RobertBirdGroup

Report Addressing Director General's Requirements Section 11 and 15

Mixed Retail and Residential Development
78-90 Old Canterbury Road, Lewisham, NSW, 2049

Issue: C

Prepared For: Lewisham Estates Pty Ltd.

Project No.: 09675W

26 October 2010

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Report Amendment Register

Issue	Section & Page No.	Issue/Amendment	Author/ Initials		Project Engineer	Reviewer/ Initials		Date
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1.0 Brief

Further to the request of Joe Abboud and in accordance with our fee proposal, Robert Bird Group presents this report addressing the requirements of Section 11 (Rail Impacts) and Section 15 (Flooding and Drainage) of the Director General's requirements for Environmental Assessment under Part 3A of the Environment Planning Assessment Act. The Concept Plan is for a Major Project comprising a mixed use development for residential, commercial and retail land uses with associated car parking facilities and public domain improvements. The Concept Plan is for buildings ranging in height from 4 to 9 storeys with a maximum overall FSR of 3.5:1. Public domain improvements include the creation of new streets, open space areas and pedestrian access points. The subject site is located at 78-90 Old Canterbury Rd, Lewisham, which is legally described as Lot 11 in DP 774322 and Lots 6-8 in DP 977044. The site is an irregular shaped allotment that is currently occupied by an assortment of industrial buildings. As described in Figure 1, the site is bounded by Longport Street to the north, Old Canterbury Road to the east, Hudson Street to the south and a green corridor (redundant freight railway corridor) to the west. A few outbuildings are located within the green corridor to the west and attached to the western boundary alignment of the subject site. The north eastern corner of the site is bounded by William Street and Brown Street. The site has a total area of 13,115sqm.

A meeting was arranged for Brendan Drake from our Newcastle office to meet with Rail Corp to discuss their requirements for the development. In attendance at the meeting were Chris Bailey, Alice Pettini and Jim Tsirimiagos from Rail Corp.

We are in receipt of the following documentation

- Master Planning Report October 2010
- Survey, StrataSurv drawing number 159301 Rev E 20/10/2003 (Appendix A)
- Service Location Plans (Appendix B)
    - Telstra assets location plan
    - Sydney Water assets location plan
    - Marrickville Council drainage plan
    - Jemena assets location plan
    - Energy Australia assets location plan
- Marrickville Council flood affected properties map, 2006
- Rail Corp Documentation (Appendix C)
    - A guide to working in and around the rail corridor, November 2005
    - ESC 380 External Developments, Version 2.1, May 2009
    - ESC 510 Boundary Fences, September 2005
    - Developments and Rail Crossings Application Form for External Third Parties Information Package, Public Version, November 2008
    - Brief for review of geotechnical & structural design for developments adjacent to or above rail corridor for external third party works performed under the NSW State Environment Planning Policy (Infrastructure) 2007, July 2009
- Preliminary geotechnical assessment, environmental investigations report No. E1195.1GA, 10 June 2010

2.0 Limitations of the Report

This report is based solely on provided documentation and "Dial-Before-You-Dig" search results. No detailed survey has been undertaken to locate exact location of boundary and/or services within proximity of site.

3.0 Description

The proposed development is located at Lewisham and the site is bounded by the existing Rozelle freight rail corridor to the West and Old Canterbury Road to the East. It is bounded by Hudson Street to the South and Longport Street to the North. Located within a portion of the site is Brown Street and William Street. It is understood that the existing Rozelle freight line is currently disused however there are possible future plans for this to converted to light rail. The main western rail line lies on the Northern side of Longport Street.

Existing structures on the site consist of the following

- 1 to 3 storey industrial buildings
- Concrete carparks
- Structures within rail corridor
    - Gas compound
    - Portion of carpark
    - Canopy adjacent to existing industrial building
    - Existing concreted area

It is understood that only portions of site bounded by Brown Street, William Street, Longport Street and Old Canterbury Road are to be developed.

4.0 Location of existing services

Services located within the site from "Dial-before-you-dig" search are as follows:

- Energy Australia
    - Located primarily on Brown and William Street
- Sydney Water
    - Water is located on Brown and William Street.
    - Stormwater and Sewer lines are located within middle to Northern end of site. It appears that these services will likely be required to be relocated to allow for either excavation of basement or location of buildings.

    Options for relocation of services (refer Appendix D) could be as follows:

    - Relocate sewer and stormwater along William and Brown Street and reconnect at boundary where services extend under rail corridor.

        This option has the following issues:

        - Existing services located on Old Canterbury Road, William Street, Brown Street and Longport Street and will require coordination
        - Further to discussions with Rail Corp; where services are located near rail corridor boundary the easement cannot encroach into rail corridor.
        - Portions of structure/development within zone of influence of services will require piling.

    - Relocate sewer and stormwater along Hudson Street and along rail corridor boundary within site. This option has similar issues as the above option.
- Marrickville Council Stormwater
    - Stormwater connects to Sydney Water stormwater at Brown Street and would require relocation as per relocation of Sydney water services.
- Telstra
    - Located primarily on Brown and William Street
- Jemena Gas
    - Located primarily on Brown and William Street

5.0 Rail Impact Requirements

5.1 Director General Requirements

Director General's requirements include the following:

- *Provide cross sectional drawings showing ground surface, rail tracks, sub soil surface profile, proposed basement excavation and structural design adjacent to the rail corridor.*

  Refer Appendix E for indicative Cross sections. Given a setback of 10 m from rail corridor boundary to building envelope it is expected that excavation depths will generally be minimal and footings for building can be placed as shown in Appendix E Sections "B" and "C" assuming a 1:2 zone of influence. Where this is not achievable the use of a pile retaining wall system or temporary sheet piling may be required (refer Appendix E Section "A"). It is noted in the preliminary geotechnical report (Appendix G) that excavations should be adopted that limit ground vibrations at the adjoining properties including railway land where building are sensitive to vibrations.

- *Provide a survey locating the development with respect to the rail boundary and infrastructure.*

  Note that on the current survey (StrataSurv Drawing No. 159301 Rev E) the following is noted; "relationship of improvements and detail to boundaries is diagrammatic and if critical should be confirmed by a further boundary survey". Discussions with StrataSurv indicated that boundary locations were most probably accurate to within 50 mm. It is also noted that no services search was undertaken to locate services for current existing survey. It could therefore be considered prudent for further surveying to be undertaken.

- *Balconies and windows within 20 m of the rail corridor must be designed to prevent objects being thrown onto Rail Corp facilities.*

  Detailed design of balcony screens and window schedules to be included in detailed architectural documentation.

- *All landscaping and fencing within 20 m of rail corridor must meet Rail Corp's requirements.*

  The western boundary of the proposed development is a common boundary with Rail Corp land. It is understood, from discussions with Rail Corp, that fencing will be required to be 0.5 m to 1 m offset from boundary. Fences are to be in accordance with Rail Corp Standard ESC 510 and applicable Australian Standards. Details of fence are required to be submitted to Rail Corp for their approval.

- *The portion of the development along the rail corridor must be designed and constructed to meet the redundancy requirements or the minimum collision loads specified in AS 5100.*

  Given that no structure is within 20 m from the centre of the existing rail line and ground levels generally grade upwards towards boundary it is expected that design for collision loads will not be required as per requirements of AS 5100.

- *Stormwater drainage from the site is not allowed to be discharged into the rail corridor.*

  Surface drainage along the rail corridor boundary will drain away from boundary to pits to be incorporated into site drainage system.

5.2 Rail Corp Requirements

Further to a meeting with Rail Corp the following documents were provided as being applicable to the current project:

- A guide to working in and around the rail corridor, November 2005
- ESC 380 External Developments, Version 2.1, May 2009
- ESC 510 Boundary Fences, September 2005
- Developments and Rail Crossings Application Form for External Third Parties Information Package, Public Version November 2008
- Brief for review of geotechnical & structural design for developments adjacent to or above rail corridor for external third party works performed under the NSW State Environment Planning Policy (Infrastructure) 2007, July 2009

These documents should be read in conjunction with this report and are attached in Appendix C.

Further to review of documentation provided by Rail Corp, and our subsequent meeting, the following issues have been raised in addition to the Director General's requirements for Environmental Assessment and subsequent Project Approval.

- Submission of Developments and Rail Crossings Application Form for External Parties.
- Application for access within rail corridor to remove existing structure. This may be required prior to Construction Certificate.
- Future maintenance of structure/development adjacent to rail corridor boundary. It was noted that part of this requirement is that fencing would be required to be 0.5 m to 1.0 m offset from boundary.
- Access to rail corridor via Hudson Street is to be maintained at all times including during construction.
- Developer is required to eliminate the potential impacts of stray currents and electrolysis on the proposed development.
- Rail Corp noted that existing surveys for rail corridor may be out of date and further survey may be required including survey of Rail Corp infrastructure.
- Additional to survey of track location a survey of Rail Corp infrastructure may be required.

From our discussions with Rail Corp it is understood that given the Project Application is under Part 3A of the Environment Planning Assessment Act then Rail Corp will submit conditions to be included as part of Minister for Planning's Project Approval conditions. Some of Rail Corps stipulated conditions will be as follows:

- Construction Methodology
- Demolition requirements within rail corridor

6.0 Flood and Drainage Requirements

6.1 Director General Requirements

Director General's requirements include the following:

- *Provide an assessment of any flood risk on site in consideration of any relevant provisions of the NSW Floodplain Development Manual (2005) including potential effects of climate change, sea level rise and an increase in rainfall intensity.*

  Marrickville Council's map of flood affected properties shows that the proposed development does not lie in a flood affected area (refer Appendix F). Further to discussion with Council, none of the formally adopted studies within the Cooks River area to date have accounted for potential effects of future increases in sea level or rainfall intensities. We understand that a new Cooks River flood study is soon to be adopted which does include these potential effects. Given the location of the development at approximately RL 10.0 it is considered that the site will not be in a flood affected area when these potential effects are considered.

- *The Environmental Assessment shall address drainage issues associated with the development/site including: stormwater, drainage infrastructure and incorporation of Water Sensitive Urban Design measures.*

  Where there is a 10 metre setback from the rail corridor boundary, the setback area could be used for bio retention swales; however, given the nature of the site a proprietary system may be more effective to achieve Water Sensitive Urban Design measures.

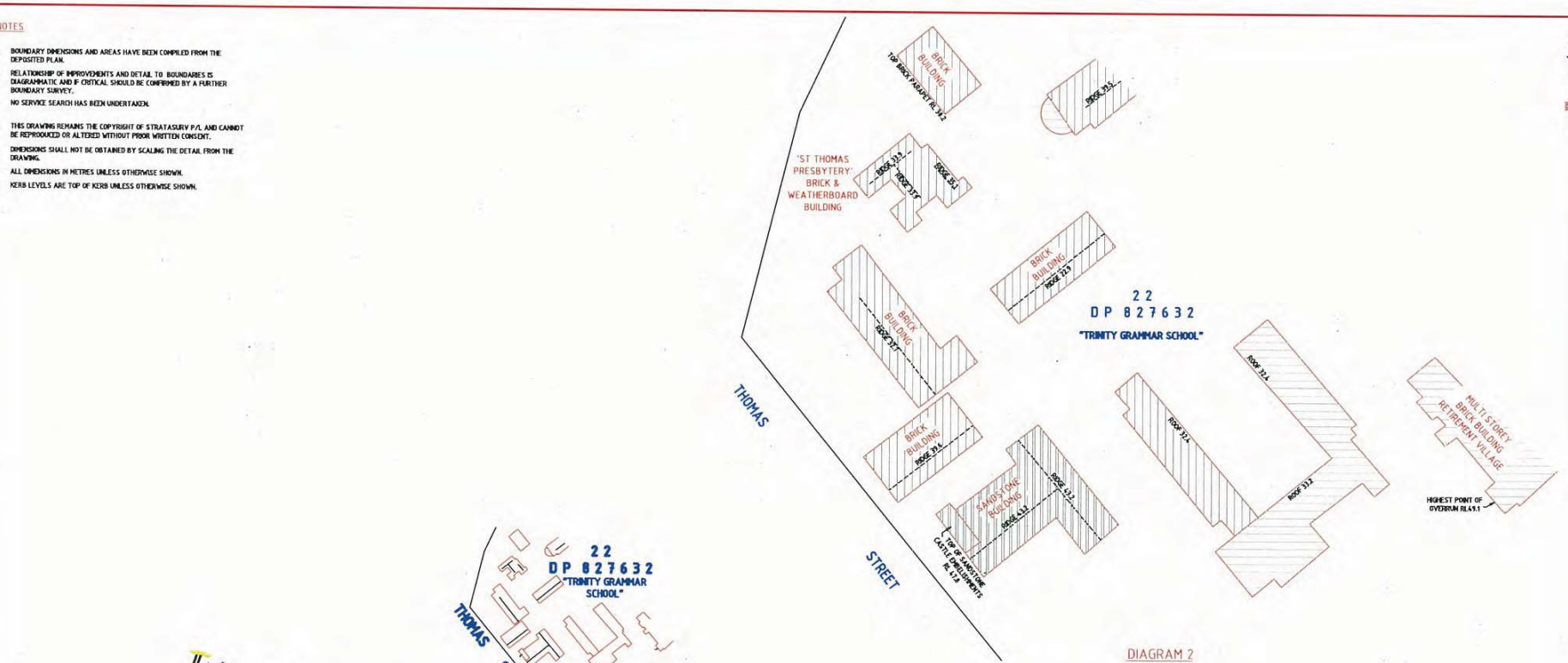
  On Site Detention for site is required to be in accordance with Marrickville Council's Stormwater and On Site Detention Code.

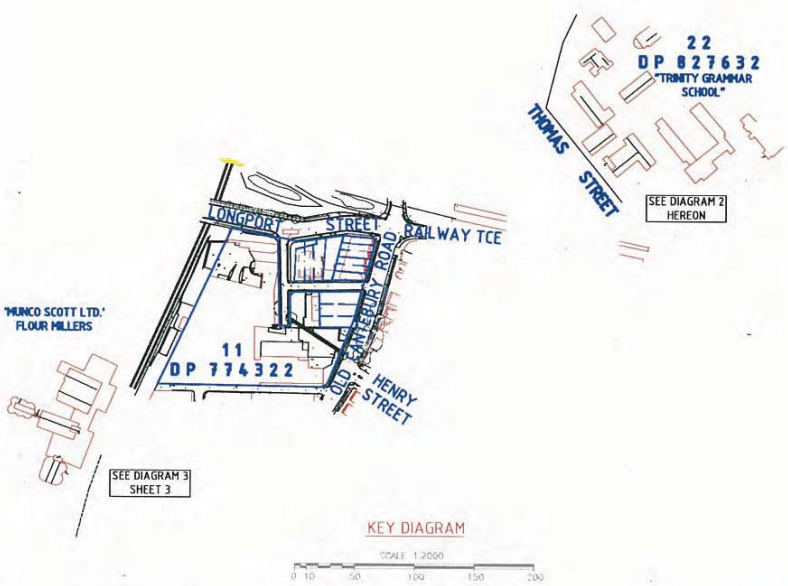
We trust the above has been of assistance. Should you require further advice or clarification of any of the above please do not hesitate contact us.

Appendix A
Existing Survey

NOTES

- BOUNDARY DIMENSIONS AND AREAS HAVE BEEN COMPILED FROM THE DEPOSITED PLAN.
- RELATIONSHIP OF IMPROVEMENTS AND DETAIL TO BOUNDARIES IS DIAGRAMMATIC AND IF CRITICAL SHOULD BE CONFIRMED BY A FURTHER BOUNDARY SURVEY.
- NO SERVICE SEARCH HAS BEEN UNDERTAKEN.
- THIS DRAWING REMAINS THE COPYRIGHT OF STRATASURV P/L AND CANNOT BE REPRODUCED OR ALTERED WITHOUT PRIOR WRITTEN CONSENT.
- DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE DETAIL FROM THE DRAWING.
- ALL DIMENSIONS IN METRES UNLESS OTHERWISE SHOWN.
- KERB LEVELS ARE TOP OF KERB UNLESS OTHERWISE SHOWN.





CLIENT DETAILS

DEMAIN DEVELOPERS

REV	DATE	REVISION DETAILS	SURV	DWN	CHK
H	18.05.10	DRAINAGE PIT LEVELS ADDED	JK	WW	PB
G	04.09.09	ADJOING ROOF DETAIL AND ELEVATIONS ADDED	JM	WW	PB

DATE OF SURVEY	AUG.'09
ORIGIN OF R.L'S	SSM 61797 RL.16.0
DATUM	AHD
CONTOUR INTERVAL	N/A
CAD REF FILE:	1593DT01h1.dwg

PROJECT:

78-90 OLD CANTERBURY ROAD
LEWISHAM

STRATASURV
REGISTERED SURVEYORS
DEVELOPMENT CONSTRUCTION STRATA
Sydney · Melbourne · Brisbane · Dural · Tweed Coast
TEL: 97151133 FAX: 97151144
EMAIL: surveyors@stratasurv.com.au

DRAWING TITLE

PLAN SHOWING DETAIL & LEVELS
ROOF RIDGE HEIGHTS

DRAWING NUMBER	SCALE	REVISION
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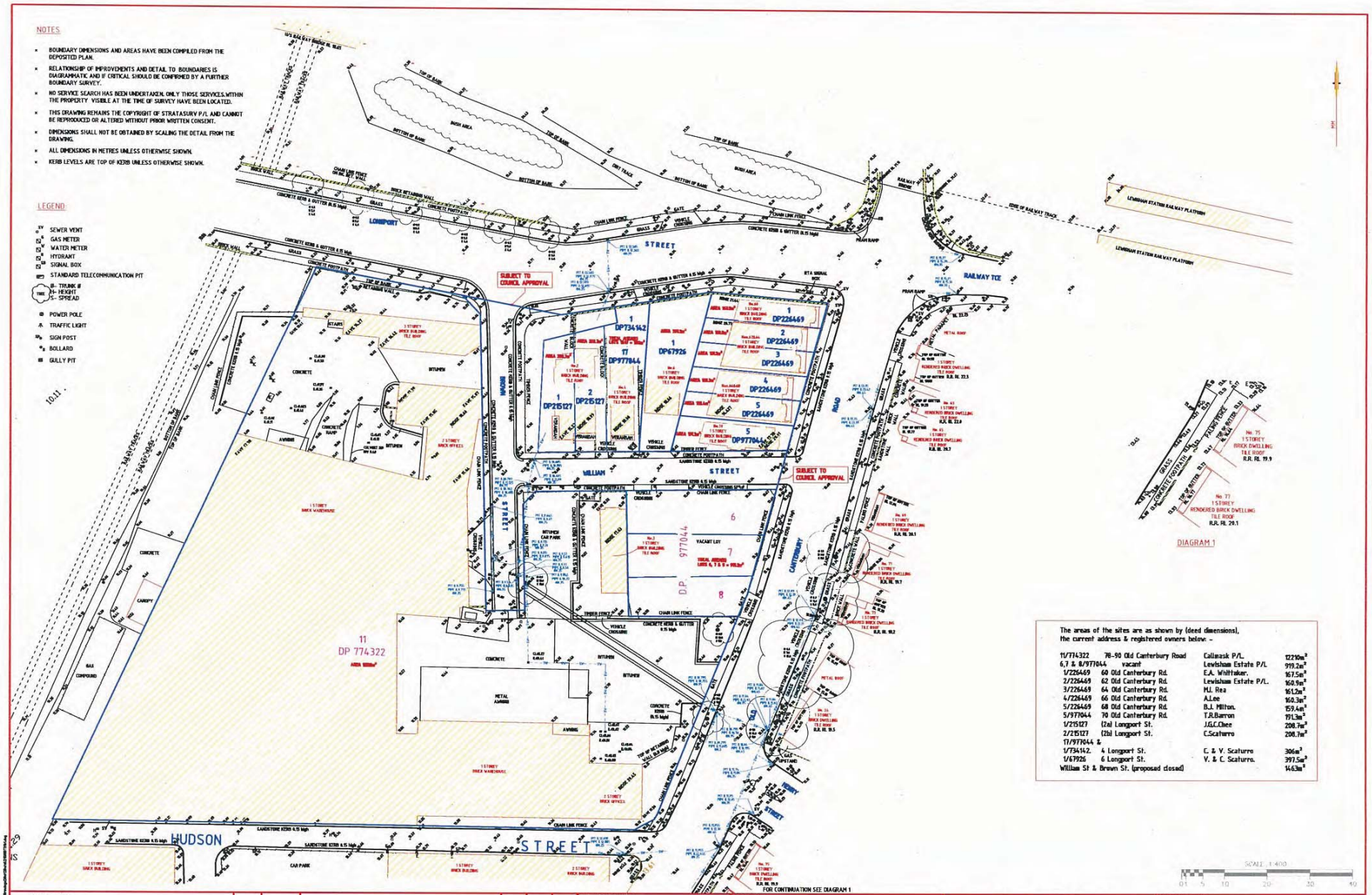

CLIENT DETAILS

DEMAIN DEVELOPERS

REV	DATE	REVISION DETAILS	SURV	DWN	CHK
H	16.03.10	DRAINAGE PIT LEVELS ADDED	JK	WW	PB
G	04.08.09	ADJOING ROOF DETAIL AND ELEVATIONS ADDED	JM	WW	PB

DATE OF SURVEY: AUG.'09
ORIGIN OF FILE: SSM 91797 RL=16.0
DATUM: AHD
CONTOUR INTERVAL: N/A
CAD REF FILE: 1593DT01.dwg

PROJECT:

78-90 OLD CANTERBURY ROAD
LEWISHAM

FOR CONTINUATION SEE DIAGRAM 1

STRATASURV
REGISTERED SURVEYORS
DEVELOPMENT CONSTRUCTION STRATA
Sydney · Melbourne · Brisbane · Dural · Tweed Coast
TEL: 97151133 FAX: 97151144
EMAIL: surveyors@stratasurv.com.au

DRAWING TITLE

PLAN SHOWING DETAIL & LEVELS
FOR LOTS 11DP 774322, 6-8 DP 977044

DRAWING NUMBER	SCALE	REVISION
1593DT01 SHEET 1 OF 3	1:400@A1	H

NOTES

- BOUNDARY DIMENSIONS AND AREAS HAVE BEEN COMPILED FROM THE DEPOSITED PLAN.
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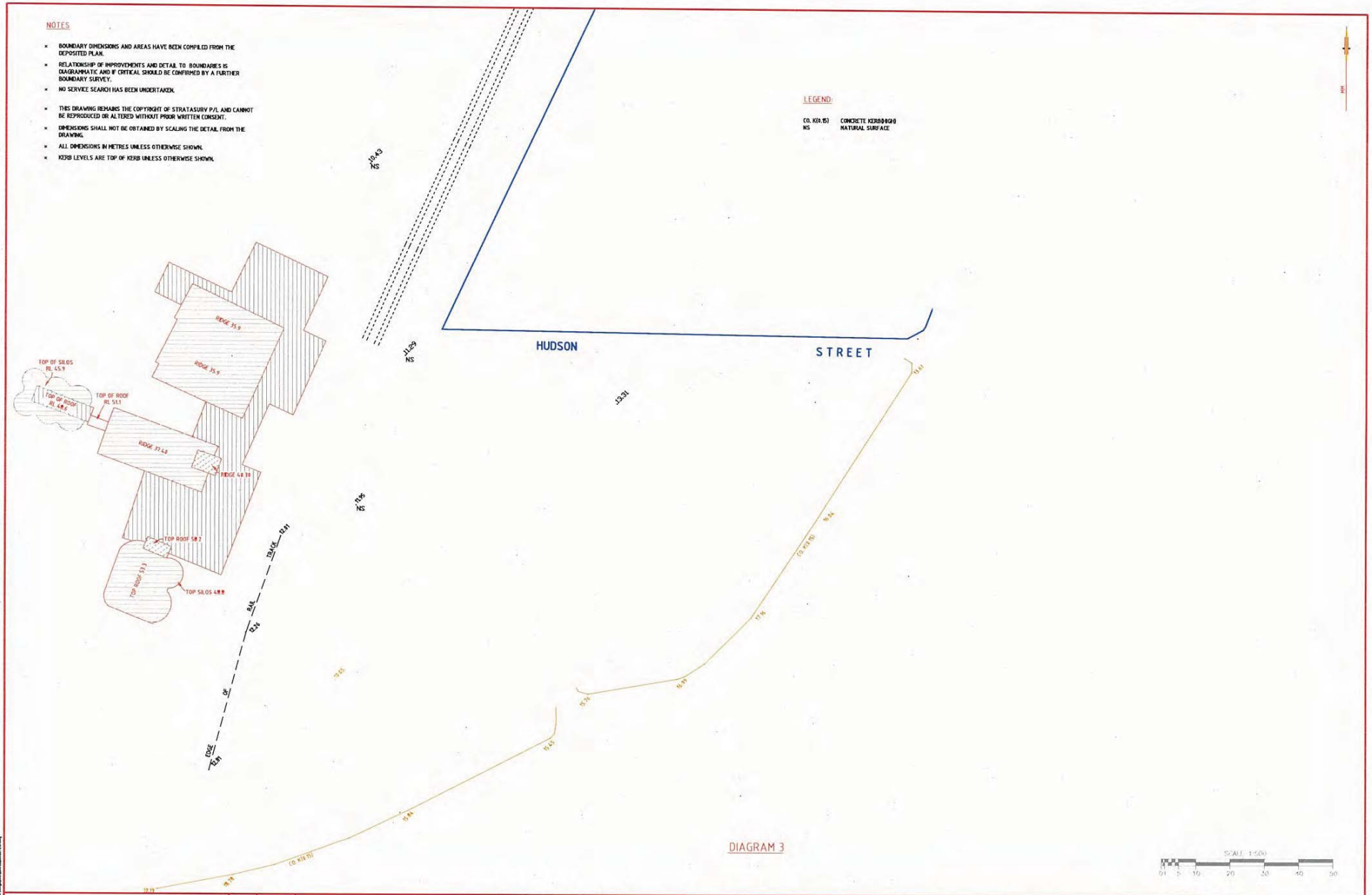
- KERB LEVELS ARE TOP OF KERB UNLESS OTHERWISE SHOWN.

LEGEND:

CO, K(0.15) CONCRETE KERB(HIGH)
NS NATURAL SURFACE



CLIENT DETAILS

DEMAIN DEVELOPERS

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H	18.08.10	DRAINAGE PIT LEVELS ADDED	JK	WW	PB
G	04.08.09	ADJOING ROOF DETAIL AND ELEVATIONS ADDED	JM	WW	PB

DATE OF SURVEY	AUG.'08
ORIGIN OF R.L'S	SSM 61797 R.L.=16.0
DATUM	AHD
CONTOUR INTERVAL	N/A
CAD REF FILE:	1593DT01h1.dwg

PROJECT:

78-90 OLD CANTERBURY ROAD
LEWISHAM

STRATA SURV
REGISTERED SURVEYORS
DEVELOPMENT CONSTRUCTION STRATA
Sydney · Melbourne · Brisbane · Dural · Tweed Coast
TEL: 97151133 FAX: 97151144
EMAIL: surveyors@stratasurv.com.au

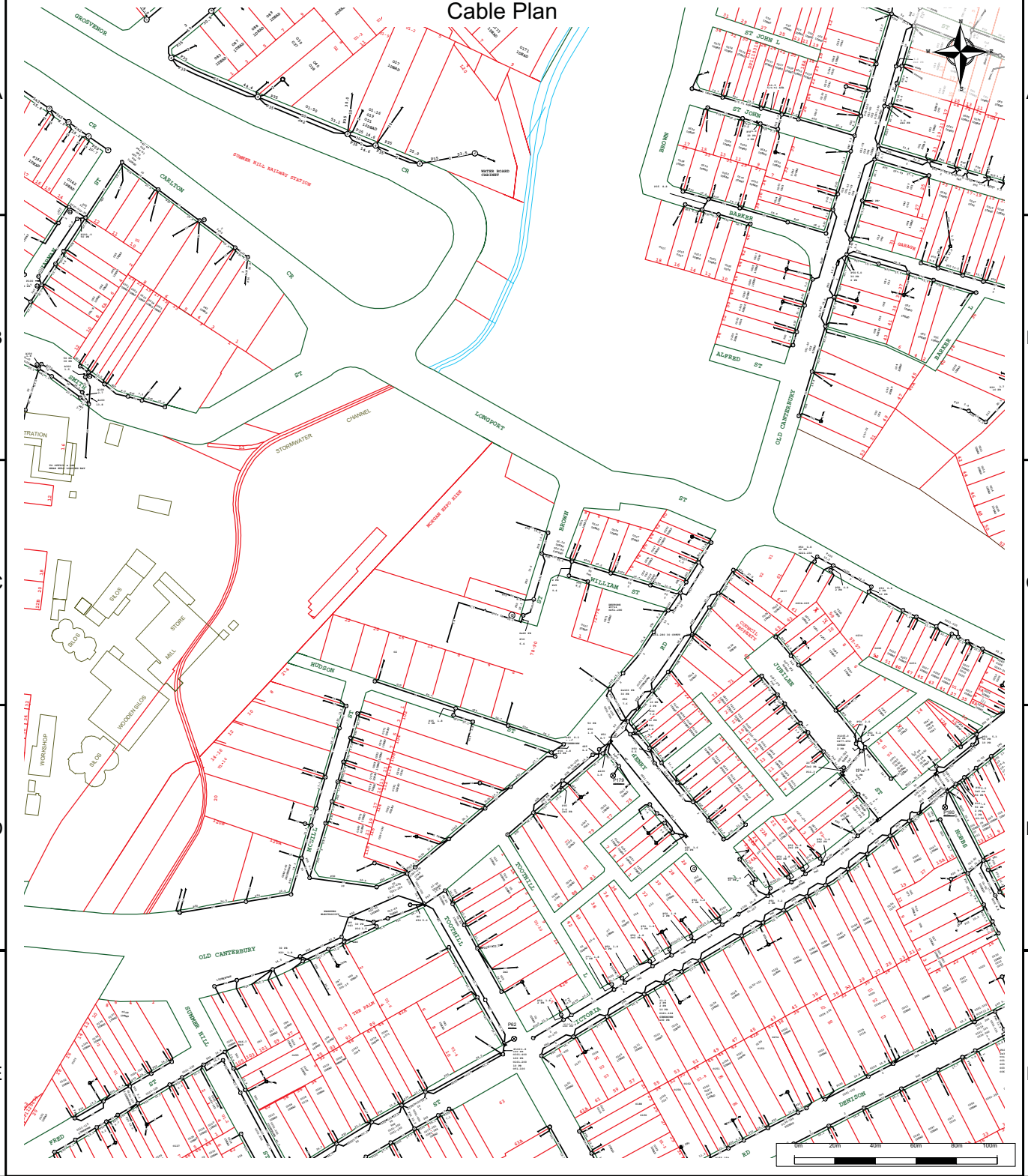
DRAWING TITLE

PLAN SHOWING DETAIL & LEVELS
ROOF RIDGE HEIGHTS

DRAWING NUMBER	SCALE	REVISION
1593DT01 SHEET 3 OF 3	1:500@A1	H

Appendix B
Services Location Plans

Cable Plan



Telstra	For all Telstra DBYD plan enquiries - email - Telstra.Plans@team.telstra.com For urgent onsite contact only - ph 1800 653 935 (bus hrs)	Sequence Number: 17235095 Exchange Area: PETE
TELSTRA CORPORATION LIMITED A.C.N. 051 775 556		
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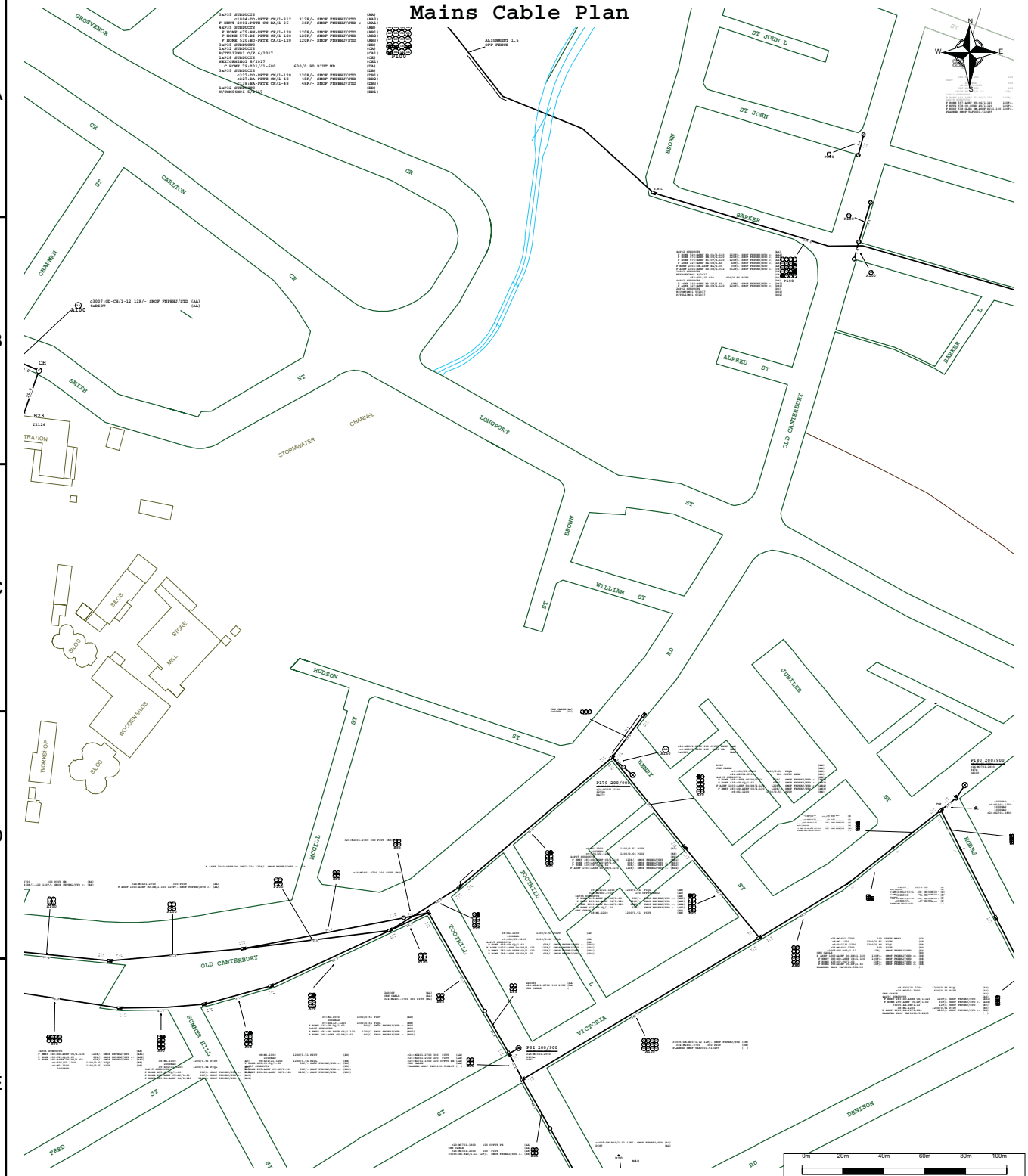
The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

Mains Cable Plan



Telstra	For all Telstra DBYD plan enquiries - email - Telstra.Plans@team.telstra.com For urgent onsite contact only - ph 1800 653 935 (bus hrs)	Sequence Number: 17235095 Exchange Area: PETE
TELSTRA CORPORATION LIMITED A.C.N. 051 775 556		
Generated On 26/11/2009 14:59:49		

Accredited Plant Locaters:

Name and Address	Phone Number	Ask for:
Abitek Pty Ltd - Rouse Hill	Ph:02 88147899 Fax:02 88147855 Mob:0413 327 243	Braden Tynan
Action Locating	02 9671 5600 0415 228 466	Matthew Tynan
Austerberry Directional Drilling Services	0405 504 315	Bob Reynolds
Australian Locating Services	130076 1545 0412 227 434	Scott Hogan
Barry Bros Specialised Servcies	Mob: 0433 500 405 Ph: 02 8723 8777 Fax 02 977 3 0777	Chris Gaven
Bradmac Locating Services - Springwood	Ph: 02 47543626 Fax: 02 47543735 Mob: 0434 157 409	Brad McCorkindale
Concrete & Ground Penetrating Radar	0417 223 433	Mark Devine
Civilscan Pty Ltd	Mob: 0416 068 060	Doug Dean
Daley Boring Pty Ltd	Mob: 0409 244 670 Fax: 02 4655 4647	Michael Daley
D & K Vacuum Excavation	02 47292428 0422 764 271	Dwayne Miller
Dig Smart - Vacuum Potholing Services	0433 213 045	(James) Scott Harris
Down Under Consulting	Ph: 02 948 492 73 Fax: 02 998 023 95 Mob: 040 815 0345	Ashleigh Ferris
Duds	0418 267 964	Philip Pegler
Durkin Construction Pty Ltd- Sydney	Ph: 02 97120308 Fax: 02 97120206 Mob: 0413158255	Sean & Jane Durkin
Excavac Potholing	Mob: 0414 521 808 Fax: 02 4631 1450	Peter Lawrence
JFTA Pty Ltd	02 82138677	Trevor Ormond
Line-tel Pty Ltd	02 9601 8472 0418 677 809	Dominic Cannon Sam Nicoletti
Locaters	0418 262 025	Paul Forbes
Locating Tracing Services	0417 147 945 02 8824 6654 (A.H)	Darryl Critcher
On Line Pipe & Cable Locating	02 98312750	Barry Maloney
Optical Technologies Pty Ltd	02 9501 4922 0402 354 322	Bruce Whittaker
Point Locations	02 4284 1532 02 4268 4812 0417 683 939	Troy Stanning
Power Serve Pty Ltd - Newcastle	0402 696 535	Murray Oldham
Protech Plumbing	02 9542 8820 0418 971 587	Glenn East
Barry Schultz Fibre & Pipe Locations	02 88147233 0416 068 060	Barry Schultz
Saturn Pty Ltd	02 9555 2505 0414 555 617	Murray Schultz
Sinclair Knight Mertz	02 99282176 0422 6674 81	Phillip Layton
Sydwide Concrete Saw & Pipe Locators	02 9822 8228 0407 433 580	Tony Stojanovski

Accredited Plant Locaters:

Name and Address	Phone Number	Ask for:
Abitek Pty Ltd - Rouse Hill	Ph:02 88147899 Fax:02 88147855 Mob:0413 327 243	Braden Tynan
Action Locating	02 9671 5600 0415 228 466	Matthew Tynan
Austerberry Directional Drilling Services	0405 504 315	Bob Reynolds
Australian Locating Services	130076 1545 0412 227 434	Scott Hogan
Barry Bros Specialised Servcies	Mob: 0433 500 405 Ph: 02 8723 8777 Fax 02 9773 0777	Chris Gaven
Bradmac Locating Services - Springwood	Ph: 02 47543626 Fax: 02 47543735 Mob: 0434 157 409	Brad McCorkindale
Concrete & Ground Penetrating Radar	0417 223 433	Mark Devine
Civilscan Pty Ltd	Mob: 0416 068 060	Doug Dean
Daley Boring Pty Ltd	Mob: 0409 244 670 Fax: 02 4655 4647	Michael Daley
D & K Vacuum Excavation	02 47292428 0422 764 271	Dwayne Miller
Dig Smart - Vacuum Potholing Services	0433 213 045	(James) Scott Harris
Down Under Consulting	Ph: 02 948 492 73 Fax: 02 998 023 95 Mob: 040 815 0345	Ashleigh Ferris
Duds	0418 267 964	Philip Pegler
Durkin Construction Pty Ltd- Sydney	Ph: 02 97120308 Fax: 02 97120206 Mob: 0413158255	Sean & Jane Durkin
Excavac Potholing	Mob: 0414 521 808 Fax: 02 4631 1450	Peter Lawrence
Hunter Smith Management PtyLtd	Ph:/Fax: 02 9634 8684 Mob: 0422 224 761	Doug Smith
JFTA Pty Ltd	02 82138677	Trevor Ormond
Line-tel Pty Ltd	02 9601 8472 0418 677 809	Dominic Cannon Sam Nicoletti
Locaters	0418 262 025	Paul Forbes
Locating Tracing Services	0417 147 945 02 8824 6654 (A.H)	Darryl Critcher
On Line Pipe & Cable Locating	02 98312750	Barry Maloney
Optical Technologies Pty Ltd	02 9501 4922 0402 354 322	Bruce Whittaker
Pied Piper Cable & Pipe Locaters	02 88147233 0416 068 060	Barry Schultz
Point Locations	02 4284 1532 02 4268 4812 0417 683 939	Troy Stanning
Power Serve Pty Ltd - Newcastle	0402 696 535	Murray Oldham
Protech Plumbing	02 9542 8820 0418 971 587	Glenn East
Saturn Pty Ltd	02 9555 2505 0414 555 617	Murray Schultz
Sinclair Knight Mertz	02 99282176 0422 6674 81	Phillip Layton
Sydwide Concrete Saw & Pipe Locators	02 9822 8228 0407 433 580	Tony Stojanovski

DUTY OF CARE

Telstra Corporation Limited

IMPORTANT:

- Please read and understand all the information and disclaimers provided below.
- Sketches and Plans provided by Telstra are circuit diagrams only and indicate the presence of telecommunications plant in the general vicinity of the geographical area shown; exact ground cover and alignments cannot be given with any certainty and cover may alter over time. Telecommunications plant seldom follow straight lines and careful on site investigation is essential to uncover and reveal its exact position.
- Due to the nature of Telstra plant and the age of some cables and records, it is impossible to ascertain the location of all Telstra plant. The accuracy and/or completeness of the information can not be guaranteed and, accordingly Telstra plans are intended to be indicative only.

"DUTY OF CARE"

When working in the vicinity of telecommunications plant you have a legal "Duty of Care" that must be observed. The following points must be considered:-

1. It is the responsibility of the owner and any consultant engaged by the owner, including an architect, consulting engineer, developer, and head contractor to design for minimal impact and protection of Telstra plant. Telstra will provide plans and sketches showing the presence of its network to assist at this design stage.
2. It is the owner's (or constructor's) responsibility to:-

a) Request plans of Telstra plant for a particular location at a reasonable time before construction begins.

b) Visually locate Telstra plant by hand digging (pot-holing) where construction activities may damage or interfere with Telstra plant (see "Essential Precautions and Approach Distances" section for more information).

c) Contact Telstra's **Network Integrity Group** (see below for details) if Telstra plant is wholly or partly located near planned construction activities.

DAMAGE:

ANY DAMAGE TO TELSTRA'S NETWORK MUST BE REPORTED TO 132203 IMMEDIATELY.

- The owner is responsible for all plant damage when works commence prior to obtaining Telstra plans, or failure to follow agreed instructions.
- Telstra reserves all rights to recover compensation for loss or damage to its cable network or other property including consequential losses.

CONCERNING TELSTRA PLANS:

- **Phone 1100 - Dial Before You Dig** for plans of Telstra plant locations. Please give at least 2 business days notice.
- Telstra plans and information provided are **valid for 60 days** from the date of issue.
- Telstra owns and retains the copyright in all plans and details provided in conjunction with the applicant's request. The applicant is authorised to use the plans and details only for the purpose indicated in the applicant's request. The applicant must not use the plans or details for any other purpose. The plans and details should be disposed of by shredding or any other secure disposal method after use.
- Telstra plans or other details are provided only for the use of the applicant, its servants, or agents. **The applicant may not give the plans or details to other parties, and may not generate profit from commercialising the plans or details.**
- Please contact the **Network Integrity Help Desk** (see below for details) immediately should you locate Telstra assets not indicated on these plans.
- Telstra, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and or details so supplied to the applicant, its servants and agents, and the applicant agrees to indemnify Telstra against any claim or demand for any such loss or damage.
- Please ensure Telstra plans and information provided remains on-site at all times throughout your construction phase.

ESSENTIAL PRECAUTIONS and APPROACH DISTANCES:

NOTE: If the following clearances cannot be maintained, please contact the Network Integrity Help Desk (see below for details)

for advice on how best to resolve this situation.

1. On receipt of plans and sketches and before commencing excavation work or similar activities near Telstra's plant, **carefully locate this plant first** to avoid damage. Undertake prior manual exposure such as potholing when intending to excavate or work **closer** to Telstra plant than the following approach distances.

- Where Telstra's plant is in an area where road and footpaths are well defined by kerbs or other features a minimum clear distance of 600mm must be maintained from where it could be reasonably presumed that plant would reside.
- In non established or unformed reserves and terrain, this approach distance must be at least 1.5 metres.
- In country/rural areas which may have wider variations in reasonably presumed plant presence, the following minimum approach distances apply:

a) Parallel to major plant: 10 metres (for IEN, optic fibre and copper cable over 300 pairs)
b) Parallel to other plant: 5 metres

- Note: Even manual pot-holing needs to be undertaken with extreme care, commonsense and employing techniques least likely to damage cables. For example, orientate shovel blades and trowels parallel to the cable rather than digging across the cable.
- If construction work is parallel to Telstra plant, then careful hand digging (pot-holing) at least every 5m is required to establish the location of all plant, hence confirming nominal locations before work can commence.

2. Maintain the following minimum clearance between construction activity and **actual location** of Telstra Plant.

Jackhammers/Pneumatic Breakers	*Not within 1.0m of **actual location.***
Vibrating Plate or Wacker Packer Compactor	*Not within 0.5m of Telstra ducts.* *300mm compact clearance cover before compactor can be used across Telstra ducts.*
Boring Equipment **(in-line, horizontal and vertical)**	*Not within 2.0m of **actual location**.* *Constructor to hand dig (pot-hole) and expose plant.*
Heavy Vehicle Traffic (over 3 tonnes)	*Not to be driven across Telstra ducts (or plant)* *with less than 600mm cover.* *Constructor to check depth via hand digging.*
Mechanical Excavators, Boring and Tree Removal	*Not within 1.0m of **actual location.*** *Constructor to hand dig (pot-hole) and expose plant.*

- All Telstra pits and manholes should be a minimum of 1.2m in from the back of kerb after the completion of your work.
- All Telstra conduit should have the following minimum depth of cover after the completion of your work:-
- **Footway 450mm**
- **Roadway 450mm at drain invert and 600mm at road centre crown**
- For clearance distances relating to Telstra pillars, cabinets and RIMs/RCMs please contact the Network Integrity Help Desk (see below for details).

FURTHER ASSISTANCE:

Over-the-phone assistance can be obtained by calling the **Network Integrity Help Desk**.

Where on-site location is provided, the owner is responsible for all hand digging (pot-holing) to visually locate and expose Telstra plant.

If plant location plans or visual location of Telstra plant by digging reveals that the location of Telstra plan is situated wholly or partly where the owner plans to work, then **Telstra's Network Integrity Group** must be contacted through the **Network Integrity Help Desk** to discuss possible engineering solutions.

NOTE:

If Telstra relocation or protection works are part of the agreed solution, then payment to Telstra for the cost of this work shall be the responsibility of the principal developer or constructor. The principal developer or constructor will be required to provide Telstra with the details of their proposed work showing how Telstra's plant is to be accommodated and these details must be approved by the Regional Network Integrity Manager prior to the commencement of site works.

RURAL LANDOWNERS - IMPORTANT INFORMATION

Where Telstra owned cable crosses agricultural land, Telstra will provide a one off free on-site electronic cable location. Please note that the exact location of cables can only be verified by visual proving by pot holing, which is not covered by this service. The Network Integrity Helpdesk Officer will provide assistance in determining whether a free on-site location is required. Please ring the Network Integrity Helpdesk Officer as listed above.

PRIVACY NOTE

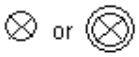
A GUIDE TO READING Telstra PLANS

Telstra Corporation Limited
ABN 33 051 775 556

Exchange
(major cable present)

Footway access chamber
(can vary from 1-lid to 12-lid)

Roadway access chamber



Pillar/cabinet
(above the ground / free standing)

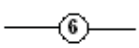
Above ground complex equipment housing (eg RIM)

Please Note: This equipment is powered by 240V electricity.

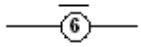
Public telephone

Please Note: This equipment is powered by 240V electricity.

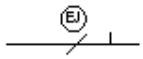
Direct buried cable



Cable jointing pit
(number indicating pit type)

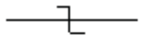


Buried cable jointing pit
(number indicating pit type)

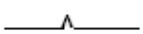


Elevated cable joint
(above ground joint on buried cable)

Cable loop (direct buried)

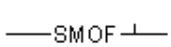


Telstra Plant in shared utility trench

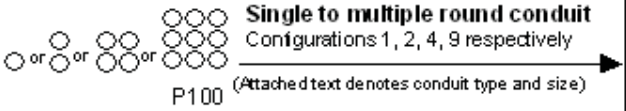


Aerial Cable
(above ground)

Aerial cable
(attached to joint use pole e.g. power)



Optical fibre cable direct buried



Single to multiple round conduit
Configurations 1, 2, 4, 9 respectively
(Attached text denotes conduit type and size)

P100

Multiple square conduit
Configurations 2, 4, 6 respectively
(Attached text denotes conduit type and size)

E85

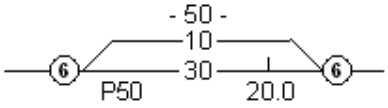
Some examples of conduit type and size:

A - Asbestos cement, P - PVC / plastic, C - Concrete, GI - Galvanised iron, E - Earthenware.

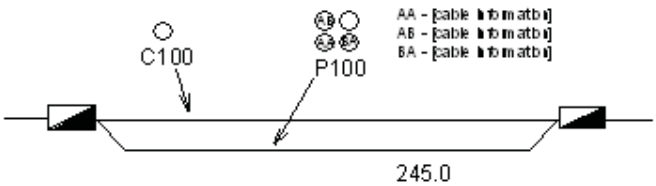
Conduit sizes *nominally* range from 20mm to 100mm.

P50	50mm PVC conduit
P100	100mm PVC conduit
A100	100mm asbestos cement conduit
E 85	85mm square earthenware conduit

Some examples of how to read Telstra plans:



One 50mm PVC conduit (P50) containing a 50-pair and a 10-pair cable between two 6-pits, 20.0m apart, with a direct buried 30-pair cable along the same route.



Two separate conduit runs between two footway access chambers (manholes) 245m apart. A nest of four 100mm PVC conduits (P100) containing assorted cables in three ducts (one being empty) and one empty 100mm concrete duct (C100) along the same route.

WARNING: Telstra's plans show only the presence of cables and plant. They only show their position relative to road boundaries, property fences etc. at the time of installation and Telstra does not warrant or hold out that such plans are accurate thereafter due to changes that may occur over time.
DO NOT ASSUME DEPTH OR ALIGNMENT of cables or plant as these vary significantly.
The customer has a DUTY OF CARE when excavating near Telstra cables and plant. Before using machine excavators TELSTRA PLANT MUST FIRST BE PHYSICALLY EXPOSED BY SOFT DIG (potholing) to identify its location.
Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers.

ACCREDITED PLANT LOCATERS (For your area)

On-site assistance should be sought from an **Accredited Plant Locater** if the telecommunications plant cannot be located within

2.5 metres of the locations indicated on the drawings provided.

On-site advice should be obtained from a suitably qualified contractor highly skilled in locating Telstra plant if there is any doubt whatsoever about the actual location of the telecommunications plant, the best method for locating the telecommunications plant or the correct interpretation of the drawings provided. In the case where Telstra plant is outside a recognised road reserve Telstra recommends that the **Network Integrity Help Desk** is contacted for assistance prior to engaging an Accredited Plant Locater.

For the assistance of customers Telstra has established strict criteria to assess the skill of contractors that may be engaged by owners requiring Telstra plan locating services to perform any of the following activities if requested to do so by the owner:

- review Telstra's plans to assess the approximate location of Telstra plant;
- advise owners of the approximate location of Telstra plant according to the plans;
- advise owners of the best method for locating Telstra plant;
- advise owners of the hazards of unqualified persons attempting to find the exact location of Telstra plant and working in the vicinity of Telstra plant without first locating its exact position.
- perform trial hole explorations by hand digging (pot-holing) to expose Telstra plant with a high degree of skill, competence and efficiency and utilising all necessary safety equipment.

Telstra has provided a number of contractors with certification as an Accredited Plant Locater.

A list of Accredited Plant Locaters operating in your area is attached. Accredited Plant Locaters are certified by Telstra to perform the tasks listed above. Owners may engage Accredited Plant Locaters to perform these services, however Telstra does not give any warranty in relation to these services that Accredited Plant Locaters are competent or experienced to perform any other services.

The attached list provides the names and contact details for Accredited Plant Locaters who service your area and can provide you with assistance in locating Telstra plant on site. These organisations have been able to satisfy Telstra that they have a sound knowledge of telecommunications plant and its sensitivity to disturbance; appropriate equipment for locating telecommunications plant and competent personnel who are able to interpret telecommunications plans and sketches and understand safety issues relevant to working around telecommunications plant. They are also able to advise you on the actions which should be taken if the work you propose will/could result in a relocation of the telecommunications plant and/or its means of support.

We recommend that you engage the assistance of one of these Accredited Plant Locaters as a step towards discharging your Duty of Care obligations when seeking the location of Telstra's telecommunications plant.

Please Note:

1. The details of any contract, agreement or retainer for site assistance to locate telecommunications plant shall be for you to decide and agree with the organisation engaged. Telstra is not a party to any contract entered into between an owner and an Accredited Plant Locater. The Accredited Plant Locaters are able to provide guidance concerning the extent of site investigations required.
2. Payment for the site assistance will be your responsibility and payment details should be agreed before the engagement is confirmed.
3. Telstra does not accept any liability or responsibility for the performance of or advice given by an Accredited Plant Locater. Accreditation is an initiative taken by Telstra towards the establishment and maintenance of competency standards. However, performance and the advice given will always depend on the nature of the individual engagement.
4. Each Accredited Plant Locater has been issued with a certificate which confirms the Accreditation. Each year Telstra will reassess the accreditation and where appropriate will issue a letter confirming the accreditation for the next calendar year. You have the right to request the organisation you engage to show evidence of this certificate and its currency.
5. The Accredited Plant Locater is required to service each engagement with the personal attendance of at least one accredited employee who has satisfactorily completed a Telstra approved employee accreditation training course. These people will carry a certification card issued by Telstra.
6. Neither the Accredited Plant Locater nor any of its employees are an employee or agent for Telstra and Telstra is not liable for any damage or loss caused by the Accredited Plant Locater or its employees.
7. The attached list contains the current names and contact details of Accredited Plant Locators who service your area, however, these details are subject to change.

Sydney WATER

PIPELINE LOCATION INFORMATION

Accuracy of plans not to be assumed – see Clause 4.
Plans not for conveyancing purposes.

www.dialbeforeyoudig.com.au DIAL 1100 BEFORE YOU DIG

ATTENTION

The accompanying plan(s) in relation to Sydney Water s pipelines are forwarded in response to your recent Dial Before ou Dig in uiry. Please note the following important information and bases upon which the plan(s) are issued:

1. The accompanying plans have been generated by an automated system. The plans should cover the area highlighted in the Locality ndication Only window on your Caller Confirmation. t is that defined area which is used to automatically generate the plans and not UBD or address information or any free text information provided to Dial Before ou Dig. t is important therefore that you be accurate in defining your dig site when you lodge your en uiry with Dial Before ou Dig. t is the en uirer s responsibility to resubmit the en uiry to Dial Before ou Dig if the information supplied does not match the proposed dig site.
2. Plans indicate the general position of Sydney Water s pipelines and associated structures and fittings (pipelines) **at the time of their construction**. Sydney Water does NOT guarantee that all its existing pipelines are shown on the plans (Particular care should be exercised in newer developments as pipeline details may not yet have been supplied to Sydney Water). Plans have NOT necessarily been adjusted to reflect any subse uent changes to surface levels road alignments fences buildings and the like. Pipeline locations are approximate and accordingly the plans are NOT suitable for scaling purposes.
3. Plans do NOT show locations of property services (often called house service lines) belonging to and or serving individual customers and which are usually connected to Sydney Water s pipelines.
4. The plans have been prepared and are only intended for Sydney Water s own use. Sydney Water does not supply the plans on a commercial basis because it cannot and will not warrant their accuracy or completeness. t supplies them free of charge only with a view to reducing the very real risk of inadvertent damage being caused to its pipelines. Accordingly Sydney Water accepts no liability for any inaccuracies in the information or lack of information on the plans.
5. To determine their precise location Sydney Water s pipelines MUST first be exposed by pot-holing using hand-held tools or vacuum techni ues i.e. **before** any mechanical means of excavation are employed.
6. Asbestos cement pipelines may form part of Sydney Water s water and sewerage reticulation systems and if damaged can pose a risk to health.
7. Persons excavating in the vicinity of Sydney Water s pipelines MUST exercise care and suitably protect Sydney Water s pipelines. Protection may include timbering sheet piling support and or bracing or tomming to prevent movement.
8. Any movement in a pipeline could result in joint failure flooding and death or injury to persons (in addition to damaged assets). The protection of Sydney Water s pipelines benefits the safety of workers.
9. Constructors are legally responsible for any damage and financial loss resulting from their interfering with Sydney Water s pipelines. **In an emergency, call 13 20 90 (24 hours, 7 days).**
10. Minimum clearances MUST be maintained between Sydney Water s pipelines and underground services belonging to other parties.
11. Plans MUST be approved by Sydney Water (usually signified by stamping) prior to landscaping and or building over or adjacent to any Sydney Water asset.
12. Backfilling of excavation work in the immediate vicinity of Sydney Water s pipelines MUST comply with Sydney Water s standards.

Further information and guidance is available on Sydney Water s website at **www.sydneywater.com.au** *Building and Development* where the following documents can be found under *Dial Before You Dig*:

- Avoid Damaging Water and Sewer Pipelines
- Water Main Symbols
- Sewer Symbols
- Depths of Mains
- Guidelines for Building Over Adjacent to Sydney Water Assets
- Clearances Between Underground Services

or call 13 20 92 for Customer Enquiries.

NOTE:

f you lodged your en uiry via telephone or facsimile be aware that on-line en uiries 24 hours per day 7 days per week to **www.dialbeforeyoudig.com.au** will enable you to receive colour plans in .pdf format 24 7 via email.

f you have any uestions concerning DB D re uests call (02) 8849 3800 Monday to Friday between 8 am and 4 pm.

Hydra Legend

Sewer

- Sewer Main (with flow arrow & size type annotation) — 225 PVC
- Disused Main
- Pressure Main (Rising Main)
- Maintenance Hole with upstream depth to invert — 1.7
- Terminal Maintenance Shaft — TMS
- Maintenance Shaft — MS
- Maintenance Hole with Overflow Weir — 7.1
- Rodding Point — RP
- Ventshaft INDUCT — VSI
- Ventshaft EDUCT — VSE
- Vertical — VERT
- Lamphole
- Property Connection Point (with chainage to downstream MH)
- Concrete Encased Section — 10.6 — Conc. Enc
- Sewer Rehabilitation
- Pumping Station — SP0882
- Sewer Mining — SM

Sewer - Low Pressure Sewer

- Low Pressure Sewer Main
- Pump Unit (Alarm, Electrical Cable, Pump Unit) — A
- Property Valve Boundary Assembly
- Stop Valve
- Reducer / Taper
- Flushing Point — FP

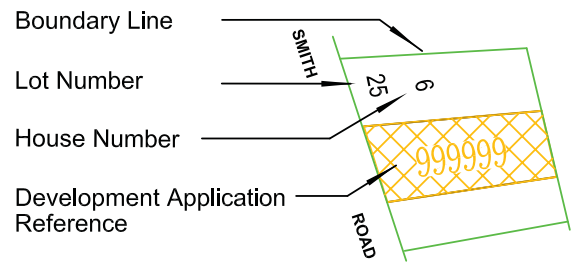
Sewer - Vacuum

- Vacuum Sewer Main
- Divisional Valve
- Vacuum Chamber
- Clean Out Point

Stormwater

- Stormwater Pipe
- Stormwater Channel
- Stormwater Gully
- Stormwater Maintenance Hole

Property Details



Location of SWC Heritage item - Please call **13 20 92** during office hours and ask for the **Heritage Unit.**

Water

- Water Main - Potable (with size type annotation) — 200 PVC
- Disconnected Main - Potable
- Proposed Main - Potable
- Water Main - Recycled
- Special Supply Conditions - Potable
- Special Supply Conditions - Recycled
- Restrained Joints - Potable
- Restrained Joints - Recycled
- Hydrant
- Maintenance Hole
- Stop Valve
- Stop Valve with By-pass
- Stop Valve with Tapers
- Closed Stop Valve
- Air Valve
- Valve
- Scour
- Reducer / Taper
- Vertical Bends
- Reservoir

Symbols for Recycled Water as per Potable above. Main and Symbol colour as indicated.

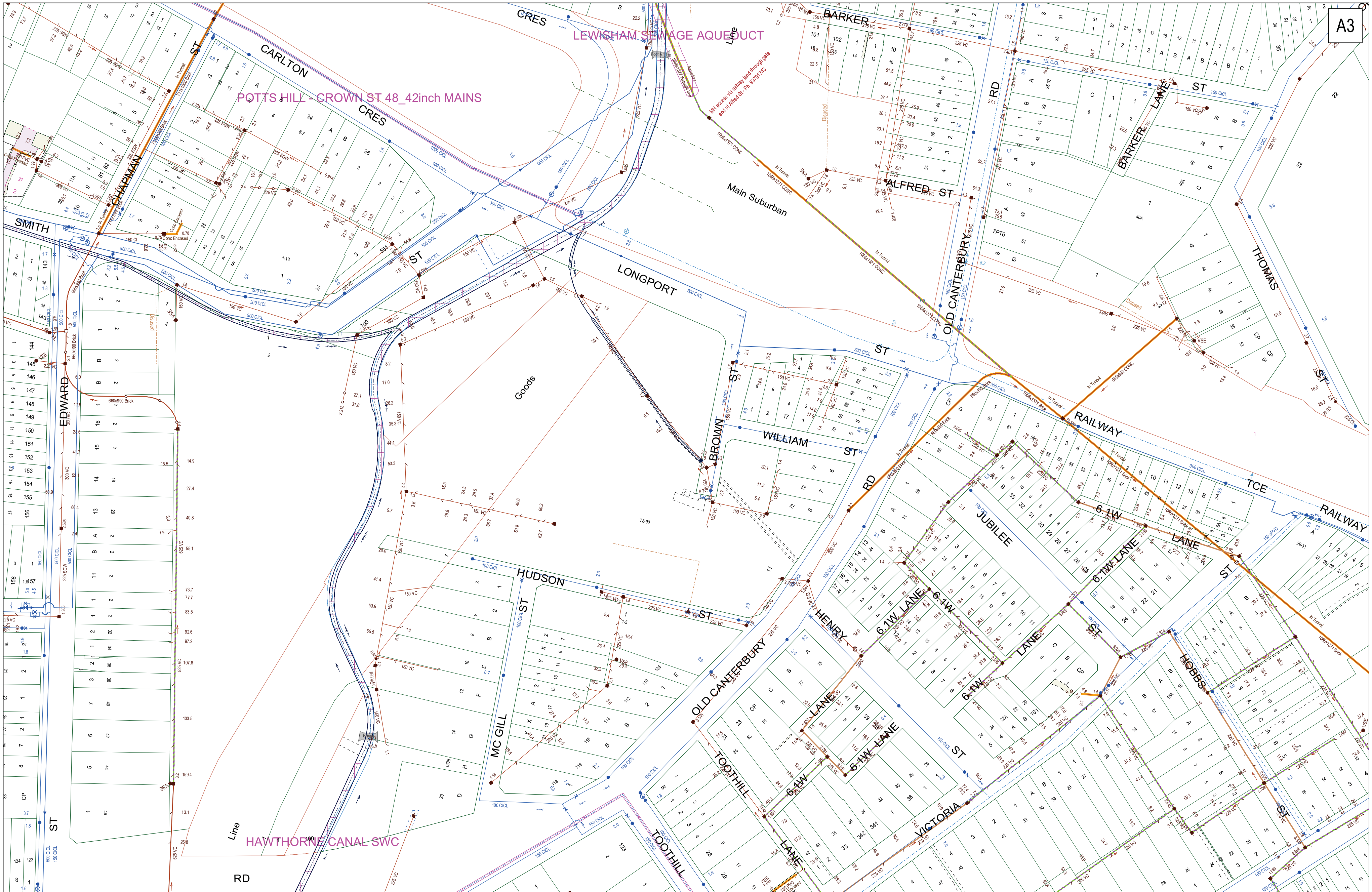
Private Mains

- Potable Water Main
- Recycled Water Main
- Sewer Main

Symbols for Private Mains shown grey. Main colour as indicated.

PIPELINE MATERIAL ABBREVIATIONS

ABBREVIATION	INTERPRETATION
ABS	acrylonitrile butadiene styrene
AC	asbestos cement
BRICK	brick
CI	cast iron
CICL	cast iron cement lined
CONC	concrete
COPPER	copper
DI	ductile iron
DICL	ductile iron cement (mortar) lined
EPDM	ethylene propylene diene monomer
EW	earthenware
FIBG	fibreglass
FL BAR	forged locking bar
GI	galvanised iron
GRP	glass reinforced polyester
HDPE	high density polyethylene
MS	mild steel
MSCL	mild steel cement lined
PE	polyethylene
PP	polypropylene
PVC	polyvinylchloride
PVC-M	polyvinylchloride modified
PVC-O	polyvinylchloride oriented
PVC PW	polyvinylchloride profile wall
PVC SW	polyvinylchloride smooth wall
PVC-U	polyvinylchloride unplasticised
RC	reinforced concrete
S	steel
SCL	steel cement (mortar) lined
SGW	salt glazed ware
SS	stainless steel
STONE	stone
VC	vitrified clay
WI	wrought iron
WS	woodstave



DBYD Address:
Brown St
Lewisham NSW 2049

DBYD Job No: 184225

DBYD Sequence No: 17235097

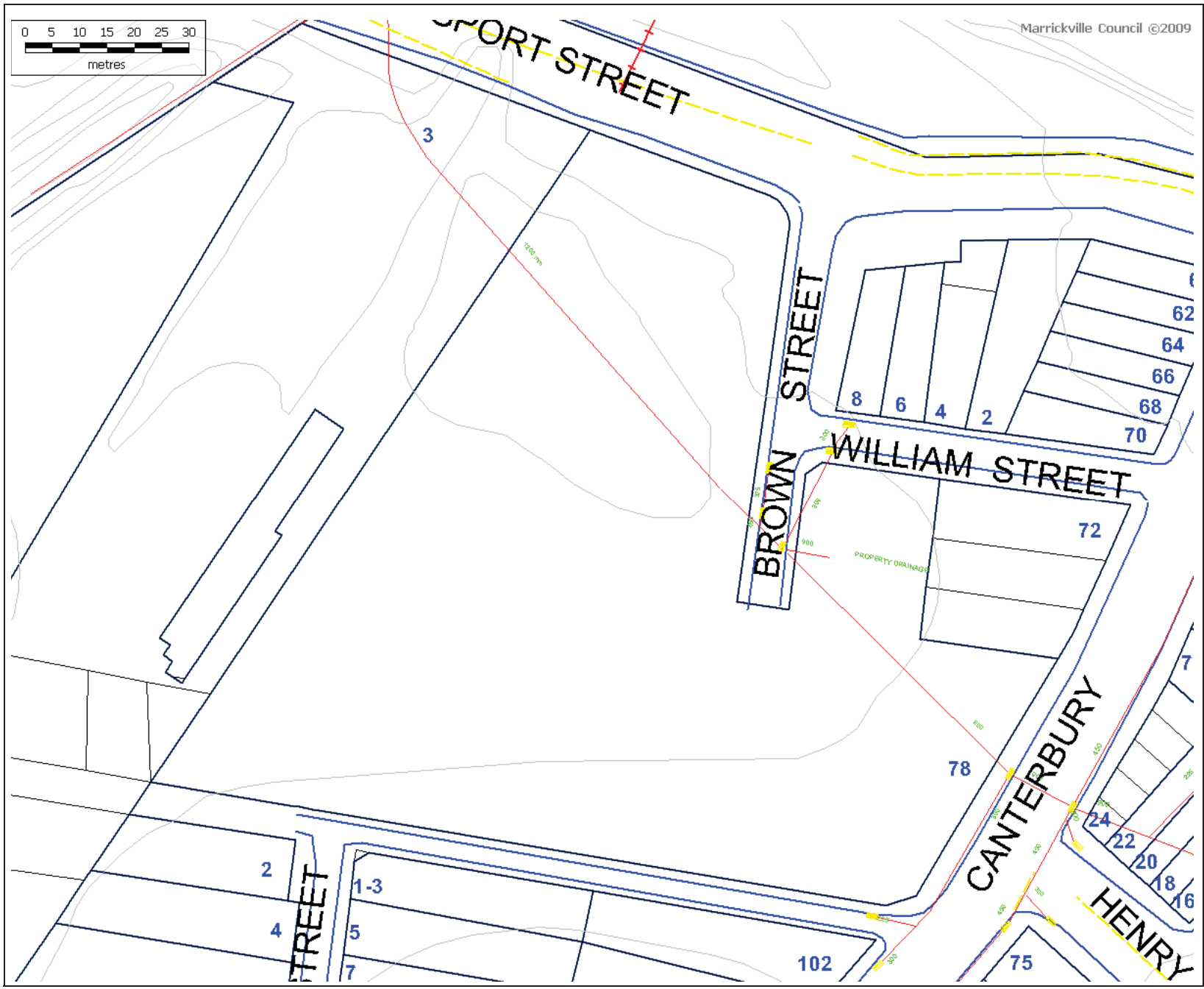
Scale: 1:1500

Date of Production: 26/11/2009

Plan 1 of 1

N

0m 9m 18m 27m 36m



MARRICKVILLE council

{Title}

{SubTitle}

Legend

- Rail Station
- FISHER ST — Street Names
- 20 — House Numbers
- 300 — Pipe Diameter
- Railway Line
- Lines
- Pits
- Pipeline
- Kerb
- Contour 2m
- Cooks River Flood Zone
- Local Flood Affected Properties
- Land Parcels
- Property
- Suburbs

Map Zoom: 216.4 m

Map Projection: GDA-94, Zone-56

Created by Engineering on Monday, 16 November 2009

MARRICKVILLE council

{Title}

{SubTitle}

Legend

- Rail Station
- FISHER ST — Street Names
- 20 — House Numbers
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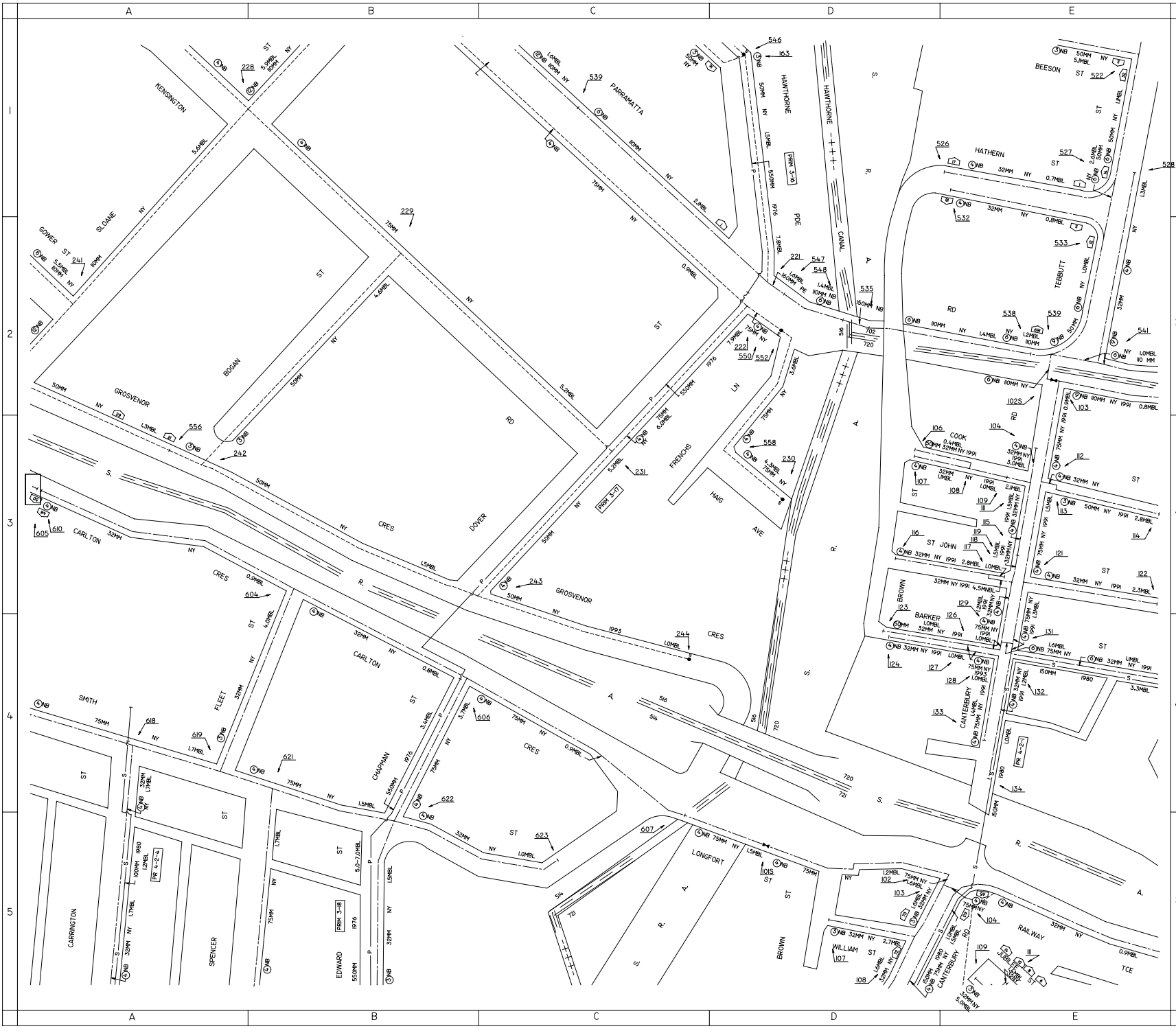
- Cooks River Flood Zone
- Local Flood Affected Properties
- Land Parcels
- Property
- Suburbs
- Aerial Photo (Jan.,2007)

N W E S

Map Zoom: 216.4 m

Map Projection: GDA-94, Zone-56

Created by Engineering on Monday, 16 November 2009



LEICHHARDT 5CB

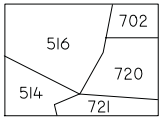
SCALE 1:1000

25 0 25 50 75 100

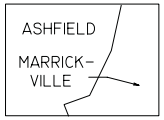
THIS MAP UPDATED ON 16/08/04
THIS PLAN IS DIAGRAMATIC ONLY. DISTANCES SCALED FROM THIS PLAN MAY NOT BE ACCURATE.

LE5AC	LE5AD	LE6BC
LE5CA	LE5CB	LE5DA
LE5CC	LE5CD	LE5DC

ADJOINING MAPS



NETWORK AREA



MUNICIPALITY AREA

Alinta

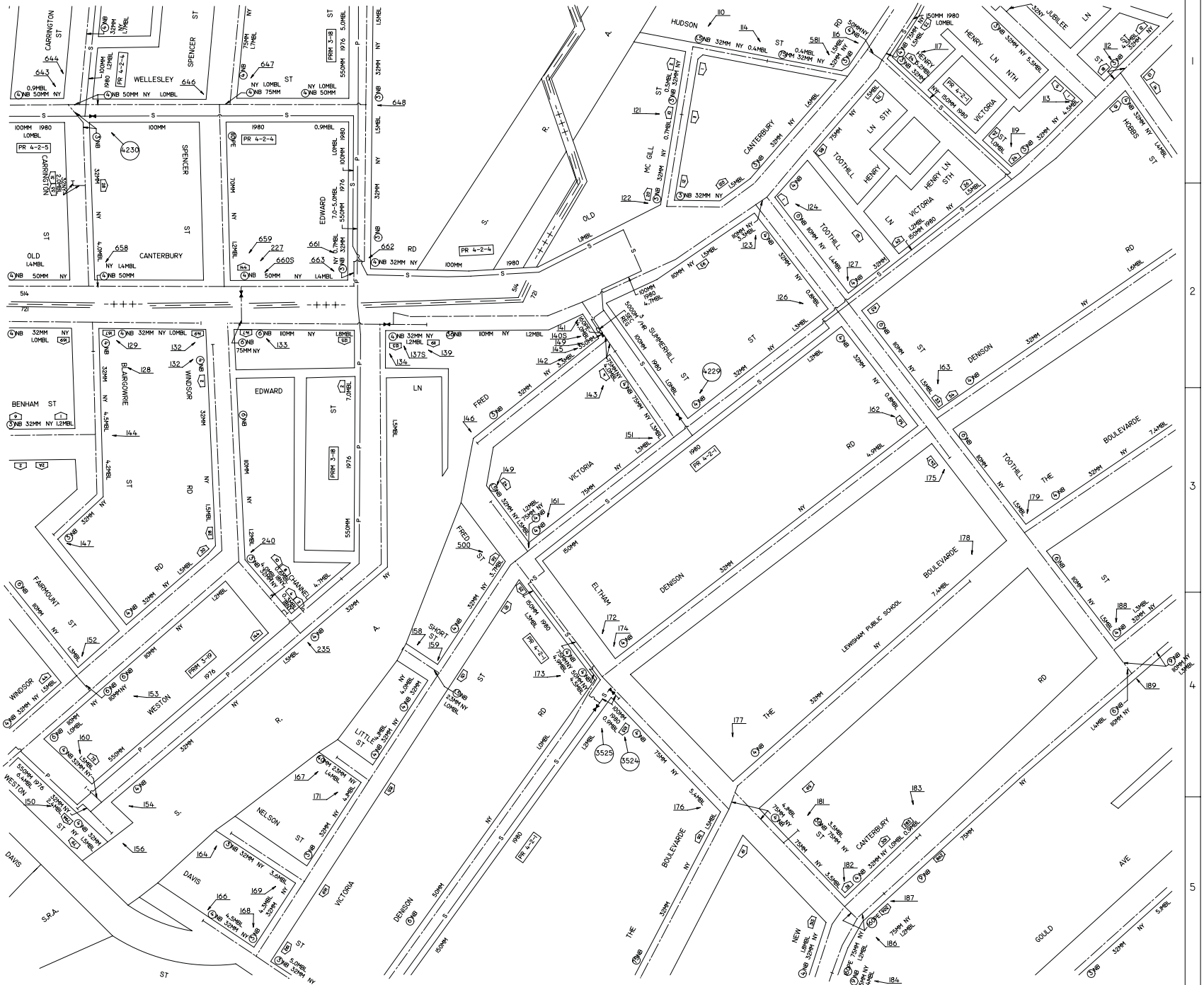
KEY

MAX ALLOWABLE OPERATING PRESSURE

T	TRUNK MAIN	7000 kPa
P	PRIMARY MAIN	3500 kPa
S	SECONDARY MAIN	1050 kPa
		300 kPa
		210 kPa
		7 kPa
400		400 kPa
100		100 kPa
		2 kPa

- PROPOSED MAINS
- PR 11-2 3 — STEEL MAIN PROJECT NUMBER
- P — PRESSURE MONITORING STATION
- VALVE
- SYSTEM PRESSURE REGULATOR
- S — SIPHON
- 123 — NETWORK NODES
- 123S — ITEM DETAIL SKETCH AVAILABLE
- 6NB — VALVE NUMBER (OLD NUMBERING)
- 6NB — 6 INCH CAST IRON MAIN
- 150MM — 150MM STEEL MAIN
- 110MM PE/NY — 110MM POLYETHYLENE/NYLON MAIN
- 6NB 50MM NY — 50MM NYLON INSERTED INTO 6NB MAIN CAST IRON MAIN
- 1.2MBL — DISTANCE IN METRES OF MAIN FROM BUILDING LINE (TOLERANCE OF 0.4M)
- 1957 — YEAR LAID
- MUNICIPALITY BOUNDARY
- NETWORK BOUNDARY
- 63 — HOUSE NUMBER

LEICHHARDT 5CB



LEICHHARDT 5CD

SCALE 1:1000

25 0 25 50 75 100

THIS MAP UPDATED ON 01/09/03
THIS PLAN IS DIAGRAMATIC ONLY. DISTANCES SCALED FROM THIS PLAN MAY NOT BE ACCURATE.

LE5CA	LE5CB	LE5DA
LE5CC	LE5CD	LE5DC
LE8AA	LE8AB	LE8BA

ADJOINING MAPS

514
721

NETWORK AREA

ASHFIELD
MARRICKVILLE

MUNICIPALITY AREA

AGL

KEY

MAX ALLOWABLE OPERATING PRESSURE

T	TRUNK MAIN	7000 kPa
P	PRIMARY MAIN	3500 kPa
S	SECONDARY MAIN	1050 kPa
		300 kPa
		210 kPa
		7 kPa
400		400 kPa
100		100 kPa
		2 kPa

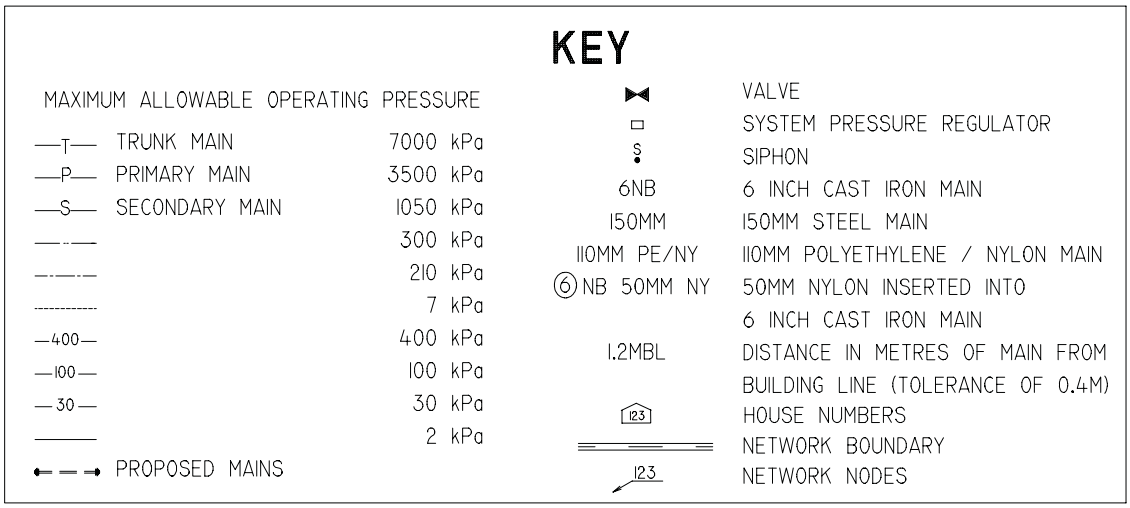
- PROPOSED MAINS
- PR 1-2 3 — STEEL MAIN PROJECT NUMBER
- PRESSURE MONITORING STATION
- VALVE
- SYSTEM PRESSURE REGULATOR
- S — SIPHON
- 123 — NETWORK NODES
- 123S — ITEM DETAIL SKETCH AVAILABLE
- (696) — VALVE NUMBER (OLD NUMBERING)
- 6NB — 6 INCH CAST IRON MAIN
- 150MM — 150MM STEEL MAIN
- 110MM PE/NY — 110MM POLYETHYLENE/NYLON MAIN
- 6NB 50MM NY — 50MM NYLON INSERTED INTO 6NB MAIN CAST IRON MAIN
- 1.2MBL — DISTANCE IN METRES OF MAIN FROM BUILDING LINE (TOLERANCE OF 0.4M)
- 1957 — YEAR LAID
- MUNICIPALITY BOUNDARY
- NETWORK BOUNDARY
- 63 — HOUSE NUMBER

LEICHHARDT 5CD

Network Protection

In reply to your enquiry, there are **High Pressure Gas Mains** at the location of your intended work, as generally illustrated on the attached map. There may also be other gas or other services at the location, as discussed in the warning below. For an explanation of the map, please see the key below. The following excavations guidelines apply:

Excavation Guidelines:
You ***must*** contact a Pipeline Technician to conduct a survey ***before*** commencing any work in this area. You can arrange a survey by contacting the High Pressure Response Coordinator on **1300 665 380**. ***(Please note that two working days notice is required to arrange a survey).*** For all works in the vicinity of High Pressure Gas Mains you are required to arrange for a Pipeline Technician to attend. Charges apply for attendance of any works outside the hours of 7am to 4pm, Monday to Friday ("**Standard Business Hours**") and for any attendance during Standard Business Hours that is longer than 2 hours.



Warning: The enclosed plans show the position of Jemena Gas Networks (NSW) Ltd's underground gas mains and installations in public gazetted roads only. **Individual customers' services and services belonging to other third parties are not included** on these plans. These plans have been prepared solely for the use of Jemena Gas Networks (NSW)_Ltd and Jemena Asset Management Pty Ltd (together "**Jemena**") and any reliance placed on these plans by you is entirely at your own risk. The plans may show the position of underground mains and installations relative to fences, buildings etc., as they existed at the time the mains etc were installed. The plans may not have been updated to take account of any subsequent change in the location or style of those features since the time at which the plans were initially prepared. Jemena makes no warranty as to the accuracy or completeness of the enclosed plans and does not assume any duty of care to you nor any responsibility for the accuracy, adequacy, suitability or completeness of the plans or for any error, omission, lack of detail, transmission failure or corruption in the information provided. Jemena does not accept any responsibility for any loss that you or anyone else may suffer in connection with the provision of these plans, however that loss may arise (including whether or not arising from the negligence of Jemena, its employees, agents, officers or contractors). The recipient of these plans must use their own care and diligence in carrying out their works and must carry out further surveys to locate services at their work site. Persons excavating or carrying out other earthworks will be held responsible for any damage caused to Jemena's underground mains and equipment.

DBYD Admin
1300 880 906

In case of Emergency Phone 131 909 (24 hours)

Working Near EnergyAustralia Cables

Dial Before You Dig
The life you save, could be yours

EnergyAustralia®

Working Safely.

This brochure gives you a brief overview of **NS156**. It will help you work out what you will need to do to ensure the safety of your staff and the public. This will also help to prevent any disruption to the electrical network. **NS156** is a Network Standard that contains some very important information on what to do if you are undertaking excavation works.

EnergyAustralia operates a network of electrical power cables throughout Sydney, the Central Coast and Newcastle/Hunter Valley. These cables are critical to the continuous supply of power to all of our customers, including hospitals, schools, and the emergency services. They are also potentially dangerous, if you do not take care while working near them.

With electricity, it's not 'if', but 'when'.

It is likely that you or someone you work with have been, or will be involved in a life threatening situation. It's never a matter of if, but when. Underground power cables and overhead powerlines are potentially hazardous to every person working around them. All it takes is one lapse in safety or preparedness and someone could be seriously injured or worse. You could face criminal charges and a hefty fine if you negligently damage pipes or cables.

Every little bit helps.

Forward planning and simple safety precautions are necessary and help to ensure everyone is as safe as possible on your work site, including you.

Do all power cables look the same?

No. Power cables come in different sizes, colours and outer coverings. They may be covered in a black plastic sheath, steel wires in a sticky bitumen like material, or even a simple lead or steel wire/tape sheath. See example below.

What other forms do electrical assets take?

It's mainly the method of installation that varies. They may be buried in orange PVC or PE conduits, or even old earthenware or steel pipes. A bank of cables may be covered with electrical bricks, plastic warning markers or protective covers, or nothing at all. If they have to be buried at a reduced depth, they may be covered in concrete slabs or steel plates.

You've taken every precaution but accidents still happen. What now?

Striking power cables while digging can result in serious damage to the cables, as well as posing a safety hazard. There's also safety and environmental risks associated with working near power cables – for example, some cables are installed in asbestos conduits or troughing, and OCPs have been used in some trenches to avoid damage by termites.

Be prepared. Wise words for safety at work.

Here are some simple precautions you and your workers need to follow in order to be as safe as possible.

- Keep a copy of the cable plan on site at all times and discuss this with your staff.
- Have a person trained in resuscitation and a first aid kit on site at all times.
- Wear protective clothing, including safety footwear and safety helmet if required.
- Have appropriate emergency contact numbers on site.
- Set up the appropriate safety barriers, witches hats and warning lights to reduce the risk of injury to the general public.
- Comply with all WorkCover requirements and codes.

Site Manager = Safety Manager.

The site manager or supervisor is responsible for ensuring that all construction staff are fully aware and compliant with the necessary clearances from exposed live overhead conductors.

To ensure all work complies with environmental legislation and WorkCover requirements, you can refer to:

- **WorkCover Guidelines: Work Near Underground Assets; and**
- **WorkCover Codes of Practice: Excavation Work and Work Near Overhead Powerlines if applicable.**

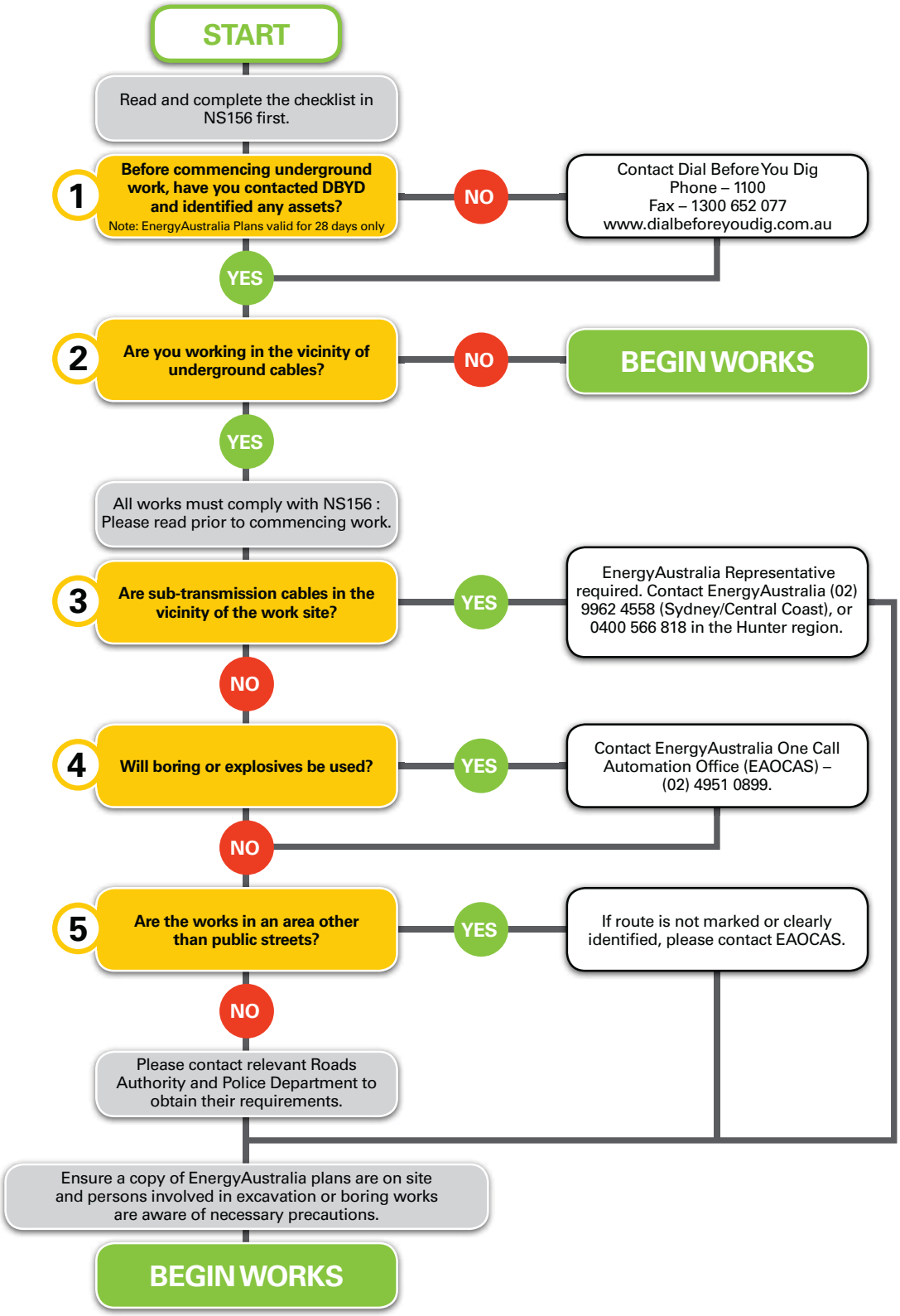
Before you start. Stop and look around.

Before you start any work, be sure to look for clues as to where cables might be located on the site: for example pits, distribution pillars (green or other colours), cables attached to the side of poles, street lights without overhead wires.

It's safer with EnergyAustralia by your side.

When working near transmission cables you MUST arrange for EnergyAustralia to provide a representative on site during the works – see **NS156** for details including lead time to arrange the representative. The attached flow chart includes contact numbers and further information. A checklist has also been provided (see over), to help you ensure you have taken all the appropriate precautions before working near power cables.

Energy Wise Flow Chart for Work Near EnergyAustralia Cables



EnergyAustralia Checklist for work near or around underground cables

It is the responsibility of the constructor to ensure that underground pits, ducts and cables are not damaged as a result of construction work. It is also your duty to protect your workers from harm or injury. This checklist is intended to be used as a guide to what Constructors should do to make sure they have satisfied the minimum requirements to minimise the damage to underground networks.

PLANS, LOCATION and NOTIFICATIONS	Completed
Have you obtained all relevant utilities plan by calling "1100" - Dial Before You Dig service? (Allow at least 5 working days for plans).	
Have you examined the plans and assessed all possible impacts on EnergyAustralia's network?	
Do you have both Underground Distribution & Transmission Plans (if applicable), on site at all times?	
Have all cables and conduits shown on the EnergyAustralia plans been located and marked on the ground?	
If you are planning to use a bore, have you ensured that the equipment is calibrated?	
Have you obtained a current copy and understood the requirements of EnergyAustralia's Network Standard NS156 Working Near of Around Underground Cables?	
For a copy of NS156 phone the EnergyAustralia One Call Automation (EAOCAS) office at the number indicated on the response to your DBYD enquiry or visit: **www.energy.com.au/energy/ea.nsf/Content/Network+Standards**	
INSPECTION OF WORK BY ENERGYAUSTRALIA's REPRESENTATIVE	
Where the proposed work is near or around* any sub-transmission cable, is the EnergyAustralia representative on site to observe the work and warn or stop works if they are performed in a manner which may endanger the cables or workers before you start?	
Where the proposed work is near or around* cable other than sub-tranmission and/or conduits, are any requirements specified by EnergyAustralia's representative clearly understood and ready to be applied before you start the work?	
PROTECTION	
Have you checked that all people on-site have been made aware of the presence and location of ALL EnergyAustralia underground cables and/or conduits; especially boring, drilling and trenching machine operators?	
Have you checked for the presence of any asbestos or asbestos containing material in EnergyAustralia's underground network assets?	
Have you checked for the presence of any Organo-Chloride Pesticides (OCP) in sub-transmission trenches?	
Is the site supervisor monitoring all machine operators working near or around EnergyAustralia's underground cables and/or conduits?	
Are the requirements specified by EnergyAustralia's representative being followed?	
Are EnergyAustralia's requirements in place for any exposed cables and/or conduits to be supported and protected?	
Have you marked all exposed underground cables and/or conduits with flags that are clearly visible from within all machinery used on-site?	
Have safety barriers, fencing or para-webbing been erected to protect staff and the public as well underground cables and/conduits in areas that are at risk?	

*Refer to NS156.

In the event of DAMAGE to EnergyAustralia's cable or conduits, call 13 13 88 immediately

It is your responsibility to protect EnergyAustralia's cables and conduits from damage and your Duty of Care to protect your workers from harm or injury.

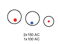
Signed: _____ Date: _____ /_____ /_____

Responsible person on site.

For more information call 13 15 35 or visit energy.com.au

EnergyAustralia®

LE532 - BD1



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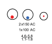
LE534 - AR1



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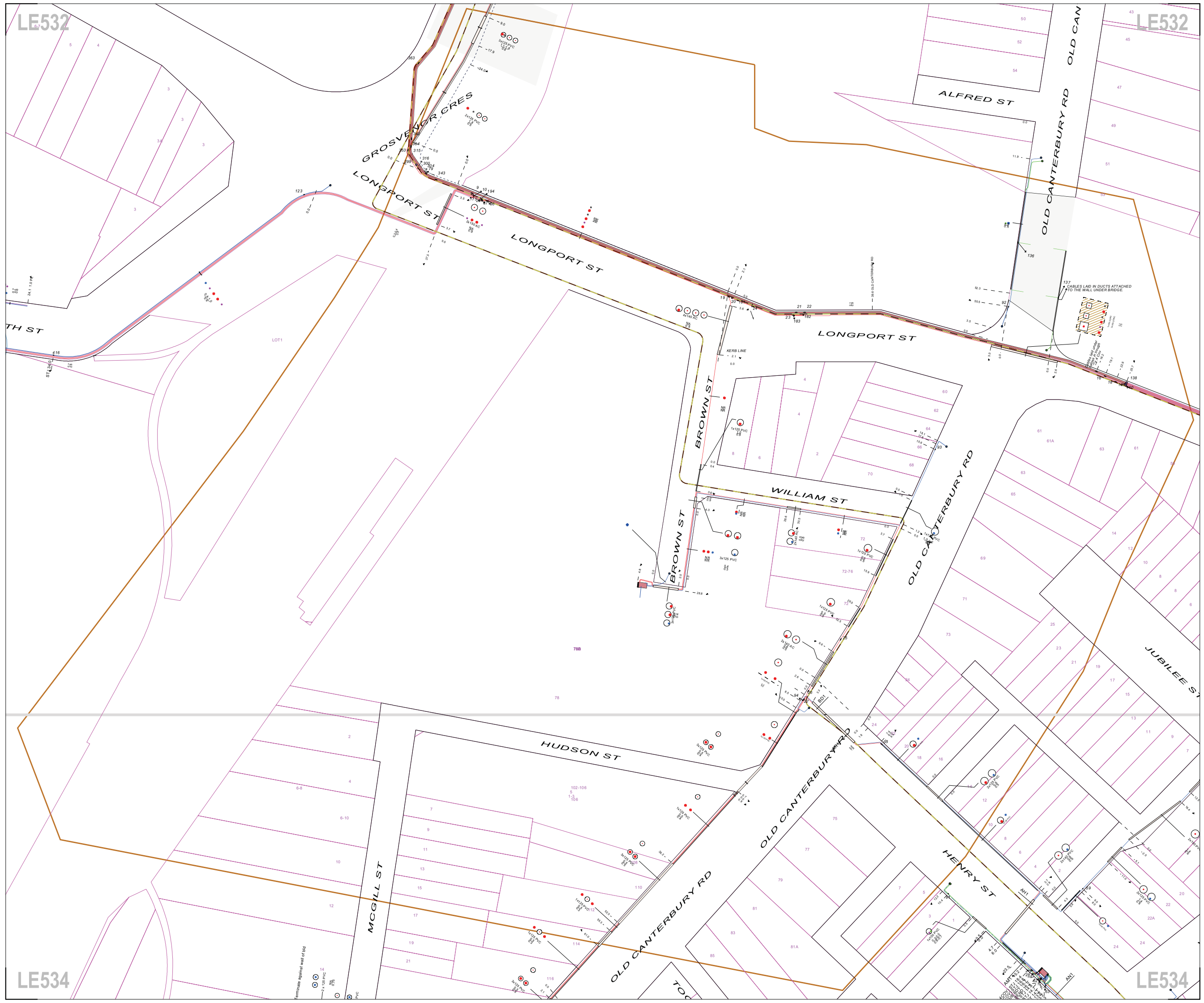


JOINT DETAIL REPORT

No.	Bk-Pg	Pl/Cvr	Joint Location
Map: LE532			
9	896-37	0.61/0.38	19.4 E OF GROSVENOR CRES EXT EBL
10	481-82	1.52/0.61	20.7 E OF GROSVENOR EXT EBL
16	65-34	1.07/0.61	
17	65-34	0.53/0.61	
18	65-34	1.65/0.61	
19	1259-32	1.19/0.61	ADJ TO BROWN ST EXT EBL
20	450-50	1.22/0.91	3.7 E OF BROWN ST EXT EBL
21	450-34	0.91/0.91	20.1 E OF BROWN ST EXT EBL
22	711-47	1.30/0.61	22.6 E OF BROWN ST EXT EBL
23	450-34	1.83/0.91	19.5 E OF BROWN ST EXT EBL
24	450-50	1.22/0.91	8.2 E OF EXT BL OF BROWN ST
25	1289-24	0.61/0.51	13.4 N OF HENRY ST NBL EXT
26	1654-89	0.30/0.51	4.7 S OF HENRY ST NBL
27	1654-89	0.61/0.51	8.1 S OF HENRY ST EXT NBL
79	1798-97	99.99/0.61	0.1 S OF LONGPORT ST EXT NBL
86	1289-15	/0.71	24.3 E OF GROSVENOR CRES EXT EBL
87	387-48	0.69/0.76	22.9 E OF GROSVENOR CRES EXT EBL
92	1664-38	/0.51	0.4 INSIDE EXT BL
93	1289-22	0.61/0.41	15.6 N OF WILLIAM ST NBL
94	1234-18	0.71/0.51	8.3 S OF HENRY ST EXT NBL
136			
137			
138	65-34	0.30/0.84	
139	65-34	0.84/0.84	
140	65-34	1.37/0.84	
175	970-80	/99.99	19.7 E OF GROSVENOR CRES EXT EBL
181			0.3 E OF BROWN ST EXT EBL
182	711-47	1.60/0.61	22.3 E OF BROWN ST EXT EBL
183	450-34	1.83/0.91	19.5 E OF BROWN ST EXT EBL
194	1289-16	0.99/0.71	24.0 E OF GROSVENOR CRES EBL
254	987-48	0.69/0.76	22.9 E OF GROSVENO CRES EXT EBL
299	65-36	99.99/0.79	0.9 N OF LONGPORT ST EXT NBL
300	252-69	0.38/0.61	2.1 E OF GROSVENOR CRES EXT EBL
304	252-69	0.46/0.61	3.7 E OF GROSVENOR CRES EXT EBL
315	1466-74	0.30/0.79	3.6 N OF LONGPORT ST EXT NBL
316	65-35	99.99/0.79	0.9 N OF LONGPORT ST EXT NBL
343	232-94	0.69/0.30	6.9 E OF GROSVENOR CRES EXT EBL

No.	Bk-Pg	Pl/Cvr	Joint Location
Map: LE534			
3	1289-23	0.61/0.41	

WARNING

EnergyAustralia's plans showing the location of its network have been prepared solely for EnergyAustralia's use. They show the position of such assets at the time of installation and may not account for subsequent changes to road alignments, fences or buildings. EnergyAustralia advises that the plans show no more than the presence or absence of its assets in the street and will accept no liability for inaccuracies in the information shown.

Persons working near electricity networks must exercise care and will be held responsible for any damage caused.

Only hand or vacuum excavation shall be employed until the location of EnergyAustralia assets is established. Vacuum excavation must not be used where asbestos containing material is suspected to be present.

Underground: Asbestos or asbestos containing material may be present in EnergyAustralia's underground network. Some sub-transmission trenches contain organo-chloride pesticides (OCPs) which are harmful to human health.

Note that some low voltage cables may have cracked insulation and contact could result in electric shock during nearby excavation work. Any work within 300mm of LV or HV cables should only be performed using safe work methods developed in accordance with the recommendations included in WorkCover Code of Practice for Excavation and WorkCover Guide for Work Near Underground Assets as well as recommendations of NS156.

Overhead: Do not excavate near poles or towers until the stability of the foundation has been assessed by EnergyAustralia. Cables or earth conductors may be present close to substations, poles or towers. Workers must maintain safe approach distances and follow applicable WorkCover Codes of Practice.

GMLA0

Distribution - 17235099

INFORMATION ON THIS PLAN ONLY VALID FOR 28 DAYS FROM ISSUE DATE

26 Nov 2009 **Page 1 of 1**

SCALE 1:472 0 — 28 metres

EA (ISG) GRID

LE53232	LE53241	LE53242
LE53234	LE53243	LE53244
LE53412	LE53421	LE53422

GRID

254K4	254L4	254M4
254K5	254L5	254M5
254K6	254L6	254M6

EnergyAustralia

A0 MOCS_std_plot

S_17235099_GMLA0_1.hpgl2

WARNING: You must contact Energy Australia on (02) 99624558 for work near Transmission cables. **The contact should be made at least two weeks before work commences. See Energy Australia Standard NS156**

LE532 - HM1

Ref: B5

WARNING

GMLA0

Transmission - 17235099

INFORMATION ON THIS PLAN ONLY VALID FOR 28 DAYS FROM ISSUE DATE

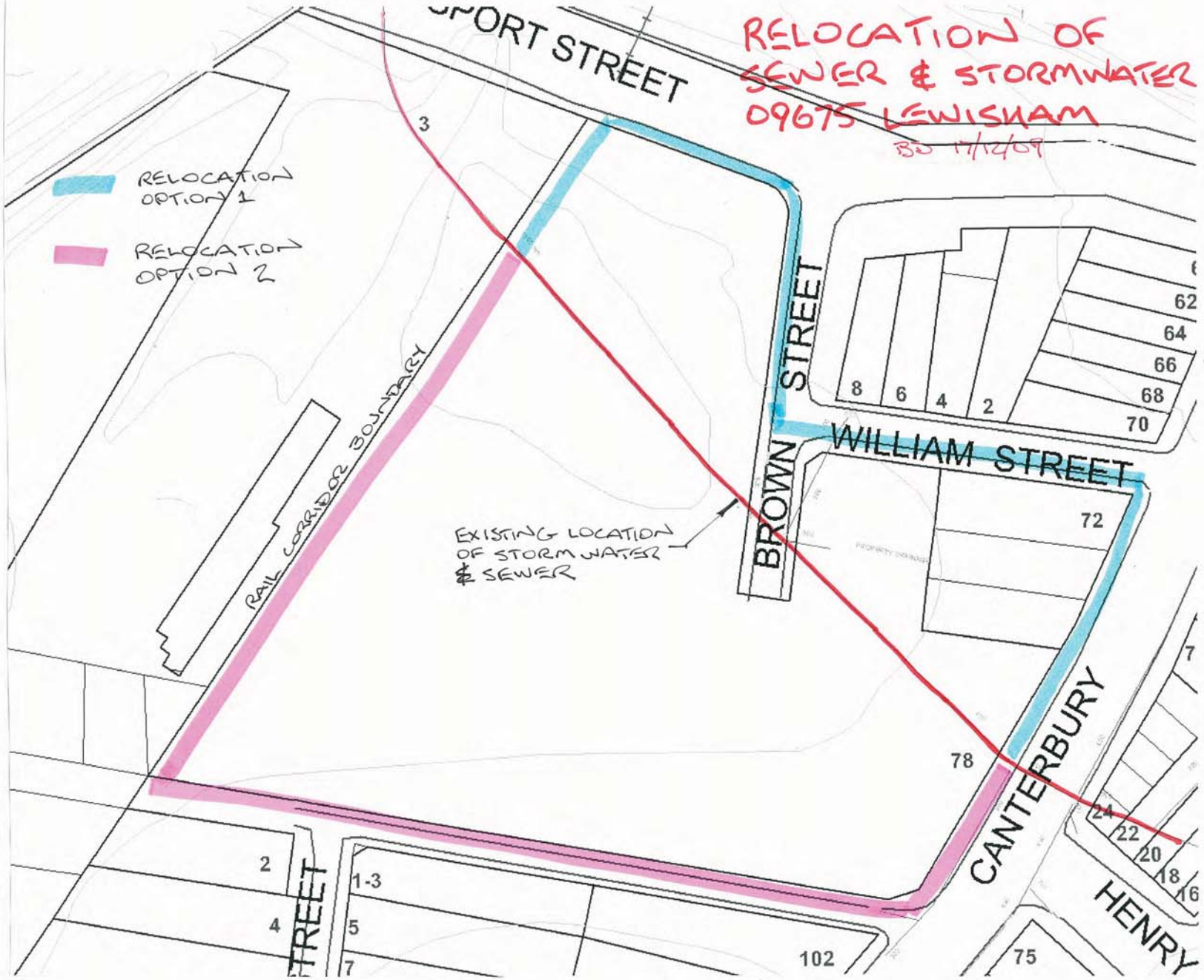
26 Nov 2009 Page 1 of 1

SCALE 1:472 28 metres

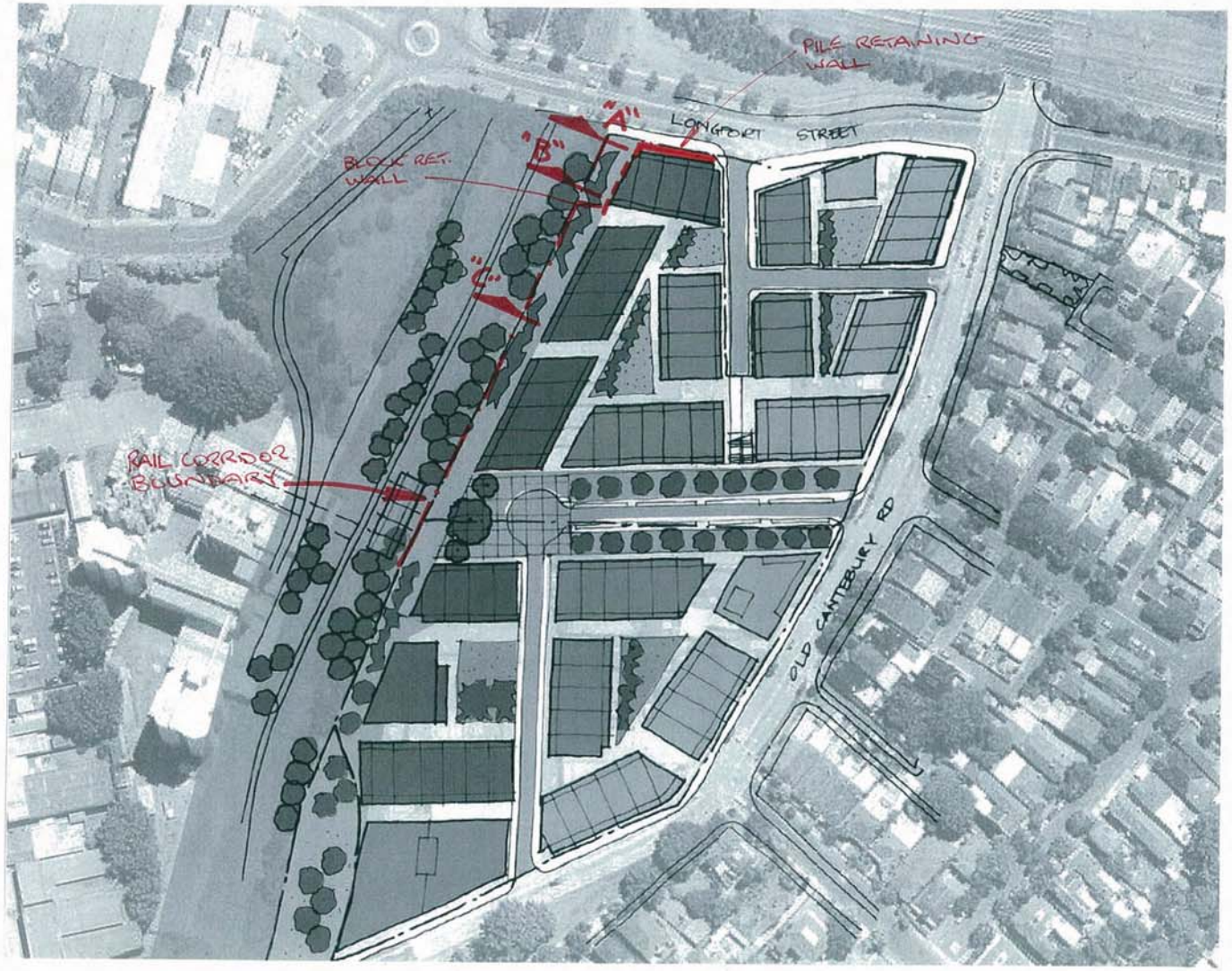
EnergyAustralia

Appendix C
Rail Corp Documentation

Appendix D
Options for Relocation of Sewer and Stormwater


RELOCATION OF SEWER & STORMWATER 09675 LEWISHAM
BJ 11/4/09
PORT STREET
RELOCATION OPTION 1
RELOCATION OPTION 2
RAIL CORRIDOR BOUNDARY
EXISTING LOCATION OF STORM WATER & SEWER
BROWN STREET
WILLIAM STREET
CANTERBURY
HENRY
STREET
3
8
6
4
2
62
64
66
68
70
72
78
2
1-3
4
5
7
102
75
24
22
20
18
16

Appendix E
Cross Sectional Sketches



RobertBirdGroup

NEWCASTLE OFFICE:
Robert Bird Group Pty Ltd
PO Box 817, Hamilton, NSW 2303
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ACN 010 580 248
Web Site: www.robertbird.com

Rev.	Revision Description	Date
A	EA PRELIM	18/12/09

Client: AUSTRALIAN CONSULTANT ARCHITECTS	By: BJD	Date: 18/12/09
Project/Job: LEWISHAM DEVELOPMENT	Job No: 09675	Sheet No: S1
Subject: RAIL IMPACT PLAN	Scale NTS	Rev: A

ROBERT BIRD GROUP

RBP-DOC/2.9

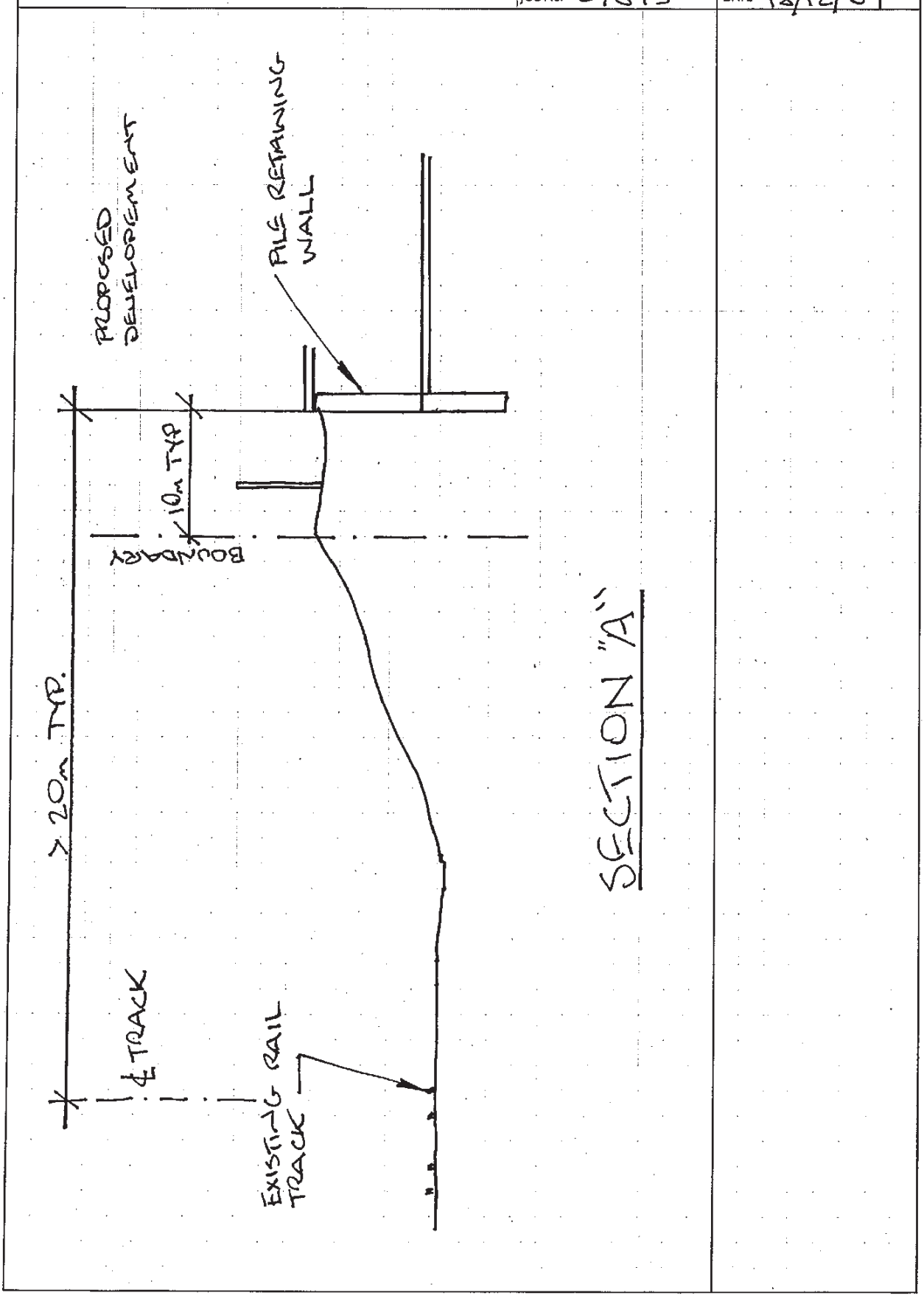
LEWISHAM RAIL IMPACT

DESIGN BJD

JOB No. 09675

PAGE 1 OF 3

DATE 18/12/09



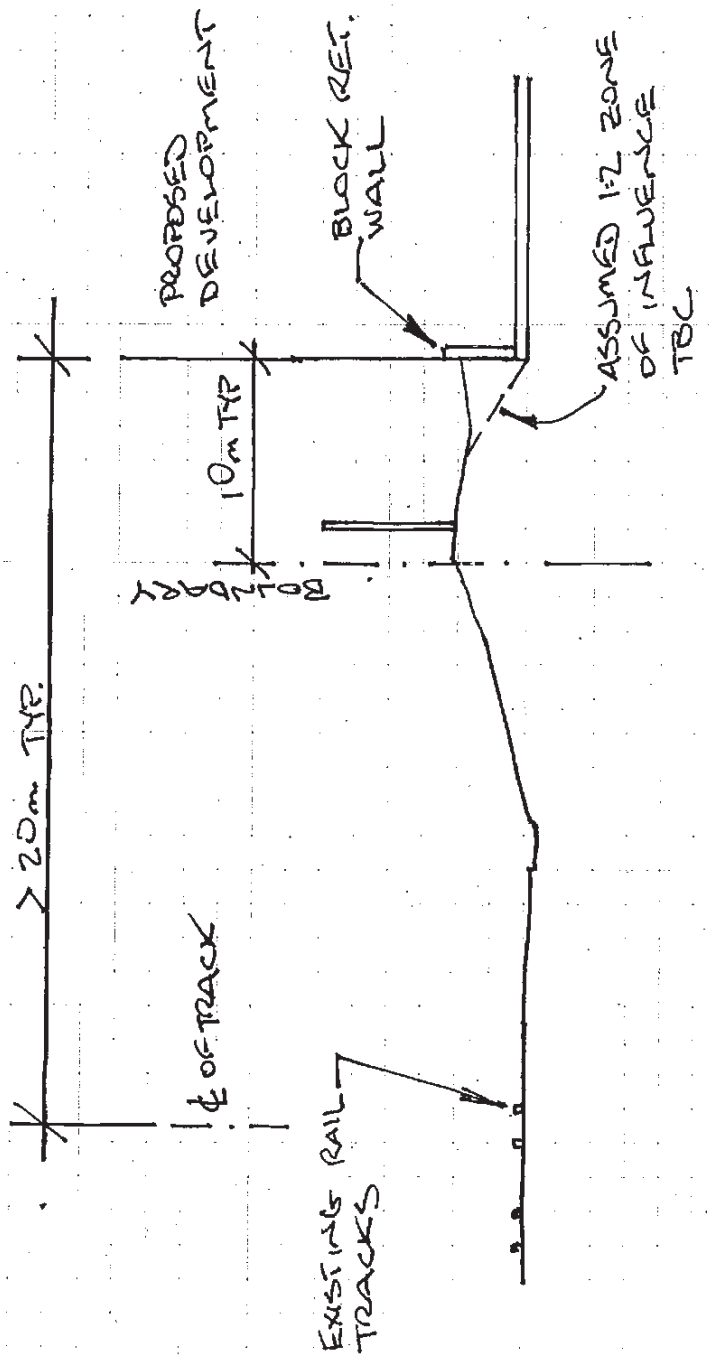
SECTION "A"

RBP-DOC/2.9

LENISHAM RAIL IMPACT

DESIGN BJD | PAGE 2 OF 3

JOB No. 09675 | DATE 18/12/09

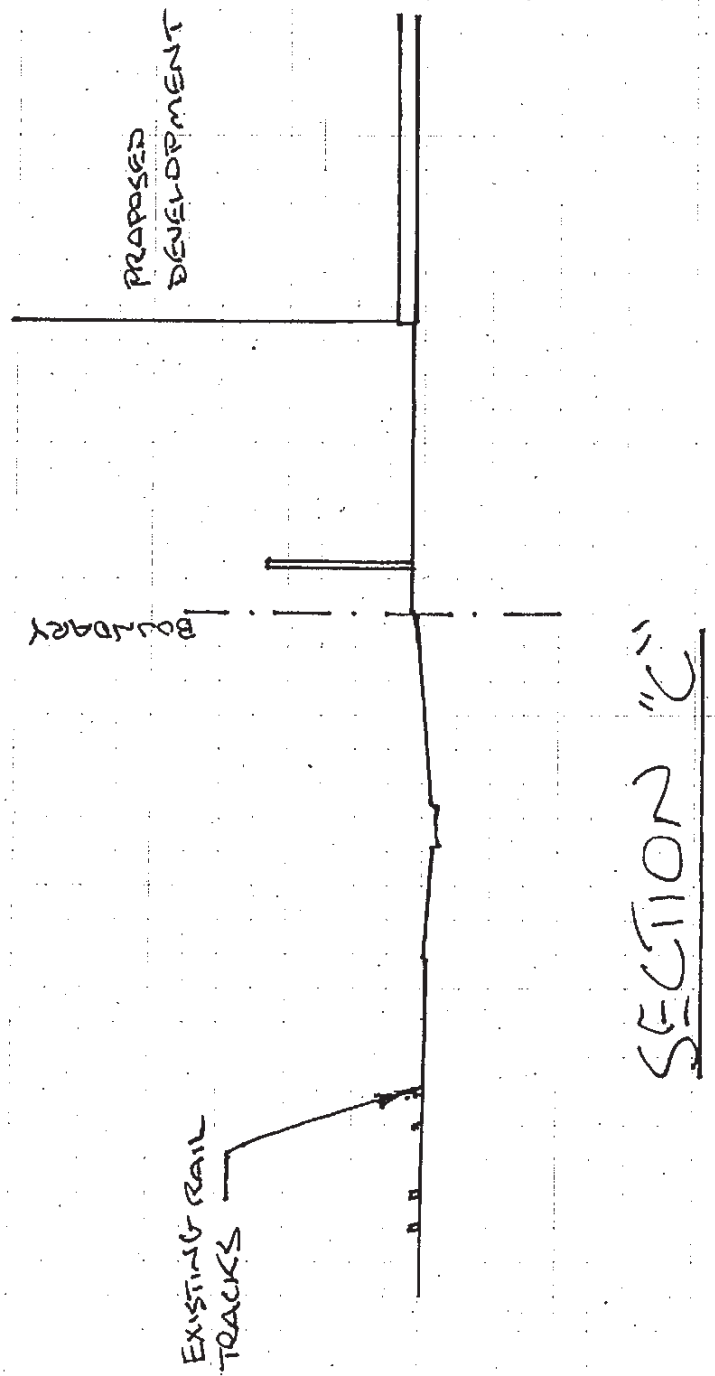


SECTION "B"

ROBERT BIRD GROUP

RBP-DOC/2.9

LEWISHAM RAIL IMPACT	DESIGN BJD	PAGE 3 OF 3
	JOB No. 09675	DATE 18/12/09

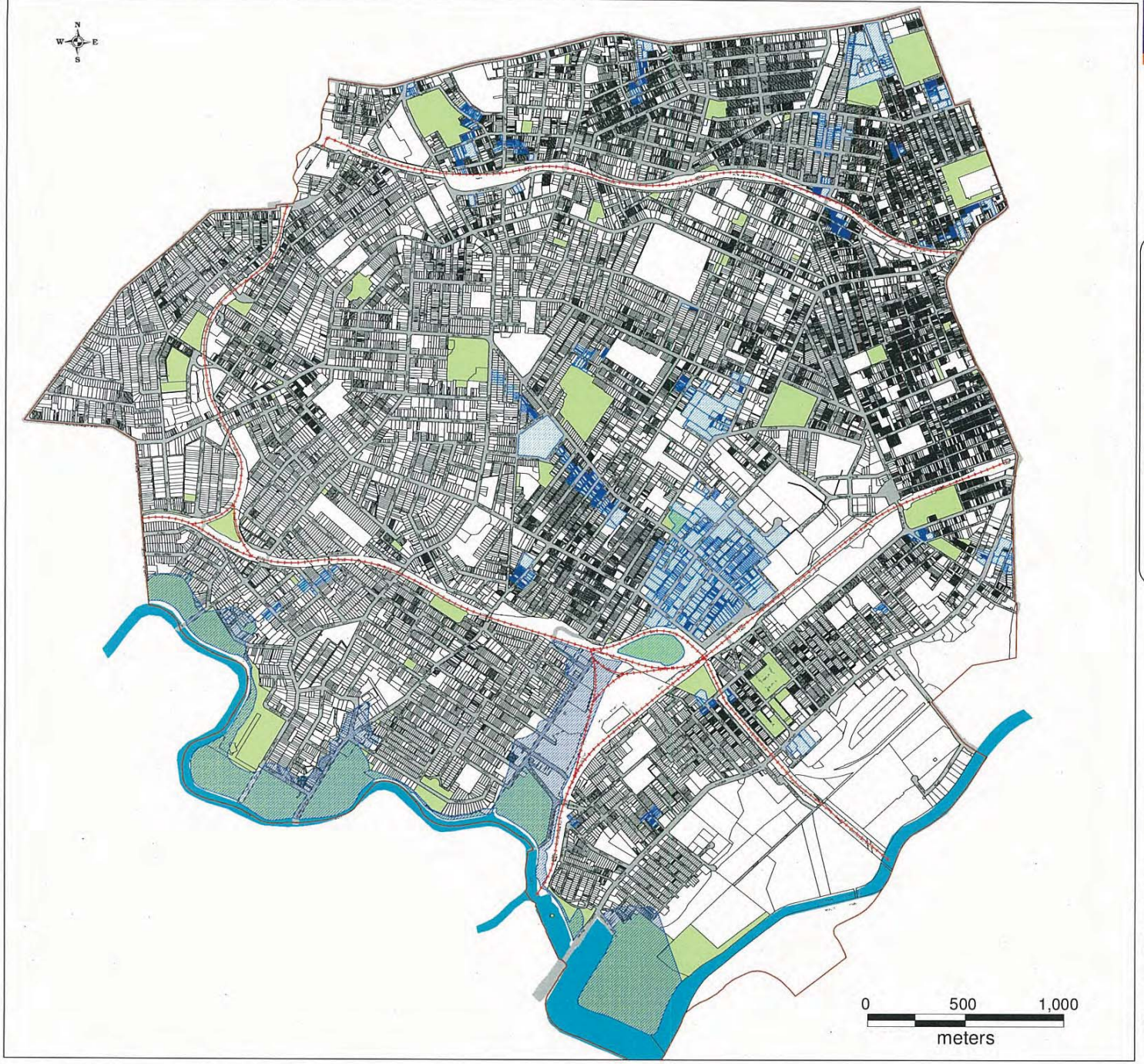


SECTION "C"

Appendix F
Marrickville Council's Map for Flood Affected Properties

MARRICKVILLE council

Flood Affected Properties



LEGEND

- Local Drainage Flood Affected Properties
- Cooks River Flood Zone
- Parks
- Property
- Roads
- Cooks River
- Suburbs
- Railway

P:\GIS_Maps\TechnicalServices\Engineers\Local_cooksriver_flood_affected_Prop.WOR