Prepared for: Bacchus Marsh Developments Pty Ltd

Merrimu Precinct Structure Plan, Bacchus Marsh - High-Level Utility Servicing and Infrastructure Assessment

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Job No: 190294
Revision: F
Date: 31 January 2023

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Document Control Register:

Revision	Issue Date	Status	Author	Checked
A	20/12/2019	ISSUED TO CLIENT FOR REVIEW	T. PALIOS	E. SFYRIDIS
B	15/09/2020	AUTHORITY COMMENTS	T. PALIOS	E. SFYRIDIS
C	19/09/2020	ISSUED TO CLIENT FOR REVIEW	T. PALIOS	E. SFYRIDIS
D	05/03/2021	CLIENT COMMENTS	T. PALIOS	E. SFYRIDIS
E	06/09/2022	AUTHORITY COMMENTS	T. PALIOS	E. SFYRIDIS
F	31/01/2023	AUTHORITY COMMENTS	T. PALIOS	E. SFYRIDIS

1 INTRODUCTION

Creo Consultants was commissioned by Bacchus Marsh Developments Pty Ltd to undertake a high-level utilities servicing assessment report for the Merrimu precinct and identify current services and utilities infrastructure capacity issues within the precinct, noting identified key opportunities and constraints for the provision of servicing and utility infrastructure to fully service the precinct into the future.

The information within this report has been collated from the following sources:

- A Dial-Before-You-Dig enquiry to determine the extent of readily available services information and to assess the size and location of existing services.
- Publicly available aerial and street level photography and cadastral and contour information.
- Correspondence, meetings and phone conversations with personnel from the various utility service authorities who provided information about future servicing strategies and master planning.
- Websites of service authorities, industry associations and government departments to obtain further information about the capacities of existing assets, plans for future assets, policies, standards and legislation governing development.

2 LIMITATIONS AND ASSUMPTIONS

This report is limited to research on utility services including sewer, potable water, recycled water, electricity, gas, and telecommunications. The report will identify the existing services within and in close proximity to the PSP and the proposed servicing arrangements for future urban development of the PSP.

The information presented within the report is based on both written and verbal advice received from authorities over the period of time during which this report was prepared and amended and as such should be understood as high level planning advice, with varying degrees of currency and which is to be confirmed in subsequent stages of development with the relevant authorities.

3 SERVICE AUTHORITIES

Creo Consultants have contacted the following service authorities to obtain plans and details of existing and future services in the investigation area.

- Powercor - Electricity Distribution/Supply
- Telstra – Telecommunications
- NBN Co – Telecommunications
- AusNet Services - Gas Reticulation
- Melbourne Water – Main Scheme Drainage
- Western Water - Sewer, Water and Recycled Water
- Moorabool Shire – Drainage

It should be noted that sizing and alignment of proposed services described within this report is indicative only, subject to formal offers of supply from the relevant utilities servicing agencies and detailed subdivision design.

4 SITE OVERVIEW

Merrimu is located approximately four kilometres north east of the Bacchus Marsh Township, encompassing a1016-hectare site that overlooks the Bacchus Marsh Valley.

The PSP has been developed in response to projected population increases within the region. Key areas to be developed within the PSP include residential and commercial developments with a view to support growth in local business and employment opportunities. The Urban Growth Framework Plan was approved by the Minister of Planning in 2018. Refer to Figure 1 below for the Merrimu Precinct Structure Plan Area. An enlarged plan is contained in Appendix A.

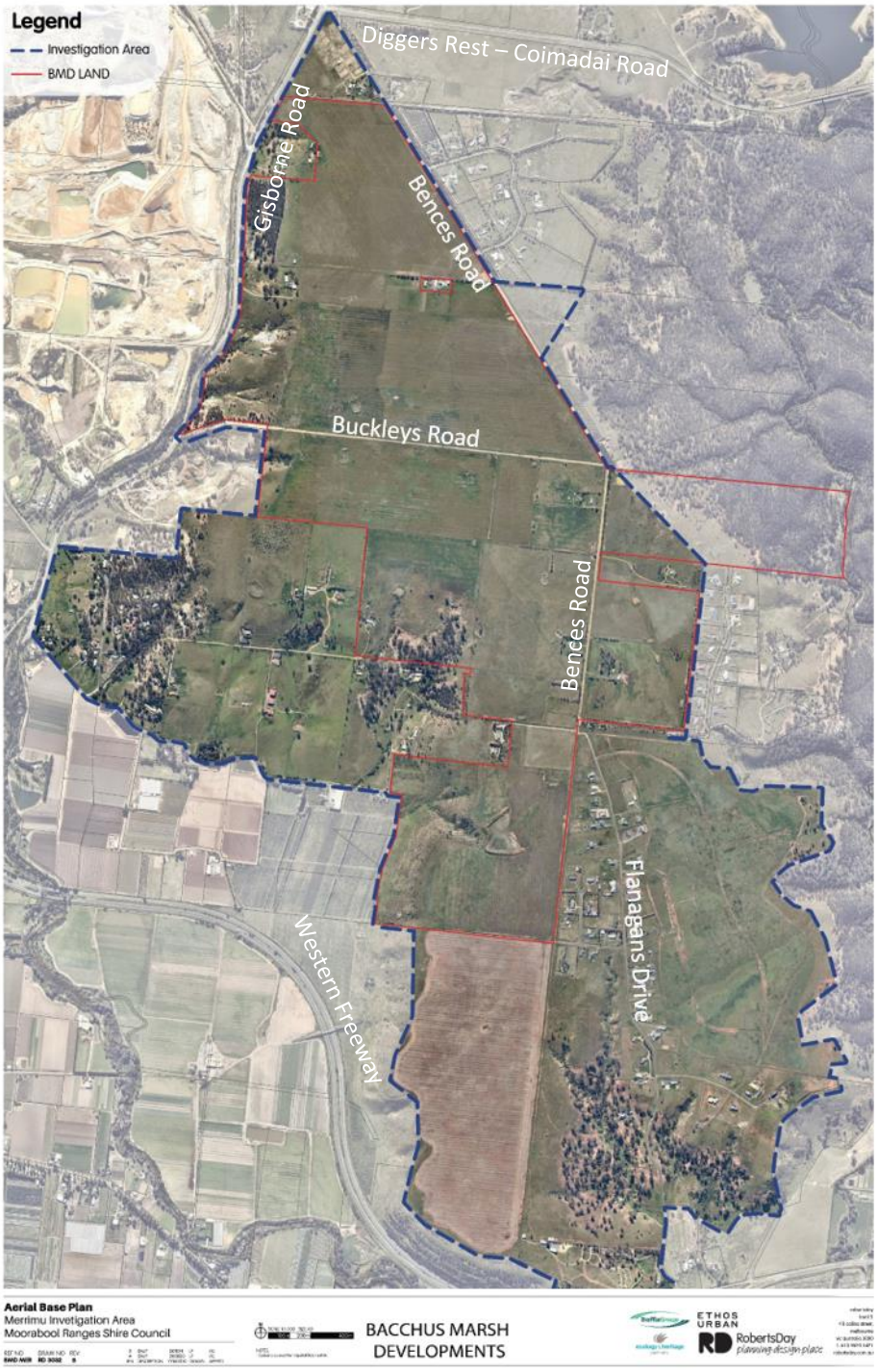


Figure 1 Merrimu Precinct Structure Plan Area

5 PRECINCT DEVELOPMENT PROPOSAL

The Merrimu PSP study area is in its early stages of planning, however the Victorian Planning Authority (VPA) advises that it will be largely a residential precinct with at least 10% open space (active and passive) and provide appropriate retail, education, and community facilities to support the projected population.

It is expected that the Merrimu Precinct will generate up to 5,500 new residential allotments and a population forecast of circa 15,000 people.

Access to the Merrimu PSP area is expected to be via Flanagans Drive to the southeast, O'Connell Road and Buckleys Road to the west (to Gisborne Road) and Bences Road (to Diggers Rest-Coimadai Road) to the north. Refer to Figure 2 below to the Illustrative Concept Masterplan. An enlarged plan is contained in Appendix B.

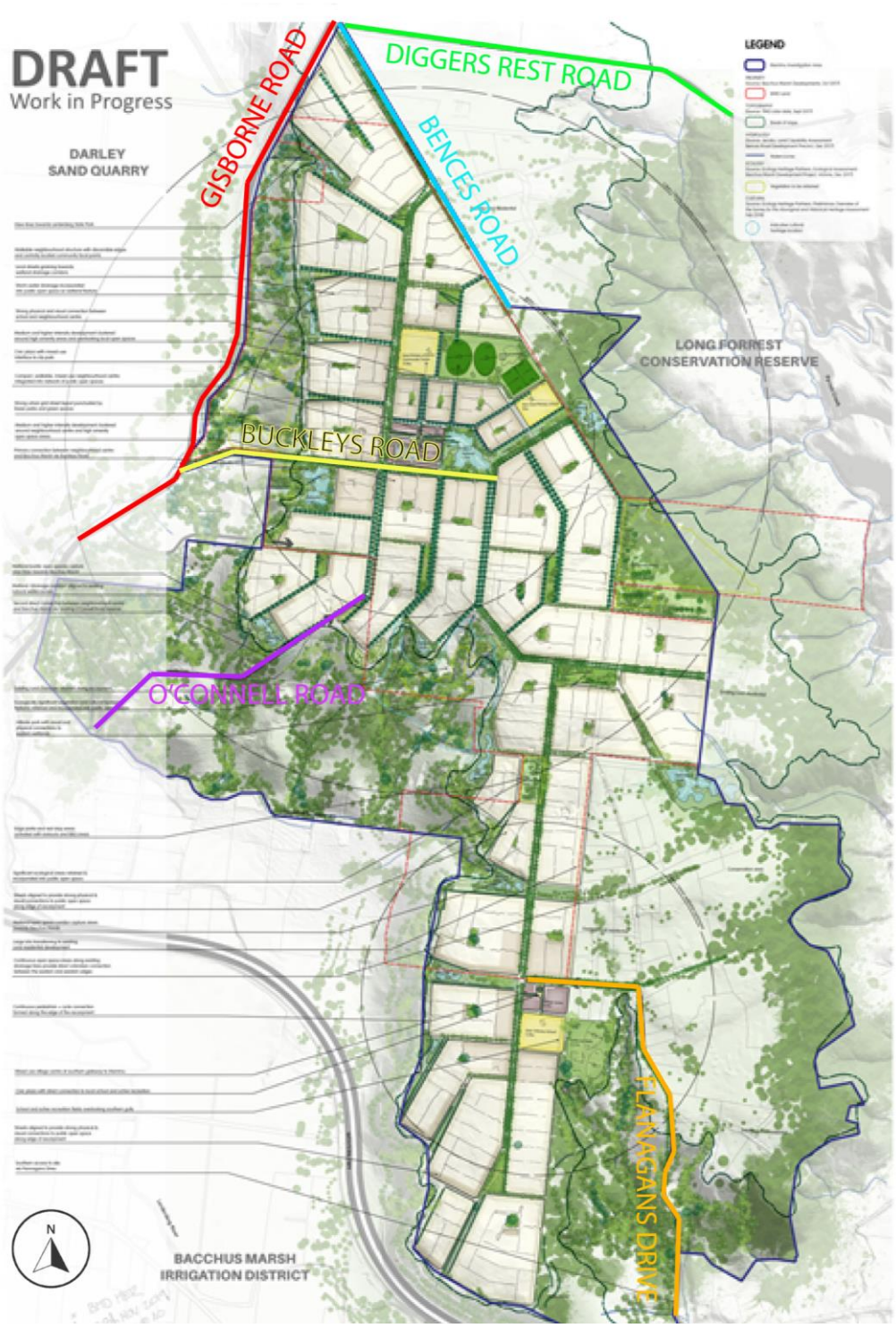


Figure 2 Access to Merrimu Precinct Structure Plan Area

6 SERVICES INVESTIGATION

6.1 SEWER

6.1.1 Servicing Responsibility

Western Water is the responsible authority for the provision of sewer reticulation to the Merrimu precinct.

6.1.2 Existing Servicing

A small sewer pump station is located at the corner of Tipperary Flats Road and Bacchus Marsh Road that services fewer than 100 lots. This pump station has a 150mm diameter rising main that pumps sewerage flows to the Avenue of Honour sewer pump station and ultimately to the Bacchus Marsh recycled water plant. Refer Figure 3 below for details.

Western Water have advised that the said existing pump station could be upgraded to service the initial stages of the Merrimu Precinct. The number of lots that this pump station could service, would be limited to the capacity of the existing 150mm diameter rising main. Western Water have determined that the existing rising main can service a total of 500 lots. The location of these 500 lots is not constrained to the southern end of the PSP.

The likely details of the upgrade are not yet known, however are envisaged to include larger pumps and additional emergency storage.

6.1.3 Future Servicing

Western Water has released a servicing strategy for their relevant service areas, dated June 2018. This servicing strategy was prepared in support of their submission to the Essential Services Commission for the pricing period between 2018 – 2023.

The current servicing strategy proposes to upgrade the existing Avenue of Honour Sewer Pump Station (SPS), construct a new sewer pump station in the west of Bacchus Marsh north of Werribee River and upgrade the existing Grant Street SPS. Refer to Figure 4 for details.

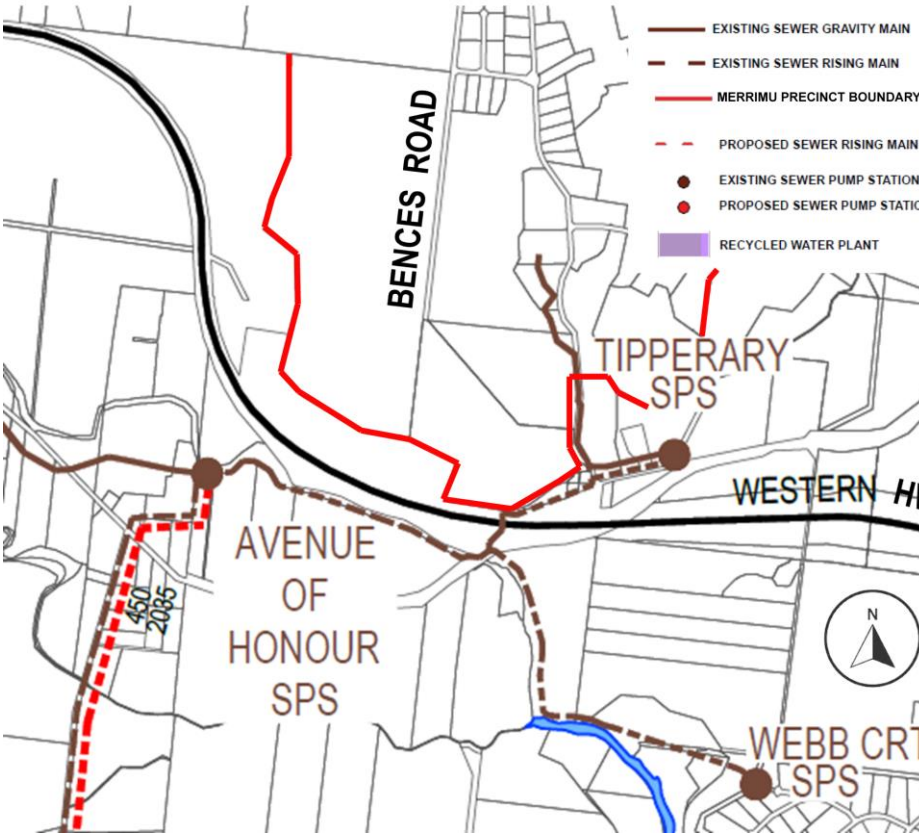


Figure 3 Existing Sewer Infrastructure (*Source: Western Water 2020*)

New 450mm dia. rising main sewers are proposed to be constructed along both Geelong-Bacchus Marsh Road and Woolpack Road to cater for the future Bacchus Marsh growth, to then combine into a new 600mm dia. rising main sewer proposed to be constructed along Parwan-Exford and Parwan South Road. This 600mm dia. rising main will then discharge into the Bacchus Marsh Recycled Water Plant in Parwan. The new 600mm dia. rising main will have the capacity to service a total of 15,000 lots.

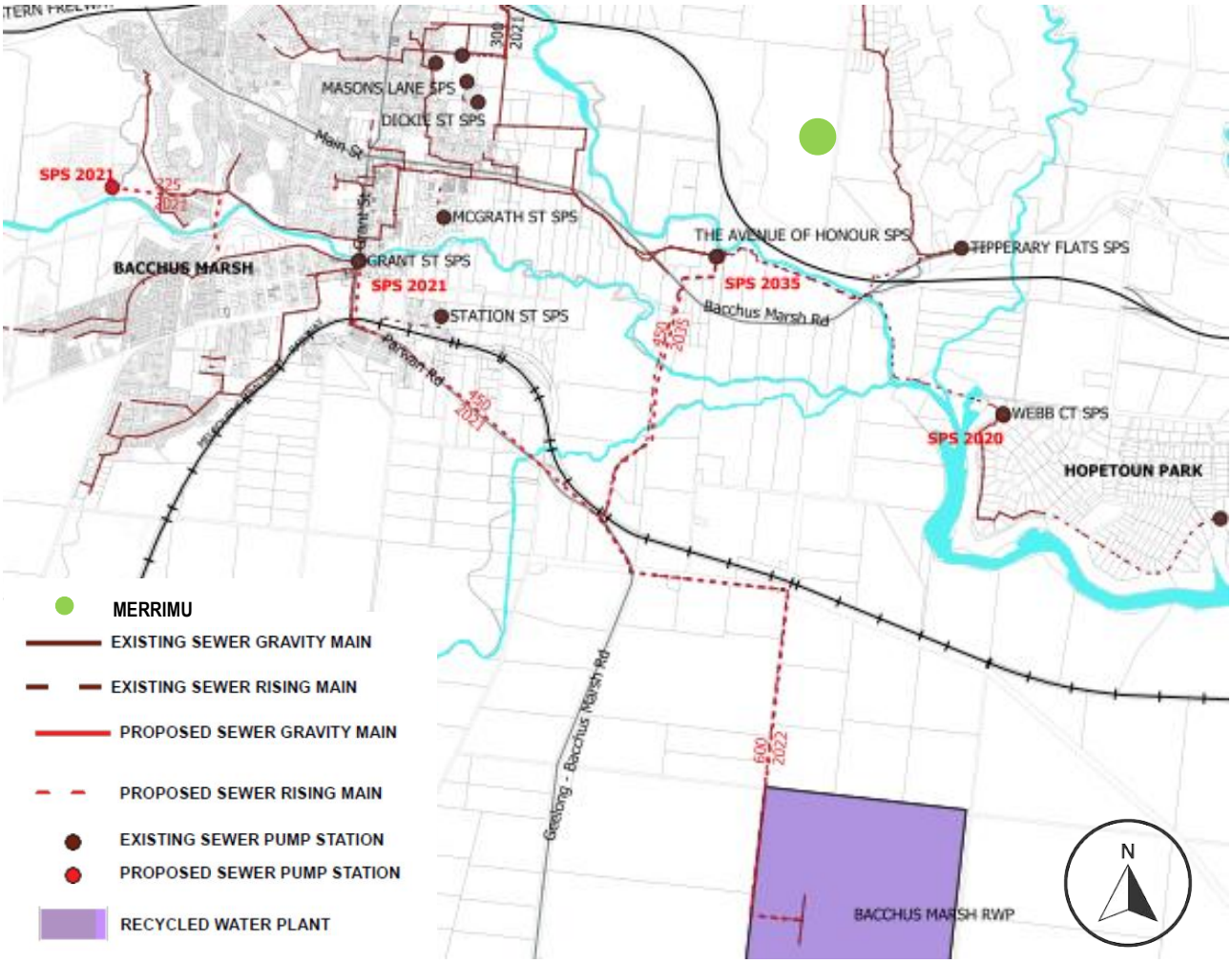


Figure 4 Future Sewer Infrastructure (*Source: Western Water 2020*)

Western Water have advised that the Merrimu Precinct was not considered in the June 2018 report and have yet to formally develop a high-level sewer strategy plan for the Merrimu Precinct.

Western Water have advised however that the likely sewer strategy to ultimately service the Merrimu Precinct would be to either construct a new sewer pump station or a further upgrade to the Avenue of Honour sewer pump station. It is likely that a new rising main will be required along Woolpack Road or similar path to go to the Bacchus Marsh recycled water plant.

Furthermore, Western Water have advised that the existing capacity of the Bacchus Marsh Recycling Water Plant is 3.9ML/day and is only sufficient to treat the forecast sewerage generated from Bacchus Marsh area in the short to medium term. Significant upgrades to the Bacchus Marsh Recycled Water Plant would be required to cater for the future Merrimu, Parwan and Bacchus Marsh areas.

The 2022 update and review of this Urban Water Strategy and Pricing Submission 2023-2028 will consider the infrastructure and capital program required to service the Merrimu and Parwan growth investigation areas once the Precinct Structure Plan areas are formalised.

6.2 WATER SUPPLY - POTABLE

6.2.1 Servicing Responsibility

Western Water is the responsible authority for the provision of water reticulation to the Merrimu precinct.

6.2.2 Existing Servicing

Western Water have advised that an existing network of DN100 and DN225 mains are located along Bences Road.
These mains have limited capacity to service additional lots and cannot be relied upon for initial stages. Refer Appendix C for details. A DN600 reinforced concrete transfer main traverses diagonally through the Merrimu precinct between Bences Road and Buckleys Road. This main provides water supply from the Merrimu reservoir to the Bacchus Marsh township. This main is a non-tapping main.

6.2.3 Future Servicing

Western Water has released a servicing strategy for their relevant areas, dated June 2018. This servicing strategy was prepared in support of their submission to the Essential Services Commission for the pricing period between 2018 – 2023. Western Water's servicing strategy is to ultimately construct two (2) 6ML tanks at Western Water's Dodemaide Circuit site and a new DN675 transfer main. The said new transfer main will replace the existing DN600 transfer main which is earmarked for the year 2030. It is noted that the DN675 transfer main alignment in Figure 5 is tentative and would be adjusted to coincide with future road alignments within the Merrimu Precinct.

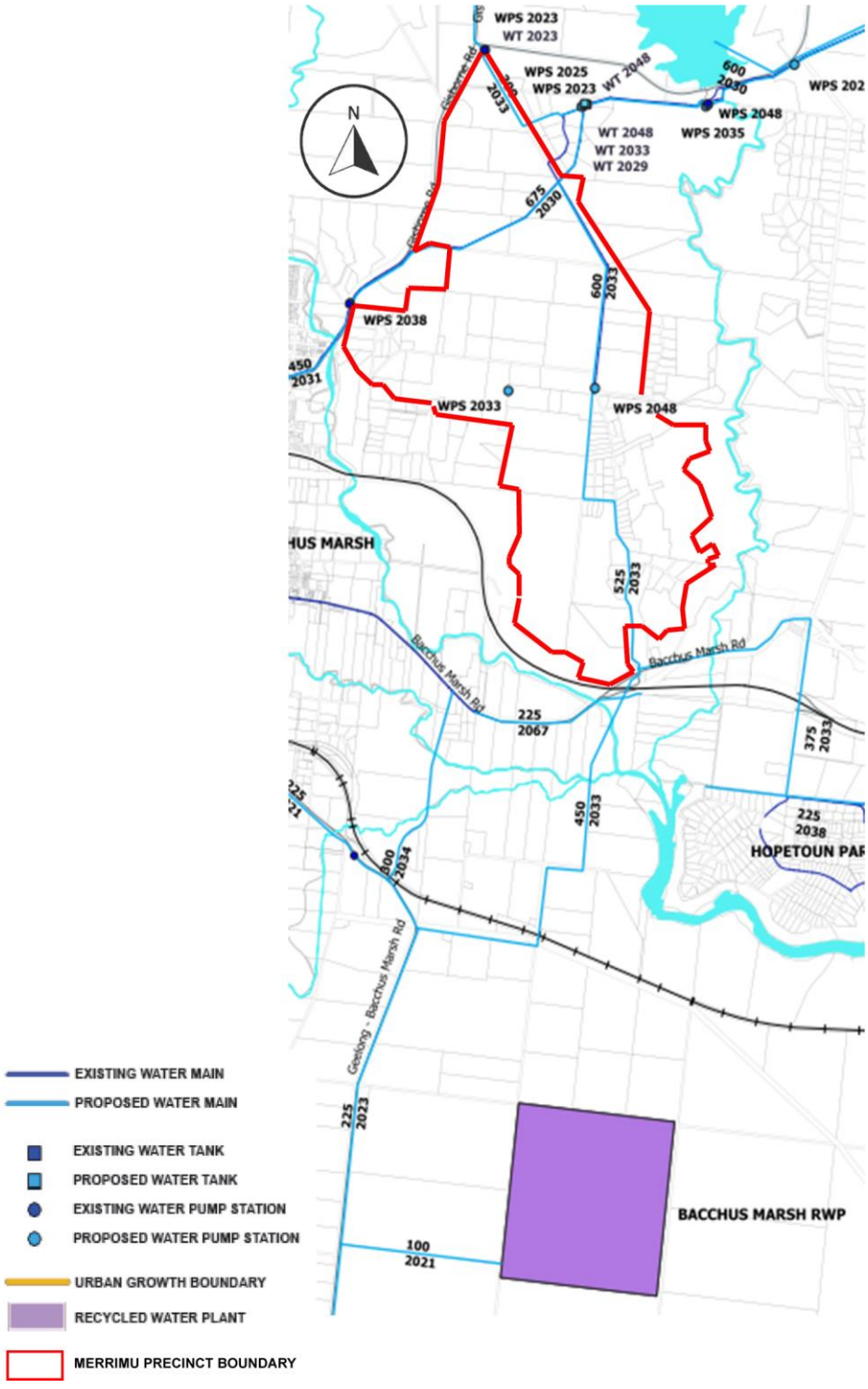


Figure 5 Water Supply - Potable

To ultimately service the Merrimu Precinct a DN600 main will be required to be constructed from the Merrimu Water Filtration Plant (WFP) down Bences Road and Flanagans Drive as development progresses. The construction of these works is earmarked for the year 2033. Western Water has advised that the capacity of the Merrimu WFP is circa 15,000 lots. Noting that the current number of lots being supplied in Bacchus Marsh is circa 7,000, there is currently capacity in the Merrimu WFP for interim development of the Merrimu precinct.

Western Water have also advised that the initial stages of the Merrimu precinct can be serviced from the existing water tank located in Dodemaide Circuit. This interim strategy would require the construction of a smaller suitable sized trunk main from Western Water's tank site along Dodemaide Circuit to Bences Road. The number of lots that this interim strategy can support has yet to be determined by Western Water.

The 2022 update and review of this Urban Water Strategy and Pricing Submission 2023-2028 will consider the infrastructure and capital program required to service these growth investigation areas once the Precinct Structure Plan areas are formalised.

6.2.4 Expected Funding Arrangements

Western Water is responsible for funding trunk infrastructure and shared assets. Developers are responsible for providing reticulation assets and temporary reticulation works and the cost to connect the development to the Western Water network. Developers are also responsible for the financing costs associated with bringing forward the provision of shared assets and temporary shared works that Western Water had programmed to be constructed at a future date. The ESC guidelines determine that Western Water may levy a charge that will cover the financing costs associated with bringing forward the provision of Shared Assets. This is referred to as an Incremental Financing Cost charge. The potable water mains shown in Figure 4 have been identified by Western Water as being Shared Assets.

6.3 WATER SUPPLY - RECYCLED

6.3.1 Servicing Responsibility

Western Water is the responsible authority for the provision of Class A recycled water reticulation to the region.

6.3.2 Existing Servicing

Class A recycled water is not available in Bacchus Marsh.

It is however noted that the Bacchus Marsh Recycled Water Plant currently produces Class C recycled water, which is not suitable for residential use. This Class C recycled water is stored over winter in a 478 ML above ground storage for agricultural uses during the irrigation season.

6.3.3 Future Servicing

Bacchus Marsh is not within a mandated service area and Western Water will not impose Class A recycled water within the Merrimu Precinct.

Currently some sewage is treated to Class A recycled water at Melton Recycled Water Plant and used in third pipe networks such as the very successful Eynesbury Scheme. However, the policy change to decrease minimum lot sizes has rendered outdoor water demand too small to justify the business case for future Class A recycled water schemes. Furthermore, residential demand for Class A would still leave substantial excess recycled water volumes to be managed.

Noting the above, Western Water's preferred option is to develop an irrigation scheme in Parwan-Balliang, supplied by Class C recycled water from Sunbury, Melton and Bacchus Marsh recycled water plants. The proposed project includes the construction of a series of pipelines from Western Water's recycled water plants to a main storage at the boundary of the proposed irrigation district. A distribution pipeline system would be constructed within the Parwan-Balliang district to supply recycled water to the farms.

Western Water has undertaken a detailed assessment of the likely demand for recycled water for irrigation purposes and has found that farmers in the Parwan-Balliang Irrigation District that convert to irrigated agriculture as a result of the scheme are likely to be better off from increased yield and higher value crops, even when accounting for higher input costs associated with the recycled water supply. As a result, it is likely that the scheme will be a viable irrigation district in the long run and will attract the required demand and deliver a significant economic benefit to the region.

6.4 ELECTRICITY SUPPLY

6.4.1 Servicing Responsibility

Powercor is the responsible authority for the provision of electricity to the Merrimu precinct.

6.4.2 Existing Servicing

Powercor have advised that there is existing 22kV High Voltage (HV) overhead infrastructure along Bences Road. Refer Appendix D for details.

Bacchus Marsh is serviced from the Bacchus Marsh zone substation (BMH) which is located on the corner of Bacchus Marsh-Balliang and Kerrs Road, Maddingley.

BMH is currently supplied by a 66kV sub-transmission line from Brooklyn terminal station with backup supply via a 66kV sub-transmission line from the Ballarat terminal station via an auto changeover scheme at BMH.

BMH provides electricity supply to domestic, commercial, industrial, and agricultural customers. The suburbs supplied include Bacchus Marsh, Maddingley, Darley, Greendale, Ballan and Myrniong. Figure 6 below shows the area supplied by BMH.

Currently, the BMH zone substation is comprised of two 10/13.5 MVA transformers operating at 66/22kV.

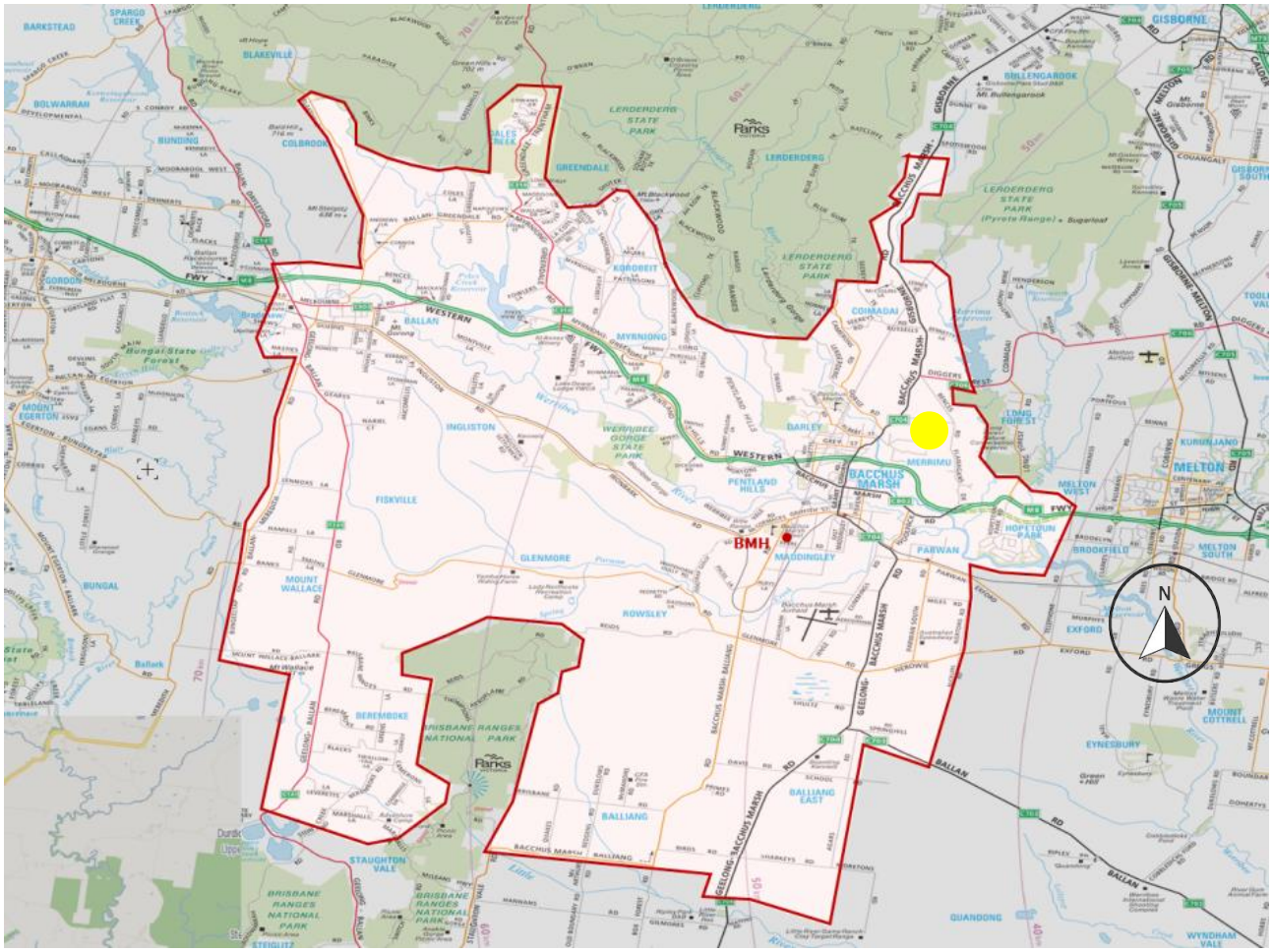


Figure 6 Geographical are supplied by Bacchus Marsh Zone Substation (*Source: Powercor 2016*)

MERRIMU.
BMH BACCHUS MARSH ZONE SUBSTATION

The zone substation predominately experiences summer afternoon-into-evening peak demand, driven by residential customers and supported by a strong commercial demand during the day.

Powercor estimates that by 2023 it will not be able to supply all customers from the zone substation if there is a failure of one of the transformers at BMH. That is, it would not be able to supply all customers during high load periods following the loss of a transformer.

6.4.3 Future Servicing

Powercor have advised that to service the full development of Merrimu of circa 5500 lots represents in the vicinity of 16 – 18MVA of new load.

Furthermore, Powercor have advised that there is only 2 MVA of spare capacity remaining in the current HV 22kV feeders to supply Bacchus Marsh, Parwan and Merrimu precincts. This spare capacity can only service up to 500 additional residential lots.

To address the anticipated system constraint at BMH zone substation, Powercor has advised that a new 25/33MVA third transformer at BMH zone substation will be required at an estimated cost of $7 million. This augmentation of the BMH substation is proposed by 2025 and will bring extra capacity and be able to supply additional load. Powercor will need to complete additional design and modelling to confirm the future network loads and to what extent the Merrimu Precinct can be serviced with power.

To service the initial stages of the Merrimu precinct will require the high voltage conductors surrounding the Merrimu precinct to be augmented.

To ultimately service the Merrimu precinct will require two new 22kV feeders to be installed from BHM to Merrimu. Powercor have yet to prepare a future servicing plan.

Electricity supply will be ultimately be serviced within the Merrimu PSP via underground high and low voltage cables located within existing and proposed road reservations. Supply to each individual dwelling within the development will be by low voltage underground cable. Substation sites will be required at approximately 300 metre intervals and the locations will be finalised as part of the overall electrical design for the development.

6.4.4 Expected Funding Arrangements

Zone substations and sub-transmission network augmentation would likely be funded by Powercor as part of the shared upstream network augmentation. Out of sequence upgrades to the 22kV feeder network may incur cost to the Developer, however this cannot be confirmed until an application is made.

6.5 GAS SUPPLY

6.5.1 Servicing Responsibility

APA GasNet is the responsible authority for gas transmission pipelines within Victoria and AusNet Gas Services is responsible for the gas distribution network.

6.5.2 Existing Servicing

Bacchus Marsh is serviced by natural gas supply connecting Melbourne to Ballarat via a High Pressure 200mm diameter transmission line. The transmission line runs south of Bacchus Marsh near the Western Water sewer treatment plant.

Gas supply does not extend into the Merrimu Precinct. There is an existing City Gate gas interchange in Rowsley Station Road which provides gas supply to Bacchus Marsh. Refer to Figure 6 for a high-level servicing plan showing the approximate location of APA's Brooklyn to Ballarat pipeline.

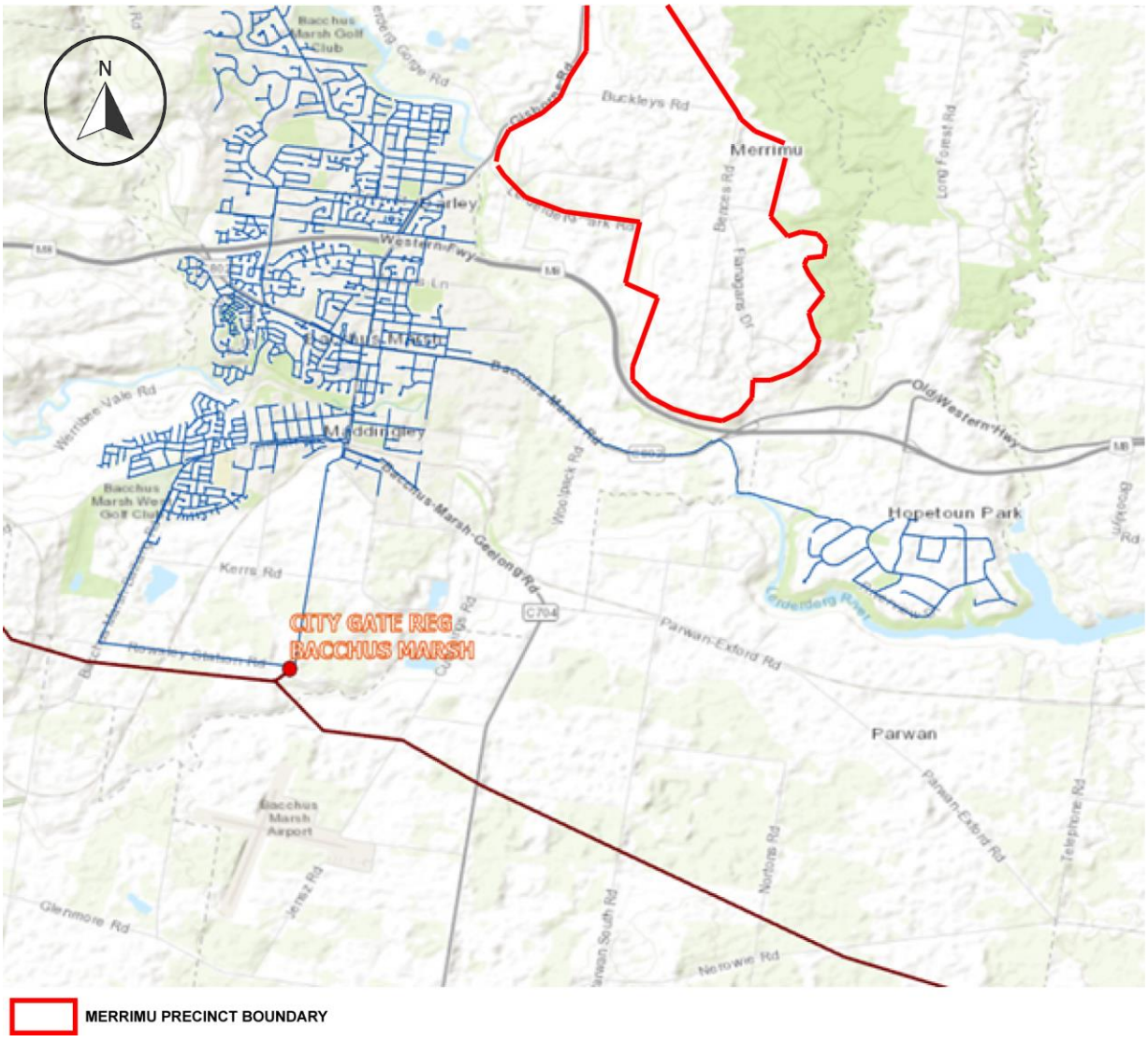


Figure 7 Existing Gas Infrastructure (*Source: AusNet Services 2020*)

6.5.3 Future Servicing

AusNet Services have advised that there are no plans to extend the network to the Merrimu precinct unless customer initiated.

To provide interim gas supply to the Merrimu Precinct will require a 180mm P10 main to extend from the existing 150mm S7 main located in Bacchus Marsh Road as highlighted in Figure 7. AusNet Services have advised that up to 250 dwellings could be serviced from this main without major augmentation to the existing network.

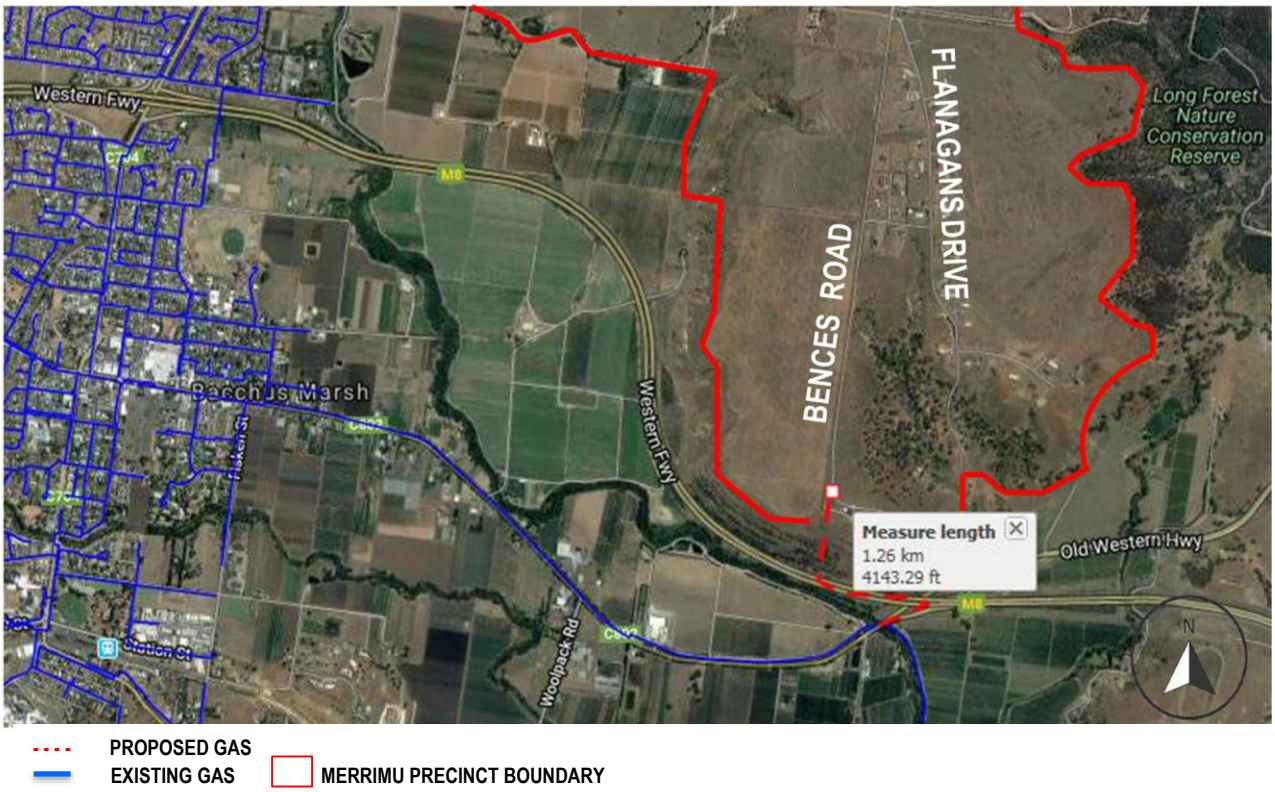


Figure 8 Interim Gas Extension (*Source: Ausnet Services 2020*)

A further request was made in October 2022 to ascertain the scope of augmentation that would be required to service more than 250 dwellings now that the Parwon City Gate Interchange Station has been constructed to service the Parwan Employment Precinct.

Despite numerous follow up calls and emails in November and December 2022 we have yet to receive a response from AusNet Services regarding this matter.

The Parwan City Gate project is an initiative from the Moorabool Shire Council and the Victorian Planning Authority to develop the area south of Bacchus Marsh into an agribusiness hub to serve the goal of attracting significant levels of new industrial and agricultural business investment to the region and capitalise on existing business in the area. It is unclear if the Parwan City Gate Interchange Station has the capacity to also provide adequate gas supply to the Merrimu Precinct.

Notwithstanding this, Bacchus Marsh Developments Pty Ltd (as the primary landowner within the PSP area) has committed to a gas free development, it is unlikely that any other landowner will have the scale of yield required to support gas provision for a specific portion of the PSP.

6.5.4 Expected Funding Arrangements

Gas is not considered an essential service and supply of gas to an estate needs to be commercially viable or otherwise subsidised. Typically, the distribution network operator would forecast revenue from a growth area and undertake a cost benefit analysis to establish the commercial viability of providing the service. If the return does not warrant the expense, the service would only be provided if subsidised by the customer, in this case part or wholly developer funded main extensions. Subject to ongoing cost benefit analysis the distribution network operator would usually provide internal gas reticulation in new estates if the distribution network is sequentially extended as development progresses.

6.6 TELECOMMUNICATIONS

6.6.1 Servicing Responsibility

The roll-out of the National Broadband Network (NBN) is a key factor in the determination of servicing responsibilities for telecommunications infrastructure within the Plumpton precinct. The following outline of servicing responsibilities was provided through Telstra:

- NBN Co is responsible as the infrastructure provider of last resort for developments of 100 or more lots or dwellings (over 3 years) that are within the NBN Co long term fibre footprint. NBN may choose to provide fibre in some smaller developments (<100 dwellings).

- Telstra is responsible as the infrastructure provider of last resort for developments of less than 100 lots and all developments outside NBN Co's long-term fibre footprint.

In all types of new developments, Developers are responsible for providing Pit and Pipe infrastructure (including trenching, design and third-party certification for development approval) that is fibre ready. Developers are required to meet the costs of Pit and Pipe. Third party providers may be selected to construct pit and pipe infrastructure that is compliant with NBN legislation and standards.

For developments where Telstra is the infrastructure provider of last resort, Developers will need to allow Telstra access to the developer provided pit and pipe so Telstra can install services.

6.6.2 Existing Servicing

There are no known constraints in telephone or internet infrastructure within the Bacchus Marsh district. In 2014 Bacchus Marsh was at the forefront of the roll out of the national broadband network (NBN). Internet speeds within the town are likely superior to much of western Melbourne.

The Merrimu Precinct is within NBN's fixed wireless network. This type of network transmits data using radio signals instead of cables. Businesses and homes can use fixed-wireless antenna technology to access broadband internet.

6.6.3 Future Servicing

To ultimately service the Merrimu Precinct will require a fibre to the premises (FTTP) network to be rolled out.

NBN Co, as the responsible agency, will determine the requirements for initial and ultimate fibre optic-based telecommunication services to proposed development within the Merrimu Precinct. Application and registration requirements for the provision of telecommunication services to the proposed development will be made through NBN Co by each individual development within the Merrimu Precinct.

An approved NBN Co provider will typically design and install the infrastructure within each development on a staged basis and install the extension of the network or backhaul to the development as required. The telecommunication services will be located underground along existing and future road reservations.

There are currently no future plans available from NBN Co.

6.6.4 Expected Funding Arrangements

The developer's responsibilities will include:

- Design of pit and pipe infrastructure to NBN's specifications and standards and submit to NBN for review prior to installation.

- Installation of pit and pipe infrastructure to NBN's specifications and standards.

- Payment of NBN deployment contributions in accordance with the Telecommunications Infrastructure in New Developments (TIND) policy. Developer contribution charges only apply to developers and builders. It is a flat rate charged for:

    I. Single Dwelling Units (SDUs): $600 inc. GST per premises

    II. Multi Dwelling Units (MDUs): $400 inc. GST per premises

- Payment of Backhaul contributions if applicable. If the length of backhaul is typically over 1.0km, then there will be additional charges to be paid by the developer to bring NBN fixed-line optic fibre to their site. As such, it is expected that the cost of backhaul and external pit & pipe headworks will be borne by the 'first-in' development. The indicative cost allocation for backhaul for NBN infrastructure is outlined in the Table below.

Table 7 Developer Contributions for NBN Backhaul Infrastructure

Component	NBN Average Cost	Developer Contribution 50% of the first $1,000 per premises	Developer Contribution 100% above first $1,000 per premise
Haul	$13 / metre	$6.5 / metre	$13 / metre
Construction	$60 / metre	$30 / metre	$60 / metre

7. DEVELOPMENT STAGING

An indicative development staging plan is contained in Appendix E. This staging plan is only relevant to land owned by BMD and does not reflect the entire PSP area and shows development commencing from the north and progressively heading south.

This staging plan utilises the existing Gisborne/Diggers Rest Road intersection as a safe entry into the Merrimu PSP and brings on in the early stages of development the Village Centre. This staging does not result in any major issues from a servicing perspective.

8. SERVICING INNOVATION & SUSTAINABILITY OPPORTUNITIES

There are several opportunities for innovative servicing strategies and sustainability outcomes within the Merrimu PSP. These include:

- ✓ Implementation of Integrated Water Management Strategy (IWM)

Integrated Water Management brings together all the elements of the water cycle, including rainfall, stormwater and wastewater to achieve the greatest social, environmental and economic outcomes.

The implementation of an IWM plan would have the following benefits for the Merrimu precinct:

  - reducing pressure on our drinking water supplies;
  - creating green open spaces;
  - reducing climate change and urban heat island impacts;
  - reducing erosion, sediment and dispersive soils;
  - reducing consumption of water in Council facilities;
  - reducing flood risk; and
  - improving waterway health.

- ✓ Implementation of a Local Class A Recycling Plant

Wastewater generated in homes could be transferred to a treatment facility within the development site and treated to provide Class A recycled water supply back to homes. By “closing the loop”, homes in the Merrimu precinct would be able to harness local alternative water resources for non-potable uses, including garden irrigation, toilet flushing and cold-water supply to the washing machines.

The provision of an on-site system will avoid the need for wastewater to be transferred (at a considerable cost) to the Bacchus Marsh Recycled Water Plant in Parwan. Furthermore, significant upgrades to the Bacchus Marsh Recycled Water Plant could be deferred.

It is noted that South East Water is implementing a closed loop system at Aquarevo, a 460 residential dwelling development located at Evans Road, Lyndhurst (42km south east of central Melbourne). The site is being developed in collaboration between the landowner, South East Water, and a property developer, Villawood Properties.

- ✓ Urban Cooling

The use of non-drinking water for irrigation and increased tree planting can aid Urban Cooling by providing shade and moist environments that improve thermal comfort. Increased tree canopy coverage in open spaces and along roadways, supported by Water Sensitive Urban Design, along with passive irrigation of landscaped areas and open spaces can reduce the Urban Thermal Climate Index, a measure of human thermal comfort, by as much as 10 degrees Celsius.

The PSP can support Urban Cooling initiatives by increasing density of tree planting and canopy coverage in open spaces and irrigation through use of stormwater harvesting.

- ✓ Resource Management

Studies supported by Sustainability Victoria have shown the use of recycled road pavement materials reduce impact on the environment through efficient use of extractive industries, reduced waste to landfill (and increased life of local landfill facilities) and reduce energy required to produce pavement construction materials as recycled products are less energy intensive to produce than quarry materials.

- ✓ Renewable Energy Sources

A Virtual Power Plant (VPP) should be considered. A VPP is a network of solar power and battery systems installed at homes and businesses. The systems are coordinated by a central control software system run by the VPP operator that taps into the stored energy of the batteries during periods of peak demand to supply the mains grid.

A well designed solar electric system on a residential dwelling can generate more electricity than they use and when combined with battery storage can become self-sufficient.

- ✓ Carbon Storage

Increased tree planting to improve canopy coverage has an important secondary feature – Carbon Sequestration.

Carbon sequestration is the process of capturing and storing atmospheric carbon dioxide. It is one method of reducing the amount of carbon dioxide in the atmosphere by enhancing storage capabilities of soils, trees and vegetation. Carbon Sequestration from revegetation and mass plantings can provide a significant short-term contribution to Climate Change Mitigation.

The PSP can support Carbon Sequestration by increasing density of planting in landscaped areas and in public and active open spaces.

9. SUMMARY AND CONCLUSION

Based on discussions with authorities responsible for servicing the Merrimu Precinct, the following summary of assessment findings and recommendations will assist in facilitating the planning and implementation of adequate infrastructure servicing for the Merrimu Precinct.

Potable Water

- Interim potable water supply to the Merrimu Precinct can be serviced from the existing elevated tank in Dodemaide Circuit. This interim strategy would require the construction of a smaller suitable sized trunk main from Western Water's tank site along Dodemaide Circuit to Bences Road.

  It is recommended that BMD/VPA ascertain the maximum number of lots that can be serviced from this interim system prior to the need to construct the ultimate DN600 main from the Merrimu Water Filtration Plant (WFP) down Bences Road and Flanagans Drive as development progresses.

- Western Water is responsible for funding trunk infrastructure and shared assets. Developers are responsible for providing reticulation assets and temporary reticulation works and the cost to connect the development to the Western Water network. Developers are also responsible for the financing costs associated with bringing forward the provision of shared assets and temporary shared works that Western Water had programmed to be constructed at a future date. The ESC guidelines determine that Western Water may levy a charge that will cover the financing costs associated with bringing forward the provision of Shared Assets. This is referred to as an Incremental Financing Cost charge.

Non-Drinking Water

- Class A recycled water is not available in Bacchus Marsh.

- BMD/VPA to ascertain from Western Water if the irrigation scheme for the provision of Class C recycled water to Parwan-Balliang is Western Water's preferred strategy in lieu of Class A to the Merrimu Precinct.

Sewer

- Interim sewerage supply to the Merrimu Precinct is via an upgrade to the Tipperary sewer pump station.

- The Bacchus Marsh Recycling Water Plant has sufficient capacity to treat the forecast sewerage generated from Bacchus Marsh area in the short to medium term. Significant upgrades to the Bacchus Marsh Recycled Water Plant would be required to cater for the future Merrimu, Parwan and Bacchus Marsh areas.

- BMD/VPA to ascertain the progressive upgrades (and associated costs) required to cater for the future roll-out of the Merrimu, Parwan and Bacchus Marsh areas.

- Western Water is responsible for funding trunk infrastructure and shared assets. Developers are responsible for providing reticulation assets and temporary reticulation works and the cost to connect the development to the Western Water network. Developers are also responsible for the financing costs associated with bringing forward the provision of shared assets and temporary shared works that Western Water had programmed to be constructed at a future date. The ESC guidelines determine that Western Water may levy a charge that will cover the financing costs associated with bringing forward the provision of Shared Assets. This is referred to as an Incremental Financing Cost charge.

Electricity

- Existing 22kV high voltage overhead supply along Bences Road can provide electrical supply to initial stages of the development.

- It is recommended that BMD/VPA ascertain if the installation of a new 25/33MVA third transformer at BMH zone substation will have the capacity to cater for the future Merrimu, Parwan and Bacchus Marsh areas.

- Zone substations and sub-transmission network augmentation would likely be funded by Powercor as part of the shared upstream network augmentation. Out of sequence upgrades to the 22kV feeder network may incur cost to the Developer, however this cannot be confirmed until an application is made.

Gas

- Gas supply does not extend into the Merrimu Precinct.
- Interim gas supply to a maximum 250 dwellings can be extended from the existing 150mm diameter main located in Bacchus Marsh Road.
- BMD/VPA to ascertain the scope of augmentation that would be required to service more than 250 dwellings now that the Parwon City Gate Interchange Station has been constructed to service the Parwan Employment Precinct.
- BMD/VPA to ascertain if the Parwan City Gate Interchange Station has the capacity to also provide adequate gas supply to the Merrimu Precinct.
- Gas is not considered an essential service and supply of gas to an estate needs to be commercially viable or otherwise subsidised. Typically, the distribution network operator would forecast revenue from a growth area and undertake a cost benefit analysis to establish the commercial viability of providing the service. If the return does not warrant the expense, the service would only be provided if subsidised by the customer, in this case part or wholly developer funded main extensions. Subject to ongoing cost benefit analysis the distribution network operator would usually provide internal gas reticulation in new estates if the distribution network is sequentially extended as development progresses.

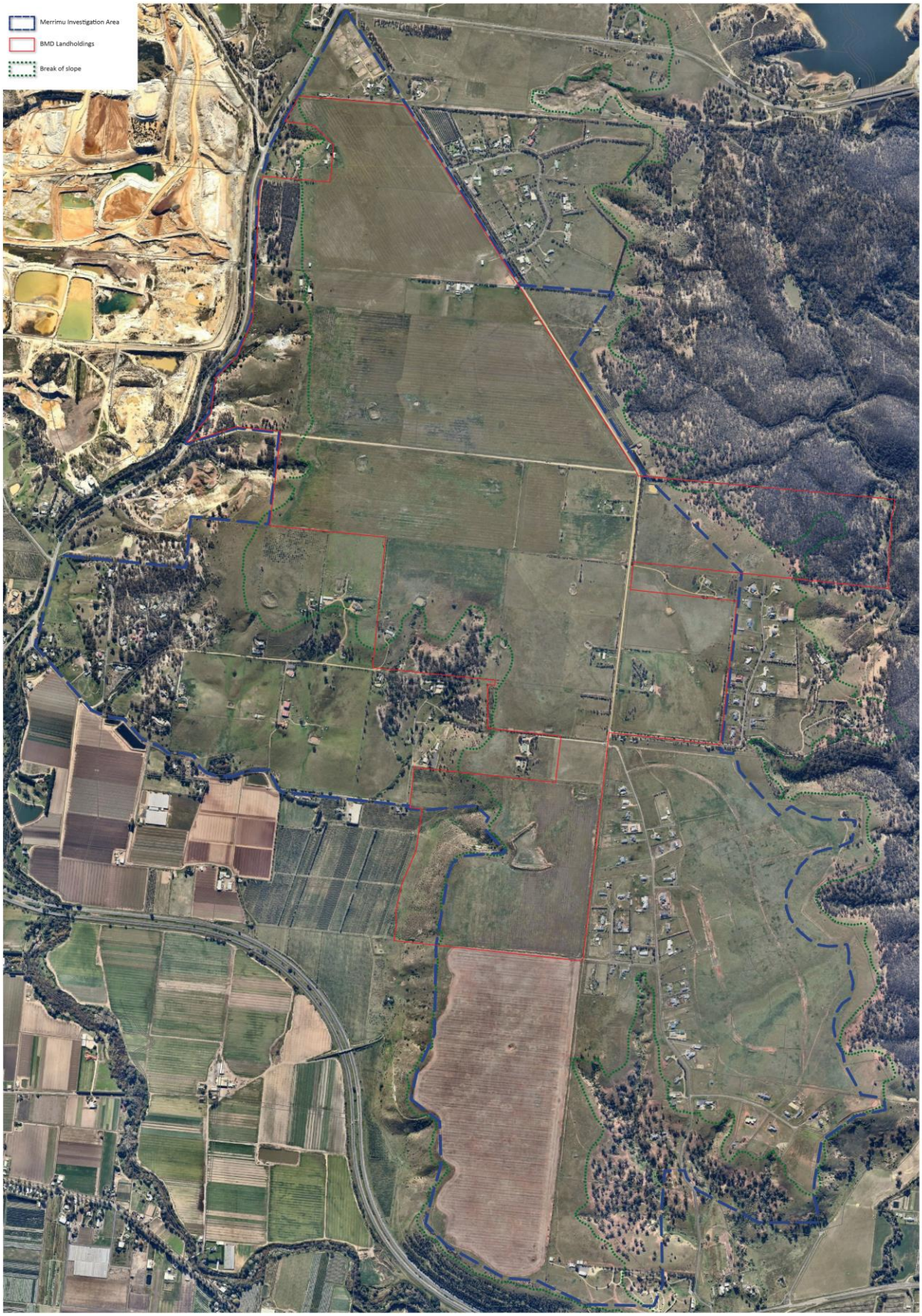
Telecommunications

- The Merrimu Precinct is within NBN's fixed wireless network.
- To ultimately service the Merrimu Precinct will require a fibre to the premises (FTTP) network to be rolled out.
- Payment of NBN deployment contributions in accordance with the Telecommunications Infrastructure in New Developments (TIND) policy will be required as follows:

    1. Single Dwelling Units (SDUs): $600 inc. GST per premises
    2. Multi Dwelling Units (MDUs): $400 inc. GST per premises

- Payment of Backhaul contributions if applicable. If the length of backhaul is typically over 1.0km, then there will be additional charges to be paid by the developer to bring NBN fixed-line optic fibre to their site. As such, it is expected that the cost of backhaul and external pit & pipe headworks will be borne by the 'first-in' development.

Appendix A Merrimu Investigation Area



Aerial Plan
Merrimu Invetigation Area
Moorabool Ranges Shire Council

REF NO RVL LOV | DRAW NO RD 3018 | REV D

D Draft 200720 LP MJ
REV DESCRIPTION YYMMDD DRAWN APPRD

SCALE 1:5,000 SIZE A0
100m 200m 400m

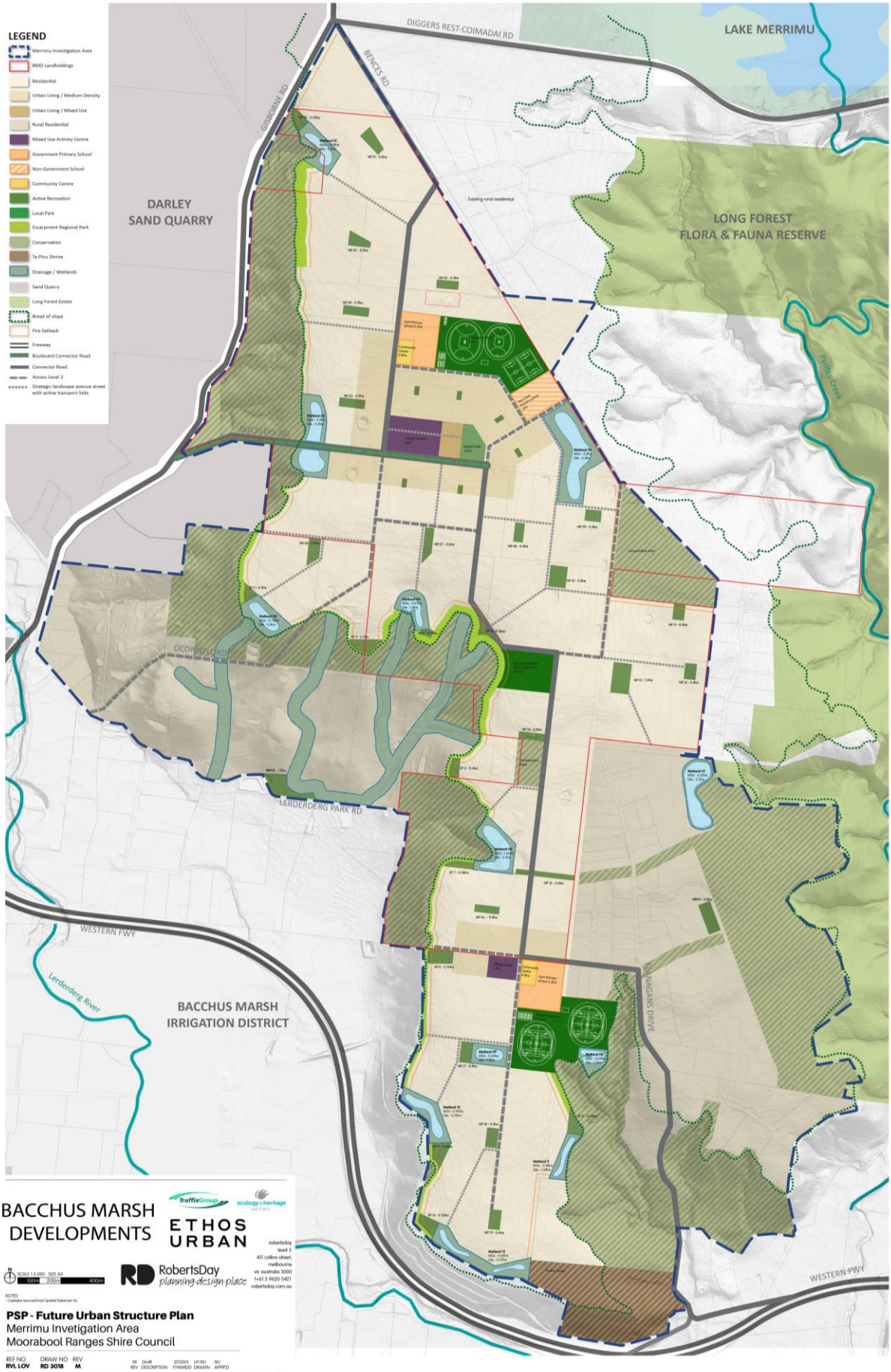
NOTES:
- Cadastre sourced from Spatial Datamart Vic

BACCHUS MARSH DEVELOPMENTS

TraffixGroup
ecology & heritage partners
ETHOS URBAN
RobertsDay planning·design·place

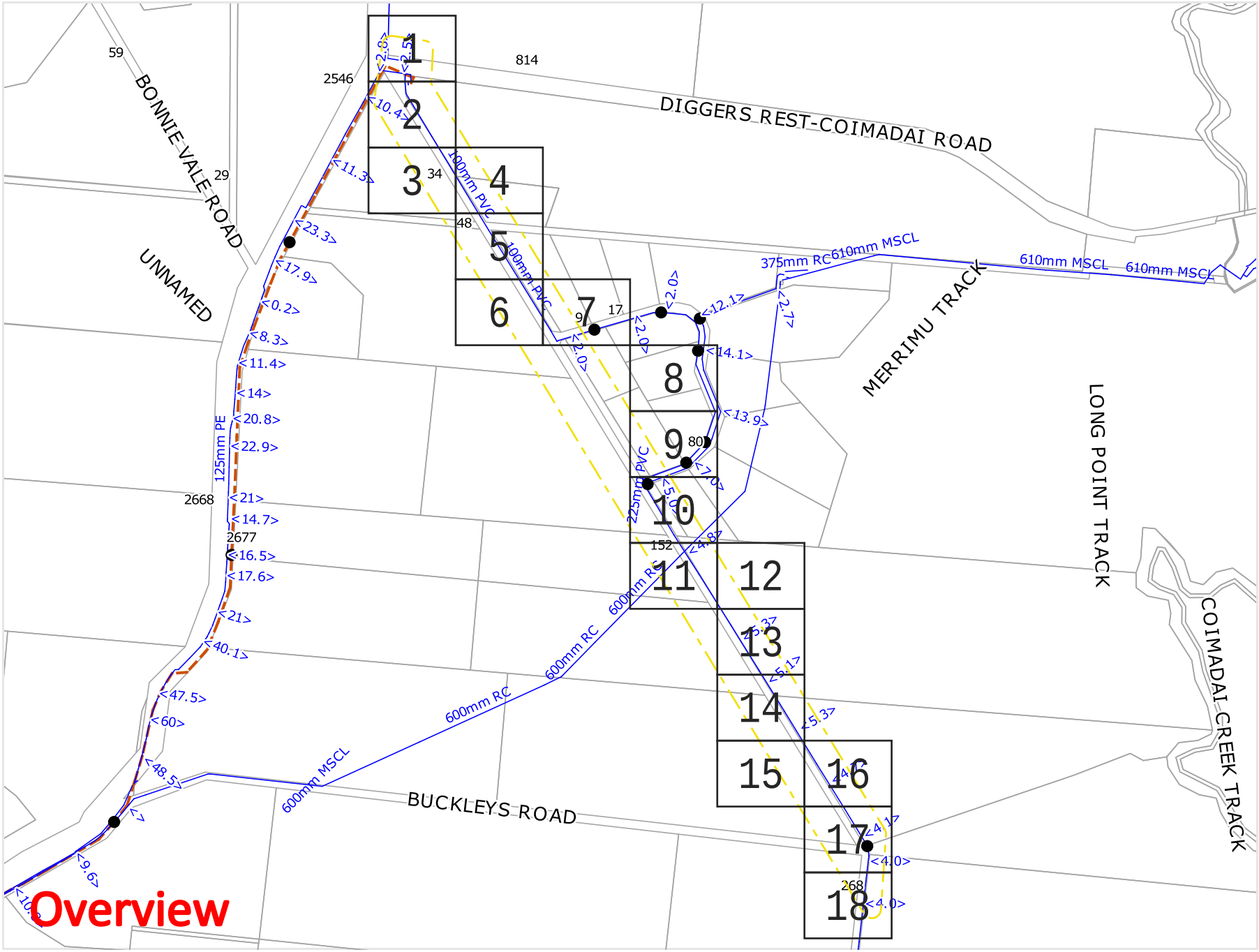
robertsday
level 5
411 collins street,
melbourne
vic australia 3000
t+61 3 9620 5421
robertsday.com.au

Appendix B Illustrative Concept Masterplan


LEGEND
Merrimu Investigation Area
BMD Landholdings
Residential
Urban Living / Medium Density
Urban Living / Mixed Use
Rural Residential
Mixed Use Activity Centre
Government Primary School
Non-Government School
Community Centre
Active Recreation
Local Park
Escarpment Regional Park
Conservation
Te Pinu Shrine
Drainage / Wetlands
Sand Quarry
Long Forest Estate
Break of slope
Fire Setback
Freeway
Boulevard Connector Road
Connector Road
Access Level 2
Strategic landscape avenue street with active transport links
DIGGERS REST-COIMADAI RD
LAKE MERRIMU
GISBORNE RD
BENCES RD
DARLEY SAND QUARRY
LONG FOREST FLORA & FAUNA RESERVE
Pyrites Creek
BULMANS RD
O'CONNOR RD
LERDERDERG PARK RD
WESTERN FWY
Lerderderg River
BACCHUS MARSH IRRIGATION DISTRICT
HANNAGANS DRIVE
WESTERN FWY
BACCHUS MARSH DEVELOPMENTS
ETHOS URBAN
TraffixGroup
ecology & heritage partners
RobertsDay planning-design-place
robertsday level 5 411 collins street, melbourne vic australia 3000 t+61 3 9620 5421 robertsday.com.au
SCALE 1:5,000 SIZE A0 100m 200m 400m
NOTES
- Cadastre sourced from Spatial Datamart Vic
PSP - Future Urban Structure Plan
Merrimu Invetigation Area
Moorabool Ranges Shire Council
REF NO RVL LOV
DRAW NO RD 3018
REV M
M Draft 20/2/23 LP/MJ MJ
REV DESCRIPTION YYMMDD DRAWN APPRD

Appendix C Existing Potable Water Supply

Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340



Legend:

- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
- Water Potable
- Water Recycled
- Water Raw
- Abandoned Pipes
- Surface Fitting/Manhole
- <1.2> Estimated Offset

NOTE: Assets labelled "AC" may contain asbestos material and therefore any works near these assets must be undertaken in accordance with OHS (Asbestos) Regulations 2007.

Due to the placement of Potable and Recycled pipes in the same trench, it may be difficult to distinguish the two asset types where they have been superimposed on the plans.

PLANS MUST BE PRINTED IN COLOUR

N

Scale: 1:14350
Expires: 30 Sep 2020

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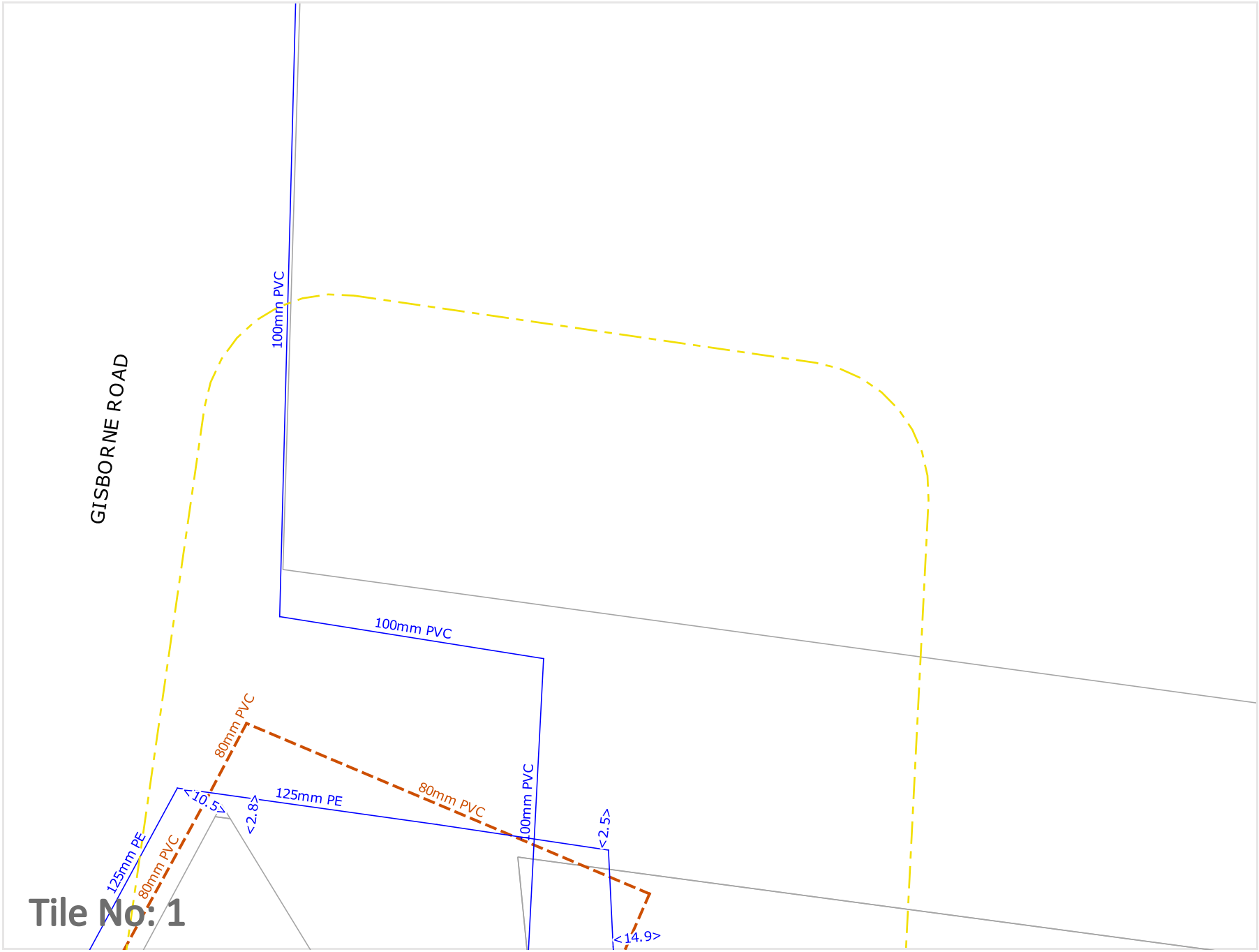
Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340



Legend:

- Gravity Sewer
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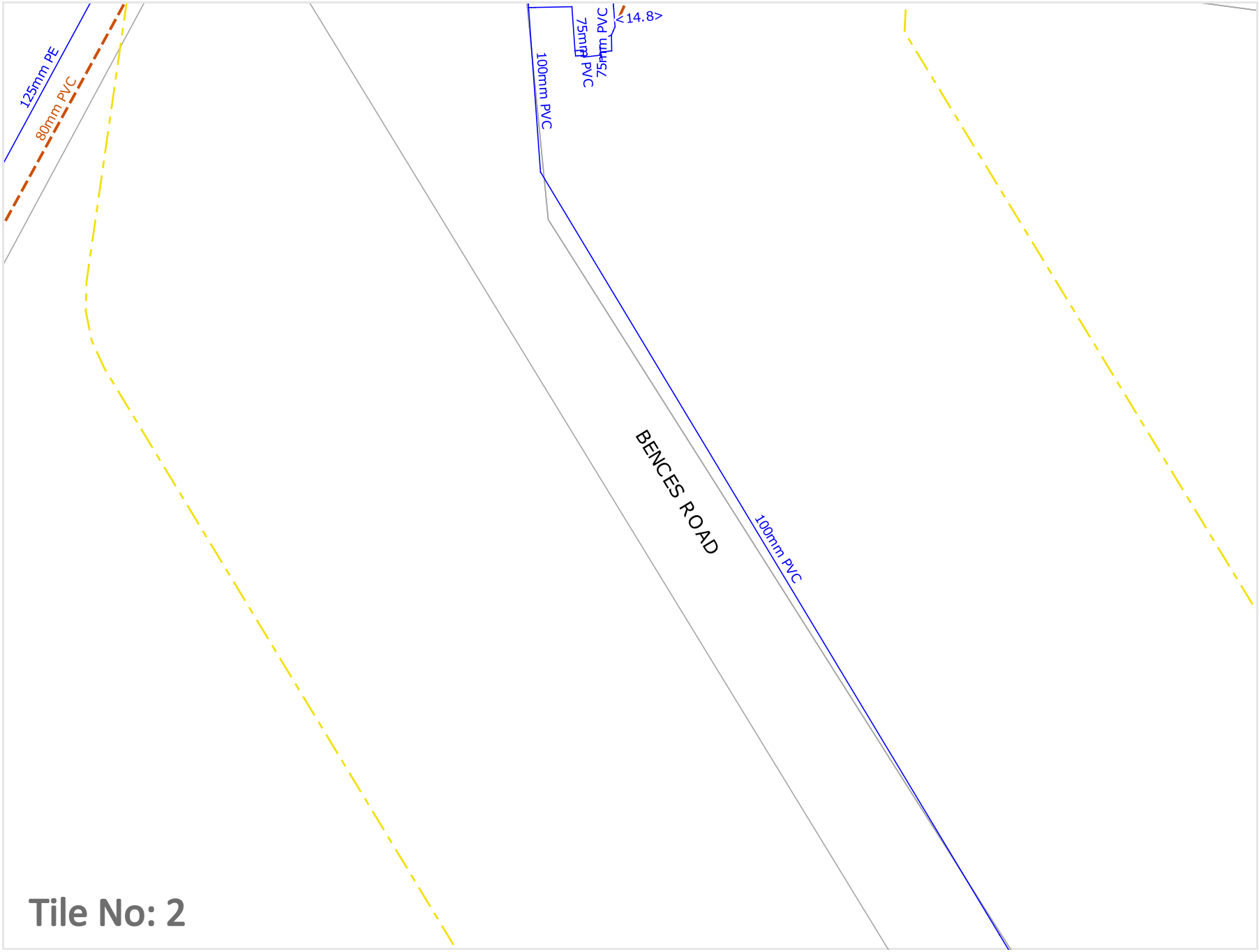
Expires: 30 Sep 2020

Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340



Legend:

- Gravity Sewer
- Pressure Sewer
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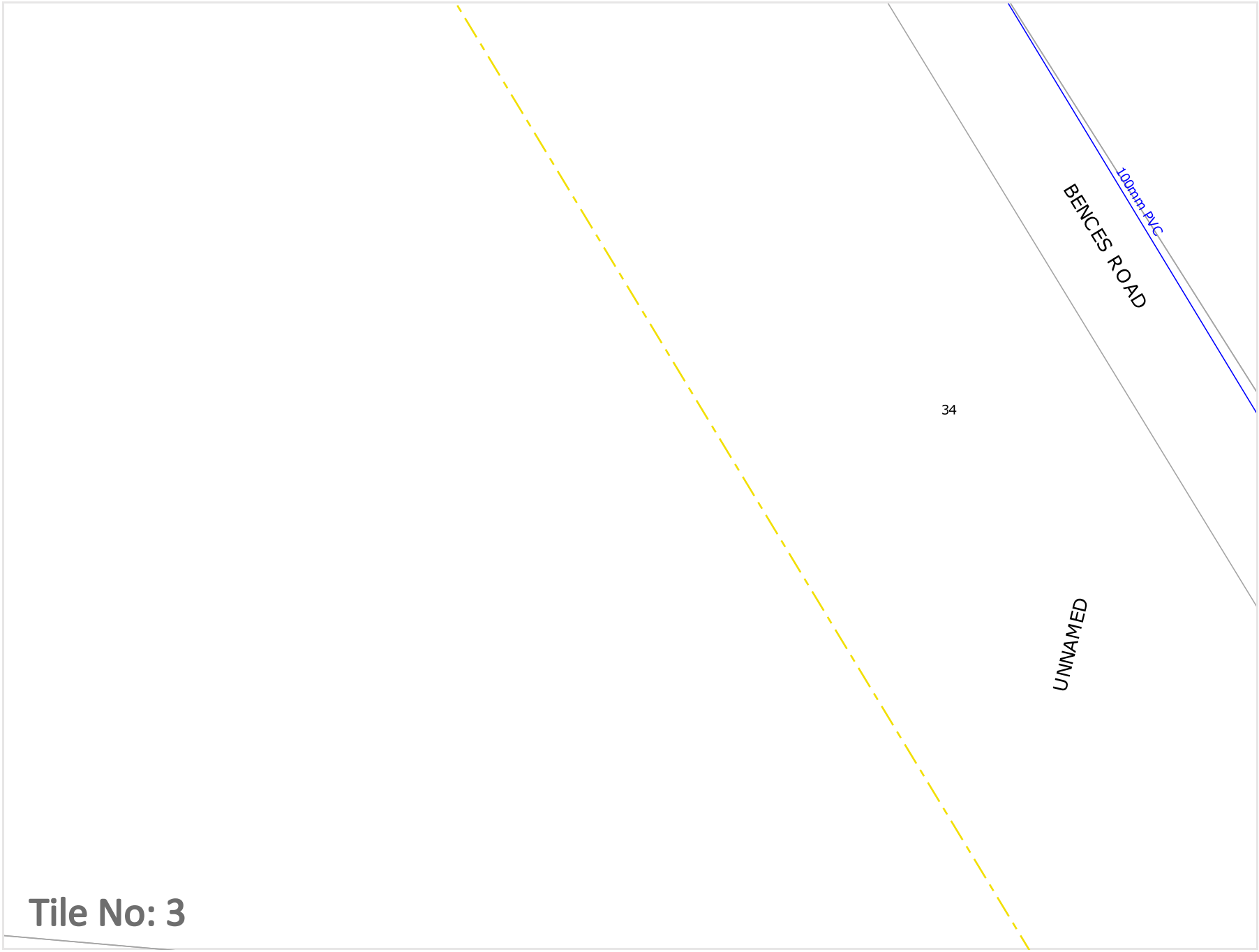
Tile No: 2

Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340



Legend:

- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
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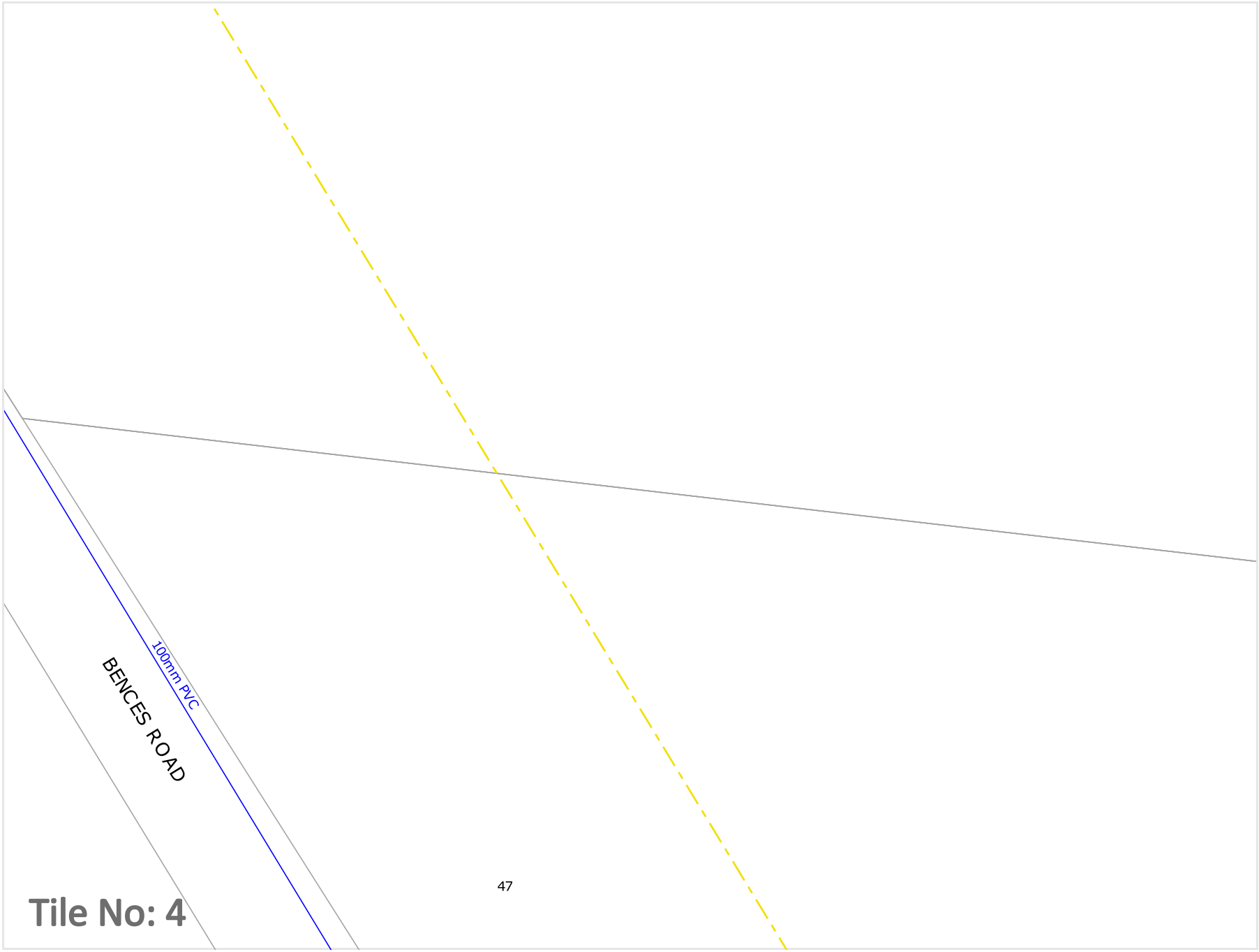
Tile No: 3

Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340



Legend:

- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
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- Abandoned Pipes
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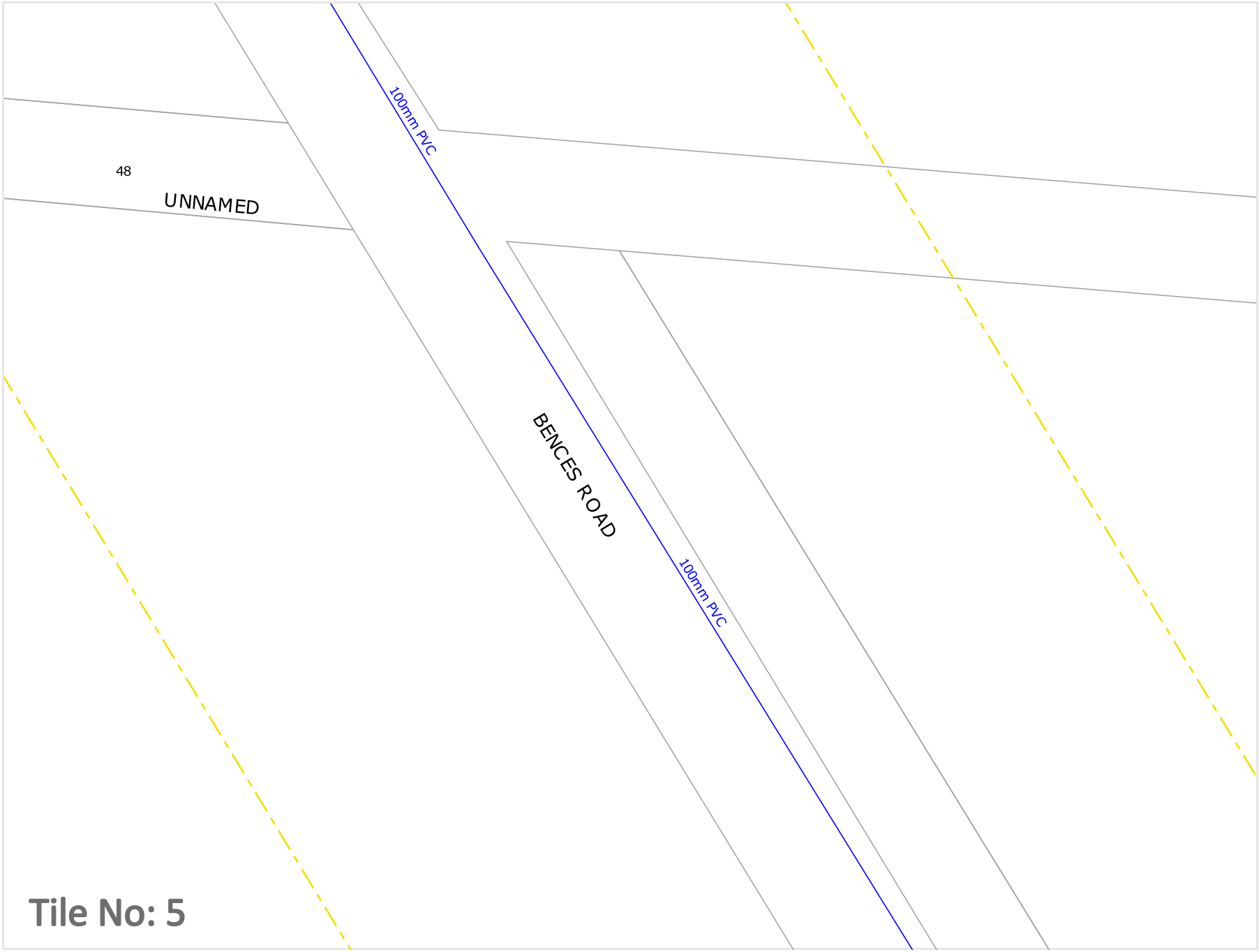

Legend:

- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
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Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340

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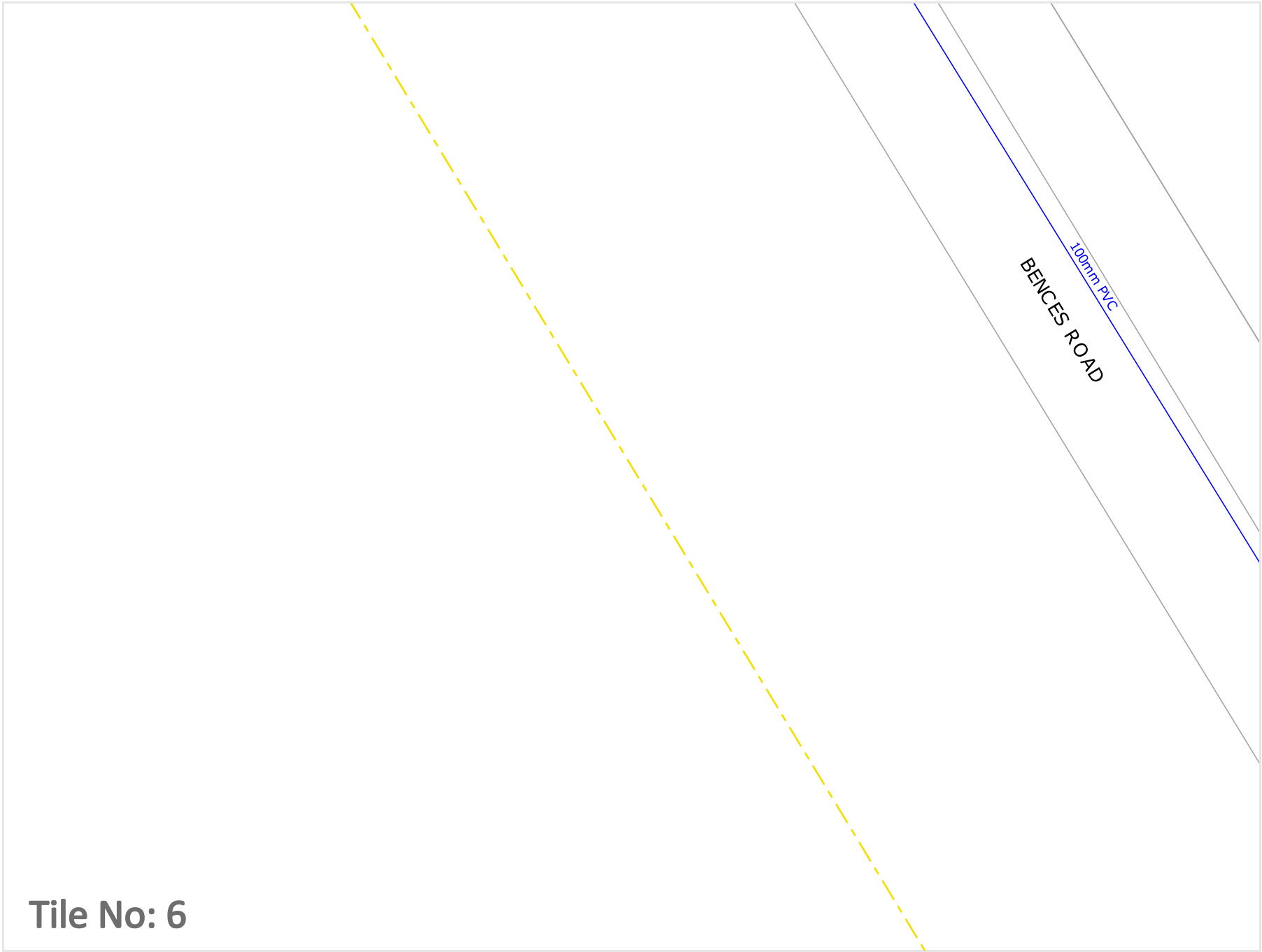

Legend:
- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
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- Water Raw
- Abandoned Pipes
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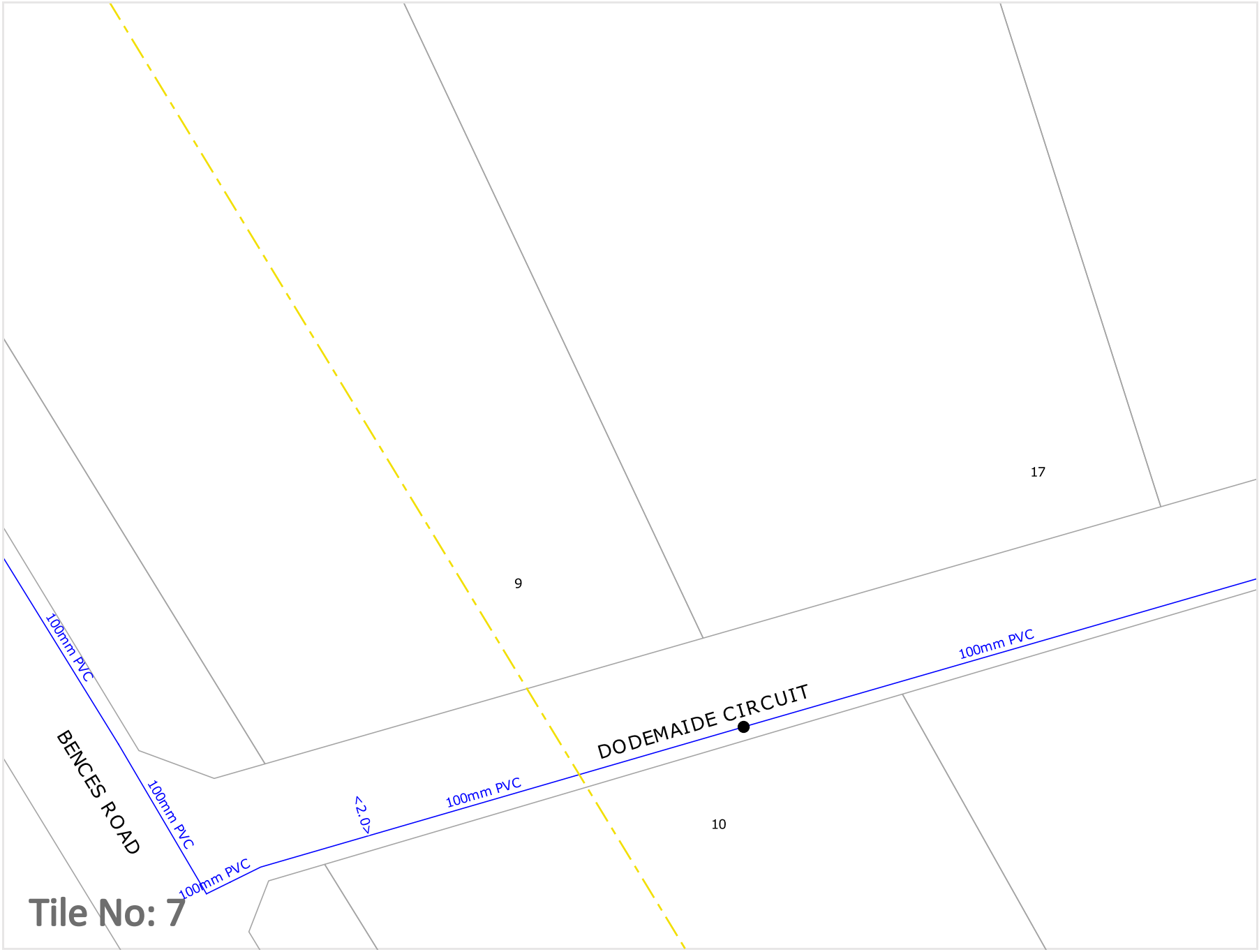
Tile No: 6

Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340



Legend:

- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
- Water Potable
- Water Recycled
- Water Raw
- Abandoned Pipes
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- <1.2> Estimated Offset

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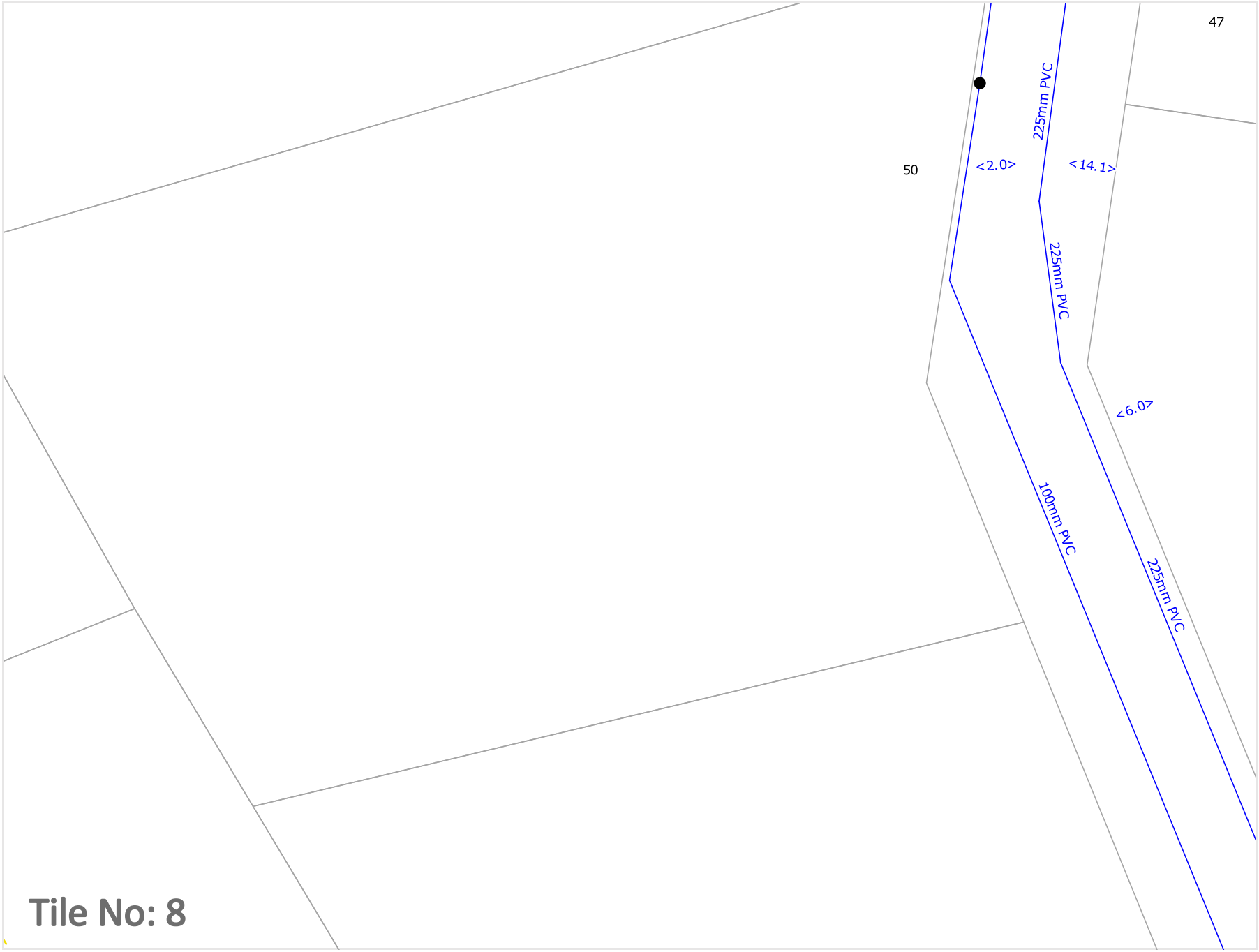
Location: Bences Road, Merrimu, VIC 3340



Legend:

- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
- Water Potable
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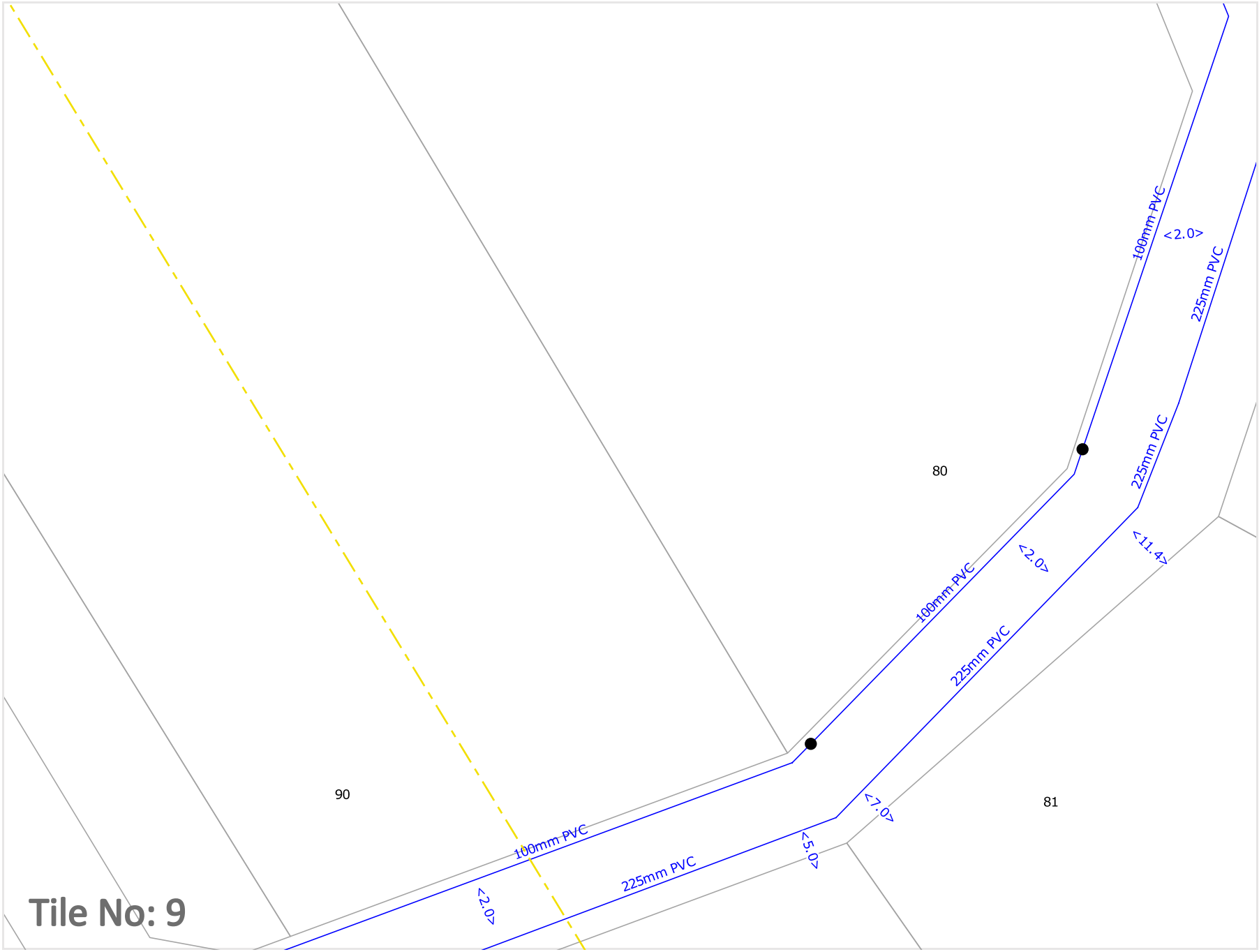
Expires: 30 Sep 2020

Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340



Tile No: 9

Legend:

- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
- Water Potable
- Water Recycled
- Water Raw
- Abandoned Pipes
- Surface Fitting/Manhole
- <1.2> Estimated Offset

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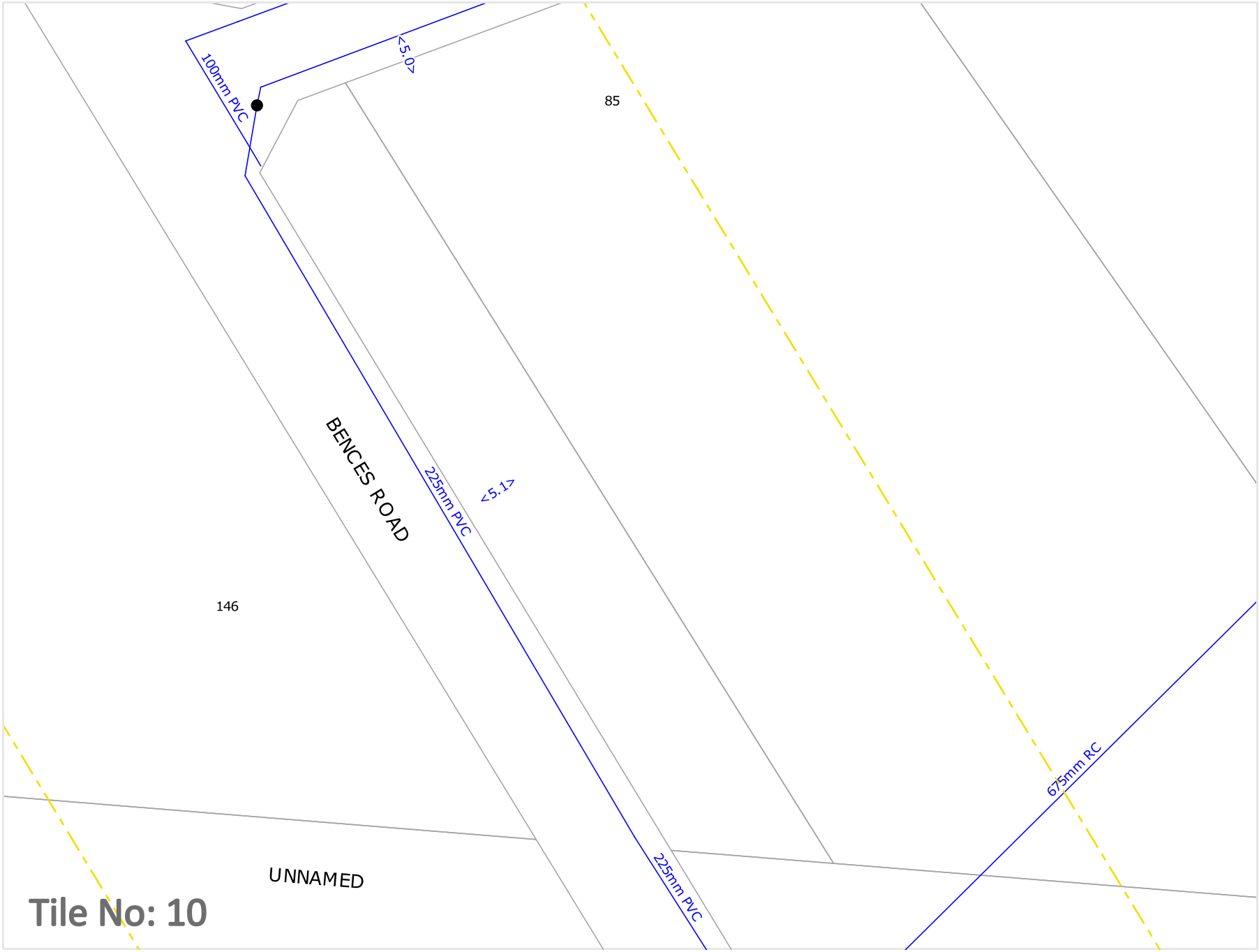

Legend:

- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
- Water Potable
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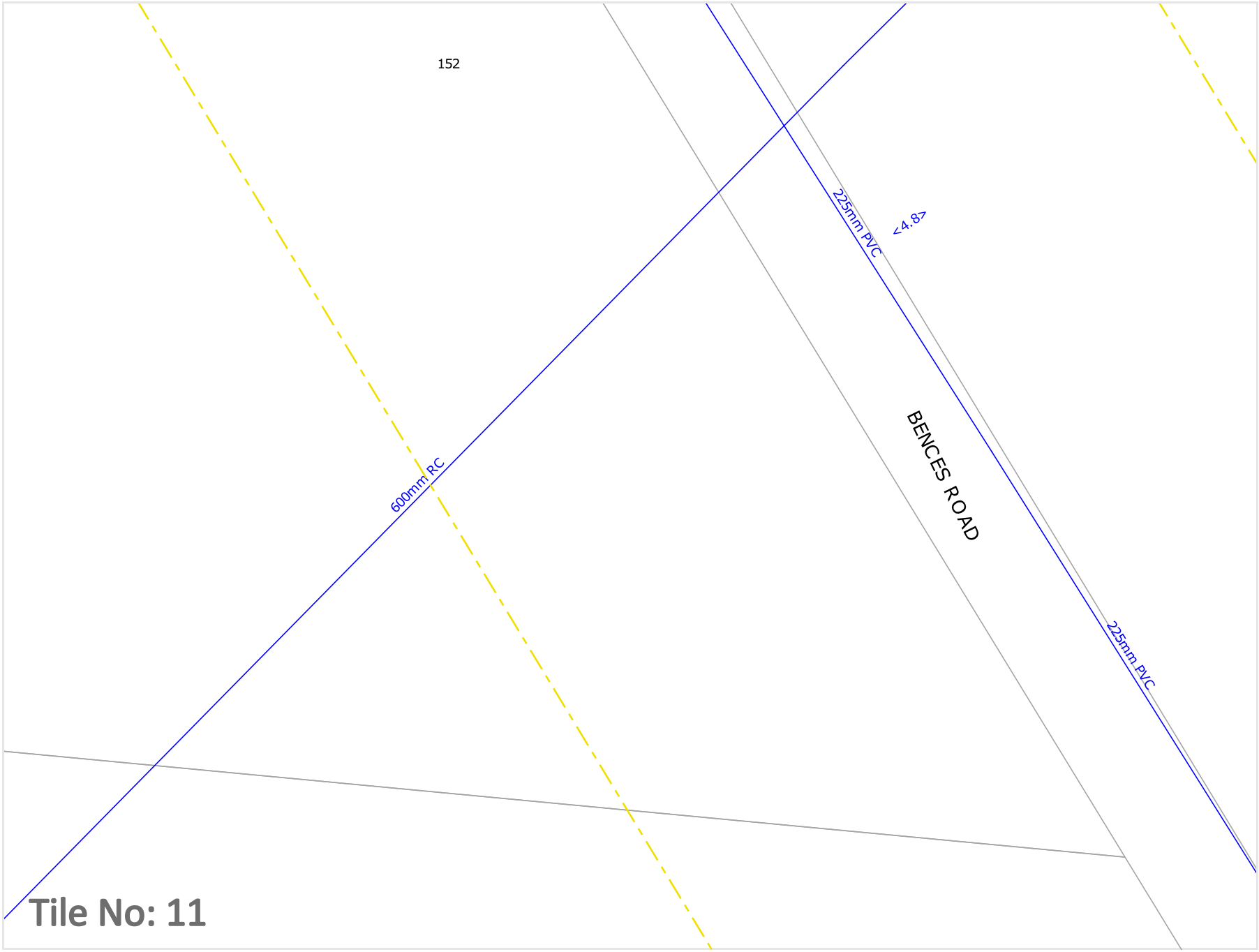
Expires: 30 Sep 2020

Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340



Legend:

- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
- Water Potable
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- Abandoned Pipes
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N

Scale: 1:1000
Expires: 30 Sep 2020

Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340

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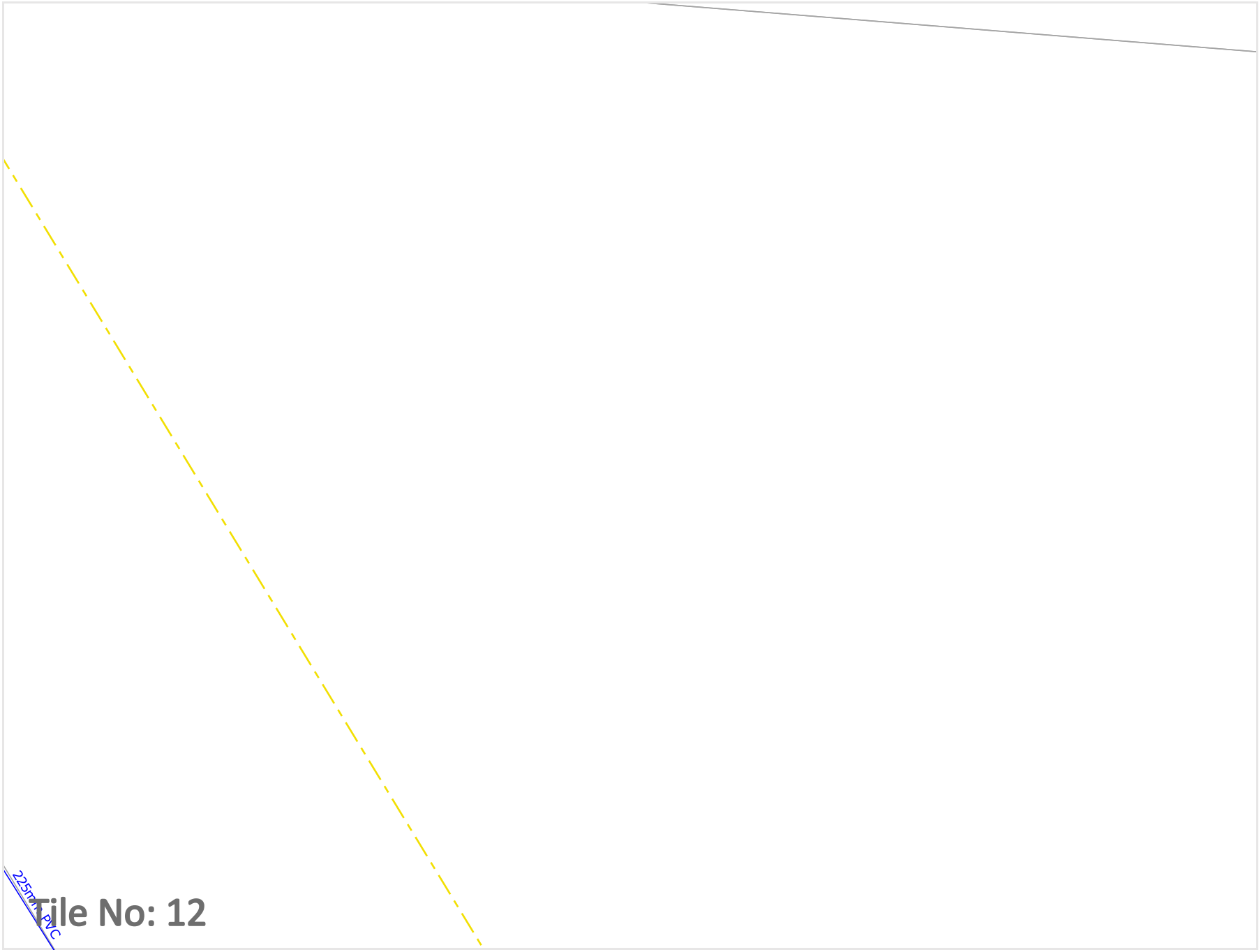

Legend:

- Gravity Sewer
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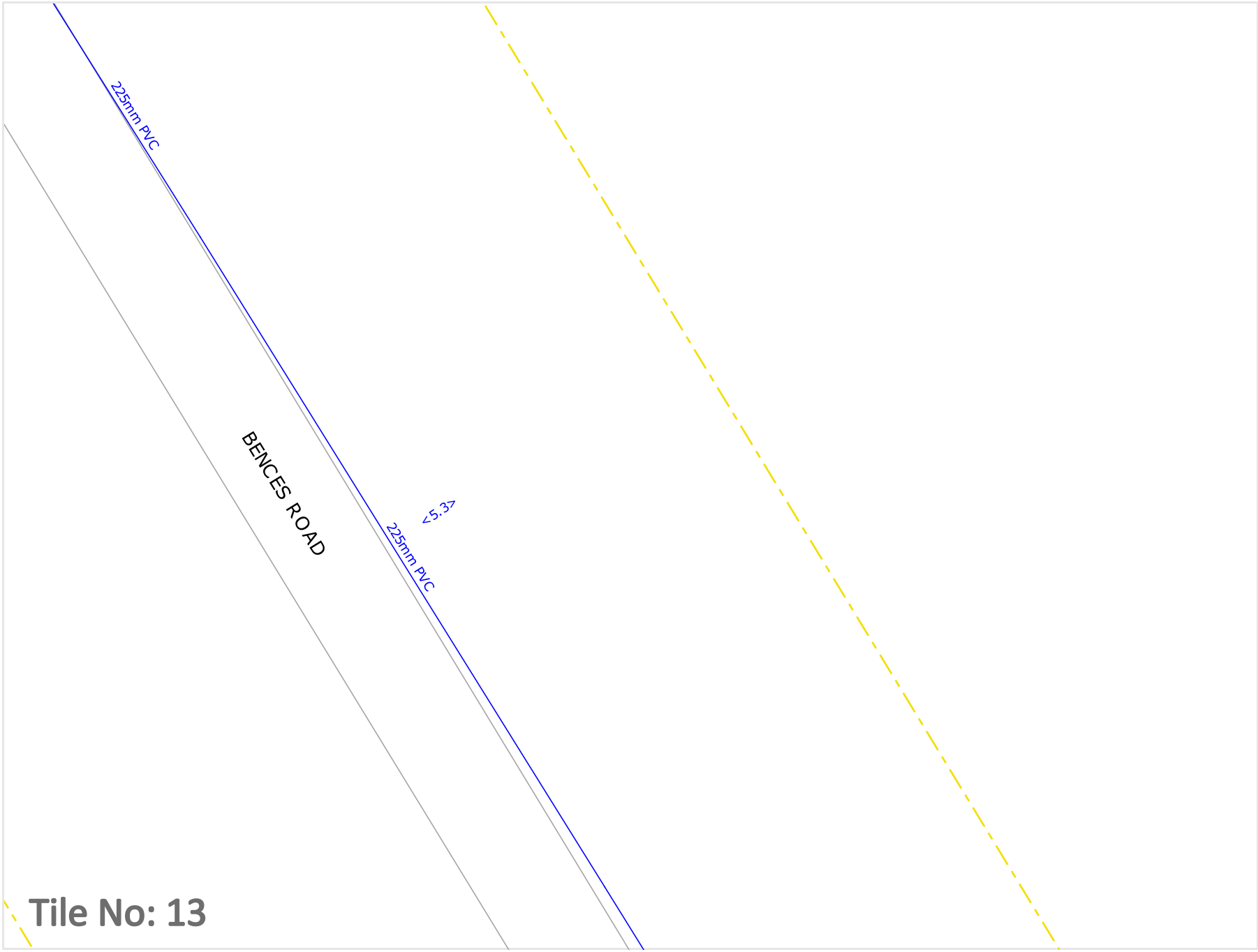

Legend:

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Sequence No: 101368858
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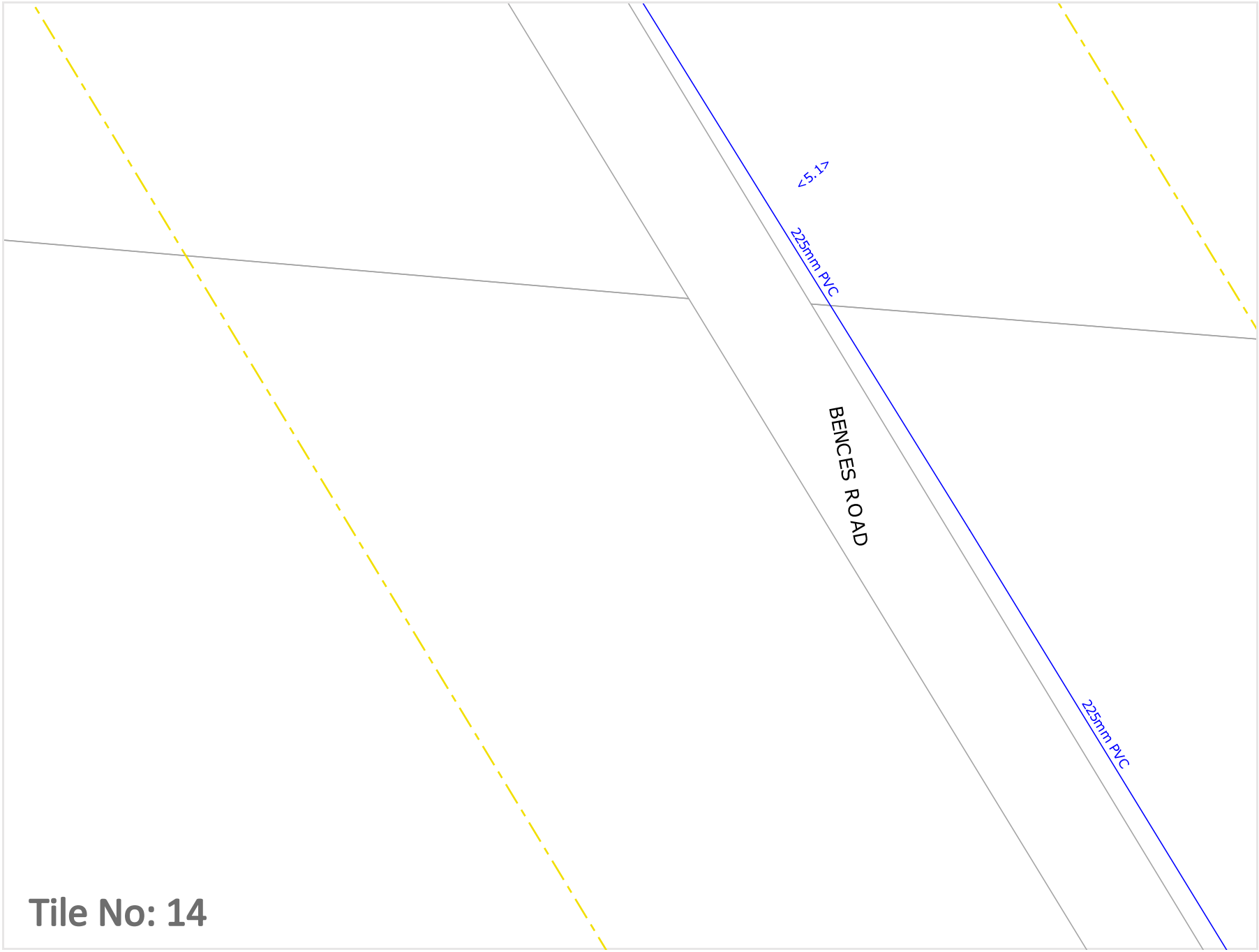

Legend:

- Gravity Sewer
- Pressure Sewer
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Tile No: 14

Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340

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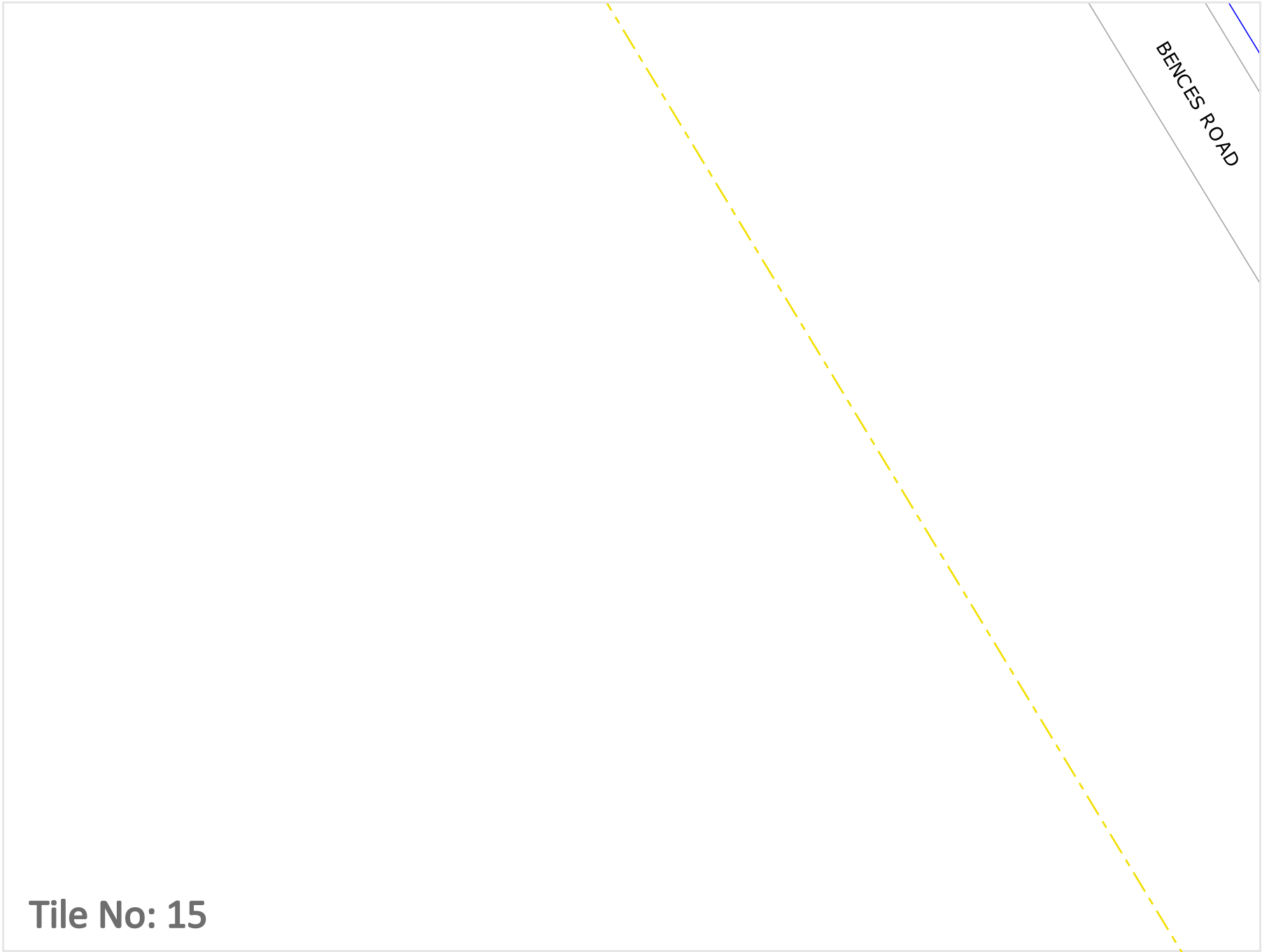

Legend:
- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
- Water Potable
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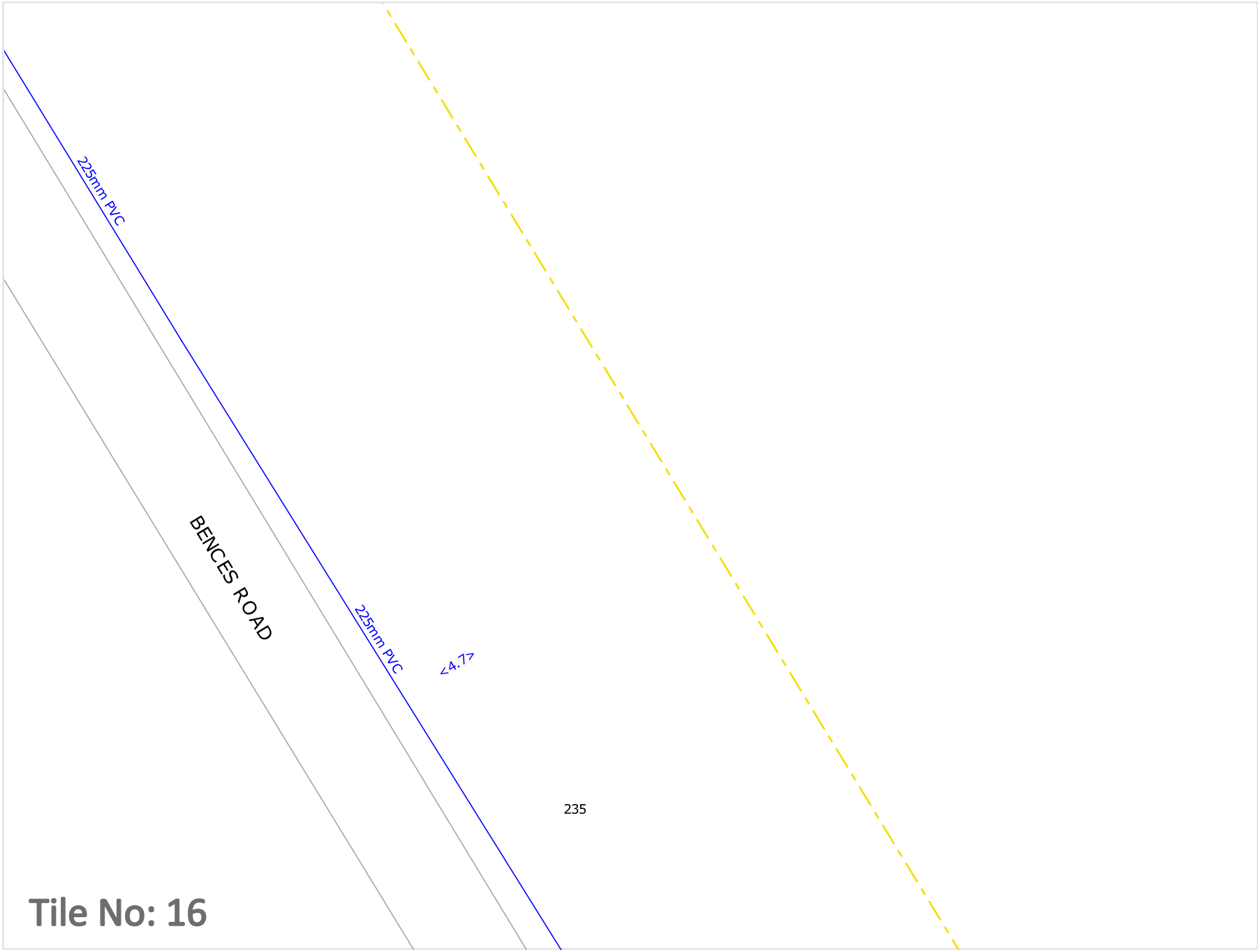
Tile No: 15

Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340



Tile No: 16

Legend:

- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
- Water Potable
- Water Recycled
- Water Raw
- Abandoned Pipes
- Surface Fitting/Manhole
- <1.2> Estimated Offset

NOTE: Assets labelled "AC" may contain asbestos material and therefore any works near these assets must be undertaken in accordance with OHS (Asbestos) Regulations 2007.

Due to the placement of Potable and Recycled pipes in the same trench, it may be difficult to distinguish the two asset types where they have been superimposed on the plans.

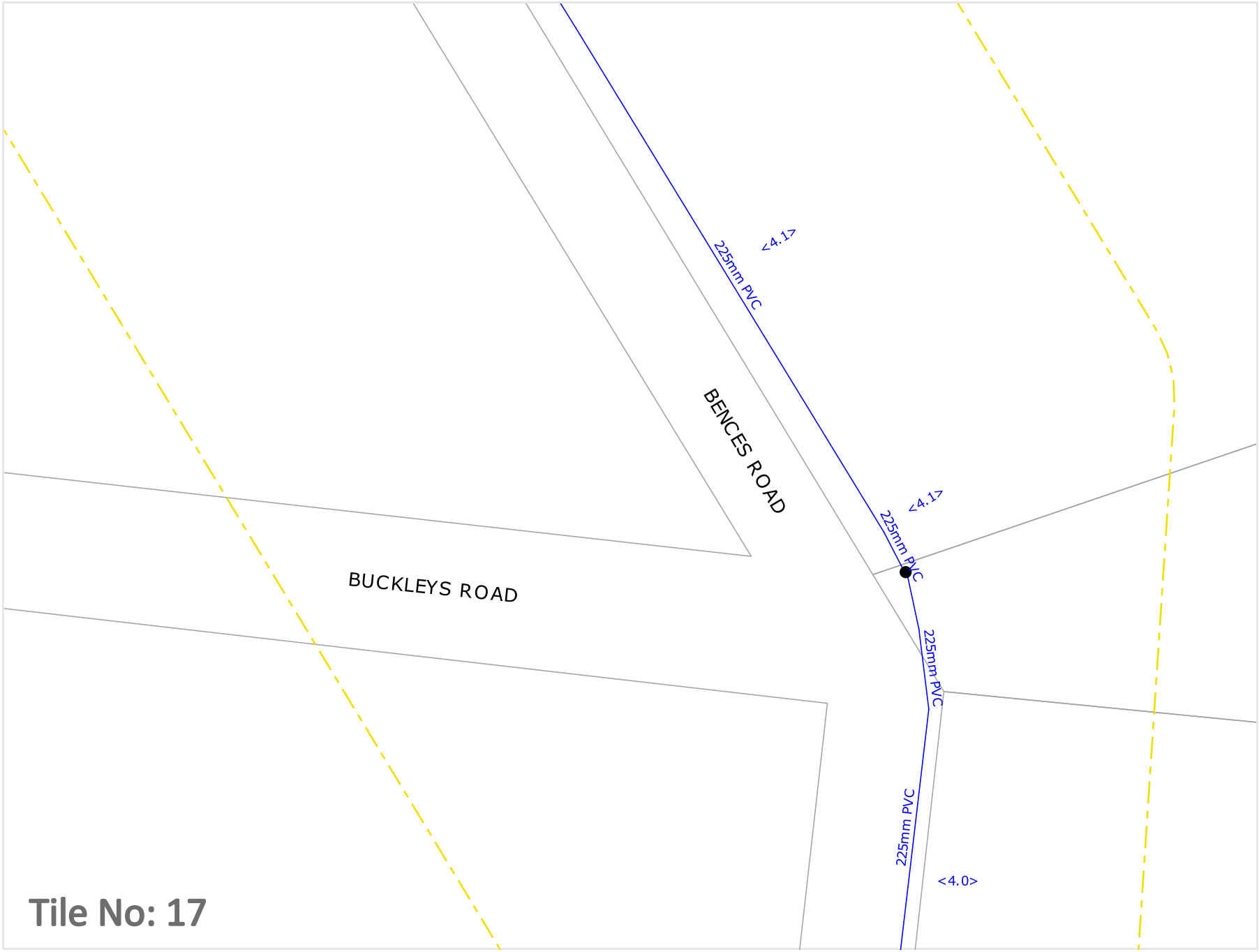
PLANS MUST BE PRINTED IN COLOUR

N

Scale: 1:1000
Expires: 30 Sep 2020

DISCLAIMER: Western Region Water Corporation and PelicanCorp do not guarantee or make any representation or warranty as to the accuracy of this plan or associated details. It is provided in good faith as the best information available at the time. Western Region Water Corporation and PelicanCorp therefore accept no liability for any loss or injury by any party as a result of any inaccuracy in these plans.

Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340



Legend:

- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
- Water Potable
- Water Recycled
- Water Raw
- Abandoned Pipes
- Surface Fitting/Manhole
- <1.2> Estimated Offset

NOTE: Assets labelled "AC" may contain asbestos material and therefore any works near these assets must be undertaken in accordance with OHS (Asbestos) Regulations 2007.

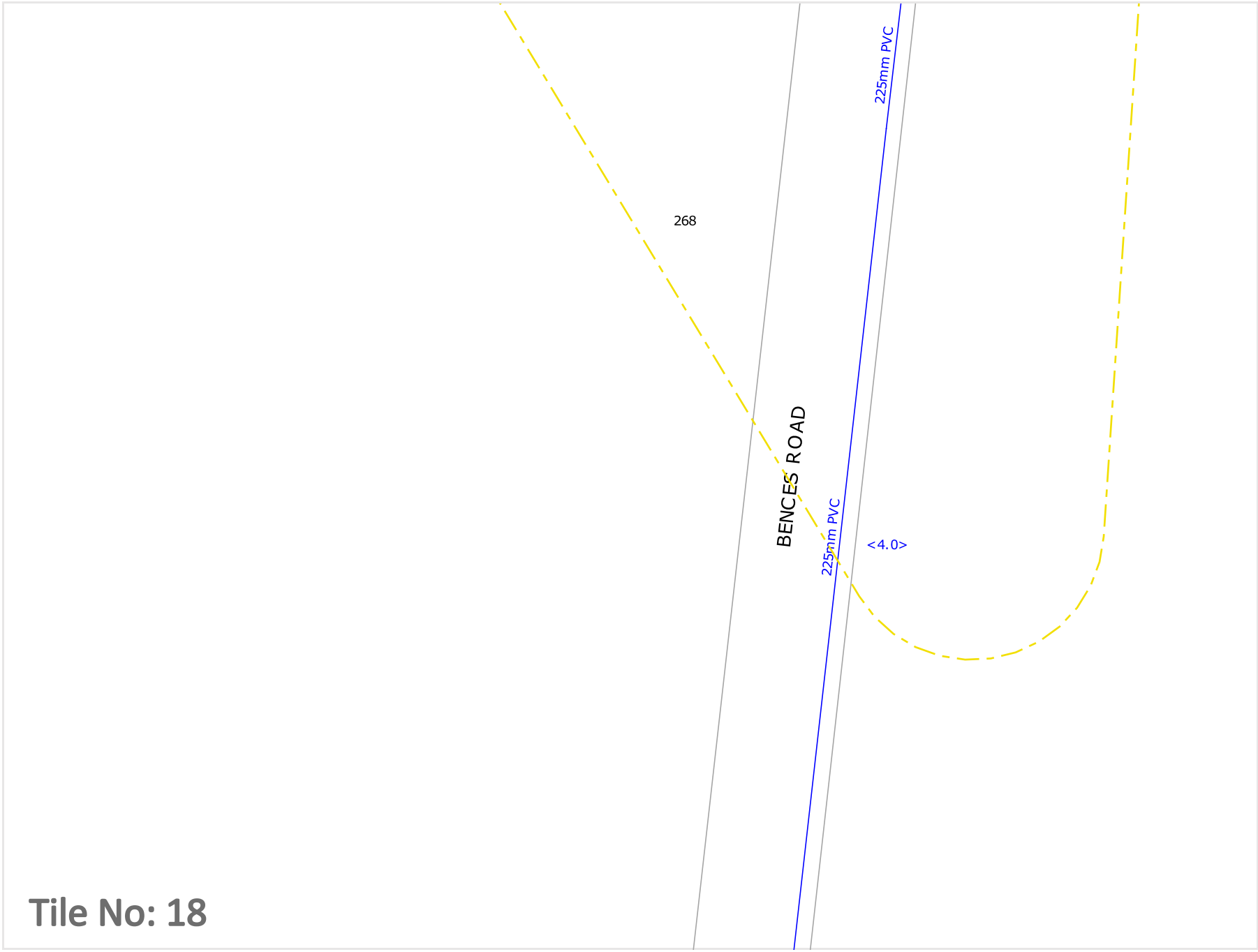
Due to the placement of Potable and Recycled pipes in the same trench, it may be difficult to distinguish the two asset types where they have been superimposed on the plans.

PLANS MUST BE PRINTED IN COLOUR

N

Scale: 1:1000
Expires: 30 Sep 2020

Sequence No: 101368858
Job No: 20172569
Location: Bences Road, Merrimu, VIC 3340



Legend:

- Gravity Sewer
- Pressure Sewer
- Vacuum Pipe
- Water Potable
- Water Recycled
- Water Raw
- Abandoned Pipes
- Surface Fitting/Manhole
- <1.2> Estimated Offset

NOTE: Assets labelled "AC" may contain asbestos material and therefore any works near these assets must be undertaken in accordance with OHS (Asbestos) Regulations 2007.

Due to the placement of Potable and Recycled pipes in the same trench, it may be difficult to distinguish the two asset types where they have been superimposed on the plans.

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N

Scale: 1:1000
Expires: 30 Sep 2020

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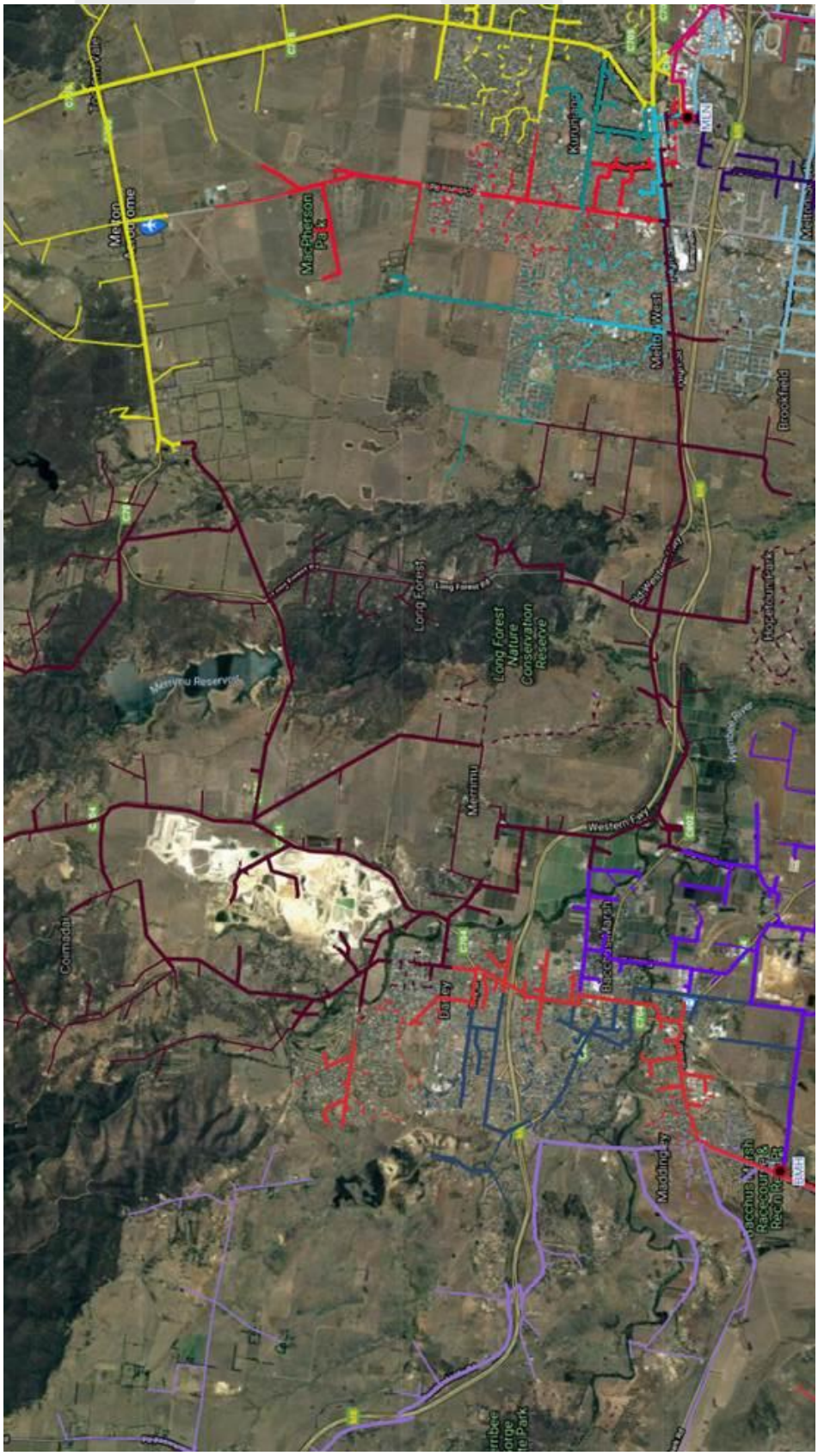
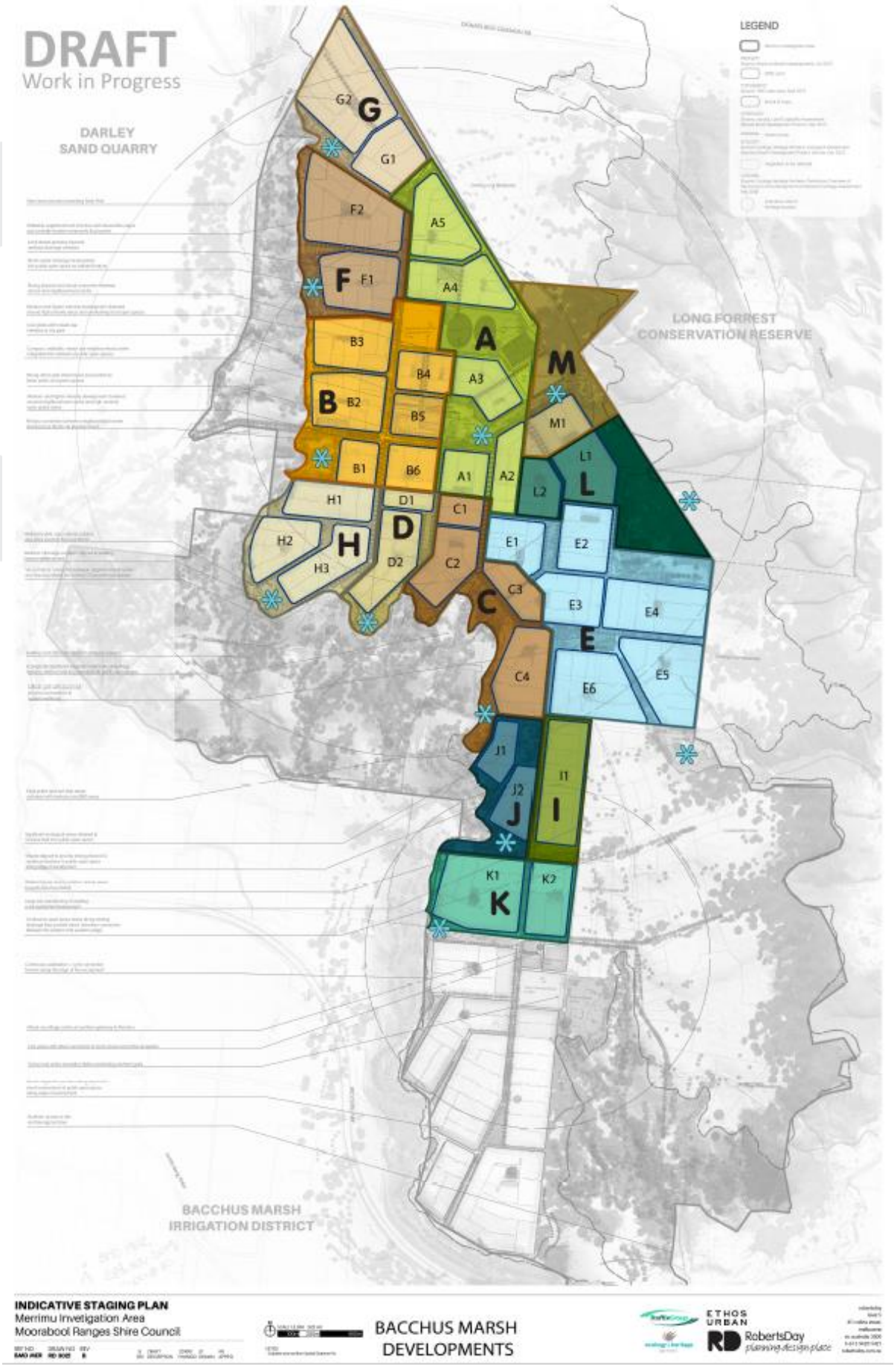
Tile No: 18

Appendix D Existing High Voltage Electrical Supply Network


Melton
Mt Cottrell
Merrimu Reservoir
Long Forest
Long Forest Nature Conservation Reserve
Merrimu
Western Fwy
Coimadai
Bacchus Marsh
Maddingley
Melton West
Brookfield
Kurunjang
Hopetoun Park
Ironbark Gorge
N

Appendix E Indicative Development Staging



INDICATIVE STAGING PLAN
Merrimu Investigation Area
Moorabool Ranges Shire Council

BACCHUS MARSH DEVELOPMENTS

ETHOS URBAN
RobertsDay planning design place

**Indicative staging map is only relevant to land owned by Bacchus Marsh Developments and does not reflect the entire PSP area*