# UTILITIES AND INFRASTRUCTURE REPORT

CONCEPT PLAN— UNIVERSITY OF TECHNOLOGY SYDNEY (UTS) BROADWAY

ISSUE—REV 4

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## ARUP

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#### 1.0 EXECUTIVE SUMMARY

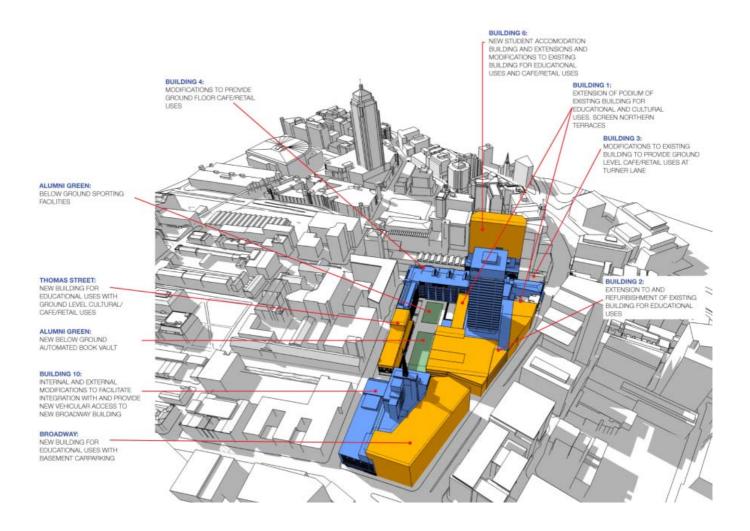


FIGURE 1 (ABOVE) UTS CITY CAMPUS

The University of Technology Sydney competes in a global field of leadingedge academic institutions and, as such, has accepted responsibility for developing new buildings on its urban campus based upon high standards of design and environmental sustainability.



The Broadway Precinct includes the development of two, new stand-alone buildings—the Broadway and Thomas Street buildings—and the expansion of Building 6 (CB06). There are also proposed expansions and refurbishments of Buildings 1 and 2 (CB01, CB02), which include an underground Book Storage Vault and Multipurpose Hall. These developments will require the expansion of electrical infrastructure on campus with additional electrical substations for the Broadway Building, Thomas Street Building, and Building 6 (refer to Section 4.0 for specific sizes). It is proposed that trigeneration plants be investigated for incorporation into the design of the Broadway and Thomas Street buildings in order to generate cleaner electricity and to increase the chilled water supply for the existing campus central plant. It is proposed that all new substations will be fed from existing EnergyAustralia service feeders that currently surround the Broadway Precinct.

It is proposed that new supplies of cold water, fire hydrant water, and fire sprinkler water will be provided for the Broadway Precinct. These supplies will tap into existing services on the site. In order to reduce potable water use, it is proposed that wastewater systems will incorporate a black water treatment plant (currently being investigated as a separate project from this Concept Plan). It is proposed that this system would incorporate sewer mining in order to reduce the amount of sewage on the Sydney infrastructure and ensure an adequate supply of wastewater; however, it is proposed that new buildings will be provided with sewer connections to the existing infrastructure. It is also proposed that the stormwater system will incorporate rainwater collection and storage systems, new connections to existing stormwater mains at the site, and reuse systems for irrigation.

It is proposed that telecommunications systems will be developed based on existing UTS infrastructure and information technology requirements.

#### SUMMARY RESPONSE TO THE DIRECTOR-GENERAL'S REQUIREMENTS

- ▶ Electricity services, capacity, and potential for new substations for the new buildings for the Broadway Precinct have been confirmed, along with proposed locations identified for the services. Spare capacity has been identified at existing substations associated with buildings that will be expanded or renovated in the Concept Plan.
- ► Adequate water supplies have been identified for the new buildings for the Broadway Precinct.
- ▶ Adequate capacity in the wastewater lines has been identified for the Broadway Precinct. The Concept Plan proposes several strategies, such as low-flow tapware, to reduce wastewater output associated with new building development at UTS.
- ▶ Adequate capacity in the stormwater systems has been identified for the Broadway Precinct. The Concept Plan proposes strategies like rainwater capture and green roofs to slow and prevent stormwater runoff associated with new building development at UTS.
- ► Gas supply services with spare capacity have been identified for the proposed trigeneration plants for the new buildings for the Broadway Precinct.
- ▶ Significant spare capacity for communications services has been identified to serve the new buildings for the Broadway Precinct, as well as for the additional capacity needed for expanded and renovated buildings.

#### 2.0 INTRODUCTION

#### REPORT SCOPE

This report is written in response to the Department of Planning Director-General's Requirements for the *Concept Plan - University of Technology Sydney* (Major project No. MP 08\_0116).

More specifically, it addresses the Key Assessment Requirement No.12 as detailed below:

- 12. Utilities and Infrastructure
- Utility and infrastructure servicing, demonstrating development can be adequately serviced for water supply, wastewater, stormwater, electricity, gas and communications.

#### 3.0 UTS BROADWAY CONCEPT PLAN

#### UTS BROADWAY PRECINCT CONCEPT PLAN

The Concept Plan involves the demolition, construction and extension of certain buildings on the Broadway Precinct to enable UTS to provide an additional 84,750 m² of gross floor area of education, social and sporting facilities, including student housing. The proposal will also enhance existing open space and improve pedestrian, bicycle and vehicular access into the Campus. The project will deliver facilities for up to 15,000 EFTSL (equivalent full time student load) on the campus by 2015, up from 12,200 in 2008.

Concept approval is sought for the following, as illustrated in Figure 2:

Demolition of existing Building 11 (81 Broadway), Building 12 (113 Broadway) and Building 13 (115 Broadway).

**Building 1**—extension to podium of existing building to a height: of 22.47 metres to provide an additional 4,050 m<sup>2</sup> of gross floor area for educational and cultural uses.

**Building 2**—extension to, and refurbishment of, existing building to a height of 24.24 metres to provide an additional 6,750 m<sup>2</sup> of gross floor area for educational uses.

Building 3—modifications to existing building to provide café or retail uses on Level 1.

**Building 4**—modifications to existing building to provide café, retail uses or public facilities on Level 1.

**Building 6**—extension and modifications to Levels 1-7 of the existing building to provide approximately 5,950 m<sup>2</sup> of gross floor area for educational, retail or café uses; construction of a new 69.20 metre high extension to provide approximately 19,300 m<sup>2</sup> of gross floor area for student accommodation; new pedestrian link between Harris Street and the Ultimo Pedestrian Network through Building 6.

**Building 10**—modifications to existing building to provide vehicular access into the new Broadway Building at basement level, and pedestrian access at ground and upper levels.



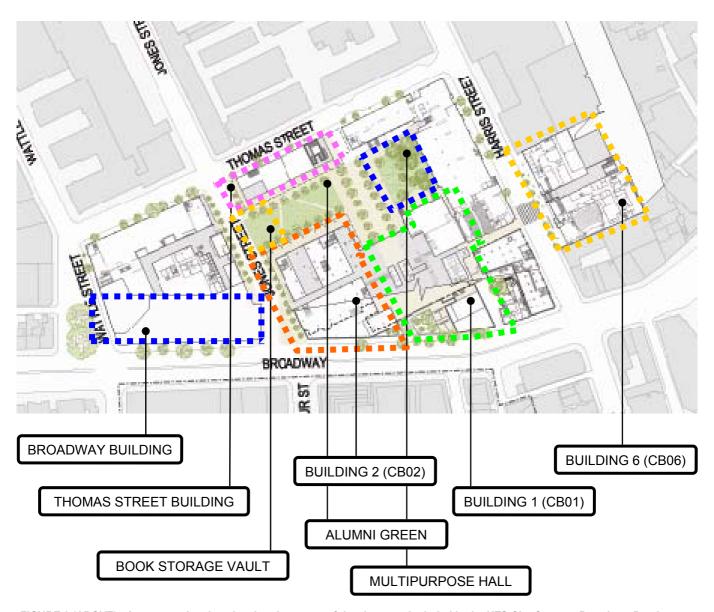


FIGURE 2 (ABOVE) A campus site plan showing the extent of development included in the UTS City Campus Broadway Precinct concept plan. Refer to the architectural concept plan documents for full extent of demolition and construction.

**Broadway Building**—construction of a new 44.47 metre high building to provide 34,650 m<sup>2</sup> of educational, and café or retail uses plus basement car parking for approximately 160 relocated spaces.

**Thomas Street Building**—construction of new 27.10 metre high building to provide 10,000 m<sup>2</sup> of gross floor area for educational, cultural and café or retail uses.

**Alumni Green**: landscaping; below ground book storage vault (2,250 m<sup>2</sup> of gross floor area); below ground multi-purpose sports hall (1,800 m<sup>2</sup> of gross floor area); public domain improvements to Broadway and Thomas, Harris, Wattle and Jones Streets.

#### 4.0 ELECTRICITY

#### **EXISTING ELECTRICAL SERVICE**

The UTS Broadway Precinct is serviced by the local power distribution company, Energy-Australia, through main infrastructure consisting of underground high-voltage (11 KV) routes located in Broadway Street, Harris Street, Wattle Street, Thomas Street, and Jones Street.

UTS is considered a Low-Voltage Customer by EnergyAustralia in all of its Broadway Precinct buildings where substations supplying these buildings with power are owned and maintained by EnergyAustralia. The one exception is Building 10 (CB10), where UTS is considered a High-Voltage Customer. This is due to the condition of ownership, where UTS inherited the high-voltage service when it purchased the building from a previous owner. As such, for Building 10, UTS is responsible for the operation and maintenance of the high-voltage services, including distribution transformers. The electrical substations feeding the Broadway Precinct are indicated in FIGURE 3; the loads on these substations are included in TABLE 1.

The power consumption rates for the University's various buildings have been obtained from energy profile records maintained by UTS. These have then been confirmed with EnergyAustralia Maximum Demand Indicators (MDI) readings. Figures indicated that the transformers owned and maintained by EnergyAustralia (where UTS is a Low-Voltage Customer) generally operate within their ratings. Some of these low-voltage services have additional capacity to cater for new loads. However, this will need to be finalised with EnergyAustralia during the detailed design stage once building areas and architectural design have been developed.

In regards to Building 10, where UTS is a high-voltage customer, the maximum demand figures show that the substations have more spare capacity—approximately 60-70%—than the building requires. This is due to the existing installation of 10 high-voltage transformers of 750KVA each, while the building maximum demand has not been greater than 2000 KVA.

#### **NEW ELECTRICAL SERVICE**

Three new electrical substation supply locations: at the Broadway, Thomas Street, and Building 10 locations will be investigated for the UTS Broadway Precinct. Preliminary load profiles have been developed based on the Masterplan space planning area allocations.



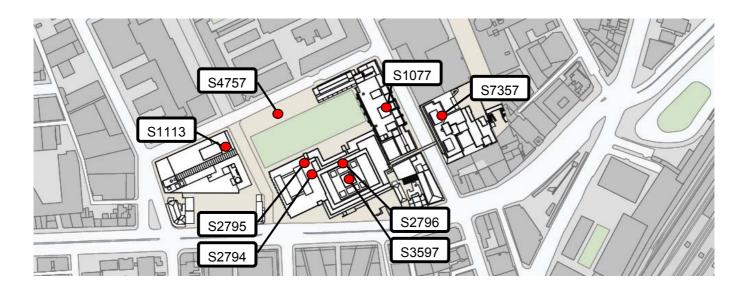


FIGURE 3 (ABOVE) This plan shows the EnergyAustralia substations currently serving UTS facilities. All of these substations are located in accessible rooms within UTS buildings. The S4757 substation has been removed by EnergyAustralia due to demolition of the existing building in this vicinity. S1113 is a high-voltage substation, the only one on the UTS campus.

UTS Electrical Substation Overview (May 2008)							
Sub No.	Trans (KVA)	Rating (A)	MD (A)	Location	Notes		
1077	2*1000 KVA	1928	1120	Building 4	Supplies other customers		
2794	3*1000 KVA	3874	3550	Building 1, Level 1			
2795	3*1000 KVA	3788	2450	Building 1, Level 1			
2795	3*750 KVA	2100	1200	Building 1, Level 7			
3597	3*750 KVA	2100	1050	Building 1, Level 29			
7357	3*1000 KVA	3866	1600	Building 6			
1113			84A (HV)	Building 10	HVC, Fairfax site		
4757	1*750 KVA	1095			This was removed during demolition		

TABLE 1 This table collates the EnergyAustralia electrical substations that currently feed the UTS Broadway Precinct. These substation loads were taken from UTS energy consumption data and confirmed with EnergyAustralia data. As with any new building project, load capacity is confirmed again once detailed design begins or when a development application for an individual proposed new building or expansion of an existing building is filed. This is due to the fact electrical loads change and new load could be added to the substation or feeder due to other development in the area.

#### **NEW ELECTRICAL SERVICES: KEY ISSUES**

Based on the Concept Plan for the UTS Broadway architectural program, the estimates of the maximum demands of the proposed areas using the NLA (Net lettable Area) and assuming 120VA per square metre indicate the following:

**CB01 Extension**: 300 KVA **CB02 Extension**: 600 KVA

Book Storage Vault: 220 KVA

Multi-purpose Sports Hall: 117 KVA

Broadway: 2510 KVA
Thomas Street: 630 KVA
CB06 Extension: 350 KVA

It is anticipated that construction will occur over the next 6 years.

#### PROPOSED ELECTRICAL SYSTEM RETICULATION

Preliminary discussions with Energy Australia on the electrical services infrastructure for the site have been taken on the basis of the above estimated maximum demand of the proposed development sites.

UTS has opted to remain a low-voltage customer for EnergyAustralia. As such, new chamber substations will be investigated for the Broadway and Thomas Street buildings, as well as the residential expansion of Building 6 (CB06). These substations would be fed from existing high-voltage (11kV), underground cables that surround the Broadway Precinct. It is anticipated that the remaining expanded and refurbished buildings will rely on the existing building substations; the spare capacity in the equipment at those substations has been confirmed. Preliminary discussions with EnergyAustralia indicate that spare capacity is available on these existing feeders and at the substations feeding the Precinct.

Spatial requirements for chamber type substations vary depending on the capacity of the required substation size. For planning purposes, 150m² for the substation plus access routes within the building from the street have been proposed. Final locations will be determined during the schematic design of individual new buildings.

#### **TRIGENERATION**

The design teams for the Broadway Building and Thomas Street Building will investigate the use of a trigeneration plant to generate electricity, heat or hot water, and chilled water for use within the Broadway Precinct. It is proposed that electricity generation would be sized to the largest electrical substation switchboard for each respective building. The chilled water generated would be fed in the Broadway Precinct central plant chilled water loop to be used throughout the Broadway Precinct. The design teams would also investigate the potential to connect to the larger trigeneration plant that has been proposed for the Frasers Broadway site, south of UTS. Currently, none of these initiatives have been



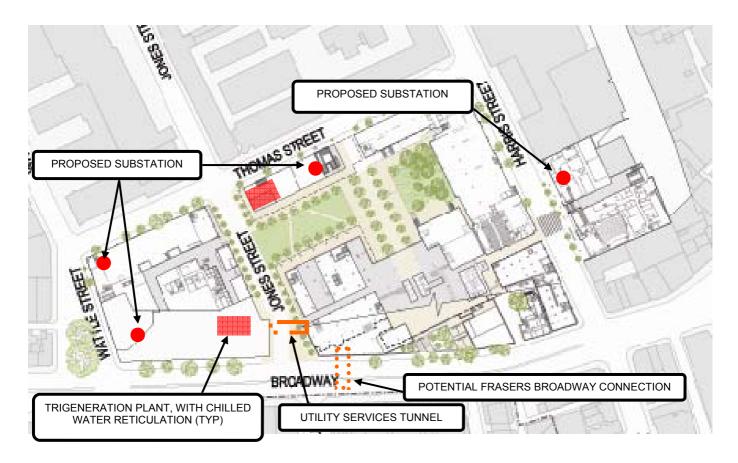


FIGURE 4 (ABOVE) A site plan of the UTS Broadway Precinct energy strategy includes the addition of several new EnergyAustralia substations to feed new and existing buildings. The proposed trigeneration plants for the Broadway and Thomas Street buildings will be investigated so that the University could expand its facilities without the need for adding a new chiller to the existing campus central plant. By eliminating the need for an additional chiller, UTS could reduce the potential increase in energy consumption associated with implementing the Masterplan.

This solution also depends on the construction of a proposed services tunnel between the Broadway Building and CB02. This tunnel would allow for all utilities—water, gas, electricity, chilled water, heating hot water, telecommunications, and data—between these two buildings, thereby allowing for the connection of the entire Broadway Precinct utility systems. The potential for connecting the site to the Frasers Broadway site, south of UTS, for chilled water capacity is indicated here only as a reference. The actual location and viability of such a scheme would need to be coordinated with Frasers.

incorporated into the UTS Broadway Precinct Concept Plan, but discussions between UTS and Frasers are continuing. However, UTS has made planning for a future utility tunnel under Broadway—which would connect UTS to the Frasers site—a consideration of the Concept Plan that would merit further investigation as both sites develop.

Size: Proposed 1.2-1.5MW

**Location:** Broadway Building (basement and rooftop plant space); Thomas Street Building (basement)

**Benefits:** The benefits of such a system include the reduction of greenhouse gas production associated with electricity generation. This is due in large part to the difference between grid power, which is produced using coal, and trigeneration plant power, which would be produced using natural gas. Such a system would help UTS achieve its commitment to designing new buildings to a 5 Star Green Star Education V.1 design rating or a 6 Star Green Star Education V.1 design rating for the Thomas Street building.

#### **RENEWABLES**

It is proposed that individual design teams for new and refurbished buildings for the UTS Broadway Precinct will investigate the use of renewable energy generation at the building level. This could include solar photovoltaics, bio-fuels, and wind turbines. As the scope of the Concept Plan has been conceived as a multi-year process, it is envisaged that UTS will undertake such investigations due to the changing market for renewable power, the availability of new and more efficient technologies, and government incentives to install such systems. Refer to the Concept Plan's ESD Report No. 10 for more information.

#### **ASSESSMENT**

All electrical services and systems would be designed in accordance with Australian Standard 3000 and other applicable standards.

#### **MANAGEMENT**

Design consultants shall confirm electrical service capacity once architectural areas and plans have been developed in the detailed design phase. At this point, UTS would engage Energy Australia in a service agreement for new substations and service extensions.

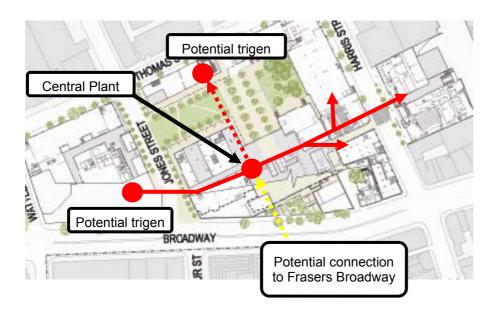


FIGURE 5 (LEFT) This site plan indicates the potential locations for trigeneration plants to be investigated for the Broadway Precinct. Plants will be investigated for the Broadway and Thomas Street buildings, with connections to the campus central plant's chilled water system. The potential for a future connection to the Frasers Broadway trigeneration plant remains on the University's larger community agenda.



#### 5.0 PROPOSED HYDRAULICS SITE PLAN

The next section lays out the hydraulics services, including the following:

- ▶ Water supply
- ▶ Wastewater
- ▶ Stormwater
- ▶ Gas

As these services are typically provided as part of one service offering, the proposed new services have been combined in the conceptual hydraulics plan below. The following pages address each service separately and account for the existing infrastructure and capacity for feeding the Broadway Precinct development.

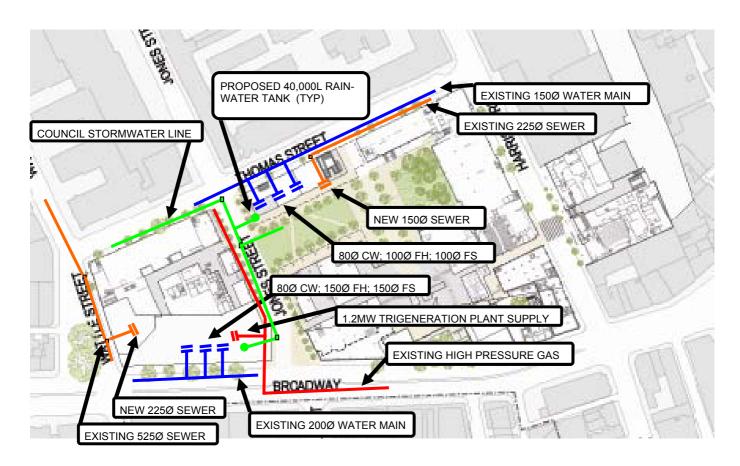


FIGURE 6 (ABOVE) This site plan indicates the anticipated new services for the new buildings for the UTS Broadway Precinct, including sewer connections, cold water supply, fire water hydrant supply (FH), fire water sprinkler supply (FS), and high-pressure gas supply. This information has been developed based on Sydney Water and EnergyAustralia site information, as well as first-hand investigation of services. Where no new services are indicated, existing services shown on previous pages have been deemed adequate for potential expansion projects.

#### 6.0 WATER SUPPLY

#### **▶ WATER SUPPLY: KEY ISSUES**

There are Sydney Water water supply mains on Broadway, Harris, Jones, Thomas and Wattle streets, which all border the UTS Broadway Precinct. New connections would be provided from these mains to the Broadway and Thomas Street buildings (refer to FIGURE 6 on page 13). It is proposed that the Broadway Building's water supplies for water, fire hydrant water, and fire sprinkler water be fed from the existing water main on Broadway. It is proposed that the Thomas Street Building's water supplies for water, fire hydrant water, and fire sprinkler water be fed from the existing water main on Thomas Street.

Potable water supply requirements would be reduced due to rainwater reuse and black water systems to be investigated for the Broadway and Thomas Street buildings (refer to FIGURE 12 on page 21). These recycled water systems could be used to supply irrigation, toilet flushing, and cooling tower make-up water.

#### **ASSESSMENT**

This report includes preliminary sizes and locations for water supplies that will be confirmed based on final programs and areas for each building as they are developed or refurbished during the implementation of the Concept Plan. Sizes and design requirements will conform to Australian Standard 3500 for water supplies, AS2419 for fire hydrant water supplies, and AS2118 for fire sprinkler water supplies.

#### **MANAGEMENT**

The building services consultants will confirm the sizes and configurations of all water supplies with Sydney Water and EnergyAustralia as part of schematic design for each building project of the Concept Plan.

WATER U	JSE IN U	JTS BUI	LDINGS I	FOR 200	7 (in Kil	oLiters)						
BLDGS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC
CB01 CB02* CB04*	8828	8432	10391	6470	6187	4410	3965	5787	-	-	16906	5000
CB06	129	478	962	646	903	495	910	582	-	1030	638	600
CB10	2503	2492	3210	2385	2435	1661	1842	2006	1267	2226	2338	1585

TABLE 2 This table indicates the water demand, based on billing records provided by UTS, for buildings on the City Campus for 2007 as measured in kiloliters. Some data could not be verified. These numbers have been used as the basis of design for the addition of new water supply sources for the implementation of the Concept Plan for the Broadway Precinct. [\* = combined with CB01]



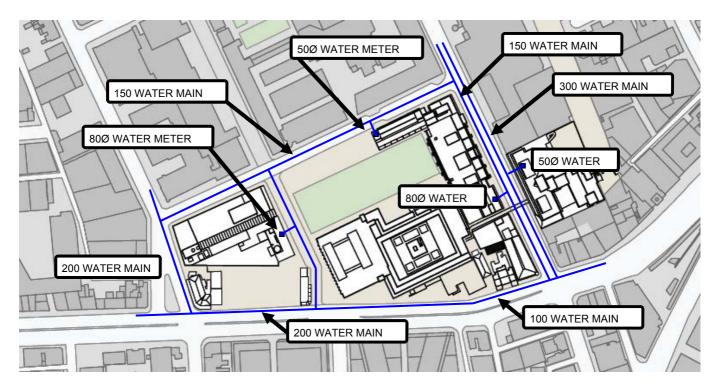


FIGURE 7 (ABOVE) This plan indicates the existing water and gas connections, including water infrastructure, for the UTS campus. This information is based on documentation provided by UTS, Sydney Water and EnergyAustralia. The water lines are the property of Sydney Water and the gas lines are the property of EnergyAustralia.

UTS BROADWAY PRECINCT—PROPOSED HYDRAULICS LOADS				
Building	Water	Waste	Gas	
Building 1 (CB01)	7.70L/second (80mm supply)	150mm drain	410 MJ/hour	
Building 2 (CB02)	6.80 L/second (80mm supply)	150mm drain	864 MJ/hour	
Building 4 (CB04)	5.50 L/second (80mm supply)	100mm drain	187 MJ/hour	
Broadway Building	5.00 L/second (80mm supply)	225mm drain	3610 MJ/hour	
Thomas Street Building	2.42 L/second (65mm supply)	150mm drain	849 MJ/hour	
Building 6 (CB06)	5.00 L/second (80mm supply)	150mm drain	468 MJ/hour	

TABLE 3 Preliminary load calculations for water, waste and gas for the Broadway Precinct plan for UTS are shown above. These calculations are based on the UTS City Campus Masterplan 2020 area allocations and architectural program. The following assumptions have been made in preparation of this table: 12-hours per day of operation; 10 Litres per person per day for cold water consumption; 6 Litres per person per day for hot water consumption; and 40kW/m2 for heating loads.

#### 7.0 WASTEWATER

#### **► WASTEWATER: KEY ISSUES**

There are existing sewer lines on Thomas and Wattle streets, which would be used for the sewer lines required for the Broadway and Thomas Street buildings (refer to FIGURE 6 on page 13). However, these sewage loads could be reduced if a black water treatment plant were to be designed to accommodate the sewage loads generated by new buildings in the Broadway Precinct. The other buildings have existing sewer connections that preliminary analysis has concluded are designed to accommodate increased loads.

#### **ASSESSMENT**

This report includes preliminary sizes and locations for wastewater lines that will be confirmed based on final programs and areas for each building as they are developed or refurbished during the implementation of the Concept Plan. Wastewater systems shall be designed in accordance with Australian Standard 3500.

#### **MANAGEMENT**

The building services consultants will confirm the sizes and configurations of all wastewater lines with Sydney Water as part of schematic design for each building project of the Concept Plan.

#### FOR INFORMATION ONLY:

#### **BLACK WATER TREATMENT PLANT**

Black water treatment plants can significantly reduce the potable water needs of buildings, as such plants treat sewage to acceptable standards for reuse for cooling towers and toilet flushing. At UTS, the majority of water use is attributed to cooling towers and toilet flushing, thus such a system is currently undergoing a comprehensive feasibility study at the University.

Black water systems work primarily one way. The system pumps untreated sewage from the municipal sewer system into a buffer tank where it is then filtered through a treatment process and into a holding tank. The solid component of the sewage is then returned to the municipal sewer, while the treated water can be reused to flush toilets and, in the case of UTS, in cooling towers. This water cannot be used for potable purposes, such as hand washing and anywhere else humans could potentially come into contact with it (such as public fountains).

The water from these systems is pumped through buildings via "purple pipe," which has been termed "dual-reticulation" in this Concept Plan. Dual reticulation entails running a secondary water supply system through a building using this purple pipe and used for non-potable purposes. The Broadway and Thomas Street buildings, in addition to the refurbishment of CB02, would be designed with dual-reticulation so as to use the recycled rain water supply as a first measure, with the potential to tap into the black water plant if the capacity were available.



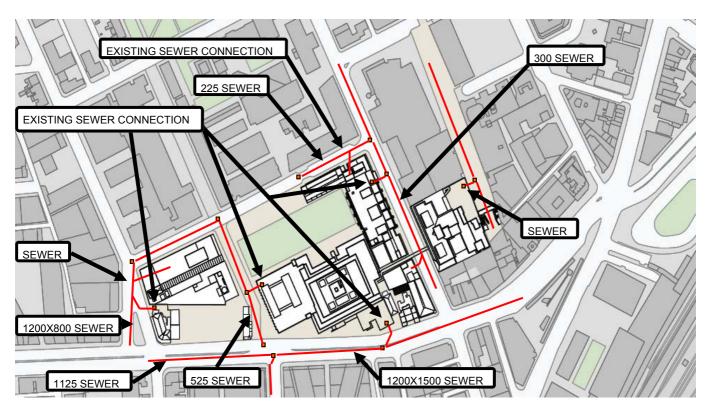


FIGURE 8 (ABOVE) This plan indicates the existing sewer and stormwater connections, including sewer infrastructure. This information is based on existing UTS drawings and information provided by Sydney Water. The sewer lines and stormwater lines are the property of Sydney Water.

Further investigation has been proposed to be undertaken to determine the appropriateness and optimal size of the black water plant for the UTS Broadway Precinct. The table below indicates just how large a plant would be needed to supply recycled black water to Broadway, Thomas Street, and CB02 and CB01.

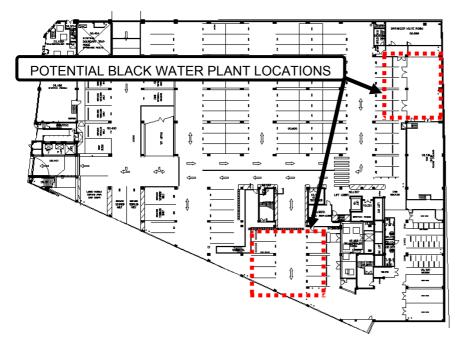


FIGURE 9 (LEFT) A basement plan of Building 10 (CB10), indicating potential locations for the proposed black water treatment plant. These locations have been proposed since they would be adjacent to the existing sewer line along Jones Street. The UTS project includes the possibility of sewer mining, which would effectively reduce the amount of sewage output distributed to this sewer line. This would potentially free up more capacity to be used for future development in this precinct of Sydney. This is provided for information only.

PROPOSED BLACK WATER SYSTEM SIZING CONSIDERATIONS (LITRES/DAY)				
BUILDING	TOILET FLUSHING (L/DAY)	COOLING TOWERS (L/DAY)	TOTAL	
CB01 AND CB02	32,312	120,000	152,000	
BROADWAY AND THO- MAS STREET BUILD- INGS	22,904	67,000	89,904	
TOTAL BLACK WATER SYSTEM REQUIRE- MENTS	55,216	187,000	241,904	

TABLE 4 This table indicates the potential amount of sewage generated by Buildings 1 and 2 (CB01, CB02, which are combined into one sewer output) and the proposed Broadway and Thomas Street buildings. The separate consultant team for the black water plant will investigate the actual design conditions of the plant in concert with the consultants that will implement this Concept Plan. This is provided for information only.



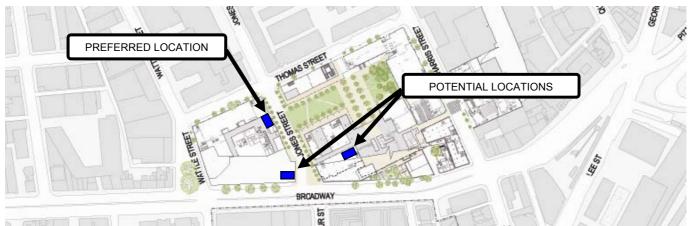


FIGURE 10 (ABOVE) Preliminary investigation by UTS and Arup identified the existing basement car park of the UTS Building 10 (CB10) as an ideal location for the black water plant. However, a feasibility study could investigate other potential locations, including in or adjacent to the central plant in CB01 and CB02 or potentially in the basement of the new Broadway Building. The final location will be assessed as part of the investigation to determine the appropriateness of the black water plant and is provided here for information only.

#### 8.0 STORMWATER

#### **► STORMWATER: KEY ISSUES**

There is an existing stormwater line on Thomas Street. This line would be used for a new Broadway Precinct connection that would take stormwater from Alumni Green, as well as overflow from the rainwater collection tanks recommended for both the Broadway and Thomas Street buildings (refer to FIGURE 11). The installation of a new rainwater collection system will also be investigated as part of the refurbishment of Building 2 (CB02). This would effectively reduce the stormwater output of that existing building.

Stormwater runoff would be reduced with the proposed new development in the Broadway Precinct through a number of strategies. Chief among the strategies to be investigated is a new drought-tolerant garden in an expanded Alumni Green area. In addition, green roofs will be investigated for the roofs of the Broadway and Thomas Street buildings would reduce and slow stormwater runoff.

#### **ASSESSMENT**

This report includes preliminary locations for stormwater lines that will be confirmed based on final programs and areas for each building as they are developed or refurbished during the implementation of the Concept Plan. Stormwater systems shall be designed in accordance with Australian Standard 3500.

#### **MANAGEMENT**

The building services consultants will confirm the sizes and configurations of all stormwater lines with Sydney Water as part of schematic design for each building project of the Concept Plan.

UTS—STORMWATER TREATMENT OBJECTIVES					
Suspended solids	80% retention of average annual load				
Total phosphorus	45% retention of average annual load				
Total nitrogen	45% retention of average annual load				
Litter	Retention of litter greater than 50mm for flows up to the 3-month ARI peak flow				
Coarse sediment	Retention of sediment coarser than 0.1235mm for flows up to the 3-month ARI peak flow				
Oil and grease	No visible oils for flows up to the 3-month ARI peak flow				

TABLE 5 These stormwater treatment objectives are given by the book, "Australia Runoff Quality, A Guide to Water Sensitive Urban Design," published in 2006 by Engineers Australia. The design team for the Concept Plan will investigate treating all stormwater in accordance with these guidelines and with those contained in the CSIRO "Urban Stormwater Best Practice Environmental Management Guidelines" (1999) in order to eliminate pollution in stormwater that is released back into the Sydney stormwater system.



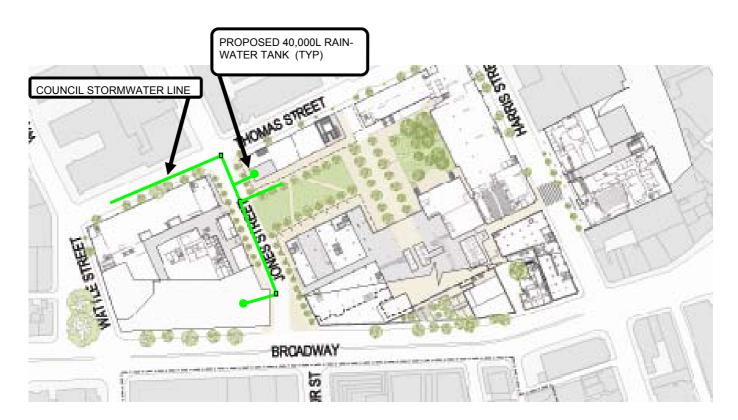


FIGURE 11 (ABOVE) This site plan indicates the proposed new stormwater connections for the Broadway and Thomas Street buildings, as well as for the renovated Alumni Green public space. The incorporation of rainwater storage tanks in both new buildings will significantly decrease the stormwater runoff associated with the Broadway campus. The design team will perform a comprehensive site water balance report during detailed design in order to design appropriately sized stormwater retention and detention systems.

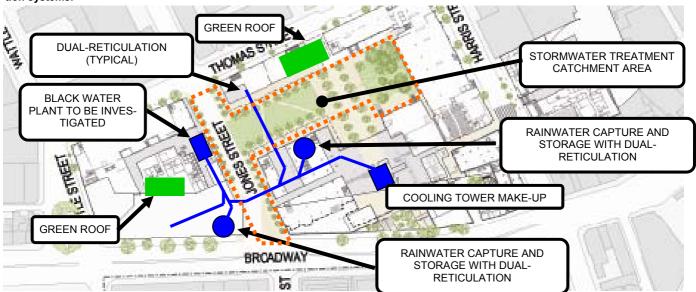


FIGURE 12 (ABOVE) A Broadway Precinct site plan showing water strategies in a diagrammatic form only. Due to the difficulty and expense of retrofitting existing buildings with secondary hydraulics systems (otherwise known as "dual-reticulation"), there are limited options for incorporating black water and grey water systems. However, UTS has committed to investigate incorporating rainwater recycling systems in new buildings and in existing buildings that are undergoing a total refurbishment, such as CB02.

#### 9.0 GAS

#### ► HIGH-PRESSURE NATURAL GAS: KEY ISSUES

There is an existing high-pressure natural gas line running from Broadway along Jones Street. This line would be used to supply natural gas to the 1.2MegaWatt trigeneration plant to be investigated for the Broadway Building. The trigeneration plant would include a natural-gas-fired generator set that would be operated to provide electricity for the Broadway Building and, by way of an absorption chiller, chilled water to the campus central plant's chilled water loop. There is also an additional trigeneration plant proposed to be investigated as part of the development of the Thomas Street Building. It is proposed that the same existing natural gas line would be used to supply this potential plant.

#### **ASSESSMENT**

This report includes preliminary locations for natural gas supplies that will be confirmed based on the final configuration of the trigeneration plants proposed to be investigated for each building as they are developed or refurbished during the implementation of the Concept Plan. All natural gas supplies will be designed in accordance with applicable Australian Standards.

#### **MANAGEMENT**

The building services consultants will confirm the sizes and configurations of all natural gas supplies with Sydney Water as part of schematic design for each building project of the Concept Plan.

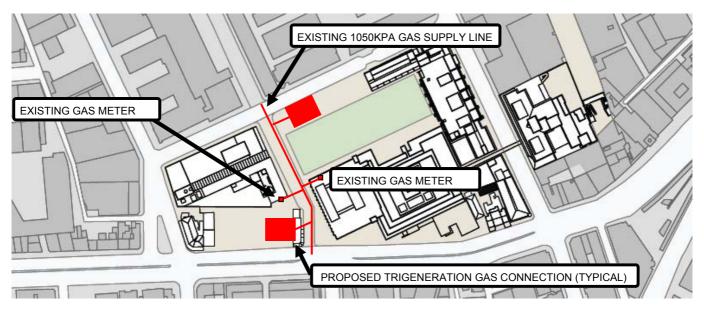


FIGURE 13 (ABOVE) This plan indicates the existing gas connections for the Broadway Campus. This information is based on documentation provided by UTS, Sydney Water and EnergyAustralia. The gas lines are the property of EnergyAustralia.



#### 10.0 COMMUNICATIONS

Due to the location of the UTS Broadway Precinct in the heart of Sydney, the University has access to a number of telecommunications providers. These include Telstra, Verizon, and Optus, among others.

#### **TELECOMMUNICATIONS: KEY ISSUES**

The proposed Broadway and Thomas Street buildings will be designed with new telecommunications (voice, data) infrastructure based on the performance and capacity requirements of the University. Expansions and refurbishments of buildings will be developed with an extension of existing services as required. Refer to the Appendix for site area drawings indicating existing telecommunications infrastructure.

#### **ASSESSMENT**

The telecommunications connections shall be designed in accordance with Australian Standards 3080 and 3084.

#### **MANAGEMENT**

The telecommunications requirements of each building developed for the Broadway Precinct will be coordinated by the consultant team and the UTS Information Technology Division.

APPENDIX A—Meeting Minutes and Dial Before You Dig Summary





Job title	University of Technology, Sydney, Campus Master Plan	Job number 205178
Meeting name & number	EnergyAustralia	File reference
Location	-	Time & date 07 March 2008
Purpose of meeting	Electrical Coordination for UTS Masterplan	

- 1. Preliminary electrical load requirements for the expansion of UTS according to the Masterplan was provided to EnergyAustralia.
- 2. Arup indicated that load data is based on 120VA per square metre for a commercial/retail net lettable area assumption; it was indicated to EnergyAustralia that these loads could change during the implementation of the Masterplan.

Prepared by Sam Sader

Date of circulation 07 March 2008



Job title	University of Technology, Sydney, Campus Master Plan	Job number 205178
Meeting name & number	EnergyAustralia	File reference
Location	-	Time & date 11 March 2008
Purpose of meeting	Electrical Coordination for UTS Masterplan	

- 1. EnergyAustralian (EA) indicated that the load requirements for the expansion of UTS associated with the Masterplan would place UTS in the position of being a "large load" customer.
- 2. Arup informed EA that UTS prefers to remain a low voltage customer and has no plans to expand the existing high-voltage service that is currently located only in Building 10 (CB10).
- 3. EA indicated that if UTS were to expand the high voltage service at CB10, they would have to ensure that all maintenance, training, and operation procedures were up to date for high voltage equipment.
- **4.** EA provided maximum demand loads on the six EA services/transformers feeding the UTS campus. These services have spare capacity.
- 5. EA advised Arup that electrical capacity is available for new substations to supply new buildings at UTS, but the details of the service provisions will be provided once detailed design has begun on a single building with a substation requirement. At that time, EA will advise on how electricity will be fed to that substation.

Prepared by Sam Sader

Date of circulation 11 March 2008



Job title	University of Technology, Sydney, Campus Master Plan	Job number 205178			
Meeting name & number	EnergyAustralia (EA)	File reference			
Location	EnergyAustralia	Time & date 10:00AM 20 May 2008			
Purpose of meeting	Discuss service options for Building 10, Broadway, Thomas St buildings				
Present	David Twigg (EnergyAustralia); Nabil Faysal, Greg Moore (UTS); Russell Fortmeyer (Arup)				
Circulation	Nabil Faysal, Greg Moore, Haico Schepers, Sam Sader, Warwick Simmonds				

UTS

- 1. The scope of the master plan was explained to EA
- A new substation would be developed at the northwest corner of the 2. Building 10 (CB10) basement; this space is currently a distribution electrical room for CB10; this substation would convert CB10 from a high-voltage service customer to a low-voltage service; the substation would be designed to accommodate the loads at CB10, as well as the Broadway building; further study is needed to determine a single substation could serve those two buildings and the Thomas St building; two substations may be necessary for all three buildings, alternately, a separate substation at the Thomas St building could be developed; [Arup note: a high-level discussion of these options would be included in the master plan, but this work would not necessarily be fully provided by the master plan; final direction by UTS.]

EA noted that it is their preference to convert CB10 to a low-voltage 3. service in light of maintenance issues at other high-voltage service sites in the precinct; EA requested that UTS provide them with an explanation of the maintenance plans for the existing substation equipment; UTS noted that external contractors currently provide maintenance to this equipment

- EA requested that once a project were to move forward for the upgrade 4. of CB10, a formal letter with plans and load information would need to be sent in order to activate EA's planning group to begin looking at how feeder cables could be directed to a new substation at CB10; the letter would also need to discuss the phasing of the master plan and the demand loads that would be added to the substation service as new buildings came on line
- 5. The electrical supply for the new CB10 substation would be on the suburban grid, not the CBD triplex service; nearby EA zone substations include Campbell St, Surry Hills, and Darling Harbour; costs to UTS

J:\205178 UTS MASTERPLAN\ESD\MEETING MINUTES\0002\_MTGMINUTES\_ENERGYAUS\_UTS\_RF\_200508.DOC

Russell Fortmeyer Prepared by

21 May 2008 Date of circulation

Job title	Job number	Date of Meeting
UTS Master Plan	205178	30 April 2008

- would include the connection point, new equipment, room renovation, feeder duct banks, feeders, and associated excavation; these costs hinge on the availability of HV feeders adjacent to CB10
- 6. With the addition of a new substation at CB10, any previous network agreements would be re-negotiated; it was discussed, but not confirmed, that it was unlikely that there was any agreement between UTS and EA to minimise the demand on the existing, over-sized electrical service at CB10
- 7. Prior to undertaking a cogeneration installation, EA would need a formal letter and plans of the proposed system in order to verify compliance; this is especially necessary if the cogen plant were to tie into electrical systems fed from two different transformer/substations; EA noted that it depends on fault ratings at the distribution equipment; UTS and Arup noted that it would not be the intention of UTS to feed back into the EA grid; EA could not discuss natural gas service reliability, as that is a business that is not in its purview; UTS noted it would not be its intention to undersize any electrical service based on the availability of cogen power (i.e. each electrical substation would be sized to serve 100% of the projected load plus excess)
- 8. The closure of Jones St is not an issue to EA if the street were to remain a public roadway, though pedestrianised; EA would need to verify the services on the street prior UTS undertaking work for landscaping/Alumni Green purposes; UTS could request this from EA via e-mail, when appropriate; any new site lighting along Jones St would likely need to tie into the UTS electrical system;



Job title	University of Technology, Sydney, Campus Master Plan	Job number 205178
Meeting name & number	Jemena Gas Networks	File reference
Location	-	Time & date 10 December 2008
Purpose of meeting	Gas Service Availability for UTS Masterplan	

- 1. Gas service availability was confirmed with Jemena Gas Networks, which supplies the UTS city campus precint.
- 2. Gas supplies are located along Thomas, Wattle and Jones streets. These are high-pressure gas mains and spare capacity exists in these lines to supply the requirements of the proposed trigeneration systems for the UTS Masterplan.
- 3. Specific connection requirements can be verified upon initiation of a contract for a gas supply associated with a single building.

Prepared by Thierry Melis

Date of circulation 10 December 2008



Job title	University of Technology, Sydney, Campus Master Plan	Job number 205178
Meeting name & number	Sydney Water	File reference
Location	Teleconference	Time & date 29 February 2008
Purpose of meeting	Water Infrastructure for UTS	

- The scope of the master plan was explained to Sydney Water; existing water lines were identified in the UTS precinct, including existing campus connections.
- 2. Pipeline location information (maps and details) were provided to Arup.
- 3. Water capacity for the precinct and proposed development was verified.
- 4. Sydney Water requested that drawings with proposed connection locations and detailed water balance calculations be provided for individual buildings requiring connections for water, sewage and stormwater. This is currently outside of the Masterplan scope.

Prepared by Thierry Melis

Date of circulation 29 February 2008



Job title	University of Technology, Sydney, Campus Master Plan	Job number 205178
Meeting name & number	Sydney Water	File reference
Location	-	Time & date 05 May 2008
Purpose of meeting	Sydney Water comments on sewer mining for U	UTS

- 1. Written comments were provided by Sydney Water (SW) regarding the proposal for a feasibility study for a black water treatment plant and sewer mining for UTS in Building 10.
- 2. SW's letter considered the proposal in a favourable light in regards to the potential for potable water savings.
- 3. SW provided a *Sydney Water Trade Waste Policy* as a guide to be used if the proposed black water plant were to be developed by UTS. SW also expressed the need for detailed design drawings if the proposal were to be undertaken.

Prepared by Thierry Melis

Date of circulation 05 May 2008



Job title	University of Technology, Sydney, Campus Master Plan	Job number 205178
Meeting name & number	Telecommunications/Dial Before You Dig and Service Verification	File reference
Location	-	Time & date 04 March 2008
Purpose of meeting	Telecommunications Coordination for UTS Mas	terplan

- 1. Service location, availability, and capacity was requested and verified with the following telecommunications providers and cabling companies: Optus, Telstra, Verizon, Primus, and NextGen Data Networks.
- 2. Telecommunications provisions (tunnels, conduits, and connection boxes) have been identified on Harris, Jones, Wattle, Thomas, and Broadway streets surrounding the UTS city campus.
- 3. Telecommunications providers informed Arup that detailed connection information will be provided for individual building projects once specific requirements are detailed and contracts are negotiated.

Prepared by Sam Sader

Date of circulation 04 March 2008

PO Box 7710 Melbourne VIC 8004 Phone: 1100 Fax: 1300 652 077

## DIAL BEFORE YOU DIG Caller Confirmation



www.dialbeforeyoudig.com.au

 To:
 Mr Sam Sader
 Job No:
 2785992

 Enquiry Date:
 29/02/2008 2:59:53 PM
 Start Date:
 04/03/2008

Priority Type: Normal - Web

Dig Safely - ensure all information has been received prior to excavating and hand expose pipes and cables before using heavy machinery.

The asset owners listed below have been advised of your enquiry. We have requested that they contact you with information of their asset locations, within 2 working days. Additional time should be allowed for information issued by post.

- \*\* Asset owners highlighted by asterisks \*\* require that you visit their offices to collect plans.
- # Asset owners highlighted with a hash require that you call them to discuss your enquiry or to obtain plans.

It is your responsibility to check that the location of the dig site on the map below is correct and to contact any other asset owners not listed herein.

IMPORTANT: For further information regarding your enquiry, please contact the asset owner listed below and quote your Seq No.

Seq No.	Asset Owner	Contact No	Notification Status
13346954	Roads & Traffic Authority #	0288370896	Notified
13346950	Verizon Business	0294345963	Notified
13346949	RailCorp - City Region **	0296937522	Notified
13346953	Transgrid	0296200777	Notified
13346951	Visionstream, Ncc - Nsw	1800336886	Notified
13346960	AAPT / PowerTel, NSW	0282643932	Notified
13346961	PIPE Networks, Nsw	0732339800	Notified
13346948	Energyaustralia, Eastern	0249510899	Notified
13346955	Telstra, Cbd	1800653935	Notified
13346956	Telstra, Kingsford Smith	1800653935	Notified
13346959	Optus Networks, Nsw	1800505777	Notified
13346957	Alinta AAM3, South	1300880906	Notified
13346958	Sydney Water	0293506744	Notified
13346952	Primus Telecom, Nsw	0399233562	Notified

#### **Caller Details:**

 Customer Id:
 716427
 Phone:
 0293209482

 Contact:
 Mr Sam Sader
 Mobile:
 Not Supplied

 Company:
 Arup
 Fax No:
 Not Supplied

Address: Level 10 201 Kent St Email: sam.sader@arup.com.au

Sydney Nsw 2000

LOCALITY INDICATION ONLY	Location Details	
	WARNING	The adjacent map displays the location of the dig site only and does not display any asset owner's pipes or cables. Asset owners' will send you plans directly.
	Address:	Harris St Ultimo NSW 2007
	Intersection:	George ST
	Side of Street:	SE
	Distance:	20m S
	Activity:	Planning & Design
	Location Type:	Both Private Property & Road
		Reserve
	For Planning:	Yes
	Traffic Affected:	No
	Parcel ID:	

	The adjacent map displays the
Property Ph No:	
Address:	Harris St
	Ultimo NSW 2007
Intersection:	George ST
Side of Street:	SE
Distance:	20m S
Activity:	Planning & Design
Location Type:	Both Private Property & Road
For Planning:	Yes
Traffic Affected:	No
Parcel ID:	

Map Ref: UbdSyd 235Q15;236A15;236B15;236C15;235Q16;236A16;236B16;236C16;256A1;256B1

Additional work site information: Hi I need all underground services serving UTS

**DBYD Message:** Visit our new Web site - www.dialbeforeyoudig.com.au ((NSW))

**END OF TRANSMISSION** 

## APPENDIX B—Dial Before You Dig RailCorp

#### Samantha Peart

From: Allen, Hazel [Hazel.Allen@railcorp.nsw.gov.au]

**Sent:** Monday, 3 March 2008 10:31 AM

To: Sam Sader

Subject: FW: Dial Before You Dig search request Sequence Nos:13346949 Reviewed by SS on

2008-03-03

Attachments: Map - City Region Office; Dial Before You Dig Terms & Conditions.pdf

Follow Up Flag: Follow up Flag Status: Flagged

#### Dear Mr Sam Sader

We refer to the above and confirm that we can process your request promptly.

The plans associated with the search areas named in your request may be collected from Level 3, 280 Coward St, Mascot, please see map below for directions.

To arrange collection please call us on 9693 7522 to ensure the search will be ready when you arrive, if you are not able to let us know when you will be collecting the documents there may be a 15 minute wait while the documents are located.

Could you please also ensure the person collecting the search quotes reference SEQ: 13346949

Our normal opening hours are 08:30 - 16:00, Mon-Fri. It may be possible to arrange collection outside these times, please call the number below to discuss.

#### Please note:

- 1. Work should not commence before you have studied the documentation. If in the opinion of RailCorp staff, work is being carried out in a manner that is putting persons and/or RailCorp assets at risk, RailCorp may seek to prevent you from working near the assets and call the police/Workcover to the site.
- 2. This Rail Corporation New South Wales (RailCorp) Service Search covers the approximate location of RailCorp out-of-rail-corridor assets within the City Region only. If you are working within the rail corridor you must follow the RailCorp internal service search procedure.
- 3. RailCorp City Region is defined as the area bounded by Waverton, Bondi Junction, Macdonaldtown and Georges River (at Como and East Hills), along with the Airport Line and a portion of Rozelle Railyard. RailCorp has high voltage electrical cables, rail and service tunnels located under public roadways throughout this area.
- 4. This search does not include assets owned by Rail Infrastructure Corporation (ph.9219 1871), RailCorp Communication and Control Systems (C/CS) (ph.9379 4000), or RailCorp Regions: South (west of Macdonaldtown, East Hills and Rozelle Railyard), North (north of Waverton) and Illawarra (south of Georges River at Como).

Please ensure you read and comply with the attached Terms and Conditions.

IMPORTANT: Damage or suspected damage must be reported immediately to the Electrical System Operator on (02) 9379 4911 or 1800 060 015

Regards,

Hazel Allen

Dial Before You Dig Co-ordinator RailCorp - City Region Phone: (02) 9693 7522 Fax: (02) 9693 7502

# APPENDIX C—Dial Before You Dig ELECTRICITY & GAS





# **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.

		KEY	
—P— PRIMARY MAIN 3:  —S— SECONDARY MAIN II  —————————————————————————————————	RESSURE  000 kPa  500 kPa  050 kPa  300 kPa  210 kPa  7 kPa  400 kPa  100 kPa  30 kPa  2 kPa	6NB 150MM 10MM PE/NY 6NB 50MM NY 1.2MBL	VALVE SYSTEM PRESSURE REGULATOR SIPHON 6 INCH CAST IRON MAIN I50MM STEEL MAIN II0MM POLYETHYLENE / NYLON MAIN 50MM NYLON INSERTED INTO 6 INCH CAST IRON MAIN DISTANCE IN METRES OF MAIN FROM BUILDING LINE (TOLERANCE OF 0.4M) HOUSE NUMBERS NETWORK BOUNDARY NETWORK NODES

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.

1300 880 906 DBYD Admin

In case of Emergency Phone 131 909 (24 hours)

Jenena Asset Management Pty Ltd ABN 53 086 013 461 for and on behalf of Jemena Gas Networks (NSW) AGN Ltd ABN 87 003 004 322



. .

From: EAOCAS Admin [eadmin@energy.com.au]

Sent: Friday, 29 February 2008 5:25 PM

To: Sam Sader

Subject: EnergyAustralia DBYD Sequence No: 13346948 Reviewed by SS on 2008-03-03

Attachments: COMN0119 How To Read EA Plans.zip

Follow Up Flag: Follow up Flag Status: Flagged

Underground Cable Location Search Advice

EnergyAustralia ASSETS AFFECTED

To: Mr Sam Sader
Arup
Level 10 201 Kent St
Sydney Nsw 2000

Fax No: Not Supplied

Phone No: 0293209482

Issue Date: 29/02/2008

In response to your enquiry, Sequence No: 13346948 the records of EnergyAustralia disclose that there are underground cables of EnergyAustralia in the search location based on the graphical position of the digsite as denoted in the Dial Before You Dig caller confirmation sheet.

Address . . . : Harris St Ultimo NSW

Intersecting

Streets: George ST

Side of Street: SE

Map Ref . . . : UbdSyd 235Q15,236A15,236B15,236C15,235Q16,236A16,236B16,236C16,256A1,256B1

YOUR PLANS HAVE BEEN POSTED. (Please contact the G.I.S office on 02-49510899 if the plans are not received within 3 working days.) A reference document "How To Read Energy Australia Plans" is attached to this email.

In the interest of conserving natural resources, Energy Australia encourages customers of the Dial Before You Dig service to consider requesting the relevant information as an email attachment. When such a request is made, the information is supplied by Energy Australia as a .pdf (Portable Document Format) attachment. These are easily viewed with the popular and free Adobe Acrobat Reader software.

IF YOU WISH TO RECEIVE YOUR PLANS VIA EMAIL IN FUTURE - please contact (02)49510899 or email <a href="mailto:eaocas@energy.com.au">eaocas@energy.com.au</a> Provide your customer ID number, email address and indicate if you are connected via dial-up or broadband.

1

ALL INFORMATION PROVIDED TO YOU IS ONLY VALID FOR 28 DAYS FROM THE DATE OF ISSUE. Refer to EnergyAustralia's Network Standard NS0156 for further information.

In particular, refer to page 13 of NSO156 for a copy of the important EnergyAustralia checklist for work near or around underground cables.

http://www.energy.com.au/energy/ea.nsf/Content/Safety+Dial+before+you+dig

#### IMPORTANT INFORMATION

#### YOU MUST BE AWARE THAT:

- 1. There may be underground cables owned by other utilities, in the vicinity of your work, about which EnergyAustralia has no information.
- 2. EnergyAustralia does not usually keep plans of privately owned underground cables or its underground service cables on private property. (Refer NS 0156 Clause 2.1 for further information.) YOU MUST MAKE YOUR OWN ENQUIRIES IN RESPECT OF THESE CABLES.

#### YOU MUST UNDERSTAND THAT:

- 1. EnergyAustralia takes all reasonable care in providing details of its underground cables. However, owing to changes in road and footway alignments and levels, and the age and incompleteness of some records, it is not possible to conclusively specify the location of all of EnergyAustralia's underground cables. The accuracy and completeness of the information provided to you cannot be guaranteed. It is intended to be indicative only. It must not be solely relied upon when undertaking underground works.
- 2. Except to the extent that liability may not be capable of lawful exclusion, EnergyAustralia, its servants and agents will be under no liability whatsoever to any person for loss or damage (including indirect or consequential loss or damage) however caused (including without limitation, for breach of contract, negligence and breach of statute) which may be suffered or incurred from or in connection with the advice provided.

  3. Due to the inherent dangers associated with excavation in the vicinity of underground cables, precautions must always be taken when undertaking any underground works. EnergyAustralia's Network Standard NS 0156 specifies standards for working in the vicinity of underground cables. It is deemed to be part of this Advice, and it must be read by you.

YOU MUST READ NETWORK STANDARD NS 0156 (AS AMENDED BY LATEST NSA 1289 28FEB 2003), WORKING NEAR OR AROUND UNDERGROUND CABLES. IT IS PART OF THIS ADVICE.

This e-mail may contain confidential or privileged information. If you have received it in error, please notify the sender immediately via return e-mail and then delete the original e-mail. EnergyAustralia has collected your business contact details for dealing with you in your business capacity. More information about how we handle your personal information, including your right of access is contained at <a href="http://www.energy.com.au">http://www.energy.com.au</a>.

From: Dorahy Mark [Mark.Dorahy@transgrid.com.au]

Sent: Monday, 3 March 2008 10:18 AM

To: Sam Sader

Subject: RE: Response- Dig Ref No: 13346953 Reviewed by SS on 2008-03-03

**Attachments:** CAB-807697\_00.TIF; CAB-807698\_00.TIF; CAB-807699\_00.TIF; CAB-807700\_00.TIF;

31281-T-0206[X].PDF; 31281-T-0207[X].PDF; 31281-T-0208[X].PDF

Follow Up Flag: Follow up Flag Status: Flagged

#### Sam,

Attached are the drawings as requested for TransGrid's HV tunnel. PDF's are profile drawings, I hope they can be of some assistance.

Thanks,

#### Mark Dorahy

From: Sam Sader [mailto:sam.sader@arup.com.au]

Sent: Monday, 3 March 2008 9:38 AM

To: Dorahy Mark

Subject: RE: Response- Dig Ref No: 13346953

Mark

## Thanks for that.

At the moment it is just planning for UTS (master plan for the next decade). There will be some development to the site but we need first to locate the existing underground infrastructure. I am in contact with Energy Australia to have info about substations but I would appreciate if you can send me the drawings that show the HV underground services in that area.

#### Regards Sam

# Sam Sader

Electrical Engineer

### **ARUP**

Level 10, 201 Kent St, Sydney 2000 PO Box 76, Millers Point 2000 T +61 (0)2 9320 9482 F +61 (0)2 9320 9321

From: Dorahy Mark [mailto:Mark.Dorahy@transgrid.com.au]

Sent: Monday, 3 March 2008 9:31 AM

To: Sam Sader

Subject: Response- Dig Ref No: 13346953

# TRANSGRID

Central Region 200 Old Wallgrove Rd, Eastern Creek PO Box 87 Horsley Pk, NSW 2164 Ph. 9620 0777

1

# HARRIS ST, ULTIMO

Sam.

Thank you for the inquiry.

TransGrid does have a High Voltage Service Tunnel located in this area. If your planned excavation depth is greater than 5 metres please contact us and we will supply drawings to assist your planning.

If more detail is required, please ask.

Mark Dorahy
Electrical Fitter/Cables
mark.dorahy@transgrid.com.au

Telephone 9832 6530 or 0418 165 580

TransGrid is the trading name of the ELECTRICITY TRANSMISSION AUTHORITY of NSW PLEASE NOTE: TransGrid and the 'distributors' (such as EnergyAustralia) are separate organisations. TransGrid is owned by the NSW State Govt., and is responsible for transmitting high voltage power from the 'generating companies', to the 'distribution companies'.

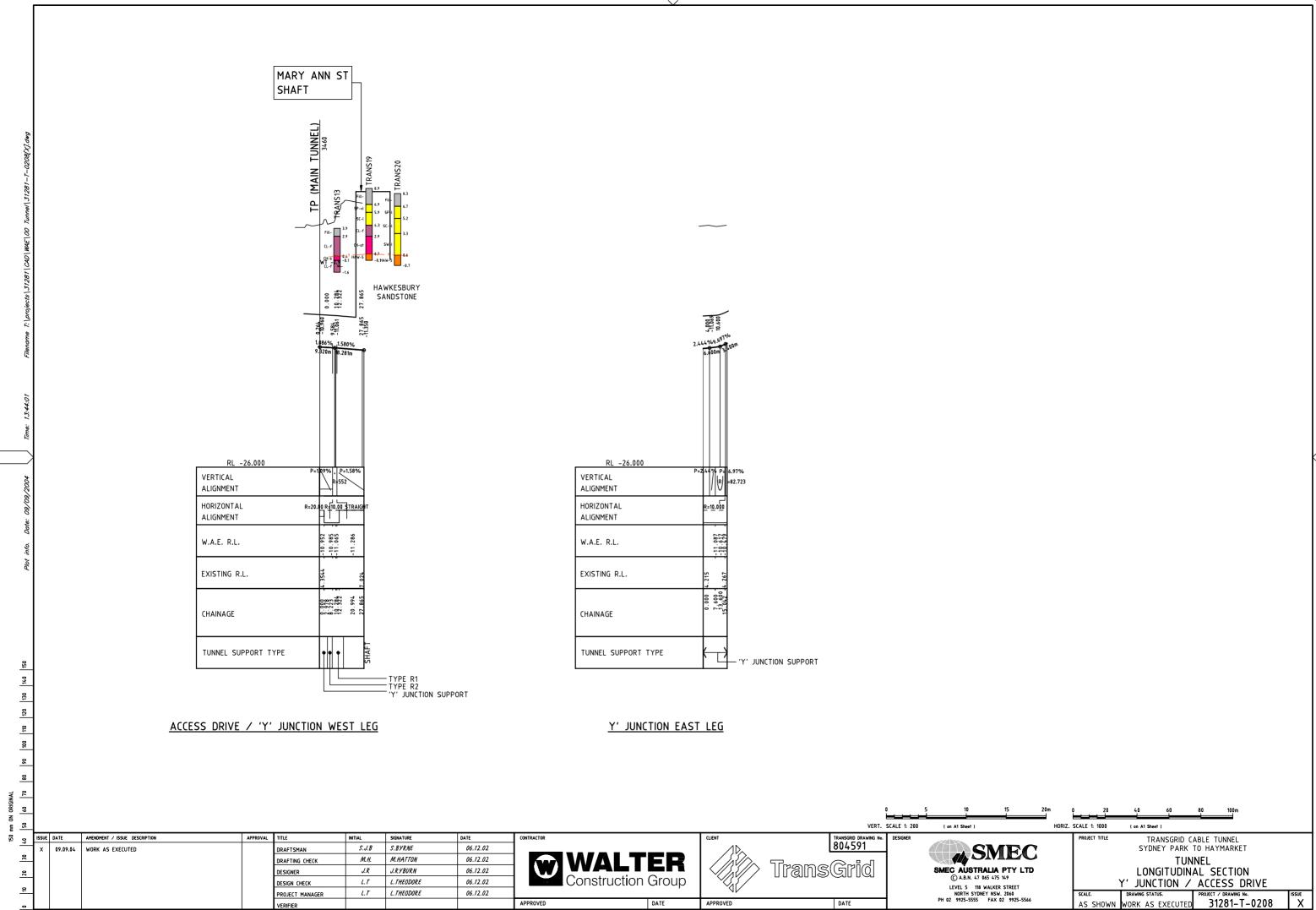
(TransGrid was formerly known as:- Electricity Commission of NSW, Pacific Power, & PacificGrid.)

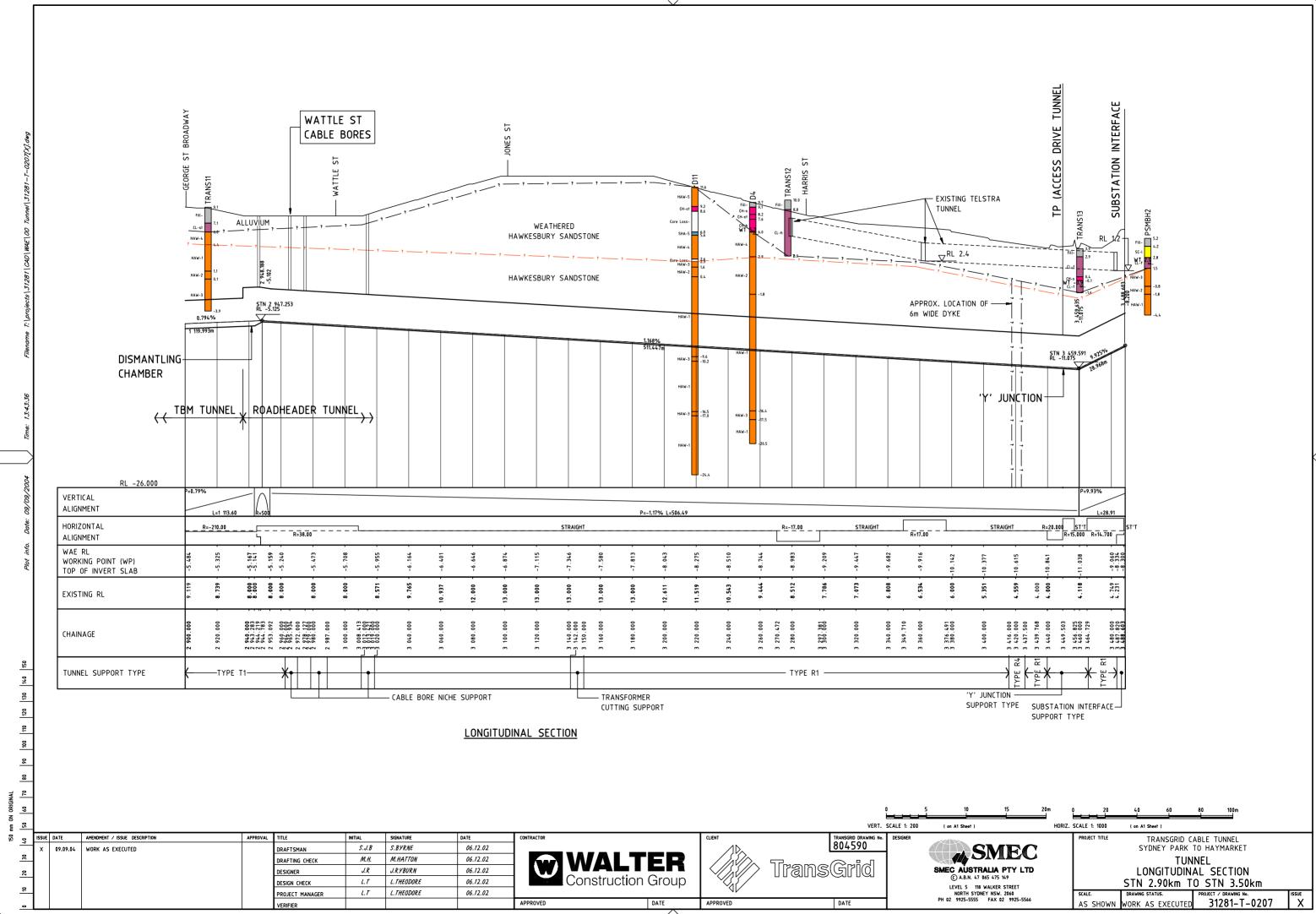
\*

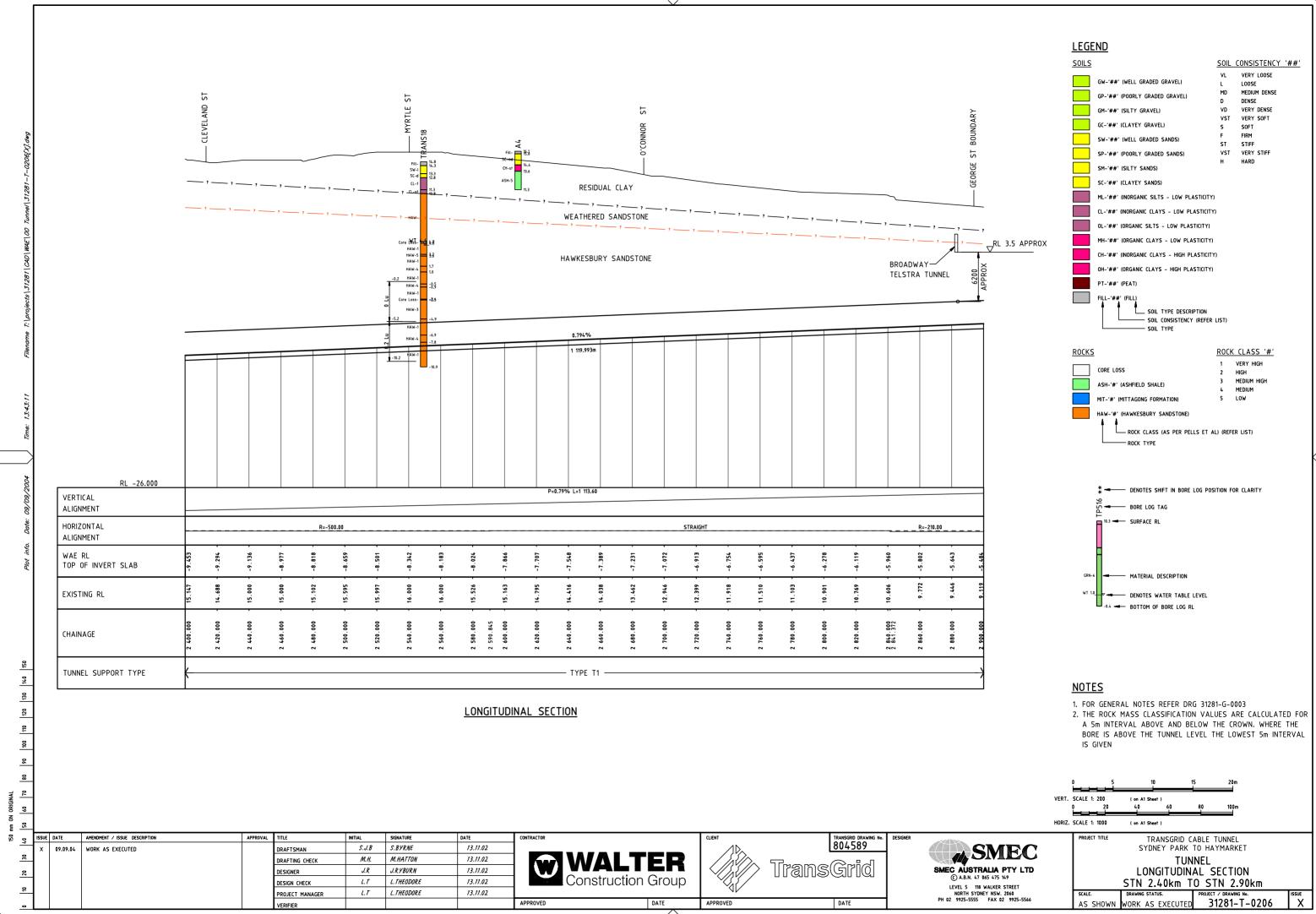
Please consider the environment before printing this email.

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# APPENDIX D—Dial Before You Dig HYDRAULIC

From: dbydgis@sydneywater.com.au

Sent: friday, 29 February 2008 8:12 PM

To: Sam Sader

DBYD\_Legend.pdf

Attention: Mr Sam Sader To: <a href="mailto:sam.sader@arup.com.au">sam.sader@arup.com.au</a> Sequence number: 13346958

The attached plans of Sydney Water assets are in response to your Dial Before You Dig enquiry. To view them you need Adobe Acrobat Reader. PLEASE DO NOT RESPOND TO THIS EMAIL

ADDRESS.
Pages: 4
Documents: 3

\_\_\_\_\_\_

Sydney Water - delivering essential and sustainable water services.

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Want to keep up-to-date with the latest news from Sydney Water? Subscribe to Sydney Water online, our electronic newsletter at <a href="https://www.sydneywater.com.au">www.sydneywater.com.au</a>

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\_\_\_\_\_



# PIPELINE LOCATION INFORMATION

Accuracy of plans not to be assumed – see Clause 4.

Plans not for conveyancing purposes.



# **ATTENTION**

The accompanying plan(s) in relation to Sydney Water's pipelines are forwarded in response to your recent Dial Before You Dig inquiry. 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 Indication Only" window on your Caller Confirmation. It 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 You Dig. It is important, therefore, that you be accurate in defining your dig site when you lodge your enquiry with Dial Before You Dig. It is the enquirer's responsibility to resubmit the enquiry to Dial Before You 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 subsequent 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.
- 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. It 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.
- To determine their precise location, Sydney Water's pipelines MUST first be exposed by pot-holing using hand-held tools or vacuum techniques i.e. **before** any mechanical means of excavation are employed.

- Asbestos cement pipelines may form part of Sydney Water's water and sewerage reticulation systems and, if damaged, can pose a risk to health.
- 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.
- 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.
- 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).
- 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.
- 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 <a href="www.sydneywater.com.au">www.sydneywater.com.au</a> / Building Developing and Plumbing 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:

If you lodged your enquiry via telephone or facsimile, be aware that on-line enquiries 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.

If you have any questions concerning DBYD requests, call (02) 9350 6744 Monday to Friday, between 8 am and 4 pm.

NOTICE: This communication is confidential. If you are not the nominated recipient, please destroy all copies immediately. Sydney Water Corporation prohibits unauthorised copying and/or distribution of this communication.

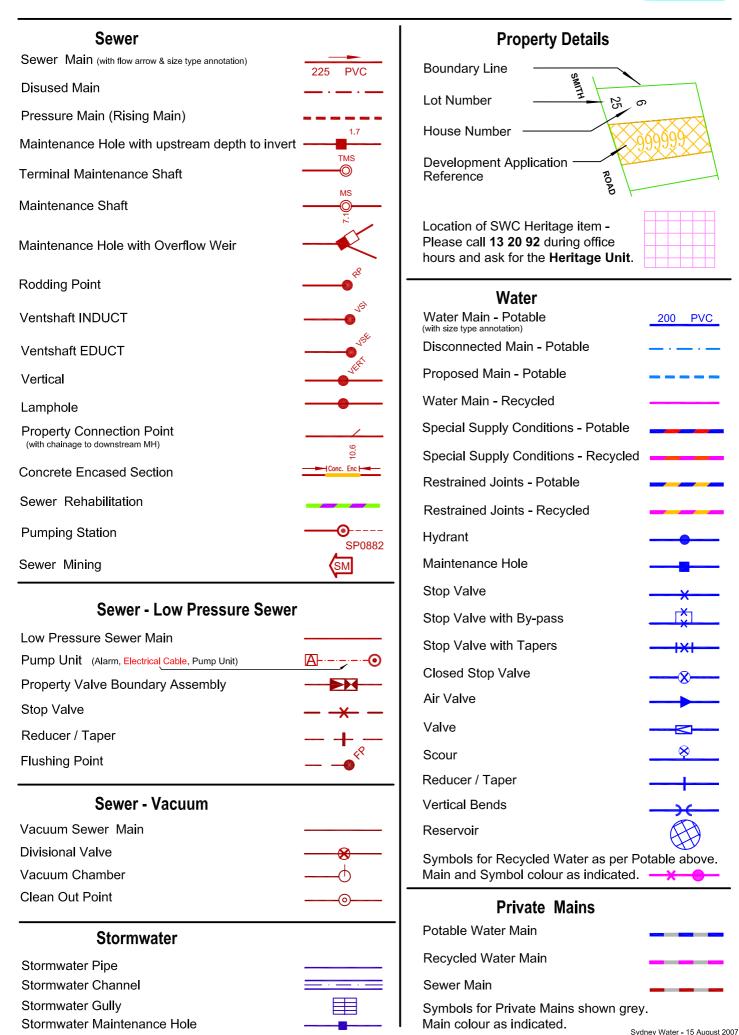
Doc. Name: AutoDBYD\_Cover\_Sheet\_03
Doc Controller: Policy, Standards & Materials Manager

Pipeline Location Information Issue: 03

6 September 2007

# Hydra Legend





# **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	

Issue: 01



# APPENDIX E—Dial Before You Dig COMMUNICATIONS



From: DBYD-in [dbyd-in@powertel.com.au]
Sent: Priday, 29 February 2008 3:11 PM

To: Sam Sader

Subject: DBYD Referral: 13346960 Reviewed by SS on 2008-03-03

Attachments: URBAN JEOPARDY.pdf

DigSAFE Pro Automated Dial Before You Dig Enquiry

AAPT (POWERTEL) FIBRE OPTIC CABLE - JEOPARDY

We refer to the abovementioned referral and note that your proposed dig location may affect PowerTel's underground fibre network. PowerTel will contact you shortly regarding this enquiry.

It is essential that no excavations is undertaken, until you have been contacted by a PowerTel Representative. Your local PowerTel Representative's phone number can be found in the attached document.

\*

If you receive this email in error, please let us know by reply email, delete it from your system and destroy any copies. We give no warranties in relation to the accuracy or completeness of the information contained in this email.

This email is also subject to copyright.

\*

AAPT (PowerTel) Limited 55 Clarence Street Sydney 2000 Phone: 0, 05 133 156

Phone: 0 05 133 156 A/H 1300 86 311

Date: 29/02/2008 03:09:42 PM





# **AAPT (POWERTEL) FIBRE OPTIC CABLE - JEOPARDY**

Sequence Number: 133 6960

Location Address : .

To : Mr Sam Sader

Fax Number:

Customer Address: Level 10 201 ent St, Sydney, Nsw, 2000

In relation to your enquiry at the above address, AAPT (PowerTel) advises as follows.

The records of AAPT (PowerTel) Limited disclose that there are underground FIBRE OPTIC/TELECOMMUNICATIONS cables in the vicinity of the above enquiry.

Your enquiry has been dispatched to a AAPT (PowerTel) Route Technician who will contact you ASAP with further information regarding the exact location of the AAPT (PowerTel) network.

It is essential that no excavations are undertaken until you have been contacted by a AAPT (PowerTel) Representative. Your local AAPT (PowerTel) Field Representative can be contacted on mobile ph: 0405 133 156

#### **DUTY OF CARE**

Due to the nature of underground cables and the age of some cables and records the accuracy and/or completeness of the information cannot be guaranteed and, accordingly, they are indicative only and as a result AAPT (PowerTel) does not accept any responsibility for any inaccuracies of its plans. They should not be solely relied upon when undertaking underground works. It is also inaccurate to assume that fibre optic cables follow straight lines and careful onsite investigations are essential to locate an assets exact position.

The following minimum clearances must be maintained.

- 1) 300mm when laying asset's inline, horizontal or vertical.
- 2) 500mm when operating vibrating equipment. Eg: Vibrating plates.
- 3) 1000mm when operating mechanical excavators or Jackhammers.

ON SITE LOCATING OF AAPT'S (POWERTEL) CABLING AND INFRASTRUCTURE MUST BE CONDUCTED BY AAPT (POWERTEL) PERSONNEL ONLY. AAPT (POWERTEL) WILL USE ALL LEGAL MEANS TO SEEK DAMAGES AND ANY OTHER REMEDIES AVAILABLE TO IT IN THE EVENT THAT ITS CABLE OR ANY OTHER NETWORK INFRASTRUCTURE IS DAMAGED BY YOU OR YOUR PERSONNEL AND/OR CONTRACTORS. IT IS AN OFFENCE TO OPEN ANY AAPT (POWERTEL) PITS OR MANHOLES AND/OR ANY ASSOCIATED INFRASTRUCTURE BELONGING TO OR PART OF AAPT'S (POWERTEL) NETWORK

Due to the inherent dangers associated with excavation in the vicinity of underground cables, precautions should be taken in the undertaking of any underground works, including (but not limited to) the following.

All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs Manhole covers must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the possibility of damage to the cable.

E : Blades of hand equipment should be orientated parallel to the line of the cable rather than digging across the cable.

All personnel must be properly briefed, particularly those associated with the use of earth-moving equipment, trenching, boring and pneumatic equipment.

All excavations must be undertaken in accordance with the relevant legislation and regulations.

ANY DAMAGE TO AAPT (POWERTEL) NETWORK MUST BE REPORTED IMMEDIATELY TO 1300 786 311

Any information provided is valid only for 28 days from the date of issue of this document.

If the work operations extend beyond this period, or if the designs are altered in any way, you are requested to re-submit your proposal for re-assessment by contacting Dial Before You Dig ph:1100 or <a href="https://www.dialbeforeyoudig.com.au">www.dialbeforeyoudig.com.au</a>

Onsite visits by AAPT (PowerTel) agents may incur costs, this would solely depend on the type and extent of the work to be carried out. E : Major roadwork s, network relocation's, Large planning and design work's.



29/02/2008 03:3 :36 PM

Dear Sir/Madam,

Sequence Number: 13346952

Primus Telecom have existing underground assets located within the area you have

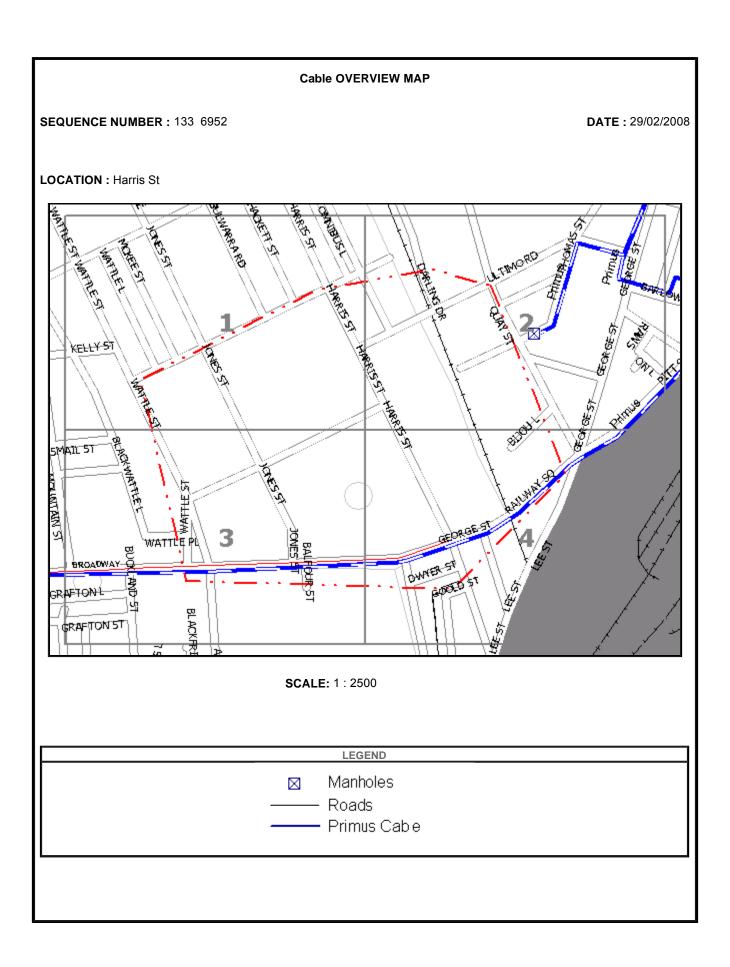
identified.

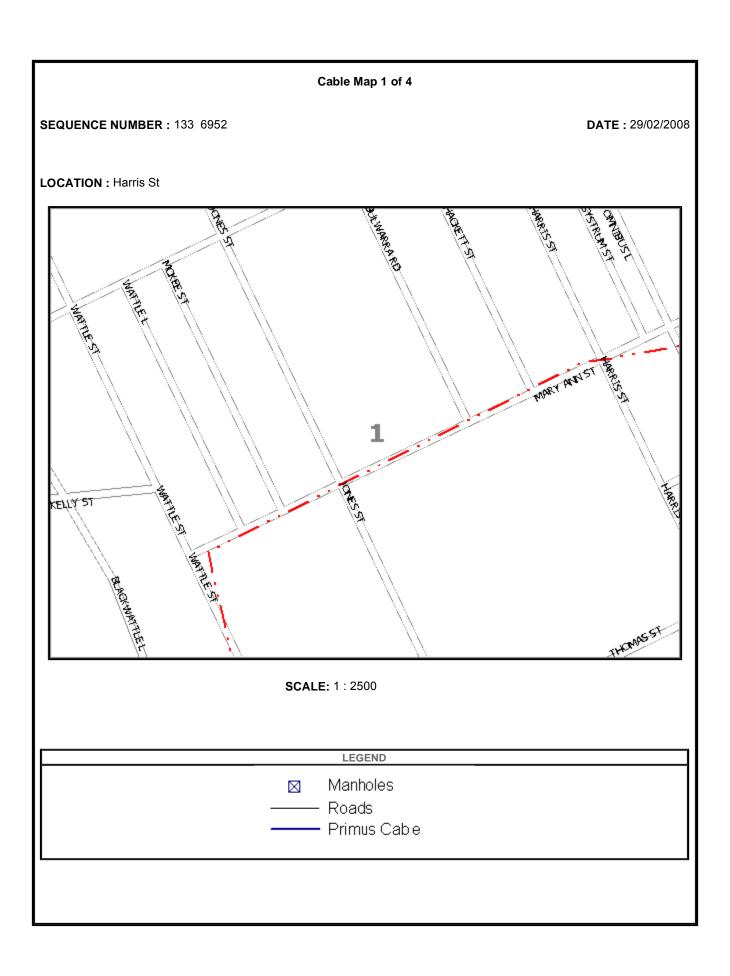
The Primus asset is contained in the Telstra duct / conduit network.

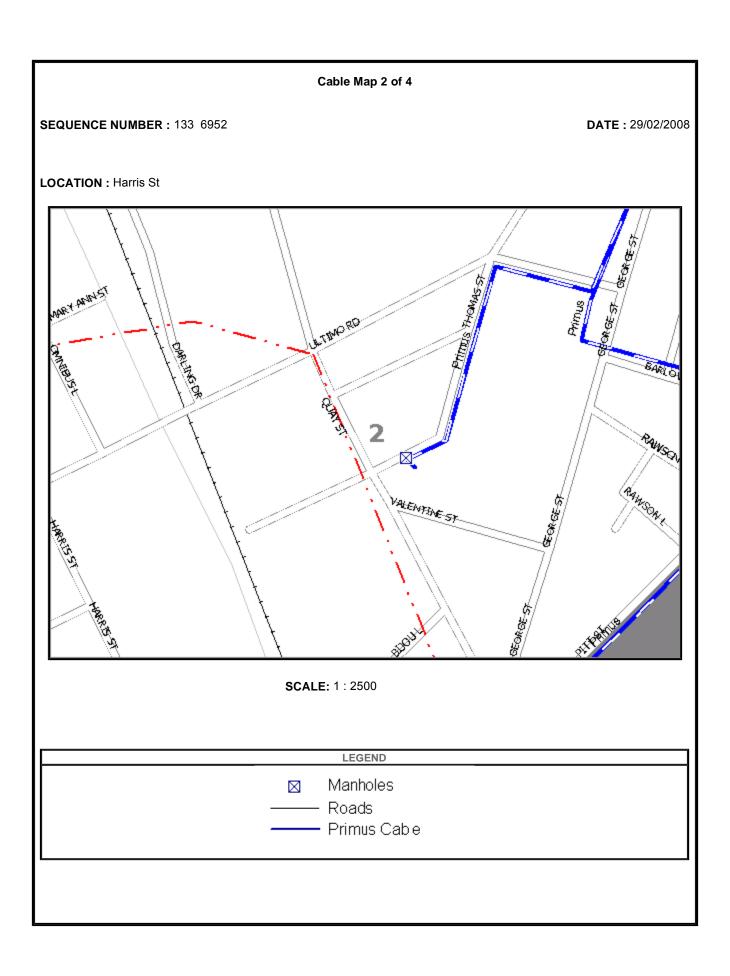
It is your responsibility that the Telstra duct/conduit is physically located by Telstra.

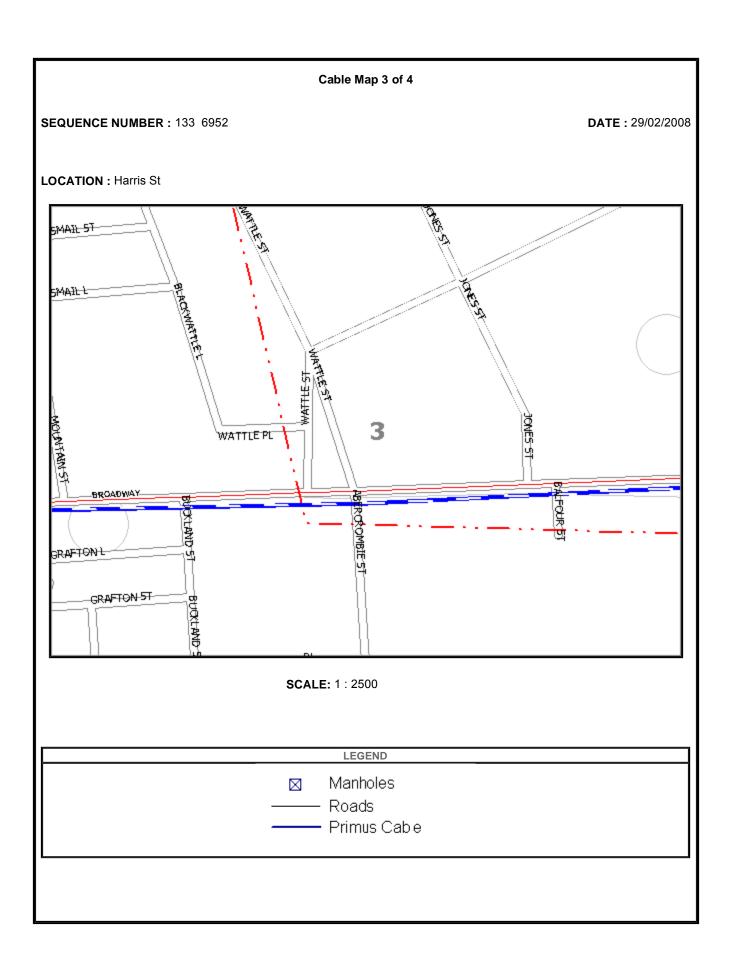
Thank you for your inquiry.

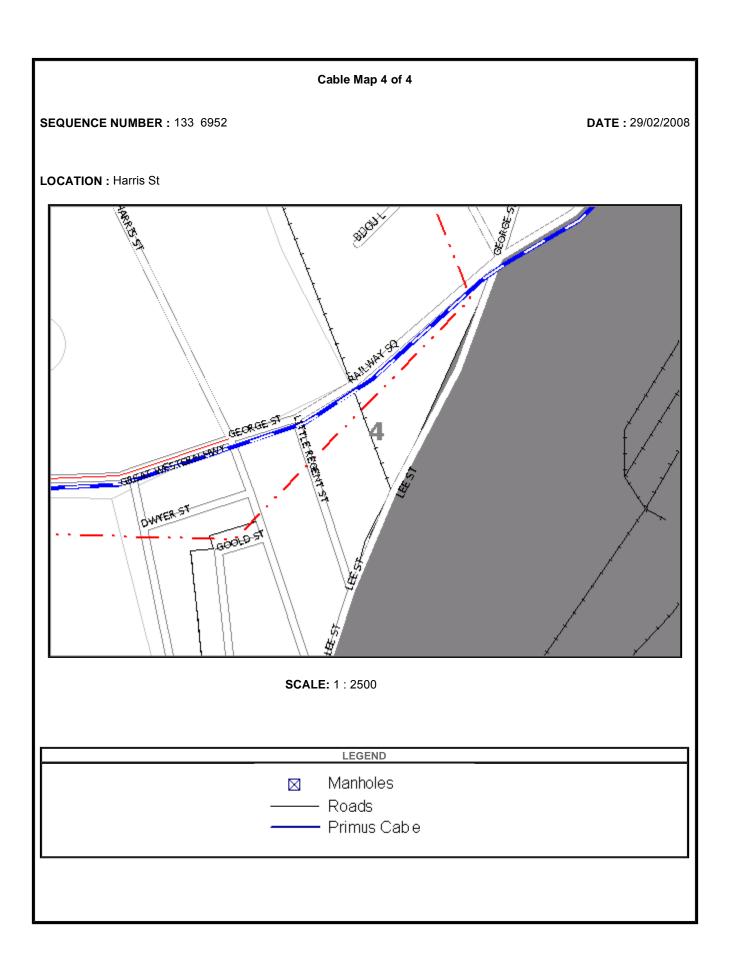
Primus Telecom











From: Cumberland, Scott [scott.cumberland@visionstream.com.au] on behalf of VPL DBYD

Correspondence [dbydnext@visionstream.com.au]

**Sent:** Monday, 3 March 2008 12:53 PM

To: Sam Sader

**Subject:** FW: 13346951 - ID:54D3CC8F70FABB13CA2573FE00163EE7 Reviewed by SS on

2008-03-03

**Attachments:** 13346951.pdf; SYDN\_4081\_005.pdf; SYDN\_4081\_006.pdf; SYDN\_4081\_004.pdf

#### Please find attached.

----Original Message-----

From: Referrals@1100.com.au [mailto:Referrals@1100.com.au]

Sent: Friday, 29 February 2008 3:08 PM

To: VPL DBYD Correspondence

Subject: SEQ:13346951 - ID:54D3CC8F70FABB13CA2573FE00163EE7

DIAL BEFORE YOU DIG Call 1100, Fax 1300 652 077

PO Box 7710 MELBOURNE, VIC 8004

Utilities are requested to respond within 2 working days and reference the Sequence number.

#### [REFFERAL DETAILS]

FROM= Dial Before You Dig - Web

TO= Vpl - Nextgen Events

UTILITY ID= 30214

COMPANY= Visionstream, Ncc - Nsw ENQUIRY DATE= 29/02/2008 14:59 COMMENCEMENT DATE= 04/03/2008

SEQUENCE NO= 13346951

PLANNING= Yes

[CALLER DETAILS]

CUSTOMER ID= 716427

CONTACT NAME = Mr Sam Sader

CONTACT HOURS= 0 COMPANY= Arup

ADDRESS= Level 10 201 Kent St

SUBURB= Sydney
STATE= Nsw
POSTCODE= 2000
TELEPHONE= 0293209482
MOBILE= Not Supplied
FAX TYPE= Private

FAX NUMBER= Not Supplied

PUBLIC ADDRESS= PUBLIC TELEPHONE=

EMAIL ADDRESS= sam.sader@arup.com.au

# [LOCATION DETAILS]

ADDRESS= Harris St
SUBURB= Ultimo
STATE= NSW
POSTCODE= 2007
DEPOSITED PLAN NO= 0
SECTION & HUNDRED NO= 0
PROPERTY PHONE NO=
SIDE OF STREET= SE
INTERSECTION= George ST

1

DISTANCE=	20m S
ACTIVITY CODE=	23
<b>ACTIVITY DESCRIP</b>	TION= Planning & Design
	UbdSyd
MAP REF=	,-
	B15,236C15,235Q16,236A16,236B16,236C16,256A1,256B1
MAP PAGE=	5 10,2000 10,2000 10,2000 10,2000 10,2000 1
MAP GRID 1=	
MAP GRID 1=	
MAP GRID 3=	
MAP GRID 4=	
MAP GRID 5=	
GPS X COORD=	
GPS Y COORD=	
PRIVATE/ROAD/BO	
TRAFFIC AFFECTE	
NOTIFICATION NO=	
MESSAGE=	Hi I need all underground services serving UTS
MOCSMESSAGE=	Digsafe generated referral
WOCSWESSAGE=	Digsale generaled referral
Notice: Please DO N	OT REPLY TO THIS EMAIL as it has been automatically generated and replies are not
	ou wish to advise Dial Before You Dig of any issues with this enquiry, please Call 1100
morniorour orround y	with the author Bian Boloto 100 Big of any located marking origin, produce can 1100
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	scanned for viruses by MCI's Internet Managed Scanning Services - powered by MessageLabs.
For further information	on visit <a href="http://www.mci.com">http://www.mci.com</a>
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This email and any files tra	ansmitted with it are confidential and
intended solely for the use	e of the individual or entity to whom they
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are addressed. If you have	e received this email in error please notify
the quotem manager	
the system manager.	



#### **Plant Location Details**

To: Mr Sam Sader Fro

Company: Arup

Address: Level 10 201 Kent St, Sydney, Nsw, 2000

Phone: 0293209482 Fax Number: Not Supplied

Email: sam.sader@arup.com.au

From: Nextgen Networks

Enquiry No.: 13346951

Date Sent: 3 March 2008

Send type: email

Type: Optical Fibre

The following sketch/plan(s) are provided from Nextgen Networks records in response to your request to show the approximate location of Nextgen Networks Installations within the vicinity of:

Location: Harris St, Ultimo, NSW, 2007

Side of Street: SE

Intersection: George ST

#### IMPORTANT:

Please read and understand all the information and disclaimers provided below.

- Sketches and Plans provided by Nextgen Networks 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.
- The accuracy and/or completeness of the information in the plans can not be guaranteed often due to changes in the surrounding land subsequent to Nextgen's deployment and, accordingly the 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 Nextgen Networks plant. Nextgen Networks will provide free 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 Nextgen Networks plant for a particular location at a reasonable time before construction begins.
  - b) Visually locate Nextgen Networks plant by vacuum excavation (pot-holing) where construction activities may damage or interfere with Nextgen Networks plant (see "Essential Precautions and Approach Distances" section for more information).
  - c) Contact Nextgen Networks Network (see below for details) if Nextgen Networks plant is wholly or partly located near planned construction activities.

# DAMAGE:

#### ANY DAMAGE TO NEXTGEN NETWORKS NETWORK MUST BE REPORTED TO 1800 032 532 IMMEDIATELY.

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

#### **CONCERNING NEXTGEN NETWORKS PLANS:**

- Phone1100. Dial Before You Dig for free plans of Nextgen Networks plant locations. Please give at least 2 business days notice.
- Nextgen Networks plans and information provided are valid for 50 days from the date of issue.
- Nextgen Networks retains copyright in all plans and details provided in conjunction with your request. These plans and or details should be disposed of by shredding or any other secure disposal method after use.
- Nextgen Networks plans or other details are provided for the use of the applicant, its servants, or agents, and shall not be used for any unauthorised purpose.
- Please contact the Network Help Desk (see below for details) immediately should you locate Nextgen Networks assets not
  indicated on these plans.
- Nextgen Networks, 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 Nextgen Networks against any claim or demand for any such loss or damage.
- Please ensure Nextgen Networks plans and information provided remains on-site at all times throughout your construction phase.

### **ESSENTIAL PRECAUTION and APPROACH DISTANCE:**

NOTE: If the following clearances cannot be maintained, please contact the Nextgen Network 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 Nextgen Networks plant, carefully locate this plant first to avoid damage. Undertake prior exposure (vacuum excavation) such as potholing when intending to excavate or work closer to Nextgen Networks plant than the following approach distances:
- Where Nextgen Networks plant is in an area where load 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 optic fibre cable)
  - b) Parallel to other plant: 5 metres

Note: Even pot-holing needs to be undertaken with extreme care, common sense and employing techniques least likely to damage cables. For example – vacuum excavation.

- If construction work is parallel to Nextgen Networks plant, then careful pot-holing at least ever 5m is required to establish the location of all plant, hence continuing nominal locations before work can commence.
  - 2. Maintain the following minimum clearance between construction activity and actual location of Nextgen Networks Plant.

Jackhammers/Pneumatic Breakers	Not within 1.0m of actual locations.
Vibrating Plate or Wackers Packer Compactors	Not within 0.5m of Nextgen Networks ducts.
	300mm compact clearance cover before compactor can be used across Nextgen Networks ducts, and 600mm clearance across Nextgen Networks cables in the solid.
Boring Equipment	Not within 2.0m of actual location.
(in-line, horizontal and vertical)	Constructor to check depth via vacuum excavation (pot- hole).
Heavy Vehicle Traffic (over 3 tonnes)	Not to be driven across Nextgen Networks ducts with less than 600mm cover. Not to be driven across Nextgen Networks fibre with less than 1.2m cover.
	Constructor to vacuum excavate(pot-hole) and expose plant.
Mechanical Excavators, Boring and Tree	Not within 1.0m of actual location.
Removal	Constructor to vacuum excavate (pot-hole) and expose plant.

- All Nextgen Networks pits and manholes should be a minimum of 1.2m in from the back of kerb after the completion of your work.
- All Nextgen Networks conduit should have the following minimum depth of cover after the completion of your work:-

### Footway 450mm

Roadway 450mm at drain invert and 600mm below the pavement subgrade level invert

 All Nextgen Networks 'fibre in the solid' should have the following minimum depth of cover after the completion of your work:-Footway 600mm

# Roadway 1200mm at drain invert and 1200mm below the pavement subgrade level invert

 For clearance distances relating to Nextgen Networks above ground infrastructure please contact the Network Help Desk (see below for details).

#### **FURTHER ASSISTANCE**

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

**Nextgen require 5 clear business days notice to conduct an on-site location.** The initial on site location visit will not normally incur a charge, but at the discretion of Nextgen subsequent site visits may incur a charge to be applied at an hourly rate.

Where an on-site location is provided, the owner is responsible for all vacuum excavation work (pot-holing) to visually locate and expose Nextgen Networks plant.

If plant location plans or visual location of Nextgen Networks plant by vacuum excavation reveals that the location of Nextgen Networks plan is situated wholly or partly where the owner plans to work, then **Nextgen Networks** must be contacted through the **Network Help Desk** to discuss possible engineering solutions.

The contact number for the Network Help Desk is 1800 032 532.

#### NOTE:

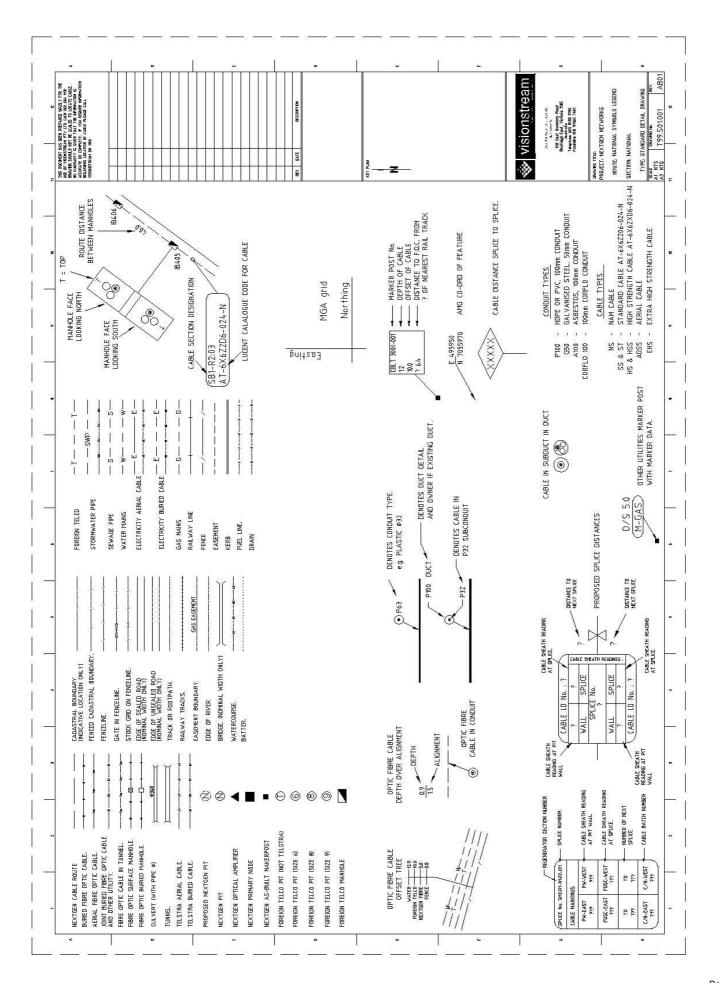
If Nextgen Networks relocation or protection works are part of the agreed solution, then payment to Nextgen Networks for the cost of this work shall be the responsibility of the principal developer. The principal developer will be required to provide Nextgen Networks with the details of their proposed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

### **RURAL LANDOWNER - IMPORTANT INFORMATION**

Where Nextgen Networks owned cable crosses agricultural land Nextgen Networks 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 Nextgen Network Help Desk as listed above.

#### **PRIVACY NOTE**

Your information has been provided to Nextgen Networks by DBYD to enable Nextgen Networks to respond to your DBYD request. Nextgen Networks keeps your information in accordance with its privacy statement entitled 'Protecting Your Privacy' which can be obtained from Nextgen Networks either by calling 1800 032 532 or visiting our website <a href="https://www.nextgennetworks.com.au">www.nextgennetworks.com.au</a>



**WARNING:** Nextgen Networks 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 Nextgen Networks 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 Nextgen Networks cables and plant. Before using machine excavators NEXTGEN PLANT MUST FIRST BE PHYSICALLY EXPOSED BY VACUUM EXCAVATION (potholing) to identify its location.

Nextgen Networks will seek compensation for damages caused to its property and losses caused to Nextgen Networks and its customers.

#### **EXPERIENCED PLANT LOCATORS (For your area)**

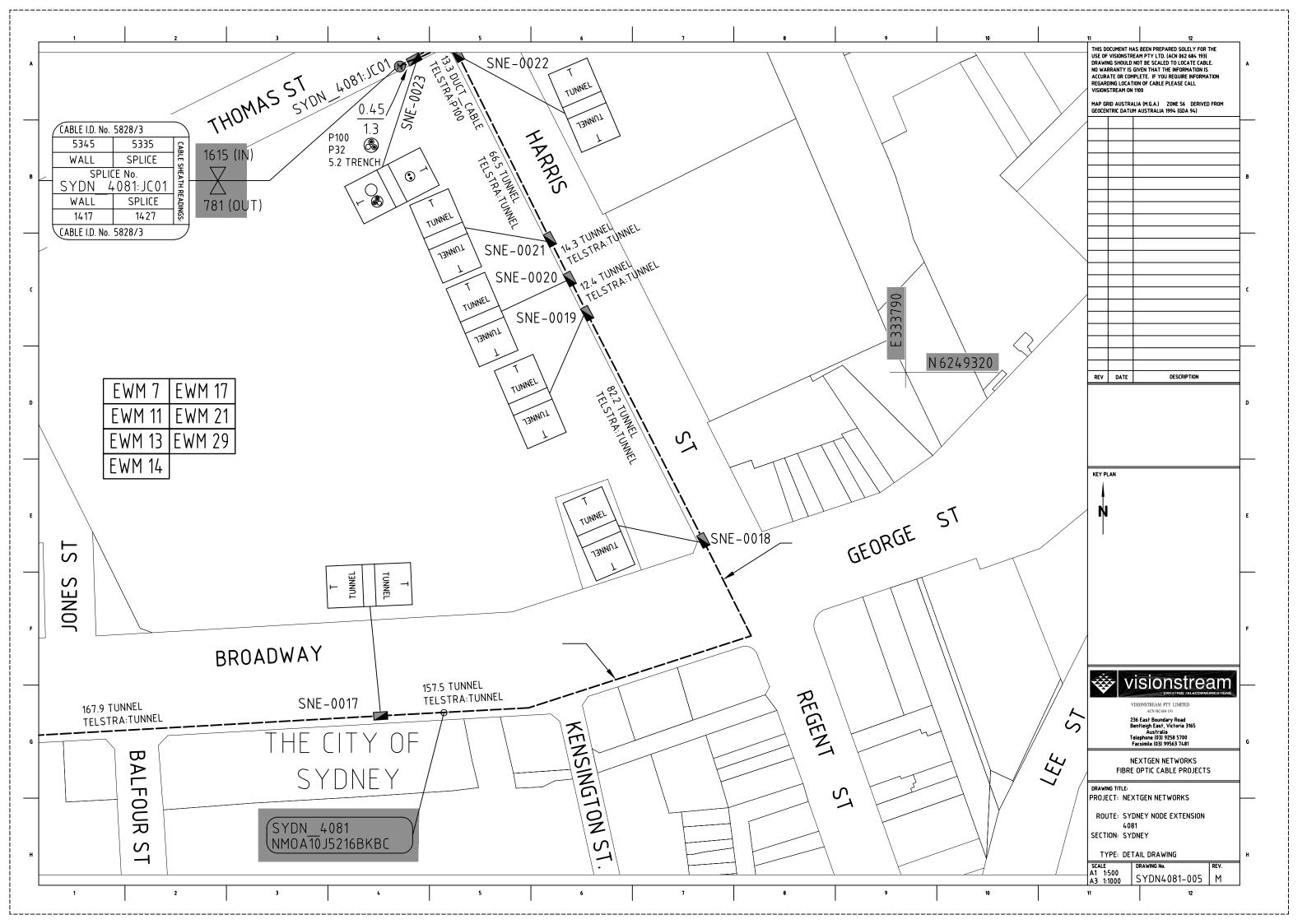
On-site assistance should be sought from an Experienced Plant Locater if the telecommunications plant cannot be located within 2.5 metres of the locations indicated on the drawings provided.

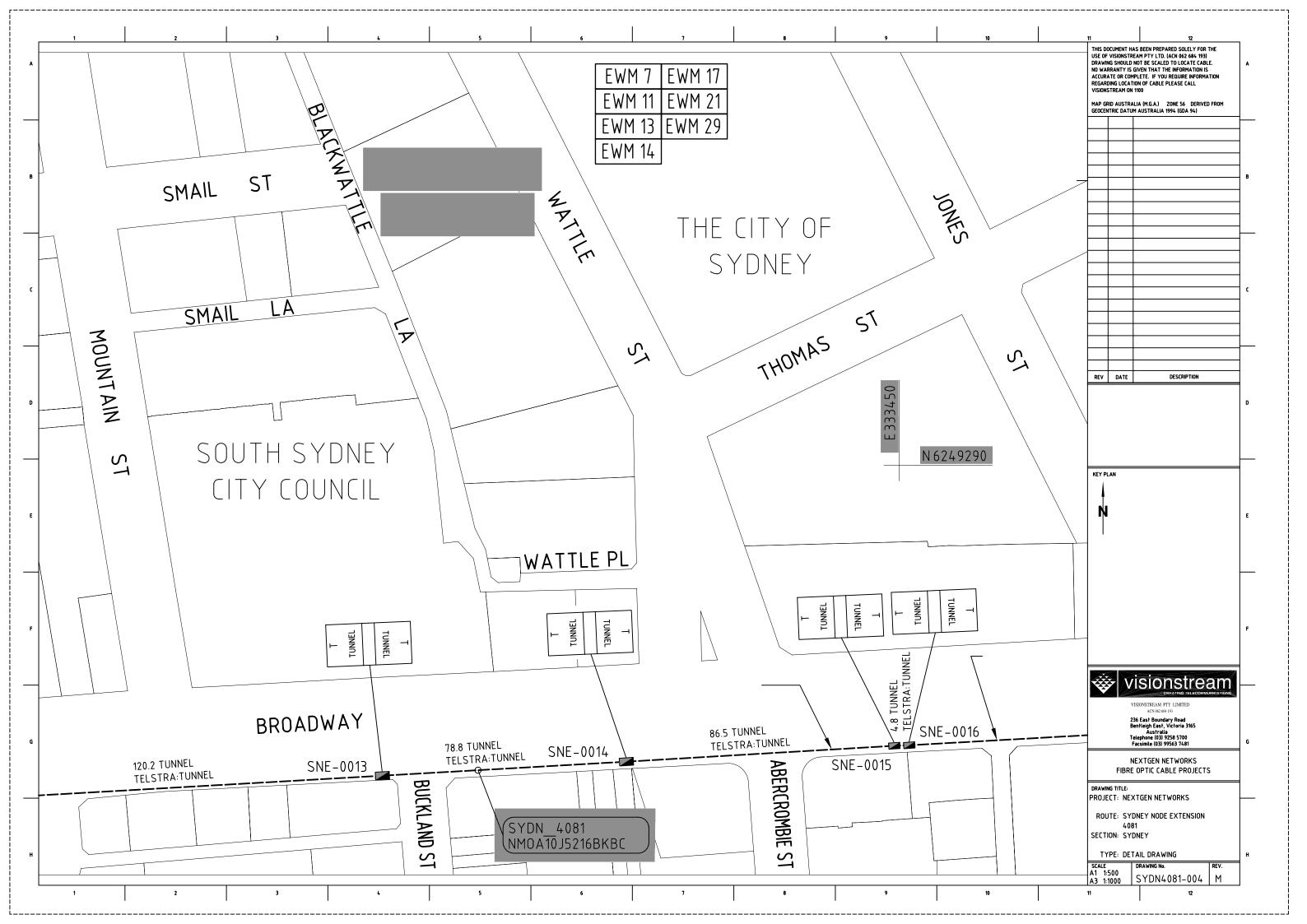
On-site advice should be obtained from a suitably qualified contractor highly skilled in locating Nextgen Networks plant. If there is any doubt whatsoever about the actual location of the telecommunications plant, the best method for locating the telecommunications plant or the correct interpretation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

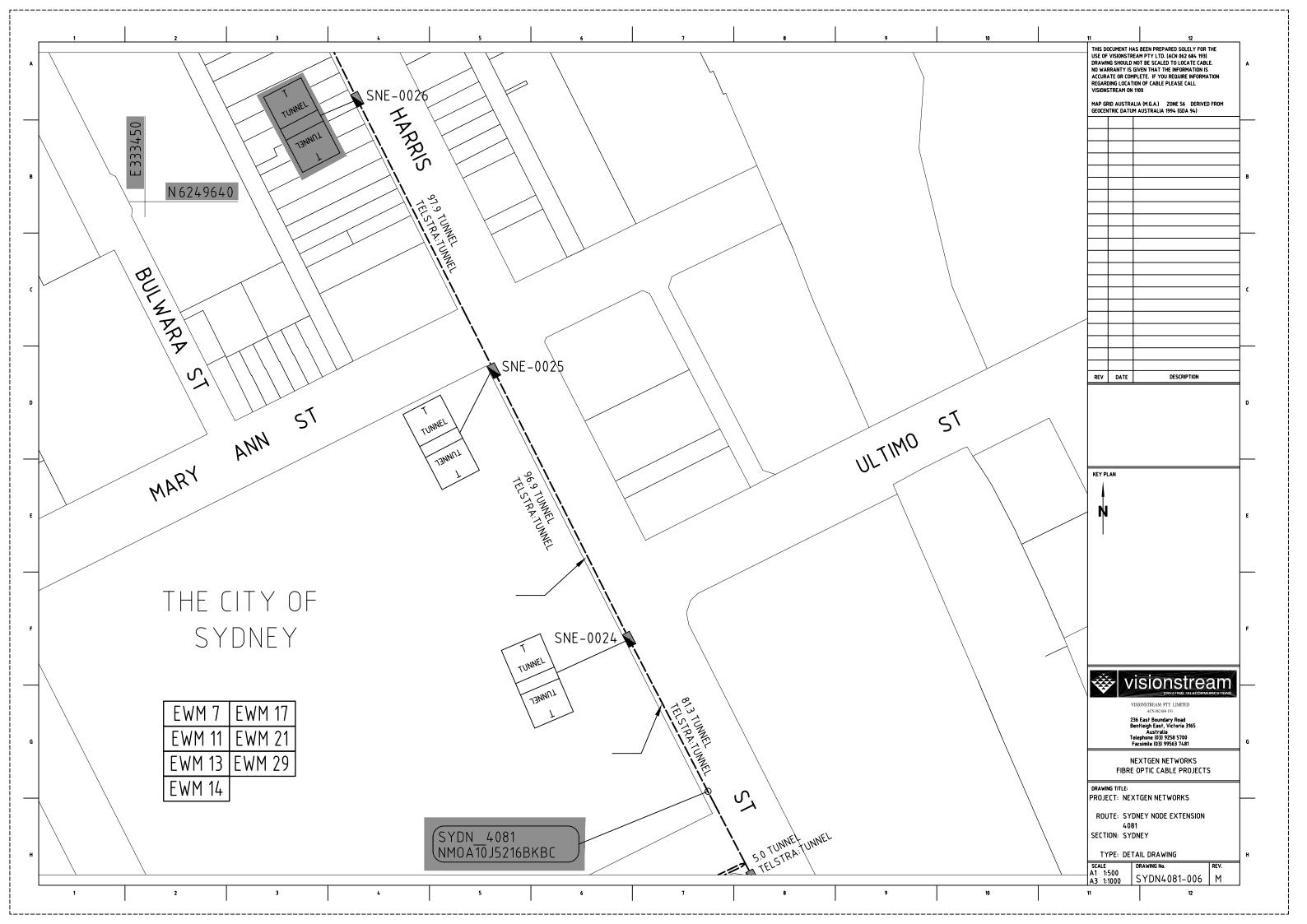
For the assistance of customers Nextgen Networks has established strict criteria to assess the skill of contractors that may be engaged by owners requiring Nextgen Networks plant locating services to perform any of the following activities if requested to do so by the owner:

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

Nextgen Networks does not accept any liability or responsibility for the performance of or advice given by any Plant Locater engaged by you but we will, if requested, recommend suitably qualified plant locators that Telstra has accredited.









03/03/2008

**Network Operations Centre - Asset Analysis** 

1 Lyonpark Road, Macquarie Park, NSW 2113

Ph: 1800 505 Fax: 1300 30 035

To: Mr Sam Sader

Company: Arup

Address: Level 10 201 ent St

Sydney, Nsw 2000

Fax: Not Supplied

#### Asset Location Reply

Dear Mr Sam Sader,

With reference to your enquiry of

Location: Harris St Ultimo, NSW 200

**Sequence No:** 133 6959

Dial Before You Dig Job No: 2 85992
Dial Before You Dig Customer No: 16 2

After referring to the Optus and/or Uecomm asset database, OPTUS find that within the vicinity of your proposed works there are:

#### **EXISTING Optus UNDERGROUND ASSETS**

Please refer to the attached map for further details as you are responsible for any damage you may cause to Optus and/or Uecomm assets due to negligence on your part.

Note: You must not commence work without first obtaining an on-site location of the Optus underground plant and approval of your works plans. Only Optus staff (or Optus approved location contractors) are to provide onsite location services for Optus plant. You can arrange Optus and/or Uecomm onsite locations by calling Optus on 1800 505 and Optus or its approved representatives will attend your site to identify the exact location of Optus assets (the "Optus and/or Uecomm Asset Alignment").

## Optus requires 2 clear business days notice to conduct an on-site location.

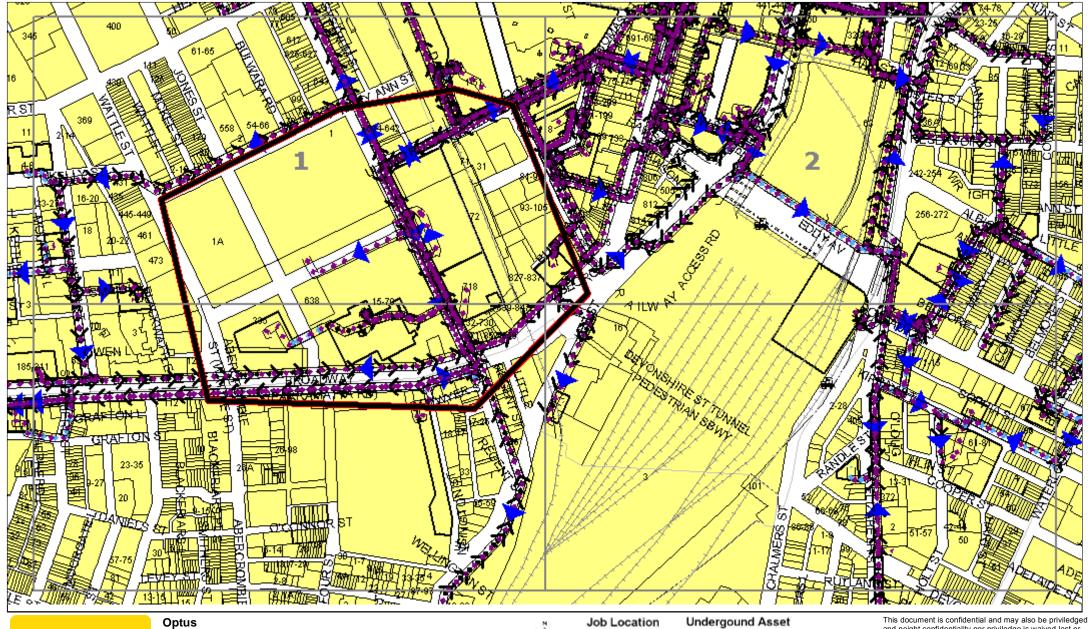
The initial on site location visit will not normally incur a charge, but at the discretion of Optus, subsequent site visits may incur a charge to be applied at an hourly rate.

We thank you for your enquiry and appreciate your continued use of the Dial Before You Dig Service and/or Optus Asset Analysis Service. If you require further information please contact Optus on **1800 505 777** 

This reply relates only to the location indicated above and is valid for 14 days from the sent date. Where additional works are planned that have not been specified with this reply, Optus require that an additional enquiry be submitted. In the case of no additional location request being submitted, Optus will hold the relevant party responsible for any damage to Optus and/or Uecomm plant and all expenses incurred by Optus as a result of asset damage.



Optus Limited ACN 052 833 208 IMPORTANT This transmission may be confidential and privileged. Unauthorised use is prohibited. If you have it in error, please notify us and shred this document. Thank you.

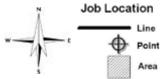




Cable Optus Undergroud OVERVIEW MAP Scale: 1:2500 Printed On: 03/03/2008

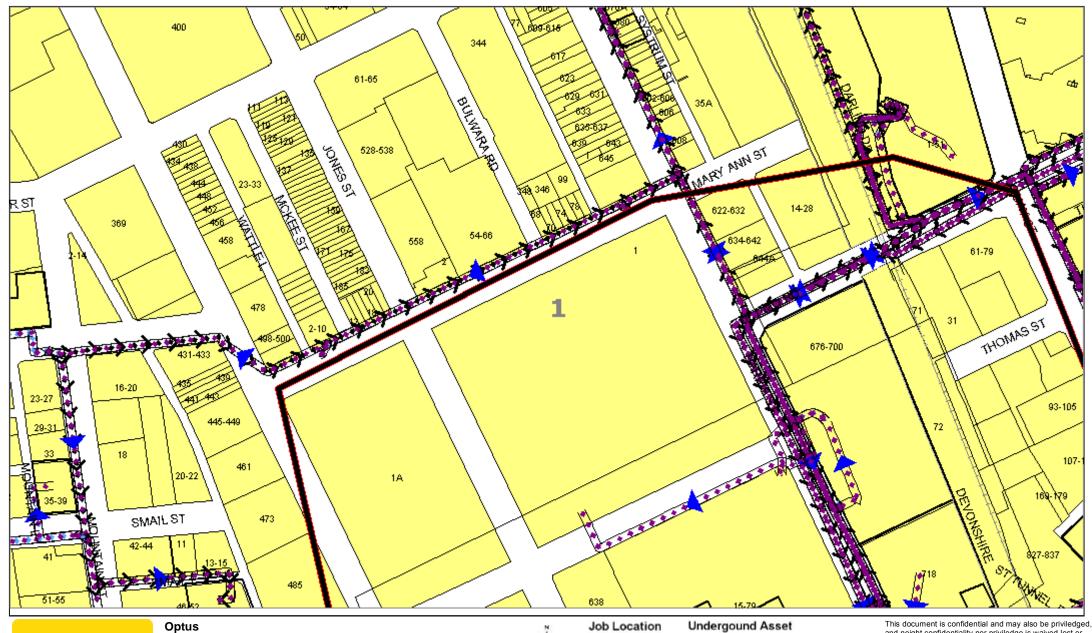
Sequence Number: 133 6959

Location: Harris St





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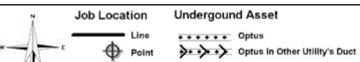




Cable Optus Undergroud Map 1 of 4
Scale: 1: 2500 Printed On: 03/03/2008

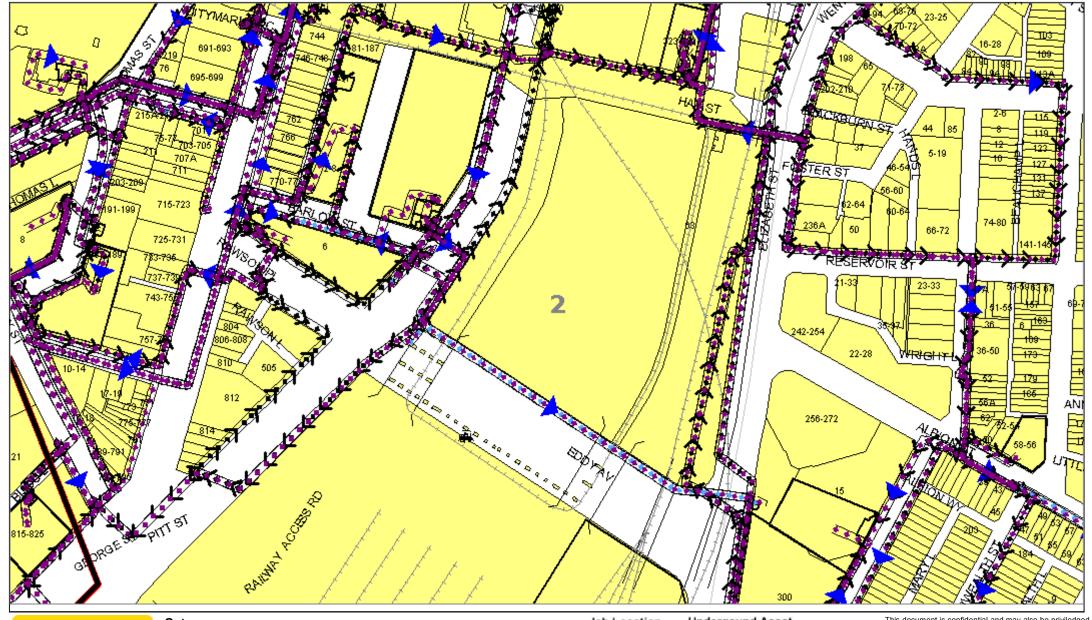
Sequence Number: 133 6959

Location: Harris St



Area

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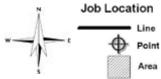




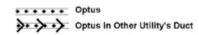
Optus
Cable Optus Undergroud Map 2 of 4
Scale: 1:2500 Printed On: 03/03/2008

Sequence Number: 133 6959

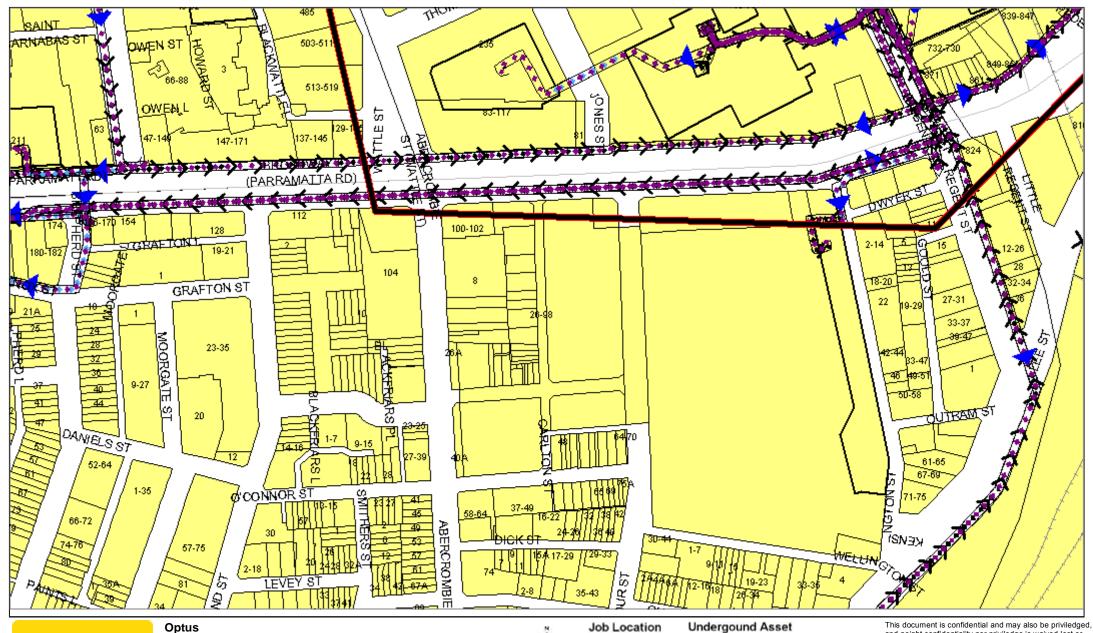
Location: Harris St



**Undergound Asset** 



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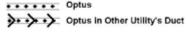


Cable Optus Undergroud Map 3 of 4
Scale: 1: 2500 Printed On: 03/03/2008

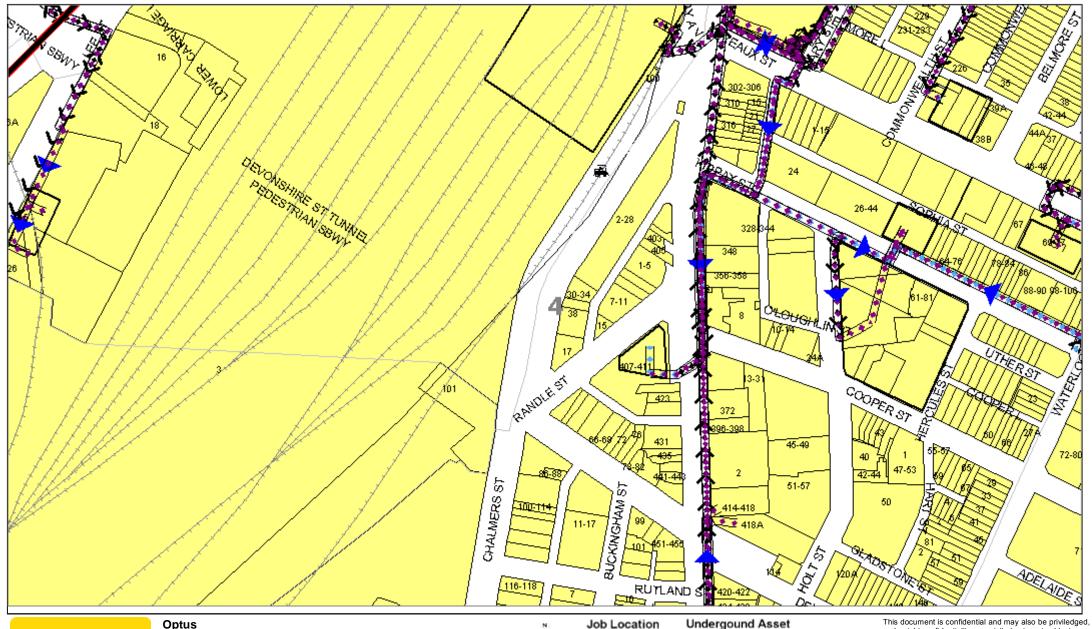
Sequence Number: 133 6959

Location: Harris St





Inis occument is confidential and may also be priviledged and neight confidentiality nor priviledge is waived lost or destroyed by virtue of it being transmitted to an incorrect addressee. Unauthorised use of the contents is therefore strictly prohobited. Any information contained in this document that has been extracted from our records is believed to be accurate, but no responsibility is assumed for any error or omission.

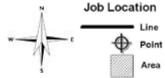




Optus
Cable Optus Undergroud Map 4 of 4
Scale: 1:2500 Printed On: 03/03/2008

Sequence Number: 133 6959

Location: Harris St





This document is confidential and may also be priviledged, and neight confidentiality nor priviledge is waived lost or destroyed by virtue of it being transmitted to an incorrect addressee. Unauthorised use of the contents is therefore strictly prohobited. Any information contained in this document that has been extracted from our records is believed to be accurate, but no responsiblity is assumed for any error or omission.



Level 9, PIPE Networks House, 127 Creek Street, Brisbane 4000

PH:(07) 3233 9800 FAX:(07) 3221 5292

Attention: Mr Sam Sader

Fax: Not Supplied

DBYD enquiry number: 13346961

Our ref: 41216

Date: 03/03/2008 01:12:18 PM

Location: Harris St Ultimo 2007 NSW

## DBYD ENQUIRY RETURN:

PIPE Networks **DOES** own or operate telecommunications network infrastructure within the area detailed above.

The affected network is contained in the PIPE Networks duct network and can be found on PIPE Networks own network plans.

This network is vital to our operations and as such, it is critical that no works commence within the area until a PIPE Networks representative has contacted you.

A PIPE Networks representative will contact you within 24 hours

to further discuss your intended works.

Due to continued network expansion, this network information can only be considered valid and accurate for 14 days from issue.

PIPE Networks will seek compensation for any damage to its network through negligence or ignorance of your duty of care.

PIPE Networks
Ph (07) 3233 9800

Email: RRRRR@rt.pipenetworks.com

(for information specific to this job only)



Level 17, PIPE Networks House, 127 Creek Street, Brisbane 4000 PH:(07) 3233 9800 FAX:(07) 3233 9888

## DBYD ENQUIRY RETURN:

PIPE Networks **DOES** own or operate telecommunications network infrastructure within the request area detailed above.

The affected network infrastructure is contained within the **Telstra** duct network and can be found listed on the appropriate **Telstra** duct Network plans.

THIS NETWORK IS VITAL TO OUR OPERATIONS AND AS SUCH, IT IS CRITICAL THAT **NO WORKS** COMMENCE WITHIN THE AREA UNTIL YOU HAVE RECEIVED AND APPRAISED THE TELSTRA DUCT PLANS FOR THIS AREA.

Due to continued network expansion, this network information can only be considered valid and accurate for 14 days from issue.

PIPE Networks will seek compensation for any damage to its network through negligence or ignorance of your duty of care.

PIPE NETWORKS
Ph (07) 3233 9800

Email: RRRRR@rt.pipenetworks.com

(for information specifically on this job only)



# Samantha Peart

From: Telstra\_Smartplan@domino.in.telstra.com.au

Sent: Tuesday, 4 March 2008 10:03 AM

To: Sam Sader

Subject: Telstra Plant Location Details (N\_nswnth), Seq. No. 13346956 Reviewed by SS on

2008-03-04

Attachments: Telstra Duty of Care.pdf; KS\_AccreditedPlantLocators.pdf; 13346956.dwf

Attention: Sam Sader

Site Location: Harris St, Ultimo, NSW 2007

The attached files contain Telstra information relating to your recent Dial-Before-You-Dig request. Please ensure you read the Telstra Duty of Care document as it contains important information.

If you are unable to launch any one of the files for viewing and printing, you may need to download and install one or more of the free viewing and printing products such as Adobe Acrobat Reader (for PDF files) or Autodesk Design Review 2008 (for DWF files).

For all enquiries:

Phone: 1800 653 935 (7.30 am to 5 pm, 5 days per week)

Fax: 02 49613714

Please DO NOT SEND A REPLY to this email as it has been automatically generated and replies are not monitored.

WARNING - MAJOR CABLES and/or OPTIC FIBRE IN THE AREA.

Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the exact location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information provided can not be guaranteed as property boundaries, depths and other natural landscape features may change over time, and accordingly the plans are indicactive only. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans. It is your responsibility to locate Telstra's underground plant by careful hand pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation. TELSTRA WILL SEEK COMPENSATION FOR LOSS CAUSED BY DAMAGE

TO ITS PLANT. Please read and understand the information provided in the duty of | care statement attached with the Telstra Plans. Contact the Network Integrity | Help Desk for further assistance.

Caution: Some Telstra fibre routes may be marked as "Amcom", as Telstra has purchased much of this infrastructure. If in doubt please contact us on the Network Integrity Help Desk number.

Telstra plans and information are valid for 60 days from the date of issue. If this timeframe has elapsed, please reapply for plans.

# **Accredited Plant Locaters:**

Accredited Plant Locaters:  Name and Address	Phone Number	Ask for:
Abitek Pty Ltd - Rouse Hill	Ph:02 881 899 Fax:02 881 855 Mob:0 13 32 2 3	Braden Tynan
Action Locating	02 96 1 5600 0 15 228 66	Matthew Tynan
Austerberry Directional Drilling Services	0 05 50 315	Bob Reynolds
Australian Locating Services	1300 6 15 5 0 12 22 3	Scott Hogan
Barry Bros Specialised Servcies	Mob: 0 00 001 0 5 Ph: 02 9 238 Fax 02 9 230	Chris aven
Brad McCorkindale - Springwood	Ph: 02 5 3626 Fax: 02 5 3 35 Mob: 0 3 15 09	Brad McCorkindale
Concrete round Penetrating Radar	0 1 223 33	Mark Devine
Civilscan Pty Ltd	Mob: 0 16 068 060	Doug Dean
Daley Boring Pty Ltd	Mob: 0 09 2 6 0 Fax: 02 655 6	Michael Daley
D Vacuum Excavation	02 292 28 0 22 6 2 1	Dwayne Miller
Dig Smart - Vacuum Potholing Services	0 33 213 0 5	( ames) Scott Harris
Down Under Consulting	Ph: 02 9 8 92 3 Fax: 02 998 023 95 Mob: 0 0 815 03 5	Ashleigh Ferris
Duds	0 18 26 96	Philip Pegler
Durkin Construction Pty Ltd- Sydney	Ph: 02 9 120308 Fax: 02 9 120206 Mob: 0 13158255	ane Durkin
Excavac Potholing	Mob: 0 1 521 808 Fax: 02 631 1 50	Peter Lawrence
Line-tel Pty Ltd	02 9601 8 2 0 18 6 809	Dominic Cannon Sam Nicoletti
Locaters	0 18 262 025	Paul Forbes
Locating Tracing Services	0 1 1 9 5 02 882 665 (A.H)	Darryl Critcher
On Line Pipe Cable Locating	02 98312 50	Barry Maloney
Optical Technologies PtyLtd	02 9501 922 0 02 35 322	Bruce Whittaker
Barry Schultz Fibre Pipe Locations	02 881 233 0 16 068 060	Barry Schultz
Power Serve Pty Ltd - Newcastle	02 9 9 0100 or 0 2 10 03	Paul arpathy
Protech Plumbing	02 95 2 8820 0 18 9 1 58	lenn East
Saturn PtyLtd	02 9555 2505 0 1 555 61	Murray Schultz
Sinclair night Mertz	02 992821 6 0 22 66 81	Phillip Layton
Sydwide Concrete Saw Pipe Locators	02 9822 8228 0 0 33 580	Tony Stojanovski
Topcrew P/L T/AS Excavac Potholing	Fax: 02 6311 50 Mob: 0 1 521808	Peter Lawrence
Trevor Ormrod Plumbing Services Pty Ltd	1800 256 93	Trevor Ormond

# **DUTY OF CARE**



### **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 free 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 free 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 retains copyright in all plans and details provided in conjunction with your request. These plans and or details should be disposed of by shredding or any other secure disposal method after use.
- Telstra plans or other details are provided for the use of the applicant, its servants, or agents, and shall not be used for any unauthorised purpose.
- 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 <b>actual location</b> .  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 <b>actual location.</b> 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:

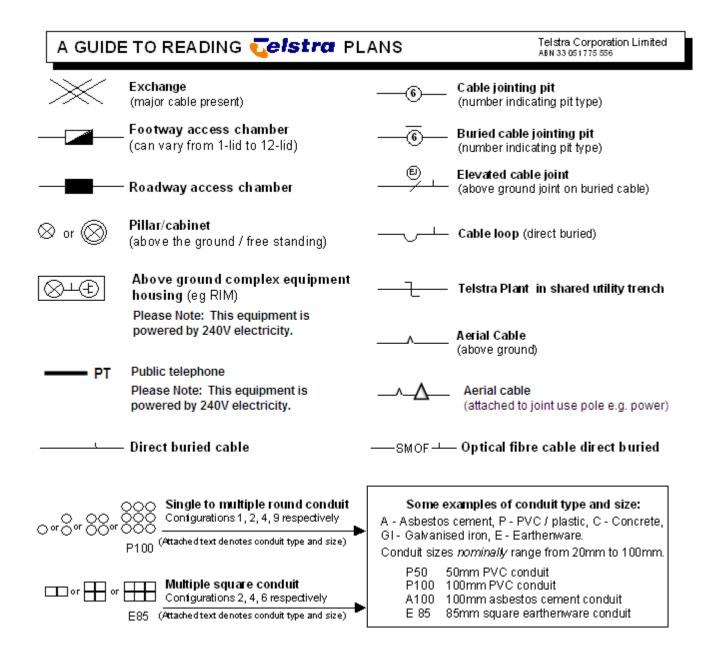
If Telstra relocation or protection works are part of the agreed solution, then payment to Telstra for the cost of this work shall be the responsibility of the principal developer or constructor. The principal developer or constructor will be required to provide Telstra with the details of their proposed 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**

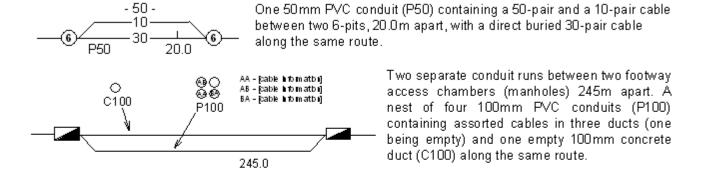
Where Telstra owned cable crosses agricultural land, Telstra will provide a one off free on-site electronic cable location. Please note that the exact location of cables can only be verified by visual proving by pot holing, which is not covered by this service. The Network Integrity Helpdesk Officer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

Your information has been provided to Telstra by DBYD to enable Telstra to respond to your DBYD request. Telstra keeps you information in accordance with its privacy statement entitled "Protecting Your Privacy" which can be obtained from Telstra either by



# Some examples of how to read Telstra plans:



**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.



# Samantha Peart

From: Gismo\_FL [Gismo\_FL@optus.com.au]
Sent: Monday, 3 March 2008 5:23 PM

To: Sam Sader

Subject: DBYD Referral: 13346959 Reviewed by SS on 2008-03-03

Attachments: UECOMM\_COVERLETTER.pdf; 2170-1.pdf; 2161-3.PDF; 2575.pdf

Optus - DigSAFE PRO Dial Before You Dig- REFERRAL NOTIFICATION

This referral has been successfully processed by Optus and the results are contained in the attached files.

Notice: Please DO NOT REPLY TO THIS EMAIL as it has been automatically generated and replies are not monitored.

If you have any queries or attachments missing please contact.

Network Operations Centre Zenith Tower B, Level 15, 821 Pacific Highway Chatswood NSW 2067 Ph: 1800 505 777

Fax: 1300 307 035

You will require Adobe Reader to view attachments. <a href="http://www.adobe.com/downloads/">http://www.adobe.com/downloads/</a>

We thank you for your enquiry and appreciate your continued use of the "Dial Before You Dig Service" Asset Analysis Service.

If you require further information in relation to Optus and/or Uemcomm cables please contact Optus on above.

This reply relates only to the location indicated above and is valid for 14 days from the sent date. Where additional works are planned that have not been specified within this reply, Optus require that an additional enquiry be submitted to Dial Before You Dig enquiry Service. <a href="http://www.dialbeforeyoudig.com.au/PlansMap.html">http://www.dialbeforeyoudig.com.au/PlansMap.html</a> In the case of no additional location request being submitted, Optus will hold the relevant party responsible for any damage to Optus and/or Uecomm plant and all expenses incurred by Optus as a result of asset damage.

This e-mail may contain confidential information. If you are not the intended recipient, please notify Network Operations Centre immediately and delete this e-mail from your system. You must not disclose this e-mail to anyone without express permission from the sender. The contents of all e-mails sent to and received from Optus may be scanned, stored, or disclosed to others at Optus' discretion.

TO:Mr Sam Sader Arup Level 10 201 Kent St Sydney, Nsw, 2000



Uecomm Pty Limited ABN 56 0 9 083 195

Building 8, 658 Church St, Richmond, VIC 3121 Ph: (03) 9221 100 Fax: (03) 9221 193

Ah: 1800 0

# LOCATION OF UNDERGROUND FIBRE OPTIC CABLE INFORMATION SHEET

IMPORTANT: PLEASE READ <u>ALL</u> INFORMATION AND CONDITIONS BELOW AND THE NOTICE ON THE REVERSE SIDE OF THE PLAN/S.

"Dial Before You Dig" Sequence No 13346959 Customer ID 716427

Issue Date: 03/03/2008 Issue By: Bruce

Location: Harris St, Ultimo, NSW 2007

Map Ref: 235Q15, 236A15, 236B15, 236C15, 235Q16, 236A16, 236B16, 236C16, 256A1, 256B1

Uecomm Asset Location No. **13346959** Dial Before You Dig ob No. **2785992** 

In relation to your enquiry at the above address, Uecomm advises as follows:

The records of Uecomm Limited disclose that there ARE underground FIBRE OPTIC / TELECOMMUNICATIONS cables in the vicinity of the above enquiry as per attached plan/s.

- The underground cables referred to in this advice are defined as the underground communications cables owned or controlled by Uecomm Pty Limited.
- The person/company responsible for submitting the inquiry should take care to ensure all plans listed above have been received. For any plan listed above but not received please contact **1800 707 447**
- Any information provided is valid only for **14 days** from the date of issue set out above.
- If the work operations extends beyond this period, or if the designs are altered in any way, you are requested to resubmit your proposal for re-assessment.
- Further assistance may be obtained if necessary by telephoning 1800 707 447

# PLEASE READ ALL INFORMATION AND DISCLAIMERS BELOW:

- 1. Due to the nature of underground cables and the age of some cables and records, it is impossible to conclusively ascertain the location of all cables. The accuracy and/or completeness of the information cannot be guaranteed and, accordingly, they are intended to be indicative only and as a result Uecomm does not accept any responsibility for any inaccuracies of its plans. They should not be solely relied upon when undertaking underground works. It is also inaccurate to assume that fibre optic cables follow straight lines and careful onsite investigations are essential to locate its exact position.
- 2. The following minimum clearances must be maintained:
  - 300mm when laying asset s inline, horizontal or vertical.
  - 1 500mm when operating vibrating equipment. Eg: ackhammers or vibrating plates.
  - 1000mm when operating mechanical excavators.
- 3. Due to the inherent dangers associated with excavation in the vicinity of underground cables, precautions should be taken in the undertaking of any underground works, including (but not limited to) the following:
  - All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs if present must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the likely hood of damage to the cable. E : Blades of hand equipment should be orientated parallel to the line of the cable rather than digging across the cable.
  - If any undisclosed underground cables are located, Uecomm Limited should be notified immediately.
  - All personnel must be properly briefed, particularly those associated with the use of earth-moving equipment, trenching, boring and pneumatic equipment.
  - All excavations must be undertaken in accordance with the relevant legislation and regulations.

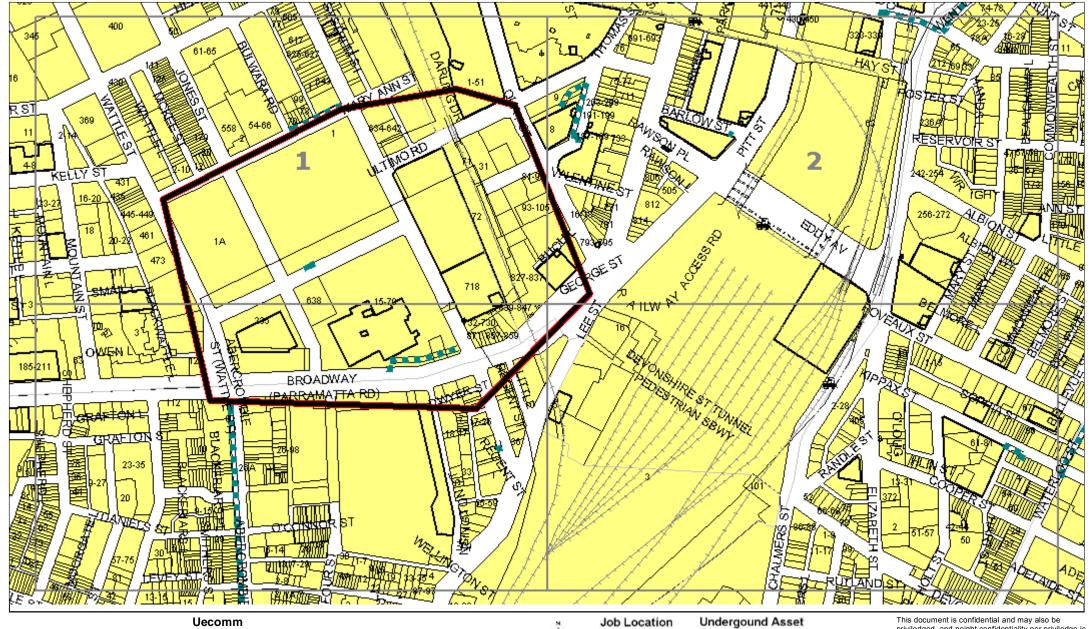
#### DAMAGE. ANY DAMAGE TO UECOMM'S NETWORK MUST BE REPORTED IMMEDIATELY TO 1800 707 447

- 5. Uecomm recommends using Uecomm approved location contractors to provide onsite location services for Uecomm plant. You can arrange Uecomm onsite visits by calling Uecomm on 1800 0 and Uecomm or its approved representative will attend your site to provide guidance to the location of the Uecomm assets (the "Uecomm Asset Alignment"). Uecomm requires 3 clear business days notice to conduct an onsite location. The initial on site visit by Uecomm will not normally incur a charge, but at the discretion of Uecomm, subsequent site visits may incur a charge to be applied at an hourly rate.
- 6. Uecomm will hold the relevant party responsible for any damage to Uecomm plant and all expenses incurred by Uecomm as a result of asset damage.

. Except to the extent that liability may not be capable of lawful exclusion, Uecomm Pty Limited and its servants and agents and the related bodies corporate of Uecomm Pty Limited and their servants and agents shall be under no liability whatsoever to any person for any loss or damage (including indirect or consequential loss or damage) however caused (including, without limitation, breach of contract negligence and/or breach of statute) which may be suffered or incurred from or in connection with this information sheet or any Plans attached hereto. Except as expressly provided to the contrary in this information sheet or the attached Plans, all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

We thank you for your enquiry and appreciate your continued use of the Dial Before You Dig Service and/or Uecomm Asset Analysis Service. If you require further information please contact Uecomm on **1800 707 447.** 

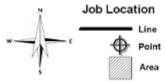
**IMPORTANT** This document may be confidential and privileged. Unauthorised use is prohibited. If you have it in error, please notify us and shred this document. Thank you.





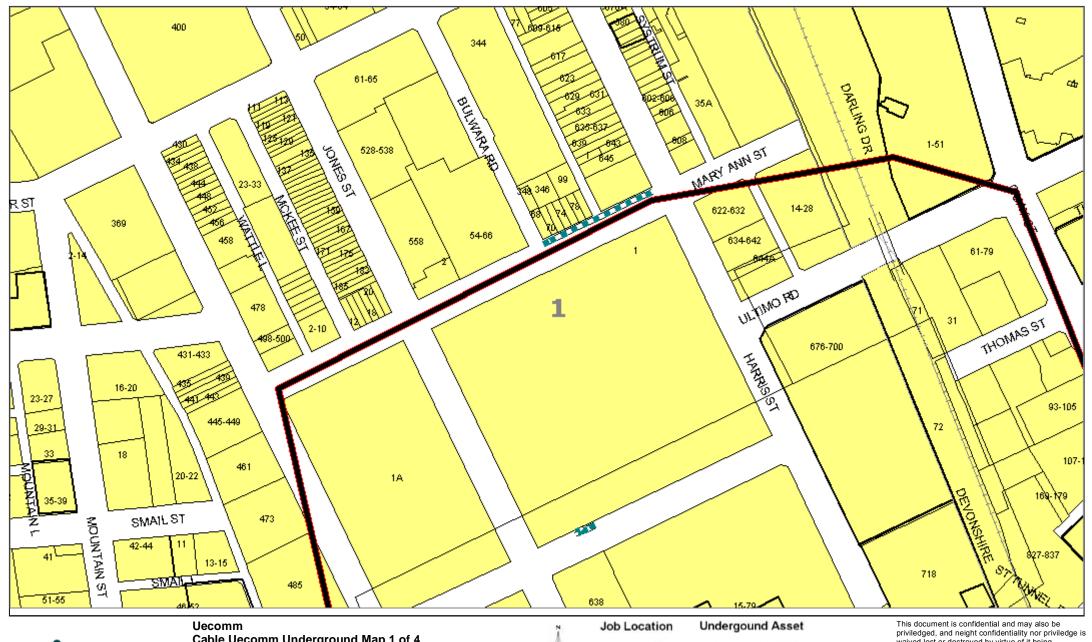
Cable Uecomm Underground OVERVIEW MAP Scale: 1: 2500 Printed On: 03/03/2008

Sequence Number: 133 6959 Location: Harris St



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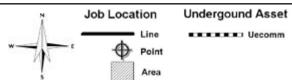




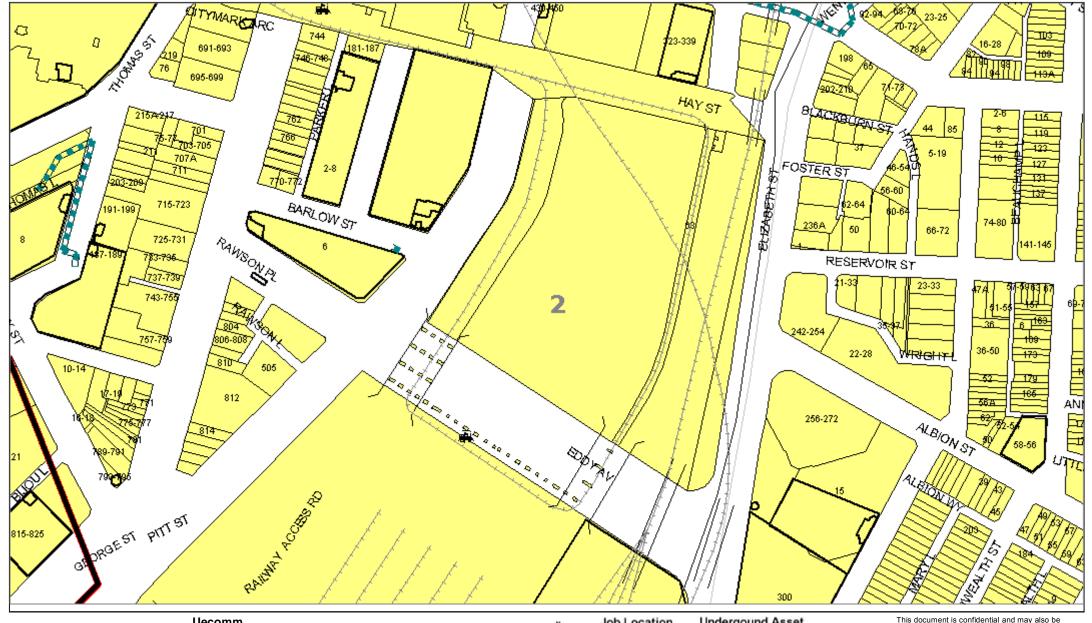
Cable Uecomm Underground Map 1 of 4 Scale: 1:2500 Printed On: 03/03/2008

Sequence Number: 133 6959

Location: Harris St



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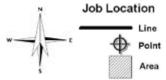




**Uecomm** Cable Uecomm Underground Map 2 of 4 Scale: 1:2500 Printed On: 03/03/2008

Sequence Number: 133 6959

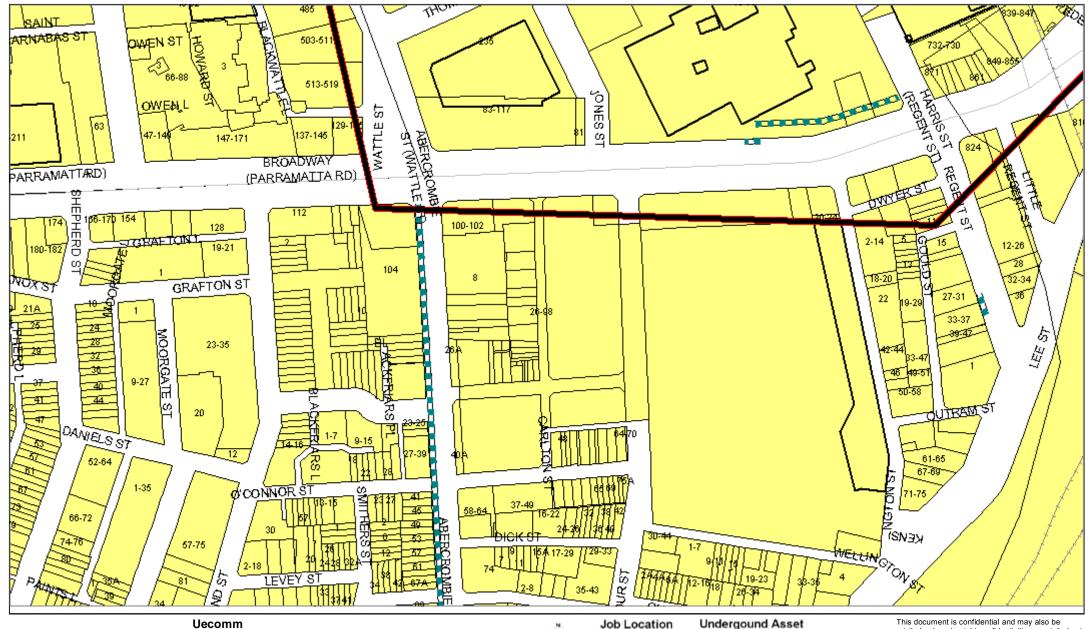
Location: Harris St



Undergound Asset

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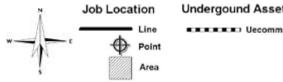




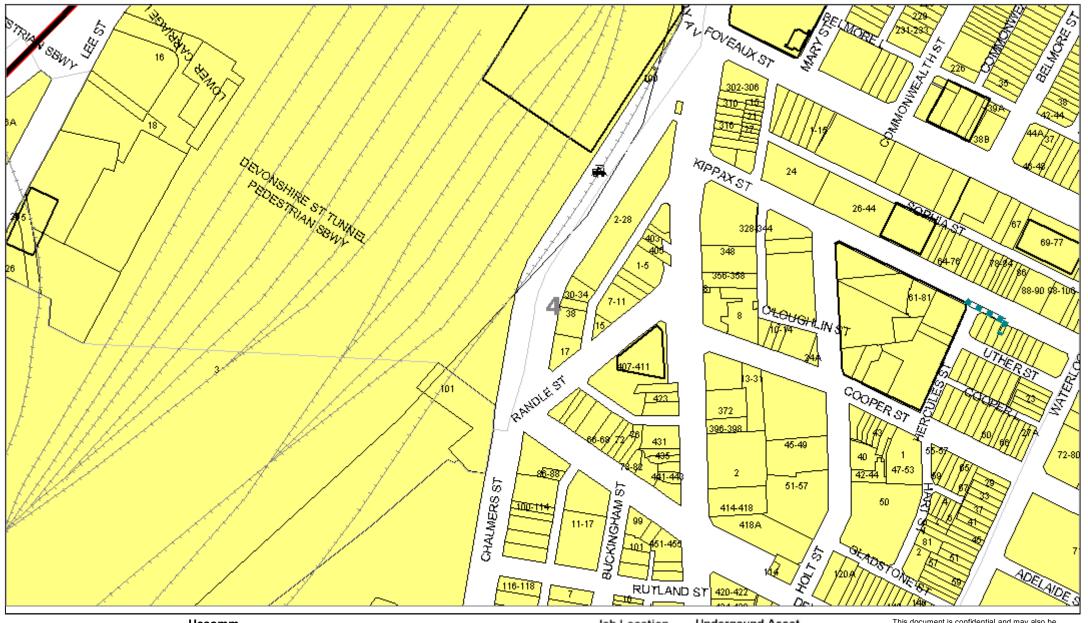
Cable Uecomm Underground Map 3 of 4 Scale: 1:2500 Printed On: 03/03/2008

Sequence Number: 133 6959

Location: Harris St



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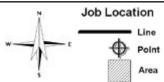




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Cable Uecomm Underground Map 4 of 4
Scale: 1:2500 Printed On: 03/03/2008

Sequence Number: 133 6959

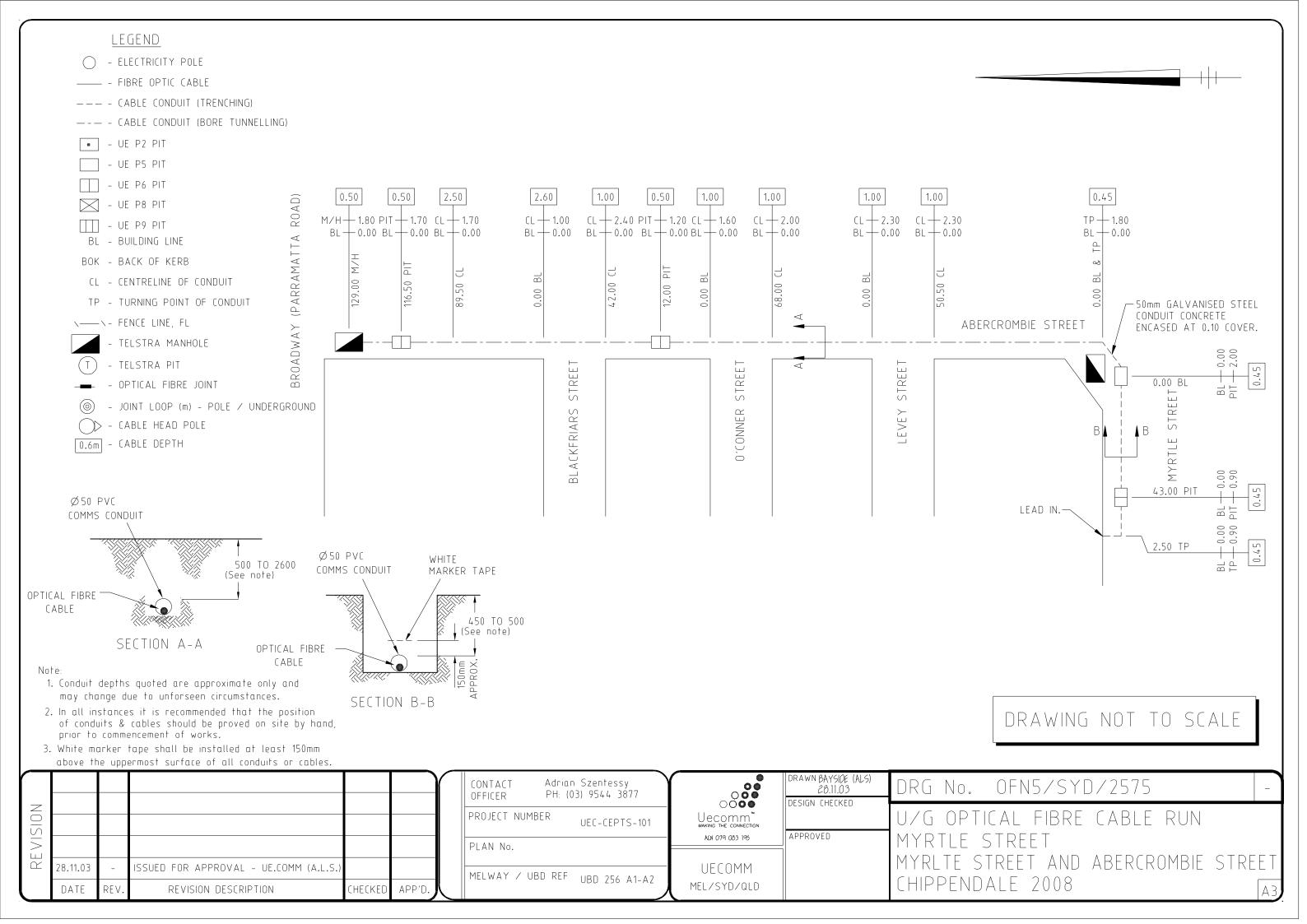
Location: Harris St

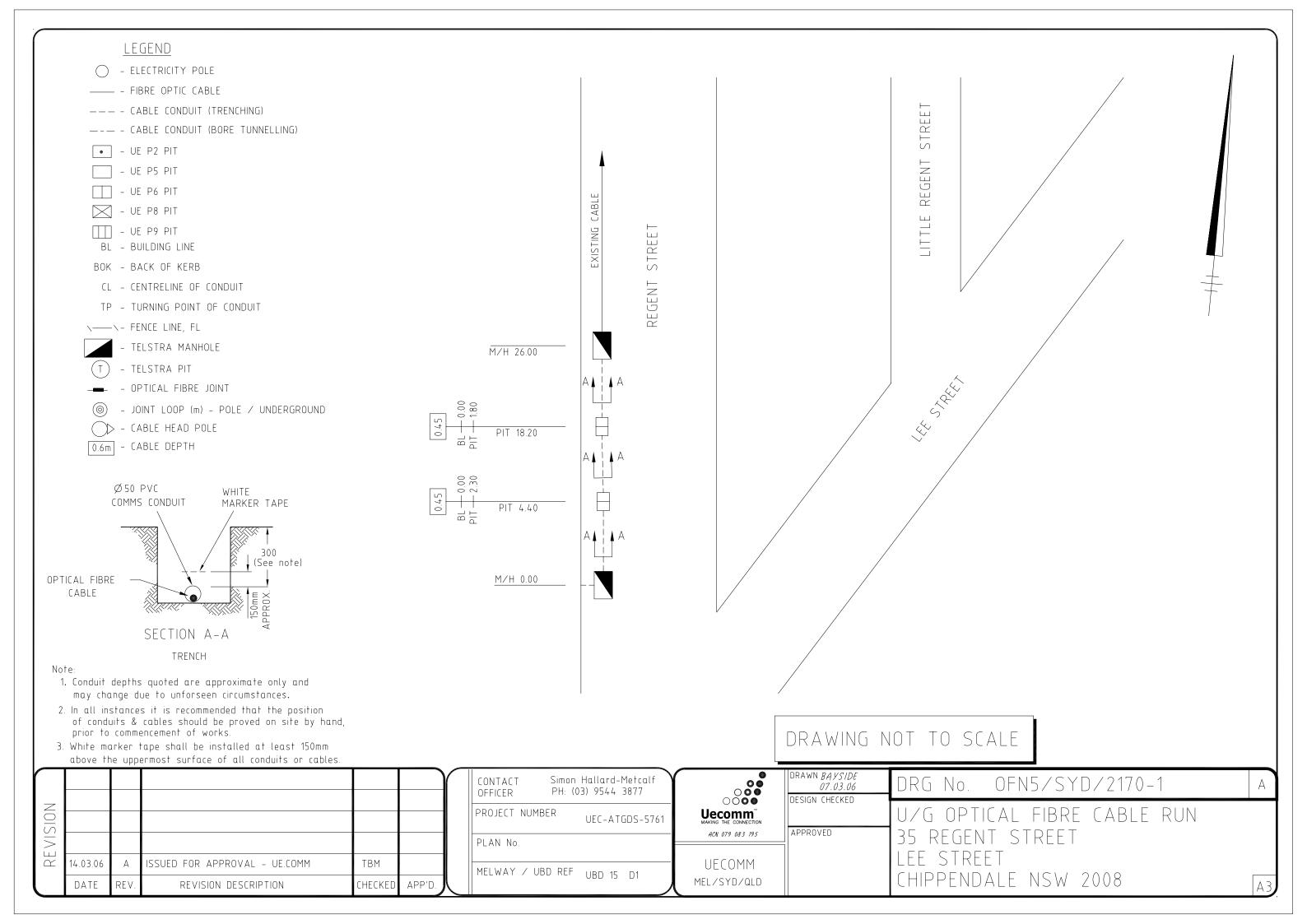


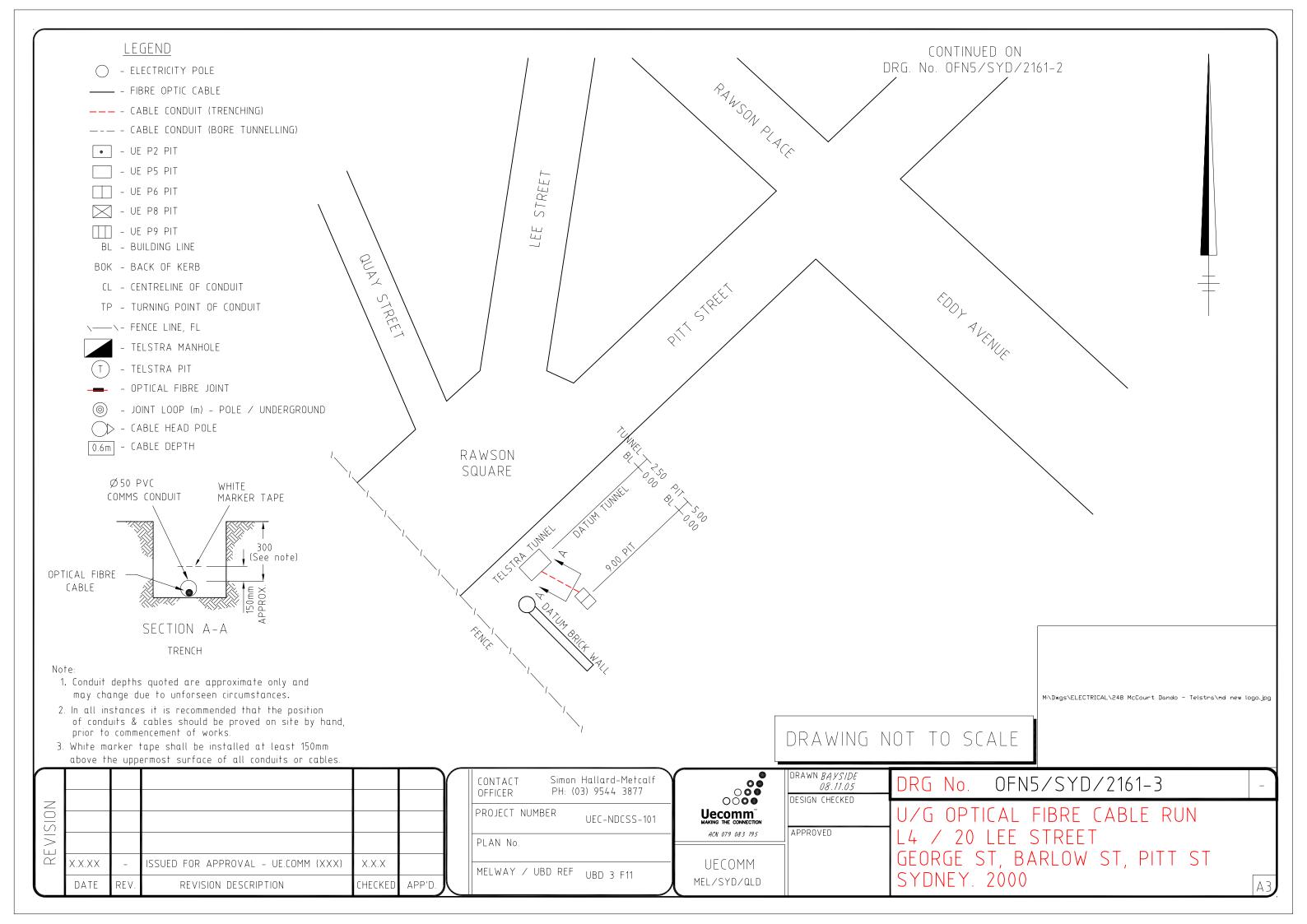
**Undergound Asset** 

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# Samantha Peart

From: MKIdigging - Sydney [mkidigging@au.verizonbusiness.com]

Sent: Monday, 3 March 2008 4:53 PM

To: Sam Sader

**Subject:** FW: 13346950 - ID:D2646678D39FCEC4CA2573FE00163EDF Reviewed by SS on

2008-03-03

Attachments: DB4UD Response.pdf; SYDNEY CBD NETWORK (8-13).pdf; SYDNEY CBD NETWORK

(9-13).pdf; SYDNEY CBD NETWORK (10-13).pdf

Verizon Business - global capability. personal accountability.

This e-mail is strictly confidential and intended only for use by the addressee unless otherwise indicated.

----Original Message----

From: Referrals@1100.com.au [mailto:Referrals@1100.com.au]

Sent: Friday, February 29, 2008 12:08

To: MKIdigging - Sydney

Subject: SEQ:13346950 - ID:D2646678D39FCEC4CA2573FE00163EDF

DIAL BEFORE YOU DIG

Call 1100, Fax 1300 652 077 PO Box 7710 MELBOURNE, VIC 8004

Utilities are requested to respond within 2 working days and reference the Sequence number.

1

[REFFERAL DETAILS]

FROM= Dial Before You Dig - Web

TO= Stuart Stevens

UTILITY ID= 30204

COMPANY= Verizon Business ENQUIRY DATE= 29/02/2008 14:59

COMMENCEMENT DATE= 04/03/2008 SEQUENCE NO= 13346950 PLANNING= Yes

[CALLER DETAILS]

CUSTOMER ID= 716427 CONTACT NAME= Mr Sam Sader

CONTACT HOURS= 0 COMPANY= Arup

ADDRESS= Level 10 201 Kent St

SUBURB= Sydney
STATE= Nsw
POSTCODE= 2000
TELEPHONE= 0293209482
MOBILE= Not Supplied
FAX TYPE= Private

PUBLIC ADDRESS= PUBLIC TELEPHONE=

FAX NUMBER=

EMAIL ADDRESS= sam.sader@arup.com.au

Not Supplied

[LOCATION DETAILS]

ADDRESS= Harris St
SUBURB= Ultimo
STATE= NSW

POSTCODE= 2007
DEPOSITED PLAN NO= 0
SECTION & HUNDRED NO= 0
PROPERTY PHONE NO=

SIDE OF STREET= SE

INTERSECTION= George ST
DISTANCE= 20m S
ACTIVITY CODE= 23

ACTIVITY DESCRIPTION= Planning & Design

MAP TYPE= UbdSyd

MAP REF=

235Q15,236A15,236B15,236C15,235Q16,236A16,236B16,236C16,256A1,256B1

MAP PAGE=
MAP GRID 1=
MAP GRID 2=
MAP GRID 3=
MAP GRID 4=
MAP GRID 5=
GPS X COORD=
GPS Y COORD=

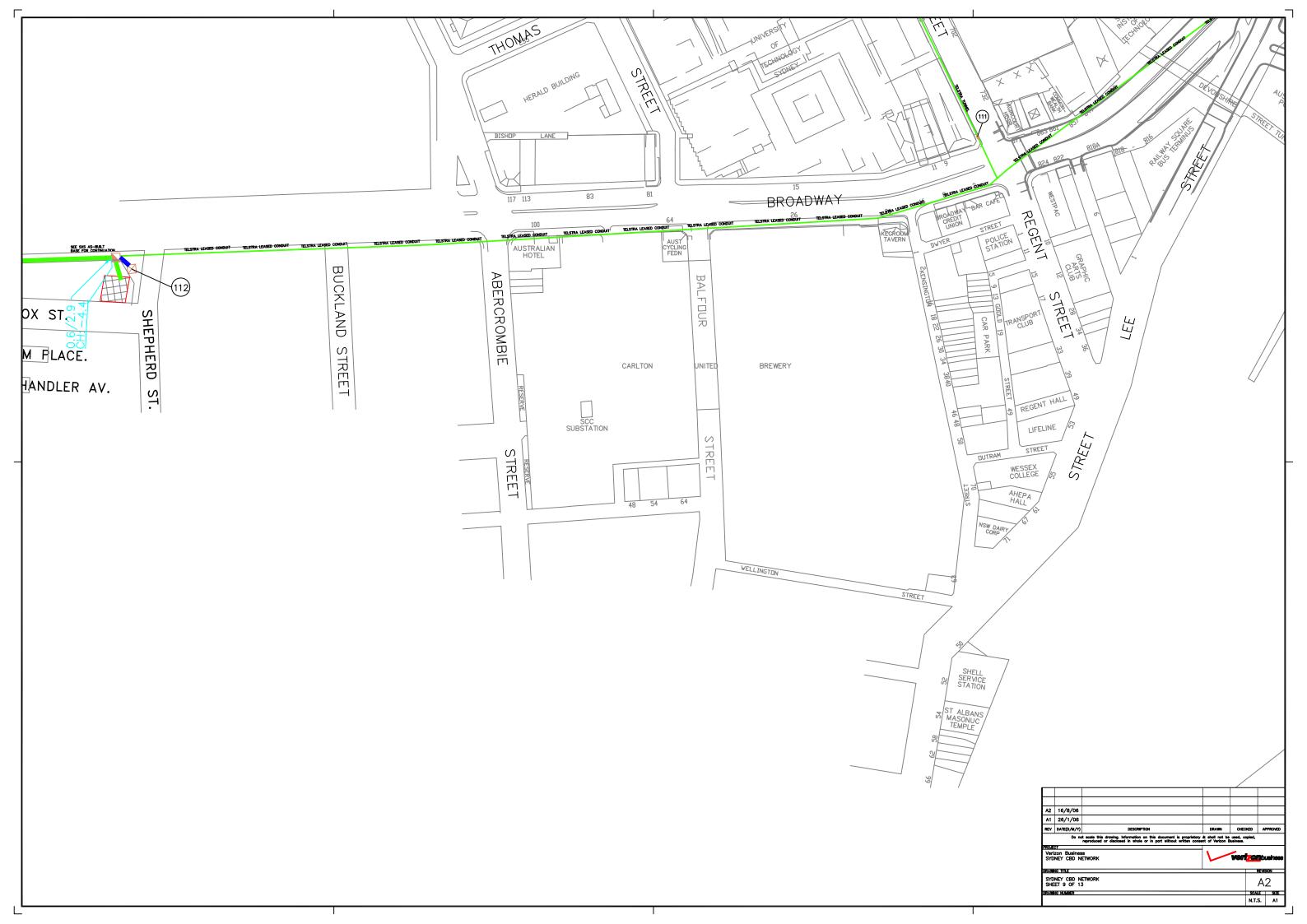
PRIVATE/ROAD/BOTH= B
TRAFFIC AFFECTED= No

NOTIFICATION NO= 2785992

MESSAGE= Hi I need all underground services serving UTS

MOCSMESSAGE= Digsafe generated referral

Notice: Please DO NOT REPLY TO THIS EMAIL as it has been automatically generated and replies are not monitored. Should you wish to advise Dial Before You Dig of any issues with this enquiry, please Call 1100







8/16/2006 15:03:46; ISO expand A1 (841.00 x 594.00 MM); Verizon Bus