EDGELOE
Engineering

Ocean Gardens Pty Ltd

Lot 12, 28, &165 Capel Drive Capel
Mixed Use Development

Servicing Strategy

Job No. 25098
Prepared by Edgeloe Engineering 3
November 2025 Rev 2

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It is not intended for and should not be relied upon by any third party and no responsibility is taken to any third party. respect

Document Status

Rev No.	Author	Date	Issued for	Signature
0	W Edgeloe	19 October 2025	Review	
1	W Edgeloe	19 October 2025	Lots updated	
2	W Edgeloe	19 October 2025	Lots updated	

INTRODUCTION

Edgeloe Engineering has been engaged by Ocean Gardens Pty Ltd to provide Civil Engineering consultancy services to support the preparation of the Development application for the development of Lots 12, 28, &165 Capel Drive Capel for a mixed-use Development.

This report assesses and reports on the servicing requirements and proposed servicing strategy for the proposed development.

The proposed development is shown in Figure 1 and consists of:

- Retention of existing Capel Tavern
- Short Stay accommodation
- Short Stay facilities
- Over 55 accommodation
- Over 55 facilities
- Mixed Use development
- Foreshore easement

Figure 1 Proposed Development

The existing lots 12, 28, &165 will be amalgamated and 3 new green title lots created as shown in Figure 2 and consisting:

- Lot 28 -R60
- Lot 165 - R40 & R60
- Lot 12- R60
- Foreshore easement

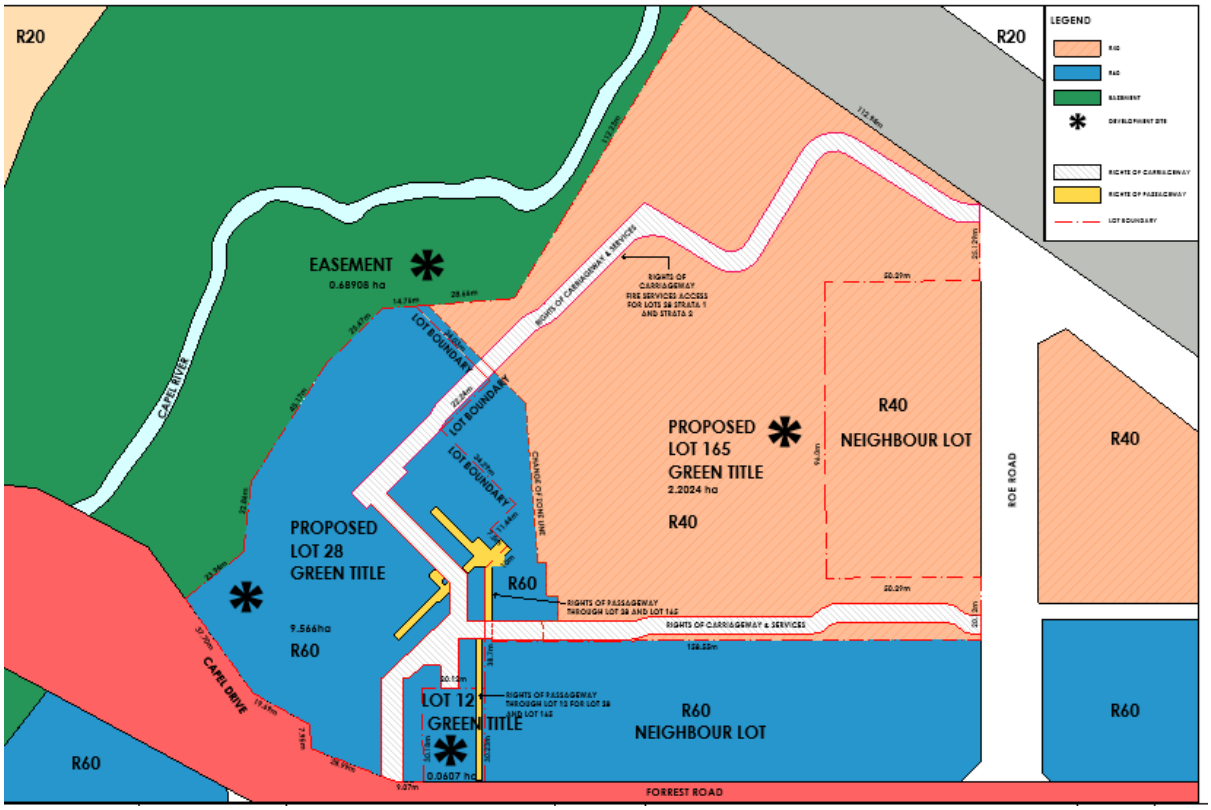

Figure 2 **Proposed Lots**

2 SITE CONDITIONS

2.1 Existing levels

A full feature survey has been undertaken across the site and a summary of general contours is shown in Figure 3 with the terrain shaded in Figure 4.

The site generally falls from RL 13 at the south east to RL 12.0 along the edge of the river bank and then drops to approximately RL 3.0 along the edge of the Capel River.

There is a depression in the centre of the site at approximately RL 11.8 that appears to be a trapped low area and will require filling. This is evident in Figure 4.

The vegetated central portion of the site is at RL 12.5 and above and these levels would be retained to retain vegetation.

Figure 3 Existing Site Levels

Figure 4 Existing Site Levels

Adjacent the river bank there is a very steep batter section as shown in Figure 5 and this is being further investigated by GALT Geotechnical Engineers to determine slope stability.

The effects of possible continual downstream erosion on the adjacent downstream batter will also be investigated by GALT in the detail design phase and prior to issue of any building approvals for works on the site.

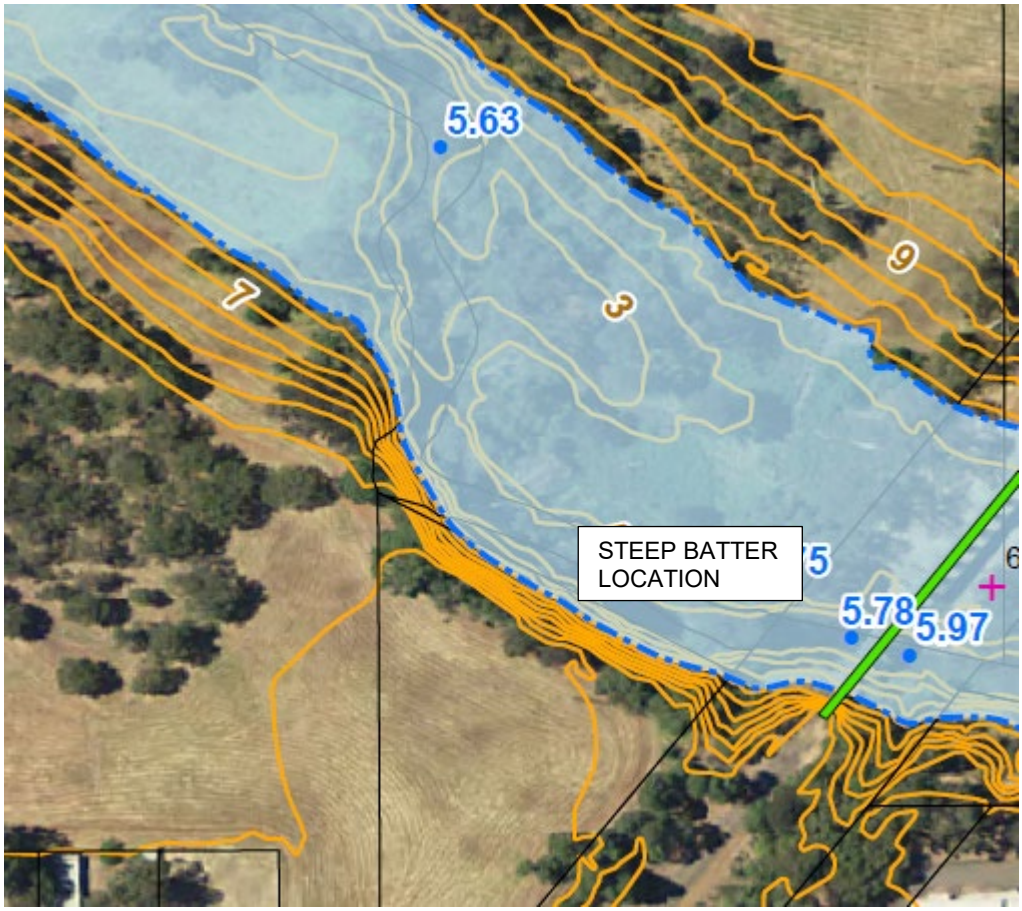

Figure 5 Existing Steep Batter (DWER Flood mapping extract)

2.2 Site Conditions

2.2.1 Geotechnical Investigations

WML (2015) undertook a Geotechnical Investigation across the site and described the site as being located on sandy silts of the Guilford formation, with Bassendean sands underlying the southern limit of the site and alluvial sandy silt at the northern limit of the site in the region of the Capel River.

Based on test pits and soil testing across the site 4 distinct Zones, A1, A2, B & C were determined across the site as shown in Figure 6.

Figure 6 Mapped Soil Zones (WML (2015))

The characteristics of each of the 4 areas was summarised as:

Area A1
Forms the flat paddock portion at the west side of the site. Testing of the materials in this area show the clay to be of medium to high plasticity.

The anticipated seasonal movement in area A1 is expected to be around 60mm and an 'H2' classification is appropriate for the buildings in this portion of the site.

Depth (m)	Description Area A1 (TP 1, 2, 3, 4, 5, 14)
0.0 – 0.1/0.2	Dark grey fine to medium grained silty sand top soil with roots
0.1/0.2– 1.7/2.2+	Dry, variable, grey, brown, orange, hard, sandy silty clays of the Guilford Clay Formation.
1.7/2.2+ – 3.8	Moist, dense yellow-orange, fine grained silty sand
Comments	Groundwater was not encountered in any of the test pits. The lot on Roe Road containing test pit 3 has approximately 0.4-0.5m of uncontrolled sandy clay fill above natural ground.

Area A2
Forms the flat paddock portion at the east side of the site. Testing of the materials show the clay to be of medium plasticity.

The anticipated seasonal movement in area A2 is expected to be around 30mm and an 'M' classification is appropriate for the buildings in this portion of the site.

Depth (m)	Description Area A2 (TP 10, 11,12)
0 – 0.1	Dark grey fine to medium grained silty sand top soil with roots
0.1 – 1.8/2.4	Moist dark red, very stiff sandy clay
1.8/2.4 - 2.8+	Moist, dense yellow brown, sandy clay
Comments	Groundwater was not encountered in any of the test pits.

Area B
Forms the portion of the site that slopes towards the Capel River. Test pit 8 located on the slope and test pit 13 located at the crest of the slope proved silty sand below topsoil to termination of the hole. The sand encountered in test pit 6 was shallower and underlain by clay from Area A, this potentially identifies a sand filled channel in the vicinity of test pit 6.

The anticipated seasonal movement in area B is expected to be around 15mm and an 'S' classification is appropriate for the buildings in this portion of the site.

Depth (m)	Description Area B (TP 6, 7, 8, 13)
0.0– 0.1/0.4	Dark grey silty sand top soil with roots.
0.1/0.4 – 1.6/3.0	Dry, fine to medium grained sand and silty clayey sand, with some grey mottled brown silty clay lenses Trial pit 8 and 13 was terminated in this sand,
1.75/2.4 +	Moist, dense, yellow-orange, fine grained silty Sand
Comments	Groundwater was not encountered in any of the test pits.

Area C
Forms the flat Portion of the site at the toe of the slope beside the Capel River

The anticipated seasonal movement in area C is expected to be around 30mm. Testing shows the soils to 2.6m contain 7% organic content by weight, and are classified as an organic soil. This area of the site in its current condition is considered unsuitable for development.

Depth (m)	Description Area C (TP 9)
0.0– 0.3	Dark grey silty sand top soil with roots.
0.3 – 2.9	Dark brown-dark grey organic clayey fine sand
2.9– 3	Blue green sandy clay with silt
Comments	Groundwater was not encountered in any of the test pits.

It was also advised that Areas A1, A2 can be improved to an “S” classification by placing 800mm of sand fill below the proposed foundation, provided the site preparation is carried out as described below. Area C could be improved to an “S” classification by over excavating 1m of the insitu material below the proposed foundation and a minimum of 1m latterly from the outer edge of the planned foundation and backfilling with compacted clean sand.

An alternative to over excavation would be to place a 1m sand pad above natural ground, however settlement monitoring stations should be installed and construction of footings only commenced once the majority of settlement has occurred.
It is noted that the foundations planned for this development will use alternate methods such as screw piles and so these reported Site Classifications may not be relevant.

WML (2015) also reported the steep slope approximately 20m high formed in soil like materials running parallel with the river that bounded the development site at the north edge of lot 165. They reported the slope exhibits signs of considerable instability, evidence of previous slope failures and current ongoing failures are apparent. They reported currently the slope poses an unacceptable geotechnical risk to a potential development in the vicinity of the slope crest and recommended that further investigation and slope stability analysis is necessary if the land in the vicinity of the slope crest is to be developed.

The proponent for this development has engaged GALT Geotechnical to undertke this investigation and report on any measures that may be requried to remove associated risk.

2.2.2 Acid Sulfate Soils

Acid Sulfate Soils were assessed by WML (2015). The DWER ASS risk map as shown in Figure 7 indicates the majority of the site is a Moderate to low risk, however the flat low lying portion of the site next to the Capel River (Area C) is of High to Moderate. Preliminary field testing for ASS conditions undertaken in test pit TP9 and TP8 showed no evidence of ASS. Further investigations would be undertken on this site prior to any ground disturbing works occuring so appropropriate ASS management practises can be used.

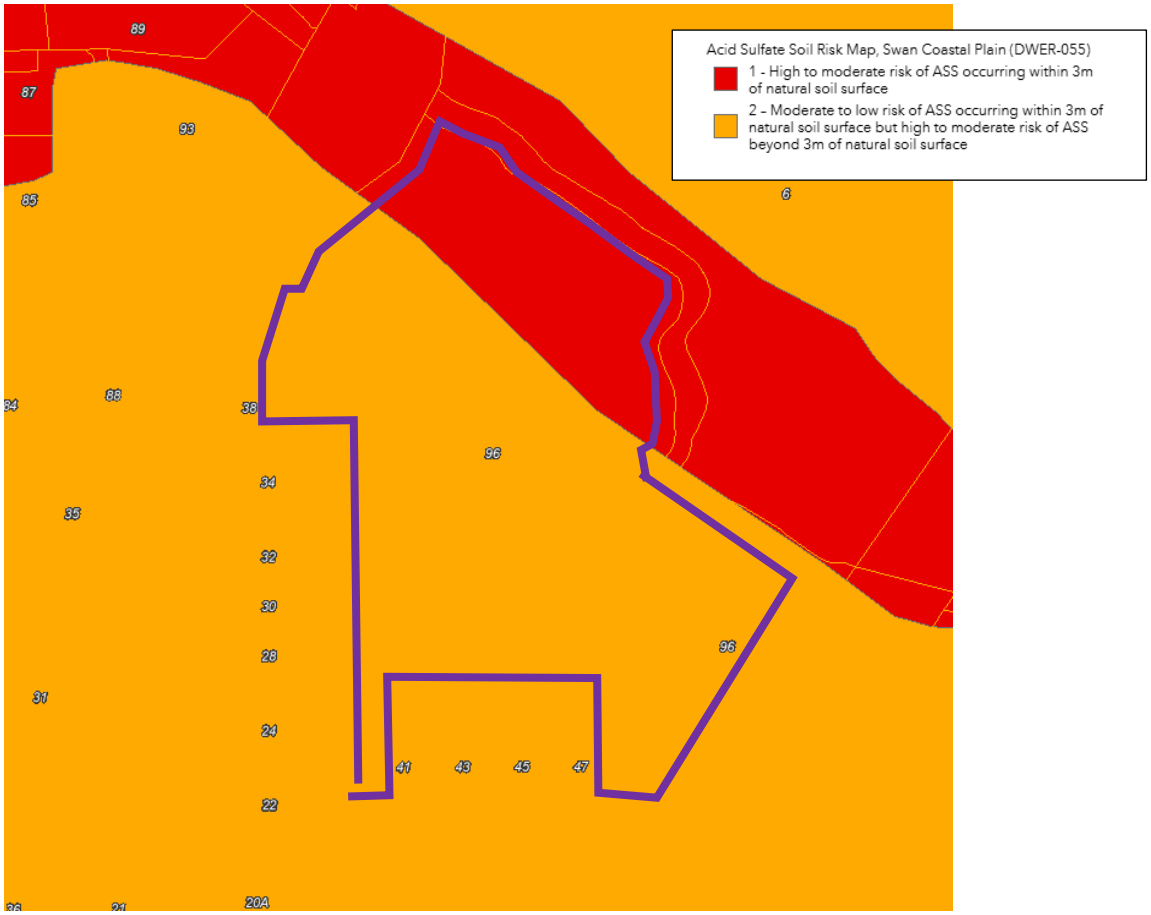

Figure 7 ASS Mapping

2.2.3 Contaminated Sites

The DWER Contaminated sites data base shows a contaminated site to the west of the site as shown in Figure 8.

This site is related to leakage reported from the Service Station on the west side of Capel Drive and Visual and olfactory evidence of hydrocarbons (such as from petrol or diesel) have been identified down-gradient of a service station in the Capel River and along the riverbank.

The report indicates that DWER understands that an underground storage tank (UST) at the service station site failed an integrity test, and it is estimated that approximately 3,450 L of petroleum hydrocarbons leaked from the UST. The location of the UST is yet to be determined. However, information supplied to DWER indicates that the UST is likely to be located in the southern portion of Lot 16 and the south-western portion of the adjacent road reserve.

It is reported that interim management measures were undertaken to reduce off-site impacts to the Capel River, including installation of organic mulch barrier over the riverbank, restriction of access to soil under the bridge using fencing and spill containment within the river in the form of booms and absorbent pads. It is also reported that fencing and spill containment remain in place and that stained soils under the bridge are removed, and absorbent pads are replenished, on a regular basis.

As this is downgradient of the proposed development it is not anticipated to have any impacts on the development.

Figure 8 Site Contamination, DWER Contaminated sites data base.

2.2.3 Groundwater

The WML (2015) investigations did not encounter groundwater but the subsequent Pippin (2019) report indicates that in 2014 and 2015 MPM Developments Consultants undertook two winter periods of groundwater monitoring across the redevelopment site. The monitoring involved the installation of 8 shallow groundwater bores to a depth of 4.0m. The bores were monitored monthly from July to December in 2014 and 2015.

The bore monitoring produced a range of results varying from the highest recorded groundwater levels being found in the South West corner of the property and no record of groundwater being located to a depth of 4.0m along the eastern boundary, adjoining the river foreshore. The highest groundwater peaked at only 400mm below the natural surface in the south western corner in late August 2015.

Pippin (2019) reported that based upon the recorded groundwater levels adjoining this area and nearby surface heights, it is likely that the south western corner contains a perched groundwater and that the heavier clay materials are likely to be trapping rain events with limited permeability through to the deeper groundwater level, that is controlled by Capel River water level.

As part of this development there will be a need to control groundwater levels under roads, paths and buildings and so subsoil drainage in conjunction with fill in select areas will be required.

The extent of subsoil and fill can be refined when a further detailed geotechnical investigation and groundwater monitoring is completed over the site.

2.2.5 Flood mapping

DWER Flood mapping for the Capel River is shown in Figure 9. All development on the site is required to be a minimum of 500mm above the flood levels.

DWER have further recommended that any proposed development is set back from the top of riverbanks to avoid the potential risk of bank erosion during major river flows.

The Proponent has engaged GALT Geotechnical to investigate bank erosion is an issue to be addressed at detail design stage.

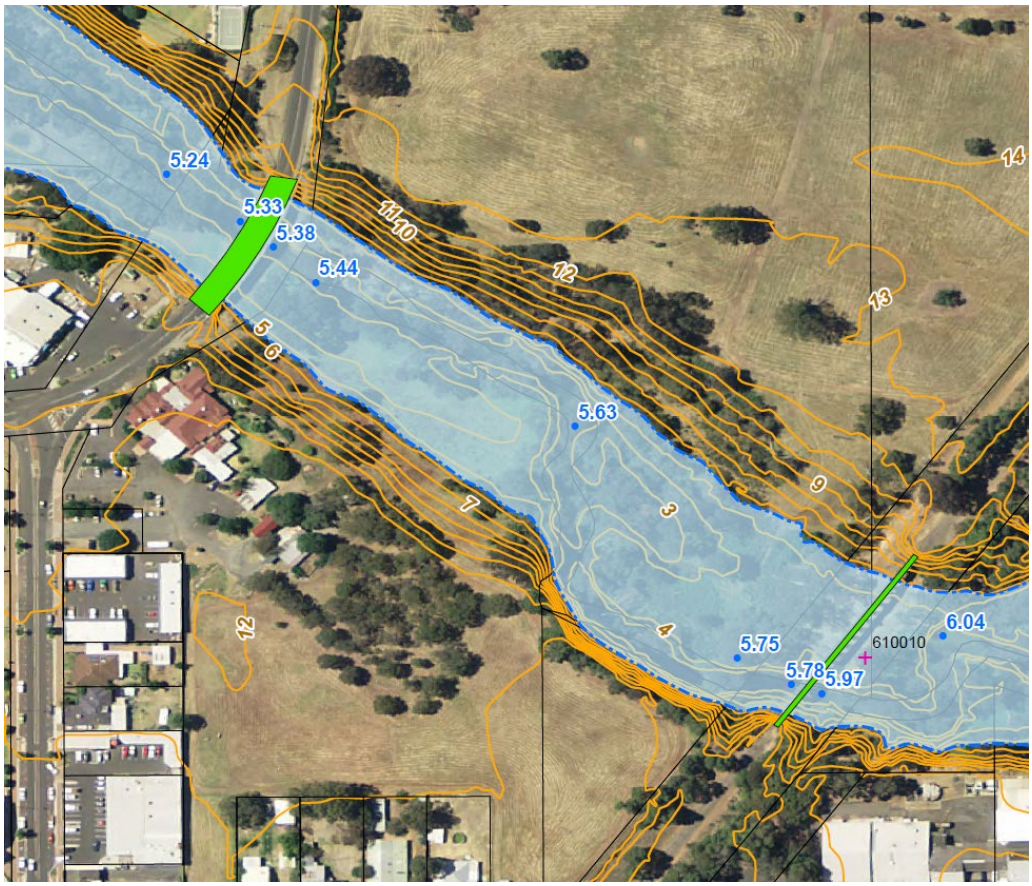

Figure 9 DWER Flood mapping

3 Earthworks

To develop this site fill will be required to achieve:

- Adequate separation above perched groundwater levels
- Grading of the site so the 1% AEP (1 in 100 year) overland flows will be directed in safe flow. paths towards the Capel River.
- Filling to remove trapped low points on the site.
- Suitable subgrade layers below internal roads and paths.
- Building foundation fill
- Landscape area fill

The indicative extent of fill is shown in Figure 10 and will remove the trapped low point within the central portion of the site.

Figure 10 Indicative fill area

This will be further refined at detail design stage and will be determined in conjunction with subsoil drainage on the site to control perched groundwater that could occur on this site.

This fill will require a retaining wall along the southern boundary of the site abutting lots fronting Forrest Road. A Twinside wall of less than 1m high is anticipated. This type of wall is easily removed if required to access the Water Corporation sewer along this alignment for longer term maintenance.

4 SEWER

The site and its existing lots are serviced by Water Corporation sewer network as shown in Figure 11.

Each new lot in the development will be serviced by a single sewer junction located to suit the plumbing depth requirements on the site.

Water Corporation advice has also been sought to ensure there is sufficient capacity in the sewer network to cater for the flows from the proposed development. The response is awaited.

Where proposed works are in proximity to the existing sewers within the lot then buildings and improvements would be undertaken in accordance with the Water Corporation Protection of Assets Technical Guidelines.

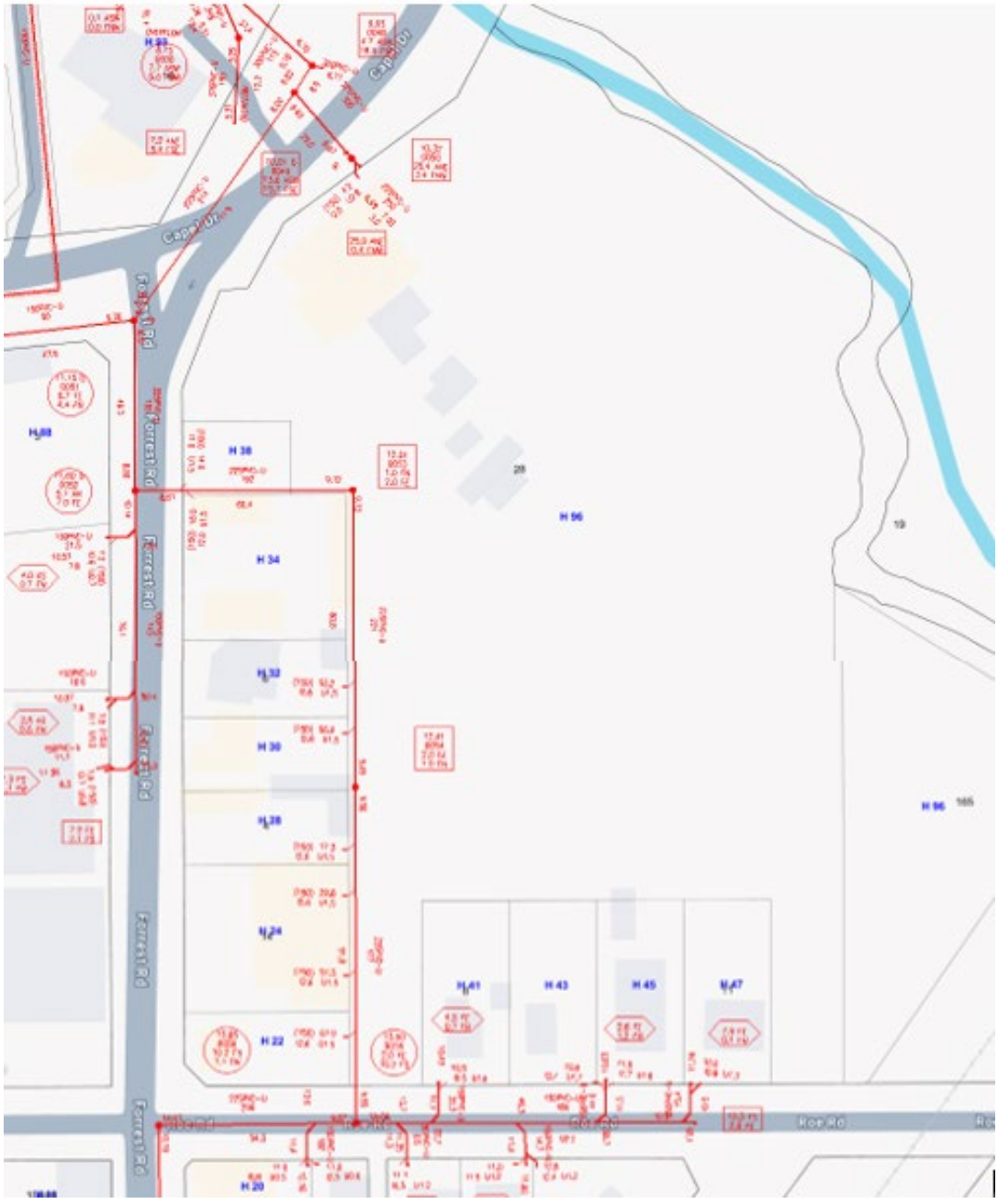

Figure 11 Water Corporation Sewer, ESINET (2025)

5 STORMWATER

The stormwater strategy for the area will be designed in accordance with **DWER (2004-2022)** Stormwater Management Manual and the **DWER (2017)** Decision Process for Stormwater Management in Western Australia (2017).

The system will be designed to collect and treat the 1 year 1-hour event in swales or infiltration devices, have the 20% AEP (1 in 5 year) flows captured and detained/ infiltrated on the site and the 1% AEP (1 in 100 year) flows would be safely conveyed to the adjacent Capel River with no additional compensation.

Underground storage devices such as EcoAID and Flo Vault Cells would be used in open space areas and under carparks and walkways to minimise disturbance to existing trees to be retained on site. Flows from these would infiltrate into sand backfill placed around the devices and a trickle outflow from an underlying subsoil system.

Subsoil drains would also be used across the site to control perched groundwater and flows for these would discharge to the storage devices as well.

Runoff from the site would be captured internally in a system of shallow swales, drainage pits and pipes for conveyance to the below ground storage devices.

The indicative drainage scheme is shown in Figure 12 and would be further detailed at the detail design and Building Permit phase of the project.

All drainage would be under private ownership and maintenance and no flows would discharge into Shire of Capel Drainage system adjoining the site without appropriate compensation to acceptable flow rates.

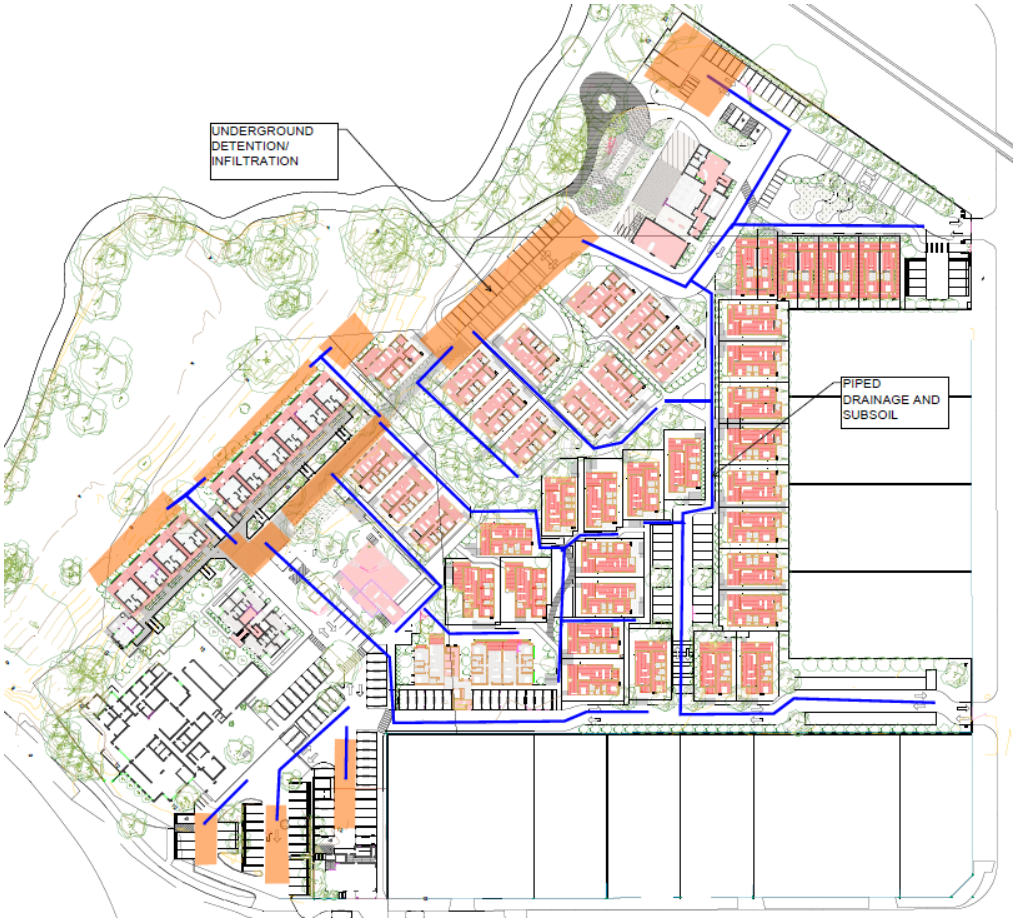

Figure 12 Site Drainage Concept

6 ROADWORKS

All roads within the proposed development will be privately owned and maintained.

Roads, parking and paths within the development would be a mixture of brick paving and asphalt surfacing to tie in with the desired development themes for the site.

Key access points to the site are as shown in Figure 13 and are subject of a separate traffic study.

These include a single access point onto Forrest Road and two access points onto Rowe Road.

These access points also show swept path analysis that has been undertaken by others.

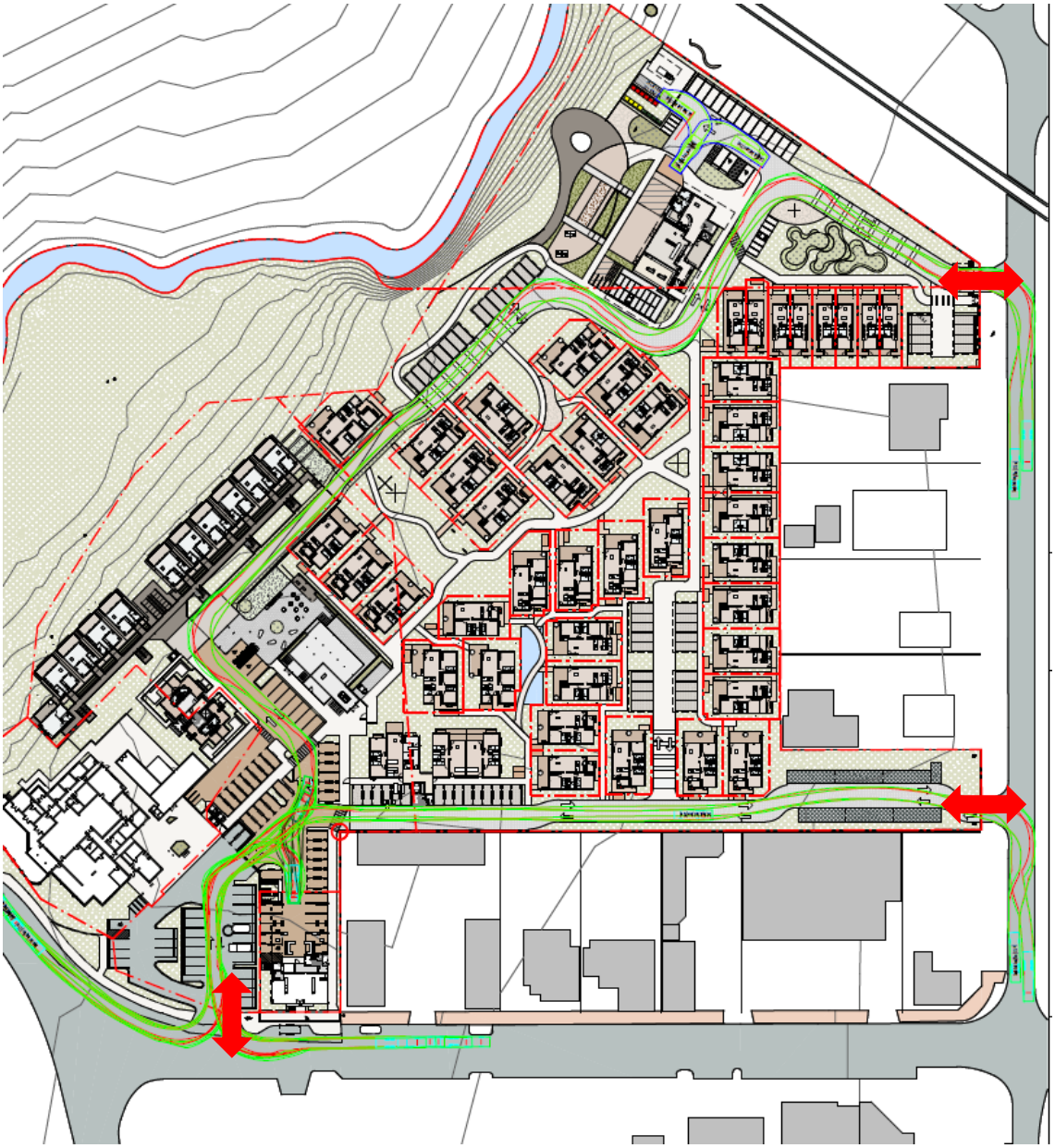

Figure 13 Proposed Access Points

7 WATER SUPPLY

The site and its existing lots are serviced by Water Corporation water network as shown in Figure 14.

There is a 200 RC main on Forrest Road and 200 AC and 150 RC mains along Roe Road.

Each new lot in the development will be serviced by a single water service located to suit the plumbing requirements on the site.

The mains are unlikely to achieve fire pressure and flow requirements and so independent fire storage and boosters are likely required on site for the developments needs.

Water Corporation advice has also been sought to ensure there is sufficient capacity in the water network to cater for the flows from the proposed development. The response is awaited.

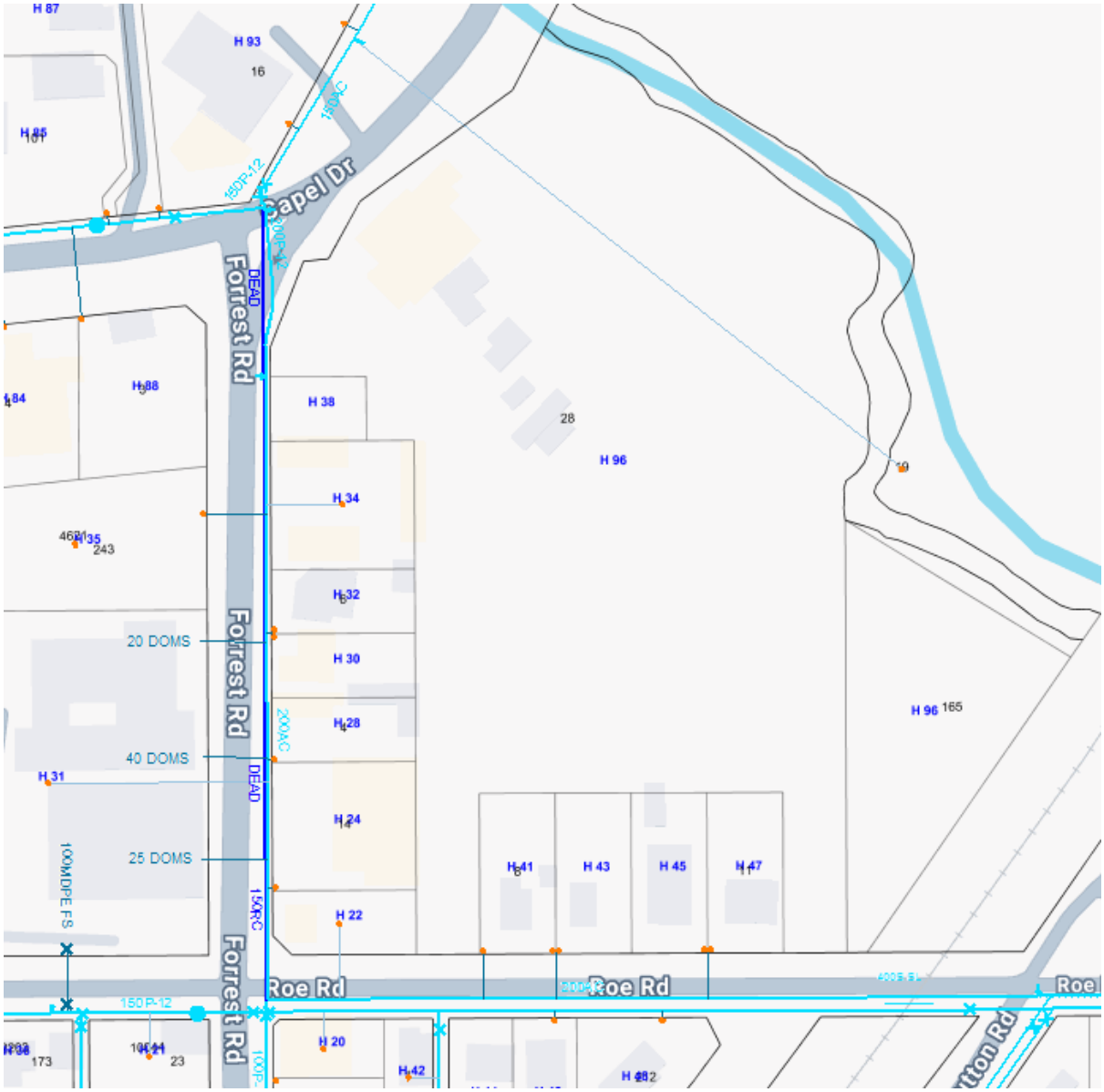

Figure 14 Water Corporation Water, ESINET (2025

8 POWER

The site currently serviced by Western Power overhead and underground network as shown in Figures 15 and 16.

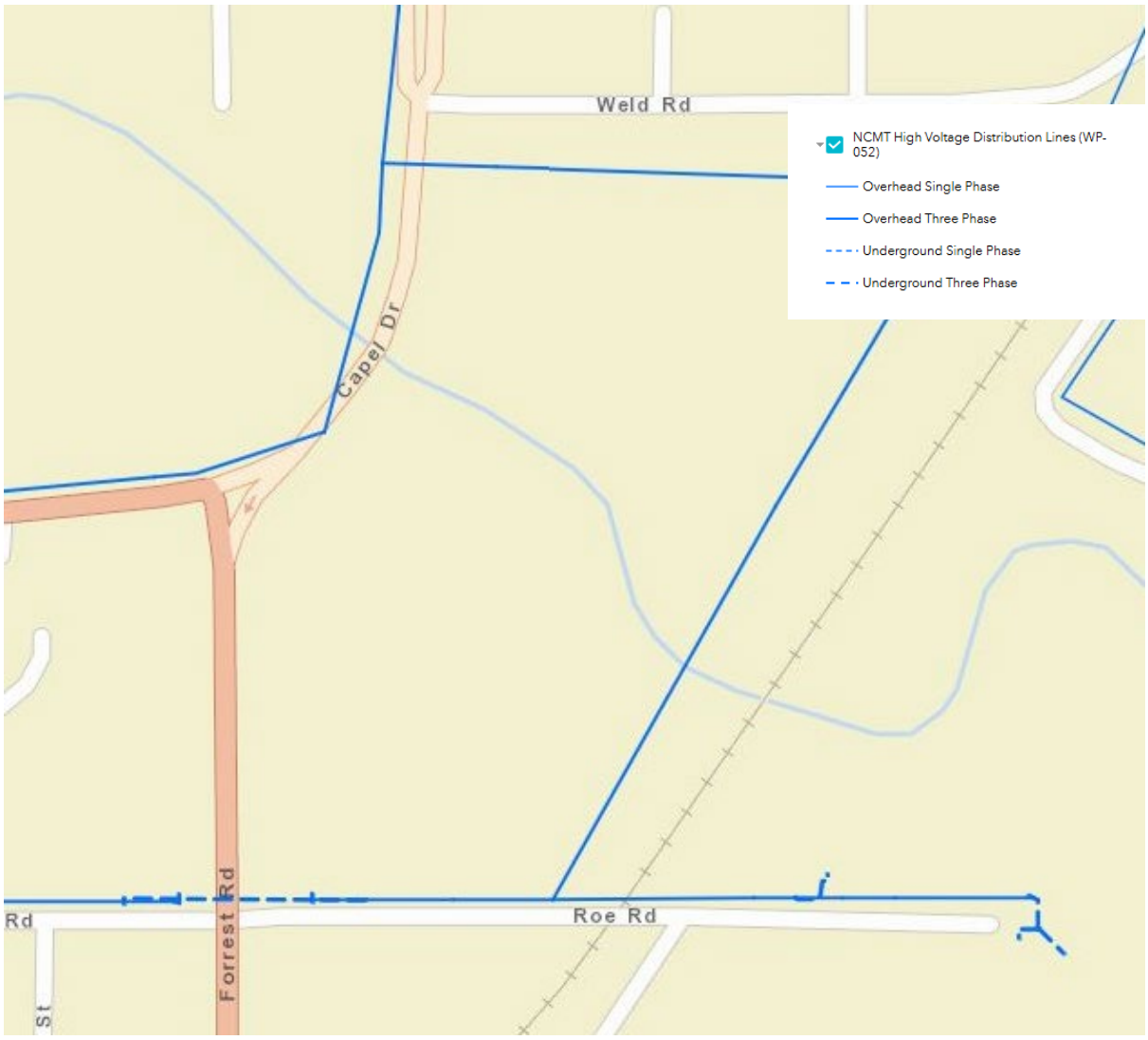

Figure 15 Existing Overhead Power Infrastructure

The power connection to the site will be subject to a formal DIP submission and this will determine any upgrades that may be required in addition to onsite supply requirements such as switchgear and transformers that may be required.

A 3 phase HV overhead line crosses the south eastern portion of the development. A set back will be required from this line so no development occurs within its easement.

A sag study will also be required to ensure sufficient clearance under the power line for all proposed development and road and access crossings.

Low voltage underground cables are also located adjacent the site as shown In Figure 16.

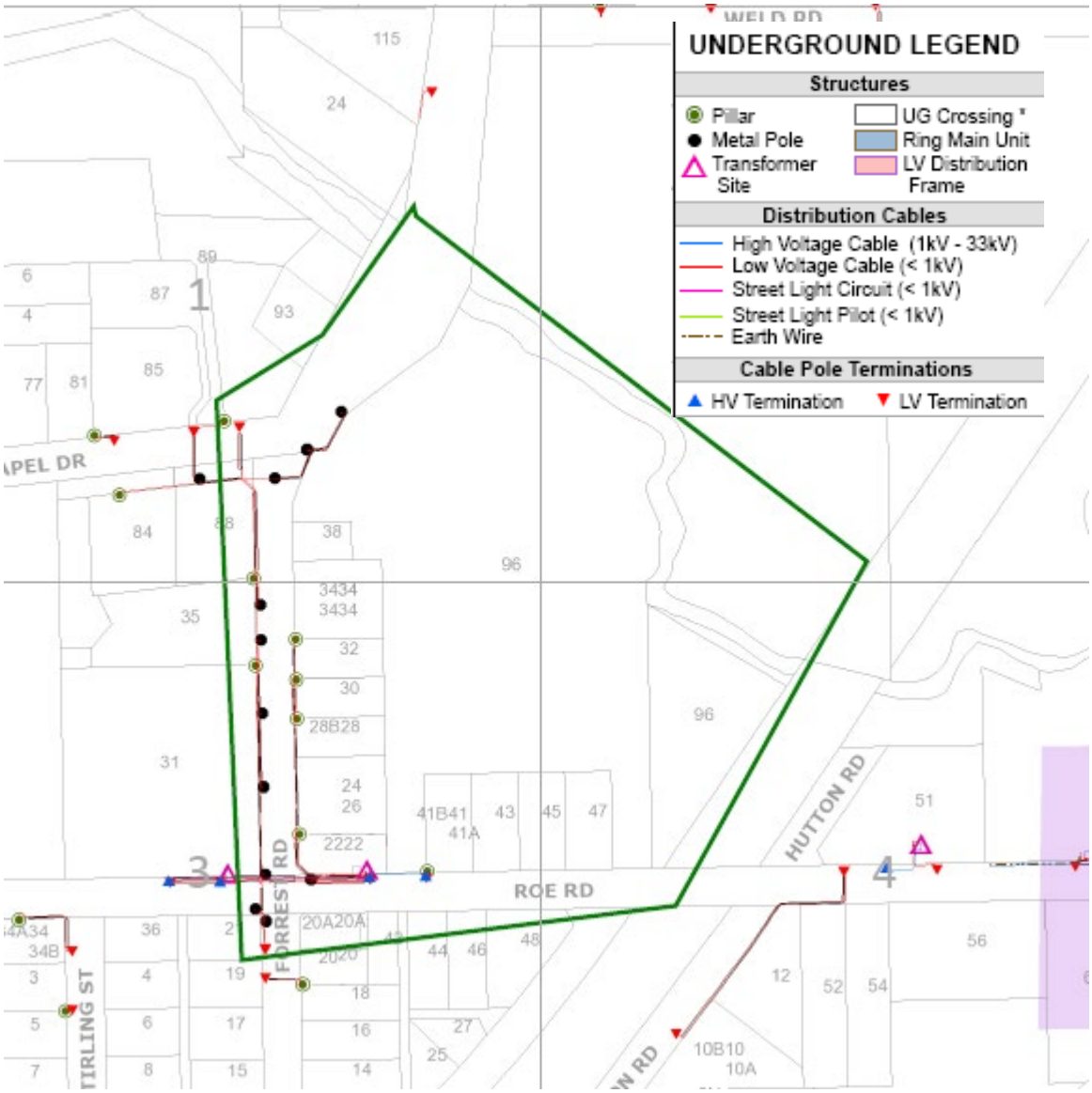

Figure 16 Existing Underground Power Infrastructure

The Western Power Capacity Mapping system shows 15 to 20 MVA available in the system that should be adequate for this development.

9 GAS

Gas is provided to lots in the southern portion of the Capel townsite but here is no gas available in the area of this development.

There is a Gas transmission pipeline located along the rail corridor crossing Roe Road as shown in Figure 17 but this is not suitable for delivery of gas to development without a pressure reduction station being installed.

This pipeline is only 5m off the boundary of Lot 165 and no works are permitted within 15m of the pipeline without prior approval from ATCO.

As works will be undertaken to the boundary of Lot 165 and will fall within this zone ATCO approval will be required.

Gas is not planned to be connected to the site.

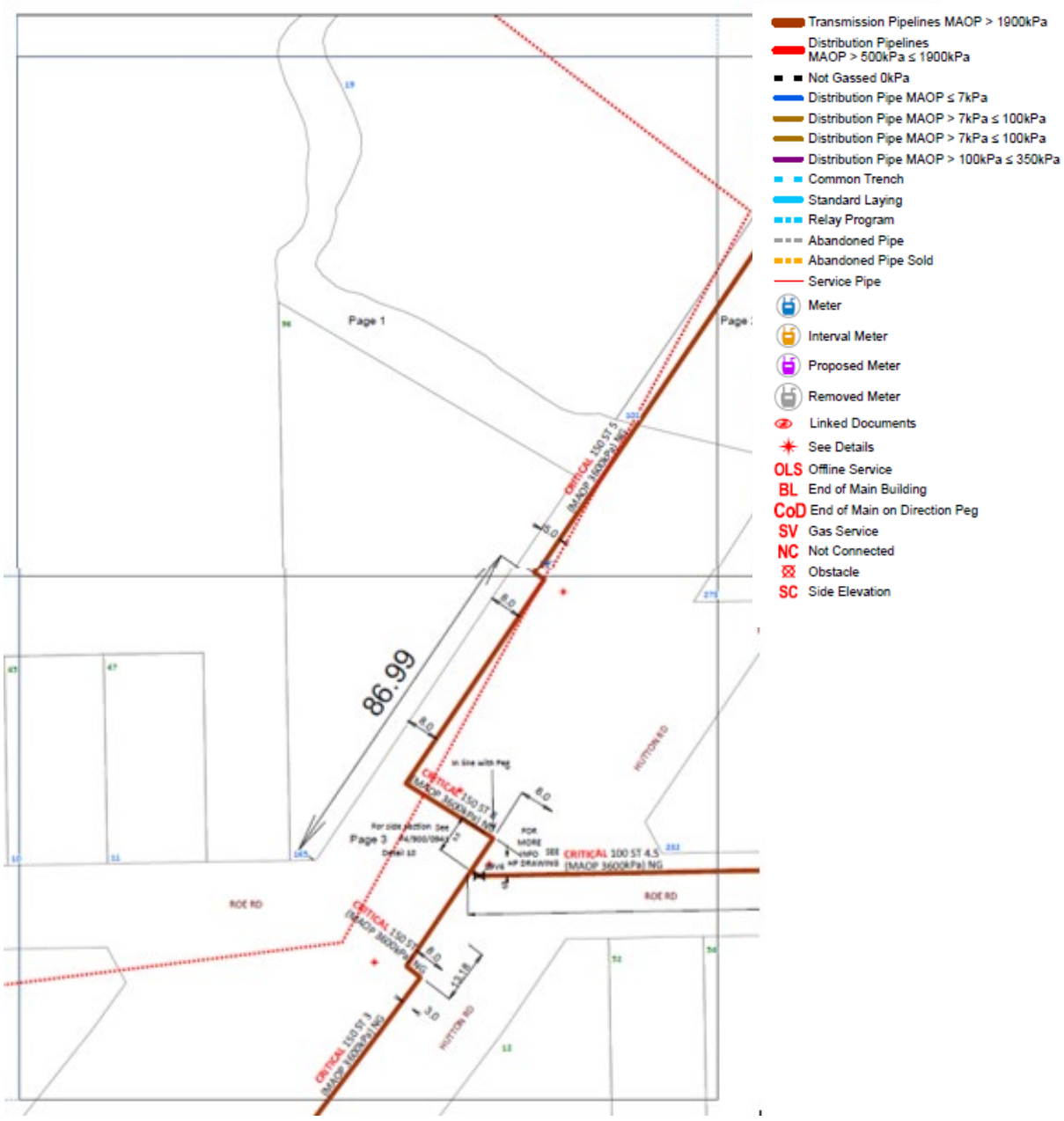

Figure 17 Existing Gas Transmission Pipeline

10 NBN

Dial Before Dig records indicate Optus, Telstra and nbn conduits and pits are directly adjacent the site and so a connection should be readily available to the site.

REFERENCES

DWER (2004-2022) Stormwater Management Manual

DWER (2017) Decision Process for Stormwater Management in Western Australia

Pippin Civil Engineering (2019) Engineering Servicing Review and Preliminary Order of magnitude Cost Estimate Capel Tavern Redevelopment

WML (2015) Geotechnical Investigation Lot 12, 28 and 165 Roe Road Capel

Appendix A SITE FEATURE SURVEY

Easement

Tavern Lease Area

Zoning Boundary (Marked on Ground 28/03/2025)

Zoning Boundary (Shire of Capel 01/04/2025)

Area of New Survey (Mar/Aug 2025) - NOTE: All other Survey Data From August 2017

Class 2/3 Accuracy Statement

This survey has been completed to CLASS 2/3 Accuracy
Hard Stand Areas are to Class 2 Accuracy
Horizontal Accuracy ± 20mm
Vertical Accuracy ± 20mm
All other Areas are to Class 3 Accuracy
Horizontal Accuracy ± 30mm
Vertical Accuracy ± 50mm
This note is an integral part of this plan

Detail/Feature Survey

Surface features and levels have been surveyed to meet the requested scope of works accuracy. The surface may be contoured to depict topography or defined only by spot heights.For clarity on hard copy some level information is not shown, refer to 3D digital file. Above ground indicators (markers) of underground services are located where visible. Third parties utilising this information should confirm the capture accuracies meet requirements prior to use. This note is an integral part of this plan.

Landgate SCDB only

Existing boundaries have been extracted from Landgate's Spatial Cadastral Database, which is only a model of the cadastre. The depicted boundary locations are a graphical representation only and as they have not been re-established by survey. MNG does not guaranteed the position unless stated otherwise. Re-establishment of lot boundaries by a Licensed Surveyor is recommended for any works on or about a boundary. This note is an integral part of this plan

Verified / Re-established

The subject parcel/s depicted on this plan have been defined by a Licensed Surveyor based on existing survey marks and survey documentation. Refer to the Regulation 25A Certificate produced as part of this survey. Subsequent surveys registered with Landgate may affect the definition of the boundaries shown on the plan and as such MNG cannot be held liable for any differences arising from these surveys. This note is an integral part of this plan.

Underground Services - Class D

Quality level D (QL-D) Is the lowest level providing the gathering of information such as BYDA or any existing site plans showing the indicative position of the utility. No equipment used to locate, and no potholing is carried out. Broad indication of any utility presence with no site verification.

Contours at 2m & 0.5m

CAPEL DRIVE

FORREST ROAD

ROE ROAD

CAPEL RIVER

Toe of bank inaccessible

Stage structure

Deck

Dish

Mast

Single story brick & tin

Brick and tin shed

Single story brick & tin weatherboard & tin

Small fruit trees

Tin shed

Tin shed

Colorbond patio

Tin and wood stables

Concrete Crossovers

SSM COL 134A
RL 10.888

Single Storey Concrete Panel Building

Bracket Mounted Air Conditioner

Single Storey Concrete Panel Building

Bracket Mounted Air Conditioner

Single Storey Concrete Panel Building 0.50 Clear

Bracket Mounted Air Conditioner

Single Storey Concrete Panel Building 0.45 Clear

CONCRETE SLAB

CONCRETE BLOCK

OLD BORE HOLE

Gravel Driveway

Concrete Driveway

R60

R40

16 19 12 28 13 165 6 5 4 14 8 9 10 11 1

Rev.	Description	Drawn	Date	Checked
B	Additional Survey Areas Added	GSU	08/08/2025	CPO
A	Initial Issue	GSU	01/04/2025	CPO

ISO 9001 - AS/NZS 4801 - ISO45001
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Surveyor:- GSU
Survey Date:- 18/03/2025
Precal/Cad:- SCDB

N

DETAIL SURVEY
LOTS 12, 28 & 165 CAPEL DRIVE
CAPEL

CLIENT:

Ocean Gardens Pty Ltd

The contents of this plan are current and correct as of the date stated within the revision panel. All consultants and persons wishing to utilise this data should satisfy themselves of this plans currency by contacting the McMullen Nolan Group.

SCALE 1:500 @ A1
0 10 20 30 40 50
ALL DISTANCES ARE IN METRES
For a true to scale reproduction of this plan, plot it to A1 with the Paging Scaling set to None.

The boundaries shown on this plan were not re-established as part of this survey, therefore this plan does not guarantee their accuracy. Existing easements, encumbrance or interest are not depicted and a title search is recommended to obtain this information. Re-establishment of the cadastral boundaries is recommended for any proposed works on or near existing boundaries.

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Project Mngr.	Casey Oliver	Datum	BCG94 / AHD

106959 - DE - 001 - B
Job Number | Type | Plan Number | Revision

ROAD FEATURES

- Traffic Junction Box
- Traffic Signals - 1 Aspect
- Traffic Signals - 2 Aspect
- Traffic Signals - 3 Aspect
- Traffic Signals - 4 Aspect
- Pedestrian Signals
- Sign On One Pole
- Sign Multiple Poles
- Overhead Sign
- Traffic Controller Box
- Finger Sign (F SIGN)
- Traffic Earth Pit
- Police Traffic Camera
- Guide Post
- Km Marker (SLKP)
- Traffic Count
- Solar Panel - Single Pole
- Variable Speed Sign

ELECTRICAL

- Earth Pit (Earth)
- Electrical Pillar (E)
- Electrical Dome (WP)
- Light Pole - Directional (HL)
- Power Pole
- Transformer Single Pole (MR)
- Stay Pole
- Steel Wire Anchor
- High Mast Lighting
- Electrical Cable Marker (E)
- MRWA Cable Marker
- MRWA Electrical Cable Box
- Electrical Cable Pit/Box
- MRWA Distribution Board (EDB)
- High Tension Power Pole (PP)
- Electrical Supply Pole (EP)
- Ground Floodlight (GFL)
- MRWA Electrical Manhole
- Meter Box (MB)
- Power Meter Box
- Electrical Transformer
- MRWA Light Pole
- MRWA Multiple Light Pole

COMMUNICATION

- Telstra Pillar
- Telstra Marker
- Telstra Pole
- Telephone Booth (T)
- Emergency Phone (TEL)
- Antenna
- Telstra Elevated Joint
- Cable Marker (Optus)
- Telstra Tower
- Communication Manhole

WATER

- Water Meter (WM)
- Water Stop Valve (WA)
- Hydrant (Ground Level) (G.HYD)
- Hydrant (Pillar) (FH)
- Water Bore (WB)
- Stand Pipe
- Reticulation Sprinkler
- Reticulation Control Valve (WA)
- Well (WELL)
- Water Main Marker
- Water Tap
- Flushing Point (FP)
- Air Valve (AV)
- Peizometer (P)
- Water Access Chamber
- Hydrant Booster Box

GAS

- Gas Marker
- Gas Valve (GV)
- Gas Test Valve (GTV)
- LPG Tank (LPG)
- Gas Test Pit (Gas Pit)
- Gas Manhole

DRAINAGE

- Invert Level (I.L.)
- Overt Level (O.L.)
- Flood Level (FL)
- Water Line (WL)
- Flood Level Indicator (FL)
- Storm Water Grate
- Drainage Gully
- Drainage Manhole
- Drainage Headwall

SEWER

- Sewer Vent
- Sewer Line Marker
- Sewer Inspection Shaft (IS)
- Sewer Inspection Opening (IO)
- Sewer Manhole

RAIL

- Rail Traffic Signals
- Rail Traffic Control Box (RAIL)
- Rail Telephone Box (T)
- Rail Cable Pit (RAIL)
- Rail Cable Marker
- Rail SLK Post (SLKP)
- Manhole - Rail Cable (RC)

STRUCTURE

- Deck Level (D.L.)
- Floor Level (FL)
- Column Centre

GENERAL

- Clothes Hoist
- Air Conditioner
- Marker Unk/Undefined
- Undefined Manhole
- Control Of Access Sign
- Count Station
- Advertising Sign (AD)
- Windmill
- Stock Trough (TROUGH)
- Litter Bin (BIN)
- Mail Box (MAIL)
- Parking Meter (PM)
- Bus Stop (BUS)
- Ticket Machine
- Borehole (BORE)
- Flag Pole (FLAG)
- Bollard
- Fuel Bowser
- Underground Filler (UTF)
- Diesel Tank
- Oil Main Marker
- Security Post
- Special Environment Area Marker ("yellow Hockey Sticks") (SEAM)
- Roadside Memorial Cross
- Other Pole/post
- Umbrella

GROUND FEATURES

- Natural Surface (1234)
- Aerial Survey Marker

VEGETATION

- Tree Details - Canopy & Trunk
- Tree 0.1m-0.3m Trunk Diameter
- Tree 0.3m-0.5m Trunk Diameter
- Tree 0.5m-1.0m Trunk Diameter
- Tree > 1.0m Trunk Diameter
- Bush
- Die Back Area - Marker
- Nesting Tree
- Tree Trunk / Stump
- Grass Tree

SURVEY CONTROL

- Star Iron Picket
- Trig Point
- SSM
- Bench Mark (BM)
- Photo Point
- Cadastral Peg/Post (OP)
- Reference Peg (R.PEG)
- Alignment Control
- Spring Head Nail
- Spike (SP)
- TBM
- Peg Placed / Found
- Minor Vertical Control Mark Mvcm

COMMUNICATION PITS

- Amcom/Vocus Pit (A)
- NBN Pit (N)
- Next Gen Pit (NG)
- Optus Pit (O)
- Telstra Pit (T)

ROAD FEATURES

- Edge Of Bitumen
- Road Shoulder
- Edge Of Unsealed Road
- On Road
- Centre Of Road
- Kerb Top
- Kerb Bottom
- Cattle Grid
- Centre Of Driveway
- Edge Of Driveway
- Pedestrian Ramp
- Pedestrian Crosswalk
- Track
- Parking Bay
- Line Markings 1m Line & 1m Gap
- Line Markings 1m Line & 3m Gap
- Line Markings 3m Line & 9m Gap
- Lane Marking (9m*3m GAP)
- Lane Markings - Audible
- Shared Pathway - Guide Line 900mm*300mm GAP
- Footpath/Shared Path - Give Way 200mm*200mm GAP
- Giveway/Hold/Turn Lines 600mm*600mm GAP
- Double Barrier Line
- Overtaking Lane Left
- Overtaking Lane Right
- Single Solid Line
- Arrow Straight
- Arrow Straight/Left
- Arrow Straight/Right
- Arrow Left
- Arrow Right
- Arrow 3 Ways
- Arrow Right & Left
- Arrow U-Turn
- Arrow Merge
- Painted Lettering On Seal
- Painted Bicycle Traffic Signal Detector
- Guardrail - W Beam
- Guardrail - Thrie
- Barrier Concrete
- Barrier Steel Rope
- Barrier - Single Rail
- Barrier - Double Rail
- Barrier Triple Rail
- Bridge Barrier - (All Types)
- Bridge Expansion Joints
- Bridge - Outside Of Deck
- Soffit String

STRUCTURE

- Bridge
- Abutment
- Columns
- Piers
- Underpass
- Ramp
- Steps/Stairs
- Edge Of Concrete
- Bus Shelter
- Memorial
- Ruin
- Building / Structure
- Awning
- Shed
- Verandah
- Door Opening
- Window
- Roof Gutter Line
- Roof Ridge Line
- Top Of Wall
- Brick Wall
- Concrete Wall
- Livestock Grid

GROUND FEATURE

- Major Contour (10)
- Minor Contour
- Bank Bottom
- Bank Top
- Line Of Levels
- Levee Top
- Levee Bottom
- Rock Outcrop
- Ridge Line
- Borrow Pit
- Earthworks Area
- Ground Subsidence
- Rock Pitching

VEGETATION

- Tree Line/Canopy
- Bush Line
- Hedge
- Garden Bed
- Lawn Area
- Vineyard
- Plantation
- Orchard
- Nursery
- Market Garden
- Recreational Area
- Trunk Circumference Circle
- Tree-line Face Of Trunks

ELECTRICAL

- Varible Message Sign
- Electrical Structure String
- Overhead Powerlines - Null Height
- Overhead Powerlines - True Height
- High Tension Power Lines - Null Height
- High Tension Power Lines - True Height
- Guy-wire / Stay Wire / Anchor Wire - True Height
- Guy-wire / Stay Wire / Anchor Wire - 2D Null Height

COMMUNICATION

- Unidentifed Service Pit
- Telstra Cable (T)
- Amcom Cable
- Telstra Fibre Optic U/g -" Direct Measure"

WATER

- Water Pipe (W)

GAS

- Gas Line

DRAINAGE

- Drainage Pipe (D)
- Drainage Culvert
- Floodway
- Drain
- Edge Of Drain
- Sump
- Waters Edge
- Swamp
- Dam
- Edge Of Creek/Water
- Centre Of Channel
- Wet Area
- Flood Level Line
- Waterways Cross Section
- Obvert String - Top inside of drainage structure/pipe
- Top Outside of Pipe / Culvert

SEWER

- Sewer Pressure Main (PM)
- Sewer Pipe (S)

RAIL

- Railway Platform
- On Rail
- Rail Boom Gate
- Rail Underground Cable
- Dual Gauge Rail
- Narrow Gauge Rail
- Cross Setion - Rail
- Standard Gauge Rail
- Rail U/G Cable

CADASTRAL

- MNG Precal/Re Established
- (SCDB) - State Cadastral Data Base
- Cadastre By Others

GENERAL

- Swimming Pool
- Tank Perimeter
- Mine Shaft
- Mine Workings
- Koppa Logging Fence
- Fence/Gate
- Wall
- Top Of Barrier / Wall etc
- Retaining Wall
- Boundary Line
- Footpath
- Gas Cylinder/Tank
- Brick Paving
- Bike Rack
- Bench Seating
- Handrail
- Special Environment Area Boundary (line)
- Clearing Line - As Constructed/cleared
- Pegged Clearing Line

UNDERGROUND SERVICES - AUSTRALIAN STANDARDS
CLASSIFICATION OF SUBSURFACE UTILITY INFORMATION AS5488.1-2022

INDIRECT MEASUREMENT TO TOP OF SERVICE - CLASS B AND C		SERVICE LOCATION AT SURFACE- CLASS A to C		DIRECT MEASUREMENT TO TOP OF SERVICE- CLASS A		DBYD COMPILED - CLASS D - NO DEPTH	
(PZA)	Underground Amcom/Vocus Cable	HA	AMCOM/VOCUS Cable - Surface Location	(PQA)	Underground Amcom/Vocus Cable	QA	AMCOM/VOCUS Cable - Unverified, No Measurement
(PZC)	Underground Drainage Pipe	HC	Drainage Pipe / Stormwater - Surface Location	(PQC)	Underground Drainage Pipe	QC	Drainage Pipe / Stormwater - Unverified, No Measurement
(PZE)	LV/SL Underground Electrical Cable	HE	LV/SL Electrical Cable- Surface Location	(PQE)	LV/SL Underground Electrical Cable	QE	LV/SL Electrical Cable - Unverified, No Measurement
(PZE)	HV Underground Electrical Cable	HE	HV Electrical Cable - Surface Location	(PQE)	HV Underground Electrical Cable	QE	HV Electrical Cable - Unverified, No Measurement
(PZF)	Underground Western Power Comms	HF	Western Power Communication - Surface Location	(PQF)	Underground Western Power Comms	QF	Western Power Communication - Unverified, No Measurement
(PZG)	Underground Gas Line	HG	Gas Line - Surface Location	(PQG)	Underground Gas Line	QG	Gas Line - Unverified, No Measurement
(PZH)	Underground MRWA Comms	HH	MRWA Communication - Surface Location	(PQH)	Underground MRWA Comms	QH	MRWA Communication - Unverified, No Measurement
(PZI)	Underground MRWA Power	HI	MRWA Power - Surface Location	(PQI)	Underground MRWA Power	QI	MRWA Power- Unverified, No Measurement
(PZJ)	Underground NBN Comms	HJ	NBN Fibre - Surface Location	(PQJ)	Underground NBN Comms	QJ	NBN Comms - Unverified, No Measurement
(PZK)	Underground TPG /Pipe Networks	HK	TPG/Pipe Networks Surface Location	(PQK)	Underground TPG /Pipe Networks	QK	TPG/Pipe Networks - Unverified, No Measurement
(PZN)	Underground Next Gen Comms	HN	Next Gen Communication - Surface Location	(PQN)	Underground Next Gen Comms	QN	Next Gen Communication - Unverified, No Measurement
(PZO)	Underground Optus Fibre Optic	HO	Optus Optic Fibre - Surface Location	(PQO)	Underground Optus Fibre Optic	QO	Optus Optic Fibre - Unverified, No Measurement
(PZP)	Underground Optus Copper	HP	Optus Copper - Surface Location	(PQP)	Underground Optus Copper	QP	Optus Copper - Unverified, No Measurement
(PZR)	Underground Rail Services	HR	Rail Services - Surface Location	(PQR)	Underground Rail Services	QT	Telstra Copper - Unverified, No Measurement
(PZS)	Underground Sewer Pipe	HS	Sewer Pipe - Surface Location	(PQS)	Underground Sewer Pipe	QV	Telstra Optic Fibre - Unverified, No Measurement
(PZT)	Underground Telstra Copper	HT	Telstra Copper - Surface Location	(PQT)	Underground Telstra Copper	QR	Rail Services - Unverified, No Measurement
(PZU)	Underground Unknown Service	HU	Unknown Service - Surface Location	(PQU)	Underground Unknown Service	QS	Sewer Pipe - Unverified, No Measurement
(PZV)	Underground Telstra Optic Fibre	HV	Telstra Optic Fibre - Surface Location	(PQV)	Underground Telstra Optic Fibre	QU	Unknown Service - Unverified, No Measurement
(PZW)	Underground Water Pipe	HW	Water Pipe - Surface Location	(PQW)	Underground Water Pipe	QW	Water Pipe - Unverified, No Measurement
(PZX)	Underground Reticulation Pipe	HX	Reticulation - Surface Location	(PQX)	Underground Reticulation Pipe	QX	Reticulation - Unverified, No Measurement
(PZZ)	Abandoned Service	HZ	Abandoned Service - Surface Location	(PQZ)	Abandoned Service	QZ	Abandoned Service - Unverified, No Measurement

Rev.	Description	Drawn	Date	Checked
L	MNG Address Updated	SAH	18/02/2025	SDW
K	New Communication Pit Symbols added	DRD	19/10/2023	SAH
J	New Lines & Symbols added	DRD	21/03/2023	SAH
I	U/G Services Amended	DRD	18/08/2022	SAH
A	Initial Issue	SAH	30/10/2020	TKI

NOT TO SCALE

For a true to scale reproduction of this plan, plot it to A3 with the Paging Scaling set to None.

Surveyor:- MNG
Survey Date:-
Precal/Cad:-

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N

The boundaries shown on this plan were not re-established as part of this survey, therefore this plan does not guarantee their accuracy. Existing easements, encumbrance or interest are not depicted and a title search is recommended to obtain this information. Re-establishment of the cadastral boundaries is recommended for any proposed works on or near existing boundaries.

MNG

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McMULLEN NOLAN GROUP
FEATURE SURVEY - GENERAL LEGEND

CLIENT:

N/A

Project Mngr.	MNG	Datum	N/A

DOC 012 L
Type / Plan Number / Revision