UTILITY PROVIDERS

CODE OF PRACTICE

FOR WESTERN AUSTRALIA

DIAL BEFORE YOU DIG®
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The Essential First Step

UTILITY PROVIDERS CODE OF PRACTICE

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Hard copies:

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The UPSC Code of Practice for Western Australia can be located via the website:
www.1100.com.au

Should you have difficulty locating this content please email:
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Keeping Code of Practice up to date

The Code of Practice is a living document reviewed and updated periodically by the Utility Providers Services Committee to meet the evolving needs of industry. Between editions amendments may be issued. Readers of the Code of Practice are to ensure they are reading the latest version and any amendments that are issued since the latest published version. To assist in this endeavour the Committee would appreciate feedback on any aspects of this manual including inaccuracies, ambiguities and suggestions for improvements.

Disclaimer

UTILITY PROVIDERS CODE OF PRACTICE FOR WESTERN AUSTRALIA

Produced by the Utility Providers Services Committee.

Applicable from 01 May 2016

Supersedes all previous Information Manuals

and Codes of Practice.

Amendments:

Updated contact details and miscellaneous typographic corrections.

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1 INTRODUCTION

The Utility Providers Code of Practice is published by the Utility Providers Services Committee to document industry best practice and provide essential information and guidance in managing and undertaking street works associated with the provision of underground utility services in public road reserves. The Code of Practice is an authorative reference for utility services providers, local governments, developers and their contractors throughout WA.

This document includes:

- Allocation of space for underground utility services
- Pre-construction planning including locating existing services
- Environmental and heritage compliance requirements
- Installation and reinstatement requirements.
- Recording of as constructed information.
- Emergency contact details of all utility service providers.

2 HISTORY

The Public Utilities Services Committee (PUSC) was founded on June 22, 1923 when a meeting of representatives of the Perth City Council, various Government Departments and public utility providers met in the Council Chambers, Town Hall, Hay Street, Perth.

Following a period between mid-1994 and the end of 1996 in which the PUSC did not meet, the PUSC was reconstituted at a meeting on February 11, 1997, with Main Roads WA providing the new role of Chairperson and Co-ordinator of the Committee.

The Committee was chaired and co-ordinated by the Department for Planning and Infrastructure between 2003 and 2006. This role was transferred back to Main Roads WA between 2006 and 2009.

During 2009, the Committee appointed a representative from Western Power as Chairman/Co-ordinator for a fixed period.

On 4th March 2016, the Committee appointed a representative from the Water Corporation as Chairman/Coordinator.

Due to the commercialisation and privatisation of Utility owners, the PUSC was changed to the Utility Providers Services Committee (UPSC).

3 TERMS OF REFERENCE AND ACCOUNTABILITY

The UPSC operates as an independent entity and focuses on establishing standards for operational issues including the co-ordination of utility service works, site work safety, environment, allocation of alignments and corridors for utility services within road reserves and services lot entry arrangements.

The Utility Providers Code of Practice is referenced in *Liveable Neighbourhoods* produced by the Western Australian Planning Commission, Commission for Occupational Health and Safety Code of Practice – Excavation and Electricity (Supply Standards and System Safety) Regulations 2001 – Schedule 2.

Telecommunication Carriers are defined in and subject to Commonwealth legislation under the *Telecommunications Act (1997) (*Cmth) and the *Telecommunications Code of Practice (1997) (*Cmth), including subsequent amendments.

Licensed Telecommunications Carriers are exempt from some State or Territory laws. Where these laws are not consistent with the Telecommunications Act, the Commonwealth legislation will apply.

In addition there may be a requirement for telecommunication service providers to obtain development approvals and building licences from Local Governments for works other than those defined as 'low impact' facilities in the *Telecommunications (Low-impact Facilities) Determination 1997* and subsequent amendments.

Based on this framework, the aims of the UPSC are:

(a) To secure the co-operation of all authorities concerned to co-ordinate the use of space within road reserves and assist in the approval of utility services located within rail reserves;

(b) To develop and issue Codes of Practice agreed in principle by the authorities concerned;

(c) To determine methods of control and to co-ordinate the use of agreed Codes of Practice;

(d) To facilitate co-ordinated works-programs to achieve maximum efficiency and to minimise costs to communities through the mutual co-operation of the authorities concerned;

(e) To develop and implement guidelines for activities within environmentally sensitive areas, to minimise impact on streetscapes and to maintain acceptable safety standards;

(f) To enable authorities concerned to share information on technological 'best practices'.

Although the above compliance obligations have been established for the UPSC, investigation is being done to determine the most appropriate framework, be that legislative or otherwise, to provide Main Roads WA and Local Government with clear jurisdiction to manage services within road reserves in a consistent and fair manner.

Roads in WA are managed by the relevant Local Government, Main Roads WA or the Department of Parks and Wildlife (within National Parks). However, land within dedicated public roads is Crown land subject to the *Land Administration Act 1997 (LAA).* The Department of Lands (DoL) administers the LAA and has a key role in relation to policy, legal and land management issues impacting on roads. The DoL also manages the use of the DBNGP Corridor under the Dampier to Bunbury Pipeline Act 1997 (DBP Act)

Notes:

(a) In this Code of Practice 'road authority' refers to Main Roads WA and Local Governments.

(b) Refer also to Main Roads WA documents 'Utility Services in Road Reserves - Policy Statement; Application Guidelines; Approval Guidelines; Technical Guidelines; and Administration Guidelines' regarding location of utility services in road reserves, including structures, managed by Main Roads WA. In particular note Policy and Guidelines applicable to declared Control of Access road reserves and rural/regional road reserves outside urban/town site areas.

(c) Maps of State Roads and Local Roads managed by Main Roads WA and Local Governments, including those declared Control of Access, are located on Main Roads WA Website: 'Using Roads' > 'Touring WA & Maps' > 'Road Information Mapping System'

4 ORGANISATIONS REPRESENTED ON THE UTILITY PROVIDERS SERVICES COMMITTEE (UPSC)

- Western Power (Chairman/Co-ordinator)
- Dial Before You Dig (WA) (DBYD)
- Main Roads WA
- Water Corporation
- Western Power
- ATCO Gas Australia (Gas Distribution)
- Dampier Bunbury Natural Gas Pipeline (DBP)
- APA Group
- Telstra
- NBN Co
- Horizon Power
- Civil Contractors Federation (WA)
- Urban Development Institute of Australia (UDIA)
- Western Australian Local Government Association (WALGA)
- City of Perth
- Public Transport Authority

Stakeholder organisations not represented on the UPSC

- Australian Pipeline Trust
- WA Police Service
- WorkSafe WA
- Energy Safety WA
- City of Fremantle
- Department of Lands
- WA Planning Commission
- Department of Environment Regulation
- Department of Planning
- Roadside Conservation Committee
- Institute of Public Works Engineering,
- Australia (WA Division)

5 STANDARD UTILITY SPACE ALLOCATION IN ROAD RESERVES AND LOT ENTRY ARRANGEMENTS

5.1 Road reserve

5.1.1 Application

This Code of Practice applies to both urban (town site and built up areas) and rural/regional road reserves (outside town sites and built up areas), Applications of this Code of Practice apply to standard service alignments, green field developments, utilities located in narrow road reserves (nominally 14-16 metres) and paved laneways, but not to services within private property, although developers may consider applying these guidelines in some applications, such as survey strata developments.

Utilities may require easements over their services located outside of road reserves.

In rural/regional road reserves utility providers are to refer to either Main Roads

WA or the Local Government for advice, as urban type standard allocations may not apply. In the case of main roads, it is policy to locate utility services outside the road reserve unless there are exceptional circumstances that preclude this position. Special easements may be required for these cases. It is also recommended that utility services are located outside of Local Government road reserves where this minimises the impact on native vegetation.

In the case of road reserves with declared Control of Access, location of utility services is generally not permitted. Refer to Clause 3, **Notes** (b) regarding Main Roads WA Policy and Guidelines for 'Utility Services in Road Reserves'.

Co-location of similar utility services is most desirable and encouraged.

5.1.2 Service allocation principles

In developed road reserves the previously agreed alignments already occupied may continue to apply, but for green field developments, narrow road reserves and paved laneways present Code of Practice alignments will be adhered to for all new utility services including non-active utility services for future use. Alteration to standard positions may be made following negotiation between engineers or qualified officers of the road authority concerned and the utility provider and between affected utility providers. Refer to Special Notes, Clause 11.1 and 11.2. When alteration from allocated alignments is made, a written agreement is required for future reference.

5.1.3 Services allocation diagrams

Diagrams showing the standard location of utility services in the road reserve together with associated notes are detailed in Appendix B.

5.1.4 Impact of environmental considerations

Although standard allocation of space in road reserves is provided as a desirable practice, environmental considerations described in Clause 10 may impact on these standard allocations.

The provision of reduced verge width adjacent to parks/public open space may require services to be located within the parks/public open space with the approval of the Local Government. A special easement may be required.

5.1.5 Road reserve management

Unless otherwise directed, road authorities are responsible for the management of the total road reserve and associated structures e.g. bridges and tunnels.

5.1.6 Signage in road reserves

Signage installations shall not impact on existing services and be positioned to minimise impact on existing and future utility services.

Signage is all types of signs that require footings or any form of ground penetration to erect.

Sign positions shall be agreed with the road authority. The following is recommended:

Permission to be obtained from the appropriate road authority and affected (adjacent or above proposed footing) utility owner.

Installers undertake a Dial Before You Dig enquiry to ascertain location of existing recorded services.

Plan, pothole, protect and proceed in accordance with section 6.3.

Signage with deep support footings that adjacent to services shall have frangible or breakaway posts to prevent footing movement damaging adjacent services.

5.2 Lot entry services arrangement

Services interface arrangements between the utilities in road reserves and lot owner connections are detailed in Appendix A for both front of lot and rear laneway access arrangements. Laneway access is not preferred and must be agreed between developers, local government authorities and utility providers considering difficulties of servicing from the front of lots such as high retaining walls, facing public open space and no vehicle access.

6 STANDARD PROCEDURES PRIOR TO COMMENCING SERVICES INSTALLATION

Prior to commencing any work involving excavation, horizontal directional drilling boring or ground works in the road reserve or on private land, appropriate planning shall be undertaken including obtaining approvals from appropriate authorities, liaising with utilities and obtaining as detailed in the Code of Practice.

Note that Dial Before You Dig information generally does not cover private installations except utility services that extend into these lands.

6.1 Project planning – Utility providers and road authorities

6.1.1 Services to be installed in their standard alignment

(a) Obtain information on the location of all other utility providers' plant throughout the length of the proposed route.

Refer to Dial Before You Dig (6.2).

(b) Check for potential environmental and heritage impacts and obtain approvals from Regulatory Agencies (e.g. Heritage Council of WA, Department of Environment Regulation Department of Aboriginal Affairs, Local Government, etc.).

(c) Where applicable walk the route of proposed works with the road authority representative to identify native vegetation, possible locations of conflict and alternative routes.

(d) Any parties doing work in the road reserve must submit a notification of works to the relevant road authority. In some cases approval to do works may be required, please consult with the relevant road authority. Notifications shall be at least ten working days before commencing work. The Application must include a completed Environmental Checklist (as detailed in Appendix F or equivalent) applicable to the proposed works. This is a mandatory requirement.

Note:

A clearing permit is likely to be required from the Department of Environment Regulation where any clearing of native vegetation (herbs, shrubs, trees [dead or alive]) occurs and can take several months to complete the process.

In the case of Main Roads WA, utility providers are required to submit an application form, which includes an Environmental Checklist advising Main Roads WA of the proposed works and reference to any current Agreement or Memorandum of Understanding between Main Roads WA and the Utility Provider. These documents can be accessed from the Main Roads WA Website: www.mainroads.wa.gov.au

In the case of Telstra, for activities that are defined as 'low-impact facilities' in accordance with the *Telecommunications (Low-impact Facilities) Determination 1997,* the use of the application form and other approval processes (e.g. Environmental Checklist) set out in Clause 6.1.1 (d) are not applicable. Unless otherwise agreed (within an MOU or other formal Agreement), Telstra will provide 10 business days notification to road authorities, in accordance with the Telecommunications Code of Practice 1997, using a standard Telstra Land Access and Activity Notice The road authority may object to the proposed activity in accordance with the *Telecommunications Act 1997* and Telecommunications Code of Practice 1997 (e.g. incomplete information and environmental assessment).

(e) Obtain an agreement with the road authority on the Reinstatement Requirement applicable in the road reserve and applies to trenched pavements and cleared vegetation in the road verge area. Main Roads WA or Local Government (endorsed Institute of Public Works Engineering, Australia document) specifications are available. Refer to Clause 9.

(f) Prior to commencing the works, traffic management and safety permits from the road authority. will be obtained as required. The road authority must respond in a timely manner. This does not apply to emergency works, however the road authority must be informed as soon as practicable.

Refer to Appendix C, Traffic Control and Safety.

(g) It is the responsibility of road authorities and utility providers and their contractors or subcontractors to be fully conversant with all relevant Codes, Regulations, Policies and Acts that apply to their work. Consultation with relevant road authorities and utility providers may be necessary to obtain this information (e.g. notification of proposed works, environmental assessment, traffic management plans, reinstatements, etc).

(h) Telecommunications within Road Reserves - Austroads Guidelines and subsequent amendments: Austroads has produced two documents for use by road authorities when Telecommunication Carriers plan to install 'Low-impact Facilities' (particularly cables/conduits) in road reserves:

- Operational Guidelines (2007) – also equivalent document produced by the Communication Alliance for use by Carriers; and
- Administrative Guidelines (2007).

Regarding facilities that are not 'Low-impact Facilities', planning approvals are required in addition to established policies in Main Roads WA, Local Government and the Western Australian Planning Commission.

Main Roads WA owns and manages many major roads, such as highways and main roads in WA. Local roads are managed by the relevant Local Government. Land in dedicated public roads is, however, Crown land owned by the State of WA. The Department of Lands (DoL) administers Crown land on behalf of the State. The Telecommunications Code of Practice provides for comment from both the land owner (DoL), in relation to local public roads and occupier (Local Government, as road manager) to proposed installations of 'Low-impact Facilities'. (DoL) have a Memorandum of Understanding (MOU) with Telstra, which avoids the need for specific Land Access Notifications of most 'Low- impact Facilities' to be installed in roads. However, this applies to Telstra only. All other Carriers will need to notify and seek comment from (DoL) for installations in road reserves, except those owned by Main Roads WA.

Note: Main Roads WA has a MOU (currently being updated with Telstra to assist in the management of Telstra facilities in Main Roads WA road reserves and applies to activities for which Telstra is required to give notices under the *Telecommunications Act 1997* (Cmlth) and the *Telecommunications Code of Practice 1997 and subsequent amendments.*

6.1.2 Services to be installed outside standard alignments

(a) The conditions for services within the standard alignments shall apply in addition to the following clauses.

(b) Obtain information on the location of other utility providers' plant and proposed street alignments throughout the length of the proposed route in consultation with all authorities concerned. Consult with affected land owners if applicable, the appropriate land use planning authority for long term planning if necessary and ensure all land matters are in order before proceeding.

Refer to Dial Before You Dig Clause (6.2). A NOTICE OF INTENT or PRELIMINARY TO WORKS (in accordance with Land and Planning Acts) may not be adequate in all cases.

(c) There may be instances where plant is located in existing and/or future reserves or easements that may impact on adjoining property as identified in Special Note Clause 10.8.

(d) Formally notify all utility providers and appropriate road authorities at least ten working days in advance of proposed work including provision of a route plan showing street alignments. Approvals must be obtained or Notifications undertaken in accordance with Clause 6.1.1(d) prior to proceeding with the works. This is a mandatory requirement**.**

(e) Obtain an agreement with the road authority on the Reinstatement Requirement applicable in the road reserve. Refer to Clause 6.1.1 (e).

(f) Refer to 6.1.1 (f) and Appendix C regarding Traffic Control and Safety.

(g) Refer Special Notes Clause 11.2 for additional requirements.

6.1.3 Services maintenance work in road reserve

(a) Notify any utility provider or road authority that may be affected (e.g. excavation in a busy street or footpath) to expedite reinstatement. Refer to Dial Before You Dig (Clause 6.2).

(b) Utility providers must obtain an agreement with the road authority on the Reinstatement Requirement applicable in the road reserve. Refer to Clause 6.1.1 (e). This is a mandatory requirement.

(c) Refer to Clause 6.1.1 (f) and Appendix C regarding Traffic Control and Safety.

6.1.4 Special precautions

In areas where special conditions apply, such as excavation of busy streets and pedestrian ways, appropriate preparations, notifications and agreements are to be made by the utility provider undertaking the work to minimise inconvenience to the public and to comply with legal requirements.

6.1.5 Road construction notification

The road constructing authority proposing new road works is to notify and consult all utility providers in advance including a plan showing extent of earthworks and finished levels of the proposed construction. This consultation process should allow for delays in obtaining appropriate information and approvals. As a mandatory requirement service relocation issues, including cost, shall be resolved before proceeding with any works.

In the case of rural/regional areas, where services may not be on allocated alignments, it is essential to resolve relocation issues prior to proceeding with any works.

Where a road authority is proposing to do work that will affect utility services they must consult with the effected utilities in a timely manner. The service provider shall respond in a timely manner.

6.1.6 Connection of a utility service to a street main

The utility providers concerned shall be responsible for determining the exact location of existing plant in the road reserve before starting work e.g. ‘pot-holing’ by hand. The utility provider shall provide as much guidance and control as possible, particularly when contractors and sub-contractors are involved. Refer to Standard Procedures Prior to Commencing Work in Clauses 6.2 and 6.3 with emphasis on PLAN, POTHOLE, PROTECT then PROCEED.

6.1.7 Subsurface works not for service connections

For sub-surface works in the road reserve other than for service connection.

(a) Obtain information on the location of all utility provider plant in the area affected. Refer to Dial Before You Dig (Clause 6.2).

(b) The design of the work shall take into account the existing plant in the road reserve, shall conform to this Code of Practice and the road authority advised of proposed works.

6.1.8 Rural/Regional areas.

Traditionally most utility services in rural areas have been located within the road reserve. They may be located outside road reserves, particularly those managed by Main Roads WA. However, road reserves often contain important native vegetation and thus every effort should be made to avoid the placement of new utility services in the road reserve. Should it be necessary to install utility services in the road reserves, methods such as horizontal directional drilling or thrust boring should be considered to minimise the disturbance to vegetation. In these situations and undertaking vegetation maintenance within the utility service corridor, consultation with both the road authority and other utility service providers (as applicable) is mandatory.

For information on utility services in regional locations, contact Dial Before You Dig and the relevant regional office of the utility provider. Note that Dial Before You Dig covers all of the State but not all asset owners are members and are not associated with the Dial Before You Dig service. Refer Clause 6.2.

6.1.9 Attachment of non-visible utility services to road authority bridges and structures

Generally these are Main Roads WA managed.

Non-visible utility services include conduits, pipes, etc., but exclude microwave dishes, mobile phone antennae, etc.

The Utility Provider shall consult with Main Roads WA or the relevant road authority and obtain a Utility Service Management Agreement prior to the installation and attachment of a utility service facility to existing or new traffic bridges, traffic structures, tunnels and other road service structures. Refer to Section 3.4.3 of Main Roads WA 'Utility Services Application and Approval Guidelines' located on Main Roads WA Website (refer to Page 2).

6.1.10 Redundant or abandoned utility services

When utility services have become redundant, decommissioned from service or abandoned, the utility provider must remove the service from the road reserve or make the service safe regarding interference to adjacent infrastructure and environment and keep records of these abandoned services to enable information to be provided via Dial Before You Dig as required.

In the case of utility services attached to bridges or other structures managed by road authorities, detail of managing redundant services, including the removal of the service from the structure, is included in a Service Management Agreement (refer to Main Roads WA Application and Approval Guidelines, Section 3.4.3).

6.1.11 Organisations other than utility providers and road authorities.

For those organisations other than utility providers and road authorities planning to work in road reserves, obtain approval in writing from the road authority before commencing work. This is a mandatory requirement.

6.2 DIAL BEFORE YOU DIG

Digging Without Disasters

Dial Before You Dig provides a single Australia wide point of contact between excavators and major utilities that own buried pipes and cables, as well as the owners of other buried services. This service makes it easier and safer for people undertaking excavation activities by enabling them to determine what services exist in the area of proposed work

Note: The individual utility provider members may charge for provision of maps and information. This service does not include railway infrastructure in rail reserves for which information should be sought from Public Transport Authority (Rail).

To use the Dial Before You Dig service simply lodge your enquiry at least two working days in advance of your intention to excavate. Enquiries may also be lodged by

Website: www.1100.com.au; Phone: 1100;

The website is web enabled for mobile devices.

The requested information shall clearly identify the precise location where the excavation is proposed.

If you have not received your requested information from Dial Before You Dig members after two working days from the date of your request, contact the member directly as listed on your Dial Before You Dig Request Confirmation.

Note:

(a) No work is to commence until all relevant information has been received. Refer also to WorkSafe WA *Occupational Safety and Health Regulations 1996* section 3.21. It is a requirement of section 3.21 that all underground assets are located (potholed) in a job site prior to excavation. Utility maps MUST be on site.

(b) If you have received information from Dial Before You Dig and require further data and/or other information, it can be obtained by telephoning the contacts listed on the Confirmation response.

(c) Be aware that not all owners of underground assets are members of Dial Before You Dig. Provision of Dial Before You Dig information depends on membership type and the information provided is indicative only.

Those underground assets owners who choose not to register with Dial Before You Dig make it difficult for the excavator/contractor to be aware of the underground assets and to take precautionary measures to avoid damaging those assets.

(**d)** For further information on Dial Before You Dig, visit the Website: **www.1100.com.au** or Telephone: **1100**.

(e) Contact the relevant road authority. Note that Main Roads WA is not a member of Dial Before You Dig.

(f) For activities and works in the Dampier Bunbury Natural Gas Pipeline (DBNGP) Corridor contact Department of Lands. Also refer to Appendix D.

Why you should:

Dial Before You Dig

Refer to the following pictures of events that caused major damage and injury which could have been avoided if the worker had used:

Dial Before You Dig

6.3 Duty of care and prevention of damage to services

To assist a person(s) or Agency proposing to undertake excavation work in meeting their duty of care and to prevent or minimise damage to services, the following actions shall be implemented as a minimum requirement:

- Plan
- Pothole
- Protect – and only then
- Proceed

PLAN

Obtain all applicable plant drawings available.

In addition contact the relevant road authority as Dial Before You Dig does not represent all asset owners.

Contact utility providers for their recommended safe digging practices to protect their plant and comply with any specific requirements.

For services intended to enter or cross rail reserves in the Metropolitan Area, which are usually fenced with gates, contact Public Transport Authority (Rail) for advice on accessing the rail reserve even for preliminary reconnaissance. Where a road authority proposes to do work that will affect utility services they must consult with the effected parties.

POTHOLE

Potholing is the practice of digging a test hole to expose underground utilities to ascertain the horizontal and vertical location of the facility.

(a) Potholing is to be carried out prior to drilling or excavating to establish the exact location of all underground assets. (Always visually sight the service or utility)

(b) Prior to any potholing being carried out you must read the Dial Before You Dig plans and may utilise electronic methods and ground penetrating radar to fully understand what utilities are in the vicinity and also the required safe Minimum Approach Distance (MAD). Contact respective utility for MAD values and safety requirements. It is necessary to pothole to determine the accuracy of any non-invasive methods.

For instance you are not permitted to excavate within:

- 15 meters of a high pressure gas main without prior consultation and approval from the relevant gas asset owner.
- 3 meters of water mains greater than 300mm (unless they are Asbestos Cement – AC, or Reinforced Concrete - RC, if they are either of these materials then an Asset Damage Risk Assessment (ADRA) is required). Any size sewer pressure main requires an ADRA if within 3m of it.
- Electrical reticulation approach distances provided with requested Dial Before You Dig package and information available from utility website.

Note:

Potholing on the Dampier Bunbury Natural Gas Pipeline Corridor is only permitted by WA State Government written approval and carried out under DBP supervision.

(c) Potholing can be carried out with a hand shovel or by vacuum extraction. Water jetting while vacuuming has the potential to damage buried assets. Care should be taken if water jetting and water pressures limited to 1500 psi (100 bar) to avoid damage.

(d) Potholing should never be carried out with a mechanical excavator.

(e) If you are unable to locate the service by potholing, contact the utility provider and your supervisor and do NOT precede with any drilling or excavation works.

(f) It is mandatory that potholing be carried out for identified assets however safe digging practices should be implemented as not all asset owners are registered with Dial Before You Dig:

- at every location where an existing utility crosses the proposed excavation or drilling including the installation of poles and stay wires
- at spacings determined by-risk assessment for all existing utilities running parallel to the proposed excavation or drilling to fully determine the alignment and depth of the existing services
- to locate existing utilities within 2 meters of the start and finish locations of any excavation or drilling and at every excavation required for drilling entry and exit points

- safe Minimum Approach Distance (MAD) and exclusion zones noted by each utility within the Dial Before You Dig plans and notes

(g) Always **visually** sight the service or utility.

(h) When working in areas that have a hard surface such as concrete, bitumen or any other non-moveable surface you may mark out the location of existing utilities with non-permanent spray paint. As a guide you could utilise different color's such as:

Gas	Yellow
Power	Orange / Red
Water	Blue
Telstra Communications	White
Drainage	Green

(i) It is also recommended that visual markers be placed above the pothole position. White PVC pipe or a white stake directly over the existing service to record the depth, alignment and direction is widely used for this purpose. If you are unable to install the marker directly over the existing utility and you need to offset the marker, then you shall install 2 pegs as offsets and record the offset on the pegs. We also suggest that you use a thick black marking pen and record the depths of existing services in mm. Please note that the depth and position markings recorded on PVC pipe or stakes is for information only and must be confirmed by potholing.

(j) If you are unable to locate the service, contact the utility provider and your supervisor and do **NOT proceed with any drilling or excavation**.

Notes:

(a) No digging shall be done over high pressure gas transmission mains or within the easement set aside for high pressure gas transmission mains (or laterals) without written permission from the owner or manager of the pipeline, or in the case of activities and works in the DBNGP Corridor written approval is required from, Department of Lands (DoL) on behalf of the DBNGP Land Access Minister. The table below lists the major Pipelines and Managers.

Pipeline	**Manager**
DBNGP Corridor	Department of Lands
Dampier Bunbury Natural Gas Pipeline	DBP - Land Management
Karratha to Port Hedland	APA Group
Pilbara to Goldfields	APA Group
Cape Lambert Pipeline	APA Group
Parmelia Pipeline (Dongara to Pinjarra)	APA Group
Mid-West Pipeline (Geraldton to Murchison)	APA Group
Port Hedland to Telfer Pipeline	APA Group
Kambalda to Esperance Pipeline	WorleyParsons Asset Mgt P/L
Eastern Goldfield Pipeline	APA Group
Fortescue River Pipeline	DBP Development Group
Wheatstone Ashburton Pipeline	DBP Development Group

Table: Pipeline Owners

(b) Warning: These pipelines should be treated with extreme caution. If fractured gas will escape with an explosive force and will probably catch fire and destroy everything in the vicinity.

(c) For railway crossings, buried signals and communications services need to be located or exposed by Brookfield or PTA (Rail) staff

PROTECT

Protect all applicable plant in either a bore or trench that has been exposed (barricades, para webbing, flags, etc.).

Ensure Supervision or monitoring of the operator of the trenching or boring machine when near plant.

Advise ALL personnel working on site of existing hazards.

PROCEED

When ALL checks have been completed - then **proceed with care**.

For **emergencies** refer to the contact numbers listed inside back cover.

6.4 'As Constructed' detail of works

Any agency or contractor constructing works shall ensure that adequate 'as constructed' detail of the works is recorded. The 'as constructed' information shall be submitted to the appropriate agency in a form acceptable to them for inclusion in their records. This is a mandatory requirement and shall include equipment and plant in and where agreed outside the designated alignments. Also refer Clause 11.2 'Plant proposed outside allocated alignment'.

When an agency or contractor receives 'as constructed' information from a Dial Before You Dig member that proves to be inaccurate, they shall provide the accurate information to the appropriate agency for updating of their records.

7 PROJECT CONSTRUCTION

7.1 Duty of Care

Constructing authorities and others operating in the public road reserve or rail reserve have a duty of care to protect the existing service assets of utility providers, the infrastructure of road authorities, the infrastructure of Public Transport Authority and the adjacent environment in addition to the duty of care to protect the safety of employees and public in the vicinity of the work area (refer to Clause 6.1.1 (f) and Appendix C).

It is essential to determine the location of existing assets by obtaining plans and proving the exact location prior to commencement of excavation. Location plans of utility services are obtained in the first instance upon lodgement of a request to Dial Before You Dig (refer to Section 6.2).

Note that buried earth grids may exist around utility equipment, for example Water Corporation pipeline valves not indicated on Dial Before You Dig drawings that may extend into adjacent alignments. If required to be disturbed by construction works liaise with the appropriate utility to ensure safe work procedure and reinstatement requirements are undertaken.

Failure to exercise this duty of care may result in a utility provider or road authority taking action to halt works and to recover the full cost of damages.

Where it is not practical to comply with safety clearance and services allocation requirements of this Code, approval shall be obtained from the utility provider

Any damage to underground services, however minor, shall be reported to the utility provider.

Refer to standard procedures prior of commencing work outlined in Sections 6.2 and 6.3 with emphasis on PLAN, POTHOLE, PROTECT then PROCEED.

7.2 Emergency procedures and contacts

In an event of damage to a utility provider's, Main Roads WA, Local Government or PTA (Rail) asset, the person/Agency responsible for causing the damage shall immediately advise all asset owners affected. Refer 'Emergency Procedures and Contacts' page for asset owner's emergency contact details.

7.3 Closure of roads or major interference to traffic.

When project construction requires closure of roads or major interference to vehicular or pedestrian traffic, detailed discussion/liaison is to be initiated and maintained with the WA Police Service and approval obtained from the road authority not less than 30 working days prior to the proposed road closure or interference to traffic. Consideration shall be given to the effect of temporary closure of high load routes. Also notify Department of Fire and Emergency Services, St John Ambulance Association, Transperth (Department of Transport) and the Taxi Council of WA

All traffic management and safety must comply with Australian Standards, *Road Traffic Act 1974, Road Traffic Code 2000, Occupational Health and Safety Act 1984* and *Traffic Management for Works on Roads Code of Practice 2009* referenced in Appendix C.

7.4 Use of long term contractors and sub-contractors

The use of Contractors or Sub-Contractors on a long-term basis by both the road authority and utility providers is a common method of service delivery on behalf of the Principal Agency. It is emphasised that it is the Principal Agency's responsibility to ensure that contractors and sub-contractors acting on their behalf are fully conversant with the requirements of this Code of Practice and obligation to consult relevant parties prior to proceeding with the works**.**

8 MINIMUM STANDARD OF COVER FOR UNDERGROUND UTILITY SERVICES AND CLEARANCE OF OVERHEAD POWER LINES AND TELECOMMUNICATION CABLES

8.1 Minimum cover for underground utility services

Although utility providers have a commitment to comply with allocated alignments and depths, no assurance can be given that the depths of cover stated will exist for all existing facilities. Before any excavation is planned or commenced contact Dial Before Your Dig for the appropriate procedure and information (refer to Clause 6).

The minimum depths of cover required for new services buried in Rail Reserves are defined in AS4799-2000.

All hardware located across the road reservation which is controlled by Main Roads WA, shall be installed by trench-less technology (directional drilling) and placed perpendicular to and at grade to a minimum depth of 1.5m cover (to overt) for the full width of the road crossing or unless otherwise advised**.**

It is emphasised that utility providers and associated contractors have a Duty of Care whilst undertaking service works. Refer to Clause 6.3 and 7.1.

Note:

(a) Refer to Appendix A for pipe colours**.** . These pipe colours relate only to PVC and polyethylene pipe. Other materials could be used, particularly in older established areas unless otherwise stated. Some services can be buried directly in the ground and not in conduits.

(b) All buried service assets should be treated as 'Live' unless otherwise confirmed.

(c) The term 'under road surface means under the road pavement surface', that is, the area of the road reserve upon which motor vehicles travel.

8.1.1 Gas

Gas (Yellow Pipe or Yellow Striped Pipe)

(a) Distribution Mains (ATCO Gas Australia)

Street mains

- 750 mm in road reserve (verge or under road surface)

Consumer services

- 600 mm in road reserve (verge or under road surface)

(b) High Pressure Distribution Pipelines (ATCO Gas Australia)

Street mains

- 1 200 mm in road reserve (verge or under road surface)

Consumer services

- 1 200 mm in road reserve (verge or under road surface)

(c) For specific details applicable to ATCO Gas or APA contact these utility providers or relevant pipeline managers direct.

8.1.2 Electricity

Electricity (Orange pipe or Orange Striped Black Poly Pipe or Orange Electrical Tape for directly buried black cable).

Some underground cables installed by directional drilling **may not** have tape above and are **black**.

CAUTION

It is possible that power cables may be located in multiple layers.

Most mains and services (Western Power and Horizon Power)

- 750 mm minimum cover in verge and under road surface. Installation depths to be in accordance with Western Power and Horizon Power standards or as otherwise agreed between Western Power/Horizon Power and the road authority.
- Non Western Power and Horizon Power Street Light and low voltage private cables shall be buried at a minimum depth of 600mm. Refer to Appendix B, Figure B3 Note 19 of service allocations applied to green field developments.

WARNING

Western Power supplies Un Metered Services (UMS) to Local Governments for street lights, illuminated signs, parks, etc. These services are typically service pillars or cable pits and are required to be shown on Western Power Plans. Cabling beyond these services are Local Government assets, the recording of which is their responsibility.

8.1.3 Telecommunications

Telecommunications (White telecommunications pipe)

Street mains

- 450 mm for excavation installations
- 600 mm for trench less installations

Consumer services

- 450 mm for excavation installations
- 600 mm for trench less installations

Note: There may be multi-Carriers with separate plant located within the allocated telecommunications alignment.

8.1.4 Water

Water (Blue Pipe, Blue Striped or Black Pipe)

Distribution mains

- 750 mm in road reserve (verge or under road surface)

Reticulation mains

- 600 mm in road reserve (verge or under road surface)

Consumer services

- 450 mm in road reserve (verge or under road surface).

8.1.5 Sewerage

Sewerage (Cream Pipe or Grey Pipe or Cream/Grey Striped Pipe)

Sewer mains

- 900 mm in road reserve (verge or under road surface)

Consumer services

- 900 mm in road reserve (verge or under road surface).

8.1.6 Main Drainage

Main Drainage (Water Corporation)

Stormwater mains

- 750 mm in verge
- 900 mm under road surface.

8.1.7 Street Drainage

Street Drainage (Main Roads WA or Local Government)

Street Mains

- 600 mm in road reserve (verge or under road surface)

Consumer services

- 600 mm in road reserve (verge or under road surface).

8.1.8 Main Roads WA (MRWA) Traffic Signals, Roadway Lighting and Intelligent Transport Systems (ITS) Cables

Traffic Signals, Roadway Lighting and Intelligent Transport Systems (ITS) Cables

(a) Traffic Signals MRWA Specification 712

Street mains (Orange Pipe)

- 600 - 800 mm in verge and under road surface.

Detectors (Orange Pipe or White Pipe)

- 35 mm in carriageway asphalt
- 300 mm in verge encased in PVC conduit.

(b) Roadway Lighting MRWA Specification 701 (Orange Pipe)

- 600 mm in verge and under road surface.

(c) ITS Cable Conduits MRWA Specification 704 (Orange Pipe for power source) and (White Pipe for communications)

- 600 mm in verge.

8.2 Clearance from overhead power lines and telecommunications cables

Clearance of overhead power lines and telecommunications cables above the ground in road reserves is to be in accordance with Western Power, Horizon Power, Telecommunications Carrier, and Worksafe WA requirements. For clearances above road surfaces, the organisation responsible for the overhead power lines or telecommunications cables is to obtain from the applicable road authority the maximum combined vehicle and load height for the road, and together with the overhead power line or telecommunication cable route data determine the clearance requirement.

9 STANDARD RESTORATION AND REINSTATEMENT OF INFRASTRUCTURE

9.1 General

Reinstatements to be carried out as soon as practicable following work by a utility provider in a road reserve or rail reserve as agreed with the Road Authority or Public Transport authority.

The specification for reinstatement work and backfill of trenches including sign off of works undertaken and maintenance period is obtained from the road or rail **a**uthority Refer to Clause 6.1.1(e).

The Restoration and Reinstatement Specification produced by the Institute of Public Works Engineering, Australia (WA Division), for use by Local Governments is printed as a companion document with this Code of Practice on the Dial Before You Dig website.

The utility provider or contractor is responsible for the Duty of Care in ensuring the safety of the public as well as employees during all works and reinstatement, until the site is accepted as satisfactory by the Road Authority or PTA (Rail).

9.2 Cost of reinstatement

The utility provider or contractor is responsible for the cost of the reinstatement, inspections and any subsequent related work required during the maintenance period of the road, footpath, verge and other applicable infrastructure or damaged plant and property in accordance with any agreement between the utility provider and the road authority.

10 ENVIRONMENT AND HERITAGE

10.1 Native vegetation

Native vegetation has been extensively cleared from much of the south west of WA. As a result, special attention and specific actions are required when works may impact on remaining native vegetation, particularly in verge areas of road reserves.

(a) Declared Rare Flora

The Department of Environment Regulation (DER) should be contacted during the planning phases of the proposed works to ensure that no rare flora or threatened ecological communities will be affected by the works.

Fines for illegally taking rare flora are significant.

Further information is available from Department of Environmental Regulation.

(b) Clearing native vegetation

If any clearing of native vegetation is anticipated, the Department of Environmental Regulation must be contacted to determine if a clearing permit is required. It is recommended that this is done during early stages of planning the proposed works. Exemptions do not apply in environmentally sensitive areas.

Large projects with extensive environmental impacts may require referral to the Environmental Protection Authority.

Clearing should be avoided wherever possible by installing utility services in already cleared land or use of horizontal directional drilling or thrust boring and other trenchless technology.

If clearing is necessary, rehabilitation must use local species. The Department of Environmental Regulation can provide advice regarding appropriate and successful rehabilitation of cleared areas.

Note: Fines for illegally clearing native vegetation are significant.

Refer to the Department of Environmental Regulation website: www.der.wa.gov.au/nvc or contact them for more information regarding clearing regulations.

(c) Dieback and weeds

Dieback, caused by Phytophthora cinnamomi (Pc), results in irreversible damage to natural environments and some tree crops.

To prevent the spread of dieback caused by Pc all machinery, equipment and vehicles must be cleaned on entry and exit from site. Dieback-free fill should be used and site activities should be planned for dryer months.

Further information is available from the Roadside Conservation Committee (email rcc@dpaw.wa.gov.au) and Department of Environmental Regulation.

Weeds displace native vegetation and once established are difficult to control. Good hygiene practices of clean on entry and clean on exit from the site and the use of weed-free fill will minimise the spread of weeds.

It is recommended that utility service providers and local governments use the Environmental Checklist (or equivalent) provided in Appendix D.

10.2 Environmental considerations in Main Roads WA road reserves

Utility providers and their Contractors/Sub-Contractors are required to be aware of Main Roads WA environmental requirements when undertaking works in the road reserve. Refer to Clause 6.1.1 (d).

10.3 Environmental considerations in railway reserves

Rail land can also include important native vegetation. The Public Transport Authority maintains a Land and Transport Information System database (LATIS) that includes the location of any rare flora in railway reserve that has been advised by the Department of Environmental Regulation. This shall be checked as part of the approval process for any works in railway reserves.

Refer also to Brookfield Rail for environmental information within their rail reserves.

10.4 Impact upon heritage nominated and listed places

References should be made to both the Heritage Council of WA (Heritage Register) and relevant Local Government (Municipal Heritage Inventory) to assess potential impacts upon heritage listed sites. This also includes the impact of machinery causing vibration when working in close proximity to heritage-listed sites.

Penalties for damage to places listed under the *Heritage of Western Australia Act 1990* are significant.

In pedestrian and heritage areas, particularly within the CBD, utility providers are to ensure that pit covers do not detract from the area and are level with the footpath surface.

10.5 Aboriginal heritage sites

Aboriginal sites are protected under the *Aboriginal Heritage Act 1972 (WA)*. A check must be made with the Department of Aboriginal Affairs for any registered sites and the potential for the existence of any unregistered sites must also be investigated.

10.6 Existing and planned streetscape amenity (Street trees)

Whilst it is acknowledged there will or may be conflict with existing streetscape amenity, particularly street trees when installing or upgrading infrastructure in established areas, preservation of mature flora where possible is encouraged. Liaison and consultation with the relevant Local Government (policy and specification), other utility providers and the community is required. This may require Utility Providers to be responsible for tree replacement and possible compensation for the loss of mature trees.

Refer to the WA Planning Commission publication *Liveable Neighbourhoods*, particularly for green field developments.

10.7 Impacts of pollutants

Utility providers and their Contractors/Sub-Contractors are responsible for the use, control and impact of potentially polluting substances and any associated spills. Use of any classified material should be in accordance with the relevant manufacturer's specification and Dangerous Goods Act and Regulations. Consideration should also be given to impact on and protection of the underlying water table.

Responsibility for the impact of pollutants applies to any site remediation work required as a result of discharge from any existing infrastructure, i.e. leaking oil pipes or sewer pressure mains. Liaison with other utility providers will be necessary in most instances.

10.8 Impact on adjoining lands and impact of noise

Consideration must be given to the impact on adjoining lands when working in the road reserve. This extends from discharging and dumping on adjoining land that may result in impact on drainage, watercourses, wetlands and water protection areas.

Noise impacts may require restricted hours of work permitted under the *Environmental Protection (Noise) Regulations 1997* and requirements of the Local Government. Refer also to WA Planning Commission Noise Policies which may also apply.

Utility providers and their contractors are actively encouraged to pursue sustainable work practices through material reuse and recycling wherever practicable.

11 SPECIAL NOTES

11.1 Provision of As Constructed records

Utility providers agree to co-operate in providing details of buried services plant that may be affected by the operations of others proposing to do work in the vicinity of the plant. It is the responsibility of the organisation that proposes to do work in the vicinity of other plant to seek this information (refer to Clause 6.2 Dial Before You Dig).

11.2 Plant proposed outside allocated alignment

Utility providers agree to construct their new plant within the allocated corridor and under the conditions stipulated and will consult the other utility providers concerned when this is impractical. When plant is not located on allocated alignments, it is mandatory for records to be kept by the Utility Provider which provide details of plant alignment and includes the agreement of the other utility providers that may be affected by the adjusted alignment. Refer to Road Reserve Allocations, Appendix B.

'As constructed' drawings and details shall be kept by the Utility Provider for all new plant that occupies a non-standard alignment.

Junction pits, access chambers, poles, valve boxes, etc. should be constructed within the allocated corridor if practical. These corridors shown in diagrams in Appendix B have been allocated with respect to distances from the property line on the cross-section of the road reserve.

Should encroachment beyond allocated corridors be required, the agreement of the affected utility providers must be obtained prior to installation of the plant.

It is not practical to specify the location of trees, poles and underground structures such as junction pits, boxes, etc., within the allocated corridor on a longitudinal basis. The utility providers concerned are expected to locate their plant in positions that avoid existing entrances to properties and other obstacles and to provide for future developments. Consultation regarding such issues with Main Roads WA, Local Government or Planning Authority is considered essential for the benefit and interest of all parties.

11.3 Road and footpath crossings

Underground crossings of roads and footpaths should be made at right angles and the position of consumer's meter (if any) should be indicative of the service route (does not apply to electrical meters).

11.4 Minimising road and rail formation damage

All attempts shall be made to minimise damage to the road surface or railway formation**.** Alternatives to open trenching such as horizontal directional drilling or thrust boring and other trenchless technology should be considered in preference to open trenching. Consultation regarding the proposed method should occur with the Road Authority or Public Transport Authority and the method agreed by both parties prior to commencement of work. When trenching is necessary, service providers should liaise and try to co-locate cables/conduits and share trench space to minimise disruption to traffic and reinstatements.

11.5 Fire hydrant boxes

Fire hydrants must be clear to operate at all times. Particular care must be taken in carrying out work on the road reserve to prevent interference with the access to or operation of fire hydrants. Refer to local water authority for location of plant and reporting damage to plant.

11.6 Safety precautions – Utility services structures in road reserves

All appropriate structures (except utility power supply structures) within the road reserve and subjected to traffic are to be designed for a loading in accordance with the appropriate Austroads Standards. Approval to erect such structures is to be obtained from the applicable road authority.

11.7 Private installations

Proponents who wish to install private installations in road or rail reserves shall seek approvals from the relevant government authority, road authority or PTA (Rail) and relevant utility providers if there is likely interference with existing services. Approvals shall be obtained for alignment and depth/cover of service, installation conditions (protection of existing services, traffic management, public safety, etc) and maintenance requirements. A record of the private installation shall be recorded and retained by the responsible organisation and be available through Dial Before You Dig requests, that will require Dial Before You Dig membership. For further information contact Dial Before You Dig.

11.8 Rail Reserves

If any works are proposed to be undertaken within or adjacent to rail reserves contact the relevant rail authority to obtain permission and compliance requirements.

APPENDIX A

LOT ENTRY ARRANGEMENTS

Drawings showing typical utility services front of lot and laneway lot entry arrangements

SERVICES DEPTHS

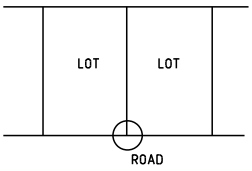
SERVICES	SERVICE CONNECTION		CONSUMER GUIDELINE	
	COVER DEPTH	TYPICAL MATERIALS AND DIAMETER	COVER DEPTH	TYPICAL MATERIALS AND DIAMETER
GAS	600mm	YELLOW PIPE OR YELLOW STRIPED PIPE	PE/PVC 450mm COPPER 300mm	20mm YELLOW PE OR PVC OR COPPER
ELECTRICITY	750mm MIN.	ORANGE PIPE OR ORANGE STRIPED PE PIPE OR ORANGE TAPE OVER BARE CABLE.	600mm Min.	CONSUMERS MAIN IN ORANGE CONDUIT
TELECOMMUNICATIONS	NOTE 3	WHITE TELECOMMUNICATIONS PIPE	NOTE 4	WHITE TELECOMMUNICATIONS PIPE
DRINKING WATER	600mm	20mm COPPER, DN25 OR DN32 BLUE STRIPED PE	450 TO 500mm	20mm COPPER OR DN25 BLUE STRIPED PE
NON DRINKING WATER	600mm	DN25 OR DN32 FULL COLOUR LILAC PE	500 TO 550mm	20mm COPPER OR DN25 FULL COLOUR LILAC PE.
SEWERAGE	900mm	150/225 mm PVC	VARIABLE	100mm PVC

NOTES: 1. UNDERLINED WATER DEPTHS ARE PREFERRED DEPTHS.
2. SERVICES SEPARATION SHALL COMPLY WITH AS/NZS 3000 REQUIREMENTS.
3. ROAD VERGE: 450mm MIN. COVER. ROADS: 450mm MIN. COVER OR AS DIRECTED BY THE TELECOM. AUTHORITY.
4. 450mm MIN. COVER IN ROAD VERGE RISING TO 350mm MIN. COVER IN CONSUMER'S PROPERTY.

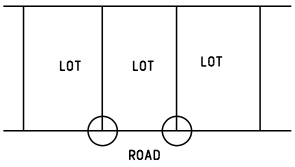
WATER SERVICE LOCATIONS - PREFERED ARRANGEMENTS TABLE

THE FOLLOWING WATER SERVICE LOCATION ARRANGEMENTS ARE TO BE CONSIDERED BY THE DESIGN ENGINEER FOR ALL FLAT GREENFIELD AND REDEVELOPMENT SITES.

	PROPERTIES WITH ROAD FRONTAGES UP TO 6.5m IN WIDTH.	PROPERTIES WITH ROAD FRONTAGES UP TO 12m IN WIDTH.	PROPERTIES WITH ROAD FRONTAGES GREATER THAN 12m IN WIDTH.
PREFERED	SPLIT ALL SERVICES BETWEEN FRONT OR REAR OF PROPERTY (REAR LANEWAY ARRANGEMENT)	SEPERATE SERVICES TO FRONT LEFT (FL) AND FRONT RIGHT (FR)	SEPERATE SERVICES TO FRONT LEFT (FL) AND FRONT RIGHT (FR)
	IF MAJORITY OF SERVICES ALL ON ONE ROAD FRONTAGE LOCATE WATER SERVICE WITH EXTENDED CLEARANCE TO POWER DOME	LOCATE WATER SERVICES ALONGSIDE DRIVEWAY FURTHER INTO PROPERTY	FOR CORNER BLOCKS POSITION WATER SERVICES ON OTHER ROAD FRONTAGE AWAY FROM POWER SERVICE.
		LOCATE WATER SERVICES ON OPPOSITE SIDE OF DRIVEWAY (TOWARDS MIDDLE OF PROPERTY) WHERE THERE ARE DUAL DRIVEWAYS.	LOCATE WATER SERVICES ON SIDE OF DRIVEWAY TOWARDS MIDDLE OF PROPERTY.
			IF SERVICES ALL ON ONE ROAD FRONTAGE LOCATE WATER SERVICE WITH EXTENDED CLEARANCE TO POWER DOME.
NON-PREFERED	CONSOLIDATED SERVICES ARRANGEMENT	CONSOLIDATED SERVICES ARRANGEMENT	CONSOLIDATED SERVICES ARRANGEMENT



CONSOLIDATED SERVICES



SEPARATED SERVICES

LIST OF DRAWINGS

FIG. A1 TYPICAL LOT ENTRY ARRANGEMENTS - INFORMATION DRAWING
FIG. A2 TYPICAL LOT ENTRY ARRANGEMENTS - SINGLE AND DUAL SEWER CONNECTION
FIG. A3 TYPICAL LOT ENTRY ARRANGEMENTS - DUAL SEWER, NO WATER AND NO GAS
FIG. A4 TYPICAL LOT ENTRY ARRANGEMENTS - DUAL SERVICES ENTRY NO SEWER, POWER/COMMS AND WATER/GAS SEPERATED WITH OPTIONS.
FIG. A5 TYPICAL LOT ENTRY ARRANGEMENTS - DUAL SERVICES ENTRY NO SEWER
FIG. A6 TYPICAL LOT ENTRY ARRANGEMENTS - DUAL SERVICES ENTRY POWER/COMMS SEPARATE.
FIG. A7 TYPICAL LOT ENTRY ARRANGEMENTS - LOW RETAINING WALLS SINGLE DN20 SERVICE - EXAMPLE DRAWING
FIG. A8 TYPICAL LANEWAY LOT ENTRY ARRANGEMENTS - SHEET 1 OF 2
FIG. A9 TYPICAL LANEWAY LOT ENTRY ARRANGEMENTS - SHEET 2 OF 2

SEVICES LEGEND

COMMUNICATIONS
ELECTRICITY
GAS (ALL PRESSURES)
NON DRINKING WATER
SEWERAGE
DRINKING WATER
STORM WATER
SEWER CONNECTION: CIRCULAR CONCRETE COVER OR UNDERGROUND CONCRETE ENCASEMENT.
SEWER CONNECTION: UNDERGROUND CONCRETE ENCASEMENT
WATER METERS
POWER DOME AND SERVICES EXCLUSION ZONE (1000mmØ)

NOTES:-

1. THE FOLLOWING DRAWINGS INDICATE SERVICE ENTRY ARRANGEMENTS WITHIN LOTS AND COMMS PITS IN ROAD RESERVES.
2. REFER UTILITY STANDARDS FOR DETAILED SERVICES REQUIREMENTS.
3. PIPE COLOURS: REFER 'SERVICE AND PIPE COLOURS' IN APPENDIX B.

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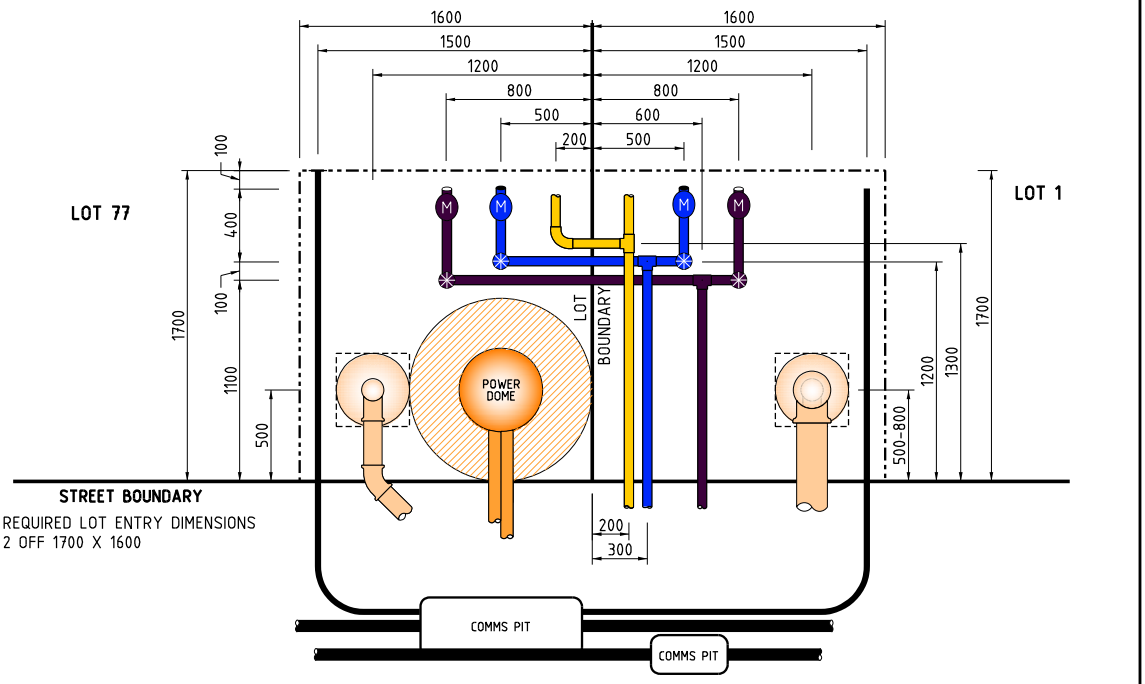
TITLE: TYPICAL LOT ENTRY ARRANGEMENTS INFORMATION DRAWING

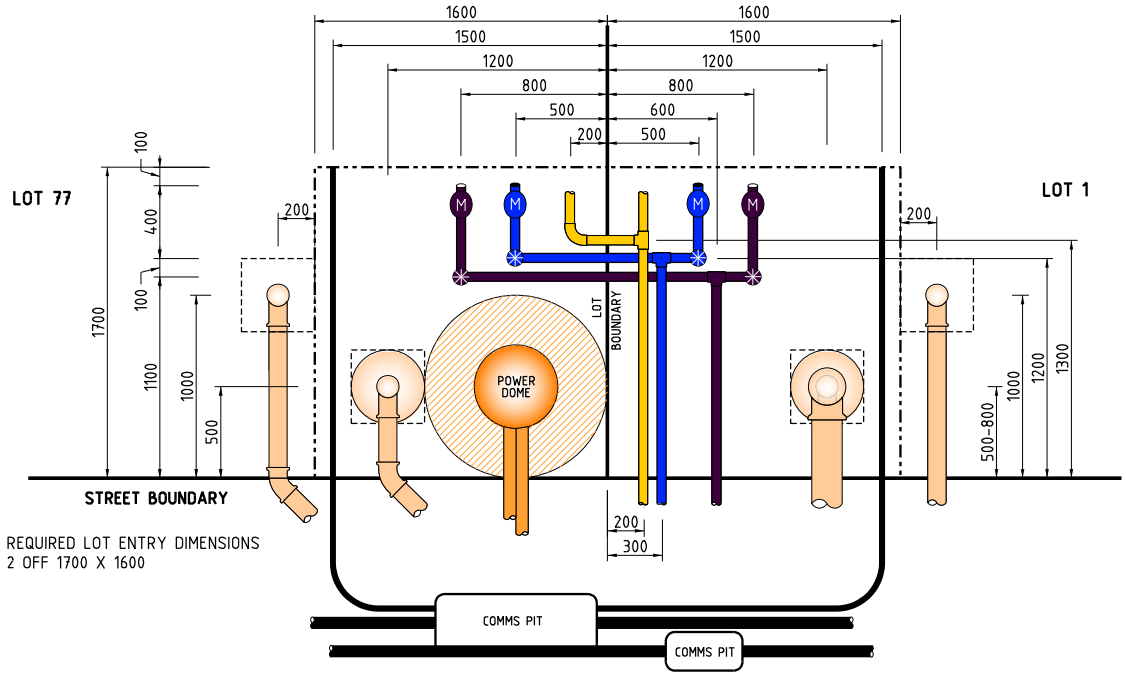
UTILITY PROVIDERS CODE OF PRACTICE FOR WESTERN AUSTRALIA

DRAWN: J. Retnarajan DATE: 01-05-2015
CHECKED: G. Williams DESIGNED:
EXAMINED:
APPROVED: ROBERT ROGERSON DATE: 01-05-2015

DRG. No. FIG A1
SCALE



PLAN 1



PLAN 2

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. REFER FIG. A1 FOR SERVICES LEGEND AND DETAILS.
3. THESE ENTRY ARRANGEMENTS DO NOT PRECLUDE THE POSITIONING OF THE SEWER AT OTHER LOCATIONS ON THE LOT.
4. NON DRINKING WATER DELIVERY PIPEWORK TO BE SLIGHTLY DEEPER THAN DRINKING WATER PIPEWORK.

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TITLE

TYPICAL FRONT OF
LOT ENTRY ARRANGEMENT
SINGLE AND DUAL SEWER CONNECTION

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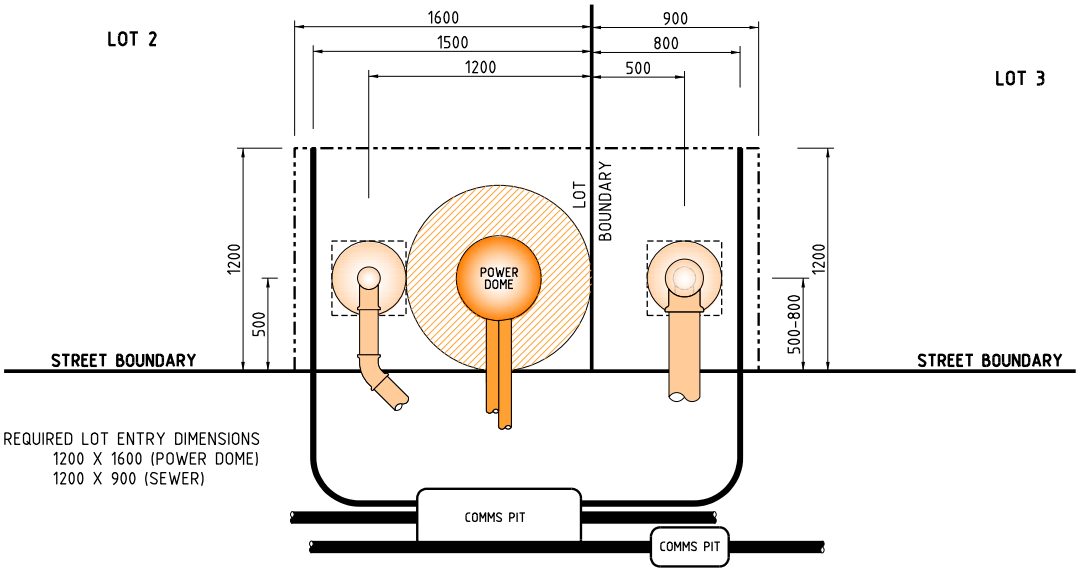
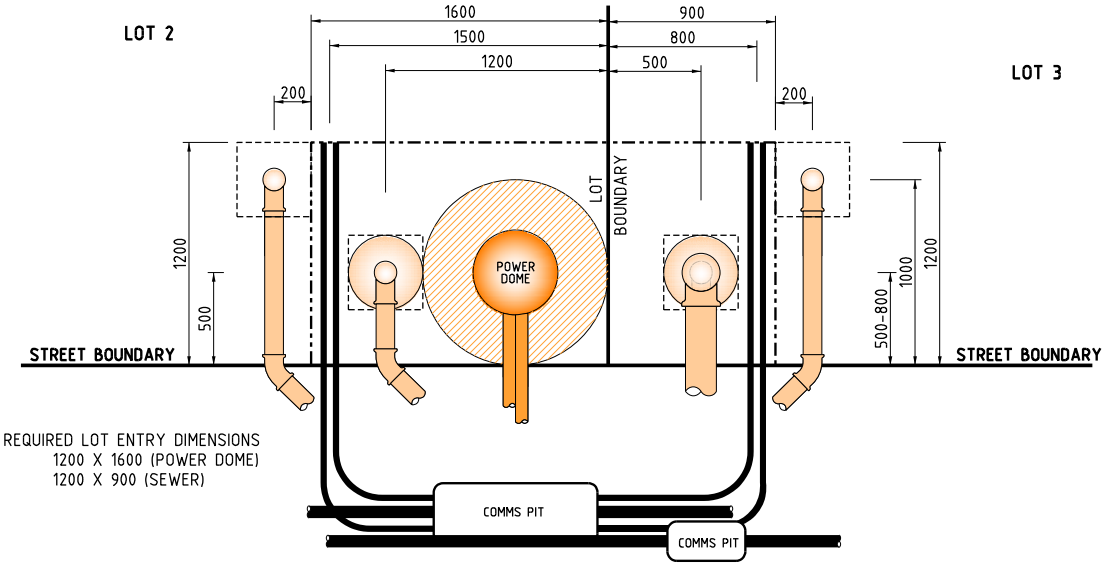
DATE: 01-05-2015

FIG A2

SCALE 0 500mm



PLAN 1



PLAN 2

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. REFER FIG. A1 FOR SERVICES LEGEND AND DETAILS.
3. THESE ENTRY ARRANGEMENTS DO NOT PRECLUDE THE POSITIONING OF THE SEWER AT OTHER LOCATIONS ON THE LOT.

REV. No	DATE	DESCRIPTION	APPRD.
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TITLE

TYPICAL FRONT OF
LOT ENTRY ARRANGEMENT
DUAL SEWER - NO WATER NO GAS

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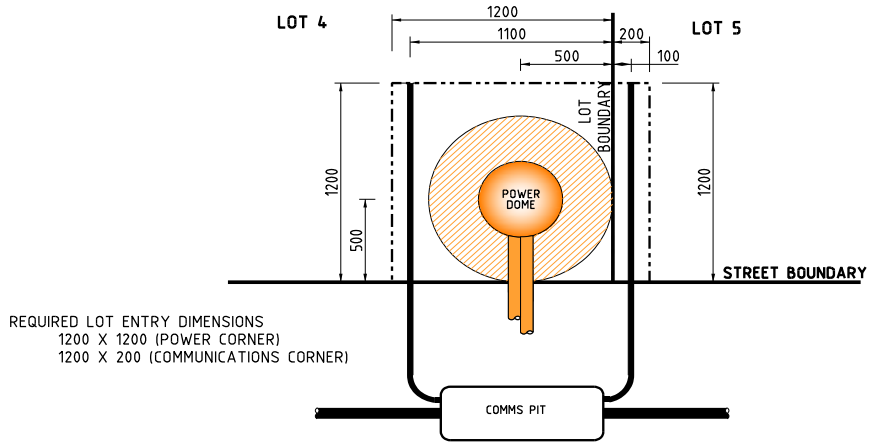
APPROVED: ROBERT ROGERSON
DATE: 01-05-2015

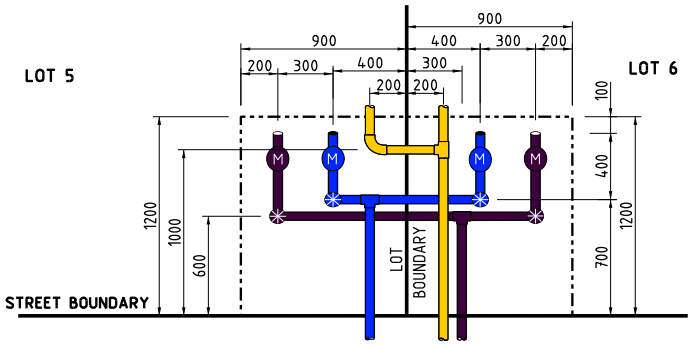
FIG A3

SCALE 0 500mm



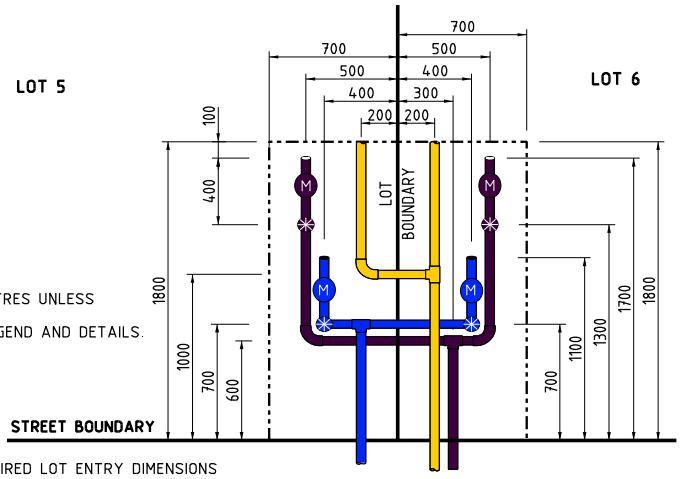
REQUIRED LOT ENTRY DIMENSIONS
1200 X 1200 (POWER CORNER)
1200 X 200 (COMMUNICATIONS CORNER)

PLAN 1



REQUIRED LOT ENTRY DIMENSIONS
2 OFF 1200 X 900

PLAN 2



NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. REFER FIG. A1 FOR SERVICES LEGEND AND DETAILS.

REQUIRED LOT ENTRY DIMENSIONS
2 OFF 1800 X 700

PLAN 3

REV. No	DATE	DESCRIPTION	APPRD.
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TITLE
TYPICAL FRONT OF LOT ENTRY ARRANGEMENT
DUAL SERVICES ENTRY - NO SEWER
POWER/COMMS AND WATER/GAS
SEPERATED WITH OPTIONS

UTILITY PROVIDERS | CODE OF PRACTICE | FOR WESTERN AUSTRALIA

DRAWN: J. Retnarajan | DATE: 01-05-2015
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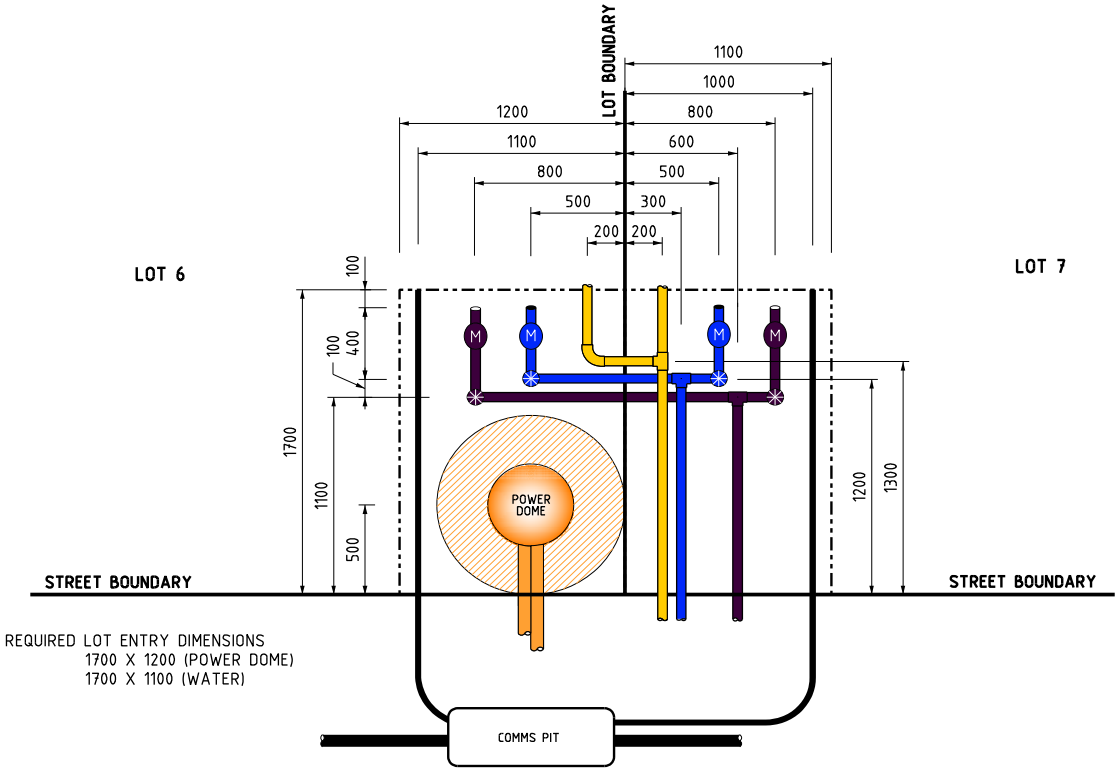
EXAMINED:
APPROVED: ROBERT ROGERSON
DATE: 01-05-2015

DRG. No. FIG A4

SCALE 0 500mm



REQUIRED LOT ENTRY DIMENSIONS
1700 X 1200 (POWER DOME)
1700 X 1100 (WATER)

PLAN

NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. REFER FIG. A1 FOR SERVICES LEGEND AND DETAILS.

REV. No	DATE	DESCRIPTION	APPRD.
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TITLE

TYPICAL FRONT OF
LOT ENTRY ARRANGEMENT
DUAL SERVICES ENTRY - NO SEWER

UTILITY PROVIDERS **CODE OF PRACTICE** FOR WESTERN AUSTRALIA

DRAWN: J. Retnarajan DATE: 01-05-2015
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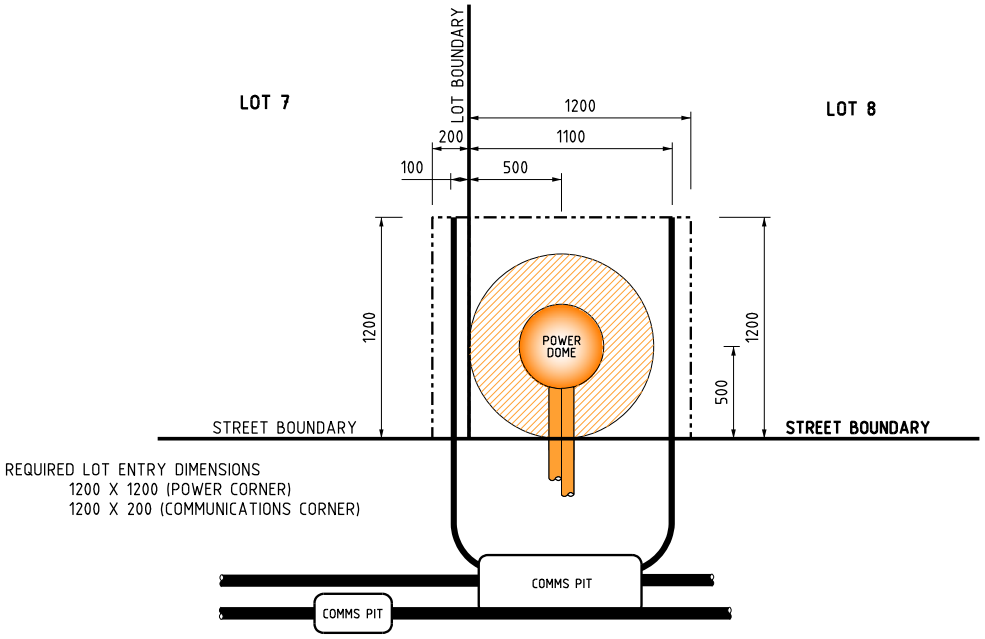
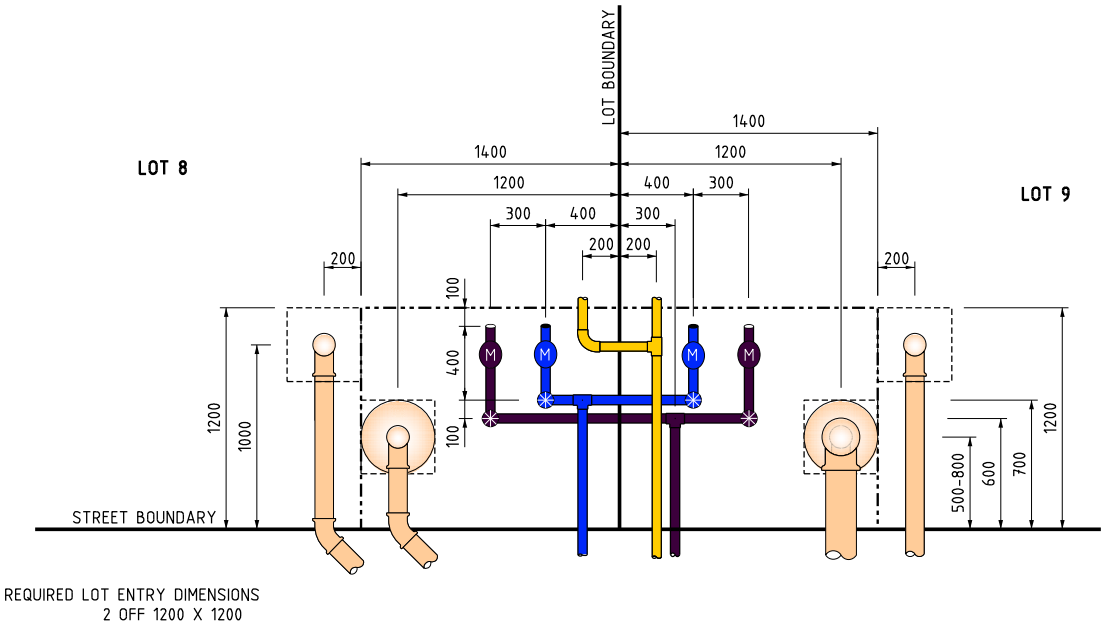
EXAMINED:
APPROVED: ROBERT ROGERSON DATE: 01-05-2015

DRG. No. FIG A5

SCALE 0 500mm



PLAN 1



PLAN 2

NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. REFER FIG. A1 FOR SERVICES LEGEND AND DETAILS.

REV. No.	DATE	DESCRIPTION	APPRD.
0	01-05-15	PUBLICATION ISSUE	RR

TITLE

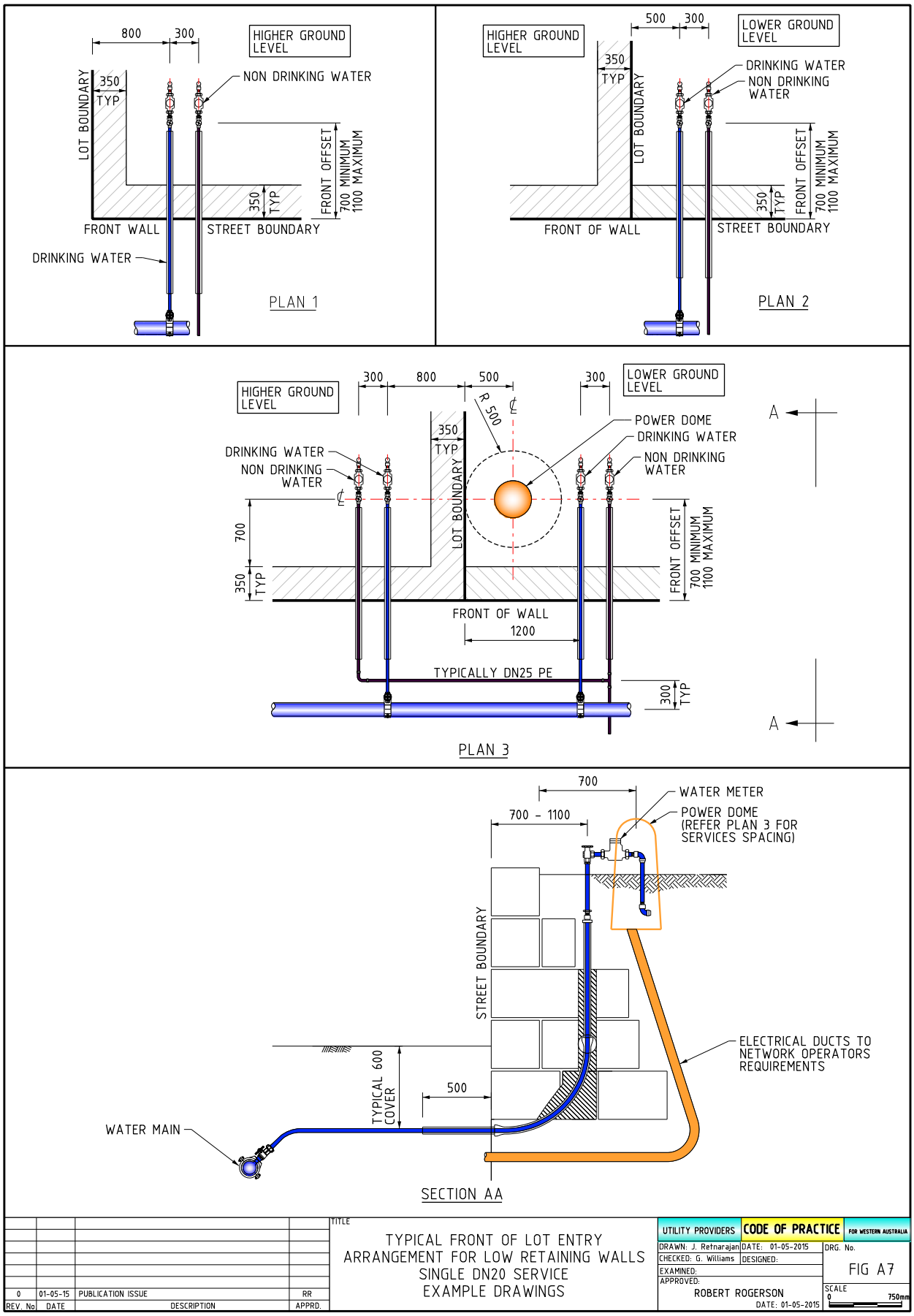
TYPICAL FRONT OF
LOT ENTRY ARRANGEMENT
DUAL SERVICE ENTRY
POWER/COMMS SEPERATE

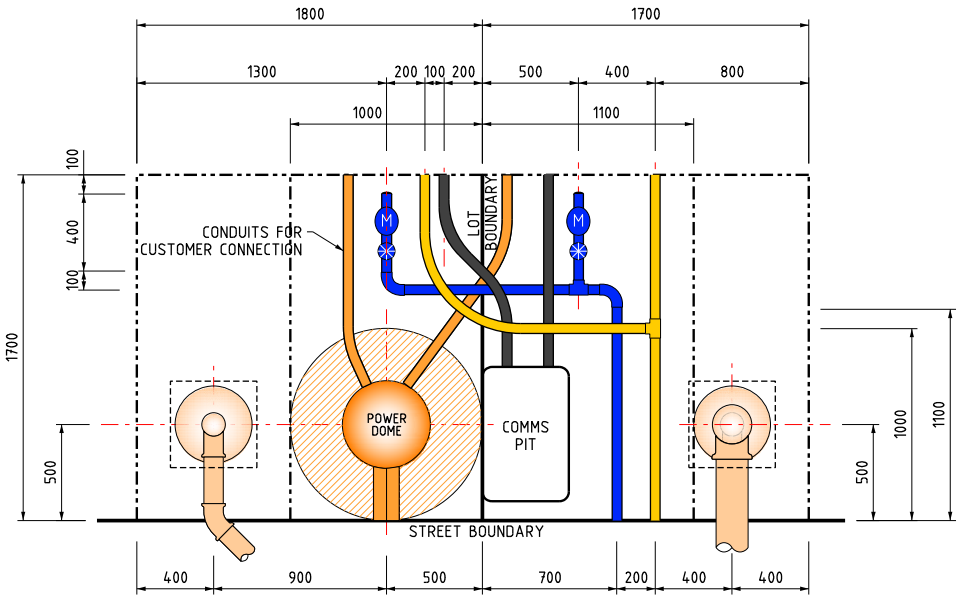
UTILITY PROVIDERS | CODE OF PRACTICE | FOR WESTERN AUSTRALIA

DRAWN: J. Retnarajan | DATE: 01-05-2015 | DRG. No.
CHECKED: G. Williams | DESIGNED:
EXAMINED:
APPROVED: ROBERT ROGERSON
DATE: 01-05-2015

FIG A6

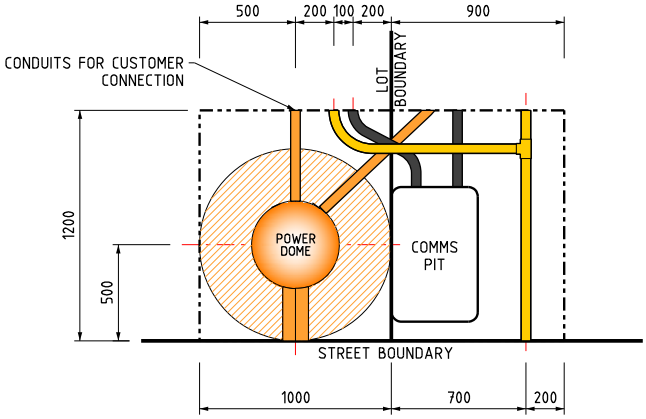
SCALE 0 500mm


800
300
HIGHER GROUND LEVEL
350 TYP
NON DRINKING WATER
LOT BOUNDARY
FRONT OFFSET
700 MINIMUM
1100 MAXIMUM
350 TYP
FRONT WALL
STREET BOUNDARY
DRINKING WATER
PLAN 1
500
300
LOWER GROUND LEVEL
DRINKING WATER
NON DRINKING WATER
FRONT OF WALL
PLAN 2
R 500
POWER DOME
700
PLAN 3
1200
TYPICALLY DN25 PE
300 TYP
A
700
700 - 1100
WATER METER
POWER DOME (REFER PLAN 3 FOR SERVICES SPACING)
STREET BOUNDARY
ELECTRICAL DUCTS TO NETWORK OPERATORS REQUIREMENTS
TYPICAL 600 COVER
500
WATER MAIN
SECTION AA
TITLE
TYPICAL FRONT OF LOT ENTRY ARRANGEMENT FOR LOW RETAINING WALLS SINGLE DN20 SERVICE EXAMPLE DRAWINGS
UTILITY PROVIDERS
CODE OF PRACTICE
FOR WESTERN AUSTRALIA
DRAWN: J. Retnarajan
DATE: 01-05-2015
CHECKED: G. Williams
DESIGNED:
EXAMINED:
APPROVED:
ROBERT ROGERSON
DATE: 01-05-2015
DRG. No.
FIG A7
SCALE
0
750mm
REV. No
DATE
DESCRIPTION
APPRD.
0
01-05-15
PUBLICATION ISSUE
RR



PLAN 1

RIGHT HAND WATER ENTRY
SEWER AND NO SEWER OPTIONS



PLAN 2

NO SEWER, NO WATER

NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. REFER FIG. A1 FOR SERVICES LEGEND AND DETAILS.

REV. No	DATE	DESCRIPTION	APPRD.
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TITLE

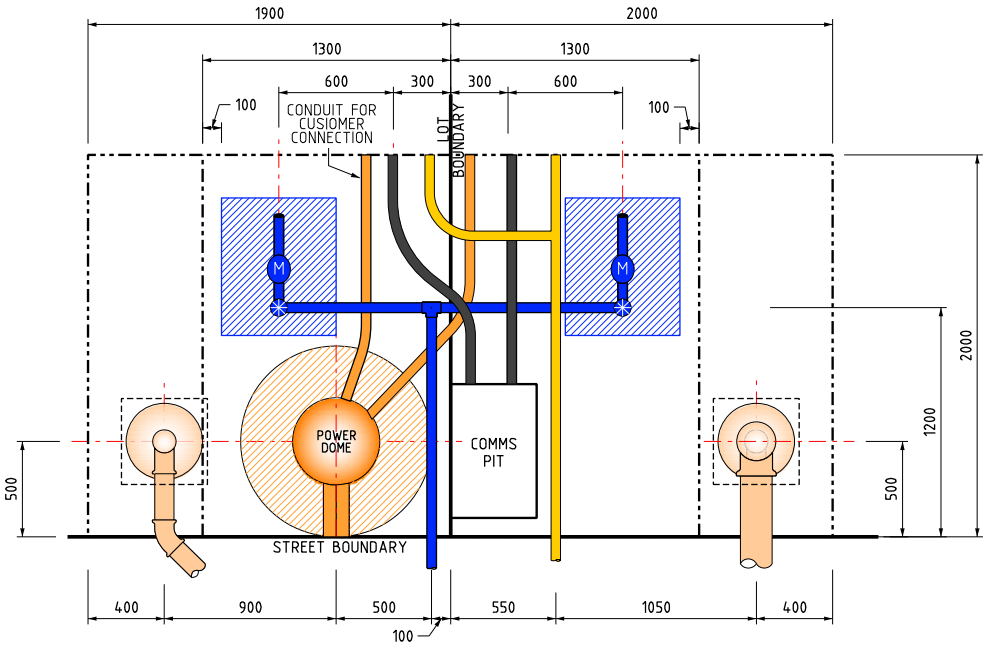
TYPICAL LANEWAY
LOT ENTRY ARRANGEMENTS
SHEET 1 OF 2

UTILITY PROVIDERS CODE OF PRACTICE FOR WESTERN AUSTRALIA

DRAWN: J. Retnarajan DATE: 01-05-2015
CHECKED: G. Williams DESIGNED:
EXAMINED:
APPROVED: ROBERT ROGERSON DATE: 01-05-2015

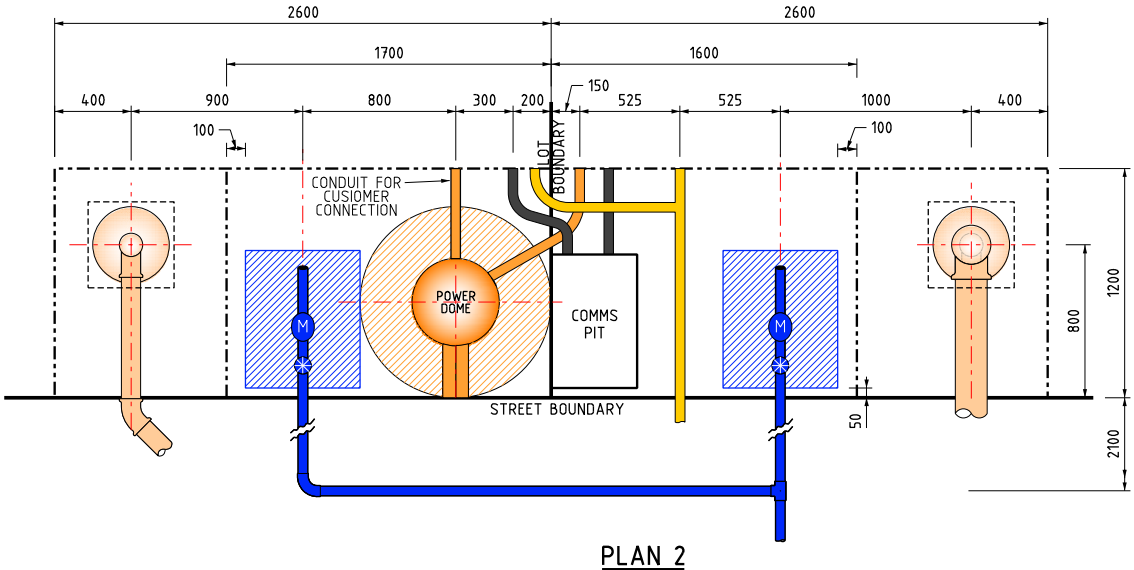
DRG. No. FIG A8

SCALE 0 500mm



PLAN 1

CENTRE WATER ENTRY, WATER METERS IN PITS
SEWER AND NO SEWER OPTIONS



PLAN 2

DUAL WATER ENTRIES, WATER METERS IN PITS
SEWER AND NO SEWER OPTIONS

NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. REFER FIG. A1 FOR SERVICES LEGEND AND DETAILS.

REV. No	DATE	DESCRIPTION	APPRD.
0	01-05-15	PUBLICATION ISSUE	RR

TITLE

TYPICAL LANEWAY
LOT ENTRY ARRANGEMENTS
SHEET 2 OF 2

UTILITY PROVIDERS **CODE OF PRACTICE** FOR WESTERN AUSTRALIA

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EXAMINED:
APPROVED:
ROBERT ROGERSON
DATE: 01-05-2015

DRG. No. FIG A9

SCALE 0 500mm

APPENDIX B

ROAD RESERVE ALLOCATIONS FOR UTILITY PROVIDERS

Figures showing utility services allocation in:

Standard Alignment (pre 2001)

Green Field Development (After 2001)

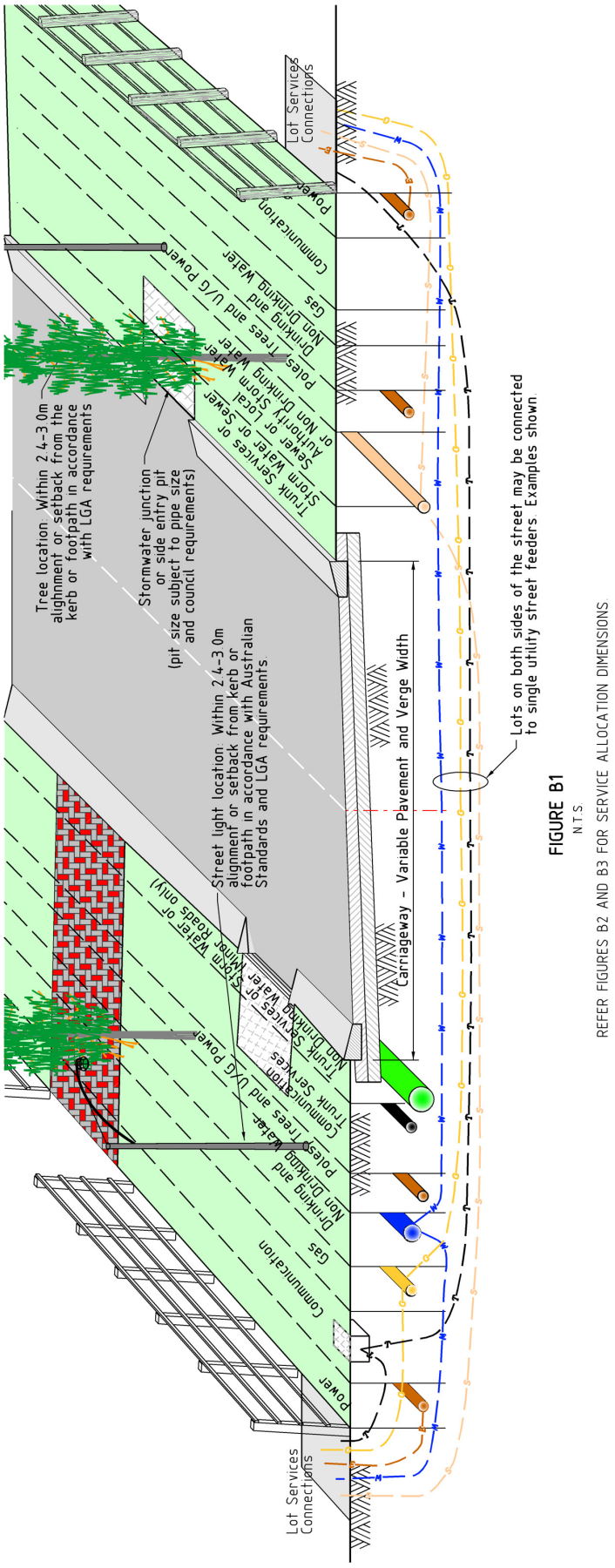
Narrow Road Reserves

Paved Laneways

Figures showing recommended utility services set out practices

ILLUSTRATION OF TYPICAL ROADWAY UTILITY SERVICES ARRANGEMENTS

FIGURE B1

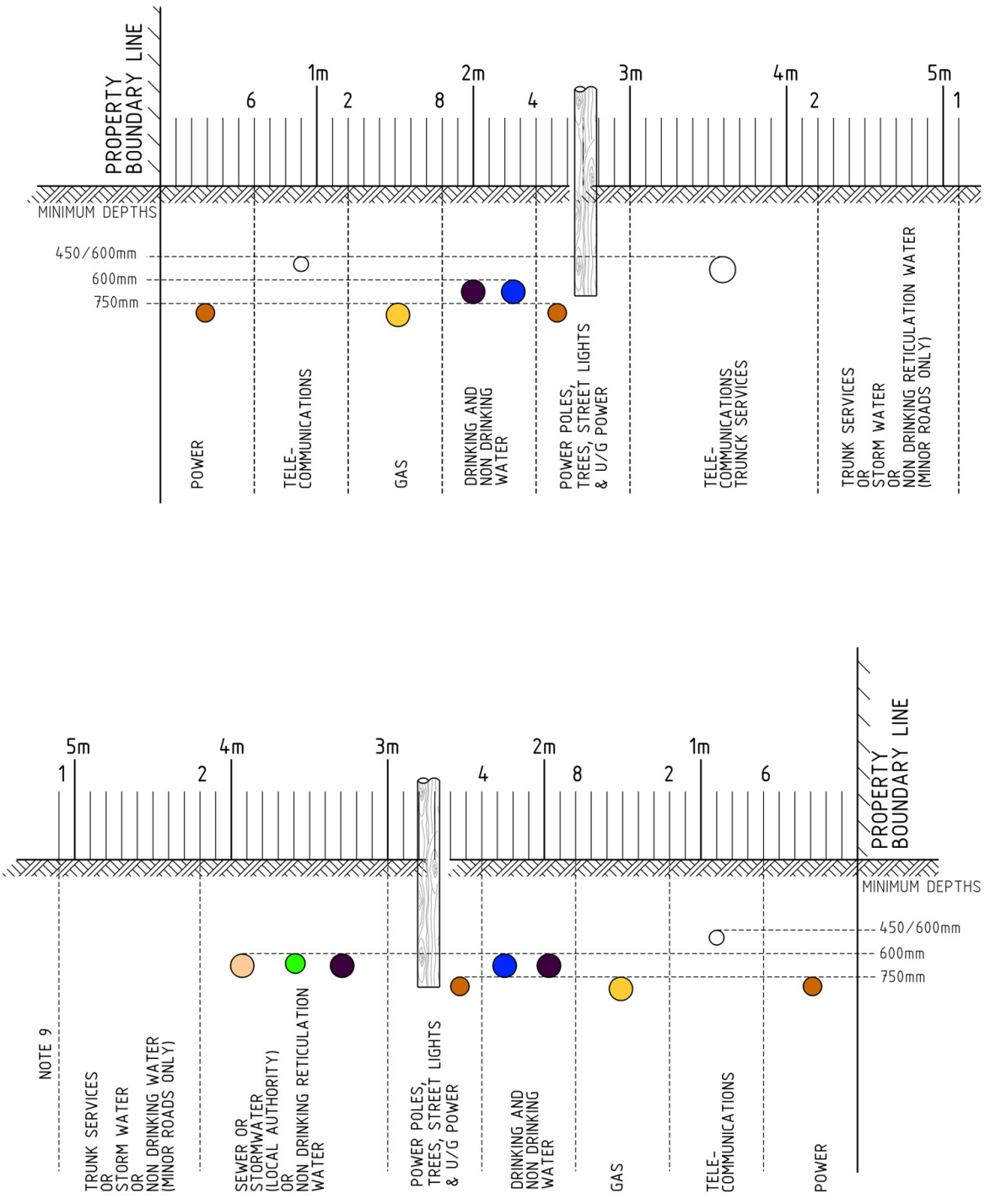


ROAD RESERVE ALLOCATION FOR UTILITY SERVICE PROVIDERS WHEN USING STANDARD ALIGNMENTS

(Applicable PRIOR to June 2001 and not applicable to new 'Green Field' Developments

FIGURE B2

ROAD RESERVE ALLOCATION FOR UTILITY SERVICES *PRIOR* TO JUNE 2001



Notes:

1 All measurements relate to distance from the boundary line on each side of the road reserve unless otherwise specified.

2 Junction pits and access chambers may extend into the 2.4 - 3.0 metre corridor.

3 Trunk services allocations may be interchanged with approval from all affected utility providers.

4 Traffic light installation cables for synchronising systems to be located in verge by arrangement.

5 Under established footpaths some variations may be necessary to Western Power and Telecommunications cable alignments following negotiation and approval from other affected utility providers.

6 In general, no underground utility service shall exceed a nominal 300mm diameter in the 0 - 3.0 metre alignment. Larger utility services may be located within this alignment following negotiation and approval from other utility providers.

7 Local Government reticulation, rising irrigation or non-drinking water mains location options indicated as non potable water pipes in Figure B2. Agreement must be obtained from relevant water utility prior to works commencing.

8 The planting of street trees should be of a type and variety to have a minimal interference to utility services. (Refer to the applicable Local Government for policy and specification).

9 Utility services may, in special circumstances, be located beneath the carriageway where verge space is insufficient. Approval must be sought from all utility providers and road authority.

10 In established localities where overhead power cables have been located underground, power cables may exist in the 2.4 - 3.0 metre corridor. Beware that in many instances power cable 'tape' has not been installed.

11 Verge widths may vary. Refer to current version of the Liveable Neighbourhoods produced by the WA Planning Commission for acceptable verge widths, particularly if trees are to be planted in the verge. Also consult appropriate Local Government.

12 Access points may extend partly into adjacent allocations, particularly in Common Trenching.

13 Refer Special Notes 11.2.

14 In established areas Western Power's (Bright Telecommunications) pit and pipe installation is on the 2.7 metre alignment.

15 Where overhead power is being undergrounded or where there are problems with the 0 to 0.6 metre alignment, power may be installed on the 2.4 – 3.0 metre alignment, subject to approval by Western Power or Horizon Power.

16 For stormwater pipes, minimum cover may be reduced to 600 mm.

17 Cover, bedding and backfill requirements to be in accordance with appropriate utility provider's requirements (e.g. water reticulation in accordance with Water Corporation's Drawing BD62-1-1) and road authority's reinstatement specification requirements.

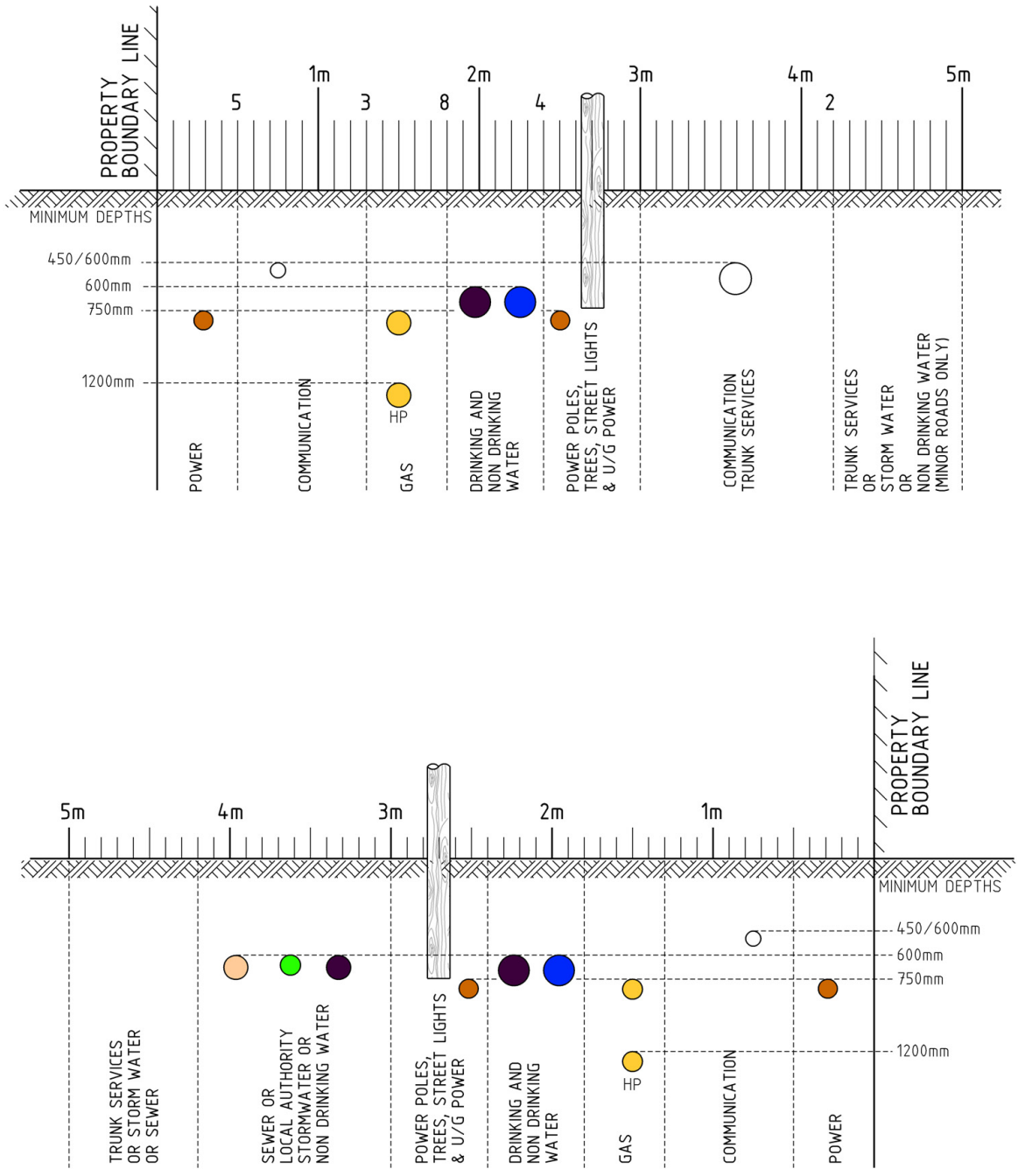
18 Service allocation in the 3.0 – 4.2 alignment shall be by agreement with nominated utility providers.

ROAD RESERVE ALLOCATION FOR UTILITY SERVICE PROVIDERS IN NEW 'GREEN FIELD' DEVELOPMENTS

(Applicable AFTER May 2001) and supersedes **ALL** allocations shown in previous codes

FIGURE B3

ROAD RESERVE ALLOCATION FOR UTILITY SERVICES *AFTER* MAY 2001



Notes:

1 All measurements relate to distance from the Property Line on each side of the road reserve unless otherwise specified.

2 Although the diagrams show a single utility service within each corridor, these may be multiple services of similar utilities.

3 Junction pits and access chambers may extend into the 2.4 - 3.0 metre corridor by agreement with the electricity network provider.

4 Alignments in the 4.2 - 5.0 metre corridor may be used by arrangement between utility providers.

5 Traffic light installation cables for synchronising systems to be located in the verge by arrangement with utility providers. Similarly under established footpaths some variations may be necessary to electrical and telecommunication cable alignments following negotiation and approval from other affected utility providers.

6 In new developments Power and Communications distribution cables are to be laid in locations shown. Under established footpaths some variations may be necessary following negotiation and approval from other affected utility providers and the road authority.

7 In general, no underground utility service shall exceed a nominal 300mm diameter within the 0 - 3.0 metre corridor. Larger utility services may be located within this corridor following negotiation and approval of other utility providers.

8 Local Government reticulation, rising irrigation or non-drinking water mains location options indicated as non potable water pipes in Figure B3. Agreement must be obtained from relevant water utility prior to works commencing.

9 The planting of street trees should be of a type and variety to cause minimal interference to utility services. (Refer to the applicable Local Government for policy and specification).

10 Utility services may be located beneath the carriageway where verge space is insufficient. Consultation must be made and agreements obtained with all relevant utility providers and road authorities.

11 Verge widths may vary. Refer to the current version of the Liveable Neighbourhoods produced by the Western Australian Planning Commission for acceptable verge widths, particularly if trees are to be planted in the verge. Also consult appropriate Local Government.

12 Electricity cables and conduits to pass under gas and water.

13 Gas to pass under water at reticulation crossings.

14 Gas services (lead ins) connecting to the property shall pass under communications and over underground power cables and water mains.

15 A minimum clearance of 300mm is required between gas and other utility services. If 300mm clearance cannot be achieved, approval of the gas provider shall be obtained.

16 A minimum clearance of 150mm is required between sewer main and other utility services and between water main and other utility services. (Note clearance of reticulation services may vary from this value). Refer also to Table B1, Clearance Zones Guide regarding minimum clearances between utility services when undertaking works within the road reserve.

17 Cover, bedding and backfill are to be in accordance with utility provider's requirements (e.g. water reticulation in accordance with Water Corporation's Drawing BD62-1-1) and road authority's reinstatement specification requirements.

18 All reticulation to be laid within +/-100mm wherever practicable of the indicated centre line and secured against movement with initial backfill. Some utility practices may vary from this requirement particularly for multiple utility services.

19 Low voltage cables used by non-network provider for street lighting shall be installed in the 2.4 - 3.0 metre service allocation. Cabling outside of the alignment including streetlight and unmetered supply consumers mains cabling shall be run at right angles to the services corridors including road crossings. Streetlight cabling in median strips shall be installed directly between poles but installation under road ways shall be avoided. Refer also to Section 8.1.2 of this Code.

20 Different alignment corridors may apply to green field developments in Narrow Road Reserves with widths of 14.0 - 16.0 metres. **Refer to Figure B4**.

21 Where there are problems with the 0 - 0.5 metre alignment, power may be installed on the 2.4 – 3.0 metre alignment subject to approval by Western Power or Horizon Power.

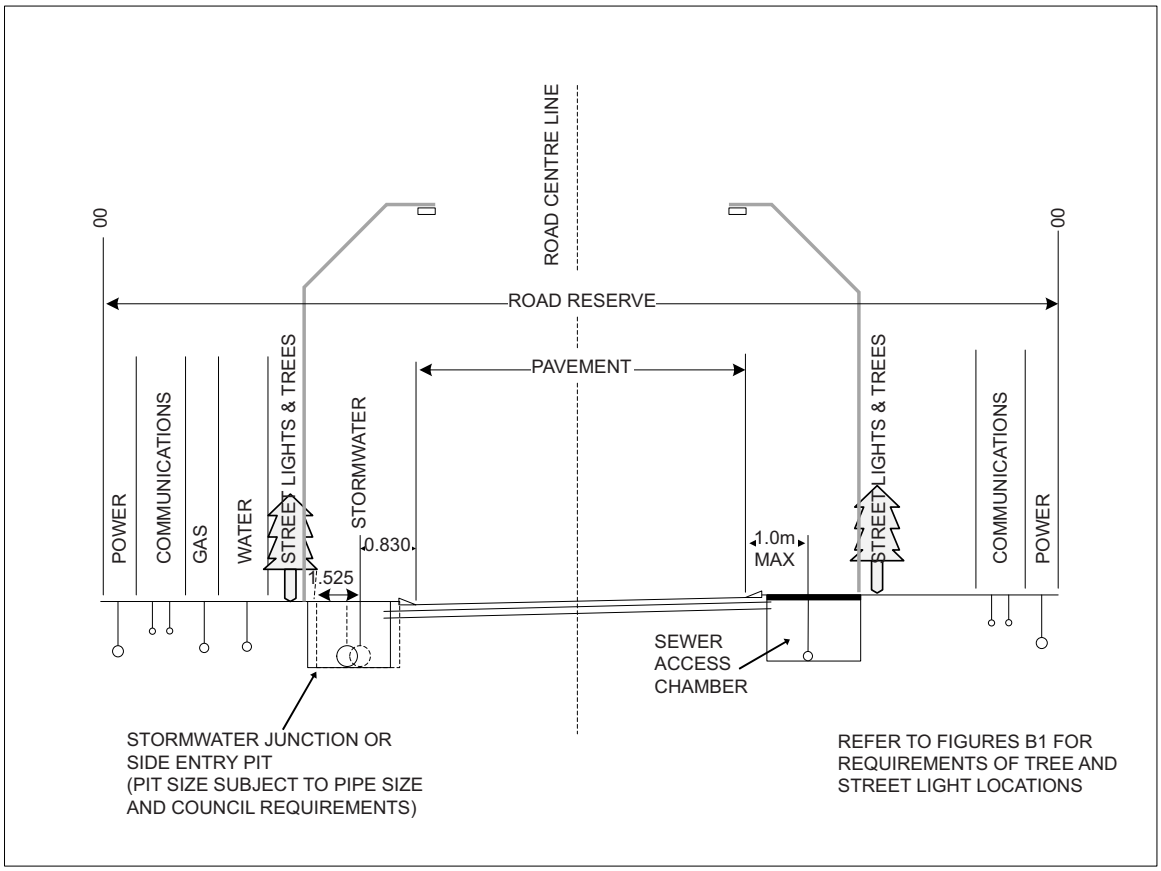
22 Services allocation in the 3.0 – 4.2 metre alignment shall be by agreement with nominated utility providers**.**

ROAD RESERVE ALLOCATION FOR UTILITY SERVICE PROVIDERS IN NARROW ROAD RESERVES (NOMINALLY 14.0 – 16.0 METRES)

These allocated alignments apply to all new developments after October 2002 and supersedes all allocations shown in previous Codes of Practice, including Standard and Common Trenching. All affected utility service providers must agree to proposed variations to these allocations.

All previous utility services allocation notes apply except where varied below.

Figure B4 Narrow road typical services installation arrangement.



Notes:

1 The designers of narrow road reserves are obliged to consider the relationship of all utility services, surfaces and furniture with each other. The corridors shown in this diagram can only be varied with approval from all affected utility service providers.

2 All measurements generally relate to the distance from the property line on each side of the road reserve unless otherwise specified.

3 Access chambers may extend into the trees and lights corridor.

4 In general, no underground utility service shall exceed a nominal 300 mm diameter within the 0 - 3.0 metre corridor. Larger utility services may be located within this corridor only after negotiation with all utility providers.

5 Local Government reticulation or irrigation pressure mains are to be located beyond the 3.0 metre alignment by arrangement.

6 For narrow reserves with a wide road surface, the verge space available may be insufficient for trees while maintaining minimum clearances from other utility services. (Refer to current version of the Western Australian Planning Commission Liveable Neighbourhoods and applicable Local Government for Policy and Specification).

7 Provision of an alignment for water distribution mains and other 'trunk' services can be negotiated on the verge adjacent to the sewer in 16 metre reserves.

8 Verge widths may vary. Refer to the current version of Liveable Neighbourhoods produced by the Western Australian Planning Commission for acceptable verge widths, particularly if trees are to be planted in the verge. Also consult appropriate Local Government.

9 Cover, bedding and backfill requirements to be in accordance with appropriate utility provider's requirements (e.g. water reticulation in accordance with Water Corporation's Drawing BD62-1-1) and road authority's reinstatement specification requirements.

10 For sewers in curved streets:

Access chambers and maintenance shafts should be positioned in the sewer corridor. Alternatively they may need to be positioned in the surface. The minimum distance from the sewer to the property boundary shall be 1.0 metres. Access chambers and maintenance shafts should be clear of the kerb. The minimum cover to the sewer shall be 0.9 metre. A similar approach shall apply to stormwater pipe work.

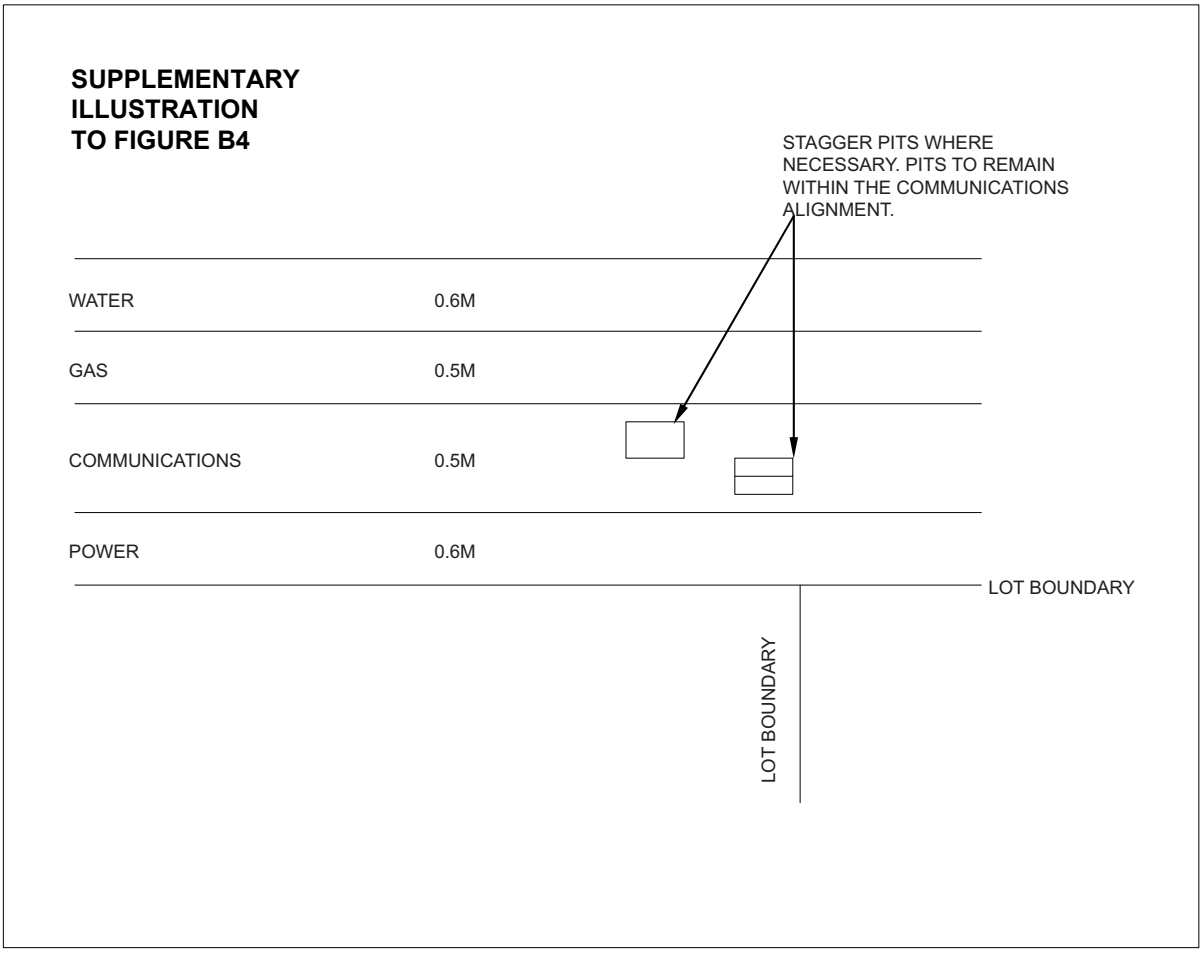
11 All pits shall be totally contained within the utility service corridor except where approved by the utility service provider whose alignment is encroached upon. This may require staggering of pits as shown in the following Supplementary Diagram to Figure B4.

12 Underground power cables may be installed on the 2.4 – 3.0 metre alignment, where there are installation and maintenance issues adjacent to retaining walls in the 0-0.5 metre corridor provided it is acceptable to other Utility Service Providers and doesn't interfere with street trees.

13 Service allocation in the 3.0 – 4.2 alignment shall be by agreement with nominated utility providers.

‘GREEN FIELD’ DEVELOPMENTS IN NARROW ROAD RESERVES

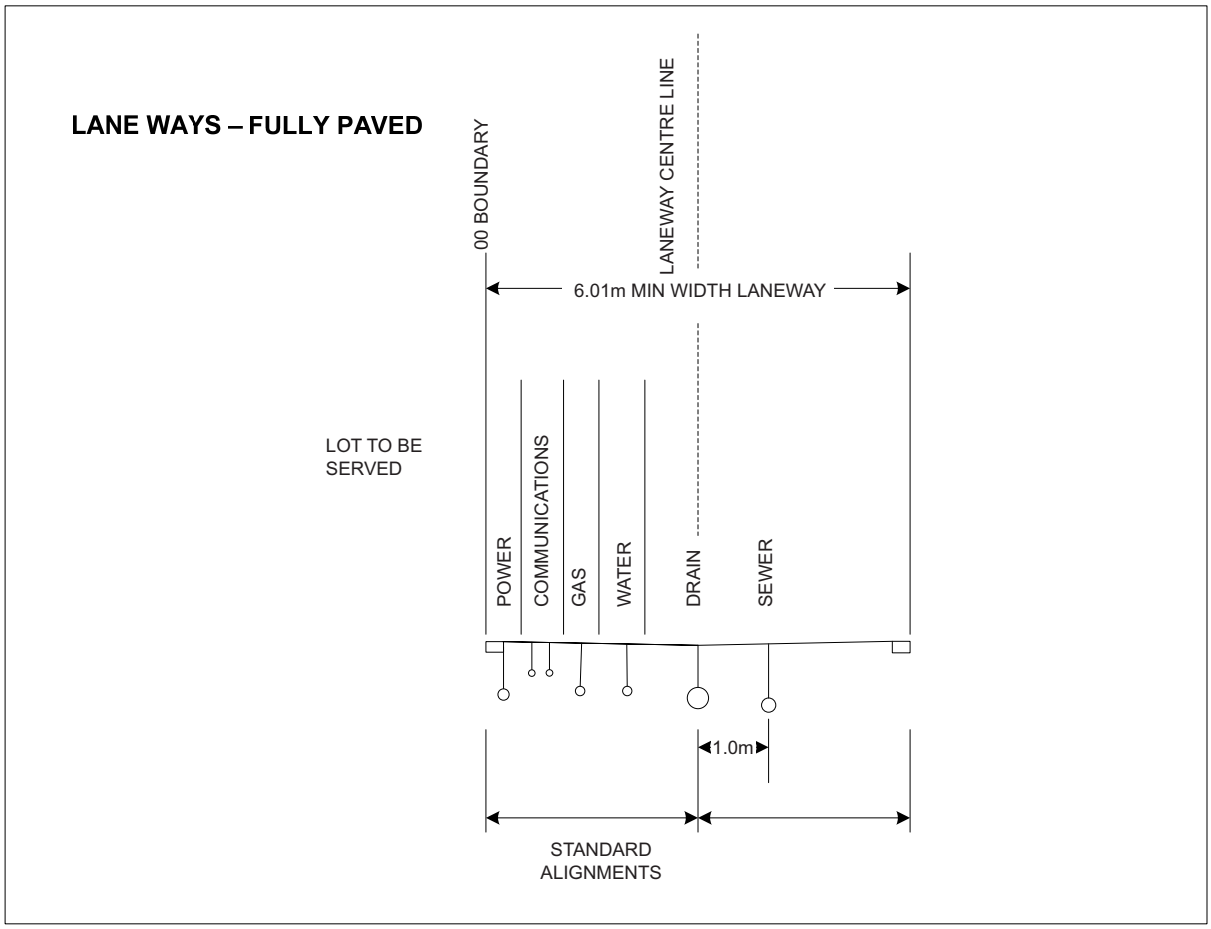
(NOMINALLY 14.0 – 16.0 METRES) SUPPLEMENTARY DIAGRAM TO FIGURE B4



ROAD RESERVE ALLOCATION FOR UTILITY SERVICES IN LANEWAYS

(AS DEFINED IN THE PLANNING AND DEVELOPMENT ACT)

Figure B5



Notes:

1 Cover to utility services to be the same as for roadways.

2 Where a laneway lot fronts a primary street the location of utility services shall be in the primary street, except where building setbacks and/or topography constrains the provision of utility services in the primary street, i.e. natural or altered land environment, including retaining walls.

3 Where a laneway lot fronts Public Open Space, consideration should be given to relocating some of the utility services to the Public Open Space; e.g. sewer.

4 Utility Services are to be placed on the side of the laneway servicing the greatest number of lots, unless there are topographical constraints.

5 Street lights to be positioned to suit Local Government requirements and to minimise the effect on the other utility services.

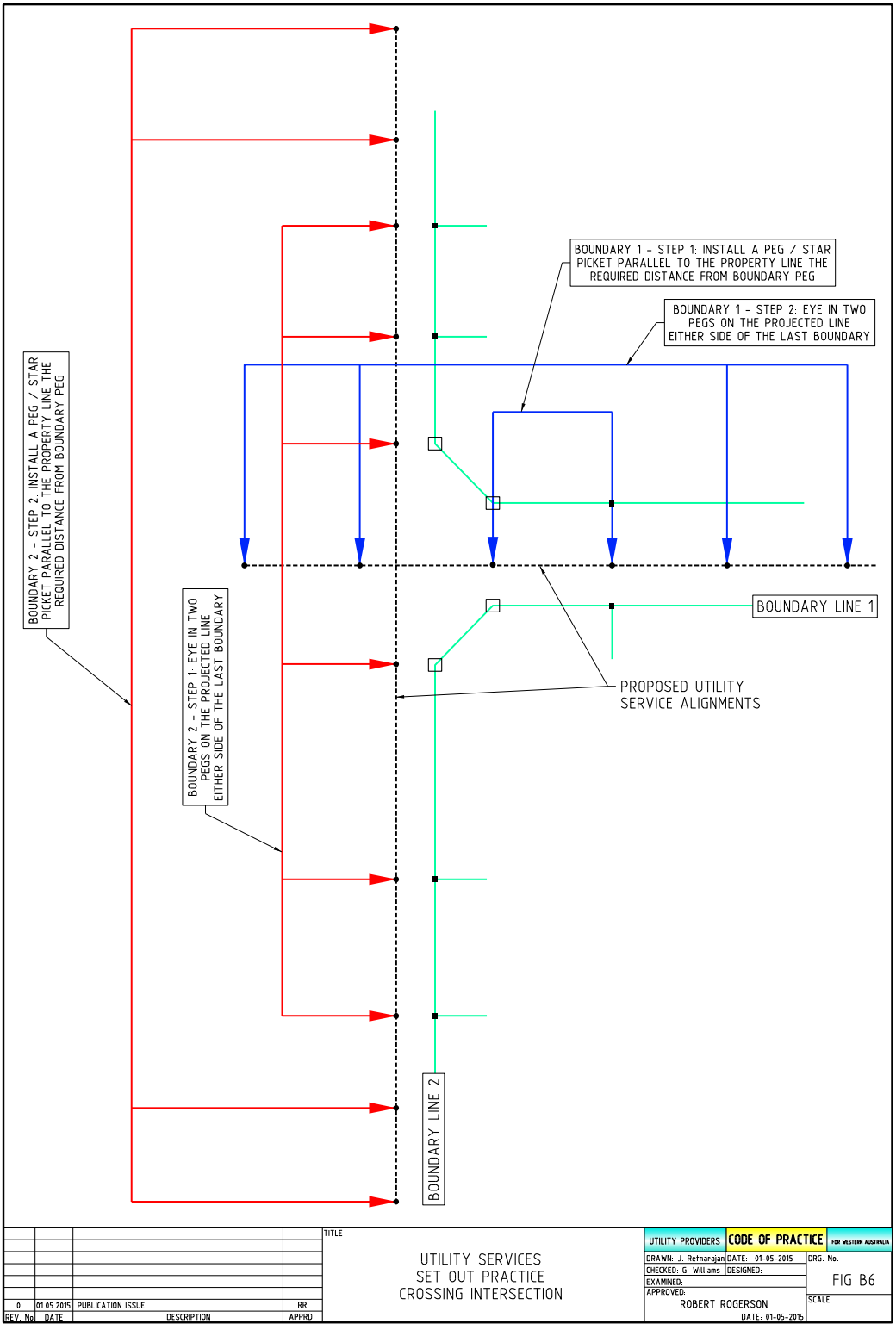
6 For all laneway widths, utility services are to remain in their relative positions.

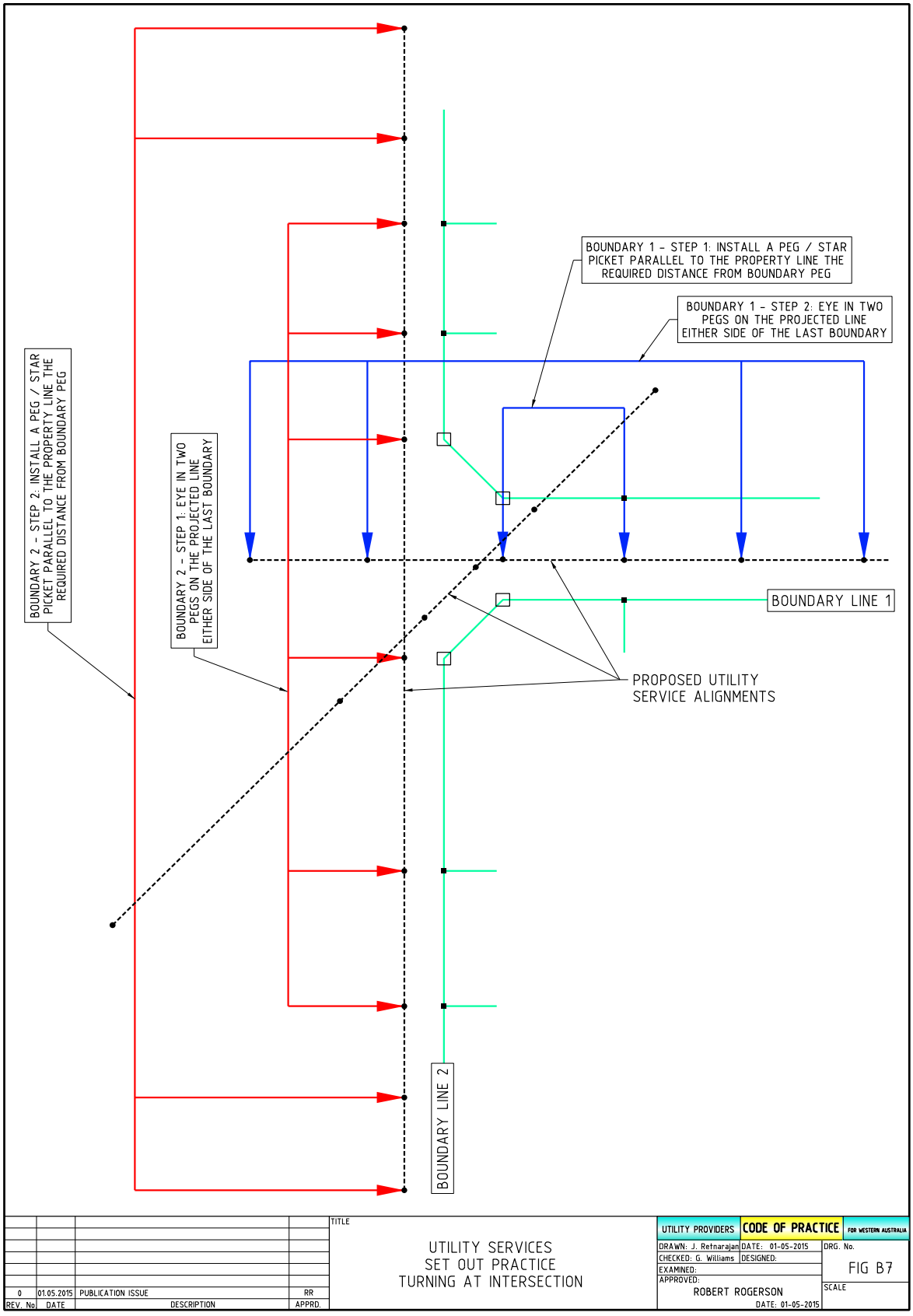
7 Proposed variations to these allocations must be agreed by all affected utility service providers.

UTILITY SERVICES SET OUT PRACTICE:

CROSSING INTERSECTIONS, TURNING AT INTERSECTION AND CHANGE OF STREET ALIGNMENT

The following drawings indicate suggested utility services set out practice drawings to ensure accurate alignment at roadway intersections and truncations.




BOUNDARY 1 – STEP 1: INSTALL A PEG / STAR PICKET PARALLEL TO THE PROPERTY LINE THE REQUIRED DISTANCE FROM BOUNDARY PEG
BOUNDARY 1 – STEP 2: EYE IN TWO PEGS ON THE PROJECTED LINE EITHER SIDE OF THE LAST BOUNDARY
BOUNDARY 2 – STEP 2: INSTALL A PEG / STAR PICKET PARALLEL TO THE PROPERTY LINE THE REQUIRED DISTANCE FROM BOUNDARY PEG
BOUNDARY 2 – STEP 1: EYE IN TWO PEGS ON THE PROJECTED LINE EITHER SIDE OF THE LAST BOUNDARY
BOUNDARY LINE 1
PROPOSED UTILITY SERVICE ALIGNMENTS
BOUNDARY LINE 2
TITLE
UTILITY SERVICES
SET OUT PRACTICE
TURNING AT INTERSECTION
REV. No
DATE
DESCRIPTION
APPRD.
0
01.05.2015
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UTILITY PROVIDERS
CODE OF PRACTICE
FOR WESTERN AUSTRALIA
DRAWN: J. Retnarajan
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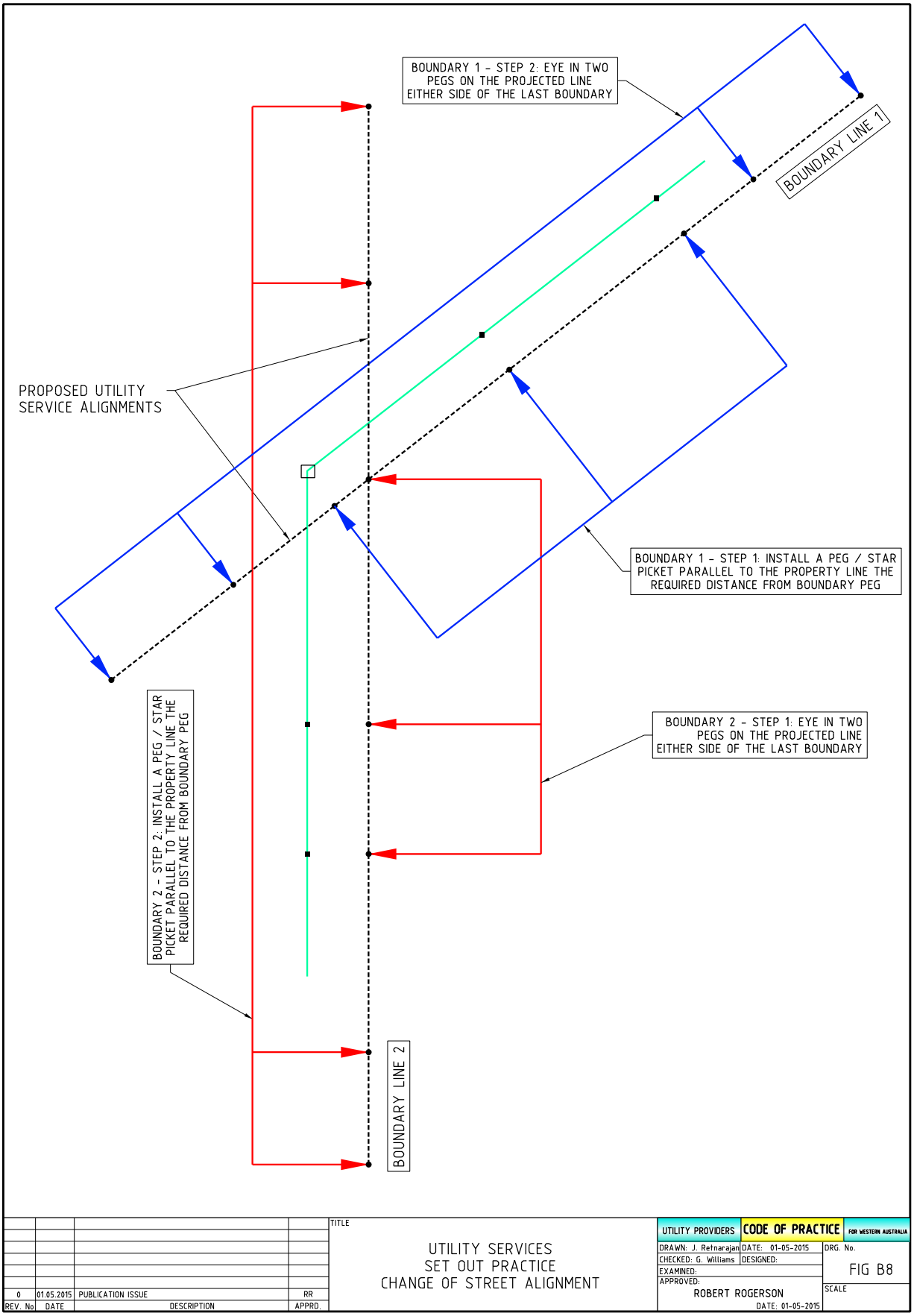
APPROVED:
ROBERT ROGERSON
DATE: 01-05-2015
DRG. No.
FIG B7
SCALE


BOUNDARY 1 – STEP 2: EYE IN TWO PEGS ON THE PROJECTED LINE EITHER SIDE OF THE LAST BOUNDARY
BOUNDARY LINE 1
PROPOSED UTILITY SERVICE ALIGNMENTS
BOUNDARY 1 – STEP 1: INSTALL A PEG / STAR PICKET PARALLEL TO THE PROPERTY LINE THE REQUIRED DISTANCE FROM BOUNDARY PEG
BOUNDARY 2 – STEP 1: EYE IN TWO PEGS ON THE PROJECTED LINE EITHER SIDE OF THE LAST BOUNDARY
BOUNDARY 2 – STEP 2: INSTALL A PEG / STAR PICKET PARALLEL TO THE PROPERTY LINE THE REQUIRED DISTANCE FROM BOUNDARY PEG
BOUNDARY LINE 2
TITLE
UTILITY SERVICES
SET OUT PRACTICE
CHANGE OF STREET ALIGNMENT
UTILITY PROVIDERS
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APPROVED:
ROBERT ROGERSON
DATE: 01-05-2015
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FIG B8
SCALE
0 01.05.2015 PUBLICATION ISSUE RR
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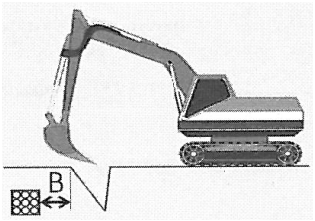
TABLE B1

CLEARANCE ZONES GUIDE - CLEARANCE LIMITS TO UNDERGROUND UTILITY SERVICES WHEN UNDERTAKING WORKS IN ROAD RESERVES

This Clearance Zone Table provides the minimum approach distance that powered excavating machines may operate before the Controls are applied. Use of this Table provides protection of the utility service and ensures the safety of the excavator and operator. Adoption of this Table will improve site safety and demonstrate Duty of Care by both the utility service provider and excavator operator.

Types of Underground Utility Services	Clearances	Clearance Zone for Powered Excavation	Controls	Typical Depths
Note: The owners of utility services registered with the Dial Before You Dig service are covered by this Guide and require an enquiry through this free service and the compliance with any directive issued with information regarding the utility service.	The minimum approach distance for individuals carrying out work near underground utility services.	Distance B is the minimum approach distance for powered excavating machines  B = the distance from the underground utility service to the break of the surface created by an excavating machine digging away from the underground utility service. The machine will be on the other side of the cut away from the underground utility service. For directional boring across the line of a utility service, a minimum clearance of 300 mm from the utility service will be maintained. For directional boring parallel to the utility service and at the level of the utility service, a clearance of 500mm shall be maintained from the edge of the nearest utility service. Prior to commencing any directional drilling you must know the exact location of all utilities within the vicinity. Refer to potholing Clause 6.	If the risk assessment identifies a potential risk of making contact with both underground and overhead utility services, two safety observers would be required. One observer to ensure that the machinery maintains a safe distance from underground utility services, the other observer to ensure a safe distance from the overhead utility services e.g. power lines. In the case of gas or electricity utility services, an appropriate fire extinguishing system must be accessible to meet the identified fire risk. If the width and /or depth of the excavation will expose the utility service, the utility service provider must be contacted prior to commencing work.	Below natural ground level or top of road pavement.

Low and Medium Pressure Gas Services.	N/A	**300mm**	Pot hole to confirm location of utility service. The position of the utility service may not appear on the plans.	**300 - 600 mm.**
Low and Medium pressure gas mains.	N/A	**300mm**	Pot hole to confirm location of utility service. The Code of Practice for shafts, tunnels and trenches, and the Guideline to dangers of poorly ventilated workplaces. Only one individual at a time should be excavating if hand excavation is being undertaken in a confined space. Another should act as an observer and be able to operate any breathing, escape or fire equipment if required. The elimination of an ignition source in the event of an escape. Excavation below underground utility services should not be undertaken within a distance of 300mm below the utility service located at the lowest level.	**600 - 750mm**
High Pressure gas services, mains and pipelines.	Refer to utility service provider requirements.	Refer to utility service provider requirements.	If excavation is required within 15 metres of a high pressure gas pipeline prior approval must be obtained from the relevant gas owner. However, for any excavation in the vicinity of the DBNGP refer Appendix D for approval requirements. Must contact the utility service provider for specific conditions. ATCO Gas conditions: http://www.atcogas.com.au/Safety/Working-around-gas-infrastructure Note: All transmission pipelines involving gas (also oil and petrochemical) have separate requirements and the utility service provider should be contacted.	**900 - 1200mm**

Dampier Bunbury Natural Gas Pipeline (DBNGP).	**Refer to Department of Lands approval conditions.**	**Refer to Department of Lands approval conditions.**	**Refer to Department of Lands approval conditions.**	**Refer to Department of Lands approval conditions.**
Low Voltage Electricity cables – voltages less than or equal to 1000V (1kV)	Refer to utility service provider requirements.	Refer to utility service provider requirements.	Must contact the utility service provider for specific conditions prior to excavating. Western Power conditions: http://www.westernpower.com.au/safety-working-near-electricity.html	**500mm minimum.**
High Voltage Electricity cables – voltages from 1000V (1kV) up to 33000 (33kV)	Refer to utility service provider requirement.	Refer to utility service provider requirement.	Must contact the utility service provider for specific conditions prior to excavating. Western Power conditions: http://www.westernpower.com.au/safety-working-near-electricity.html	**500mm minimum.**
Underground sub-transmission cables 33000V (33kV) up to 132000V (132kV)	Refer to utility service provider requirement.	Refer to utility service provider requirement.	Must contact utility service provider for specific conditions. Western Power conditions: http://www.westernpower.com.au/safety-working-near-electricity.html	**750mm minimum.**
Telecommunications cables.	Contact utility service provider for specific requirement.	Contact utility service provider for specific conditions prior to excavating.	Must contact utility service provider for specific conditions prior to excavating.	Typically **450 – 600mm,** other assets to **1200mm**
Water pipelines.	N/A	**300mm** (if pipeline is **200mm** or greater in diameter).	Pot hole to confirm location of utility service.	**450mm minimum**
Sewer pipelines.	N/A	**300mm** (if pipeline is **200mm** or greater in diameter).	Pot hole to confirm location of utility service.	**600mm to 10 (ten) metres**

APPENDIX C

TRAFFIC CONTROL AND SAFETY

C1 TRAFFIC MANAGEMENT FOR ROADWORKS

The Utility Providers Code of Practice for Western Australia has adopted the following documents (unless otherwise agreed between the utility service provider and Main Roads WA) to be used for all traffic control and safety purposes:

Main Roads Western Australia, Traffic Management for Works on Roads Code of Practice (July 2014) - defined as 'Code of Practice' in the following text.

The Code of Practice is issued by Main Roads WA to establish and maintain a standardised system procedures and practices, for traffic management at all road works undertaken within the road reserve by direct labour (e.g. utility service provider) and contract. The Code of Practice is supported by the Australian Standard AS 1742.3 – 2009. It is also supported by the *Main Roads Act 1930, Occupational Safety and Health Act 1984, Road Traffic Act 1974, Road Traffic Code 2000* and *Disability Services Act 1993.*

The Code of Practice has been authorised by the Commissioner of Main Roads for use by Local Government and Main Roads (including authorised contractors) personnel. It is expected that State instrumentalities and other organisations such as utility service providers and their contractors will adopt the Code of Practice for all works on roads that are under the control of Main Roads WA or Local Government to ensure a safer road network environment for both the road works and road users.

The enforcement of safe worksite practices to ensure the safety of employees and public is undertaken by **Worksafe WA.**

It is essential that **only accredited personnel** who have completed modules of the Code of Practice training course can erect temporary traffic management signs.

Amendments to the Code of Practice may be made from time to time. Users of this document shall ensure that they are using the current document, which is available from the Main Roads WA Website: www.mainroads.wa.gov.au ('Using Roads' > 'Traffic Management' > 'Roadworks' > 'Traffic Management for Works on Roads - Code of Practice').

Note:

The Code of Practice is to be used in conjunction with Australian Standards AS 1742.3 - 2009

TITLES OF STANDARDS

AS 1742.3 (2009)

C2 ERECTION OF TEMPORARY REGULATORY TRAFFIC SIGNS AND DUTY OF CARE WHEN UNDERTAKING WORKS IN ROAD RESERVES

Part 20 Regulation 297 of the *WA Road Traffic Code 2000* provides that where work or a survey is being carried out upon a road by an authorised body, that authorised body may erect, establish, display alter or take down any particular road sign or traffic control signal approved by the Commissioner of Main Roads so as to only apply to one lane, or one dissection of the

carriageway to which the work or survey relates. Motorists must not exceed speed limits displayed on a speed restriction sign operating over any portion of road that lies between this sign and a de-restriction sign. It is implicit that such signs will be of a temporary nature for the purpose of warning motorists and for the prevention of injury and loss of life to the persons carrying out the works or survey in question and possibly also to a lesser extent to the motorist and their vehicle.

A **duty of care** would arise on the part of anybody, whether government or private, who is carrying out operations on a road which is otherwise open to traffic, to take all reasonable measures to prevent accident or injury to persons carrying out those operations and also to members of the public lawfully using the road. Part of this **duty of care** would consist of the erection of warning signs, which would be of a temporary nature, to alert motorists to the impending danger for as long as the operations are being carried out within the road reserve. **This duty of care is the responsibility of those carrying out the works or surveys** within the public road reserve and not upon the Commissioner of Main Roads or the relevant Local Government. These temporary signs would have to be removed from the road or vicinity of the road as soon as the works or survey has been completed.

The traffic management including reduced speed limits in place for the safety of the public and utility workers and contractors must suit the site conditions acknowledging whether workers are on site. For instance prior to the workers leaving site the speed limits must be adjusted to suit the changed situation.

APPENDIX D

UTILITY SERVICES LOCATED IN THE DAMPIER TO BUNBURY NATURAL GAS PIPELINE (DBNGP) CORRIDOR

D1 PROCESS AND INFORMATION

D1.1 INTRODUCTION

The DBNGP is Australia's longest high pressure gas pipeline and one of Western Australia's most critical pieces of energy infrastructure. The DBNGP covers more than 1,530km starting from the Burrup Peninsula in the State's North West and finishing near Bunbury in the State's South West. The DBNGP also includes numerous lateral pipelines at various locations along its length.

Built by the State Energy Commission of Western Australia (SECWA), the Dampier to Kwinana section of the DBNGP was commissioned in 1984 with the extension south to Bunbury commissioned in 1985. In 1995, under the Government's energy reform program, SECWA was split into gas (AlintaGas) and electricity (Western Power). As a result, the pipeline assets were vested in AlintaGas.

In 1996, Cabinet approved the sale of the DBNGP and subsequently the *Dampier to Bunbury Pipeline Act 1997* (the Act) provided for the sale of the DBNGP (Pipeline) to Epic Energy in March 1998. Under the Act, the land within the DBNGP Corridor was vested in the DBNGP Land Access Minister (the Minister) and managed on behalf of the Minister by the Western Australian State Government.

In October 2004 the Pipeline was sold to the Dampier Bunbury Pipeline (DBP) group, who are the current owner and manager of the Pipeline.

The DBNGP corridor is currently managed by Department of Lands (DoL) on behalf of the Minister.

Management of the DBNGP corridor is an integral part of ensuring transportation of natural gas supplies from the North West Shelf to the South West of Western Australia. The gas is used for heavy and light industry, power generation and homes.

The Minister acting with the advice of the Minister for Energy has control over the DBNGP corridor to assist with the gas needs of the State.

D1.2 *THE DAMPIER TO BUNBURY PIPELINE ACT 1997 (THE ACT)*

In considering this information potential applicants should be mindful of the central requirements of the Act.

Utility providers, land owners, pipeline operators and other third parties cannot use land in the DBNGP Corridor in a way that is inconsistent with anything that is on, or is being done on the land in accordance with rights granted to access right holders under section 34 of the Act.

Utility providers, land owners, pipeline operators and other third parties must seek written approval from the Department of Lands, who administers the DBNGP Corridor on behalf of

the Minister, to carry out any work within the DBNGP Corridor. Such approval can be sought only by written application to the Department of Lands.

Penalties are provided under section 41 of the Act and Regulation 4A of the *Dampier to Bunbury Pipeline (Corridor) Regulations 1998* for unauthorised use of the DBNGP Corridor. A successful criminal prosecution under these provisions can result in a fine of up to $10 000.

D2 INFORMATION FOR APPLICATIONS TO UNDERTAKE ACTIVITIES AND WORKS IN THE DBNGP CORRIDOR

D2.1 INTRODUCTION

The following information provides details for all proponents and organisations seeking to undertake activities and works in the DBNGP Corridor.

Detailed information regarding the DBNGP Corridor, appropriate land use, activities and works, and the section 41 application process can be found in the Department of Lands Land Use Guidelines. Copies can be downloaded from the Department of Lands Website: www.lands.wa.gov.au or contact the Infrastructure Corridors Branch (contact details below).

D2.2 LOCATION OF PIPELINE(S)

Where a pipeline is constructed in the DBNGP Corridor, the area is marked by warning signs. Warning signs do not indicate the exact location of a pipeline and should only be used as an indication that a high pressure gas pipeline exists in the DBNGP Corridor.

The greatest risk to high pressure gas pipelines and to people in the vicinity is damage by persons unfamiliar with the requirements for the safe work around high pressure gas pipelines.

D2.3 APPLICATION PROCESS

Before undertaking any works within the DBNGP Corridor, contact **Dial Before You Dig** - Dial 1100.

Prior to commencement of intended works within the DBNGP Corridor, all parties must submit a written application for approval from the DBNGP Land Access Minister through the Department of Lands. This is a requirement under section 41 of the DBP Act.

All applicants are advised to submit an application at the earliest possible stage to allow sufficient time for assessment from a technical, social, environmental and safety-hazard perspective.

Submissions should include the following information:

- Land description and map identifying location of the proposed works.
- Type of works to be carried out.
- Intended future use of the land.
- Type and weight of machinery that will be used.
- Timeframe of the works.
- Any plans or diagrams of the works.

Approval will only be granted to the party responsible for the works.

The approval process should take approximately 3 weeks and includes referral to all relevant section 34 access right holders (gas pipeline owners and/or operators) for comment and technical and safety conditions regarding works in the vicinity of high pressure gas pipelines.

Indemnification will be sought from the proponent for all proposed works within the DBNGP Corridor and shall be completed by the proponent and returned to Department of Lands prior to commencement of processing the section 41 application.

The section 41 application form can be downloaded from the Department of Lands website:

(refer to Section 2.1)

or contact the Infrastructure Corridors Branch (contact details below).

When completed, the application form and relevant information to support the application should be forwarded by either email, facsimile or post to:

The Manager Infrastructure Corridors
Department of Lands
PO Box 1143
WEST PERTH WA 6872
Ph.: +61 8 6552 4400
Fax: +61 8 6552 4420

If you have any questions that are not covered on the website or in the Land Use Guidelines, please contact the Infrastructure Corridors team at Department of Lands.

The section 41 application process is **free of charge.**

D2.4 PERMISSION TO ACCESS LAND

Please note that any such conditional approval granted under section 41 of the Act does not of itself provide any further approval required from any underlying land owner or other interest holder to access the land concerned.

For example, a third party holding conditional approval under section 41 of the Act should not access the land without appropriate permission from the land owner.

D2.5 TELECOMMUNICATION CARRIERS

Telecommunication Carriers are defined in and subject to Commonwealth legislation under the *Telecommunications Act 1997* (Cmth) and the *Telecommunications Code of Practice 1997* (Cmth), including subsequent amendments.

Licensed Telecommunications Carriers are exempt from some State or Territory laws. Where these laws are not consistent with the Telecommunications Act, the Commonwealth legislation will apply.

To ensure compliance with all safety and technical requirements for working in the vicinity of high pressure gas pipelines it is essential to contact Department of Lands and provide a Land Activity and Access Notice, pursuant to Schedule 3 Part 1 Division 5 Section 17 of the *Telecommunications Act 1997* (Cmth), of intended works to enable referral to relevant section 34 access right holders before undertaking any activities or works in the DBNGP corridor. The approval process should take approximately 3 weeks.

APPENDIX E

ENVIRONMENT CHECKLIST

The following Environmental Checklist is a **minimum** requirement to be completed by Utility Service Providers for proposed works in road reserves managed by Main Roads WA and Local Governments. Approvals to undertake works may be required from the Department of Environment Regulation, Department of Aboriginal Affairs, etc. Refer to Section 8.1 regarding clearing of native vegetation and possible requirement for a clearing permit which could take several months to complete.

Item No.	Item	Yes / No / Not Applicable.
1	**Protection of rare flora, fauna or other significant vegetation** 1(a) Identified significant vegetation or habitat. 1(b) Alternatives routes and methods considered. 1(c) Obtained approval to disturb this vegetation/habitat.	
2	**Clearing of native vegetation** 2(a) Routes and methods that do not require clearing considered. 2(b) Obtained all necessary approvals to clear. 2(c) Revegetation/rehabilitation plans prepared.	
3	***Phytophthora cinnamomi* Dieback** 3(a) Work in area with rainfall greater than 600mm per year. 3(b) Hygiene practices will be in place. 3(c) Work to take place during dry periods.	
4	**Water protection and Conservation Areas** 4(a) Identified wetlands, sensitive water courses, drinking water areas, Swan River Trust management areas, Bush Forever areas, etc. 4(b) Alternatives routes and methods considered. 4(c) Obtained approval to work near sensitive water or conservation areas. 4(d) Obtained approval to undertake dewatering.	
5	**Aboriginal heritage** 5(a) Identified existing and potential for Aboriginal heritage sites. 5(b) Alternatives routes and methods considered. 5(c) Obtained approval to disturb sites.	
6	**Cultural heritage** 6(a) Identified existing heritage sites. 6(b) Alternatives routes and methods considered. 6(c) Obtained approval to disturb sites.	
7	**Adjoining residential and other sensitive properties** 7(a) Identified need to control dust, vibration and noise. 7(b) Obtained approval to do work outside normal hours.	
9	**Acid Sulphate Soils (ASS)** 9(a) Identified requirement for ASS management. 9(b) Obtained approval for ASS management plan	

EMERGENCY PROCEDURES AND CONTACTS

In the event of damage to Utility Provider's asset, Main Roads WA asset, Local Government asset or PTA (Rail) asset, the person/Agency responsible for causing the damage shall immediately advise all asset owners affected.

Refer to emergency numbers as follows to be used in Emergency (Hazardous Situations) only:

Fire (Fire, Rescue, Hazardous Material), Police and Ambulance (life threatening) **Dial 000**.

NON LIFE THREATENING

Fire and Emergency Services ..... (08) 9323 9300
Police 131 444
St John Ambulance ..... (08) 9334 1234

GAS PROVIDERS

ATCO Gas.....13 13 52
APA:
- Goldfields Gas Pipeline 1800 151 016
- Pilbara Pipeline System.....1800 625 665
- Parmelia Pipeline.....1800 019 966

Epic Energy 1800 625 665
Land Fill Gas and Power (office) ..... (08) 9475 0144
(Managing Director) 0412 314 002
Dampier Bunbury Natural Gas Pipeline (DBNGP) 1800 019 919
Esperance Gas .....(08) 9072 1422 or 0429 886 016

POWER PROVIDERS

Western Power 13 13 51
Horizon Power 13 23 51

WATER PROVIDERS

AQWEST
Bunbury Water Corporation ..... (08) 9791 3272
Busselton Water ..... (08) 9781 0500
Water Corporation 13 13 75

SAFETY AUTHORITIES

Worksafe WA ..... (08) 9327 8777
- (24hr Accident Reporting) 1800 305 791

Energy Safety WA ..... (08) 9422 5200
- (24hr Accident Reporting) 1800 678 198

TELECOM PROVIDERS

AAPT Telecommunications 13 88 86
AMCOM PtyLtd 1800 262 663
Bright Communications.....1300 661 393
Broadcast Engineering Services..... (08) 9248 5200

TELECOM PROVIDERS *(continued)*

Optus 1800 505 777
Telstra 13 22 03
Uecomm Operations Pty Ltd 1800 707 447
Nextgen Group 1800 336 886
Vodaphone ..... (08) 9322 6444

LAND AUTHORITY

Department of Lands ..... (08) 6552 4400
Dampier to Bunbury Natural Gas Pipeline
Corridor only: Infrastructure Corridors (DoL) 0477 723 360

ROAD AUTHORITIES

Local Governments – ..... (Refer to Appendix A for contact number details)
Main Roads WA 138 138

Rail Authorities

Public Transport Authority MetroRail
(24hr Emergency) ..... (08) 9220 9999
Brookfield Rail
Level Crossing Faults 1800 150 107
Midland Train Control 1300 987 246
Avon Train Control 1300 087 246

MISCELLANEOUS

BHP Supply Authority ..... 1800 677 639 or (08) 9175 3303
BP Refinery ..... (08) 9419 9500
Coogee Chemicals 1800 800 655
Co-operative Bulk Handling ..... (08) 9237 9600
Curtin University ..... (08) 9266 9266
or (24hr Security) ..... (08) 9266 4444
Defence, Property Management ..... (08) 9311 2685 or (08) 9311 2680
Fax: ..... (08) 9311 2670
(24 hour emergency) 1300 658 975
Department of Industry and Technology
C/- Zernike Australia Pty Ltd 0408 877 215
Ensite Claude 0414 225 826
Fremantle Ports ..... (08) 9430 3442 or (08) 9335 1300
Pilbara Iron Utilities
(Tom Price) ..... (08) 9143 3271
(Paraburdoo) ..... (08) 9143 4668
(Dampier) ..... (08) 9143 5650
Adshel ..... (08) 9387 7444 or 0438 253 557
People Telecom ..... (08) 9318 6555
(24 hour emergency) 1300 736 877
University of WA ..... (08) 6488 2025

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