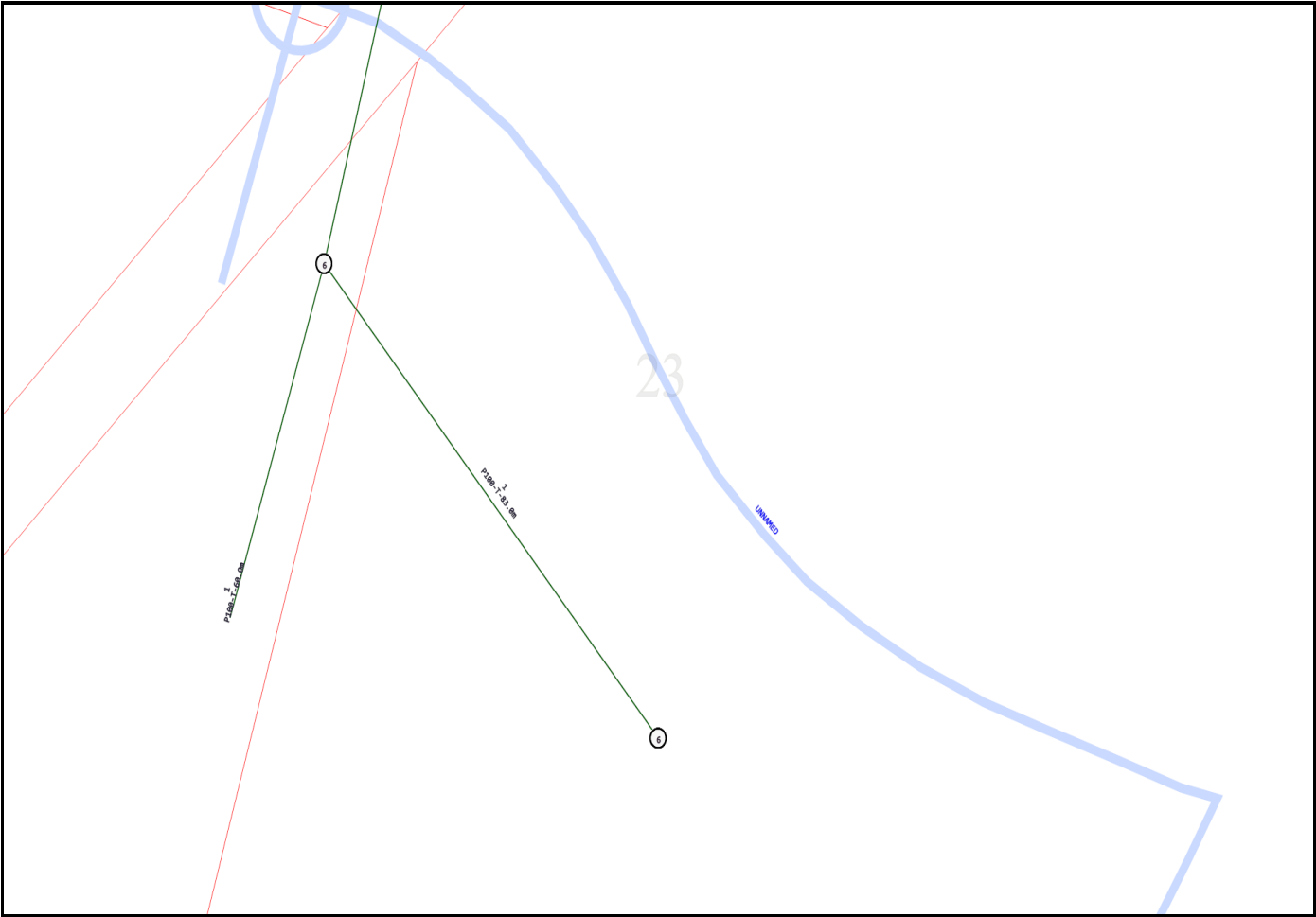


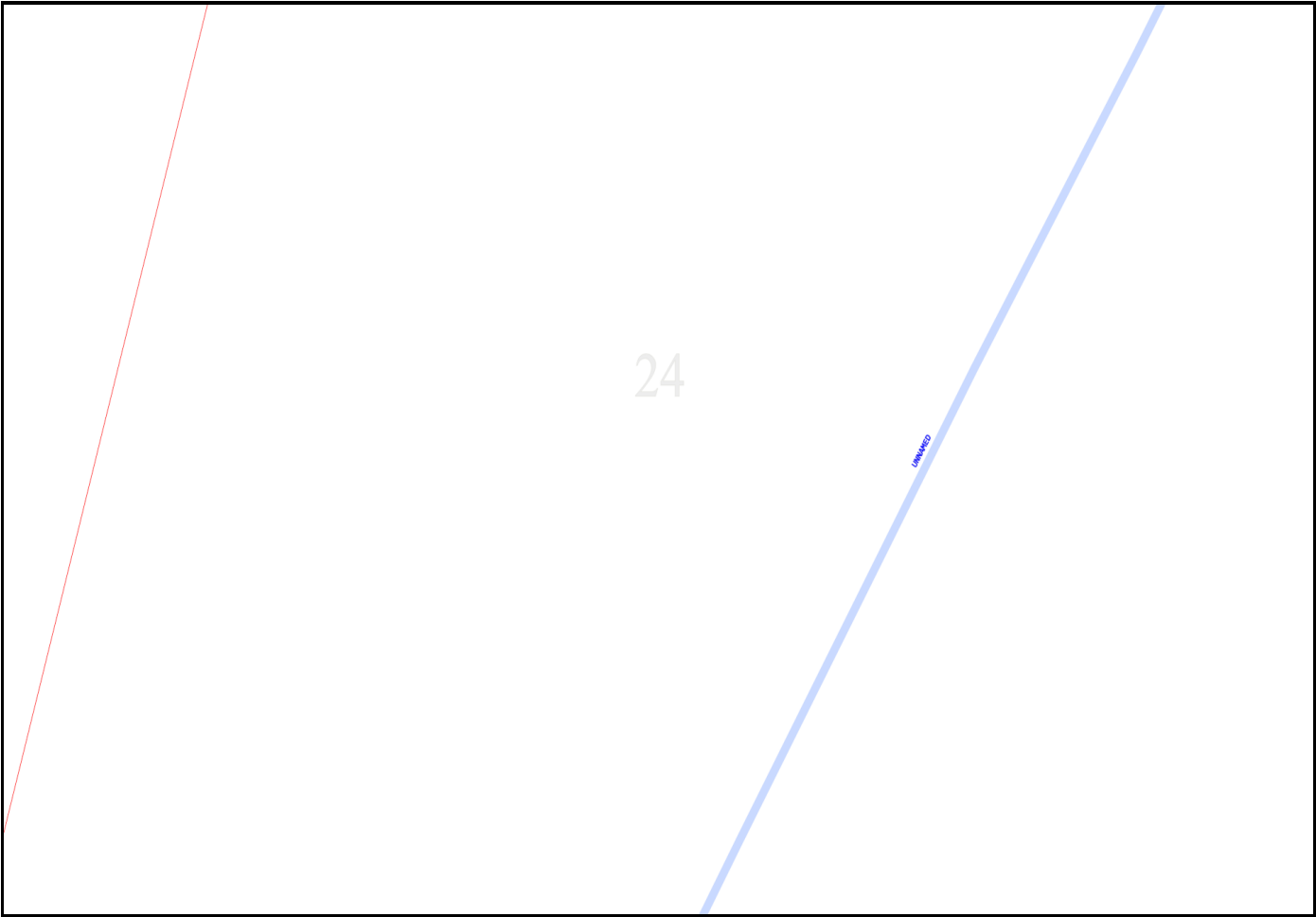
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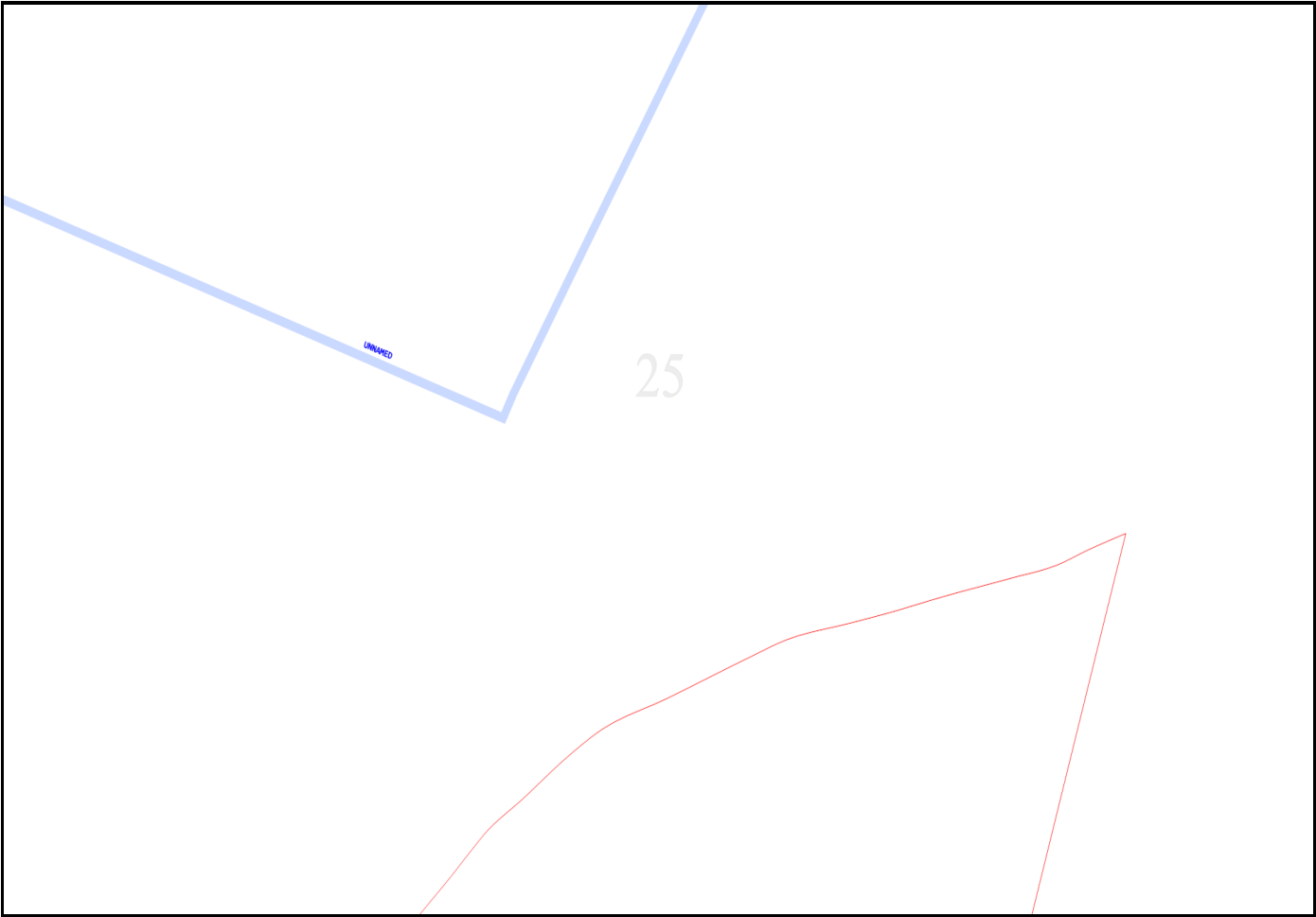


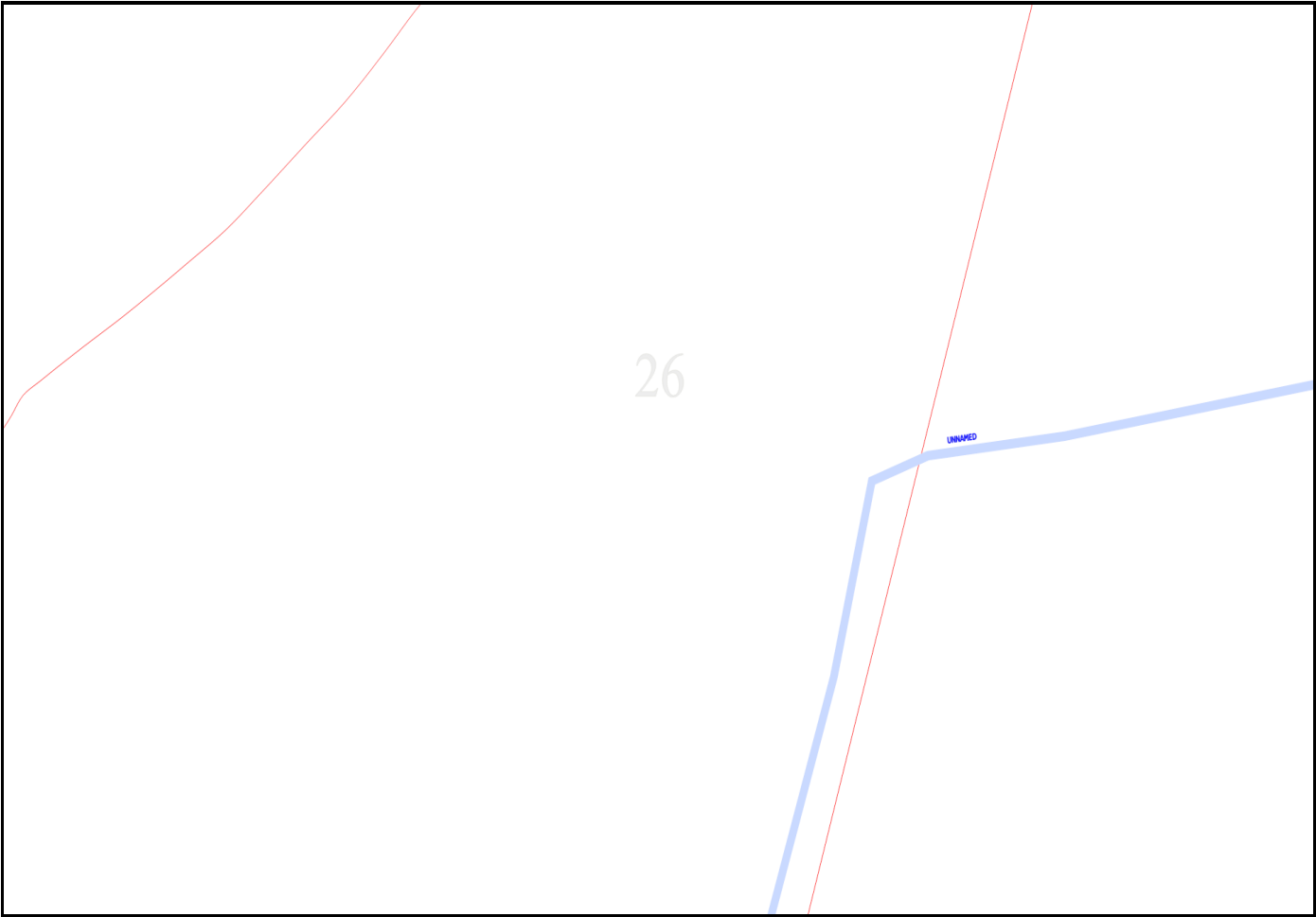
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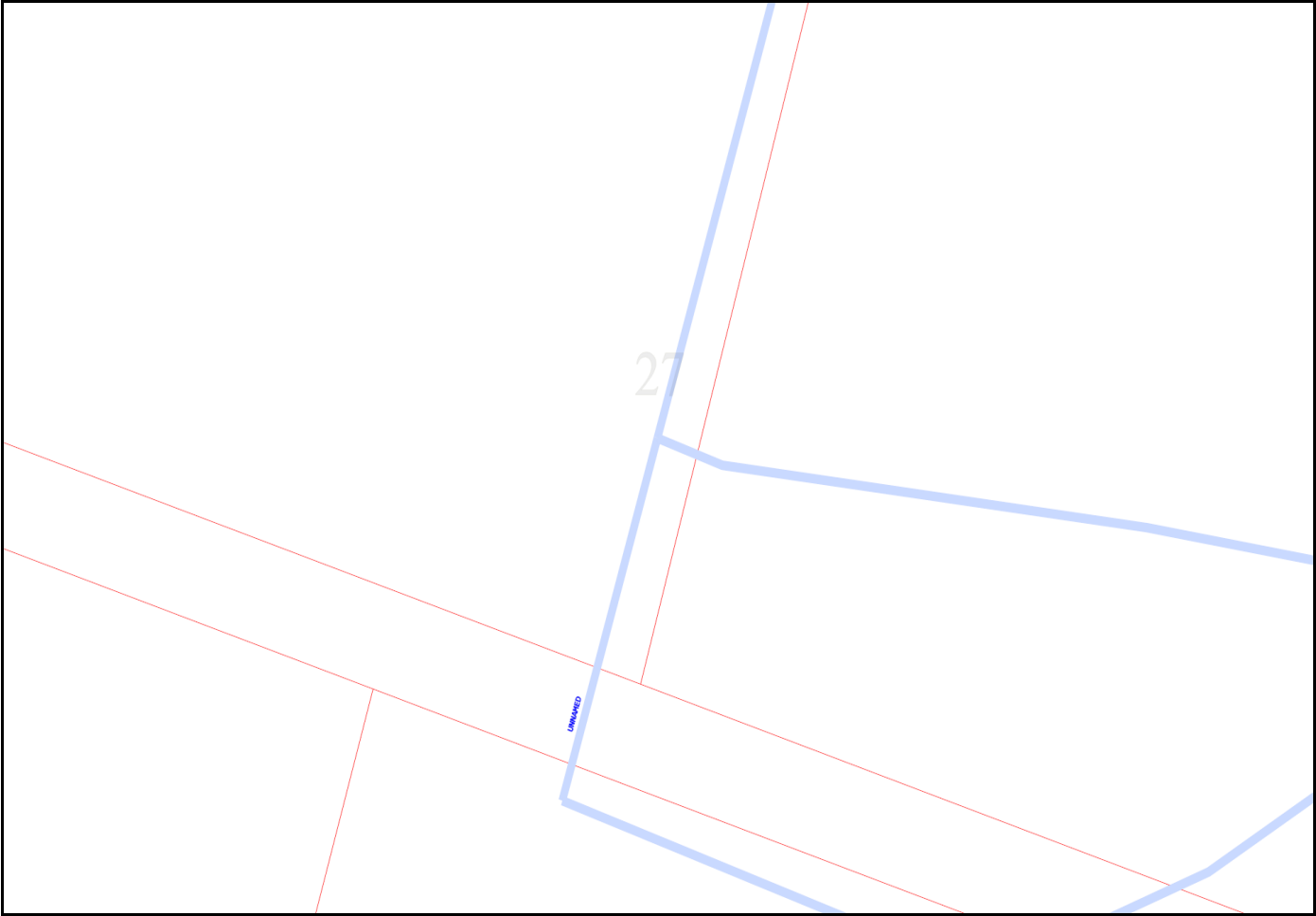


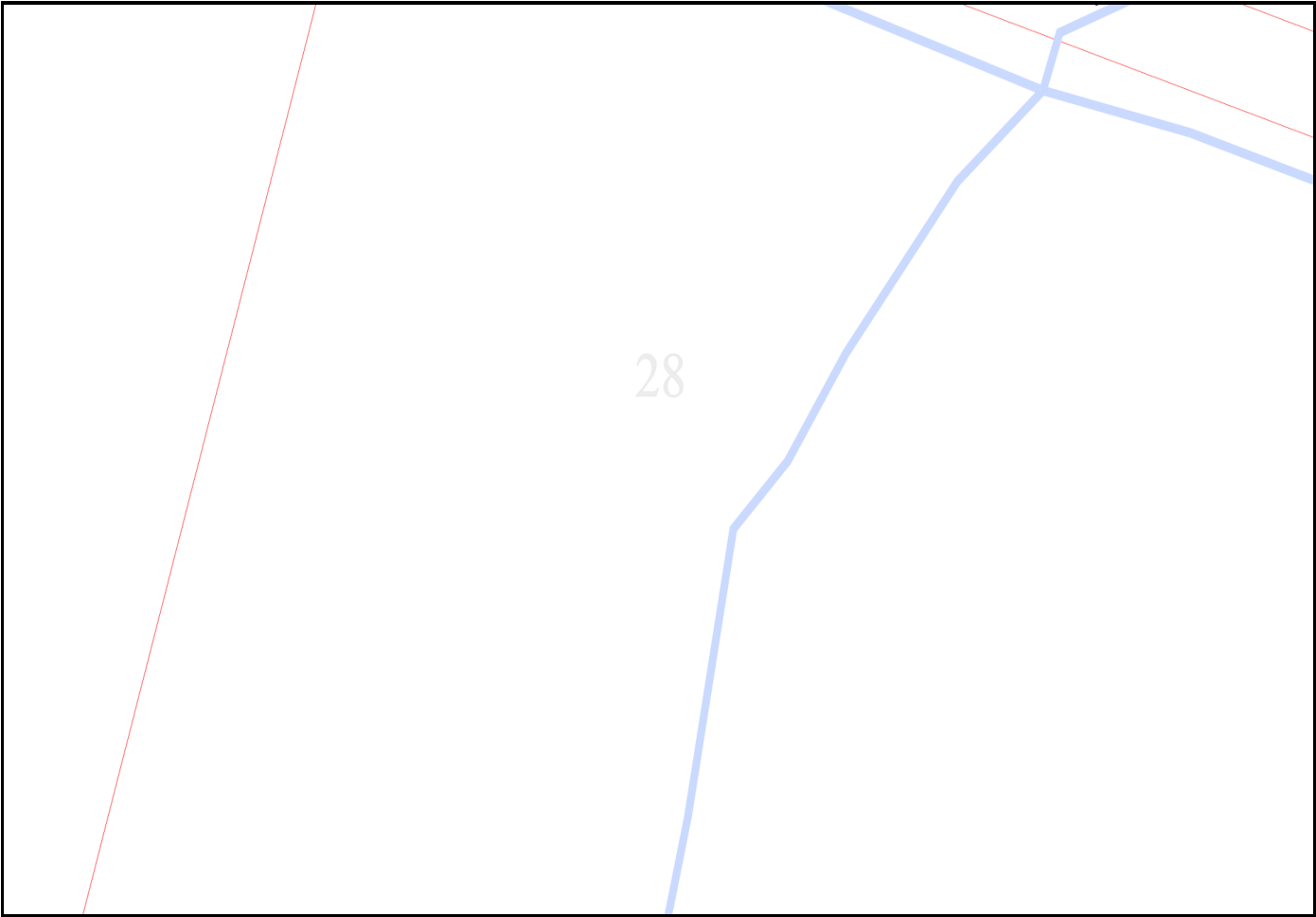


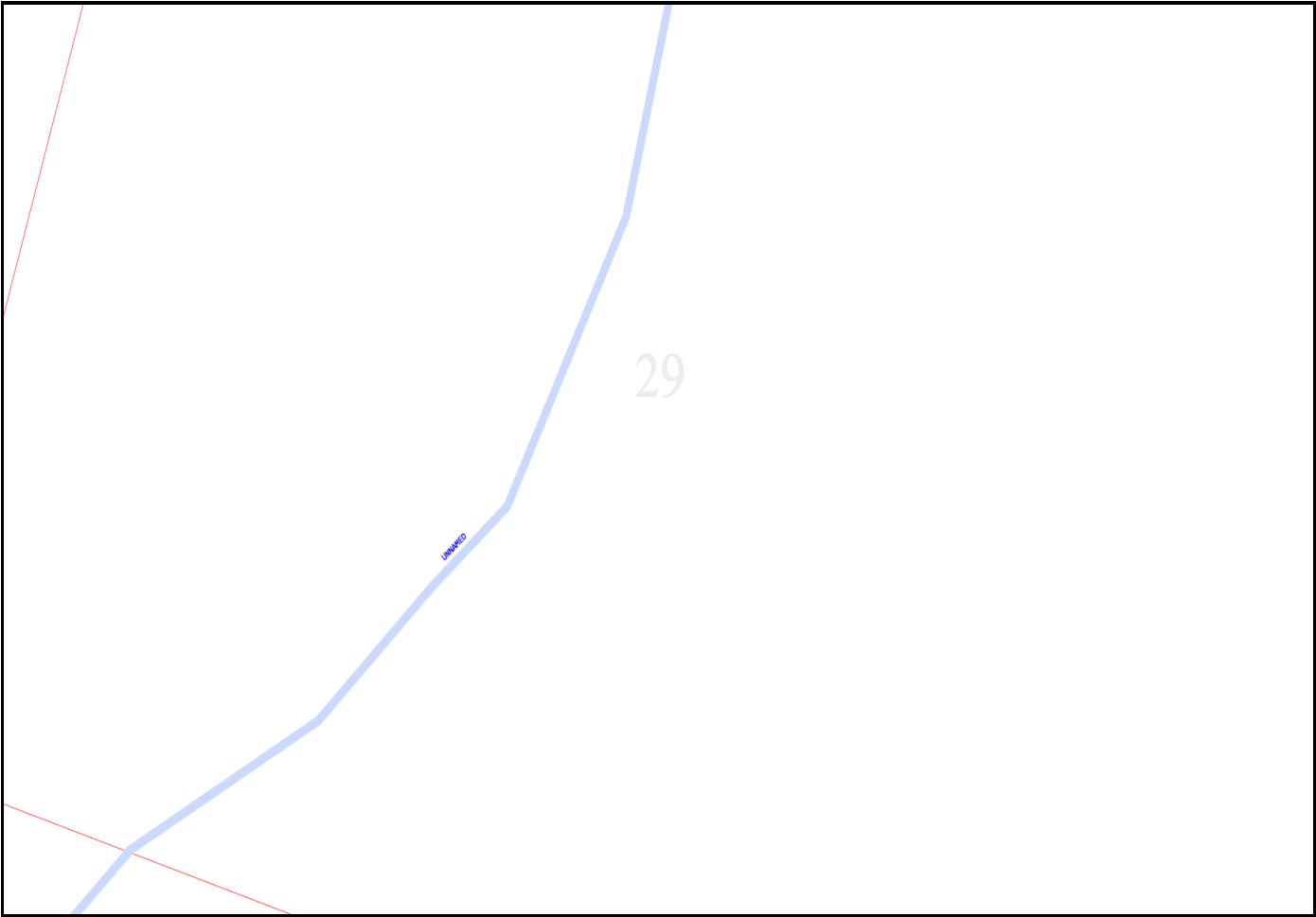


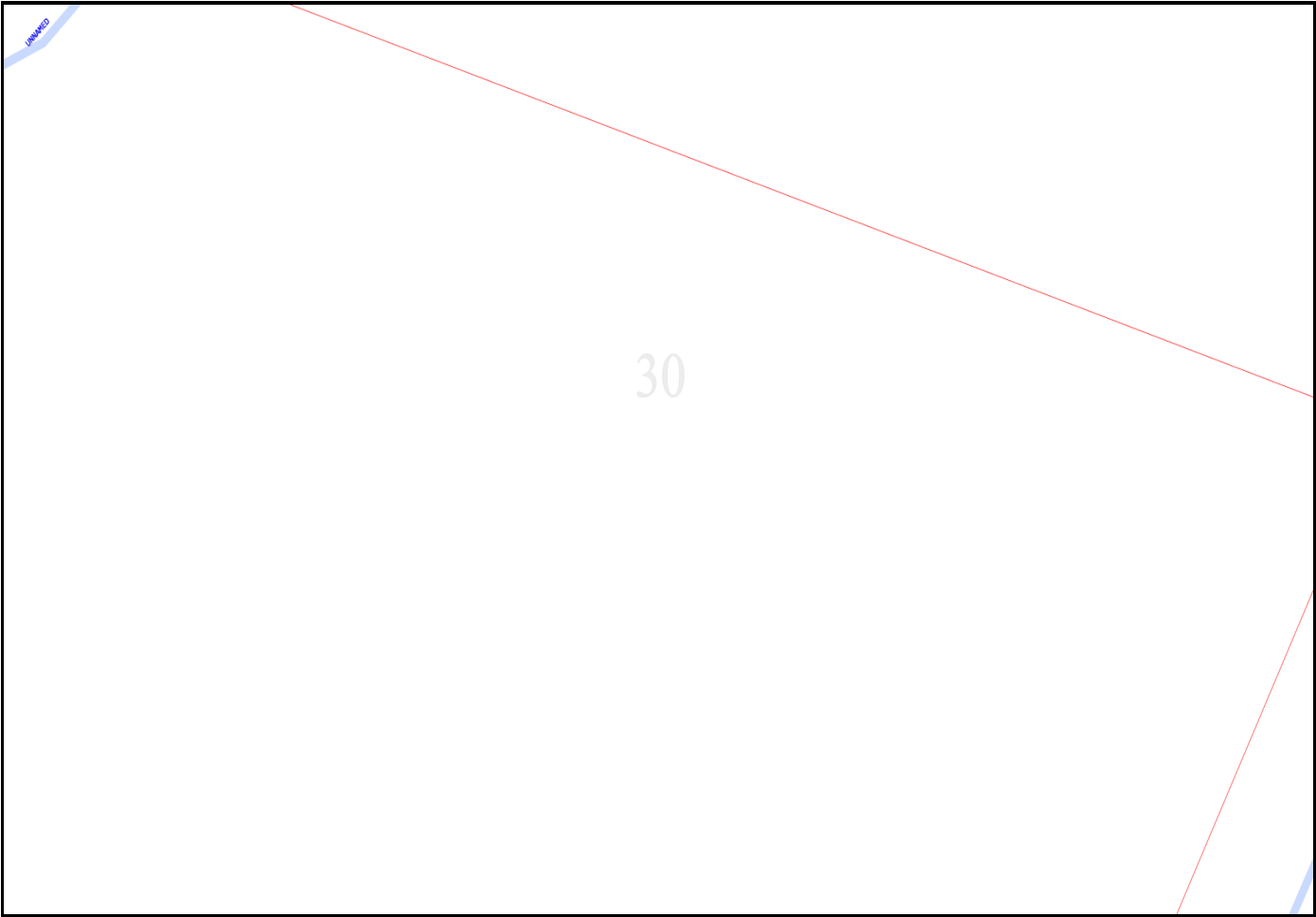


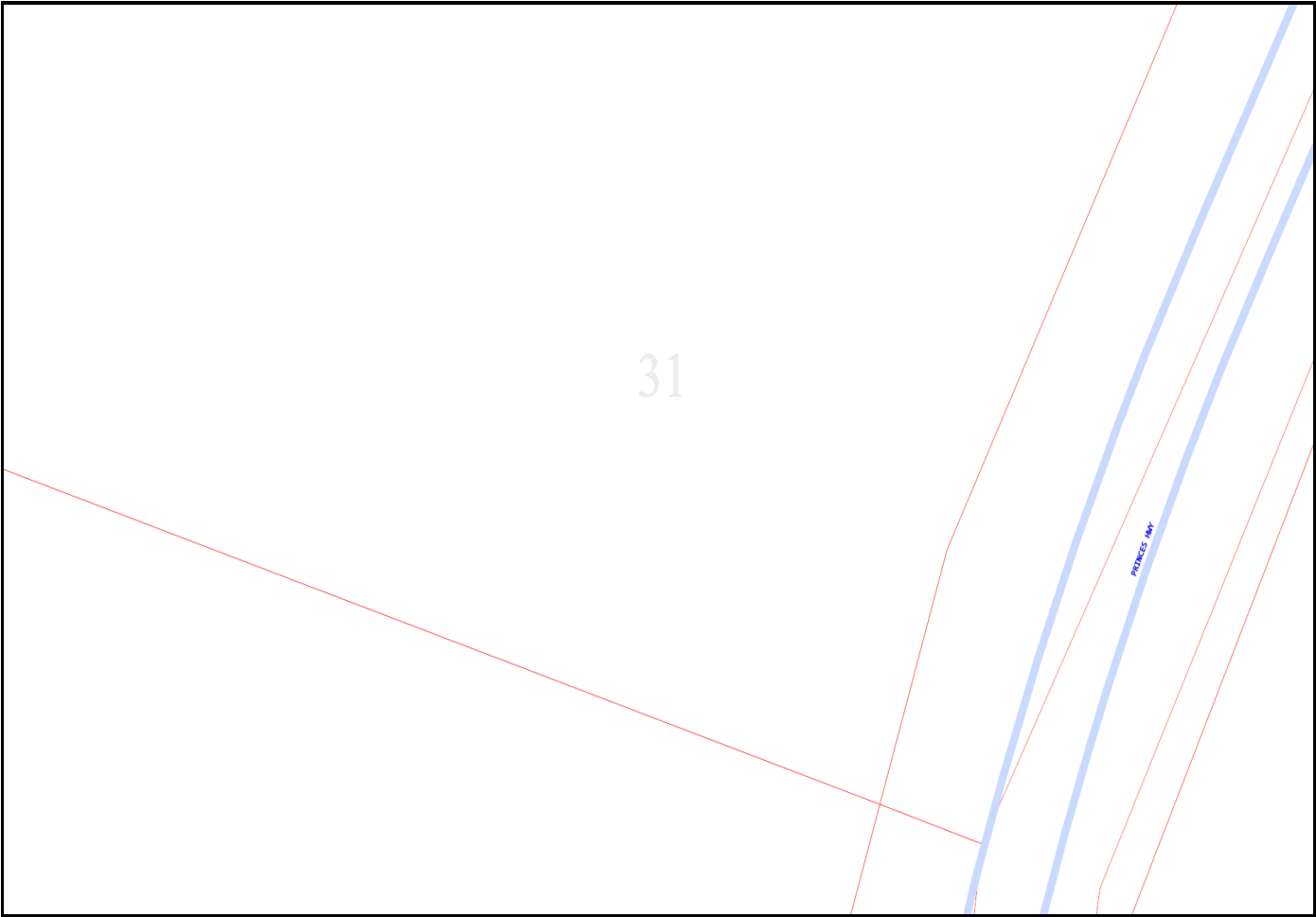








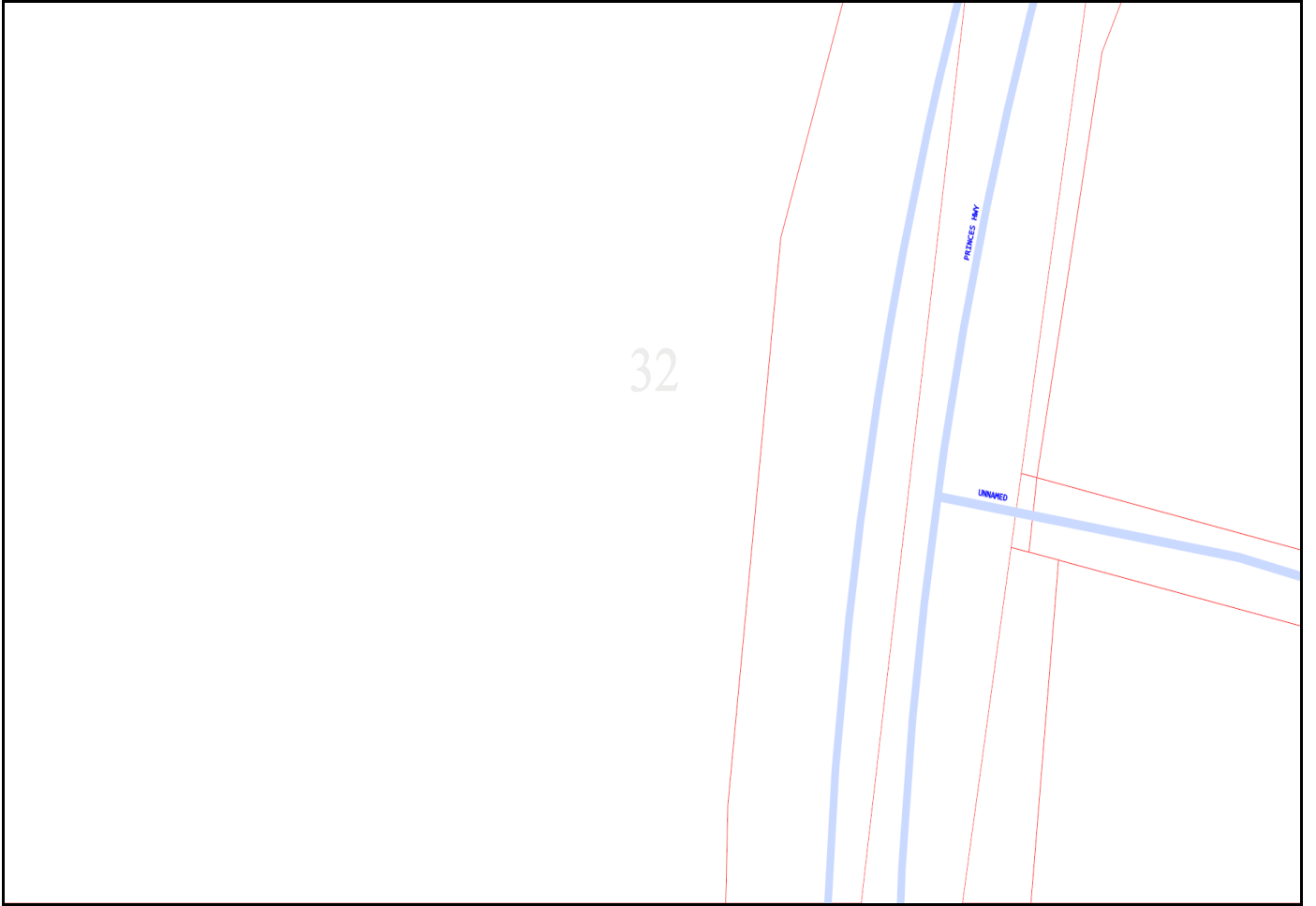


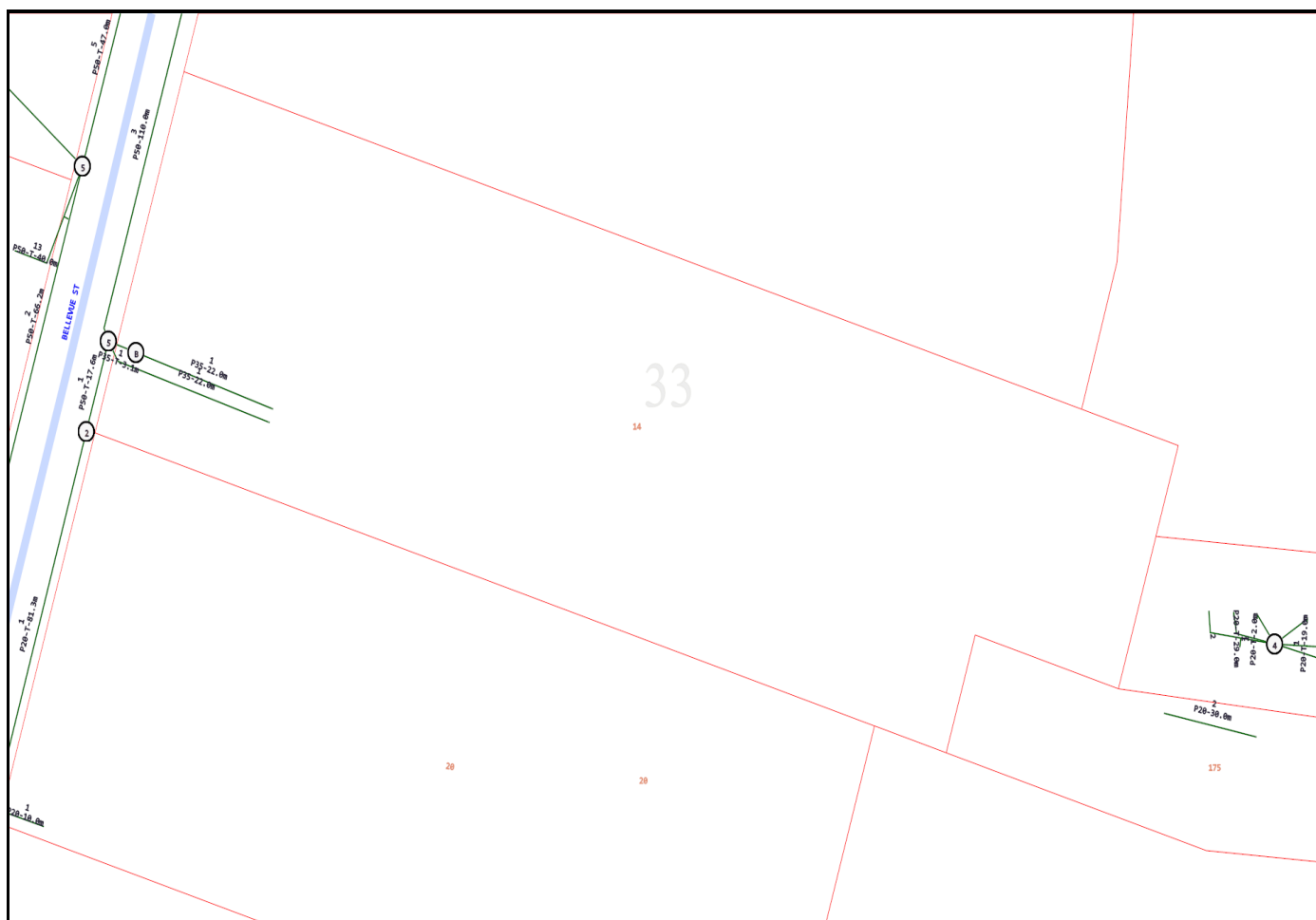


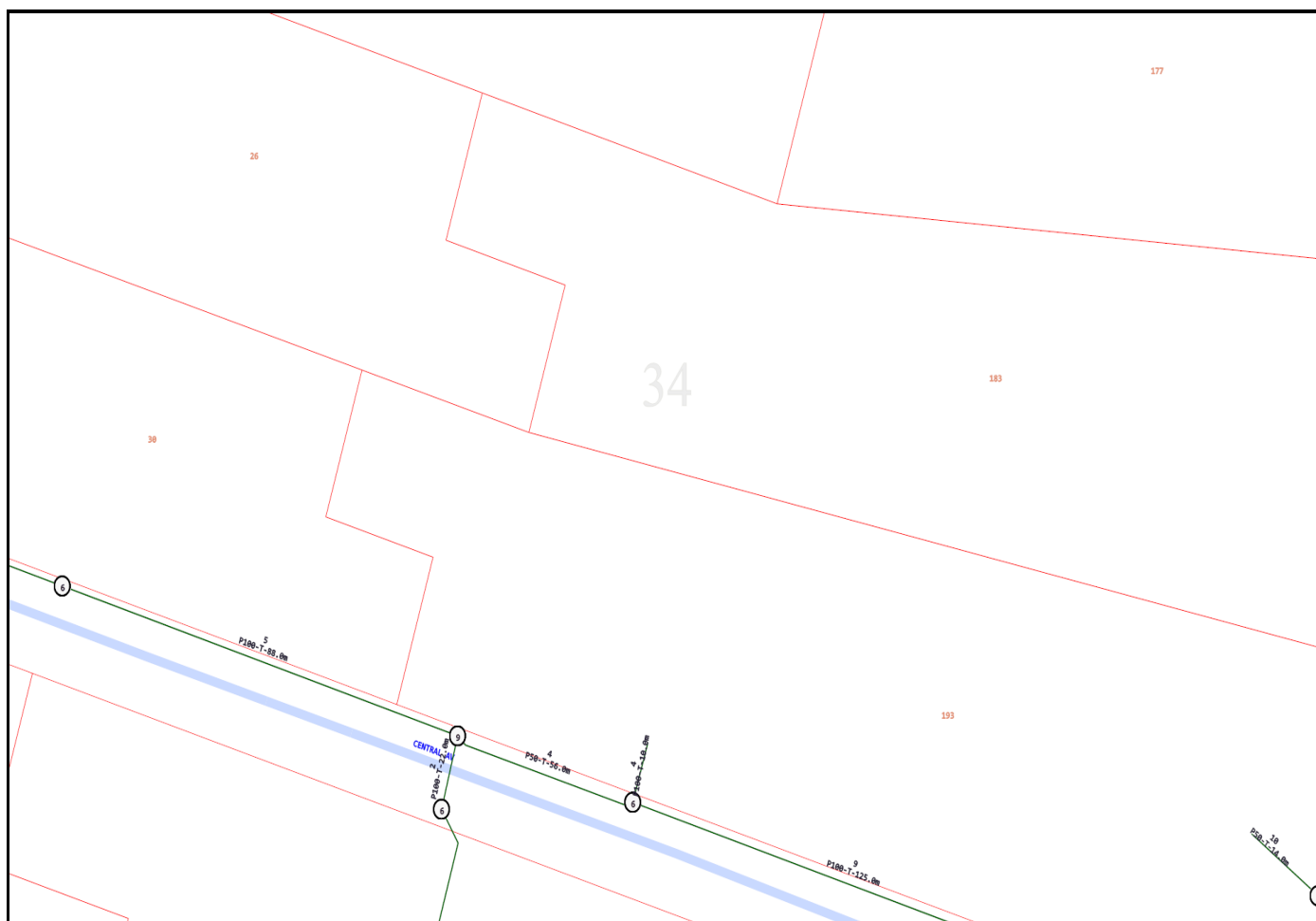
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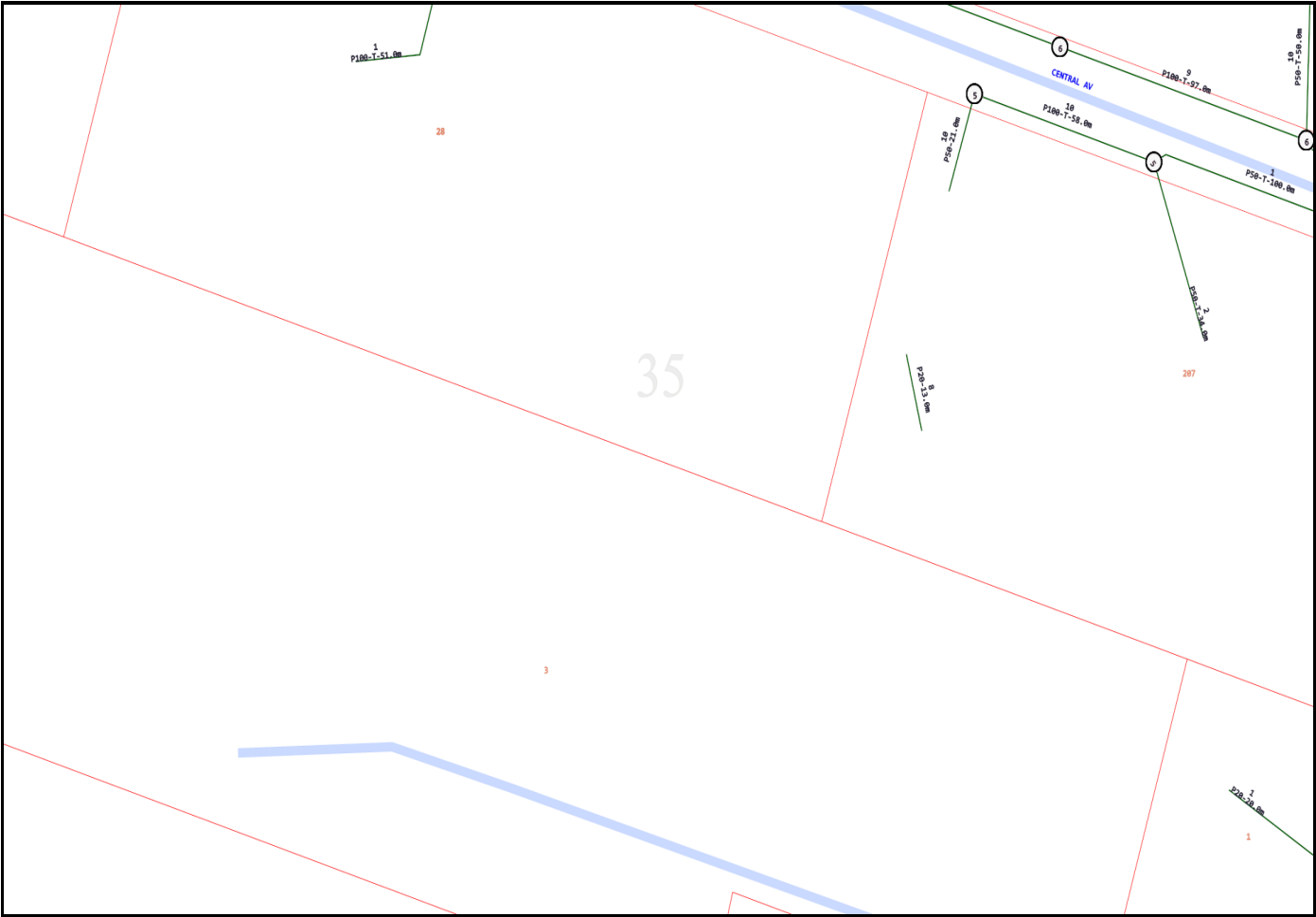
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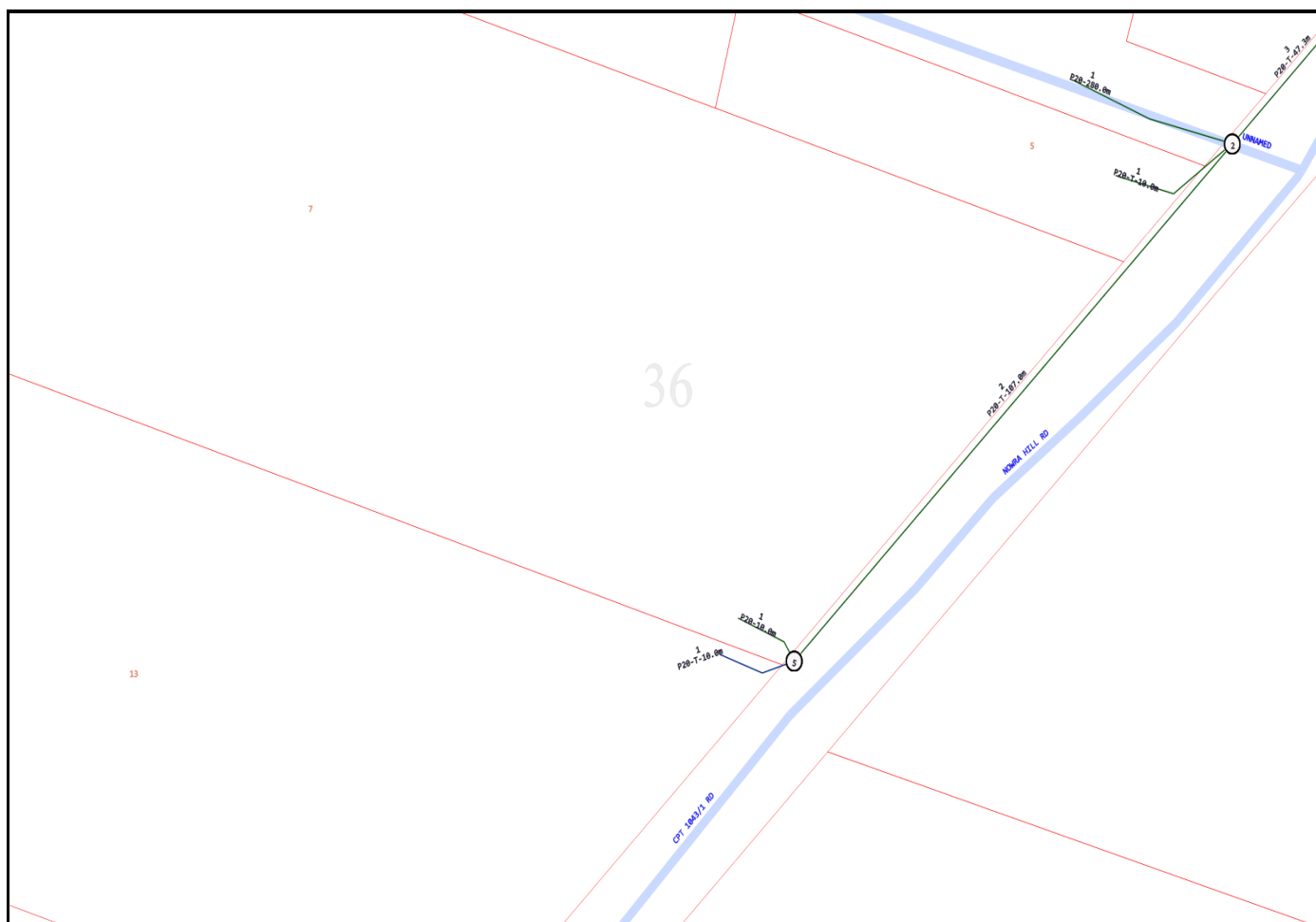
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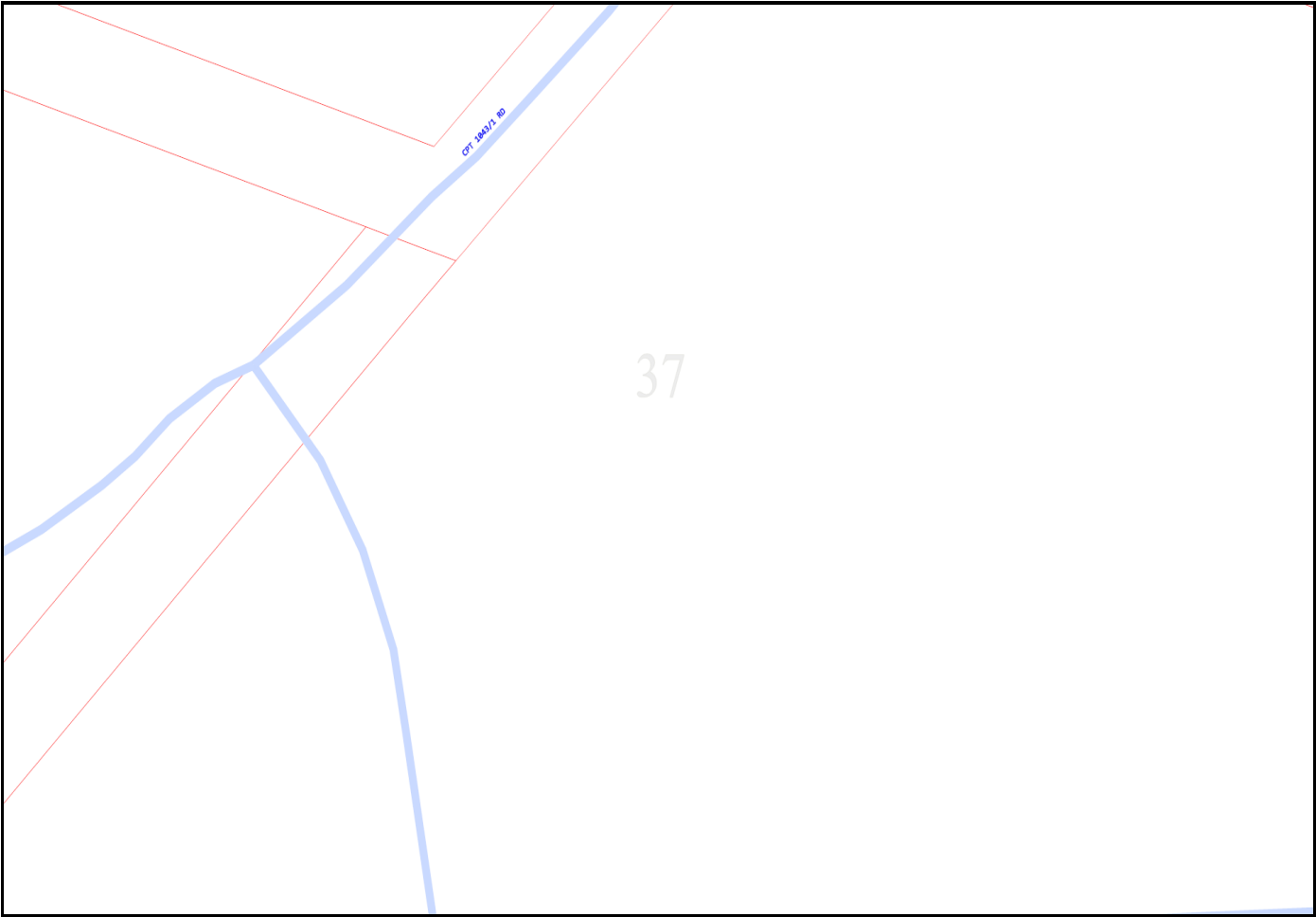


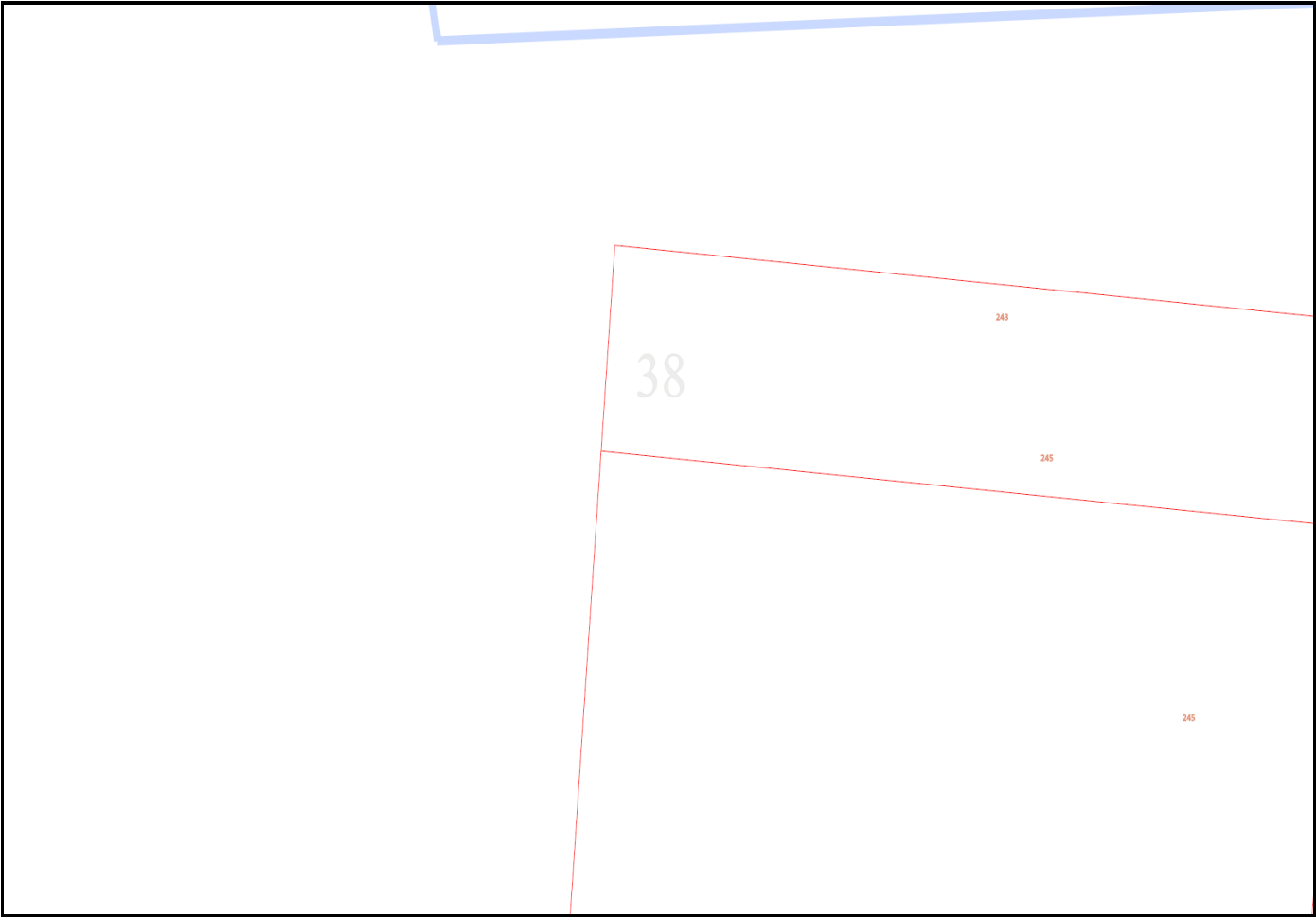


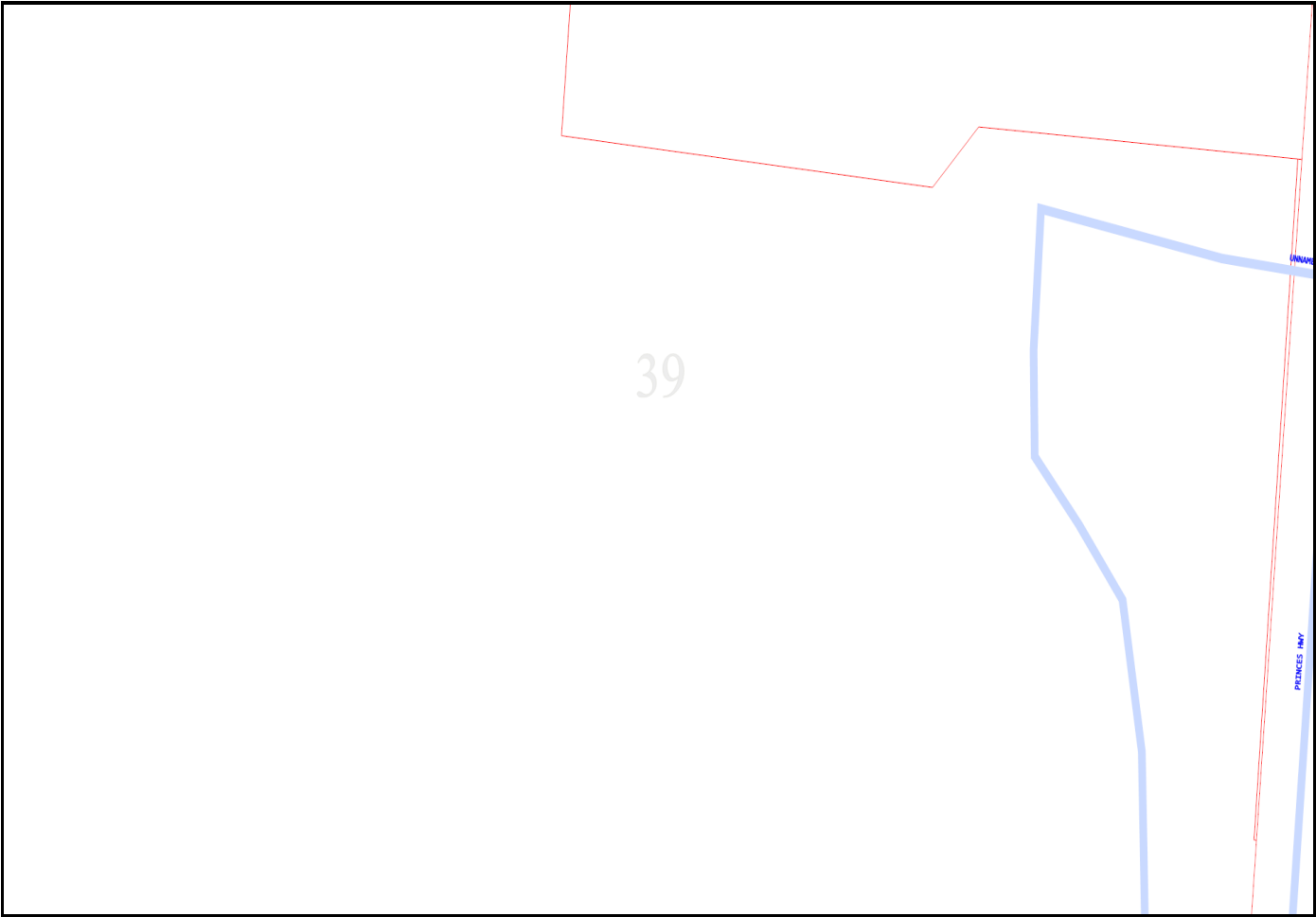


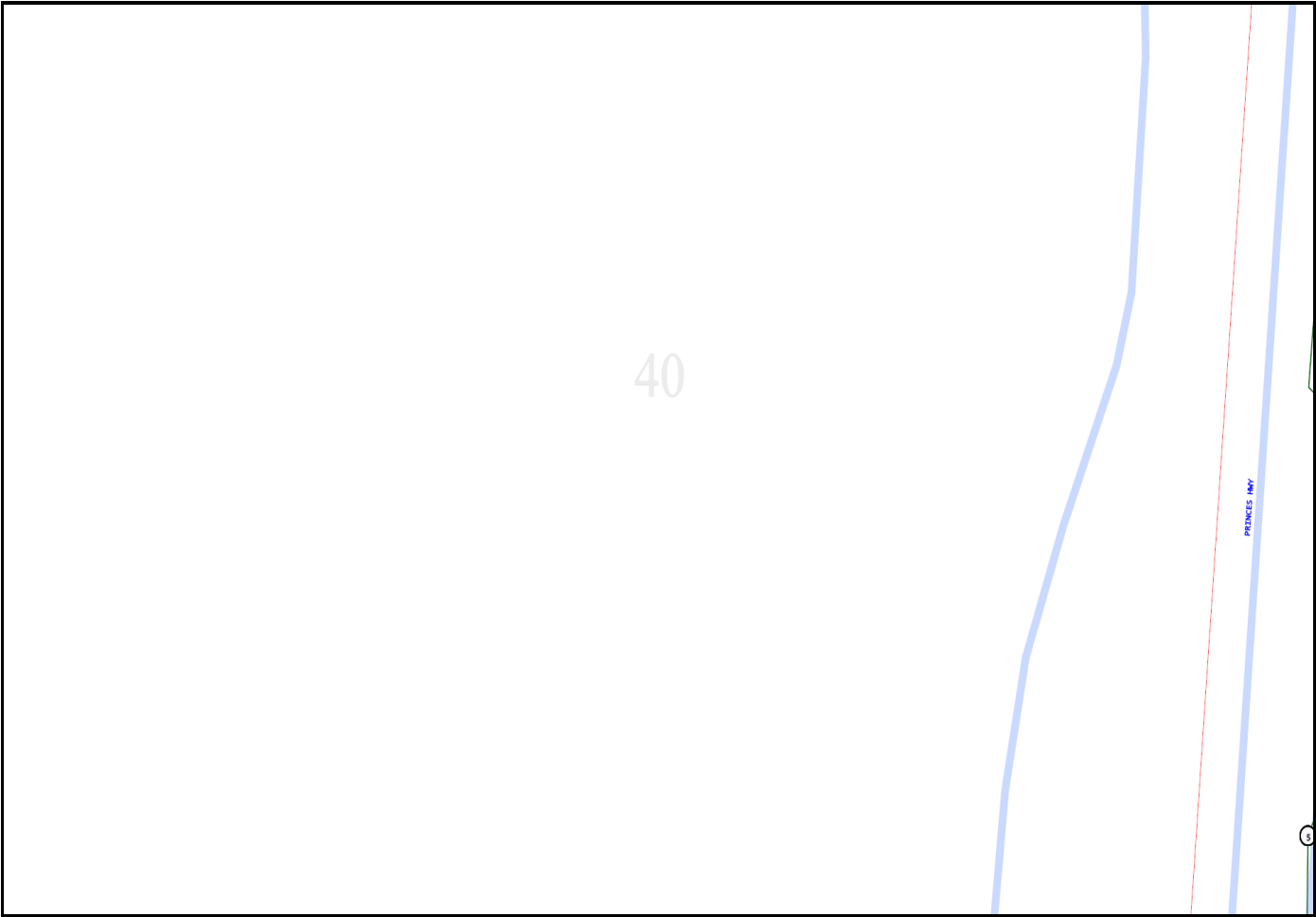










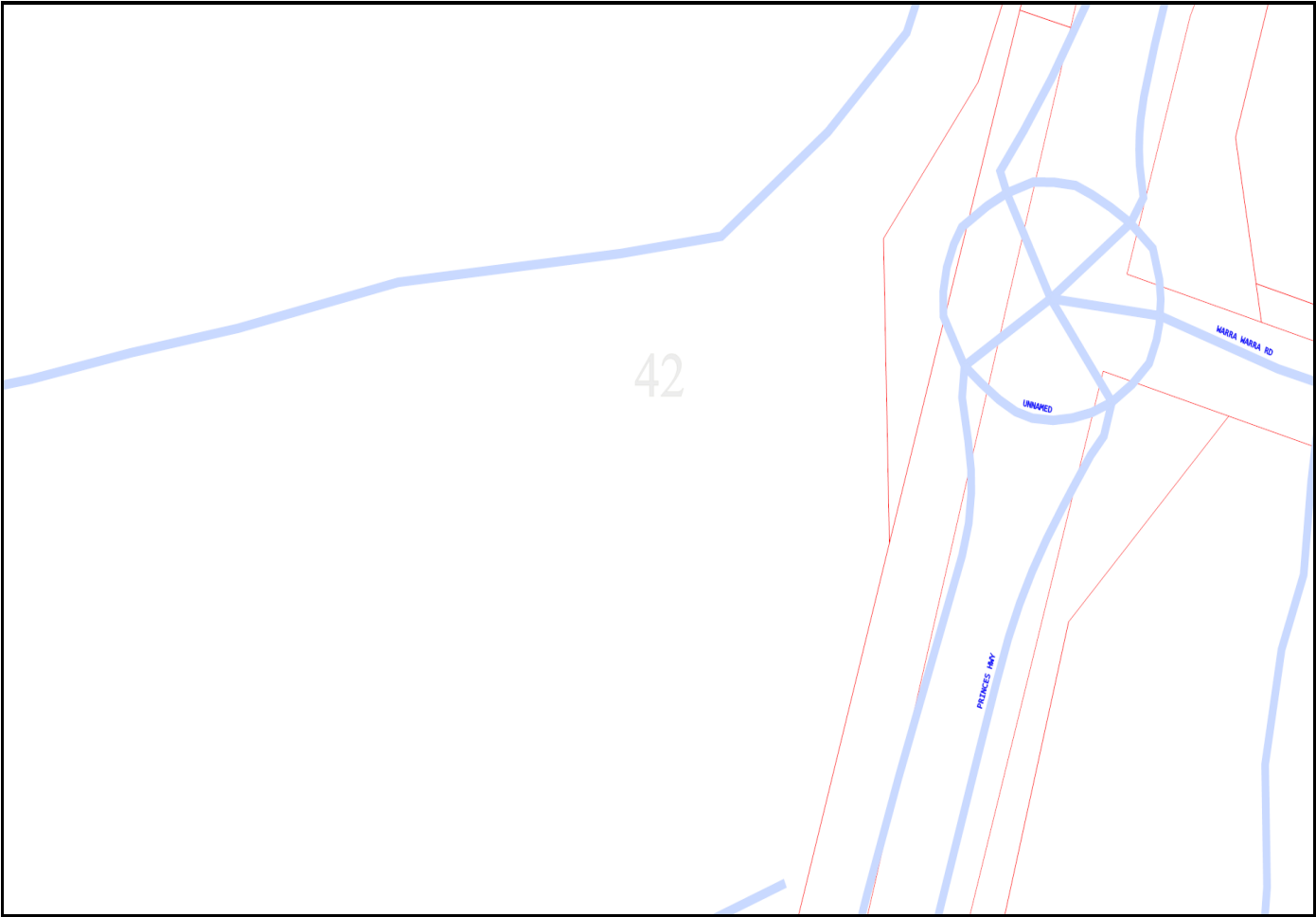


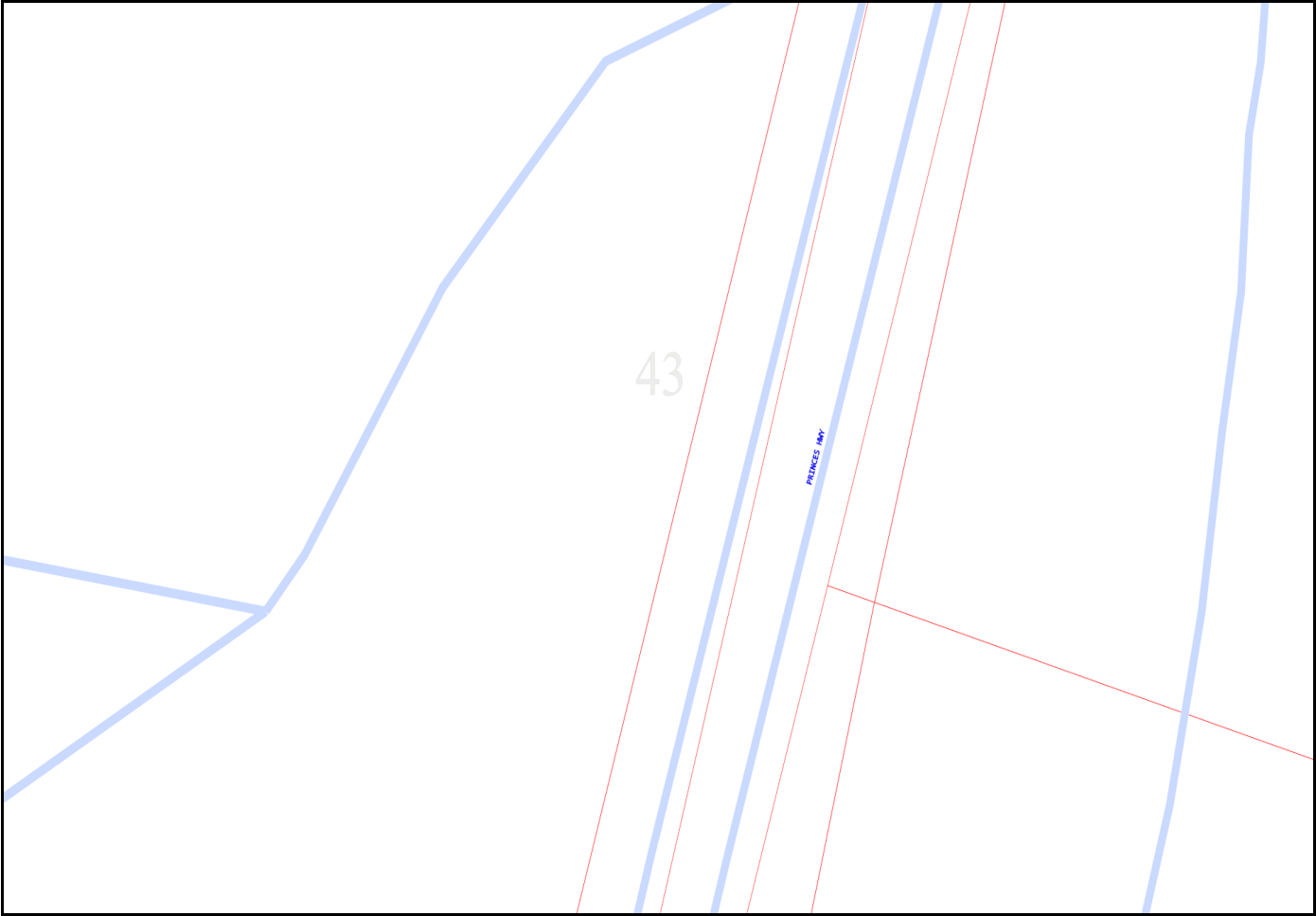
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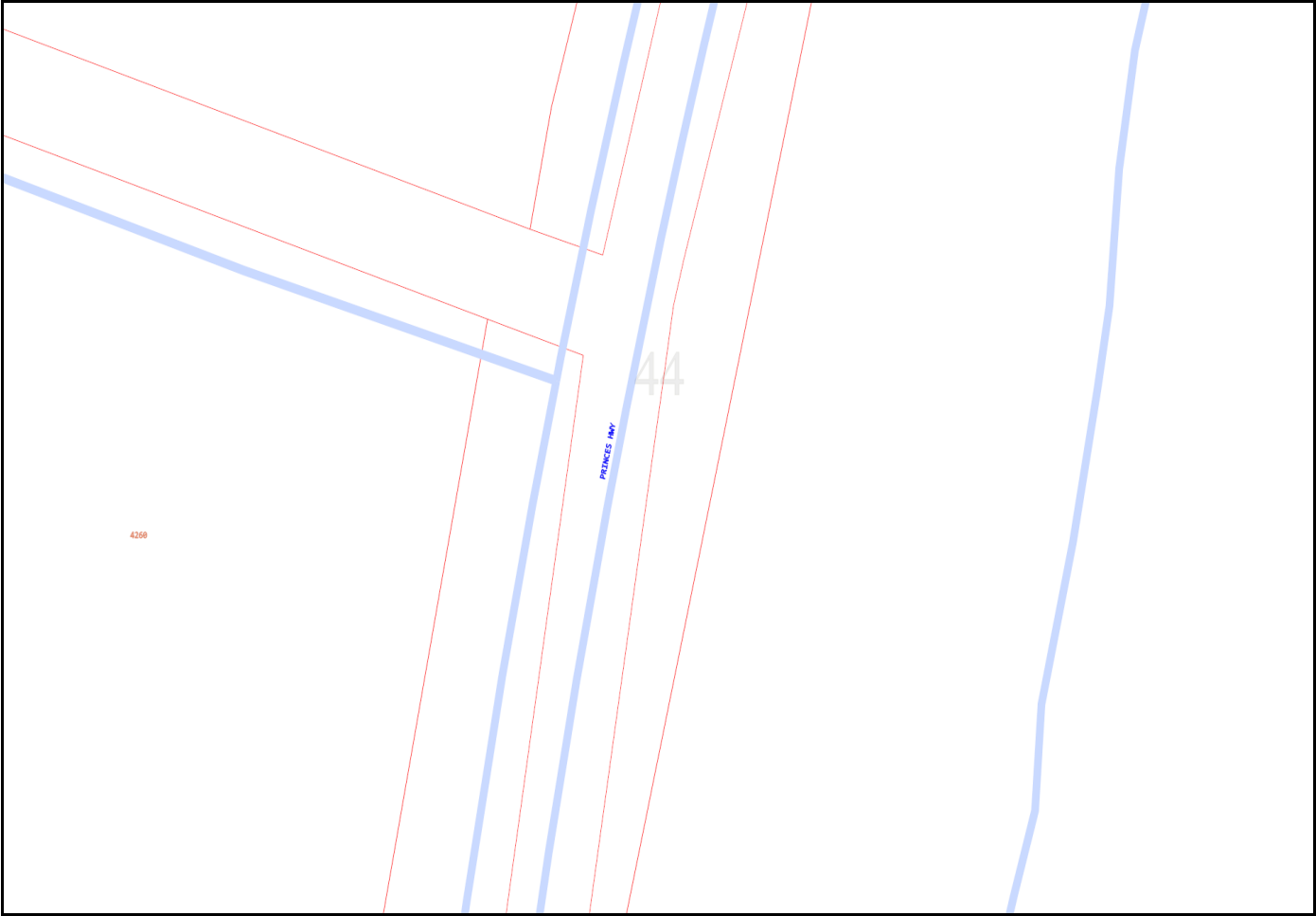
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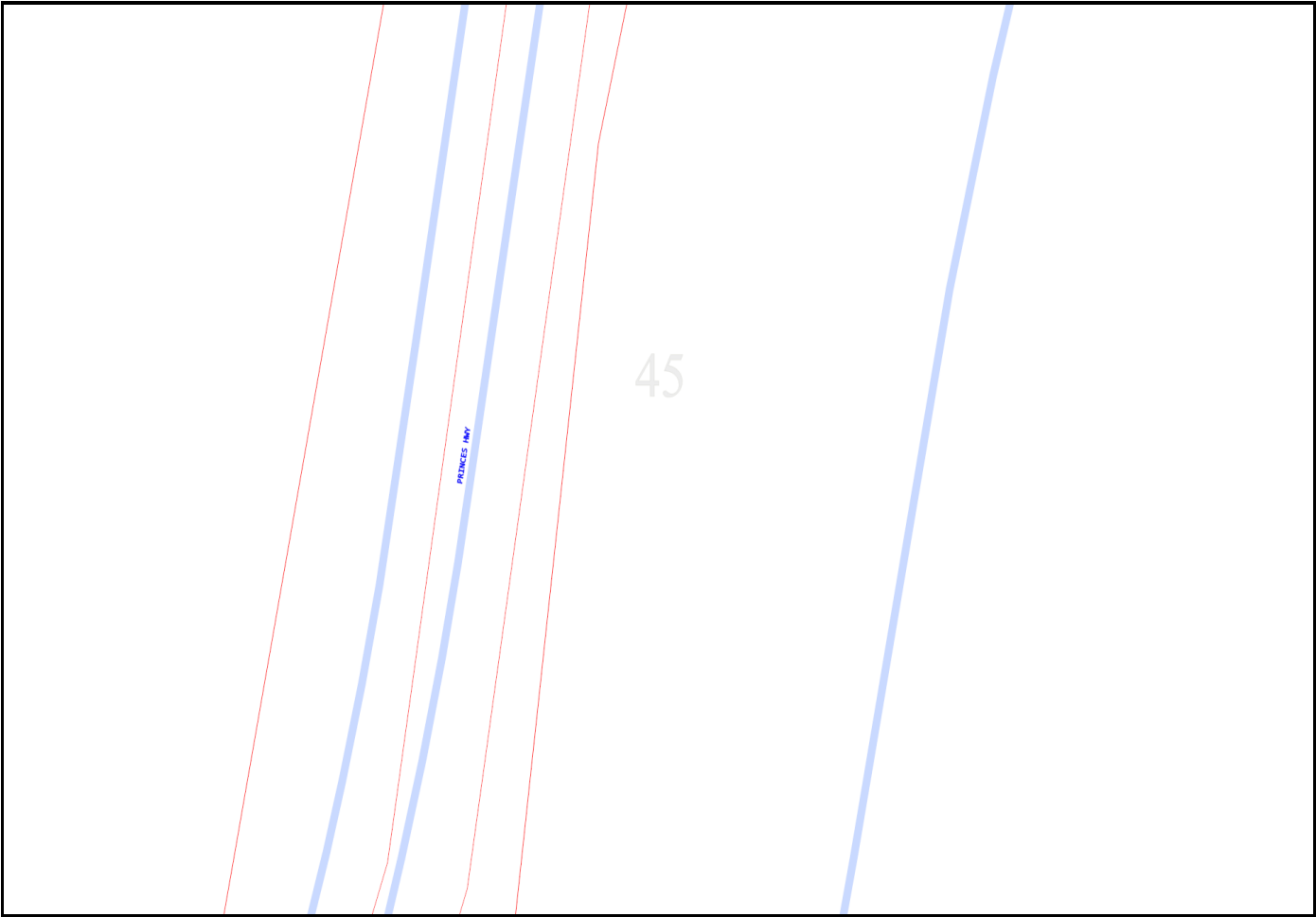
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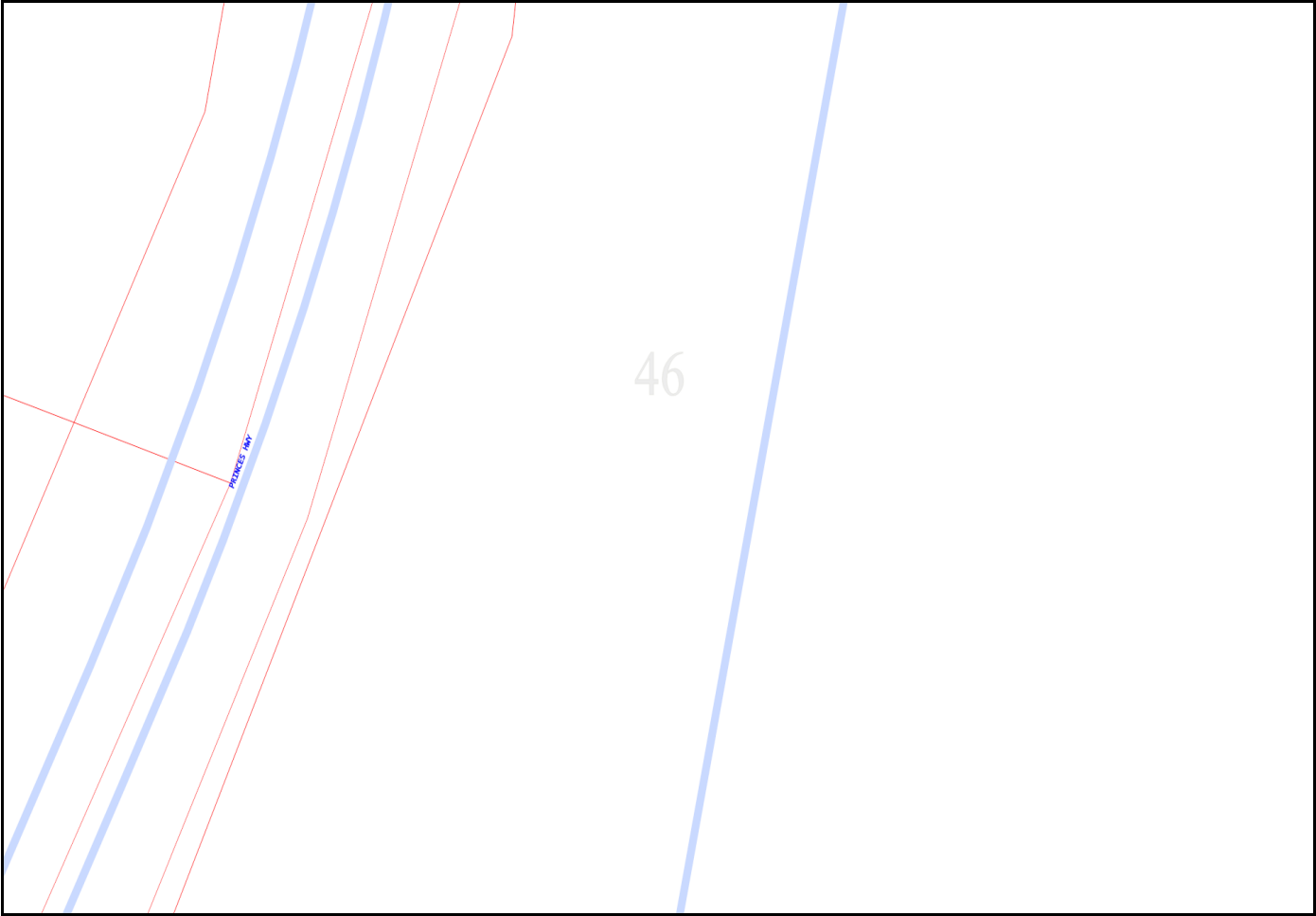
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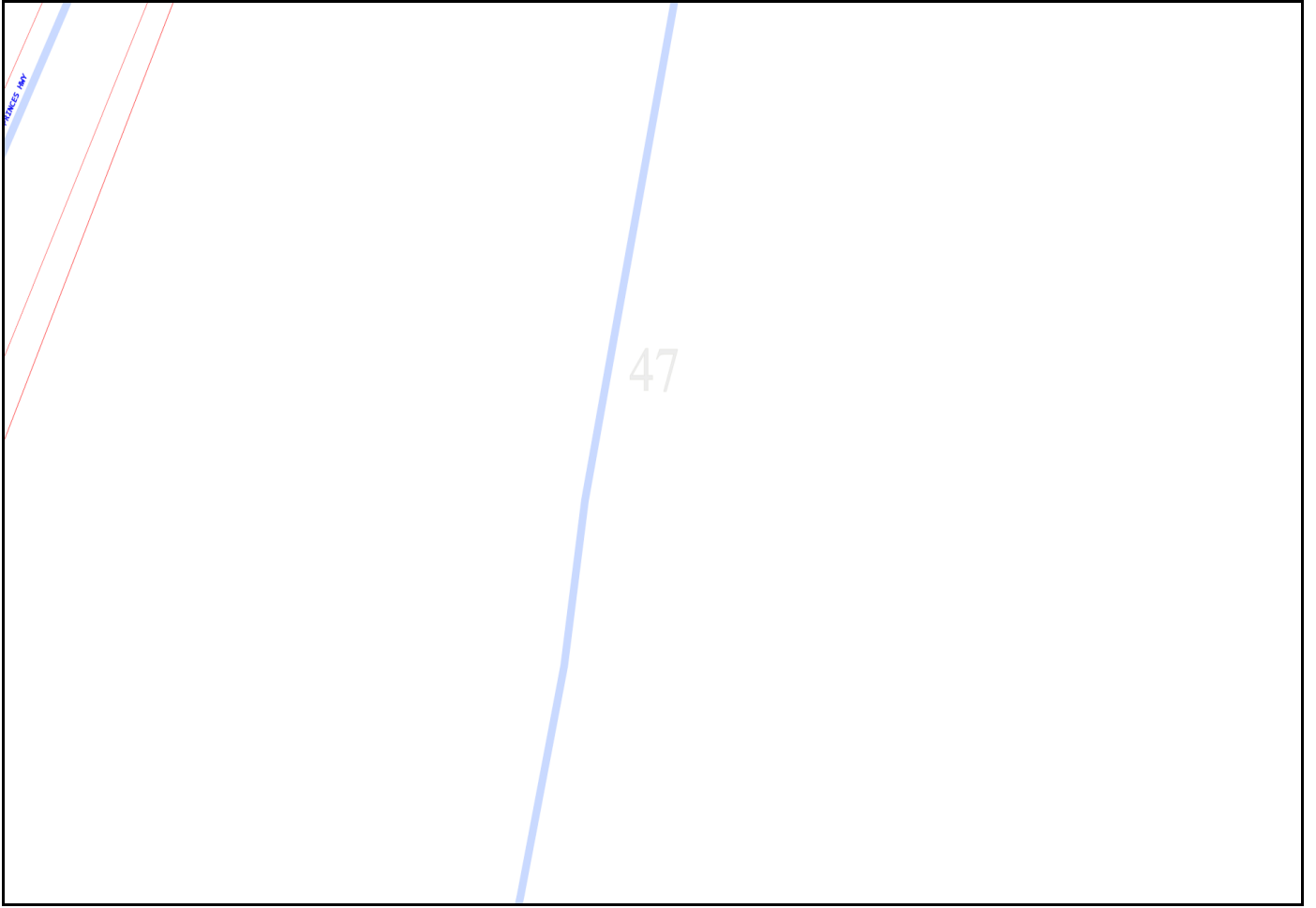


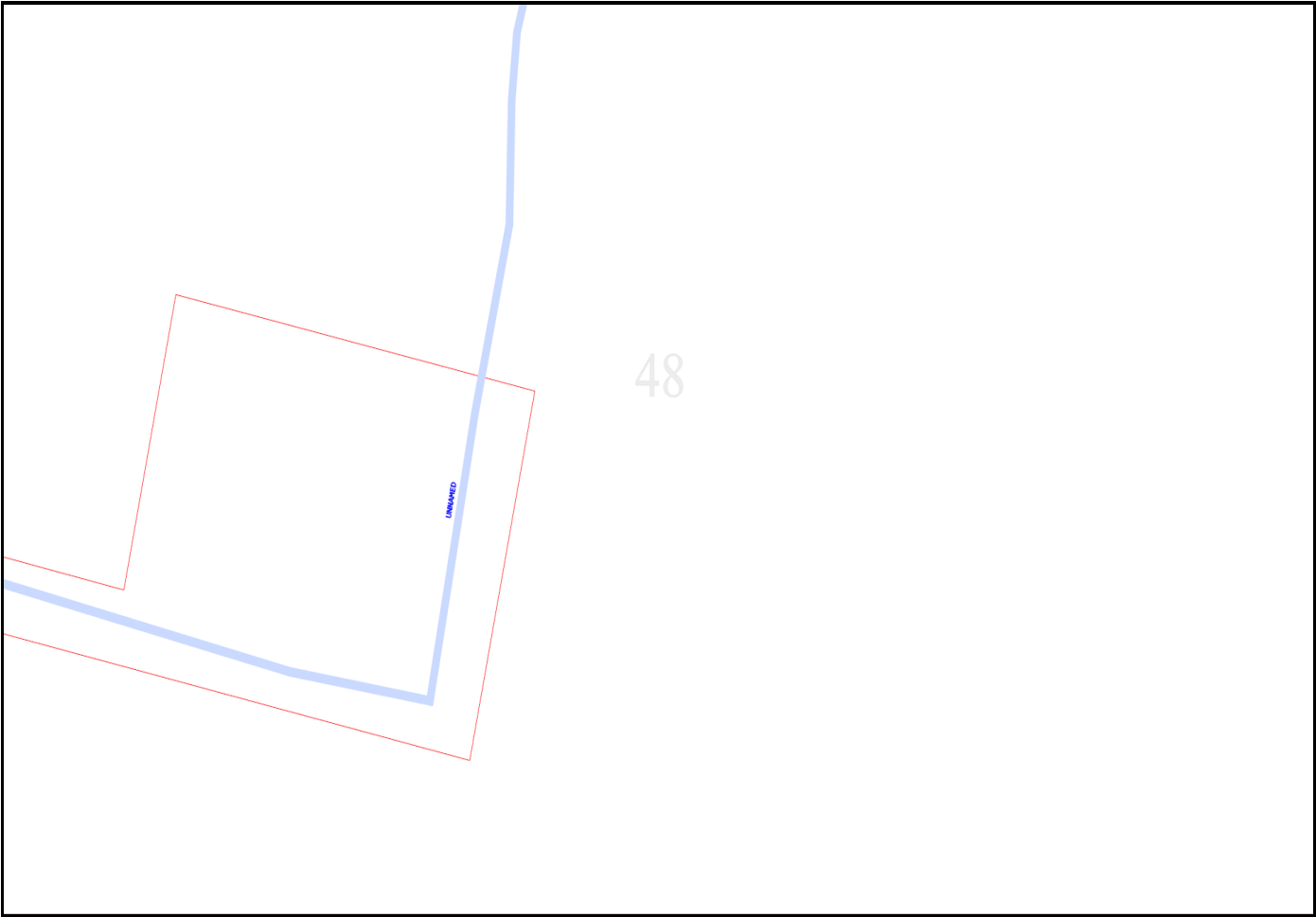


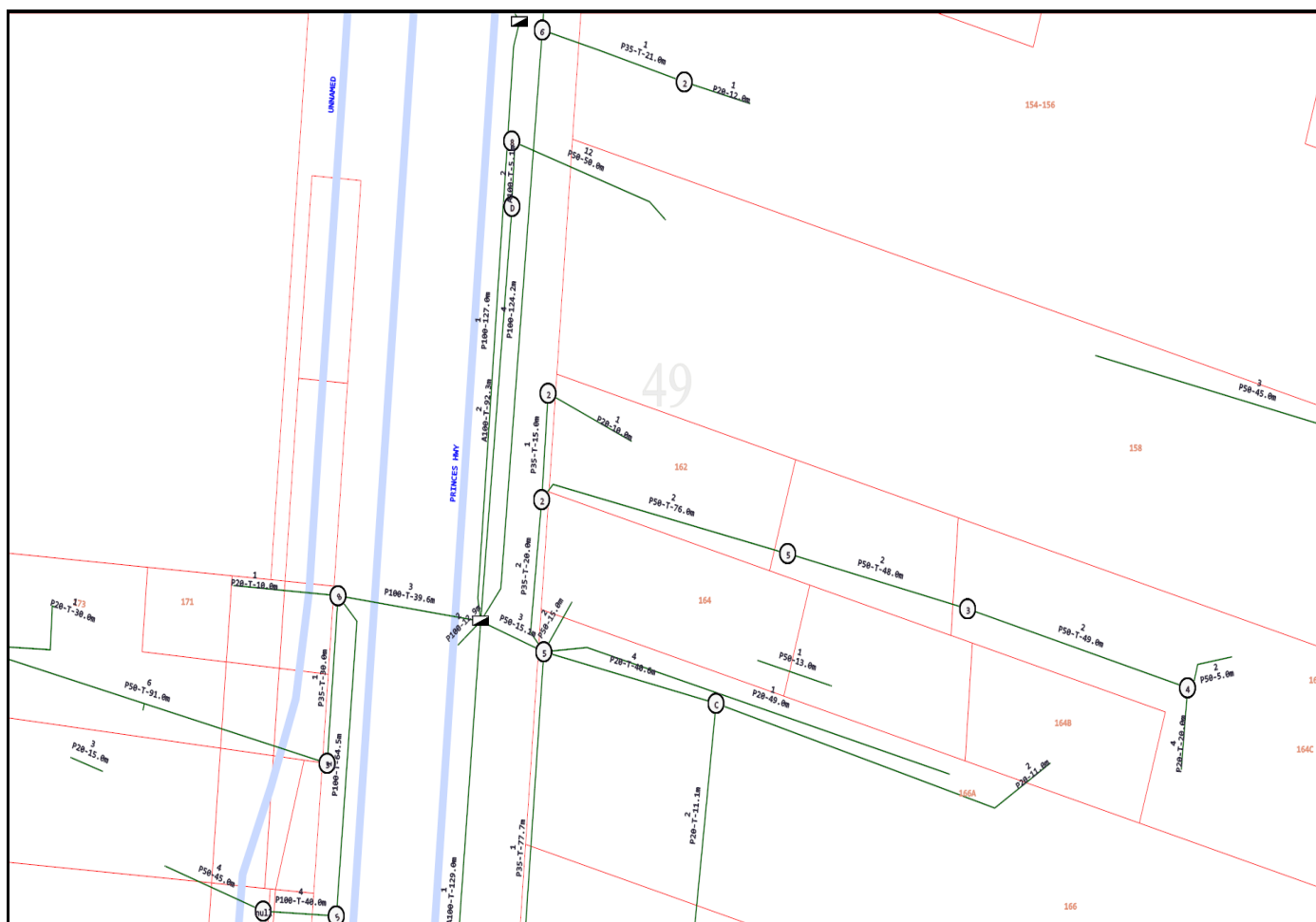


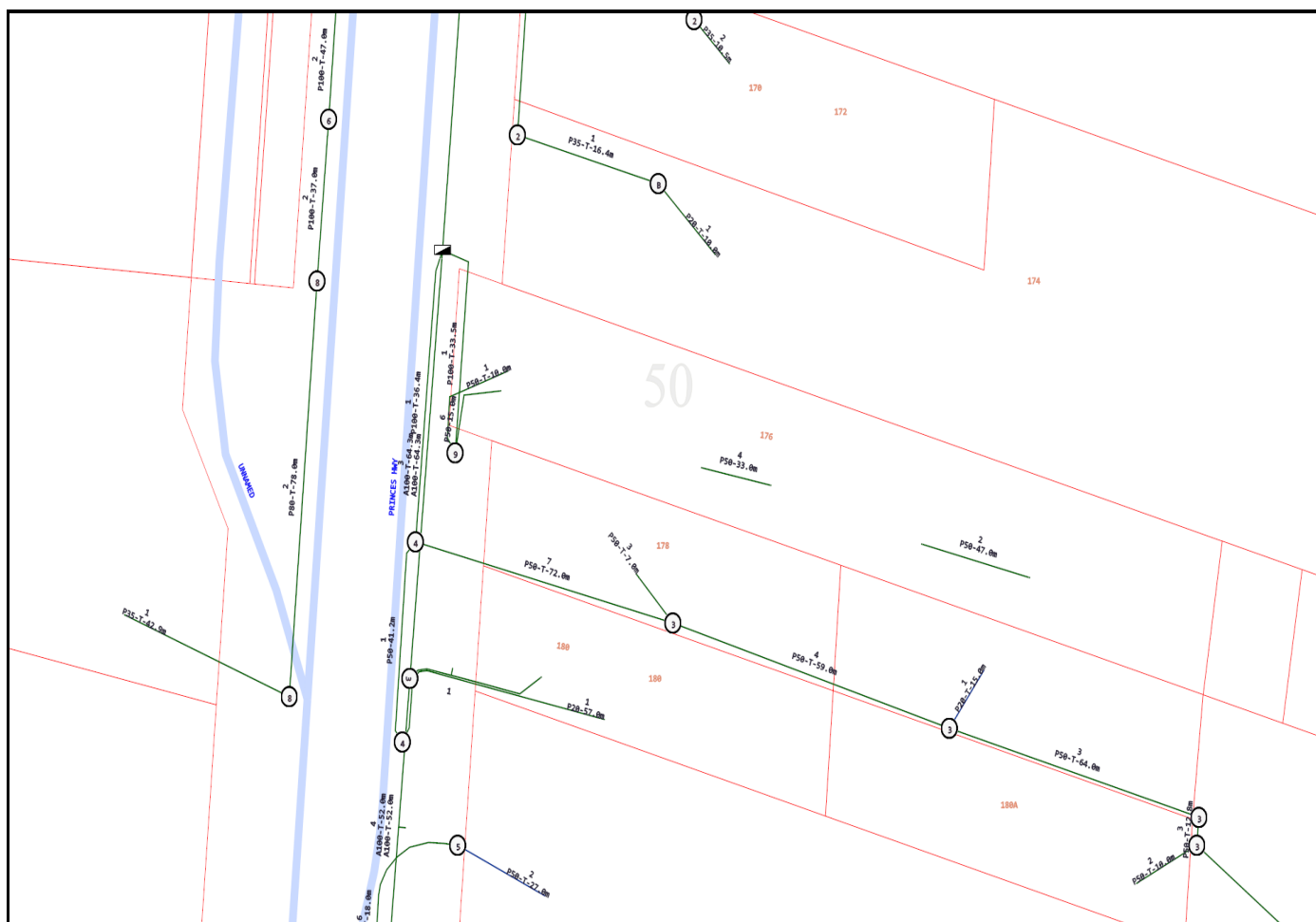


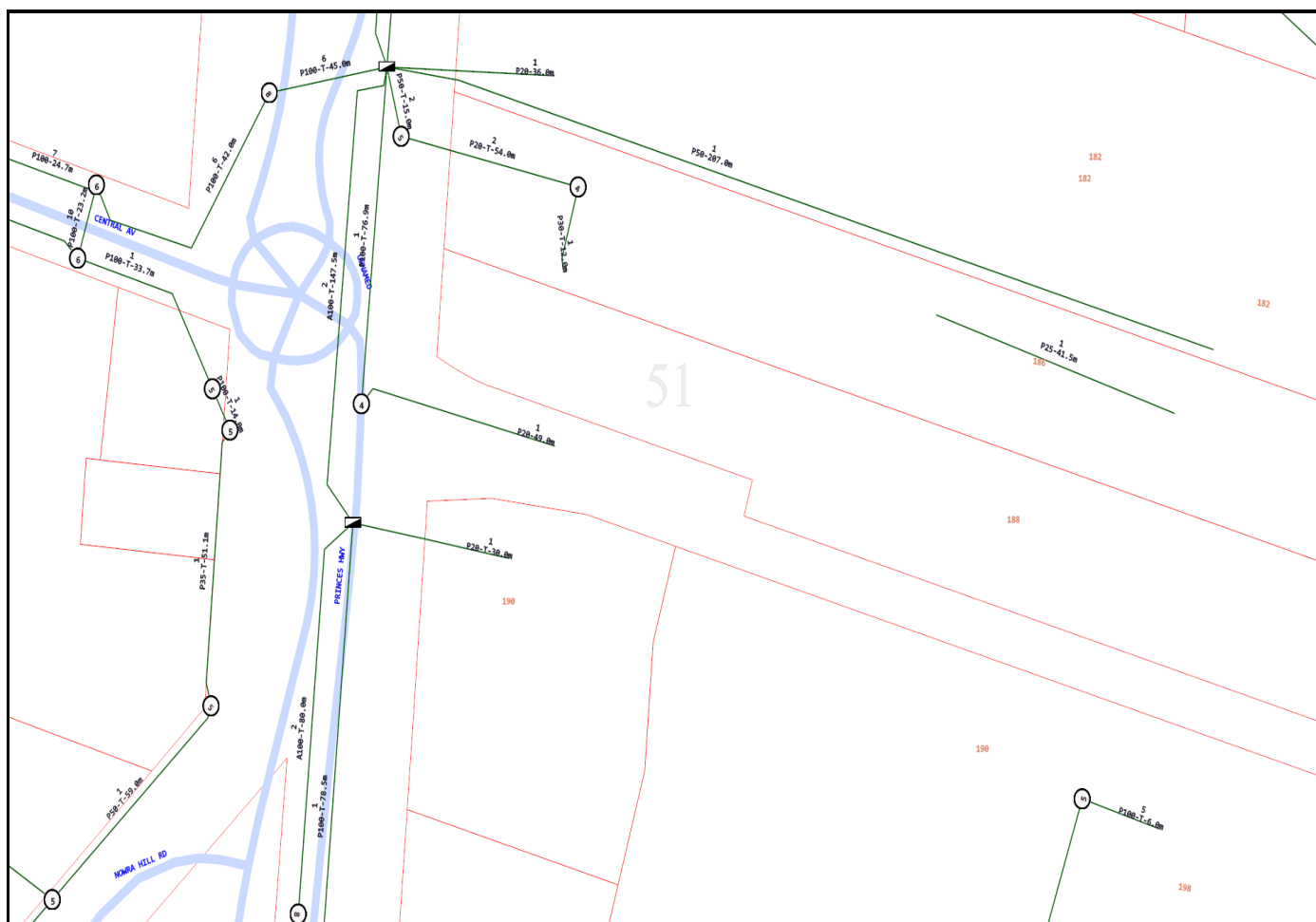


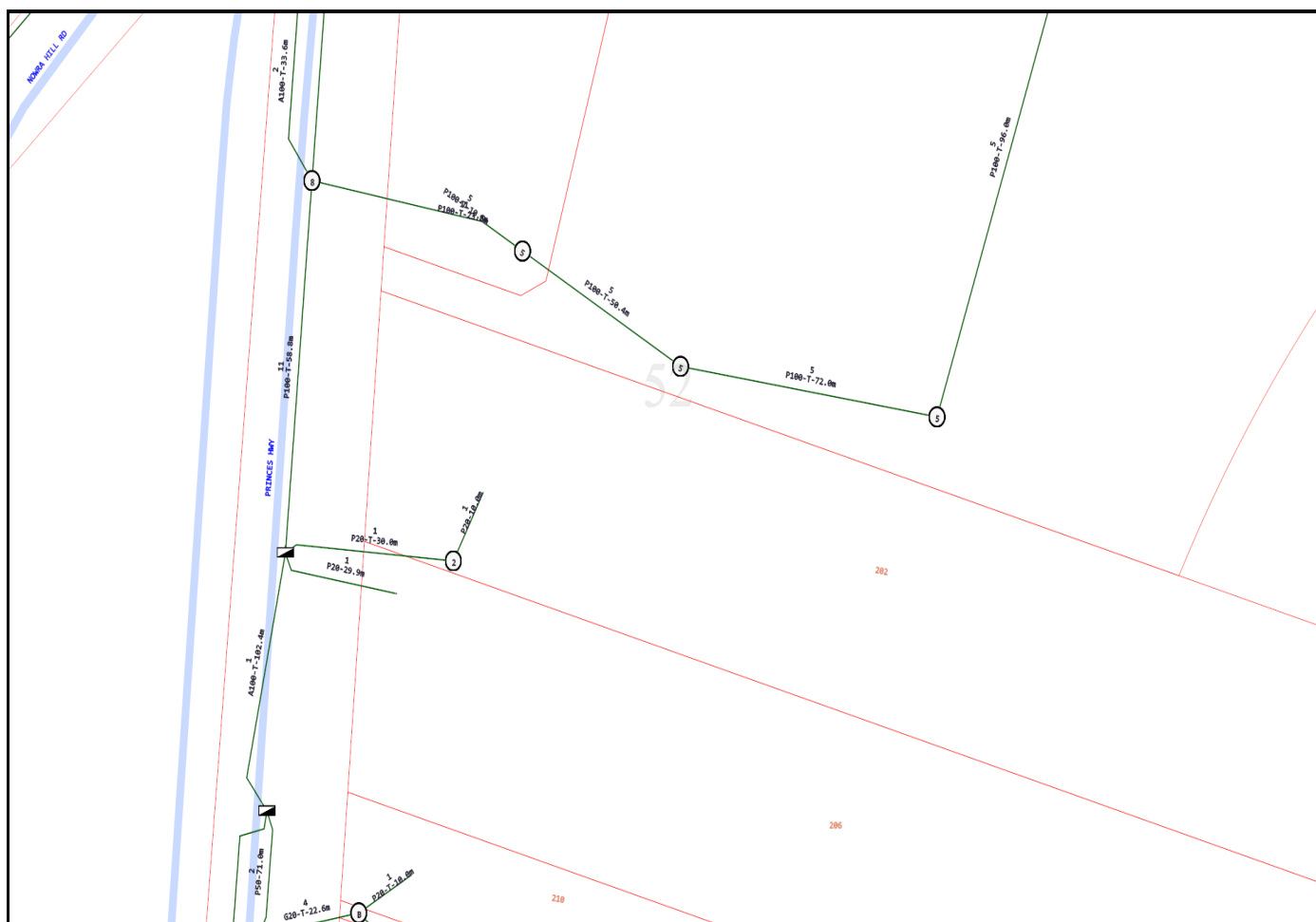


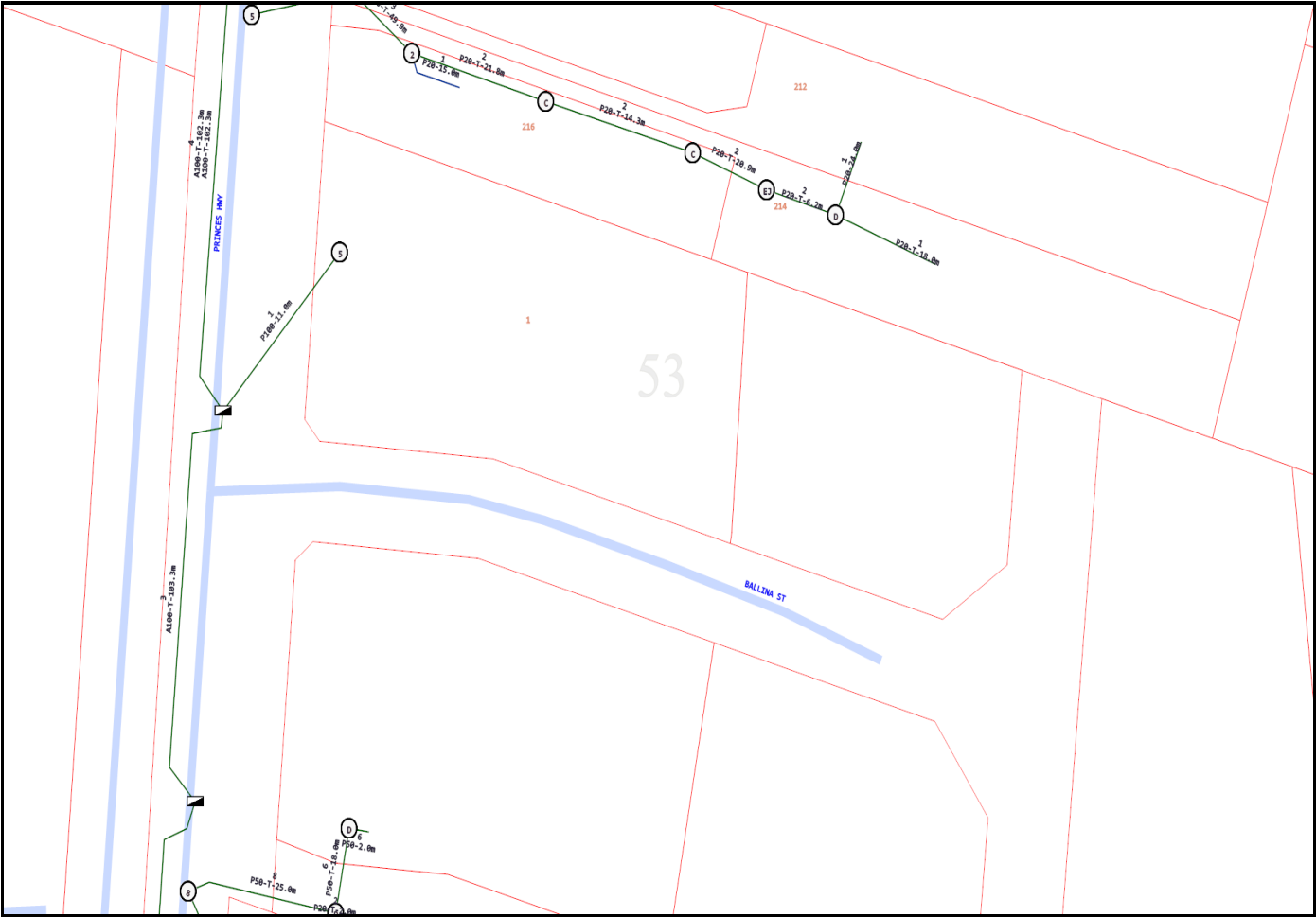


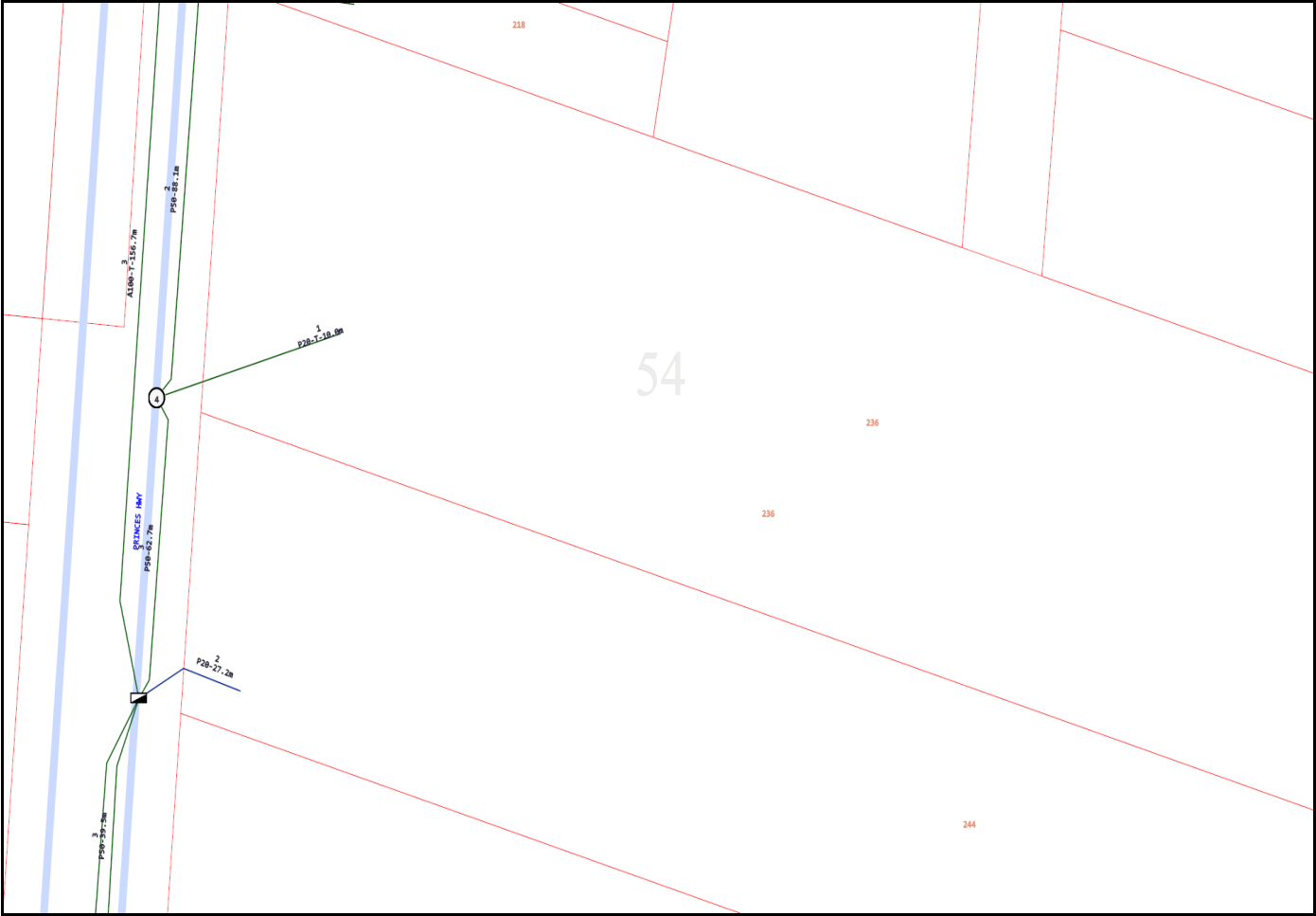


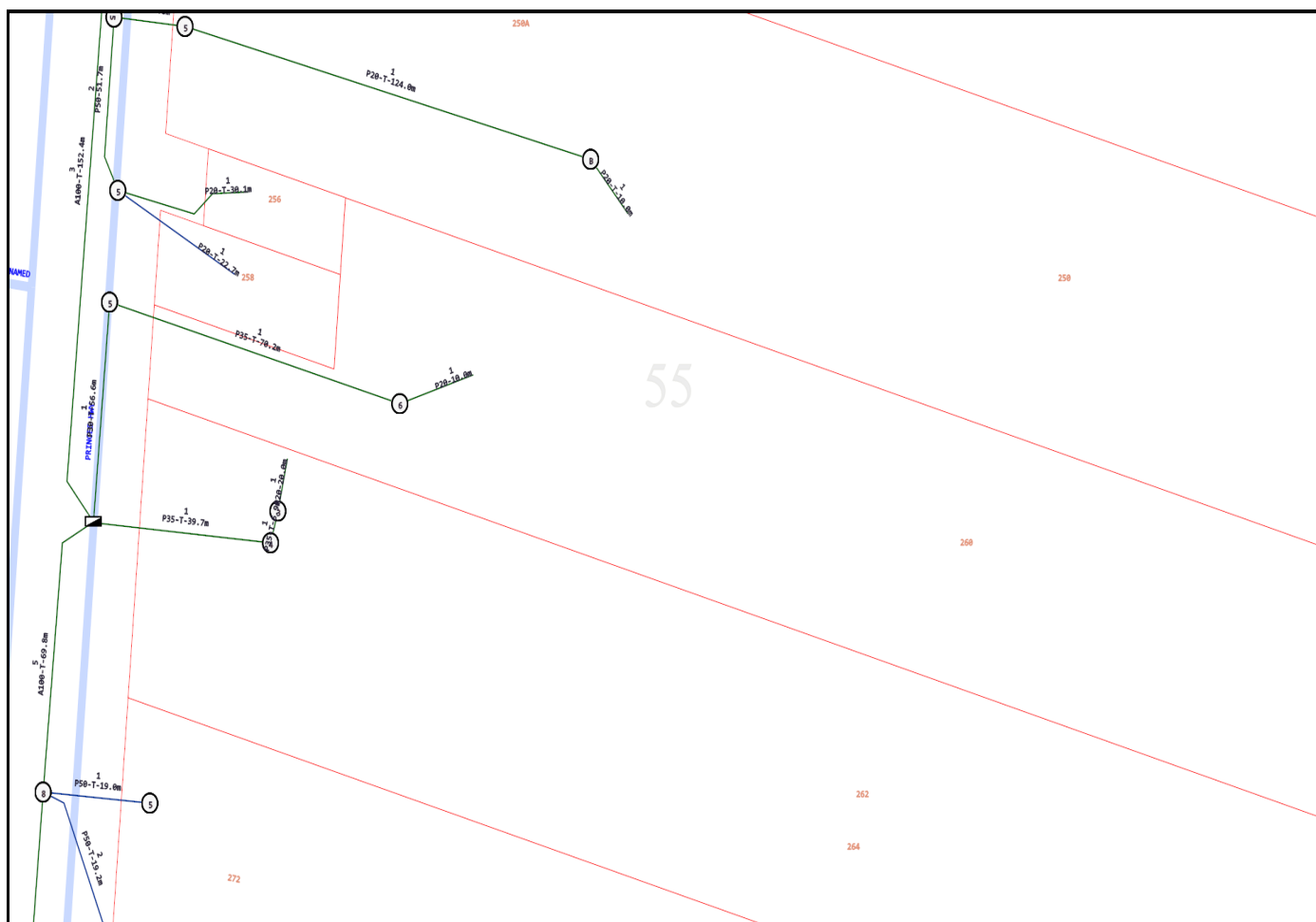


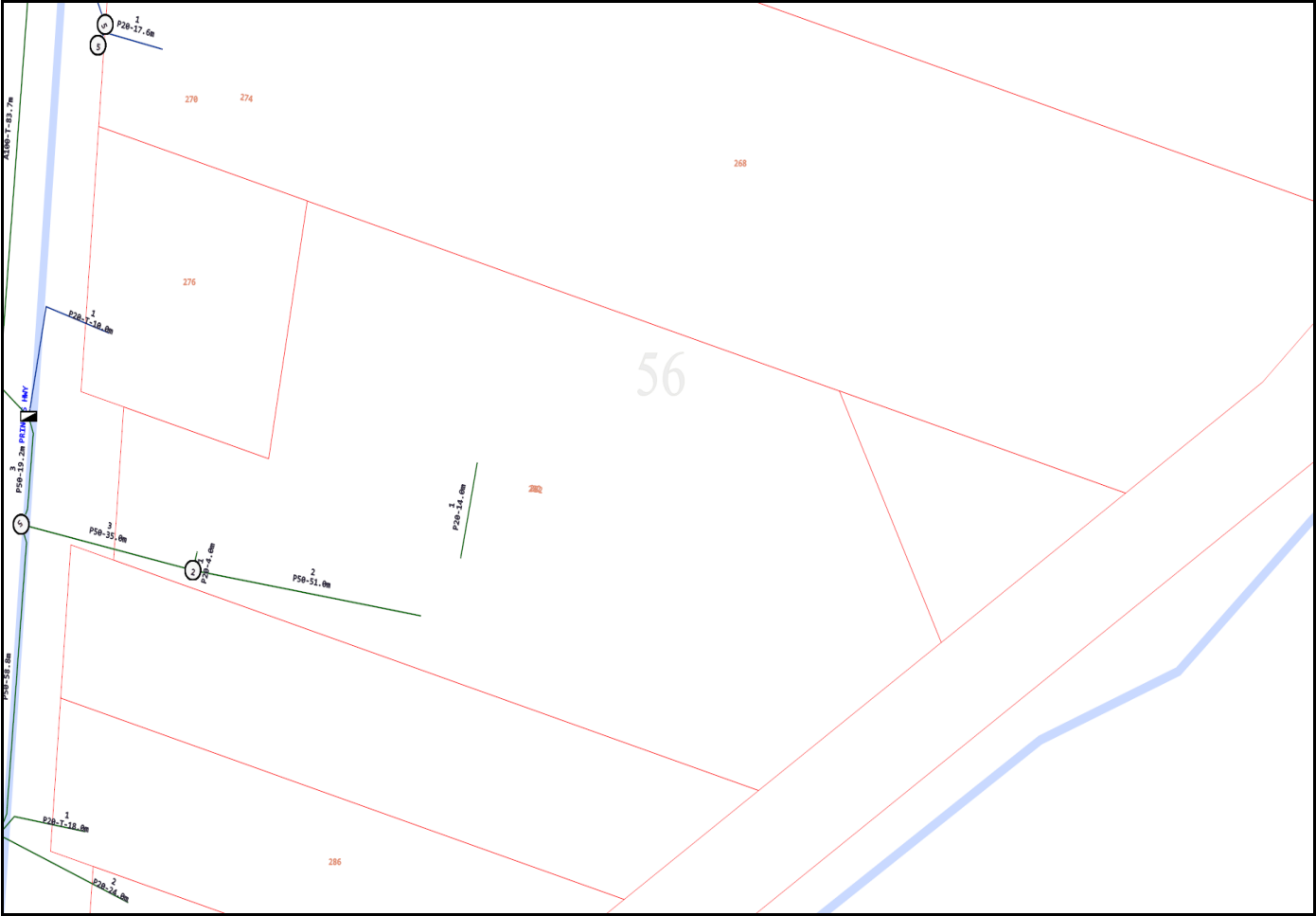


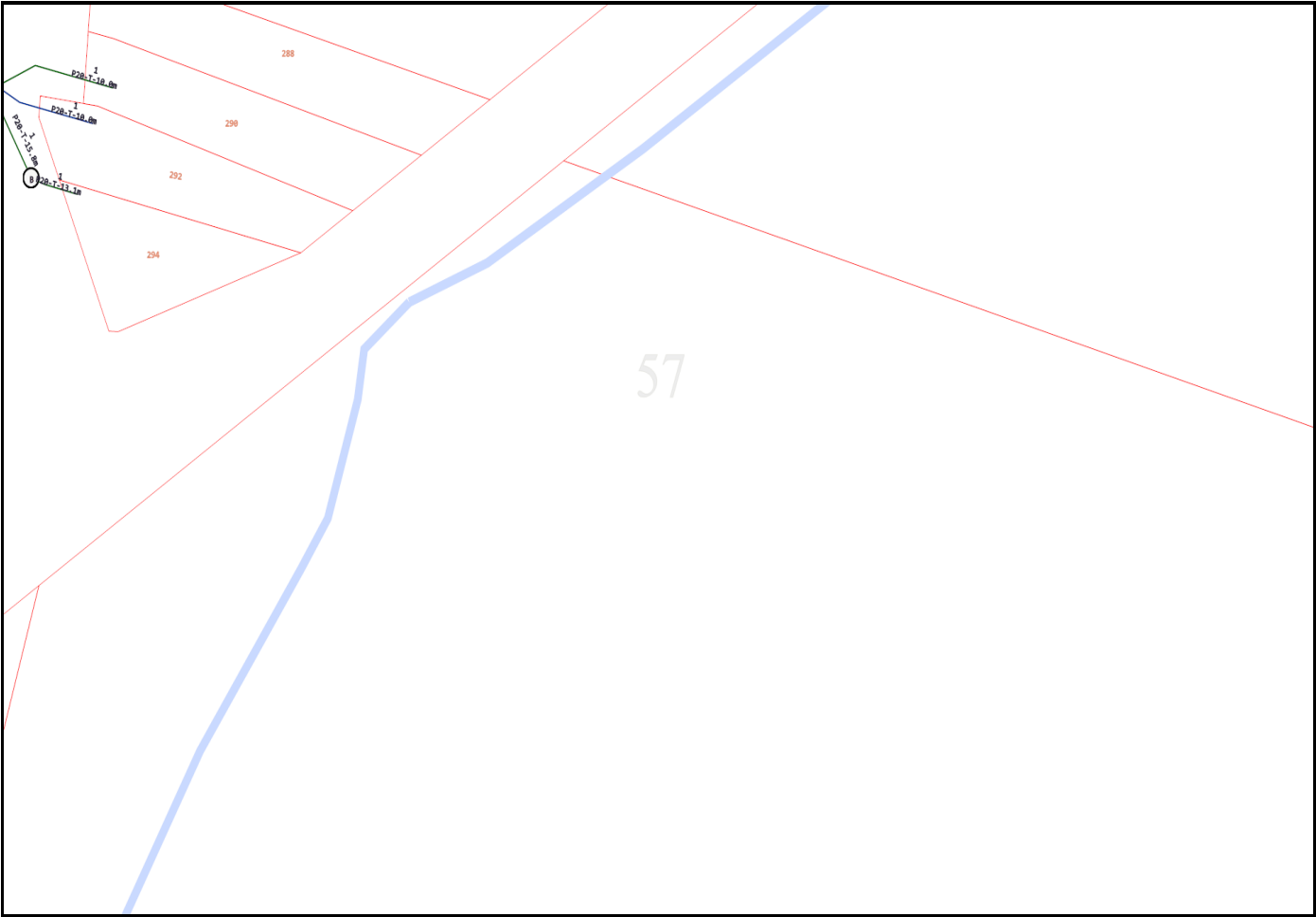


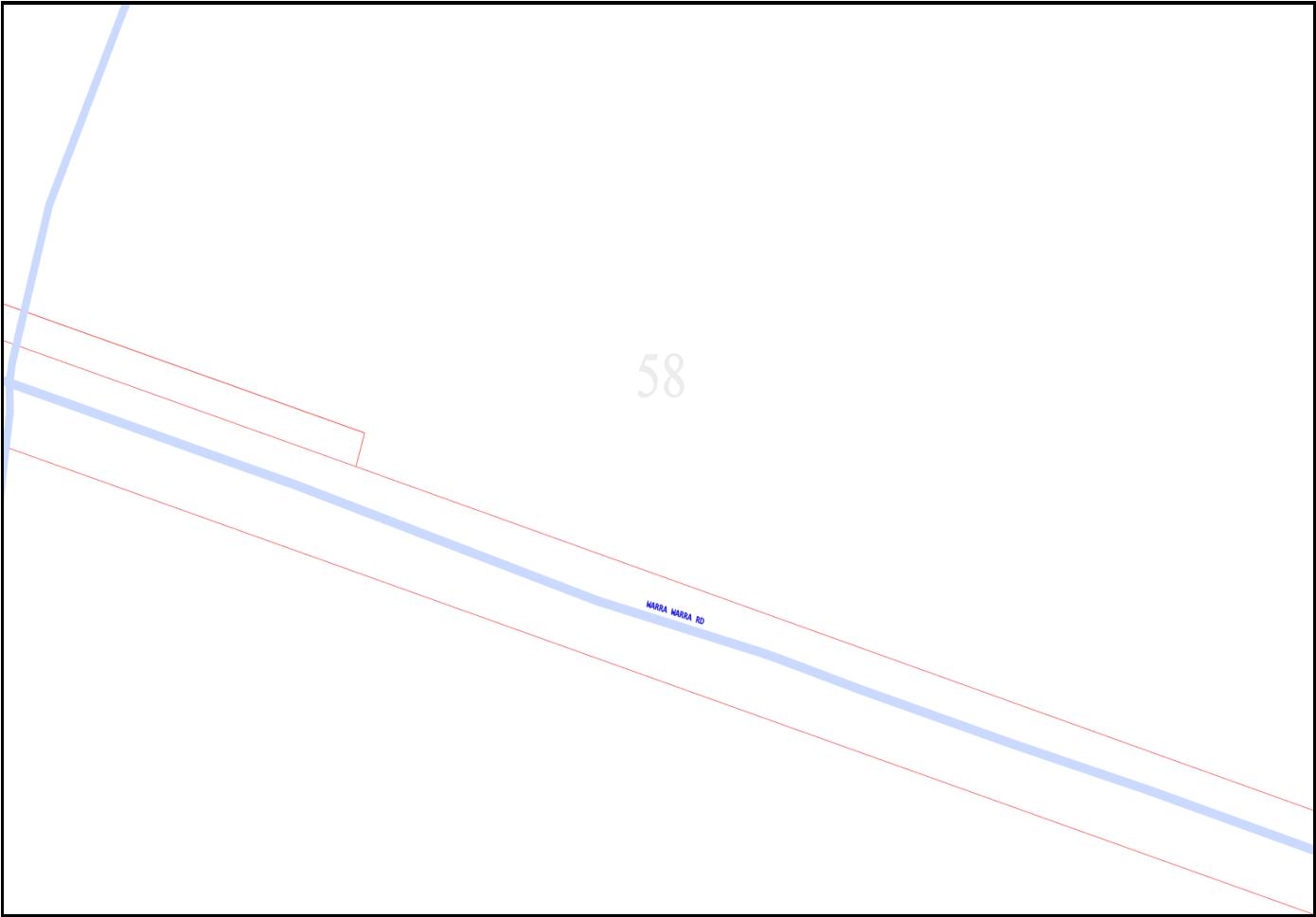




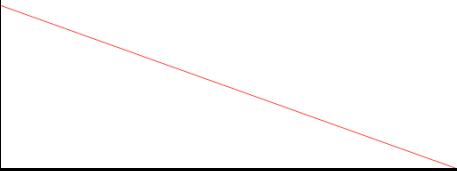


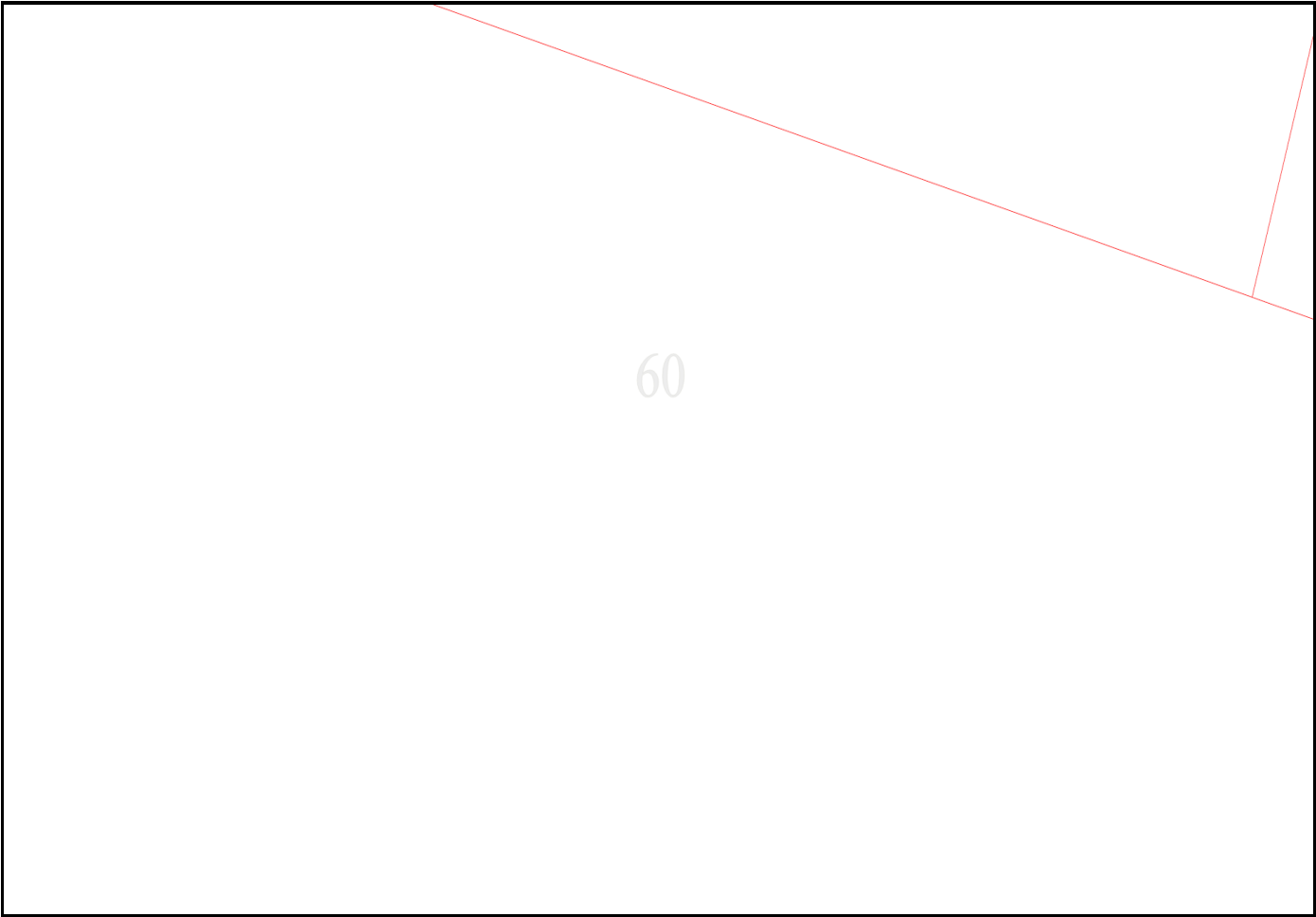


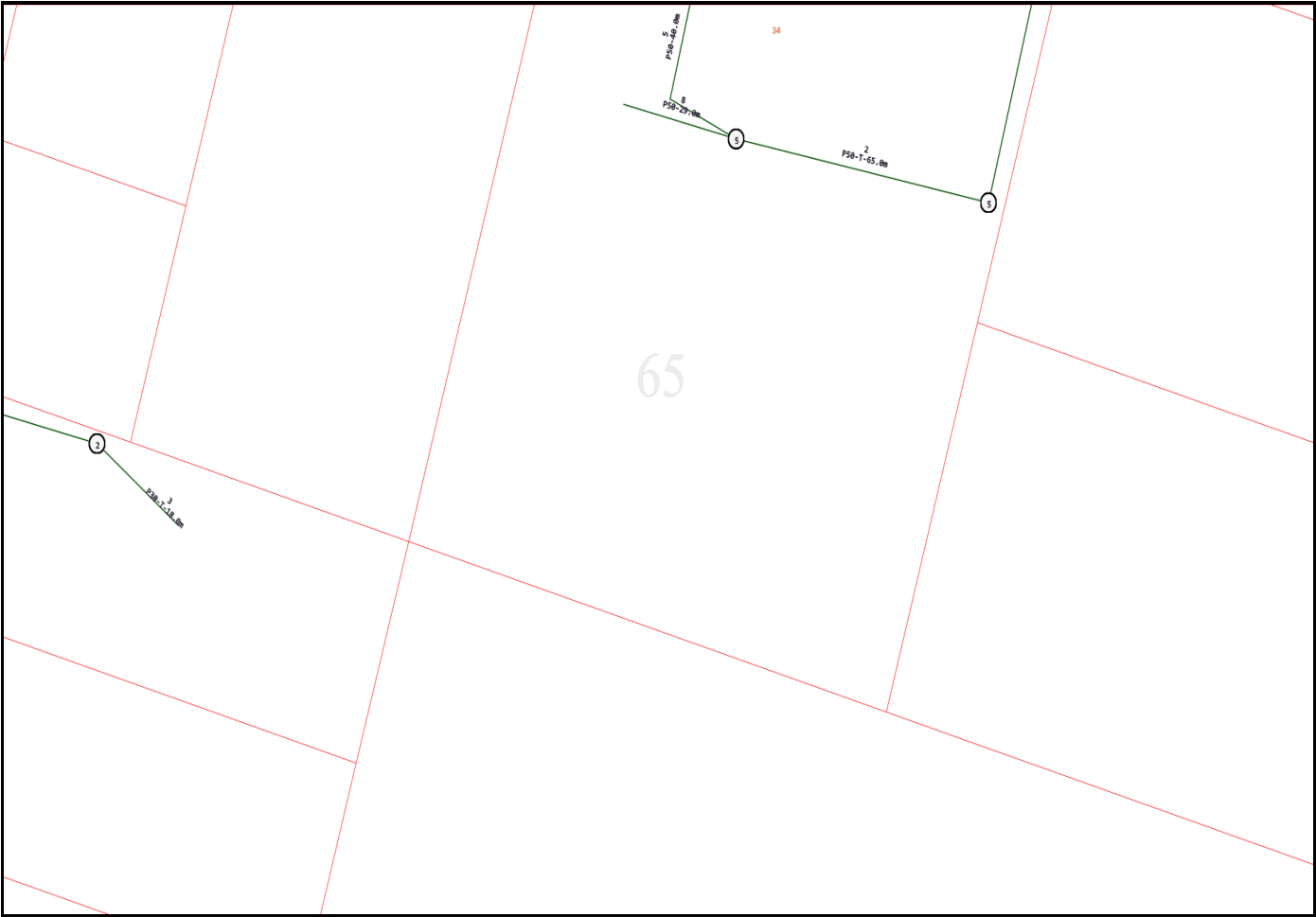


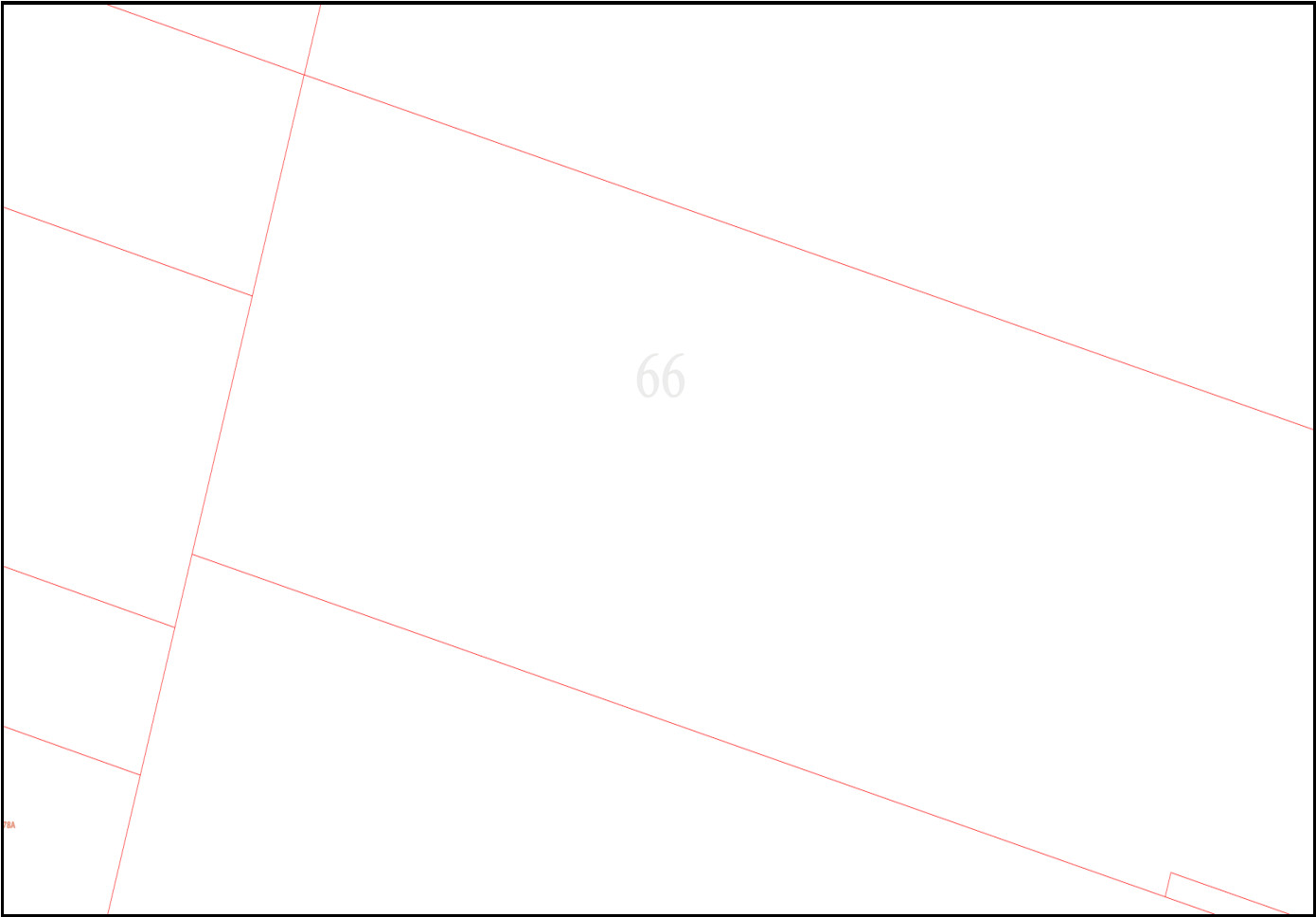


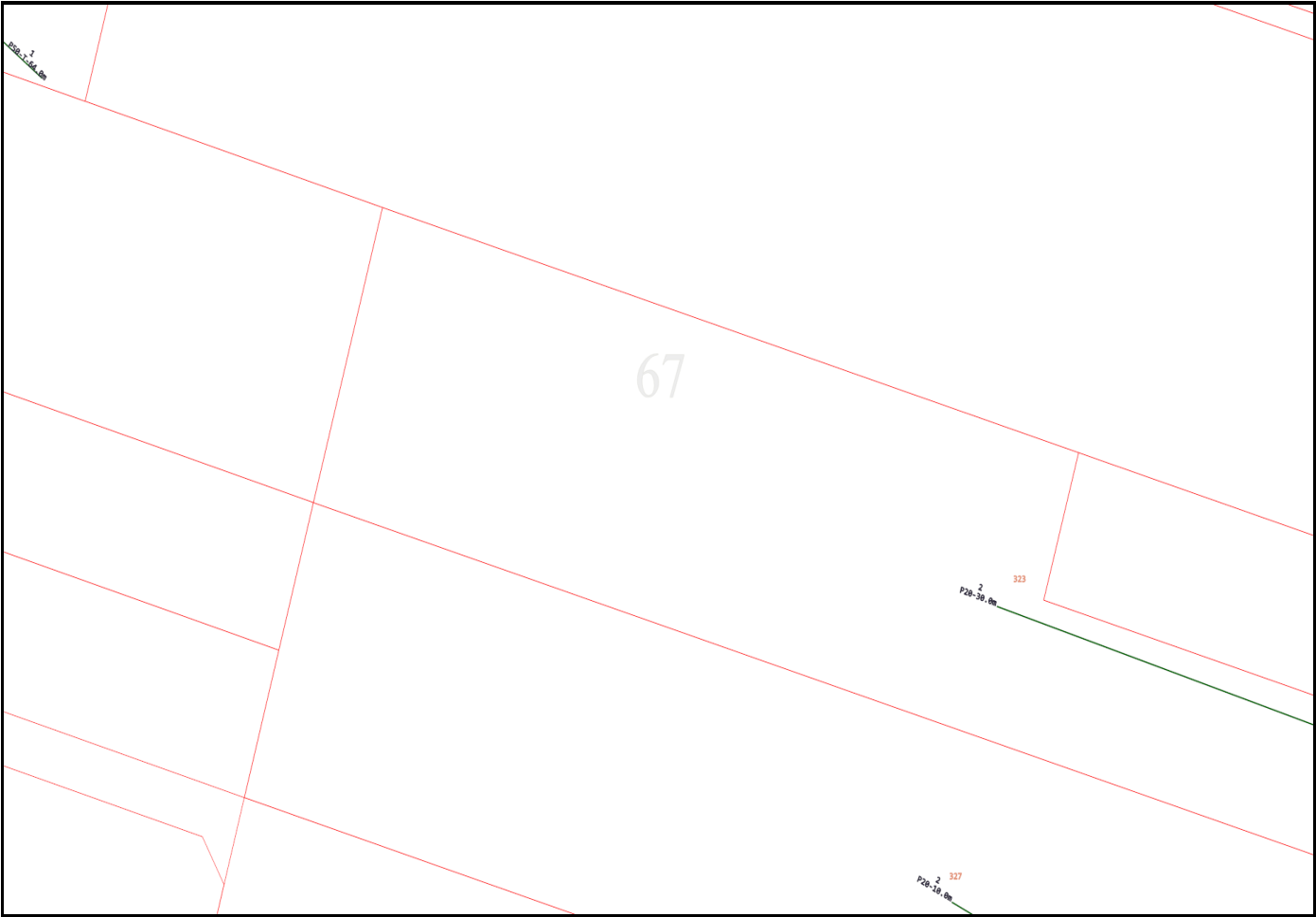
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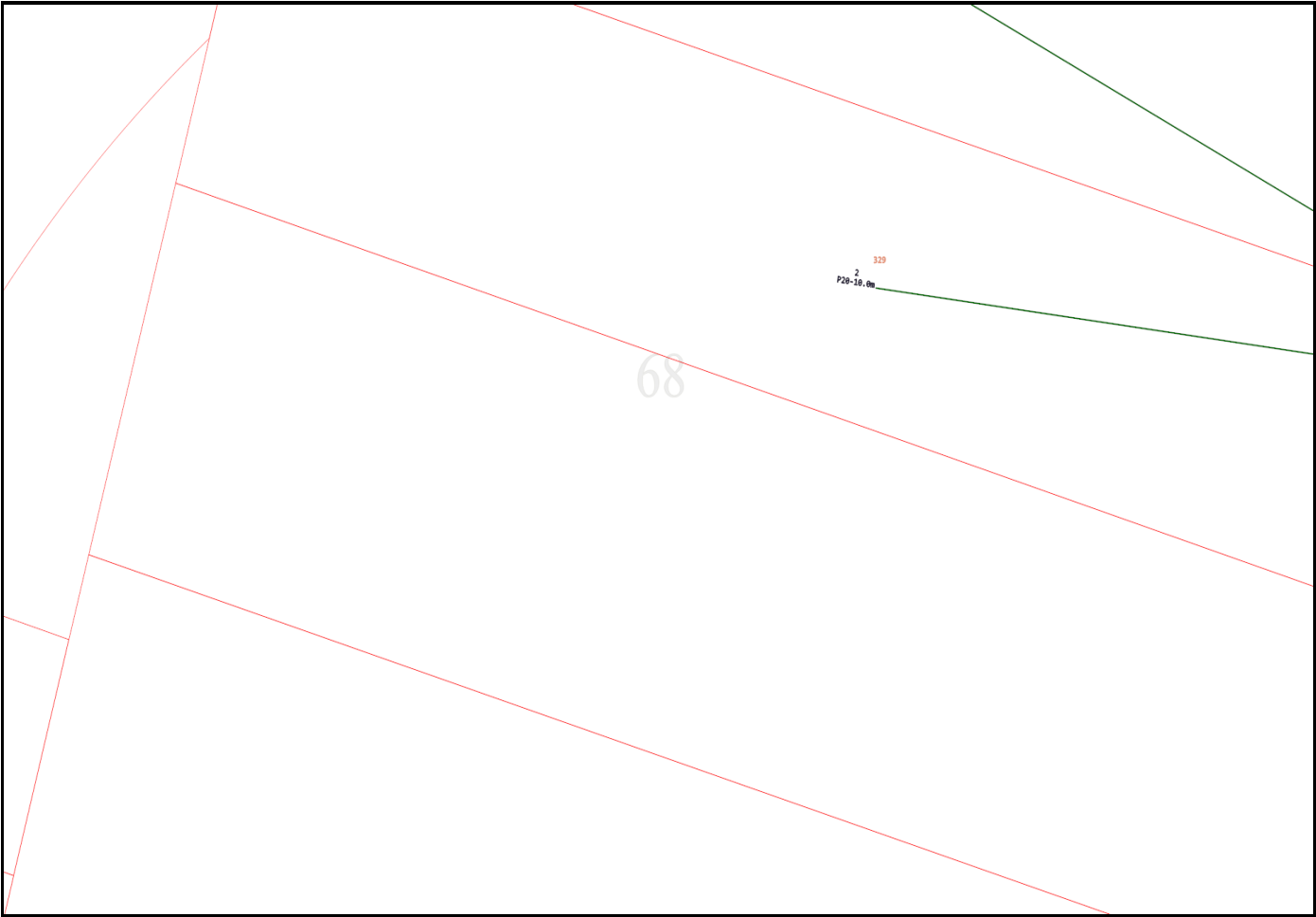


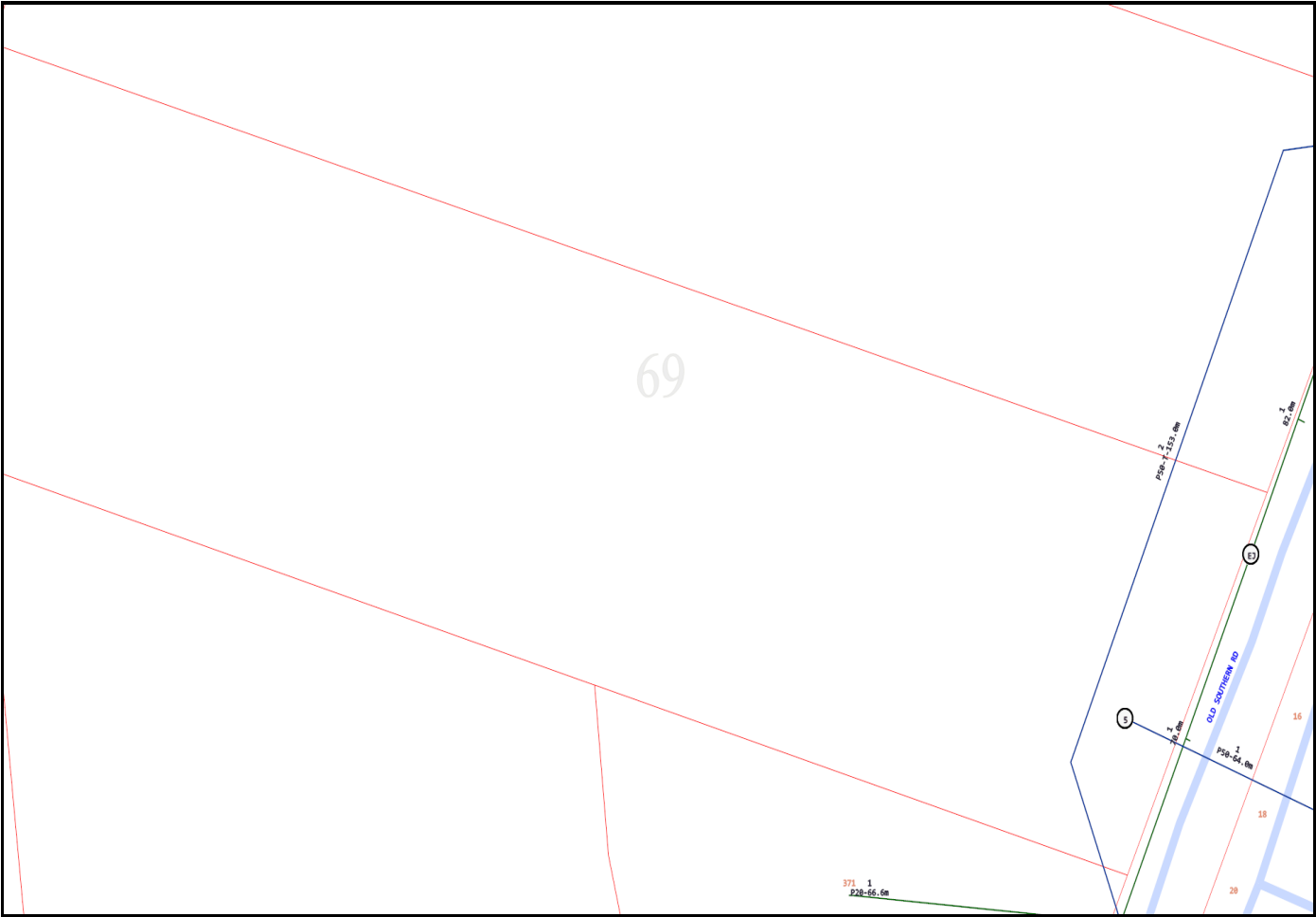


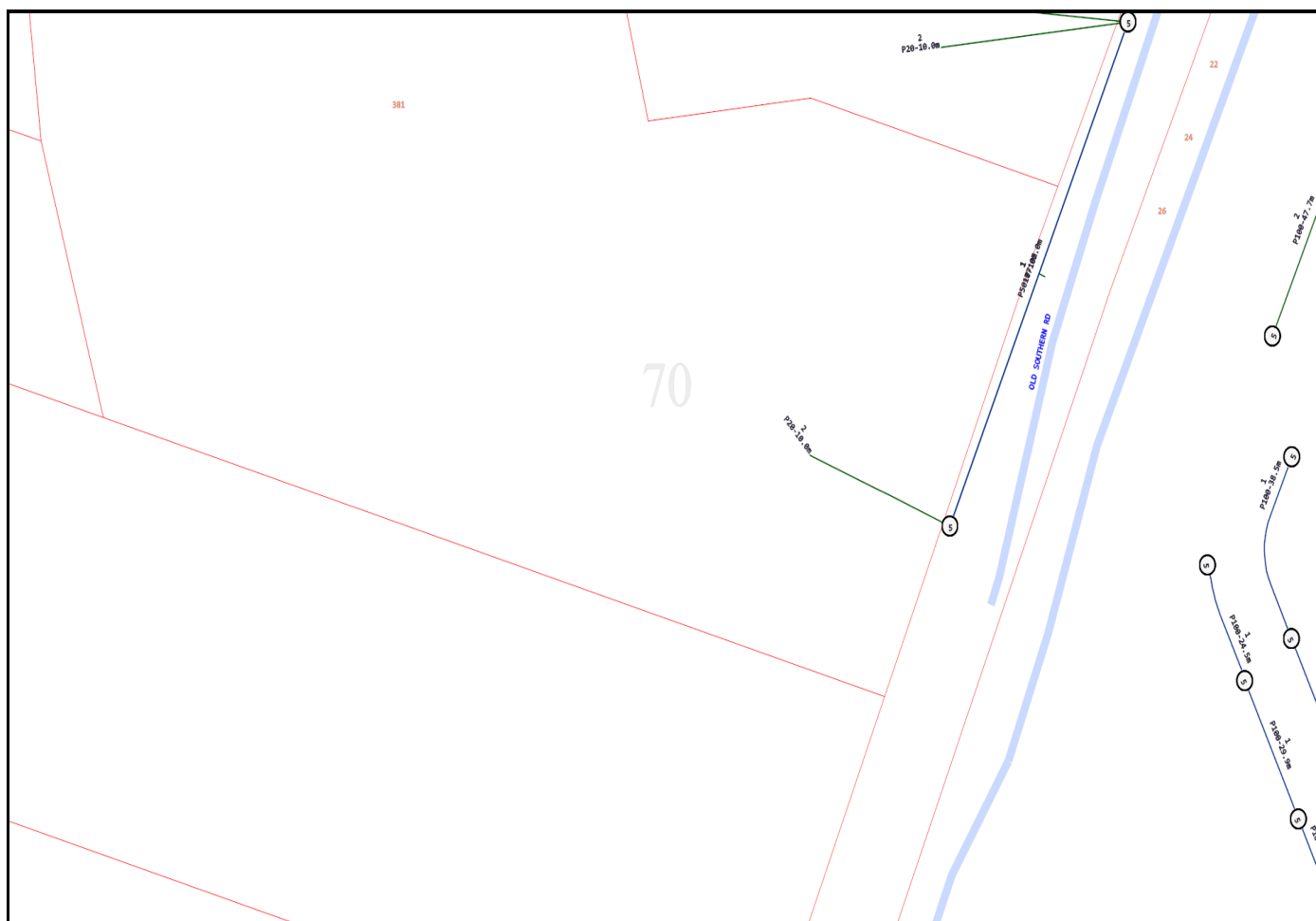


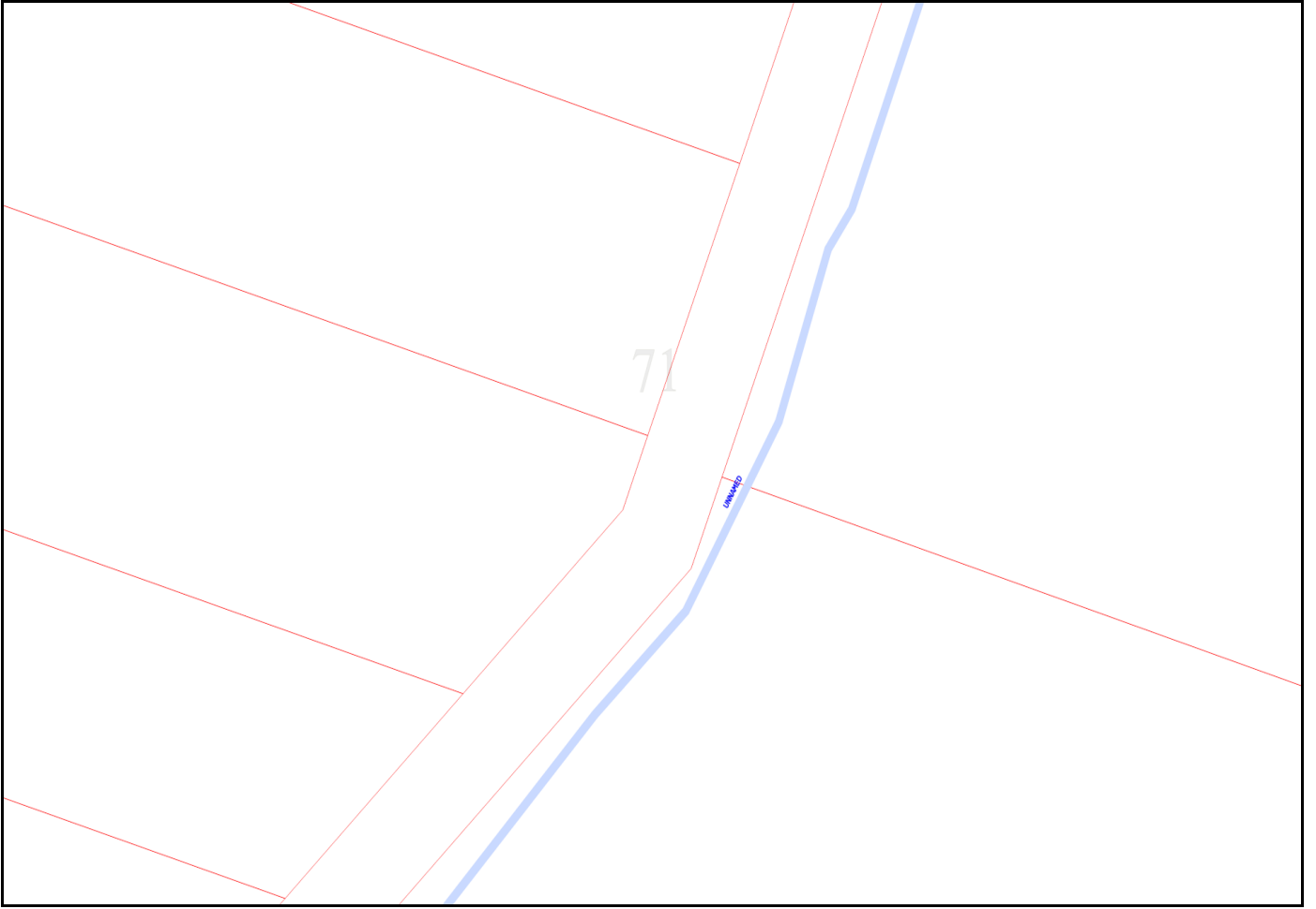


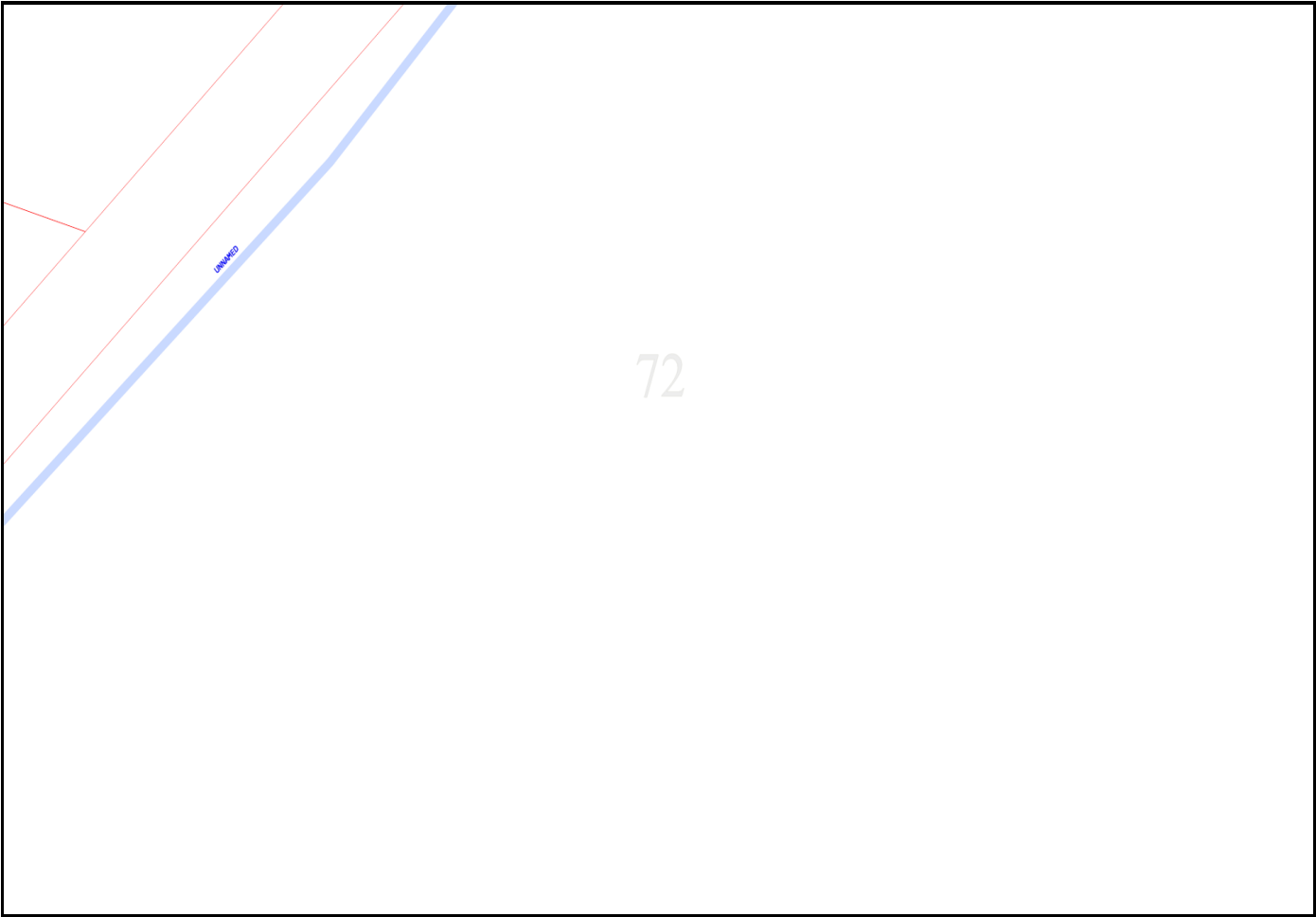




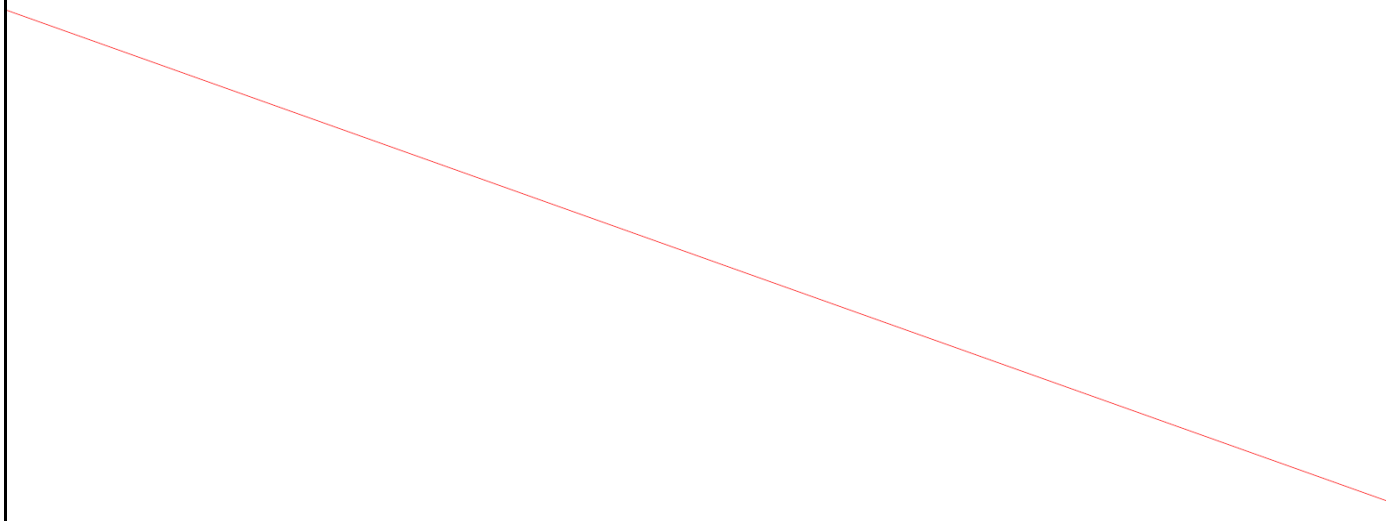






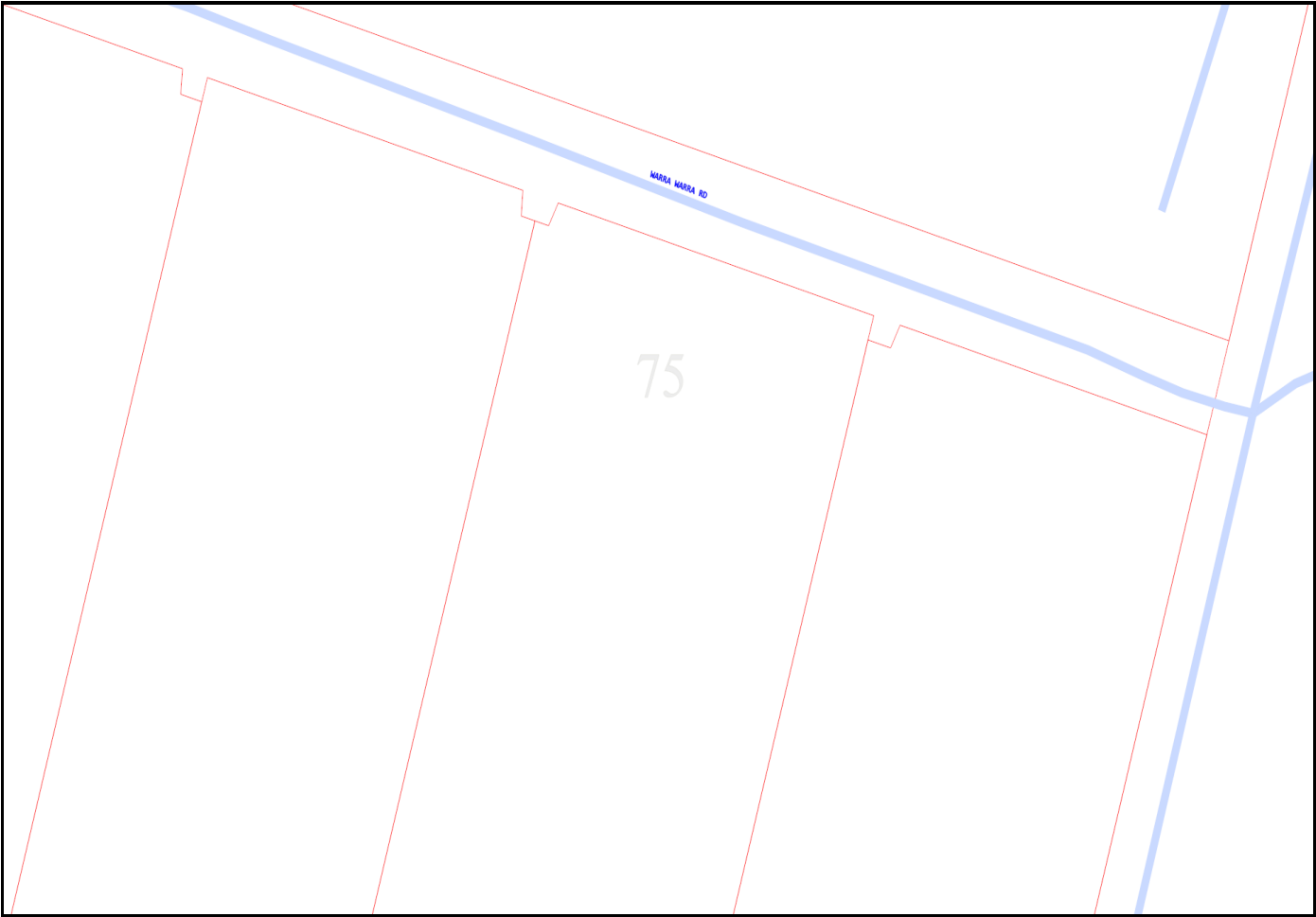


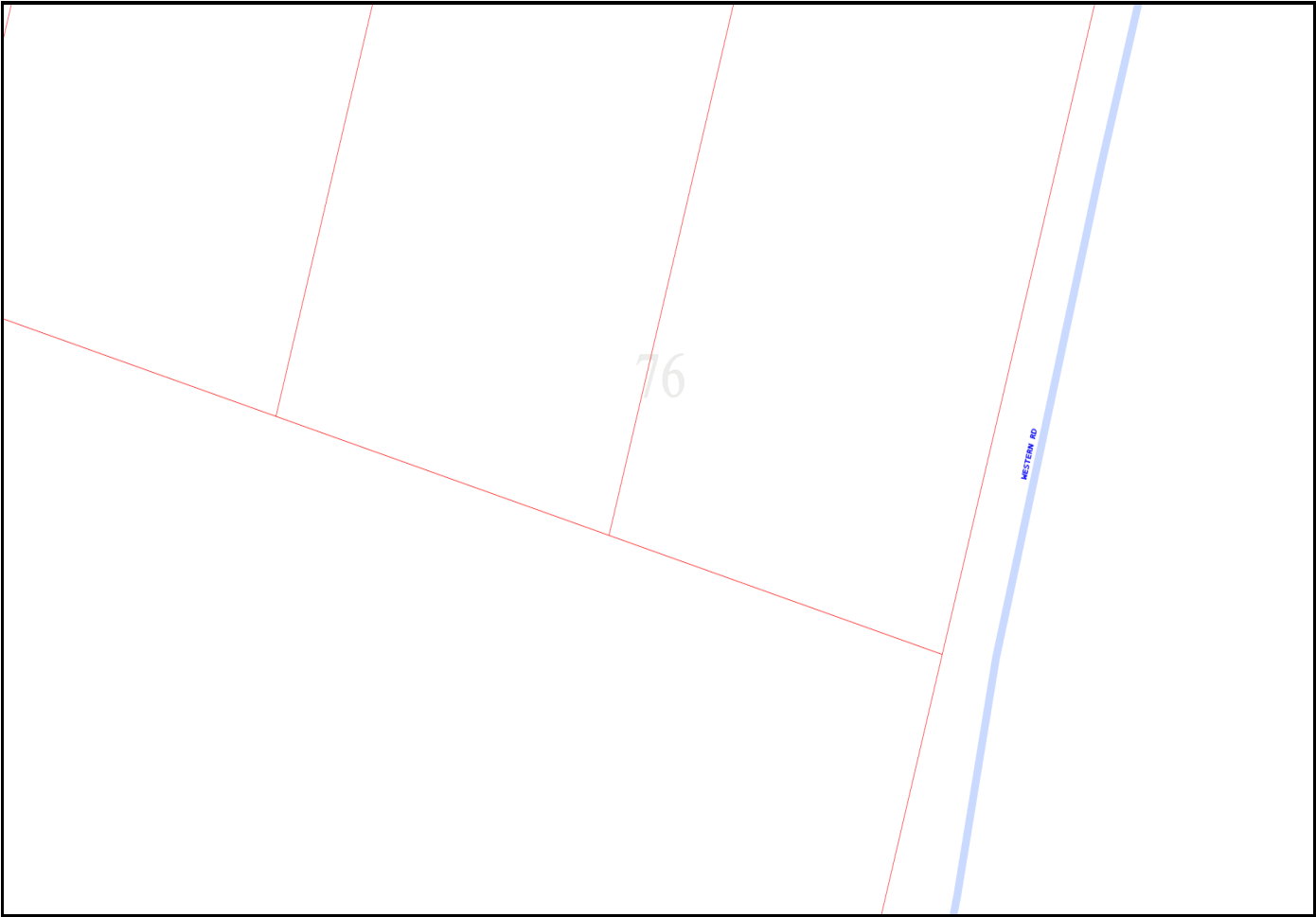
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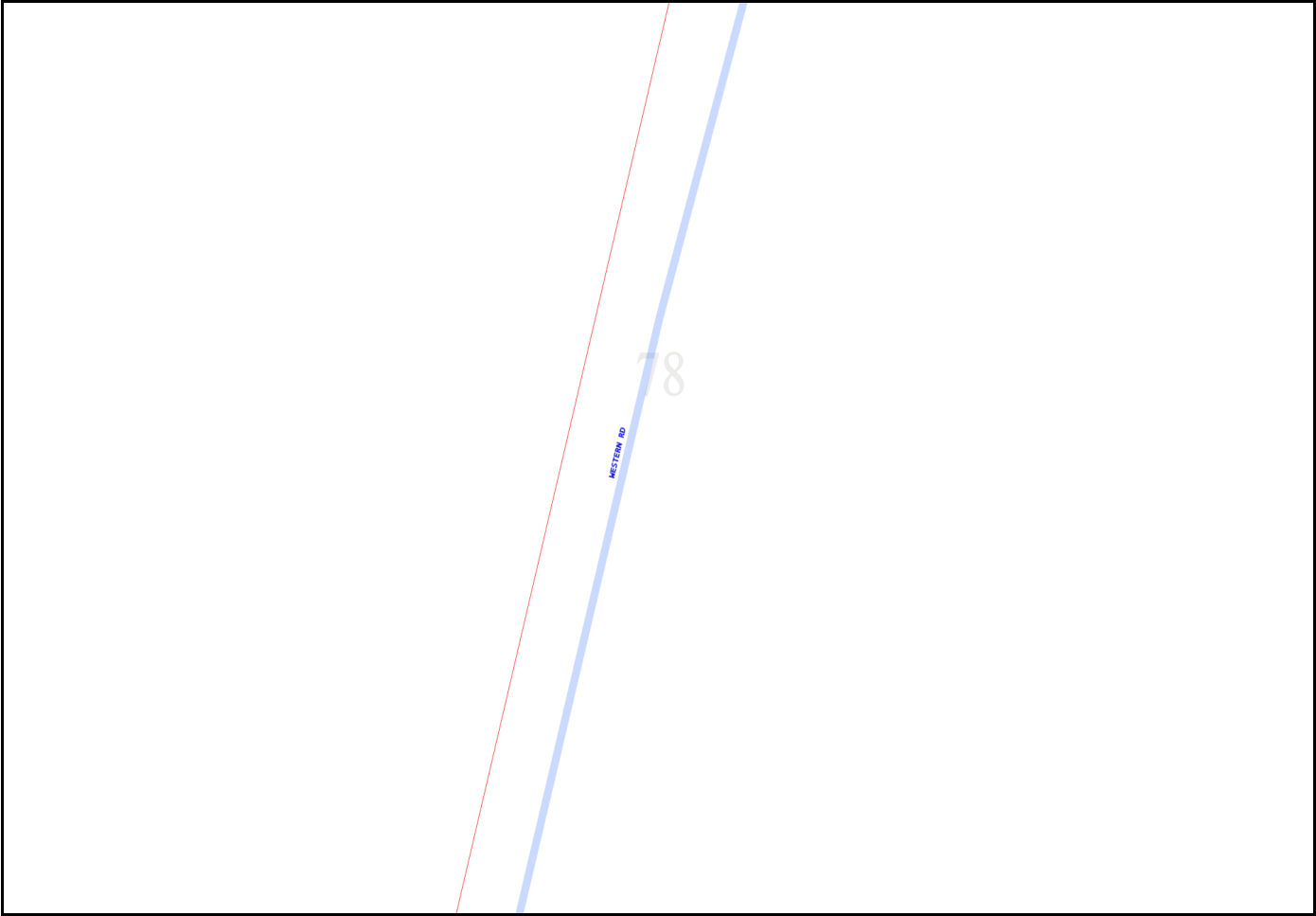
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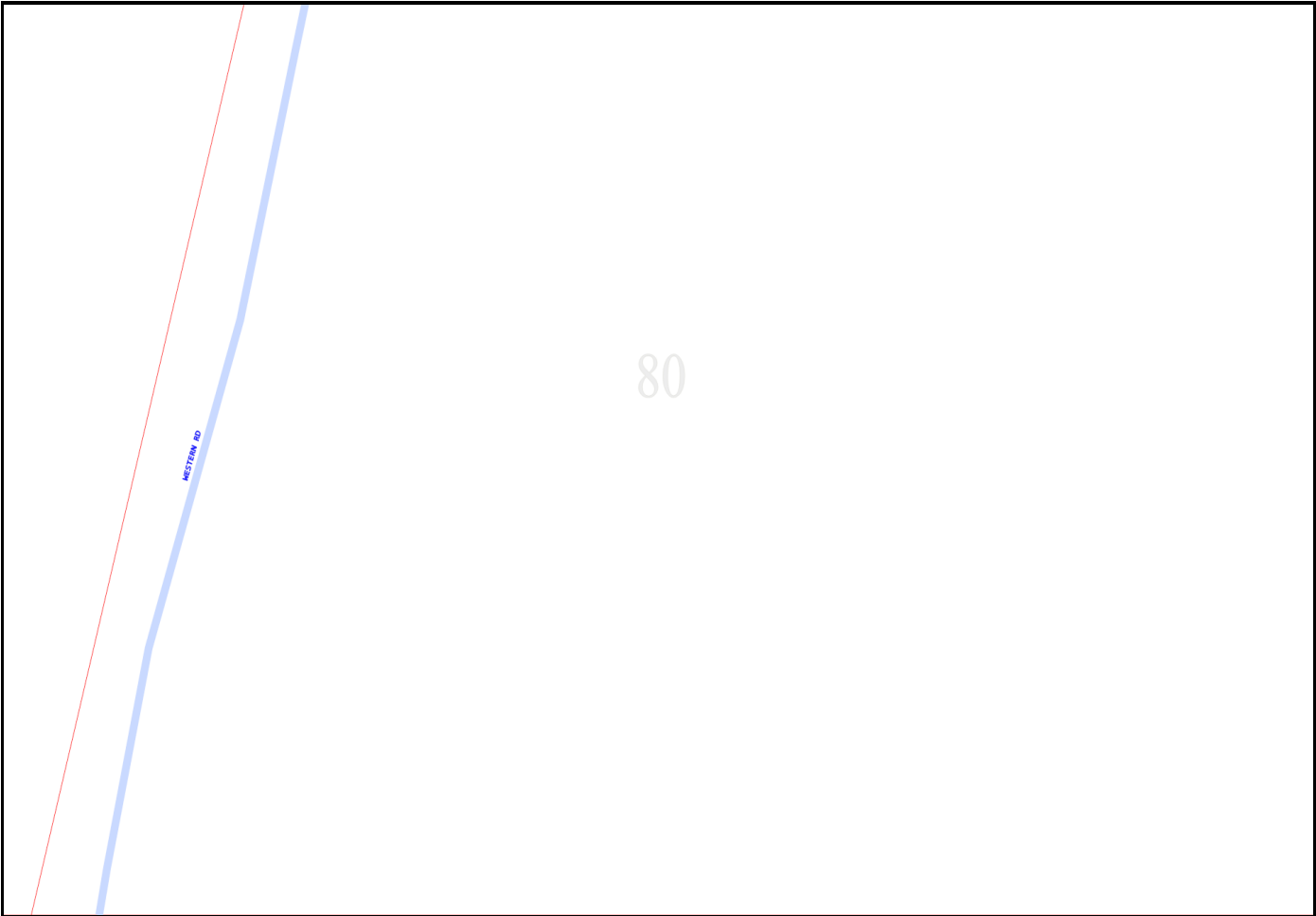
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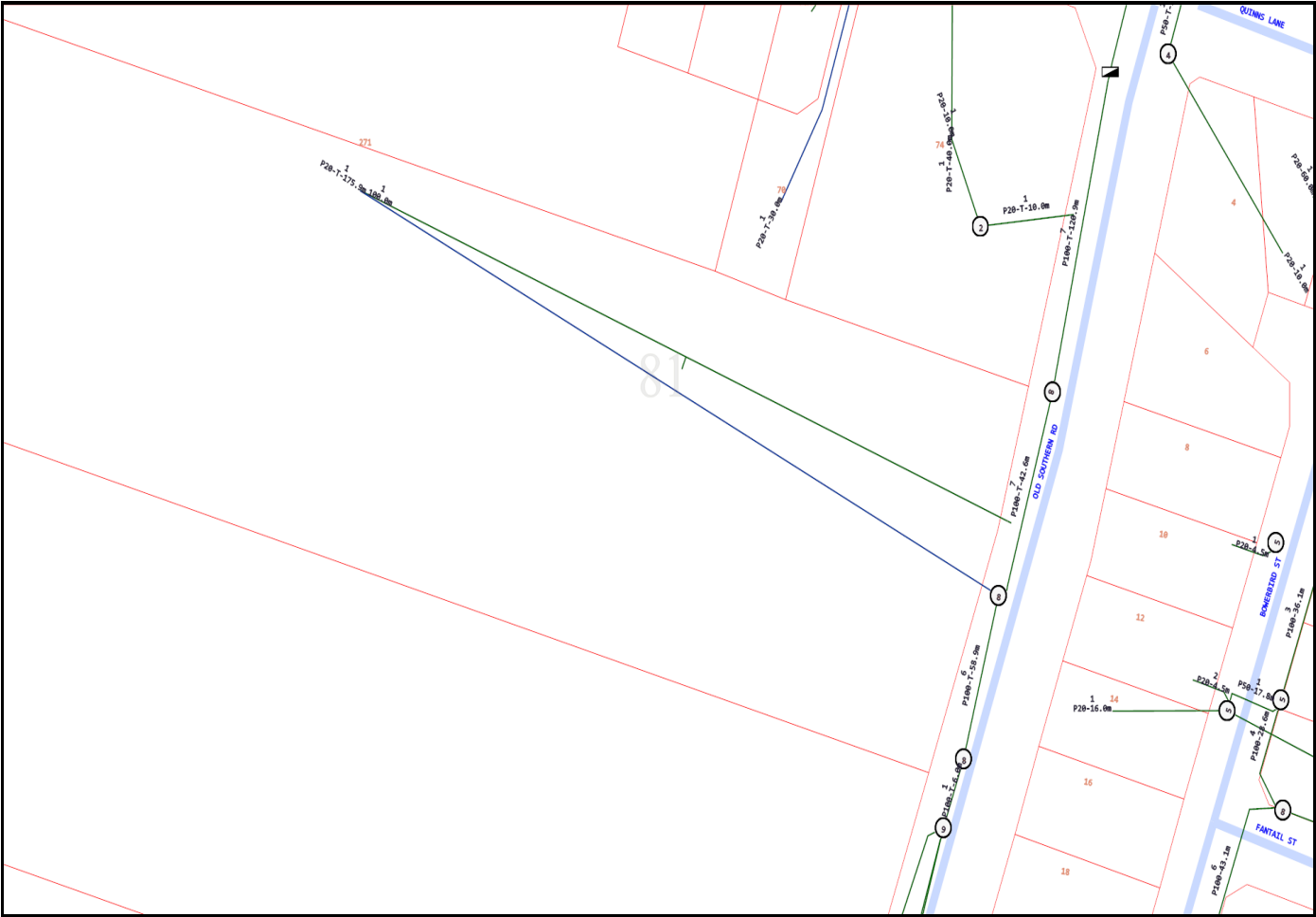
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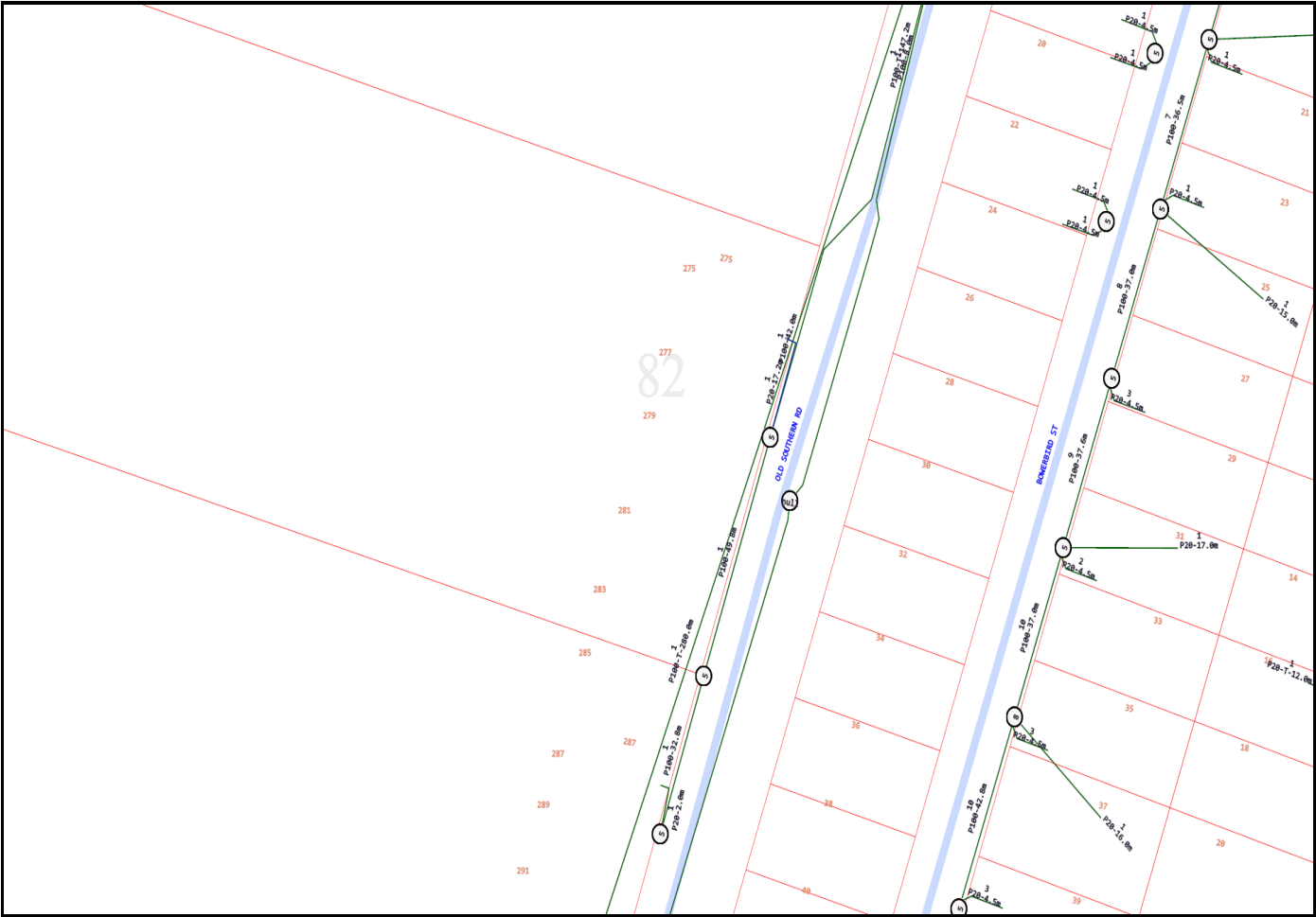


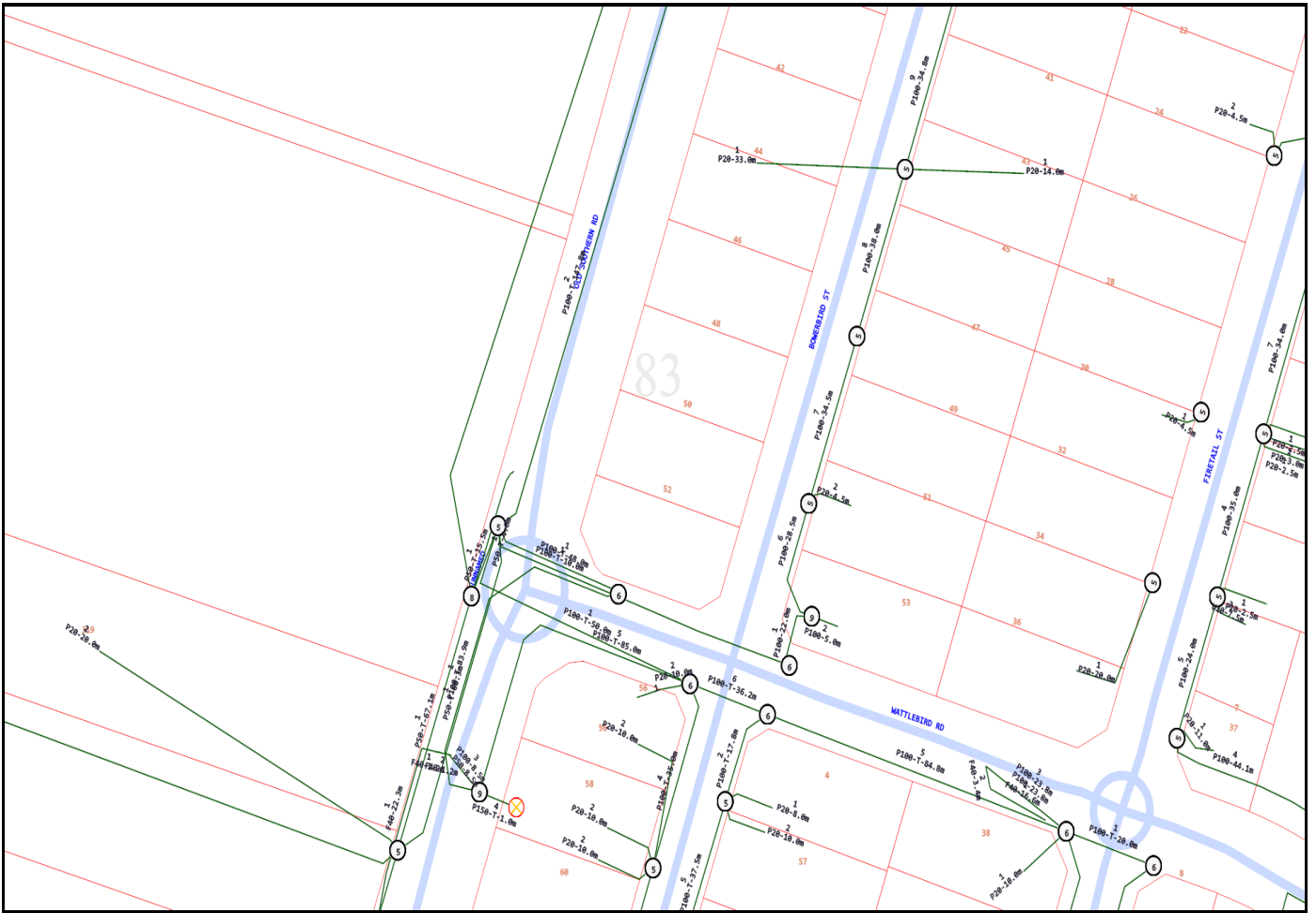
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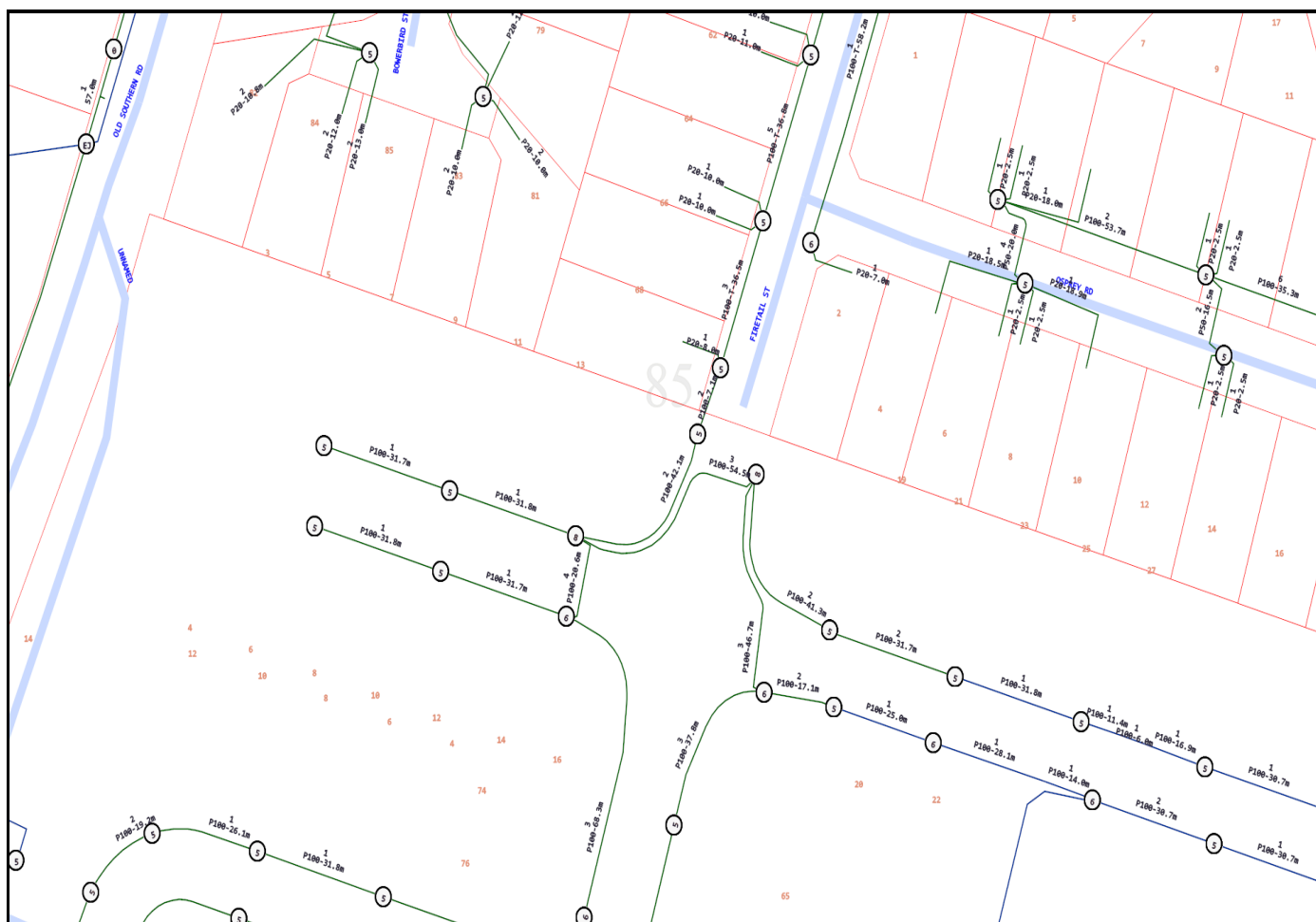


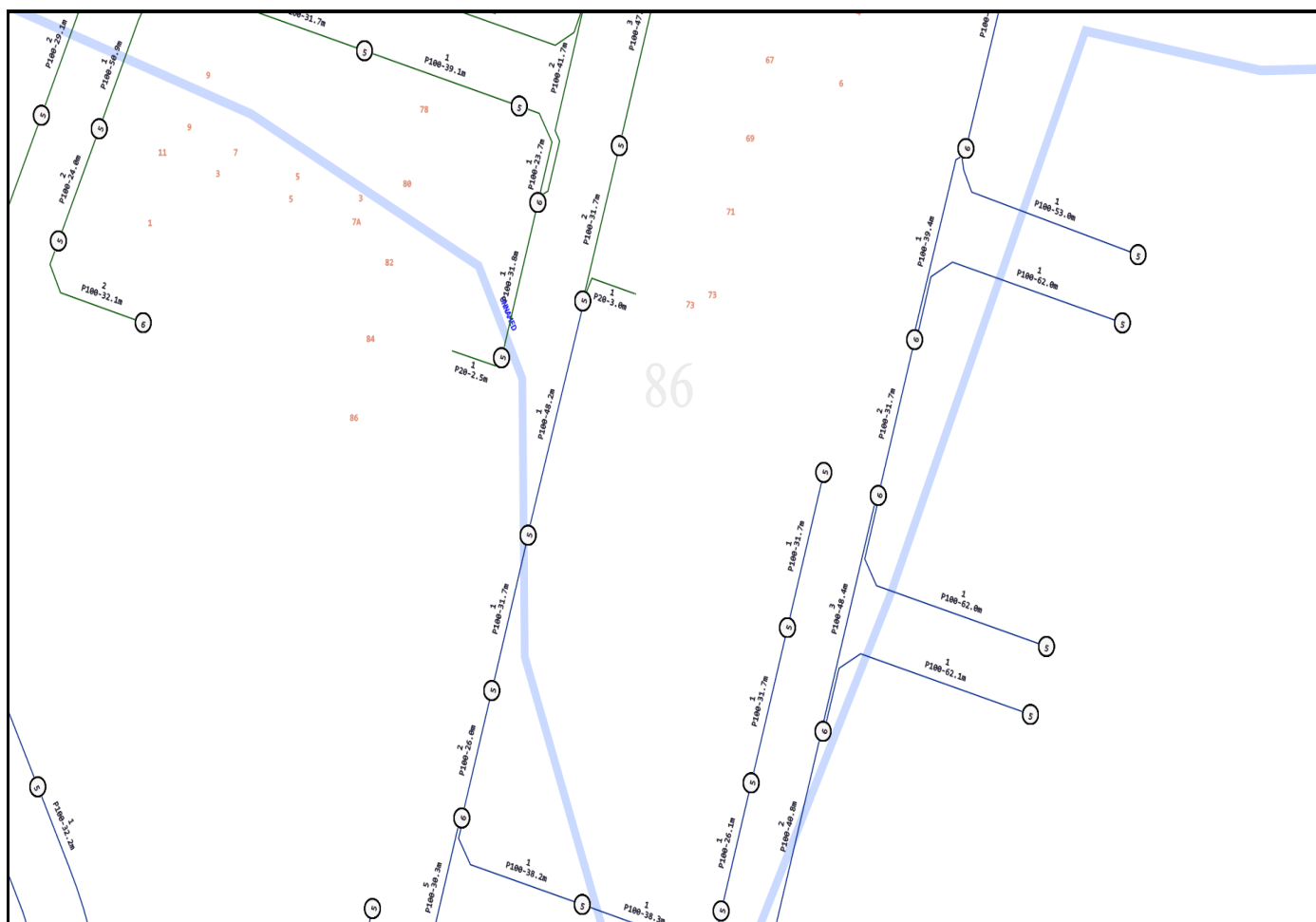


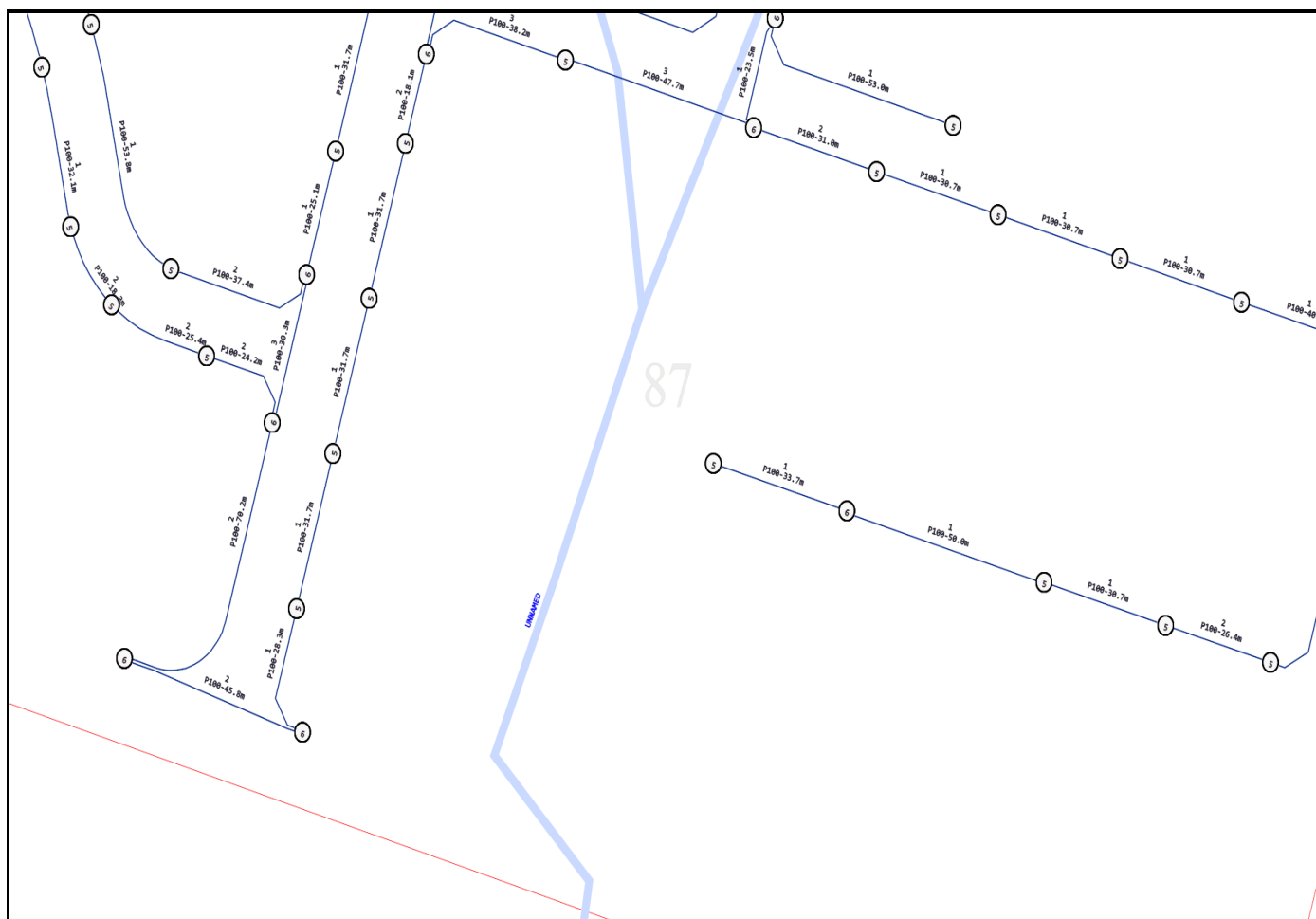
Emergency Contacts

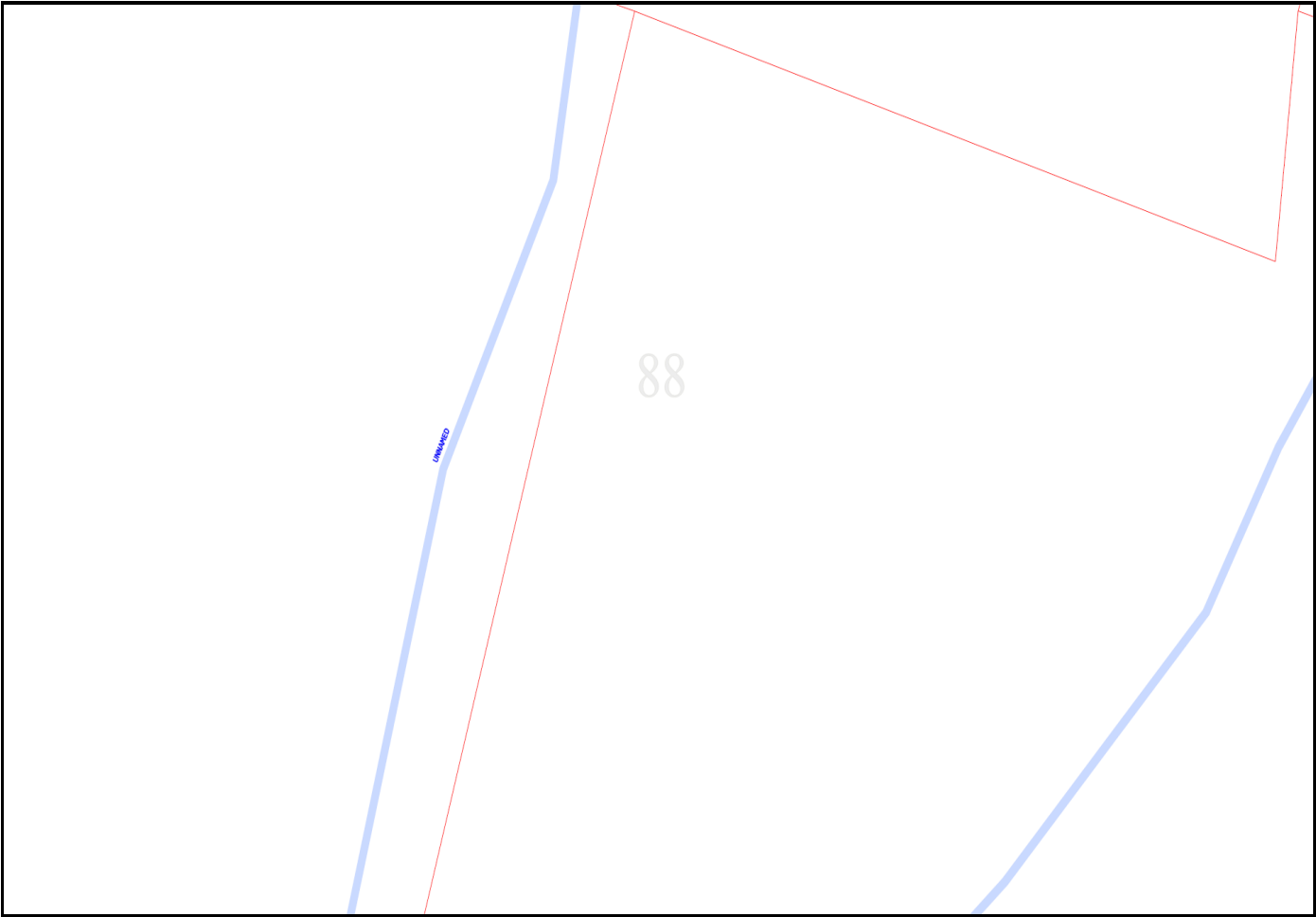
You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.

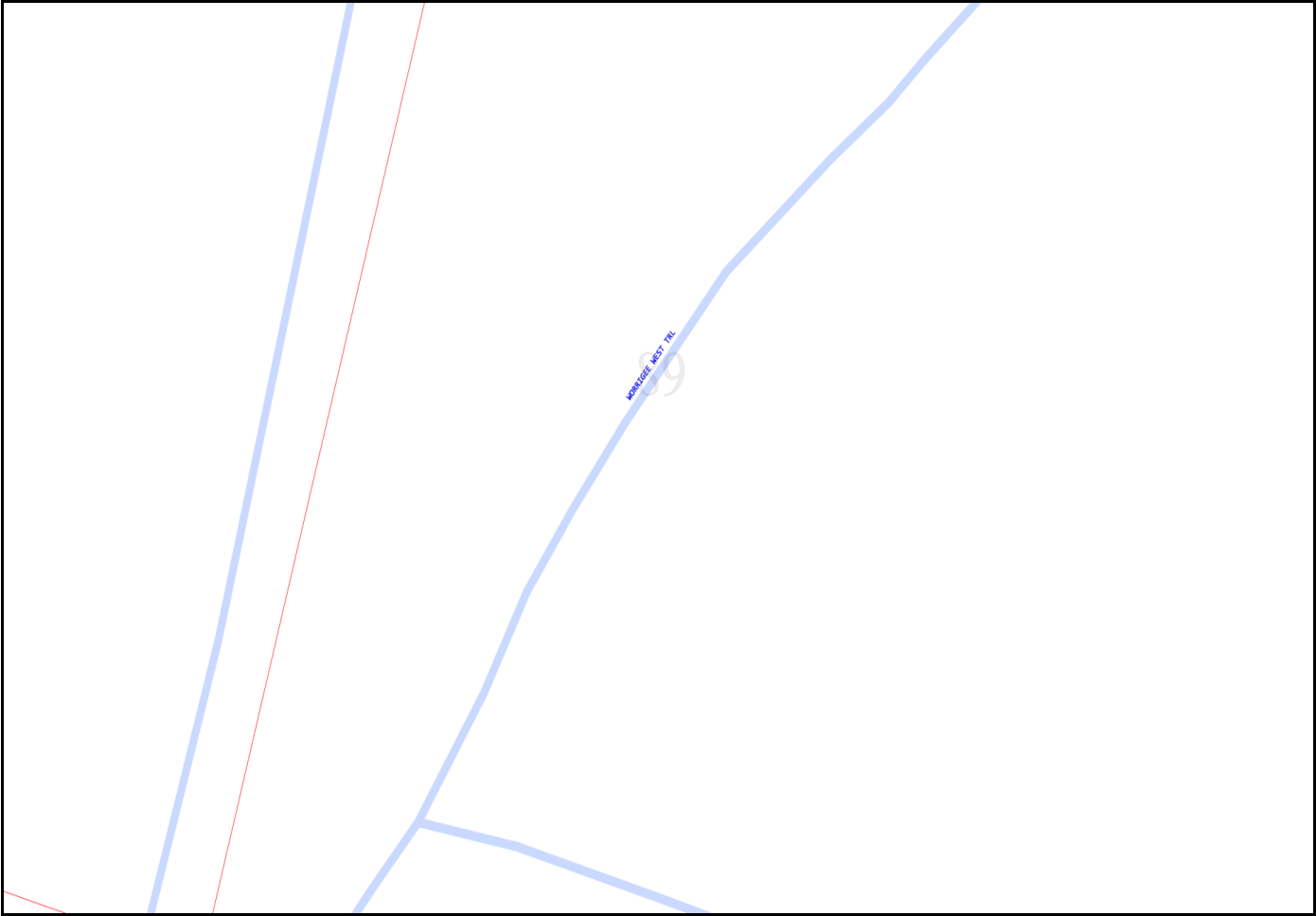


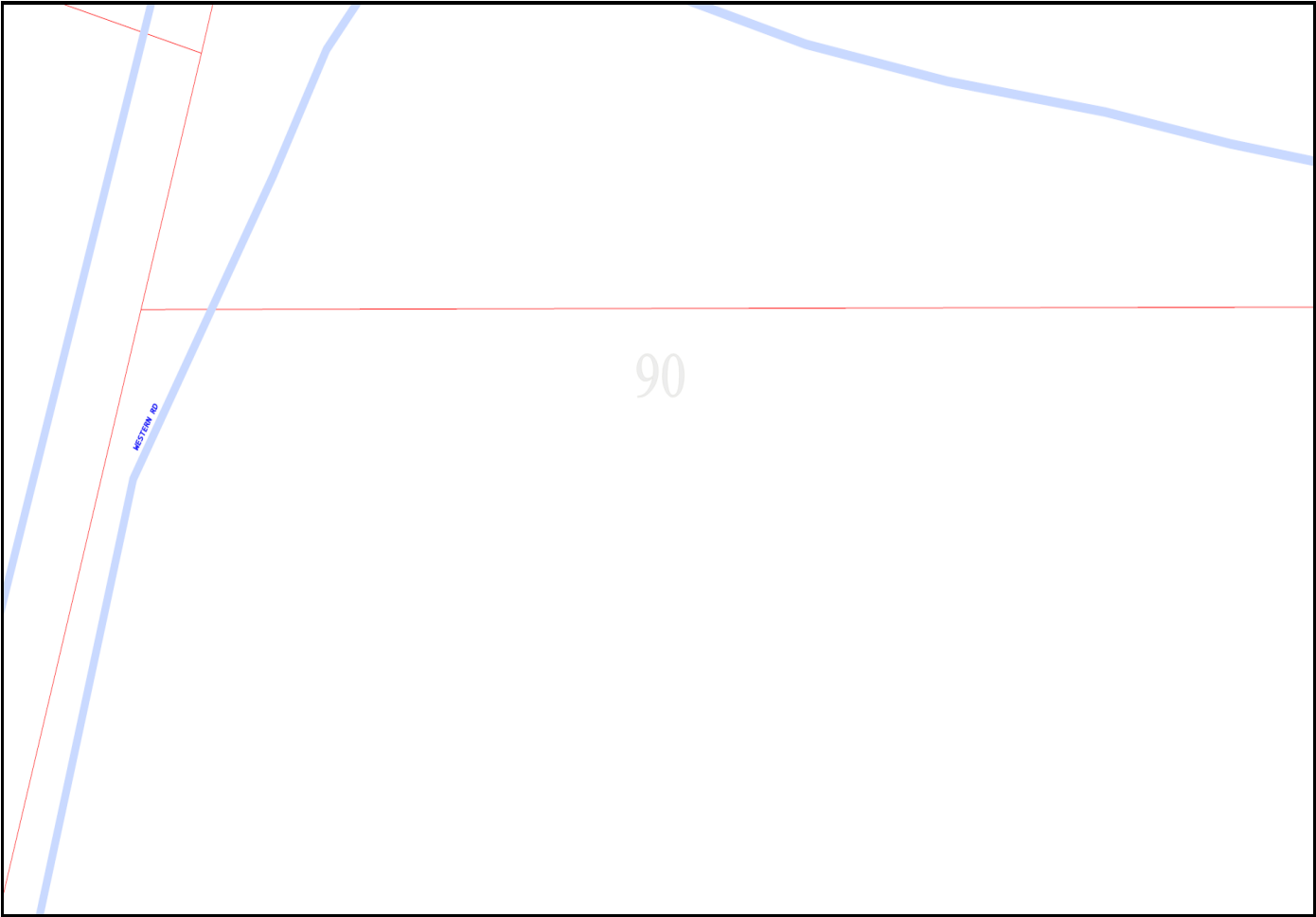


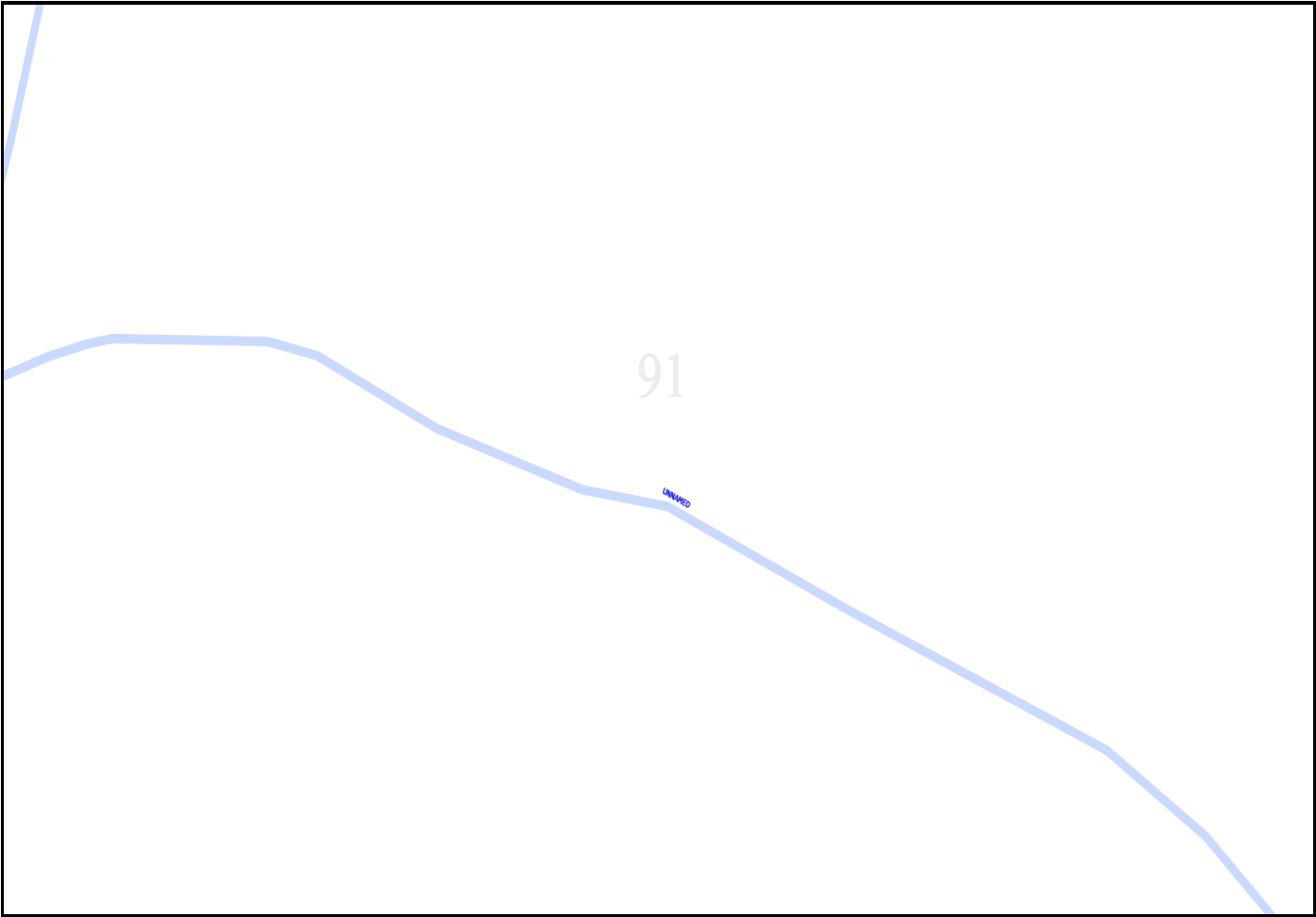


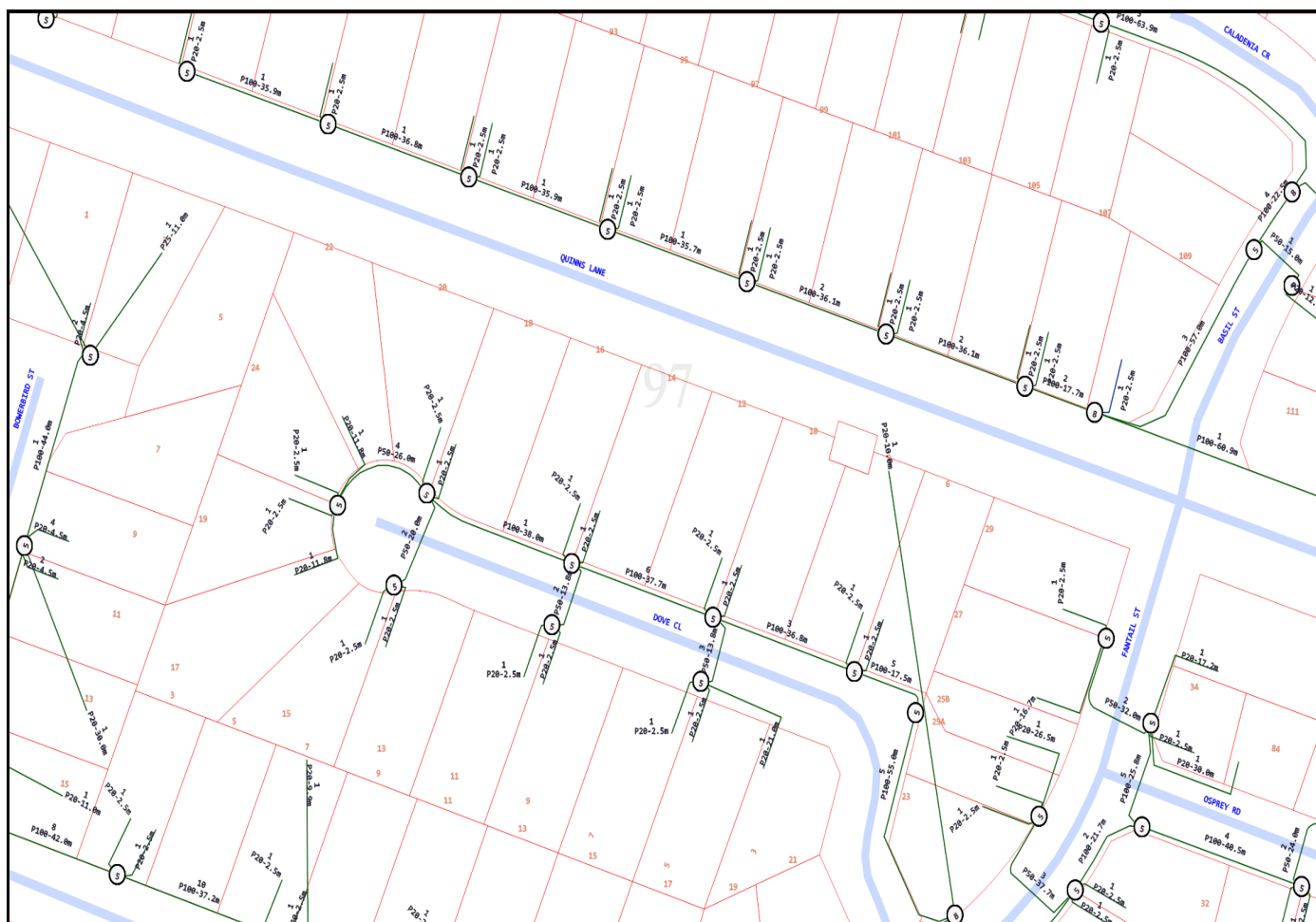


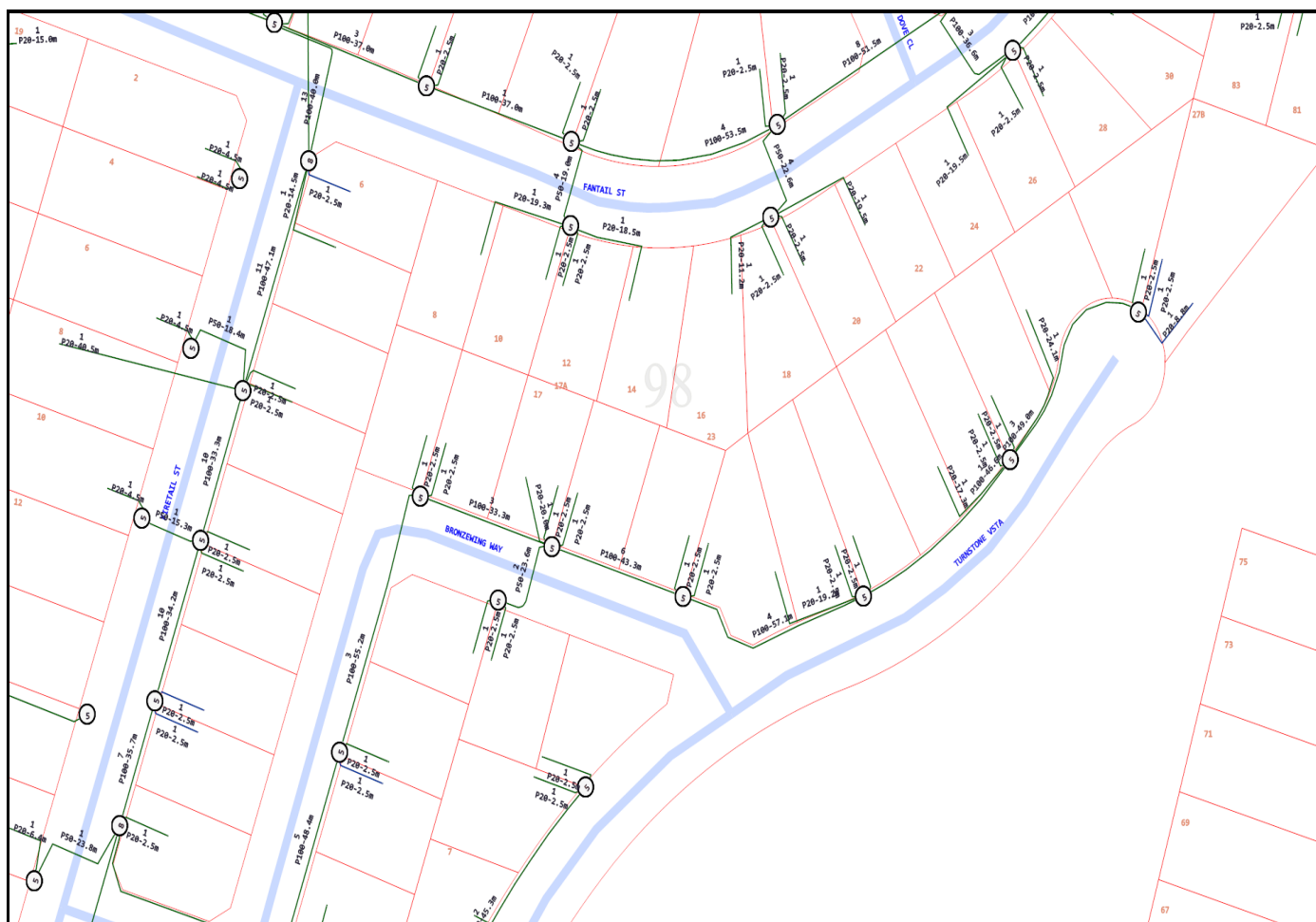


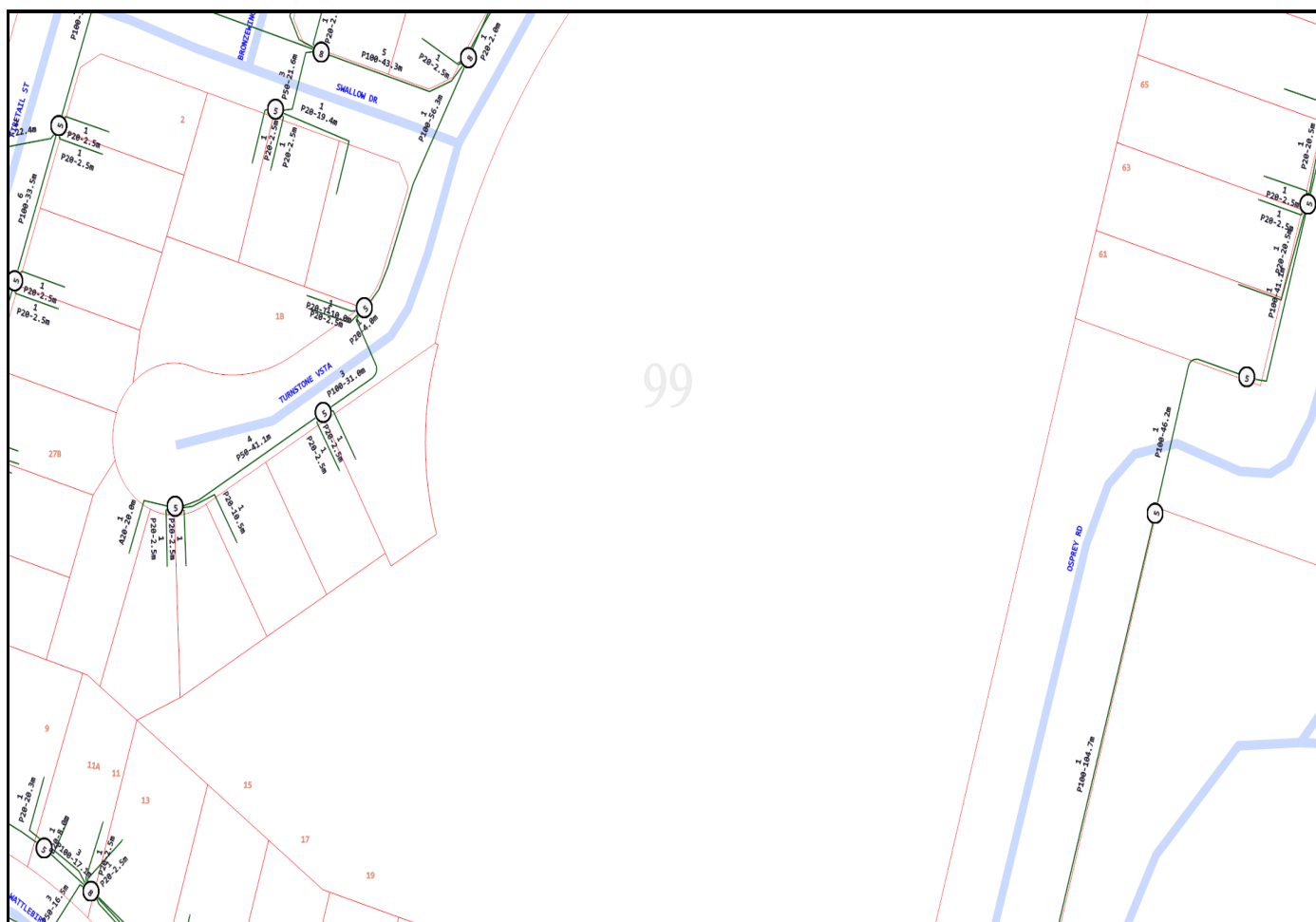


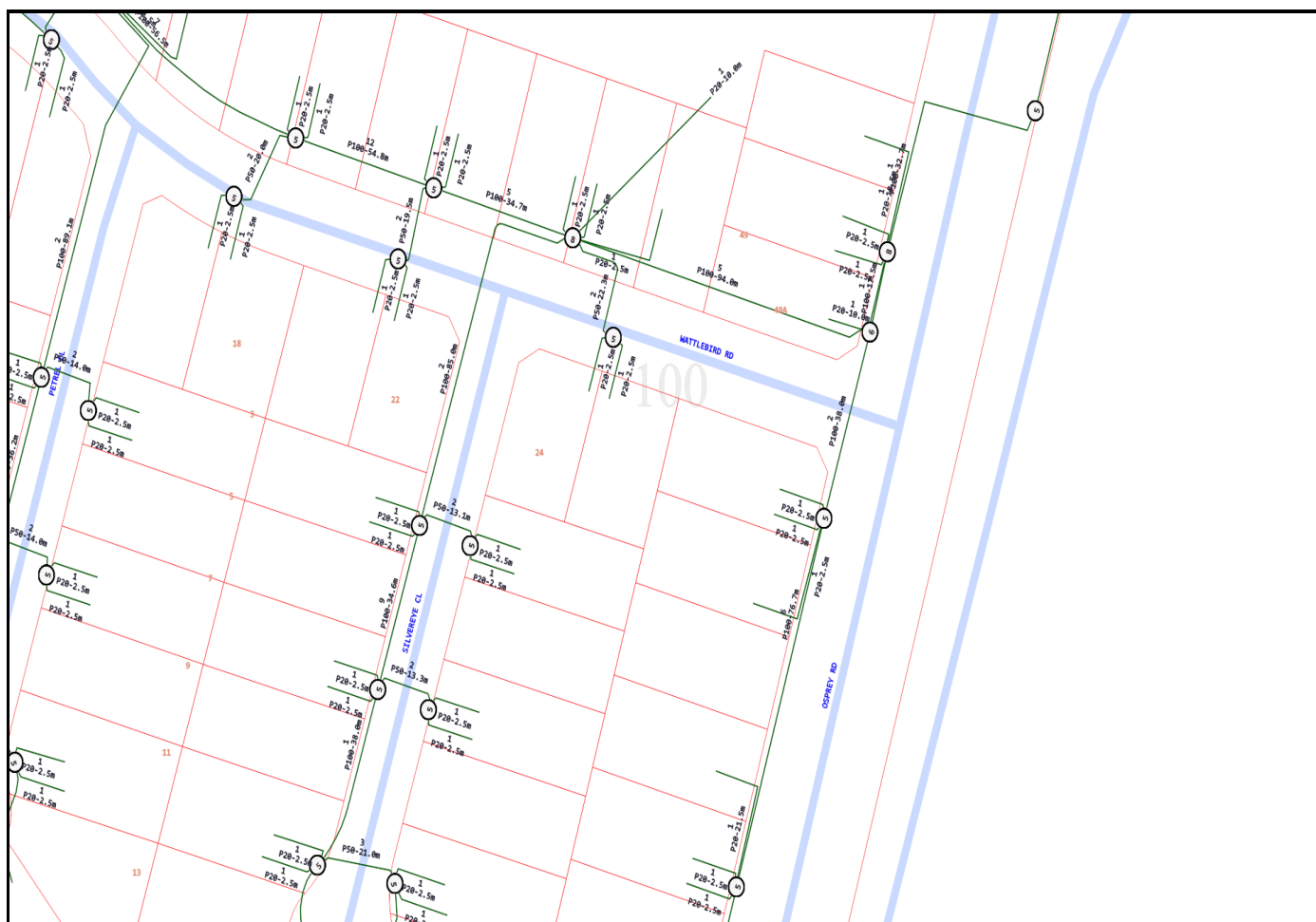


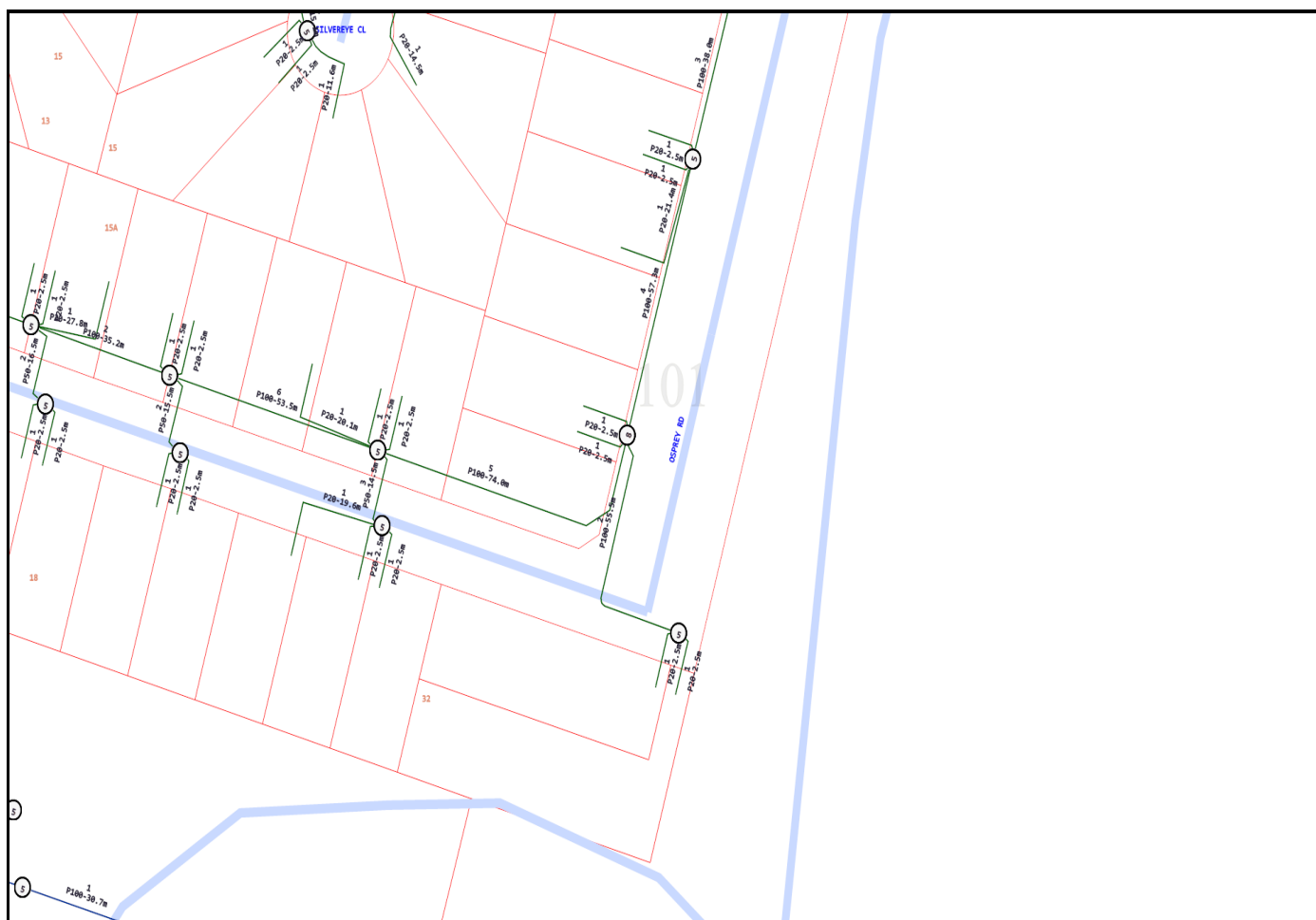


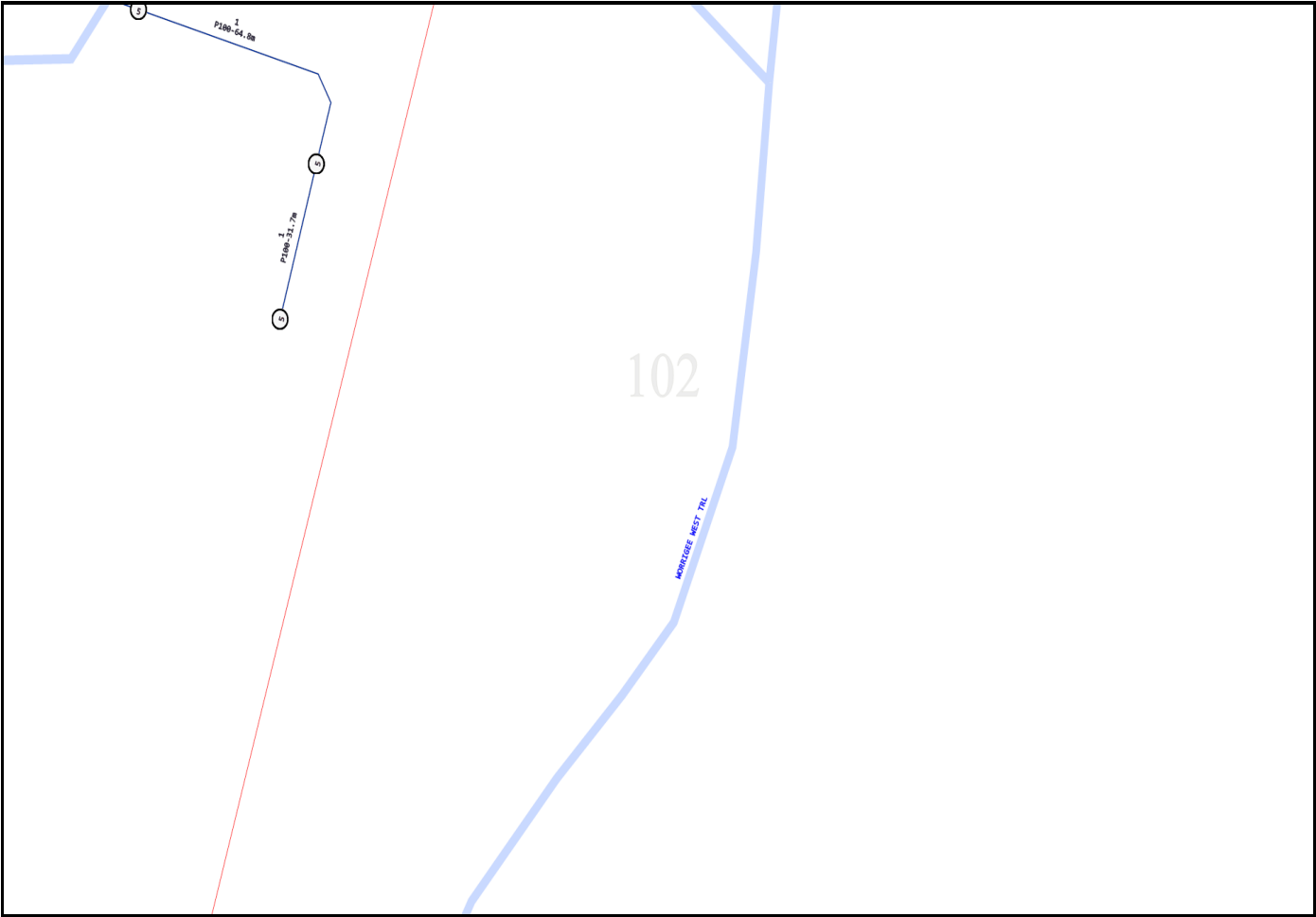


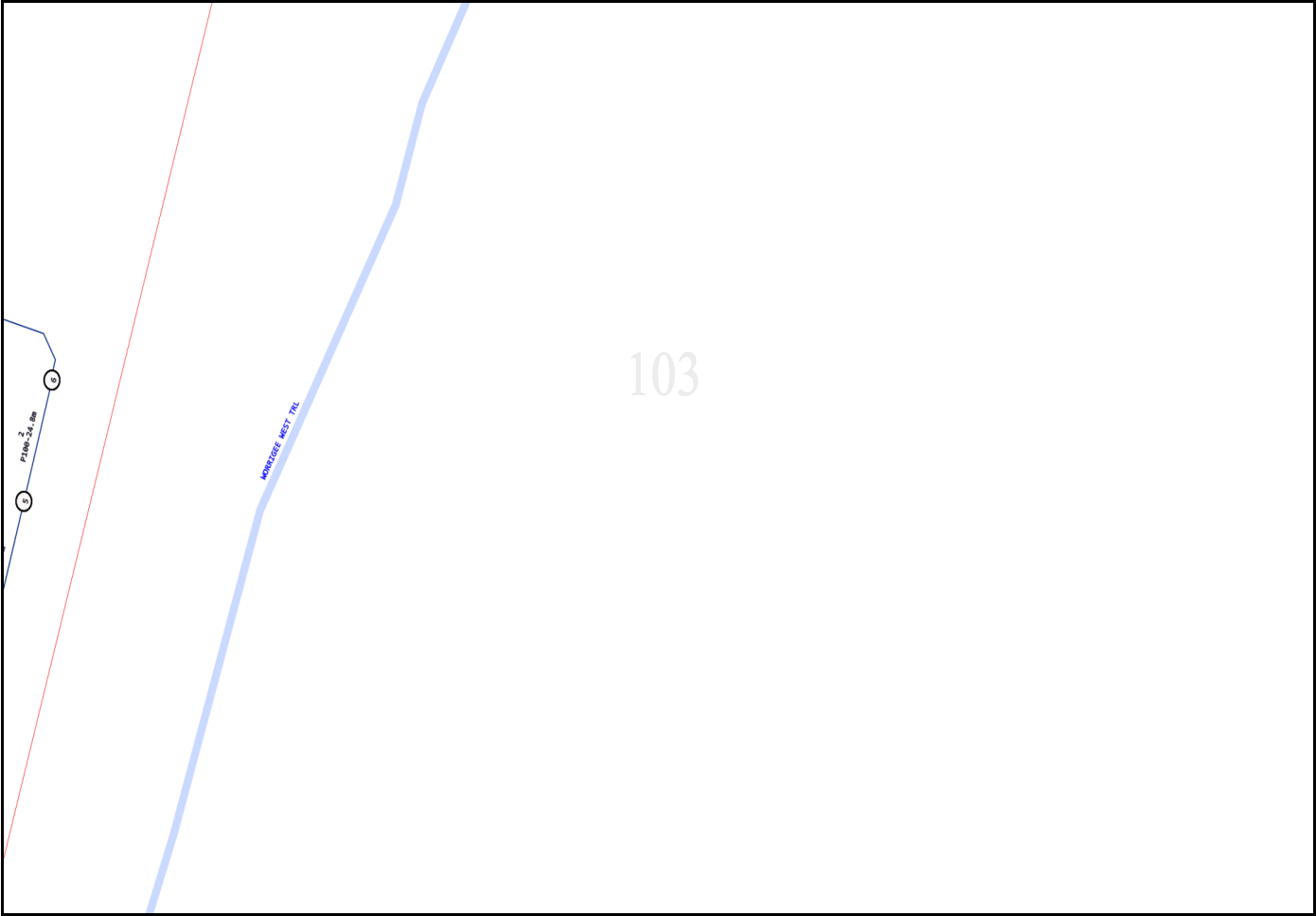


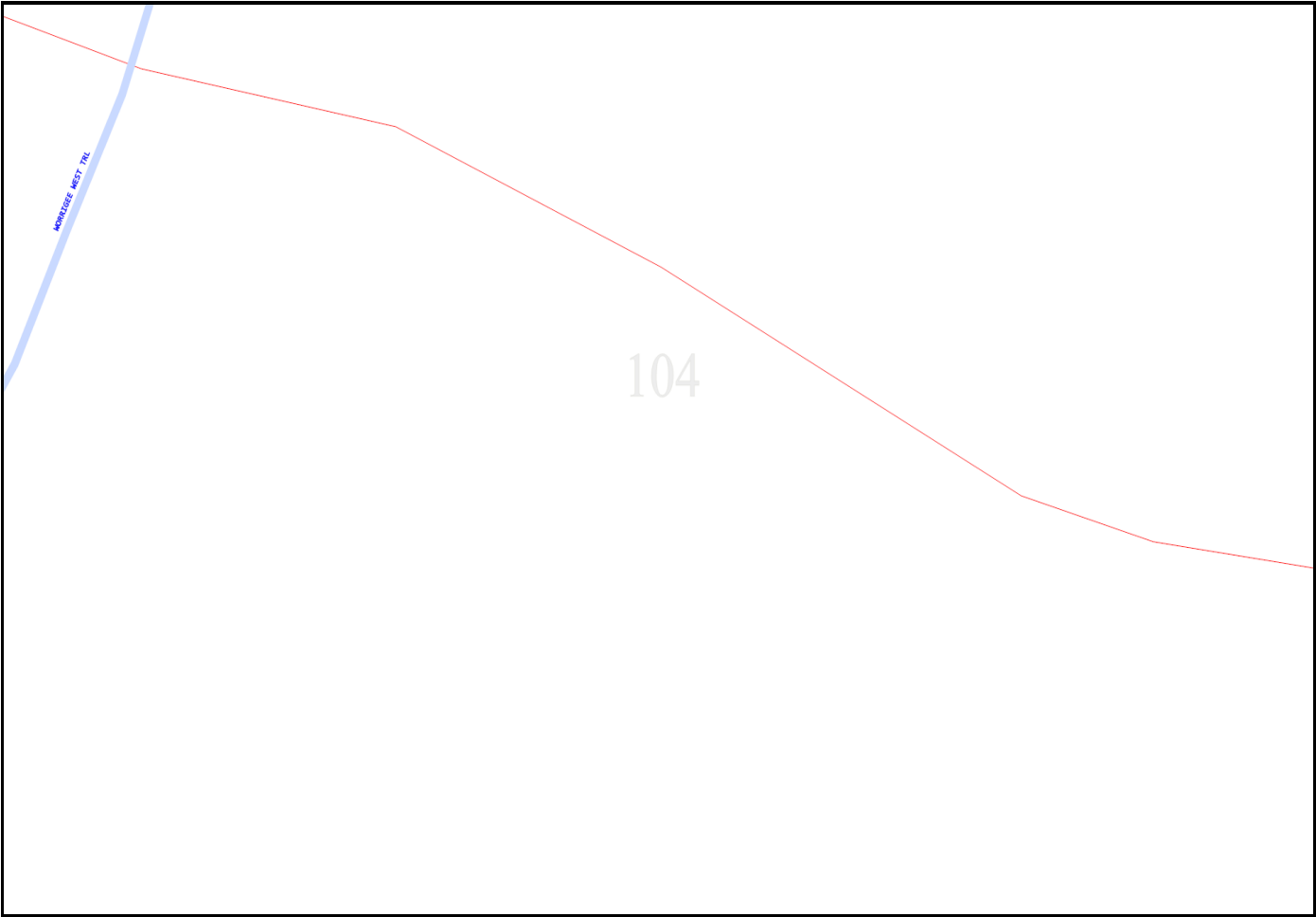


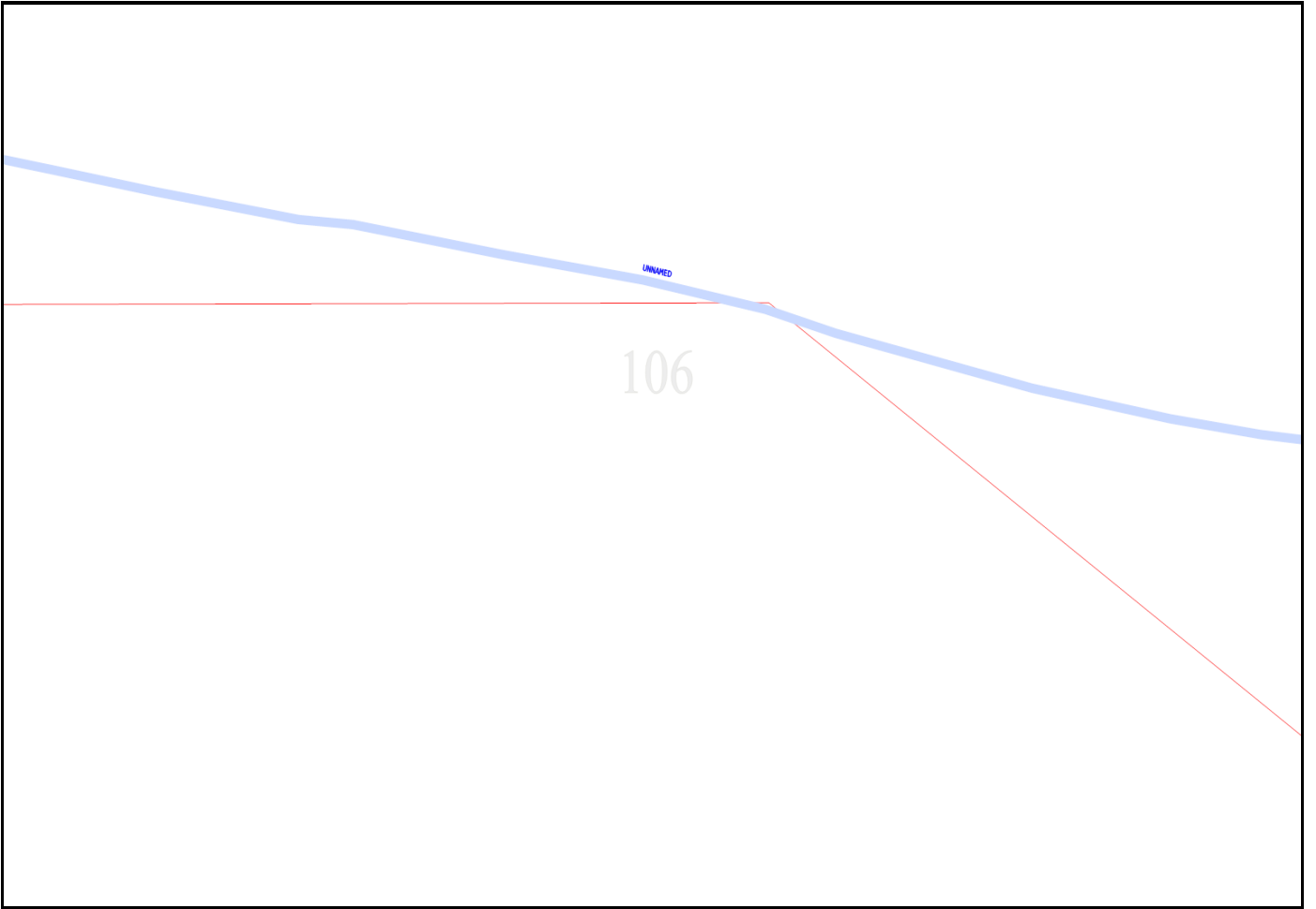


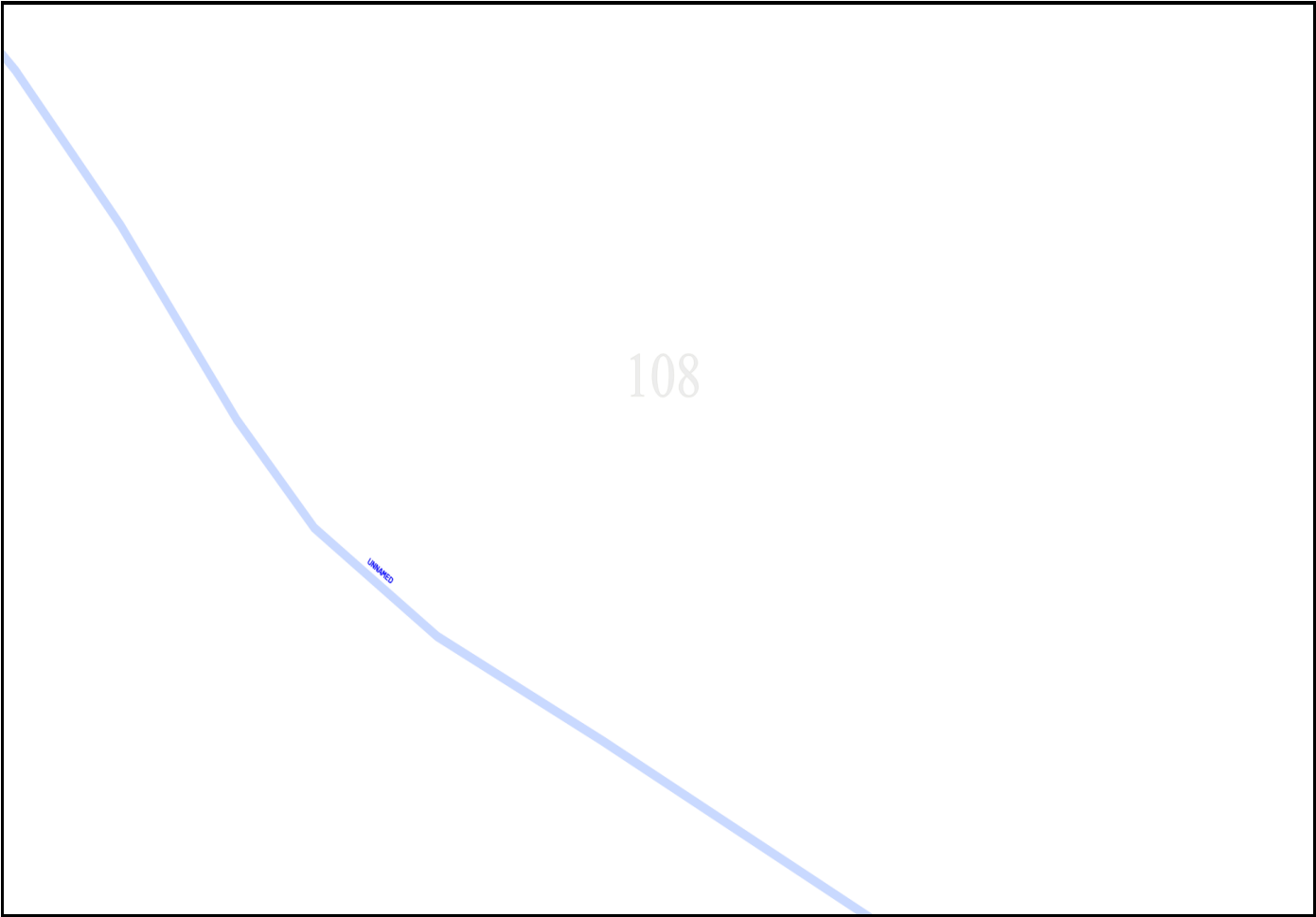












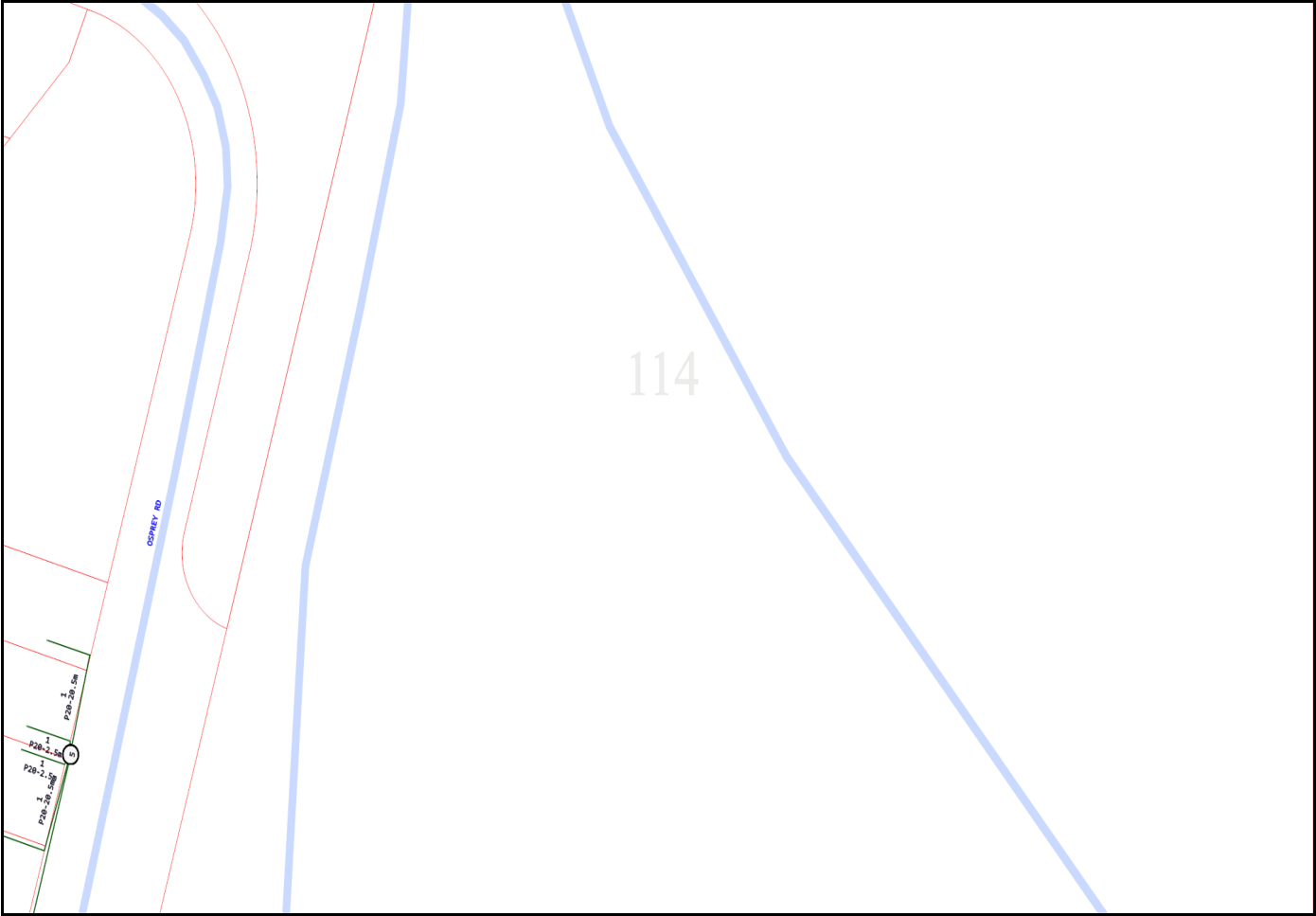
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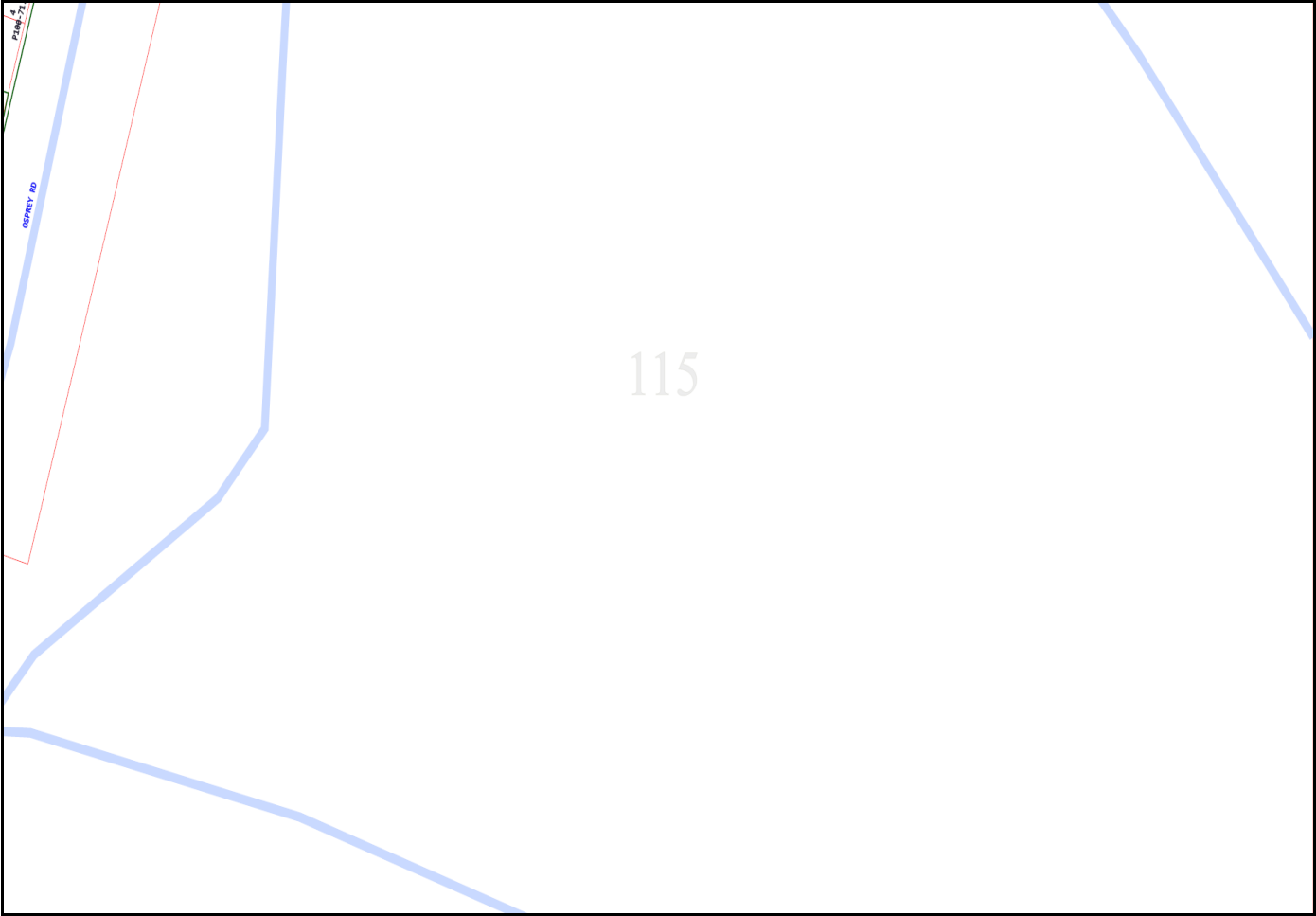
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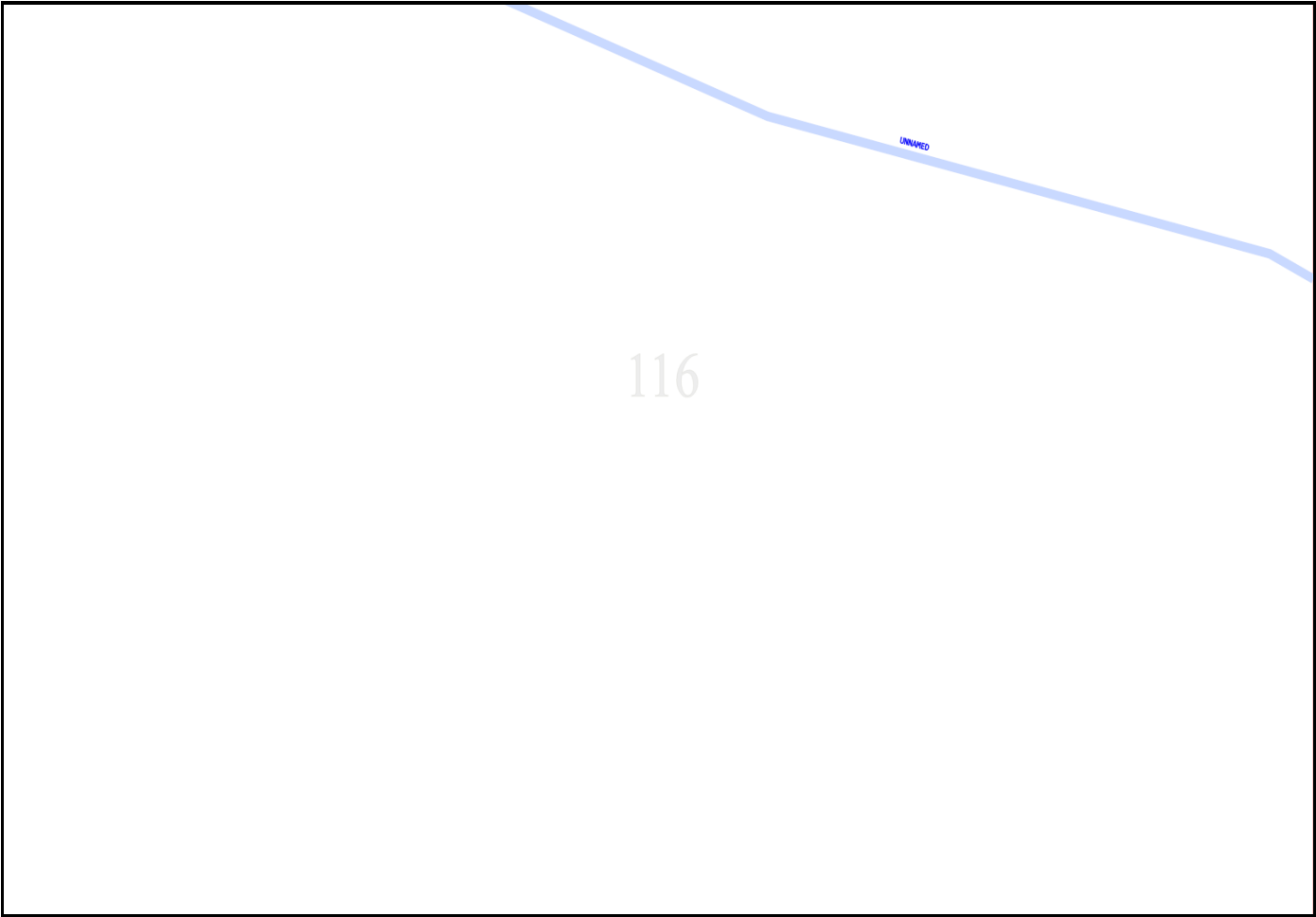
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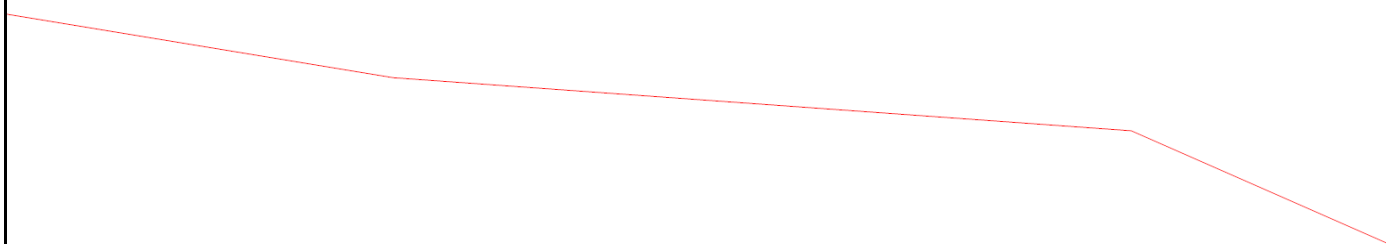








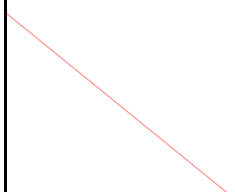
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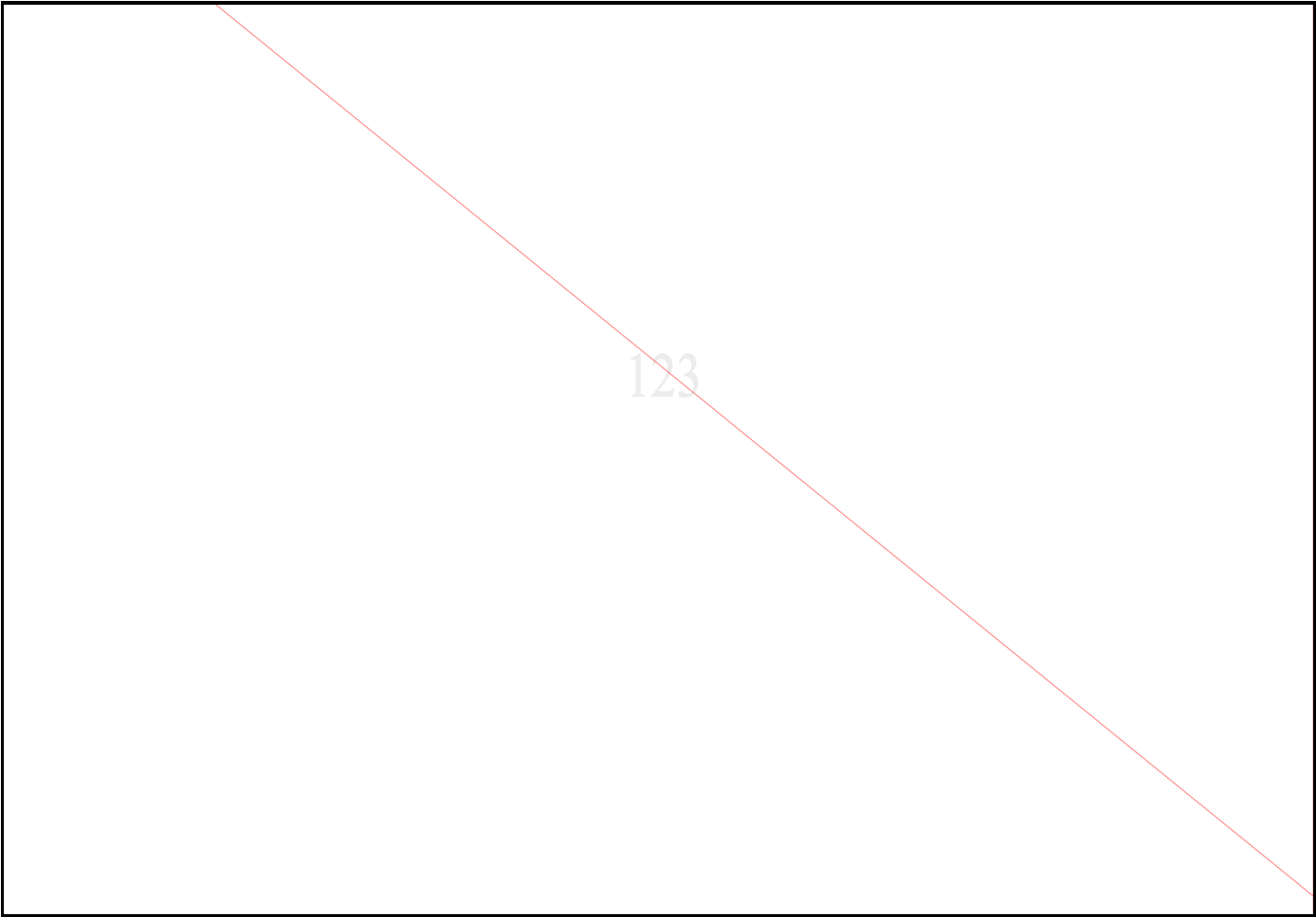


121

122

UNWED





124

125

Unlabeled

126

128

To: Julie Pascu
Phone: Not Supplied
Fax: Not Supplied
Email: juliepascu@bigpond.com

Dial before you dig Job #:	37670533	
Sequence #	245138580	
Issue Date:	25/09/2024	
Location:	268 Princes Highway , South Nowra , NSW , 2541	

Indicative Plans

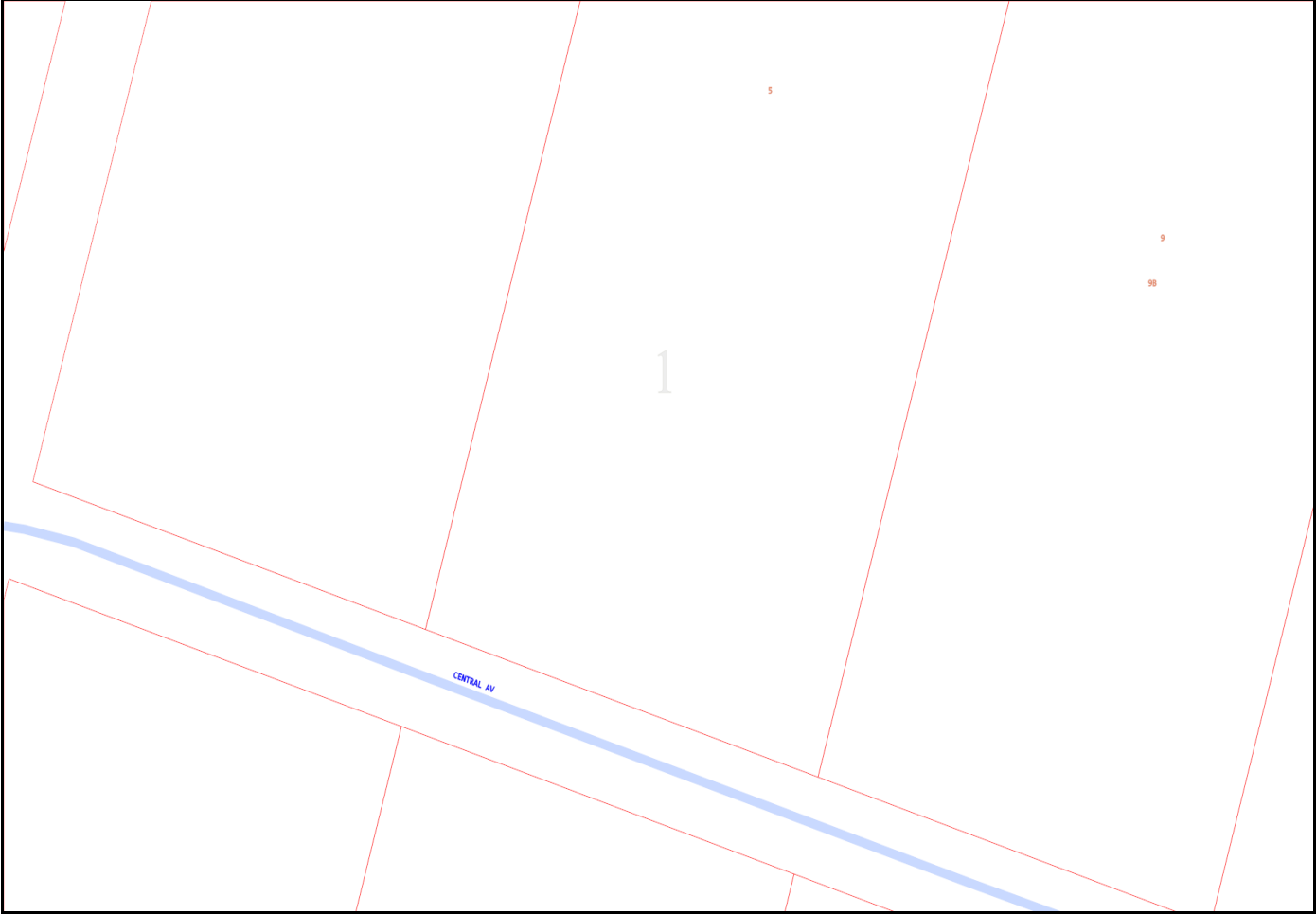
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3	19	35	51	67	83	99	115
4	20	36	52	68	84	100	116
5	21	37	53	69	85	101	117
6	22	38	54	70	86	102	118
7	23	39	55	71	87	103	119
8	24	40	56	72	88	104	120
9	25	41	57	73	89	105	121
10	26	42	58	74	90	106	122
11	27	43	59	75	91	107	123
12	28	44	60	76	92	108	124
13	29	45	61	77	93	109	125
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15	31	47	63	79	95	111	127
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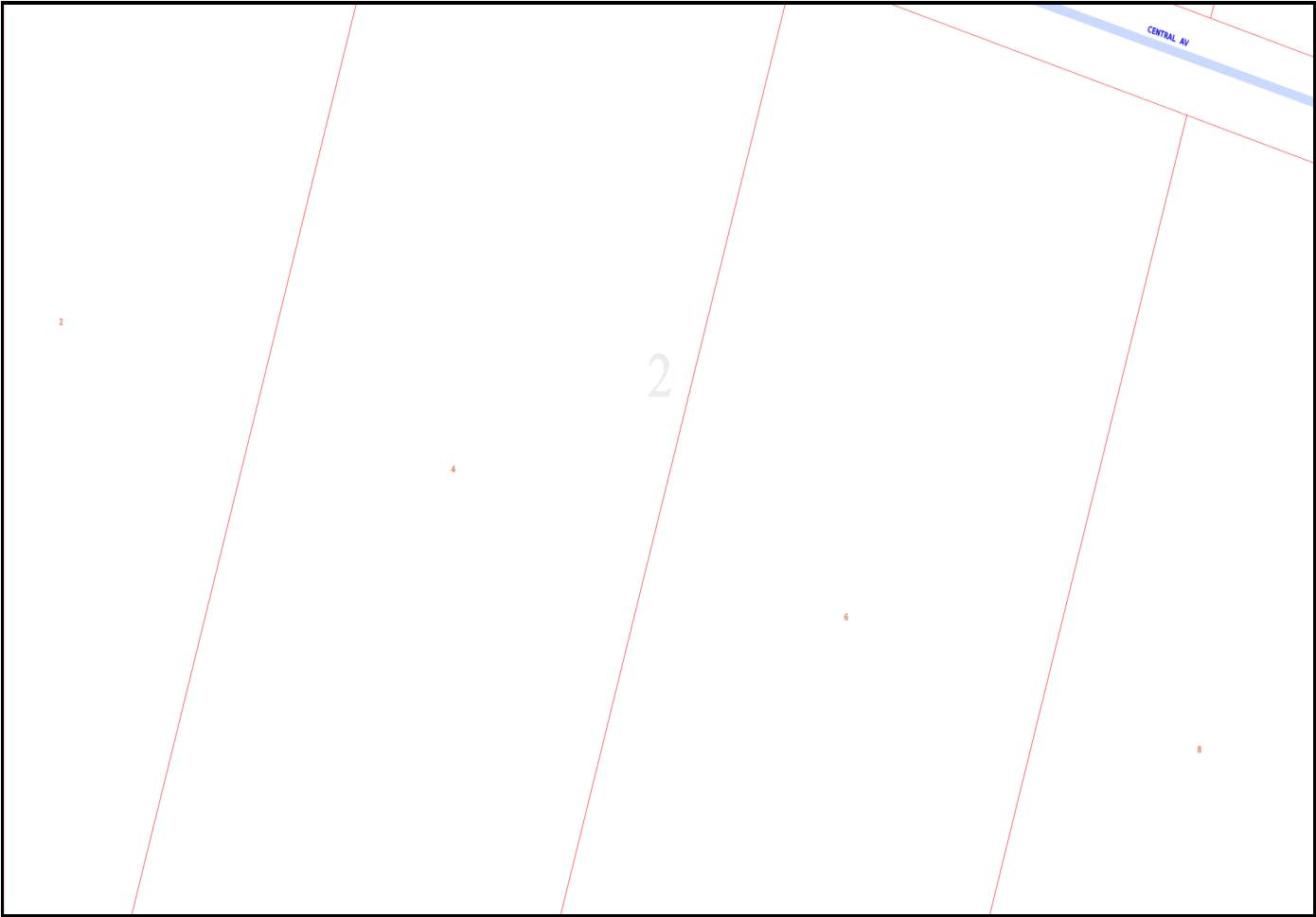


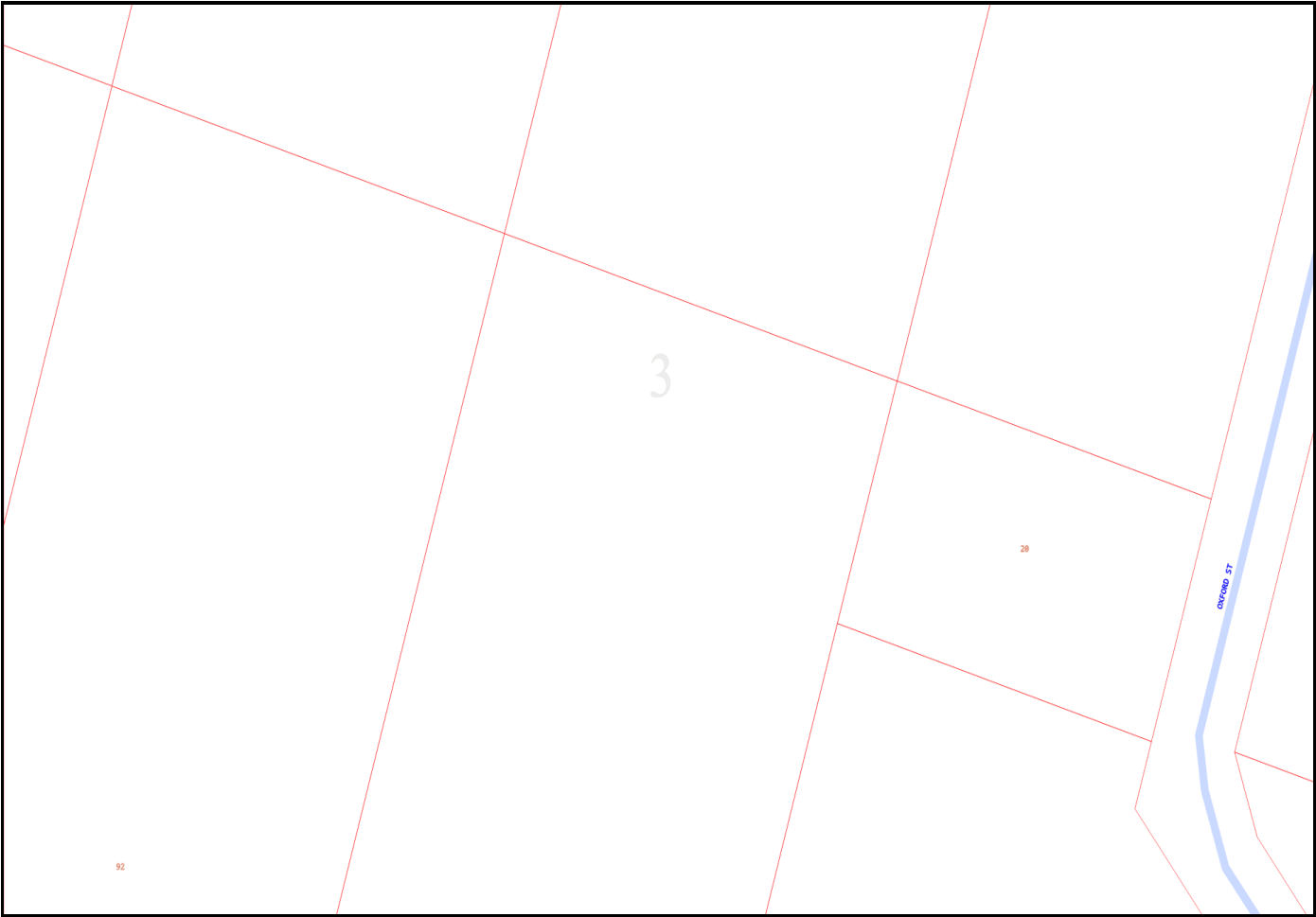
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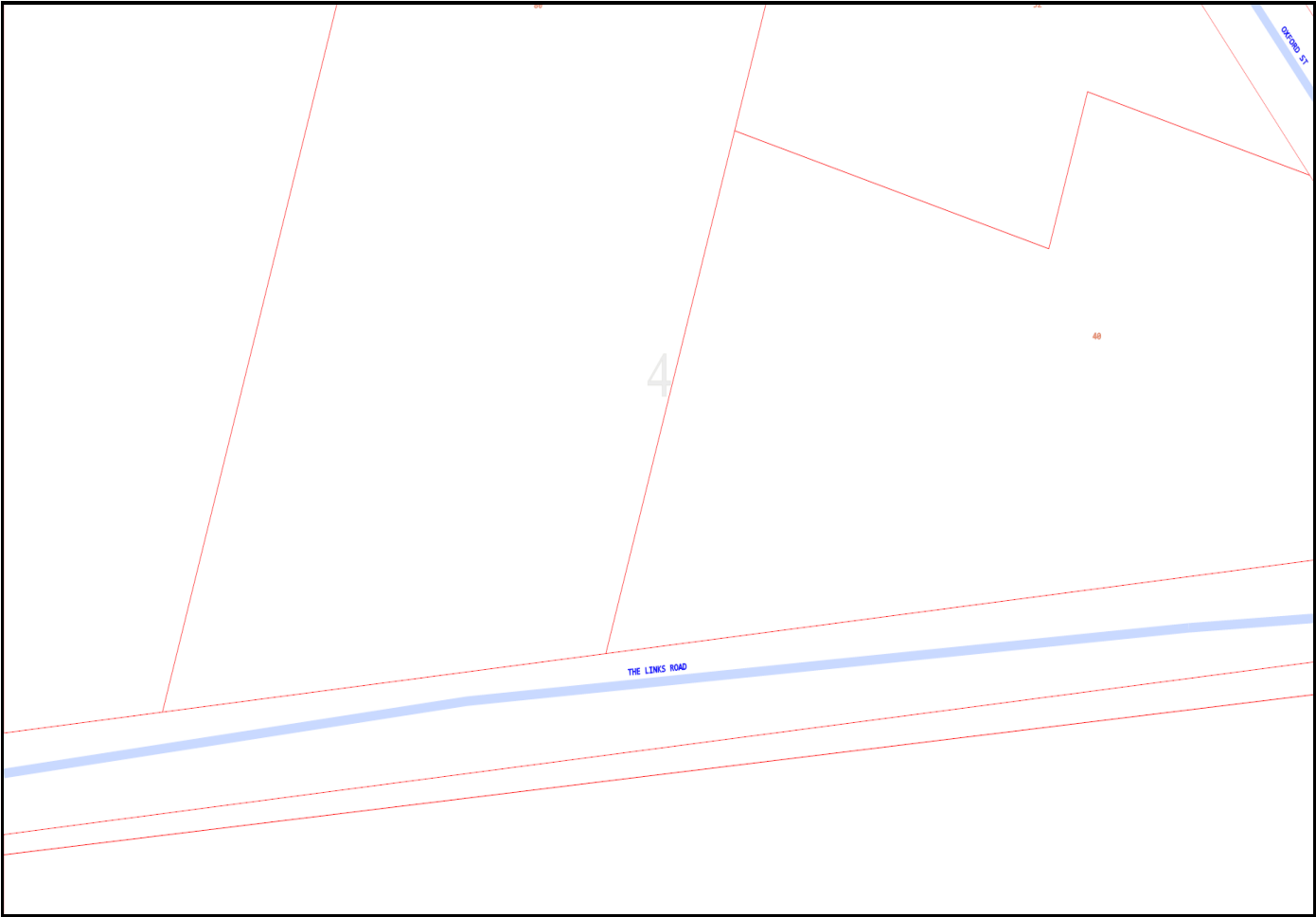


	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) 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



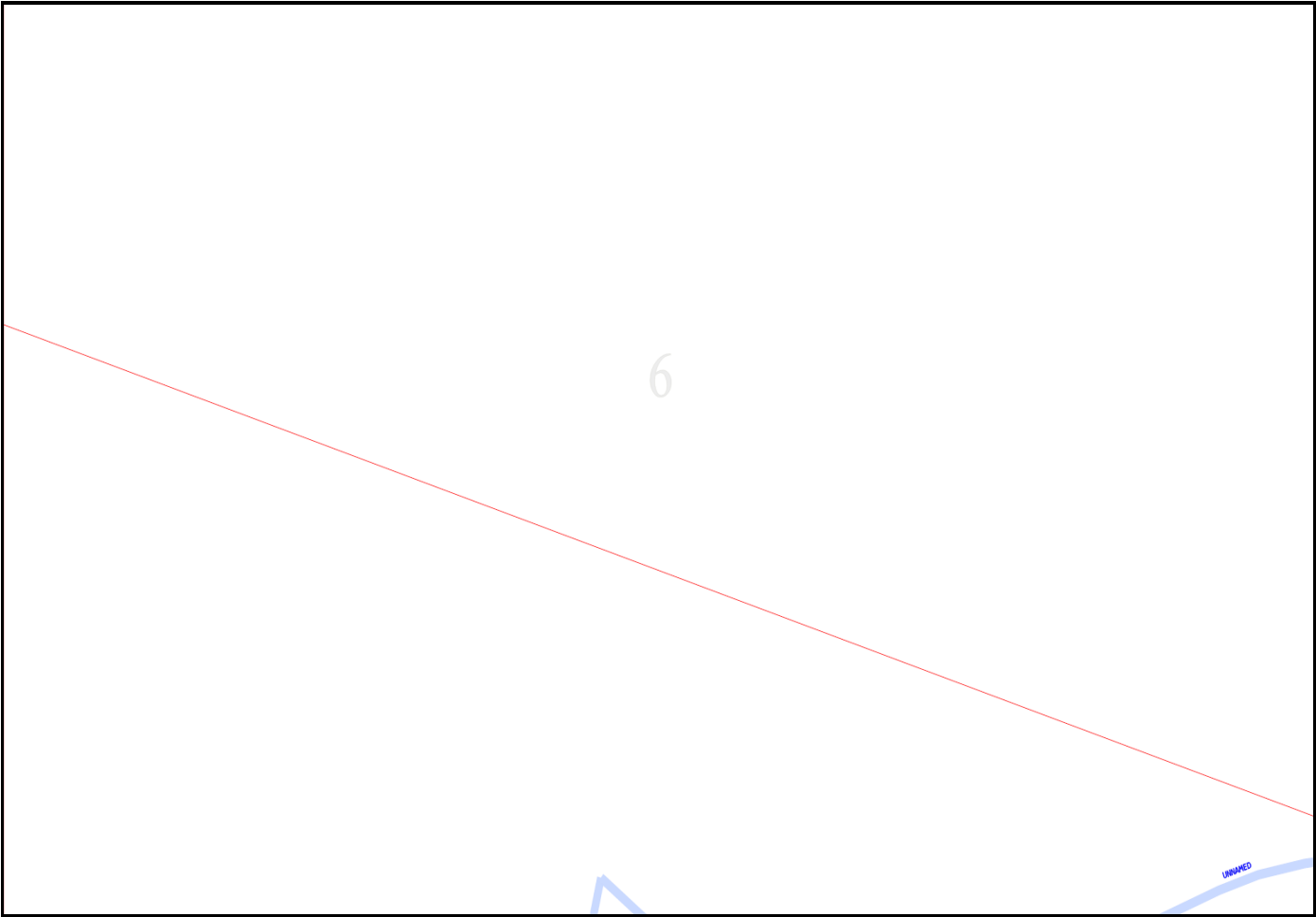


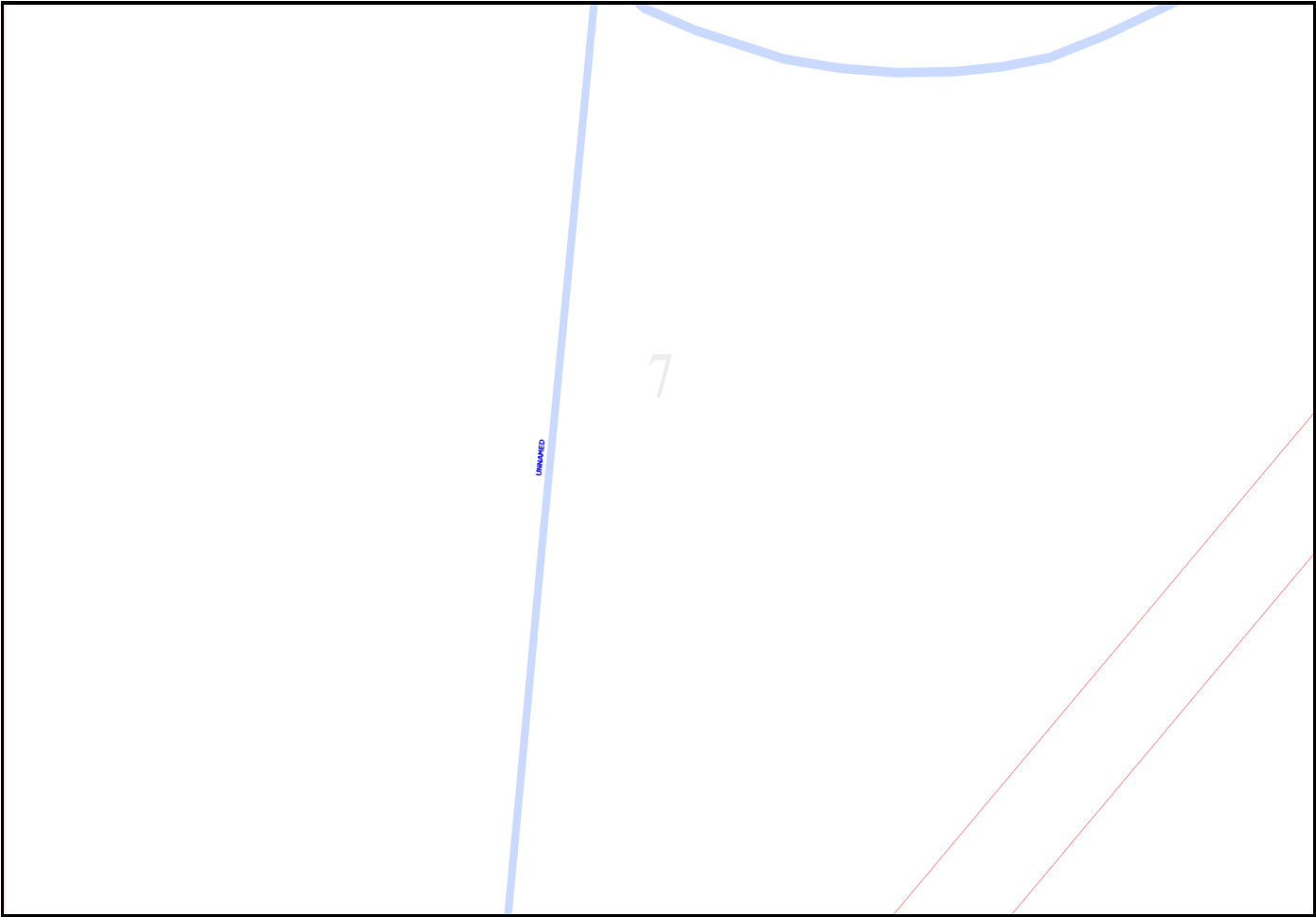


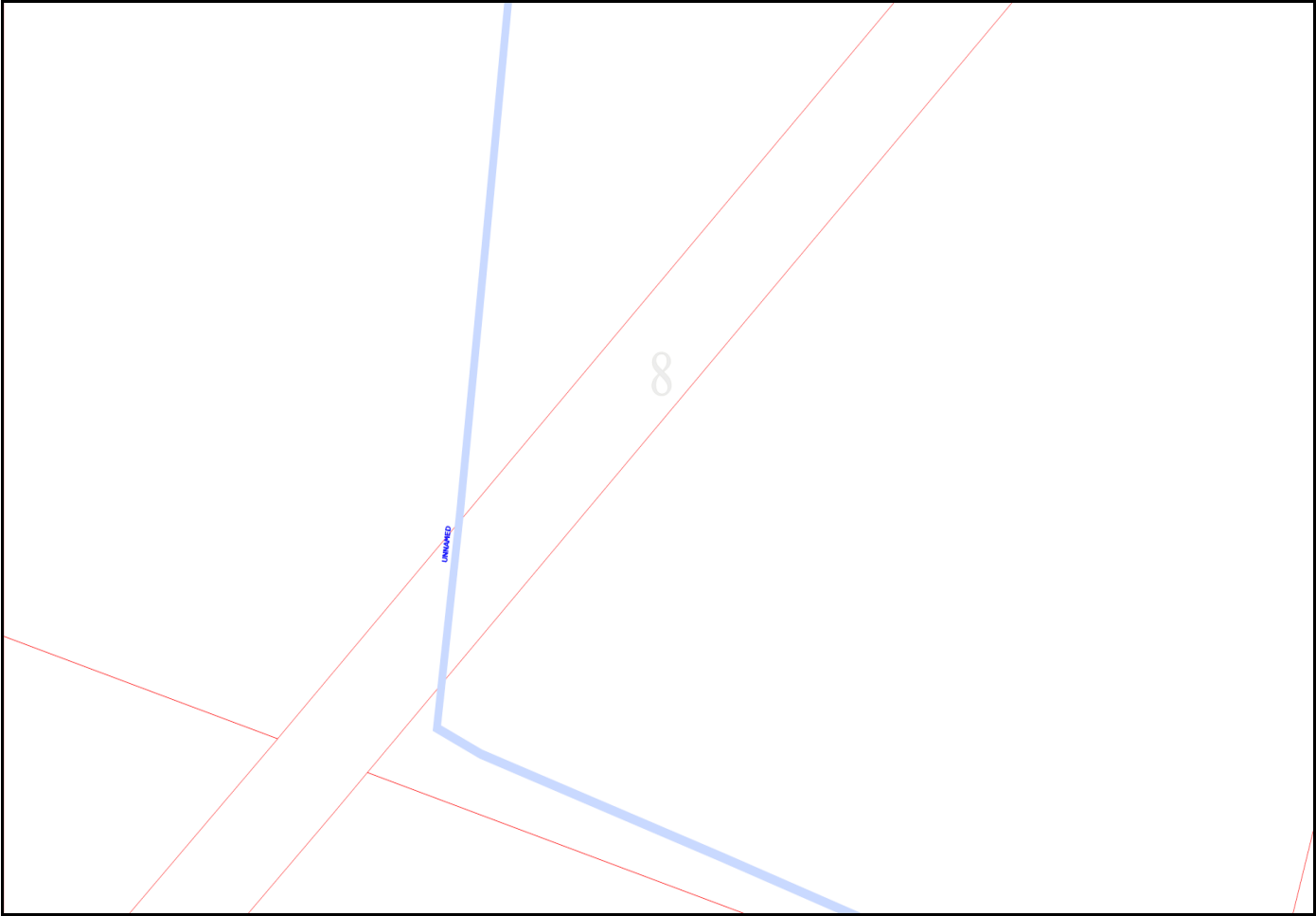


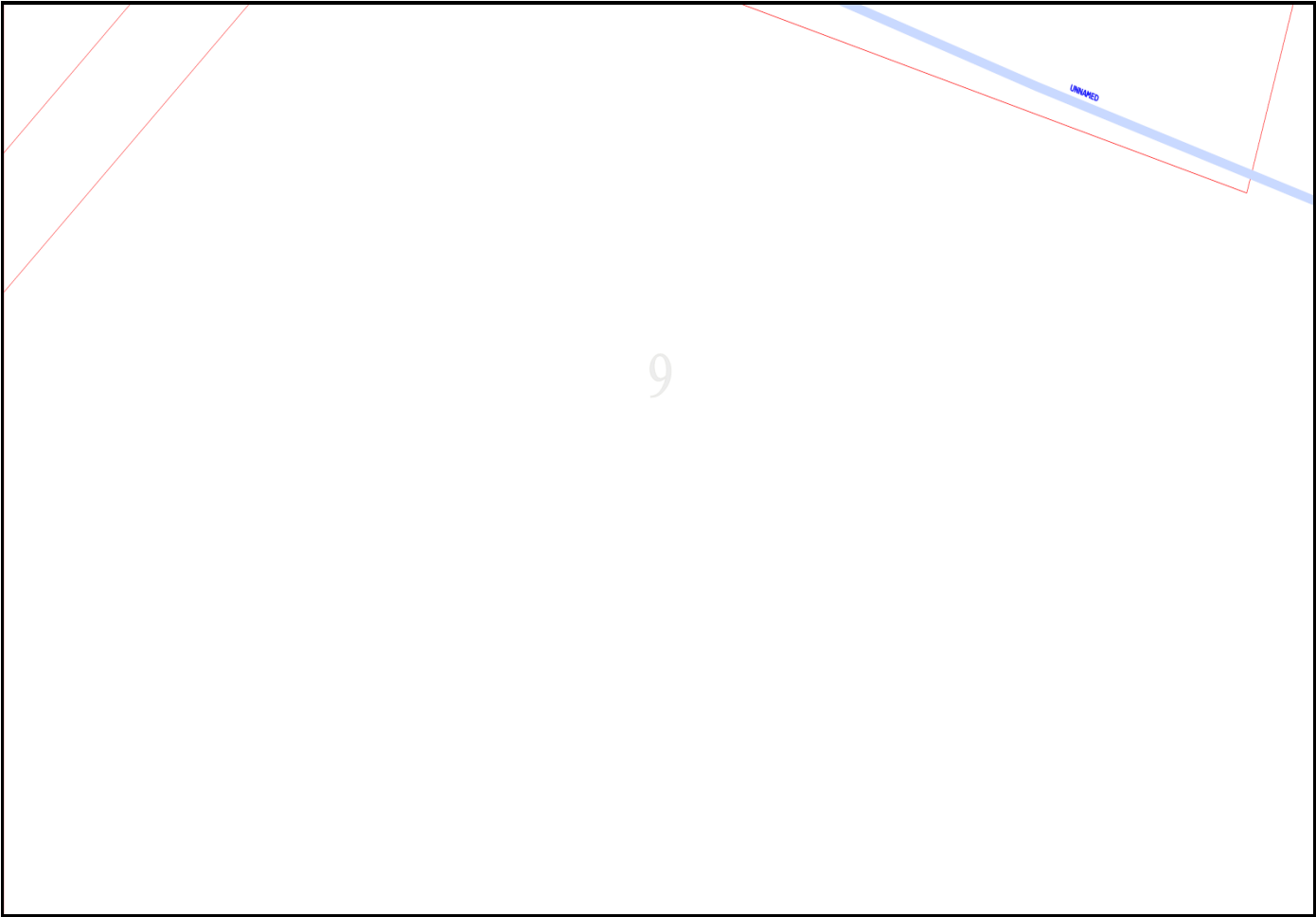
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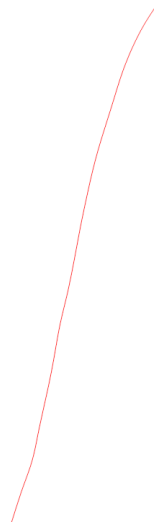
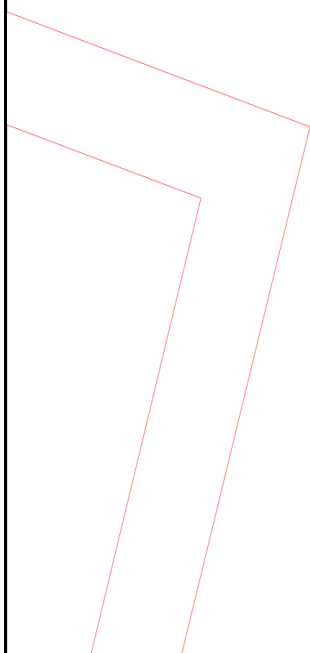


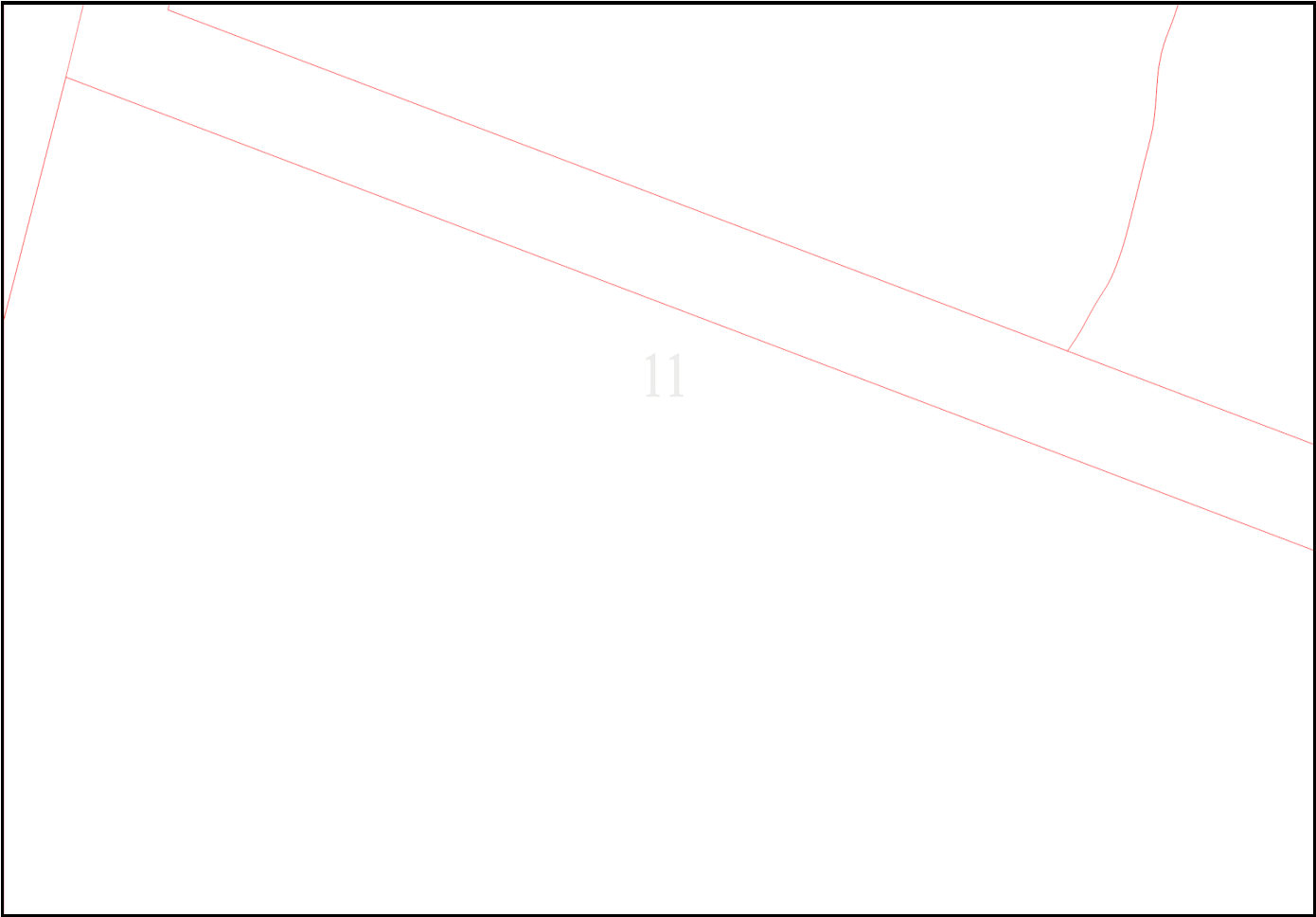


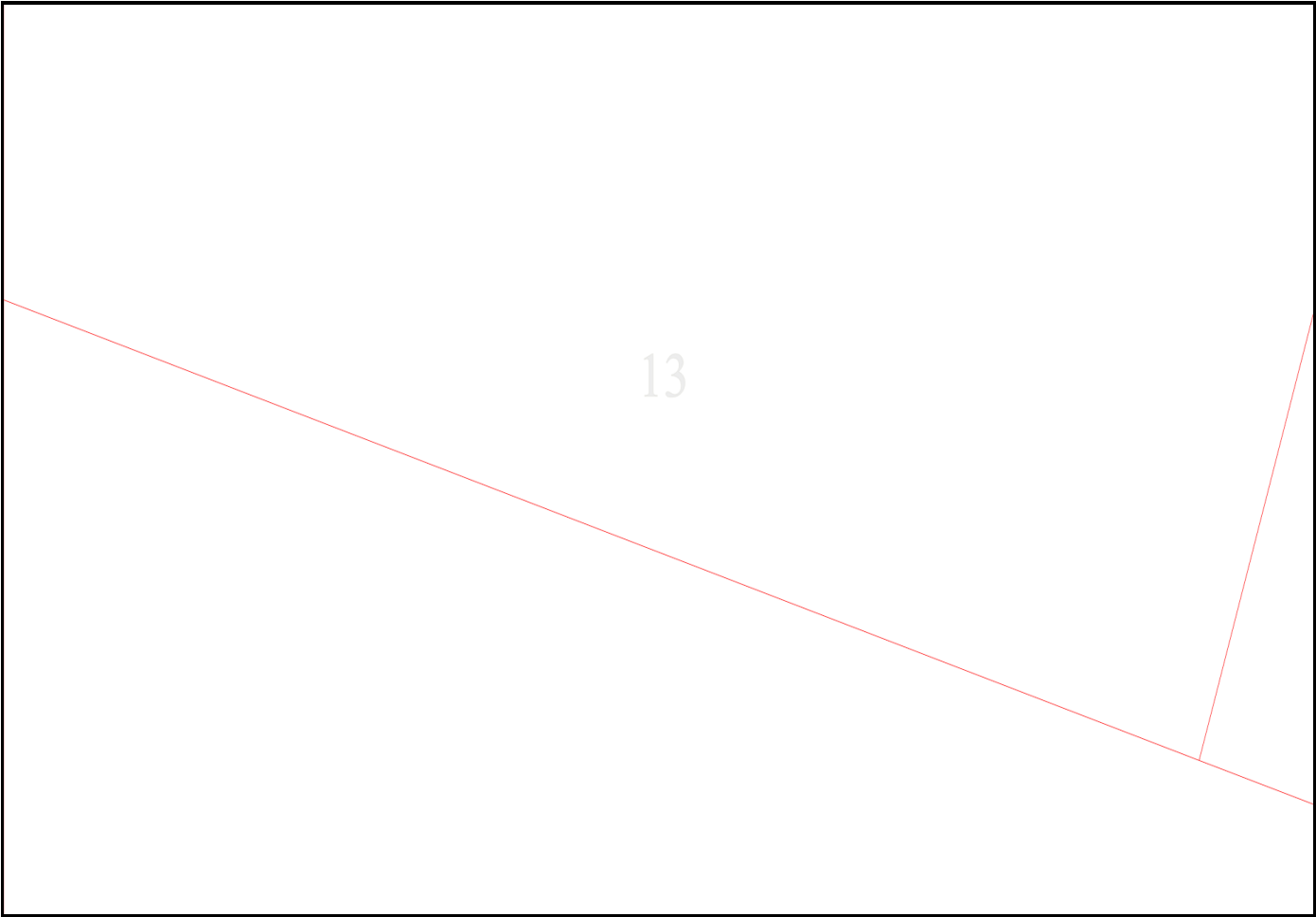


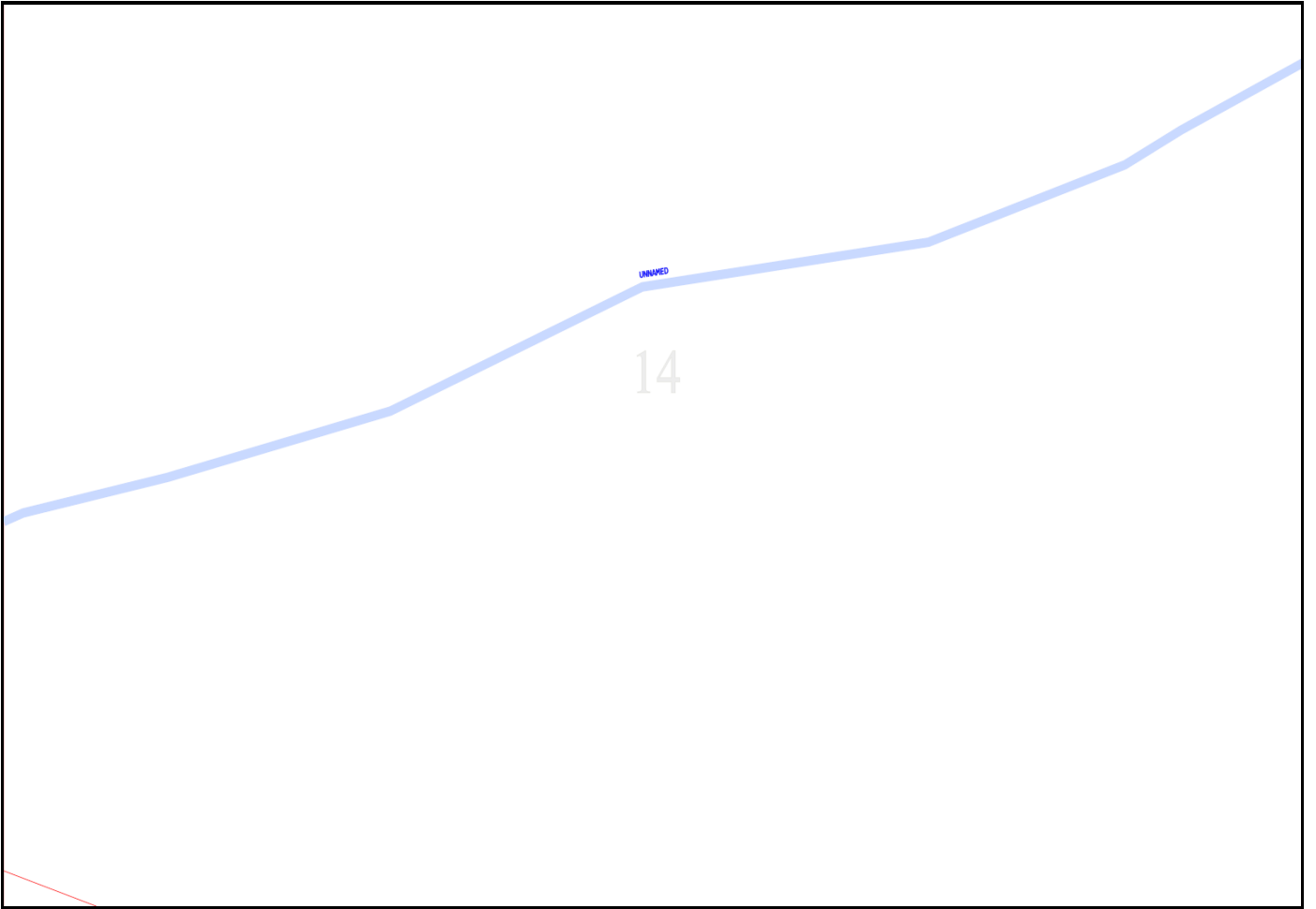


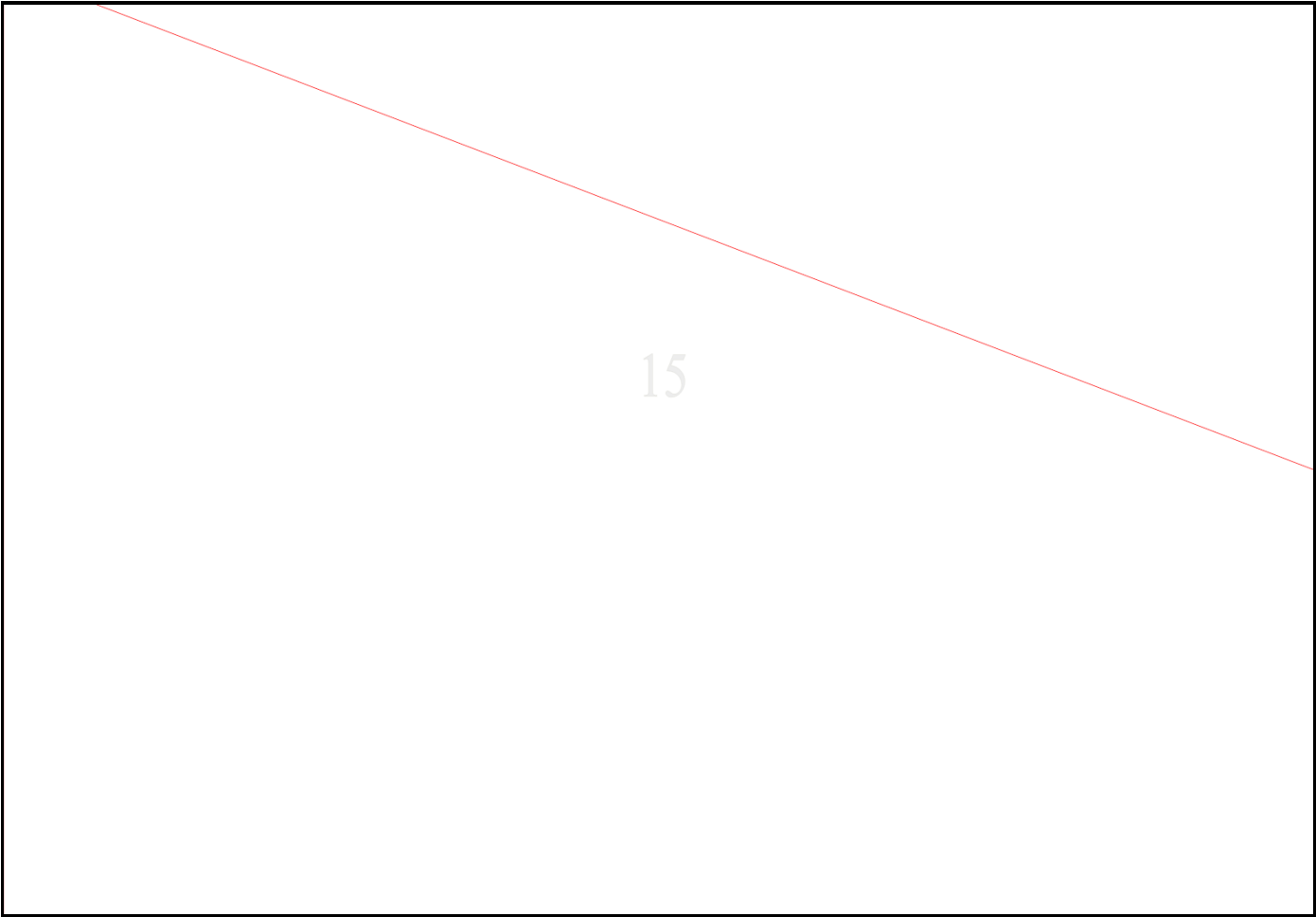
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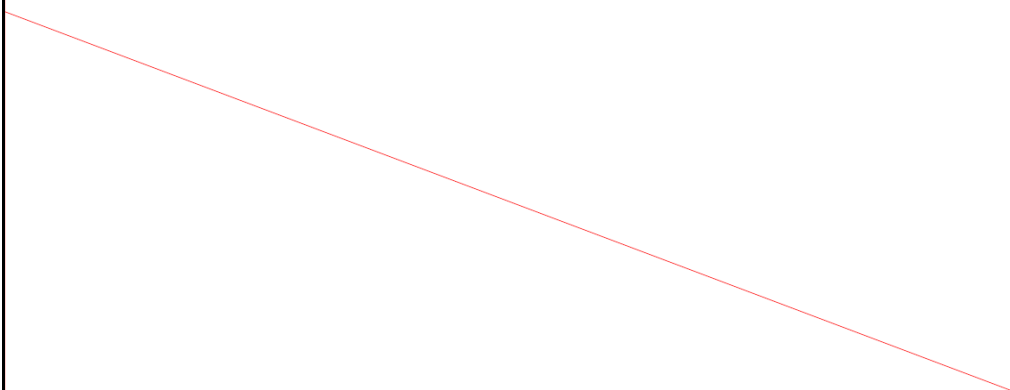


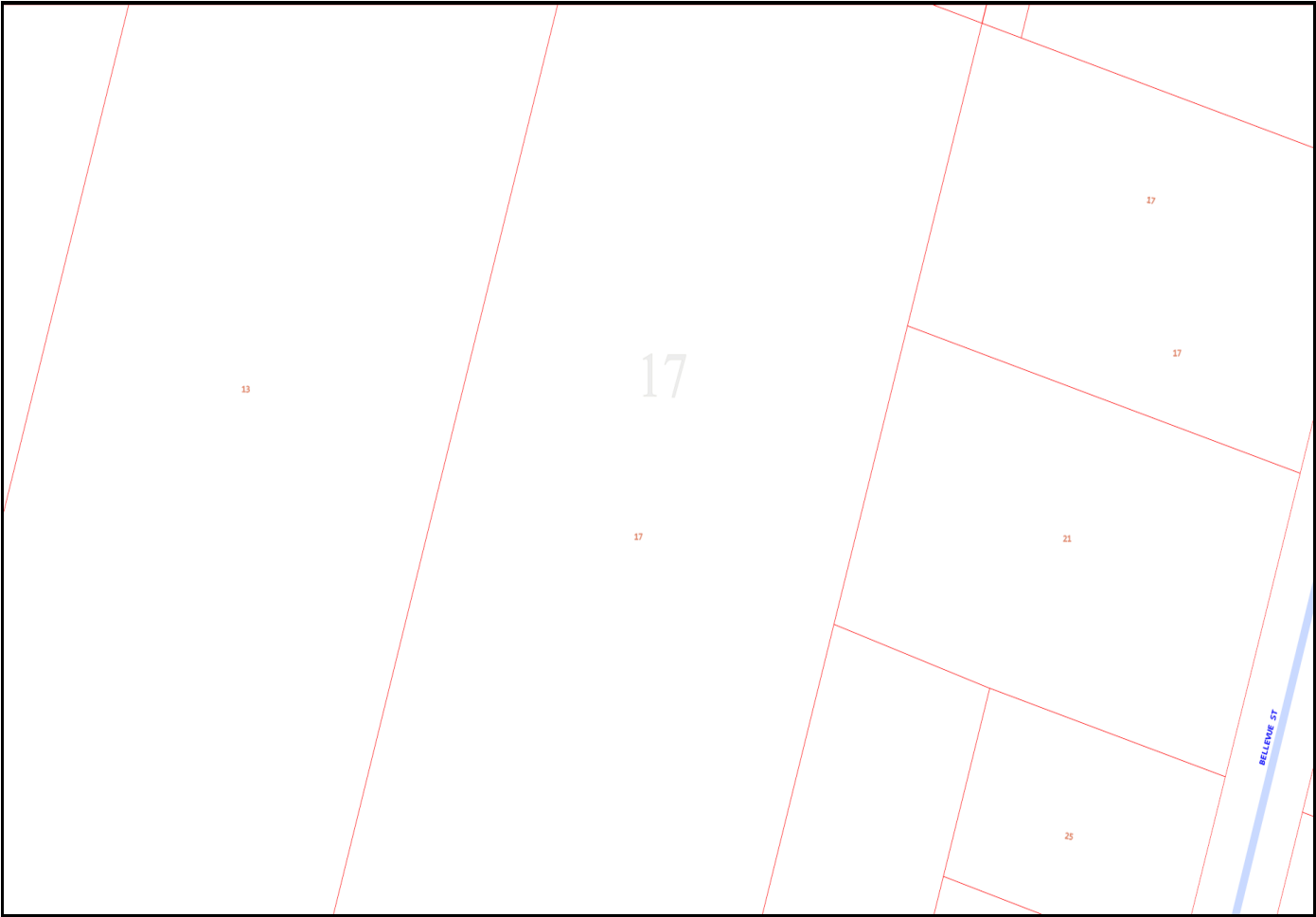


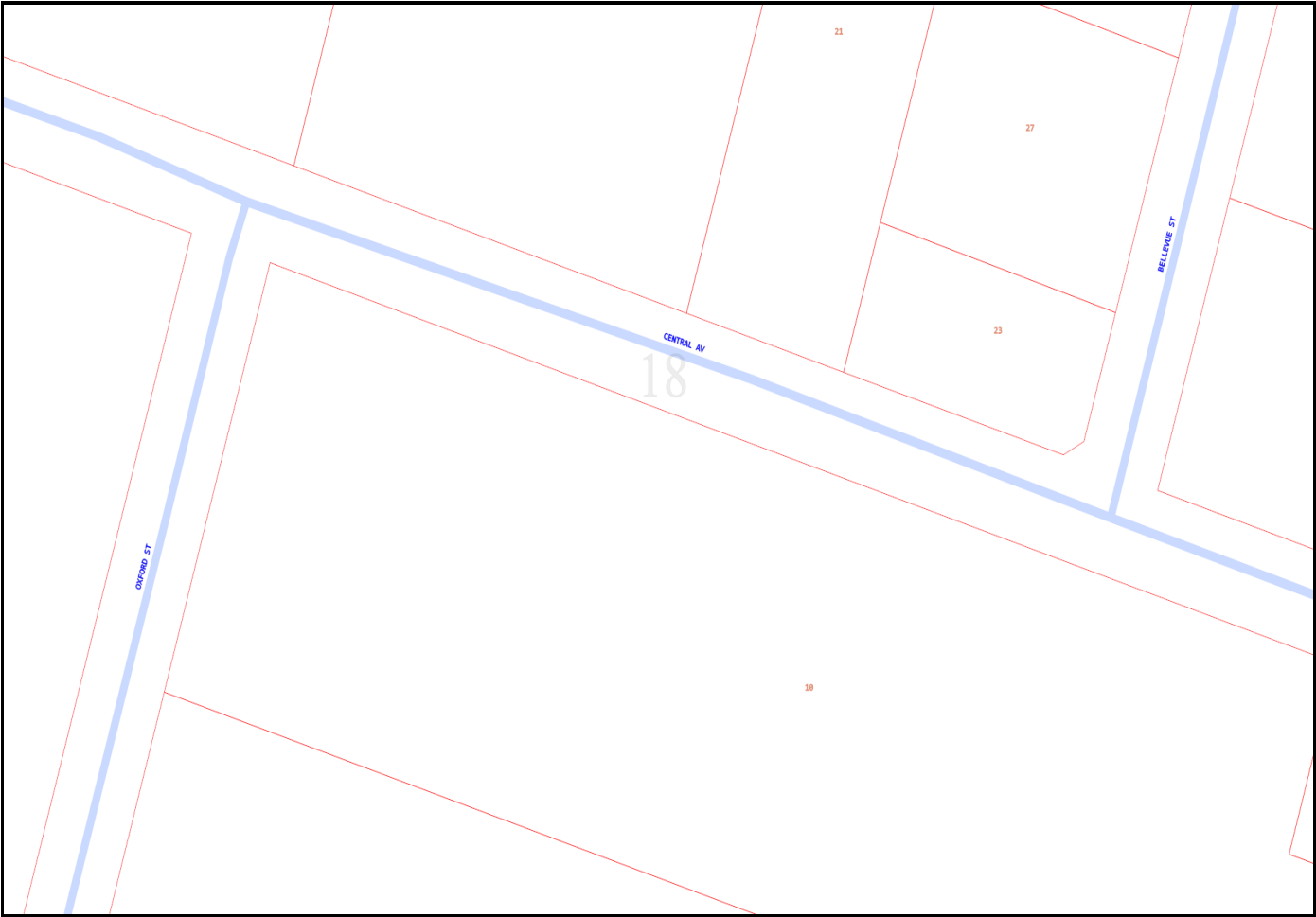


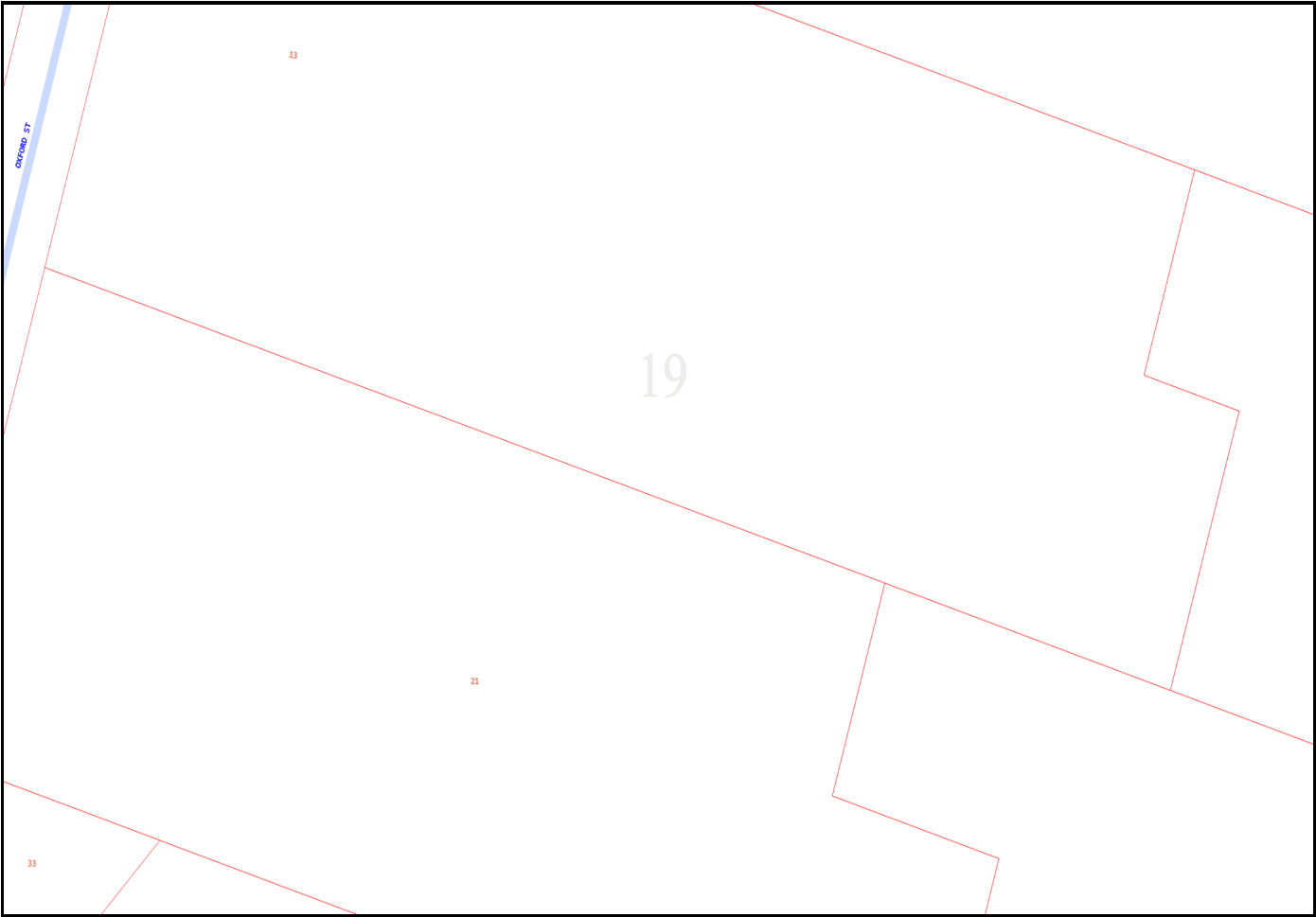


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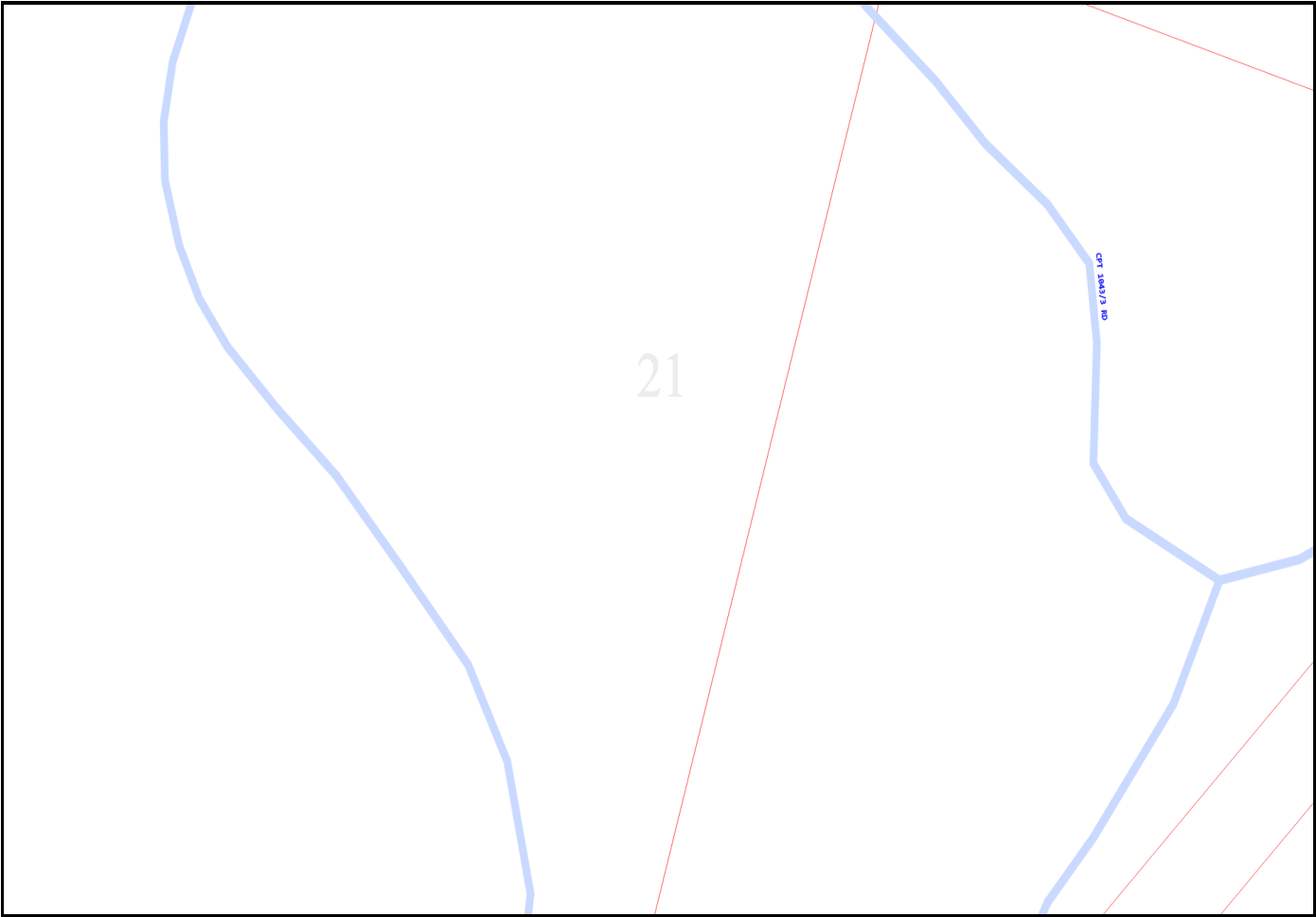


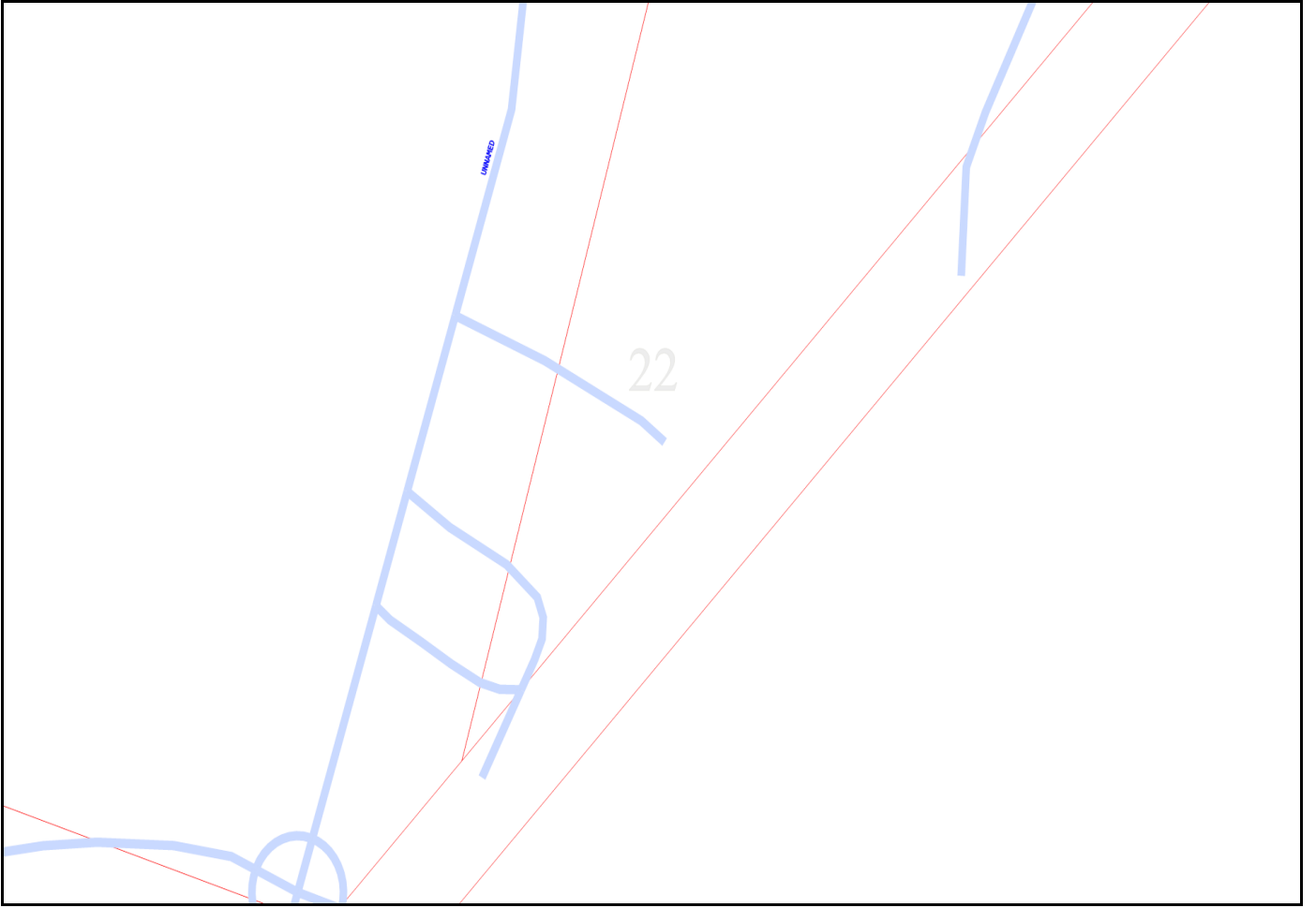


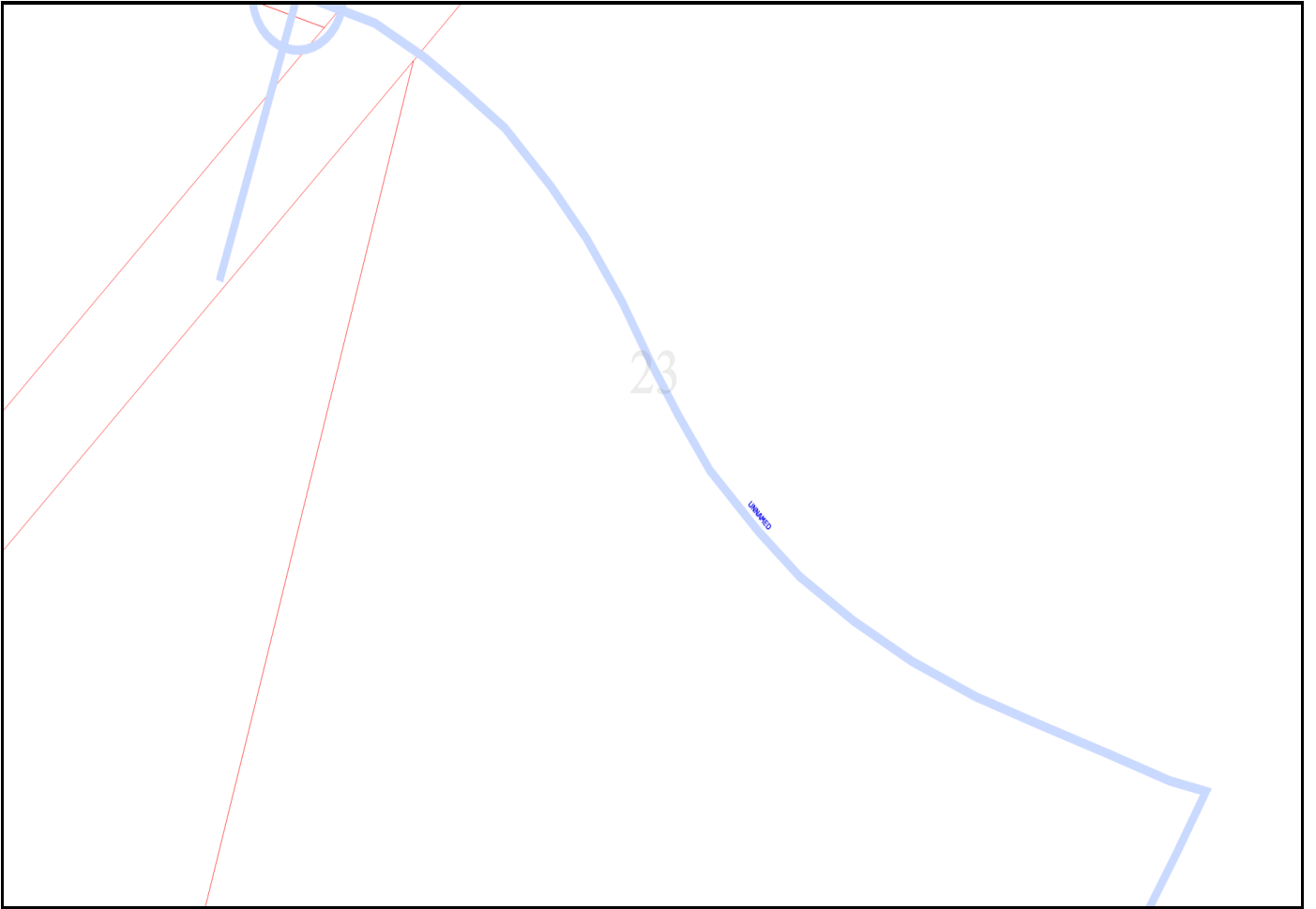


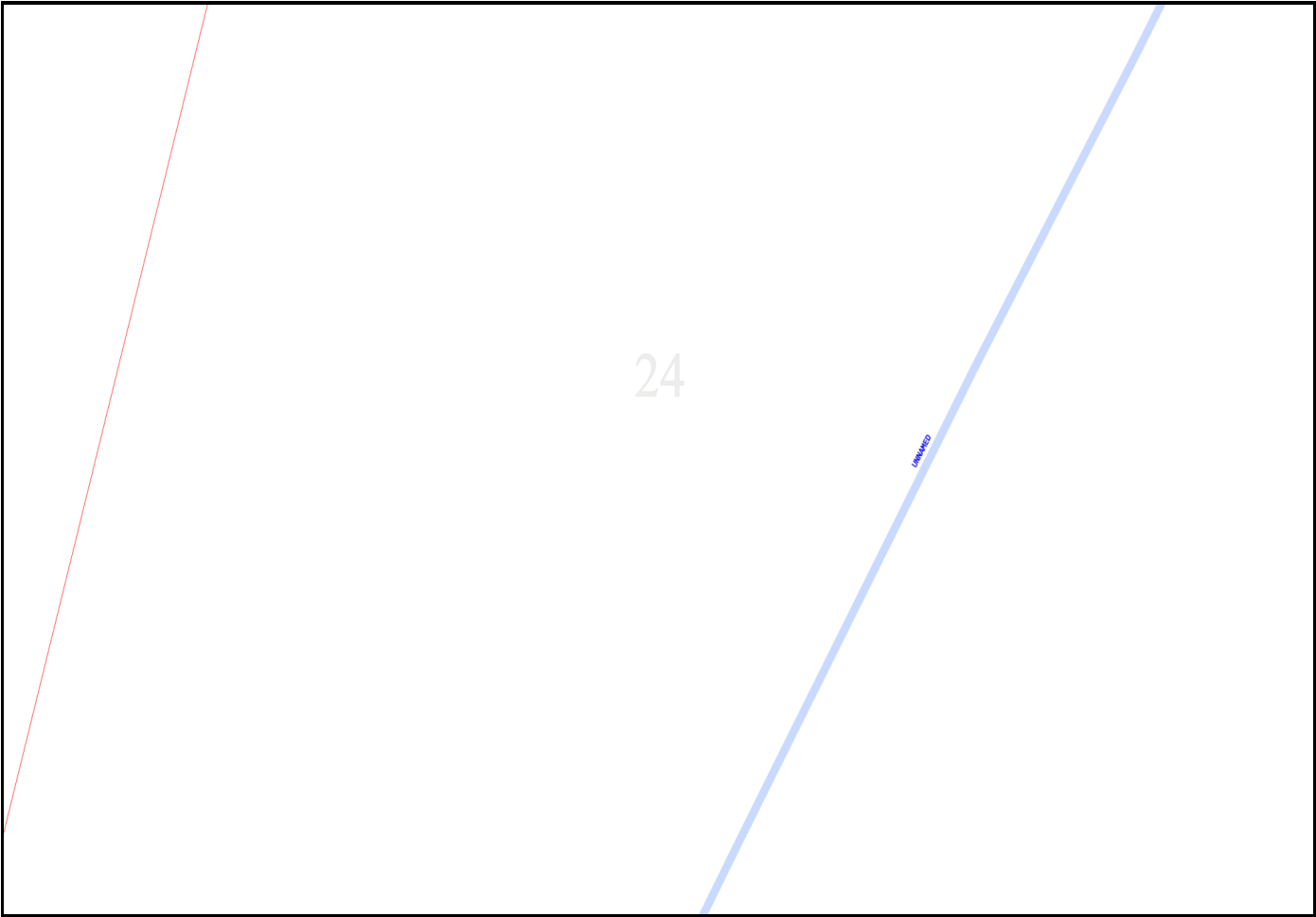


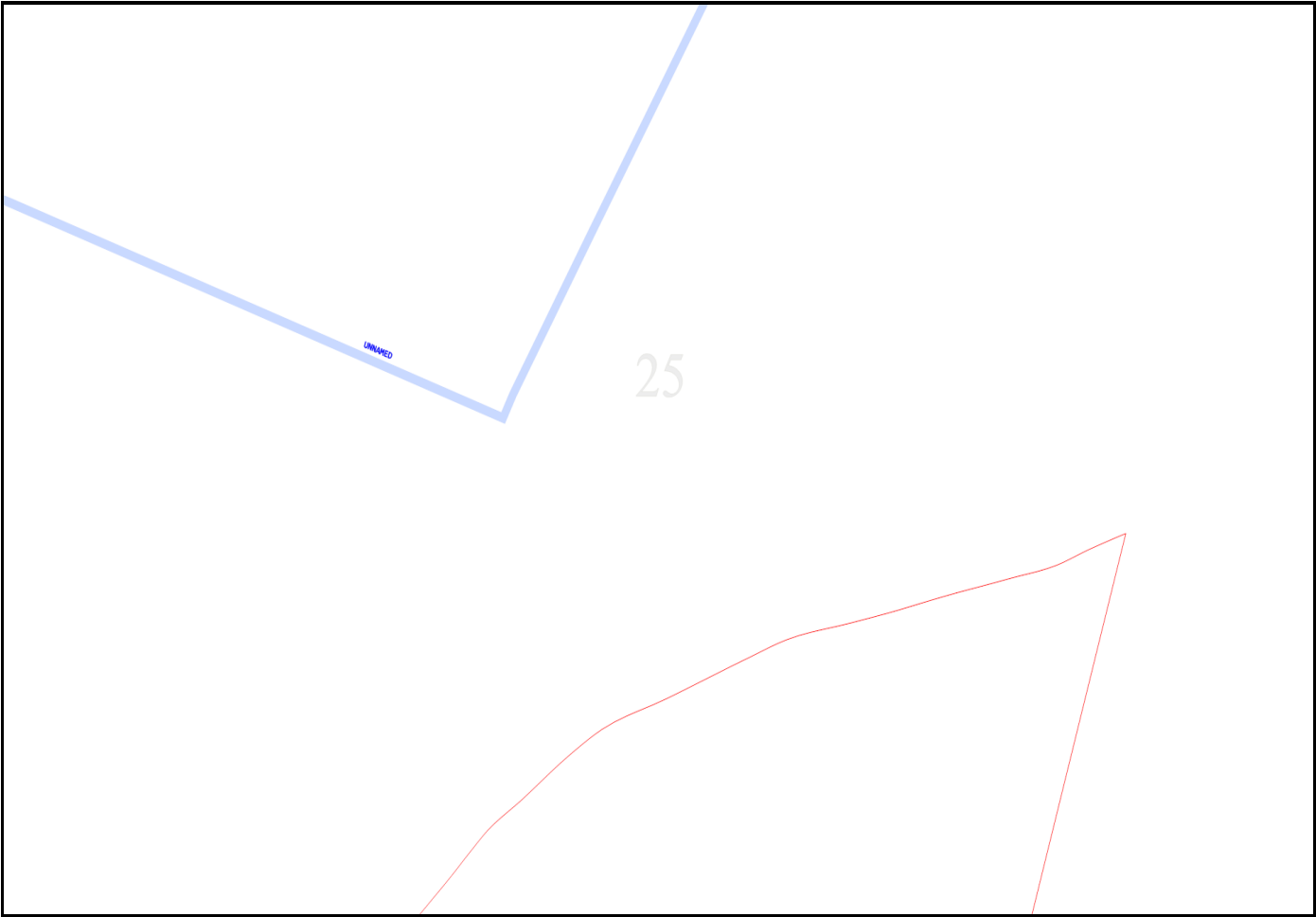


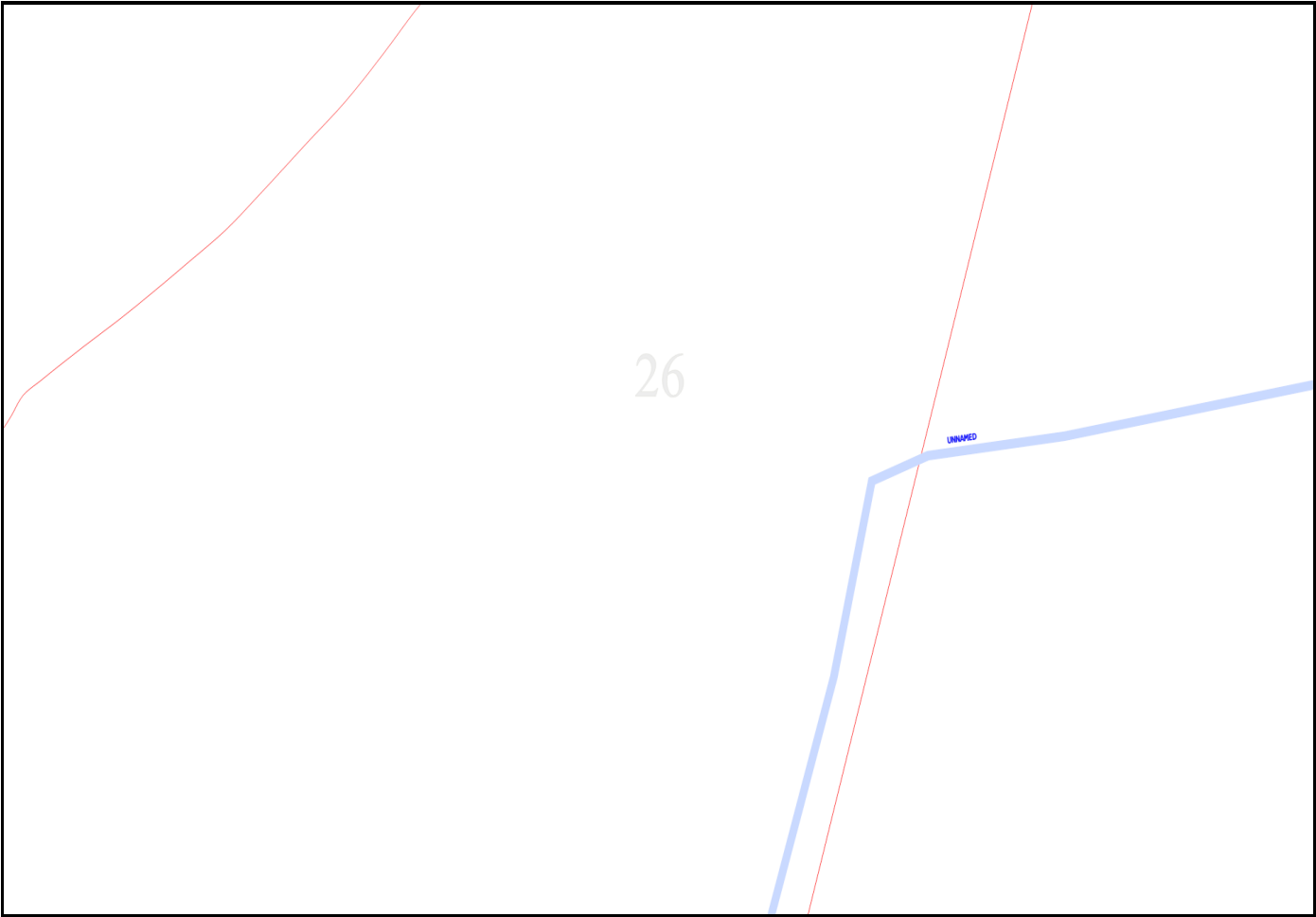


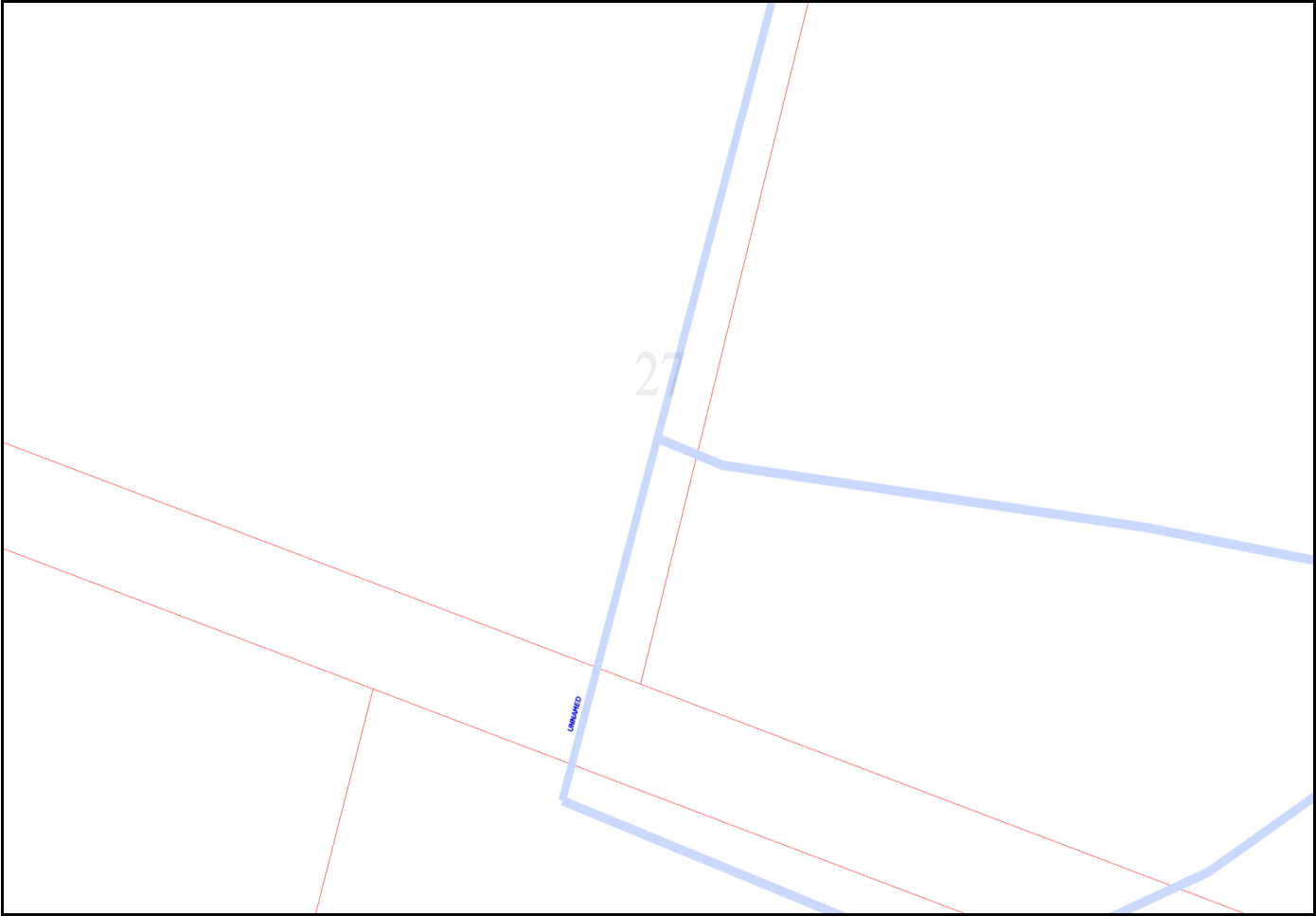


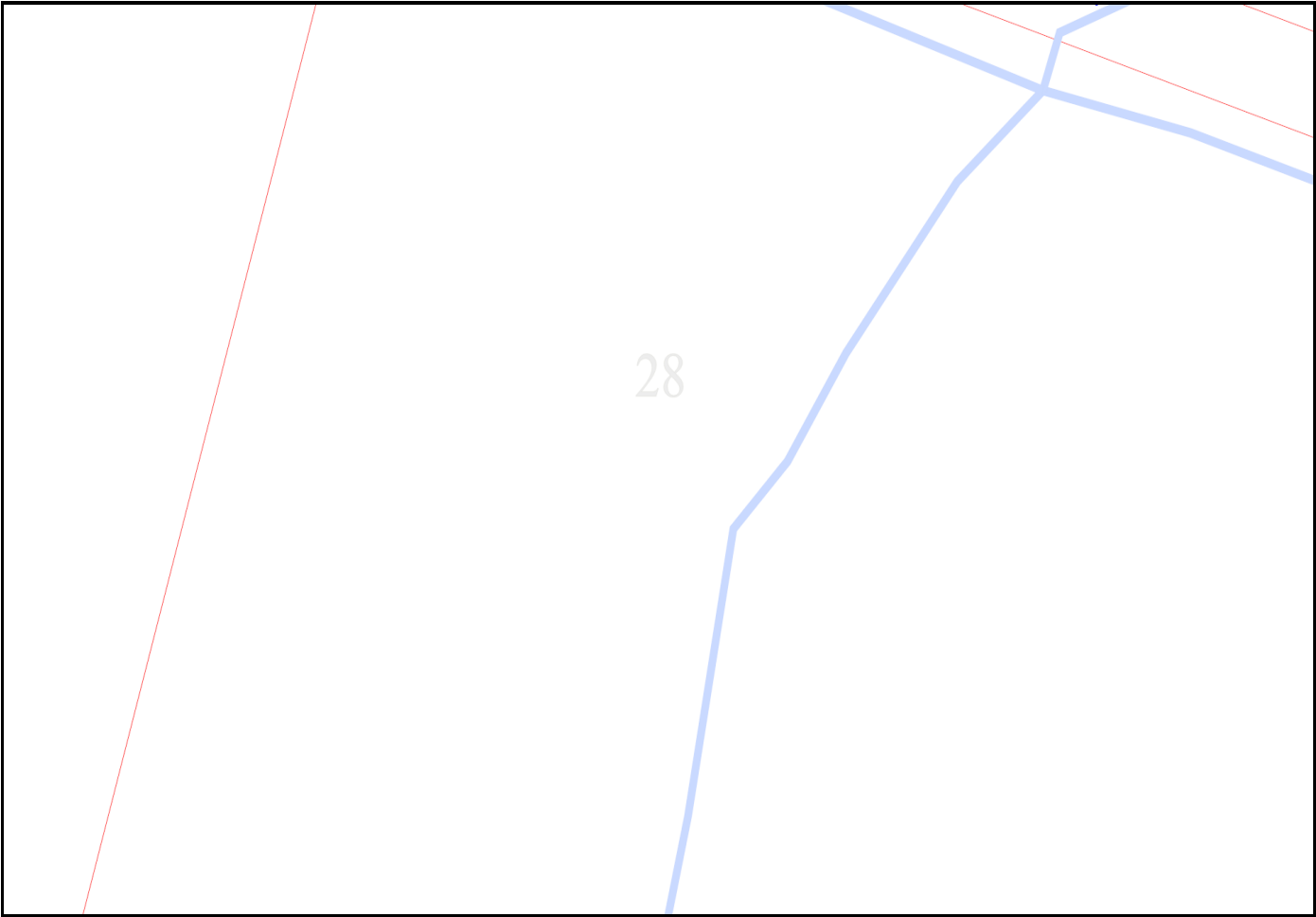


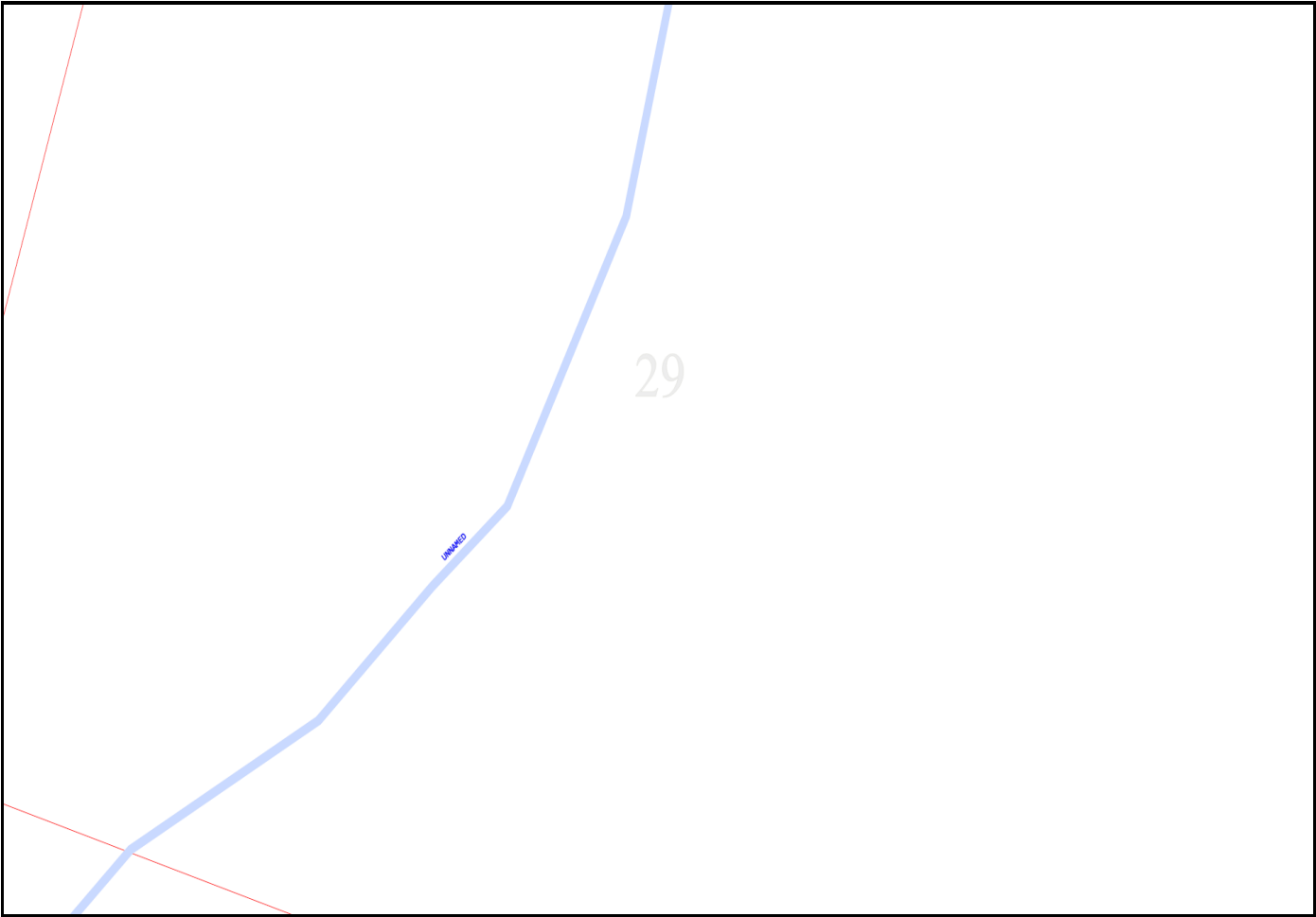


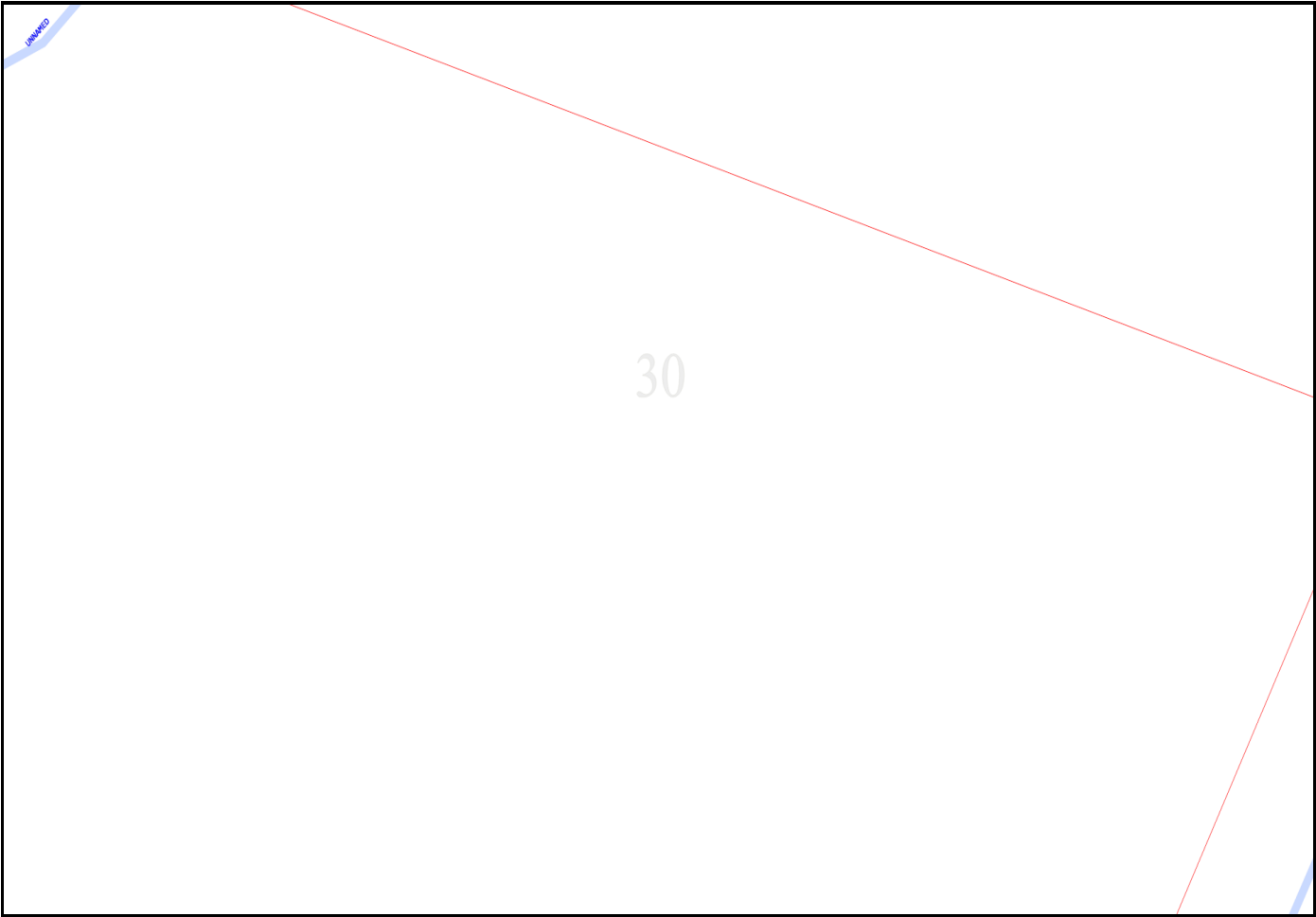


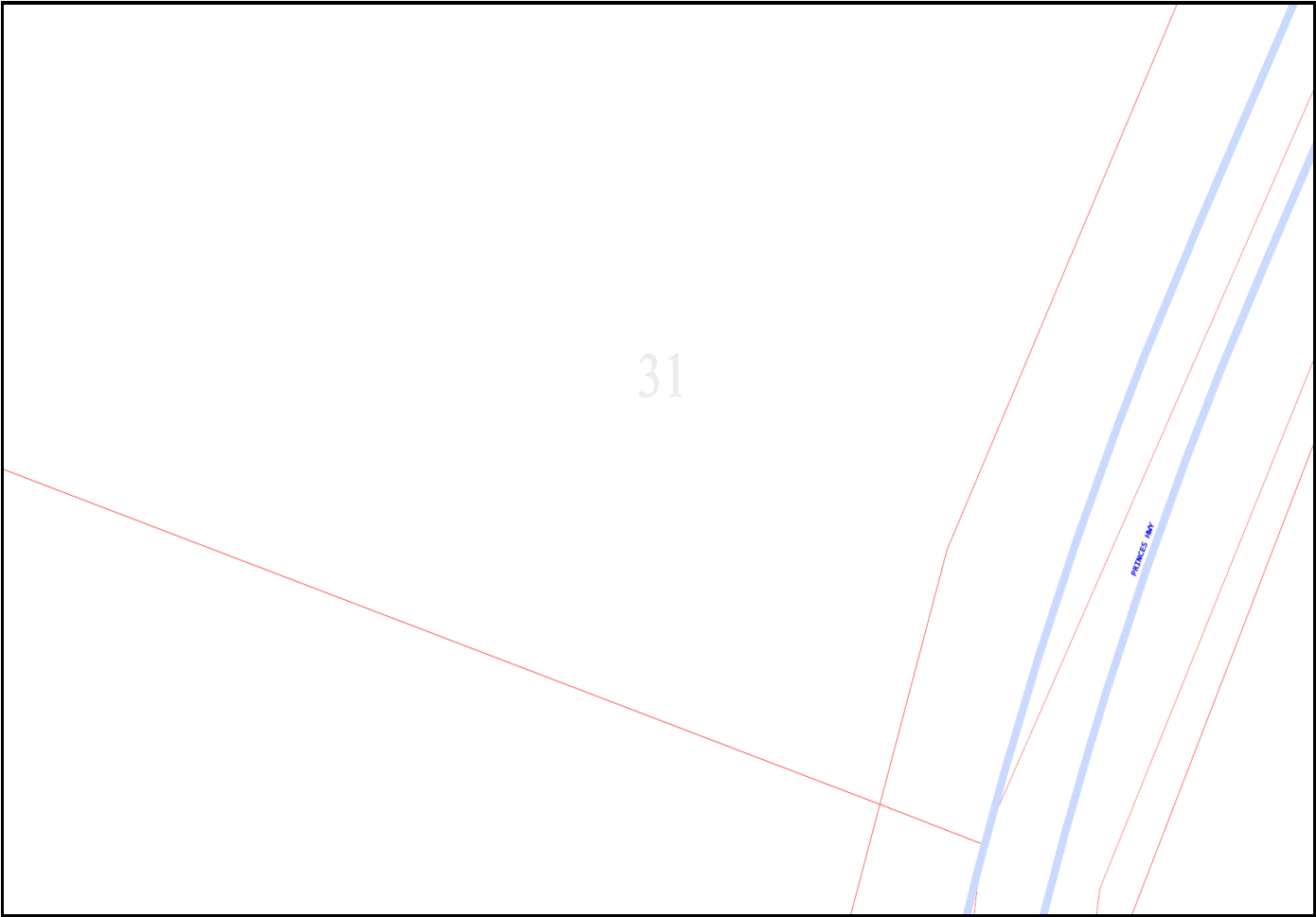








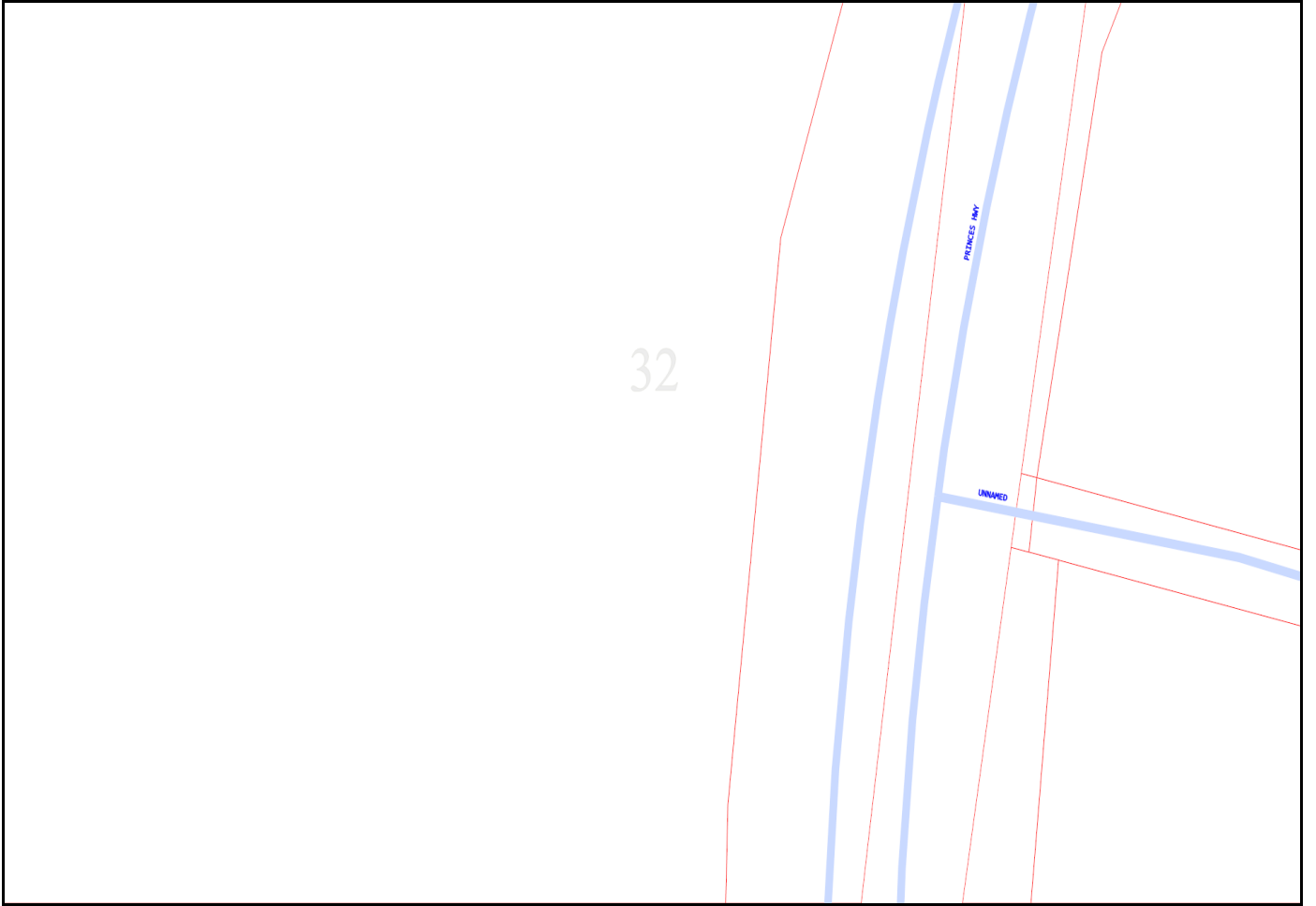


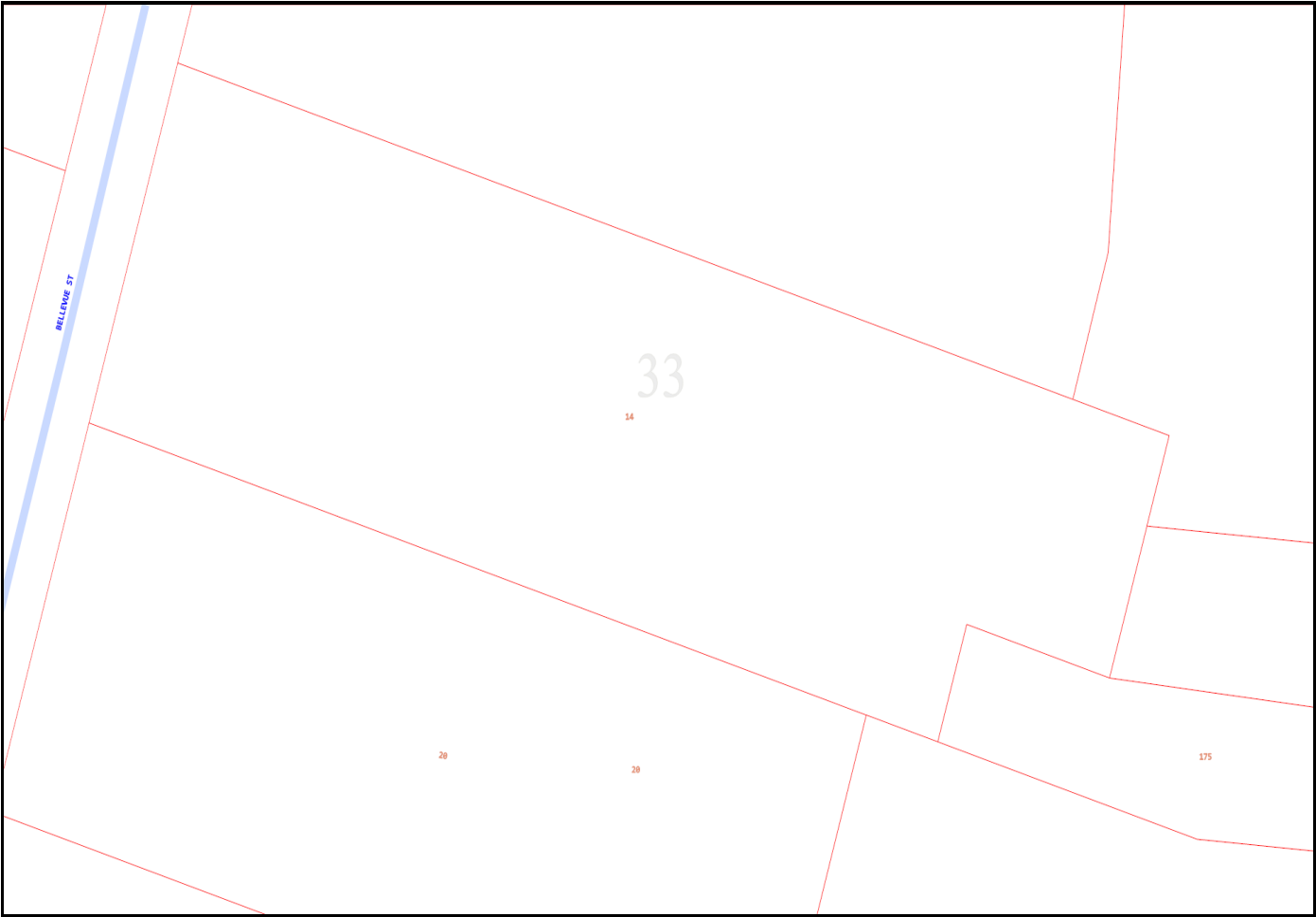


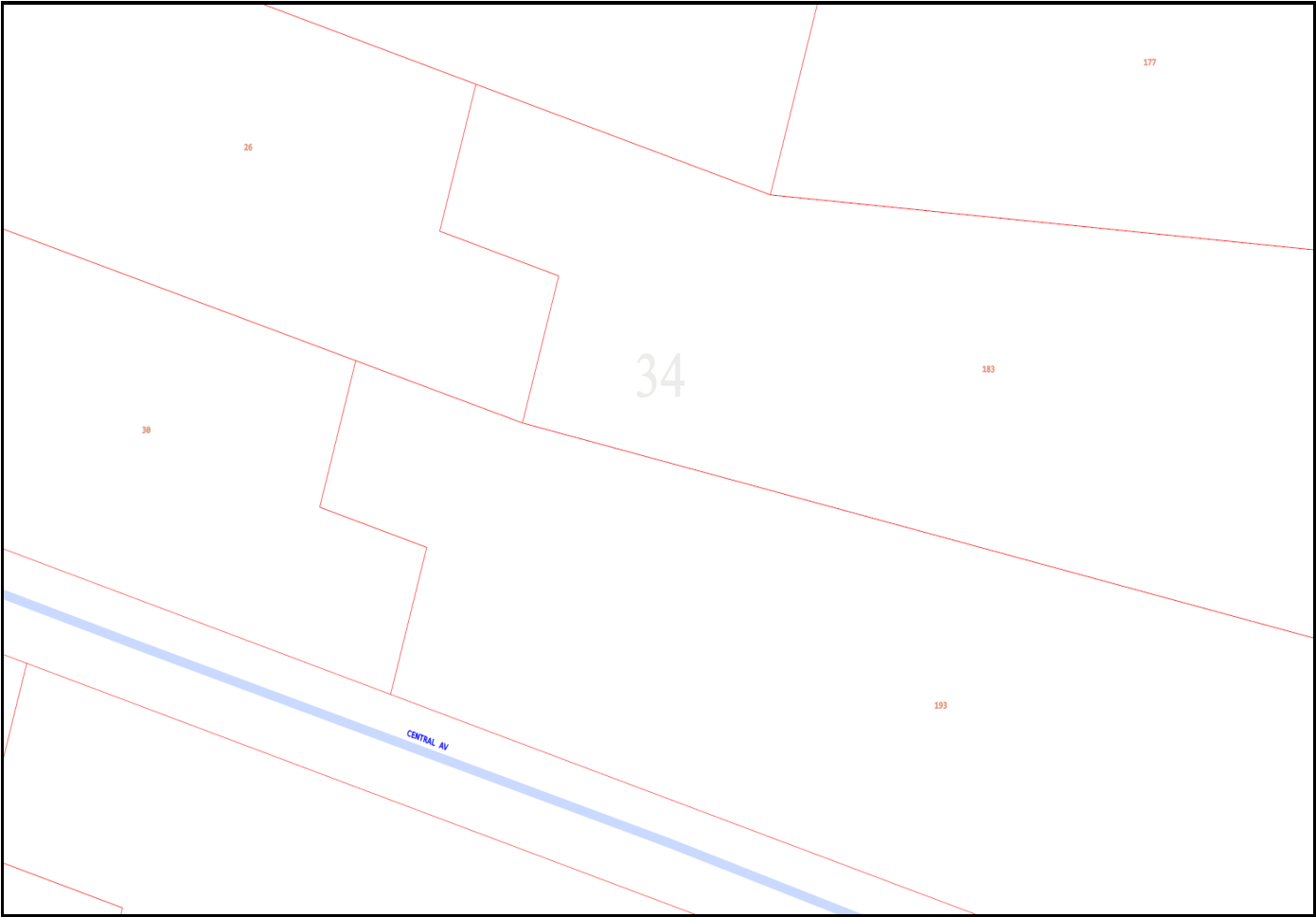
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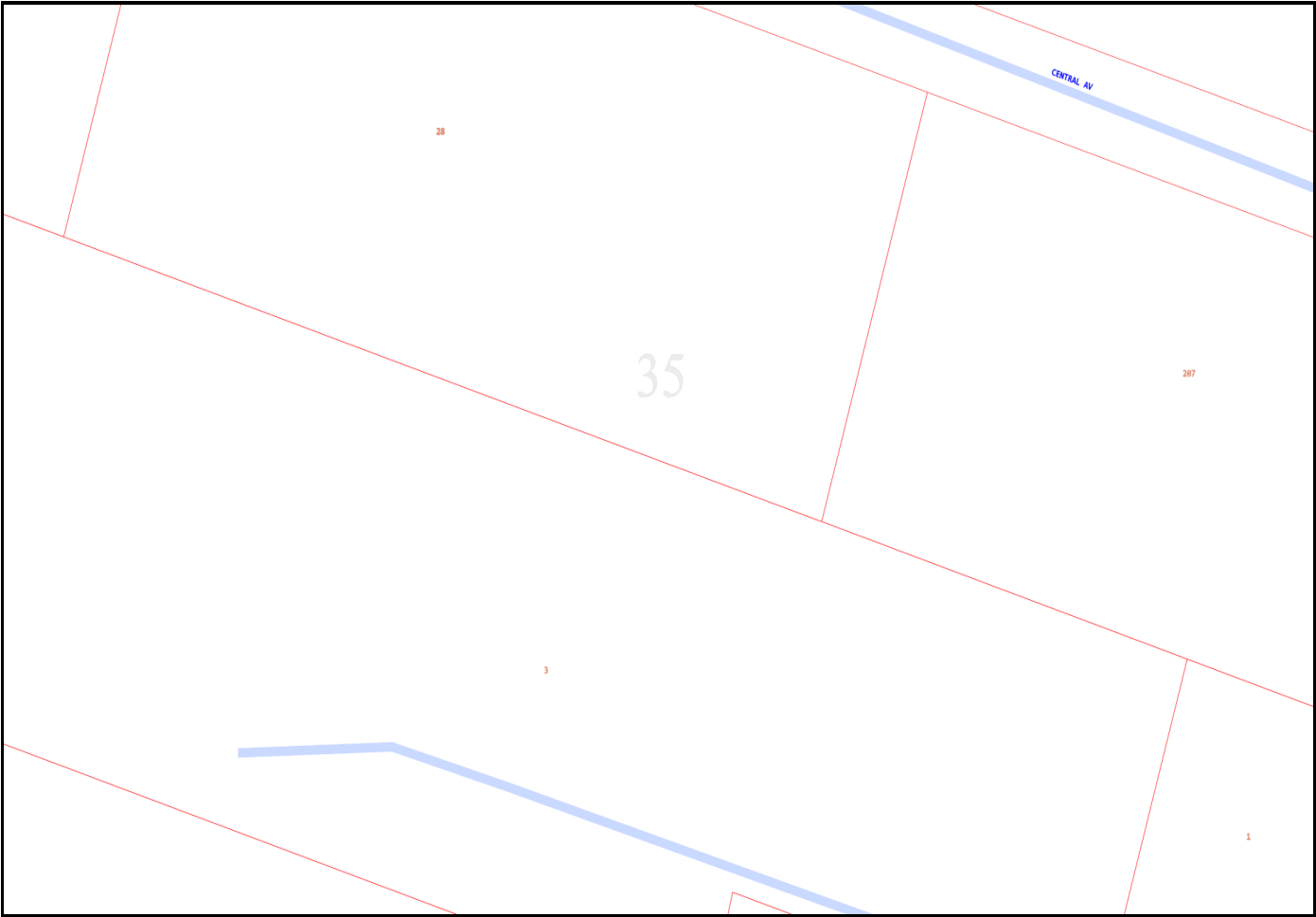
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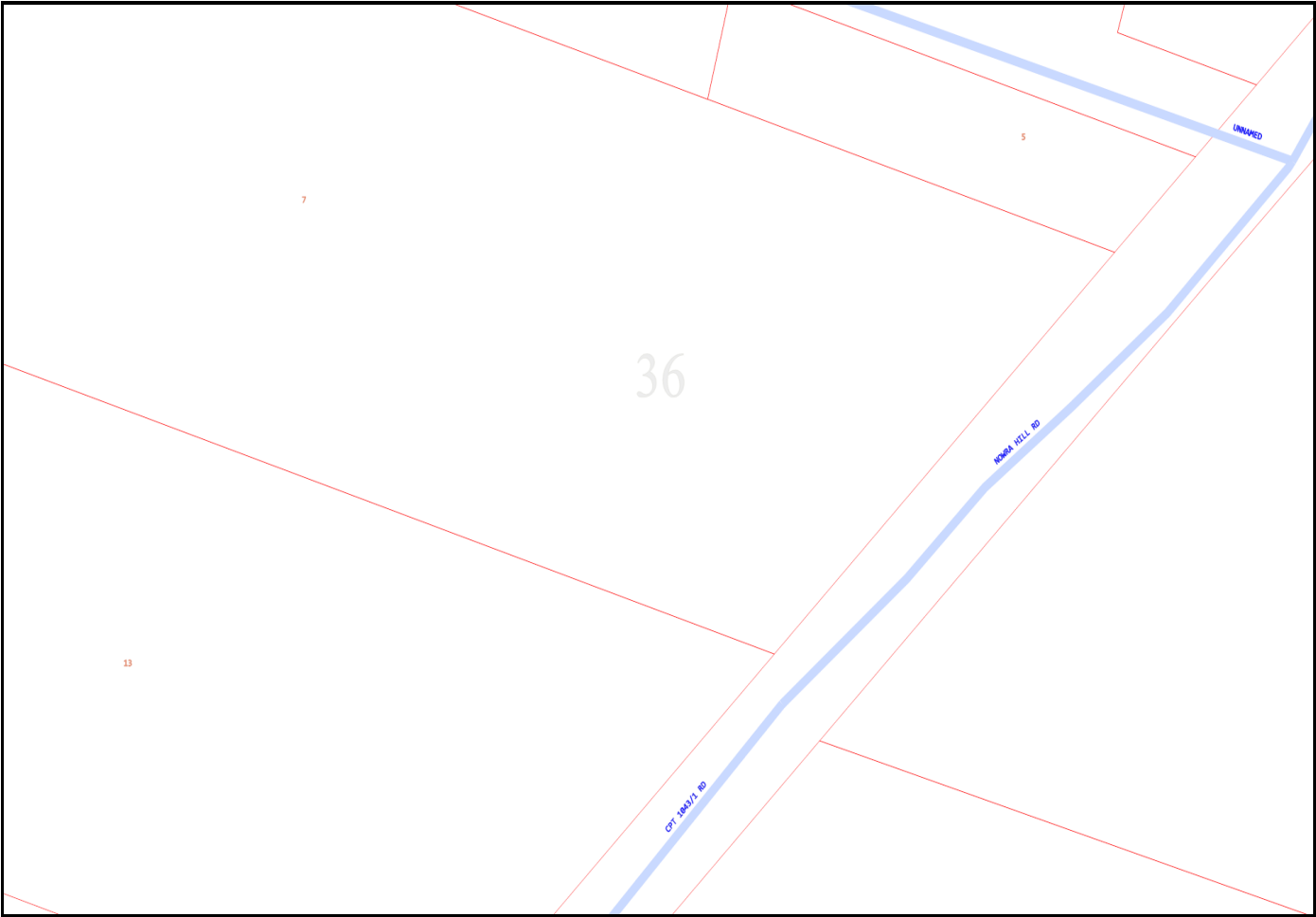
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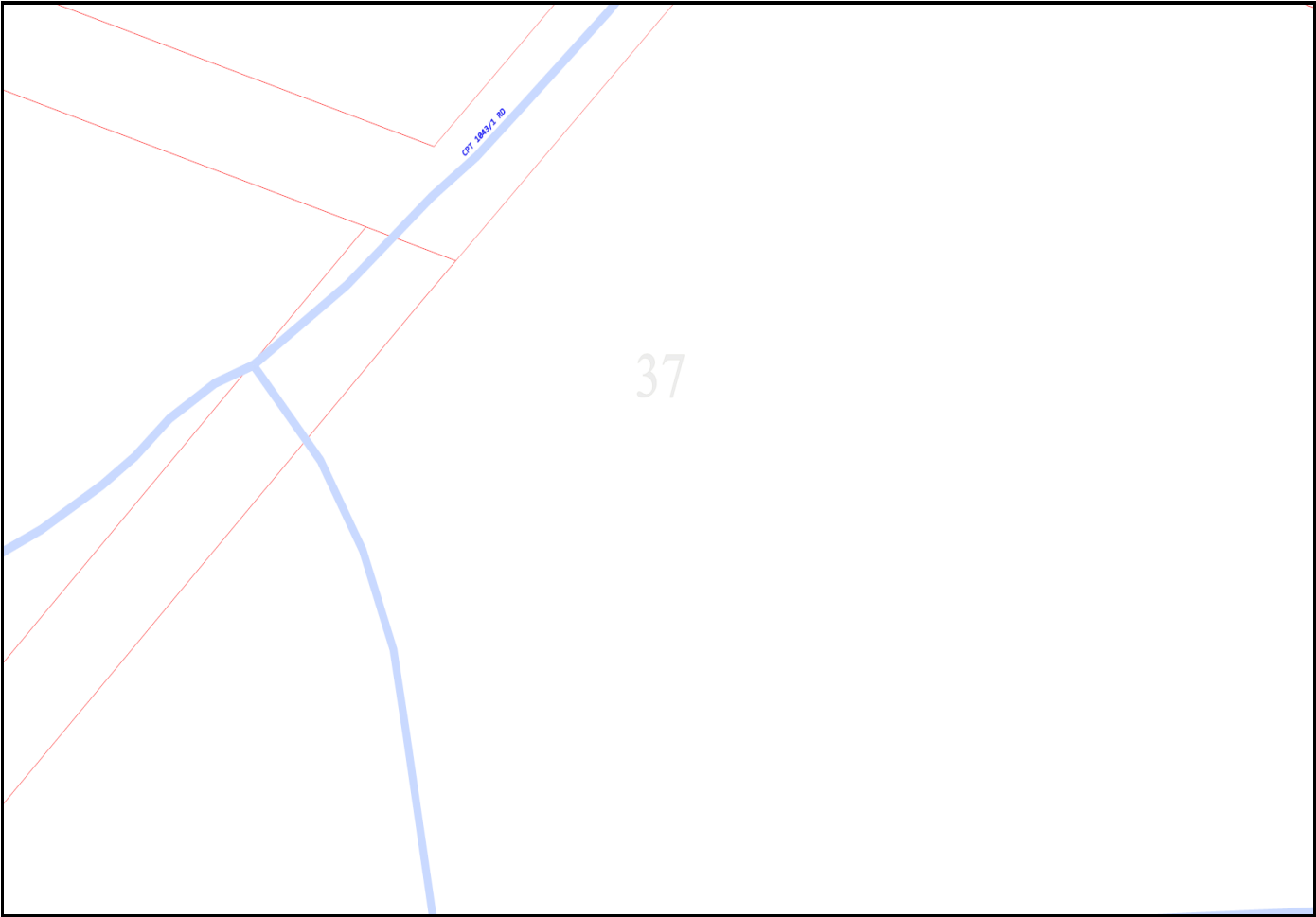


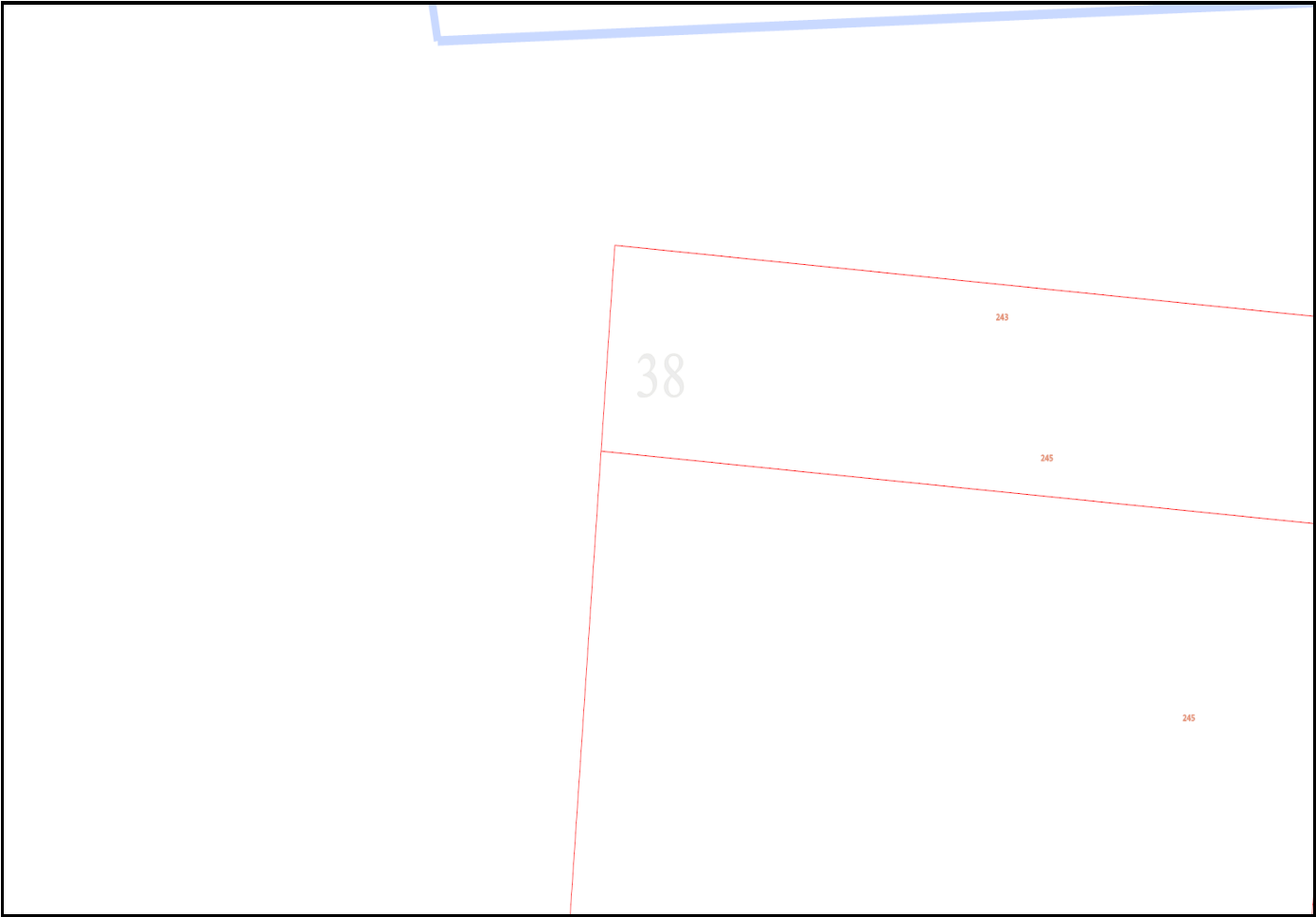


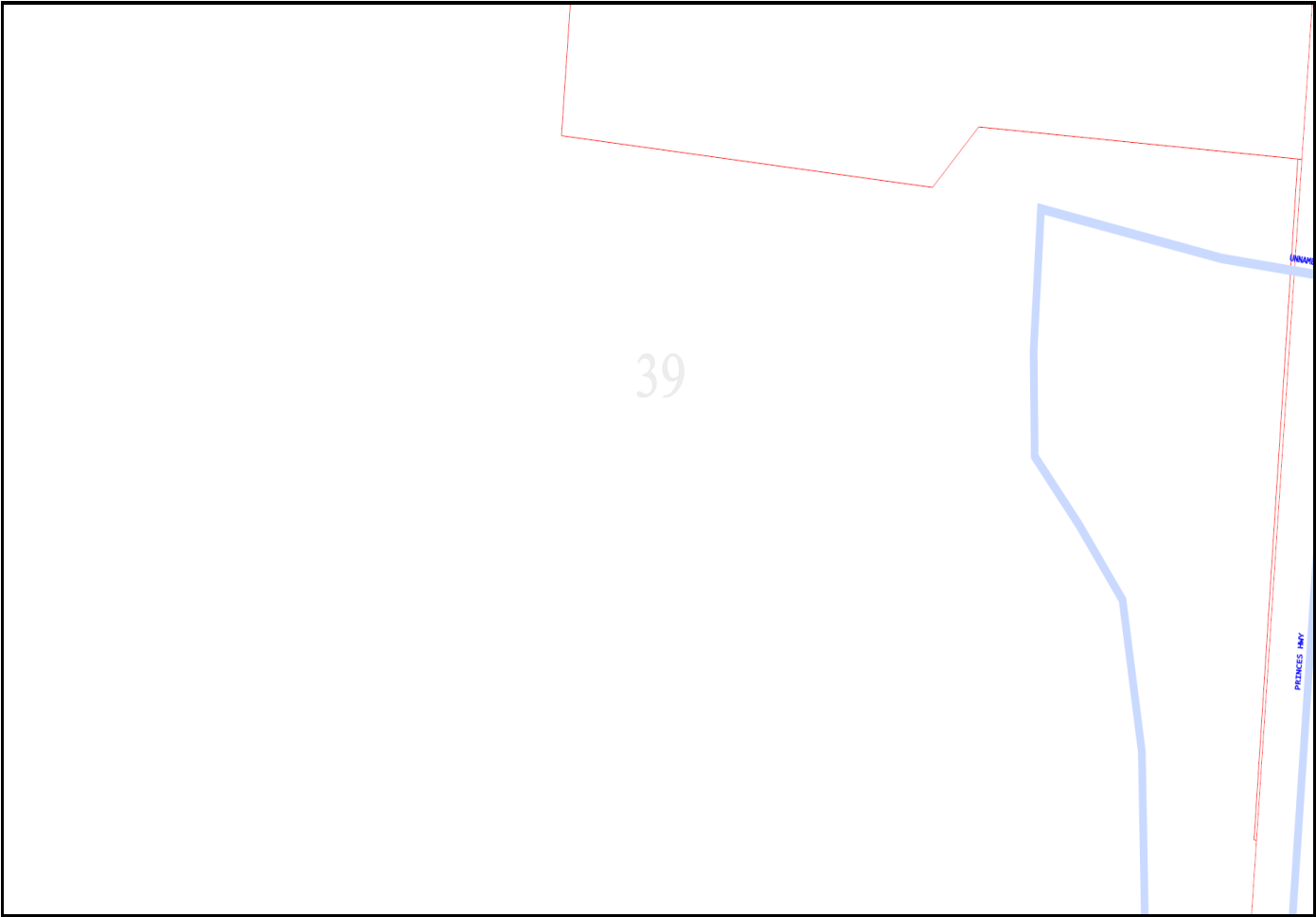










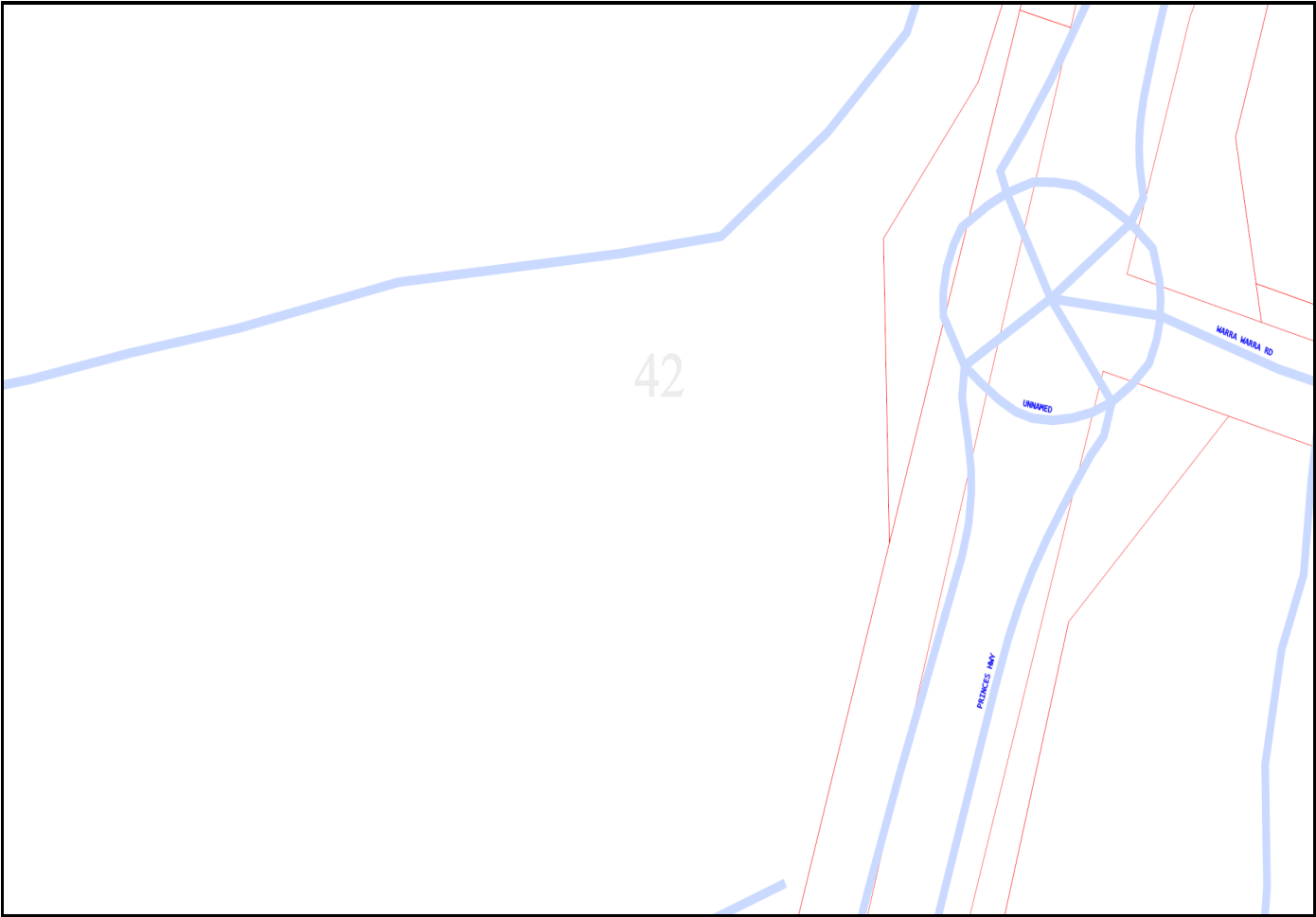


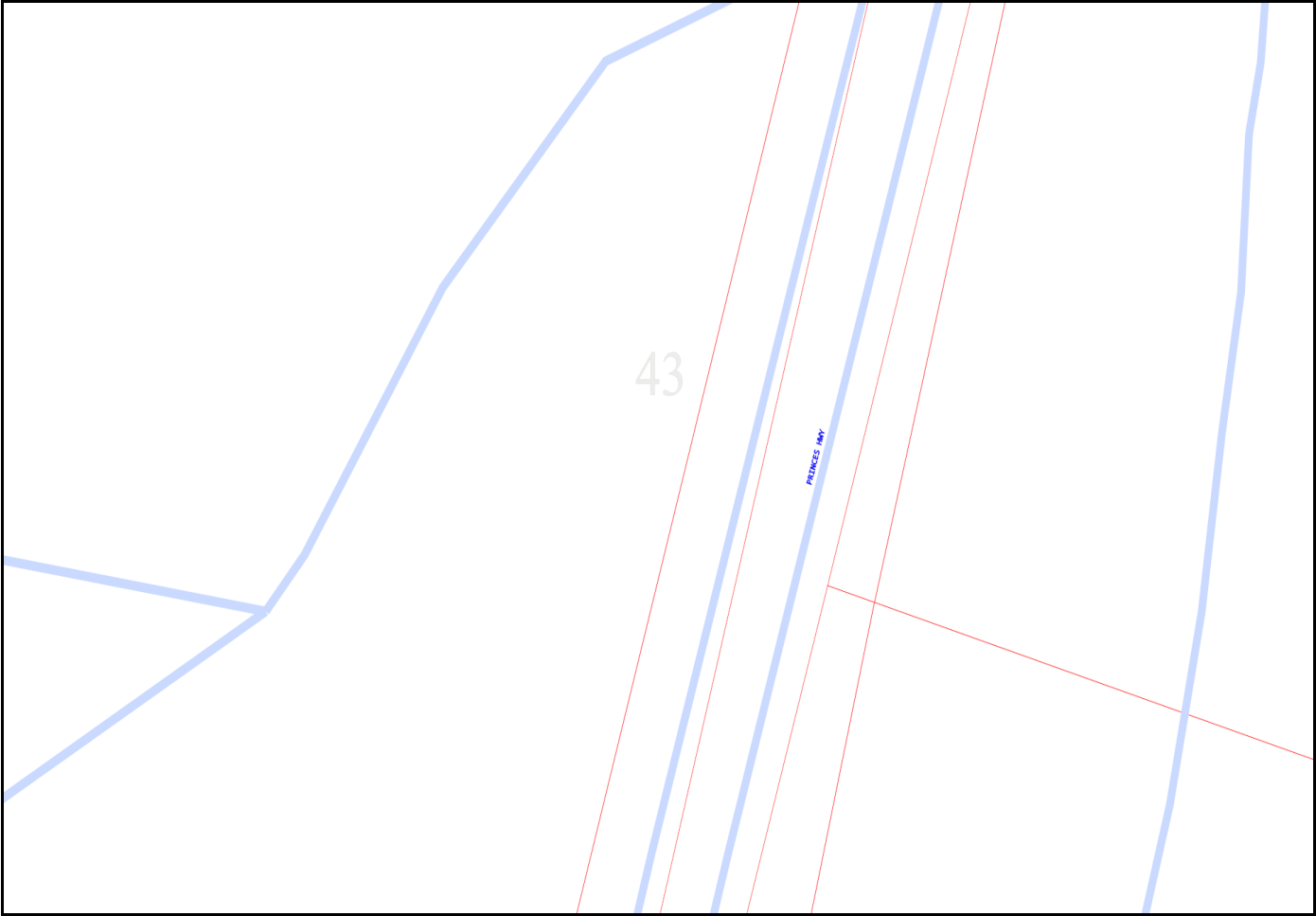
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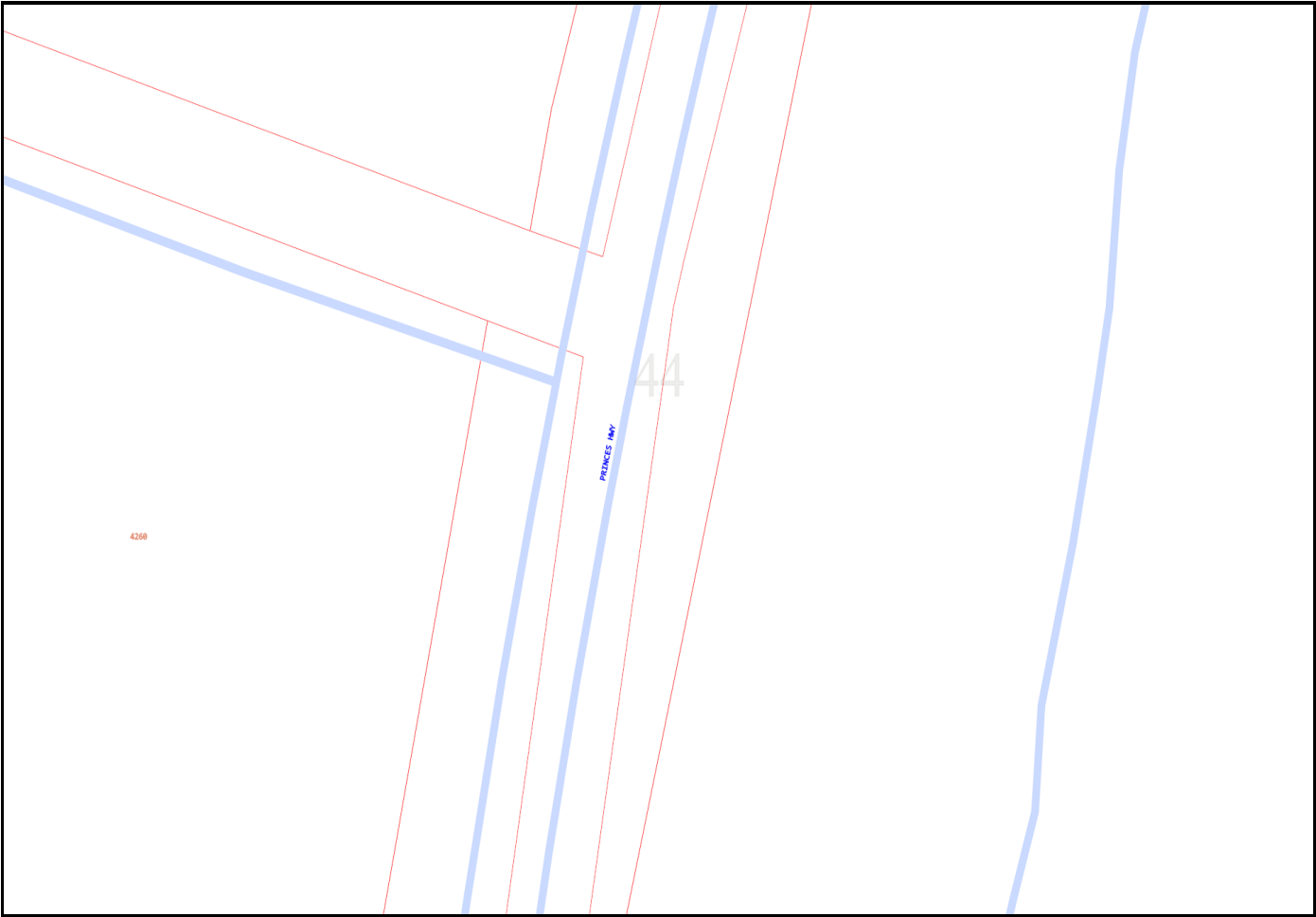
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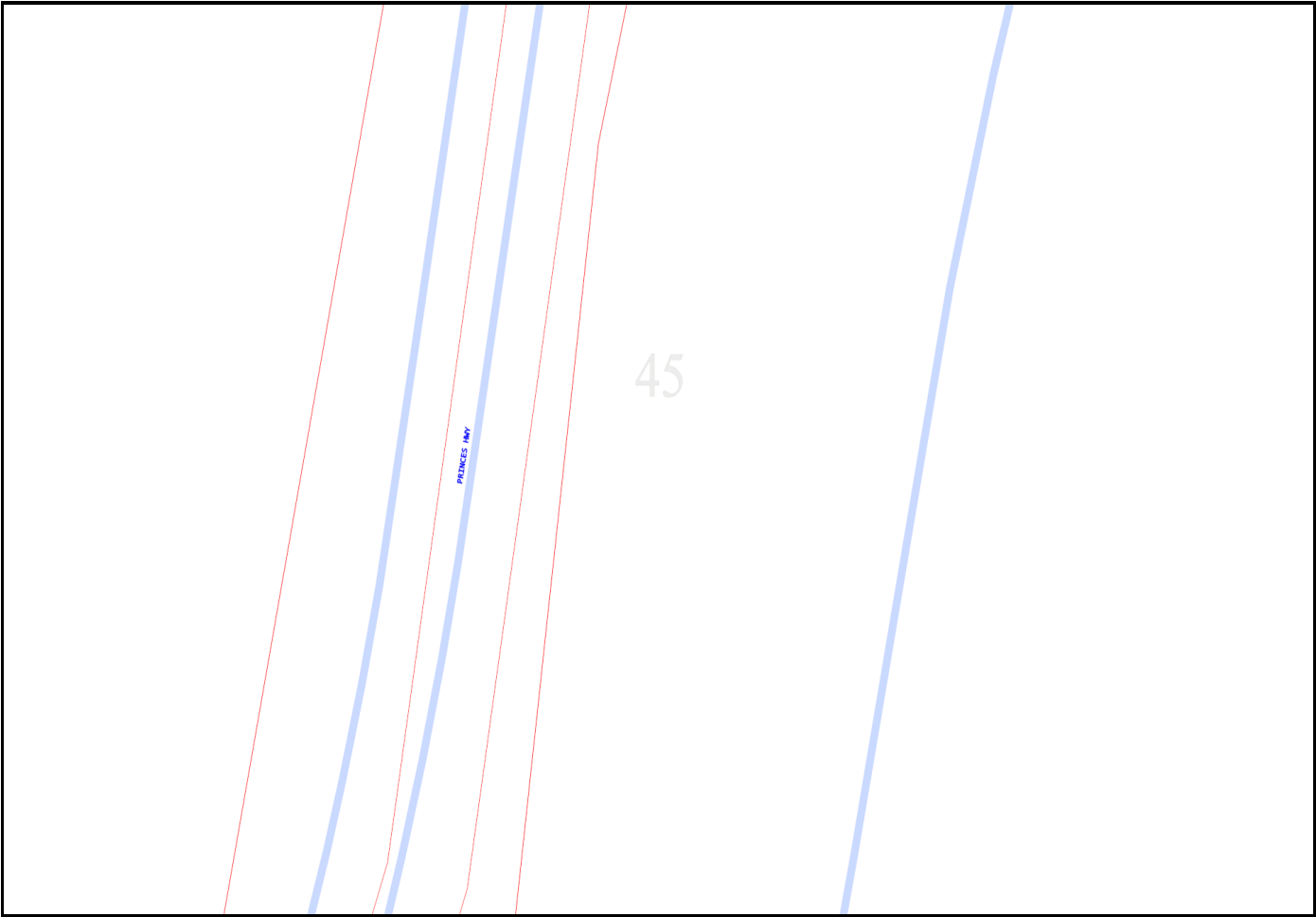
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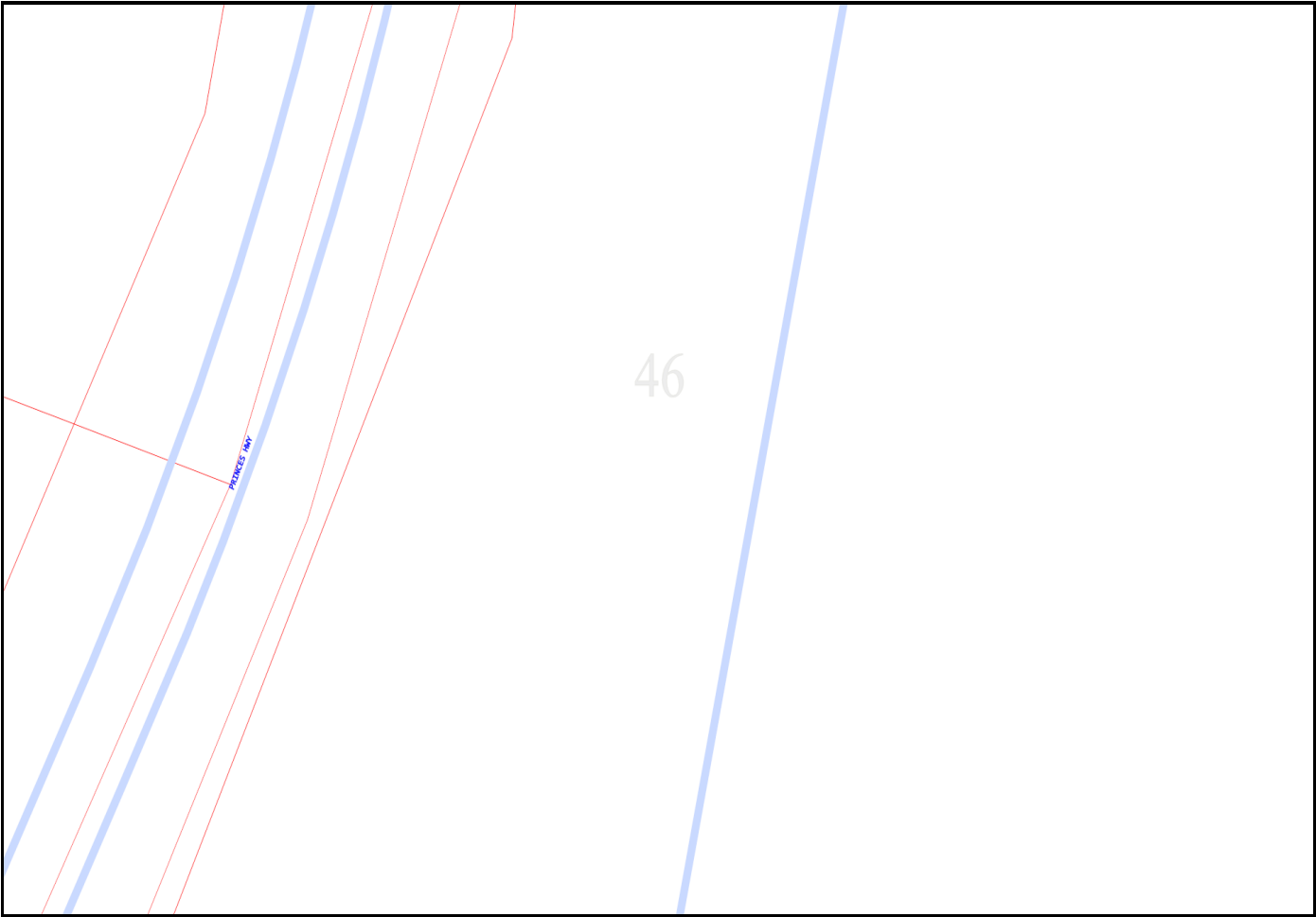
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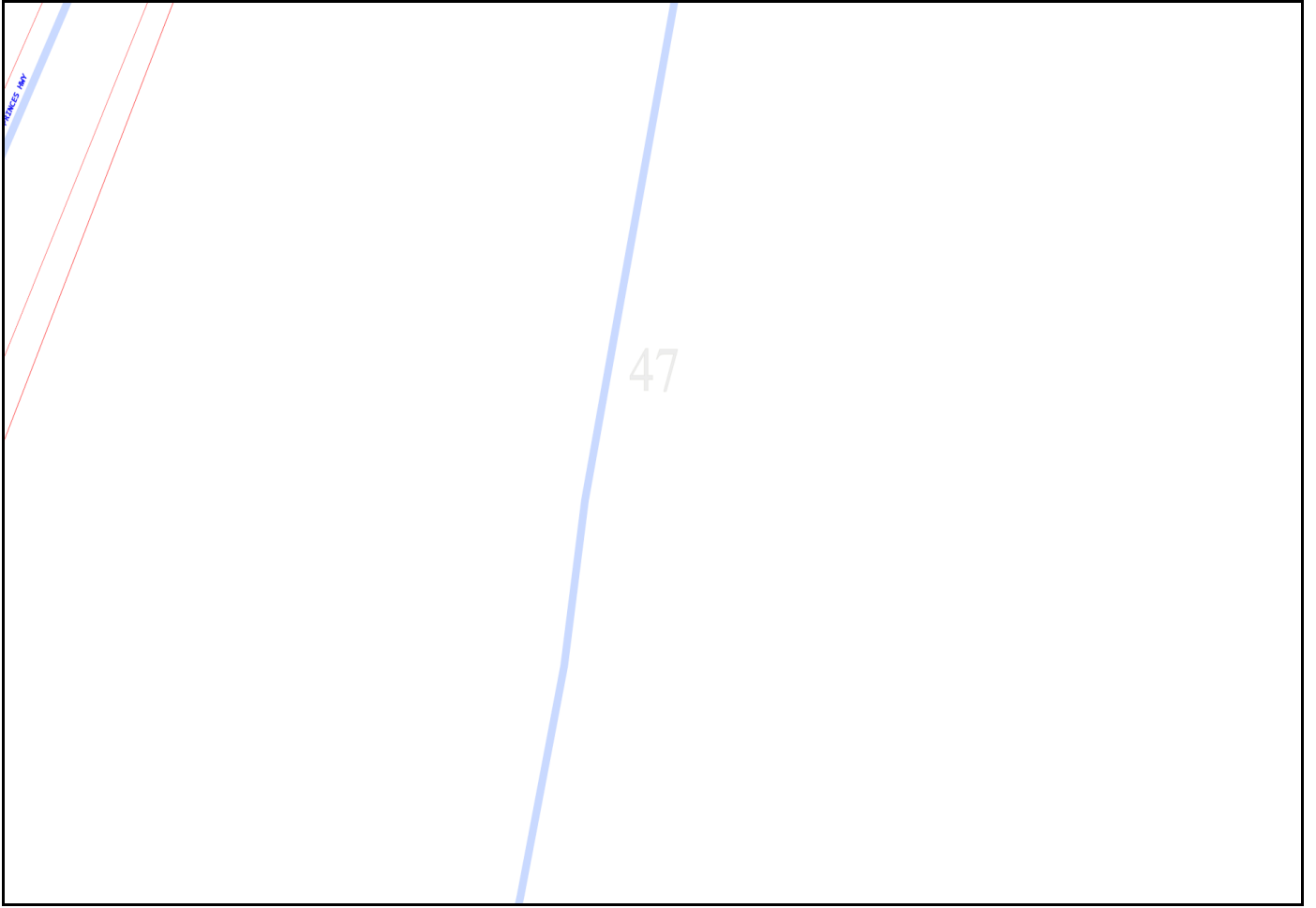


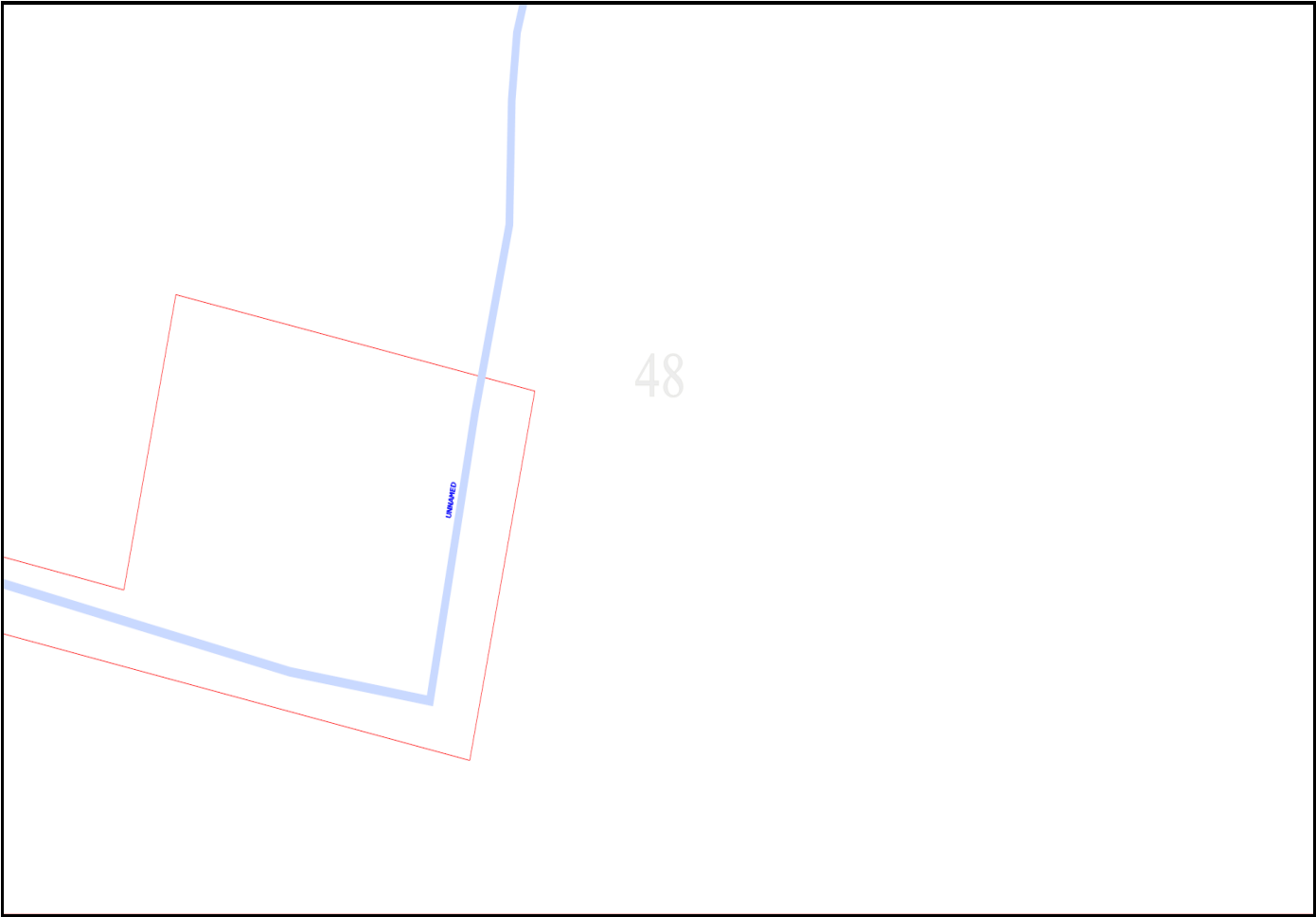


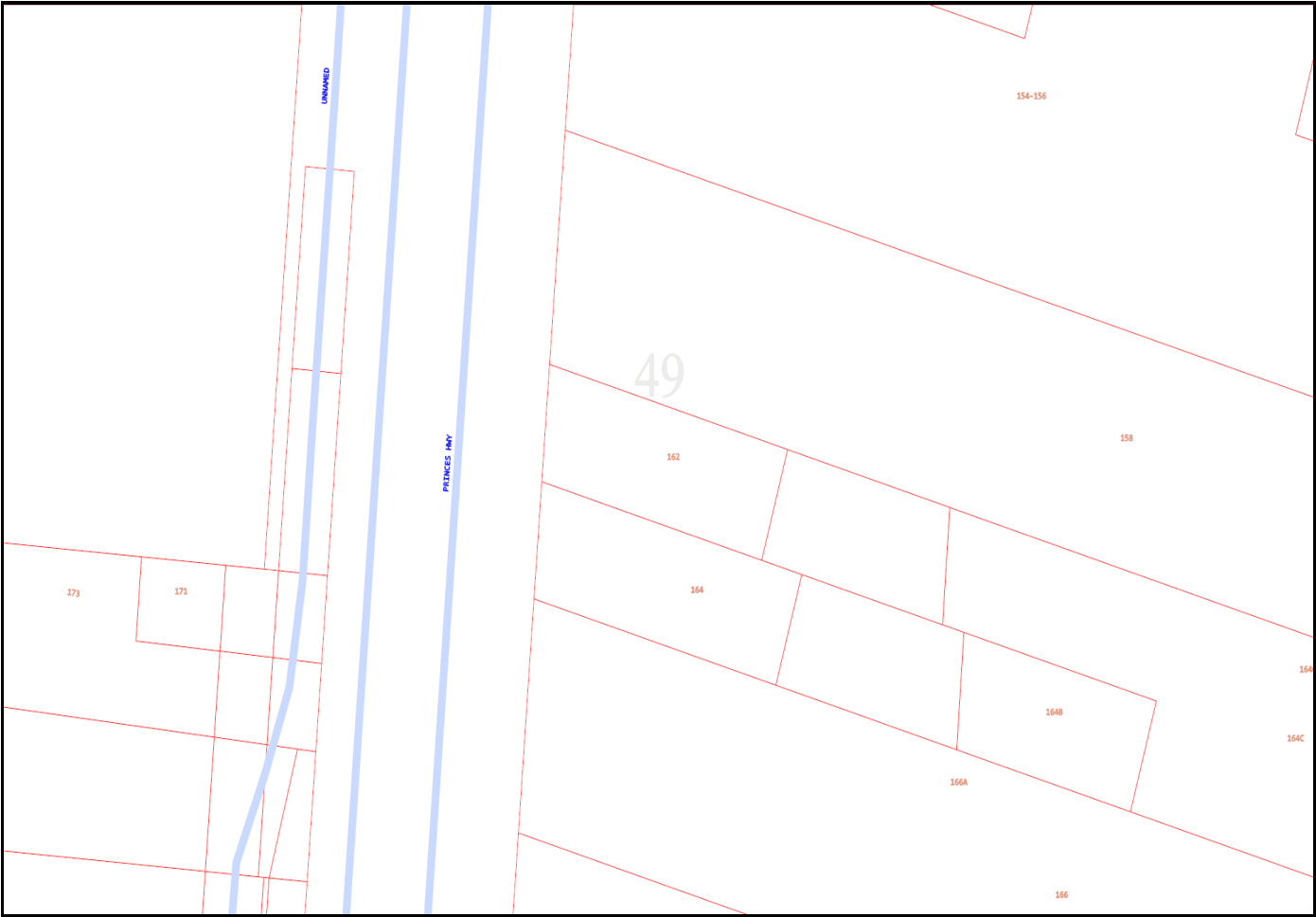


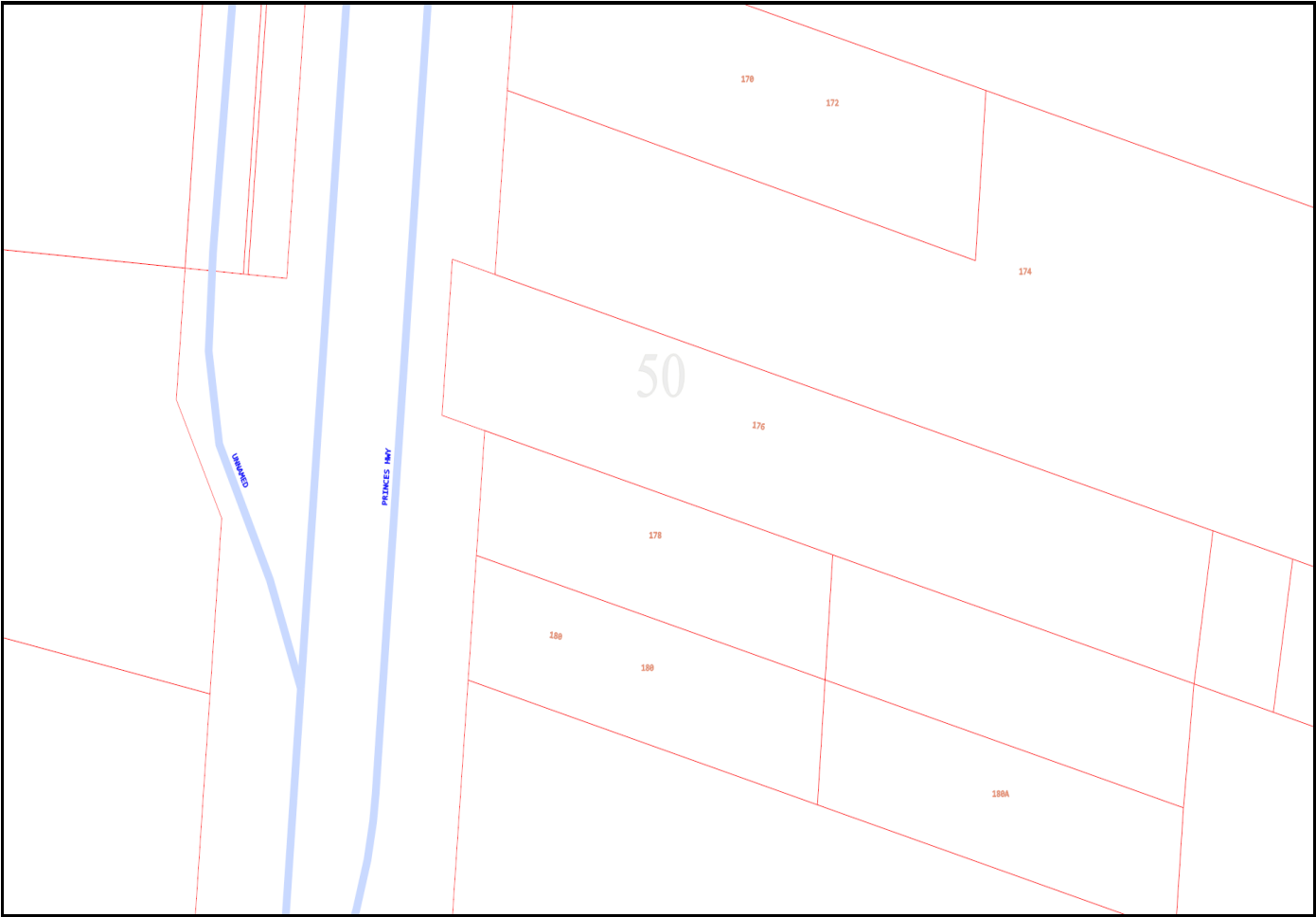


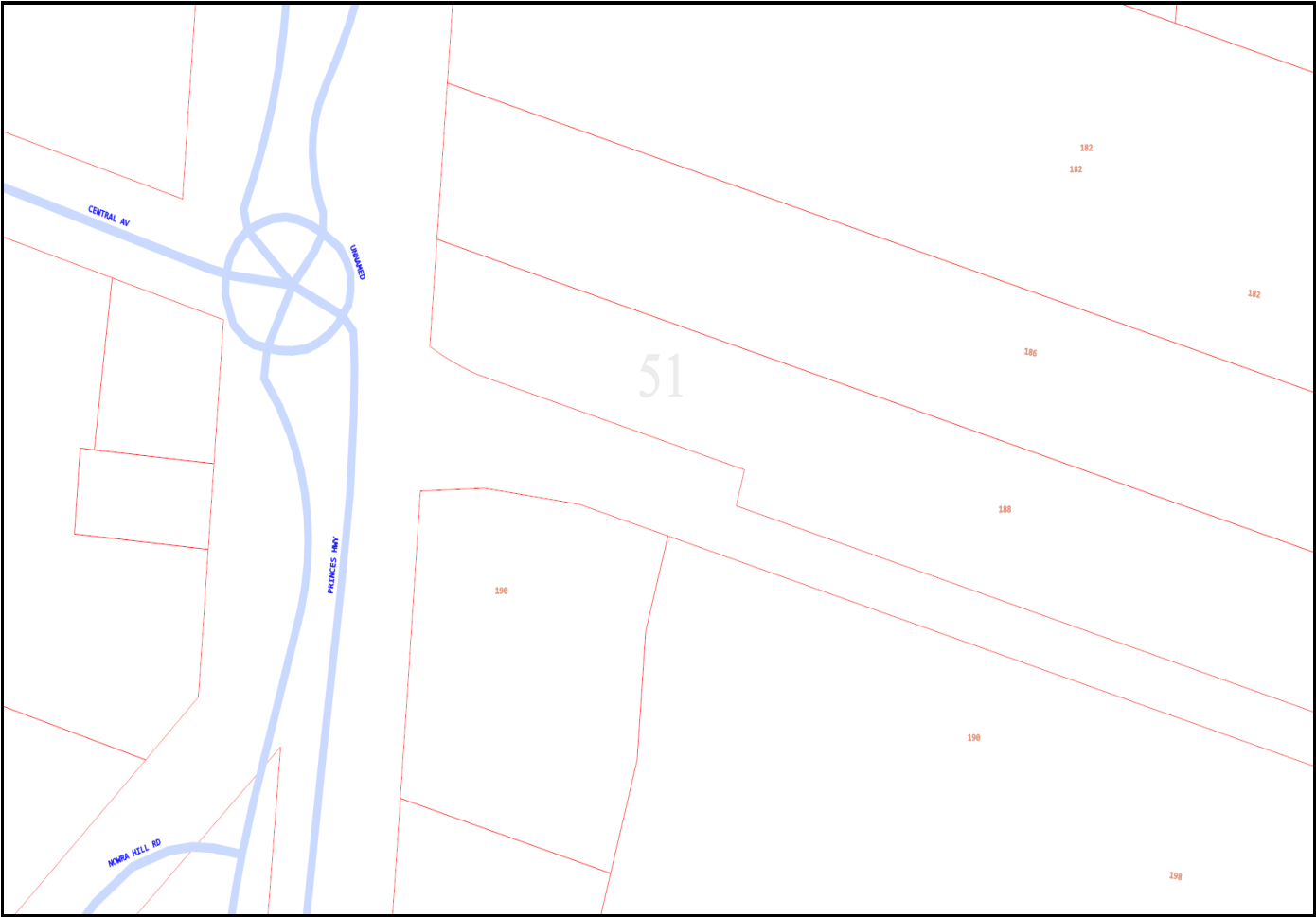


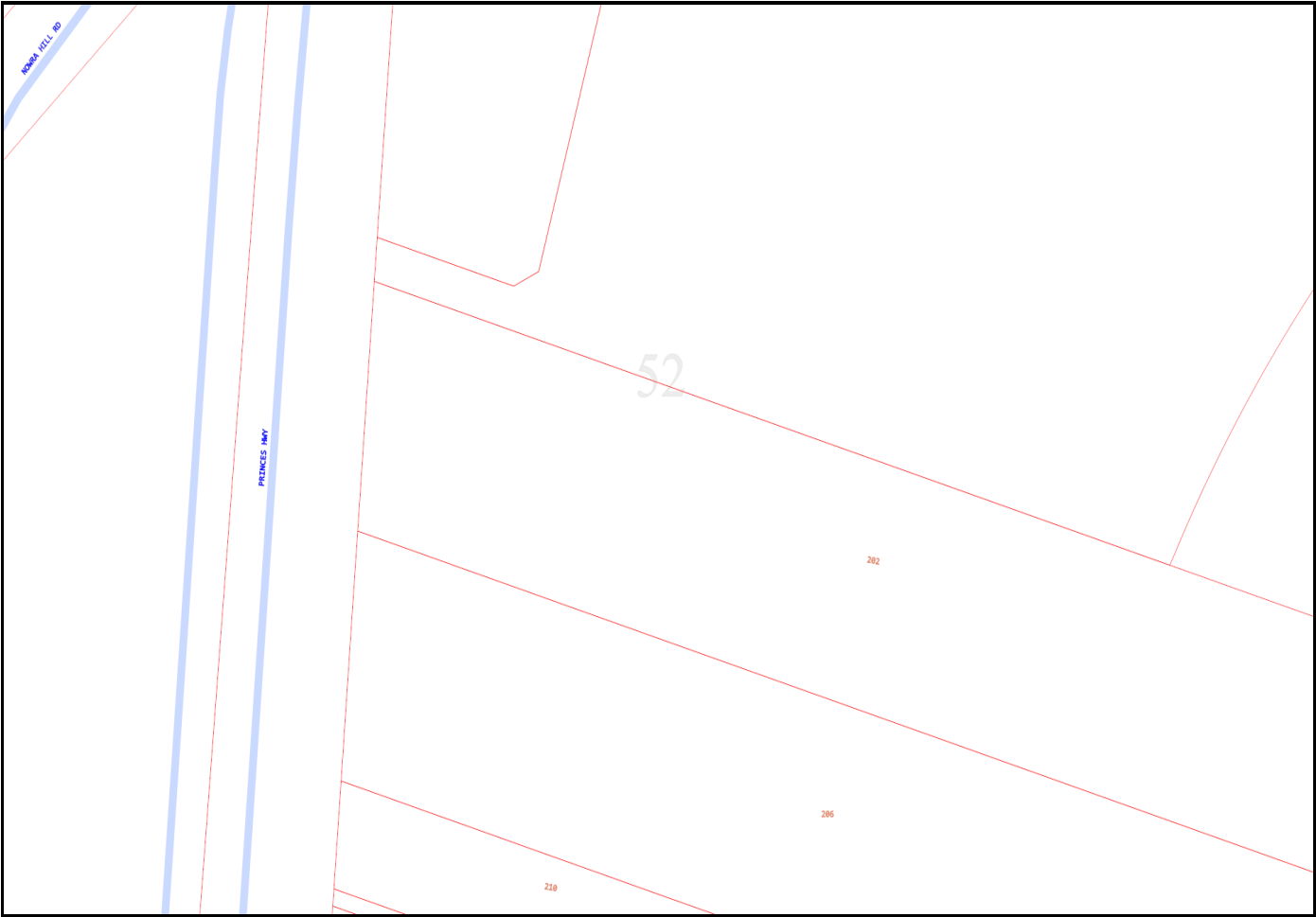




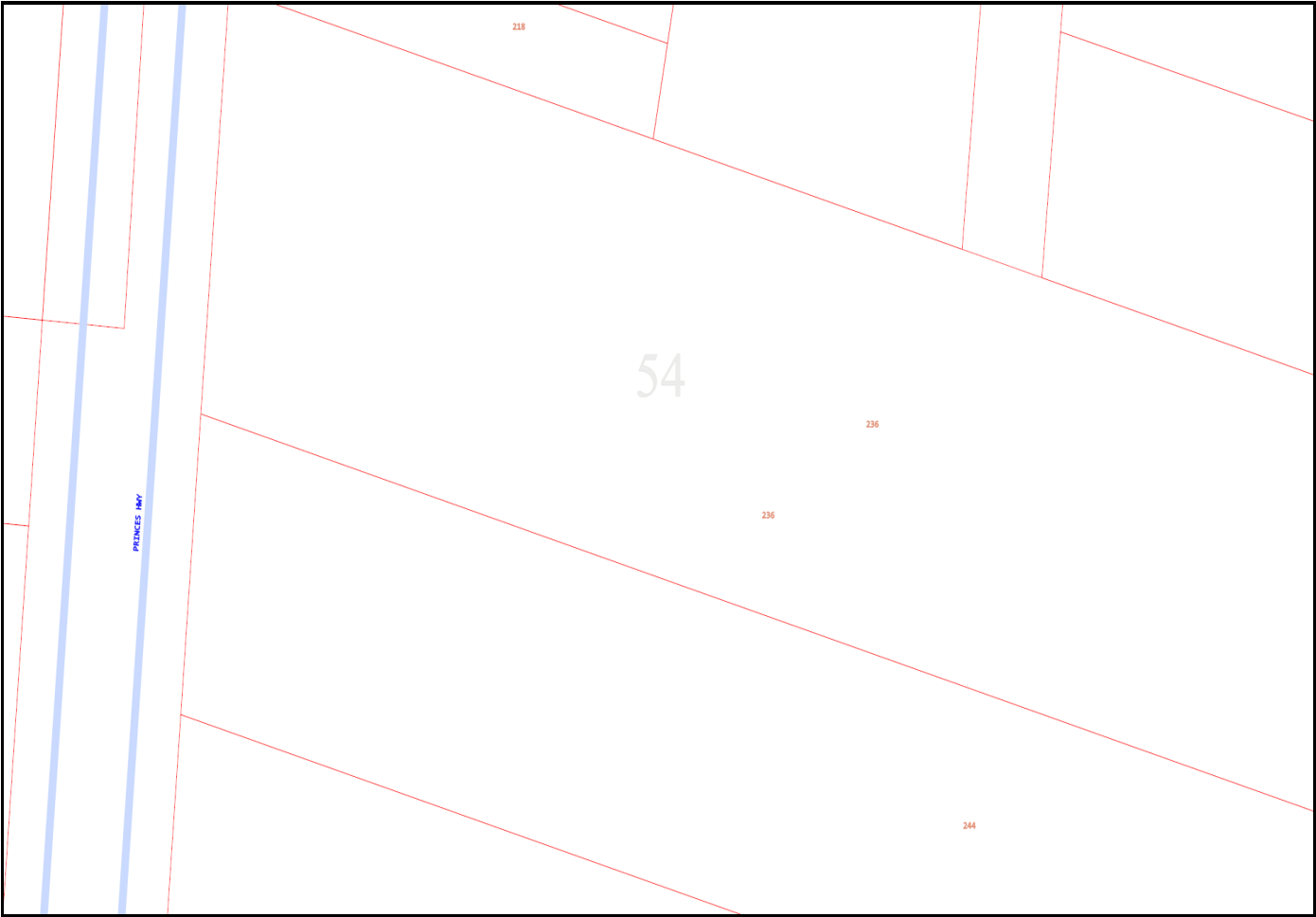


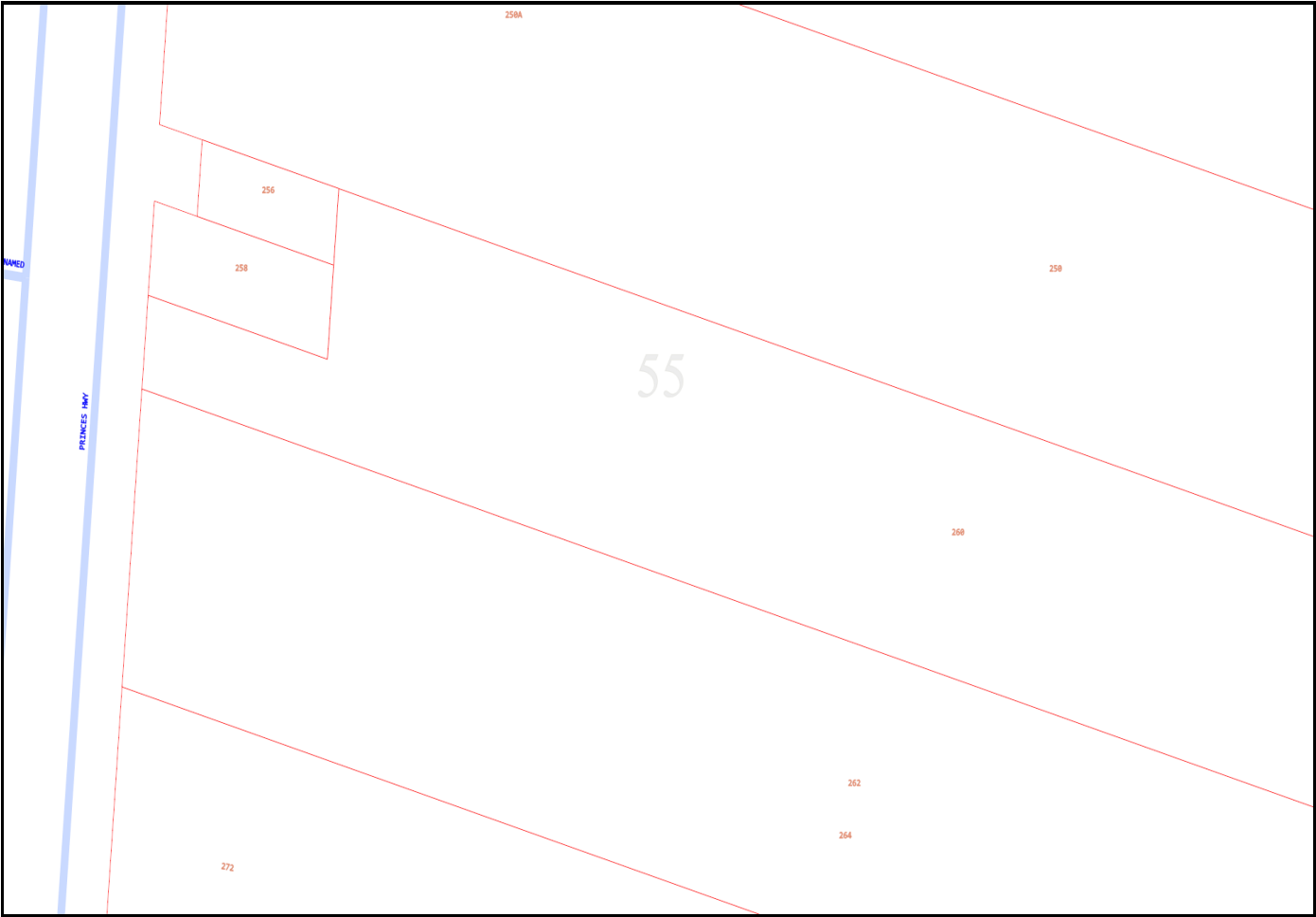


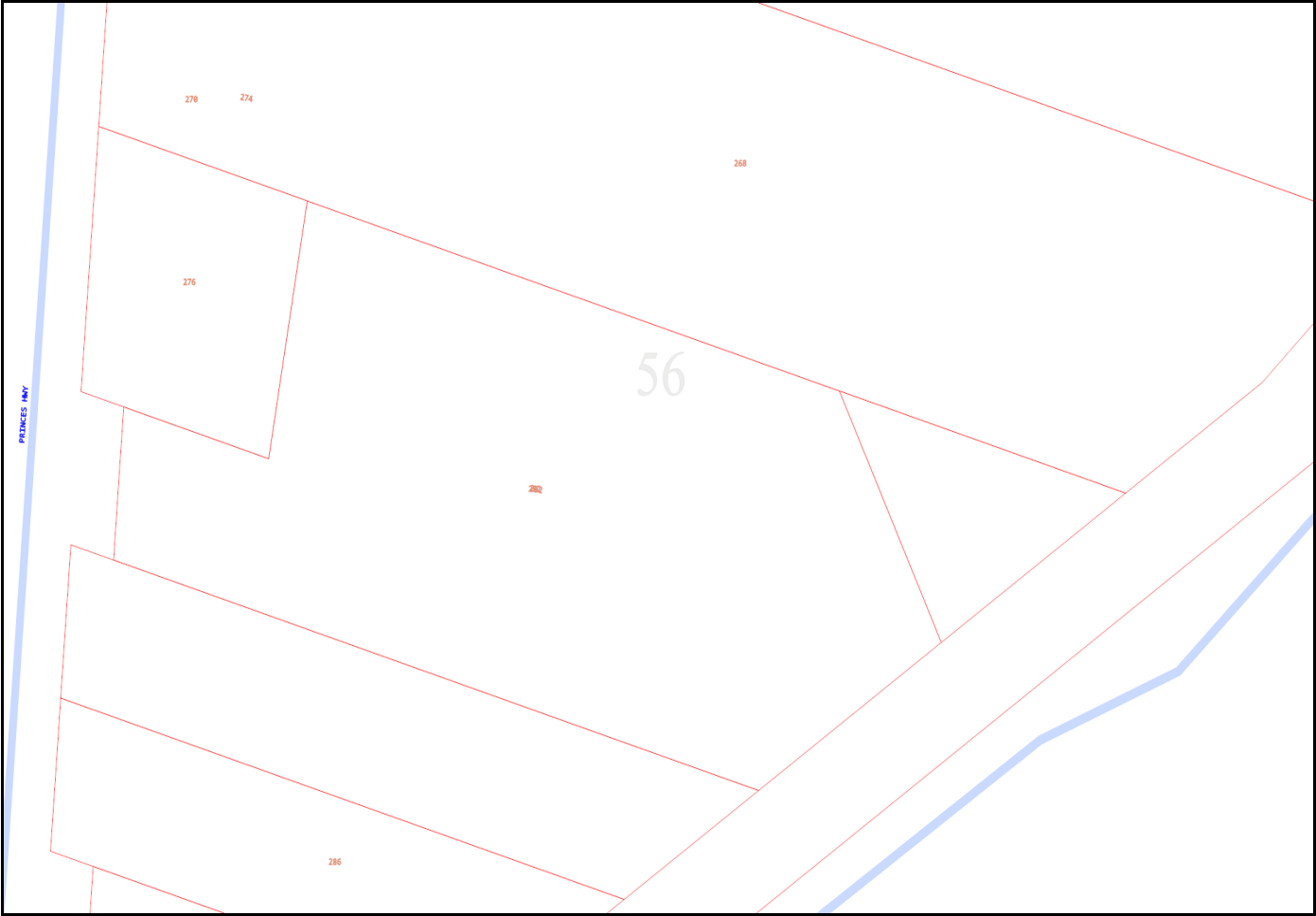


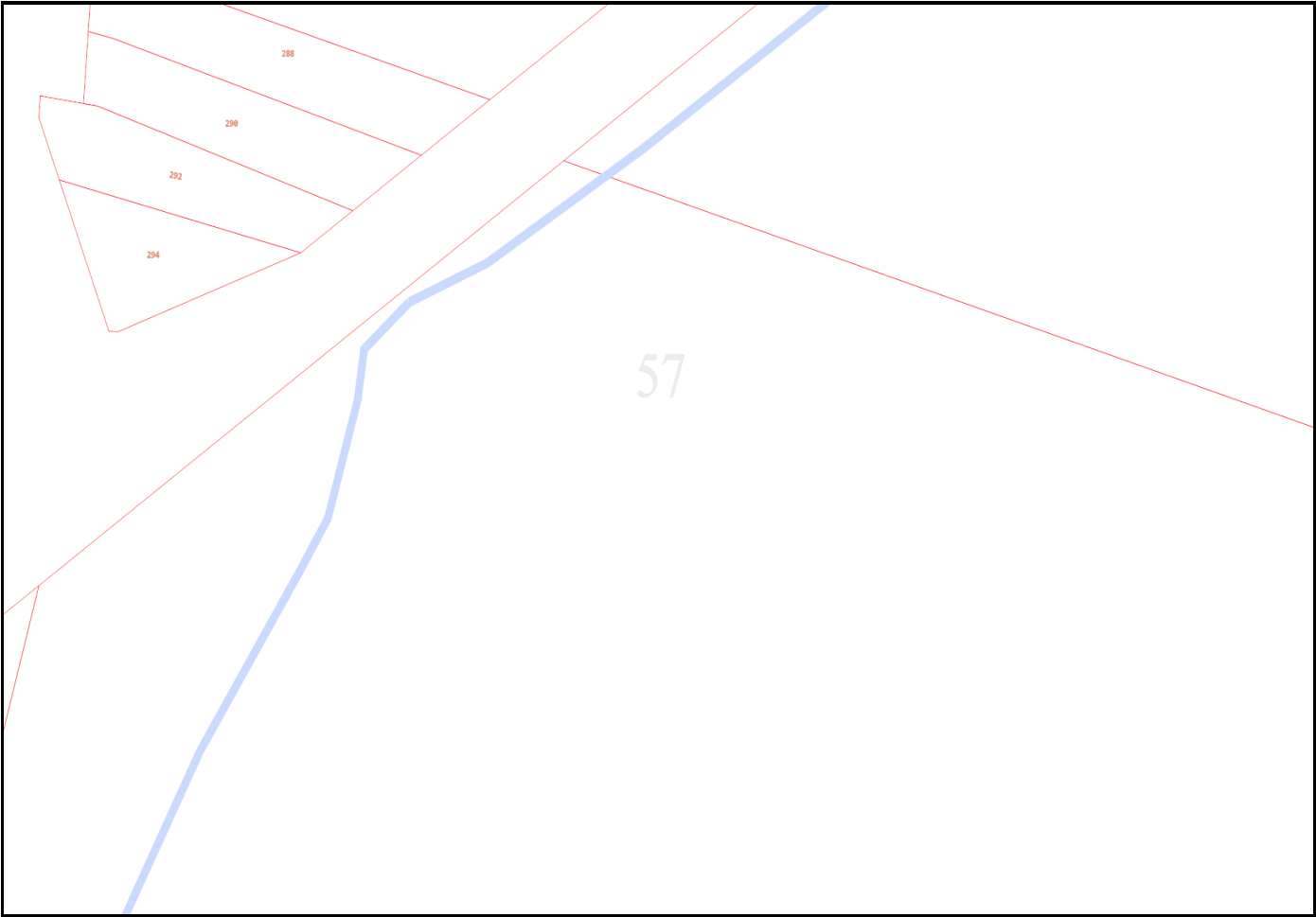


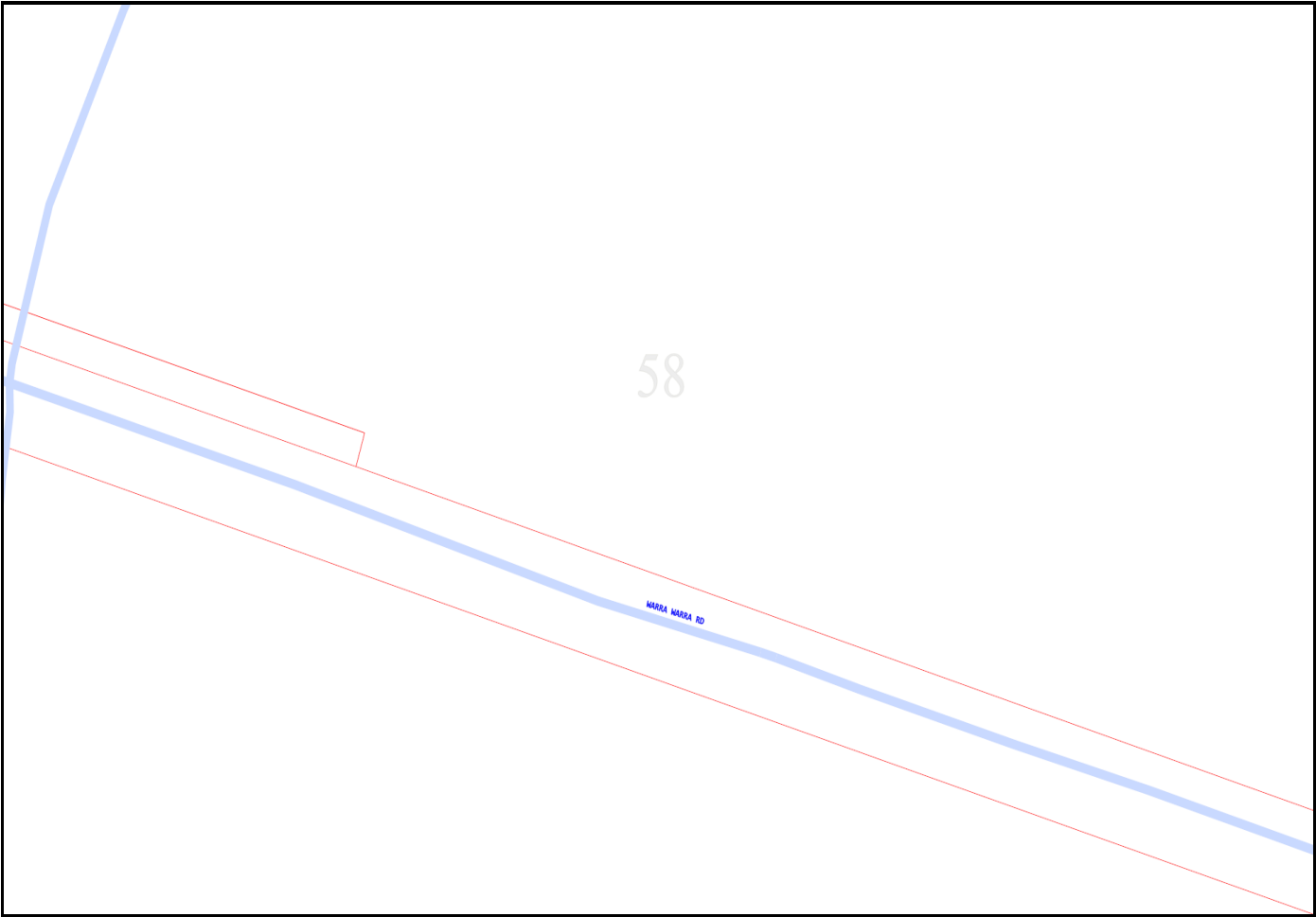




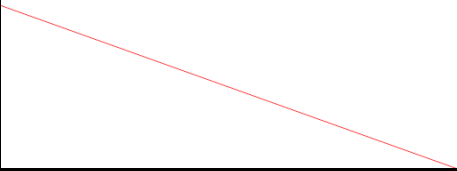


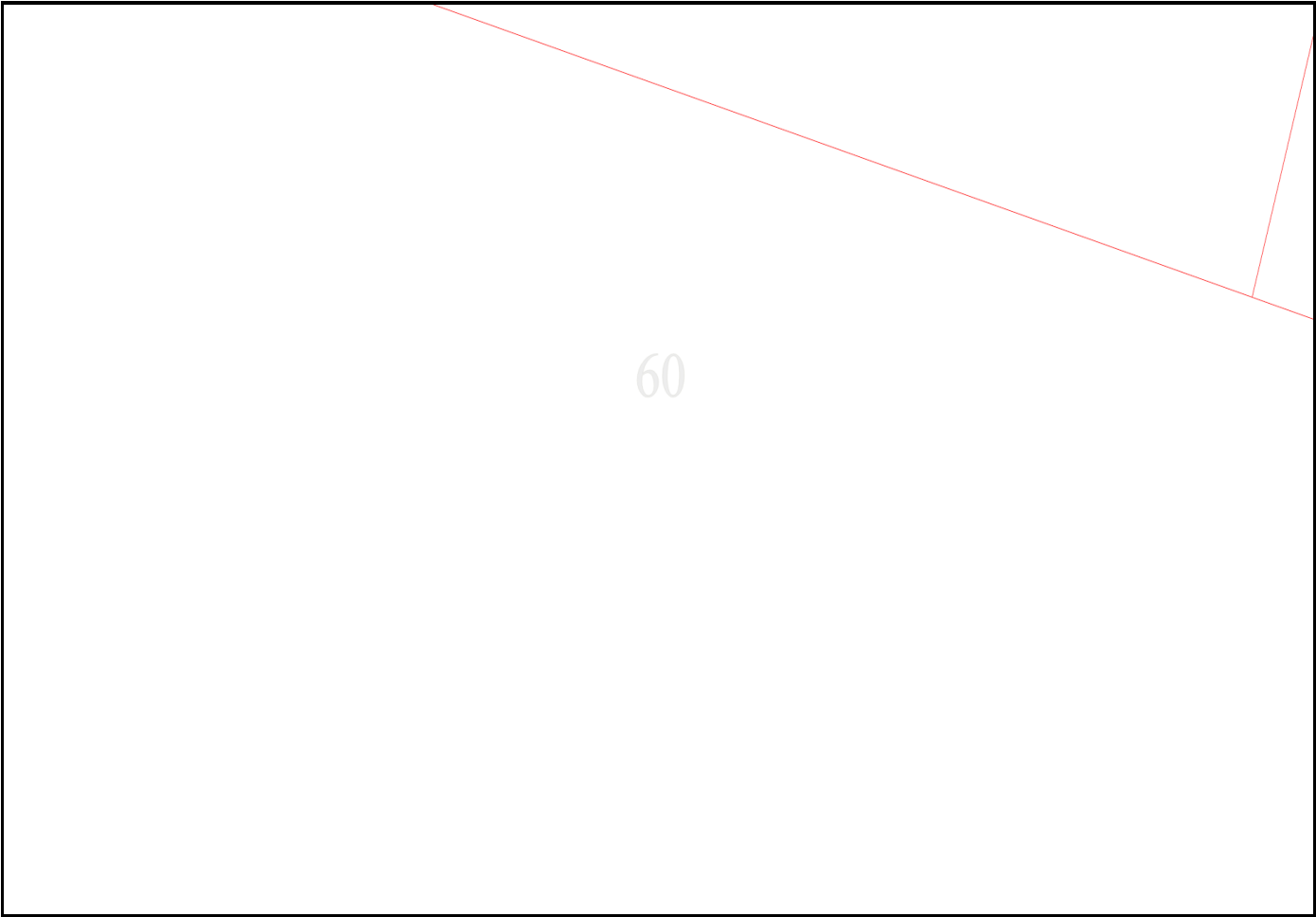




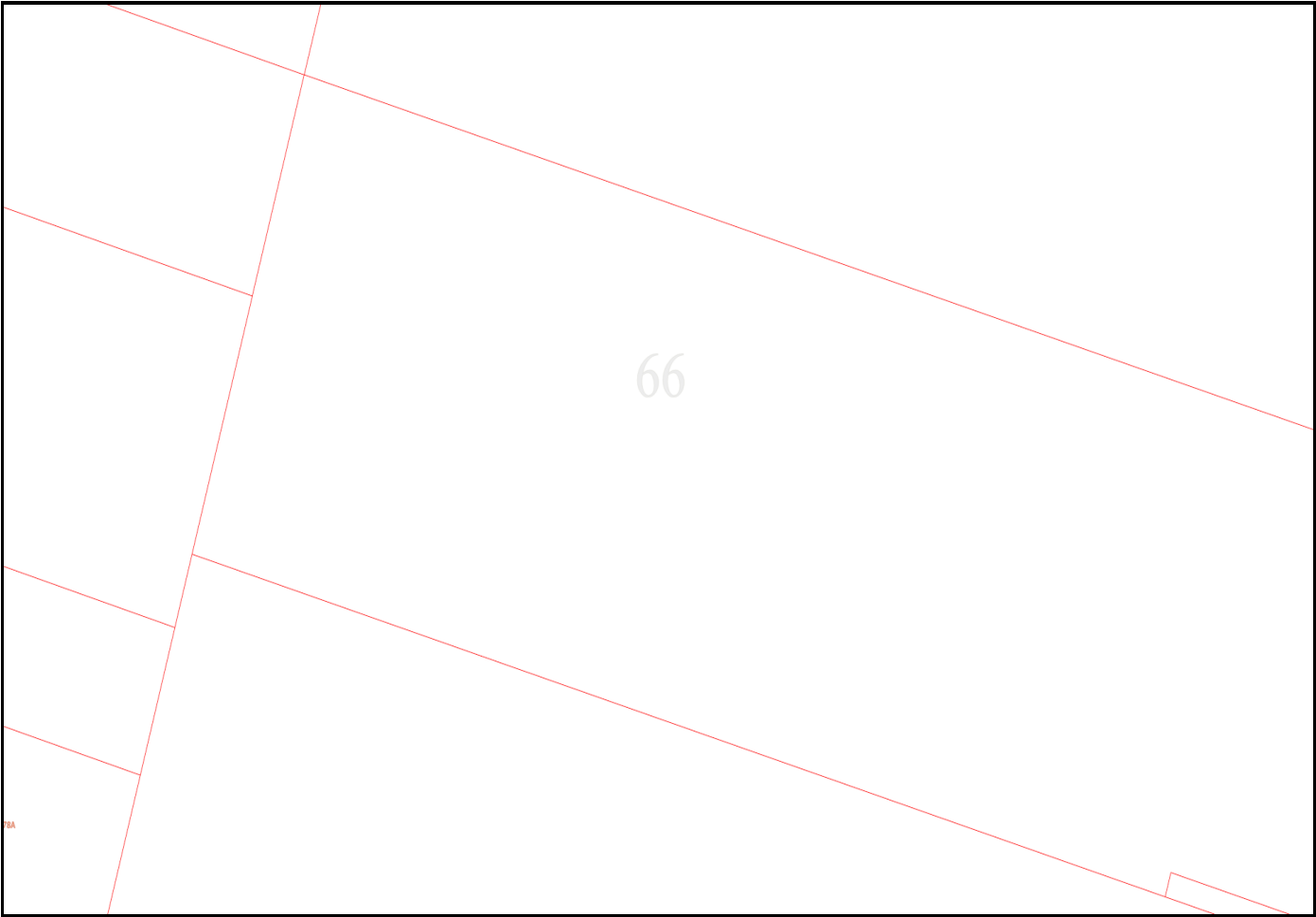


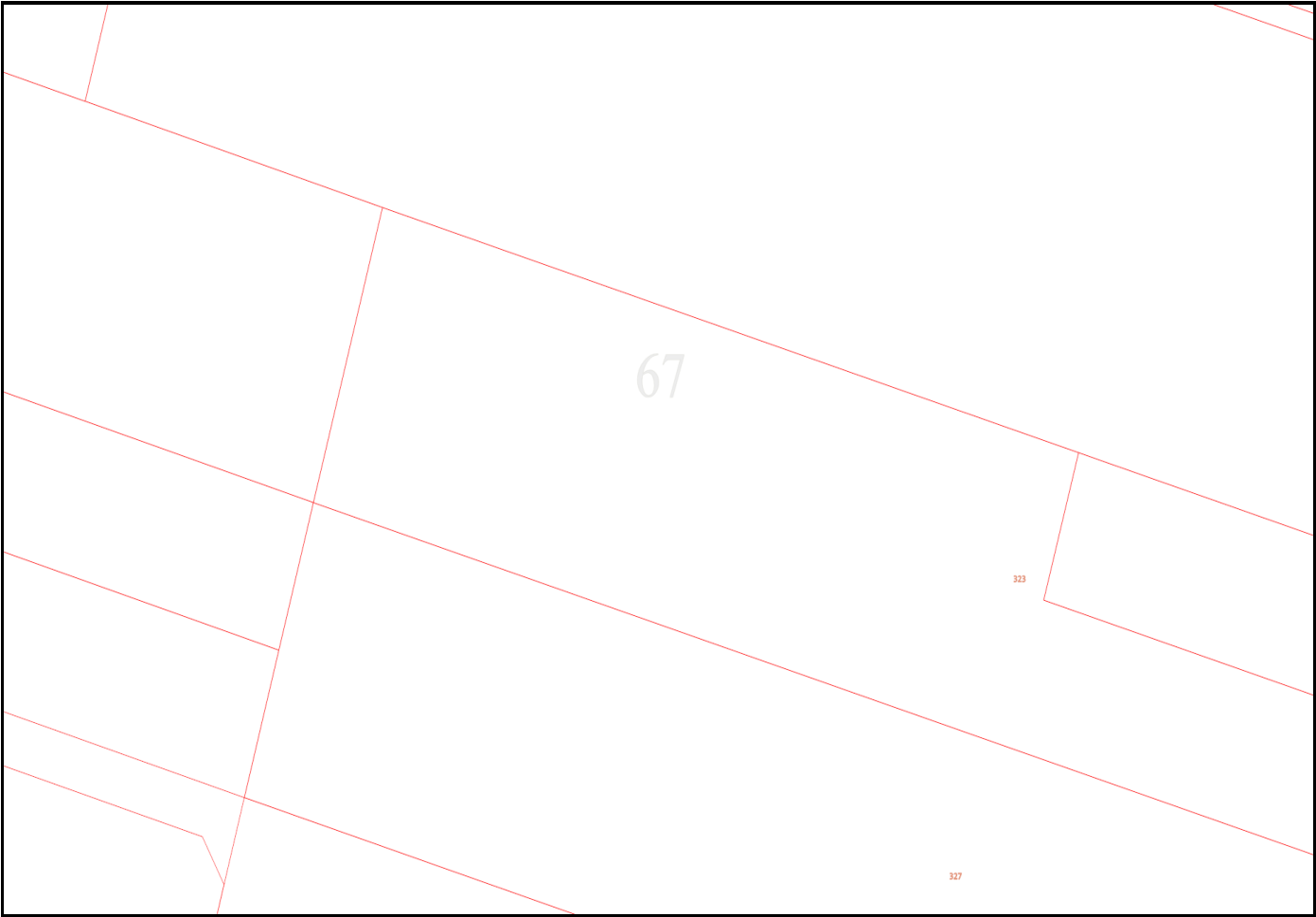
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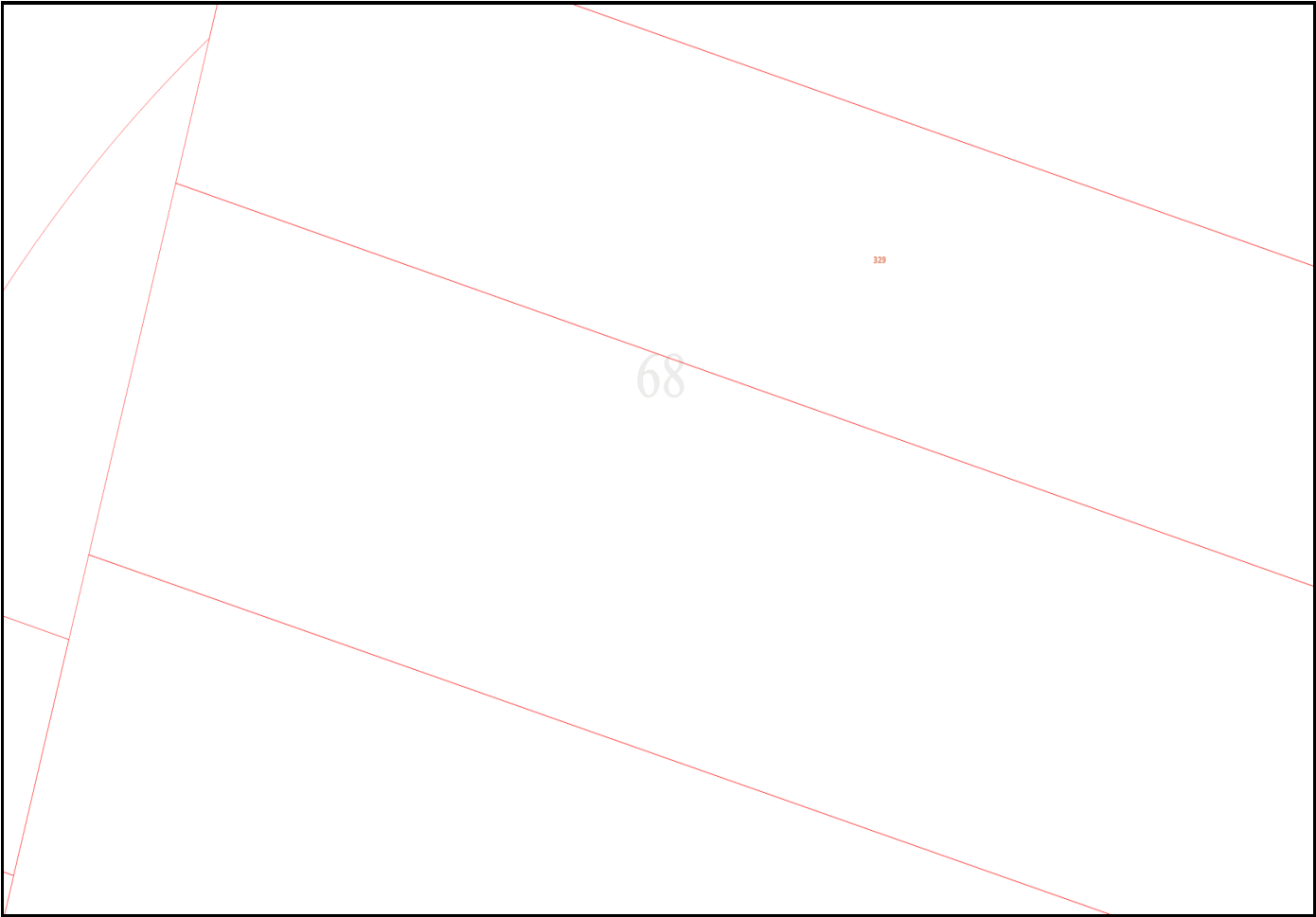


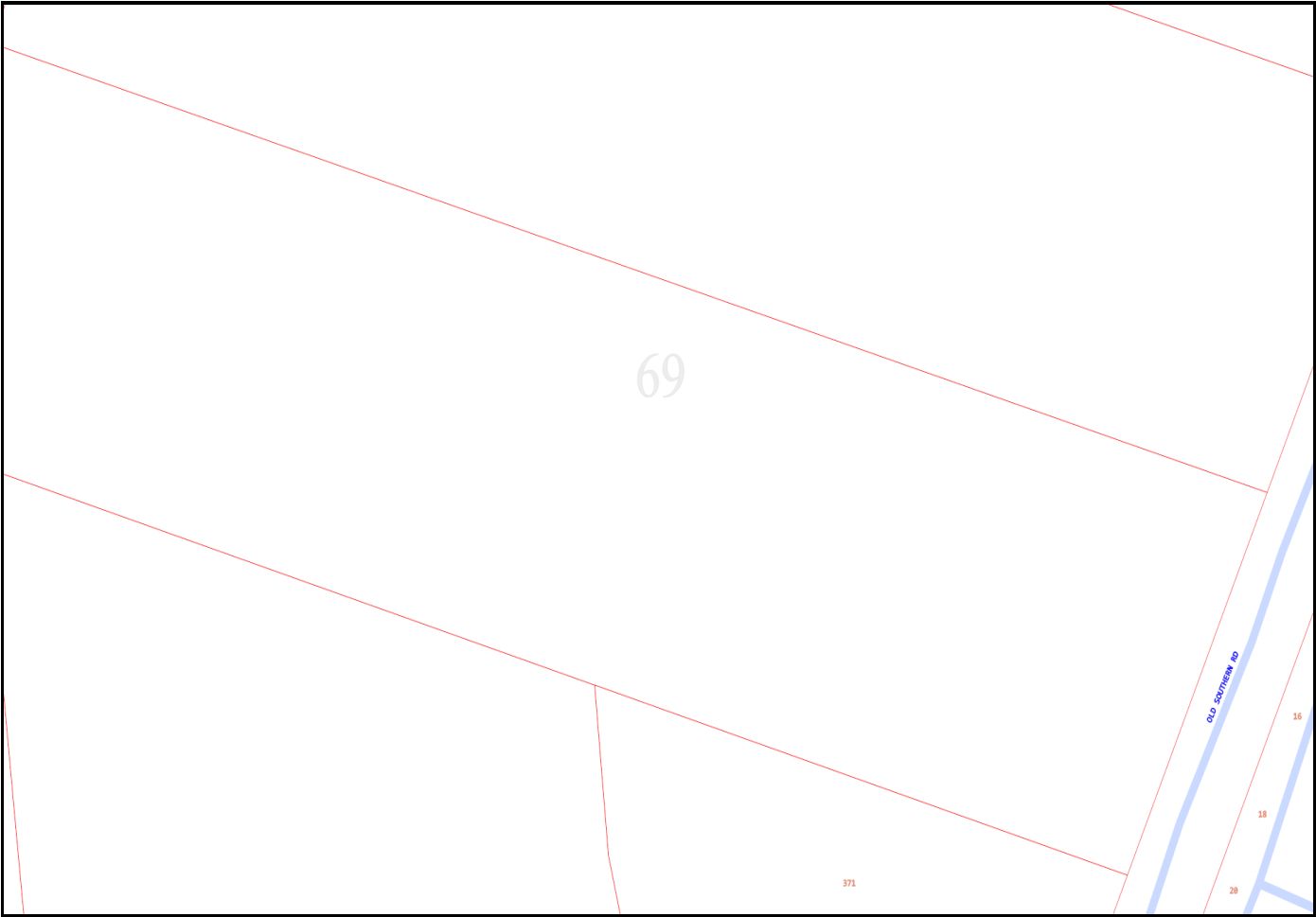


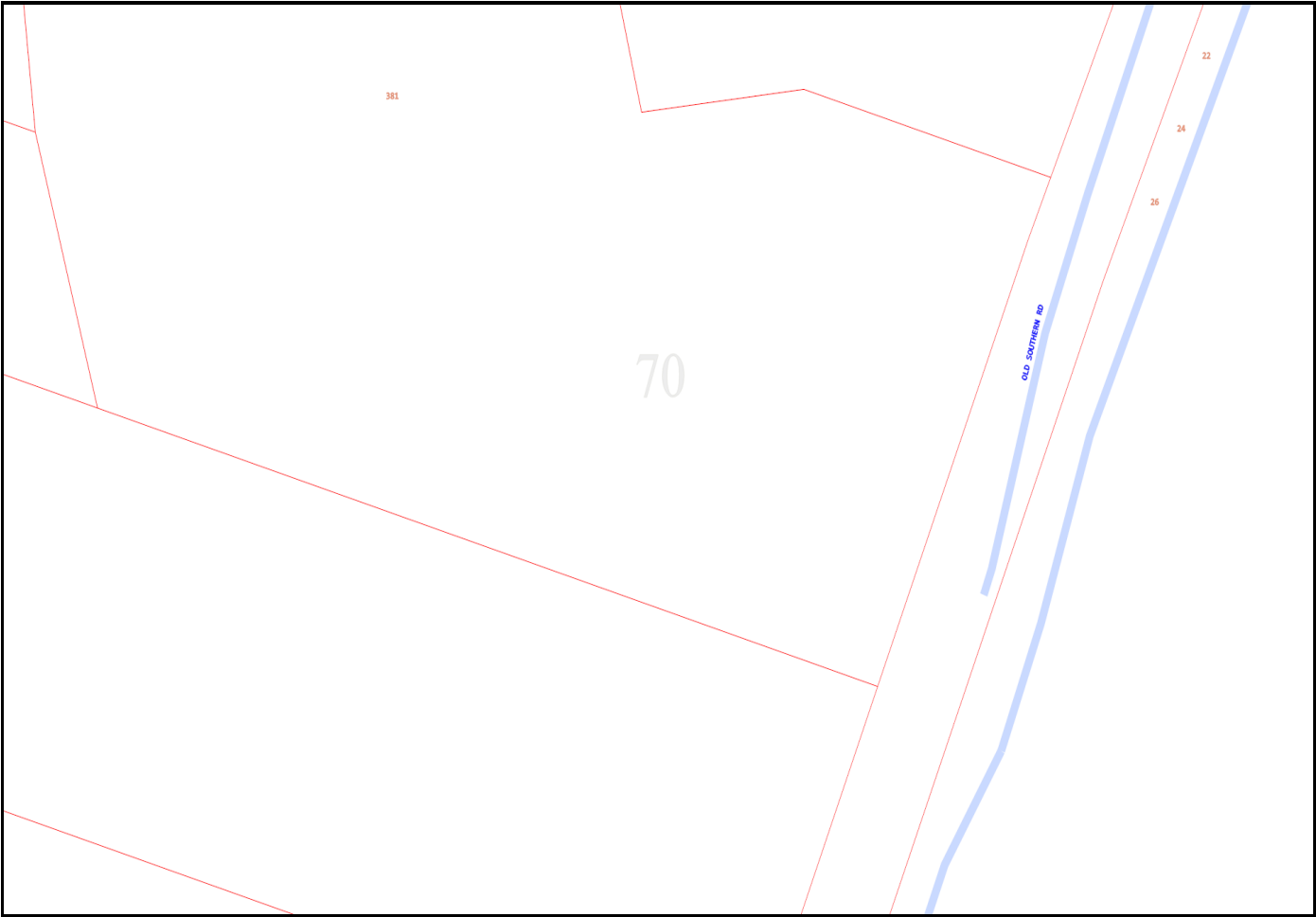
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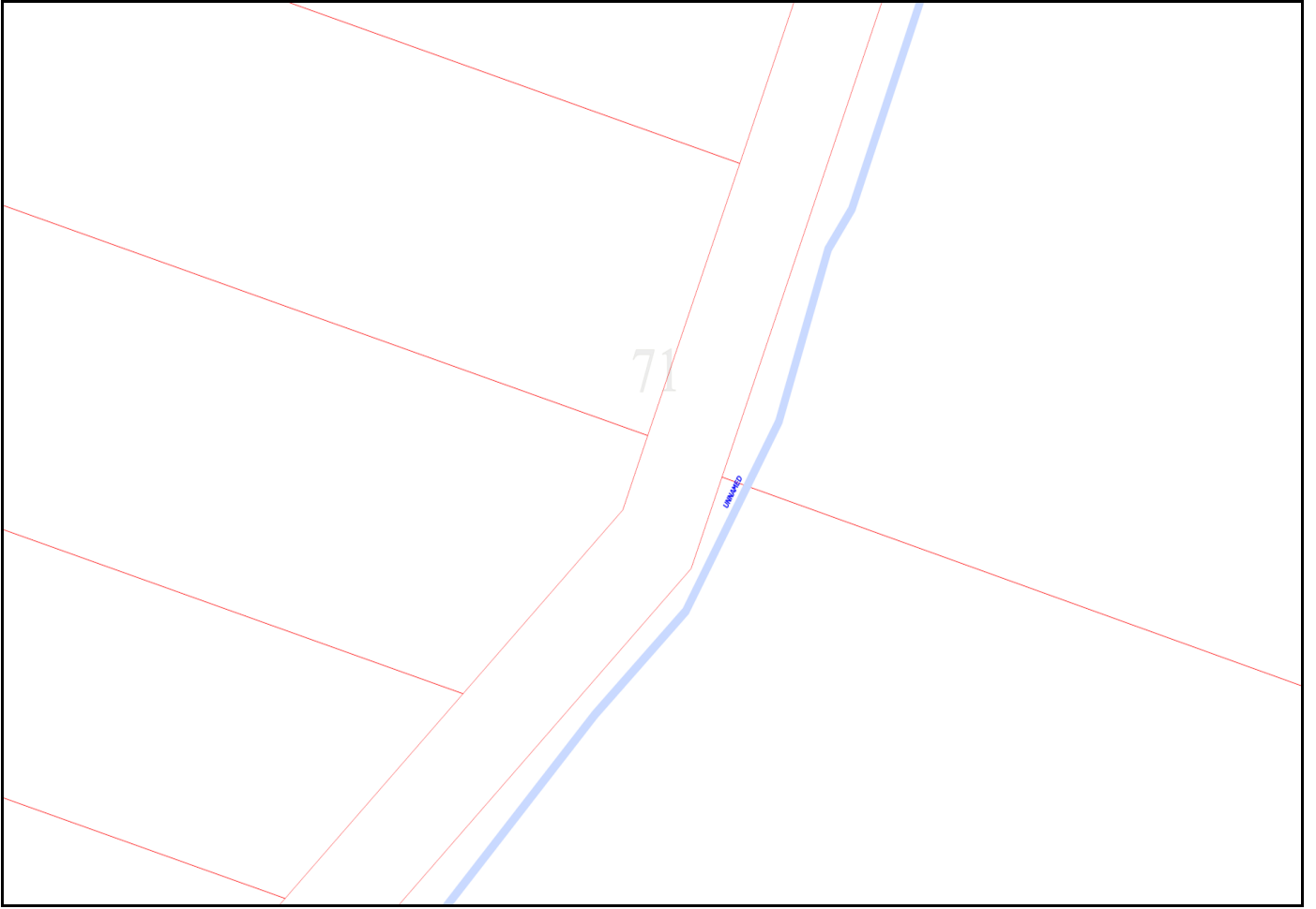


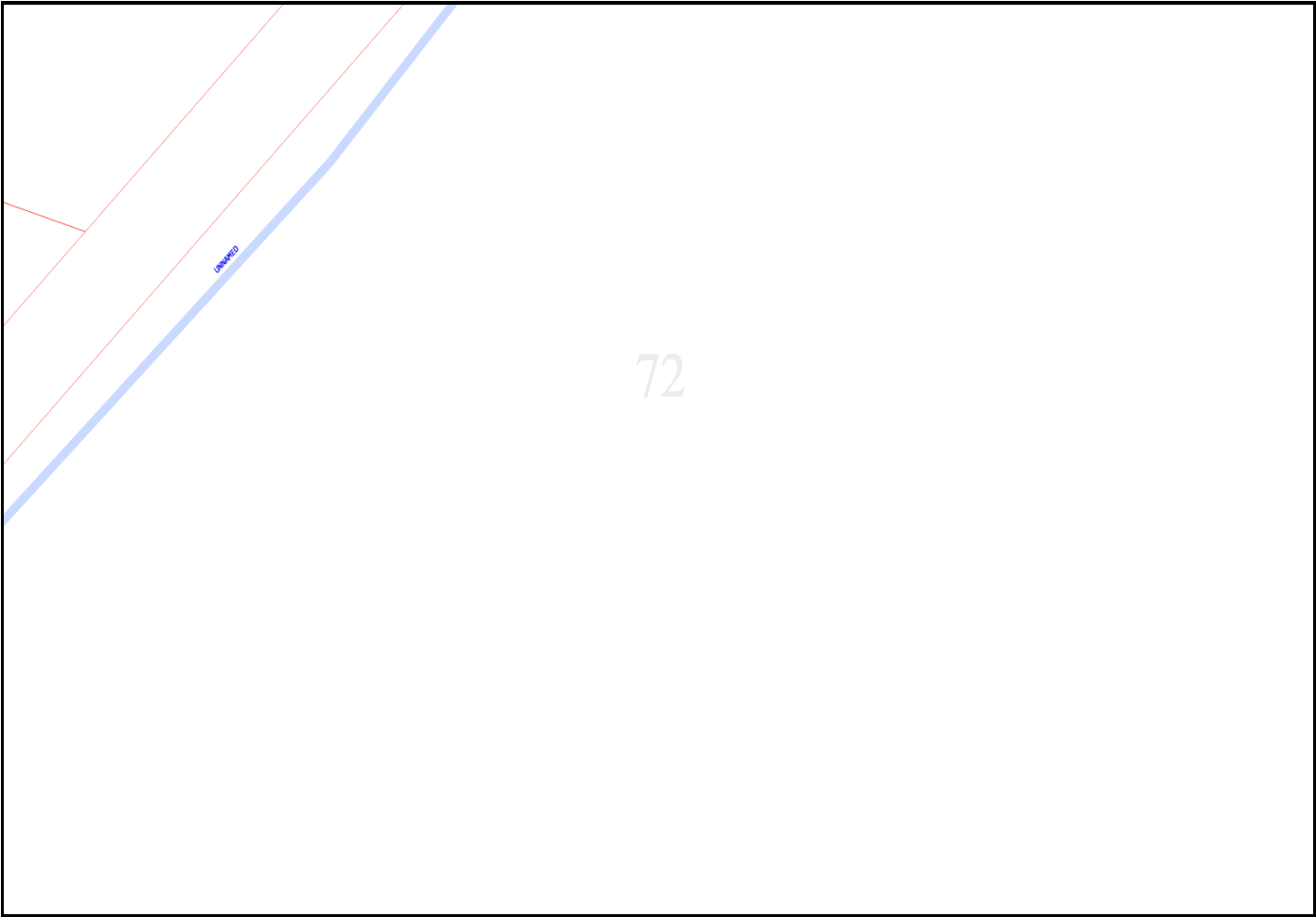




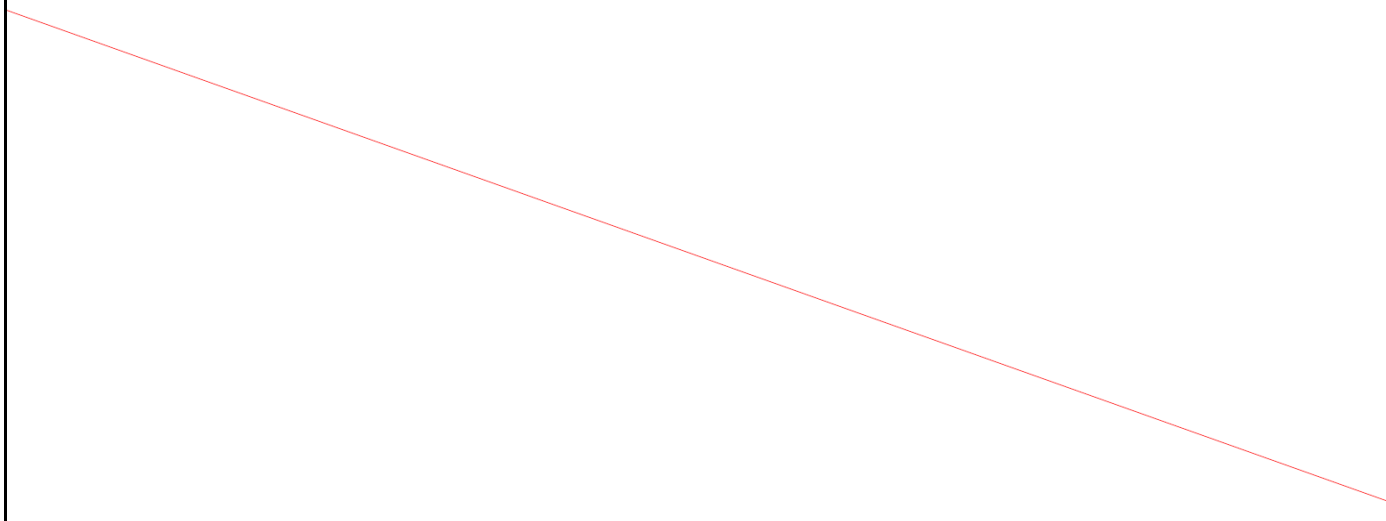






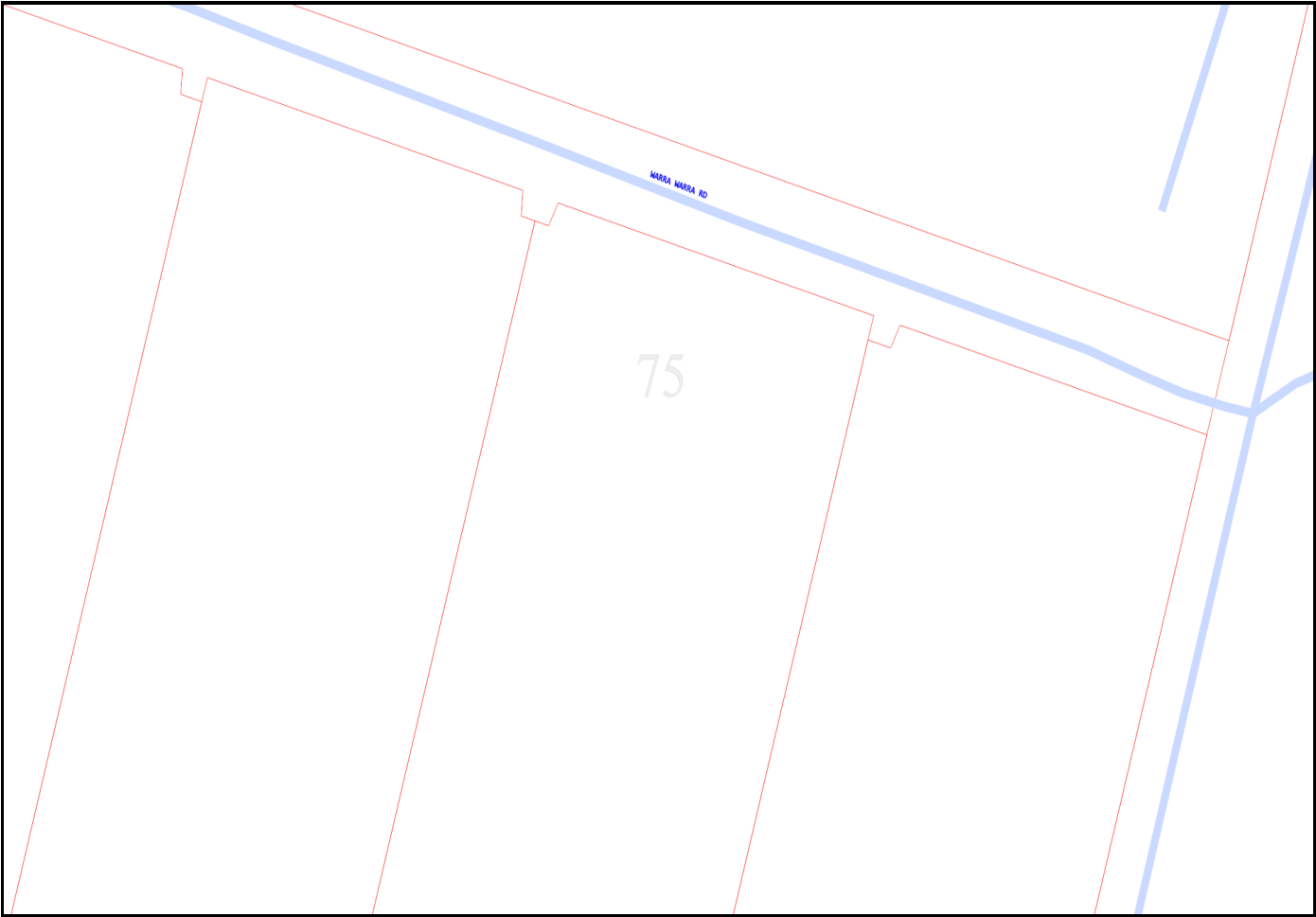


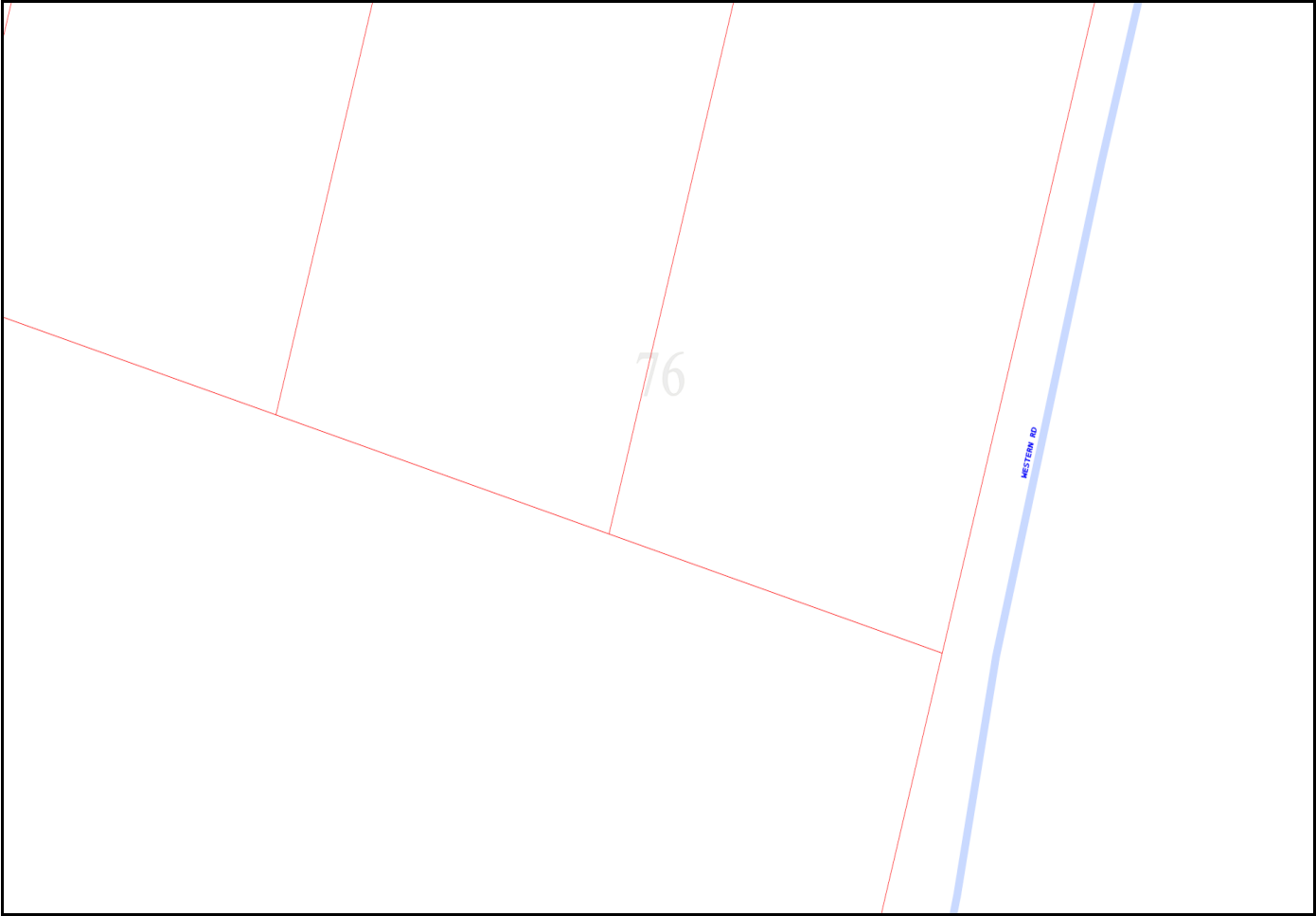
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74

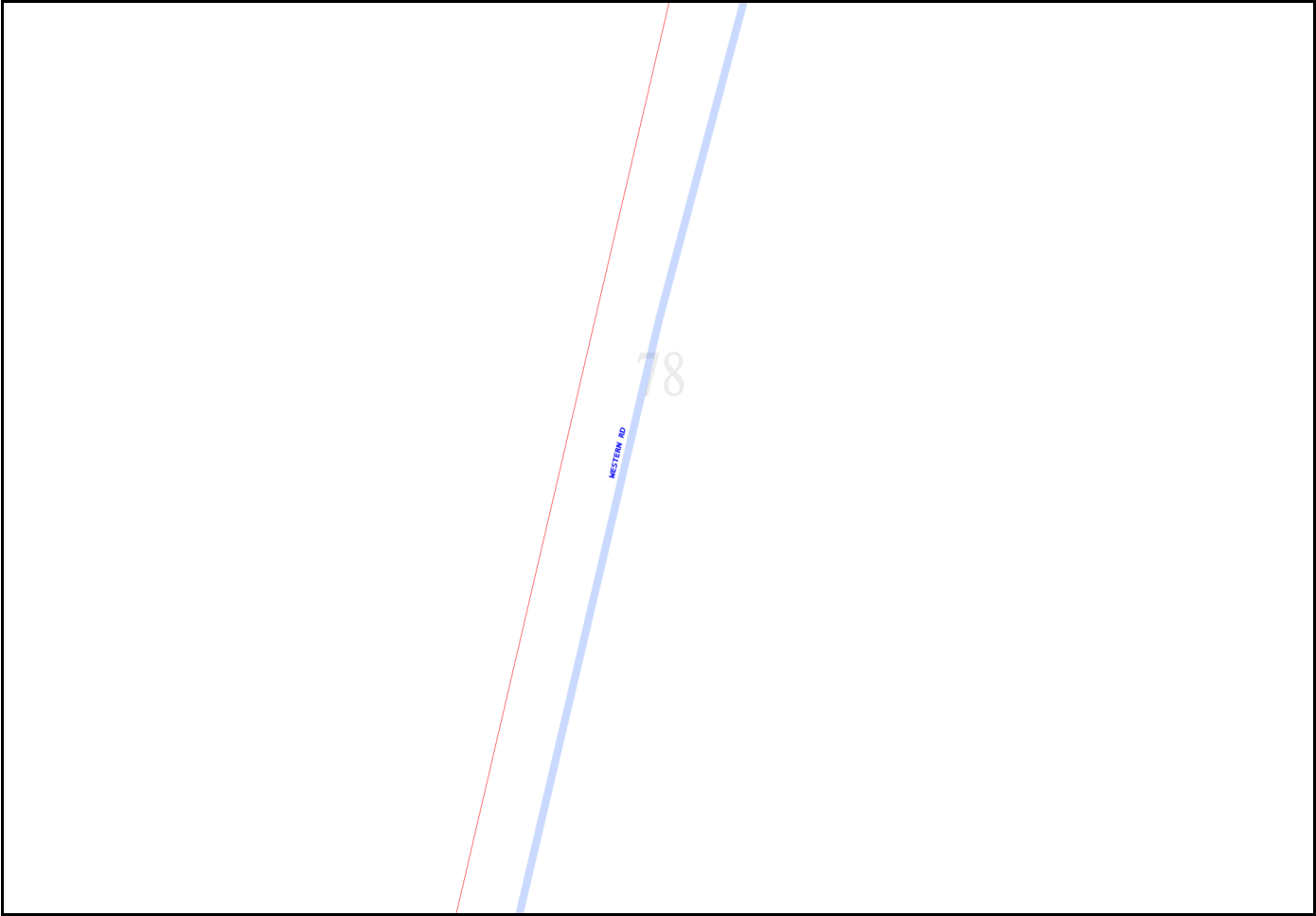
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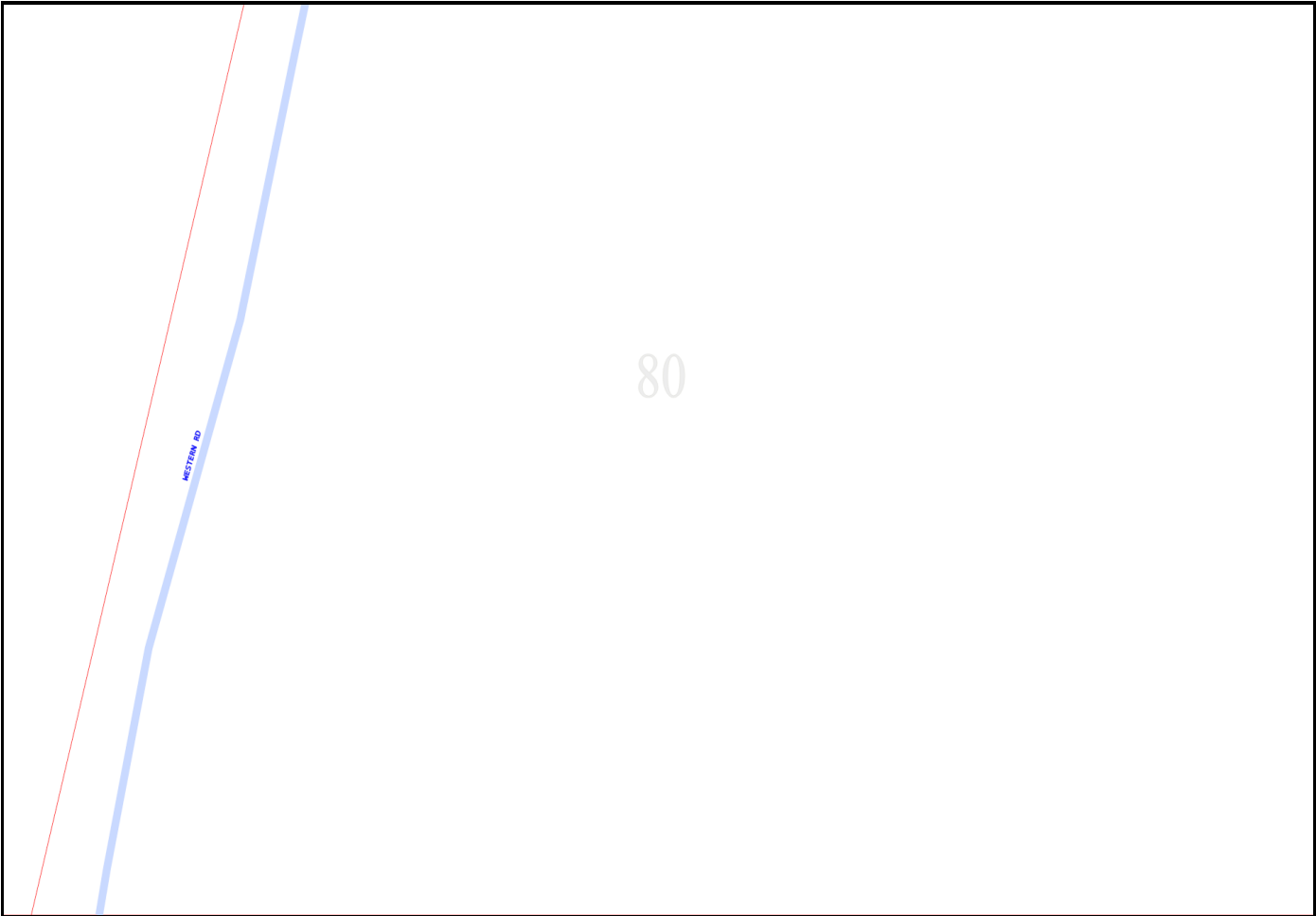
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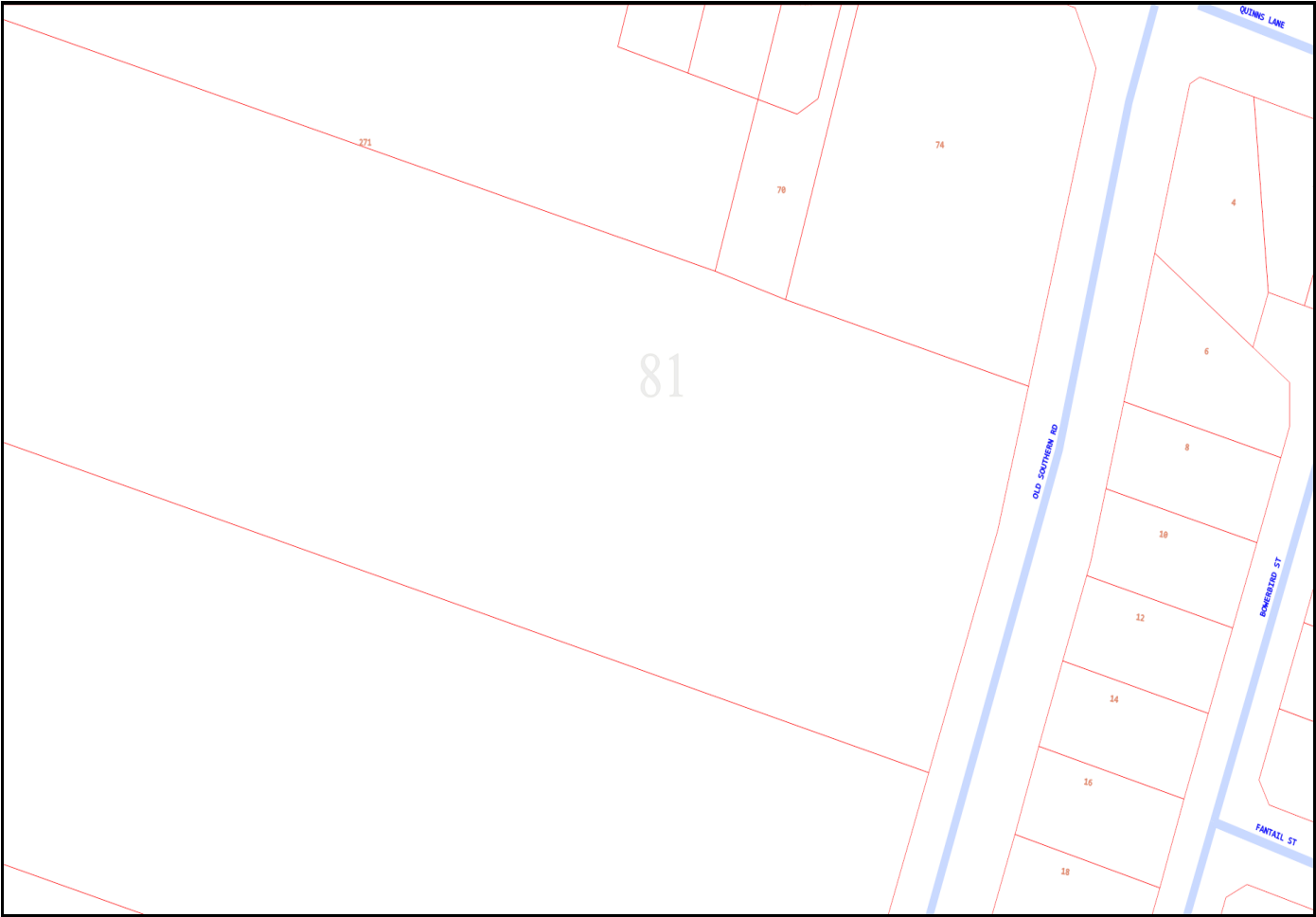
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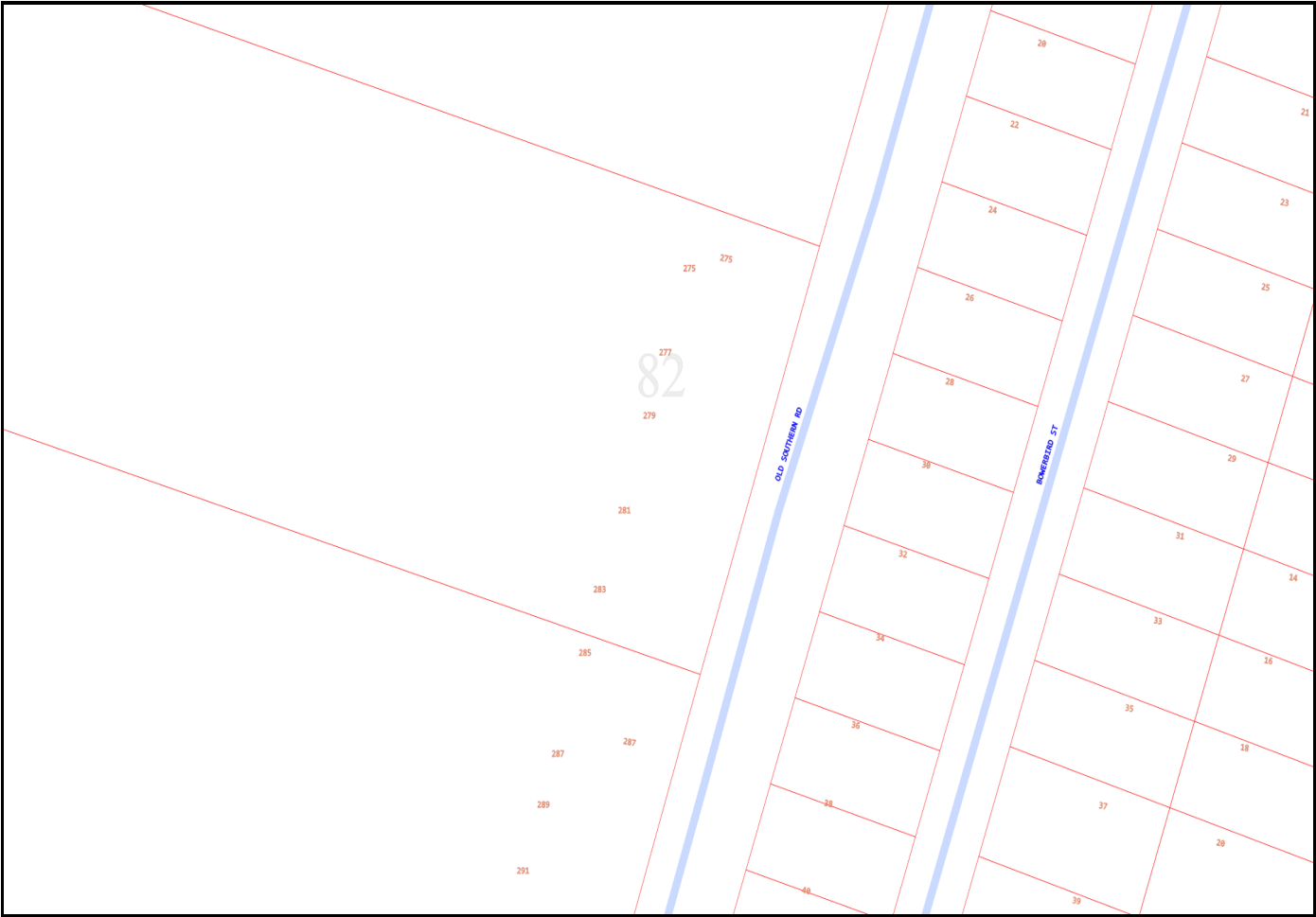


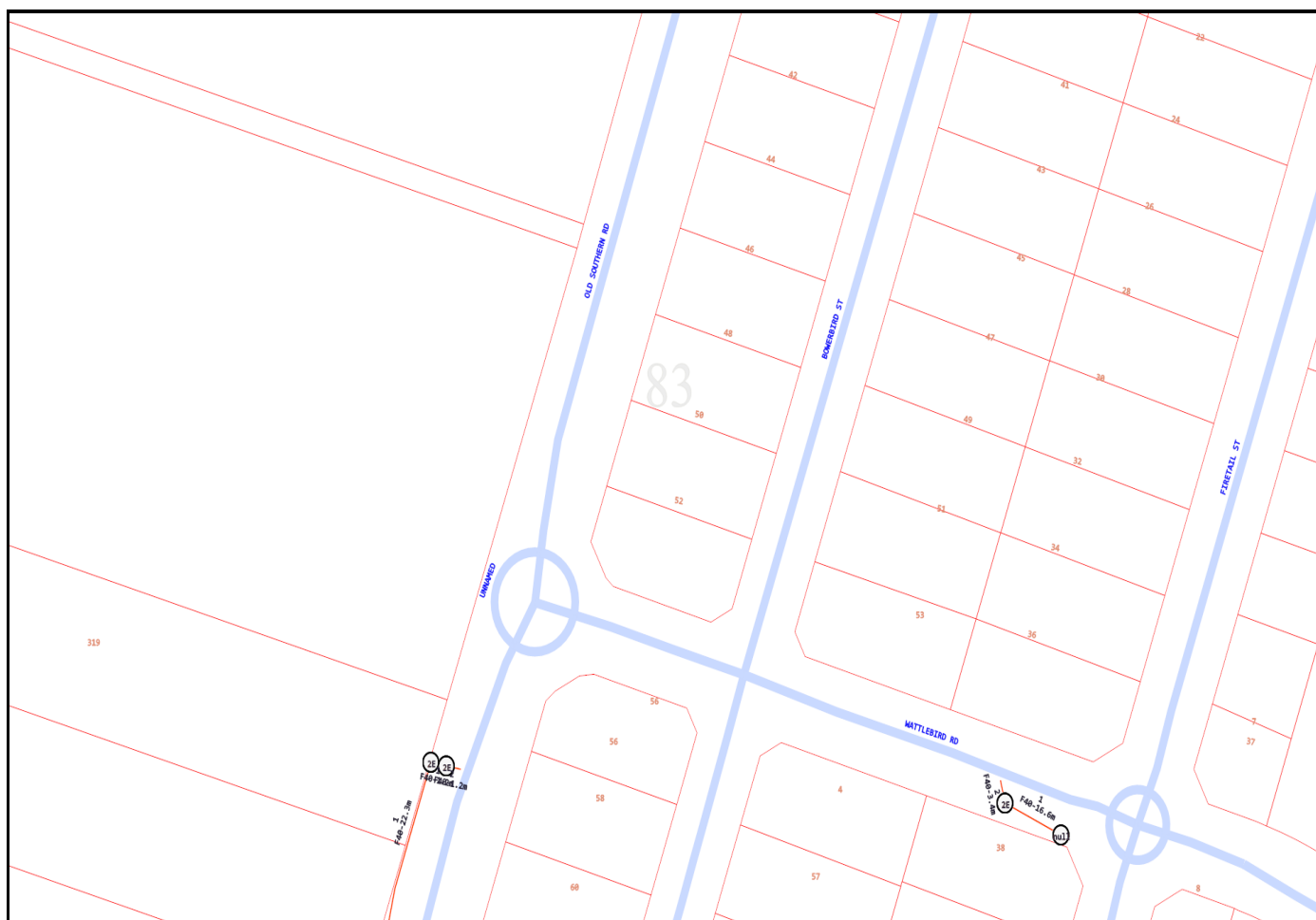
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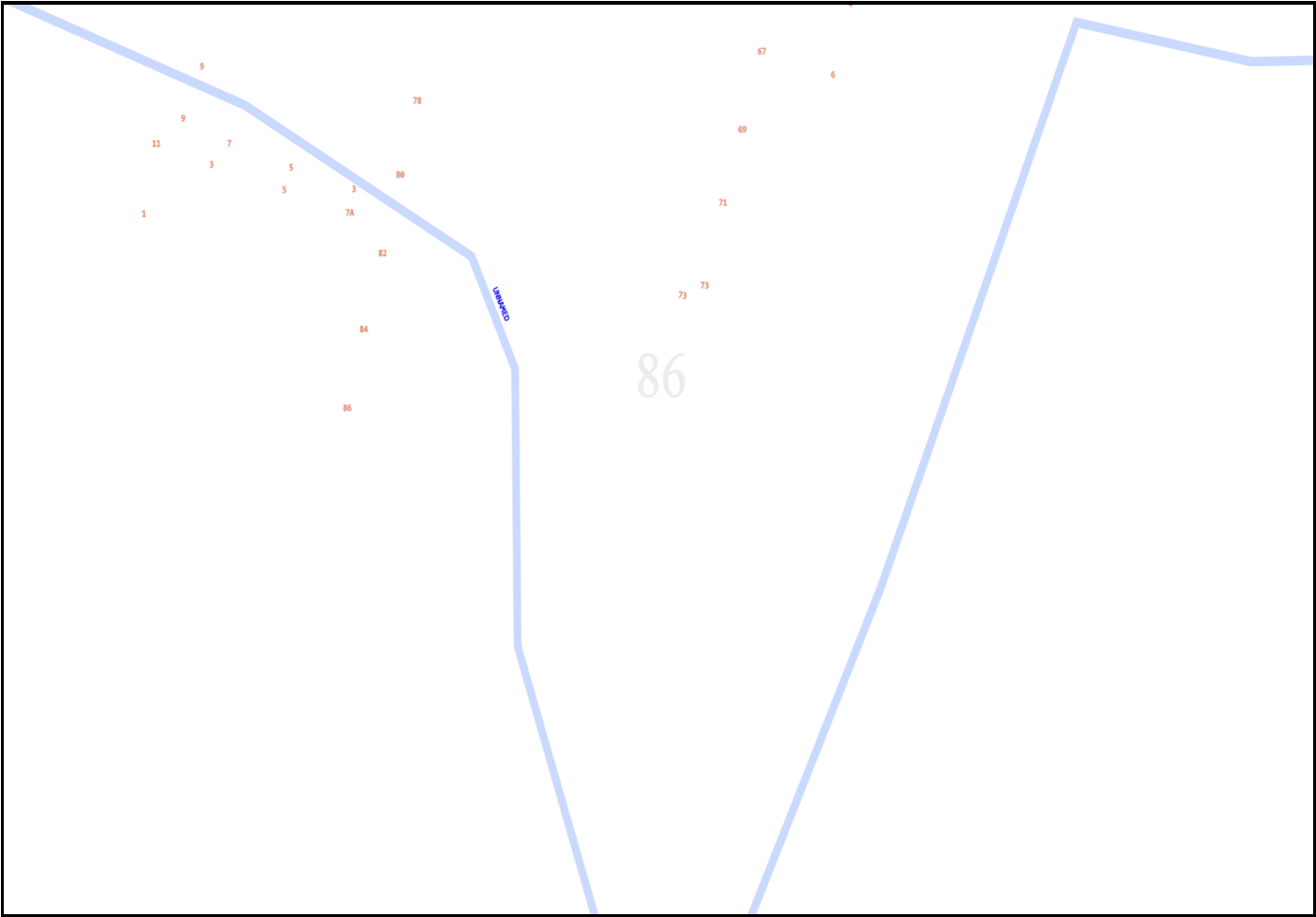


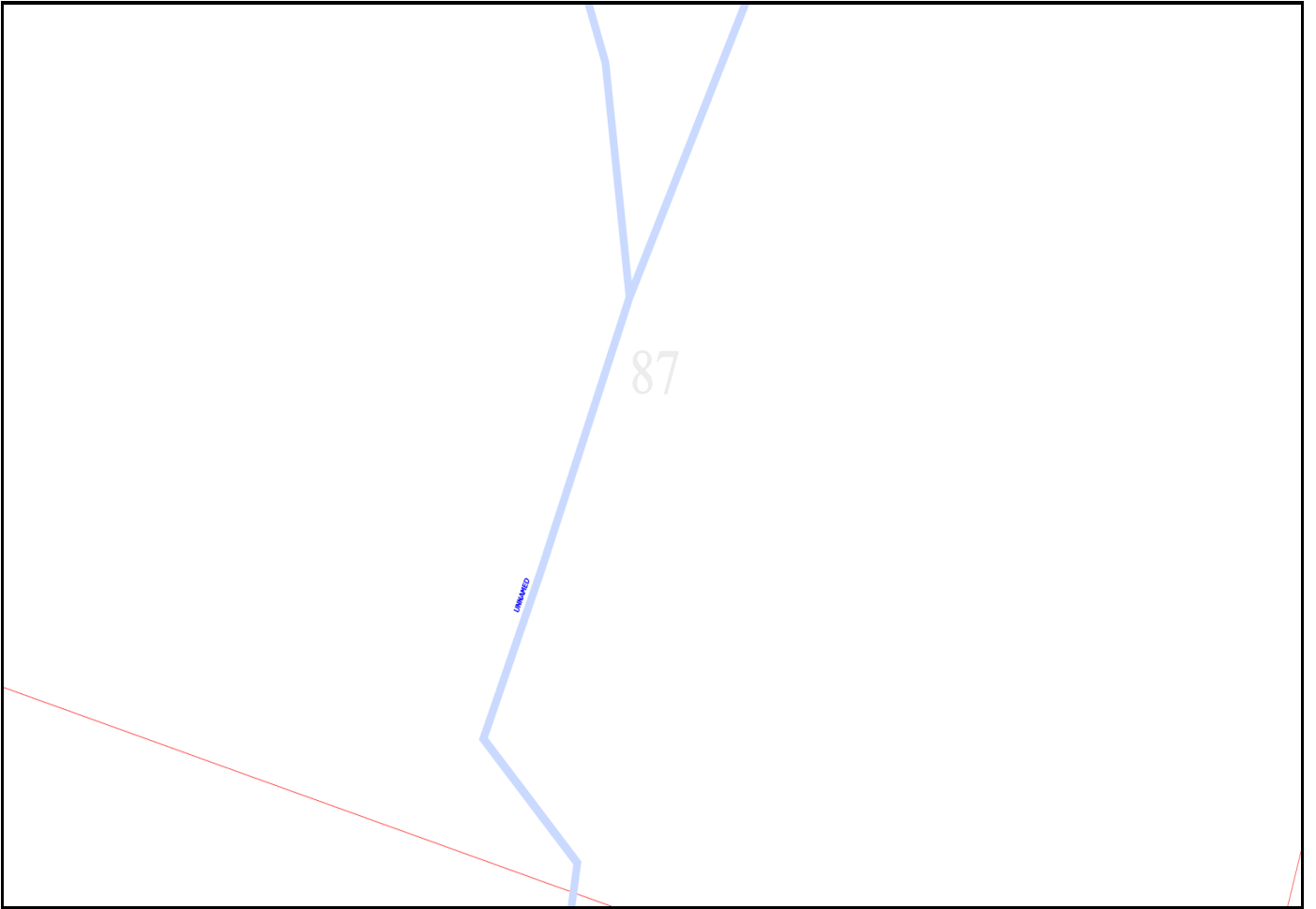


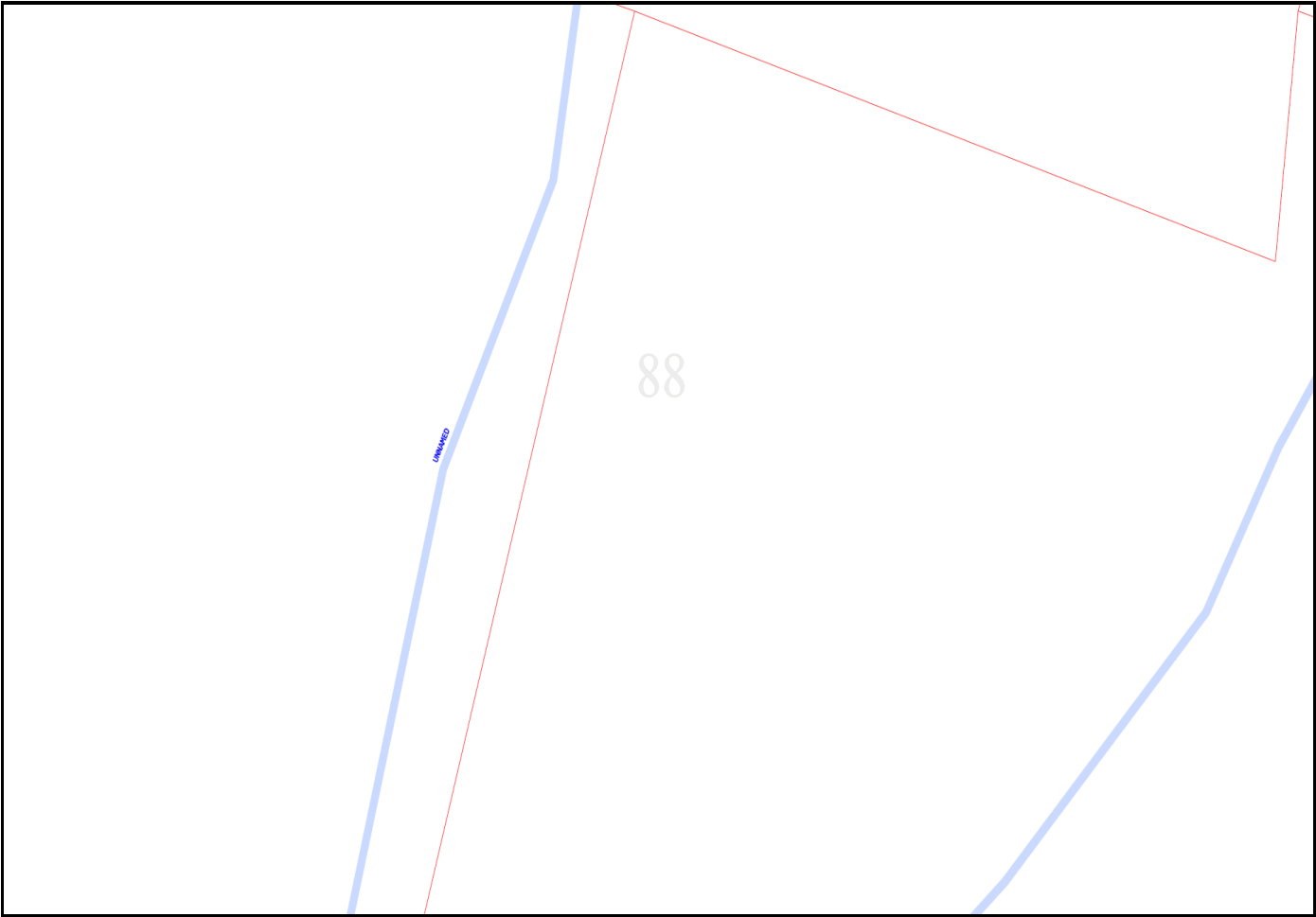


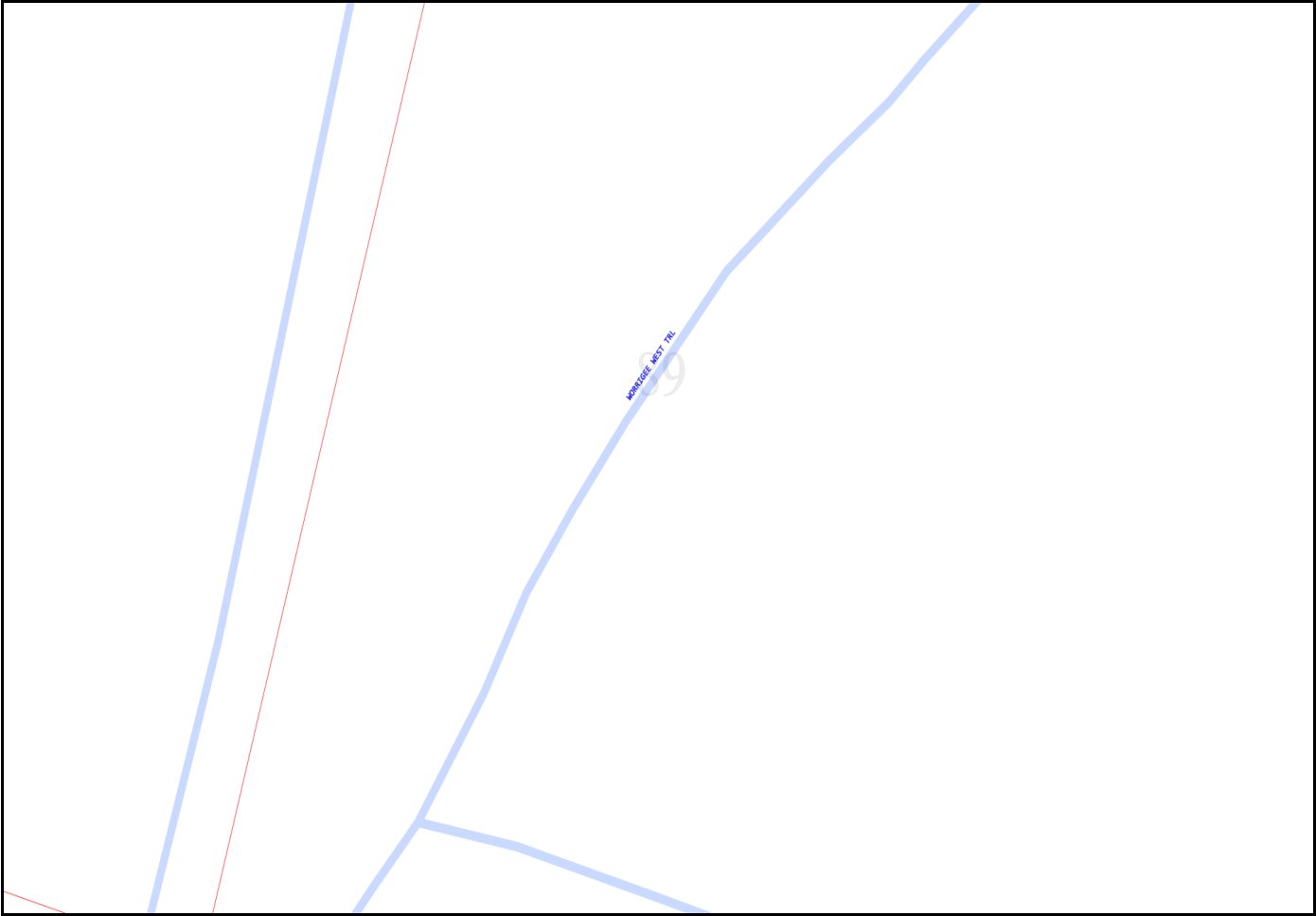


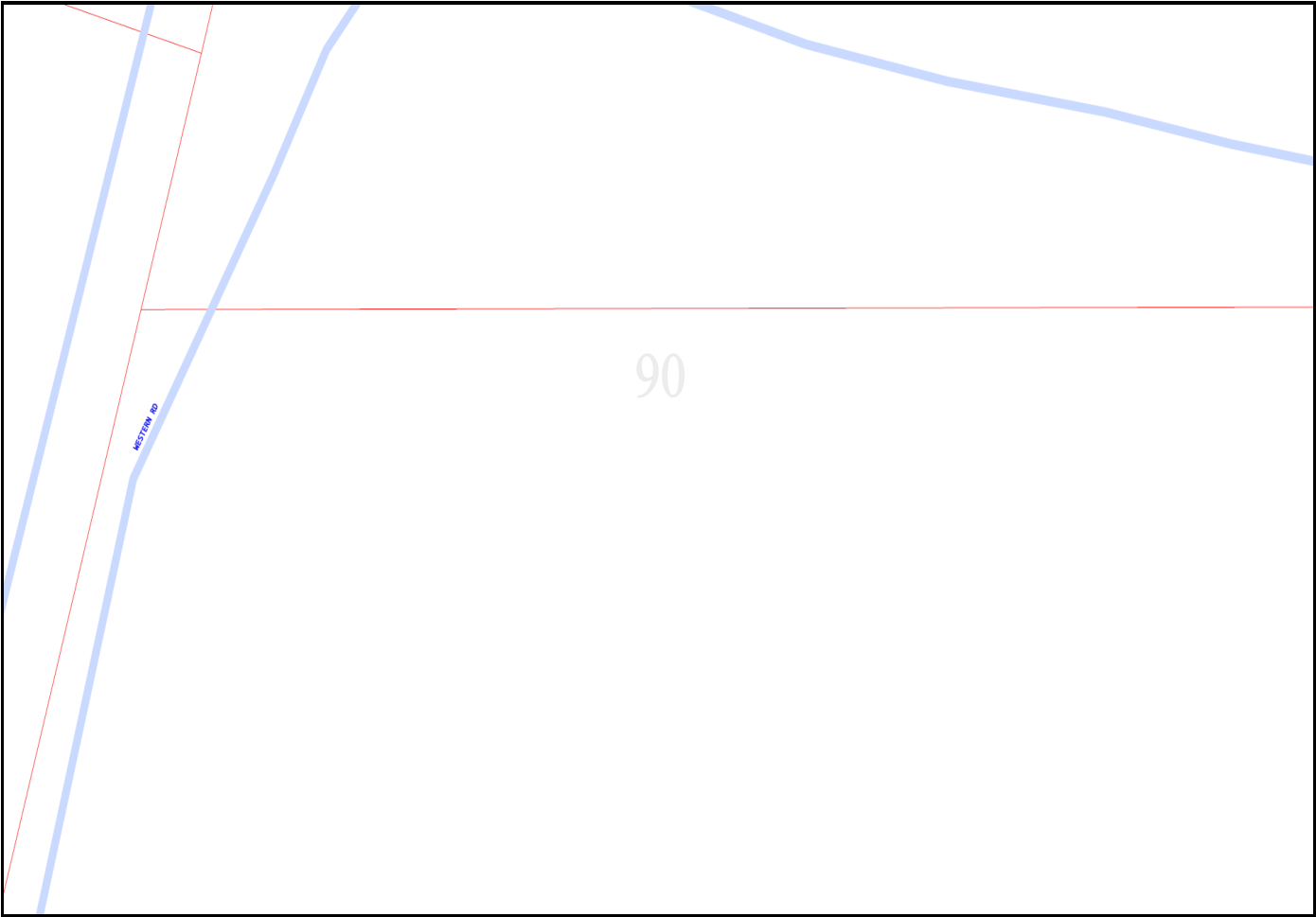


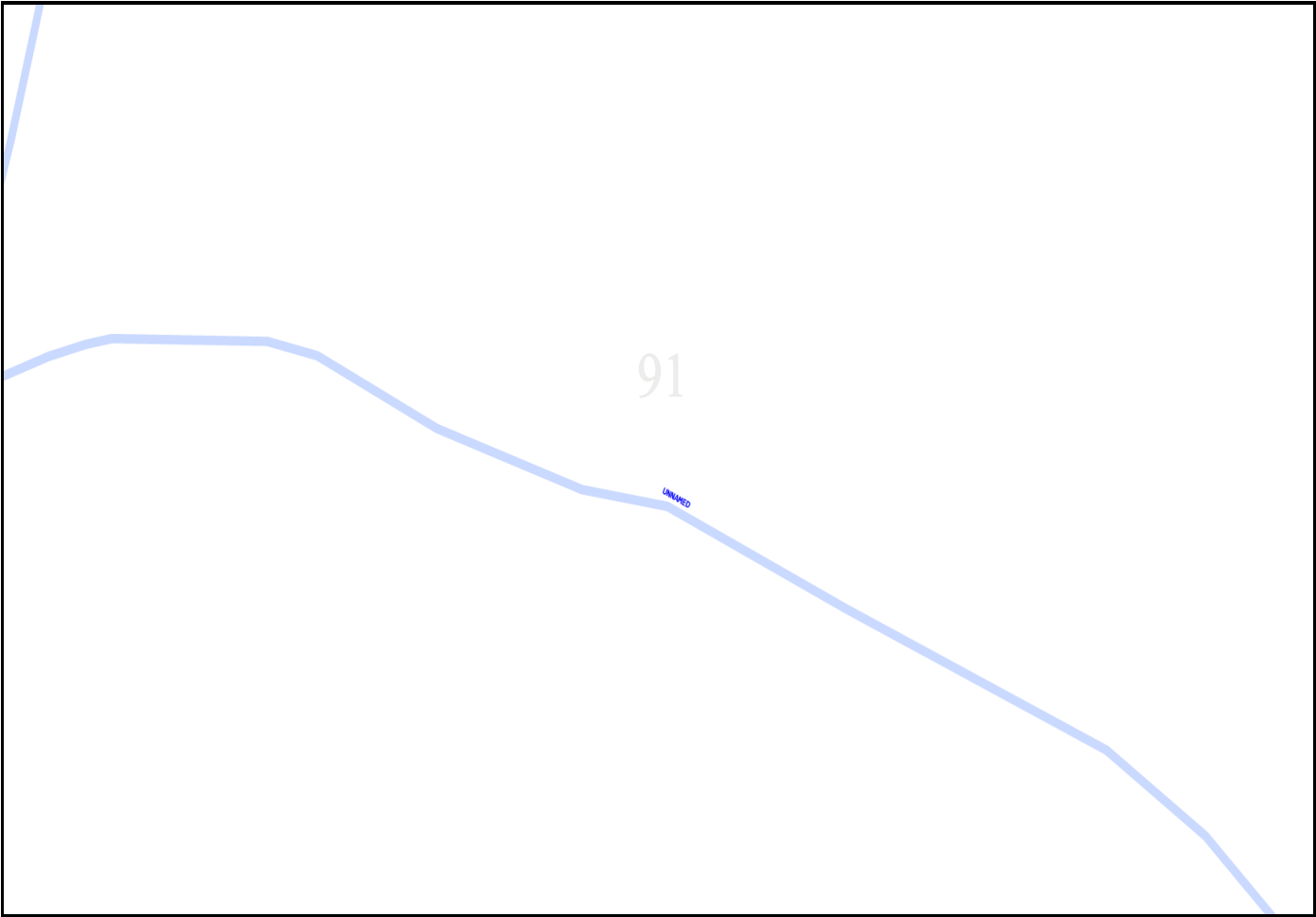


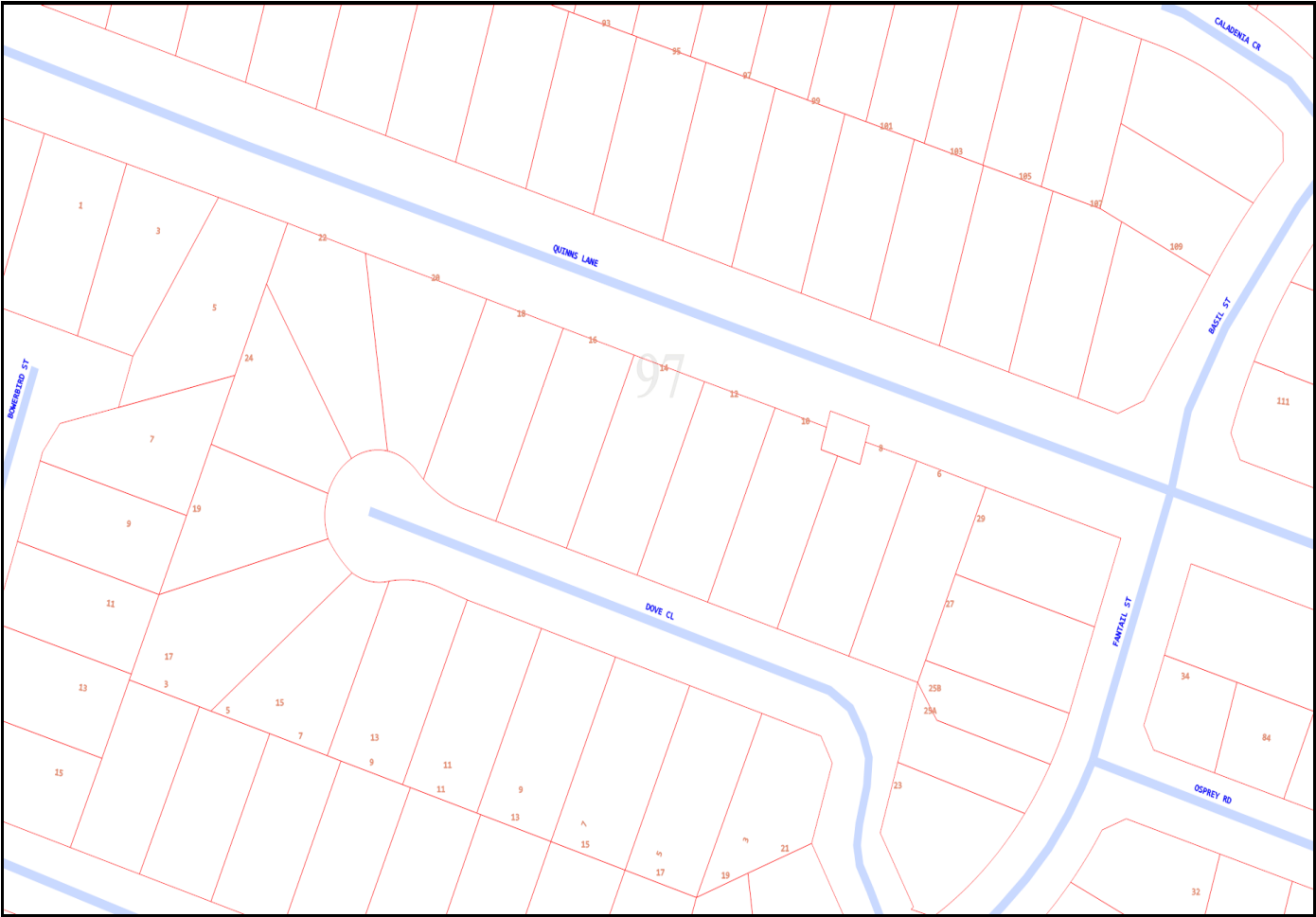


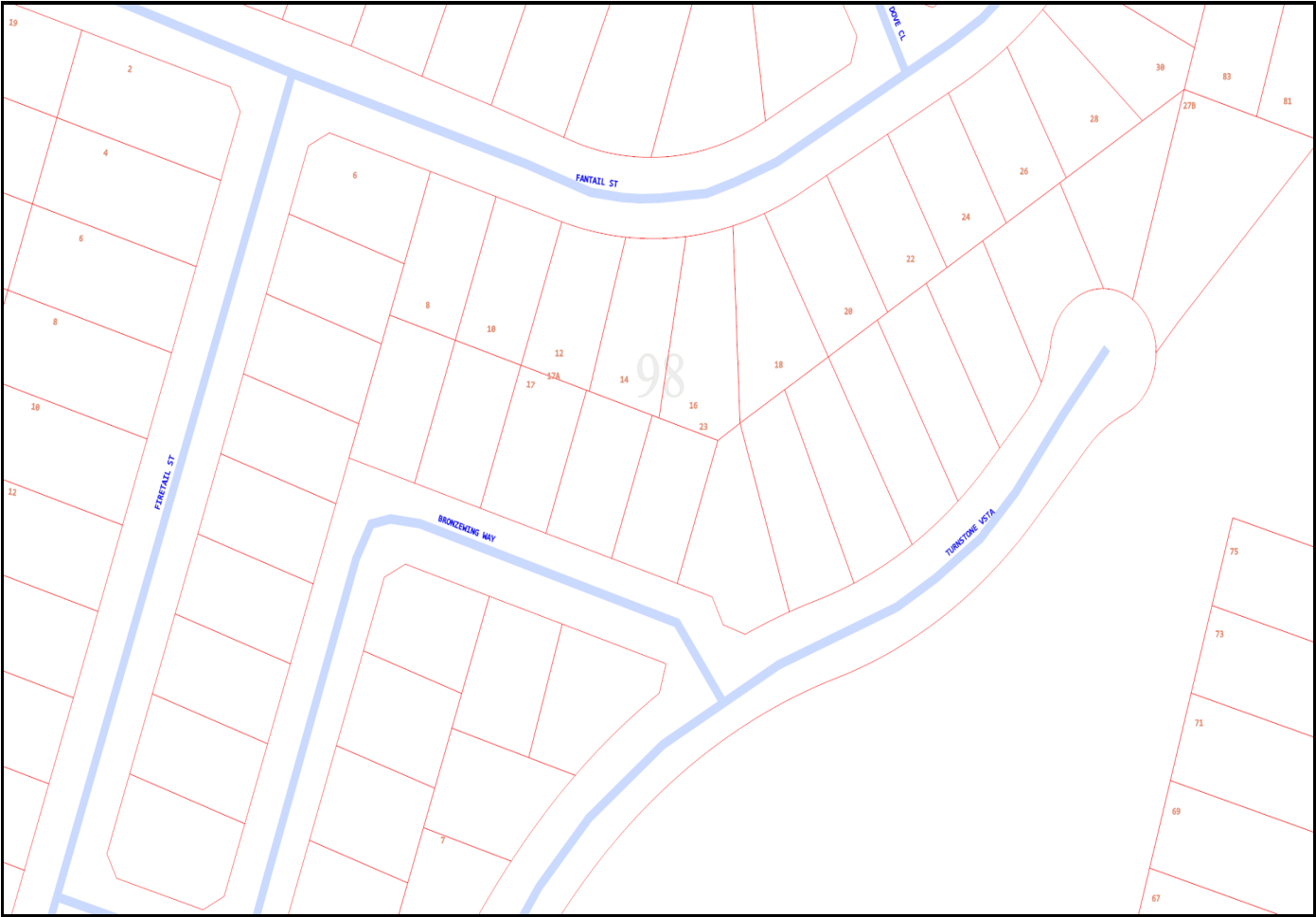






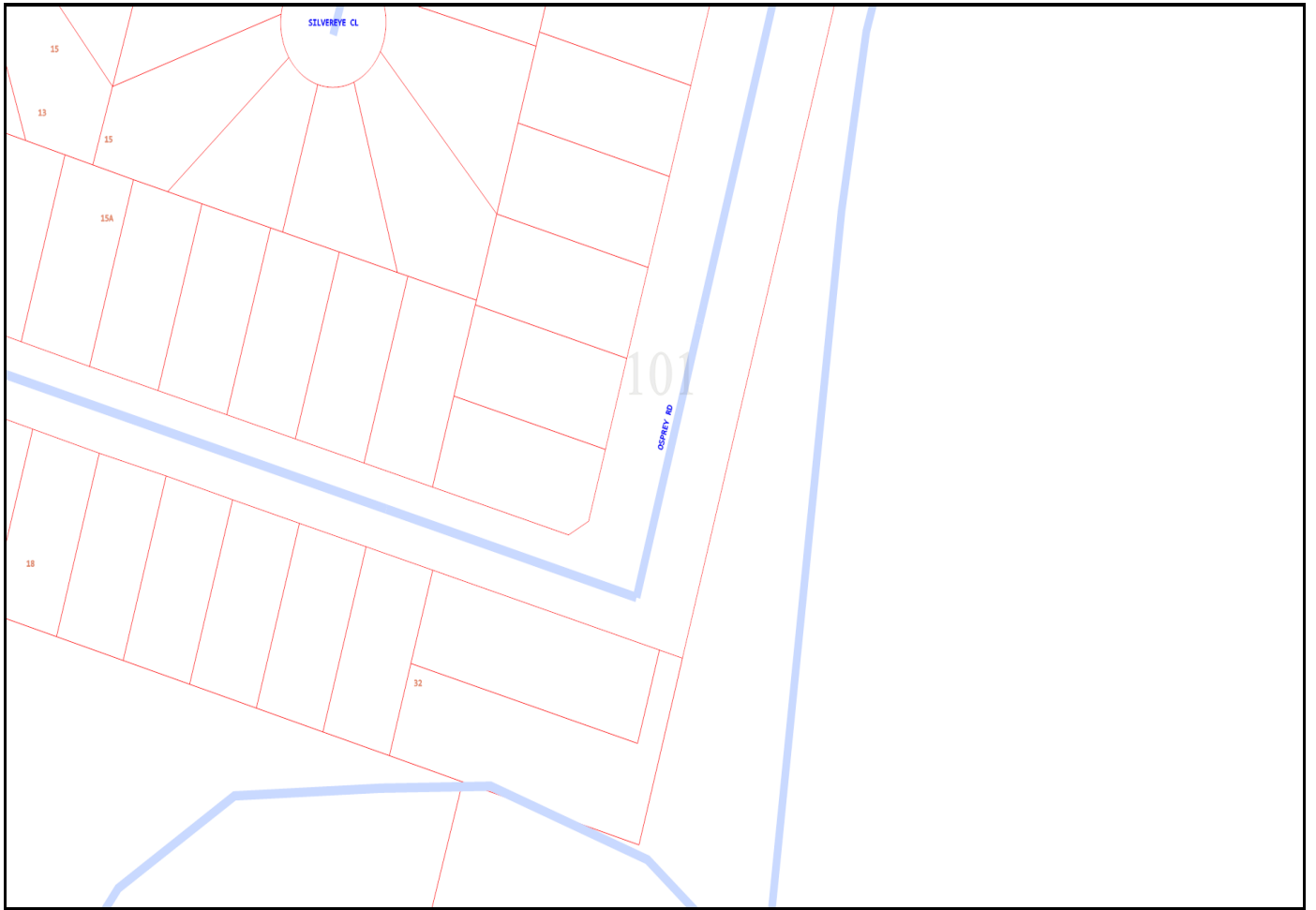






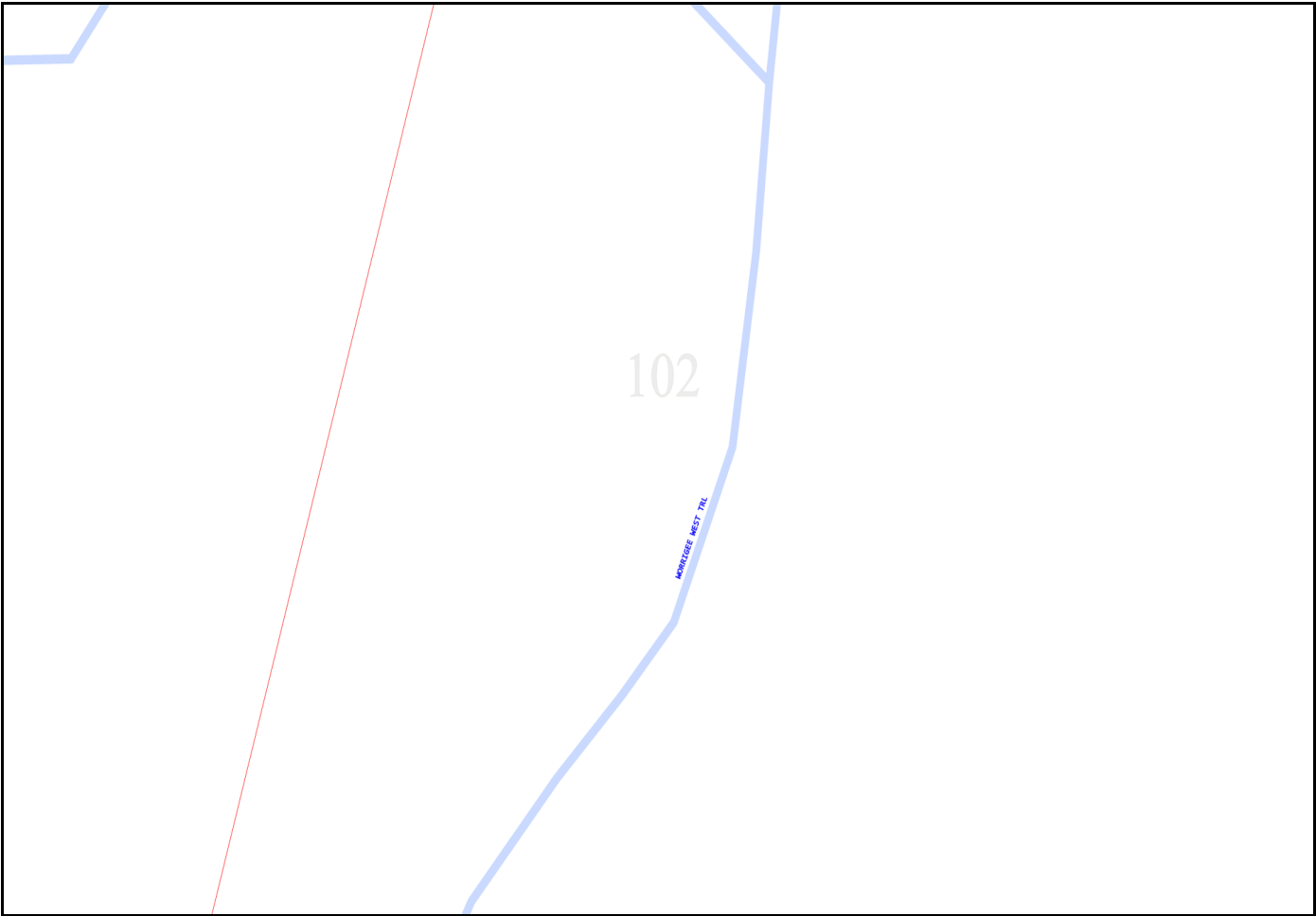


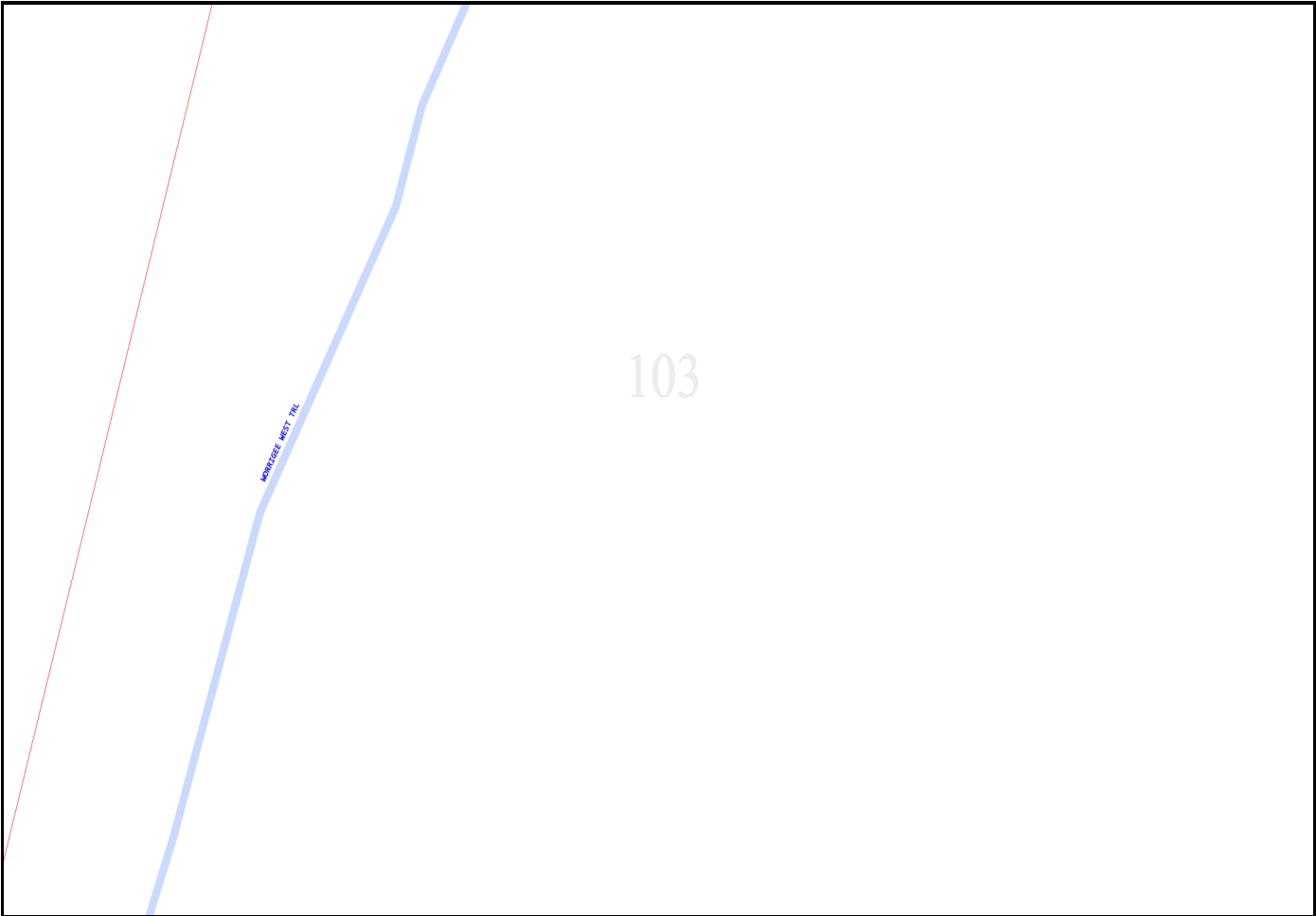


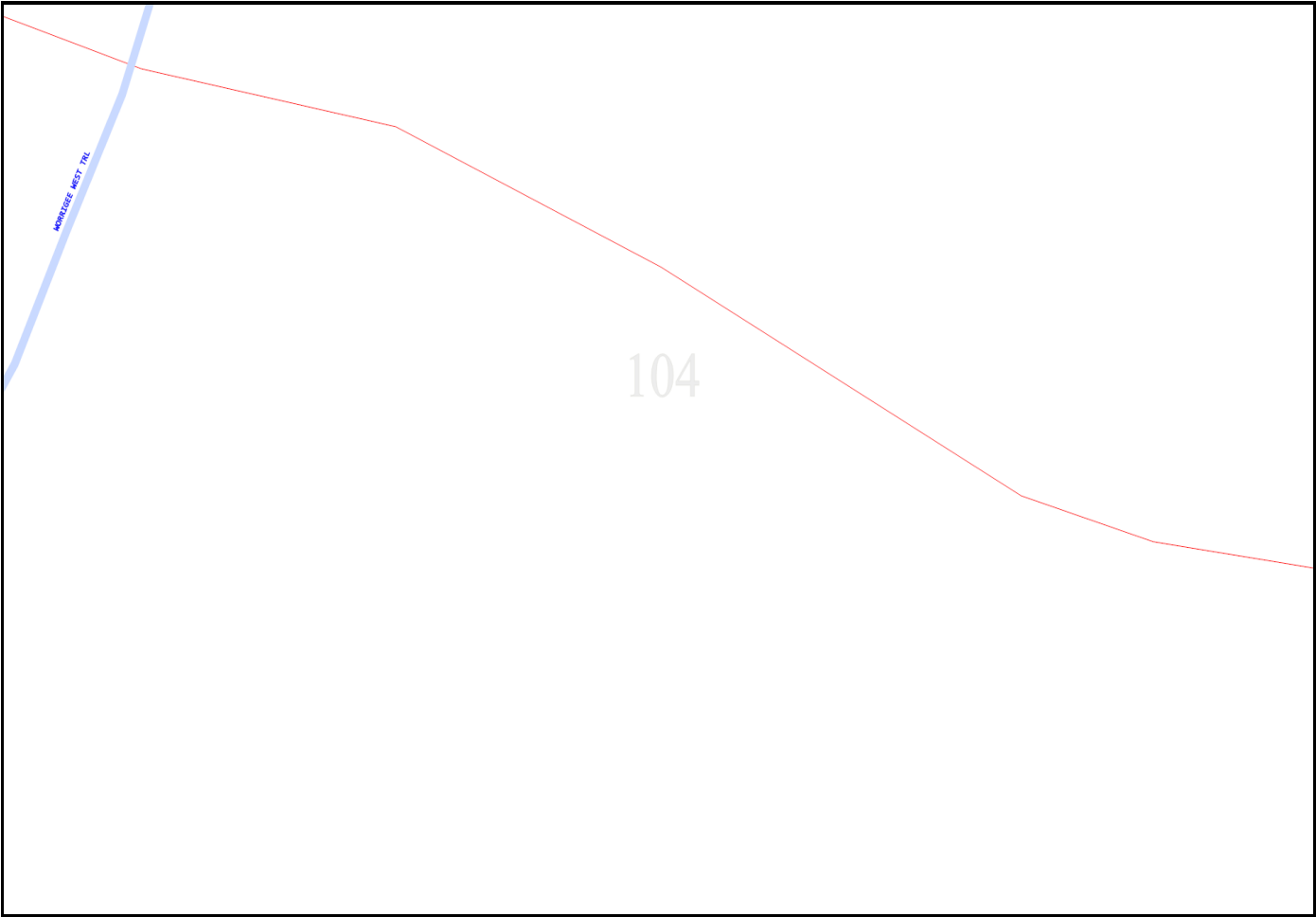


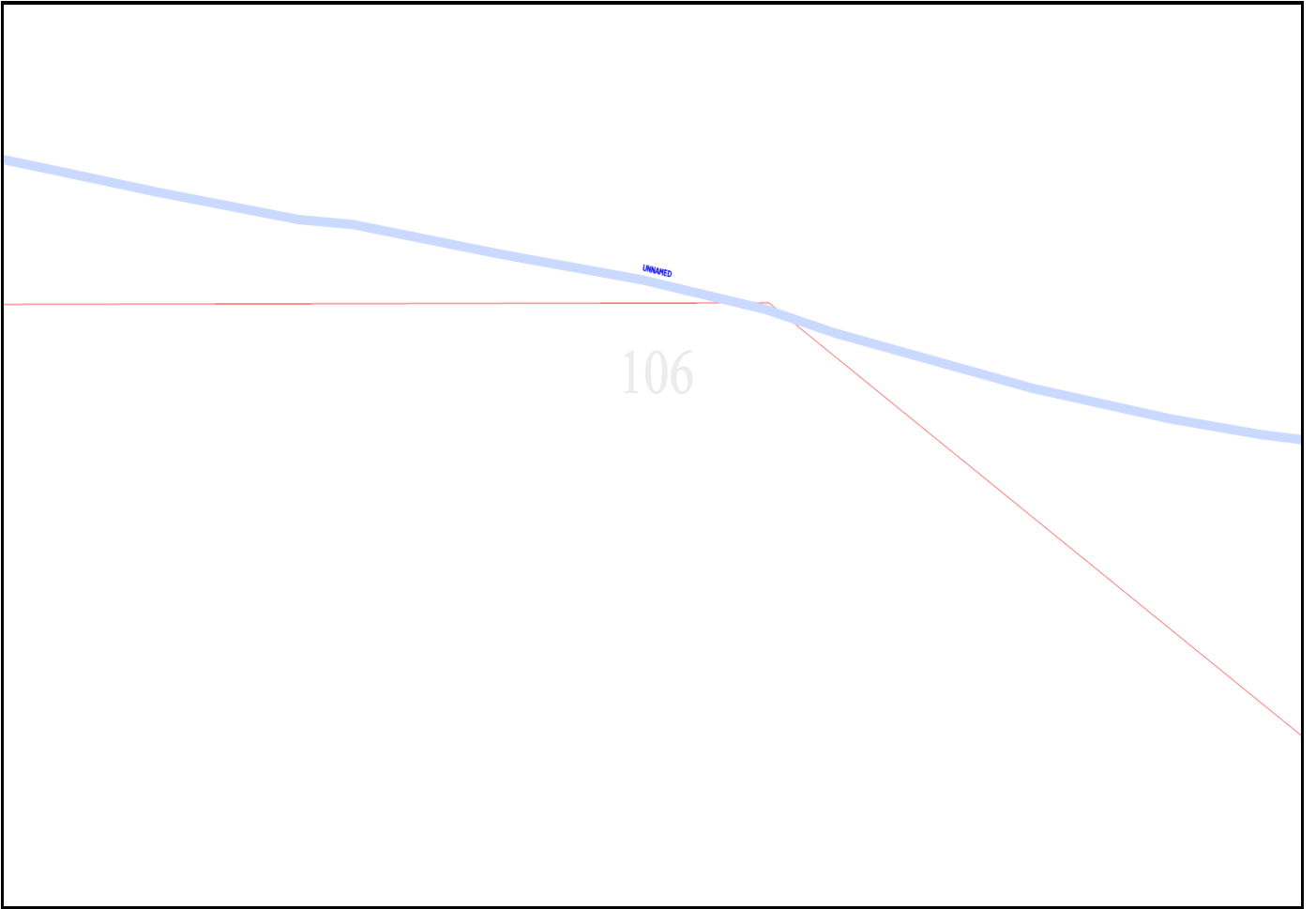
Emergency Contacts

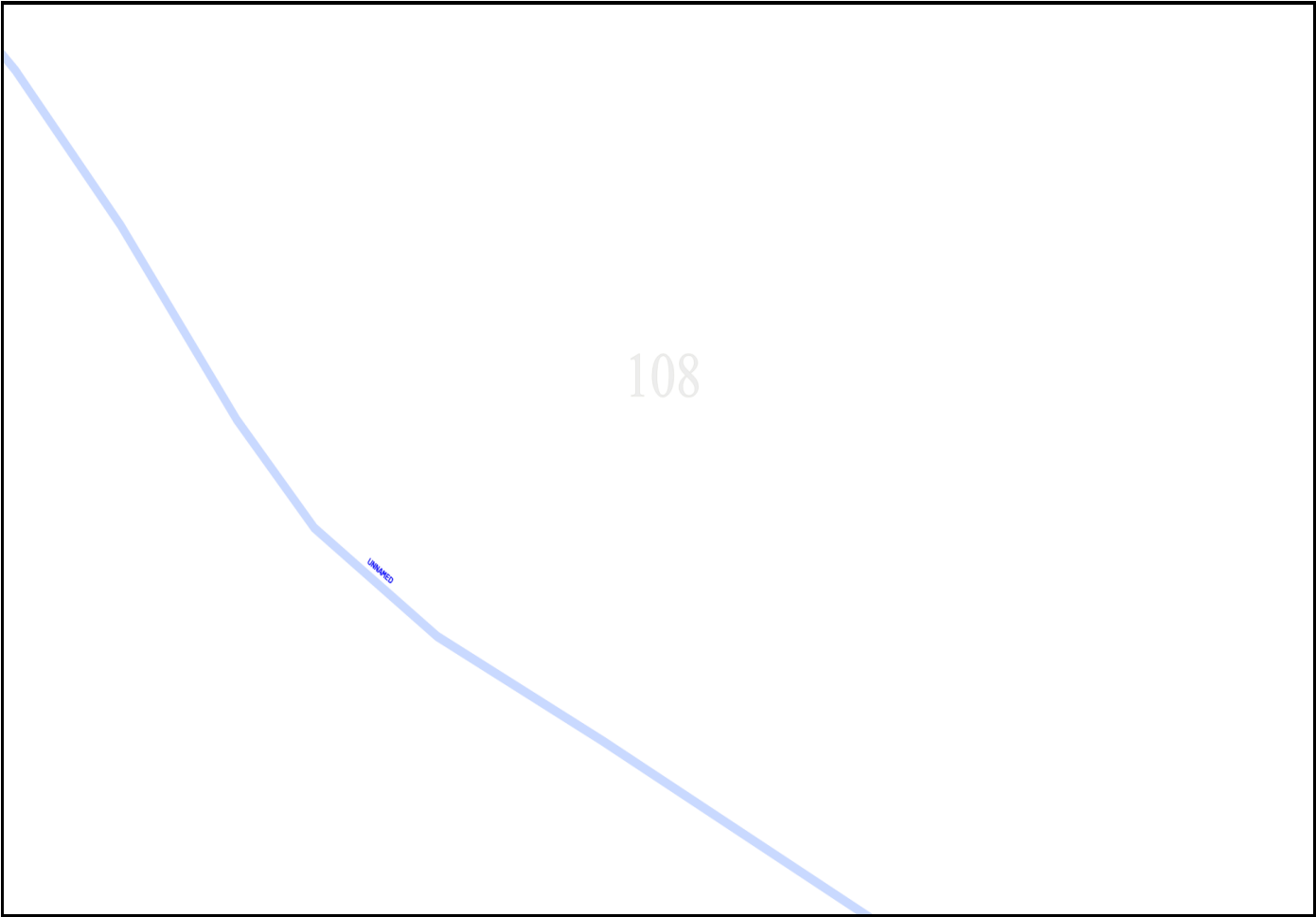
You must immediately report any damage to the **nbn**™ network that you are/become aware of. Notification may be by telephone - 1800 626 329.











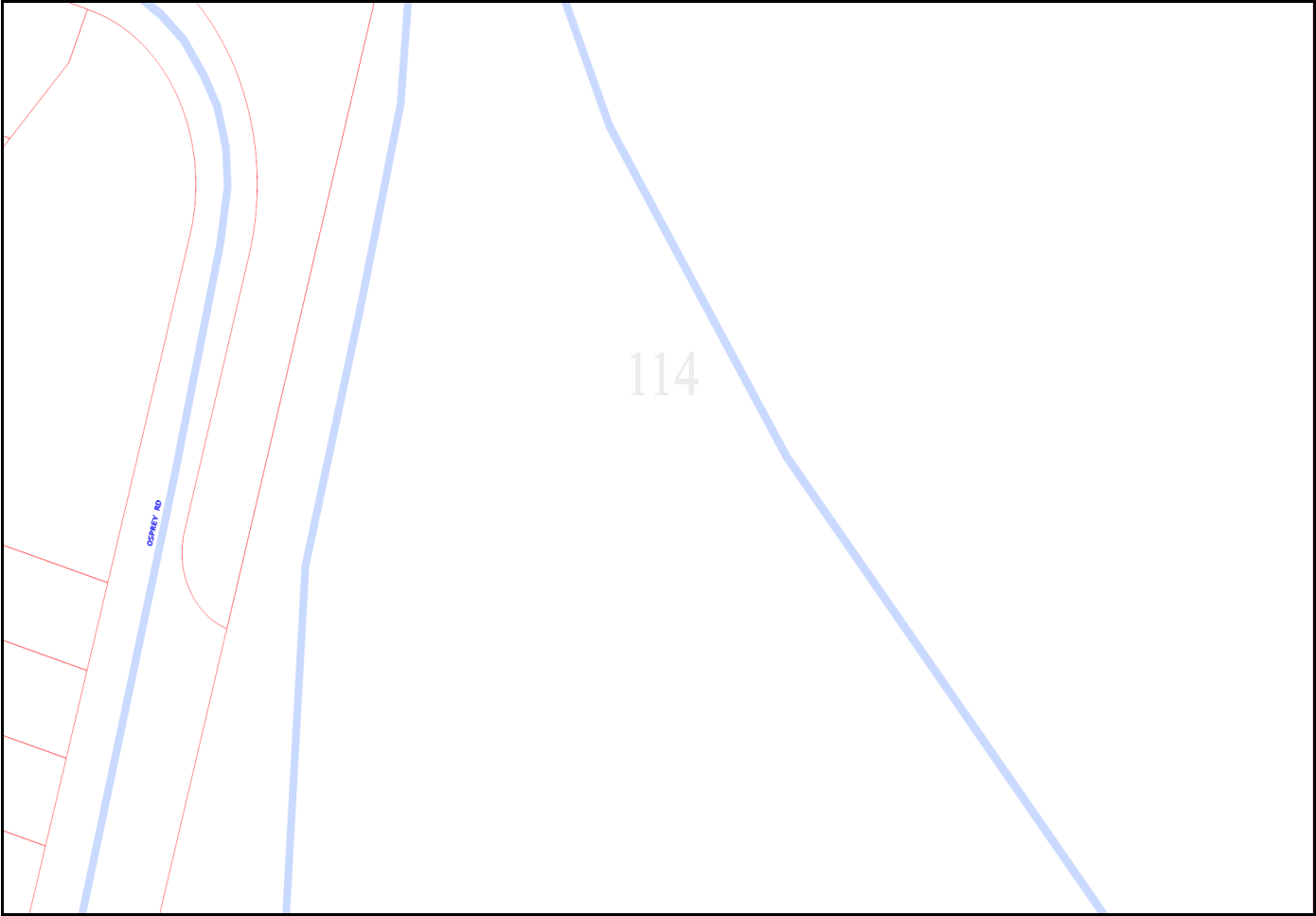
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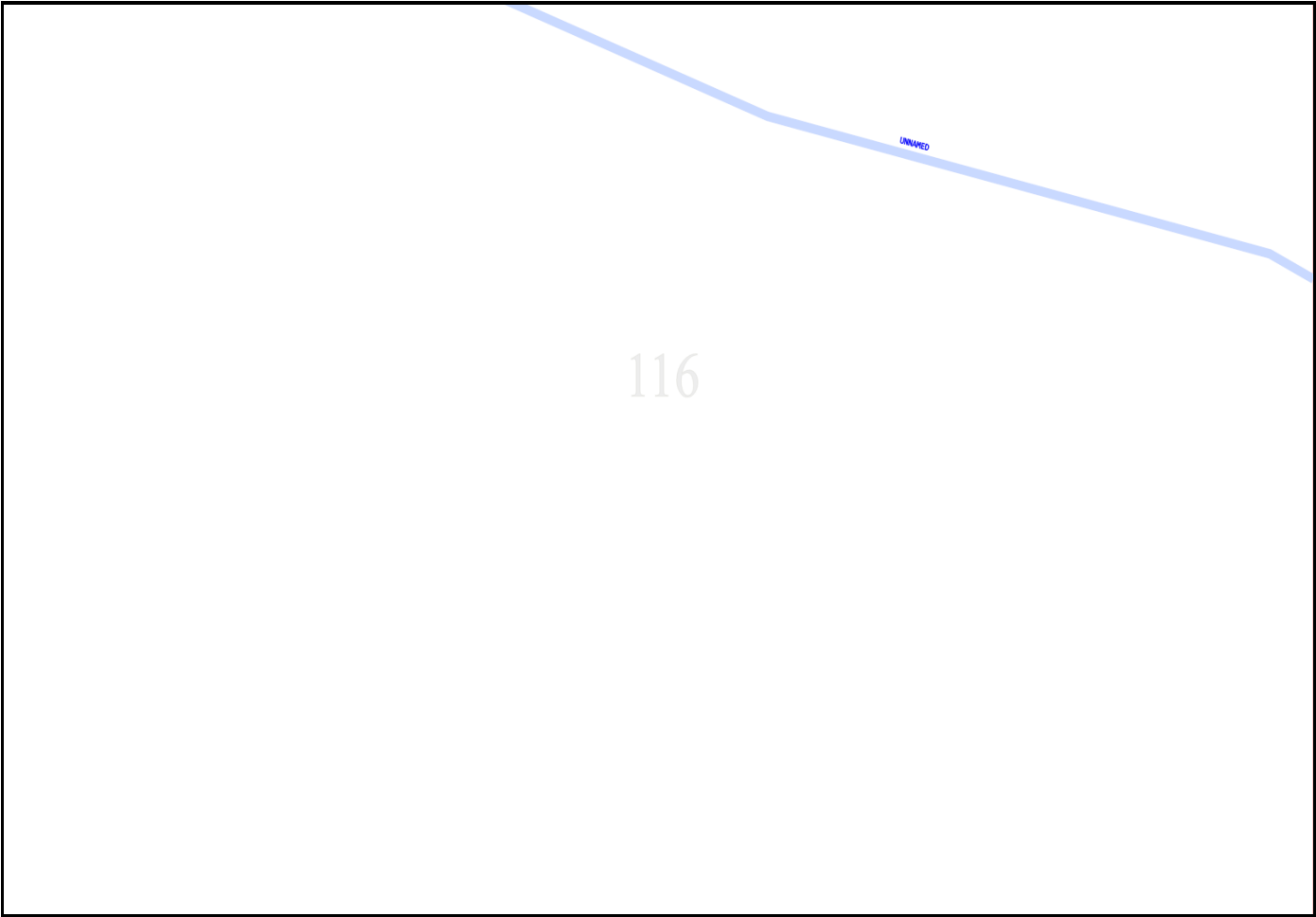
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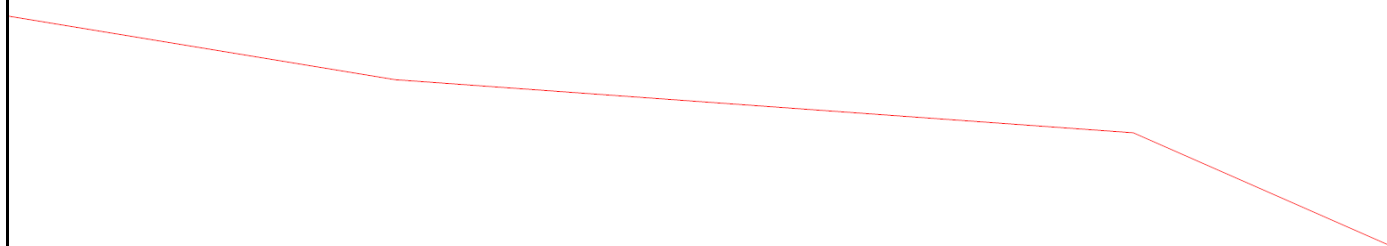
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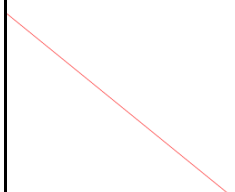
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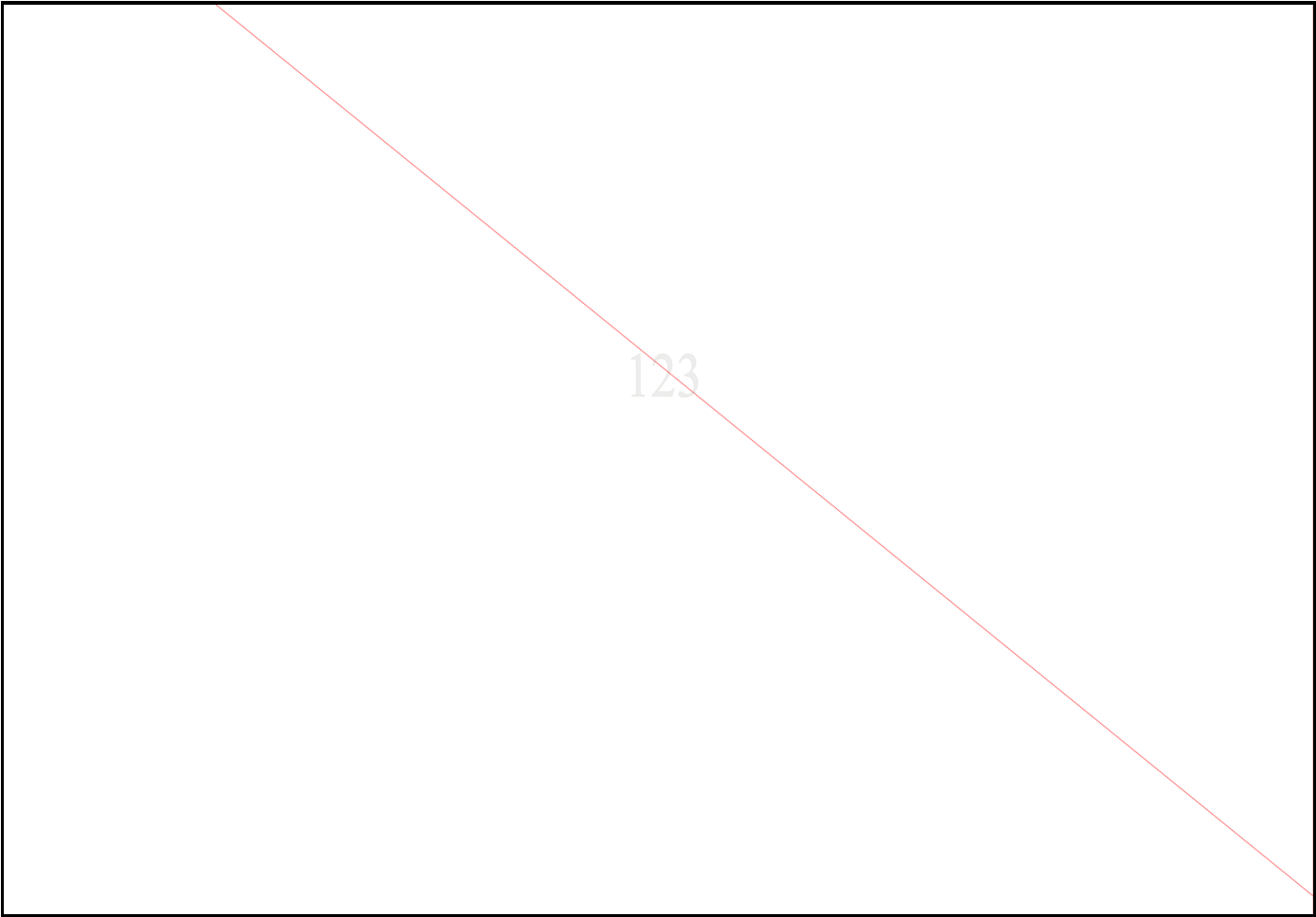


121

122

UNWED





125

Unlabeled

126

128

To: CivPlan Consulting Pty
Ltd
Phone: Not Supplied
Fax: Not Supplied
Email: projects@civplan.com.au

Dial before you dig Job #:	37124943	
Sequence #	241873957	
Issue Date:	15/07/2024	
Location:	74 Warra Warra Road (Large Prop) , Comberton , NSW , 2540	

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

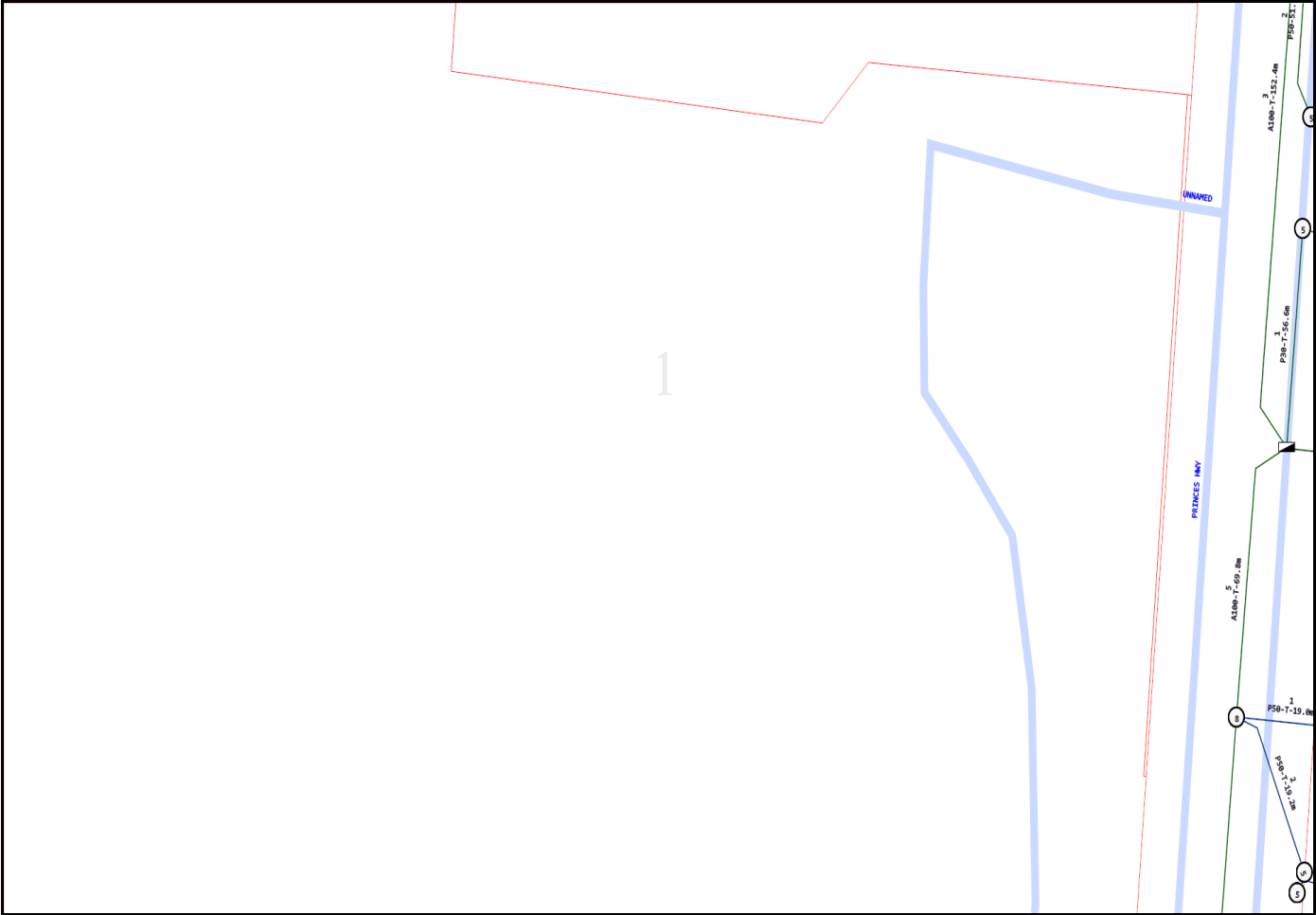
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4	9	14	19
5	10	15	20

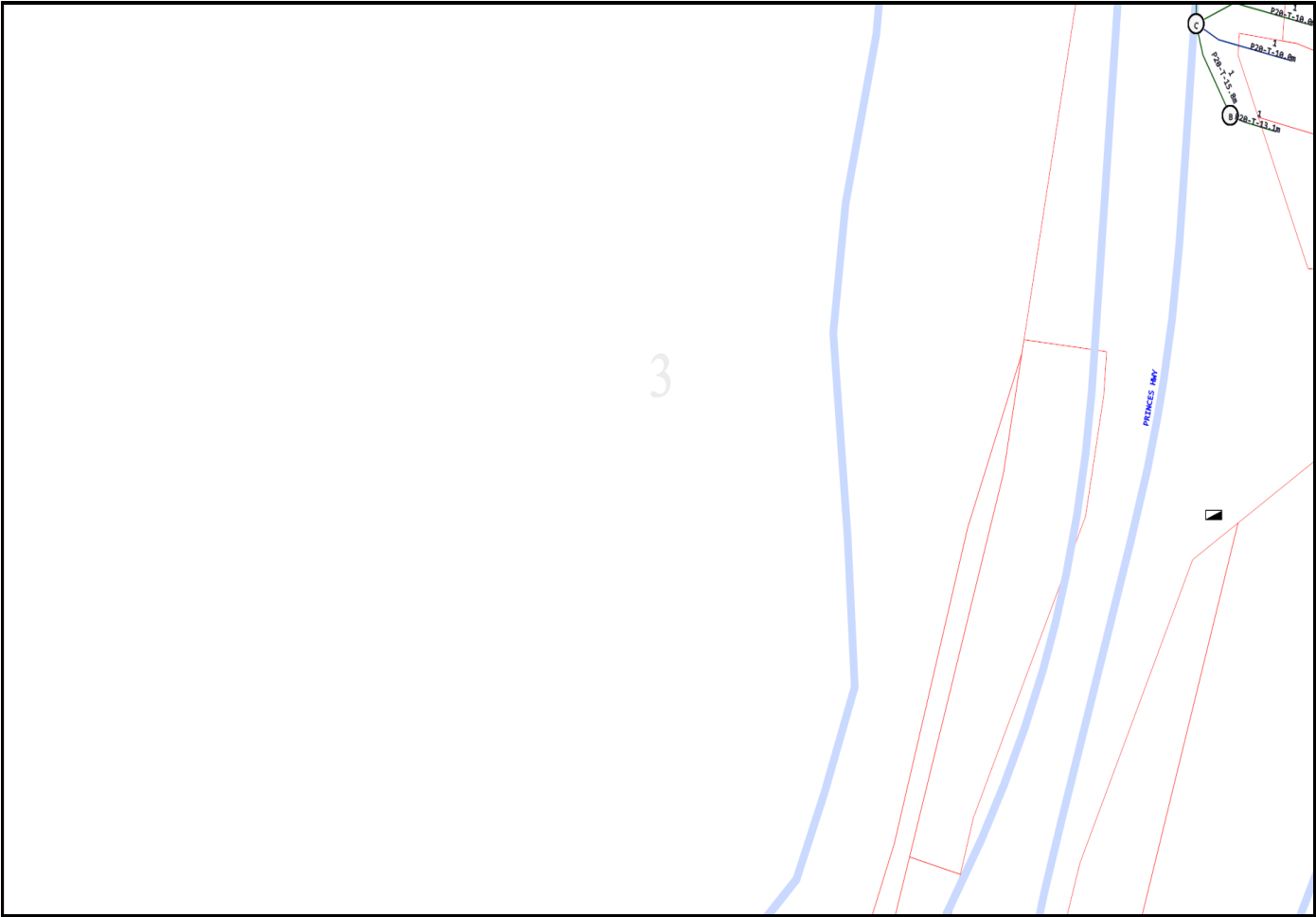


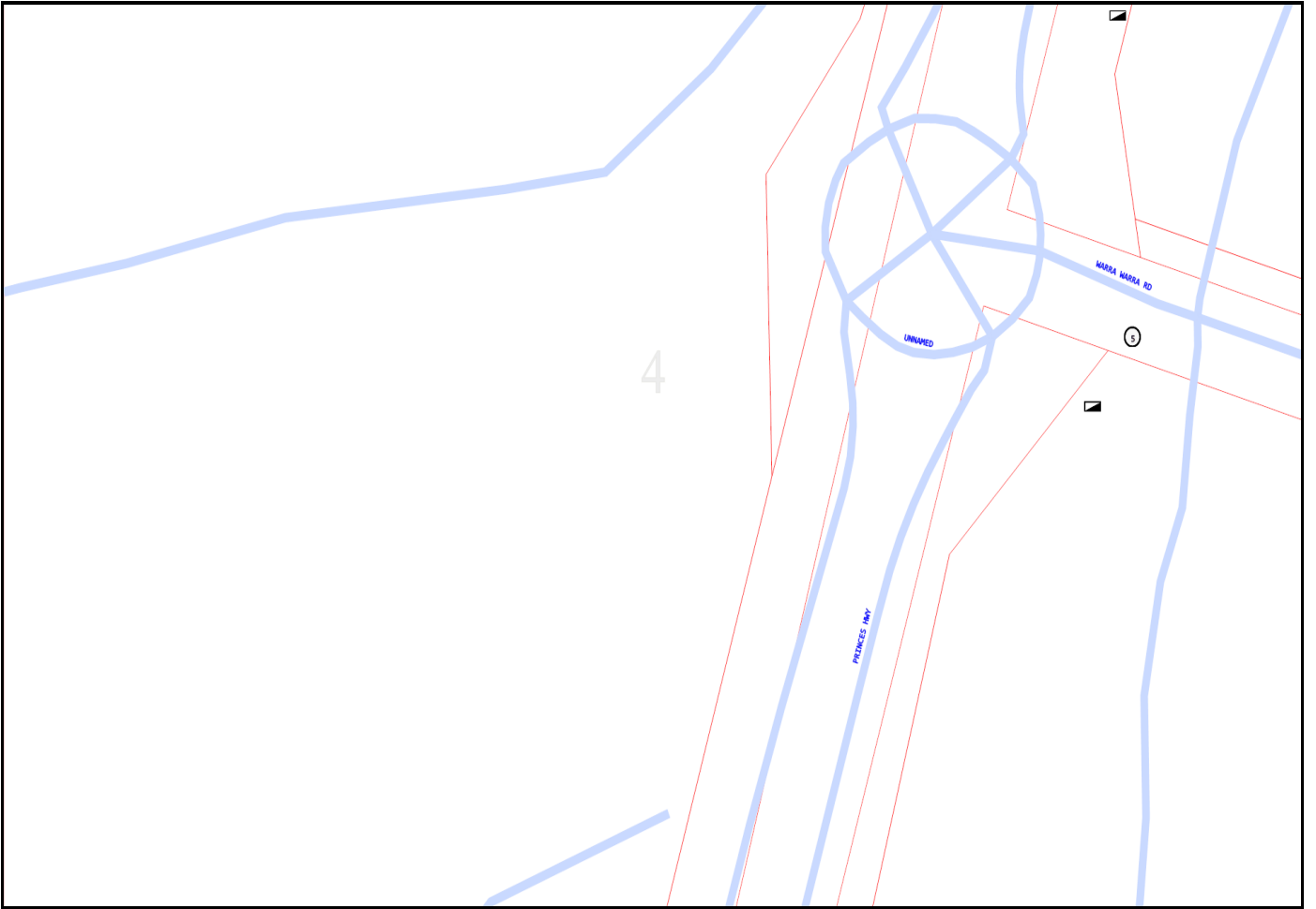
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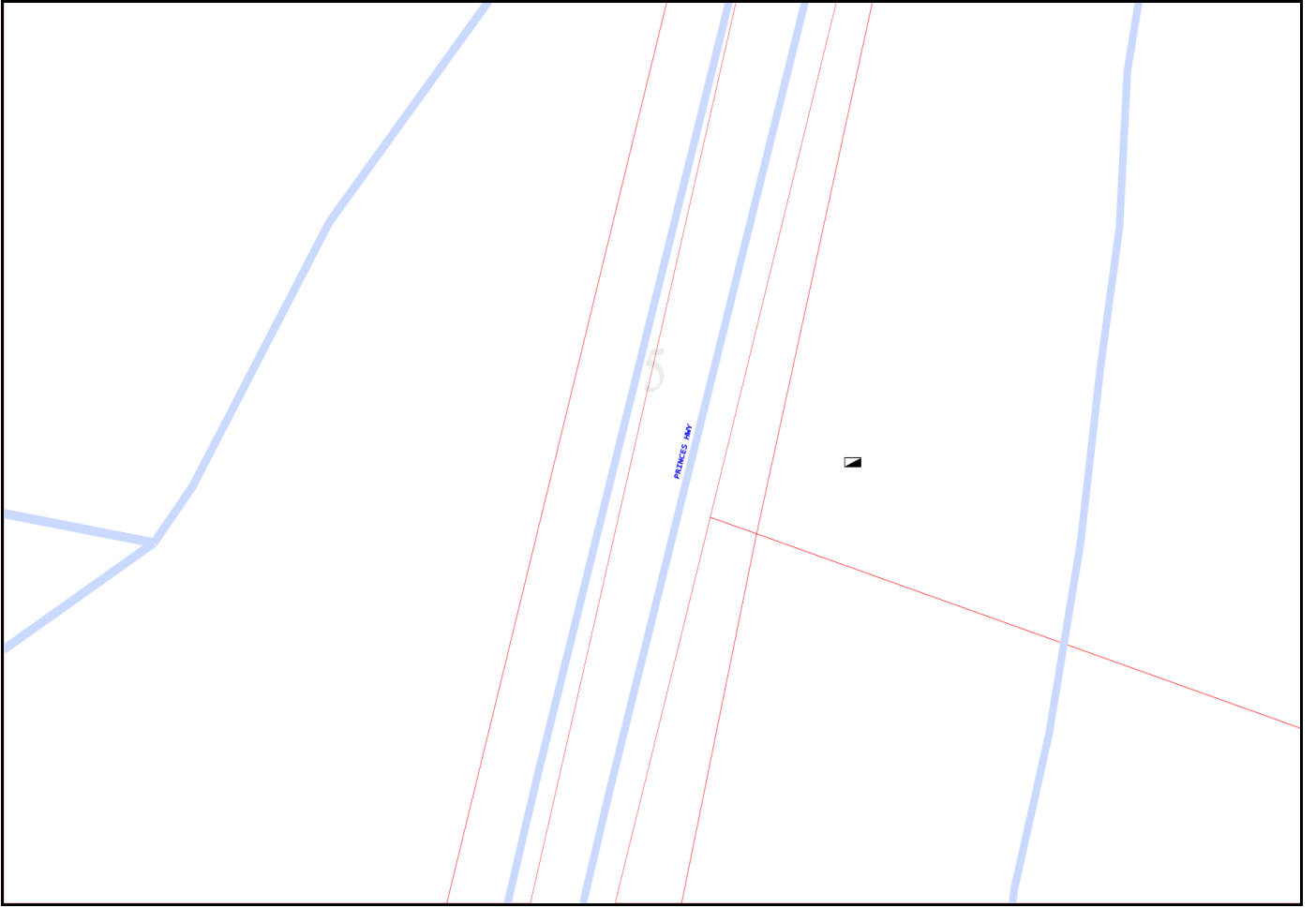


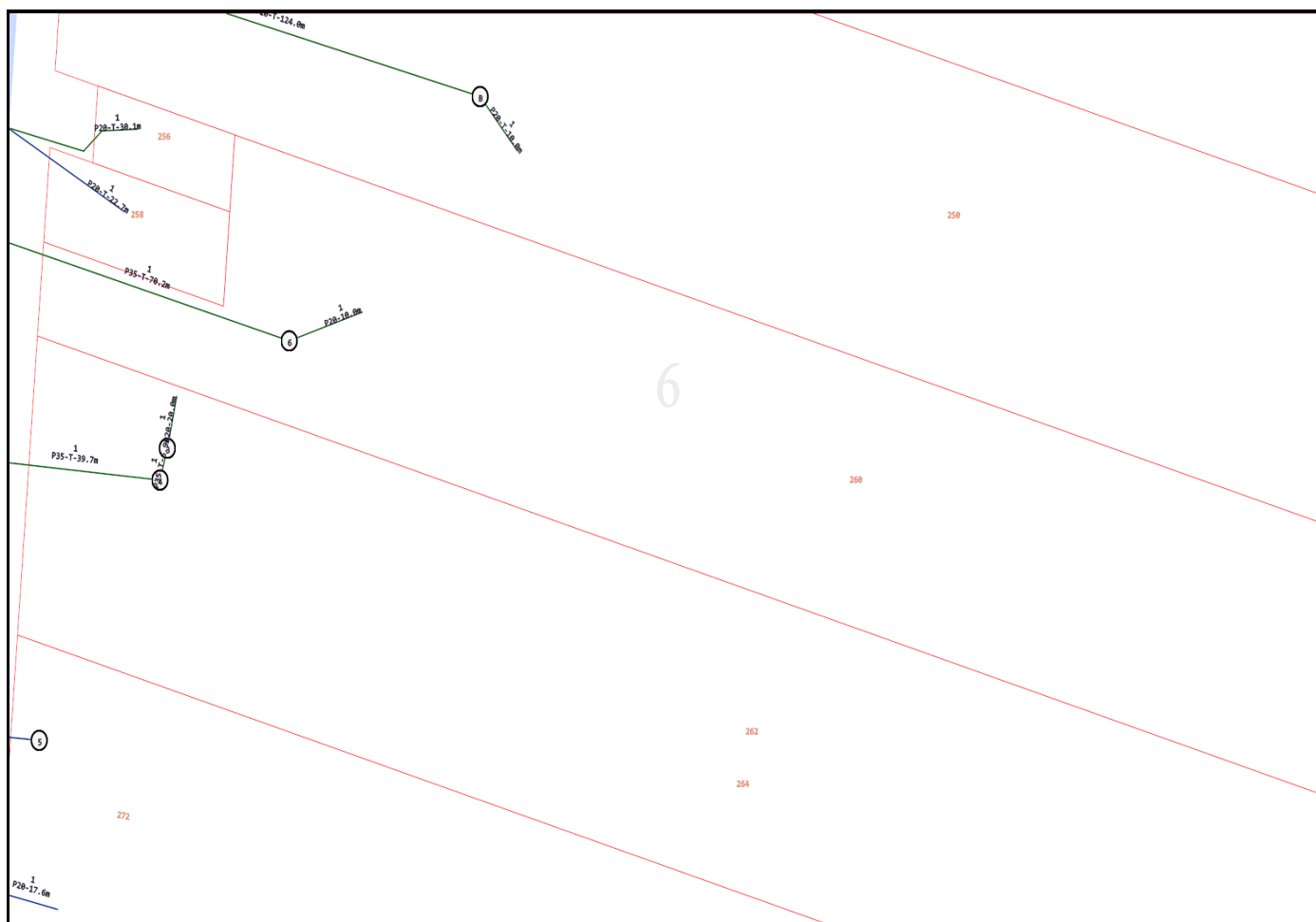
	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) 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

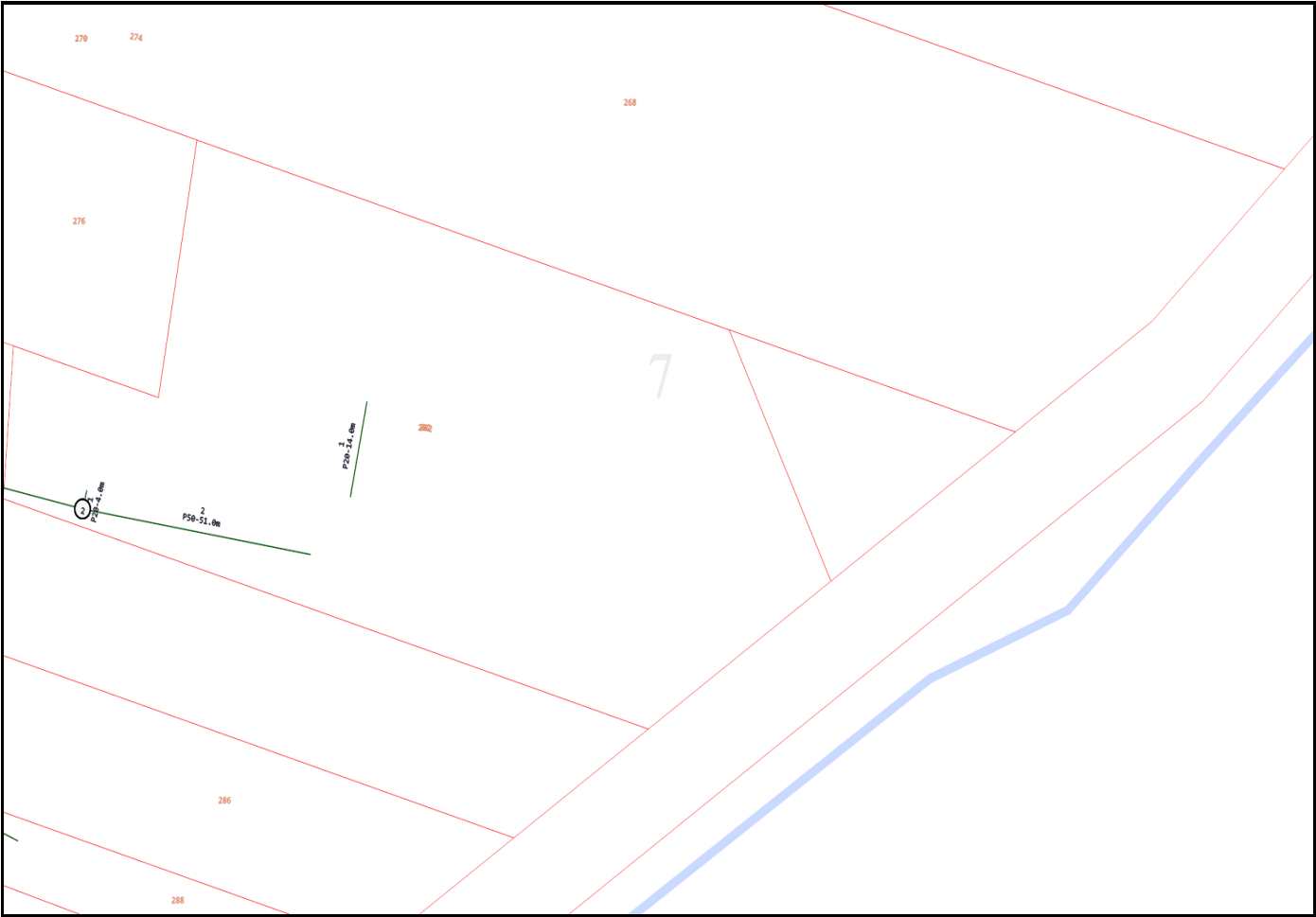


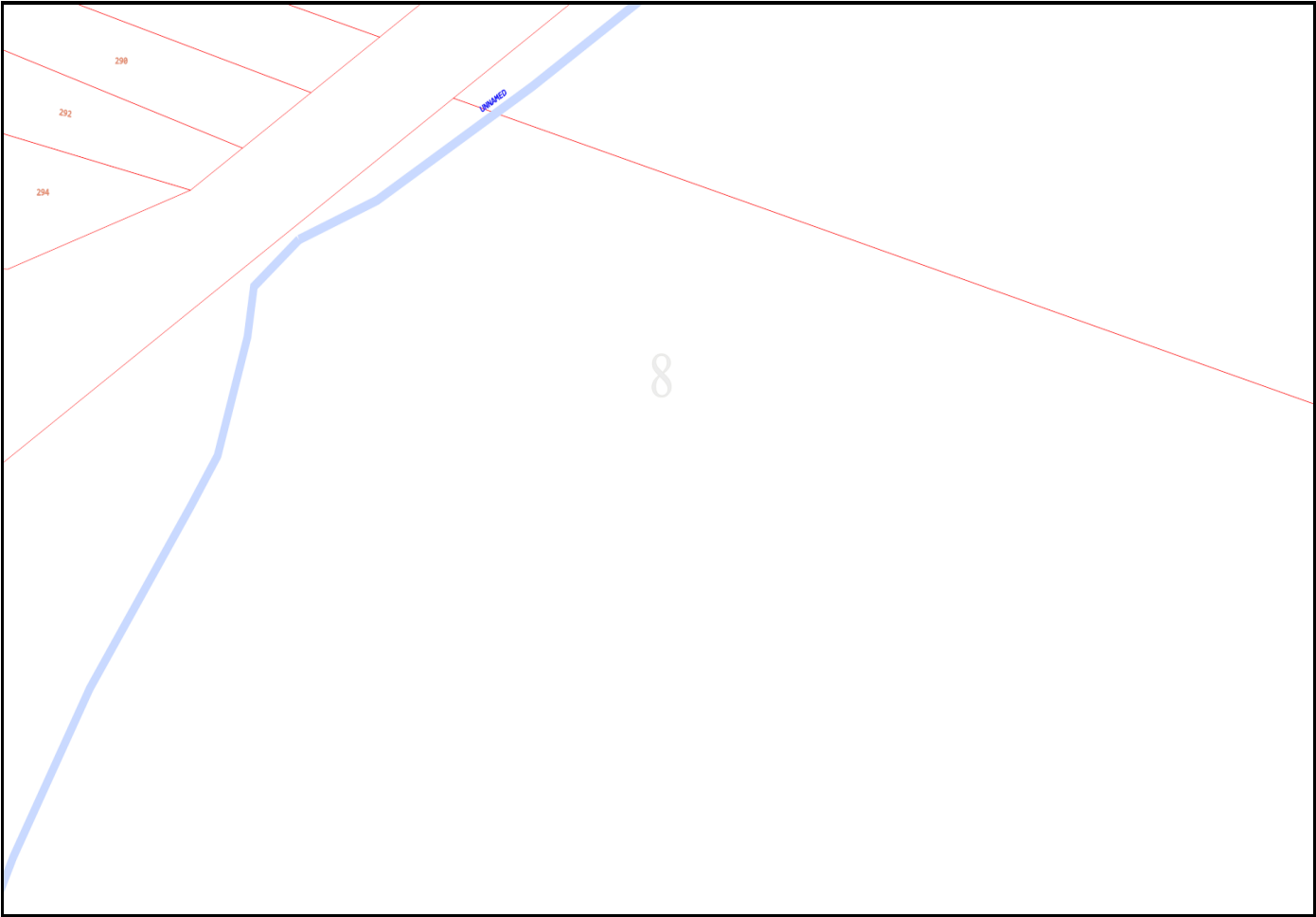


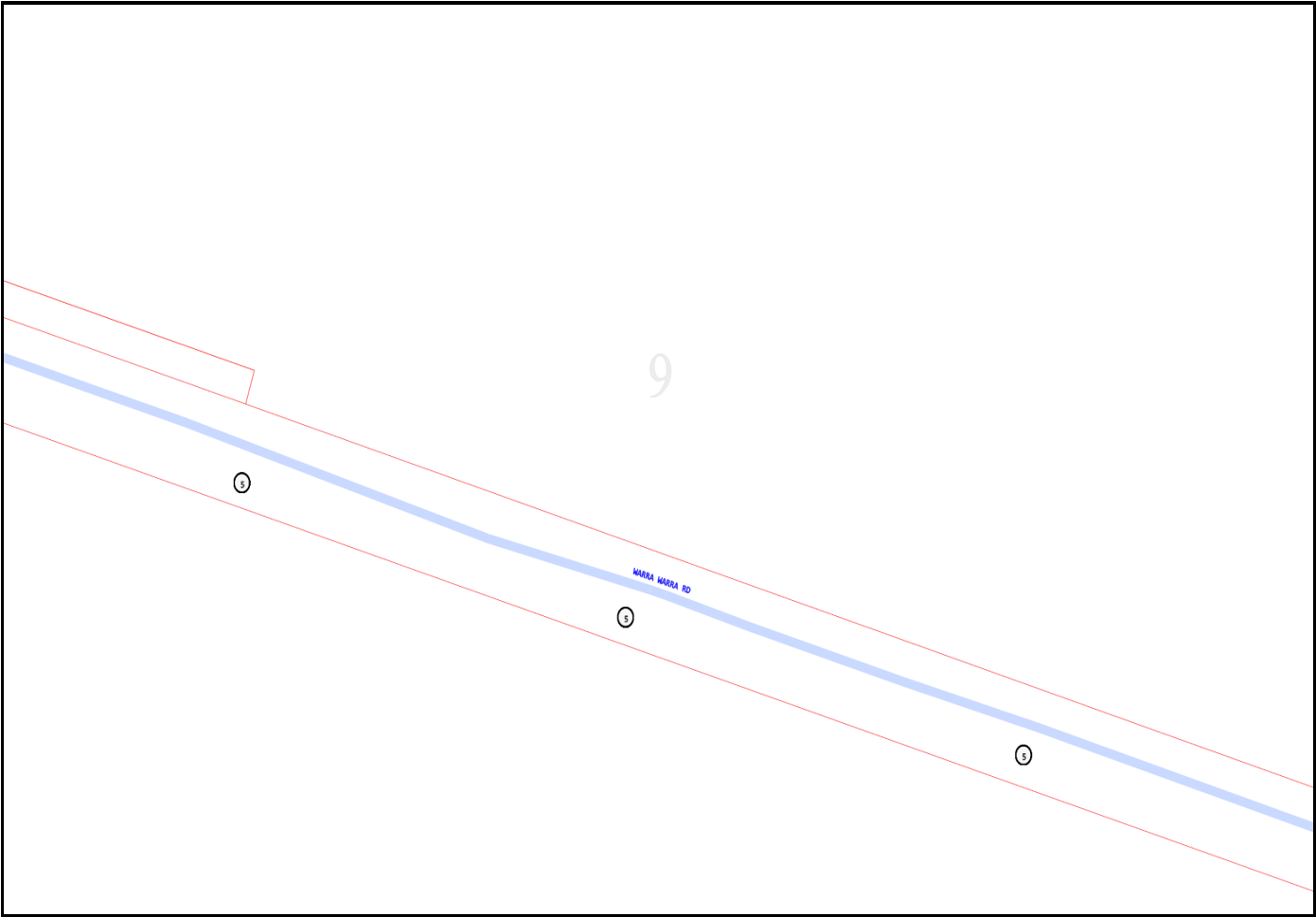




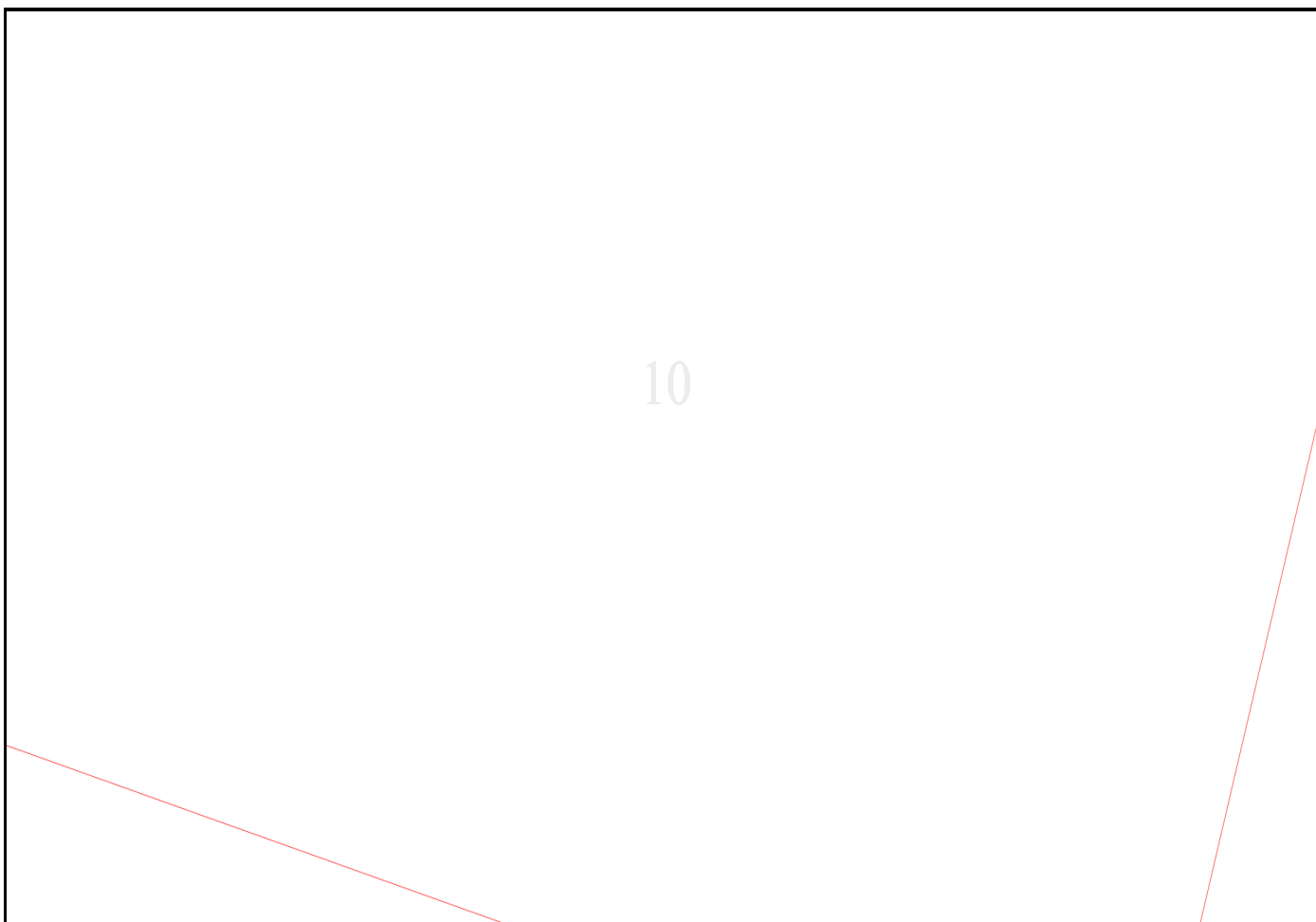


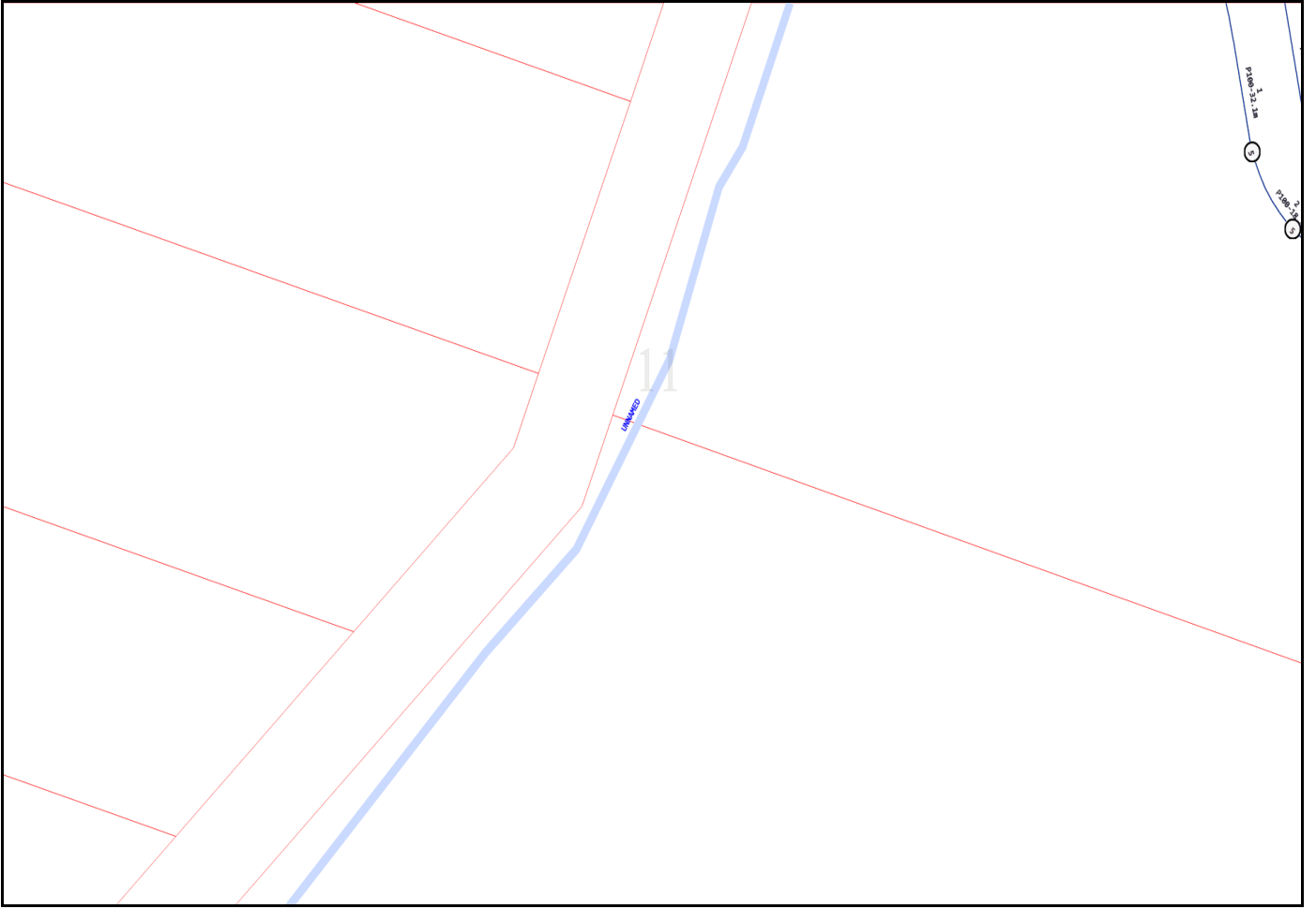


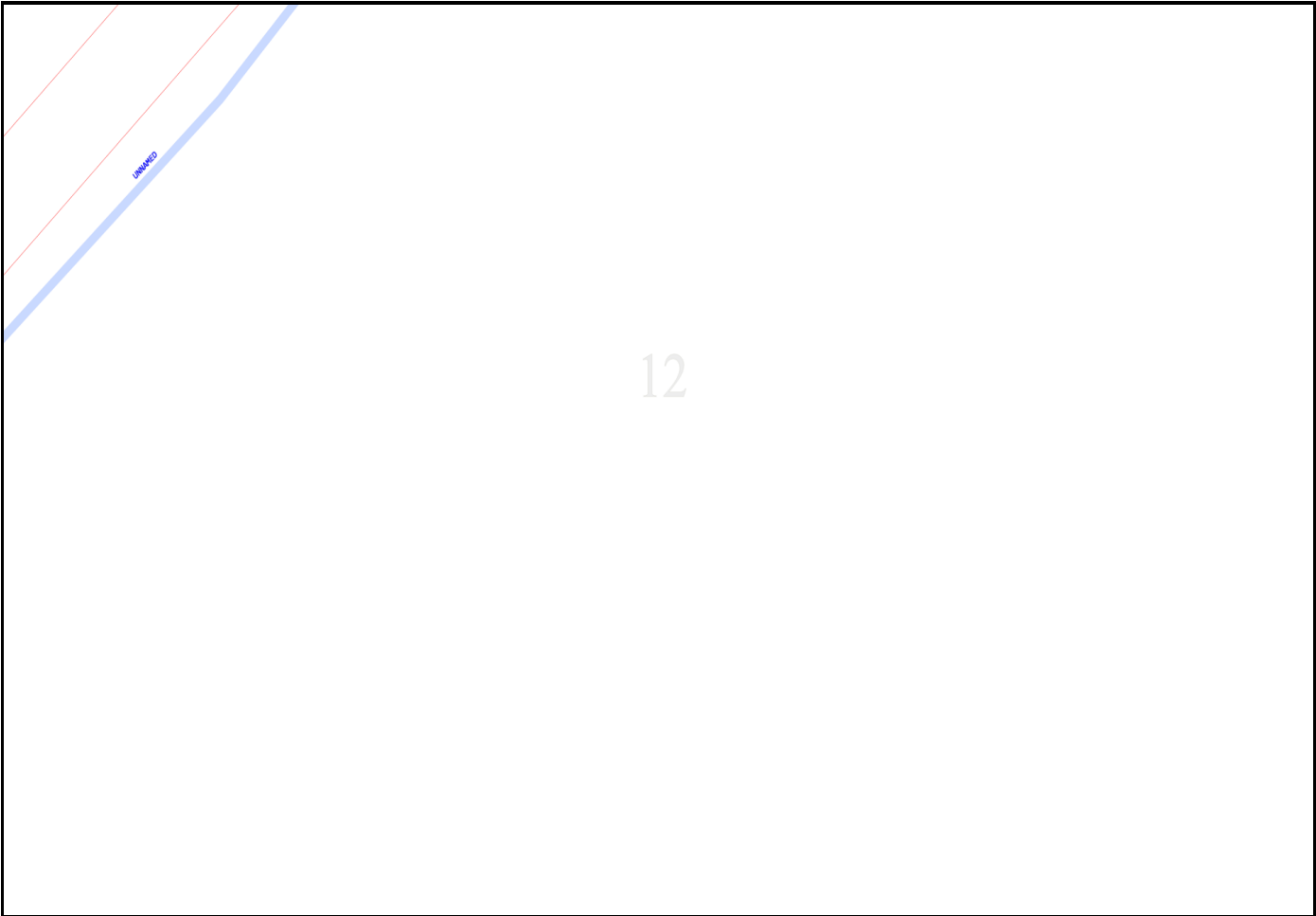




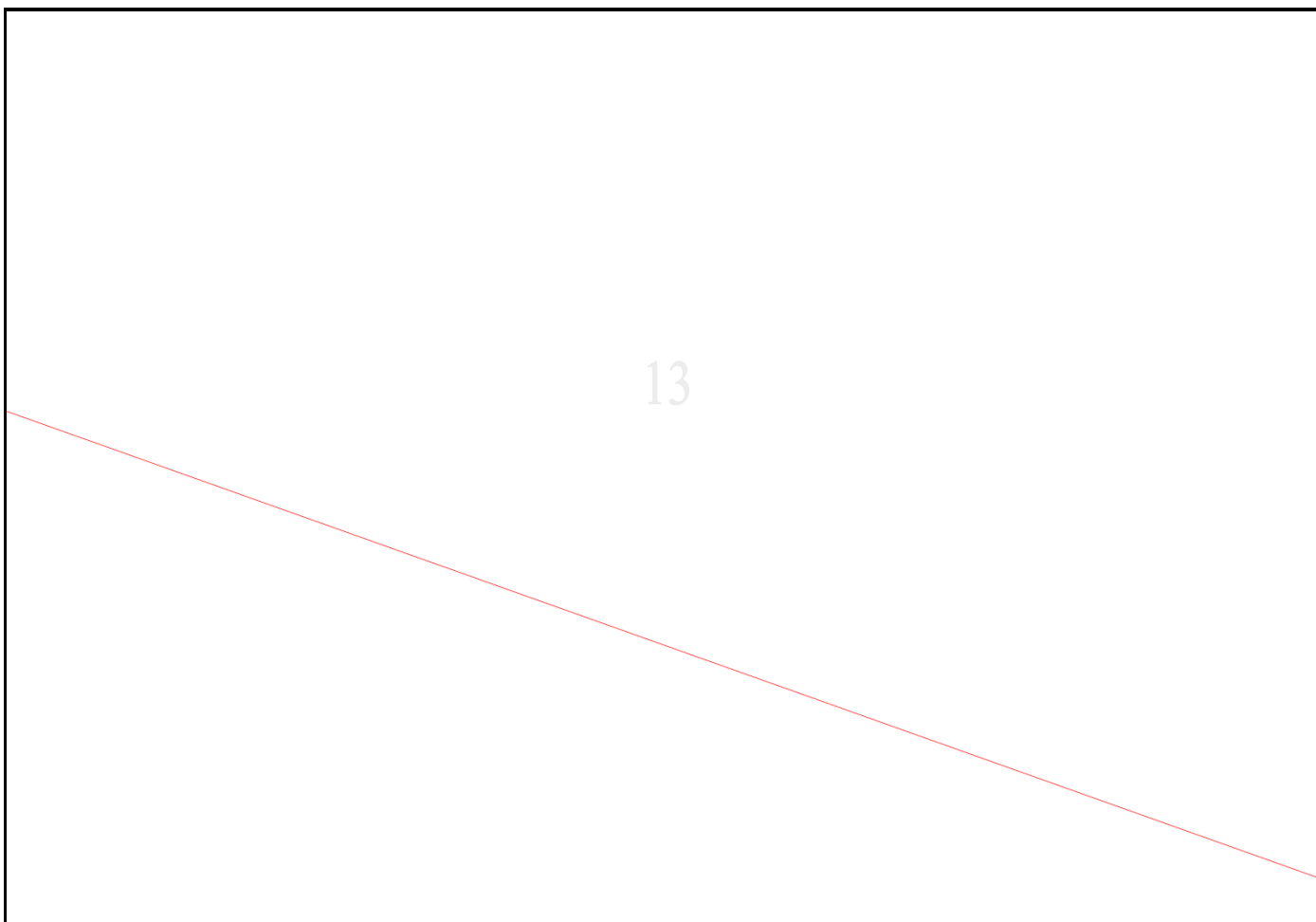
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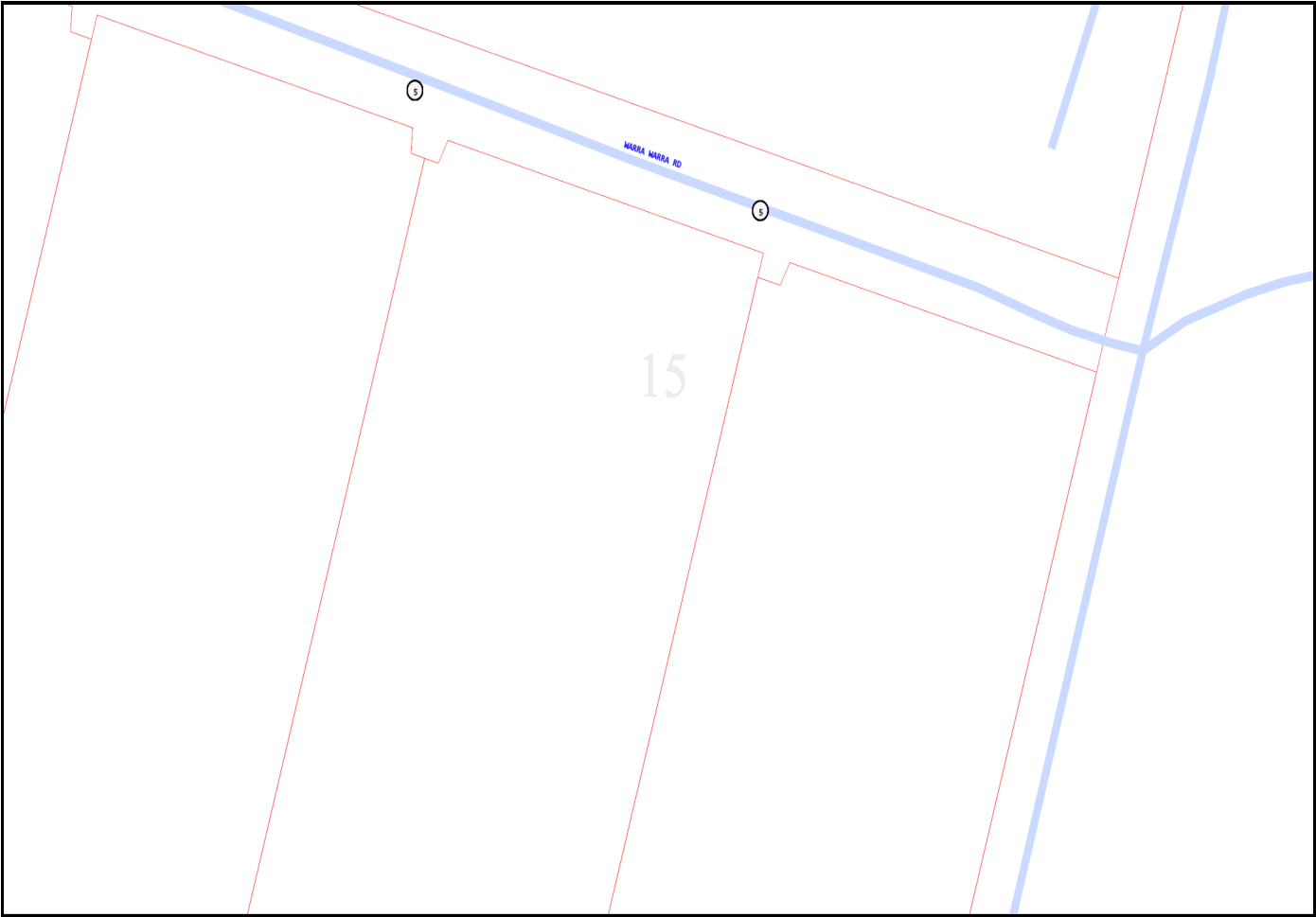


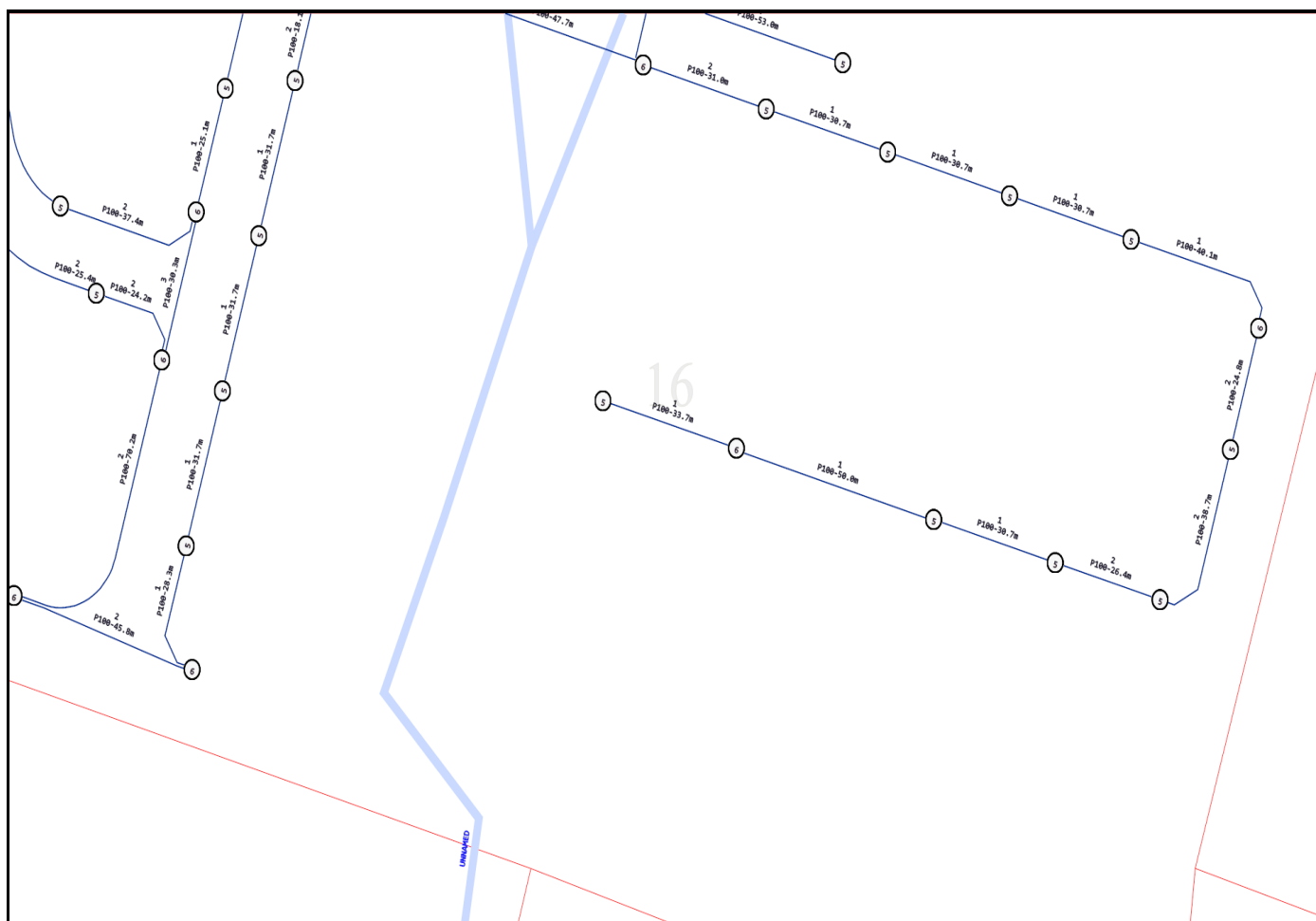
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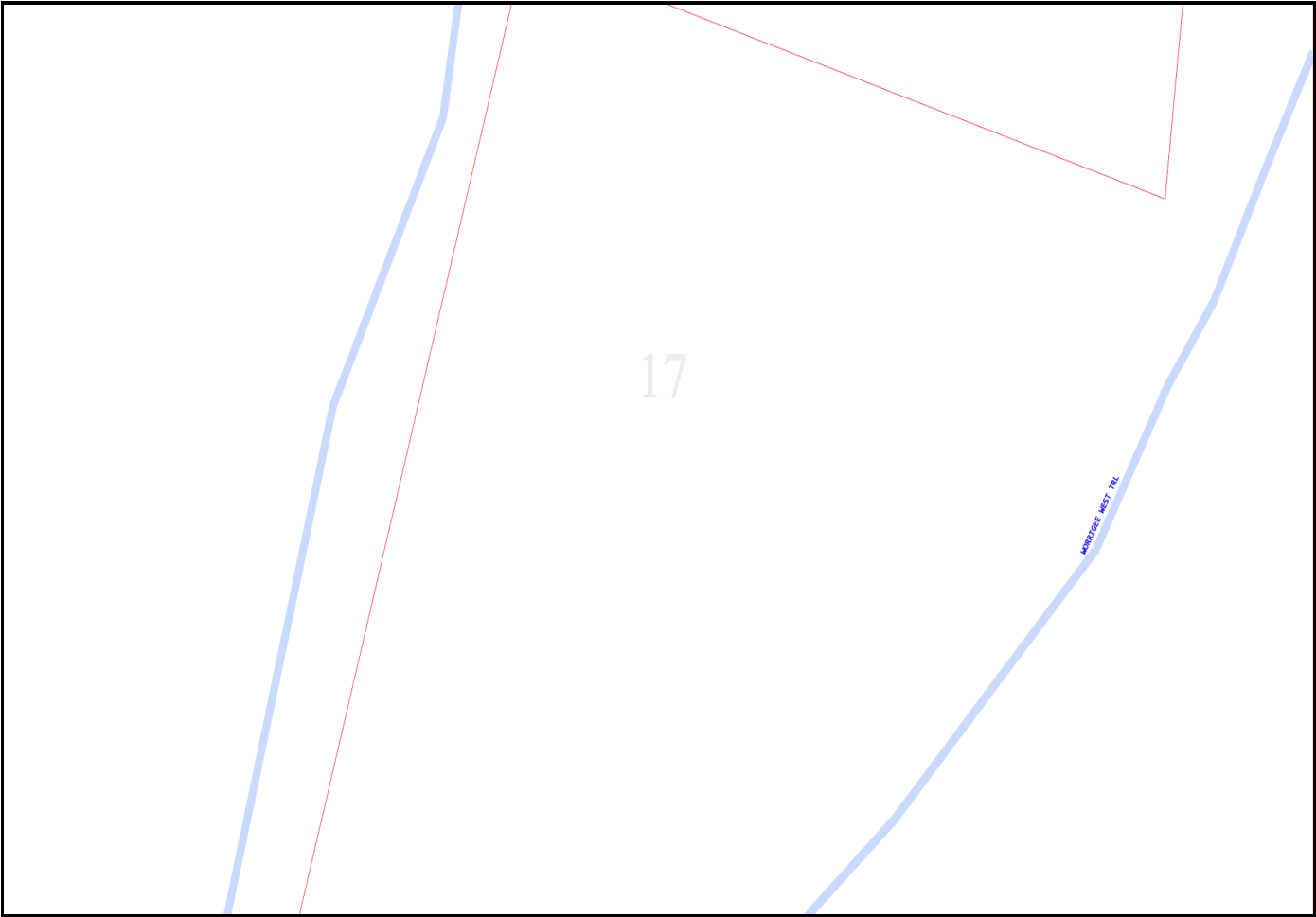


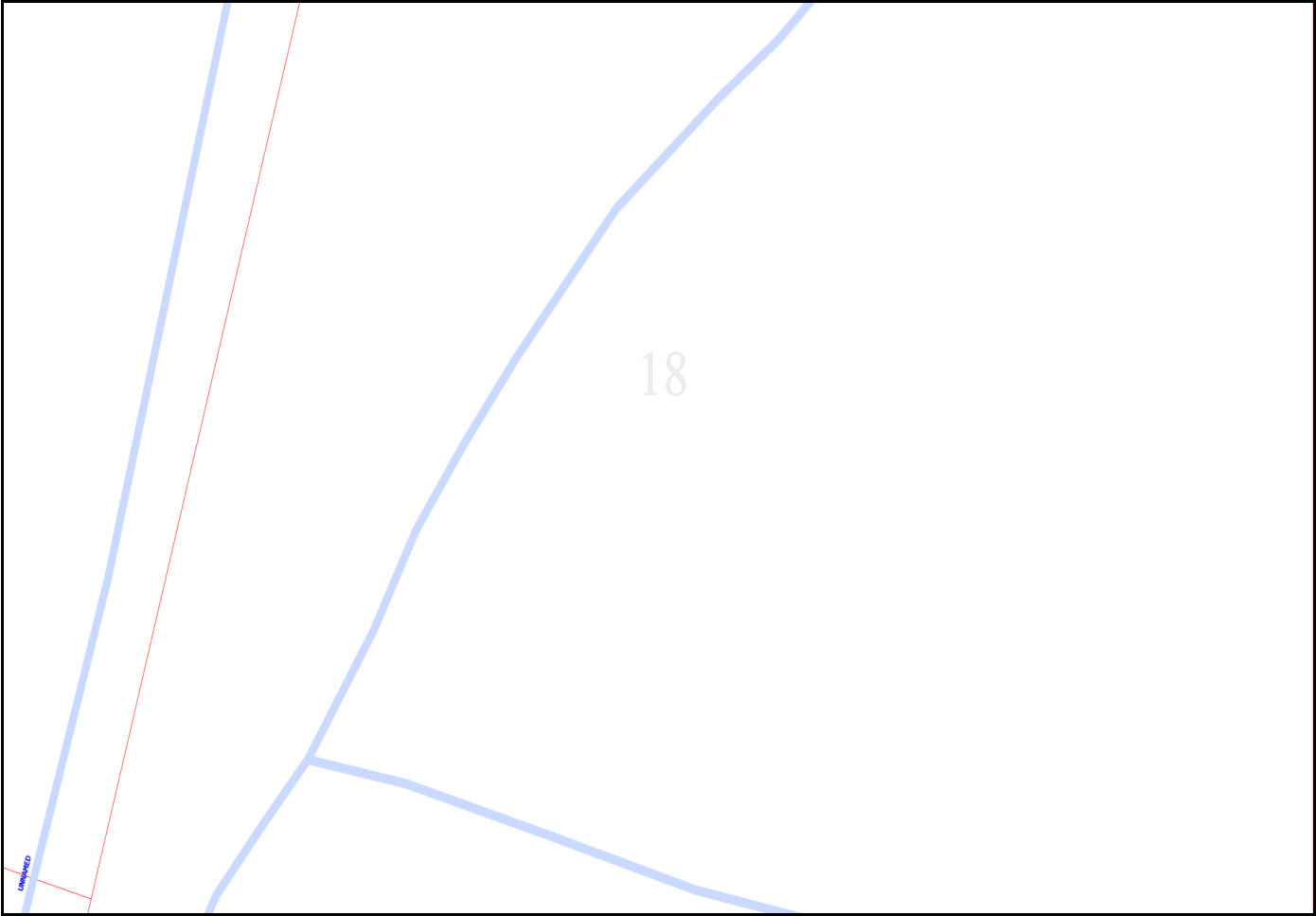
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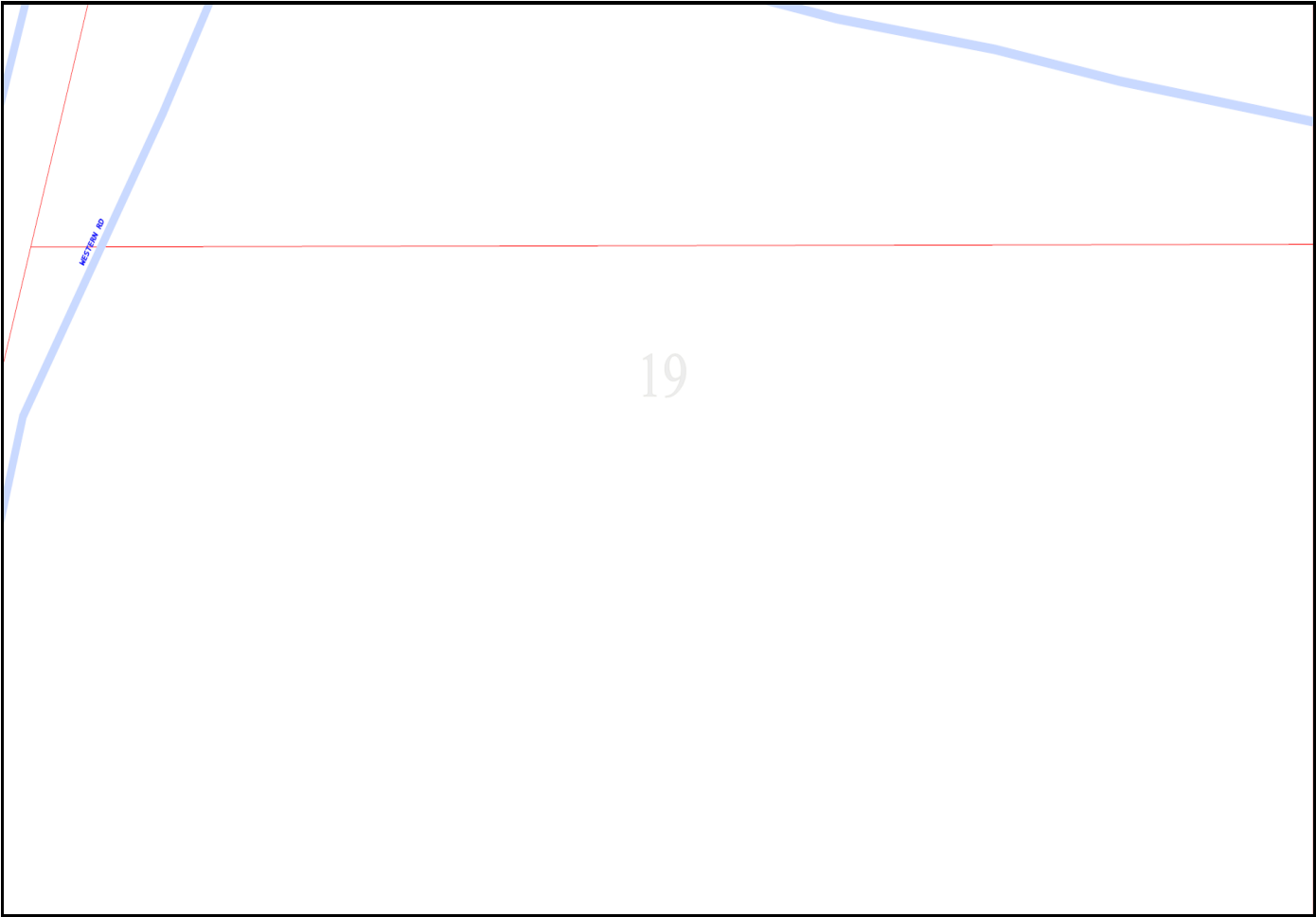


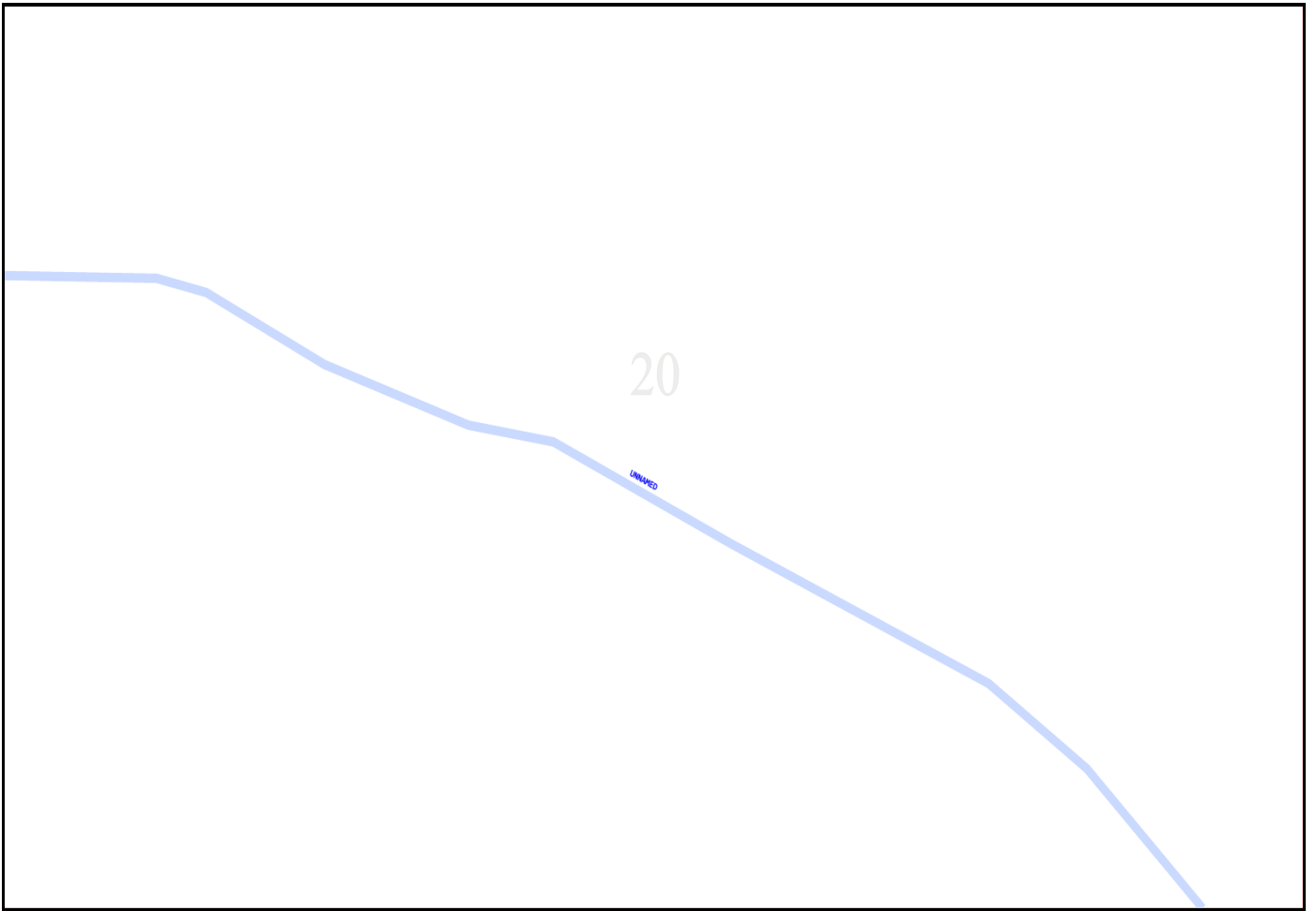






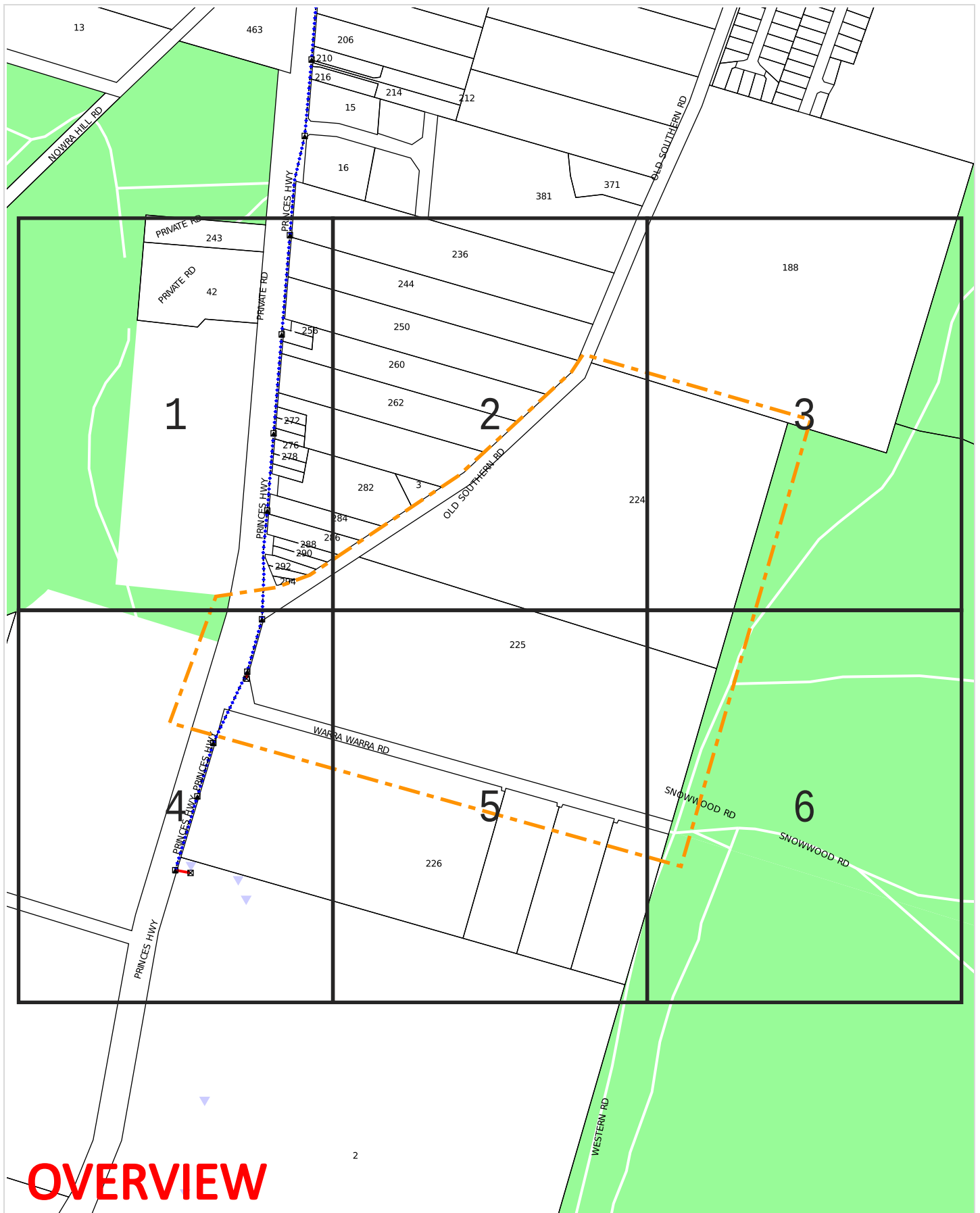






Emergency Contacts

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



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Sequence Number: 241873961

Date Generated: 15 Jul 2024



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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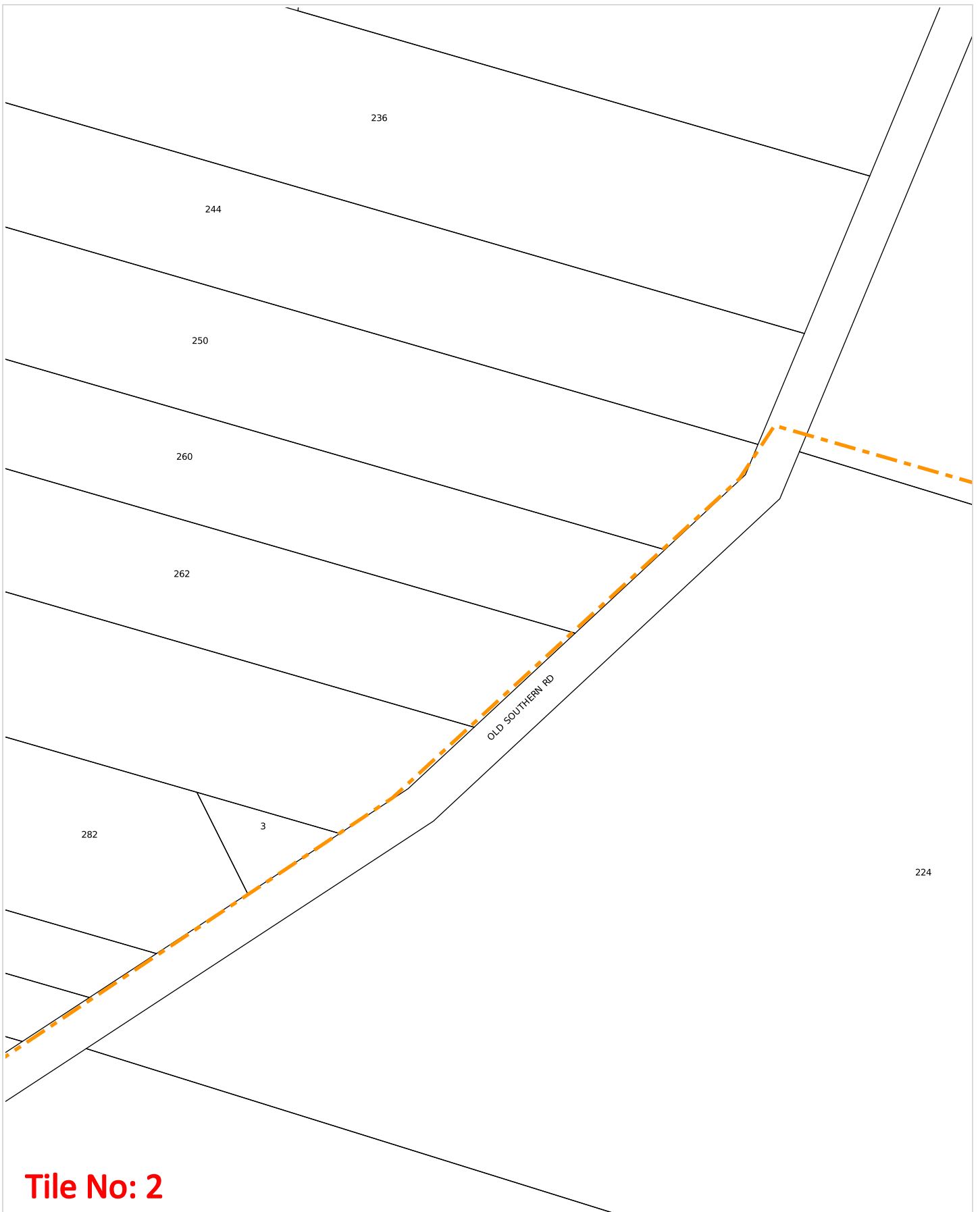
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Sequence Number: 241873961

Date Generated: 15 Jul 2024

OPTUS yes
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For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208



Tile No: 3

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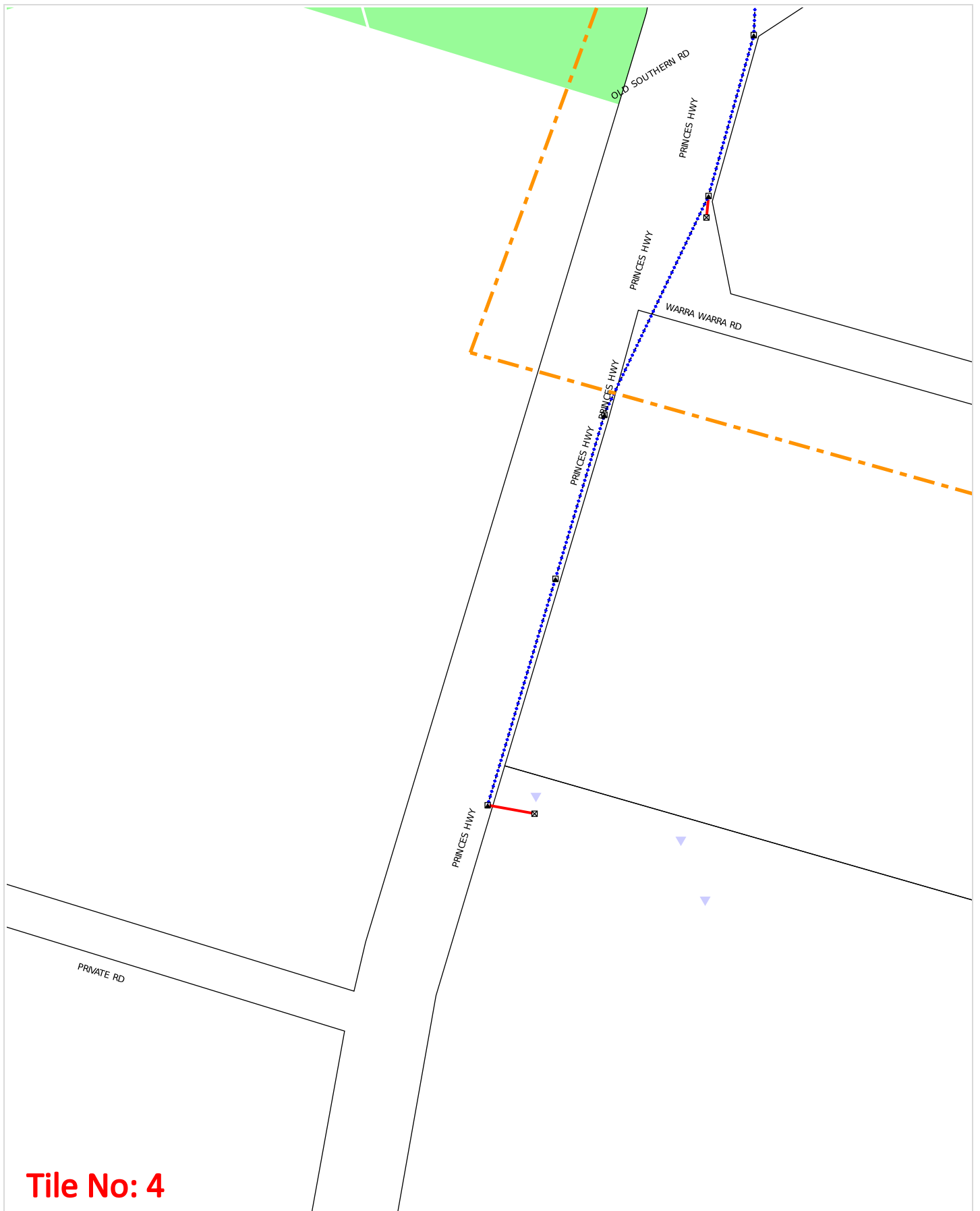
Sequence Number: 241873961

Date Generated: 15 Jul 2024



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Sequence Number: 241873961

Date Generated: 15 Jul 2024



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Optus Limited ACN 052 833 208





Tile No: 5

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For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208





Optus Contract Management Team
Unit 9, 677 Springvale Road
Mulgrave, Victoria, 3178

Date: 15 Jul 2024
To: CivPlan Consulting Pty Ltd
Company: CivPlan Pty Ltd
Address: 390 Princes Highway
Bomaderry, NSW 2541

ENQUIRY DETAILS

Location: 74 Warra Warra Road (Large Prop), Comberton, NSW 2540
Sequence No.: 241873961
BYDA Reference: 37124943

In relation to your enquiry concerning the above location, Optus advises as follows:

Optus records indicate that there ARE underground Optus FIBRE OPTIC TELECOMMUNICATIONS ASSETS in the vicinity of the above location as per the attached drawing(s).

PLEASE NOTE THAT THE ASSETS IN THIS AREA ARE OF NATIONAL SIGNIFICANCE. Any interference with these assets has the potential to significantly disrupt communications in Australia and may be considered an offence under the Criminal Code Act 1995 (Cth). Optus reserves the right to seek compensation for loss or damage to its assets including consequential loss.

This reply is valid for a period of 30 days from the date above.

IMPORTANT INFORMATION

Asset location drawings provided by Optus are reference diagrams and are provided as a guide only. The completeness of the information in these drawings cannot be guaranteed. Exact ground cover and alignments cannot be provided with any certainty as these may have altered over time. Depths of telecommunications assets vary considerably as do alignments. It is essential to identify the location of any Optus assets in the vicinity prior to engaging in any works.

All Optus assets in the vicinity of any planned works will need to be electronically located to ascertain their general location. Depending on the scope of planned works in the vicinity, the assets may also need to be physically located.

YOU MUST ENGAGE THE SERVICES OF ONE OF THE OPTUS ASSET ACCREDITED LOCATORS TO CARRY OUT ASSET LOCATION (REFER LIST OF ACCREDITED LOCATORS AT THE END OF THIS OPTUS RESPONSE).

Unless otherwise agreed with Optus, where an on-site asset location is required, the requestor is responsible for all costs associated with the locating service including (where required) physically exposing the Optus asset.

DUTY OF CARE

When working in the vicinity of telecommunications assets you have a legal "Duty of Care" and non-interference that must be observed.

It is your responsibility as the requesting party (as a landowner or any other party involved in the planned works) to design for minimal impact to any existing Optus asset. Optus can assist at the design stage through consultation.

It is also your, as the requesting party (or your representative's), responsibility to:

- Obtain location drawings (through the Before You Dig Australia process) of any existing Optus assets at a reasonable time before any planned works begin;
- Have an Optus Accredited Asset Locator identify the general location of the Optus asset and physically locate the asset where planned works may encroach on its alignment; and

- c) Contact Optus for further advice where requested to do so by this letter.

DAMAGE TO ANY OPTUS ASSET MUST BE REPORTED TO 1800 505 777 IMMEDIATELY

You, your head contractor, and any relevant subcontractor are all responsible for any Optus asset damage as a result of planned activities in the vicinity of Optus assets.

This applies where works commence prior to obtaining Optus drawings, where there is failure to follow instructions or during any construction activities.

Optus reserves the right to seek compensation for loss or damage to its assets including consequential loss. Also, you, your head contractor and any relevant subcontractor may also be liable for prosecution under the Criminal Code Act 1995 (Cth).

ASSET RELOCATIONS

You are not permitted by law to relocate, alter, or interfere with any Optus asset under any circumstance. Any unauthorised interference with an Optus asset may lead to prosecution under the Criminal Code Act 1995 (Cth). Enquiries relating to the relocation of Optus assets must be referred to the relevant Optus Damages and Relocations Team (refer to "FURTHER ASSISTANCE").

APPROACH DISTANCES

On receipt of Optus asset location drawings and prior to commencing any planned works near an Optus asset, engage an Optus Accredited Locator to undertake a general location of the Optus asset.

Physical location of the Optus asset by an Optus Accredited Locator will also be required where planned works are within the following approach distances of the general location of the Optus asset:

- In built up metropolitan areas where road and footpaths are well defined by kerbs or other features a minimum clear distance of 1 meter must be maintained from the general location of the Optus asset.
- In non-established or unformed metropolitan areas, a minimum clear distance of 3 meters must be maintained from the general location of the Optus asset.
- In country or rural areas where wider variations may exist between the general and actual location of an Optus asset may exist, then a minimum clear distance of 5 meters must be maintained from the general location of the Optus asset.

If planned works are parallel to the Optus asset, then the Optus asset must be physically located by an Optus Accredited Locator at a minimum of 5 meter intervals along the length of the parallel works prior to work commencing.

Under no circumstances is crossing of any Optus asset permitted without physical location of the asset being carried out by an Optus Accredited Locator. Depending on the asset involved an Optus representative may be required onsite.

The minimum clearances to the physical location of Optus assets for the following specific types of works must be maintained at all times.

Note: Where the clearances in the following table cannot be maintained or where the type of work differs from those listed then advice must be sought from the relevant Optus Damages and Relocations Team (refer to "FURTHER ASSISTANCE").

Type of Works	Clearance to Physical Location of Optus Asset
Jackhammers / Pneumatic Breakers	Not within 1 meter.
Light duty Vibrating Plate or Wacker Packer type compactors (not heavy road construction vibrating rollers etc.)	500mm compact clearance cover before a light duty compactor can be used over any Optus conduit. No compaction permitted over Optus direct buried cable without prior approval from Optus.
Boring Equipment (in-line, horizontal and vertical)	Not within 5 meters parallel of the Optus asset location without an Accredited Optus Asset Locator physically exposing the Optus asset and with an Optus representative onsite.

	Not to cross the Optus asset without an Accredited Optus Asset Locator physically exposing the Optus asset and with an Optus representative onsite.
Type of Works	Clearance to Physical Location of Optus Asset
Heavy vehicle Traffic (over 3 tonnes)	Not to be driven across Optus conduits with less than 600mm of cover. Not to be driven across Optus direct buried cable with less than 1.2 meters of cover. Once off crossings permitted, multiple crossing (e.g. road construction or logging) will require Optus approval. Accredited Optus Asset Locator to physically expose the Optus asset to verify actual depth.
Mechanical Excavators, Farm Ploughing, Vertical Hole installation for water bore or fencing etc.	Not within 1 meter. Accredited Optus Asset Locator to physically expose the Optus asset to verify actual location.

ASSET CLEARANCES AFTER COMPLETION OF WORKS

All Optus pits and manholes must be a minimum of 1 meter from the back of any kerb, 3.5 meters of the road surface without a kerb or not within 15 meters of street intersection.

In urban areas Optus conduit must have the following minimum depth of cover:

- Footway 600mm;
- Roadway 1 meter at drain invert and at road centre crown.

In rural areas Optus conduit must have a minimum depth of cover of 1 meter and direct buried cable 1.2 meters.

In cases where it is considered that the above clearances cannot be maintained at the completion of works, advice must be sought from the relevant Optus Damages and Relocations Team (refer "Further Assistance").

FURTHER ASSISTANCE

Further assistance on asset clearances, protection works, or relocation requirements can be obtained by contacting the relevant Optus Damages and Relocations Team on the following email address:

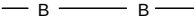
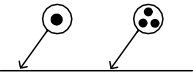
NFODamages&RelocationsDropbox@optus.com.au

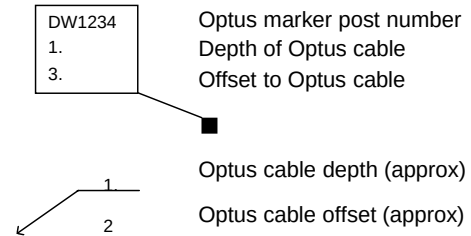
Further assistance relating to asset location drawings etc. can be obtained by contacting the Optus Network Operations Asset Analysis Team on 1800 505 777.

OPTUS ENGINEERING DRAWING SYMBOLS

	Optus underground cable
	Optus underground IOF cable
	Optus conduit
 OR 	Optus cable in Other Utility conduit
	Southern Cross conduit
	Indigo conduit
	Uecomm conduit
	Optus aerial fibre cable

	Optus manhole/pit
	Other Utility manhole/pit
	Optus marker post
	Railway / Tram line
	Highway / Major Road
	Arterial Road
	Council Road - minor

	Optus underground cable
	Optus cable buried jointly with third party utility
	Optus cable in conduit with subducts





Optus Accredited Asset Locators

Name	Company Name	Phone	Email	State	Region/Service Area
Drew Misko	Australian Subsurface Pty Ltd	0427 879 600	admin@australiansubsurface.com	ALL	ALL
Andrew Watson	Subsurface Mapping Solutions Pty Ltd	0408 839 723	admin@subsurfacems.com.au	ALL (Not TAS)	South East QLD + Aus wide
Chris Gordon	Heavy Construction Solutions	1300 859 027	chris.gordon@heavycs.com.au	VIC,NSW,QLD,SA TAS	All
Alan Cordner	Alcom Fibre Services Pty Ltd	0400 300 337	alcomfibre@bigpond.com	NSW	Sydney, NSW
Brad McCorkindale	Bradmac Locating Services	0434 157 409	info@bradmaclocating.com.au	NSW	NSW
Shane Buckley	Cable & Pipe Locations Pty Ltd	0408730430	shane@cableandpipelocations.com.au	NSW	North Coast , Mid North Coast, Central West, Northern Rivers
Annabelle Pegler	Down Under Detection Services (DUDS)	0418 267 964	apegler@duds.net.au	NSW	All
Bruce Whittaker	Optical Fibre Technologies	0402 354 322	opticaltek1@aol.com	NSW	Sydney/Wollongong
George Koenig	Downunder Locations	0438243856	downunderlocations@gmail.com	NSW	Tweed Heads/Gold Coast
Michael Grant	M&K Grant Bega Bobcats Pty Ltd	0427 260 423	zzbobcat@bigpond.net.au	NSW	Bega, Far South Coast
Antony Critcher	Geotrace Australia Pty Ltd	0417 147 945	antony@geotrace.com.au	NSW	All Areas, Sydney, Wollongong, Newcastle, ACT
Sarah Martin	Hydro Digga	0447 774 000	admin@hydrodigga.com	NSW	Mid North Coast
Nathan Ellis	Utility Locating Services	0404 087 555	nathan@uls.com.au	NSW	Sydney
Scott O'Malley	Coastal Cable Locators Pty Ltd	0427 975 777	skomalley@bigpond.com	NSW	South Coast- Snowy Mountains- Southern Highlands
Liam Bolger	Brandon Construction Services	0438 044 008	liam.bolger@hotmail.com	NSW	Sydney
Laura Elvery	Durkin Construction Pty Ltd	02 9712 0308	info@durkin.au	NSW	NSW

Shireen Sidhu	Locate & Map	(02) 8753 0049	admin@locateandmap.com.au	NSW	Sydney & Regional NSW only
Ken Browne	Riteway Traffic Control Pty Ltd	0419 212 969	kbrowne@ritewaytc.com.au	NSW	Central Coast, Hunter
Jean-Max Monty	Civilscan	1300 575 488	john@civilscan.com.au	NSW	Sydney, Central Coast, Newcastle, Wollongong, Hunter Valley, Blue Mountains
Scott Hunter	Hunter Ground Search	0409327345	admin@hunter-groundsearch.net.au	NSW	Hunter, Upper Hunter, Central Coast, Newcastle
Damien Black	Mid North Coast Hydro Digging & Service Locating P/L	0418 409 465	djblack1@bigpond.com	NSW	Mid North Coast
Michael Nicholls	Utility Mapping NSW	1300 627 746	sydney@utilitymapping.com.au	NSW	All NSW
Joseph Restuccia	ProLocate	0415 633 393	joe.restuccia@prolocate.com.au	NSW	NSW Wide
Barry Maloney	Online Pipe & Cable Locating	1300 665 384	Office@onlinepipe.com.au	NSW	Sydney, Central Coast, Canberra, Wollongong, Newcastle
Sam Romano	Locating Services	0403 065 510	sam.romano@locatingservices.com.au	NSW	NSW All
Scott Allison	Crux Surveying Australia	02 9540 9940	sydneyoffice@cruxsurveying.com.au	NSW	Sydney Metro & Surrounding Areas
Donna Wullaert	Commence Communications Pty Ltd	02 6226 3869	admin@commencecomms.com.au	NSW	Canberra/ Yass / Bungendore/ Goulburn and surrounding regional areas
Grant Pearson	Warrabinya Services	0423 651 615	sales@warrabinya.com.au	NSW	Sydney Metro & Surrounding Areas
Stephen Fraser	Advanced Ground Locations	(02) 4930 3195	steve_agl@hotmail.com	NSW	Newcastle, Hunter Valley, Central Coast, Taree & Surrounding Areas
Andrew Findlay/ Anthony Hart	LiveLocates	0429 899 777	info@livelocates.com.au	NSW	South Coast/ACT, Snowy Mountains
Graeme Teege	Armidale Electrical	02 6772 3702	office@armidale-electrical.com.au	NSW	Armidale
Samantha Guptill	Australian Locating Services	1300 761 545	admin@locating.com.au	NSW	Sydney / Central Coast
Clay Laneyrie	Laneyrie Electrical	0411142627	bindy@laneyrieelectrical.com.au	NSW	Illawarra, South Coast, Shoalhaven, Southern Highlands

Reece Gainsford	East Coast Locating Services	0431 193 111	eastcoastlocating@hotmail.com	NSW	Sydney, Maitland, Newcastle, Hunter, Port Stephens, Central Coast
Craig Vallely	Aqua Freeze & Locate Pty Ltd	0458 774 440	service@aquafreeze.com.au	NSW	Sydney only
Jason Vane	Smartscan Locators PTY Ltd	1300 778 923	Admin@sslocators.com.au	NSW	Sydney
Alex Farcash	Newcastle Locating Services Pty Ltd	0410698599	Admin@newcastlelocatings-services.com.au	NSW	Newcastle, Hunter Valley, Central Coast, Taree & Surrounding Areas
Amer El Chami	Site Scan Pty Ltd	0449 992 520	office@sitescan.net.au	NSW	All NSW
Ian Brown	A1 Locate Services	0400 484 828	Ian.brown@a1locate.com.au	NSW	All NSW
Paul Wallis	Beveridge Williams	0431 458 878	wallisp@bevwill.com.au	NSW	Newcastle Sydney Wollongong
Cameron Handley	Wombat Underground Services	0407477038	accounts@wombatunderground-services.com.au	NSW	ALL
Samantha Cupido	Geoscope Utility Detection Services Pty Ltd	1300 750 350	info@geoscopelocating.com.au	NSW	All regions
Laurence Mead	Astrea Pty Ltd	1300 009 346	admin@astrea.com.au	NSW	Sydney Only
Braydon Greenwood	City Coast Services	0422432813	braydon.greenwood@live.com.au	NSW	NSW
Jim Morrison	Absolute Utilities Pty Ltd	0429 496 375	jim@absoluteutilities.com.au	NSW	Mid North Coast
Declan Dowd	Dowds Pipe And Cable Locating	0434 635 134	accounts@pipeandcable.com.au	NSW	Sydney/Wollongong/South Coast / Highlands/Soth west Sydney
Nicholas Schneider	Subsurface Utility Solutions	0421157372	nick@subsurf.com.au	NSW	Sydney only
Ricky Evans	Riverina Cable Locating	0411444980	ricky@riverinacablelocating.com.au	NSW	Riverina, Murray
Adrian Ruane	Road and Rail Excavations Pty Ltd	0414 594 063	cody@roadandrailexcavations.com.au	NSW	Sydney only
Billy Cameron	Locate Down Under Pty Ltd	0431275034	info@locatedownunder.com.au	NSW	Central Coast/ Sydney
Daniel Hudson	Geosurv Locating Pty Ltd	1300 554 675	dan@geosurv.com.au	NSW	Sydney only
Roneel Chand	JDG Civil	0416506891	sadhunaam@gmail.com	NSW	Sydney only

Tim Briggs	Deetect Locating Services	0414630852	deetect.locating@outlook.com	NSW	ACT / NSW
Sean Ferriter	Utech Solutions Pty Ltd	1300 427 614	seanf@vaughancivil.com.au	NSW	Sydney only
Mark Restuccia	Direct Connect Locating PTY LTD	0400507690	info@dclocating.com.au	NSW	NSW only
Ali Chahine	Underground Industries	0406906787	info@undergroundindustries.com.au	NSW	Sydney only
Scott Copetti	Metiri	0435 710 399	scott@metiri.com.au	NSW	Newcastle & Hunter Region
Blake Richardson	VFT	0409 210 502	b.richardson@vftes.com	NSW	NSW
Brett Pickup	BAP Services Pty Ltd	0434006009	Brett@bapservices.com.au	NSW	All Areas, Sydney, Illawarra, Newcastle, ACT
Patrick Billingham	OzDetect Pty Ltd	0497700667	patrick@ozdetect.com.au	NSW	NSW
Euan Gow	Jurovich Surveying	1300 750 000	egow@jurovichsurveying.com.au	WA/NSW/SA	All state
Jason Steger	Steger & Associates Registered Land Surveyors	0400 008 641	jason.steger@steger.com.au	ACT/NSW	ACT & Surrounds
Samuel Hathaway	Landmark Surveys	02 6280 9608	admin@landmarksurveys.com.au	NSW/ACT	ACT & Sourthen NSW
Kaisar sefian	Australian Utility Search Pty Ltd	0424 841 888	kaisar@aususearch.com.au	NSW/ACT	All NSW, ACT
Daniel Fox	Epoca Environmental Pty Ltd	1300 376 220	daniel@epocaenvironmen-tal.com.au	NSW & ACT	All NSW & ACT
Scott Tancred	SureSearch Underground Services	1300 884 520	Scott.Tancred@suresearch.com.au	NSW/ACT QLD	NSW, Sydney, Northern NSW, Canberra, QLD, South East QLD.
Justin Martinez	LCG GLOBAL PTY LTD	0401749007	J.martinez@lcgsolutions.com.au	NSW, ACT, QLD, VIC	All regions
Troy Redden	On Point Utility Locating	1300 66 76 46	Troy@onpointlocating.com.au	NSW/QLD	Throughout both states
Geoff Campbell	CLS Locating	0450759497	geoffrey@campbellslocating.com.au	NSW/QLD	All QLD, Northern Rivers, NSW
Alexander Bogdanoff	Expert Service Locating	0420346477	info@expertservice locating.com.au	NSW/QLD	Brisbane, Gold Coast, Sunshine Coast Northern Rivers NSW
Patrick Popovic	Site And See Pty Ltd	0479 162 692	patrick@siteandsee.com.au	QLD/NSW	South East QLD & Northern NSW

Rhys Lambert	Provac / one find cables	1300 734 772	rhys@provac.net.au	QLD	South East QLD
Paul Beaton	Cairns Asset Locations	0448 157 227	paul.beaton@clarketrenching.com.au	QLD	FNQ to NT Border
Chris Hall	D C Locators Pty Ltd	0419 679 741	dcloc@powerup.com.au	QLD	Brisbane, Ipswich
Benji Lee	LADS	0478 915 237	benji@ladsqld.com.au	QLD	South East QLD
Ian Lambert	Lambert Locations Pty Ltd	07 5562 8400	admin@lambertlocations.com.au	QLD	South East QLD & Northern NSW
Ross Clarke	FNQ Cable Locators Pty Ltd	0428 775 655	onlineco@bigpond.net.au	QLD	QLD REGION
Col Greville	Bsure Locators	0488 520 688	admin@bsurelocators.com.au	QLD	Wide Bay & Burnett; Central and Western QLD; Western Downs
Matthew Carr	Pensar	0405609739	matty.carr@pensar.com.au	QLD	Brisbane
Jimmy Wilkins	GeoRadar Asutralia Pty Ltd	0425057722	jimmy@georadar.net.au	QLD	Emerald, Bundeaberg
Craig Waite	C Locate	0437 808 444	clocate@bigpond.com	QLD	Brisbane GC SC
Jeffrey Lenehan	Syndicate Communica-tions	0404 151 270	jlenehan@syndicate.com.au	QLD	Brisbane
Toni O'Dell	Utility Location Services	1300 001 857	qldops@utilitylocation-services.com.au	QLD	South East QLD
Michael Jackman	Utility Mapping QLD	1300 627 746	brisbane@utilitymapping.com.au	QLD	All QLD
Jenny Dziduch	1300 Locate Pty Ltd	1300 562 283	admin@1300locate.com.au	QLD	All Queensland, Northern NSW
Brendon Smith	Advanced Locating PTY LTD	0424678823	admin@advancedlocating.com.au	QLD	Gold Coast
Samuel Hazel	Utility ID Underground Service Locators	0401 202 515	sam@utilityid.com.au	QLD	Darling Downs, South West QLD and South East QLD
Bruce Normyle	Dynamic Hydro Excava-tions	0434 731 933	admin@dynamicexcava-tion.com.au	QLD	QLD
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Robert Rutledge	Safe Dig Services	+61 7 3376 0856	rrutledge@safedig.com.au	QLD	Brisbane

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Adam Lloyd	Aussie HydroVac Services	07 3287 7818	adam.lloyd@aussiehydrovac.com.au	QLD	All
Michael Prentice	Onsite Utility Locations	0437 172 601	admin@onsiteutilitylocations.com.au	QLD	SEQ
Roland Mollison	LandPartners Pty Ltd	0439 488 545	roland.mollison@landpartners.com.au	QLD	South East Queensland
Duncan McGrath	Abletech Underground Group	0418 511 767	duncan@abletechunderground.com.au	QLD	QLD Wide
Daniel Poppi	Ace Cable Locations	0431517837	acecablelocations@bigpond.com	QLD	Wide Bay Burnett
Carl Molloy	Provac Melbourne	0451 104 611	melbourne@provac.net.au	VIC	Melbourne Region
Olivier Davies	Central Locating PTY LTD	0439 995 894	ollie@centrallocating.com.au	VIC	Melbourne & Western Victoria
Tina Brereton	D-Tech Ground & Over-head	03 9544 8933	tina@d-tech.net.au	VIC	ALL
Josh Taylor	Advanced Locations Victoria Pty Ltd	0427846716	josh@advancedlocationsvic.com.au	VIC	All Victoria
Ben Minutoli	Geelong Cable Locations	1800 449 543	ben@geelongcablelocations.com.au	VIC	Melbourne, Geelong, Country Victoria
Mick McGoldrick	Locate Cables	0404 241 679	mick@locatecables.com	VIC	Western Victoria
Alex Jones	Utility Mapping VIC	1300 627 746	melbourne@utilitymapping.com.au	VIC	All VIC
Phi Nguyen	Asset Detection Services Pty Ltd	1300 300 100	Phi.nguyen@assetdetection.com.au	VIC	Melbourne/VIC
Maurice Tobin	Drain Solutions	0412 111600	info@drainsolutions.com.au	VIC	Melbourne Metro
Kate Ficker	Seeker Utility Engineering	1300 733 583	admin@seekerutilityengineering.com.au	VIC	All Victoria
Leigh French	Veris Australia VIC	(03) 7019 8400	melbourne@veris.com.au	VIC	Melbourne
Ben Wooldridge	Controltech Solutions	0447 760 759	ben.wooldridge@controltechsolutions.com.au	VIC	Melbourne

Chris Sandlant	Access Utility Engineering P/L	03 9799 8788	Chris.sandlant@accessue.com.au	VIC	Victoria & Regional
Shaun Stephen	STS Locating Services	0405 181 734	stslocatingservices@gmail.com	VIC	All VIC
Glen Foreman	Underground Services Detection Pty Ltd	0402 748 889	undergroundservices@big-pond.com	VIC	Victoria
Clinton Carver	Insight Underground Pty Ltd	0468 900 273	clinton@insightunderground.com.au	VIC	Victoria
Lindsay Botha	L B Underground Service Locations & Engineering	0499 658 677	lb.locations.engineering@gmail.com	VIC	Metro and Regional Victoria
Damien Nielsen	ELS Environmental Location Systems Pty Ltd	0499 499 137	bookings@elsvic.com.au	VIC	Victoria only
Tyler Blake	CHS Group	0409 437 750	tyler.blake@chsgroup.com.au	VIC	Horsham VIC
Craig Jackson	Survey Management Solutions	0400647299	craigj@surveyms.com.au	VIC	All Regions
Ashley Stevens	ABS HYDRO Pty Ltd	0422 798 476	ashley.stevens@abshydro.com.au	NSW/VIC	All of VIC, Regional NSW
Eddie Santos	Taylor's Development Strategists	0488 700 155	m.tasker@taylorssds.com.au	VIC/SA/TAS	Victoria
Taryn van Dyk	Trenchless Pipelaying Contractors (TPC)	08 8376 5911	tpc@trenchlesspipelaying.com.au	SA	All
Marc Rose	SADB	0488190699	marc@sadb.com.au	SA	Adelaide only
Matthew Lewis	Adelaide Pipeline Maintenance services	0431 870 471	matt.apms@gmail.com	SA	South Australia
Deninis Stray	Pinpoint Services Mapping	(08) 8130 1600	hello@pinpointsm.com.au	SA	SA and western VIC
Liam Gill	Michael Grear Surveys	08 82788732	ugsl@mgsurveys.com.au	SA	SA
Mattew Cooper	Fulton Hogan	0447 320 581	Matthew.Cooper@fulton-hogan.com.au	SA	South Australia
Liam Catchpole	APEX SERVICE LOCATING PTY LTD	0458 924 471	liam@apexvacolutions.com.au	SA	Adelaide
Bradley Gosling	Engineering Surveys	0433506880	bgosling@engsurveys.com.au	SA	Adelaide
Jason Revill	MME/Platinum Locating Services	08 94080625	jason.revill@platinumlocating.com.au	WA	Perth
Henry Westbrook	Cable Locates & Consulting	08 9524 6600	admin@cablelocates.com.au	WA	All WA

Cameron Swift	Mikcomm Communication	08 9337 1125	cswift@mikcomm.com.au	WA	All
Tobi Lawrence-Ward	Abaxa	08 9256 0100	enquiries@abaxa.com.au	WA	Perth, Southwest, Western Australia
Ben Upton	TerraVac Vacuum Excavation	0433 374 802	locations@terravac.com.au	WA	Perth
Dale Shearsmith	Subtera	1300 046 636	dale@subtera.com.au	WA	WA
Cheron Ingram	Bunbury Telecom Service Pty Ltd	08 9726 0088	cheron@btswa.com.au	WA	WA
Drew Monkhouse	Utility Mapping WA	1300 627 746	perth@utilitymapping.com.au	WA	All WA
Edel O'Connor	Kier Contracting	0456 190 910	edel@kier.com.au	WA	Perth Metro & greater region; Regional WA
Nigel Nunn	CCS Group / Utility Locating Solutions	08 9385 5000	enquiry@ccswa.com.au	WA	Perth
Jeremy Brown	Spotters Asset Locations Pty Ltd	0459 130 677	jeremy@spottersassetlocations.com.au	WA	All
Reece Topham	Prime Locate	0400 888 406	reece@primelocate.com.au	WA	All
Rhyce Murphy	RM Surveys	08 9457 7900	rhyce.murphy@rmsurveys.com.au	WA	All
James Horton	Westscan Pty Ltd	1300 858 404	westscan1@gmail.com	WA	All
Ashleigh Austin	Veris WA	0419 024 696	perth@veris.com.au	WA	Perth Metro & Regional
Suhairee Suhaimi	BCE Spatial	08 9791 7411	harry@bcespatial.com.au	WA	WA
Tim Daws	Award Contracting Pty Ltd	0411 878 895	info@awardcontracting.com.au	WA	Metro & Country Regions
Stephen Steart	Cabling WA Pty Ltd	0422 845 586	ssteart@cablingwa.com.au	WA	Perth Metro
Devvyn Barto	Pulse Locating	0431402738	devvyn.barto@pulselocating.com.au	WA	Western Australia
Josh Pool	Utility Mapping NT	1300 627 746	darwin@utilitymapping.com.au	NT	All NT
Stuart Speckman	FYFE	08 8944 7888	Stuart.Speckman@fyfe.com.au	NT/SA/NSW	NT/SA/NSW

Wayne Parslow	Danisam	0417 089 865	danisam@westnet.com.au	NT	Darwin NT and Surrounds
Scott Crerar	Paneltec Group	0400 895 637	scott@paneltec.com.au	TAS	All

Date: 15 Jul 2024
To: CivPlan Consulting Pty Ltd
Company: CivPlan Pty Ltd
Address: 390 Princes Highway
Bomaderry, NSW 2541

ENQUIRY DETAILS

Location: 74 Warra Warra Road (Large Prop), Comberton, NSW 2540
Sequence No.: 241873961
BYDA Reference: 37124943

In relation to your enquiry concerning the above location, Optus advises as follows:

Optus records indicate that there ARE underground Optus FIBRE OPTIC TELECOMMUNICATIONS ASSETS in the vicinity of the above location as per the attached drawing(s).

PLEASE NOTE that any interference with these assets may be considered an offence under the Criminal Code Act 1995 (Cth). Optus reserves the right to seek compensation for loss or damage to its assets including consequential loss.

This reply is valid for a period of 30 days from the date above.

IMPORTANT INFORMATION

Asset location drawings provided by Optus are reference diagrams and are provided as a guide only. The completeness of the information in these drawings cannot be guaranteed. Exact ground cover and alignments cannot be provided with any certainty as these may have altered over time. Depths of telecommunications assets vary considerably as do alignments. It is essential to identify the location of any Optus assets in the vicinity prior to engaging in any works.

All Optus assets in the vicinity of any planned works will need to be electronically located to ascertain their general location. Depending on the scope of planned works in the vicinity, the assets may also need to be physically located.

YOU MUST ENGAGE THE SERVICES OF ONE OF THE OPTUS ASSET ACCREDITED LOCATORS TO CARRY OUT ASSET LOCATION (REFER LIST OF ACCREDITED LOCATORS AT THE END OF THIS OPTUS RESPONSE).

Unless otherwise agreed with Optus, where an on-site asset location is required, the requestor is responsible for all costs associated with the locating service including (where required) physically exposing the Optus asset.

DUTY OF CARE

When working in the vicinity of telecommunications assets you have a legal "Duty of Care" and non-interference that must be observed.

It is your responsibility as the requesting party (as a landowner or any other party involved in the planned works) to design for minimal impact to any existing Optus asset. Optus can assist at the design stage through consultation.

It is also your, as the requesting party (or your representative's), responsibility to:

- Obtain location drawings (through the Before You Dig Australia process) of any existing Optus assets at a reasonable time before any planned works begin;
- Have an Optus Accredited Asset Locator identify the general location of the Optus asset and physically locate the asset where planned works may encroach on its alignment; and
- Contact Optus for further advice where requested to do so by this letter.

DAMAGE TO ANY OPTUS ASSET MUST BE REPORTED TO 1800 505 777 IMMEDIATELY

You, your head contractor, and any relevant subcontractor are all responsible for any Optus asset damage as a result of planned activities in the vicinity of Optus assets.

This applies where works commence prior to obtaining Optus drawings, where there is failure to follow instructions or during any construction activities.

Optus reserves the right to recover compensation for loss or damage to its assets including consequential loss. Also, you, your head contractor and any relevant subcontractor may also be liable for prosecution under the Criminal Code Act 1995 (Cth).

ASSET RELOCATIONS

You are not permitted by law to relocate, alter or interfere with any Optus asset under any circumstance. Any unauthorised interference with an Optus asset may lead to prosecution under the Criminal Code Act 1995 (Cth). Enquiries relating to the relocation of Optus assets must be referred to the relevant Optus Damages and Relocations Team (refer to "FURTHER ASSISTANCE").

APPROACH DISTANCES

On receipt of Optus asset location drawings and prior to commencing any planned works near an Optus asset, engage an Optus Accredited Locator to undertake a general location of the Optus asset.

Physical location of the Optus asset by an Optus Accredited Locator will also be required where planned works are within the following approach distances of the general location of the Optus asset:

- In built up metropolitan areas where road and footpaths are well defined by kerbs or other features a minimum clear distance of 1 meter must be maintained from the general location of the Optus asset.
- In non-established or unformed metropolitan areas, a minimum clear distance of 3 meters must be maintained from the general location of the Optus asset.
- In country or rural areas where wider variations may exist between the general and actual location of an Optus asset may exist, then a minimum clear distance of 5 meters must be maintained from the general location of the Optus asset.

If planned works are parallel to the Optus asset, then the Optus asset must be physically located by an Optus Accredited Locator at a minimum of 5 meter intervals along the length of the parallel works prior to work commencing.

Under no circumstances is crossing of any Optus asset permitted without physical location of the asset being carried out by an Optus Accredited Locator. Depending on the asset involved an Optus representative may be required onsite.

The minimum clearances to the physical location of Optus assets for the following specific types of works must be maintained at all times.

Note: Where the clearances in the following table cannot be maintained or where the type of work differs from those listed then advice must be sought from the relevant Optus Damages and Relocations Team (refer to "FURTHER ASSISTANCE").

Type of Works	Clearance to Physical Location of Optus Asset
Jackhammers / Pneumatic Breakers	Not within 1 meter.
Light duty Vibrating Plate or Wacker Packer type compactors (not heavy road construction vibrating rollers etc.)	500mm compact clearance cover before a light duty compactor can be used over any Optus conduit. No compaction permitted over Optus direct buried cable without prior approval from Optus.
Boring Equipment (in-line, horizontal and vertical)	Not within 5 meters parallel of the Optus asset location without an Accredited Optus Asset Locator physically exposing the Optus asset and with an Optus representative onsite. Not to cross the Optus asset without an Accredited Optus Asset Locator physically exposing the Optus asset and with an Optus representative onsite.

Type of Works	Clearance to Physical Location of Optus Asset
Heavy vehicle Traffic (over 3 tonnes)	Not to be driven across Optus conduits with less than 600mm of cover. Not to be driven across Optus direct buried cable with less than 1.2 meters of cover. Once off crossings permitted, multiple crossing (e.g. road construction or logging) will require Optus approval. Accredited Optus Asset Locator to physically expose the Optus asset to verify actual depth.
Mechanical Excavators, Farm Ploughing, Vertical Hole installation for water bore or fencing etc.	Not within 1 meter. Accredited Optus Asset Locator to physically expose the Optus asset to verify actual location.

ASSET CLEARANCES AFTER COMPLETION OF WORKS

All Optus pits and manholes must be a minimum of 1 meter from the back of any kerb, 3.5 meters of the road surface without a kerb or not within 15 meters of street intersection.

In urban areas Optus conduit must have the following minimum depth of cover:

- Footway 600mm;
- Roadway 1 meter at drain invert and at road centre crown.

In rural areas Optus conduit must have a minimum depth of cover of 1 meter and direct buried cable 1.2 meters.

In cases where it is considered that the above clearances cannot be maintained at the completion of works, advice must be sought from the relevant Optus Damages and Relocations Team (refer "Further Assistance").

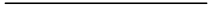
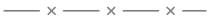
FURTHER ASSISTANCE

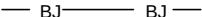
Further assistance on asset clearances, protection works, or relocation requirements can be obtained by contacting the relevant Optus Damages and Relocations Team on the following email address:

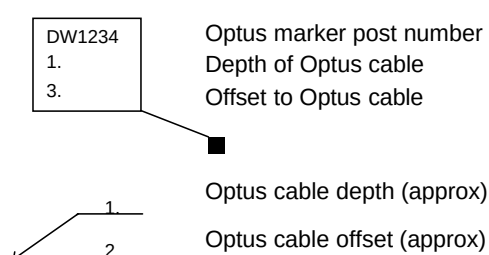
NFODamages&RelocationsDropbox@optus.com.au

Further assistance relating to asset location drawings etc. can be obtained by contacting the Optus Network Operations Asset Analysis Team on 1800 505 777.

OPTUS ENGINEERING DRAWING SYMBOLS

	Optus underground cable		Optus manhole/pit
	Optus underground IOF cable		Other Utility manhole/pit
	Optus conduit		Optus marker post
 OR 	Optus cable in Other Utility conduit		Railway / Tram line
	Southern Cross conduit		Highway / Major Road
	Indigo conduit		Arterial Road
	Uecomm conduit		Council Road - minor
	Optus aerial fibre cable		

	Optus underground cable
	Optus cable buried jointly with third party utility
	Optus cable in conduit with subducts





Optus Accredited Asset Locators

Name	Company Name	Phone	Email	State	Region/Service Area
Drew Misko	Australian Subsurface Pty Ltd	0427 879 600	admin@australiansubsurface.com	ALL	ALL
Andrew Watson	Subsurface Mapping Solutions Pty Ltd	0408 839 723	admin@subsurfacems.com.au	ALL (Not TAS)	South East QLD + Aus wide
Chris Gordon	Heavy Construction Solutions	1300 859 027	chris.gordon@heavycs.com.au	VIC,NSW,QLD,SA TAS	All
Alan Cordner	Alcom Fibre Services Pty Ltd	0400 300 337	alcomfibre@bigpond.com	NSW	Sydney, NSW
Brad McCorkindale	Bradmac Locating Services	0434 157 409	info@bradmaclocating.com.au	NSW	NSW
Shane Buckley	Cable & Pipe Locations Pty Ltd	0408730430	shane@cableandpipelocations.com.au	NSW	North Coast , Mid North Coast, Central West, Northern Rivers
Annabelle Pegler	Down Under Detection Services (DUDS)	0418 267 964	apegler@duds.net.au	NSW	All
Bruce Whittaker	Optical Fibre Technologies	0402 354 322	opticaltek1@aol.com	NSW	Sydney/Wollongong
George Koenig	Downunder Locations	0438243856	downunderlocations@gmail.com	NSW	Tweed Heads/Gold Coast
Michael Grant	M&K Grant Bega Bobcats Pty Ltd	0427 260 423	zzbobcat@bigpond.net.au	NSW	Bega, Far South Coast
Antony Critcher	Geotrace Australia Pty Ltd	0417 147 945	antony@geotrace.com.au	NSW	All Areas, Sydney, Wollongong, Newcastle, ACT
Sarah Martin	Hydro Digga	0447 774 000	admin@hydrodigga.com	NSW	Mid North Coast
Nathan Ellis	Utility Locating Services	0404 087 555	nathan@uls.com.au	NSW	Sydney
Scott O'Malley	Coastal Cable Locators Pty Ltd	0427 975 777	skomalley@bigpond.com	NSW	South Coast- Snowy Mountains- Southern Highlands
Liam Bolger	Brandon Construction Services	0438 044 008	liam.bolger@hotmail.com	NSW	Sydney
Laura Elvery	Durkin Construction Pty Ltd	02 9712 0308	info@durkin.au	NSW	NSW

Shireen Sidhu	Locate & Map	(02) 8753 0049	admin@locateandmap.com.au	NSW	Sydney & Regional NSW only
Ken Browne	Riteway Traffic Control Pty Ltd	0419 212 969	kbrowne@ritewaytc.com.au	NSW	Central Coast, Hunter
Jean-Max Monty	Civilscan	1300 575 488	john@civilscan.com.au	NSW	Sydney, Central Coast, Newcastle, Wollongong, Hunter Valley, Blue Mountains
Scott Hunter	Hunter Ground Search	0409327345	admin@hunter-groundsearch.net.au	NSW	Hunter, Upper Hunter, Central Coast, Newcastle
Damien Black	Mid North Coast Hydro Digging & Service Locating P/L	0418 409 465	djblack1@bigpond.com	NSW	Mid North Coast
Michael Nicholls	Utility Mapping NSW	1300 627 746	sydney@utilitymapping.com.au	NSW	All NSW
Joseph Restuccia	ProLocate	0415 633 393	joe.restuccia@prolocate.com.au	NSW	NSW Wide
Barry Maloney	Online Pipe & Cable Locating	1300 665 384	Office@onlinepipe.com.au	NSW	Sydney, Central Coast, Canberra, Wollongong, Newcastle
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