

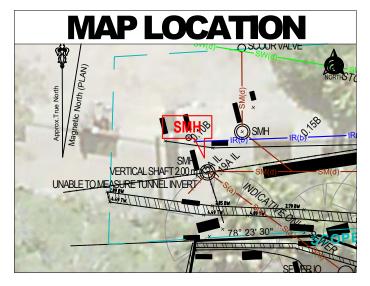


SEWER MANHOLE - VERTICAL SHAFT











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ISSUE	DETAILS OF AMENDMENT	BY	DATE	LOCATED BY MW
Α	UTILITY INVESTIGATION	JM	02-02-2023	SURVEYED BY
В	SURVEY AND FILE OVERLAY	JM	27-03-2023	DRAFTED BY JA
С	UTILITY INVESTIGATION (STORMWATER)	JM	26-05-2023	CHECKED BY
D	STORMWATER INVESTIGATION (MARINE PARADE)	JA	11-07-2023	APPROVED BY
				SW
				LOCATED DATE 24-03-2023, 25-05-2023, 10-07-202

THIS PLAN MUST BE READ IN CONJUNCTION WITH ALL SHEETS FOR ADDITIONAL WARNINGS, NOTES AND LEGENDS.

TRACEABLE SERVICES WERE LOCATED USING ELECTROMAGNETIC AND GPR LOCATING METHODS.

GEOSCOPE ADVISE TO POTHOLE THESE SERVICES TO CONFIRM DEPTHS AND LOCATION FINDINGS PRIOR
TO ANY EXCAVATION WORKS

CLIENT	DRAWING TITLE			
	UTILITY INVESTIGATION			
	SITE LOCATION			
	32 BOWER STREET, MANLY			
back accords rations	DRAWING NUMBER			
beeboconstructions	20230711SUI			
	DRAWING FILE NAME			
	20230711SUI - 32 BOWER S	STREET, MANLY		
	HEIGHT DATUM	COORDINATE SYSTEM	SHEET	
	_	_	03 OF 04	F

AUSTRALIAN STANDARD AS 5488-2019 CLASSIFICATION OF SUBSURFACE UTILITY INFORMATION (SUI CLASSIFICATION)

SUI CLASSIFICATION FROM THE AUSTRALIAN STANDARD (AS 5488-2019) ALLOWS THE USER OF THIS INFORMATION TO FULLY UNDERSTAND THE GATHERED INFORMATION AND DETERMINED QUALITY LEVELS. THE QUALITY LEVELS (QL-A, QL-B, QL-C, QL-D) REFER TO THE ACCURACY OF EACH INFORMATION COLLECTED ON SUBSURFACE UTILITIES ON THIS PLAN, WITH THESE QUALITY LEVELS, PROJECT RISKS RELATED TO UNDERGROUND UTILITIES CAN BE PROPERLY MANAGED, BELOW ARE THE DESCRIPTION OF EACH QUALITY LEVEL WITH QUALITY LEVEL A (QL-A) AS THE HIGHEST OF ALL THE QUALITY LEVELS. HIGHER QUALITY LEVEL CORRESPONDS TO A MORE ACCURATE INFORMATION ON SUBSURFACE UTILITIES.

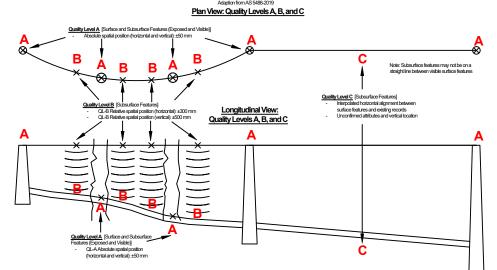
A (QL-A) IS THE HIGHEST QUALITY LEVEL OF ACCURACY WITH AN ABSOLUTE LOCATION IN THREE DIMENSIONS (X, Y, Z COORDINATES). THE MAXIMUM HORIZONTAL AND VERTICAL TOLERANCE IS ±50 MM. THIS IS OBTAINED BY USING A NON-DESTRUCTIVE EXCAVATION (POTHOLING) OR BY MEASURING DIRECTLY TO THE UTILITIES (I.E. MANHOLE). THE VERTICAL INFORMATION FOR THIS LOCATING METHOD IS ON THE TOP OF THE SHALLOWEST PART OF THE LOCATED SERVICE—UNLESS STATED INVERT OR OBVERT MEASUREMENT. IN ADDITION, QL-A ALSO CONFIRMS PIPE DETAILS SUCH AS ITS SIZE, MATERIAL, AND CONDITION.

S) IS THE MOST COMMON FORM OF UTILITY LOCATING WHICH PROVIDES A RELATIVE SUBSURFACE LOCATION IN THREE DIMENSIONS (X. Y. Z. COORDINATES). THE UTILITIES IN THIS LEVEL USES METHODS BY PHYSICALLY LOCATING A KNOWN SERVICE BY USING ELECTROMAGNETIC PIPE AND CABLE LOCATORS, SONDES OR FLEXI TRACE, AND ACOUSTIC PULSE EQUIPMENT. THE MINIMUM REQUIREMENT FOR THIS QUALITY LEVEL IS RELATIVE SPATIAL POSITION WITH A MAXIMUM HORIZONTAL TOLERANCE OF ±300 MM AND A MAXIMUM VERTICAL TOLERANCE OF ±500 MM. THIS QUALITY LEVEL IS AN INDICATION OF EXISTENCE OF SUBSURFACE UTILITIES AND DOES NOT VALIDATE THE LOCATION AND ATTRIBUTES BECAUSE ELECTRONIC DETECTION IS NOT RECOMMENDED FOR OBTAINING ACCURATE DEPTH INFORMATION DUE TO INTERFERENCE FROM OTHER ADJACENT SERVICES AND/OR DUE TO GEOLOGICAL CONDITIONS. IN ADDITION, IT IS NOT ALWAYS ENTIRELY ACCURATE DUE TO DIFFERING ELECTROMAGNETIC FIELDS, SOIL CONDITIONS, AND MULTIPLE BANKS OF CABLES AFFECTING THE LOCATING SIGNAL

CORRELATES THE SURVEY OF VISIBLE UTILITY SURFACE FEATURES SUCH AS PITS, POLES, MARKER PLATES, WATER HYDRANTS, AND ACQUIRED BEFORE YOU DIG AUSTRALIA (BYDA) PLANS TO DRAW A STRING WHICH SHOWS THE APPROXIMATE POSITION OF THE SERVICES. IN ADDITION, THIS IS BEING USED FOR LOCATING METHODS WHICH WAS ABLE TO DETECT AN UNKNOWN UNIDENTIFIED ENTITIES OR SERVICES (I.E. GROUND PENETRATING RADAR (GPR)), FOR THIS QUALITY LEVEL, THE MINIMUM REQUIREMENT FOR THIS QUALITY LEVEL IS RELATIVE SPATIAL POSITION WITH A MAXIMUM ±300 MM HORIZONTAL TOLERANCE; HOWEVER, THIS METHOD DOES NOT USUALLY SHOW MULTIPLE BANKS OF CABLES AND THREE-DIMENSIONAL INFORMATION.

DISTHE LOWEST OF ALL THE QUALITY LEVELS AS PER AUSTRALIAN STANDARD (AS 5488-2019). THIS IS THE MOST BASIC LEVEL OF UTILITY LOCATIONS BY USING ONLY THE INFORMATION BASED ON THE EXISTING BEFORE YOU DIG AUSTRALIAN STANLARD (AS SHOEZE). THEIR OST BASIL LEVEL FOR "OF ITLIT LEVELS AS PER AUSTRALIAN (BYDA) FLANS, OTHER ENGINEERING AND DESIGN PLANS, AND BY MEASURING BOUNDARY OFFSETS. THIS QUALITY LEVEL COLLD BE A SIMPLE APPROXIMATION FROM SITE ECORDS, ANECDOTAL EVIDENCE, OR A SERVICE WHICH WAS NOT LOCATED USING ELECTRONIC OR GROUND PENETRATING RADAR METHODS. THIS METHOD OF UTILITY LOCATING SHOULD ALWAYS BE TREATED AS AN INDICATION OF THE PRESENCE OF A SERVICE ONLY AND SHOULD NOT BE USED FOR DESIGN.





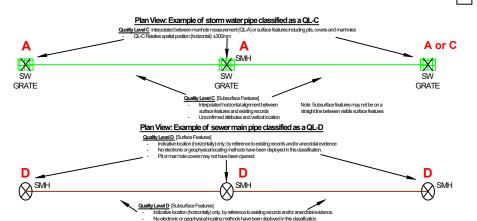
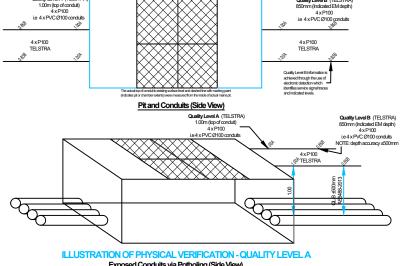
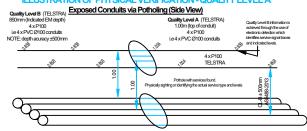


ILLUSTRATION OF (TELSTRA) MANHOLE OR MAINS PIT

Site Mark-up (Plan View)





Site Mark	USTRATION OF S up (Plan View)	STORM	Pit (Side)		velA
1.10 inv 1.10 inv 1.10 inv	0.57A1L STORMWATER Ø150 PVC Quality II (STORM) 1.10n Ø375 (Reinforced	NATER) L ninv RC	2875 RC	(STORMUN 570mm Ø150F (Polyvinyl C) Ø150 Pv	ninv VC thloride)
ILLU:	STRATION OF SI	EWER I	MANHOLE	ORPIT	
Site Mark	up (Plan View)		Manhole (Sid	de View)	
	~ I O			-	

STORMW Ø375 RC	Ø37	Iminy 23/5 NC 75 RC d Conarete)
		EWER MANHOLE OR PIT
Site I	Vlark-up (Plan View)	Manhole (Side View)
	SEWER TI VOL 2	Quality Level A (SEWER) 1.00m inv Ø225 VC (Virified Clay)
SEWER Ø225 VC	2.10 iv	∫Ø225VC ↓ Q
	SEWER Ø400 VC	Quality Level A (SEWER) 2.10m rv Ø400 VC (Virified Clay)

EGEND	DESCRIPTION	LEGEND	DESCRIPTION	
Ø	Pipe Diameter	AHD	Australian Height Datum	
S	Steel	EOT	End of Trace	
AC	Asbestos Cement	FOD	Full of Debris	
BH	Bore Hole	FOW	Full of Water	
Cl	Cast Iron	GRP	Glass Reinforced Plastics	
DH	Drill Hole	HYD	Hydrant	
DI	Ductile Iron	inv/ IL	Invert Level	
EW	Earthenware	MGA	Map Grid of Australia	
Ŧ	Fire Hydrant	obv/OL	Obvert Level	
Gl	Galvanised Iron	OOA	Out of Area	
GV	Gas Valve	PVC	Polyvinyl Chloride	
C	Inspection Cover	RMS	Roads and Maritime Services	
KI	Kerb Inlet	SCL	Steel Cement (Mortar) Lined	
LP	Light Pole	SGW	Salt Glazed Ware	
MH	Manhole Cover	UTL	Unable to Locate	
MS	Mild Steel	UTO	Unable to Open	
PE	Polyethylene	UTS	Unable to Survey	
PP	Power Pole	UTT	Unable to Trace	
RC	Reinforced Concrete	CICL	Cast Iron Cement Lined	
RL	Reduced Level	CONC	Concrete	
SS	Stainless Steel	DICL	Ductile Iron Cement Lined	
SV	Stop Valve	FIBG	Fibreglass	
VC	Vitrified Clay	HDPE	High Density Polyethylene	
VP	Vent Pipe	MSCL	Mild Steel Cement Lined	
VS	Vent Shaft	PVC-M	Polyvinyl Chloride Modified	
WI	Wrought Iron	PVC-U	Polyvinyl Chloride Unplasticised	
WM	Water Meter	UGOH	Underground to Overhead Service	

UTILITY AND SURVEY ABBREVIATIONS

GEOSCOPE HAVE MARKED UTILITIES WITHIN AN AREA SPECIFIED BY THE CLIENT. UTILITIES HAVE BEEN REFERENCED TO THE RELATIVE UTILITY OWNER DIAGRAMS, HOWEVER, ALL UTILITIES MAY NOT HAVE BEEN SHOWN, UTILITY LINES WERE INTERPOLATED BETWEEN POINTS THAT WERE GATHERED ON SITE BY UTILITY DETECTION METHODS AND MARKED BASED ON THE AUSTRALIAN STANDARD OF UTILITY CLASSIFICATION. UTILITY DESCRIPTIONS WERE LABELLED FROM MEASURED VISIBLE SERVICES ORIGINATING FROM CLASS (OL-A) POINTS AND/ OR FROM DIAGRAMMATIC RECORDS.

(OL-A) PIPE AND CONDUIT DIAMETERS INDICATED HAVE BEEN MEASURED AS ACCURATELY AS POSSIBLE FROM THE TOP OF AN OPEN MANHOLE, SOME PIPE WORK MAY HAVE SUGHT VARIANCE IN DIAMETER DUE TO THE ABILITY TO MEASURE UNDER PIT LIDS OR EROSION ANDIOR FORMED OR SHAPED BELLMOUTHS LARGER THAN THE ACTUAL INSIDE DIAMETER FURTHER INVESIGATION MAYBE NECESSARY.

ONLY MANHOLE CONFIRMATION AND POTHOLED OR TRENCHED SERVICES AREAS ARE CLASS (QL-A), ALL OTHER AREAS ARE INTERPOLATED BETWEEN CLASS (QL-B) POINTS USING A VARIETY OF LOCATING METHODS INCLUDING EM AND GPR.

ELECTRONIC DETECTION MUST NOT BE SOLELY USED TO DETERMINE LOCATION FOR CONSTRUCTION PURPOSES. THE ELECTRONIC (INDICATIVE) SUBSURFACE MEASUREMENTS MUST BE PROVEN BY PHYSICALLY SIGHTING THE ASSET. ELECTROMAGNETIC LOCATING WILL DETECT ALMOST ALL BURIED CONDUCTORS; BUT THERE ARE SOME OBJECTS THAT DO NOT RADIATE ANY DETECTABLE SIGNAL.

EXPOSING UNDERGROUND STRUCTURES BY POTHOLING USING HAND-HELD TOOLS OR NON-DESTRUCTIVE EXCAVATION METHODS TO DETERMINE THE PRECISE LOCATION AND EXTENT OF STRUCTURES BEFORE ANY MECHANICAL MEANS OF EXCAVATION IS RECOMMENDED.

SEWER LINES ARE SHOWN AS CLASS (QL-C) AND (QL-D) INFORMATION ONLY DRAWN FROM MANHOLE AND PIT INVESTIGATIONS USING FLEXHOD AND DRAIN DYE METHODS. FURTHER INVESTIGATION WILL BE NECESSARY.

THIS PLAN IS FOR DESIGN PURPOSES ONLY. IT DOES NOT REPLACE THE PLANS PROVIDED BY THE UTILITY ASSET OWNERS IN THE DESIGNATED WORK AREA THROUGH THE BEFORE YOU DIG AUSTRALIA (BYDA) SERVICE. CONTRACTORS ARE REMINDED OF THEIR OWN "DUTY OF CARE" AND SHOULD CONDUCT THEIR OWN "BEFORE YOU DIG AUSTRALIA (BYDA)" PRIOR TO EXCAVATION OR CONSTRUCTION.

THESE PLANS DO NOT GIVE APPROVAL TO DIG. PERMITS AND APPROVALS MUST BE OBTAINED FROM THE RELEVANT AUTHORITIES. THIS PLAN MUST BE PRINTED IN COLOUR FAILURE TO DO SO WILL INVALIDATE THE INFORMATION SHOWN ON THIS PLAN.

CLASS QL-B

SURVEY SYMBOLS LEGEND					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION		
0	Above Ground Joining Post	0	Unidentified Pole/ Power Pole		
a	Std 1.1m by 1.1m Main Pit	ණි	Speed Camera		
•	Telephone Pole	*	Seismic Test Shot		
Ø	Telephone Single Concrete Pit	77	Unidentified Service		
3	Telephone Twin Concrete Pit	۵	Underground Tank		
Ħ	Mobile Phone Transmitter	0	AP/DH/GI/Pipe or RMCB		
	Optical Fibre Junction Box/ Pit	Δ	Bolt/ Dumpy/ Nail/ Spike		
₽oF	Optical Fibre Cable Marker	0	Peg/BoundaryPeg		
5	Telephone Triple Concrete Pit	•	RTA Control Mark/PM SSM		
Basic Control	Telephone Box Point	A	Miscellaneous Survey Mark		
±π.	Telephone Cable Marker	1	Broad Arrow		
0	Telephone Distribution Pillar	SS	Default MX Survey Mark		
#	Gas Manhole Cover	A	Trig Station		
Дн	High Pressure Gas Pipeline Marker	•	Drainage Junction Manhole		
#	Gas Meter	EW ^{123,45}	End of Wingwall		
- Bop	Gas Pipeline Marker	H ²³⁴⁵	Flood Height		
•	Gas Regulator Box	•	Gully Pit at Gutter Line		
A	Gas Test Point	HW ^{23,45}	Bottom of Headwall		
•	Gas Vent Pipe	HW ^{23,45}	Top of Headwall		
E	Distribution Fuse Point	~BZ	Invert - 225 mm Diameter		
E	Electricity Cable Junction Box/Manhole	~ THE	Invert - 1800 mm Diameter		
2	Transformer Cabinet Centre	1, ^{123,45}	Inlet to Sump		
0	Underground Power Service Pillar	N ^{23,45}	Invert of Pipe		
×	High Tension Pylon	0	Top of Concrete Junction Box/ Petrol Pump		
0	Garden Light	DE ^{223,45}	Obvert of Pipe		
*	Pole - Light	50	Invert of Subsoil Drain Outlet		
ø	Pole - Power and Light	4	Subsoil Drain Flush Point		
ď	Pole - Power and Transformer	₩ ^{123,45}	Water Level Point		
۵	Stay Anchor Pole	Δ	Recycled Water Air Valve		
ø	Stay Pole	ш	Recycled Water Earth Terminal		
-	Light with Outreach	П	Recycled Water Hydrant		
0	Sewer Lamphole	₽	Recycled Water Main Marker		
•	Sewer Manhole	M	Recycled Water Meter		
ø	Sewer Vent Pipe	A	Recycled Water Stop Valve		
0	Bore Hole	0	Recycled Water Tap		
•	MX Break String	Δ	Water Air Valve		
	Red Light Camera		Water Earth Terminal		
Ē	Camera - Flash Unit	-	Water Fire Hydrant		
(6)	Gatic Cover Lid		Water Hydrant		
1 1P1	Geotech Test Point	₽wM	Water Main Marker		
E	Pot Hole - Null Level	М	Water Meter		
m ³⁸⁴	Pot Hole - With RL	_	Water Stop Valve		
Дон	High Pressure Oil Pipeline Marker	•	Water Tap		

№.80A

DENOTES THE DEPTH OF THE UNDERGROUND SERVICE DETERMINED USING LOCATING METHODS PERFORMED. QUALITY LEVELS INDICATED BESIDE THE DEPTH. IN THE EXAMPLE, THE DEPTH IS 800mm AND THE QUALITY LEVEL IS A.



EXAMPLE OF ELECTRICAL CABLES LOCATED BY QUALITY LEVEL QL-B WITH THE DEPTH INDICATING BETWEEN 500mm to 600mm BELOW THE SURFACE VIA ELECTROMAGNETIC LOCATING TRACE



QUALITY ENVIRONMENT OH&S

EXAMPLE OF STORM WATER PIPE PLOTTED BY QUALITY LEVEL QL-D WITH NO DEPTH INDICATION AS THE PIPE WAS NOT TRACED AND/OR UNABLE TO BE TRACED BETWEEN ACCESSIBLE STORM WATER PITS









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GEOSCOPE ADVISE TO POTHOLE THESE SERVICES TO CONFIRM DEPTHS AND LOCATION FINDINGS PRIOR TO ANY EXCAVATION WORKS

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DRAWING TITLE UTILITY INVESTIGATION SITELOCATION 32 BOWER STREET, MANLY

DRAWING NUMBER 20230711SUI - 32 BOWER STREET, MANLY HEIGHT DATUM

COORDINATE SYSTEM 04 OF 04 **A3**