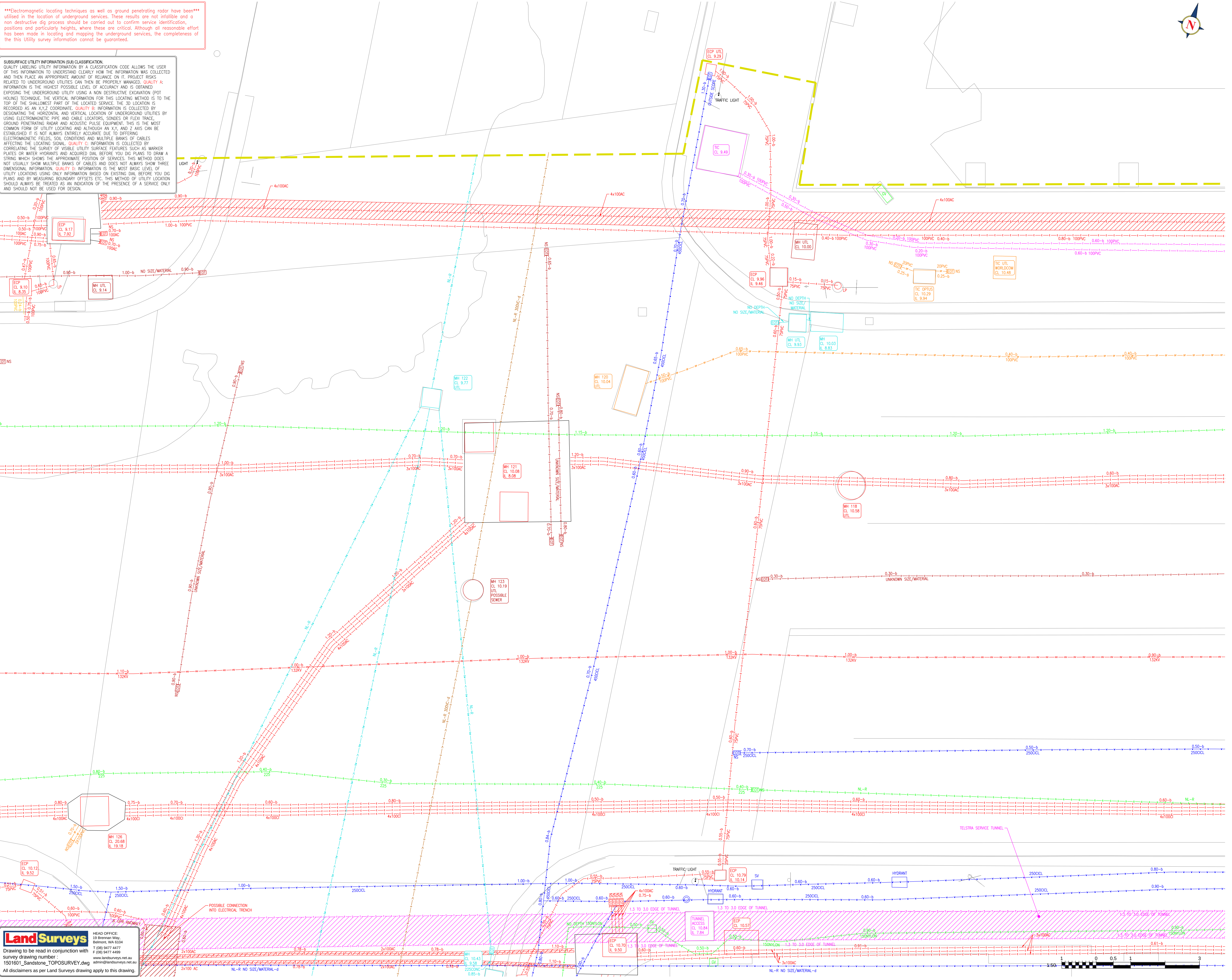


Electromagnetic locating techniques as well as ground penetrating radar have been
utilised in the location of underground services. These results are not infallible and a
non destructive dig process should be carried out to confirm service identification,
positions and particularly heights, where these are critical. Although all reasonable effort
has been made in locating and mapping the underground services, the completeness of
the this Utility survey information cannot be guaranteed.

SUBSURFACE UTILITY INFORMATION (SUI) CLASSIFICATION
QUALITY LABELING UTILITY INFORMATION BY A CLASSIFICATION CODE ALLOWS THE USER
OF THIS INFORMATION TO UNDERSTAND CLEARLY HOW THE INFORMATION WAS COLLECTED
AND THEN PLACE AN APPROPRIATE AMOUNT OF RELIANCE ON IT. PROJECT RISKS
RELATED TO UNDERGROUND UTILITIES CAN THEN BE PROPERLY MANAGED. QUALITY A:
INFORMATION IS THE HIGHEST POSSIBLE LEVEL OF ACCURACY AND IS OBTAINED
EXPOSING THE UNDERGROUND UTILITY USING A NON DESTRUCTIVE EXCAVATION (POT
HOLING) TECHNIQUE. THE VERTICAL INFORMATION FOR THIS LOCATING METHOD IS TO THE
TOP OF THE SHALLOWEST PART OF THE LOCATED SERVICE. THE 3D LOCATION IS
RECORDED AS AN X,Y,Z COORDINATE. QUALITY B: INFORMATION IS COLLECTED BY
DESIGNATING THE HORIZONTAL AND VERTICAL LOCATION OF UNDERGROUND UTILITIES BY
USING ELECTROMAGNETIC PIPE AND CABLE LOCATORS, SONDES OR FLEX TRACE,
GROUND PENETRATING RADAR AND ACOUSTIC PULSE EQUIPMENT. THIS IS THE MOST
COMMON FORM OF UTILITY LOCATING AND ALTHOUGH AN X,Y, AND Z AXIS CAN BE
ESTABLISHED IT IS NOT ALWAYS ENTIRELY ACCURATE DUE TO DIFFERING
ELECTROMAGNETIC FIELDS, SOIL CONDITIONS AND MULTIPLE BANKS OF CABLES
AFFECTING THE LOCATING SIGNAL. QUALITY C: INFORMATION IS COLLECTED BY
CORRELATING THE SURVEY OF VISIBLE UTILITY SURFACE FEATURES SUCH AS MARKER
PLATES OR WATER HYDRANTS AND ACQUIRED DIA. BEFORE YOU DIG PLANS TO DRAW A
STRING WHICH SHOWS THE APPROXIMATE POSITION OF SERVICES. THIS METHOD DOES
NOT USUALLY SHOW MULTIPLE BANKS OF CABLES AND DOES NOT ALWAYS SHOW THREE
DIMENSIONAL INFORMATION. QUALITY D: INFORMATION IS THE MOST BASIC LEVEL OF
UTILITY LOCATIONS USING ONLY INFORMATION BASED ON EXISTING DIA. BEFORE YOU DIG
PLANS AND BY MEASURING BOUNDARY OFFSETS ETC. THIS METHOD OF UTILITY LOCATION
SHOULD ALWAYS BE TREATED AS AN INDICATION OF THE PRESENCE OF A SERVICE ONLY
AND SHOULD NOT BE USED FOR DESIGN.



Key for underground services

Air line	--->---
Communications cable	--->---
Comms optic fibre	--->---
Electric cable	--->---
Electric earth cable	--->---
Electric HV cable	--->---
Fuel line	--->---
Gas pipe	--->---
Irrigation line	--->---
Chilled water pipe	--->---
Heated water pipe	--->---
Oil pipe	--->---
Sewer/Waste Pipe	--->---
Sewer Pressure Main	--->---
Sewer/Waste vent pipe	--->---
Stormwater/Drainage pipe	--->---
Telstra cable	--->---
Traffic cable	--->---
Unidentified	--->---
Water pipe	--->---
Multi User Duct	--->---
Overhead service or	--->---
Survey Boundary	--->---
Cable/Pipe banding	--->---
End of trace	--->---
End of trench scar	--->---
Characteristic change	--->---
Spot Level	--->---

Where chamber extents are significantly greater than the cover size, their approximate
extents are shown thus:



Inaccessible areas, shown thus:



Abbreviations for underground services

AC	Asbestos cement	NL-A	Not located - route assumed
ALK	Alkaline	NL-I	Not located - route plotted
AR	Assumed Route	NL-R	Not located - route plotted
BD	Back drop		from on-site information
BH	Bore hole		from records
Br	Brick	NL-T	Not located - plotted from
CA	Compressed air		visible trench scar detail
CATV	Cable tv	NRV	Non return valve
CCTV	Closed circuit television	NS	No signal
CH	Coal hole	o/h	Overhead
CI	Cast iron	PE	Polyethylene
CL	Cover level	pe	Pot ended
CM	Cable marker	PR	Pipe riser
CNC	Concrete	PRV	Pressure reducing valve
C/PIT	Cotton pit	PVC	Polyvinyl chloride
CU	Copper	RE	Rodding eye
CR	Cable riser	RG	Road gully
DB	Direct buried	RS	Road sign
DI	Ductile iron	RWP	Rain water pipe
DTB	Depth to base	S/A	Sockaway
ECP	Electric cable pit	SC	Stop cock
EHV	Extra high voltage	SE	Side entry
EJB	Electric joint box	SI	Spun iron
EP	Electricity pole	SL	Soil level
ER	Earthing rod	SP	Soil pipe
ES	Earthing strap	ST	Steel
FI	Fire hydrant	SV	Stop valve
FL	Floor level	SVP	Soil vent pipe
Fit	Floodlight	SW	Sink waste
F/O	Fibre optic	TCB	Telephone call box
FP	Feeder pillar	TIC	Telecom inspection
G	Gully		chamber
GM	Gas meter	T/I	Trapped inlet
GV	Gas valve	T/O	Trapped outlet
HV	High voltage	TP	Telephone pole
IC	Inspection chamber	UST	Underground storage tank
IL	Invert level	UTL	Unable to lift
Kv	Kilo volts	UTF	Unable to find
LD	Land drain	UTGA	Unable to gain access
LH	Lamp hole	UHR	Unable to rod hole
LP	Lamp post	UTS	Unable to survey
LPG	Liquid petroleum gas	UTT	Unable to trace
LV	Low voltage	VC	Verified clay
MDPE	Medium density polyethylene	VP	Vent pipe
MH	Manhole	WL	Water level
Mkr	Marker post	WM	Water meter
NFI	No further information	WO	Wash out

SUI Class Definition, Quality Level Locates

QUALITY A shown after pipe size or depth in small case -> 100-b -> 0.60-b
QUALITY B shown after pipe size or depth in small case -> 100-b -> 0.60-b
QUALITY C shown after pipe size or depth in small case -> 100-b -> 0.60-b
QUALITY D shown after pipe size or depth in small case -> 100-b -> 0.60-b

Notes for underground services

- I. Where no cover level is available, depths to pipe inverts are shown thus: @ 0.50
- II. Depths of services at inspection chambers, where possible, are shown thus: @ 0.50
- III. Depths obtained electronically are generally to the centre of the service and are shown thus: @ 0.80
- IV. Number of duct ways, where known, shown thus: 2W
- V. Pipe sizes, which cannot be obtained by visual survey, are taken from record drawings/marker plates where available.
- VI. Cable routes shown as a single line may actually consist of many cables.
- VII. Electric cable routes shown are assumed to be LV unless otherwise annotated
- VIII. Information taken from records is suffixed thus: (R)
- X. Drainage pipe sizes & invert levels have been determined without man entry into chambers. Every effort has been made to correctly obtain this information, however, accuracy is dependent on visibility from the surface.
- X. To assist with clarity of presentation, services and drains have been extended within buildings.

REV	REVISION DESCRIPTION	DATE	SIG	CHK

SHEET 5 OF 21

LandSurveys
Drawing to be read in conjunction with
survey drawing number
1501601_Sandstone_TOPOSURVEY.dwg
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RIDLEY ARCHITECTS

SANDSTONE BUILDINGS
23-39 BRIDGE ST, SYDNEY, NSW

Surveyed	SH/CB/AB	Date	15/04/16
Drawn	AMM	Scale at A1	1:50
Checked	SHH	DBYD Ref	VARIOUS

Drawing No.	NSW16-02-01	Rev.	0
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