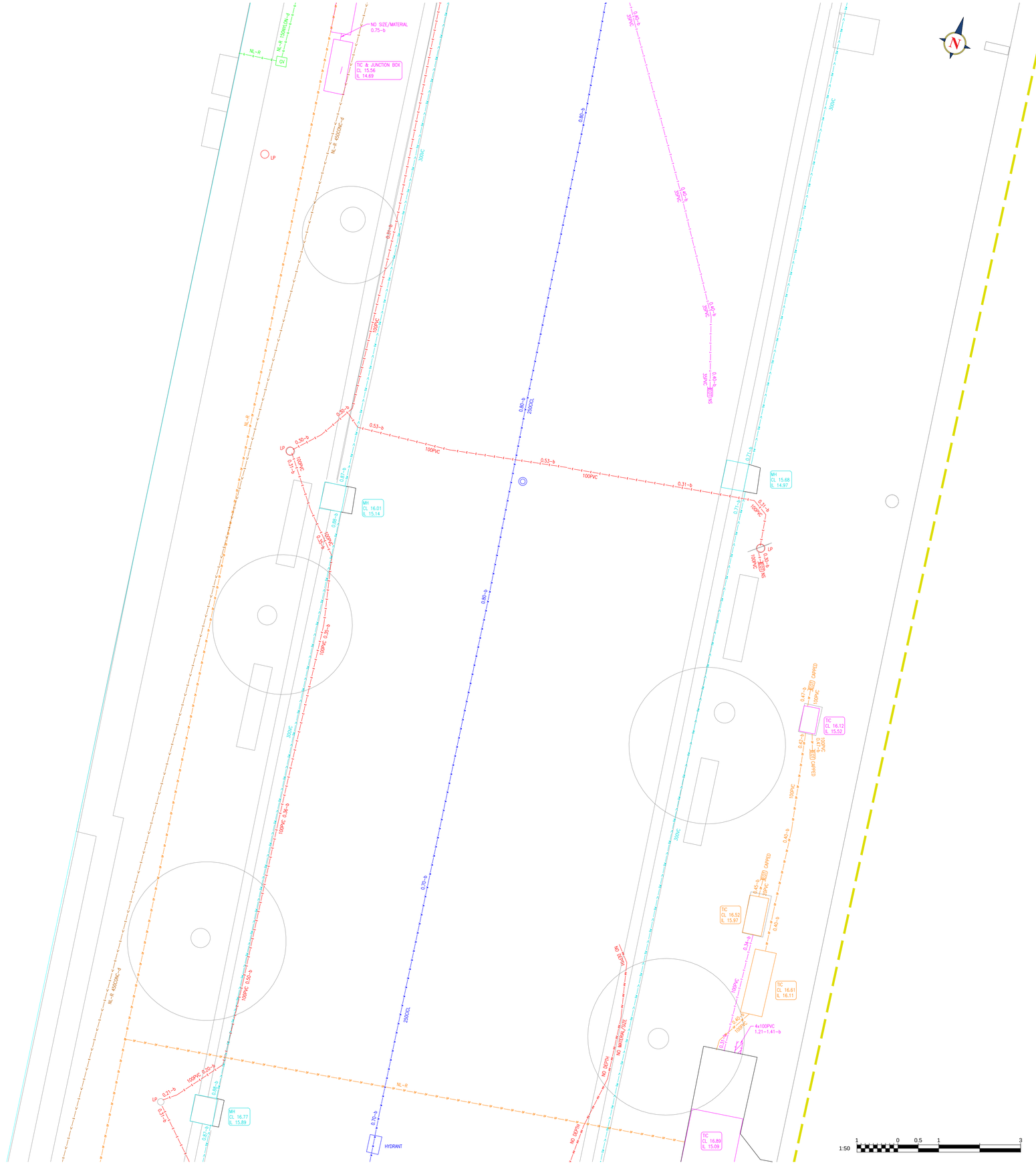
Electromagnetic locating techniques as well as ground penetrating radar have been utilised in the location of underground services. These results are not infallible and a non destructive dig process should be carried out to confirm service identification, positions and particularly heights, where these 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 FLEXI 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 DIAL 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 DIAL 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 earth cable
Electric 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
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	Alkathene	NL–I	Not located – route plotted from on–site information
AR	Assumed Route		
BD	Back drop	NL–R	Not located – route plotted from records
BH	Bore hole		
Br	Brick	NL–T	Not located – plotted from visible trench scar detail
CA	Compressed air		
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
CONC	Concrete	PRV	Pressure reducing valve
C/PIT	Catch 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	Sookaway
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	Solfit level
ER	Earthing rod	SP	Soil pipe
ES	Earthing strap	ST	Steel
FH	Fire hydrant	SV	Stop valve
FL	Floor level	SVP	Soil vent pipe
Flt	Floodlight	SW	Sink waste
F/O	Fibre optic	TCB	Telephone call box
FP	Feeder pillar	TIC	Telecom inspection chamber
G	Gully		
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	UTR	Unable to rod
LP	Lamp post	UTS	Unable to survey
LPG	Liquid petroleum gas	UTT	Unable to trace
LV	Low voltage	VC	Vitrified 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 –a; 100–a 0.65–a
QUALITY B shown after pipe size or depth in small case –b; 100–b 0.65–b
QUALITY C shown after pipe size or depth in small case –c; 100–c 0.65–c
QUALITY D shown after pipe size or depth in small case –d; 100–c 0.65–d

Notes for underground services

I. Where no cover level is available, depths to pipe inverts are shown thus; dl 0.954
II. Depths of services at inspection chambers, where possible, are shown thus; dl 0.954
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)
IX. 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 13 OF 21

Utility MAPPING
Phone: +61 3 9566 7292
Address: 343 Plummer Street
Port Melbourne
Victoria
3207
Mail: info@utilitymapping.com.au
Web: www.utilitymapping.com.au

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

LandSurveys
HEAD OFFICE:
19 Brennan Way,
Belmont, WA 6104
T (08) 9477 4477
F (08) 9477 4499
www.landsurveys.net.au
admin@landsurveys.net.au

Drawing to be read in conjunction with survey drawing number : 1501601_Sandstone_TOPOSURVEY.dwg

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NSW16-02-01.DWG