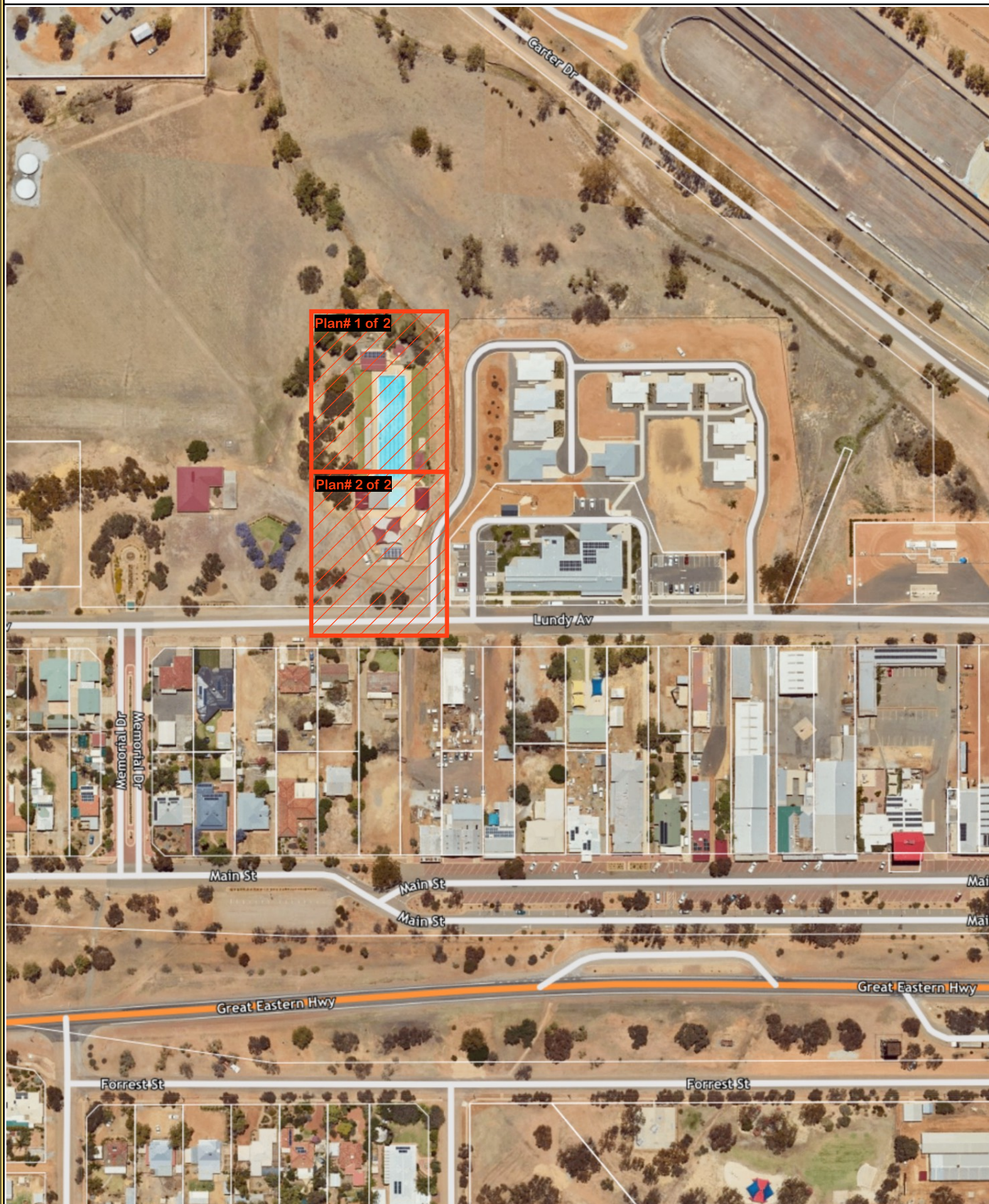




	Legend Power QL-B Comms QL-B Water QL-B Gas QL-B Stormwater QL-B Sewer QL-B Unknown/retic QL-B MRWA traffic signals QL-B	Power QL-C/D Comms QL-C/D Water QL-C/D Gas QL-C/D Stormwater QL-C/D Sewer QL-C/D Unknown/retic QL-C/D MRWA TS QL-C/D	Symbols Electrical Pole Electrical Dome MRWA traffic signal Telstra Pit/Manhole Optus Pit Vocus Pit Sewer Pit Stormwater Pit Electrical Pit	Electrical Transformer Fire Hydrant Water Valve Water Meter Water Feed Gas Feed Gas Valve QL-A/Pothole QL-B depth 1.2m	Abbreviations PVC - Polyvinyl Chloride PE - Polyethylene AC - Asbestos Cement RC - Reinforced Concrete C - Concrete CU - Copper CI - Cast Iron DI - Ductile Iron ST - Steel	VC - Vitrified Clay AB - Abandoned OF - Optic Fibre IL - Invert Level QL - Obvert Level EOT - End of Trace UTT - Unable to Trace DB - Direct buried	 AUS CERTLOC CERTIFIED LOCATING ORGANISATION

- Existing swimming pool pipework unaccounted for.
- Existing reticulation not located as requested.



Legend

— Power QL-B	--- Power QL-C/D
— Comms QL-B	--- Comms QL-C/D
— Water QL-B	--- Water QL-C/D
— Gas QL-B	--- Gas QL-C/D
— Stormwater QL-B	--- Stormwater QL-C/D
— Sewer QL-B	--- Sewer QL-C/D
— Unknown/retic QL-B	--- Unknown/retic QL-C/D
— MRWA traffic signals QL-B	--- MRWA TS QL-C/D

Symbols

Electrical Pole	Electrical Transformer
Electrical Dome	Fire Hydrant
MRWA traffic signal	Water Valve
Telstra Pit/Manhole	Water Meter
Optus Pit	Gas Feed
Vocus Pit	Gas Valve
Sewer Pit	QL-A/Pothole
Stormwater Pit	QL-B depth
Electrical Pit	

Abbreviations

PVC - Polyvinyl Chloride	VC - Vitrified Clay
PE - Polyethylene	AB - Abandoned
AC - Asbestos Cement	OF - Optic Fibre
RC - Reinforced Concrete	IL - Invert Level
C - Concrete	OL - Obvert Level
CU - Copper	EOT - End of Trace
CI - Cast Iron	UTT - Unable to Trace
DI - Ductile Iron	
ST - Steel	

- Existing swimming pool pipework unaccounted for.
- Existing reticulation not located as requested.



Legend		Symbols		Abbreviations	
Power QL-B	Power QL-C/D	Electrical Pole	Electrical Transformer	PVC - Polyvinyl Chloride	VC - Vitrified Clay
Comms QL-B	Comms QL-C/D	Electrical Dome	Fire Hydrant	PE - Polyethylene	AB - Abandoned
Water QL-B	Water QL-C/D	MRWA traffic signal	Water Valve	AC - Asbestos Cement	OF - Optic Fibre
Gas QL-B	Gas QL-C/D	Telstra Pit/Manhole	Water Meter	RC - Reinforced Concrete	IL - Invert Level
Stormwater QL-B	Stormwater QL-C/D	Optus Pit	Water Feed	C - Concrete	QL - Obvert Level
Sewer QL-B	Sewer QL-C/D	Vocus Pit	Gas Feed	CU - Copper	EOT - End of Trace
Unknown/retic QL-B	Unknown/retic QL-C/D	Sewer Pit	Gas Valve	CI - Cast Iron	UTT - Unable to Trace
MRWA traffic signals QL-B	MRWA TS QL-C/D	Stormwater Pit	QL-A/Pothole	DI - Ductile Iron	
		Electrical Pit	1.2m QL-B depth	ST - Steel	



Utility surveying is a professional service defined in Australia by the Australian Standard, Classification of subsurface utility information AS5488.1:2019.

WA Mapping provides all utility investigations in accordance with the Australian Standard. This standard identifies four quality levels and specifies the following tolerances:

- QL-A +/- 50mm

- QL-B +/- 300mm horizontal and +/- 500mm vertical

- QL-C - Tolerance does not apply

- QL-D - Tolerance does not apply

Quality Level A

(Meets location accuracy standards for minimum risk when excavating)

Quality Level A is the highest quality level detailed within AS5488. It is the only quality level that defines a subsurface utility to be 'validated'. This level involves the exposure of underground utilities through non-destructive methods (*Vacuum potholing*). The utility depth, type, size and material will all be confirmed.

Quality Level B

(Significant risk reduction)

Quality Level B provides the horizontal position of underground utilities through surface geophysical methods. Traditionally, electromagnetic detection (EMI) is used for conductive utilities and ground penetrating radar (GPR) is primarily used for nonconductive utilities. Both methods have limitations and can be affected by the following, but not limited to:

- Depth of the utility.

- Proximity of utilities.

- Soil/geological conditions.

- Material conductivity and other geological anomalies that may distort EMI and GPR frequencies.

- Terrain onsite i.e., surface condition, vegetation cover, reinforced concrete, surface water etc.

The effectiveness of GPR is highly dependent on ground conditions, WA Mapping cannot guarantee GPR will be effective on all sites/projects however this will be communicated to advise of an alternative solution if GPR is unsuccessful.

Quality Level C

(Low accuracy and a high risk of damage)

Quality Level C is best described as a surface feature correlation or an interpretation of the approximate location and attributes of a subsurface utility asset using a combination of existing records and site survey of visible evidence for example you can see the pit lids shown on the plan but the actual position of underground connection between pits is still assumed.

Quality Level D

(The least accurate level and if used on its own has a high risk of damage)

Quality Level D information is generally obtained from existing records provided by utilities as a result of a Before you dig enquiry being lodged, In many cases the asset depicted on the plan is in a schematic format and intended only to indicate its presence.

For any more information please contact Shane on 0422 344 981 or shane.hart@wamapping.net.au.