
Charnwood Group Centre Stage 1 Site Investigation Report

Prepared for:

**Environment, Planning and
Sustainable Development
Directorate (EPSDD)**

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Executive Summary

JPS Engineering Consultants, commissioned by the Environment, Planning and Sustainable Development Directorate (EPSDD), conducted a Stage 1 Site Investigation Report for the Charnwood Group Centre. The site, which spans approximately 28,030m², is occupied by various businesses, car parking, and open space areas. The site is zoned for commercial and open space uses in line with the Territory Plan (2024).

This report assesses the suitability of the site for potential development or redevelopment in alignment with the latest Territory Plan objectives for revitalising group centres.

Considering the comprehensive evaluation of constraints and associated risk ratings, the subject site possesses some constraints and the need for additional information to inform a future development. Consequently, the subject site is considered viable for a potential future development, pending addressing the recommendations provided in the following section that respond to the above risks.

Based on the level of risk, recommendations have been listed in order of priority, to assist in programming the recommended works. The priority listing has been developed by assessing the importance of the additional investigations recommended and the effect that this work would have on other reports. A summary of the recommendations and necessary actions required to enable this site for development with the associated risk colour coded to that which is presented in section 8 of this report is provided below:

- **Contamination Management:** As no investigations are available on the potential of site contamination, nor confirmation of the appropriate removal of the underground service tank within the service station site, or contamination due to the former dry cleaner, an initial environmental study should be undertaken. The ACT EPA were contacted to receive this preliminary advice. This study will determine whether further studies are warranted, based on a potential development in the site. Measures should be taken as recommended in the environmental investigation to manage and remediate any potential contamination on site. EPA regulations and guidelines are to be strictly followed to ensure that development potential is not restricted by environmental conditions.
- **Stormwater Management:** Undertake a stormwater hydrological and hydraulic analysis for any proposed development in line with TCCS MIS documents. This includes the catchment and capacity analysis of the large northern area that appears to drain through the site. Validate whether the size and grade of the existing DN1350 and DN1800 stormwater mains in the western and south east portion of the site have sufficient capacity to accommodate a potential development's stormwater flows. As part of this analysis, the operation of the surcharge structure is to be verified in Block 20 Section 97 Charnwood, including its ability to discharge across Ginninderra Drive to Ginninderra Creek. Block 20 Section 97 is also to be assessed for its detention capacity. Analyse the potential development's drainage needs along with any on site detention/retention initiatives.
- **Trees and Vegetation:** Commission a tree survey and qualified arborist to assess the existing trees to ensure the protection of regulated trees on or near the subject site. Validate the tree assessment with the ACT Urban Treescapes Unit (TCCS) and the Conservator of Flora and Fauna, before proceeding with any activities that could impact existing trees. Furthermore, if trees are proposed to be removed to accommodate a proposed development, replacement trees at a ratio and location agreed to with TCCS, the Conservator and EPSDD Climate Change and Energy will need to be considered.
- **Urban Planning and Impact Study:** Undertake detailed urban planning design to comprehensively assess the impact and demand of any proposed development on services and infrastructure. This should also include an evaluation of how the development may interact with the adjacent residential and commercial properties to

ensure holistic compatibility. The proposal is to be made in accordance with EPSDD's Development Application process and consider the relevant District Strategies.

Geotechnical Investigation: Given the variable surface levels in comparison to the surrounding levels, and development timeframe of the group centre, a detailed geotechnical investigation should be undertaken, which is tailored to a proposed development. A geotechnical assessment is particularly important if basement parking is proposed. This will provide accurate data for foundation/pavement design and construction planning.

- **Ecological Assessment:** Liaise with the Conservator of Flora and Fauna to establish a scope of work to address likely ecological constraints to development on the site during the planning phase. This may need to be undertaken in conjunction with a tree assessment to determine potential habitat areas. Preliminary consultation with the Conservator of Flora and Fauna have advised that an ecological impact assessment should be completed for the site.
- **Electrical Service:** Determine the best connection point to service the site, once development demands are calculated. Address any necessary upgrades to the electrical infrastructure to service a potential development/redevelopment. This is to be undertaken through collaborative consultation with Evoenergy. If vulnerable use is proposed on the site, seek advice from Evoenergy as to whether step and touch potential test needs to be undertaken on either of the four substations within or in proximity of the subject site.
- **Easements:** An appropriate easement width and protection zone is to be determined for the water mains that runs through Block 46 and Block 21 Section 95. Easements over the electrical in Block 21 and Block 46 is also required. In addition to these, the water main easement in the northern portion of Block 47 Section 95 where a water main is shown to be abandoned should be de-registered. These easement adjustments are to be confirmed with Icon Water and Evoenergy. Once this is done, if the water and electricity mains are intended to remain within the block, a new deposited plan is to be produced for the affected blocks.
- **Traffic Impact:** In accordance with the TCCS Guidelines for Transport Impact Assessment, either a Transport Effects Form (TEF) or Transport Assessment Report (TAR), will be required to be undertaken, depending on the scale and intended use of a future potential development. Evaluate the potential impact of increased traffic on the existing transport network and parking supply in the group centre as part of this work.
- **Potable Water Supply:** For a potable water connection to a potential development within the site, work closely with Icon Water to establish a connection to their existing DN150 main network. This is to be established once the development and its potable water demand is known. Icon Water generally do not allow service connections to large distribution water mains and for this reason, a connection to the existing DN300 main on Lhotsky Street and DN375 main on Tillyard Drive is unlikely. Determine best locations for additional hydrants on existing mains to meet the Fire Risk Type of the development. Ensure compliance with all requirements and standards set by Icon Water and ACT Fire & Rescue throughout the preliminary and detailed design process.
- **Sewer Service:** To establish a sewer service for potential development within the site, collaboration with Icon Water is essential. Connections should be made to their existing DN300 mains in the west or east portions of the site, the DN150 main network in the centre of the subject site, or the receiving DN525 main in the northern verge of Lhotsky Street. The connection point will likely be to one of the existing manholes over these mains. The sewer connection point is to be established once the development is known, demand calculated, and detailed survey information available. Ensure compliance with all requirements and standards set by Icon Water throughout the preliminary and detailed design process.

- **Service Location Confirmation:** Confirm the exact locations of existing services to ensure accurate planning and prevent any conflicts during the development process. This is to be undertaken using non-destructive methods by the developer.

- **Telecommunications Service:** Liaise with NBN or Optus for a telecommunications service connection to a potential development, if required.

This site investigation report is produced for information only. Developers are required to undertake their own assessment of the site prior to lodging a Development Application with EPSDD.

1 Introduction

JPS Engineering Consultants have been commissioned by the Environment, Planning and Sustainable Development Directorate (EPSDD) to undertake a Stage 1 Site Investigation Report for the Charnwood Group Centre, hereafter referred to as the 'subject site' or simply the 'site'. The purpose of this investigation is to provide a comprehensive understanding of the site's characteristics and development opportunities. This will then inform a strategy to enhance the group centre's activation and revitalisation, aligning with the district strategy implementation as an important community meeting place that requires strategic planning to ensure its ongoing viability within the broader network.

The subject site, is occupied by various businesses, car parking and open space areas, all of which spans approximately 28,030m² in total. The site is bounded by Lhotsky Street to the south, Tillyard Drive to the east, an open space corridor and residential area to the north, and a medium density residential area to the west. A public road network is internal to the subject site providing access to car parking, with two of the roads named Charnwood Place and an eastern road off Tillyard Drive, Verge Place.

Refer to Figure 1 for an aerial photograph showing the area of this study outlined and shaded in red with red place marker.



Figure 1 – Locality Plan of Subject Site (ACTmapi, 2024)

The purpose of this Site Investigation Report is to evaluate the suitability of various areas within the subject site for future development or redevelopment, in alignment with the latest Territory Plan objectives for revitalising group centres. This report aims to offer comprehensive information to both the ACT Government and any potential developers, identifying areas that are appropriate for development. The primary objectives of this report therefore are as follows:

1. Establish Effective Communication: Initiate engagement with relevant stakeholders to establish clear communication channels. This will enable to gain an initial understanding of the site's condition and the requirements necessary to support any proposed development within the subject site area.
2. Evaluate Site Constraints: Identify any limitations imposed by current site conditions. This includes considering data from proposed infrastructure capital works, as well as assessing

road, stormwater, and service requirements gathered through stakeholder consultations and available data.

3. **Recommend Necessary Works:** Identify both on site and off site work that should be undertaken prior to any proposed development within the subject site. Provide recommendations for effectively addressing these requirements, in line with latest standards and guidelines.
4. **Assess Further Investigations:** Identify any additional investigations through a gap analysis that may be necessary to ensure a comprehensive understanding of the site and its implications for any future development within the subject site area.
5. **Determine Infrastructure and Services Requirements:** Evaluate the infrastructure and services required to allow any portion of the site's release. Additionally, outline any associated risks related to these components.

A detailed scope of works can be found in Section 4 of this report, outlining the specific tasks and activities that will be undertaken to achieve these objectives.

2 Land Use and Planning Framework

The subject site consists of one section – Section 95 Charnwood with two internal public road corridors, both named Charnwood Place and another internal road, Verge Place that enters from the east off Tillyard Drive. Section 95 comprises of the following land uses under the Territory Plan (2024):

- CZ2: Business Zone
- CZ1: Core Zone
- PRZ1: Urban Open Space

An excerpt of the Territory Plan map is shown in Figure 2, which depicts all of these zones within the subject site area.

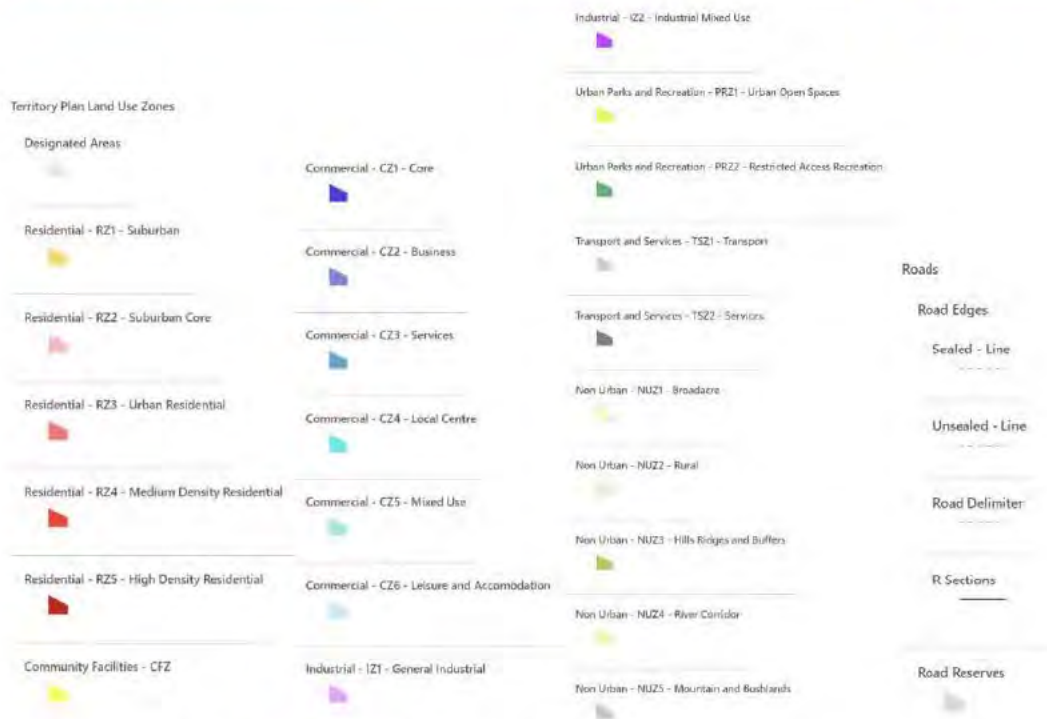


Figure 2 – Territory Plan Land Use Map from ACTmapi

The following appreciation of the land use and planning framework is based on the ACT Legislation Register website, Territory Plan 2023, and the Planning Act 2023. As the subject site is predominantly commercial, based on the ACT Legislation Register website, the following zone policy outcomes are applicable to the commercial components of the subject site:

1. Commercial zones primarily serve commercial developments, emphasising economic activity and providing land for commercial services. In areas not designated as mixed-use, other complementary uses are allowed but should not detract from the zone's commercial nature.
2. Development should align with the zone hierarchy in scale and character.

Specifically regarding CZ1 – Core Zone, the following policy outcomes are to be achieved:

1. Maintain a mix of predominantly commercial land uses to foster a diverse and dynamic environment.
2. Ensure convenient access to a variety of retail and service outlets.
3. Foster vibrant and engaging street fronts, promoting activity during evenings and weekends.
4. Create an appealing, safe, and well-lit pedestrian environment with easy access to public transportation.
5. Uphold high standards of urban design using sustainable materials, ensuring design consistency and compatibility among buildings.
6. Support business investment and job creation.
7. Encourage the development of cultural and community identity relevant to the area.
8. Enhance public spaces by promoting active uses on ground floors that connect with open spaces, pedestrian paths, and cycling networks to encourage active lifestyles.

Specifically regarding CZ2 – Business Zone, the following policy outcomes are to be achieved:

1. Ensure office and business sites are easily accessible to public transport, convenience retail, and services.
2. Offer a diverse range of office accommodation sizes and locations in proximity to the retail core.
3. Promote the availability of convenient outlets for goods, services, and facilities to meet workforce needs.
4. Develop vibrant and lively pedestrian routes and public spaces.
5. Achieve a high-quality urban environment through sustainable design and materials, maintaining a high level of amenity for employees and the public.
6. Create a high-quality public space by facilitating active uses on the ground floor that connect with the wider open space, pedestrian, and cycle networks, promoting active travel and living.
7. Foster an attractive, safe, well-lit, and connected pedestrian environment with convenient access to public transport.

Reference is made to the Territory Plan 2023, specifically, the Part E Zone Policies, E2 – Commercial Zones Policy. The land uses/development types listed in Figure 3 below require a development application unless they meet the 'exempt development' definition of the Planning Act 2023. Uses not listed in Figure 3 are prohibited and additional land uses specified as prohibited development are in District Policies. Development of prohibited uses may be considered under certain limited circumstances as outlined under Part 7.3 of the Planning Act 2023.

Land Use / Development Type	CZ1	CZ2	CZ3	CZ4	CZ5	CZ6
ancillary use	Y	Y	Y	Y	Y	Y
animal care facility	-	-	Y	Y	-	-

Land Use / Development Type	CZ1	CZ2	CZ3	CZ4	CZ5	CZ6
aquatic recreation facility	-	-	-	-	-	Y
boarding house	-	-	-	-	Y	-
bulky goods retailing	Y	Y	Y	Y	Y	-
business agency	Y	Y	Y	Y	Y	-
café	Y	Y	Y	Y	Y	Y
car park	Y	Y	Y	Y	Y	Y
caravan park/camping ground	-	-	-	-	-	Y
caretakers' residence	-	-	-	-	-	Y
civic administration	Y	Y	Y	-	-	-
club	Y	Y	Y	Y	-	Y
co-housing	Y	Y	Y	Y	Y	-
commercial accommodation use	Y	Y	Y	-	-	Y
communications facility	Y	Y	Y	Y	Y	-
community activity centre	Y	Y	Y	Y	Y	Y
Community housing	Y	Y	Y	Y	Y	-
community theatre	Y	Y	Y	Y	Y	Y
complementary use	Y	Y	Y	Y	Y	Y
cultural facility	Y	Y	Y	Y	Y	Y
consolidation	Y	Y	Y	Y	Y	Y
craft workshop	Y	Y	Y	Y	-	Y
demolition	Y	Y	Y	Y	Y	Y
drink establishment	Y	Y	Y	Y	Y	Y
drive-in cinema	-	-	-	-	-	Y
early childhood education and care	Y	Y	Y	Y	Y	Y
educational establishment	Y	Y	Y	Y	Y	Y
emergency services facility	Y	Y	Y	-	Y	-
financial establishment	Y	Y	Y	Y	Y	-
freight transport facility	-	-	Y	-	-	-
funeral parlour	-	-	Y	-	-	-
group or organised camp	-	-	-	-	-	Y
guest house	Y	Y	Y	Y	Y	Y
health facility	Y	Y	Y	Y	Y	Y
home business	Y	Y	Y	Y	Y	-
hotel / motel	Y	Y	Y	-	Y	Y
hospital	Y	Y	Y	Y	Y	Y
indoor entertainment facility	Y	Y	Y	Y	Y	Y
indoor recreation facility	Y	Y	Y	Y	Y	Y
industrial trades	-	-	Y	Y	-	-
light industry	Y	-	Y	Y	-	-
light rail	Y	Y	Y	-	Y	Y
minor road	Y	Y	Y	Y	Y	Y
minor use	Y	Y	Y	Y	Y	Y
municipal depot	-	-	Y	Y	-	-
multi-unit housing	Y	Y	Y	Y	Y	-
office	Y	Y	Y	Y	Y	-

Land Use / Development Type	CZ1	CZ2	CZ3	CZ4	CZ5	CZ6
outdoor recreation facility	Y	Y	Y	-	Y	Y
overnight camping area	-	-	-	-	-	Y
parkland	Y	Y	Y	Y	Y	Y
pedestrian plaza	Y	Y	Y	Y	Y	Y
personal service	Y	Y	Y	Y	Y	Y
place of assembly	Y	Y	Y	-	Y	Y
place of worship	Y	Y	Y	Y	Y	Y
produce market	-	-	Y	Y	-	-
public agency	Y	Y	Y	Y	Y	-
recyclable materials collection	Y	Y	Y	Y	-	-
religious associated use	Y	Y	Y	Y	Y	Y
residential care accommodation	Y	Y	Y	Y	Y	-
restaurant	Y	Y	Y	Y	Y	Y
retail plant nursery	Y	Y	Y	Y	Y	Y
retirement village	Y	Y	Y	Y	Y	-
secondary residence	Y	Y	Y	Y	Y	-
service station	Y		Y	Y	-	-
shop	Y	Y	Y	Y	Y	Y
sign	Y	Y	Y	Y	Y	Y
single dwelling housing	Y	Y	Y	Y	Y	-
Storage facility	-	-	Y	-	-	-
subdivision	Y	Y	Y	Y	Y	Y
supermarket	Y	Y	Y	Y	Y	Y
supportive housing	Y	Y	Y	Y	Y	-
take-away food shop	Y	Y	Y	Y	Y	Y
temporary use	Y	Y	Y	Y	Y	Y
tourist facility	Y	Y	Y	-	-	Y
tourist resort	Y	Y	Y	-	-	Y
transport facility	Y	Y	Y	Y	Y	Y
varying a lease	Y	Y	Y	Y	Y	Y
vehicle sales	-	-	Y	-	-	-
veterinary clinic	Y	Y	Y	Y	Y	Y
veterinary hospital	-	-	Y	Y	-	-
warehouse	-	-	Y	-	-	-
zoological facility	-	-	-	-	-	Y

Figure 3 – Permissible Land Uses and Development Types in Commercial Zones (Territory Plan, 2024)

Relevant to the PRZ1: Urban Open Space zoned area within Block 11 and Block 29 Section 95 of the subject site, the following zone policy outcomes are to be achieved:

1. Provide a high-quality, well-distributed network of parks and open spaces that address the recreational and social needs of the community.
2. Establish diverse settings that support a range of recreational and leisure activities while protecting flora and fauna habitats, ecological corridors, natural and cultural features, healthy waterways, and landscape character.
3. Facilitate stormwater drainage and protect water quality, stream flows, and stream environments in a sustainable and environmentally responsible manner, offering opportunities for safe community interaction with and interpretation of the natural environment.

4. Allow ancillary uses that support the care, management, and enjoyment of open spaces, including park maintenance depots and small-scale community activity centres.
5. Promote development that does not adversely affect the landscape or scenic quality, ecological connectivity, cultural values, adequacy of open space for other purposes, access to open space, or the amenity of adjoining residents.
6. Ensure integrated land and water planning and management.
7. Provide safe and convenient pedestrian and cycling access to urban open spaces to promote active living.

Reference is made to the Territory Plan, specifically, the Part E Zone Policies, E5 – Parks and Recreation Zones Policy. The land uses/development types listed in Figure 4 below require a development application unless they meet the ‘exempt development’ definition of the Planning Act 2024. Uses not listed in Figure 4 are prohibited and additional land uses specified as prohibited development are in District Policies.

Land Use / Development Type	PRZ1	PRZ2
ancillary use	Y	Y
aquatic recreation facility	Y	Y
carpark	-	Y
club	-	Y
communications facility	Y	Y
community activity centre	Y	Y
complementary Use	Y	Y
consolidation	Y	Y
demolition	Y	Y
distribution reservoir	Y	Y
guest house	-	Y
hotel	-	Y
indoor recreation facility	-	Y
major electricity storage facility	Y	Y
major electricity sub-station	Y	Y
major gross pollutant trap	Y	Y
major pump station	Y	Y
major road	Y	Y
major service conduits	Y	Y
minor road	Y	Y
minor use	Y	Y
motel	-	Y
municipal depot	Y	-
outdoor recreation facility	Y	Y
parkland	Y	Y
playing field	Y	Y
power generation station	Y	Y
public agency	-	Y

Land Use / Development Type	PRZ1	PRZ2
sign	Y	Y
subdivision	Y	Y
temporary use	Y	Y
treatment plant	Y	Y
urban lake, pond and/or retardation basin	Y	Y
utility hydrogen production facility	Y	Y
varying a lease where not prohibited.	Y	Y
water storage dam	Y	Y

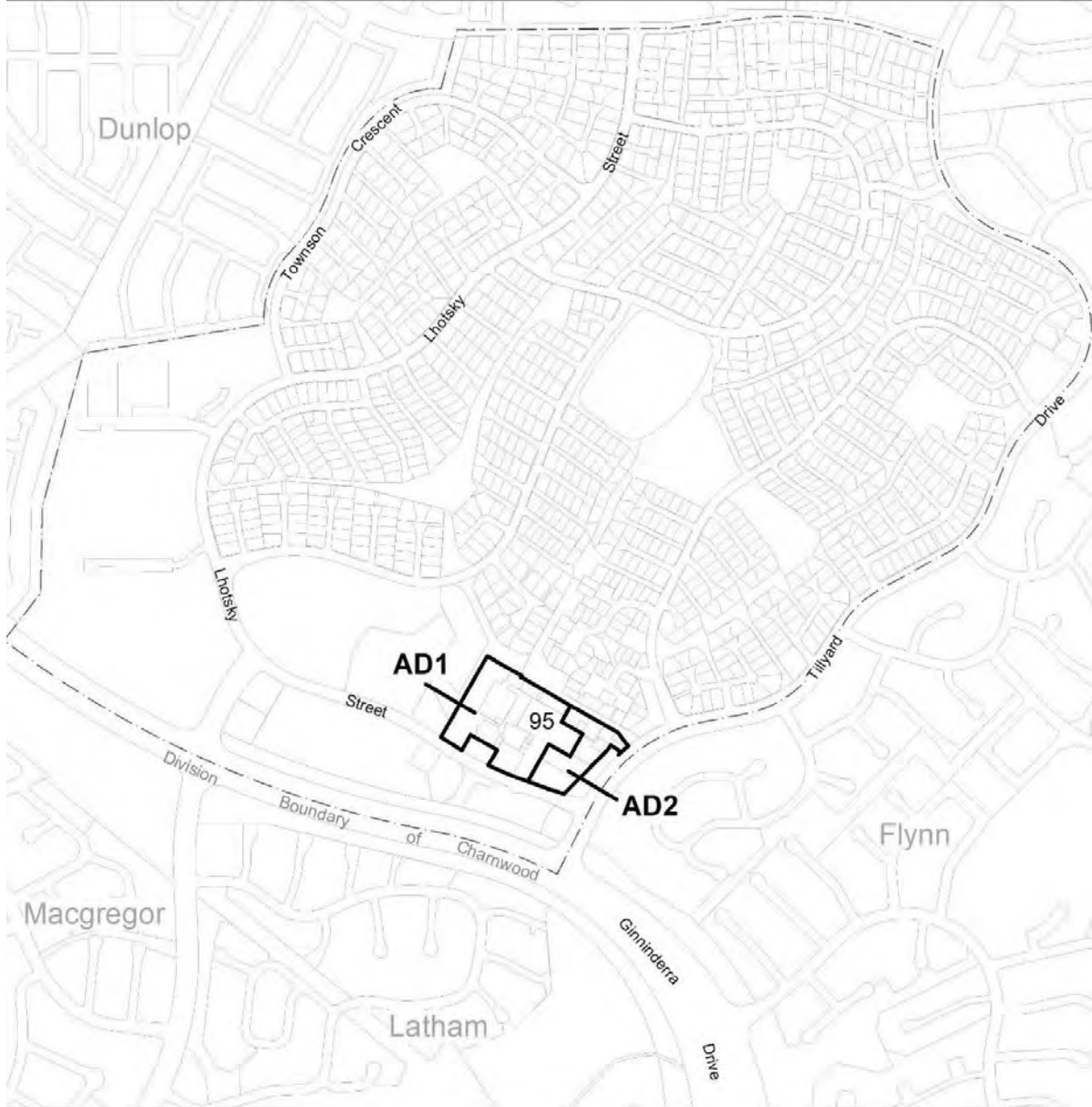
Figure 4 – Permissible Land Uses and Development Types in Parks and Recreation Zones (Territory Plan 2023)

A review of Part D District Policies, D8 – Belconnen District Policy, provides additional types of development and land uses that are assessable and prohibited in the area of the subject site. These include industrial trades, a municipal depot or store for the north west portion of Section 95. Furthermore, other assessable developments are relevant to the south east portion of Section 95, which are outlined in Figure 5 below, with reference to the parcels of land that is indicated in Figure 6 (Figure 3) from the District Policy. These assessment requirements are mandatory development controls that must be met for any future development on the site.

Locality	Zone	Additional assessable development	Additional prohibited development	Relevant parcel or Figure
Charnwood	CZ1	industrial trades, municipal depot, store.	Nil	AD1 Figure 3
Charnwood	CZ2	funeral parlour, light industry, service station, veterinary hospital	Nil	AD2 Figure 3

Figure 5 – Belconnen District Policy Additional Assessable Development for Charnwood (Belconnen District Policy, 2024)

Charnwood Division Map



ADn Additional assessable development applies

Figure 6 – Charnwood Additional Assessable Development Criteria Map (Belconnen District Policy, 2024)

3 Proposed Development

EPSDD Development and Implementation do not currently have any proposed indicative development scenario within the subject site. EPSDD is currently reviewing existing group and local centres in the Belconnen district to enhance their activation and revitalisation, in alignment with the district strategy implementation. The subject site in Charnwood Group Centre is therefore being evaluated for potential development or redevelopment, given its current zoning and development capabilities, discussed in the previous section of this report.

Recently, Charnwood Group Centre has had some safety improvement works completed. The Charnwood shops feature well established Plane trees that provide shade and enhance the environment. However, pavement laid too close to tree root zones had caused lifted paving, posing tip hazard safety issues. Upgrades began in 2023 to address concerns about lifted paving due to tree roots, and were aimed at providing a long term solution.

In response, the ACT Government addressed these issues by:

- Repaved areas of concern with a combination of existing and new pavers, particularly in front of shopfronts on the northern, southern, and western edges facing the front carpark.
- Minimised the future possibility of lifted pavers by using root pave tree surrounds, which are rubber and allow for tree root growth without cracking the surface.
- Installed new seating and furniture in locations that do not impede pedestrian movements.
- Increased soft landscaping in areas not used by pedestrians to reduce the heat island effect.
- Planted 12 new trees: 7 Large Leaved Maples (Acer Autumn Blaze), 4 Zelkova Serrata, and 1 Eucalyptus Mannidera, along with new garden beds.
- Improved drainage to address localized flooding during heavy rain on the lower level pavement near the laundromat, and replaced some stormwater infrastructure.
- Increased shade in seating areas with a new shade sail in front of Woolworths.
- Added artwork depicting local mammal species with cut outs for children to use as masks.
- Improved pedestrian access with new concrete steps and kerb ramps.

Improvements to parking were also made, which included:

- Formalised the one way traffic flow through the carpark.
- Replaced existing signage where required.
- Adjusted existing accessible parking bays and added a new kerb ramp.
- Added four new accessible parking bays in the rear/western carpark.

All construction activities were completed in May 2024. The final work to be delivered as part of this project is the new mural, with painting expected to be undertaken on site in June 2024.

See below Figure 7 for the final design of the completed works.

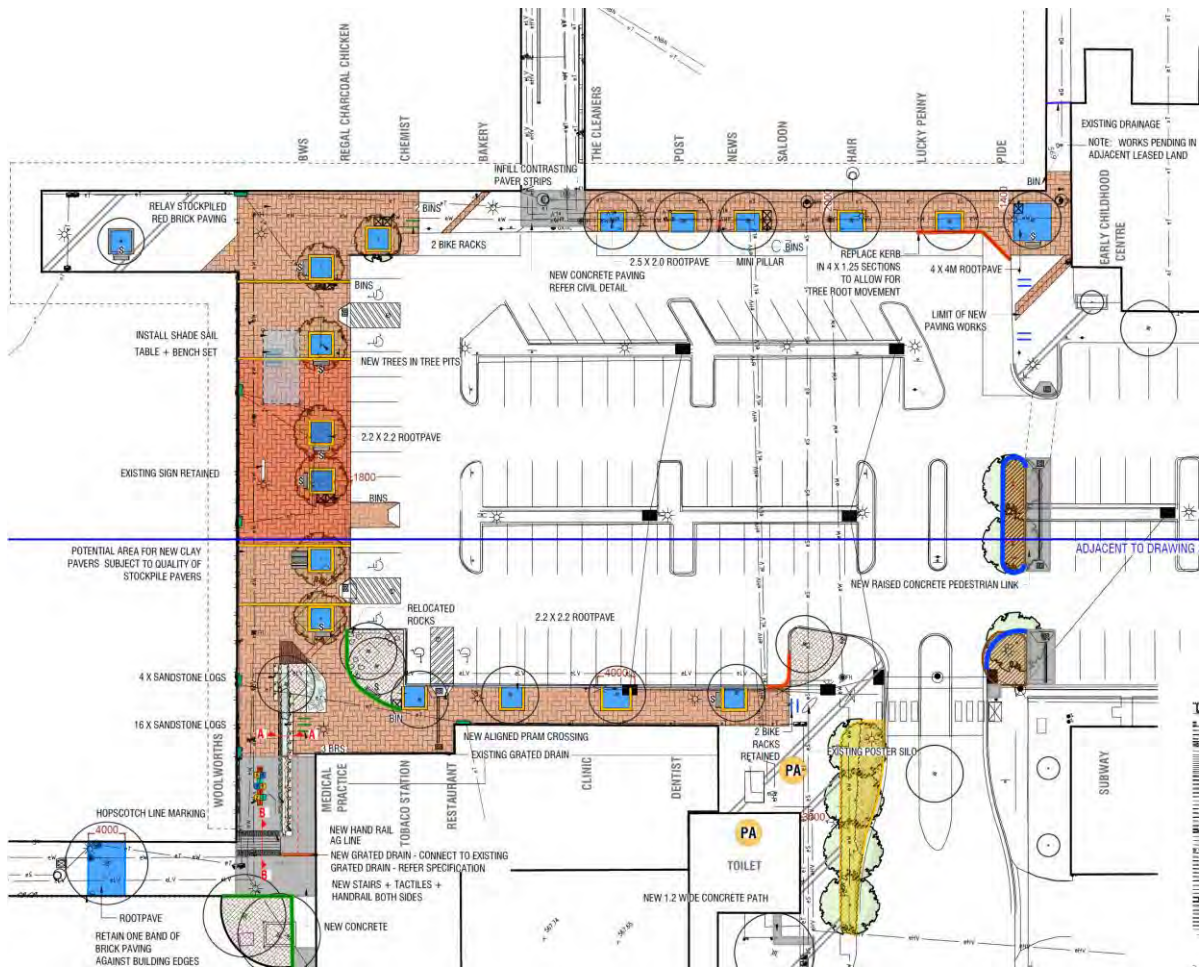


Figure 7 – Public Space Improvements at Charnwood Shops (ACT Government, 2022)

4 Investigation Scope

The scope and deliverables of this engagement will include the following:

- Introduction including site description and location in the site investigation report.
- Aerial photograph and site locality figure.
- Site zoning figure and Territory Plan review.
- Potential development/redevelopment review.
- Summary of any available relevant background reports regarding the site or surrounds.
- Existing site servicing and constraints based on Before You Dig Australia (BYDA) Plans, ACTmapi and correspondence with authorities as required. Schematic existing services excerpts will be produced to reflect these findings.
 - Stormwater (TCCS Stormwater Database and non-intrusive site inspection)
 - Overland flow and flood information (ACTmapi and/or EPSDD flood modelling information)
 - Sewer (BYDA and non-intrusive site inspection)
 - Water (BYDA and non-intrusive site inspection)
 - Electricity (Evoenergy and BYDA)
 - Telecommunication BYDA (BYDA and relevant authorities)
 - Natural gas supply (BYDA and Zinfra/Jemena)
 - Verge works including driveway and pedestrian access
 - Traffic review (TCCS Canberra Strategic Transport Model)
 - Parking (Aerial imagery)
 - Bushfire (ACTmapi/ACT Fire & Rescue)
 - Heritage (ACTmapi/ACT Heritage Council)
 - Environmental review (EPA historic data)
 - Tree Assessment (visual only)
 - Ecological (protected flora or fauna species)
 - Geotechnical
 - Review of any available geotechnical reports
 - On site non-intrusive inspection and geological mapping review
 - Other potential constraints identified
- Future site servicing guidance to latest standards and guidelines, based on existing services and infrastructure.
- Summary of opportunity and constraints in a risk assessment format.
- Recommendations for further studies in an itemised risk assessment format.
- Correspondence with all authorities.

It is understood that the outcomes of this study will lead EPSDD to understand the feasibility of development or redevelopment within the site to achieve the overarching intentions of the latest Territory Plan and more specifically, the District Policy. The report will also inform of the requirement of any further specialist studies needed to complete the due diligence on the site.

5 Site Description and Location

The subject site is situated within the suburb of Charnwood in the district of Belconnen. Bounded by Lhotsky Street to the south, Tillyard Drive to the east, an open space corridor and residential area to the north, and a medium density residential area to the west, the subject site includes an internal public road network providing access to car parking. Two of these roads are named Charnwood Place (referred to in this report as east and west), with Verge Place off Tillyard Drive to the east. With an approximate area of 28,030m², the site is occupied by various businesses, car parking and open space areas. A list of each of the block and sections, their respective block area, and current Territory Plan zoning is provided in Table 1 below. To determine the available land that is present within the group centre, the current block usage has been investigated. This table provides a comprehensive list of all blocks within the subject site area and shows areas that are potentially underutilised.

As part of the Belconnen District Policy, it is a strategic intention to strengthen the economic and employment role of group centres in the region. The role and function of existing group and local centres, particularly in north and west Belconnen, should be considered, with a focus on supporting local enterprise and community life. From a review of block usage across the Charnwood Group Centre, there appear to be several areas that can benefit from development/redevelopment to meet this district strategy. Development within the site in areas that are not best utilised will provide for ongoing, on site employment.

During a site inspection, it was observed that the topography of the site is consistent and is relatively flat. The site generally slopes from the north west to the south east, with an overland flow corridor in the open space area to the east of the site (Block 29 Section 95). These flows continue south towards a multicell culvert under Lhotsky Street and a large inlet in Block 20 Section 97. The average approximate grade across the subject site has been estimated from ACTmapi contours to be 2.1%. The highly developed nature of the site, along with the varying grades in different sections compared to surrounding areas, suggests that significant earthworks may have been carried out on the site.

Regarding vegetation, the majority of the site is cleared, with some large trees scattered throughout the group centre and within islands in the car parks. Several medium to large trees are present within open space areas on the site, and some dead trees were observed during the site inspection. Several existing trees within the site appear to meet the definition of a regulated tree as described in the Urban Forest Act 2023.

Table 1 – Charnwood Group Centre Block Areas, Zoning and Current Land Use

Block, Section and District	Block Area (m ²)	Territory Plan – Land Use Zoning	Current Block Usage
Block 01 Section 95 Charnwood	2,159	CZ1: CORE ZONE	Shell Coles Express, Coles ATM, Mycar Tyre & Auto Service
Block 02 Section 95 Charnwood	1,443	CZ1: CORE ZONE	My Medical Practice Charnwood, Charnies Noodle and Dumplin, TSG Charnwood, Public Toilet
Block 03 Section 95 Charnwood	1,375	CZ1: CORE ZONE	Ginninderra Labour Club
Block 05 Section 95 Charnwood	720	CZ1: CORE ZONE	Capital Chemist,
Block 07 Section 95 Charnwood	148	CZ1: CORE ZONE	Capital Fades (Coin Laundry)
Block 10 Section 95 Charnwood	923	CZ2: BUSINESS ZONE	Mount Rogers Scout Group (School)
Block 11 Section 95 Charnwood	1,730	PRZ1: URBAN OPEN SPACE	Open Space
Block 14 Section 95 Charnwood	80	CZ1: CORE ZONE	Open Space
Block 19 Section 95 Charnwood	419	CZ2: BUSINESS ZONE	Open Space
Block 21 Section 95 Charnwood	123	CZ1: CORE ZONE	Walkway

Block, Section and District	Block Area (m ²)	Territory Plan – Land Use Zoning	Current Block Usage
Block 25 Section 95 Charnwood	525	CZ2: BUSINESS ZONE	FOFOANGA CANBERRA (Non-profit organization), Murrungundie Girl Guide Hall (Youth organization)
Block 29 Section 95 Charnwood	2,675	PRZ1: URBAN OPEN SPACE	Open Space
Block 30 Section 95 Charnwood	107	CZ2: BUSINESS ZONE	Footpath
Block 34 Section 95 Charnwood	163	CZ1: CORE ZONE	Open Space
Block 35 Section 95 Charnwood	56	CZ1: CORE ZONE	Public Toilet
Block 36 Section 95 Charnwood	1,144	CZ1: CORE ZONE	Newsagency, Turkish restaurant
Block 37 Section 95 Charnwood	1,145	CZ2: BUSINESS ZONE	Child Care Centre
Block 38 Section 95 Charnwood	246	CZ2: BUSINESS ZONE	Child Care Centre
Block 39 Section 95 Charnwood	2,886	CZ2: BUSINESS ZONE; PRZ1: URBAN OPEN SPACE	Carpark
Block 42 Section 95 Charnwood	1,520	CZ2: BUSINESS ZONE	Anglican church
Block 43 Section 95 Charnwood	126	CZ2: BUSINESS ZONE	Walk Through
Block 44 Section 95 Charnwood	2,530	CZ2: BUSINESS ZONE; PRZ1: URBAN OPEN SPACE	Chicken restaurant, Carpark
Block 46 Section 95 Charnwood	2,146	CZ1: CORE ZONE	Walkway
Block 47 Section 95 Charnwood	3,641	CZ1: CORE ZONE	Woolworths
Total Site Area	28,030		

The photos taken in Figure 8, Figure 9, Figure 10, Figure 11, and Figure 12 provide a general overview of the group centre from different visual aspects. The photos show the site's condition, current infrastructure, topographical features, car parks, and some of the existing trees present within and surrounding the site. See also Figure 13, which is an ACT Government container deposit collection facility, north of the western car park.



Figure 8 – General Site Photo of Group Centre

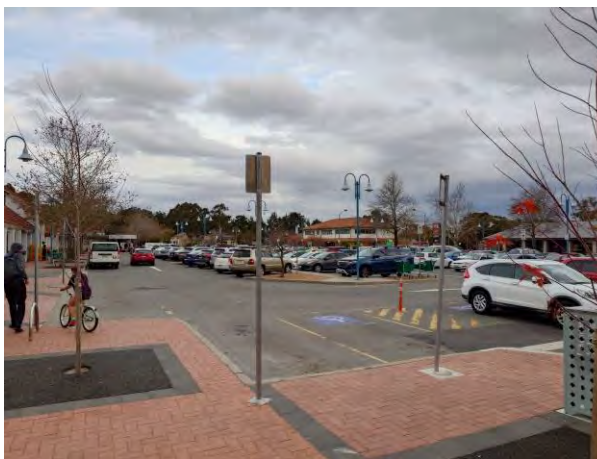


Figure 9 – General Site Photo of the Internal Car Park (west)



Figure 10 – General Site Photo of the West Car Park



Figure 11 – General Site Photo of the Internal Car Park (east)



Figure 13 – Container Collection Station



Figure 12 – Photo of Verge Place and Car Park

6 Existing Site Servicing

6.1 General

In this section, a detailed summary of the existing services information has been compiled for the subject site. This information is based on received data from Before You Dig Australia (BYDA) enquiries, work as executed (WAE) records, correspondence with service authorities, and a visual site inspection. Additionally, services that are proposed to be constructed and those to be relocated have also been considered.

While every effort has been made to ensure the accuracy of the provided information, the detailed dimensions and alignments of existing services included within the report should be treated as indicative only and the accuracy of the information cannot be warranted. It is essential that all services be accurately verified through on site potholing before commencing any development activities. Additionally, the verification of services may be required to facilitate future design efforts for the site.

All existing services described under this section are indicatively shown on drawing 20240332-DRG-CIV-UT-100 within Appendix A. All relevant correspondence with service authorities and Before You Dig Australia information is included within Appendix C and Appendix D, respectively.

6.2 Sewer

The assessment of the existing sewer infrastructure involved gathering information from multiple sources, including Before You Dig Australia (BYDA) data, records from Work as Executed (WAE) drawings, and an on site inspection.

The Icon Water BYDA information indicates that a sewer network runs through the site, servicing individual blocks in the group centre. Several sewer mains are situated within the subject site, which can be summarised as follows:

- Blocks within the eastern portion of the site (Blocks 10, 25, 42, 44, 39) all drain into DN150 sewer mains that connect to a DN300 trunk sewer running within the west verge of Tillyard Drive. The service connection to Block 10 is shown to traverse through Block 25, where an easement is registered.
- Beyond Lhotsky Street, this DN300 sewer main upsizes to a DN600 trunk sewer. See Figure 22 for a photo of the manhole at the intersection of Lhotsky Street and Tillyard Drive where the DN300 main upsizes to a DN600 main.
- All commercial blocks within the central area of the site drain into a DN150 sewer that runs within the central car park and in the west verge of Charnwood Place (east). This DN150 main connects to a DN525 trunk sewer located in the northern verge of Lhotsky Street.
- The DN525 trunk sewer in Lhotsky Street crosses the road near the southeast corner of the site and heads south, connecting to the abovementioned DN600 trunk sewer. The DN525 main crosses through Block 19 Section 97 Charnwood, where a registered easement exists.
- The western most blocks in the group centre drain toward a DN300 trunk sewer main that runs through the western car park. All blocks connect to a DN150 main before branching into the DN300 main. Refer to Figure 15, Figure 16, Figure 17, and Figure 19 for photos of the manholes that were identified over the DN300 main in the western car park.
- The DN300 sewer main in the western car park continues south in the east verge of Charnwood Place (west) and connects to the aforementioned DN525 sewer main in the northern verge of Lhotsky Street. Just prior to its connection to the DN525, the DN300 main crosses through the open space area – Block 11 Section 95. Figure 20 is a photo of a manhole over the DN300 sewer main in the open space block and the photo in Figure 21 is the manhole where the DN300 main connects to the DN525 sewer in Lhotsky Street.
- Abandoned mains are also shown in the BYDA information that are within the west car park/Charnwood Place (west).

Several manholes over the DN150 mains within the group centre were located during a site inspection. See Figure 23, Figure 24, and Figure 25 for photos of several of these manholes as observed on site.

For further details on existing sewer infrastructure within and surrounding the site, refer to Figure 14, which is extracted from the BYDA information.

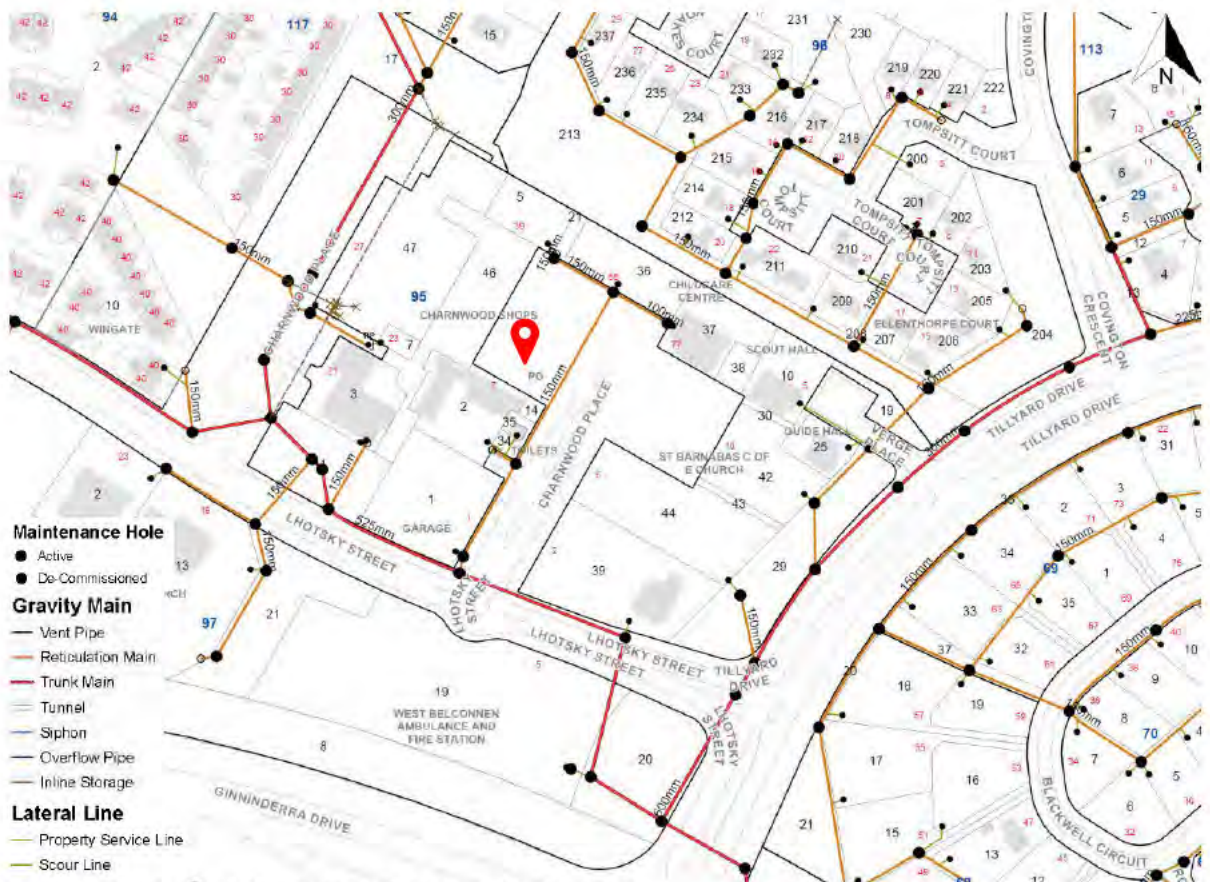


Figure 14 – Sewer BYDA Information (Icon Water, 2024)



Figure 15 – Sewer Manhole over DN300 Main North of Charnwood Place (west)



Figure 17 – Sewer Manhole over DN300 Main in Charnwood Place (west)



Figure 16 – Sewer Manhole over DN300 Main in Charnwood Place (west)



Figure 18 – Sewer Manholes over DN150 Mains Servicing Block 7 and 47 Section 95



Figure 19 – Sewer Manhole over DN300 Main in Charnwood Place (west)



Figure 21 – Sewer Manhole at DN300 and DN525 Junction in Lhotsky Street



Figure 20 – Sewer Manhole over DN300 Main in Open Space (Block 11 Section 95)



Figure 22 – Sewer Manhole over DN300 Main at Intersection of Lhotsky Street and Tillyard Drive



Figure 23 – Sewer Manhole in Group Centre (east)



Figure 25 – Sewer Manhole in Group Centre (central)



Figure 24 – Sewer Manhole in Group Centre (central)

6.3 Water Supply

The existing water supply service information was compiled from Before You Dig Australia (BYDA) information.

An extensive looped potable water network is present within the group centre and its surroundings. The potable water infrastructure can be summarised as follows:

- A DN150 main runs along the east verge of the west car park and Charnwood Place (west), connecting to a DN150 water network in the residential areas northwest of the site and to a DN300 distribution water main in the southern verge of Lhotsky Street. Two double hydrants are located on the DN150 main in Charnwood Place (west), with hydrant spacing between 35 and 60 metres along the main. Refer to Figure 28, Figure 29, Figure 30, and Figure 31 for photos of hydrants and stop valve on this DN150 main in Charnwood Place (west).
- The DN300 distribution main in the southern verge of Lhotsky Street is generally situated behind the kerb line, although it deflects and lowers adjacent to the Lhotsky Street underpass. Hydrant spacing on this trunk main ranges from 45 to 55 metres. The photos in Figure 32, Figure 33, and Figure 34 show hydrants and valves over this DN300 main.
- A DN375 distribution water main is located within the west verge of Tillyard Drive, connecting at a 90 degree bend to the abovementioned DN300 main at the intersection of Tillyard Drive and Lhotsky Street. There is one set of double hydrants on this main adjacent to the subject site. The nearest hydrant to the north is approximately 170 metres away, and the nearest hydrant on Lhotsky Street is approximately 75 metres from these double hydrants. Figure 35 below shows a photo of the hydrant and valve arrangement on this DN375 main in Tillyard Drive.
- A service connection to Block 25 Section 95 directly connects to the DN375 main.
- A DN150 main branches off the DN375 in the northern verge of Verge Place to provide service to Block 10 Section 95. This DN150 main terminates with a hydrant. See Figure 27 below for a photo of this hydrant in Verge Place.
- A DN100 and DN150 water main network loops around the central area of the group centre, with a connection to the DN300 main in Lhotsky Street. This main heads north in the west verge of Charnwood Place (east), then loops around the car park, connecting to the DN150 main in the western car park and north to the residential mains. Most blocks within the group centre have a service off this loop main. Hydrant spacing along this looped main ranges from approximately 15 to 85 metres, however, they are generally between 45 and 50 metres. Various hydrants and valves on this central looped main are provided in Figure 36 to Figure 42, below.
- An easement is shown over the water main that traverses through Block 2 Section 95. A remnant easement is also shown on part of Block 47 Section 95, although this is shown as an abandoned water line on the BYDA information.

For further details on existing water infrastructure surrounding the subject site, refer to Figure 26, which is extracted from the Icon Water BYDA information.



Figure 26 – Existing Water Infrastructure Near the Subject Site (Icon Water, 2024)



Figure 27 – Existing Fire Hydrant on Dead End DN150 in Verge Place



Figure 28 – Fire Hydrant and Stop Valve on DN150 Main Near Charwood Place (west)



Figure 29 – Double Hydrants in Charnwood Place (west)



Figure 31 – Stop Valve Near Intersection of Charnwood Place (west) and Lhotsky Street



Figure 30 – Double Hydrants in Charnwood Place (west)



Figure 32 – Fire Hydrant on DN300 Main in Lhotsky Street



Figure 33 – Existing Stop Valves at Intersection of Lhotsky Street and Charnwood Place (east)



Figure 34 – Existing Fire Hydrant and Stop Valve on DN300 Main in Lhotsky Street



Figure 35 – Existing Fire Hydrant and Stop Valve on DN375 Main in Tillyard Drive



Figure 36 – Fire Hydrant in Charnwood Place (east)



Figure 37 – Water Meter Pit and Stop Valve in Charnwood Place (east)



Figure 39 – Existing Fire Hydrant in Central Carpark (west)



Figure 38 – Existing Fire Hydrant in Charnwood Place (east)

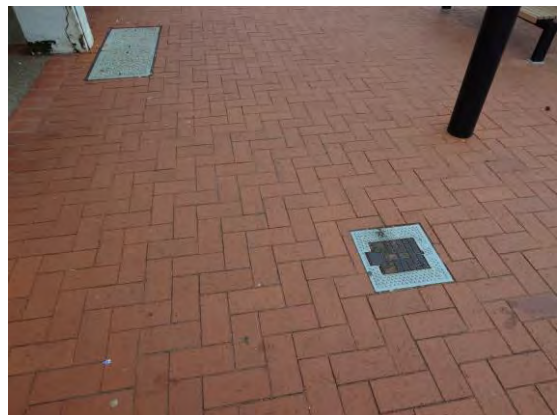


Figure 40 – Existing Fire Hydrant in Central Carpark (north)

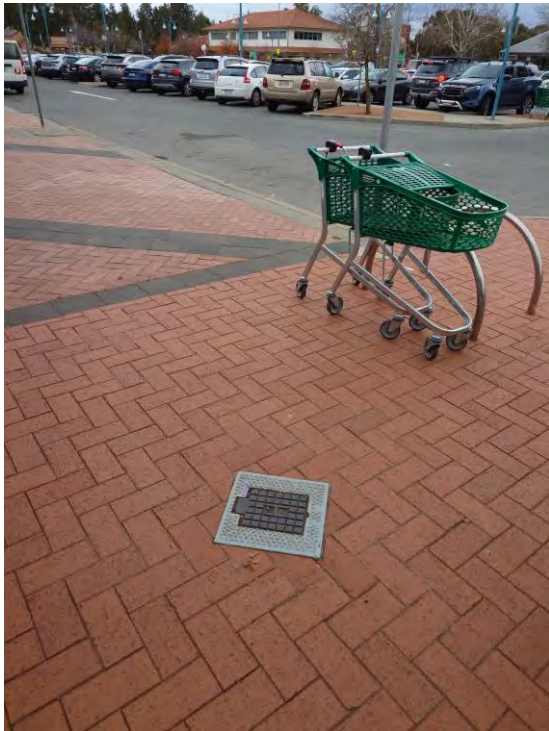


Figure 41 – Existing Fire Hydrant in Central Carpark (north west)



Figure 42 – Existing Fire Hydrant Existing Fire Hydrant in Central Carpark (east)

6.4 Stormwater Drainage

The existing stormwater infrastructure information was compiled from the TCCS Stormwater Database, and observations made during a site inspection.

A network of stormwater pipes and sumps are present within the subject site, with substantial mains in and around the site area. These mains capture stormwater flows from a sizable catchment to the north and north east of the site. Key stormwater infrastructure within and surrounding the subject site includes:

- A DN1350 stormwater pipe located in the west verge of Charnwood Place (west) drains a significant catchment to the northwest of the site. This DN1350 pipe crosses Charnwood Place (west) and passes through the open space block (Block 11 Section 95), where it upsizes to a DN1800 pipe. See Figure 49 below for a photo of an inlet/surcharge structure at the junction of the DN1350 and DN1800 pipes.
- The DN1800 stormwater pipe continues through the Lhotsky Street underpass and extends eastward in the southern verge of Lhotsky Street. A large easement is shown over this main within Block 19 Section 97 Charnwood, where the main deflects southeast, crossing the block diagonally. The DN1800 main connects to the major inlet/surcharge structure observed on site in the open space area of Block 20 Section 97 Charnwood. Figure 51 shows a photo of this inlet/surcharge stormwater structure.
- Several DN300 stormwater pipes connect to the above DN1350 and DN1800 pipes, servicing the blocks in the group centre and draining the west car park. Refer to Figure 48 for a photo of a grated pit in the western car park.
- Additional DN300 stormwater pipes are located in the central car park, draining the surrounding developments and car park. A DN300 main runs along the centreline of Charnwood Place (east) and upsizes to a DN750 stormwater pipe near the intersection of Charnwood Place (east) and Lhotsky Street. This DN750 pipe connects to the abovementioned DN1800 main. Several manholes were noted to be in the verges of the Charnwood Place verges adjacent existing buildings. Examples of these can be seen in Figure 45 and Figure 52 below.

- Another DN1800 stormwater pipe is situated in the open space corridor (Block 29 Section 95) and closely follows the alignment of the commercial blocks. This main continues south and connects to the inlet/surcharge structure in Block 20 Section 97 Charnwood. See Figure 50 below for a photo of box culverts that cross under Lhotsky Street, near the intersection of Tillyard Drive.
- In the eastern portion of the site, in addition to the DN1800 pipe in the open space area, a second DN1800 stormwater pipe runs along the centreline of Tillyard Drive. This pipe deflects southwest and also connects to the inlet/surcharge structure in the southern portion of Block 20 Section 97.

This extensive stormwater infrastructure ensures effective drainage for the site and the surrounding areas, managing large volumes of stormwater from the contributing catchments. The northern catchment is directed into a series of plantation sumps, as observed during a site inspection. Some of these can be seen in Figure 44, Figure 46, and Figure 47, along the northern border of the subject site.

For visual reference, see ACTmapi map extract provided in Figure 43 below. This map displays the indicative positions of these stormwater pipes (depicted in orange and brown linework) and drainage easements in blue. The combination of these elements contributes to the existing stormwater infrastructure in the vicinity of the subject site.



Figure 43 – Existing Stormwater Infrastructure in Proximity of the Site (ACTmapi, 2024)



Figure 44 – Existing Stormwater Plantation Sump Looking Toward Verge Place



Figure 46 – Existing Stormwater Plantation Sump North of Subject Site



Figure 47 – Existing Stormwater Plantation Sump North West of Site



Figure 45 – Existing Stormwater Manhole in Charnwood Place (west) Verge



Figure 48 – Stormwater Grated Pit in West Car Park



Figure 49 – Inlet/Surge Structure at Junction of DN1350 and DN1800 Pipes (west)



Figure 51 – Existing Stormwater Inlet/Surge Structure in Block 20 Section 97



Figure 50 – Stormwater Box Culverts Under Lhotsky Street



Figure 52 – Stormwater Manhole in Group Centre (central) Verge

6.5 Overland Flow and Flooding

After a thorough site inspection and review of the site contours, it has been determined that the subject site mainly consists of one very large catchment area. This catchment to the north is estimated to be approximately 53 hectares. See Figure 54 for an estimated catchment boundary indicated in green, whilst the subject site is outlined and highlighted in red. This has been produced to provide an indication of the scale of the catchment and will need to be verified if a development is proposed in the subject site. It is assumed that external roads, such as Tillyard Drive and Lhotsky Street, intercept upstream flows toward the site and effectively convey major stormwater events (1% AEP). The culminating catchment ultimately drains toward the inlet/surge structure identified on Block 20 Section 97, southwest of the site. See Figure 51 for a photo of this structure. Overland flows are assumed to discharge from this point to the tributary south of Ginninderra Drive, toward Ginninderra Creek.

Observations indicate that runoff generally follows a southwest trajectory through the site. Overland flows from a northwest catchment run through the Charnwood Place (west) car park and the open space area (Block 11 Section 95), through the Lhotsky Street underpass, and toward the inlet/surcharge structure in Block 20 Section 97. Refer to Figure 61 below for a photo of this underpass. Part of the northern catchment directed toward the subject site is captured by a swale in Block 29 Section 95, in the open space corridor within the eastern portion of the site. See photos of this swale from Verge Place and Lhotsky Street in Figure 56 and Figure 58 below. This swale's overland flow is then conveyed through a multi-cell box culvert crossing Lhotsky Street, which is also directed toward the inlet/surcharge structure in Block 20 Section 97. Figure 59 shows these box culverts at their downstream end.

Some of the northern catchment appears to be captured to the north of the subject site in swales and plantation sumps, suggesting that part of the 1% AEP storm event is conveyed through the very large stormwater pipe infrastructure discussed in the previous section of this report. Figure 57 and Figure 60 show examples of swales and sumps that intercept flows north of the site.

These preliminary assumptions regarding stormwater runoff are subject to confirmation through a detailed site survey encompassing the immediate surroundings and a subsequent hydrological and hydraulic analysis in accordance with the ACT Government TCCS MIS 08 document. This detailed assessment will provide accurate insights into the extent and behaviour of overland flow and flooding on the subject site.

Refer to Figure 53 for an indication of the stormwater overland flow directions within and surrounding the subject site depicted with blue arrows.



Figure 53 – Stormwater Overland Flow Diagram



Figure 54 – Stormwater Catchment in Relation to Subject Site

The current flood mapping on ACTmapi indicates that the subject site is situated away from the 1% Annual Exceedance Probability (AEP) flood modelling footprint. Refer to Figure 55 for an image of the 1% AEP flood extent that is located to the south west in relation to the subject site's location, shown in red highlight and red place marker.

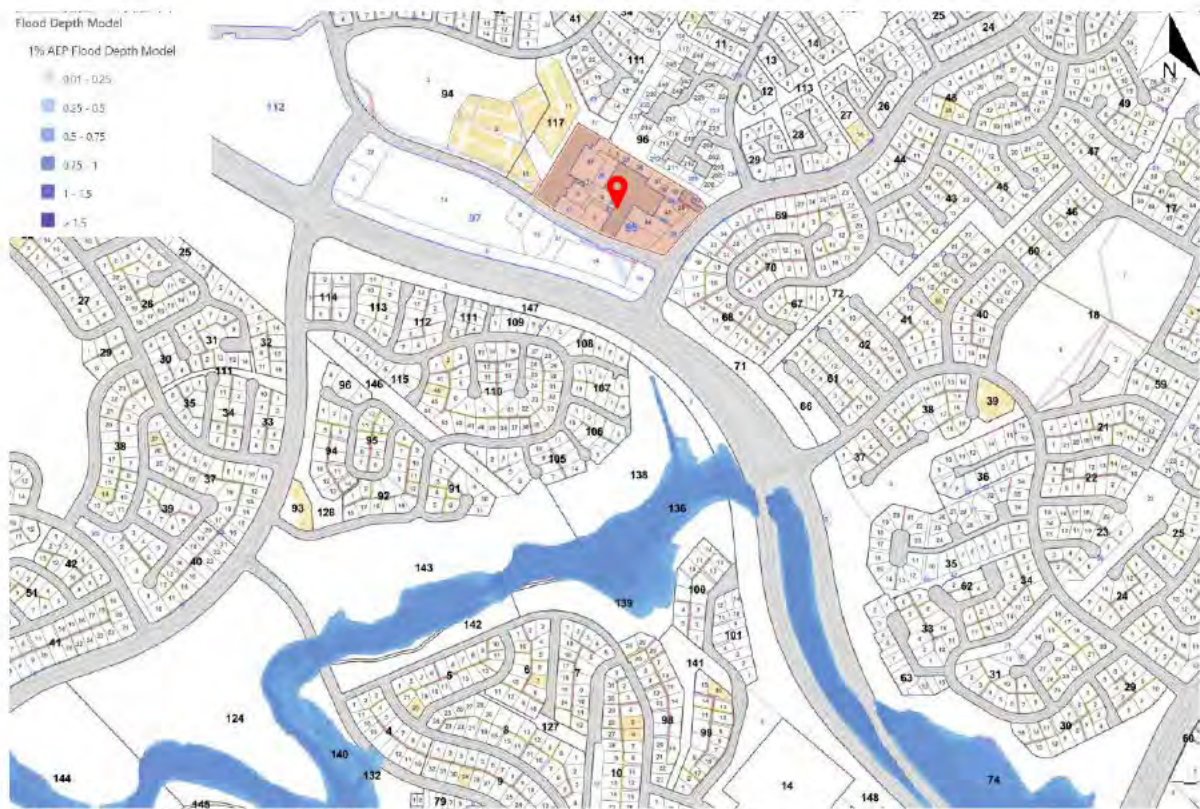


Figure 55 – 1% AEP Flood Extent and Waterways (ACTmapi, 2024)



Figure 56 – Stormwater Swale through Block 29 Section 95 Looking South



Figure 57 – Stormwater Swale and Plantation Sump North West of Site



Figure 58 – Stormwater Swale in Block 29 Looking North



Figure 60 – Stormwater Swale and Concrete Invert North West of Site



Figure 59 – Stormwater Box Culverts under Lhotsky Street



Figure 61 – Lhotsky Street Underpass South West of Site

6.6 Telecommunication Services

The following telecommunication infrastructure information has been compiled from BYDA information, and a site inspection.

6.6.1 Telstra

BYDA information indicates that Telstra infrastructure is present as underground conduits within and surrounding the site. All of these conduits within the subject site area are shown to be occupied by other carriers.

Notably, several of the conduit runs are indicated to be asbestos cement (AC) conduits. These AC conduits are located as follows:

- A 100mm AC conduit in the west verge of Chamwood Place (west)

- A 100mm AC conduit in the northern verge of Charnwood Place (west) and Block 5 Section 95
- A 100mm AC conduit southeast of Block 47 Section 95

See below Figure 65, Figure 66, Figure 67, Figure 68, and Figure 69 for pits over these abovementioned A100 Telstra conduits in Charnwood Place (west), north of the site and between Blocks 3 and 47.

The remaining Telstra conduits within and surrounding the site include:

- A P35 conduit run to the north of the site in Block 213 Section 96
- Two P50 conduit runs to the east of the site in Tillyard Drive and Block 29 Section 95, with extensions from the west line servicing the commercial blocks in the eastern portion of the subject site.
- A P100 conduit in the northern verge of Lhotsky Street
- P35 conduits running in the west verge of Charnwood Place, continuing west and northwest to provide service to the blocks in the western portion of the subject site.

Figure 63 and Figure 64 are photos of Telstra pits over the twin P50 runs near Tillyard Drive and Verge Place. Figure 70 to Figure 74 show Telstra pits observed in Lhotsky Street and in and around the central Charnwood Place (east) group centre fully paved verge.

Refer to Telstra BYDA information that has been produced from digital data provided in Figure 62 below.



Figure 62 – Telstra BYDA Information in Proximity of the Subject Site (Telstra, 2024)



Figure 63 – Telstra Pit at Intersection of Tillyard Drive and Verge Place



Figure 65 – Telstra Pit North of Subject Site Block 36 Section 95)



Figure 64 – Telstra Pit in Verge Place



Figure 66 – Telstra Pit North of Site



Figure 67 – Telstra Pit in Charnwood Place (west)



Figure 68 – Telstra Pit in Charnwood Place (west)



Figure 69 – Telstra Pit Between Block 3 and 47 Section 95



Figure 70 – Telstra Pit in Lhotsky Street South Verge



Figure 71 – Telstra Pit in Charnwood Place (east) West Verge



Figure 73 – Telstra Pits in South West Central Car Park



Figure 72 – Telstra Pit in South West Central Car Park



Figure 74 – Telstra Pit in West Central Car Park

6.6.2 NBN

BYDA information indicates that the subject site has several NBN services present through the previously mentioned Telstra conduits. This can be seen from the alignment of the NBN service in Figure 75 below.

The BYDA information also shows that NBN services are currently installed independent of the Telstra conduits to Block 47 Section 95 (Woolworths).

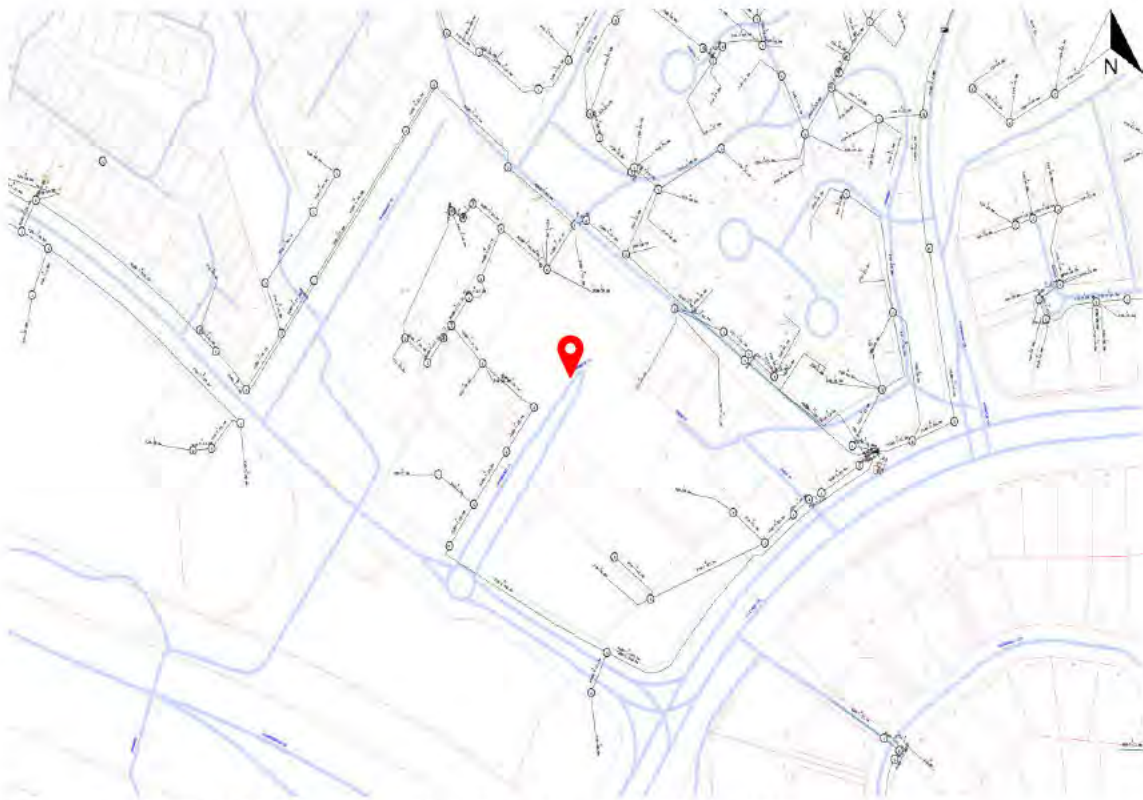


Figure 75 – NBN BYDA Information Near the Subject Site (NBN, 2024)

6.6.3 Optus

Based on the BYDA information received, there is an existing Optus underground telecommunications asset along the north west verge of Tillyard Drive. This Optus service, is depicted in the BYDA information as an optic fibre line that near the Verge Place intersection with Tillyard Drive continues south in other service providers' conduits. The alignment of this service adjacent the eastern edge of the site appears to coincide with the abovementioned Telstra conduits.

Refer to Figure 76 below for an excerpt of the Optus BYDA information in relation to the subject site's location.

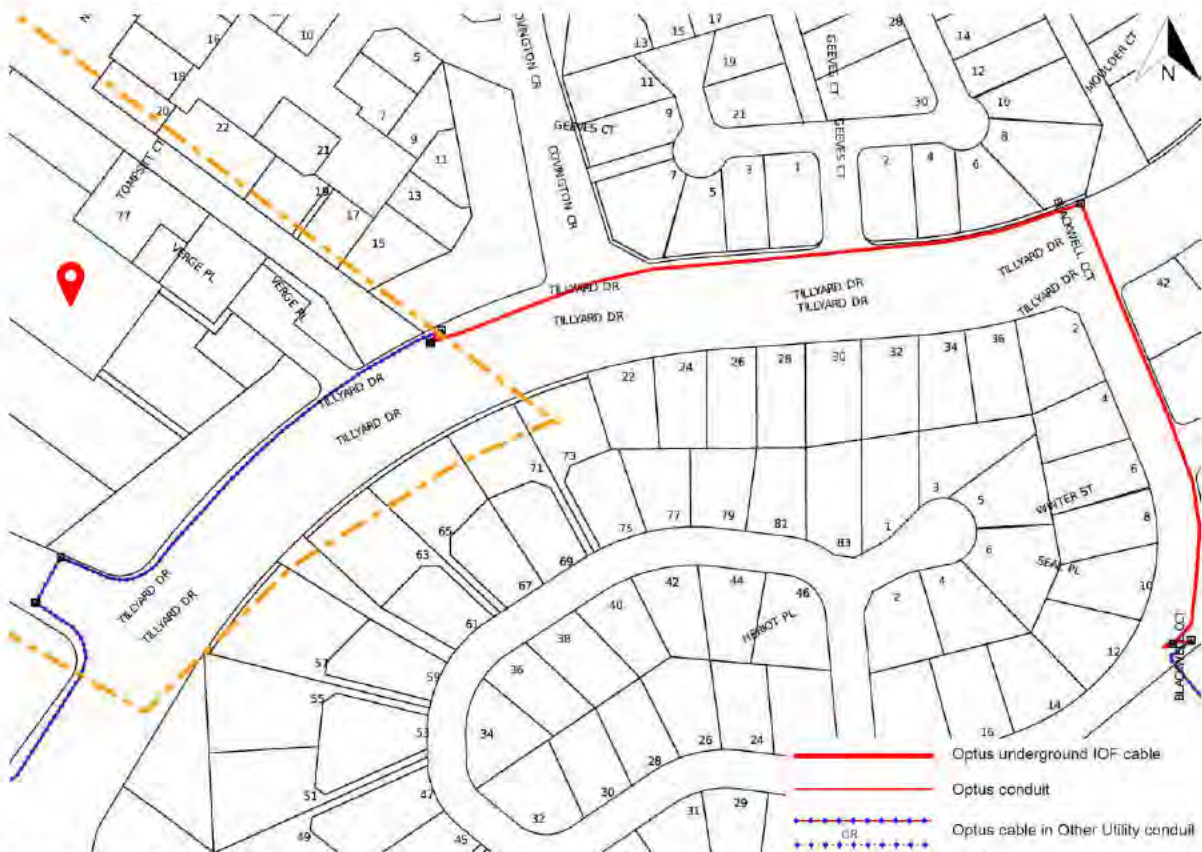


Figure 76 – Optus BYDA Information within Proximity of the Subject Site (Optus, 2024)

6.7 Gas Supply

BYDA information indicates that there is an extensive gas network within and surrounding the site. A summary of these are as follows:

- A DN110 210kPa polyethylene distribution gas main runs along the west verge of Charnwood Place (west) and the car park.
- A DN40 210kPa polyethylene distribution gas main runs across the car park in Charnwood Place (west) to the east, providing service to Block 47 Section 95. An isolation valve over the DN40 gas branch main can be seen in Figure 79 below.
- A DN110 210kPa polyethylene distribution gas main runs along the southern verge of Lhotsky Street, connecting to the DN110 gas main in Charnwood Place (west). This DN110 gas main in Lhotsky Street crosses through Block 19 Section 97 and has a registered easement over it.
- A DN63 210kPa polyethylene distribution gas main connects to the DN110 gas main in Lhotsky Street within Block 20 Section 97, then crosses Lhotsky Street and continues west in the northern verge of Lhotsky Street toward Charnwood Place (east). This DN63 main continues north in the east verge of Charnwood Place (east) and provides services to commercial developments in Block 44 Section 95 via a DN32 210kPa nylon gas main and service ties. A photo of a gas marker over the main that is within Charnwood Place (east) near Block 44, is given in Figure 78 below.
- A DN32 210kPa nylon gas network runs along the northern edge of the site in the open space area, including Block 213 Section 96. This main connects to the DN110 PE main in Charnwood Place (west) and provides service ties to the commercial developments in the northern portion of the site.

- A DN110 210kPa polyethylene distribution gas main runs along the east verge of Tillyard Drive, connecting to the DN110 gas main in the southern verge of Lhotsky Street, which crosses Tillyard Drive at the signalised intersection.

For a visual representation of these gas main locations and their proximity to the subject site, refer to Figure 77 below, which is an excerpt from the BYDA information.



Figure 77 – Gas BYDA Information in Proximity of the Subject Site (Evoenergy, 2024)



Figure 78 – Gas Marker in Charnwood Place (east)



Figure 79 – Gas Isolation Valve Between Block 3 and Block 47 Section 95

6.8 Electrical Supply and Streetlighting

Information received from Evoenergy and TCCS through BYDA was confirmed through a visual site inspection. The streetlight infrastructure within the subject site and its immediate vicinity has been therefore comprehensively identified as follows:

Streetlights and interconnecting low voltage (LV) lines are present across the roads and car parks within and surrounding the subject site, including:

- The west and east verges and centrally in the car park in Charnwood Place (west). A photo of some streetlights in this location can be seen in Figure 83 below.
- The southern and northern verges of Lhotsky Street. Figure 85 and Figure 86 show the streetlights on Lhotsky Street and those at the intersection with Tillyard Drive.
- The east and west verges of Tillyard Drive. See Figure 84 below for a general photo of lights on Tillyard Drive.
- In the open space corridor north of the subject site, in Block 213 Section 96 and Block 17 Section 117, as can be seen in Figure 81.
- Both the east and west verges of Charnwood Place (east). Refer to Figure 87 below for a general photo of streetlights in this location.
- Surrounding the central car park in the group centre and within the centre medians of the car park. Most of these streetlights are bespoke poles and fittings, as shown in Figure 88 below.

Some of the streetlight columns within the group centre and in open space areas are older custom unidirectional lights. See Figure 82 for an example of one of these streetlights within the subject site.

See Figure 80 below for the location of the abovementioned streetlight assets as provided by TCCS in BYDA information within the vicinity of the subject site.





Figure 81 – TCCS Streetlights in Block 213 Section 96 North of Site



Figure 83 – TCCS Streetlights in Charnwood Place (west)



Figure 82 – TCCS Streetlight in South West Portion of Site (Block 46 Section 95)



Figure 84 – TCCS Streetlights on Tillyard Drive



Figure 85 – TCCS Streetlights on Lhotsky Street Looking East



Figure 87 – Streetlights in Charnwood Place (east)



Figure 86 – TCCS Streetlights at Intersection of Lhotsky Street and Tillyard Drive



Figure 88 – TCCS Streetlights in Charnwood Place (east) Car Park

Based on DBYD information, information received from Evoenergy, and a visual site audit, the electrical infrastructure within and in close proximity to the subject site has been identified as follows:

- Underground high voltage (HV) lines are located within the east verge of Tillyard Drive. These lines connect to a substation (S 3213) situated within Block 37 Section 69 Charnwood, to the east of the site. They also provide power to the traffic signals at the intersection of Tillyard Drive and Lhotsky Street.
- Underground HV lines branch from the abovementioned lines in Tillyard Drive near Verge Place and continue west along the open space corridor north of the site (Block 213 Section 96). These lines connect to another substation (S 2720) located in Block 213 Section 96, north of Block 5 Section 95. See Figure 92 below for a photo of this substation.
- Underground low voltage (LV) lines extend from substation S 2720 to the east along the open space corridor, south into the group centre, and west toward the car park and Charnwood Place (west). The LV lines in the west car park run adjacent to Block 47, where they turn east into the plaza area between Block 3 and Block 47 and continue east to a substation (S 2721) located in the west verge of Charnwood Place (east). A photo of this substation is provided in Figure 94 below.
- Both HV and LV underground electrical lines exit substation S 2721 in Charnwood Place (east) and run both north and south. The lines extending to the south are primarily service lines to adjacent developments and an HV line present within the northern verge of Lhotsky Street. The HV lines in Lhotsky Street also partly traverse through the open space area of Block 11 Section 95. The underground LV and HV lines from substation S 2721 also continue north and connect back to substation S 2720.

- HV lines from substation S 2721 extend across Charnwood Place (east) to another substation located within Block 44 Section 95 (S 11010). This substation was located on site and can be seen in Figure 93 below.
- Several electrical service lines branch from the abovementioned infrastructure, providing service to all blocks within the subject site and surrounding residential and community facility areas. Some electrical minipillars within and near the subject site can be seen in Figure 90 and Figure 91.

Refer to Figure 89 for the electrical BYDA information, depicting HV lines in red dashed lines and service lines shown in lighter green dashed or solid lines for underground and overhead lines, respectively.



Figure 89 – Electrical BYDA Information (Evoenergy, 2024)



Figure 90 – Electrical Minipillar in Block 213 Section 96 North of Site



Figure 92 – Electrical Substation S 2720 North of Block 5 Section 95



Figure 93 – Electrical Substation S 11010 in Block 44 Section 95



Figure 91 – Electrical Minipillar in North Central Group Centre



Figure 94 – Electrical Substation S 2721 in Charnwood Place (east)

6.9 Boundaries and Easements

A review of ACTmapi shows several easements within the subject site. These include:

- A water easement in the northern portion of Block 47 Section 95
- An access easement in Block 5 Section 95
- A combined stormwater and sewer easement in Block 25 Section 95
- A water easement in Block 2 Section 95

The water main easement in Block 47 Section 95 is due to a remnant abandoned water main that previously ran through the block. Refer to Section 6.3 of this report for a discussion on this. However, water mains are indicated to run through Block 46 Section 95, which is classified as CZ1: Core Zone and would suggest that this would also require easements.

Although outside the subject site, there is a sewer main, stormwater mains, and a gas main crossing Block 20 Section 96, which does not appear to have registered easements. Block 20 Section 96 is currently zoned as CZ3: Services Zone. Refer to Section 6.2, Section 6.4 and Section 6.7 of this report for more information of these services that traverse through this block.

A search on ACTmapi indicates that there are several survey markers within and surrounding the subject site. These include:

- A subdivision reference mark (SRM) situated in the northern area of the central and west car parks of Charnwood Place (east and west).
- A kerb marker located on the west kerbside of Charnwood Place (east).
- Additional kerb markers at the intersection of Charnwood Place (west) and Lhotsky Street, and the intersection of Lhotsky Street and Tillyard Drive.
- SRMs on Lhotsky Street, south of the site.

Refer to Figure 95 for an extracted image from ACTmapi showing the location of these survey markers and easements that are situated surrounding the site. Easements depicted in blue are for drainage, red for sewer, pink for gas, light blue for water, and green for an access easement.

Notify the Office of the Surveyors General ACT if any existing survey markers will be damaged or removed as part of a future development.



Figure 95 – Existing Survey Markers and Easements Surrounding the Site (ACTmapi, 2024)

6.10 Transport

6.10.1 Traffic and Vehicular Access

The subject site comprises the Charnwood Group Centre, which is adjacent to Tillyard Drive and in close proximity to Ginninderra Drive. Also south of the site is Lhotsky Street that provides access via Charnwood Place and car parks that provide ease of accessibility to the commercial area. Refer to Figure 97 and Figure 104 for general perspective views of Tillyard Drive. Also see below Figure 98, Figure 99, Figure 100, Figure 101 and Figure 102 for photos of Lhotsky Street, including intersections with Charnwood Place (east) and Tillyard Drive. Lhotsky Street has been reduced to 40km/h in the vicinity of the group centre, indicating a high pedestrian activity area. Further to this, a 40km/h school zone is imposed on Lhotsky Street to the west of the group centre to cater for St. Thomas Aquinas Primary School and the Edge Early Learning Centre to the south west. See Figure 103 for a photo of sign on Lhotsky Street delineating the school speed zone.

Within the group centre, a road network from these external roads connects to various car parking areas. These internal roads are named Charnwood Place, and Verge Place. This Site Investigation Report refers to the various sections of Charnwood Place as 'east' and 'west'. Verge Place branches off Tillyard Drive. See below Figure 105, Figure 108 and Figure 106 for general perspective photos of Charnwood Place and Figure 107 for a photo of Verge Place.

For the length of Tillyard Drive adjacent the subject site, residential properties do not have driveway access to Tillyard Drive. However, for commercial developments, driveway access is available onto Lhotsky Street, for the extent of the subject site.

If any areas within the subject site are deemed suitable for development/redevelopment, a comprehensive traffic assessment will be necessary to evaluate the potential impact on the surrounding public road network once the development details and connection arrangements are established.

Based on the Active Travel Infrastructure Practitioner Tool (refer to Figure 96 for an excerpt), a summary of the classifications of roads within the vicinity of the site are detailed in Table 2 below. The road geometry requirements for each of these classifications, with the exception of 'arterial road' is provided within the Estate Development Code (2020). TCCS standard MIS 01 'Street Planning and Design' also provides guidance on functional road classifications based on traffic volumes, whilst MIS 06 Verges provides guidance on verge widths. These documents were all referred to in confirming the road classifications provided in Table 2 below.

Table 2 – Road Traffic Classification

Road Name	Classification
Ginninderra Drive	Arterial
Tillyard Drive	Major Collector
Lhotsky Street	Major Collector
Charnwood Place	Access Street B
Verge Place	Access Street A

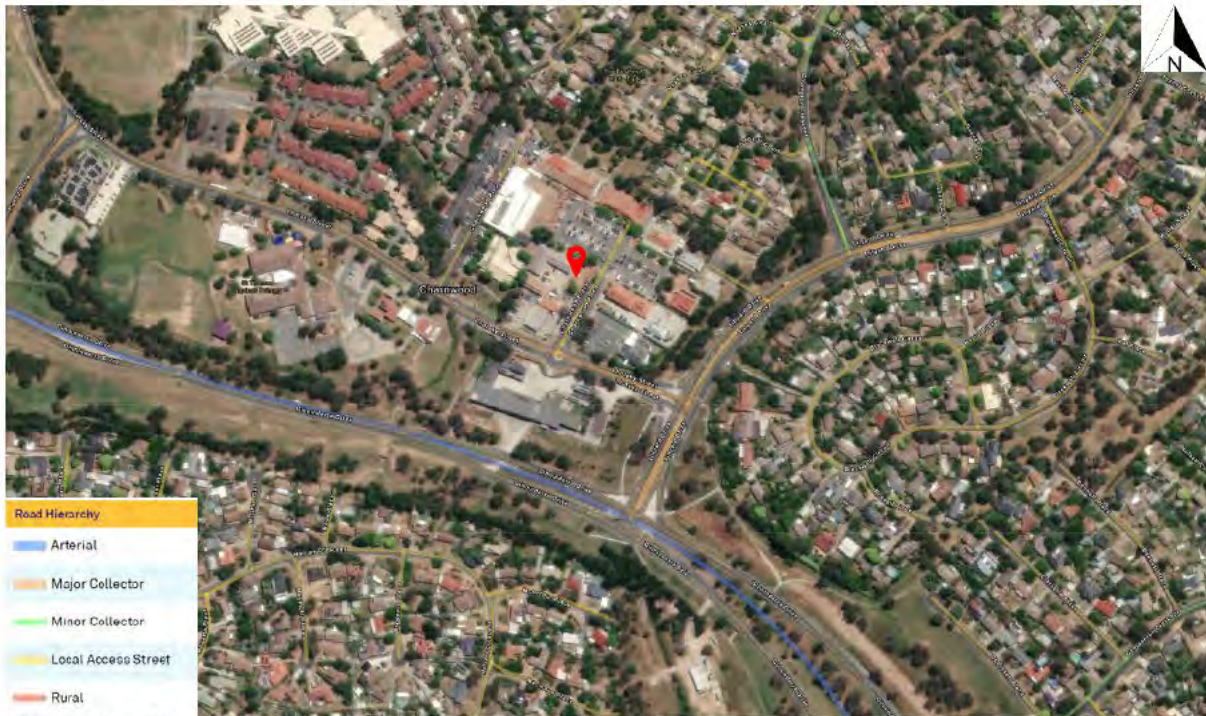


Figure 96 – Extract from the Active Travel Infrastructure Practitioner Tool (2024)



Figure 97 – General View of Tillyard Drive Looking South



Figure 98 – Lhotsky Street Looking West, Adjacent St Thomas Aquinas Parish



Figure 99 – Lhotsky Street Looking East



Figure 100 – Charnwood Place (east)
Roundabout Intersection with Lhotsky Street



Figure 101 – Signalised Intersection of Lhotsky
Street and Tillyard Drive



Figure 102 – Lhotsky Street Speed Restriction
Sign



Figure 103 – School Zone sign on Lhotsky
Street



Figure 104 – Tillyard Drive Looking North



Figure 107 – General View of Verge Place



Figure 105 – Charnwood Place (east) Looking North



Figure 108 – General View of Charnwood Place (west)



Figure 106 – General View of Charnwood Place (east)

TCCS was consulted to obtain their Canberra Strategic Transport Model (CSTM) outputs, which include assumed turn movements for the AM and PM travel peak periods in the 2026, 2031, and 2041 forecast scenarios. These outputs are illustrated in Figure 109 to Figure 114 below. The data indicates that Tillyard Drive adjacent to the site is operating within its geometric capacity (<45% of the road's capacity) in both the 2026 and 2031 morning and afternoon peak periods. However, by 2041, traffic volumes on Tillyard Drive increase significantly, with the morning peak operating within 70% of the road's capacity. The section of Tillyard Drive between Lhotsky Street and Ginninderra Drive operates just within its capacity during the 2026 morning peak period, and within 85% of its capacity during the same period in 2031 and 2041. In some sections of road there is a reduction in

traffic on Tillyard Drive in the 2031 and 2041 scenarios, which may be attributed to increased public transport usage or alternative routes being used to access Ginninderra Drive.

The morning peak in all scenarios is identified as the most critical period for the road network in proximity to the subject site. Lhotsky Street operates just within its geometric capacity in 2026 and 2031, but by 2041, the morning peak hour shows traffic volumes exceeding the road's capacity for the section of Lhotsky Street west of Charnwood Place (west).

Ginninderra Drive, south of the subject site, is shown in the output to be operating beyond its capacity during the morning peak in the 2026 scenario. East of the intersection of Tillyard Drive and Ginninderra Drive, the road operates adequately during the critical morning peak hour in 2026, 2031, and 2041. Eastbound traffic on Ginninderra Drive is projected to increase by approximately 3% from 2026 to 2031, and 15% from 2031 to 2041. This substantial increase in traffic results in the eastbound carriageway operating above its capacity during the morning peak. Similarly, the westbound carriageway is projected to operate above its capacity during the 2041 afternoon peak.

MIS 03 'Pavement Design' stipulates that the average AM and PM peak hour traffic volumes represent between 10% and 12% of the average annual daily traffic. For Lhotsky Street, using the most conservative scenario of 571 vehicles per hour (vph) in the 2026 AM peak for both directions (directly south of the subject site only), this translates to approximately 5,710 vehicles per day (vpd). This volume falls within the Major Collector classification provided in MIS 01, which is defined as 3,001-6,000 vpd.

When examining the most trafficked section of Tillyard Drive, located southwest of the subject site between Lhotsky Street and Ginninderra Drive, the traffic volume in both directions is 7,610 vpd in the 2031 AM peak. This volume exceeds the range specified for a Major Collector road classification according to MIS 01 standards (3,001-6,000 vpd). It is important to note that this section of Tillyard Drive has been recently upgraded to have two lanes in both directions and signalised intersections at Ginninderra Drive and Lhotsky Street. If the highest traffic volume projected in the CSTM is considered for a single carriageway, the daily traffic is 6,180 vpd, which exceeds the Major Collector designation by only 3%. The additional lane provides capacity to the road, which is most likely the reason that the CSTM showing this section of road operating within capacity, despite this volume of traffic.

Charnwood Place and Verge Place do not have projected traffic volumes in the CSTM output, due to their relatively low traffic compared to surrounding roads. However, it can be safely assumed that both roads fall within the Access Street B threshold of 1,000 vpd for commercial zones, as stipulated in MIS 01.

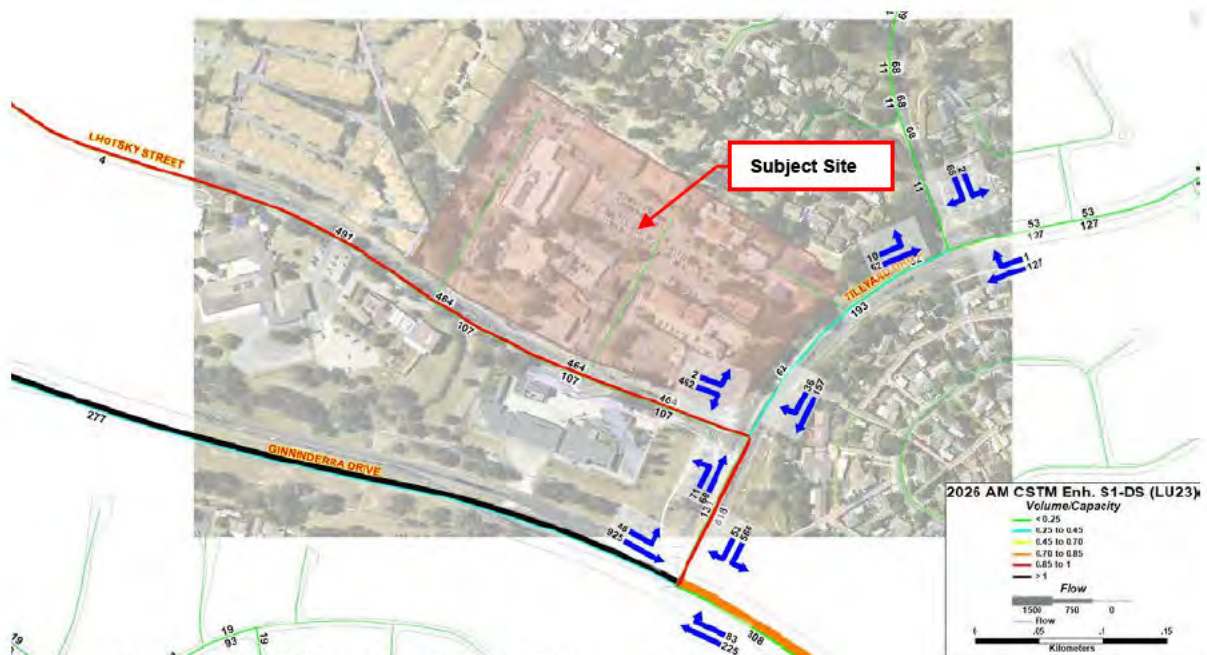


Figure 109 – CSTM Modelling – 2026 AM Peak Volumes (TCCS, 2024)

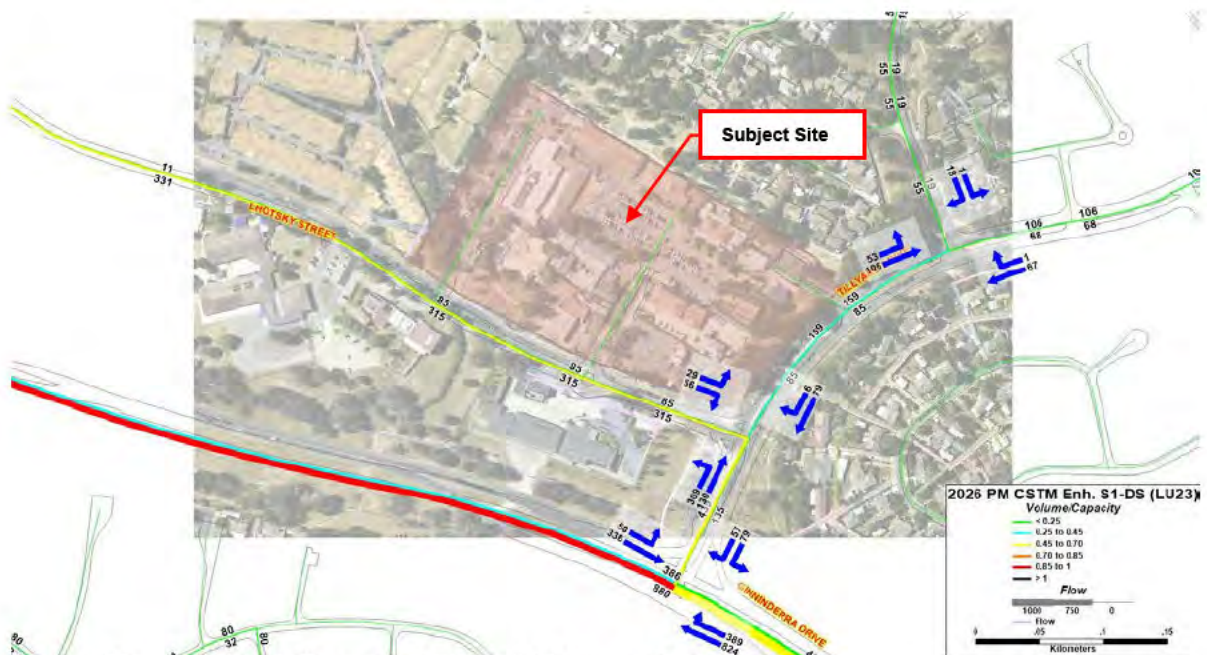


Figure 110 – CSTM Modelling – 2026 PM Peak Volumes (TCCS, 2024)

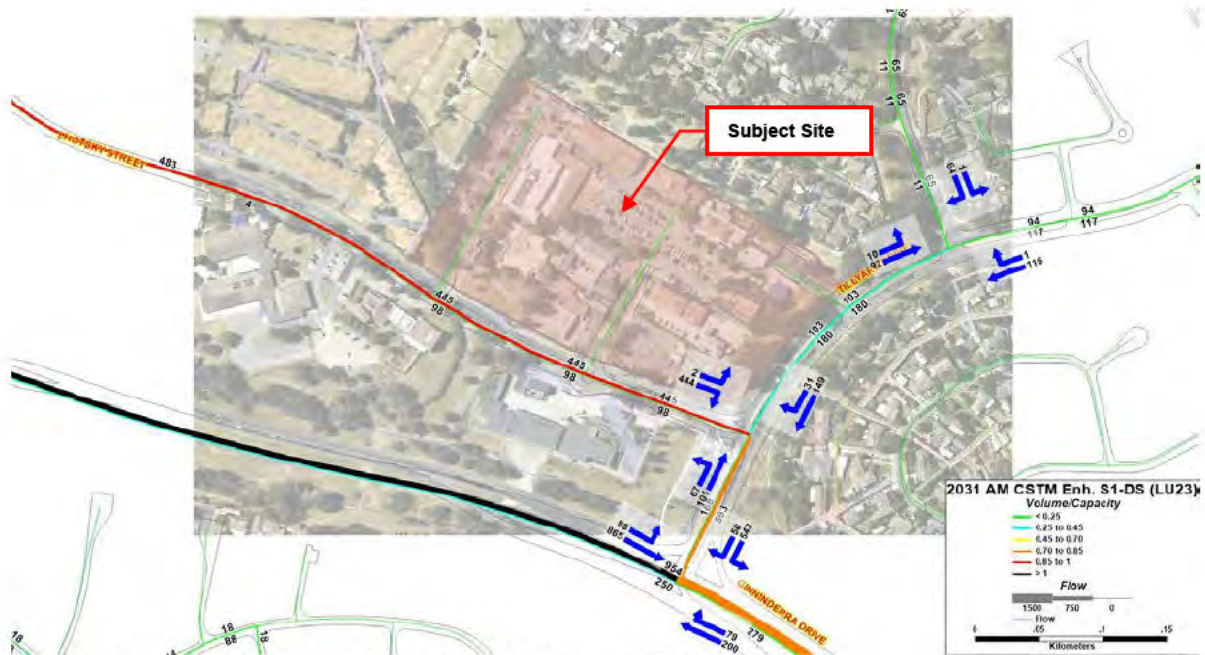


Figure 111 – CSTM Modelling – 2031 AM Peak Volumes (TCCS, 2024)

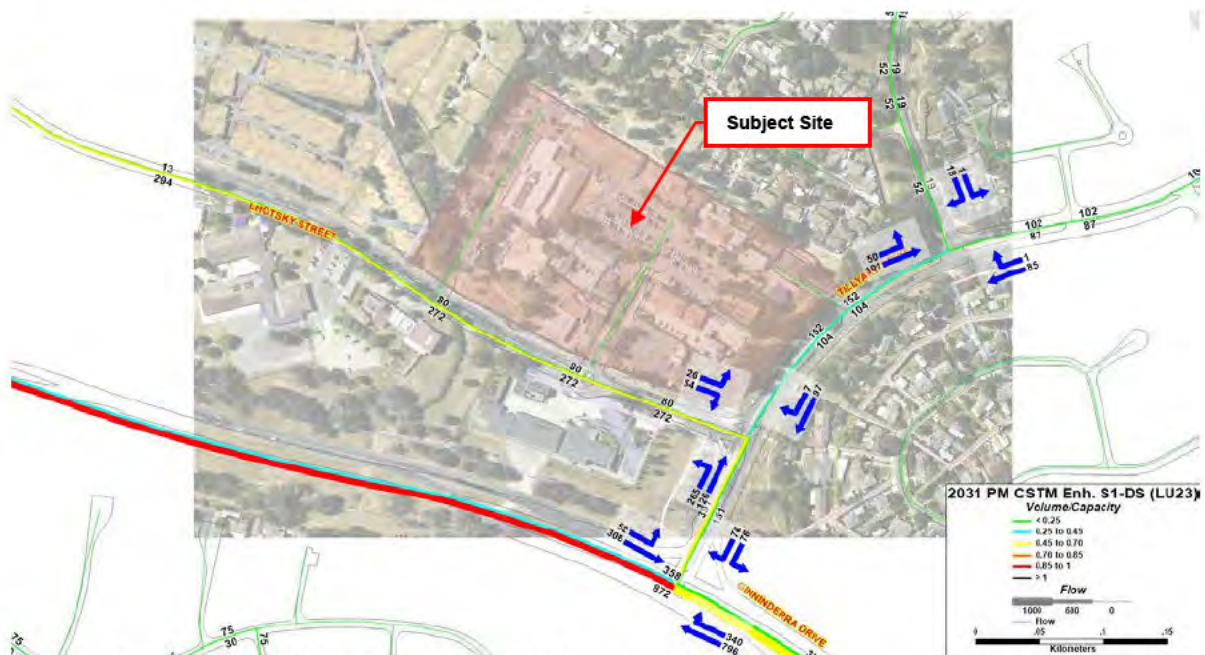


Figure 112 – CSTM Modelling – 2031 PM Peak Volumes (TCCS, 2024)

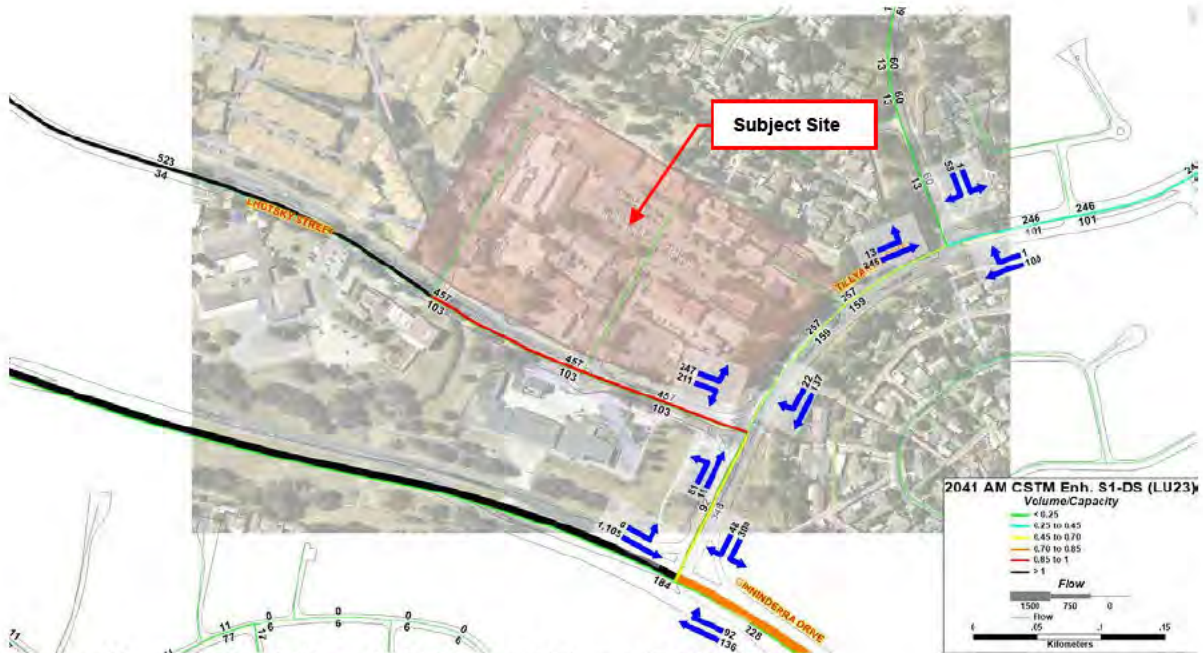


Figure 113 – CSTM Modelling – 2041 AM Peak Volumes (TCCS, 2024)

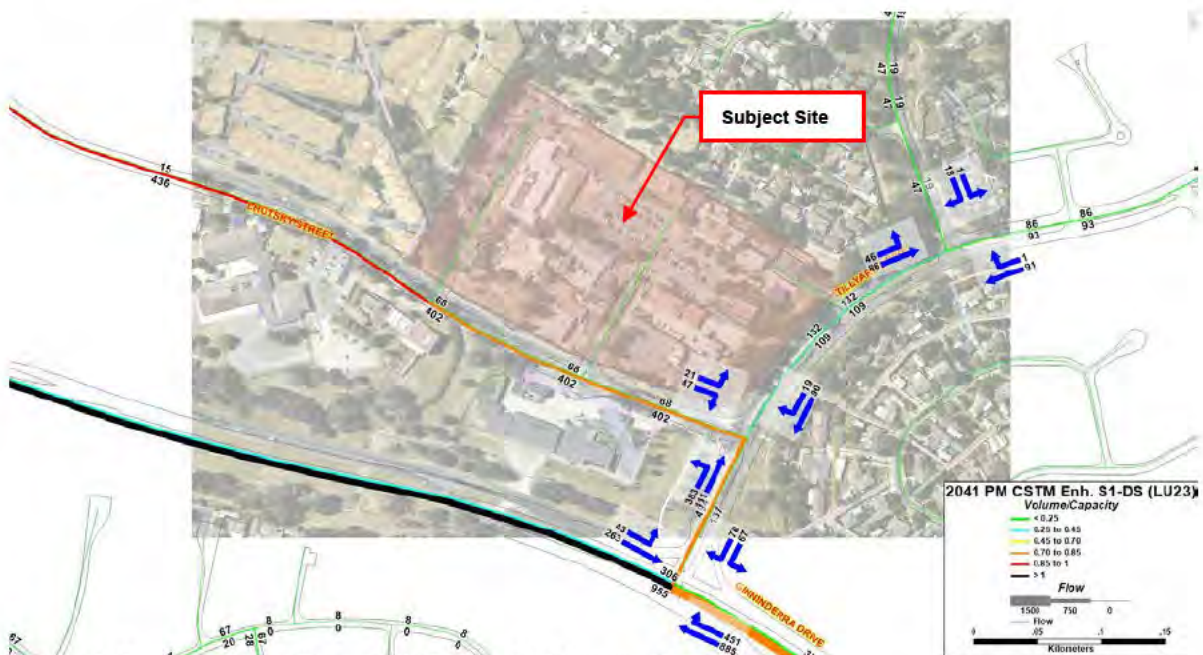


Figure 114 – CSTM Modelling – 2041 PM Peak Volumes (TCCS, 2024)

The demographics and associated populations assumed for the group centre area that is applied to the Canberra Strategic Transport Model (CSTM) was provided by ACT Government TCCS and is detailed in Figure 115 and Table 3 below. The data confirms that the site is located in an area (CSTM Zone 030407) that is a mix of employment, retail space and schools. There is a small decrease in employment over the projected year of 2026 by approximately 14% and 2041 by approximately 8%, whilst numbers rise slightly by 2051 (3%). The retail space, measured in square meters, is projected to increase over the years, stabilising by 2051. Likewise, school enrolments are projected to significantly increase by 2026, with an approximate 20% uptake, and then is relatively maintained until 2051.



Figure 115 – Canberra Strategic Transport Model (CSTM) Zone ID (TCCS, 2024)

Table 3 – CSTM Assumed Demographic Data (TCCS, 2024)

Suburb	Zone ID	Population					Employment					Retail Space					School Enrolment				
		2021	2026	2031	2041	2051	2021	2026	2031	2041	2051	2021	2026	2031	2041	2051	2021	2026	2031	2041	2051
Charnwood	030401	402	413	406	381	402	21	18	18	17	17	-	-	-	-	-	-	-	-	-	-
Charnwood	030402	279	286	281	264	279	15	12	12	11	12	556	562	569	646	646	-	-	-	-	-
Charnwood	030403	744	765	752	706	745	43	37	36	34	35	-	-	-	-	-	-	-	-	-	
Charnwood	030404	891	915	900	846	892	94	81	80	74	76	-	-	-	-	-	432	518	524	524	524
Charnwood	030405	429	440	433	407	429	19	16	16	15	16	-	-	-	-	-	-	-	-	-	
Charnwood	030406	305	313	308	289	305	13	11	11	10	10	-	-	-	-	-	-	-	-	-	
Charnwood	030407	-	-	-	-	-	576	494	491	453	466	7,096	7,178	7,259	8,246	8,246	393	472	477	477	477

6.10.2 Parking

Car parking is extensively provided around the Charnwood Group Centre predominantly as off street public parking, mainly provided within Charnwood Place (east and west) with a minor parking area available in Verge Place. An approximation of the existing car park spaces within the subject site is listed below:

- 159 parking bays in Charnwood Place (west)
- 134 parking bays in Charnwood Place (east)
- 14 parking bays in Verge Place

Additional car parks are available on development sites but are not included in this report/analysis.

Aerial imagery from ACTmapi, captured over various periods, was used to estimate the occupancy rate of the off street public car parking available in the group centre. This includes the cumulative parking spaces in Charnwood Place (east and west) and Verge Place, totalling approximately 307 parking spaces. From this analysis, the observed average percentage usage of the car parks is approximately 59%. See Table 4 below for details. The observation data represents different seasons and times throughout the years to ensure a comprehensive overview of parking usage. Specific dates and times for the imaging are not available.

Table 4 – Parking Utilisation Estimates

	May-17	Mar-18	Oct-19	Nov-20	Dec-21	Jul-22	Nov-23	Average
Spaces in Use	186	185	176	151	181	183	197	180
% Full	61%	60%	57%	49%	59%	60%	64%	59%

Please note that this assessment is preliminary and any development/redevelopment proposed on the site that could potentially generate traffic will be assessed in accordance with TCCS requirements (Transport Canberra and City Services).

The Planning (Commercial Zones) Technical Specifications 2024 (effective: 20 March 2024) establishes parking generation rates, considering the site's location and intended uses. For various group centre developments, the parking provision rates as applicable to a commercial zone are comprehensively provided in Schedule 3 of the Commercial Zones Technical Specifications.

The Planning (Commercial Zones) Technical Specifications stipulates that the location of long stay, short stay and operational parking are as follows for a development other than residential, early childhood, and residential care accommodation in a commercial zone:

- Long stay parking – On-site or within 200 metres
- Short stay parking – On-site or within 100m
- Operational parking – On-site
- Visitor parking – On-site or within 100m

Under the Planning (Commercial Zones) Technical Specifications, the following requirements apply for parking spaces designated for motorcycles and motor scooters:

- Three dedicated spaces per 100 car parking spaces are necessary, with at least one space mandated for car parks containing a minimum of 30 car parking spaces.

- These provisions must be in addition to the required number of car parking spaces. Compliance with AS 2890 standards (both part 1 - Off-street and part 5 - On-street) is essential for the provision of motorcycle parking spaces.

Also, in line with the Technical Specification, for public car parks containing more than 10 spaces, parking spaces designated for people with disabilities must constitute a minimum of 3% (rounded up to the nearest whole number) of the total number of parking spaces required for the development.

In accordance with Clause 22.1 of the Commercial Zones Technical Specifications, electric vehicle ready parking only needs to be provided to at least 20% of non-residential parking spaces in new community facility developments.

The design of the proposed parking layout and its associated geometrical dimensions on the site must adhere to Australian Standard AS2890.1, with disability parking conforming to AS2890.6.

In case of a new development, any proposed use of existing parking surrounding the subject site needs to be agreed with TCCS.

Photos in Figure 116 to Figure 126 show existing car parking bays and associated infrastructure, whilst Figure 122 and Figure 123 show existing parking signs within and surrounding the site. Also see Figure 124 below for a signposted park and ride facility in the Charnwood Place (east) car park.



Figure 116 – Parking in Verge Place



Figure 118 – Parking in Charnwood Place (west)



Figure 117 – Parking off Verge Place



Figure 119 – Parking in Charnwood Place (west)



Figure 120 – Parking in Charnwood Place (east)



Figure 122 – Parking Sign in Charnwood Place (east)



Figure 121 – Parking in Charnwood Place (west)



Figure 123 – Parking Sign in Charnwood Place (east)



Figure 124 – Park and Ride Area in Charnwood Place (east)



Figure 125 – Parking in Charnwood Place (east)



Figure 126 – Parking in Charnwood Place (east)

6.10.3 Pedestrian and Cycle Access

Fully paved verges exist on most sections of Charnwood Place, and generally within the main group centre. This also acts as a plaza frontage to the existing shopping area in the central area. An extensive path network is available within and surrounding the subject site. In summary, this includes:

- A concrete footpath, approximately 1.5 metres wide, runs along the northern verge of Lhotsky Street, west of Charnwood Place (west). This path widens to 2 metres at Charnwood Place (east) before narrowing to 1.2m as it continues east to Tillyard Drive.
- An approximate 1.7m wide concrete footpath exists along the east and west verges of Charnwood Place (east).
- An approximate 4.0m wide concrete footpath is located on the east verge of Charnwood Place (west).
- An approximate 2.0m wide concrete footpath runs through the open space area of Block 11 Section 95, extending to the Lhotsky Street underpass.
- An approximate 1.8m wide concrete footpath is situated on the southern verge of Lhotsky Street, terminating at a bus stop near the roundabout intersection with Charnwood Place (east).

- An approximate 1.5m wide concrete footpath is present on the west verge of Tillyard Drive, west of Charnwood Place (west), and a 1.2m wide path is on the east verge of Tillyard Drive.
- An approximate 2.5m wide concrete footpath is located northwest of the site, leading to Charnwood Place (west) in Block 17 Section 117.
- Two concrete footpaths, approximately 2.0 metres and 1.5 metres wide, are situated northwest of the site, leading to Charnwood Place (west) in Block 213 Section 96.
- An approximate 1.5m wide concrete footpath runs parallel to the site's northern boundary, widening to approximately 1.7 metres near Verge Place.
- An approximate 1.2m wide concrete footpath to the northeast of the site connects the abovementioned 1.7m path in Block 213 Section 96 to Verge Place.
- On road cycle lanes have been provided on Tillyard Drive for the extent of the relatively recently constructed signalised intersections with Ginninderra Drive and Lhotsky Street. Pedestrian crossings are provided at these signalised intersections.
- A raised pedestrian crossing is located at the main entrance to the group centre on Charnwood Place (east).
- The verges of Charnwood Place (east and west) are fully paved with a combination of segmental pavers and concrete.
- The group centre areas are fully paved with segmental pavers.

The photos in Figure 128 to Figure 146 provide a visual representation of all of these paths as identified during a site inspection.

An excerpt from the CBR Cycle Routes map in Figure 127, published by ACT Government Transport Canberra, illustrates that a principal route is available commencing from Charnwood Place (west) to Belconnen Town Centre (Route C3). This route is connected to by main routes along Lhotsky Street further west and north of Charnwood Place (west) through the residential area of Charnwood. The principal route continues on Tillyard Drive and east on Ginninderra Drive. The principal route is also shown to be connected with local routes, which interconnect with the previously mentioned paths near the subject site.

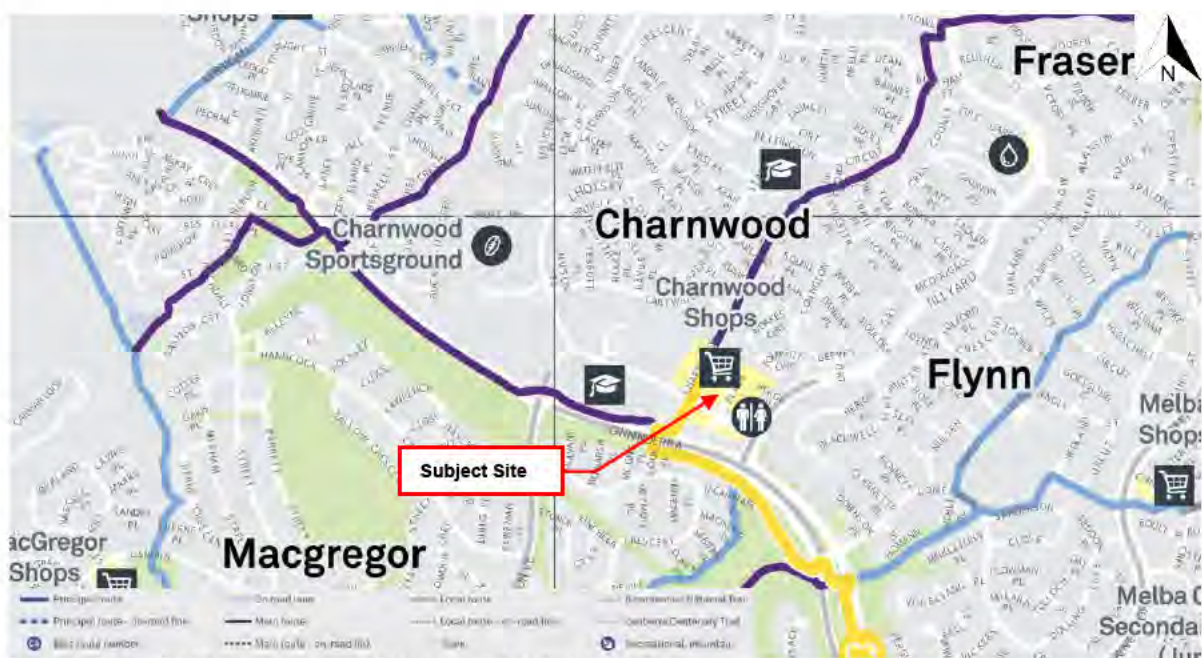


Figure 127 – CBR Cycle Routes (Transport Canberra, 2024)



Figure 128 – Footpath in West Verge of Tillyard Drive



Figure 130 – Footpath North of Site in Block 213 Section 96



Figure 129 – Footpath in Block 213 Section 96 North of Site



Figure 131 – Footpath Looking North from Group Centre in Block 213 Section 96



Figure 132 – Footpaths Near Subject Site on



Figure 134 – Footpath North West of Site in Block 17 Section 117



Figure 133 – Footpath Looking North West from Group Centre in Block 213 Section 96



Figure 135 – Fully Paved Verge in Charnwood Place (west) Car Park



Figure 136 – Paved Verges in Group Centre South West Central Car Park



Figure 137 – Footpath Leading from Group Centre to Lhotsky Street Underpass



Figure 138 – Stairs Access from Residential Areas West of Charnwood Place (west)



Figure 139 – C3 Principal Route Designation Near Lhotsky Street Underpass



Figure 140 – Lhotsky Street Underpass



Figure 141 – Footpaths South of Lhotsky Street Underpass



Figure 143 – Raised Pedestrian Crossing in Charnwood Place (east)



Figure 142 – Footpaths on Lhotsky Street Leading to Bus Stop



Figure 144 – Path Access from North to Group Centre



Figure 145 – General Photo of Fully Paved Verge in Group Centre



Figure 146 – Footpath from Charnwood Place (east) Car Park that Leads to Tillyard Drive

6.10.4 Transport Canberra and Bus Servicing

The subject site is situated in a location where two bus routes runs adjacent the group centre on Lhotsky Street and Tillyard Drive. Bus stops serving both directions on Lhotsky Street is available at the main entrance to the group centre near the intersection of Charnwood Place (east). See Figure 148 and Figure 151 below for photos of these bus stops in both eastbound and westbound carriageways.

Additionally, another bus route passes the site on Tillyard Drive, with bus stops directly east of the subject site. Refer to Figure 149 for a photo of Tillyard Drive and the bus stops in both carriageways.

The following bus routes have been identified within the general vicinity of the subject site to support the public transport needs to the group centre:

- Bus Route 40 operates between Fraser and the Belconnen Interchange, passing through Charnwood, Macgregor, Holt, Kippax, Latham, Flynn, and Florey.
- Bus Route 41 runs from Fraser to the Belconnen Interchange, traveling through Charnwood, Flynn, Melba, Evatt, and Florey.
- Bus Route 42 connects Fraser to the Belconnen Interchange, via Flynn, Melba, Scullin, Page, and Florey.

A park and ride sign was also noticed on site to be at the intersection of Lhotsky Street and Charnwood Place (east) as can be seen in Figure 150 below.

Refer to Figure 147 for an excerpt from the Transport Canberra bus route map showing these bus routes in relation to the subject site.



Figure 147 – Bus Routes Adjacent the Subject Site – Extracted from Transport Canberra (2024)



Figure 148 – Bus Stop on Lhotsky Street Near Charnwood Place (west)



Figure 149 – Bus Stops on Tillyard Drive East of Site



Figure 150 – Park ‘n’ Ride Sign Near Charnwood Place (east)



Figure 151 – Bus Stop on Lhotsky Street Near Charnwood Place (east)

6.11 Specialist Investigations

6.11.1 Heritage

A heritage assessment was not completed as part of this Site Investigation Report. However, reference was made to the ACTmapi database and the ACT Heritage Register located on the ACT Government Environment and Sustainable Development website (https://www.environment.act.gov.au/heritage/heritage_register/register-by-place).

The ACTmapi mapping shows that there are no apparent heritage factors pertaining the subject site nor in the close vicinity of the site.

To validate the information sourced from ACTmapi and the ACT Heritage Register, the ACT Heritage Council was consulted by EPSDD through a section 57 access to information request. The following heritage reports that were provided have been reviewed in relation to the Charnwood Group Centre:

1. 'National Heritage Studies Pty Ltd, 1991, NHS Ginninderra Archaeological Survey-Belconnen Latham, A Report to Dwyer Leslie Pty. Ltd., ACT.'
 - The nearest study area to the Charnwood Group Centre is Group 2, Classification Number 18, located just outside the Charnwood Group Centre.
2. 'Peter Rimas Kabaila, 1997, Belconnen's Aboriginal Past, a glimpse into the archaeology of the Australian Capital Territory, Black Mountain Projects Pty. Ltd., ACT.'
 - The closest Aboriginal site to the Charnwood Group Centre is Ginninderra Creek (No. 27), which is located just across Ginninderra Drive.
3. 'University of Canberra Cultural Heritage Research Centre, 2000, Cultural and Military Heritage Assessment, Belconnen Naval Transmitter Station and ACT Government Land, Lawson, Report to the Department of Defence and ACT Government.'
 - This study is located in Lawson, approximately 7 km away from the Charnwood Group Centre, making it irrelevant to the current investigation.
4. 'ACT Heritage Council, 2002, Australian Capital Territory Interim Heritage Place Register, Aboriginal Places in the District of Belconnen, ACT.'
 - The ACT Heritage Places Register does not identify any Aboriginal sites or potential deposits within the Charnwood Group Centre.
5. 'Navin Officer Heritage Consultants Pty. Ltd., 2006, Belconnen to City Transit Way, Cultural Heritage Assessment, A Report to Brown Consulting Pty. Ltd., ACT.'
 - The study areas in this report do not include the Charnwood Group Centre, making the findings irrelevant to the site.
6. 'Navin Officer Heritage Consultants Pty. Ltd., 2008, Belconnen Naval Transmitting Station, Brief Report, Artefact Collection (Site L19), ACT'
 - The report is focused on the Lawson Naval Transmitting Station and is not applicable to the Charnwood Group Centre.
7. 'Navin Officer Heritage Consultants Pty. Ltd., 2008, Belconnen Naval Transmitting Station Lawson CHA, Indigenous Cultural Heritage Assessment, Draft, A Report to Godden Mackay Logan, ACT.'
 - The study areas in this report are located in Lawson, and the findings do not pertain to the Charnwood Group Centre.
8. 'Navin Officer Heritage Consultants Pty. Ltd., 2009, Lawson ACT Concept Planning Study, Cultural Heritage Assessment of Territory Land, A Report to Maunsell AECOM, ACT.'
 - This report is irrelevant to the Charnwood Group Centre, as the study area is located in Lawson.
9. 'Navin Officer Heritage Consultants Pty. Ltd., 2011 Relocation of Emergency Services Agency Sites, Aranda, Charnwood and Calwell, Conder, Cultural Heritage Assessment, A Report to peckvonhartel, ACT.'

10. The report confirms that no Aboriginal sites have been previously recorded within the Charnwood study area.
11. 'Navin Officer Heritage Consultants Pty. Ltd., 2014, Town Centre Master Plan, Belconnen Town Centre, Draft, A report to Phillip Leeson Architects, ACT.'
 - The study areas in this report are situated near Lake Ginninderra, approximately 5.5 km away from the Charnwood Group Centre, making it irrelevant to this investigation.
12. 'Past Traces Heritage Consultants Pty. Ltd., 2019, Belconnen Trunk Sewer Augmentation Project – Aboriginal and Historical Cultural Heritage Impact Assessment, Report Prepared for WSP, ACT.'
 - The study areas identified in this report are along Ginninderra Drive, just outside the Charnwood Group Centre.
13. 'Past Traces Heritage Consultants Pty. Ltd., 2022, Completion of Heritage Site Survey and Impact Assessment - Umbagog Park Bridges 1193, 1194, 1195, ACT.'
 - The study areas in this report are along Ginninderra Creek, which does not cover the Charnwood Group Centre.

6.11.2 Ecological

Reviewing ACTmapi data indicates that the subject site contains ecologically sensitive habitat areas. The mapping shows that within and surrounding the site, there is potential for Spotted-tailed Quoll habitat areas. Refer to Figure 152, which provides a depiction of the area that incorporates this threatened fauna habitat area in proximity of the site, taken from ACTmapi. Figure 153 also shows ecologically sensitive vegetation mapping from ACTmapi, that correspond with the location of mature large trees.

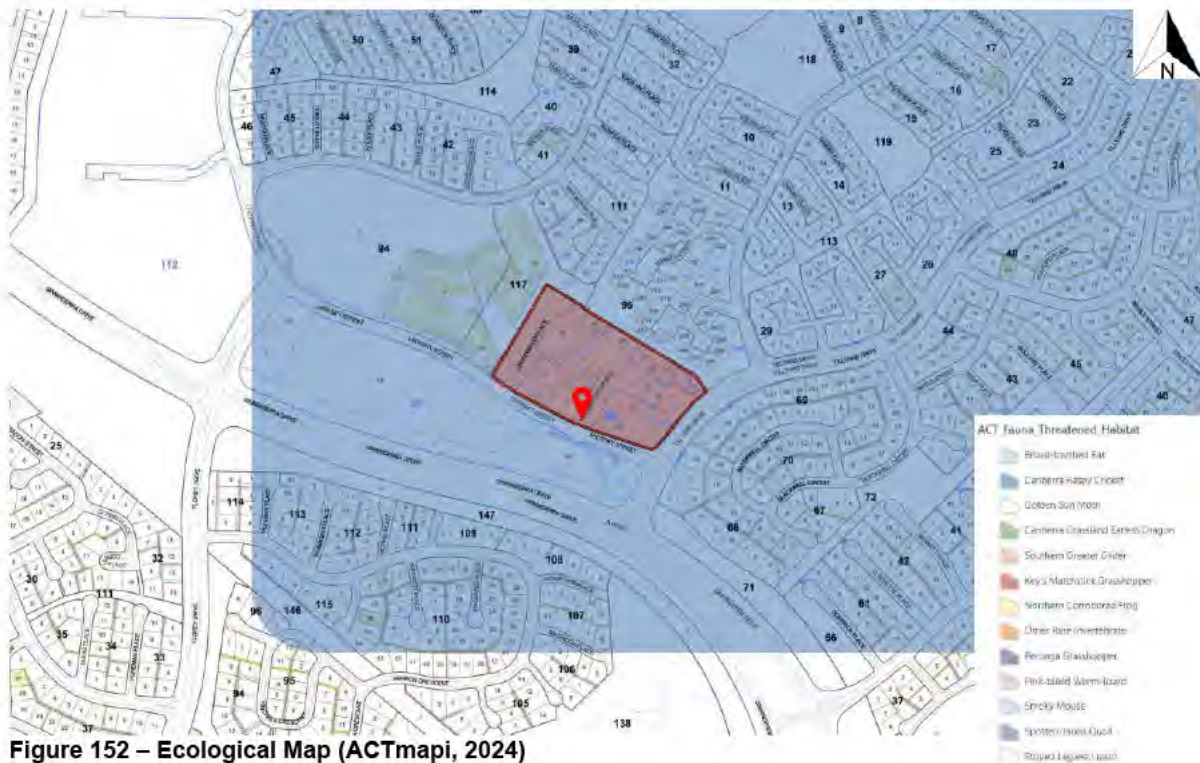


Figure 152 – Ecological Map (ACTmapi, 2024)



Figure 153 – Ecological Canopy Map (ACTmapi, 2024)

To verify these findings, the ACT Conservator of Flora and Fauna were consulted. The Conservator of Flora and Fauna advised that an ecological impact assessment should be completed for the site, if any development is proposed, addressing several key considerations:

- The Conservator emphasised the importance of maintaining connectivity for small woodland birds, particularly in the red shaded areas on the map provided in Figure 154 below, which indicate high connectivity values concentrated in the green space to the northeast of the site.
- The Conservator pointed out that mature native trees are scattered across the site. A comprehensive tree assessment is required to identify all mature native trees. The assessment should also evaluate how the proposed development aligns with the objectives of the Loss of Mature Native Trees Key Threatening Process Action Plan (2023).
- The Conservator noted that at least two trees on the site may provide significant habitat value. The assessment should determine if these trees meet the criteria for registration on the ACT Tree Register.
- The Conservator advised that any development on the site is likely to trigger the Biodiversity Sensitive Urban Design Guide. The ecological impact assessment should consider how to incorporate these guidelines into the site redesign.
- The Conservator indicated that development may require a Construction and Environment Management Plan to be approved by the Conservator. In cases where native trees are removed, specific replanting ratios may need to be applied. These ratios are provided in Table 5 below from the Conservator with respect to tree diameter at breast height (DBH).

This advice from the Conservator ensures that ecological considerations are integrated into the planning and development process, maintaining the environmental integrity of the site.



Figure 154 – Ecological Habitat Connectivity (Conservator of Flora and Fauna, 2024)

Table 5 – Native Tree and Shrub Replacement Ratios (Conservator of Flora and Fauna, 2024)

DBH Class (cm)	Replacement Ratios
<5	1:1
5 - 20	1:3 + relocate as native mulch or at Conservator discretion
21 - 30	1:8 + relocate as coarse woody debris
31 - 40	1:13 + relocate as coarse woody debris
41 - 50	1:40 + relocate as coarse woody debris
50+	1:90 + reinstate as vertical habitat structure or at Conservator discretion
100+	1:180 + reinstate as vertical habitat structure or at Conservator discretion

If any development is proposed within the subject site, it is recommended to engage with the ACT Conservator of Flora and Fauna during the project's design phase, which will lead to the need for a full ecological and tree assessment of the site and its immediate surrounds.

The subject site is not within an Environmental Offset area.

The ACTmapi database indicates that there are no registered trees within the site.

6.11.3 Environmental

A contaminated land search of the entire subject site's contamination status was initiated with the ACT Environment Protection Authority (EPA). This was to gather an understanding of the potential development constraints due to site contamination. The feedback received from the EPA confirmed that the site under consideration has two blocks that have a record of potential contamination or hazardous materials, whilst the remainder of the subject site does not have records of contaminated areas. The EPA advised that records for Block 1 Section 95 Charnwood indicate the following:

- The block is recorded on the EPA's contaminated sites management database and geographic information system.
- The site is currently occupied by an operational service station.
- The ACT EPA Contaminated Sites Environment Protection Policy 2017 lists service stations as an activity associated with land contamination.
- An Environmental Authorisation (EA 0734) under Section 42 of the Environment Protection Act 1997 for the operation of a facility designed to store more than 50m³ of petroleum products is held by Eureka Operations Pty Ltd for the site. An Environmental Management Plan (EMP) for the site has been approved by the EPA in accordance with the requirements of the EA.
- For information related to the site's EA, EMP, and the required environmental monitoring, contact environment.protection@act.gov.au.

The EPA further advised that records for Block 36 Section 95 Charnwood indicate the following:

- The block is recorded on the EPA's contaminated sites management database and geographic information system.
- EPA records suggest that hazardous materials may be present at the site due to the current or former operation of a dry cleaner.
- The block is also occupied by other commercial units. Prior to the introduction of natural gas to the ACT in the 1980s, commercial complexes often used boiler heating or similar systems fuelled by diesel or heating oil, which were typically stored in underground fuel storage tanks.
- The ACT EPA Contaminated Sites Environment Protection Policy 2017 lists dry cleaning and fuel storage as activities associated with land contamination that may pose a risk to human health and the environment.
- Other potentially contaminating activities may have been undertaken at the site associated with its past uses.

The EPA provided further advice in relation to records for Blocks 2, 3, 5, 7, 10, 11, 14, 19, 21, 25, 29, 30, 34-39, 42-44, 46, 47 Section 95 Charnwood, which included the following:

- The previously mentioned blocks within the Charnwood Group Centre are not recorded on the EPA's contaminated sites management database or geographic information system.
- However, portions of the Charnwood Group Centre are currently occupied by commercial complexes. Before the introduction of natural gas to the ACT in the 1980s, commercial complexes often used boiler heating or similar systems, typically fuelled by diesel or heating oil stored in underground fuel storage tanks.
- Aerial photographs show that other portions of the Group Centre are occupied by car parks. While there is no recorded information on potential site contamination, car parks have been associated with potential site contamination due to the placement of uncontrolled fill during site establishment.
- Under the precautionary principal, all blocks close to sites with potential land contamination activities are identified, and persons making enquiries are informed of the potential for

impacts from adjacent sites due to the ability of hydrocarbons and other contaminants to migrate through the environment.

- The EPA has no information to suggest that the dry cleaning facility (Block 36 Section 95 Charnwood) and the service station (Block 1 Section 95 Charnwood) have adversely impacted other blocks within the Group Centre.
- Other potentially contaminating activities may have also been undertaken at the site associated with current and past uses.

The EPA has not issued any orders of assessment or remediation under sections 91C (1) or 91D (1), environment protection orders under sections 125 (2) or (3), requested an audit under section 76 (2), or received an audit notification under section 76A (1) of the Environment Protection Act 1997 (the Act) over the subject site. Consequently, the entire subject site is not recorded on the Register of contaminated sites under section 21A of the Act.

The EPA advised that the information detailed above only relates to records held by the EPA and may not represent the actual condition of the site. While the EPA has no additional information on contamination of the blocks other than what has been provided above, this does not absolutely rule out the possibility of contamination. The EPA recommends conducting independent tests if absolute certainty of the site's current condition needs to be fully confirmed.

Refer to Appendix C for detailed responses from the ACT EPA.

6.11.4 Geotechnical

The site with respect to surrounding levels shows evidence of substantial earthworks that would have occurred during the subdivision works in the Charnwood Group Centre. Given the levels in the open space area to the east, south west and south east of the site, it is likely that extensive cutting and filling activities were undertaken within the group centre to create a level site to allow commercial development and accessibility.

A preliminary geotechnical site assessment, including a review of geological mapping, indicates that the subject site spans the following geological formations: Rhyodacitic Ignimbrite, suggesting potential shallow rock presence. Silurian volcanic soils are expected in this area as it falls under the Williamsdale soil landscape.

The subject site has generally flat grades across it with a moderate slope from the north west to the south east. The open space area to the east of the site has steeper grades to direct stormwater flows toward south east open space area. It is likely that previous fill operations have created the generally level surface across the group centre site. Key geotechnical considerations include the depth, strength, and excavation characteristics of shallow rock, potential uncontrolled fill operations affecting site classification, the impact of four mature trees onsite, and the shrink-swell (reactive) properties of the soils.

A comprehensive geotechnical intrusive analysis is recommended to better understand ground conditions and to inform future development on the site.

6.11.5 Bushfire

The current bushfire mapping listed on ACTmapi demonstrates that the subject site is relatively near a recorded Bushfire Prone Zone, to the south east, beyond Ginninderra Drive. The site however is within proximity of a Strategic Bushfire Management Zone, shown in mapping to include the open space area in the south east portion of the site (Block 29 Section 95). Refer to Figure 155 and Figure 156 for a bushfire prone area map and strategic bushfire management zone map, respectively, reproduced from ACTmapi. These include the subject site and broader area to provide context.

ACT Fire & Rescue confirmed that the development is located outside the area declared by the ESA as a Bushfire Prone Area. Therefore, applying bushfire protection measures will not be mandatory for the site. However, ACT Fire & Rescue advised that consideration should always be given to

bushfire protective measures, as these can improve the survival of any structure in the event of a nearby bushfire or structural fire.

ACT Fire & Rescue advised that the blocks on the eastern side of the site (Tillyard Drive) are mapped to provide a minimum water delivery rating of FRT3, while the blocks from the west to the northern side (Charnwood Place) are mapped to provide FRT4. ACT Fire & Rescue further advised that any community development will require FRT3 with a minimum firefighting flow provision of 60L/s. For any commercial development, depending on the structure type, it may be assessed as FRT3 or, where available, FRT4, with a minimum firefighting flow provision of 100L/s. This advice is consistent with Icon Water's Supplement to WSA Water Supply Code of Australia for commercial developments. The minimum hydrant spacing in an FRT3 zone is at 60 metres along the mains, whilst FRT4 requires a spacing of 45m and double hydrants every 135m and at cul-de-sac ends. This is in accordance with the Icon Water Supplement to WSA Water Supply Code of Australia.

Additional advice from ACT Fire & Rescue suggests that the verification of the fire risk rating can be conducted during the development application stage, with particular consideration given to the size and type of development.

Refer to Appendix C for detailed correspondence with the ACT Fire & Rescue.



Figure 155 – ACTmapi Bushfire Map (ACTmapi, 2024)



Figure 156 – ACTmapi Bushfire Strategic Management Zone Map (ACTmapi, 2024)

6.11.6 Tree Assessment

The following observations have been made on site and through an onsite inspection for existing trees on and within close vicinity of the site.

- Some very large isolated and grouped mature trees are present within the car parks on site and in the group centre's road verges. A large mature tree was observed in the passageway between Block 3 and Block 47, as can be seen in Figure 166 below.
- There are also some large mature trees that are located in the open space of Block 29 Section 95, adjacent Tillyard Drive. See Figure 158 and Figure 162 for a photo of these trees.
- Some dead trees were also observed within the site's open space block (Block 11 Section 95), an example of which is shown in Figure 167 below.
- Some small relatively newly planted trees were observed during the site inspection within the Charnwood Place (east) west verge. See Figure 168 for an example of these newly planted trees observed within the subject site.
- Based on ACTmapi information, none of these trees present on and in close proximity to the site are registered trees. However, mature trees are shown in ACTmapi mapping, as can be seen in Figure 157 below.
- Based on an initial onsite inspection and an aerial imagery review, some of the trees appear to meet the criteria of a regulated tree as defined in the Urban Forest Act 2023 (effective date 1 January 2024).
- A regulated tree is protected under the ACT Urban Forest Act 2023. A regulated tree is defined as:

a living tree on leased land that:

- *is at least 8m high; or*
- *has a canopy at least 8m wide; or*
- *has 1 trunk that, 1.4m above natural ground level, has:*
 - *a circumference of at least 1m; or*
 - *a diameter of at least 318mm; or*
- *has 2 or more trunks and, 1.4m above natural ground level, the average circumference of the trunks is at least 625mm, and:*
 - *the sum of the circumferences of each trunk is at least 1m; or*
 - *the sum of the diameters of each trunk is at least 318mm; or*
- *regardless of the size of the tree:*
- *has been planted for not more than 5 years:*
 - *under a canopy contribution agreement; or*
 - *in accordance with a tree protection condition of a development approval; or*

a dead native tree on leased land that, 1.4m above natural ground level, has a trunk with:

- *a circumference of at least 1.88m; or*
- *a diameter of at least 600mm.*

In accordance with the Urban Forest Act 2023, any construction work should be more than 2m away from the vertical projection of the tree canopy and 4m away from the area surrounding the trunk as measured at 1m above natural ground level.

A tree assessment has not been undertaken on the site, however, it is recommended that one is carried out by an accredited arborist in conjunction with a tree survey, to provide detailed information

on the location and status of trees within the site. This information would aid in the development or redevelopment of any portion of the site by identifying and assessing trees that are Protected and Regulated, as covered by the Urban Forest Act 2023. Following a tree assessment, the findings should be provided to the ACT Tree Protection Unit for comment/validation.

Refer to Figure 158 to Figure 168 for site photographs of some of the potentially regulated trees and newly planted trees identified during the site inspection.



Figure 157 – Mature Trees Map (ACTmapi, 2024)



Figure 158 – Large Mature Trees Adjacent Tillyard Drive



Figure 159 – Large Mature Trees North West of Site



Figure 160 – Large Trees within Charnwood Place (east) West Verge



Figure 162 – Large Mature Trees in Tillyard Drive West Verge



Figure 161 – Large Mature Trees Near Lhotsky Street Underpass



Figure 163 – Trees in Open Space Area North of Site



Figure 164 – Mature Trees in North West Open Space Area



Figure 166 – Mature Tree Between Block 3 and Block 47



Figure 165 – Mature Trees in the Central Group Centre Area



Figure 167 – Dead Tree in Block 11 Open Space Area



Figure 168 – Small Newly Planted Trees within Charnwood Place (east)

6.11.7 Water Sensitive Urban Design

Any proposed development on the subject site will drain via TCCS's stormwater infrastructure into the significant piped network that drains toward the open space area south east of the site. These flows will continue across Ginninderra Drive, which conveys flows to Ginninderra Creek, and ultimately drains into Murrumbidgee River further west. It is important the Developer is aware of this and complies with all legislative requirements with regards to stormwater runoff quality and quantity.

Stormwater design for the proposed development shall comply with the EPSDD ACT Biodiversity Sensitive Urban Design Guide, for which the requirements are summarised within the Commercial Zones Planning Technical Specifications (March 2024), including but not limited to the following requirements:

- Mains water use reduction of 40% in comparison to an equivalent development constructed in 2003.
- On site stormwater retention and detention.
- The developer must not increase the peak stormwater runoff from the development from the peak rate of runoff from an unmitigated (rural) site of the same area for minor and major storms.
- A summary of the minimum required WSUD targets and achievements are listed below:
 - Gross pollutants reduction $\geq 90\%$
 - Reduction in suspended solids $\geq 60\%$
 - Reduction in total phosphorous $\geq 45\%$
 - Reduction in total nitrogen $\geq 40\%$
 - Minimum permeable area of the site $\geq 15\%$
 - Effluent reuse is optional

The 'ACT Practice Guidelines for Water Sensitive Urban Design' (2018) document provides various methods that can assist in meeting these water sensitive urban design requirements for the proposed development. The following measures can be considered as part of the Development Application for the proposed development to achieve best practice in water sensitive urban design:

Mains water use reduction:

- Water efficient irrigation systems
- Use of stormwater to replace mains water for irrigation
- Water efficient landscaping
- Rainwater tanks for garden watering and internal uses, such as toilet flushing
- Use of greywater for irrigation and toilet flushing on individual dwellings
- Wastewater treatment and reticulation to commercial or industrial users who do not require water of a potable water mains standard

Stormwater management:

- Filter strips
- Swales and Bio-retention swales in lieu of piped drainage systems
- Downpipes and impervious surface areas not directly connected to the stormwater system, direct runoff across lawns and gardens
- Minimising impervious surfaces

- Installing on-site detention storage, which may be increased in size to allow for water harvesting
- Creating extended detention volume in ornamental ponds or landscaped depressions
- Direct connection of downpipes to a separate collection system to discharge to ornamental ponds to maintain water quality

Wastewater reuse:

- Use of domestic greywater, treated or untreated

Construction of the proposed development will also be required to comply with the Environment Protection Authority's document, 'Environment Protection Guidelines for Construction and Land Development in the ACT' (August 2022).

7 Proposed Site Servicing

7.1 General

A potential development, as discussed in Section 3 of this report is unknown with no planning design or massing work being carried out on the subject site to date, with the exception of some relatively recent group centre improvement works.

The following recommendations serve as a preliminary discussion of the site servicing options based on the constraints identified in this investigation. The location and size of the proposed services are to be confirmed following a planning design phase that can confirm a development's scale and extent. Therefore, in the context of this due diligence process, the existing services, infrastructure and other specialist components outlined in previous sections of this report have been considered for any potential development/redevelopment on the site and potential site servicing needs.

The advice provided in this section of the report is based on several aspects that necessitate a comprehensive evaluation for a proposed development.

Recommendations pertaining to additional servicing for the site, whilst based on sound engineering principles and judgement, are contingent on the completeness and accuracy of the available information regarding the existing services. Whilst every effort has been made to ensure the accuracy of this information, neither is guaranteed by JPS Engineering Consultants. It is recommended to physically verify the location and size of existing services before proceeding with detailed designs.

7.2 Sewer Supply

Using the Icon Water Supplement to WSA Gravity Sewerage Code of Australia, the sewage flow rate for the proposed development should be calculated to determine the loading induced on the existing network. According to BYDA information, a DN150 sewer main runs through the centre subject site and a DN300 sewer runs through the western portion in Charnwood Place (west). These sewer lines flow toward the low point of the site in the south east, with connections to a trunk DN525/DN600 sewer. There is also a DN300 sewer that is available to the east of the site. To meet Icon Water Standards, a new sewer tie may be necessary for a potential future development. This will need to be designed to comply with the appropriate depth and grade requirements. Considering the extent of the existing DN150 and DN300 sewer mains within the subject site area and the natural fall across the site to the low point, these mains may be feasible to connect to. The exact connection point will rely on several factors, namely, the main's depth, its available capacity, and the necessary depth for the proposed development to efficiently gravity drain.

The capacity of the DN150 and two DN300 sewer mains is undetermined. It's essential to confirm the capacity of the mains that run through the site in consultation with Icon Water after calculating the sewer loading of the proposed development. This calculation will be based on the proposed development's size, intended usage, and accurate site and sewer levels. This process is important to confirm the feasibility of establishing a tie connection to either of the existing manholes over the DN150 or DN300 mains, in coordination with Icon Water. The impact to the existing DN525 and DN600 trunk sewer lines, which will receive any additional flow from a potential development/redevelopment will also need to be verified.

7.3 Potable Water Supply

According to BYDA information, an extensive water main network is available within and surrounding the subject site.

Once the details of any proposed development within the group centre is known, Icon Water's Supplement to the WSA Water Supply Code of Australia is to be used to calculate the required water demand to service the development. This estimated peak demand, along with the Fire Risk Type (FRT) requirement, mandates achieving a minimum flow rate of 60L/s at a pressure head of 20m for firefighting and 30m for peak demand for FRT3, and 100 L/s for FRT4. The Fire Risk Type of any proposed development and its exact location must be confirmed with ACT Fire & Rescue. The flow

rate should align with Icon Water's Supplement to the WSA Water Supply Code of Australia, Table IW.3. Confirmation from Icon Water is essential to ascertain whether their external network can meet this demand while meeting the minimum pressure requirements.

Icon Water is likely to impose an exclusion zone over the existing DN375 distribution main, east of the subject site. There may also be certain development restrictions if proposals are nearby the existing DN300 water main in Lhotsky Street. The capacity of the DN150 reticulation mains throughout the subject site is unknown and must be verified with Icon Water once peak demand calculations are finalised for any proposed development on the site.

To meet the hydrant coverage requirement for Fire Risk Type FRT3, hydrants must be spaced at 60m intervals, as outlined in Table IW.8 of the Icon Water Supplement to the WSA Water Supply Code of Australia. For FRT4 areas, the minimum spacing is 45m between hydrants, with dual hydrants every 135m or at cul-de-sac ends. Given the current hydrant spacing of approximately between 35 and 60 metres along the DN150 main internal to the site, additional hydrants will likely be necessary. Hydrant spacing on Lhotsky Street on the DN300 main is up to 55m, which may not meet FRT4 requirements as mentioned above, needing additional hydrants to be installed on this main, or a duplicate main in the northern verge. As the hydrant spacing on the eastern DN375 main is quite distant (75m-175m), additional hydrants may also be needed on this main to adequately meet fire safety requirements, depending on the final location of a proposed development in the group centre.

7.4 Stormwater Drainage

According to WAE information and the TCCS Stormwater Database, there is an extensive stormwater network within and surrounding the site, including a DN1350 main in Charnwood Place (west) and three DN1800 mains that join into a downstream inlet/surcharge structure south east of the site in Block 20 Section 97. The area within Block 20 Section 97 appears to operate as a detention basin. Smaller stormwater pipes are available within the subject site that predominantly drain the car parks, internal roads and rooftops of the developments. Several structures that may be suitable for a stormwater tie connection to a proposed development are available within the subject site.

Once a proposed development scenario has been determined, the stormwater drainage requirements are to be assessed in accordance with TCCS Municipal Infrastructure Standards (MIS) 08 for Stormwater. The development site has been designated in accordance with the requirements of a 'Group and Neighbourhood Shopping Centre' and assessed for the 10 year ARI (10% AEP) in the minor storm event, as per 'Table 8-3 Minor System Design AEP' within TCCS MIS08.

The calculation of the impervious area, crucial for this assessment, depends on the proposed land usage and layout, including any on site basement parking and pumping requirements. Additionally, a survey to determine the inlet/surcharge structure in Block 20 Section 97 and its discharge capacity is necessary. The area to the north of the subject site, identified as a large catchment, requires careful analysis as it potentially flows toward the site and through the existing plaza toward the open space detention/retention area in Block 20 Section 97. A hydrological and hydraulic analysis, ensuring compliance with TCCS MIS 08 for the 1% AEP plus 300mm freeboard, is required to determine potential stormwater redirection at the northern boundary of the subject site, where there is likelihood for the northern catchment to drain toward and through the site. The ability to drain major flows adequately through this area will ensure safeguarding the existing developments within the group centre and any proposed development. This assessment is to be undertaken once the development's extent, location and site grading has been established.

Following the standards of TCCS MIS 08, a hydrological and hydraulic analysis must be conducted to determine the feasibility of utilising the existing stormwater mains within and surrounding the subject site to connect into and the downstream pipe capacities. This will be particularly important for the inlet/surcharge structure at the south east most end of the site, in Block 20 Section 97 Charnwood. Understanding how the stormwater flows across Ginninderra Drive to reach the tributary that feeds into Ginninderra Creek is also necessary.

The design flows generated by the site and any proposed development is to be calculated using the Australian Rainfall and Runoff Guidelines and ACT Government MIS 08 Standards. Design rainfall

intensities can be obtained from the Bureau of Meteorology Design Rainfall Data System (2019), which accounts for climate change.

Additionally, site detention and retention measures should be considered to manage and reduce site flows to pre-development levels, preventing any increase in flows in the adjacent roadways.

7.5 Telecommunications

NBN lines are within and around the site running along the west verge of Charnwood Place (west) and Charnwood Place (east), in the east verge of Tillyard Drive, and north of the site in Block 213 Section 96. Additional NBN services are situated in the central group centre in the east plaza area.

An Optus optic fibre line is also available in the Telstra conduits that are within the west verge of Tillyard Drive, which may also be connected to, subject to confirmation from Optus.

Once the specific scope of the development is defined, and a telecommunications/internet service provider is selected, the developer is to engage in consultation with them to establish the connection process for the site.

NBN necessitates the submission of a Development Application to request a telecommunication connection to their service.

7.6 Electricity

The subject site has an extensive electrical network, including three substations in the central and northern portions of the site. Correspondence with Evoenergy will be required to determine the best connection to a proposed development for an electricity supply once the development's electrical demand is known. This demand is also to include any provision for solar and EV car charging initiatives.

It is assumed that an electrical connection can be established to the underground low voltage electricity lines located within Charnwood Place (east and west). However, to meet the servicing needs of any proposed development, coordination with Evoenergy is necessary. This includes assessing the residual capacity of this electricity service and arranging for any required additional electrical infrastructure or upgrades.

The appropriate location to connect to Evoenergy's electricity network will be determined when the developer submits their final electrical load details (to AS 3000) and final site plans.

If vulnerable usage is proposed as part of the future development on the site, it may be necessary to conduct a step and touch potential test due to the proximity of the three pad mounted substations within the site and the fourth that is to the south west of the site on Lhotsky Street (S 2379), to confirm any earthing requirements.

7.7 Gas

There is a comprehensive gas network within and surrounding the site, providing service to the majority of blocks within the group centre. These gas mains include the west verge of Charnwood Place (west), the east verge of Charnwood Place (east), the open space area north of the site (Block 213 Section 96), the southern verge of Lhotsky Street, and the east verge of Tillyard Drive. However, it is important to note that, as per the Climate Change and Greenhouse Gas Reduction Act, new gas network connections have been prohibited in all residential, commercial, and community facility land use zones since December 8, 2023.

7.8 Traffic and Parking

The subject site currently has vehicular access through an extensive network of external and internal roads. Charnwood Place (east and west), accessible from Lhotsky Street, serve the west and central

areas of the group centre. Lhotsky Street has a 40 km/h speed limit due to the high pedestrian activity in the area and its proximity to St. Thomas Aquinas Primary School and Edge Early Learning Centre. Verge Place, branching off Tillyard Drive to the east, provides access to the north eastern section of the group centre.

The site is near Ginninderra Drive, offering arterial road access to the broader district. Additionally, Lhotsky Street and Tillyard Drive serve as a bus route with bus stops near the main entrance of the group centre and east of the site, respectively.

The site offers over 300 car parking bays, extending from Charnwood Place (east and west) and Verge Place. The utilisation of these off street car parks has been estimated to be approximately 60%. The parking demand generated by a proposed development is to be calculated using the Planning (Commercial Zones) Technical Specifications 2024, as outlined in section 6.10.2 of this report. While the Technical Specifications outline ideal parking provision rates, considering the well connected public transport and active travel network within the group centre, the possibility of reducing parking numbers may be granted at the discretion of the Transport Canberra and City Services (TCCS). Any proposals for accommodating parking needs by using off site parking will need to be agreed to with TCCS prior to submitting a Development Application. The existing parking utilisation in the general group centre appears to have residual capacity whilst accommodating current demands. However, this situation may change in the future, and any replacement parking for that removed to allow development on the subject site will need to be agreed upon with TCCS.

Any proposed development on the subject site will generate additional traffic volume to the local roads. In accordance with the TCCS Guidelines for Transport Impact Assessment (April 2020), a Transport Effects Form (TEF) or Traffic Assessment Report (TAR), depending on the final scale of the development, will be required prior to a Development Approval.

8 Site Opportunities, Constraints and Risk Assessment

A table of constraints is prepared below for the Charnwood Group Centre, based on the existing site services heritage, ecological, and environmental opportunities/constraints discussed within this report. A risk rating was established for each issue identified utilising the following risk matrix definitions.

Table 6 – Risk Matrix Rating Definitions

Risk Rating	Definition of Risk Rating Against Site Constraints
Insignificant	Sufficient, relevant and recent information to inform future development prospect, no additional work necessary at this stage.
Low	Information available is sufficient to inform future development with only minor works or investigations required to progress the design development. It is advised further investigation is undertaken to continue the development process.
Medium	Information available is lacking or absent. Significant risks reside in other investigations undertaken and the timing and cost of the proposed development. It is recommended that these investigations are undertaken.
High	Information available is severely lacking or absent. Major risks reside in other investigations undertaken and the viability of the proposed development. It is advised that these investigations are undertaken as a priority prior to recommended investigations that have been given a lower risk rating.
Extreme	Information is absent, not relevant or insufficient. The outcome of the investigation required is needed to determine whether a portion of the site is developable or unviable.

With respect to the relevant disciplines covered within this Site Investigation Report for the future development of the subject site, the following table has been developed, which incorporates the perceived issues, or gaps in information, the associated risk and a subsequent risk rating.

Table 7 – Assignment of Risk Rating to Identified Constraints

Discipline	Description of Potential Constraint	Allocated Risk Rating
Contamination	An underground fuel storage tank existed on the site of Block 1 Section 95 and a dry cleaner on Block 36 Section 95 Charnwood. Currently, there is no available information from the EPA indicating whether the fuel storage or dry cleaner have adversely affected parts of the subject site.	High

Discipline	Description of Potential Constraint	Allocated Risk Rating
Flooding	<p>Stormwater hydrological and hydraulic analysis for the subject site has not been undertaken, particularly for the large northern catchment and the conveyance of overland flow through the group centre. Furthermore, the operation of the inlet/surcharge structure where trunk mains culminate in Block 20 Section 97 and the potential for this block to function as a large detention basin has not been confirmed. The downstream conveyance of stormwater from this point to Ginninderra Creek has not been verified.</p> <p>As a proposed development has not yet been defined, the impact of stormwater flows on the development, as well as the adequacy of overland flow management surrounding the site, and the site's flood immunity, remains unknown.</p>	High
Trees	<p>Some large mature trees that would likely fall under the category of being 'Regulated' in accordance with the ACT Urban Forest Act 2023 are located within and surrounding the subject site.</p> <p>All of these trees may inhibit a potential development if unable to be removed and replaced. A professionally undertaken tree survey and arborist assessment is not available.</p>	Medium
Ecological	<p>Potential ecological fauna habitat areas are identified within the site (spotted-tailed quoll and small birds), particularly high connectivity values concentrated in the green space to the north east of the site. An ecological impact assessment has not been produced for the subject site and its surrounds.</p>	Medium
Geotechnical	<p>The site currently represents significant variable surface conditions and the potential of uncontrolled fill material that was placed on the site as part of the group centre's construction. Geotechnical information on the site is not available.</p>	Medium
Planning	<p>The proposed development's extent and purpose is not fully known and therefore servicing and infrastructure requirements are unable to be accurately determined.</p>	Medium
Electrical	<p>Connection to the existing underground LV services within Charnwood Place (east or west) or north of the site in Block 213 Section 96 and any upgrade requirements to electrical infrastructure to provide electricity to a potential development in the site is unknown.</p> <p>The existing substations within the central and northern portions of the site and that on Lhotsky Street to the south west of the site may need assessment if vulnerable usage is expected as part of future developments.</p>	Medium
Easements	<p>An easement does not exist over the existing water mains that are present within Block 46 and Block 21 Section 95 Charnwood. Electrical easements are also not shown on Block 46 and Block 21 Section 95 Charnwood.</p>	Medium

Discipline	Description of Potential Constraint	Allocated Risk Rating
Traffic	<p>A proposed development will increase traffic generation on the surrounding roads, necessitating an assessment of the impact on these roads in future years to determine compliance and the need for any upgrades. Parts of Lhotsky Street and Ginninderra Drive are shown to operate over their capacity in peak hour traffic that will need to be confirmed with TCCS during the development design stage.</p> <p>Additionally, any increase in traffic due to future development or redevelopment of the site must consider existing residential and commercial access points.</p>	Medium
Water	<p>The capacity of the existing potable water network within and surrounding the site is not known with respect to a proposed development.</p> <p>Peak demand and firefighting flow requirements are to be determined once the final development/redevelopment is understood. Current hydrant coverage does not meet Icon Water and ACT Fire & Rescue requirements in some areas within and around the site for a Fire Risk Type of FRT4.</p>	Medium
Sewer	<p>The potential connection to the DN150 or DN300 sewer mains within the site and the DN525 trunk sewer south of the site has not been checked for capacity against a proposed development scenario, or the likelihood of Icon Water's acceptance.</p>	Medium
Stormwater	<p>The existing DN1350 and DN1800 stormwater main capacities in the west and south east portion of the site has not been assessed as to whether this is suitable to drain a potential development. The capacity of the downstream stormwater infrastructure and operation of the surcharge structure has also not been checked for suitability to accept the site's discharge flows.</p>	Medium
Services	<p>Existing service's exact locations are unconfirmed.</p>	Low
Utilities	<p>Telecommunications service capacity is not known across the site.</p>	Insignificant
Gas	<p>Gas servicing to a potential development within the site has not been explored.</p>	Insignificant

When holistically considering the above noted constraints and risk ratings, the subject site possesses some constraints and the need for additional information to inform a future development. Therefore, the subject site is considered viable for a potential future development, pending address of the recommendations provided in the following section that respond to the above risks.

9 Recommendations

Based on the level of risk, recommendations have been listed in order of priority, to assist in programming the recommended works. The priority listing has been developed by assessing the importance of the additional investigations recommended and the effect that this work would have on other reports. The aim is to provide a comprehensive prioritised list of recommended additional investigations to complete the assessment of the subject site.

It is noted that a residual risk rating has not been provided, however, once recommended additional information and studies has been sought, the residual risk can be assessed based on the outcomes of these reports.

The Charnwood Group Centre has been assessed in this Stage 1 Site Investigation Report based on all existing technical constraints and unknowns, with a focus on compiling with a Development Application submission for development/redevelopment in part of the group centre site. A summary of the recommendations and necessary actions required to enable this site for development with the associated risk colour coded to that which is presented in section 8 of this report is provided below.

- **Contamination Management:** As no investigations are available on the potential of site contamination, nor confirmation of the appropriate removal of the underground service tank within the service station site, or contamination due to the former dry cleaner, an initial environmental study should be undertaken. The ACT EPA were contacted to receive this preliminary advice. This study will determine whether further studies are warranted, based on a potential development in the site. Measures should be taken as recommended in the environmental investigation to manage and remediate any potential contamination on site. EPA regulations and guidelines are to be strictly followed to ensure that development potential is not restricted by environmental conditions.
- **Stormwater Management:** Undertake a stormwater hydrological and hydraulic analysis for any proposed development in line with TCCS MIS documents. This includes the catchment and capacity analysis of the large northern area that appears to drain through the site. Validate whether the size and grade of the existing DN1350 and DN1800 stormwater mains in the western and south east portion of the site have sufficient capacity to accommodate a potential development's stormwater flows. As part of this analysis, the operation of the surcharge structure is to be verified in Block 20 Section 97 Charnwood, including its ability to discharge across Ginninderra Drive to Ginninderra Creek. Block 20 Section 97 is also to be assessed for its detention capacity. Analyse the potential development's drainage needs along with any on site detention/retention initiatives.
- **Trees and Vegetation:** Commission a tree survey and qualified arborist to assess the existing trees to ensure the protection of regulated trees on or near the subject site. Validate the tree assessment with the ACT Urban Treescapes Unit (TCCS) and the Conservator of Flora and Fauna, before proceeding with any activities that could impact existing trees. Furthermore, if trees are proposed to be removed to accommodate a proposed development, replacement trees at a ratio and location agreed to with TCCS, the Conservator and EPSDD Climate Change and Energy will need to be considered.
- **Urban Planning and Impact Study:** Undertake detailed urban planning design to comprehensively assess the impact and demand of any proposed development on services and infrastructure. This should also include an evaluation of how the development may interact with the adjacent residential and commercial properties to ensure holistic compatibility. The proposal is to be made in accordance with EPSDD's Development Application process and consider the relevant District Strategies.

Geotechnical Investigation: Given the variable surface levels in comparison to the

surrounding levels, and development timeframe of the group centre, a detailed geotechnical investigation should be undertaken, which is tailored to a proposed development. A geotechnical assessment is particularly important if basement parking is proposed. This will provide accurate data for foundation/pavement design and construction planning.

- **Ecological Assessment:** Liaise with the Conservator of Flora and Fauna to establish a scope of work to address likely ecological constraints to development on the site during the planning phase. This may need to be undertaken in conjunction with a tree assessment to determine potential habitat areas. Preliminary consultation with the Conservator of Flora and Fauna have advised that an ecological impact assessment should be completed for the site.
- **Electrical Service:** Determine the best connection point to service the site, once development demands are calculated. Address any necessary upgrades to the electrical infrastructure to service a potential development/redevelopment. This is to be undertaken through collaborative consultation with Evoenergy. If vulnerable use is proposed on the site, seek advice from Evoenergy as to whether step and touch potential test needs to be undertaken on either of the four substations within or in proximity of the subject site.
- **Easements:** An appropriate easement width and protection zone is to be determined for the water mains that runs through Block 46 and Block 21 Section 95. Easements over the electrical in Block 21 and Block 46 is also required. In addition to these, the water main easement in the northern portion of Block 47 Section 95 where a water main is shown to be abandoned should be de-registered. These easement adjustments are to be confirmed with Icon Water and Evoenergy. Once this is done, if the water and electricity mains are intended to remain within the block, a new deposited plan is to be produced for the affected blocks.
- **Traffic Impact:** In accordance with the TCCS Guidelines for Transport Impact Assessment, either a Transport Effects Form (TEF) or Transport Assessment Report (TAR), will be required to be undertaken, depending on the scale and intended use of a future potential development. Evaluate the potential impact of increased traffic on the existing transport network and parking supply in the group centre as part of this work.
- **Potable Water Supply:** For a potable water connection to a potential development within the site, work closely with Icon Water to establish a connection to their existing DN150 main network. This is to be established once the development and its potable water demand is known. Icon Water generally do not allow service connections to large distribution water mains and for this reason, a connection to the existing DN300 main on Lhotsky Street and DN375 main on Tillyard Drive is unlikely. Determine best locations for additional hydrants on existing mains to meet the Fire Risk Type of the development. Ensure compliance with all requirements and standards set by Icon Water and ACT Fire & Rescue throughout the preliminary and detailed design process.
- **Sewer Service:** To establish a sewer service for potential development within the site, collaboration with Icon Water is essential. Connections should be made to their existing DN300 mains in the west or east portions of the site, the DN150 main network in the centre of the subject site, or the receiving DN525 main in the northern verge of Lhotsky Street. The connection point will likely be to one of the existing manholes over these mains. The sewer connection point is to be established once the development is known, demand calculated, and detailed survey information available. Ensure compliance with all requirements and standards set by Icon Water throughout the preliminary and detailed design process.
- **Service Location Confirmation:** Confirm the exact locations of existing services to ensure accurate planning and prevent any conflicts during the development process. This is to be undertaken using non-destructive methods by the developer.

- **Telecommunications Service:** Liaise with NBN or Optus for a telecommunications service connection to a potential development, if required.

10 Drawings

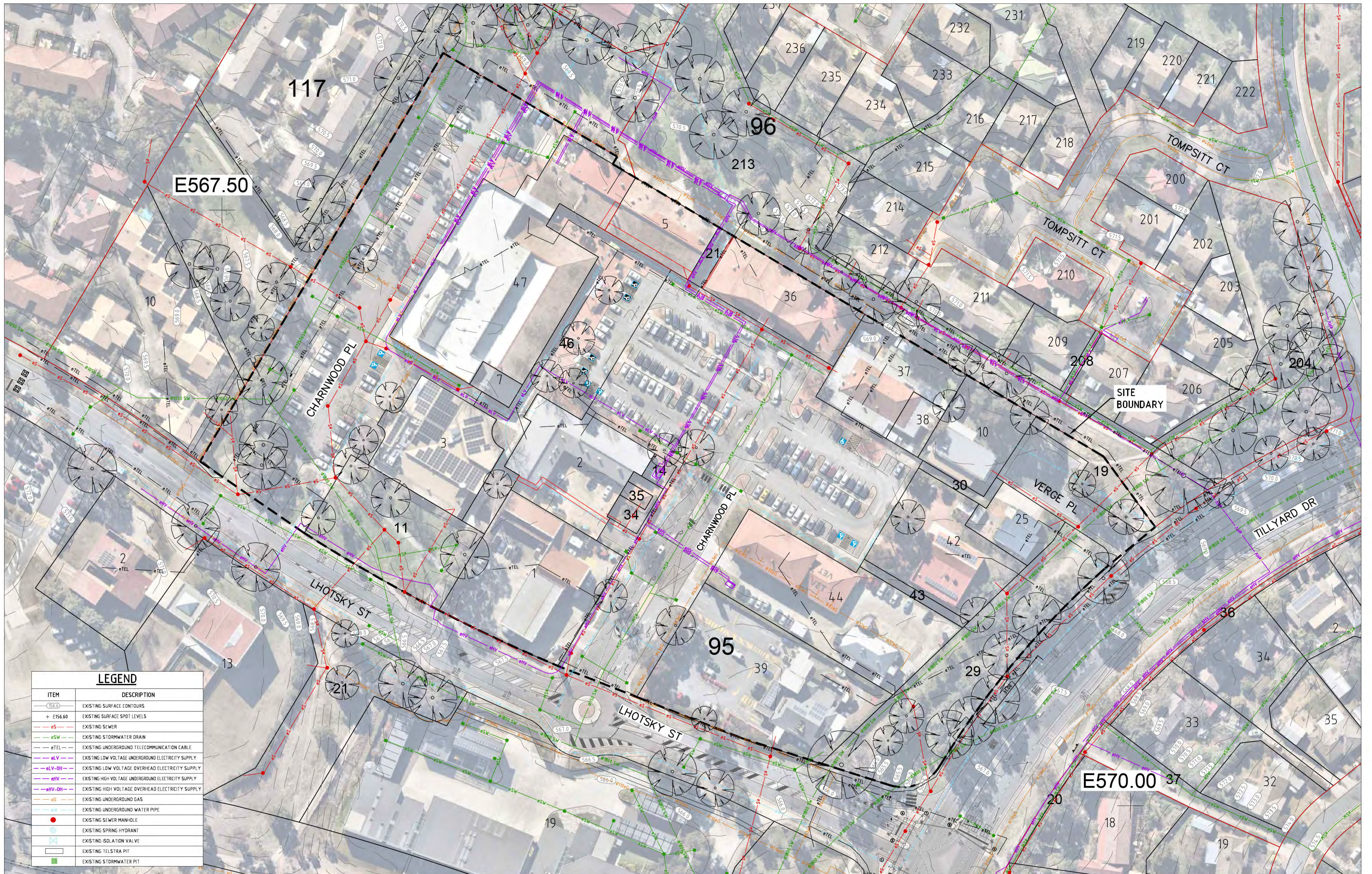
As part of this Site Investigation Report, the following drawing has been prepared and is provided within Appendix A.

Drawing No.	Description	Revision
20240332-DRG-CIV-UT-100	Existing Utilities Plan	A

This drawing is to be read in conjunction with this report. The plans are based upon information and consultation provided by service providers and authorities. All services details are to be confirmed on site. The existing services in the vicinity of the site are represented in an indicative format. This plan was prepared solely for the purposes of this report and for the use of the EPSDD.

Appendix A

Drawing



ITEM	DESCRIPTION
	EXISTING SURFACE CONTOURS
	EXISTING SURFACE SPOT LEVELS
	EXISTING SEWER
	EXISTING STORMWATER DRAIN
	EXISTING UNDERGROUND TELECOMMUNICATION CABLE
	EXISTING LOW VOLTAGE UNDERGROUND ELECTRICITY SUPPLY
	EXISTING LOW VOLTAGE OVERHEAD ELECTRICITY SUPPLY
	EXISTING HIGH VOLTAGE UNDERGROUND ELECTRICITY SUPPLY
	EXISTING HIGH VOLTAGE OVERHEAD ELECTRICITY SUPPLY
	EXISTING UNDERGROUND GAS
	EXISTING UNDERGROUND WATER PIPE
	EXISTING SEWER MANHOLE
	EXISTING SPRING HYDRANT
	EXISTING ISOLATION VALVE
	EXISTING TELSTRA PIT
	EXISTING STORMWATER PIT

Rev	Description	Date	Drawn By
A	REVISION UPDATES	05.08.2024	DM

Scales

North

DO NOT SCALE OFF DRAWINGS. VERIFY ALL DIMENSIONS ON SITE PRIOR TO WORK.
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Client Logo

ACT
 Government
 Environment, Planning and Sustainable Development

Status			
NOT FOR CONSTRUCTION			
Original Size	A1	Drawn By	AD
Date Plotted	05-August-24	Designed By	JS
Coordinate System	STROMLO GRID	Approved	JS
Height Datum	AHD	Approved Signature	

Project Name and Location					
SITE INVESTIGATION					
CHARWOOD GROUP CENTRE					
Drawing Title					
EXISTING UTILITIES PLAN					
Project Number	Type	Discipline	Sub-Discipline	Dwg No.	Rev
20240332	DRG	CIV	UT	100	A

Appendix B

*BYDA and Work as Executed
Information*

Contact Details

Contact	Contact number	Company	Enquirer ID
John Samoty		JPS Engineering Consultants	3541136
Email		Address	
john.samoty@jpsengineering.com.au		28 Barrallier Street Griffith ACT 2603	

Job Site and Enquiry Details

WARNING: The map below only displays the location of the proposed job site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.

Enquiry date	Start date	End date	On behalf of	Job purpose	Location	On site activities
25/04/2024	01/07/2024	30/06/2025	Other EPSDD	Excavation	Both Road, Nature Strip, Footpath	Mechanical Excavation, Non Destructive Digging, Subdivision



Check that the location of the job site is correct. If not, you must submit a new enquiry.

If the scope of works change or plan validity dates expire, you must submit a new enquiry.

Do NOT dig without plans. Safe excavation is your responsibility. If you don't understand the plans or how to proceed safely, please contact the relevant asset owners.

User Reference	Address	Note /description
5 Charnwood Place	5 Charnwood Place Charnwood ACT 2615	-

Your Responsibility and Duty of Care

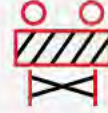
- **Lodging an enquiry does not authorise project commencement.** Before starting work, you must obtain all necessary information from all affected asset owners.
- If you don't receive plans within 2 business days, contact the asset owner & quote their sequence number.
- Always follow the 5Ps of Safe Excavation (page 2), and locate assets before commencing work.
- Ensure you comply with State legislative requirements for Duty of Care and safe digging.
- If you damage an underground asset, you MUST advise the asset owner immediately.
- By using the BYDA service, you agree to the [Privacy Policy](#) and [Term of Use](#).
- For more information on safe digging practices, visit www.byda.com.au

Asset Owner Details

Below is a list of asset owners with underground infrastructure in and around your job site. It is your responsibility to identify the presence of these assets. Plans issued by Members are indicative only unless specified otherwise. Note: not all asset owners are registered with BYDA. You must contact asset owners not listed here directly.

Referral ID (Seq. no)	Authority Name	Phone	Status
238420425	Department of Finance	(02) 6226 3869	NOTIFIED
238420428	Evoenergy Icon Water	(02) 6293 5770	NOTIFIED
238420424	NBN Co NswAct	1800 687 626	NOTIFIED
238420429	Optus and or Uecomm Nsw	1800 505 777	NOTIFIED
238420427	Telstra NSW South	1800 653 935	NOTIFIED
238420426	Transport Canberra and City Services	(02) 7801 3960	NOTIFIED

END OF UTILITIES LIST



Plan

Plan your job. Use the BYDA service at least one day before your job is due to begin, and ensure you have the correct plans and information required to carry out a safe project.

Prepare

Prepare by communicating with asset owners if you need assistance. Look for clues onsite. Engage a skilled Locator.

Pothole

Potholing is physically sighting the asset by hand digging or hydro vacuum extraction.

Protect

Protecting and supporting the exposed infrastructure is the responsibility of the excavator. Always erect safety barriers in areas of risk and enforce exclusion zones.

Proceed

Only proceed with your excavation work after planning, preparing, potholing (unless prohibited), and having protective measures in place.

Engage a skilled Locator



When you lodge an enquiry you will see skilled Locators to contact

Visit the Certified Locator website directly and search for a locator near you

dbydlocator.com/certified-locating-organisation

Book a FREE BYDA Session



BYDA offers two different sessions to suit you and your organisation's needs. The free sessions are offered in two different formats online and face to face:

- 1. Awareness Session:** Understand the role of BYDA, safe excavation practices, complying with asset owner instructions, and the consequences of damages. Learn how to mitigate and avoid potential damage and harm and ensure a safe work environment.
- 2. Plan Reading Session:** Develop the skills to interpret asset owners' plans, legends, and symbols effectively. Understand the complexities of plan interpretation to ensure smooth project execution.

To book a session, visit:

byda.com.au/contact/education-awareness-enquiry-form/

BOOK NOW



Working near nbn™ cables

nbn has partnered with Dial Before You Dig to give you a single point of contact to get information about **nbn** underground services owned by **nbn** and other utility/service providers in your area including communications, electricity, gas and other services. Contact with underground power cables and gas services can result in serious injury to the worker, and damage and costly repairs. You must familiarise yourself with all of the Referral Conditions (meaning the referral conditions referred to in the DBYD Notice provided by **nbn**).

Practice safe work habits

Once the DBYD plans are reviewed, the Five P's of Excavation should be adopted in conjunction with your safe work practices (which must be compliant with the relevant state Electrical Safety Act and Safe Work Australia "Excavation Work Code of Practice", as a minimum) to ensure the risk of any contact with underground **nbn** assets are minimised.



Plan: Plan your job by ensuring the plans received are current and apply to the work to be performed. Also check for any visual cues that may indicate the presence of services not covered in the DBYD plans.



Prepare: Prepare for your job by engaging a DBYD Certified Plant Locator to help interpret plans and identify on-site assets. Contact **nbn** should you require further assistance.



Pothole: Non-destructive potholing (i.e. hand digging or hydro excavation) should be used to positively locate **nbn** underground assets with minimal risk of contact and service damage.



Protect: Protecting and supporting the exposed **nbn** underground asset is the responsibility of the worker. Exclusion zones for **nbn** assets are clearly stated in the plan and appropriate controls must be implemented to ensure that encroachment into the exclusion zone by machinery or activities with the potential to damage the asset is prevented.

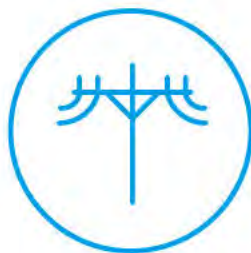


Proceed: Proceed only when the appropriate planning, preparation, potholing and protective measures are in place.

Working near **nbn**TM cables



Identify all electrical hazards, assess the risks and establish control measures.



When using excavators and other machinery, also check the location of overhead power lines.



Workers and equipment must maintain safety exclusion zones around power lines.

Once all work is completed, the excavation should be re-instated with the same type of excavated material unless specified by **nbn**. Please note:

- Construction Partners of **nbn** may require additional controls to be in place when performing excavation activities.
- The information contained within this pamphlet must be used in conjunction with other material supplied as part of this request for information to adequately control the risk of potential asset damage.

Contact

All **nbn**TM network facility damages must be reported online [here](#).
For enquiries related to your DBYD request please call 1800 626 329.


Disclaimer

This brochure is a guide only. It does not address all the matters you need to consider when working near our cables. You must familiarise yourself with other material provided (including the Referral Conditions) and make your own inquiries as appropriate. **nbn** will not be liable or responsible for any loss, damage or costs incurred as a result of reliance on this brochure.

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To: John Samoty
Phone: Not Supplied
Fax: Not Supplied
Email: john.samoty@jpsengineering.com.au

Dial before you dig Job #:	36545624	
Sequence #	238420424	
Issue Date:	25/04/2024	
Location:	5 Charnwood Place , Charnwood , ACT , 2615	

Indicative Plans

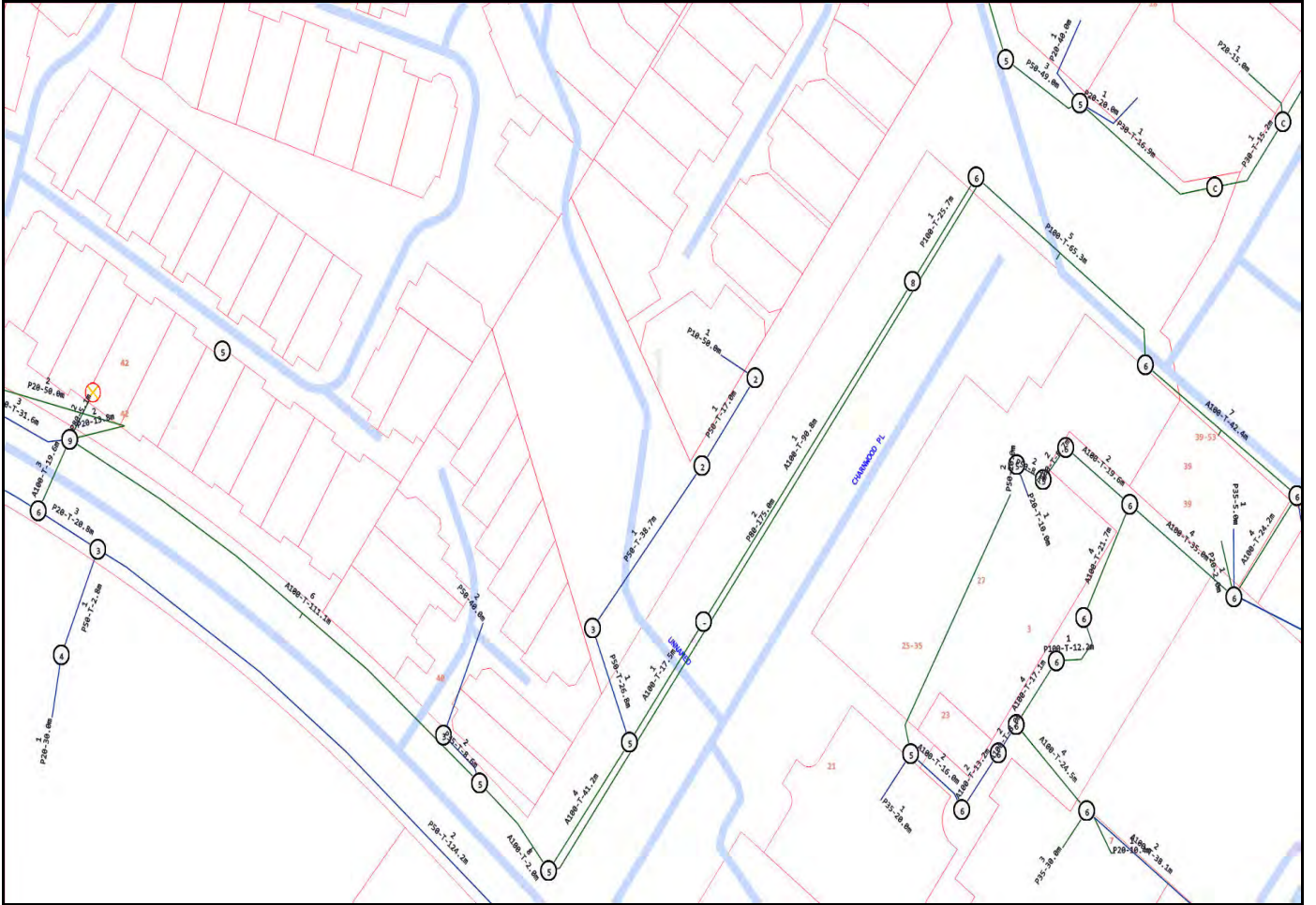
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2	4



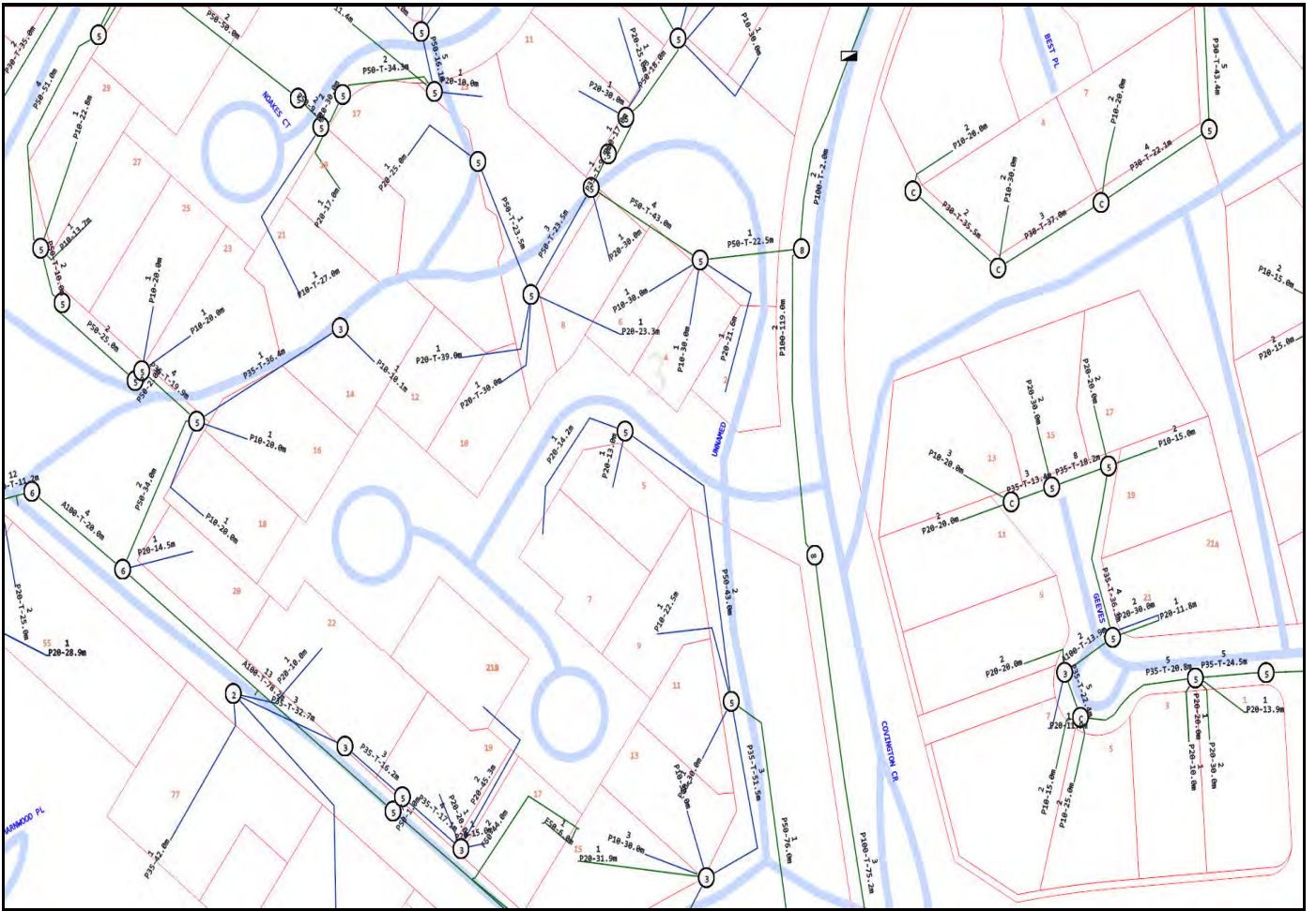
LEGEND

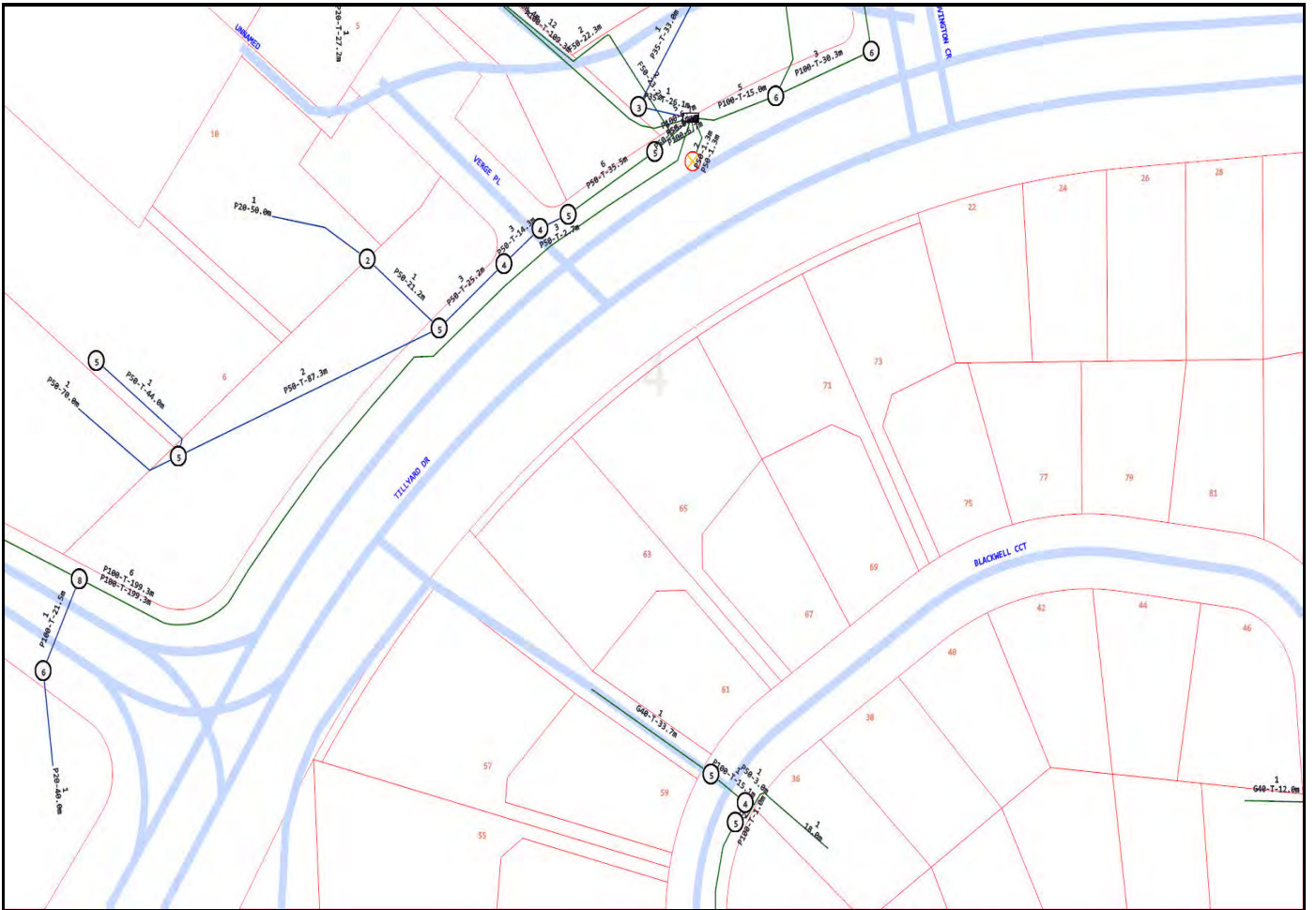


	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40)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










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.

To: John Samoty
Phone: Not Supplied
Fax: Not Supplied
Email: john.samoty@jpsengineering.com.au

Dial before you dig Job #:	36545624	
Sequence #	238420424	
Issue Date:	25/04/2024	
Location:	5 Charnwood Place , Charnwood , ACT , 2615	

Indicative Plans

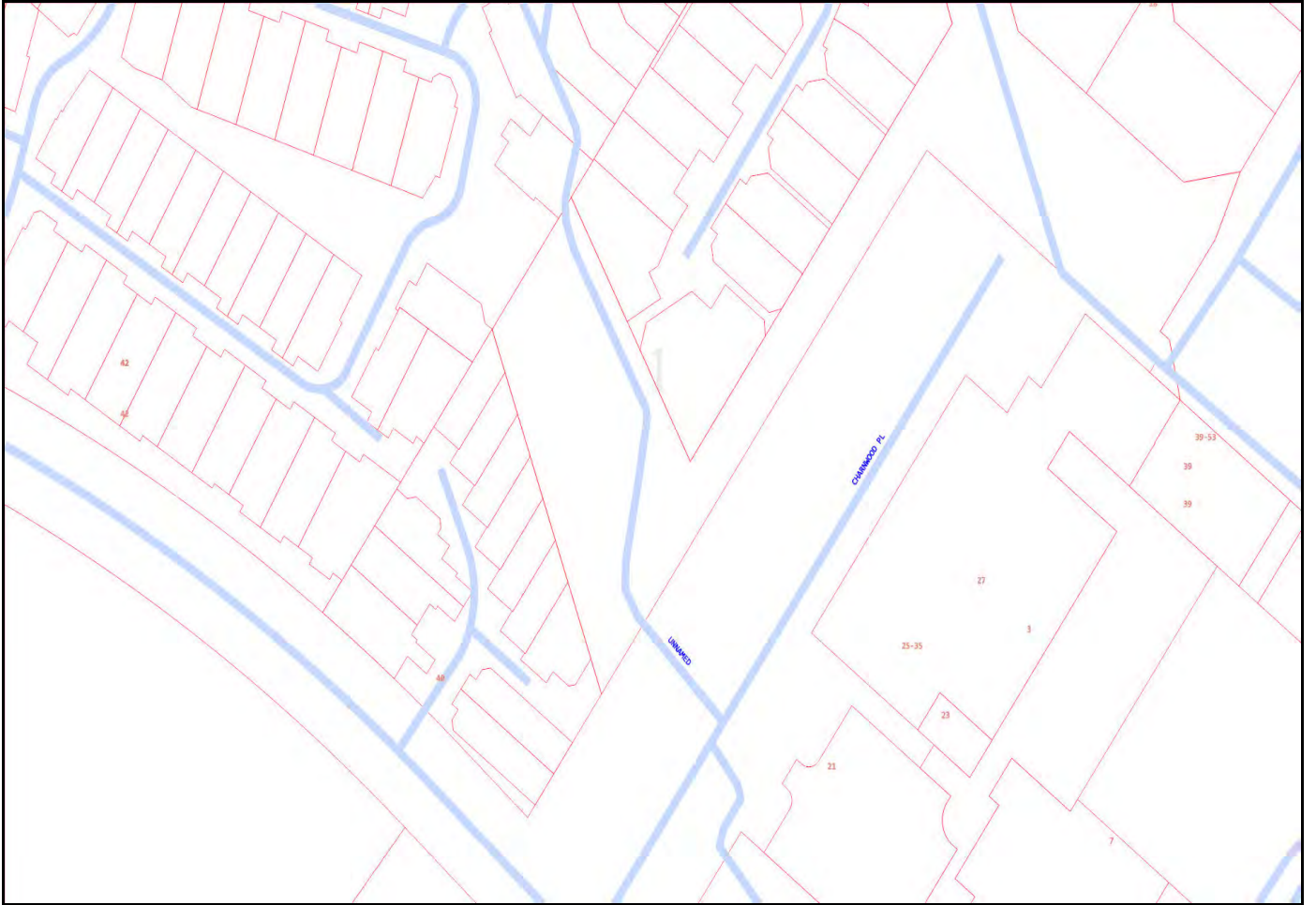
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2	4



LEGEND

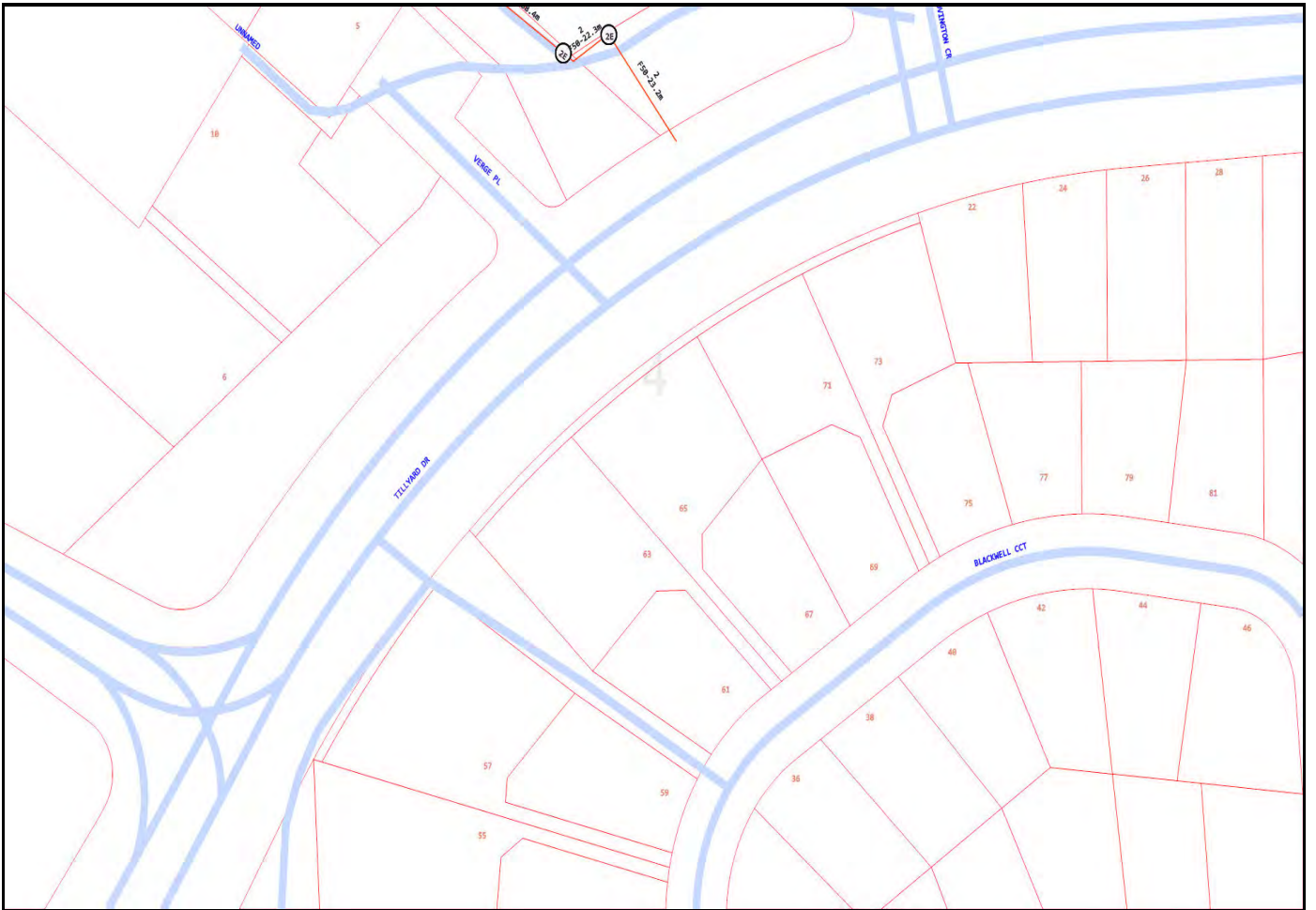


	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40)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










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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Phone: Not Supplied
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Dial before you dig Job #:	36545624	
Sequence #	238420424	
Issue Date:	25/04/2024	
Location:	5 Charnwood Place , Charnwood , ACT , 2615	

Information

The area of interest requested by you contains one or more assets.

nbn™ Assets	Search Results
Communications	Asset identified
Electricity	Asset identified

In this notice **nbn™ Facilities** means *underground fibre optic, telecommunications and/or power facilities, including but not limited to cables, owned and controlled by nbn™*

Location of nbn™ Underground Assets

We thank you for your enquiry. In relation to your enquiry at the above address:

- **nbn's** records indicate that there **ARE nbn™** Facilities in the vicinity of the location identified above ("Location").
- **nbn** indicative plan/s are attached with this notice ("Indicative Plans").
- The Indicative Plan/s show general depth and alignment information only and are not an exact, scale or accurate depiction of the location, depth and alignment of **nbn™** Facilities shown on the Plan/s.
- In particular, the fact that the Indicative Plans show that a facility is installed in a straight line, or at uniform depth along its length cannot be relied upon as evidence that the facility is, in fact, installed in a straight line or at uniform depth.
- You should read the Indicative Plans in conjunction with this notice and in particular, the notes below.
- You should note that, at the present time, the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables. As such, consistent with the notes below, particular care must be taken by you to make your own enquiries and investigations to precisely locate any power cables and manage the risk arising from such cables accordingly.
- The information contained in the Indicative Plan/s is valid for 28 days from the date of issue set out above. You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators, e.g DBYD Certified Locators, at your cost to locate **nbn™** Facilities during any activities you carry out on site).

We thank you for your enquiry and appreciate your continued use of the Dial Before You Dig Service. For any enquiries related to moving assets or Planning and Design activities, please visit the [nbn Commercial Works](#) website to complete the online application form. If you are planning to excavate and require further information, please email dbyd@nbnco.com.au or call 1800 626 329.

Notes:

1. You are now aware that there are **nbn™** Facilities in the vicinity of the above property that could be damaged as a result activities carried out (or proposed to be carried out) by you in the vicinity of the Location.
2. You should have regard to section 474.6 and 474.7 of the *Criminal Code Act 1995* (CoA) which deals with the consequences of interfering or tampering with a telecommunications facility. Only persons authorised by **nbn** can interact with **nbn's** network facilities.
3. Any information provided is valid only for **28 days** from the date of issue set out above.

Referral Conditions

The following are conditions on which **nbn** provides you with the Indicative Plans. By accepting the plans, you are agreeing to these conditions. These conditions are in addition, and not in replacement of, any duties and obligations you have under applicable law.

1. **nbn** does not accept any responsibility for any inaccuracies of its plans including the Indicative Plans. You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators, e.g DBYD Certified Locators, at your cost to locate **nbn™** Facilities during any activities you carry out on site).
2. You acknowledge that **nbn** has specifically notified you above that the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables.
3. You should not assume that **nbn™** Facilities follow straight lines or are installed at uniformed depths

along their lengths, even if they are indicated on plans provided to you. Careful onsite investigations are essential to locate the exact position of cables.

4. In carrying out any works in the vicinity of **nbn**™ Facilities, you must maintain the following minimum clearances:
 - 300mm when laying assets inline, horizontally or vertically.
 - 500mm when operating vibrating equipment, for example: jackhammers or vibrating plates.
 - 1000mm when operating mechanical excavators.
 - Adherence to clearances as directed by other asset owner's instructions and take into account any uncertainty for power cables.
5. You are aware that there are inherent risks and dangers associated with carrying out work in the vicinity of underground facilities (such as **nbn**™ fibre optic, copper and coaxial cables, and power cable feed to **nbn**™ assets). Damage to underground electric cables may result in:
 - Injury from electric shock or severe burns, with the possibility of death.
 - Interruption of the electricity supply to wide areas of the city.
 - Damage to your excavating plant.
 - Responsibility for the cost of repairs.
6. You must take all reasonable precautions to avoid damaging **nbn**™ Facilities. These precautions may include but not limited to the following:
 - All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs if present must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the likelihood of damage to the cable, for example: the blades of hand equipment should be aligned parallel to the line of the cable rather than digging across the cable.
 - If any undisclosed underground cables are located, notify **nbn** immediately.
 - All personnel must be properly briefed, particularly those associated with the use of earth-moving equipment, trenching, boring and pneumatic equipment.
 - The safety of the public and other workers must be ensured.
 - All excavations must be undertaken in accordance with all relevant legislation and regulations.
7. You will be responsible for all damage to **nbn**™ Facilities that are connected whether directly, or indirectly with work you carry out (or work that is carried out for you or on your behalf) at the Location. This will include, without limitation, all losses expenses incurred by **nbn** as a result of any such damage.
8. You must immediately report any damage to the **nbn**™ network that you are/become aware of. Notification may be by telephone - 1800 626 329.
9. Except to the extent that liability may not be capable of lawful exclusion, **nbn** and its servants and agents and the related bodies corporate of **nbn** and their servants and agents shall be under no liability whatsoever to any person for any loss or damage (including indirect or consequential loss or damage) however caused (including, without limitation, breach of contract negligence and/or breach of statute) which may be suffered or incurred from or in connection with this information sheet or any plans (including Indicative Plans) attached hereto. Except as expressly provided to the contrary in this information sheet or the attached plans (including Indicative Plans), all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

All works undertaken shall be in accordance with all relevant legislations, acts and regulations applicable to the particular state or territory of the Location. The following table lists all relevant documents that shall be considered and adhered to.

State/Territory	Documents
National	Work Health and Safety Act 2011
	Work Health and Safety Regulations 2011
	Safe Work Australia - Working in the Vicinity of Overhead and Underground Electric Lines (Draft)

	Occupational Health and Safety Act 1991
NSW	Electricity Supply Act 1995
	Work Cover NSW - Work Near Underground Assets Guide
	Work Cover NSW - Excavation Work: Code of Practice
VIC	Electricity Safety Act 1998
	Electricity Safety (Network Asset) Regulations 1999
QLD	Electrical Safety Act 2002
	Code of Practice for Working Near Exposed Live Parts
SA	Electricity Act 1996
TAS	Tasmanian Electricity Supply Industry Act 1995
WA	Electricity Act 1945
	Electricity Regulations 1947
NT	Electricity Reform Act 2005
	Electricity Reform (Safety and Technical) Regulations 2005
ACT	Electricity Act 1971

Thank You,

nbn DBYD

Date: 25/04/2024

This document is provided for information purposes only. This document is subject to the information classification set out on this page. If no information classification has been included, this document must be treated as UNCLASSIFIED, SENSITIVE and must not be disclosed other than with the consent of nbn co. The recipient (including third parties) must make and rely on their own inquiries as to the currency, accuracy and completeness of the information contained herein and must not use this document other than with the consent of nbn co.

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ON SITE BOOKING REQUIRED- PLEASE CALL

Subject: Before You Dig Australia Request – Government Fibre Optic Network

Date: 26 April 2024

Attention: John Samoty

Email: eboijing438cpyz.k1iiqvmaufzxir@smarterwx-mail.byda.com.au

Site Address: 5 Charnwood Place, Charnwood, ACT, 2615

BYDA Seq#: 238420425

From: Sue Nielson

Thank you for conducting a Before You Dig Australia request. We manage the **Government Fibre Optic Network**.

THERE IS CRITICAL GOVERNMENT FIBRE OPTIC NETWORK ASSET IN ALL OF YOUR PROPOSED AREA- ONSITE BOOKING REQUIRED

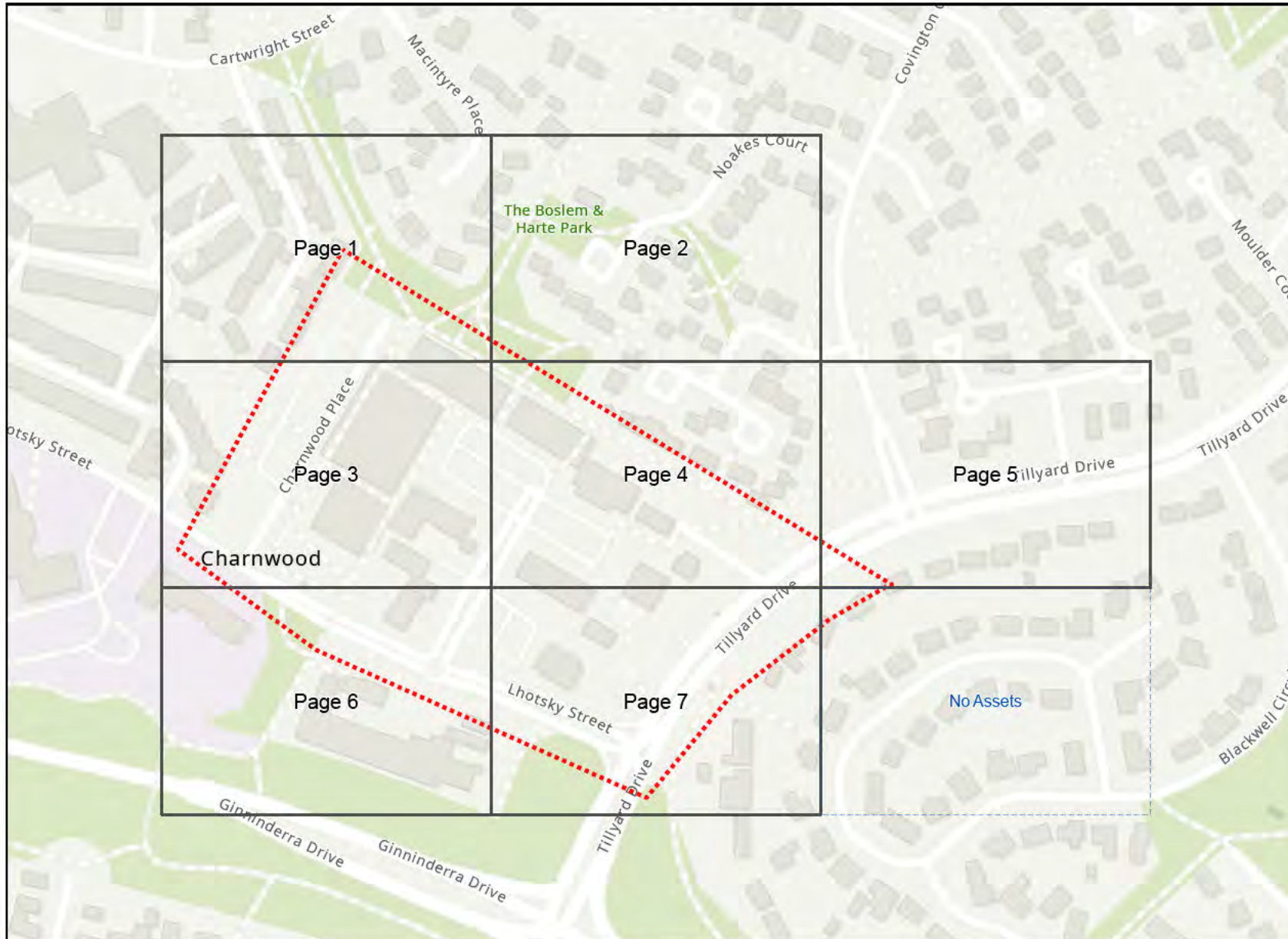
We are writing to confirm an onsite service locate is required prior to your excavation commencing.

Please call Commence Communications on 02 6226 3869 to confirm a time for an on-site appointment prior to any works commencing.




Regards

Sue Nielson
Commence Communications

19 Shearsby Crescent, Yass NSW 2582
P 02 62263869
24hr emergency: 0438 649 487
E BYDAgovfibre@commencecomms.com.au
www.commencecomms.com.au
ABN 19 168 241 727



Legend

-  BYDA Enquiry
-  Detailed map page
-  No dig site assets

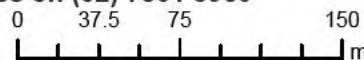
Esri Community Maps Contributors, Australian Capital Territory, Vicmap, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

Disclaimer: The Plan is provided in response to a Before You Dig request. While all reasonable care has been taken to ensure the accuracy of the information on this plan, its purpose is to provide a general indication of the location of Transport Canberra and City Services infrastructure. The information provided may contain errors or omissions and the accuracy may not suit all users. A site inspection and investigation is recommended before commencement of any project based on this data.

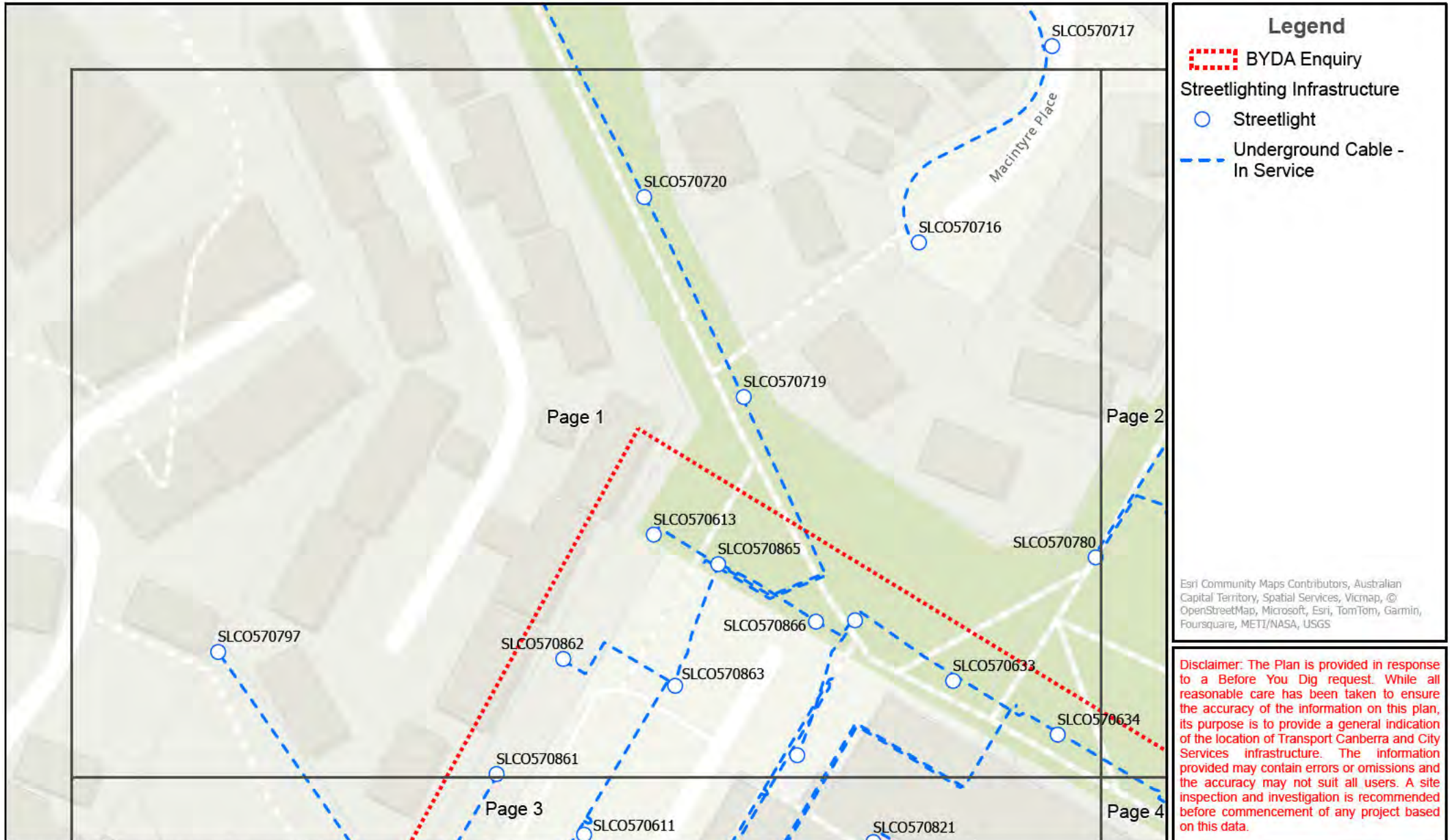
In an emergency contact Transport Canberra and City Services on (02) 7801 3960

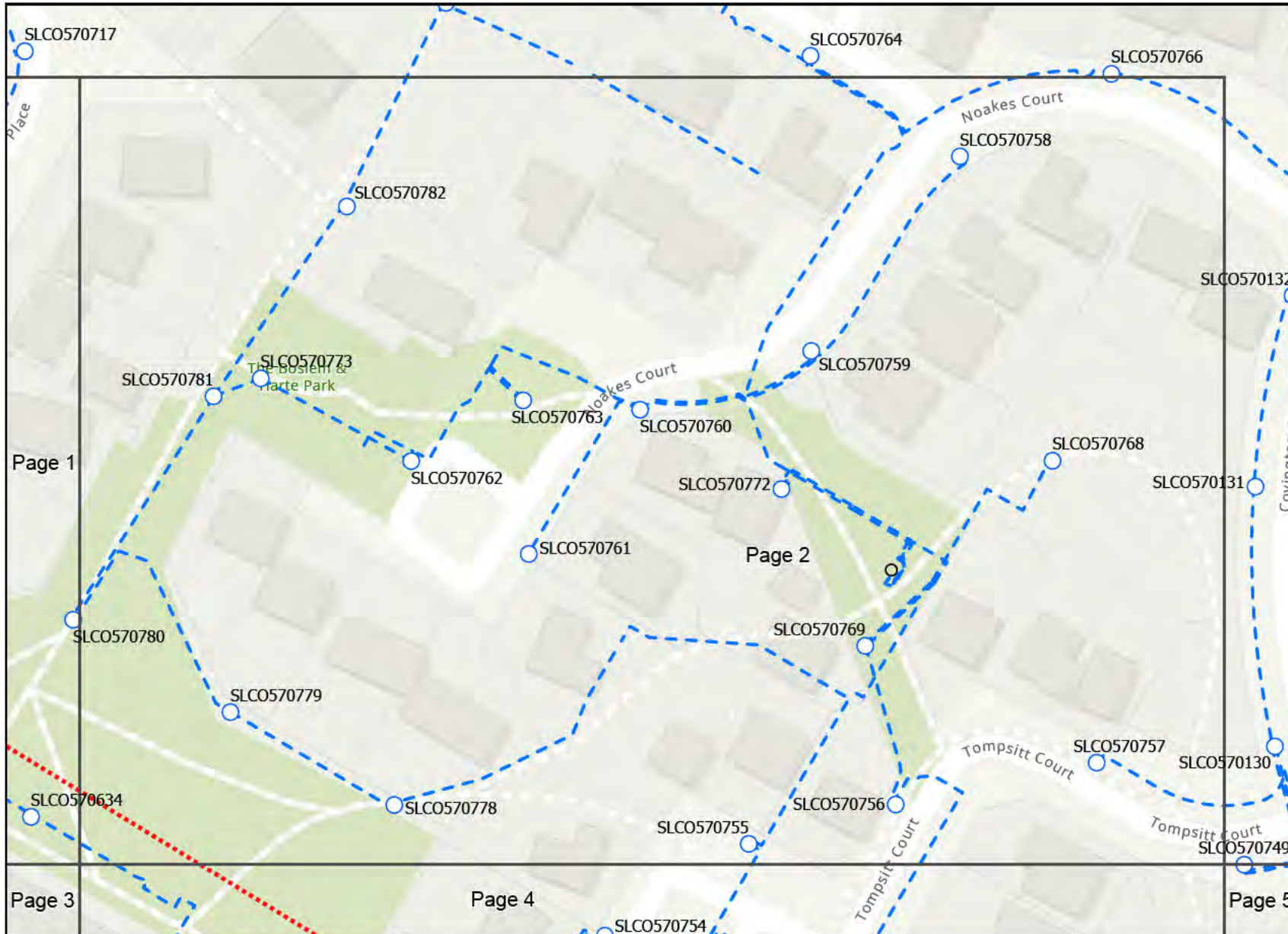
Index Sheet

Plans generated by SmarterWX™ Automate







Scale 1:3,500



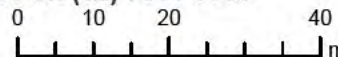


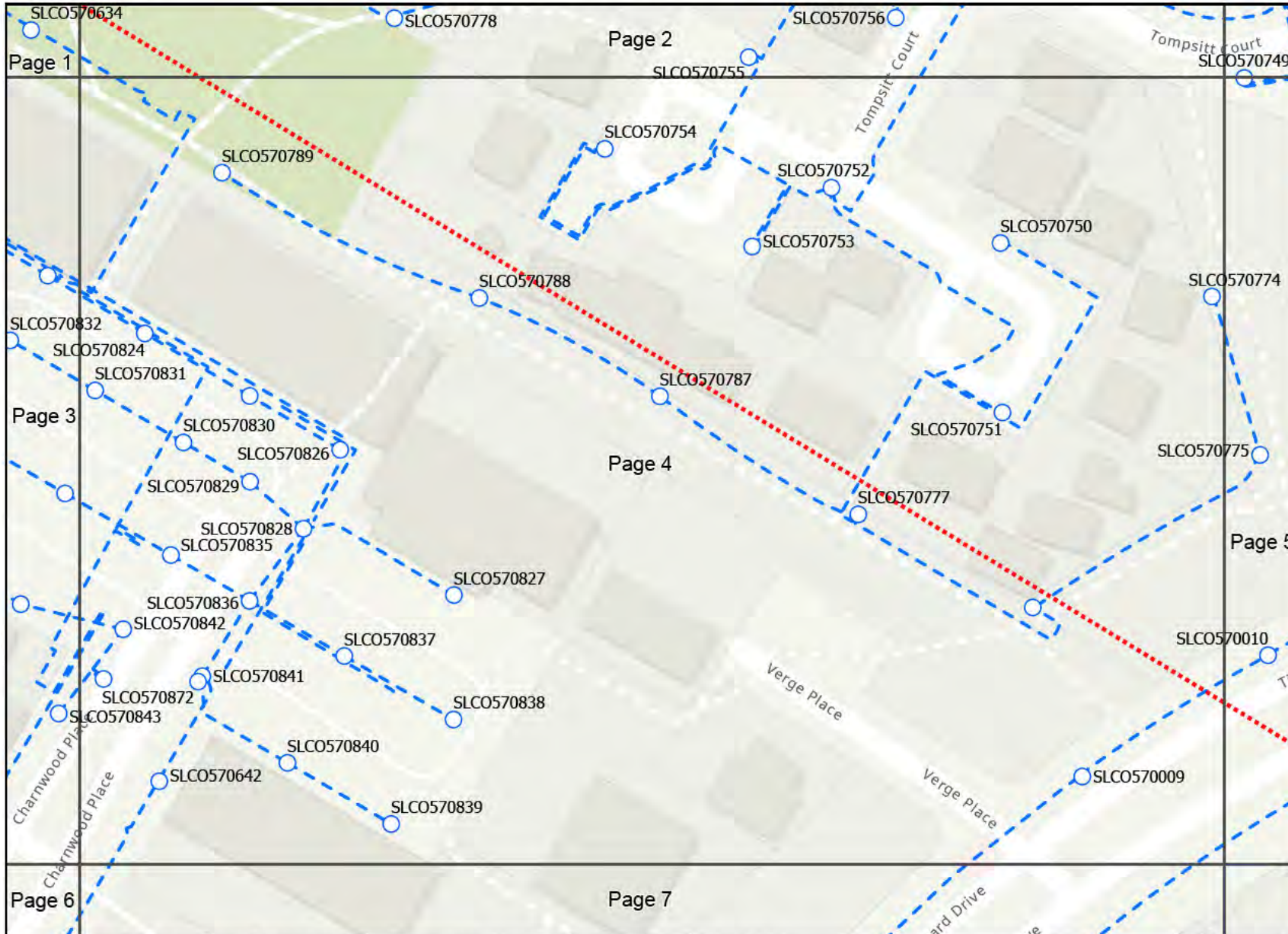
Legend

-  BYDA Enquiry
- Streetlighting Infrastructure**
-  Control Box
-  Streetlight
-  Underground Cable - In Service




Esri Community Maps Contributors, Australian Capital Territory, Spatial Services, Vicmap, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

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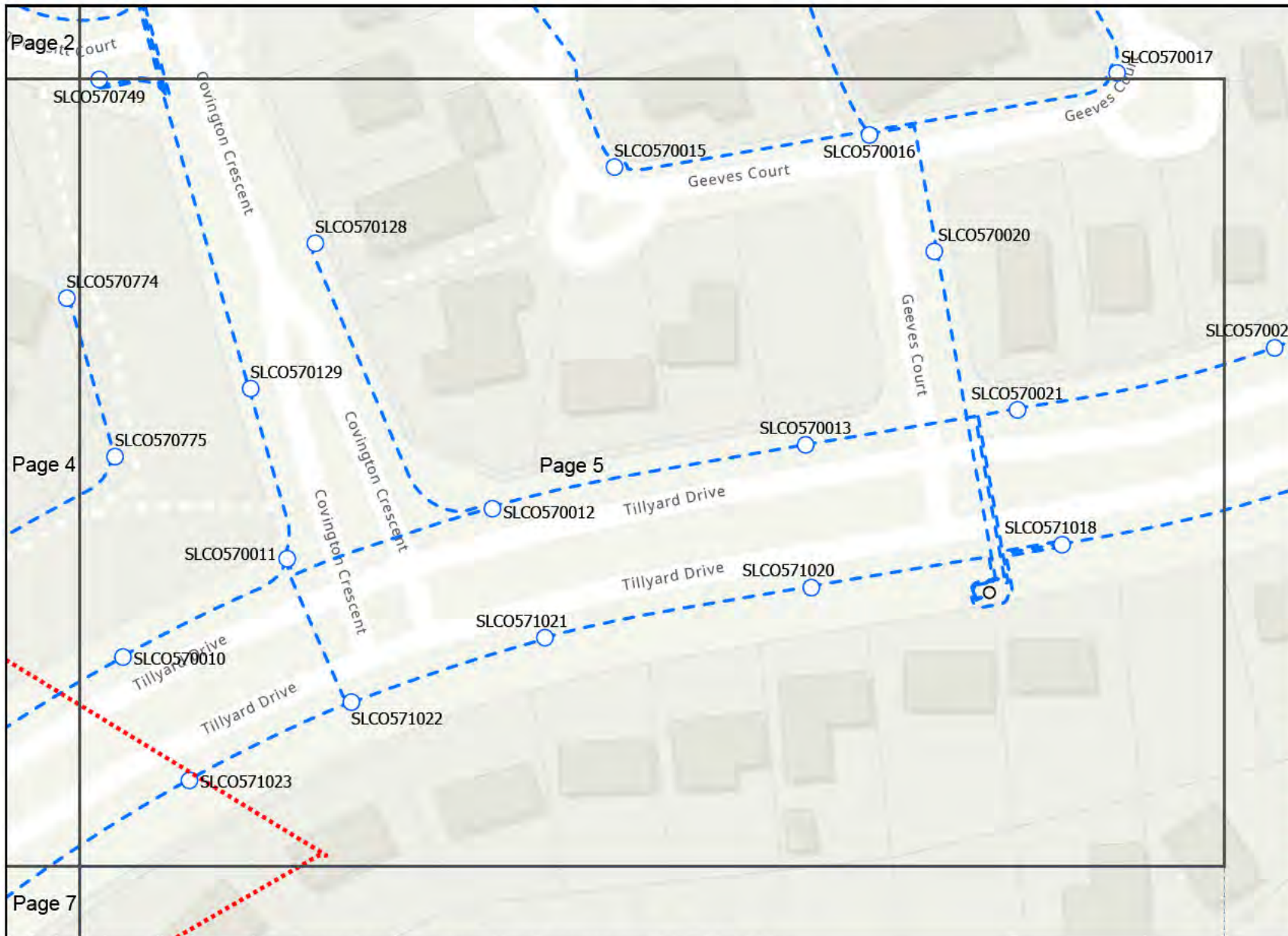


Legend

-  BYDA Enquiry
- Streetlighting Infrastructure**
-  Streetlight
-  Underground Cable - In Service

Esri Community Maps Contributors, Australian Capital Territory, Spatial Services, Vicmap, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

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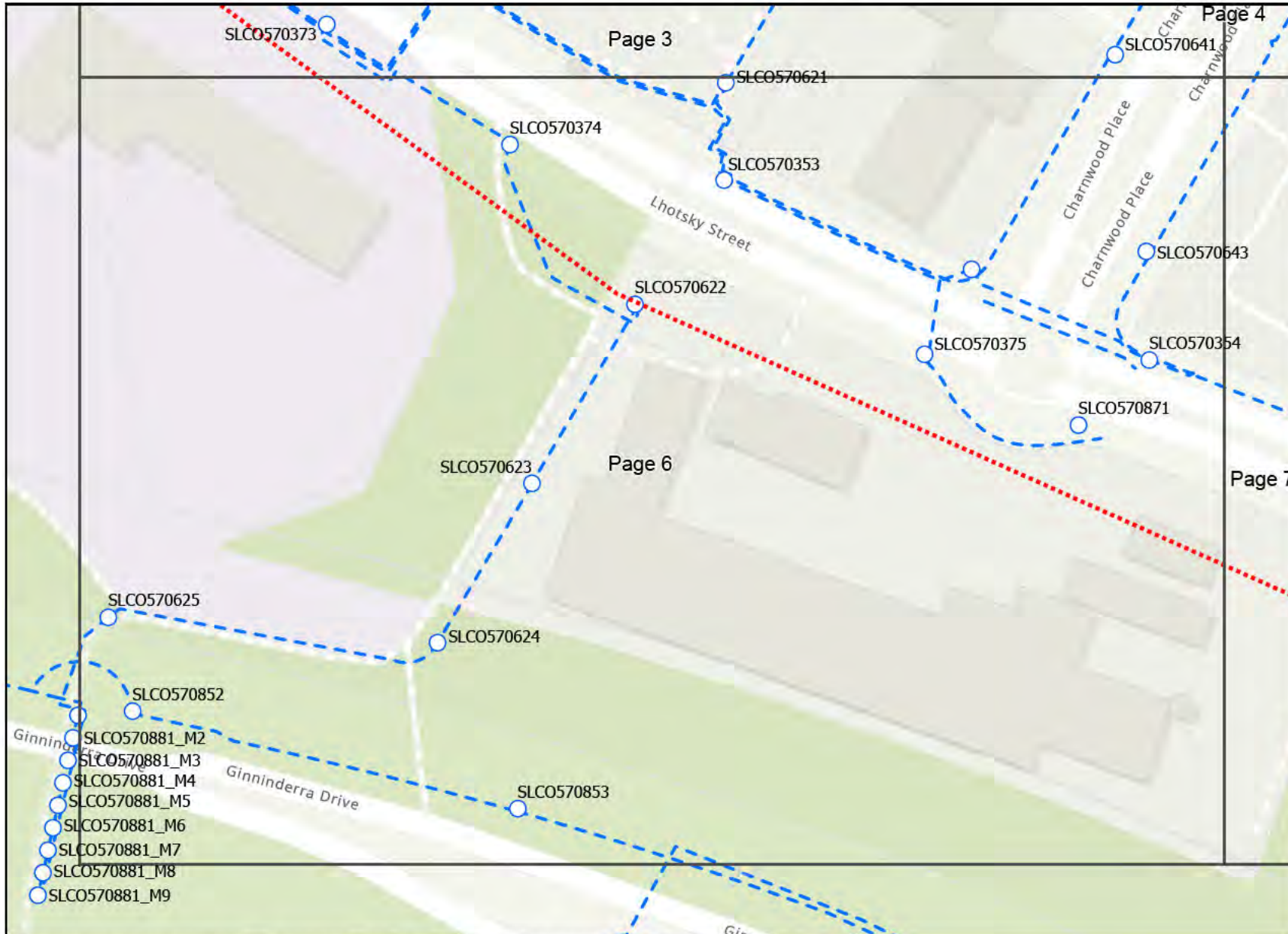


Legend

- ⋯ BYDA Enquiry
- Streetlighting Infrastructure
- Control Box
- Streetlight
- Underground Cable - In Service

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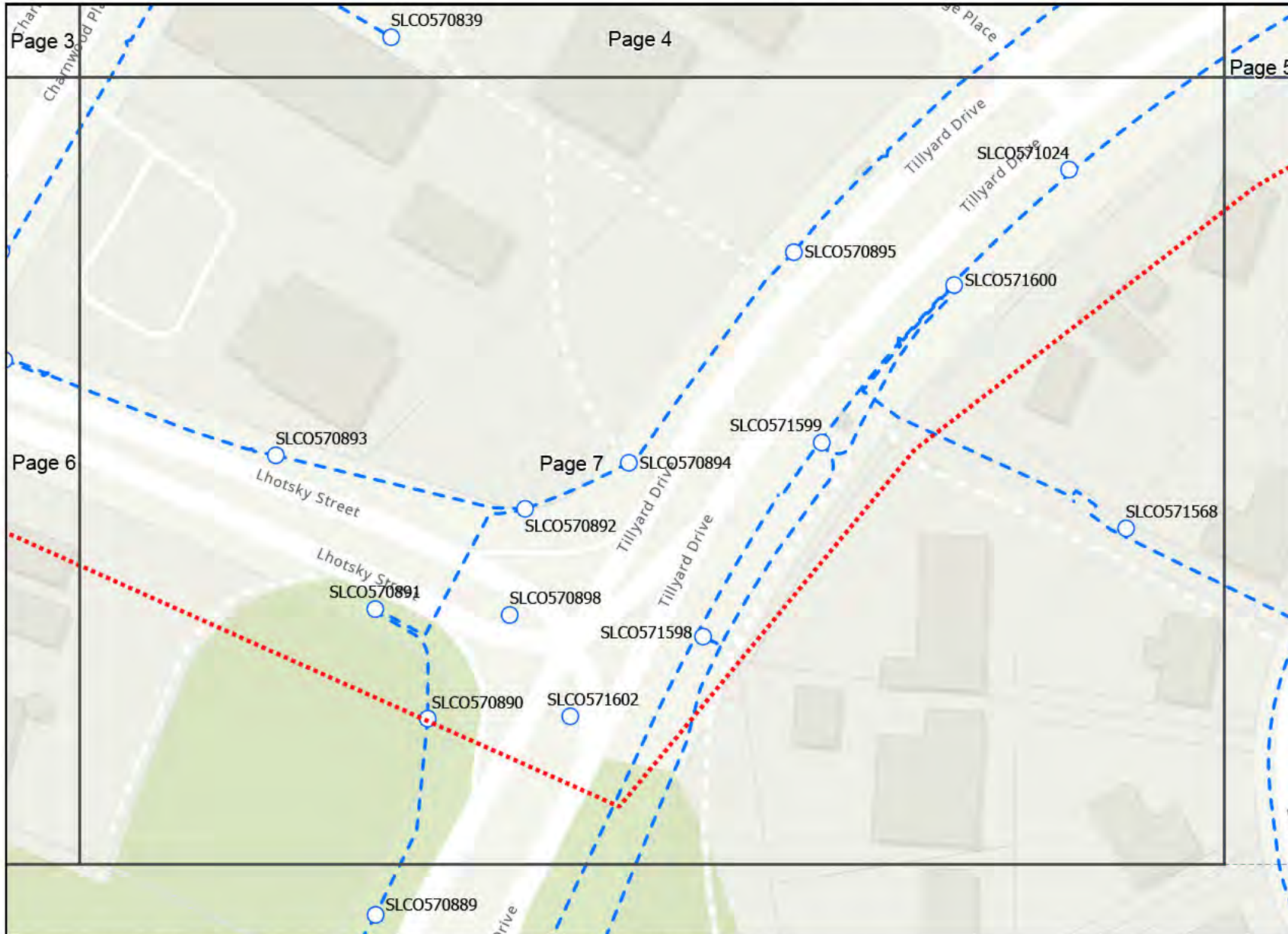


Legend

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-  Streetlight
-  Underground Cable - In Service

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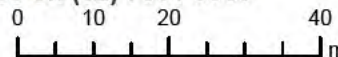
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In an emergency contact Transport Canberra and City Services on (02) 7801 3960

25/04/24 (valid for 30 days)

Plans generated by SmarterWX™ Automate



Scale 1:1,000



ACT
Government
Transport Canberra
City Services

Before You Dig Australia (BYDA)

Location Information

Streetlights and related assets

Asset owner:

Streetlighting Unit
Roads ACT, Transport Canberra and City Services
GPO Box 158
Fyshwick ACT 2601

To:

John Samoty
28 Barrallier Street
Griffith ACT 2603

Enquiry Details	
Utility ID	90520
Job Number	36545624
Sequence Number	238420426
Enquiry Date	25 April 2024
Response	AFFECTED
Address	5 Charnwood Place Charnwood ACT 2615
Location in Road	Road, Nature Strip, Footpath
Activity	Mechanical Excavation, Non-Destructive Digging, Subdivision

Enquirer Details	
Customer ID	3541136
Contact	John Samoty
Company	JPS Engineering Consultants
Email	john.samoty@jpsengineering.com.au
Phone	+61 [REDACTED]

PLEASE READ ALL THE INFORMATION AND DISCLAIMERS PROVIDED ON THE ATTACHED PAGES

General location only

- The approximate location of Streetlights and related assets (**the Assets**) in the nominated area are shown on the attached maps (**the Asset Plan**).
- The Asset locations provided with this response are based on the information available at the time and are only an indication of the presence of Assets within the nominated location. If the nominated area is not what you require, please resubmit another inquiry.
- The Asset Plans provided do not show the presence of any other assets, including private property assets.
- Please be aware that the location of the Assets may change to those indicated on the Asset Plan. The Asset locations shown on the attached Asset Plan are indicative only. Due to changes in surface levels and surrounding infrastructure, and works undertaken by other parties, Asset location may differ to those shown on the Asset Plan.
- *It is your responsibility to verify the location of the Assets shown on the Asset Plan through positive identification process*
- A new Asset Plan should be obtained every 28 days to ensure currency and accuracy. It is your responsibility to obtain a new Asset Plan if required.
- While every endeavour has been made to provide information that is accurate and reliable, complete accuracy cannot be guaranteed. Transport Canberra and City Services (TCCS) does not represent or warrant that you or any user of the Asset Plan will achieve any particular objective or guarantee any outcome.

Limitation of Liability

To the maximum extent permitted by law, TCCS and its officers, employees, contractors and agents accept no liability and are not responsible for any actions, liabilities, losses, damages (including consequential damages), costs, claims or expenses of whatever nature and regardless of the cause of action, whether in contract, tort (including negligence) or otherwise, arising out of or in connection with or as a consequence of any inaccuracies in the Asset Plan or the use of the information contained in the Asset Plan.

Without limiting the above, TCCS and its officers, employees, contractors and agents are not responsible to any person for:

- The currency, accuracy or completeness of the information provided in the Asset Plan; or
- Any delays in respect of delivery or supply by TCCS of the information sought in connection with the location of the Assets.

To the maximum extent permitted by law, TCCS specifically excludes any conditions, terms or warranties that may be implied into, or in respect of the provision of the Asset Plan and to the extent that any such condition, term or warranty or liability cannot be excluded, TCCS liability for breach of such implied term, condition or warranty is limited to the resupply of the Asset Plan provided by TCCS or the payment of the reasonable costs of having the Asset Plan supplied again.

Work to be carried out without interference or damage to Assets

Any work undertaken near the Assets, must be performed in a way that does not interfere with the reliability of or access to the Assets. Any work carried out that includes changing the surface level in any area where Assets are indicated must be carried out with care and you will be responsible for any damage caused through failure to exercise such care. TCCS may pursue the person or organisation responsible for causing any damage or interference to the Assets.



ACT
Government

Transport Canberra and
City Services

Dial Before You Dig (DBYD)

Transport Canberra and City Services
255 Canberra Avenue, Fyshwick
TCCS.ContaminatedSites@act.gov.au

To
John Samoty
28 Barrallier Street
Griffith 2603

Enquiry Details	
Utility ID	90520
Job Number	36545624
Sequence Number	238420426
Enquiry Date	25 April 2024
Response	AFFECTED
Address	5 Charnwood Place Charnwood 2615
Location in Road	Road, Nature Strip, Footpath
Activity	Mechanical Excavation, Non-Destructive Digging, Subdivision

Enquirer Details	
Customer ID	3541136
Contact	John Samoty
Company	JPS Engineering Consultants
Email	john.samoty@jpsengineering.com.au
Phone	+61 [REDACTED]



ACT
Government

Transport Canberra and
City Services

Dial Before You Dig (DBYD)

WARNING

THE LOCATION OF YOUR ENQUIRY IS WITHIN ENVIRONMENTALLY SENSITIVE AREA

The area of your enquiry has been identified as having potential for contamination.

Please check if the land you enquire about is on the [contaminated site register](#).

If so, prior to commencement of works within this site, you are required to obtain Environmental Significance Opinion (ESO) from Environment Planning and Sustainable Development Directorate. If you haven't obtained it yet, please contact EPDImpact@act.gov.au for directions.

If your block is not on the contaminated site register, you are still required to contact EPA contaminatedsites@act.gov.au to obtain further instructions.

Disclaimer

The information is provided in response to a Before You Dig request. While all reasonable care has been taken to ensure the accuracy of the information, its purpose is to provide a general indication of the location of Transport Canberra and City Services (TCCS) infrastructure.

As part of the response, the location of your enquiry has been checked against contaminated land records maintained by the Environment Protection Authority in accordance with s21A of the Environment Protection Act 1997. Where the land is noted on the contaminated land records, relevant details will be provided. Where the land is not noted on the Contaminated Land Register, no details will be provided.

While all reasonable care has been taken to disclose information in respect of contaminants, the TCCS and Environment Protection Authority do not make any representation or provide any warranty as to the state of any land, including in respect of the presence or absence of any contaminant, chemical or other substance, whether naturally occurring or man-made on the land.

The absence of information in respect of the land on contaminated land records is not a guarantee of the absence of substances, including dangerous substances on the land, and any information provided may contain errors or omissions and the accuracy may not suit all users. The TCCS recommends a comprehensive site inspection and investigation by any person contemplating engaging in any work on the land prior to doing so.



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

Sequence Number: 238420427

CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

TELSTRA LIMITED A.C.N. 086 174 781

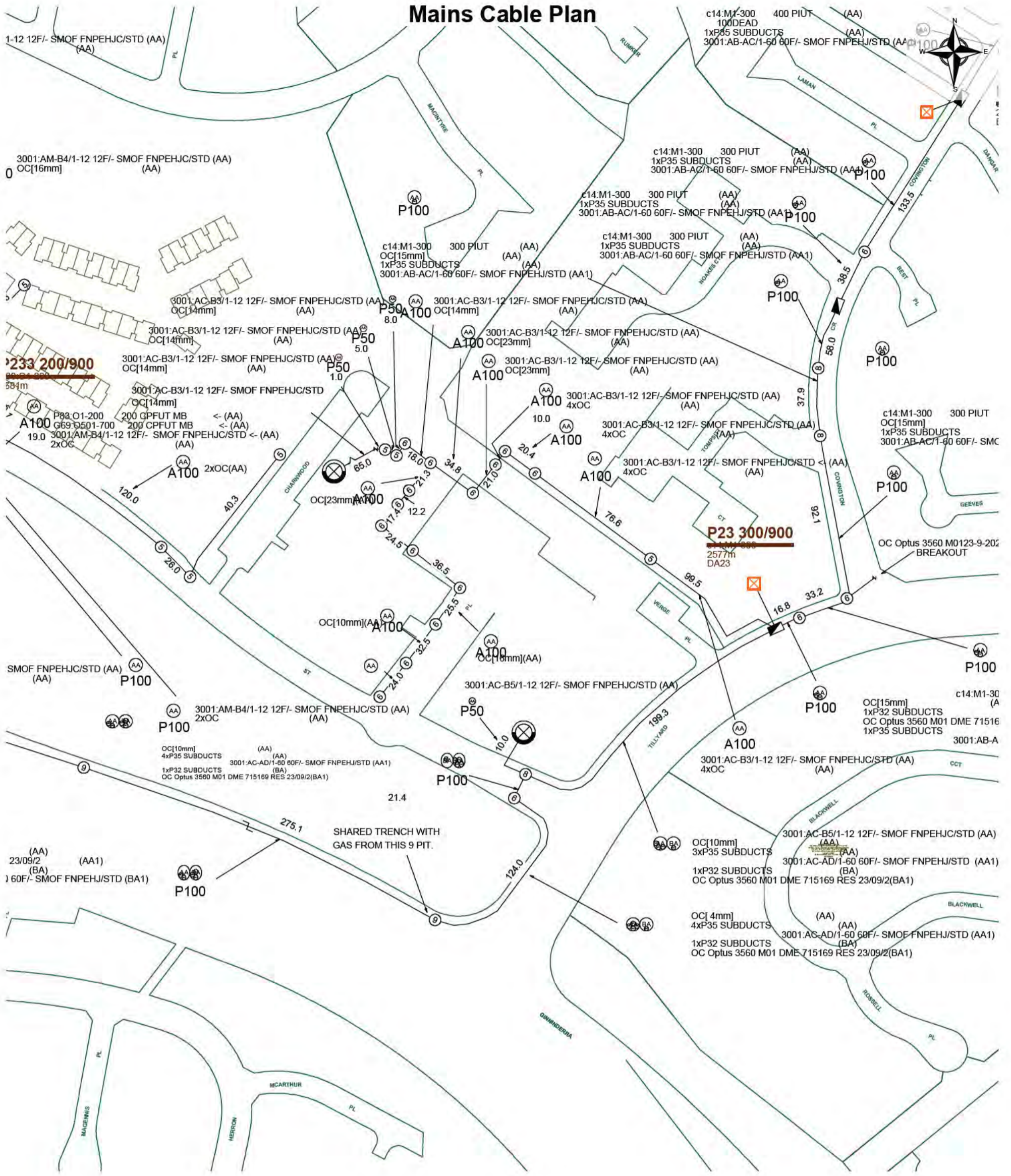
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The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

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

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

Mains Cable Plan



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

Sequence Number: 238420427

CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

TELSTRA LIMITED A.C.N. 086 174 781

Generated On 25/04/2024 18:21:24

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

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



Certified Locating Organisations (CLO)


Find the closest CLO to your worksite on: <https://dbydlocator.com/certified-locating-organisation/>

Read the disclaimer and click:




A national map and an A-Z list of Certified Locating Organisations is displayed.



Use the map to zoom to your work area and choose the closest  Locator indicated.

OR search by entering the postcode of your work area.

1. Enter the post/zip code
2. Choose your search radius
3. Click filter (If there is no result, you may have to increase the search radius)
4. Click on the closest  for CLO details or view the results displayed below the map

Personnel work managed by:
TEST COMPANY DCL


L-27000

Anne Locator


www.dbydlocator.com

Expires: 01/01/2030

CERTIFIED LOCATING ORGANISATION

Locator skills have been tested, and the Organisation has calibrated location and safety equipment.

Telstra is aware of each Certified Locating Organisation and their employee locators.

Only a DBYD Certified Locator registered with a Certified Locating Organisation is authorised to access Telstra network for locating purposes.

Each Certified Locator working for a CLO is issued with a photo ID Card, authorising them to access Telstra pits and manholes for the purpose of cable and plant locations.

Please ask to see your Locators' CLO ID Card.



Before You Dig Australia

Think before you dig

This document has been sent to you because you requested plans of the Telstra network through Before You Dig Australia (BYDA).

If you are working or excavating near telecommunications cables, or there is a chance that cables are located near your site, you are responsible to avoid causing damage to the Telstra network.

Please read this document carefully. Taking your time now and following the steps below can help you avoid damaging our network, interrupting services, and potentially incurring civil and criminal penalties.

Our network is complex and working near it requires expert knowledge. Do not attempt these activities if you are not qualified to do so.



Further Information



Cable Plan enquiries
1800 653 935 (AEST business hours only)



Telstra.Plans@team.telstra.com

Information on how to find cables and request asset relocations:



<https://www.telstra.com.au/consumer-advice/digging-construction>

Opening Digital Plan Attachments. Asset Plan Readers:



PDF [Adobe Acrobat Reader DC Install for all versions](#)
DWF Map Files (all sizes over A3)
[Autodesk Viewer \(Browser\)](#) or
[Autodesk Design Review \(Microsoft Windows\)](#)

Report any damage immediately



<https://www.telstra.com.au/forms/report-damage-to-telstra-equipment>

13 22 03

If you receive a message asking for an account or phone number say

"I Don't have one"

Then say, "Report Damage" and listen to the prompts.



Relocating Telstra Assets

If your project requires the relocation of a Telstra asset, please contact the Telstra Network Integrity Group:



1800 810 443 (AEST business hours only)



NetworkIntegrity@team.telstra.com

Never try to move or alter our network infrastructure without authorisation. By law, only authorised people can work on our assets or enter a facility owned or operated by us. Any interference, including unauthorised entry or tampering, may result in legal action.

Certified Locating Organisation (CLO)



Engage a CLO



Find your Closest CLO to identify, validate and protect Telstra Assets before you commence you work.

<https://dbylocator.com/certified-locating-organisation/>



1. Plan

Plan your work with the latest plans of our network.

Plans provided through the BYDA process are indicative only*.

This means the actual location of our asset may differ substantially from that shown on the plans.

Refer to steps 2 and 3 to determine actual location prior to proceeding with construction.



2. Prepare

Engage a DBYD Certified Locating Organisation (CLO) via dbydlocator.com to identify, validate and protect Telstra assets before you commence work.



3. Pothole

Validate underground assets by potholing by hand or using non-destructive vacuum extraction methods.

Electronic detection alone (step 2) is not deemed to validate underground assets and must not be used for construction purposes.

If you cannot validate the Telstra network, you must not proceed with construction.



4. Protect

Protect our network by maintaining the following distances from our assets:

- › 1.0m Mechanical Excavators, Farm Ploughing, Tree Removal
- › 500mm Vibrating Plate or Wacker Packer Compactor
- › 600mm Heavy Vehicle Traffic (over 3 tonnes) not to be driven across Telstra ducts or plant
- › 1.0m Jackhammers/Pneumatic Breakers
- › 2.0m Boring Equipment (in-line, horizontal and vertical)



5. Proceed

You can proceed with your work only once you have completed all the appropriate preparation, potholing and protection.

Disclaimer and legal details



*Telstra advises that the accuracy of the information provided by Telstra conforms to Quality Level D as defined in AS5488-2013.

It is a criminal offence under the Criminal Code Act 1995 (Cth) to tamper or interfere with telecommunications infrastructure.

Telstra will also take action to recover costs and damages from persons who damage assets or interfere with the operation of **Telstra's** networks.

By receiving this information including the indicative plans that are provided as part of this information package you confirm that you understand and accept the risks of working near **Telstra's** network and the importance of taking all of the necessary steps to confirm the presence, alignments and various depths of **Telstra's** network. This in addition to, and not in replacement of, any duties and obligations you have under applicable law.

When working in the vicinity of a telecommunications plant you have a "Duty of Care" that must be observed. Please read and understand all the information and disclaimers provided below.

The Telstra network is complex and requires expert knowledge to interpret information, to identify and locate components, to pothole underground assets for validation and to safely work around assets without causing damage. If you are not an expert and/or qualified in these areas, then you must not attempt these activities. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers. Construction activities and/or any activities that potentially may impact on Telstra's assets must not commence without first undertaking these steps. Construction activities can include anything that involves breaking ground, potentially affecting Telstra assets.

If you are designing a project, it is recommended that you also undertake these steps to validate underground assets prior to committing to your design.

This Notice has been provided as a guide only and may not provide you with all the information that is required for you to determine what assets are on or near your site of interest. You will also need to collate and understand all of the information received from other Utilities and understand that some Utilities are not a part of the BYDA program and make your own enquiries as appropriate. It is the responsibility of the entities undertaking the works to protect **Telstra's** network during excavation / construction works.

Telstra owns and retains the copyright in all plans and details provided in conjunction with the applicant's request. The applicant is authorised to use the plans and details only for the purpose indicated in the applicant's request. The applicant must not use the plans or details for any other purpose.

Telstra plans or other details are provided only for the use of the applicant, its servants, agents, or Certified Locating Organisation. The applicant must not give the plans or details to any parties other than these and must not generate profit from commercialising the plans or details.

Telstra, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and or details so supplied to the applicant, its servants and agents, and the applicant agrees to indemnify Telstra against any claim or demand for any such loss or damage.

Please ensure Telstra plans and information provided always remains on-site throughout the inspection, location, and construction phase of any works.

Telstra plans are valid for 60 days after issue and must be replaced if required after the 60 days.

Data Extraction Fees

In some instances, a data extraction fee may be applicable for the supply of Telstra information. Typically, a data extraction fee may apply to large projects, planning and design requests or requests to be supplied in non-standard formats. For further details contact Telstra Planned Services.

Telstra does not accept any liability or responsibility for the performance of or advice given by a Certified Locating Organisation. Certification is an initiative taken by Telstra towards the establishment and maintenance of competency standards. However, performance and the advice given will always depend on the nature of the individual engagement.

Neither the Certified Locating Organisation nor any of its employees are an employee or agent for Telstra. Telstra is not liable for any damage or loss caused by the Certified Locating Organisation or its employees.

Once all work is completed, the excavation should be reinstated with the same type of excavated material unless specified by Telstra

The information contained within this pamphlet must be used in conjunction with other material supplied as part of this request for information to adequately control the risk of potential asset damage.

When using excavators and other machinery, also check the location of overhead power lines.

Workers and equipment must maintain safety exclusion zones around power lines

WARNING: Telstra plans and location information conform to Quality Level 'D' of the Australian Standard AS 5488 - Classification of Subsurface Utility Information. As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D. Refer to AS 5488 for further details. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans. **FURTHER ON SITE INVESTIGATION IS REQUIRED TO VALIDATE THE EXACT LOCATION OF TELSTRA PLANT PRIOR TO COMMENCING CONSTRUCTION WORK.** A plant location service is an essential part of the process to validate the exact location of Telstra assets and to ensure the assets are protected during construction works. The exact position of Telstra assets can only be validated by physically exposing them. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers.

Privacy Note

Your information has been provided to Telstra by BYDA to enable Telstra to respond to your BYDA request. Telstra keeps your information in accordance with its privacy statement. You can obtain a copy at www.telstra.com.au/privacy or by calling us at 1800 039 059 (business hours only).



OPENING ELECTRONIC MAP ATTACHMENTS -

Telstra Cable Plans are generated automatically in either PDF or DWF file types, dependent on the site address and the size of area selected. You may need to download and install free viewing software from the internet e.g.



DWF Map Files (all sizes over A3)

Autodesk Viewer (Browser) (<https://viewer.autodesk.com/>) or

Autodesk Design Review (<http://usa.autodesk.com/design-review/>) for DWF files. (Windows PC)



PDF Map Files (max size A3)

Adobe Acrobat Reader (<http://get.adobe.com/reader/>)

Telstra BYDA map related enquiries email

Telstra.Plans@team.telstra.com

1800 653 935 (AEST Business Hours only)



REPORT ANY DAMAGE TO THE TELSTRA NETWORK IMMEDIATELY

Report online - <https://www.telstra.com.au/forms/report-damage-to-telstra-equipment>

Ph: **13 22 03**

If you receive a message asking for a phone or account number say:

“I don’t have one” then say “Report Damage” then press 1 to speak to an operator.



Telstra New Connections / Disconnections

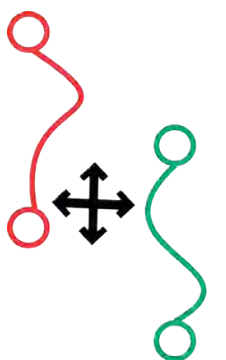
13 22 00



Telstra asset relocation enquiries: 1800 810 443 (AEST business hours only).

NetworkIntegrity@team.telstra.com

<https://www.telstra.com.au/consumer-advice/digging-construction>



Certified Locating Organisation (CLO)

<https://dbydlocator.com/certified-locating-organisation/>

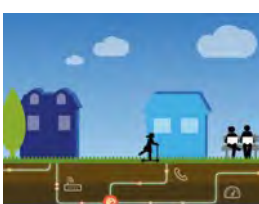
Please refer to attached Accredited Plant Locator.pdf



Telstra Smart Communities

Information for new developments (developers, builders, homeowners)

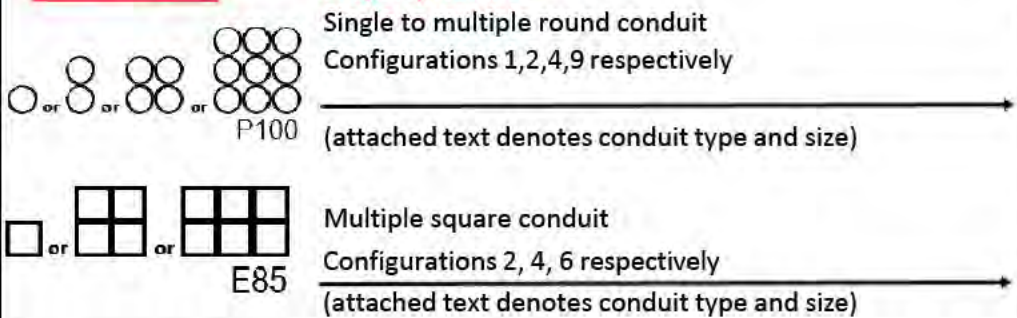
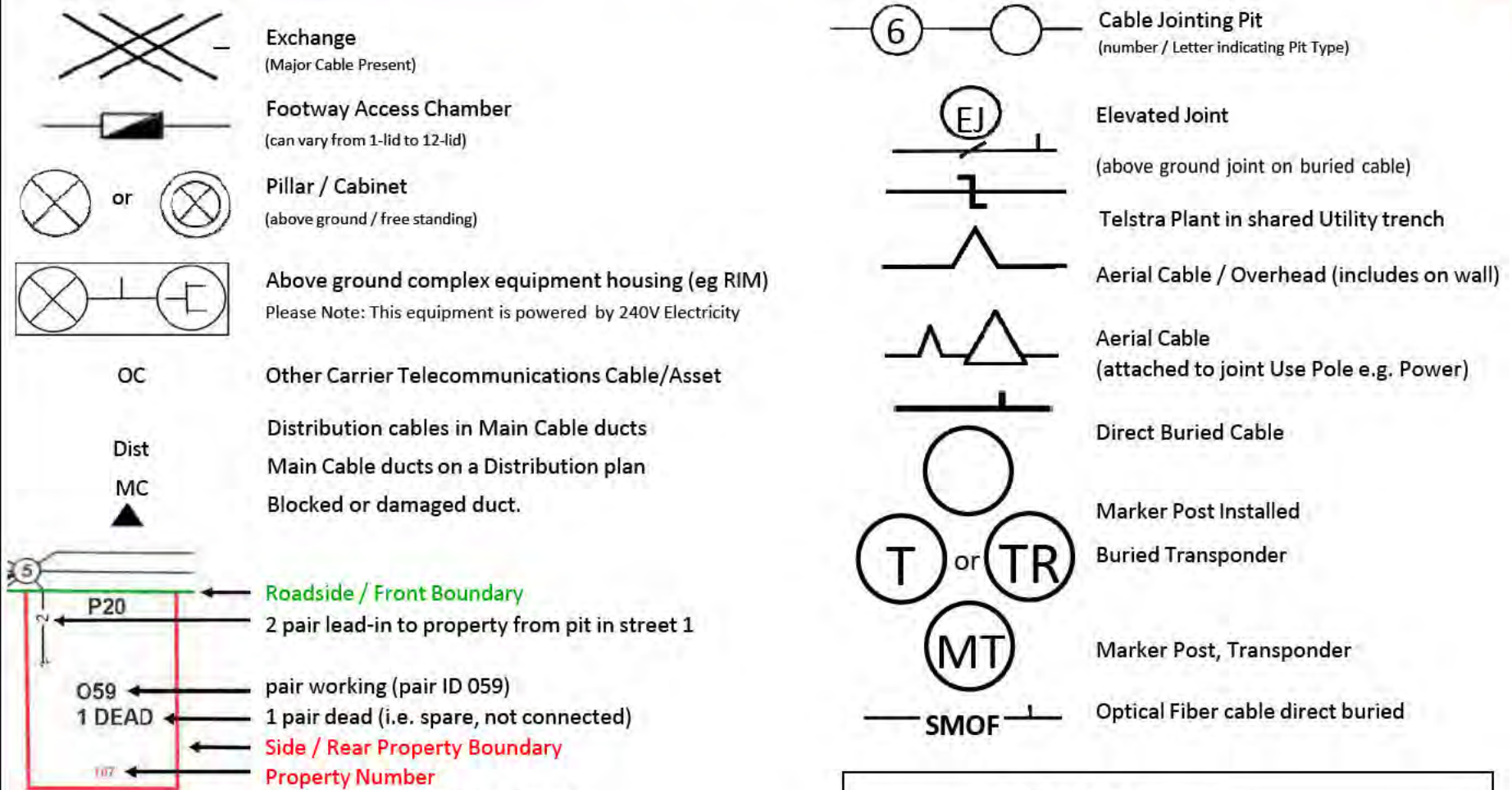
<https://www.telstra.com.au/smart-community>



LEGEND

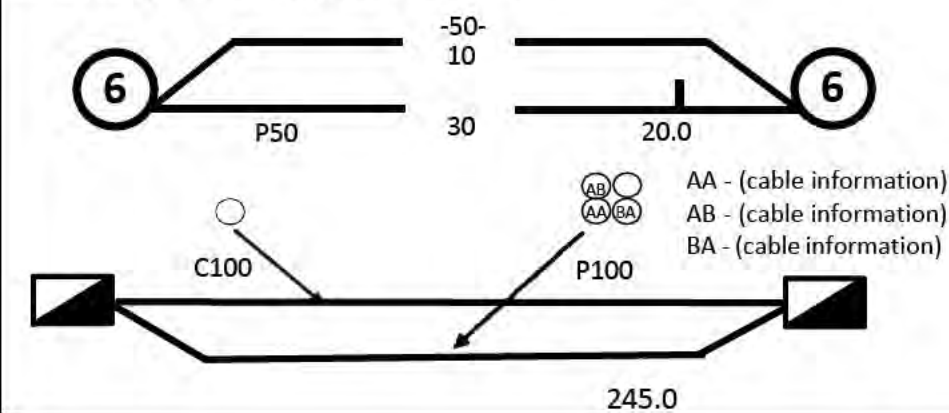


For more info contact a [Certified Locating Organisation](#) or Telstra Plan Services 1800 653 935



Some examples of conduit type and size:
 A - Asbestos cement, P - PVC / Plastic, C - Concrete,
 GI - Galanised iron, E - Earthenware
 Conduit sizes *nominally* range from 20mm to 100mm
 P50 50mm PVC conduit
 P100 100mm PVC conduit
 A100 100mm asbestos cement conduit

Some Examples of how to read Telstra Plans



One 50mm PVC conduit (P50) containing a 50-pair and a 10-pair cable between two 6-pits. approximately 20.0m apart, with a direct buried 30-pair cable along the same route

Two separate conduit runs between two footway access chambers (manholes) approximately 245m apart A nest of four 100mm PVC conduits (P100) containing assorted cables in three ducts (one being empty) and one empty 100mm concrete duct (C100)

Asset location information

Applicant/Contractor

Job No.

36545624

DBYD Sequence No.

238420428

Company: JPS Engineering Consultants
Contact: John Samoty
Telephone: +61 [REDACTED]
Address: 28 Barrallier Street Griffith ACT 2603

Work Details



Suburb: Charnwood
Address: 5 Charnwood Place

Description:

Enquiry Date: 25-Apr-2024

Issue Date: 25-Apr-2024

WARNING – HIGH PRESSURE GAS PIPELINE IN THE VICINITY

The records of Evoenergy Gas Networks indicate that High Pressure Underground Assets/Pipes ARE present in the vicinity of and/or surrounding area of the above enquiry. Please read all the information and conditions below and overleaf.

No excavations within 15 metres of this asset are permitted without the prior approval of Zinfra PHONE 1300 503 237

IN THE EVENT OF A GAS EMERGENCY CALL 13 19 09 (24 hours)

CONDITIONS FOR WORKS IN THE VICINITY OF EVOENERGY GAS NETWORK ASSETS

Any information provided is valid only for 90 days from the date of issue. If the work operation extends beyond this period, or if the designs are altered in any way, you are requested to re-submit your proposal for re-assessment.

Consistent with the requirements of Part 2 General – Section 8 of the Utility Networks (Public Safety) Regulations 2001 No. 28, Evoenergy require that:

- The requestor shall ensure that all workers on site are aware of the presence of natural gas.
- The requestor shall ensure that under no circumstances will mechanical excavation be carried out within 1.0 metres of a gas main without there being a Zinfra Representative on site.

- The requestor shall be responsible to maintain the presence / visibilities of all gas markings.
- **No live or isolated gas pipes shall be cut, altered or removed without APPROVAL from Zinfra.**

Note: Individual customer gas connections are generally not shown on the accompanying maps. For information regarding individual gas connections we recommend that you request a site meeting / inlet service location.

You can obtain additional information or arrange a site meeting by contacting Zinfra on **1300 503 237**. **Note that 24 hours notice is required for site meetings.**

Please read the following important information (overleaf)



The Essential First Step

evoenergy

1. High Pressure Pipelines

No excavations or heavy construction are permitted within 15m of these pipelines without notification to and authorisation from Jemena. If separation distance is 15m or less, you are required to notify Jemena of your works.

Prior to commencing works near or over the High Pressure Gas Mains you must supply Jemena with your proposal of works including design plans. You must allow four weeks for Jemena to review your works. Please mail your proposed works details to:

Jemena Asset Management Pty Ltd
Land Services Dept
PO Box 1220
North Sydney, NSW, 2059

or email: land.services@jemena.com.au

Once Jemena has reviewed your proposal and design plans and you have received Jemena's approval to proceed, you must organise for a Pipeline Technician to be on Stand-by during your works (charges may apply).

To arrange for a Pipeline Technician to be on site please call the High Pressure Coordinator on **1300 503 237** two working days prior to the works commencing.

2. High Pressure Steel and Large Diameter Medium Pressure Plastic Pipelines

You **must** contact a Pipeline Technician to conduct a survey **before** commencing any work in this area. You can arrange a survey by contacting the High Pressure Response Coordinator on **1300 503 237**. **Please note that two working days notice is required to arrange a survey.** For all works in the vicinity of High Pressure Gas Mains you are required to arrange for a Pipeline Technician to attend. Charges apply for attendance of any works outside the hours of 7am to 4pm, Monday to Friday ("Standard Business Hours") and for any attendance during Standard Business Hours that is longer than 2 hours.

WARNING. It is essential that ALL these documents be handed to the principal contractor carrying out the work. A photocopy may be taken for office records. All documents must be on site at the time of excavation. The information provided is to be used as guide only and does not absolve third parties in their "Duty of Care" obligations to take additional precautions where the work has the potential to impact on gas assets and the safety of people.

All work that may impact upon the Evoenergy Gas Network should be carefully planned with notification to Jemena (Zinfra) well in advance of commencement. This includes excavation of gas pipelines, crossings of pipelines by other underground infrastructure (drains, power cables, etc), road works or structural installations.

Evoenergy plans have been provided to show the position of underground gas mains and equipment in public gazetted roads only. Individual customers' services are not generally included on these plans. These plans have been prepared solely for Evoenergy's own use and indicate the position of underground mains and installations relative to boundaries and kerbs as at the time the mains were installed, and do not necessarily reflect any subsequent changes eg: changes to road alignments.

Evoenergy and / or Jemena (Zinfra) will accept no liability for inaccuracies in the information or lack of information on such plans for any cause whatsoever arising. Persons excavating or carrying out other earthworks will be held responsible for any damage caused to underground mains and equipment, and the costs associated with replacement or repair.

Please note that the information contained on the map provided is not a method of determining gas availability for the purposes of connection to a natural gas supply. Please contact a gas retailer to determine the availability of gas as an energy source.

IN THE EVENT OF A GAS EMERGENCY CALL 13 19 09 (24 hours)

Extinguish all sources of ignition and keep the area clear of all persons. Any attempt by third parties to repair damaged gas mains or services may result in prosecution under the Utility Networks (Public Safety) Regulations 2001.



Asset location information

evoenergy

Applicant/Contractor

Job No. **36545624**

BYDA Sequence No. **238420428**

Company: JPS Engineering Consultants
Contact: John Samoty
Telephone: +61 [REDACTED]
Address: 28 Barrallier Street Griffith ACT 2603

Work Details



Suburb: **Charnwood**
Address: **5 Charnwood Place**

Description:

Enquiry Date: **25-Apr-2024**

Issue Date: **25-Apr-2024**



High pressure critical gas network assets detected within your search area

As High Pressure critical gas assets are present, you must not commence any works without first emailing Jemena Land Services at lands@jemena.com.au (see Item 13 in the Disclaimer).



Check for underground transmission line assets within your search area

Check the attached map for the location of underground transmission lines. If the map indicates there are underground transmission lines in the vicinity of the search area, you must not commence any works without first contacting Evoenergy (see Item 15 in the Disclaimer).

Information

The approximate location of Evoenergy or Icon Water assets in the area-of-enquiry are shown on the attached maps. Review all attached maps to check for utility assets in your work area.

Please refer to your Before You Dig Australia (BYDA) enquiry information to ensure you have received asset maps from all relevant utility owners before you commence work. There may be additional pages attached dependent on what assets are found in the area; and maps might be on pages of different sizes.

Individual customer gas connections are generally not shown on any attached Evoenergy Gas Network map. For information regarding individual gas connections we recommend you request a site meeting / inlet service location as per Item 7 in the Disclaimer.

This information is valid from **25-Apr-2024** to **25-Jul-2024**

In case of an emergency or to report damage
13 10 93 electricity | 02 6248 3111 water & sewer | 13 19 09 gas

Please read the following important information (overleaf)



evoenergy



Disclaimer

1. General location only

The Applicant acknowledges that:

- a. while Icon Water and Evoenergy have used reasonable endeavours to keep Asset location records current, neither party makes any warranty, guarantee or representation as to the accuracy, currency or completeness of the information contained in the attached Asset Plans.
- b. Asset Plans:
 - i. may not show all assets in the work area;
 - ii. show only the general and approximate location of Assets;
 - iii. may show the position of Assets relative to fences, buildings, property lines, kerbs and/or other points of reference that existed at the time the Assets were installed. Any subsequent alterations to those fences, buildings etc may not have been updated on the Asset Plans. Persons should not rely on such things as a point of reference to estimate location of the Assets.

2. Limitation of liability

To the maximum extent permitted by law:

- a. subject to paragraph 2(b), Icon Water, Jemena and Evoenergy and the officers, employees and agents of each accept no responsibility or liability for any loss, damage, liability, cost, expense, claim or proceeding of whatever nature and howsoever arising, incurred by or awarded against the Applicant or its officers, employees, agents, contractors or subcontractors, arising out of, connected with or as a consequence of use of the Asset Plans or any inaccuracies in the Asset Plans;
- b. where:
 - i. a Jemena or Evoenergy representative has, at the Applicants request, attended the work site to mark the location of Assets prior to commencement of any works on the work site, and
 - ii. the Jemena or Evoenergy representative has been proven to be negligent in marking the Asset location

then Icon Water, Jemena and Evoenergy's liability, and the liability of the officers, employees and agents of each, is limited, at Icon Water / Jemena / Evoenergy's option, to re-attending the work site to re-mark the Asset location or paying the costs of having a third party attend the work site to re-mark the Asset location.

3. Evoenergy Authorisation and Accreditation for Working on or near the Electricity Network

Accreditation is the process of ensuring that a company or person, wishing to carry out work on or near Evoenergy electricity network, has the necessary level of skills, resources and insurance to undertake the work in a safe and reliable way. Evoenergy has obligations under the Utilities (Management of Electricity Network Assets Code) Determination 2013 to ensure that anyone working on or near its electricity network is adequately and safely trained. Evoenergy takes these obligations seriously.

Anyone working on or near Evoenergy's electricity network must have the appropriate accreditation and authorisation to do so prior to commencing works.

To gain authorisation to work on or near the electricity network you will need to:

1. Ensure you or your company is accredited with Evoenergy by making an application with Evoenergy. The application form can be found on the Evoenergy website: www.evoenergy.com.au
2. Wait for Evoenergy to assess your application and notify you of the outcome.
3. Receive your Compliance tool login and QR code from Evoenergy as proof of authorisation. The QR code is required to be available at all times when working on or near the network.

For further information contact: accreditations@evoenergy.com.au

4. Electricity cables to be treated as LIVE

ALL electricity cables and conductors identified on the attached Asset Plans, including those marked as 'Abandoned', **MUST** be treated as 'LIVE' and dangerous until such time that they are tested and proven to be 'DE-ENERGISED'. Evoenergy recommends that cables identified as 'Abandoned' and which may be impacted, severed, damaged and/or removed by excavation works be proven 'DE-ENERGISED' and safe before commencing full-scale excavations.

5. Location of Assets may change

Assets may be moved, or additional Assets may be installed at any time. Persons using the attached Asset Plans are advised to be alert for changed locations or new installations performed after the Issue Date. If work extends for a period of 3 months beyond the Issue Date, a new application **MUST** be made to Before You Dig Australia for up to date Asset Location Information.

6. Work to be undertaken without interference or damage to assets

Any work undertaken near Assets, including without limitation excavation, structures, material storage, heavy vehicle parking, blasting or change of surface level, must be performed in a way that does not interfere with the reliability of, or access to Icon Water or Evoenergy Assets, including electricity lines or plant. Persons excavating are required to exercise care if Assets are indicated on Asset Plans and will be held responsible for any damage caused through failure to exercise such care. Icon Water or Evoenergy (as applicable) will pursue the person responsible for causing the damage or interference to their Assets to recover costs and expenses incurred in remedying such damage or interference.

7. Asset location marking

You may request our representative to visit the work site to mark the approximate location of Assets by calling **02 6293 5770** (Water and Electricity – excluding streetlight assets) or **1300 503 237** (Gas) between 7:30 am and 4 pm. Irrespective of any mandatory directions given in this notice, Evoenergy recommends that a site visit be conducted before commencing any works near Assets. Appointments will be accepted only if the Asset Location Information Sequence



Number is supplied. The location and marking of Assets will not take place unless the Asset Location Advice and attached Asset Plans are in colour and to the same scale as supplied, and are at the work site. Evoenergy does not charge for these site visits. Alternatively, the Applicant may wish to engage a private underground Asset locator, at the Applicant's expense.

You are responsible for maintaining the presence / visibility of all markings and to ensure that all workers on site are aware of:

- the presence of Icon Water / Evoenergy infrastructure in the vicinity of the intended work and
- Icon Water, Jemena and Evoenergy's requirements.

NB: Arranging for marking of approximate Asset locations by either an Evoenergy representative or private underground asset locator will not relieve the Applicant and persons working on their behalf of responsibility to exercise care when working near Evoenergy / Icon Water Assets or for any damage they cause to Evoenergy / Icon Water Assets while performing works.

8. Underground Assets must be located by potholing

Potholing or other non-destructive techniques must be used until underground Assets are located. When located, excavation may commence provided that persons carrying out the excavation work must follow Evoenergy's recommended specifications concerning minimum safety distances when excavating within the vicinity of Icon Water or Evoenergy's networks. Unless otherwise approved by Jemena, **under no circumstances can mechanical excavation be carried out within 1.0 metres of a gas main without a Jemena Representative on site.**

9. Water, Sewer and Effluent Mains

Icon Water requires mandatory supervision by authorised Icon Water personnel when potholing and excavating within the vicinity of critical water and sewer network assets (as determined by Icon Water) or Icon Water mains with a diameter of 300mm and above. **All effluent mains are classified as critical assets.**

To arrange an inspection or for any emergency please call Icon Water **02 6248 3111**.

10. Substation Earthing Conductors

The information does not include details of substation earthing conductors. These are installed within the vicinity of pole and ground mounted substations. Earthing conductors extend 1.0m in each direction from the substation. However, please be aware that site-specific requirements mean earthing conductors may be installed beyond this distance. Further information can be provided upon request.

11. Indications of the Presence of Cables

The presence of cables or conduits may be indicated by the following warning and marking devices

- Letter "E" inscriptions on Kerbs or "Electrical" inscriptions on pit lids
- Danger signs on above ground posts, walls etc
- Thin Orange "Caution Electrical Cables" Warning Tape

- Orange /Black PLASTIC Polymeric slab (3-6mm thick x 200mm wide)
- Concrete Bricks or slabs (approx 200mm x 500mm)
- Orange PVC or white Asbestos Cement (AC) Conduit or Galvanized Pipe
- Cylindrical concrete "ACTEA Electric Cable" markers
- Weak Concrete encasement directly around cables / conduits
- Texture/ colour change of excavated material (bedding sand, cracker dust, clean fill)

Note that some cables may have been installed without the presence of such marking devices.

12. Gas mains

- a. Evoenergy gas mains are managed by Jemena Asset Management Pty Ltd and operated by Zinfra.
- b. Mandatory stand-by / supervision by Zinfra personnel is required when excavating within the vicinity of critical gas network assets OR where mechanical excavation is required within 1.0 metres of the gas network. Your activity around critical gas assets will be supervised by Zinfra at no charge for the first two hours. This supervision is to ensure the integrity of Evoenergy's assets is maintained.

Note: Charges may apply if stand-by is required for longer than two hours.

Please contact Zinfra on **1300 503 237** between 7.30 am and 4 pm if you require a stand-by person.

13. High Pressure Gas Network Assets

You must supply Jemena with your proposal of works including a written outline of your works and design plans for review. It may take up to four weeks for Jemena to review your works proposal. Following review, we will advise you of Jemena's requirements for protecting the High Pressure gas main. Please mail your proposed works details to:

Jemena Asset Management Pty Ltd
Attention: Land Services Department
PO Box 1220 North Sydney NSW 2059

or email lands@jemena.com.au

Please note that a duty of care exists to ensure that this gas main is not compromised or damaged during future development or construction work.

14. Streetlight Assets

Streetlight assets in the ACT are owned and maintained by the ACT Government. You expressly acknowledge and agree that

- a. Evoenergy does not maintain streetlight asset information; and
- b. any such information provided by Evoenergy may not be up to date, reliable or complete and is provided strictly on an "as is" basis without any warranty of any kind. Please contact Access Canberra on **13 22 81** during business hours if you require further information.



15. Underground Transmission Line Assets

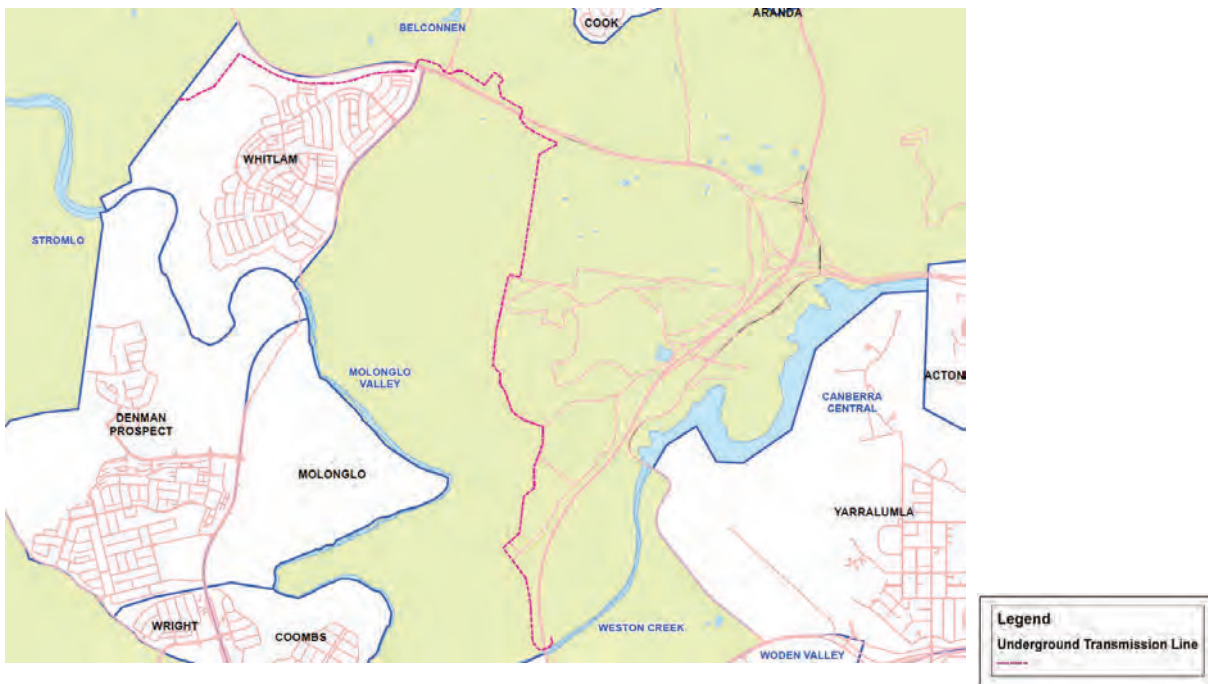
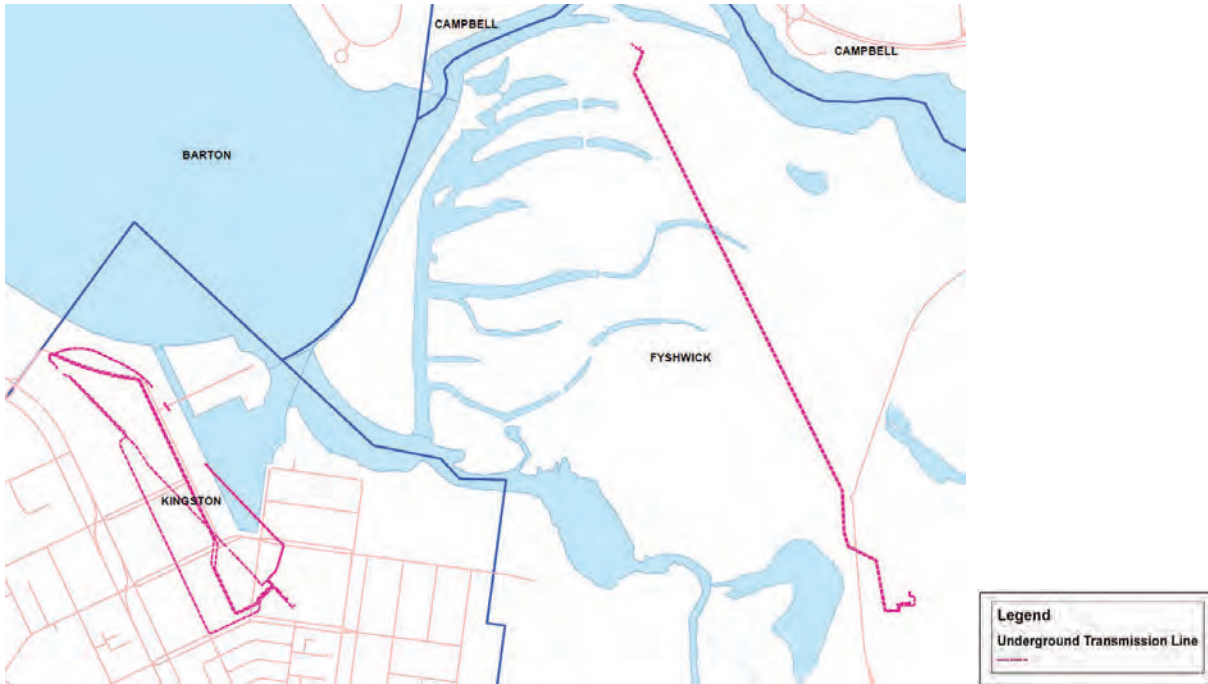
You must supply Evoenergy with your proposal of works including a written outline of your works and design plans for review.

It may take up to four weeks for Evoenergy to review your works proposal. Following review, we will advise you of Evoenergy's requirements for protecting the Underground Transmission Line Assets.

Please email your proposed work details to:
Network.ConnectionAdvice@evoenergy.com.au

Please note that a duty of care exists to ensure that this Electrical Asset is not compromised or damaged during future development or construction work.

THIS DOCUMENT AND ASSOCIATED ASSET PLANS MUST BE KEPT AT THE WORK SITE.














Icon Water: Effluent Re-use Network Legend




Hydrant

-  Overhead Filling Point
-  Mill Cock
-  Pillar Hydrant
-  High Capacity
-  Spring Hydrant



Fitting

-  Outlet
-  Inlet
-  Blank Flange
-  Dual Service Tee
-  End Cap
-  Gibault Joint
-  Maintenance Hole
-  Open End
-  Orifice Plate
-  Reducer
-  Tapping Band Bend

Service Connection (Meter)

-  Flow Element
-  Billing Large Diameter
-  Billing Small Diameter

Test Station

-  Flow Recording Device
-  Sampling Point









Pump

-  Pump



System Valve

-  <all other values>
-  Ball Valve
-  Butterfly Valve
-  Cone Valve
-  Gate Valve
-  Globe Valve
-  Needle Valve
-  Scour Valve

Control (Protection) Valve

-  DCV Double Check
-  Reflux Valve
-  AV Single Air Valve
-  DAV Double Air Valve
-  Enhanced Double Air Valve
-  RPZD Reduced Pressure Zone Valve
-  Pressure Relief Valve
-  Float Valve




Curb Stop Valve

-  Main Cock Valve
-  Tapping Band Valve






Reservoir Supply

-  Reservoir Supply






Main

-  Rising Main
-  Bulk Supply
-  Distribution Main
-  Reticulation

Lateral Line

-  Irrigation
-  Wash Down
-  Overflow
-  Scour
-  Drain

Effluent Structure

-  Dam
-  Pump Station
-  Reservoir Structure
-  Treatment Plant
-  Valve Chamber

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ELECTRICITY NETWORK LEGEND

Support Structure (Distribution)

- Pole
- Streetlight-Only Pole

Support Structure (Transmission)

- Pole
- Tower
- Yard Structure

Underground Structure

- Pit

Recloser

- Recloser

Building

- Zone Building
- Standalone Chamber

Switches

- Air Break
- Load Break
- Overhead Link

Fuse

- Drop Out Fuse

Service Point

- Service Point

Streetlight

- Streetlight Controller

Joint

- Cable Joint

Underground Earth Cable

- Underground Earth Cable

Fibre Optic Cable

- Overhead Fibre Optic Cable
- Underground Fibre Optic Cable

Copper Communication Cable

- Pilot Cable

Streetlight

- Streetlight
- Streetlight Controller
- Streetlight Photoelectric Controller
- Other Streetlight Support
- Streetlight Column

Streetlight Cable

- Overhead Streetlight Line
- Underground Streetlight Line, In Service
- Underground Streetlight Line, Abandoned

Transmission Line

- Overhead Transmission Line
- Underground Transmission Line, In Service
- Underground Transmission Line, Abandoned

HV Electric Lines

- Overhead HV Electric Line
- Underground HV Electric Line, In Service
- Underground HV Electric Line, Abandoned

LV Electric Lines

- Overhead LV Electric Line

Underground LV Electric Line <= 50 mm

- Underground LV Electric Line, In Service
- Underground LV Electric Line, Abandoned

Underground LV Electric Line > 50 mm

- Underground LV Electric Line, In Service
- Underground LV Electric Line, Abandoned

Service Lines

- Overhead Service Line

Underground Service Line <= 50 mm

- Underground Service Line, In Service
- Underground Service Line, Abandoned

Underground Service Line > 50 mm

- Underground Service Line, In Service
- Underground Service Line, Abandoned

Underground Route

- Duct

DuctBank

- <all other values>
- Conduit
- DepthIndicatorDeep
- DepthIndicatorShallow

Ground Mounted Structure

- Streetlight Control Cubicle
- Distribution Box
- Point-Of-Entry Cubicle
- HV Switching Station
- Kiosk
- Padmount
- Link Pillar
- Micro Pillar
- Mini Pillar
- Pregnant Column
- Communication Cubicle
- SCADA Cubicle

Electric Supply Site

- 132kV Switching Station
- Bulk Supply Station
- Mobile Zone Substation
- Zone Substation
- Overhead Substation
- Chamber Substation
- Stockade

IMPORTANT NOTE:

- The term 'ABANDONED' is utilised to identify an underground cable that has been physically disconnected from the Evoenergy electricity network, is not in service and cannot readily be put back into service without specific augmentation and/or reconnection works. Cable(s) identified by Evoenergy as 'ABANDONED' have been discarded in-situ by Evoenergy. ALL cables should be treated as 'LIVE' and Dangerous until proven de-energised and safe.

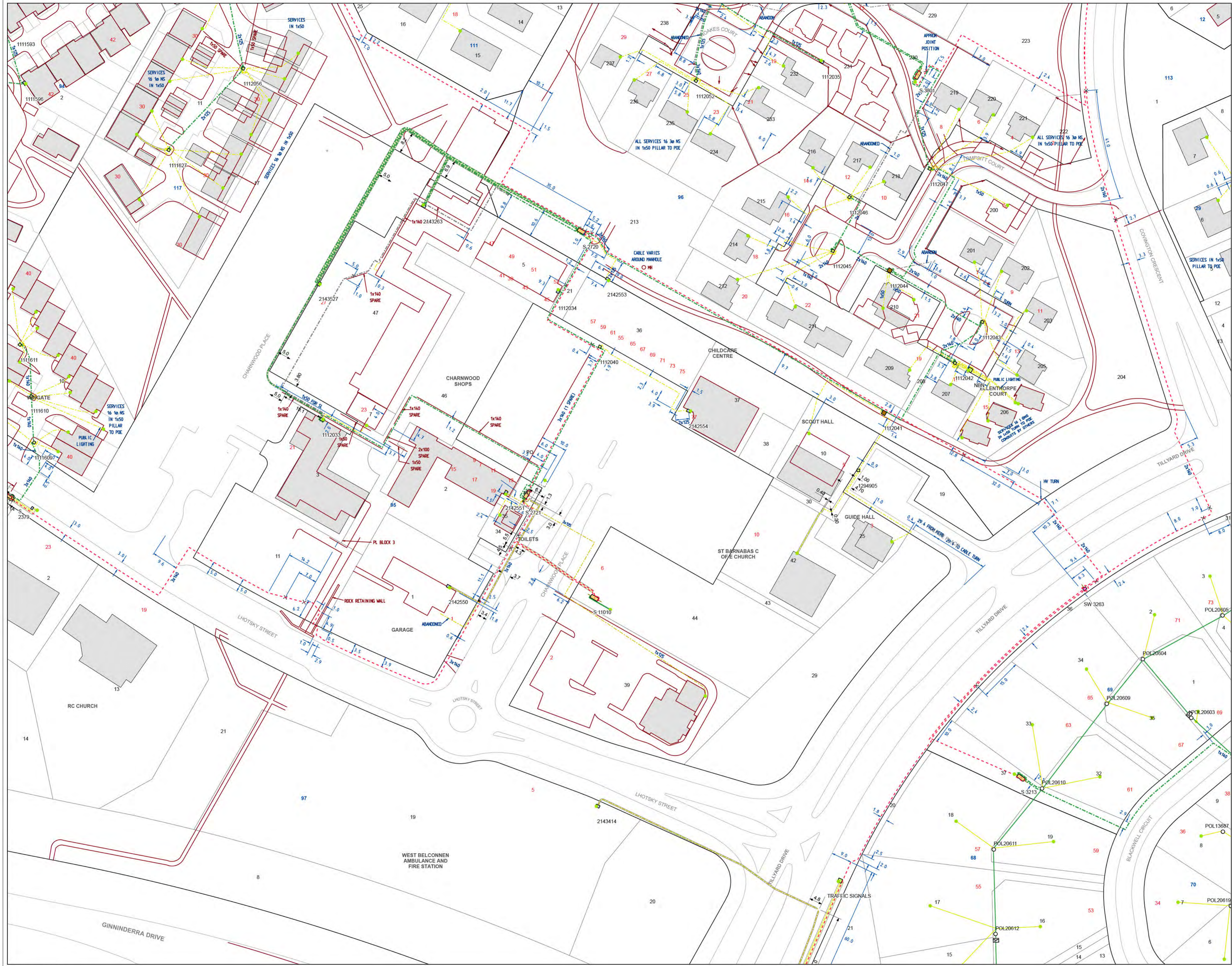
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Evoenergy Electricity Network

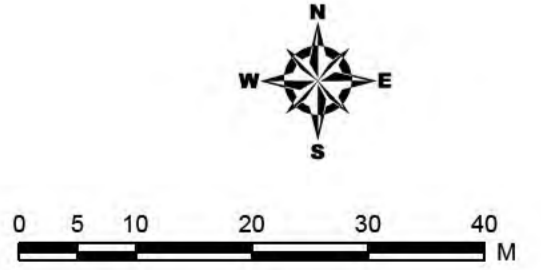


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GAS NETWORK LEGEND


GasStation CRITICAL

-  DistrictRegulator
-  TrunkReceivingStation
-  PrimaryRegulatingStation
-  BulkMeteringStation
-  PressureMonitoringStation
-  ScraperStation
-  BoundaryRegulatorSet
-  SecondaryBoundaryRegulatorSet
-  ValveStation

GasDevice

-  <all other values>
-  IsolationValve
-  Odouriser
-  Siphon
-  WaterbathHeater
-  Filter
-  Catalyst Heater
-  Silencer
-  Regulator

GasDevice High Risk Valve CRITICAL

-  HighRiskAreaIsolation



GasMeter

-  DomesticMeter
-  IndustCommMeter
-  SecondaryMeterSet

GasFitting

-  EndCap
-  Tee
-  ExpansionJoint
-  Flange
-  Reducer
-  Cross
-  ServiceSaddle
-  InsulationJoint
-  GaugingPoint



CPAnode

-  AnodeGroundBed
-  SacrificialAnode


CPRectifier

-  TransformerRectifier


CPCable

-  CPRectifierCable
-  CPGroundBedCable




Conduit

-  Conduit



GasStructure

-  <all other values>
-  CPKiosk
-  Pit
-  StationStructure






GasService

-  <all other values>
-  Gas Service IN USE
-  Gas Service NOT IN USE









GasService STEEL or MAOP >= 1050 OR DIA >= 75mm CRITICAL

-  Gas Service IN SERVICE
-  Gas Service NOT IN SERVICE

GasPipe

-  <all other values>
-  DistributionMain, Nylon, InService
-  Gas Pipe NOT IN USE
-  DistributionMain, PE, InService
-  DistributionMain, Copper, InService

GasPipe STEEL OR MAOP >= 1050 OR DIA >= 75mm CRITICAL

-  DistributionMain, Copper, InService
-  DistributionMain, Nylon, InService
-  DistributionMain, PE, InService
-  PrimaryMain, Steel, InService
-  PrimaryMain, Steel, Proposed
-  SecondaryMain, Steel, InService
-  SecondaryMain, Steel, Proposed
-  TransmissionMain, Steel, InService
-  Gas Pipe NOT IN USE

- R 10.0 = DISTANCE TO ROAD
- B 10.0 = DISTANCE TO BOUNDARY
- E 10.0 = DISTANCE TO END
- C 10.0 = DISTANCE TO CHANGE OF DIRECTION

-  = DISTANCE FROM MAIN TO KERB
-  = DISTANCE FROM MAIN TO BOUNDARY

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Evoenergy Gas Network

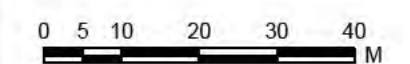


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Icon Water: Sewer Network Legend

Abandoned Point

- ✕ Abandoned Point

Maintenance Hole

- Active
- De-Commissioned

Fitting

- ^{BVR} Buried Vertical Riser
- Dead End
- ▶ Reducer
- Riser
- Tee

Service Connection

- Service Connection

DischargePoint

- ⌋ DischargePoint

Gauging Point / Test Station

- ◆ ChemicalTransducer
- ◆ ElectroMagnetic
- ◆ Flume
- ◆ PressureTransducer
- ◆ Sonic
- ◆ Venturi
- ◆ WeirGauge

Inspection Shaft

- ^{SIS} ● Special Inspection Shaft
- ^{SMS} ● Standard 225 Inspection Shaft

Clean Out Point

- ^{RP} ● Rodding Point

Control (Protection) Valve

- ◇ Air Valve
- ↶ Reflux Valve

Pump

- Pump

Storage Tank / Vault

- ▣ Storage Tank / Vault

SystemControlValve

- ^{SCOUR} ⚡ Scour Valve
- ⊙ Ball Valve
- ^{PLUG} ⚡ Plug
- ⚡ Gate Valve
- ^{SL} ⚡ Stop Log
- ^P ⚡ Penstock

Sewer Structures

- ◇ Odour Scrubber
- ⊕ Sewer Fan
- ^{SVE} ● Vent

Vertical Drop

- ^{SVD} ● Vertical Drop

VortexDrop

- ^V ▼ VortexDrop

Weir

- ^W ● Weir

Gravity Main

- Vent Pipe
- Reticulation Main
- Trunk Main
- Tunnel
- Siphon
- Overflow Pipe
- Inline Storage

Pressure Main

- Pressure Main

Lateral Line

- Property Service Line
- Scour Line

De-Commissioned Mains

- De-Commissioned Mains

Abandoned Mains

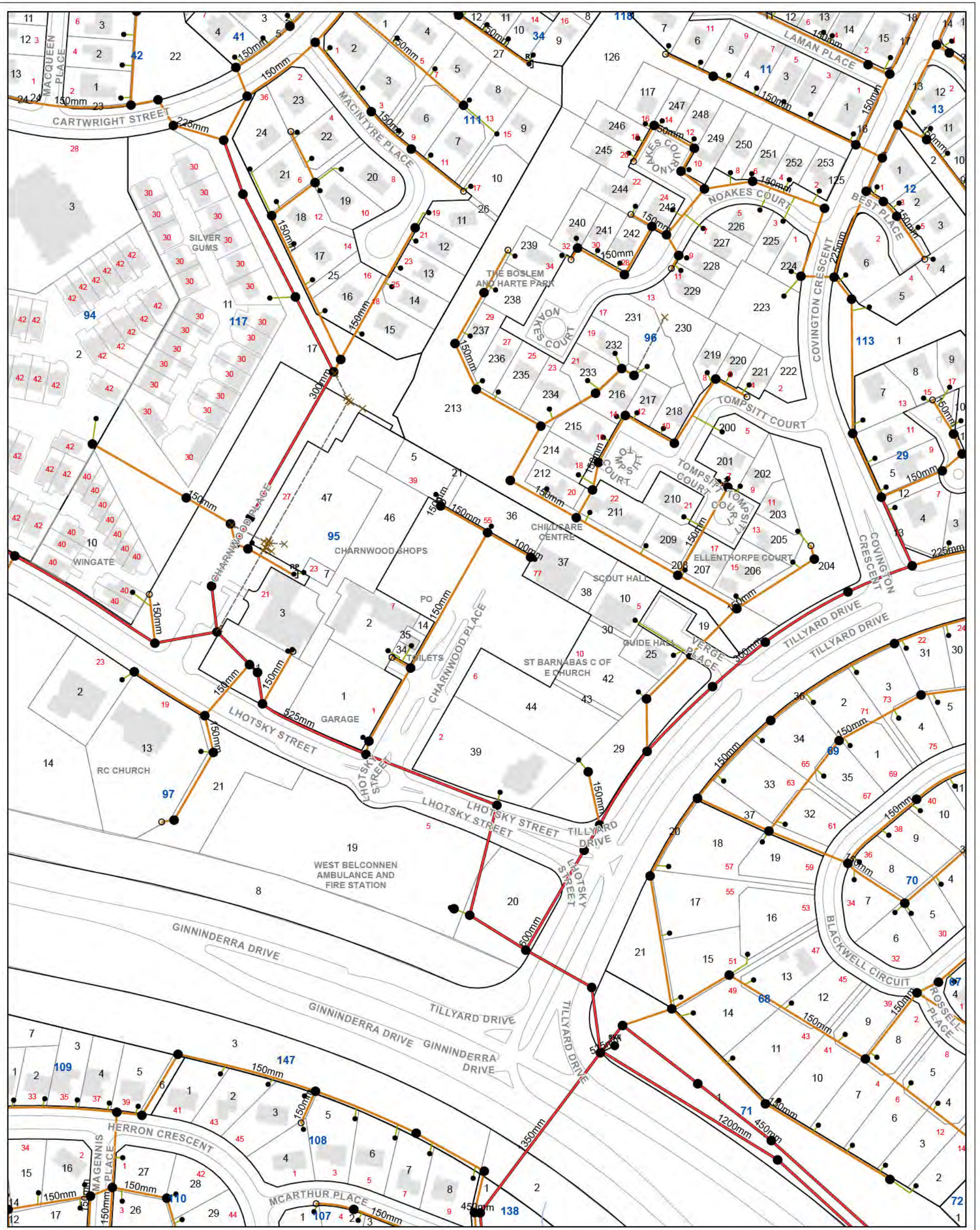
- Abandoned Mains

Sewer Structure

- DiversionChamber
- DiversionPoint
- PumpStation
- SplitManhole
- StorageBasin
- TreatmentPlant
- DischargeStructure
- PipeBridge
- SeptageFacility
- ValveChamber

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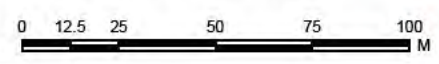
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Icon Water: Water Network Legend

Hydrant

- HighCapacity
- MillCock
- OverheadFillingP...
- PillarHydrant
- SpringHydrant

Service Connection (Meter)

- Flow Element
- Billing Large Diameter
- Billing Small Diameter

Test Station

- Pressure Recording Device
- Flow Recording Device
- Sampling Point

Pump

- Pump

System Valve: Ball

- Ball Valve

System Valve: Butterfly

- Altitude Inlet Control
- Back Up
- DualFlowRate
- Flow Altitude
- Flow Rate Control
- Isolation
- Normally Closed Isolation
- Pump Control

System Valve: Butterfly Motorised

- Altitude Inlet Control
- Back Up
- DualFlowRate
- Flow Altitude
- Flow Rate Control
- Isolation
- Normally Closed Isolation

- Pump Control

Control (Protection) Valve

- Double Air
- Double Check
- Enhanced Double Air Valve
- Float Valve
- Pressure Relief Valve
- Reduced Pressure Zone
- Reflux Valve
- Single Air

System Valve: Cone

- Altitude Inlet Control
- Outlet Control

System Valve: Gate

- Zone Valve
- Normally Closed Isolation
- Isolation
- Flow Rate Control
- Back Up
- Altitude Inlet Control

System Valve: Gate Motorised

- Isolation

System Valve: Globe

- Pump Control
- Pressure Sustaining
- Pressure Reducing
- Flow Rate Control
- Flow Altitude
- Outlet Control
- Back Up

- Altitude Inlet Control

System Valve: Needle

- System Valve: Needle

System Valve: Scour

- System Valve: Scour

Network Structure

- Service Reservoir
- Treatment Plant Reservoir
- NonPotable Water Reservoir
- Minor Tanks

Main

- Reticulation Main
- Distribution Main
- Bulk Supply Main
- Rising Main

Lateral Line

- Domestic Service
- Fire Service
- Overflow
- Wash Down
- Scour
- Drain

Abandoned Mains and Lateral Lines

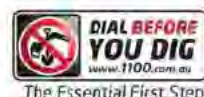
- Abandoned Mains and Lateral Lines

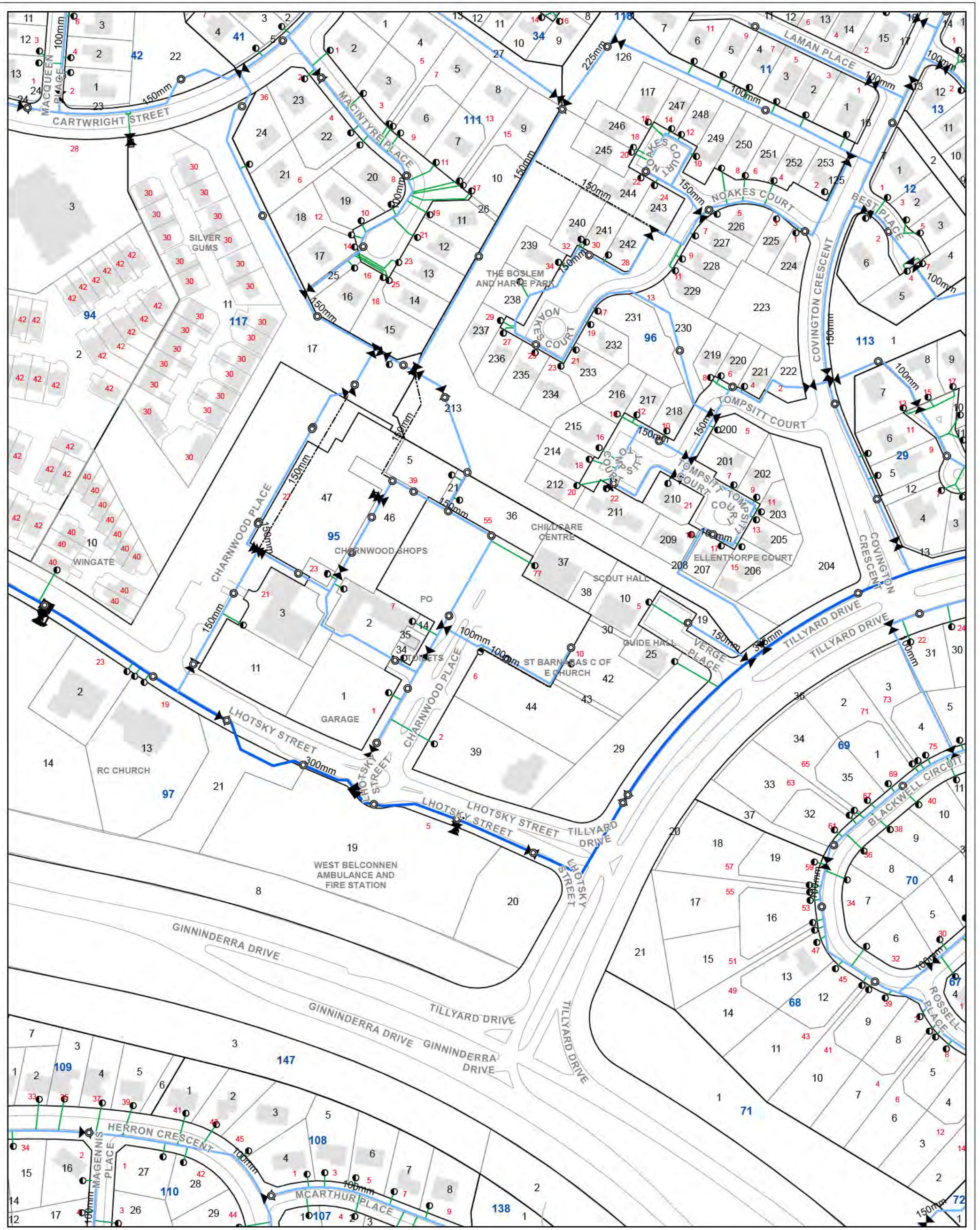
Water Structure

- Dam
- Pipe Bridge
- Pump Station
- Reservoir Structure
- Treatment Plant
- Valve Chamber

- Warning Zone: Contact Icon Water before any excavation in this area 62483111

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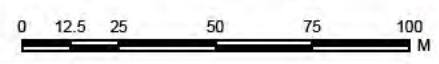
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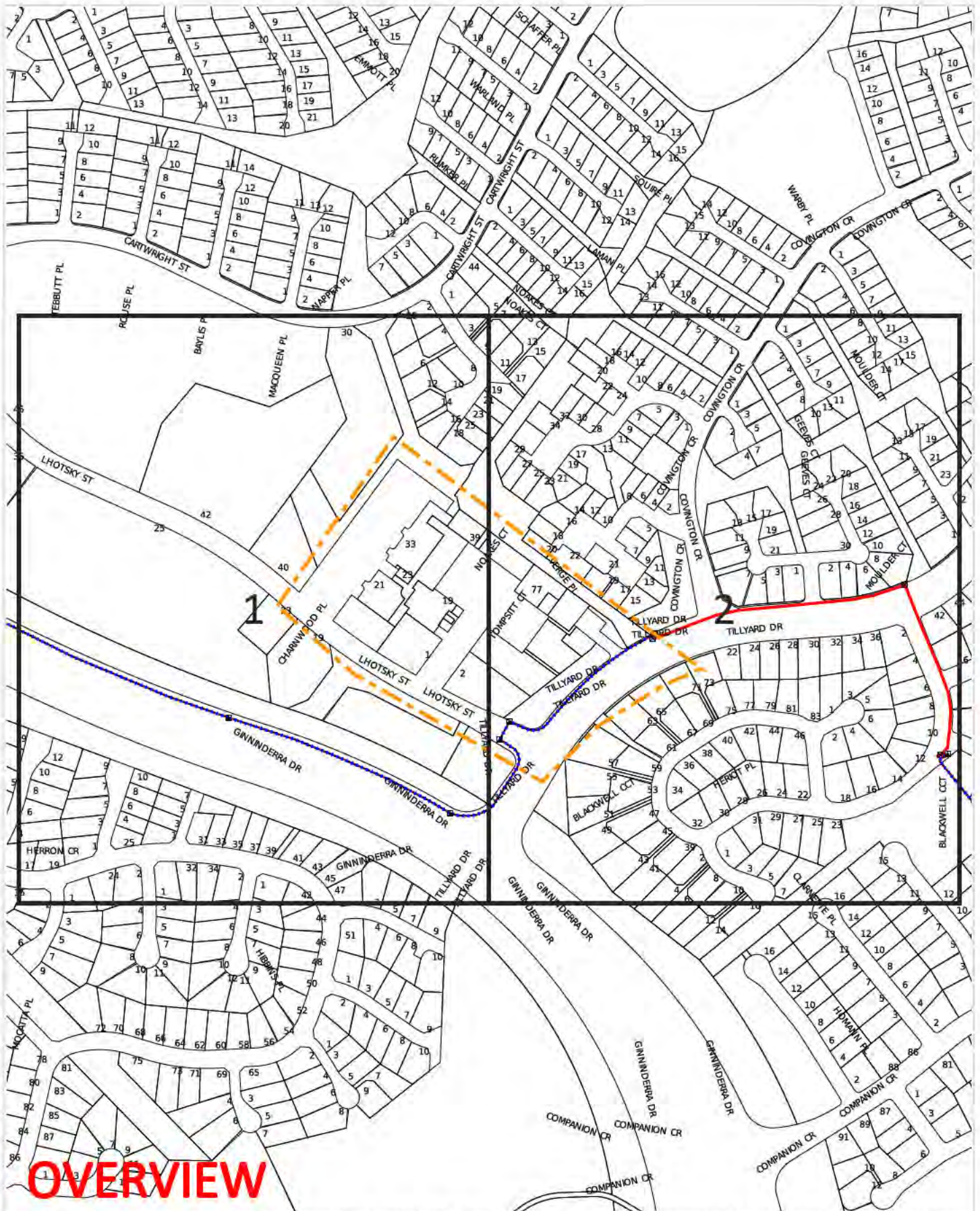
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Sequence Number: 238420429

Date Generated: 25 Apr 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





Tile No: 1

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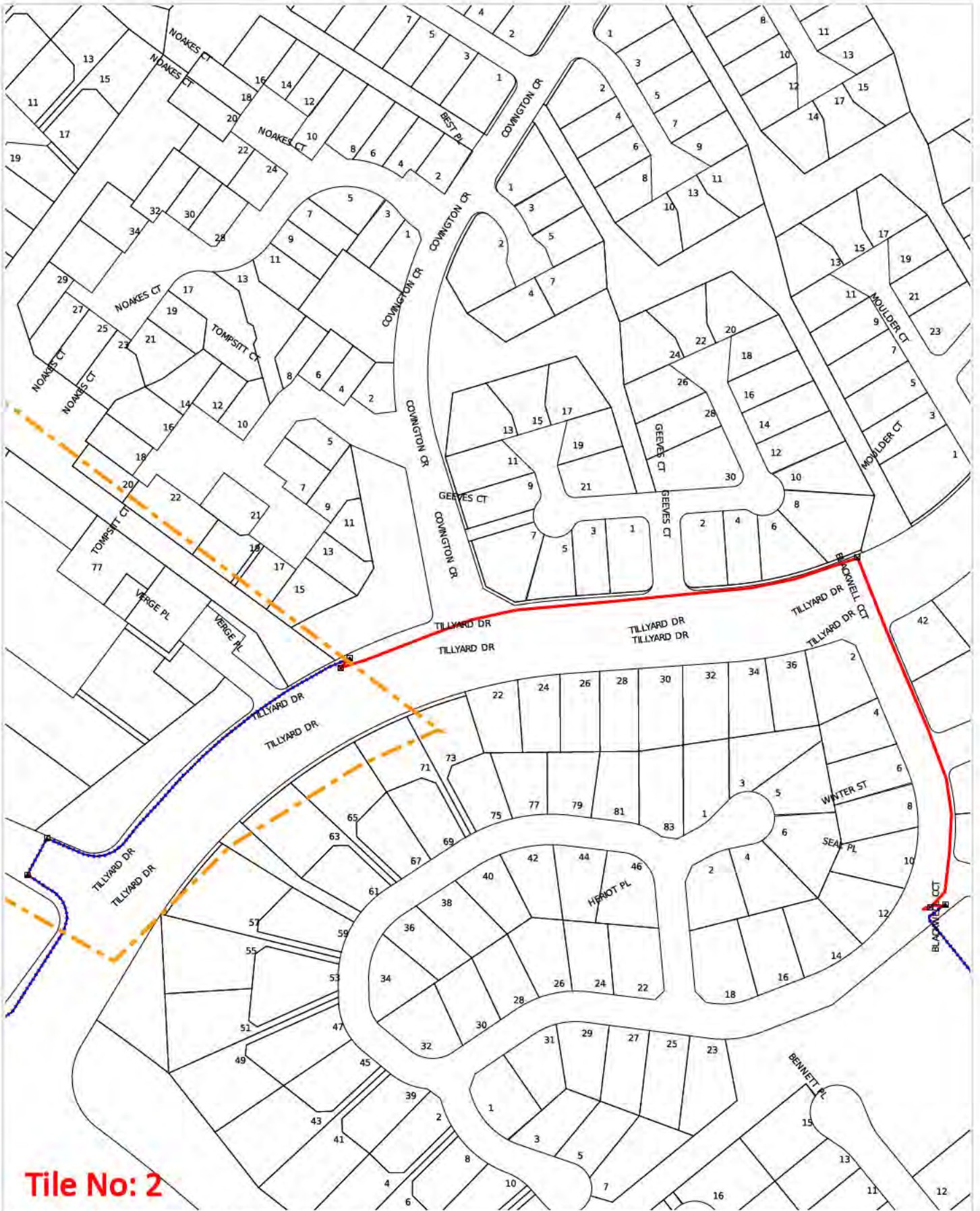
Sequence Number: 238420429

Date Generated: 25 Apr 2024



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Tile No: 2

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Sequence Number: 238420429

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



Date: 25 Apr 2024
To: John Samoty
Company: JPS Engineering Consultants
Address: 28 Barrallier Street
Griffith, ACT 2603

ENQUIRY DETAILS

Location: 5 Charnwood Place, Charnwood, ACT 2615
Sequence No.: 238420429
BYDA Reference: 36545624

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:

- a) 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.
- b) 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.
- c) 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)	<p>Not to be driven across Optus conduits with less than 600mm of cover.</p> <p>Not to be driven across Optus direct buried cable with less than 1.2 meters of cover.</p> <p>Once off crossings permitted, multiple crossing (e.g. road construction or logging) will require Optus approval.</p> <p>Accredited Optus Asset Locator to physically expose the Optus asset to verify actual depth.</p>
Mechanical Excavators, Farm Ploughing, Vertical Hole installation for water bore or fencing etc.	<p>Not within 1 meter.</p> <p>Accredited Optus Asset Locator to physically expose the Optus asset to verify actual location.</p>

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").

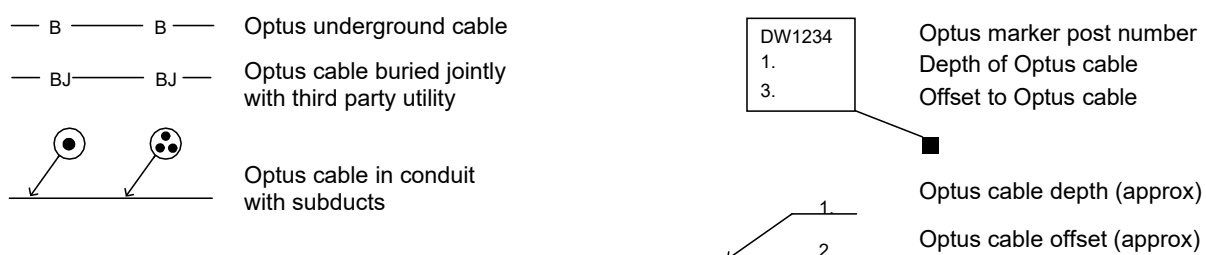
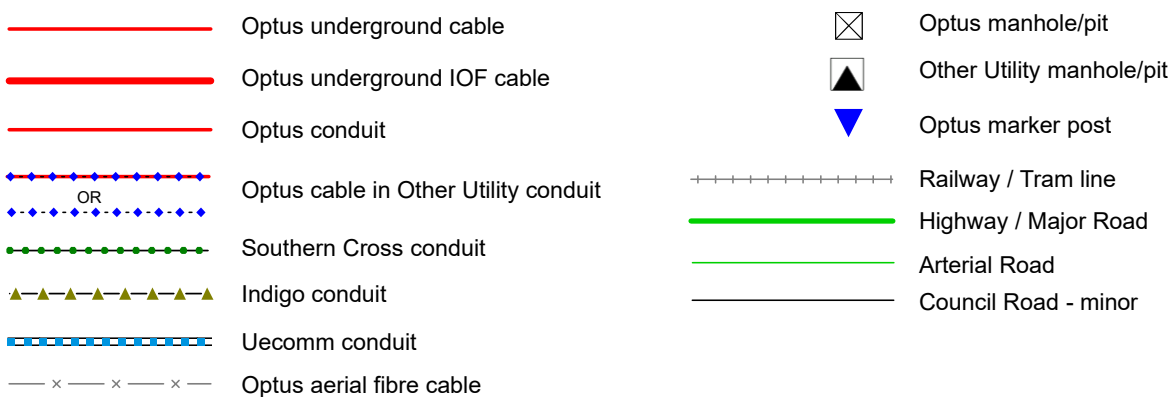
FURTHER ASSISTANCE

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 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@subsurfacecms.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
Brendan Duggan	Utility Mapping NSW	1300 627 746	bduggan@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@newcastlelocatingservices.com.au	NSW	Newcastle, Hunter Valley, Central Coast, Taree & Surrounding Areas
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Cameron Handley	Wombat Underground Services	0407477038	accounts@wombatundergroundservices.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
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Roneel Chand	JDG Civil	0416506891	sadhunaam@gmail.com	NSW	Sydney only
Tim Briggs	Deetect Locating Services	0411396369	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
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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
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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.
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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
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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
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Jack Martin	Utility Mapping Pty Ltd	1300 627 746	jmartin@utilitymapping.com.au	QLD	All QLD
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Bruce Normyle	Dynamic Hydro Excavations	0434 731 933	admin@dynamicexcavation.com.au	QLD	QLD
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Duncan McGrath	Abletech Underground Group	0418 511 767	duncan@abletechunderground.com.au	QLD	QLD Wide
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Carl Molloy	Provac Melbourne	0451 104 611	melbourne@provac.net.au	VIC	Melbourne Region
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Tina Brereton	D-Tech Ground & Overhead	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
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Mick McGoldrick	Locate Cables	0404 241 679	mick@locatecables.com	VIC	Western Victoria
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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
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Ben Wooldridge	Controltech Solutions	0447 760 759	ben.wooldridge@controltech-solutions.com.au	VIC	Melbourne
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Shaun Stephen	STS Locating Services	0405 181 734	stslocatings-services@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
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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 Gear Surveys	08 82788732	ugsl@mgsurveys.com.au	SA	SA
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Tobi Lawrence-Ward	Abaxa	08 9256 0100	enquiries@abaxa.com.au	WA	Perth, Southwest, Western Australia
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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
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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

Adam Williams	Utility Mapping	1300 627 746	awilliams@utilitymapping.com.au	NT	All NT
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Scott Crerar	Paneltec Group	0400 895 637	scott@paneltec.com.au	TAS	All

Appendix C

Correspondence

From: [Baines, Greg](#)
To: [John Samoty](#)
Cc: [ConservatorFloraFauna](#)
Subject: FW: Charnwood Group Centre - Flora and Fauna Review
Date: Thursday, 16 May 2024 2:32:08 PM
Attachments: [image001.png](#)

UNOFFICIAL

Hi John,

Thank you for reaching out early in this process. Please find a high-level overview of ecological constraints and considerations for future developments within the Charnwood Group Centre, below.

An ecological impact assessment should be completed for the site, this should include consideration of the following matters;

- Maintaining connectivity for small woodland birds. The red shaded areas in the map below indicate areas that provide connectivity values. At a site scale the connectivity values are concentrated on the tree lines in the green space on the northern, eastern and western edges of the site., it will be important to maintain this connectivity.



- Mature native trees are scattered across the site. A tree assessment will be required, it should identify all mature native trees and the report should consider how the development conforms with the objectives of the Loss of Mature Native Trees Key Threatening Process Action Plan
https://www.environment.act.gov.au/___data/assets/pdf_file/0011/2316188/Loss-of-

[Mature-Native-Trees.pdf](#)

- The site has at least 2 trees that may provide significant habitat value. The assessment should consider whether the trees meet the criteria for registration on the ACT Tree Register.
- Any development on site is likely to trigger the Biodiversity Sensitive Urban Design Guide, the ecological impact assessment should consider how these guidelines can be incorporated into a redesign of the site
https://www.planning.act.gov.au/_data/assets/pdf_file/0011/2324675/ACT-Biodiversity-Sensitive-Urban-Design-Guide.pdf
- Development may require a Construction and Environment Management plan to be approved by the Conservator. In this situation the following replanting ratios may be applied if native trees are removed.

Native Tree and Shrub Replacement Ratios

DBH class (cm)	REPLACEMENT RATIOS
<5	1:1
5 - 20	1:3 + relocate as native mulch or at Conservator discretion
21 - 30	1:8 + relocate as coarse woody debris
31 - 40	1:13 + relocate as coarse woody debris
41 - 50	1:40 + relocate as coarse woody debris
50+	1:90 + reinstate as vertical habitat structure or at Conservator discretion
100+	1:180 + reinstate as vertical habitat structure or at Conservator discretion

Regards

Greg

Greg Baines

Senior Conservation Officer | Office of the Conservator of Flora and Fauna

Phone: [REDACTED] | Email: greg.baines@act.gov.au

Environment Division | Environment, Planning and Sustainable Development Directorate | ACT Government
Level 2, 480 Northbourne Avenue Dickson | GPO Box 158 Canberra ACT 2601 | www.environment.act.gov.au

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From: [ACTF&R Risk & Planning](#)
To: [John Samoty](#)
Cc: [ACTF&R Risk & Planning](#)
Subject: RE: Fire Advice and Risk Rating - Charnwood Group Centre
Date: Thursday, 30 May 2024 9:29:29 AM
Attachments: [image005.png](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)
[image010.png](#)
[image011.png](#)

OFFICIAL

Good morning John,

ACTF&R can confirm this development is located outside of the area declared by the ESA as the Bushfire Prone Area. Applying bushfire protection measures will not be mandatory for the site however, due to the sites proximity to the BPA, consideration should be given to bushfire protective measures as these simple measures can improve the survival of any structure in the event of a nearby bushfire or structural fire.

The blocks on the Eastern side of the site (Tillyard Drive) are mapped to provide a minimum water delivery rating of FRT3 with the blocks from the West to Northern side (Charnwood Place) are mapped to provide FRT4.

I can advise any community development will require FRT3 - with a minimum available firefighting flow provision of 60 l/s and for any commercial development, depending on structure type, may be assessed as FRT3 or where available FRT4 - with a minimum available firefighting flow provision of 100 l/s.

Regards



Station Officer Graeme Hoskinson
Bushfire and Development Assessment Officer
ACT Fire & Rescue | Community Safety
9 Amberley Avenue, Majura ACT 2609
p. 62078472
e. ACTF-RRisk-Planning@act.gov.au



From: John Samoty <John.Samoty@jpsengineering.com.au>
Sent: Thursday, May 30, 2024 2:05 AM
To: ACTF&R Risk & Planning <ACTF-RRisk-Planning@act.gov.au>
Subject: RE: Fire Advice and Risk Rating - Charnwood Group Centre

Caution: This email originated from outside of the ACT Government. Do not click links or open attachments unless you recognise the sender and know the content is safe. [Learn why this is important](#)

Dear ACT Fire & Rescue Team,

Just following up on the below request for information.

Kind regards,

John Samoty, MIEAust, CPEng, NER, RPEQ, APEC Engineer, IntPE(Aus)
Director

JPS Engineering Consultants

28 Barrallier Street, Griffith, ACT 2603
M [REDACTED]
E John.Samoty@JPSEngineering.com.au

From: John Samoty
Sent: Tuesday, 14 May 2024 9:25 AM
To: ACTF&R Risk & Planning <ACTF-RRisk-Planning@act.gov.au>
Subject: Fire Advice and Risk Rating - Charnwood Group Centre

Dear ACT Fire & Rescue Team,

JPS Engineering Consultants are currently engaged by EPSDD to undertake a Site Investigation Report for the Charnwood Group Centre. See below an image of the site outlined and highlighted in red.



EPsDD is reviewing existing group and local centres to enhance their activation and vitality as part of the latest Territory Plan District Strategy implementation. This includes assessing the site's role as community meeting places and ensuring they remain viable within the broader network of centres.

ACTmap indicates that there is a nearby bushfire prone area along Ginninderra Drive and that there are strategic bushfire management zones in close proximity to the site on Tillyard Drive. See below relevant extracts from ACTmap.





Based on this information, can you please advise whether there would need to be any special bushfire mitigation allowances incorporated into any proposed development in the Group Centre? Also, could you please confirm what the most appropriate Fire Risk Type (FRT) would be for any commercial/community type development in the Group Centre, and any other concerns that ACT Fire & Rescue may have toward future development(s) within this site?

Kind regards,

John Samoty, MIEAust, CPEng, NER, RPEQ, APEC Engineer, IntPE(Aus)
Director

JPS Engineering Consultants

28 Barrallier Street, Griffith, ACT 2603
M [REDACTED]
E John.Samoty@JPSEngineering.com.au

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From: [Zhang, Jianmin](#) on behalf of [Contaminated Sites](#)
To: [John Samoty](#)
Cc: [Jennings, RussellC](#)
Subject: Contaminated land search result - Block 1 Section 95 Charnwood Belconnen
Date: Tuesday, 11 June 2024 11:17:52 AM

OFFICIAL

Dear Mr Samoty

RE: CONTAMINATED LAND SEARCH

Thank you for your search form request of 25/05/2024 enquiring about:

Block 1 Section 95 Charnwood Belconnen

Records held by the Environment Protection Authority (EPA) for the above block(s) indicate the following:

The block is recorded on the EPA's contaminated sites management database and geographic information system.

The site is currently occupied by an operational service station.

The ACT EPA Contaminated Sites Environment Protection Policy 2017 lists service stations as an activity associated with land contamination.

An Environmental Authorisation (EA 0734) under Section 42 of the *Environment Protection Act 1997* (the Act) for the operation of a facility designed to store more than 50m³ of petroleum products is held by Eureka Operations Pty Ltd for the site. An Environmental Management Plan (EMP) for the site has been approved by the EPA in accordance with the requirements of the above Environmental Authorisation (EA).

For information in relation to the site's EA, EMP and the environmental monitoring required under these documents please contact environment.protection@act.gov.au.

Information provided by Eureka Operations Pty Ltd indicate that impacts to groundwater above EPA adopted criteria exist at the site. The EPA required Eureka Operations Pty Ltd these impacts be monitored and managed through the above EMP and through other additional assessment/remediation works at the site.

Other potentially contaminating activities may have also been undertaken at the site associated with past or current permitted uses.

The EPA has not issued any orders of assessment or remediation under sections 91C (1) or 91D (1) respectively, environment protection orders under sections 125 (2) or (3), requested an audit under section 76 (2) or received an audit notification under section 76A (1) of the Act over the site and as a result the site is not recorded on the Register of contaminated sites under section 21A of the Act.

The information detailed above only relates to records held by the EPA and may not represent the actual condition of the site.

At present the EPA has no information on contamination of the above block(s) other than as detailed above. However, this does not absolutely rule out the possibility of contamination and should not be interpreted as a warranty that there is no contamination.

I appreciate that this does not absolutely rule out the existence of contamination of the soils. If you or your clients wish to be completely sure you, or they, should arrange to conduct independent tests.

Regards

Jianmin Zhang | Environment Protection Officer | Office of the Environment Protection Authority

Phone: 02 6207 2151 | Email: jianmin.zhang@act.gov.au

Access Canberra | Chief Minister, Treasury and Economic Development Directorate | ACT Government

GPO Box 158, Canberra City, ACT 2601 | www.act.gov.au/accessCBR

We acknowledge the Traditional custodians of the ACT, the Ngunnawal people. We acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

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From: [Zhang, Jianmin](#) on behalf of [Contaminated Sites](#)
To: [John Samoty](#)
Cc: [Jennings, RussellC](#)
Subject: Contaminated land search result - Block 36 Section 95 Charnwood Belconnen
Date: Tuesday, 11 June 2024 11:18:51 AM

OFFICIAL

Dear Mr Samoty

RE: CONTAMINATED LAND SEARCH

Thank you for your search form request of 25/05/2024 enquiring about:

Block 36 Section 95 Charnwood Belconnen

Records held by the Environment Protection Authority (EPA) for the above block(s) indicate the following:

The block is recorded on the EPA's contaminated sites management database and geographic information system.

EPA records indicate that hazardous materials may be present at the site associated with the operation or former operation of a dry cleaner.

The block is also occupied by other commercial units. Commercial complexes prior to the introduction of natural gas to the ACT in the 1980's utilised boiler heating or similar systems. These systems were generally fuelled by diesel or heating oil which was mainly stored in underground fuel storage tanks.

The ACT EPA Contaminated Sites Environment Protection Policy 2017 lists dry cleaning and fuel storage as activities associated with land contamination which may pose a risk to human health and the environment.

Other potentially contaminating activities were also undertaken at the site associated with its past uses.

The EPA has not issued any orders of assessment or remediation under sections 91C (1) or 91D (1) respectively, environment protection orders under sections 125 (2) or (3), requested an audit under section 76 (2) or received an audit notification under section 76A (1) of the *Environment Protection Act 1997* (the Act) over the site and as a result the site is not recorded on the Register of contaminated sites under section 21A of the Act.

The information detailed above only relates to records held by the EPA and may not represent the actual condition of the site.

At present the EPA has no information on contamination of the above block(s) other than as detailed above. However, this does not absolutely rule out the possibility of contamination and should not be interpreted as a warranty that there is no contamination.

I appreciate that this does not absolutely rule out the existence of contamination of the soils. If you or your clients wish to be completely sure you, or they, should arrange to conduct independent tests.

Regards

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From: [Zhang, Jianmin](#) on behalf of [Contaminated Sites](#)
To: [John Samoty](#)
Cc: [Jennings, RussellC](#)
Subject: Contaminated land search result - the rest of Charnwood Group Centre
Date: Tuesday, 11 June 2024 11:20:01 AM

OFFICIAL

Dear Mr Samoty

RE: CONTAMINATED LAND SEARCH

Thank you for your search form request of 25/05/2024 enquiring about:

Blocks 2, 3, 5, 7, 10, 11, 14, 19, 21, 25, 29, 30, 34-39, 42-44, 46, 47 Section 95 Charnwood Belconnen

Records held by the Environment Protection Authority (EPA) for the above block(s) indicate the following:

Charnwood Group Centre

The other blocks within the Charnwood Group Centre are not recorded on the EPA's contaminated sites management database or geographic information system.

However, a portion of the Group Centre are currently occupied by commercial complexes. Commercial complexes prior to the introduction of natural gas to the ACT in the 1980's utilised boiler heating or similar systems. These systems were generally fuelled by diesel or heating oil which was mainly stored in underground fuel storage tanks.

Aerial photographs indicate that the other portion of the Group Centre are occupied by car parks. Whilst there is no recorded information on potential site contamination, car parks have been associated with potential site contamination due to the placement of uncontrolled fill during the establishment of the site.

EPA records also indicate that there are a dry cleaning facility (Block 36 Section 95 Charnwood) and service station (Block 1 Section 95 Charnwood) located with the Group Centre.

The ACT EPA Contaminated Sites Environment Protection Policy 2017 lists fuel storage, landfilling, dry cleaning and service station as activities associated with land contamination which may pose a risk to human health and the environment.

Under the precautionary principal all blocks close to sites which contain or had contained potential land contamination activities are identified and persons making enquiries are made aware of potential for impacts from adjacent sites due to the ability of hydrocarbons and other contaminants to migrate through the environment.

The EPA has no information to suggest that the dry cleaning facility (Block 36 Section 95 Charnwood) and service station (Block 1 Section 95 Charnwood) have adversely impacted other blocks within the Group Centre.

Other potentially contaminating activities may have also been undertaken at the site associated with current and past uses.

The EPA has not issued any orders of assessment or remediation under sections 91C (1) or 91D (1) respectively, environment protection orders under sections 125 (2) or (3), requested an audit under section 76 (2) or received an audit notification under section 76A (1) of the *Environment Protection Act 1997* (the Act) over the site and as a result the site is not recorded on the Register of contaminated sites under section 21A of the Act.

The information detailed above only relates to records held by the EPA and may not represent the actual condition of the site.

At present the EPA has no information on contamination of the above block(s) other than as detailed above. However, this does not absolutely rule out the possibility of contamination and should not be interpreted as a warranty that there is no contamination.

I appreciate that this does not absolutely rule out the existence of contamination of the soils. If you or your clients wish to be completely sure you, or they, should arrange to conduct independent tests.

Regards

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Phone: 02 6207 2151 | Email: jianmin.zhang@act.gov.au

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Appendix D

Site Photos



Photo #1



Photo #2



Photo #3



Photo #4



Photo #5



Photo #6



Photo #7



Photo #8



Photo #9



Photo #10



Photo #11



Photo #12



Photo #13



Photo #14



Photo #15



Photo #16



Photo #17



Photo #18



Photo #19



Photo #20



Photo #21



Photo #22



Photo #23



Photo #24



Photo #25



Photo #26



Photo #27



Photo #28



Photo #29



Photo #30



Photo #31

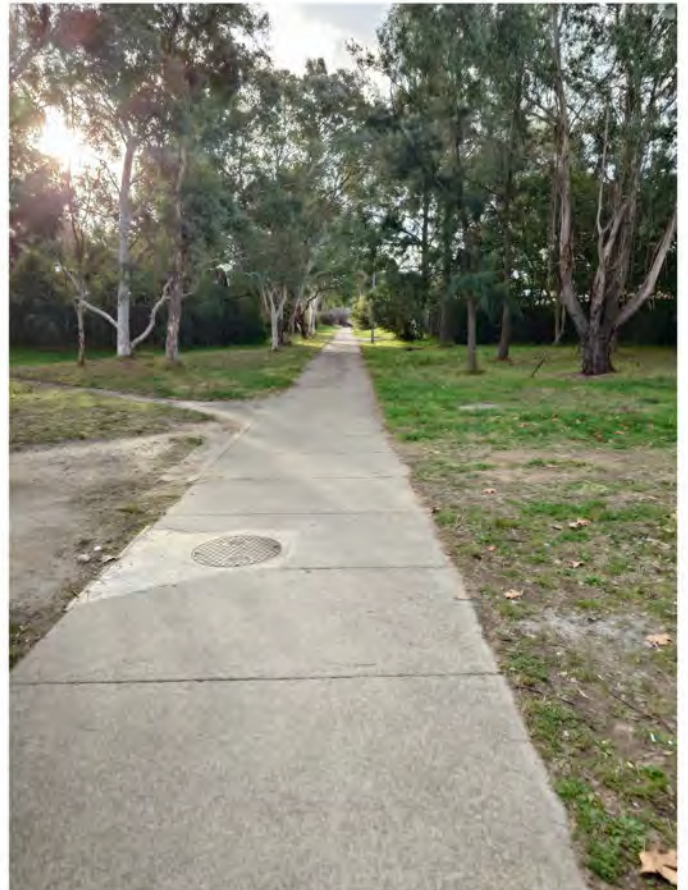


Photo #32



Photo #33



Photo #34



Photo #35



Photo #36



Photo #37



Photo #38



Photo #39



Photo #40



Photo #41



Photo #42



Photo #43



Photo #44



Photo #45

Photo #46

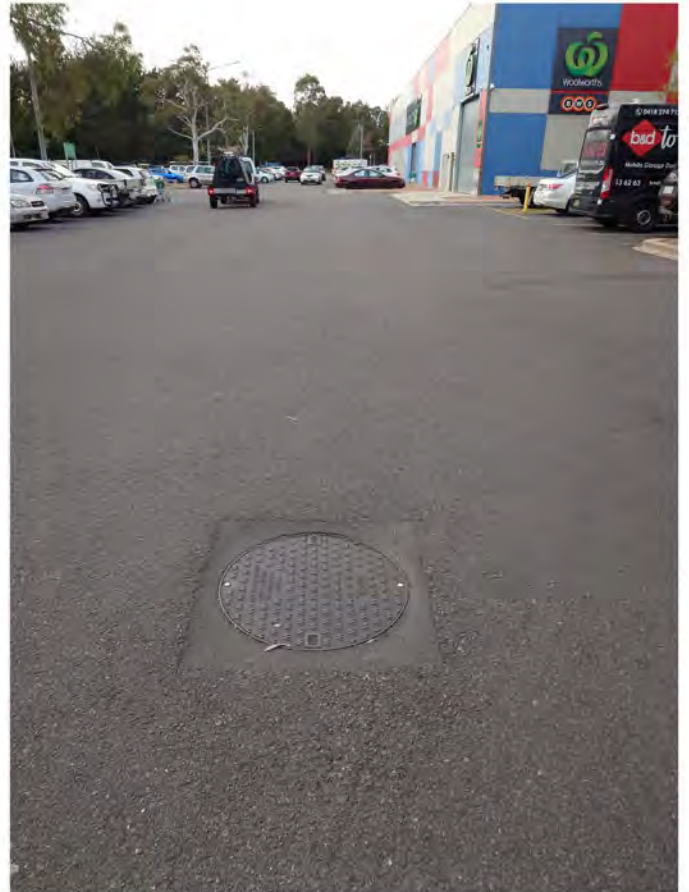


Photo #47

Photo #48



Photo #49



Photo #50



Photo #51

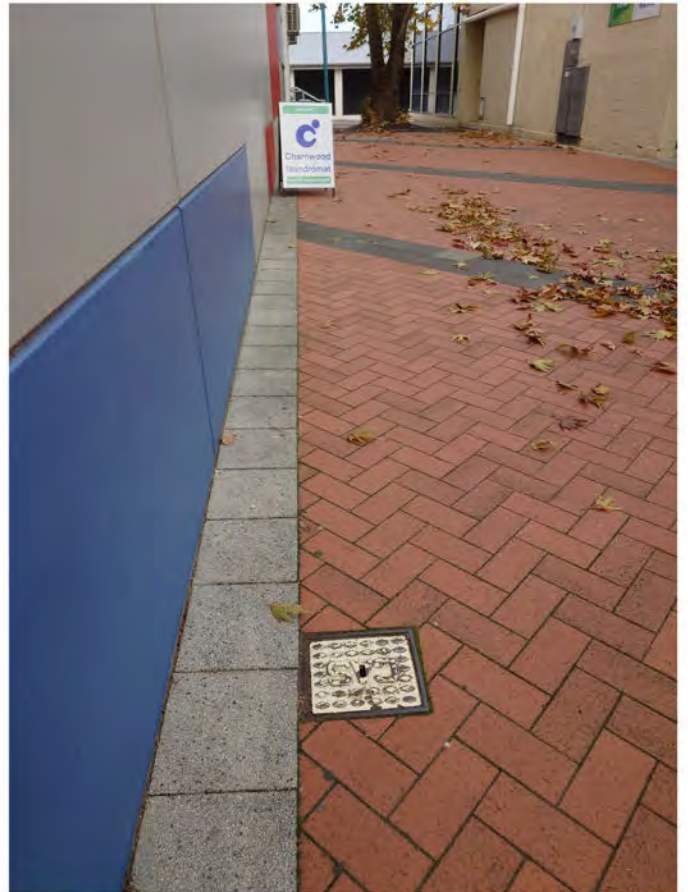


Photo #52



Photo #53

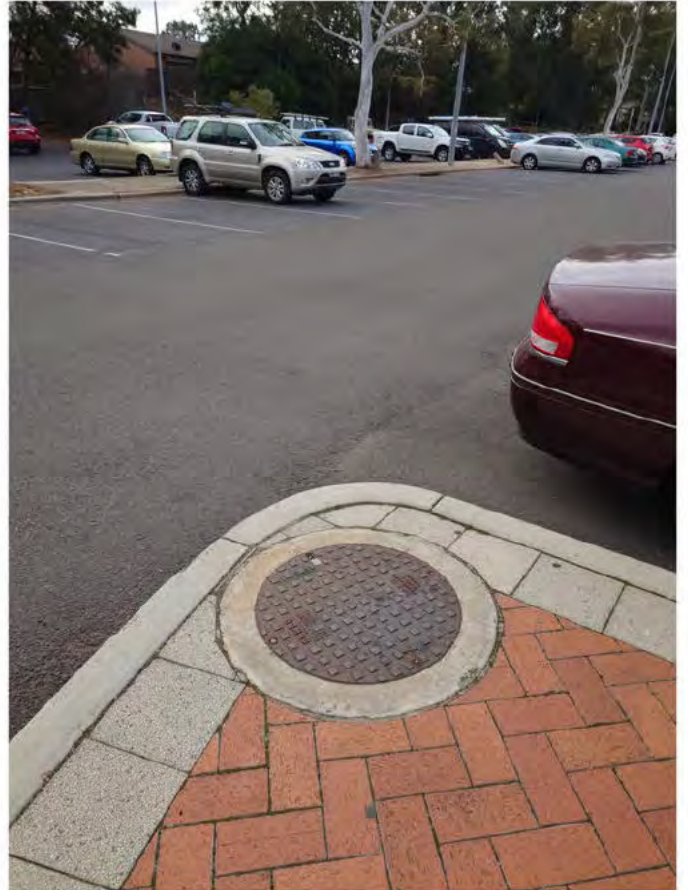


Photo #54



Photo #55



Photo #56



Photo #57



Photo #58



Photo #59



Photo #60



Photo #61



Photo #62



Photo #63



Photo #64



Photo #65



Photo #66



Photo #67



Photo #68



Photo #69

Photo #70



Photo #71

Photo #72



Photo #73



Photo #74



Photo #75



Photo #76



Photo #77



Photo #78



Photo #79

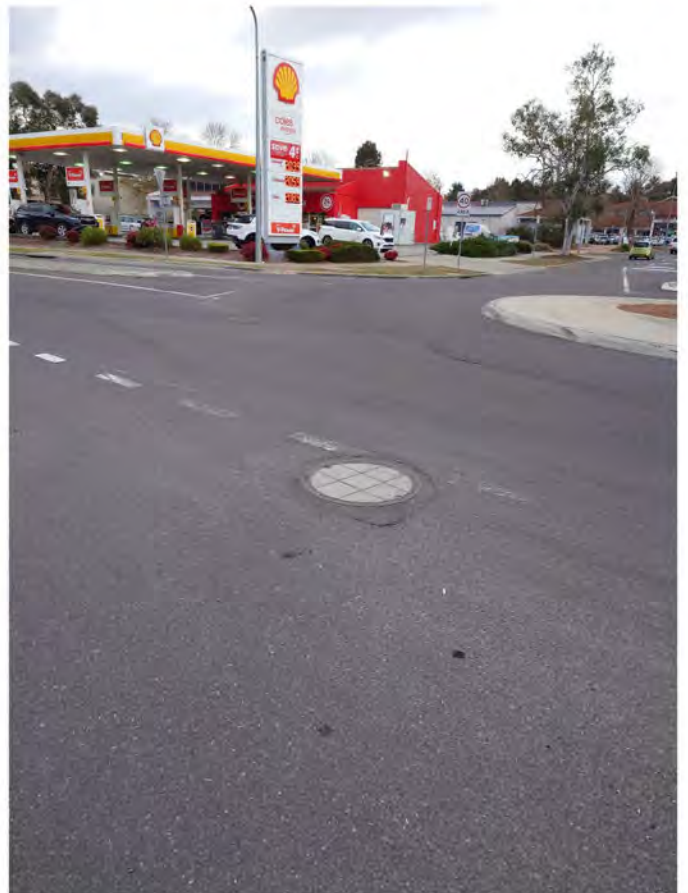


Photo #80



Photo #81



Photo #82



Photo #83



Photo #84



Photo #85



Photo #86



Photo #87



Photo #88



Photo #89



Photo #90



Photo #91



Photo #92



Photo #93



Photo #94



Photo #95



Photo #96



Photo #97



Photo #98



Photo #99



Photo #100



Photo #101

Photo #102



Photo #103

Photo #104



Photo #105



Photo #106



Photo #107

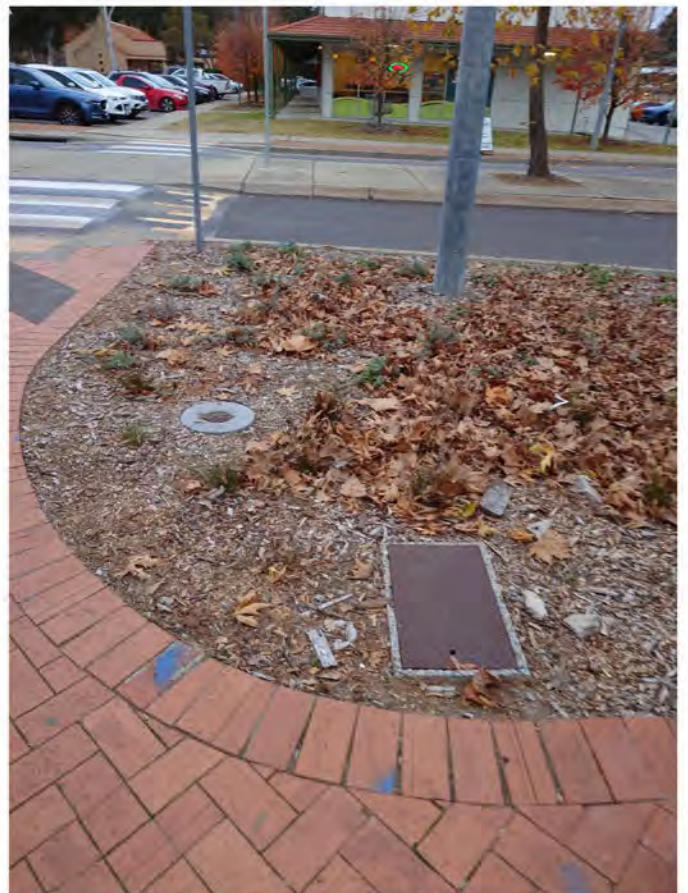


Photo #108



Photo #109



Photo #110



Photo #111



Photo #112



Photo #113

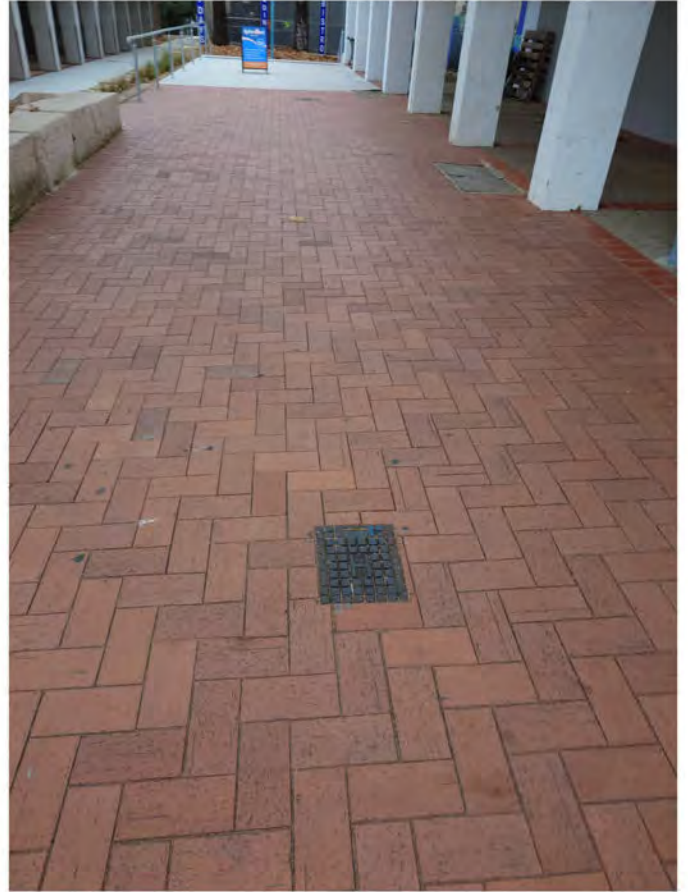


Photo #114



Photo #115



Photo #116



Photo #117

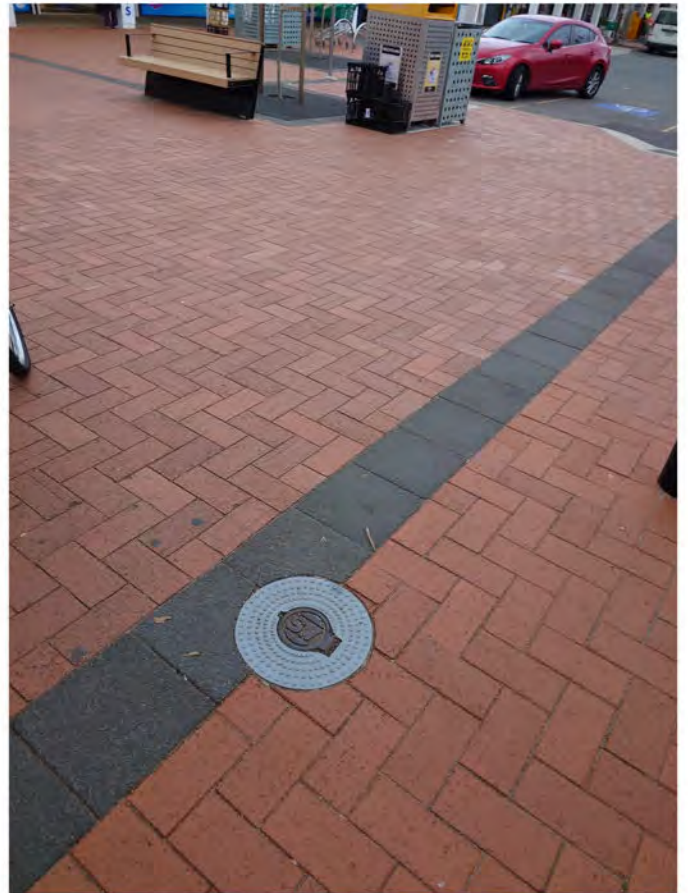


Photo #118



Photo #119

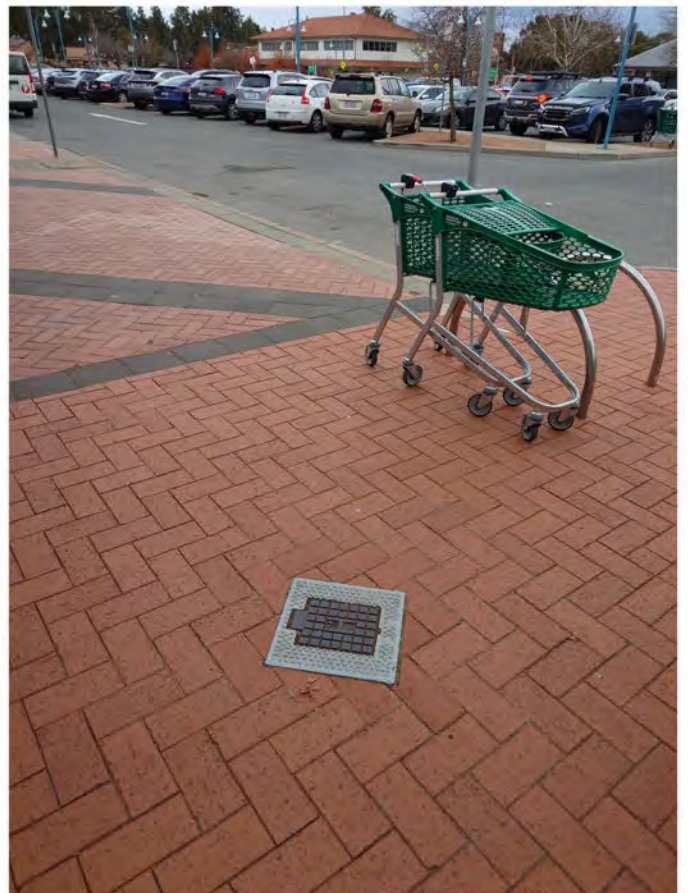


Photo #120



Photo #121

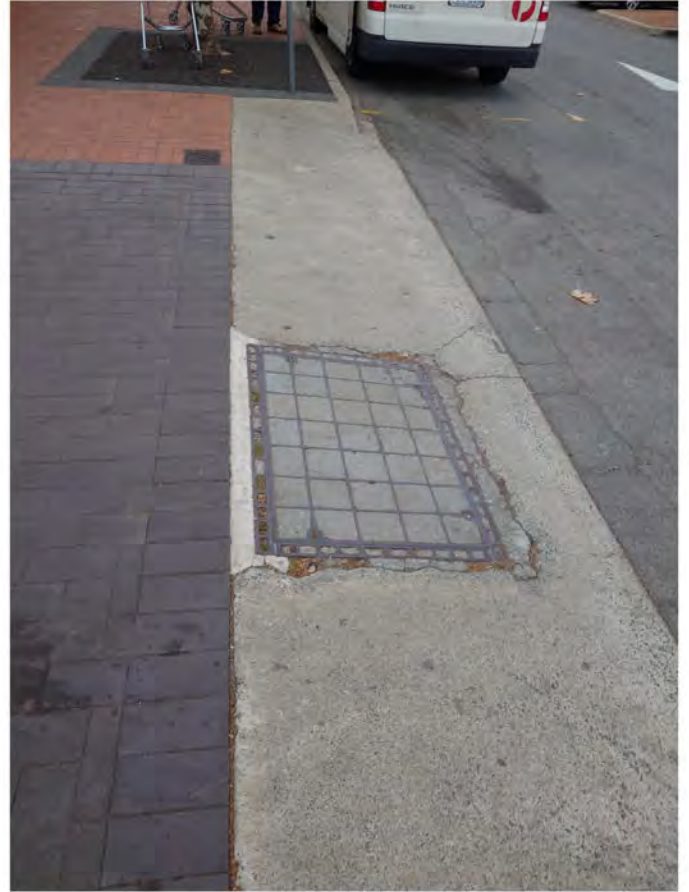


Photo #122



Photo #123

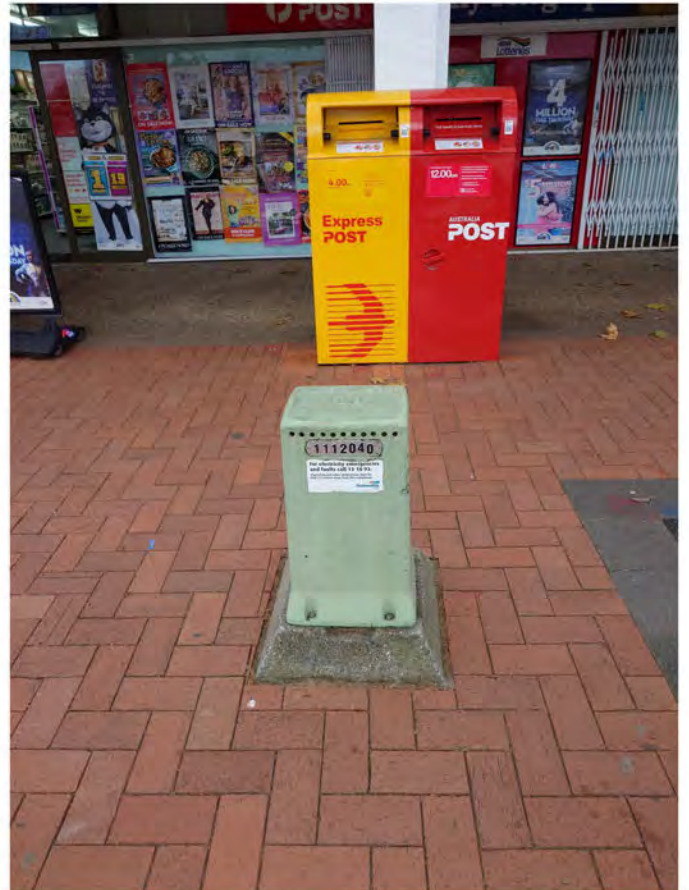


Photo #124



Photo #125



Photo #126



Photo #127



Photo #128



Photo #129



Photo #130



Photo #131



Photo #132



Photo #133



Photo #134



Photo #135