WALLBRIDGE GILBERT AZTEC

Springwood Communities

Springwood Residential Development

SITE SERVICES REPORT

Project No. 070975
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Rev. D

14 June 2019

Revision History

Rev	Date	Issue	Originator	Checker	Approver
A	06/06/2019	Draft Issue for Comment	SMc		
B	12/06/2019	Planning Approval	SMc	DB	DB
C	13/06/2019	Final Issue	SMc	DB	DB
D	14/06/2019	Minor Amendments	SMc	DB	DB

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1 INTRODUCTION

1.1 BACKGROUND

Wallbridge Gilbert Aztec (WGA) have been engaged by Springwood Communities to provide a Site Services Master Plan Report consolidating planning correspondence from respective service authorities for the proposed Springwood Residential Development in Gawler East.

The proposed Springwood site is approximately 186.1 ha, located approximately 1.5 km east of the Gawler Town Centre and 37 km north of the Adelaide City Centre. The proposed development is bordered by Balmoral Road to the east, Calton Road to the north, predominantly undeveloped farming land to the west, and undeveloped, vacant land to the south. The southern boundary is adjacent the South Para River. A locality sketch of the Development site, outlined in red, is shown in Figure 1. The site is characterised by relatively undulating topography, with grades ranging between 5-18% in the developable areas. The site is currently zoned residential and has previously been used as farm land and sand mining.

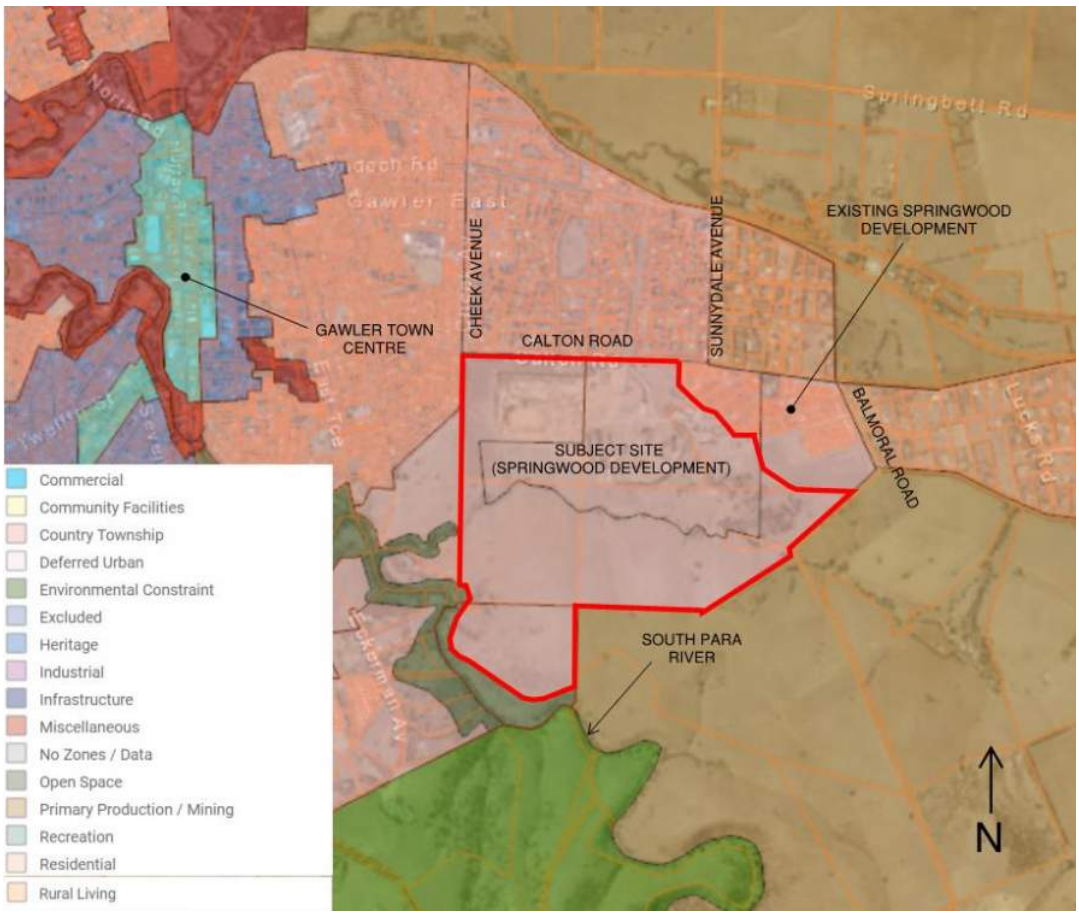


Figure 1 - Site Locality and Zoning (Location SA Map Viewer, Government SA, 2019)

The investigations have assumed the proposed subdivision comprises approximately 1414 allotments, incorporating a range of dwelling types and allotments sizes. This number is inclusive of proposed retail, commercial and specialty allotments as identified on the master plan. The current master plan for the Development, prepared by Tract Consultants Pty Ltd, is included in Appendix A.

1.2 PURPOSE OF THE REPORT

The purpose of this report is to:

- Complete an investigation into the infrastructure currently servicing the proposed site, assessing the existing infrastructure availability and capacity;
- Attain an appreciation of the requirement for augmentation or upgrade works that may be associated with development of each site; and
- Consolidate investigations to provide supporting information and justification for development of the site.

1.3 SITE INFRASTRUCTURE REFERENCE INFORMATION

The location and capacity of existing services within the vicinity of the proposed development site has been investigated and is detailed within the following sections of this report. Service authorities have been consulted to acquire background information and formalise potential supply arrangements for a potential development.

It is noted that significant planning has already been undertaken for the subject site by authorities when supplying the developed area to the north-east. Formal supply arrangements will largely incorporate this existing infrastructure, which was sized taking into account the proposed development area that is the subject of this report.

The following key authorities have been consulted in seeking infrastructure input:

- **Potable Water** – SA Water
- **Wastewater** – SA Water
- **Electricity Supply** – SA Power Networks (SAPN)
- **Gas** – APA Group (APA) and South East Australia Gas Pty Ltd (SEA Gas)
- **Telecommunications** – Opticomm
- **Stormwater** – Town of Gawler/ City of Barossa (refer accompanying WGA Stormwater Management Strategy)

2 WASTEWATER

2.1 EXISTING SITE INFRASTRUCTURE

Information on the existing infrastructure has been obtained through correspondence with SA Water, with supporting information sought through a Dial Before You Dig (DBYD) search, Aquamap, use of the SA Government's Location SA Map Viewer and through WGA's involvement in the existing portion of Development to the north-east of the subject site. Appendix B contains further information relating to the existing sewer network, with a summary provided in this Section.

2.1.1 Calton Road

A combined pumping (DN100/ DN150 PVC) and gravity (DN225 PVC) sewer system exists within Calton Road. This was installed in 2015 as part of the existing Springwood Development and is owned and operated by SA Water.

Two pump stations were installed as part of this work, one just east of Cockshell Avenue and another located between Sunnydale Avenue and Easton Drive. Both pump stations are on the southern side of Calton Road, within SA Water registered easements inside the Development boundary. This system conveys wastewater to the west of the proposed Development, and ultimately discharges to a pump station located in Paterson Terrace.

2.1.2 Cheek Avenue

Cheek Avenue contains a single gravity sewer drain operated by SA Water (DN150 PVCU), which conveys wastewater north to Holness Avenue.

2.1.3 Existing Springwood Development

An SA Water owned sewer network has been installed within the existing Development on a staged basis. This network currently drains to the Calton Road sewer, servicing 387 allotments. This number comprises both built and future dwellings, indicated by the existing Development area in Figure 1.

2.1.4 Gawler East Link Road

The Gawler East Link Road is currently under construction at the time of this report. A DN225 PVC gravity main will be installed as part of this work within the Calton Road Connector, which is the section between Calton Road and the Gawler East Link Road. Connections will be installed at strategic locations based on the current proposed Springwood Master Plan throughout the Village Centre area defined by the Preliminary Staging Plan in Appendix C.

2.2 SERVICE AUTHORITY REQUIREMENTS

SA Water has advised that a portion of the proposed development can be serviced via the existing wastewater infrastructure within Calton Road, discussed in Section 2.1 of this report. Further work would be required external to the proposed development site should the capacity of the Calton Road network be exceeded. The following summarises SA Water requirements to be met as part of the proposed development, as well as the capacity of the current infrastructure:

- The Paterson Terrace Pump Station Upgrade, which was completed prior to the Calton Road Sewer installation, increased the sewer network capacity to cater for 660 residential allotments from the proposed Springwood Development. This number is inclusive of the 387 residential allotments created as part of the existing Springwood Development, to the north-east of the site, as discussed in Section 2.1;
- Future development beyond 660 residential allotments would trigger a sewer pumping network to be installed, extending from the site's western boundary to the gravity main installed within the Gawler East Link Road and Potts Road. This gravity main is under construction at the time of this report, as part of the Gawler East Link Road project;
- Design and construction of any new wastewater infrastructure would be in accordance with SA Water Network Infrastructure Standards; and
- Any easements required for the provision of wastewater services would need to be vested to SA Water free of cost.

Figure 2 demonstrates the preliminary SA Water assessment criteria and collection point for wastewater generated as part of the proposed development exceeding 660 allotments.

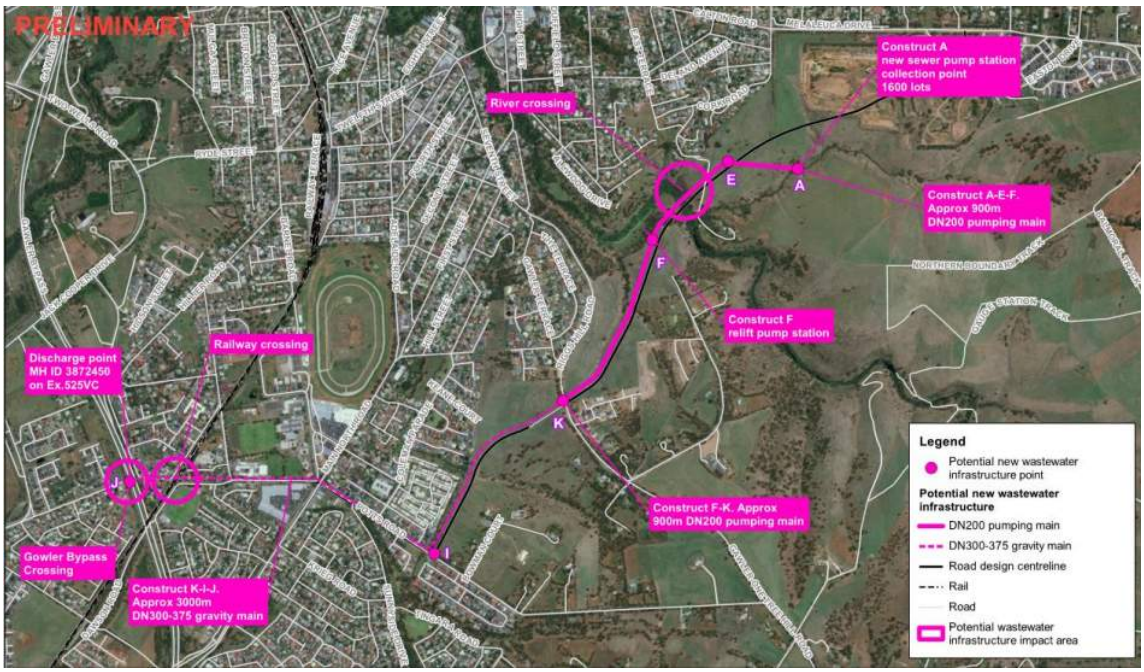


Figure 2 – Preliminary Sewer Layout with Proposed Collection/ Discharge Points (WSP, 2018)

2.3 WASTEWATER MASTER PLANNING

2.3.1 General Wastewater Master Planning

The waste water master plan for the development is based upon the Preliminary Staging Plan provided in Appendix C. It is noted that the existing terrain predominantly falls toward the central drainage channel, running east-west through the proposed Development site. On this basis, a combination of gravity sewer and internal pumping mains would be required to convey wastewater to the following collection points:

1. Calton Road – connections can be made to the existing Springwood wastewater network, or directly to the gravity sewer in Calton Road. This only applies until the 660-allotment threshold is reached; and

2. Pump Station A – would be installed in the location shown in Figure 2 and convey wastewater north, to the Development's western boundary, and connect to the future pumping main infrastructure within the Gawler East Link Road.

2.3.2 Early Stages Master Planning

Given the trigger point of 660 residential allotments, any future development would be designed in the initial stages to discharge to the existing Calton Road sewer. Based upon the Preliminary Staging Plan in Appendix C, construction of the Village Centre, Village 2 and Village 3 could be undertaken without exceeding this trigger point.

Village Centre

Wastewater generated by the Village centre is proposed to discharge to Calton Road via the Calton Road Connector, constructed as part of the Gawler East Link Road Project. A gravity sewer main (DN225 PVC) has been approved for construction through the Calton Road Connector, which is intended to service the proposed Village Centre.

Village 2

The majority of the proposed Village 2 can be serviced by gravity sewer already installed as part of the existing Springwood Development. A small portion of Village 2, currently identified as Stage 3, could be connected to the Calton Road Connector gravity sewer.

Village 3

Given the existing topography throughout this area, it is anticipated that Village 3 would need to drain to a new pump station to be installed at the most downstream point of the Village (southern end). From this pump station, wastewater could be conveyed to the Calton Road Connector gravity sewer infrastructure.

Village 7

Newly developed allotments fronting Calton Road can be individually connected directly to the Calton Road gravity sewer.

2.3.3 Overall Development Network Capacity

With provision of SA Water infrastructure within the Gawler East Link Road, from the site's western boundary to Potts Road, wastewater for the Development can be effectively managed without external infrastructure investment.

2.3.4 SA Water Internal Network Master Planning

SA Water is currently updating their internal sewer concept plans for the proposed development, based on the currently proposed roads and allotment master plan developed by Tract Consultants Pty Ltd. This is anticipated to be available mid-2019, and to be in line with the overall development connection requirements set out in this report. These concepts would be the basis of detailed design for wastewater infrastructure.

3 POTABLE WATER

3.1 EXISTING SITE INFRASTRUCTURE

Information on the existing infrastructure has been obtained through correspondence with SA Water, with supporting information sought through a Dial Before You Dig (DBYD) search and use of the SA Government's Location SA Map Viewer, as well as through WGA's experience with the existing Springwood Development. Appendix B contains further information relating to the existing potable water network, with a summary provided in this Section.

3.1.1 Barossa Trunk Main

A DN750 MSCL potable main, known as the Barossa Trunk Main currently exists through the site, running between Balmoral Road and Eckerman Ave. This main services Gawler and the northern portion of the greater metropolitan area. Most of the alignment is above ground, installed on concrete supports, however there are multiple discrete sections of the trunk main that have been diverted underground.

3.1.2 Calton Road

Currently three potable water mains exist within Calton Road. These can be summarised as follows:

- A DN450 MSCL potable water main within the southern verge of Calton Road, which has been confirmed as abandoned;
- An SA Water owned DN650 MSCL potable water main within the southern verge of Calton Road, located between the proposed Development boundary and the abandoned DN450; and
- An SA Water owned DN450 MSCL potable water main within the northern verge of Calton Road.

3.1.3 Cheek Avenue

Cheek Avenue contains a potable water main operated by SA Water (DN150 AC) running parallel to the proposed western site boundary and continuing south-west along Cork Road.

3.1.4 Balmoral Road

There are two potable water mains within Balmoral Road, both DN450 MSCL, with one located in each of the verges (east and west). The main within the eastern verge connects into the Barossa Trunk Main, which generally runs southeast-northwest through the proposed site.

3.1.5 Existing Springwood Development

An SA Water owned potable water network has been installed within the existing Development on a staged basis. This network currently connects to the Calton Road DN650 MSCL main, as well as the Balmoral Road DN450 MSCL main.

3.1.6 Gawler East Link Road

The Gawler East Link Road is currently under construction at the time of this report. A DN375 PVC-M potable water main will be installed as part of this work, which creates a link between Potts Road and Calton Road. Branches will be installed at strategic locations based on the current proposed Springwood Master Plan, which would allow future development to easily connect to this trunk infrastructure.

3.2 SERVICE AUTHORITY REQUIREMENTS

SA Water has advised that the proposed development can be serviced via the existing potable water infrastructure within Calton Road, the Gawler East Link Road and the existing Springwood network to the north-east of the site. The following summarises the SA Water requirements to be met as part of the proposed development:

- A 250mm PVC-M trunk main would need to be installed through the proposed Collector Road, creating a link between the Highfield area of the existing Springwood Development, and the Gawler East Link Road;
- Design and construction of the new potable water supply infrastructure shall be in accordance with SA Water Network Infrastructure Standards; and
- Any easements required for the provision of water supply services would need to be vested to SA Water free of cost.

Figure 3 demonstrates the SA Water assessment criteria and potable water supply points required to service the proposed development.

Figure 3 – Preliminary Potable Water Layout (WSP, 2018)

3.3 POTABLE WATER MASTER PLANNING

3.3.1 Staged Potable Water Master Planning

Upon completion of the Gawler East Link Road Project, the majority of the required trunk main identified in Figure 3 will be in place. As part of the proposed future development, it would be required to construct a DN250PVC-M link between the Highfield area of the existing Development at the site's north-eastern boundary, and the Calton Road Connector. Based on the Preliminary Staging Plan provided in Appendix C, it is currently anticipated that this link would occur during construction of Village 2.

It is also identified in Figure 3 that a link to the Barossa Trunk Main is required. This was completed in Stage 6A of the existing Springwood Development.

Village Centre

The Village centre is proposed to be serviced by the main installed within the Calton Road Connector, as part of the Gawler East Link Road Project. Connections have been provided at strategic locations based on the current master plan developed by Tract Consulting Pty Ltd. These have been sized to cater for retail and commercial sites as per the land usages illustrated in Appendix A.

Future Villages

Potable water reticulation infrastructure would be installed within the roads for each stage of the proposed Development. These can be connected by utilising the branches installed from the DN250 PVC-M trunk main as part of the Gawler East Link Road Project.

3.3.2 SA Water Internal Network Master Planning

SA Water is currently updating their internal potable water concept plans for the proposed development, based on the proposed roads and allotment master plan developed by Tract Consultants Pty Ltd. This is anticipated to be available mid-2019, and to be in line with the overall development connection requirements set out in this report. This would be used as the basis for detailed stage design for the Development.

3.4 BAROSSA TRUNK MAIN

As discussed in Section 3.1, the Barossa Trunk Main runs through the proposed Development on a SW-NE alignment. This is installed within a 10.0m wide registered SA Water easement. The position of the pipe within the easement tends to vary and is not located centrally. The trunk main presents a physical constraint to potential future development, however this has been carefully considered throughout the master planning process based on detailed survey information.

3.4.1 Road Crossings

The positioning of road crossings has been strategically considered against the alignment of the Barossa Trunk Main, as the majority of the alignment is currently above ground. Crossing points have been chosen at existing gullets, where the trunk main has been diverted underground. These points are currently used as farming access tracks.

During detailed design of any future road crossing, consideration would be given to minimum vertical clearances relative to the trunk main for both roads and services. SA Water would be involved in the auditing of design and construction of any future crossing points.

The intent would be to construct roads vested to the Town of Gawler (Council), which would extinguish the existing easement for the width of the road reserve, while retaining the easement on either side.

As part of the existing Springwood Development, a successful road crossing was constructed over an underground section of the Barossa Trunk Main. This crossing is located at Burford Street and included multiple service crossings. By following similar design and construction procedure for future road crossings, similarly successful outcomes would be delivered.

3.4.2 Road and Allotment Alignments

As illustrated by the current master plan in Appendix A, no development is proposed over the existing SA Water easement, except for the road crossings discussed in Section 3.4.1. Road reserves are proposed on the current master plan abutting the existing easement.

SA Water has previously advised that the minimum offset from a new allotment boundary to the centreline of the Barossa Trunk Main would need to be 6.60m. This can be achieved in all locations through the proposed Development.

4 ELECTRICAL INFRASTRUCTURE

Information on the existing infrastructure has been obtained through correspondence with SA Power Networks (SAPN) and ElectraNet, with supporting information sought through a Dial Before You Dig (DBYD) search and use of the SA Government's Location SA Map Viewer. Appendix B contains further information relating to the existing electrical distribution network, with a summary provided in this Section.

4.1.1 ElectraNet Infrastructure

Two transmission lines, owned and operated by ElectraNet, currently traverse the proposed Development site. These include:

- A 275kV transmission line currently runs north-south through the Development, parallel to the western boundary of the proposed Village Centre. This extends from the overall site's northern boundary to the southern boundary and is located within a 100m ElectraNet easement.

- A 132kV transmission line runs north-south through the site, approximately parallel to the site's western boundary. This line begins at the Cheek Avenue/ Calton Road intersection and extends to the southern boundary of the Development. The infrastructure is located centrally within a 30m ElectraNet easement.

4.1.2 Calton Road (SAPN)

An SAPN 11kV high voltage overhead line currently runs parallel to the proposed Development's northern boundary. This overhead line is located within the northern verge of Calton Road.

4.1.3 Cheek Avenue (SAPN)

An SAPN 11kV high voltage overhead line currently runs parallel to the proposed Development's western boundary. This overhead line is located within the western verge of Cheek Avenue, and transitions to a high voltage underground cable at Cork Road.

4.1.4 Balmoral Road (SAPN)

An SAPN 11kV high voltage overhead line currently runs parallel to the proposed Development's eastern boundary. This overhead line is located within the western verge of Balmoral Road. This network has multiple connection points to Calton Road and Balmoral Road.

4.1.5 Existing Development (SAPN)

A high voltage underground electrical distribution network, owned by SAPN, has been installed throughout the existing Development to the north-east of the site.

4.2 ELECTRICAL MASTERPLANNING

The electrical underground network for the proposed Development would be installed on a staged basis as part of the common service trench. It will be necessary to install high voltage feeders throughout the Development based on the overall masterplan.

In the early stages of the Development, it will be necessary to complete an HV feeder between the Highfield area of the existing Development and Calton Road. This would be intended to follow the alignment of the main internal collector road and the Calton Road Connector.

In order to service the proposed Village Centre, as identified on the Preliminary Staging Plan in Appendix C, it will be required to install two new runs of HV cable along the Calton Road Connector, as well as the installation of new stobie poles and load switches to connect to the Calton Road high voltage overhead network.

SAPN has advised that a future substation will be required within the Development boundary, with the exact timing and configuration to be determined based on an assessment of loading requirements. WGA, in consultant with Springwood, will continue to liaise with SAPN to finalise the trigger point for this infrastructure.

4.3 ELECTRANET EASEMENTS

4.3.1 275kV Transmission Line

The 275kV transmission line discussed in Section 4.1, is located within a 100m easement running north-south, as shown in Appendix A. No allotments have been proposed within this easement area. Short sections of road, perpendicular to the transmission line, have been proposed to cross beneath the alignment. These would be designed to the minimum vertical and horizontal clearances required by ElectraNet. Development within this zone would consist of mainly landscape/ open space area, in order to comply with the requirements set out in ElectraNet's '*Land Use Guidelines for Electricity Transmission Corridors*,' 2013.

4.3.2 132kV Transmission Line

The 132kV transmission line discussed in Section 4.1, is located within a 30m easement running north-south, as illustrated in Appendix A. It is also shown on the masterplan that a new road is proposed to run parallel to this transmission line, south from Cheek Avenue and beyond the Gawler East Link Road. The alignment for this road has been determined by applying the minimum clearance requirements set out in ElectraNet's *'Land Use Guidelines for Electricity Transmission Corridors,' 2013.*

Figure 4 shows the basis for the road design, taking into account the proposed lighting as the nearest physical constraint. A minimum 15m horizontal clearance can be achieved between the future lighting and the existing transmission lines based on the chosen road alignment.

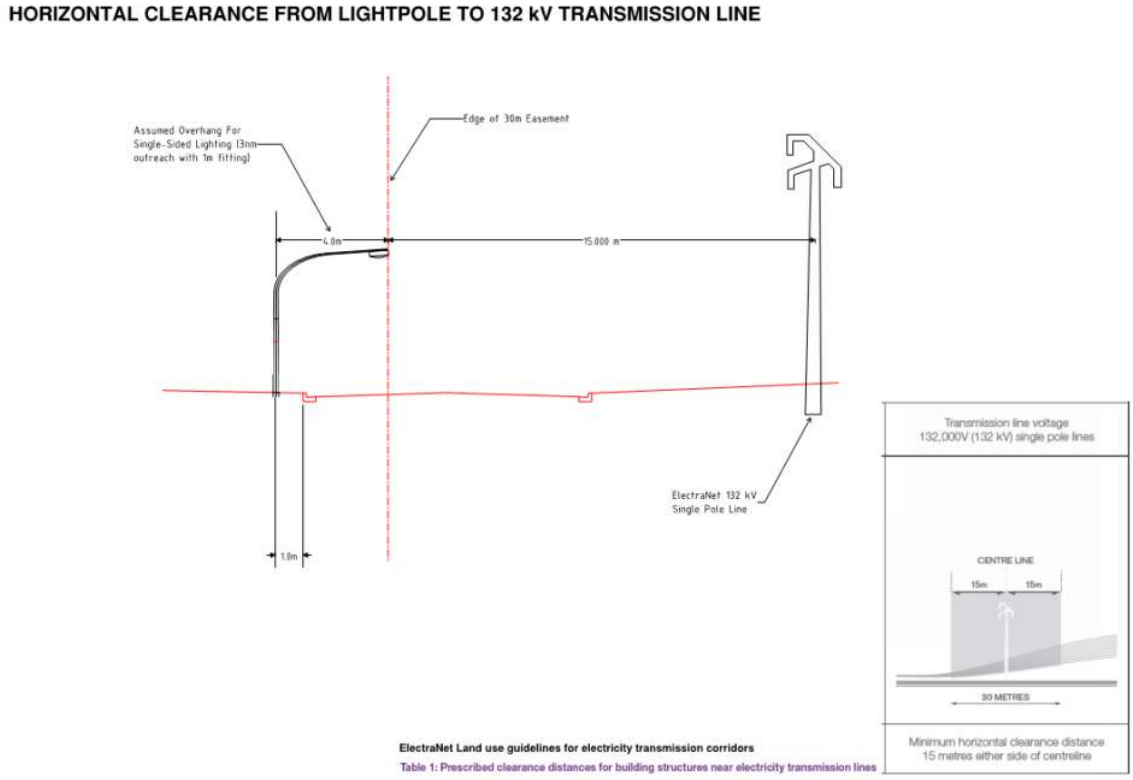


Figure 4 - ElectraNet Clearance Requirements for Parallel Road Design (WGA, 2019)

5 GAS INFRASTRUCTURE

5.1 EXISTING INFRASTRUCTURE

Information on the existing infrastructure has been obtained through correspondence with APA Group and South East Australia Gas Pty Ltd (SEA Gas), with supporting information sought through a Dial Before You Dig (DBYD) search and detailed survey through the proposed Development site. Appendix B contains further information relating to the existing potable water network, with a summary provided in this Section.

5.1.1 SEA Gas Port Campbell to Adelaide Pipeline

A 450mm diameter high pressure gas transmission pipeline, owned and operated by South East Australia Gas Pty Ltd (SEA Gas), currently traverses the proposed Development site running parallel to the Barossa Trunk Main, in a northeast to southwest direction between Balmoral Road and the site's western boundary. This gas main is part of the Port Campbell to Adelaide Pipeline and has a maximum operating pressure of 15,306 kPa. The depth of cover over the pipe generally exceeds 1.20m and is located within a 15m wide easement.

5.1.2 Calton Road (APA Group)

A 280mm high pressure gas main exists within Calton Road, installed prior to Stage 1 of the existing Springwood Development. This main is owned and operated by APA Group and it currently services the existing Development at the north-east of the proposed site.

5.1.3 Existing Springwood Development (APA Group)

An APA Group owned gas network has been installed within the existing Development on a staged basis within the Common Service Trench. This network currently connects to the Calton Road 280mm high pressure main.

5.2 GAS MASTER PLANNING

APA Group has advised the new development is considered normal urban growth and can be serviced via the existing gas infrastructure. No headworks have been identified as being required, however there will be a 125mm high pressure gas main link required from Calton Road to the proposed Development's western boundary to be undertaken on a staged basis. New gas infrastructure will be installed within the common service trench and progressively extended through each stage of the development.

5.3 SEA GAS

A Safety Management Study (SMS) workshop was carried out in 2017 to assess the relationship between the Springwood Master Plan and the SEA Gas Port Campbell to Adelaide Pipeline. The findings of the SMS were considered throughout the master planning process to support SEA Gas in its compliance with '*AS 2885.2008, Pipelines – Gas and Liquid Petroleum*.'

This section provides a summary of Springwood master plan considerations, as it relates to the SEA Gas SMS.

5.3.1 Road Crossings

Road crossings have been proposed at three locations coinciding with the Port Campbell to Adelaide Pipeline. These crossings would need to be designed in accordance with AS 2885 and SEA Gas requirements and will likely require concrete protection to protect the pipeline from vehicle loading and future excavation. Side protection will also be considered if there is a likelihood of directional boring in future for services maintenance or installation.

A successful crossing of the SEA Gas main at Burford Street was completed as part of the existing Springwood Development. The crossing included the construction of mechanical protection and the installation of services above and beneath the pipeline. Similar design and construction procedure would be followed to deliver future road crossings of the SEA Gas main.

5.3.2 Utility Crossings

Utility crossings for other services required to cross the Port Campbell to Adelaide Pipeline would be designed to comply with the appropriate standards and to achieve the necessary clearances. Designs would be approved by SEA Gas and give consideration to future connection points and potential maintenance requirements to minimise the risk of future excavation in the vicinity of the pipeline, similar to the previously constructed Burford Street crossing.

5.3.3 Easement Land Usages and Setbacks

No development has been proposed over the easement, with the exception of road crossings. It has been advised that open space is a permissible land usage, including landscape and shared paths.

5.3.4 Main Line Valve Buffer

The main line valve (MLV) compound shown on the master plan in Appendix A, requires a buffer zone a minimum of 45m between the associated vent stack and the nearest residence as a noise protection measure, and as a hazardous area exclusion zone to remove ignition sources from the area. The current master plan has designated open space within this zone only.

Within the Main Line Valve compound there is an Emergency Vent for the SEA Gas pipeline. This vent is designed to rapidly evacuate gas in the event of a pipeline emergency. The Safety Management Study notes that residential dwellings should not be located within a buffer zone of approximately 220m from an emergency vent. A 220m buffer zone would currently sit outside of the existing SEA Gas easement and accordingly we understand that it is the intention of SEA Gas to relocate this vent to ensure its ongoing compliance with AS2885. We understand that SEA Gas and its regulator, Department of Energy and Mining, has identified and secured rights over an appropriate site for this relocated vent. Accordingly, no allowance has been made for this buffer zone.

6 COMMUNICATIONS INFRASTRUCTURE

6.1 EXISTING INFRASTRUCTURE

Information on the existing infrastructure has been obtained from a Dial Before You Dig (DBYD) search and through discussion with Opticomm. Multiple communication infrastructure assets are located in direct proximity to the development site.

6.1.1 Calton Road

Opticomm cable exists within Calton Road, installed prior to Stage 1 of the existing Springwood Development. This main is owned and operated by Opticomm and currently services the existing Development at the north-east of the proposed site.

6.1.2 Existing Springwood Development

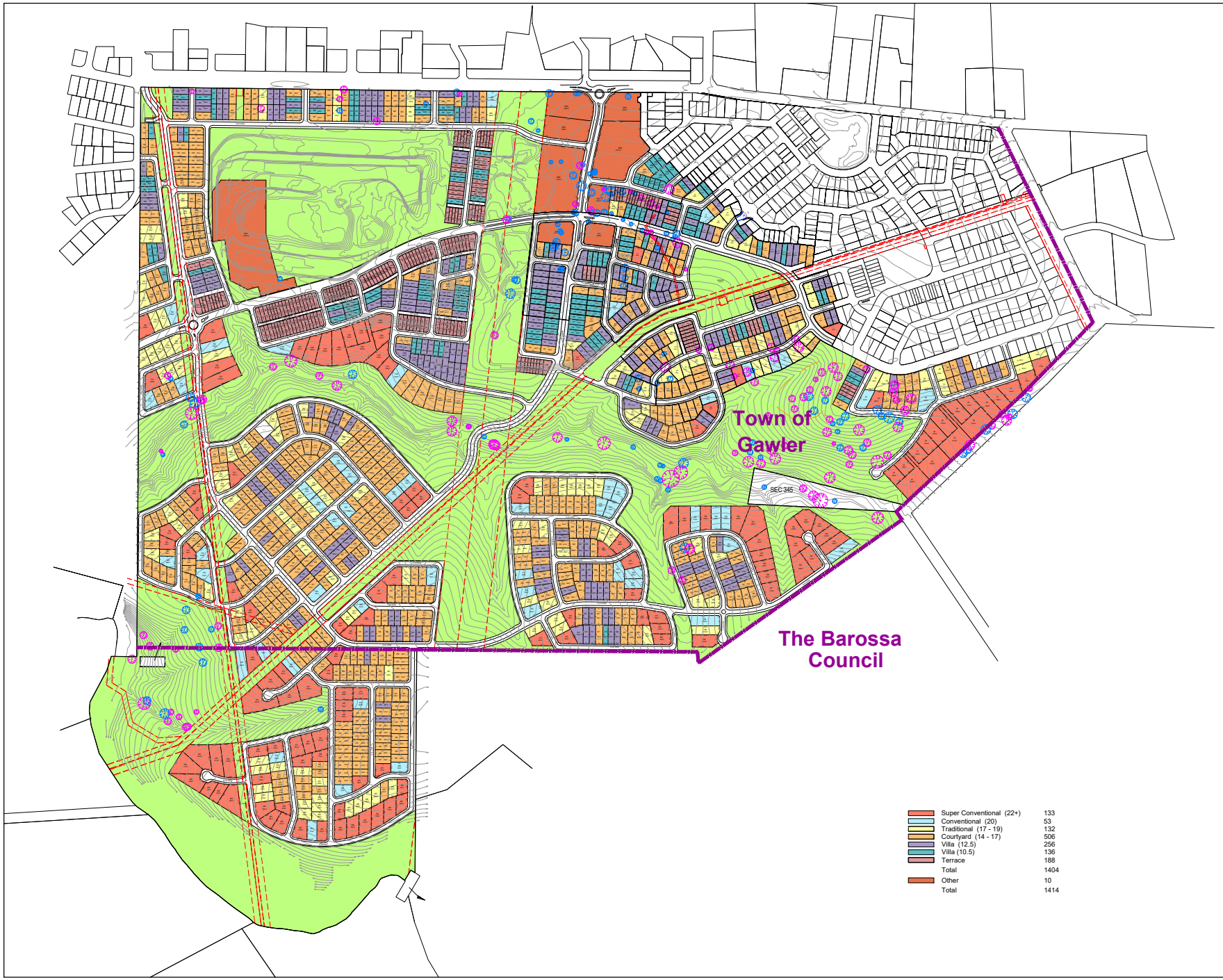
An Opticomm owned in-service pit and pipe network has been installed within the existing Development on a staged basis within the Common Service Trench. This network currently connects to cable installed within the Calton Road verge.

6.2 COMMUNICATIONS MASTER PLANNING

Through liaison with Opticomm, it has been confirmed that the proposed development is within the capacity of their existing network. The head end equipment installed during Stage 1 of the existing Development to the north-east was designed to account for future allotments associated with the newly proposed Springwood Development. Connection to the network would come from the existing Development adjacent the proposed Village 2 and Village 3 as per the Preliminary Staging Plan in Appendix C.

APPENDIX A

SITE MASTER PLAN



Development No. / /
Town of Gawler

Development No. / /
The Barossa Council

Proposed Plan of Division
Allotment 2 in F7765
Allotment 1 in F13468
Allotment 9010 & 9011 in D114845
Allotment 7030 in D119118
Allotment 4 in D28814
Hundred of Barossa
in the area named
GAWLER EAST & KALBEEBA

CT 6186/896 CT 6205/146
CT 6119/249 CT 6162/334
CT 6184/173 PT CT 6212/430

0 25 50 100 150 200 250 m
1:2500

N
W E
S

	Super Conventional (22+)	133
	Conventional (20)	53
	Traditional (17 - 19)	132
	Courtyard (14 - 17)	506
	Villa (12.5)	256
	Villa (10.5)	136
	Terrace	188
	Total	1404
	Other	10
	Total	1414

No. of proposed allotments	1414
Total area	186.1ha
Reserve area	73.57ha
Length of new roads	20.15k

Contour interval 2m.
Datum AHD.

Vide Titles for disposition of easements.

Road pavements shown are indicative only.

Not to be used for detailed engineering design.

Dimensions and areas are subject to survey.

 Original Sheet Size A0

Glenn Ian Hordacre
LICENSED SURVEYOR

REF:	A010816
DWG NO.:	A010816-CO OVERALL
REVISION:	B
DEL	5.06.2019

REV B

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+ Property + Land Development +
+ Construction + Mining +
+ Spatial Information Management +

Alexander Symonds
Surveying Consultants

APPENDIX B

EXISTING INFRASTRUCTURE

WGA
WALLBRIDGE GILBERT AZTEC

Springwood Development
Existing SA Water Sewer Infrastructure

DO NOT SCALE PAPER PRINT

F.B. Pg.

LIMITS OF CONTRACT & SEQUENCE OF WORKS

WORK BY CONSTRUCTOR

1. Construct new pumping stations at 'A' and 'C'. Complete with all structures, pipework, electrical and mechanical plant and equipment, telemetry requirements, vehicle access and site works, in accordance with S.C.M. Section M, in readiness for commissioning. Note:- All telemetry requirements to be surveyed and installed by accredited SA Water Panel member.

   Pump Station @ 'A'
   Pump Sump: = 2100mm. ID.
   2 Pumps installed, one duty and one standby.
   Pump Duty: Max Q = 11.0L/s at H = 10.6m. (Preliminary duty only).
   Typical pump/s:
   Twin ABS Sulzer model XFP 100E.CB1.PE40/4 or similar approved.

   Switch Board Rating: = 2 x 22kW.
   Max Power (P): = 8W. (4kW. per pump) (Preliminary power only).
   Required power supply to the Pump Station site
   415 V @ 50 Hz.

   NOTE:
   1. Q, H and P are subject to final design.
   2. Valve Chamber pipework at Pump Station A to be PE DN125mm.
   3. Determine the electrical requirement and arrange with SA Power Networks for the provision of supply

   Pump Station @ 'C'
   Pump Sump: = 2100mm. ID.
   2 Pumps installed, one duty and one standby.
   Pump Duty: Max Q = 22.0L/s at H = 16.8m. (Preliminary duty only).
   Typical pump/s:
   Twin ABS Sulzer model XFP 100E.CB1.PE90/4 or similar approved.

   Switch Board Rating: = 2 x 22kW.
   Max Power (P): =18kW. (9kW. per pump) (Preliminary power only).
   Required power supply to the Pump Station site
   415 V @ 50 Hz.

   NOTE:
   1. Q, H and P are subject to final design.
   2. Valve Chamber pipework at Pump Station C to be PE DN160mm.
   3. Determine the electrical requirement and arrange with SA Power Networks for the provision of supply.

2. Construct the reticulation sewer 'C'-'B' as shown.
3. Construct new pumping main 'A'-'B' (100mm. PVC-O Class PN 16 pipe).
4. Construct new pumping main 'C'-'D' (150mm. PVC-O Class PN 16 pipe).
   (Link-up to existing M.H. at 'D' with no stub).
   - Excavate up to existing M.H., bore through wall and benching, install new stub with plunger× to isolate new work from existing sewer and lay away with new pumping main.
   - Reform× new channel and benching.
   - Remove plunger× on commissioning of pumping station at 'C' and pumping main 'C'-'D'.
5. New sewer to be tested and passed before proceeding.
6. Following testing, Commission new Pumping Stations at 'C' & 'A' respectively.
7. Following commissioning of Pumping Stations at 'C' & 'A', provide link up at 'E'
   (Existing Control M.H. with stub).
   - Install plunger× in existing stub to isolate it from live sewer.
   - Excavate up to existing Control M.H., expose stub, remove cap, connect, and lay new sewer 'A'-'E'.
   - Remove plunger× after testing and before C.P.C. issue.
8. Abandon existing sewer 'E'-'F' (Connection to existing Private Tankering Sump)
   - Seal branch× of abandoned sewer from within Control M.H. at 'E'.
   - Excavate and remove entire sewer from 'E'-'F'.

×Constructor shall be accredited by SA Water to undertake this work.

WORK BY DEVELOPER AT DEVELOPERS EXPENSE

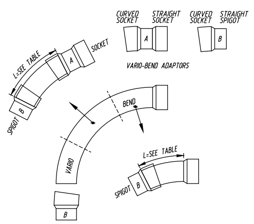
1. Abandon existing Private Tankering Sump at 'F'.
   - All existing sewage within the abandoned Private Tankering Sump is to be captured and removed from the site without any spillage.
   - Remove cover slab and top 750mm of Private Tankering Sump and backfill with cement treated sand.
   - Backfill from top of sump to natural surface level with suitable material in accordance with SCM Section G to match the existing site and conditions.

CONNECTIONS

- Connection to future lot 5002 to be 150Ø
- Connections are to be constructed similar to SCM K3 & K4. Unless Noted Otherwise.
- Connection to future lot 5002 to be laid under the 650mm water main with jump up at boundary similar to SCM K6

'VARIO-BEND' CUTTING TABLE

DEFLECTION		LENGTH (mm) MEASURED ALONG OUTSIDE CURVED FACE OF 'VARIO-BEND'	
DEGREES	%	HORIZ./VERT. BEND R=3000mm	HORIZ. BEND IMMEDIATELY UPSTREAM OF M.S. R=635mm L=12.5mm PER 1°
2	3.49	MIN. 110	N/A
3	5.24	160	N/A
4	6.99	215	N/A
5	8.74	270	N/A
6	10.51	325	N/A
7	12.27	375	N/A
8	14.05	430	MIN. 100
9	15.83	485	110
10	17.63	540	125
11	19.43	590	135
12	21.25	645	150
13	23.08	700	160
14	24.93	755	175
15	26.79	805	185
16	28.67	860	200
17	30.57	915	210
18	32.49	970	225
19	34.43	1020	235
20	36.40	1075	250
21	38.38	1130	260
22	40.40	1185	275
23	42.44	1235	285
24	44.52	1290	300
25	46.63	1345	310
26	48.77	1400	325
27	50.95	1450	335
28	53.17	1505	350
29	55.43	1560	360
30	57.73	1615	375
31	60.08	1670	390
32	62.48	1720	400
33	64.94	1775	415
34	67.45	1830	425
35	70.02	1885	440
36	72.65	1935	450
37	75.35	1990	465
38	78.12	2045	475
39	80.97	2100	490
40	83.90	2150	500
41	86.92	2205	515
42	90.04	2260	525
43	93.25	2315	540
44	96.56	2365	550
45	100.00	MAX. 2420	MAX. 565



NOTES:
(1) POSSIBLE VARIO-BEND ALTERNATIVES USING THE TWO ADAPTORS:-
- SOCKET/SPIGOT BEND
- SOCKET/SOCKET BEND
- SPIGOT/SPIGOT BEND

(2) BEND CONFIGURATION:
PIPES SHALL BE LAID FROM THE DOWNSTREAM END OF THE SYSTEM, WITH THE SOCKET ENDS FACING 'UPGRADE'. WHERE POSSIBLE, BENDS CONFIGURATIONS SHALL BE CONSISTENT WITH THIS APPROACH

(3) BEND RADII:
- HORIZONTAL/VERTICAL BENDS RADIUS=3000mm (TO CENTERLINE).
- HORIZONTAL BEND IMMEDIATELY UPSTREAM OF MS RADIUS=635mm (TO CENTERLINE).

LOCALITY PLAN

0 25 50 100 150 m.
1:2500 @ A1

EXISTING SERVICES

- Prior to commencing any construction works, the constructor shall locate and depth all other existing underground servicesin vicinity of works. any discrepancies of depth or location from that indicated on these drawings shall be reported to engineer.
- It shall be noted that there may be other existing underground services in the vicinity of works other than those shown on these drawings.
- It shall be the constructor's responsibility to determine if other underground services are present and have all services located and depthed prior to commencing works.

AS CONSTRUCTED DETAILS	
Soil	CLAY
Watertable	NOT ENCOUNTERED
Date of Construction	25.05.2015 TO 20.08.2015
Field Check	CJW
Bedding	SAND
Certified by:	Surveyor

TOTAL CONSTRUCTION SURVEYS

FITTING SCHEDULE

LINE No./DIST	DEFL.ANGLE	FITTING TYPE
HORIZONTAL		
1/0.00	-	PUMP SUMP
1/3.38	-	CONTROL M.H.
1/15.89	-	M.H.
1/135.92	-	M.S. 225
1/255.97	-	M.S. 225
1/375.89	-	M.H.
1/496.05	-	M.S. 225
1/615.92	-	M.H.
1/731.37	-	M.S. 225
1/842.40	-	M.H.
1/921.27	-	M.H.
1/967.06	-	M.H.
1/1052.57	-	M.H.
2/10.09	-	TEMP I.O. END
3/10.17	-	TEMP I.O. END
4/0.00	-	PUMP SUMP

NOTES:
1. The larger R=3000mm bend shall be used for all bends except where used in conjunction with a maintenance shaft.

LEGEND
WASTE WATER

Proposed Sewer
Proposed Maintenance Hole
Maintenance Shaft
Maintenance Shaft Terminal
Sewer Proposed in Adj. Schemes
Future Sewer
Existing Sewer, Connection and Maintenance Hole
Pumping Main — PM —
Inspection Opening
Inspection Point
Contract Boundary

NS. EL. at I.P. 24.55
Final EL. at I.P. 23.63
Inv. EL. of I.P. 22.23
Spot level
Design level 19.33
Line No.
Sheet No.
Area not serviced
Area of fill

Maintenance Hole
Maintenance Shaft
Maintenance Hole Jump Up
I.O.
Proposed Sewer
Exist Sewer
Exist Sewer 150Ø at 12.00%
Future Sewer
Future Sewer 150Ø at 12.00%
Natural Surface
Design Surface

Sheet No	Length	Prog. Total	Pipe Description
08	443.37	443.37	DN 150 PVC P.M.
08	120.84	120.84	DN 100 PVC P.M.
07	14.41	14.41	DN 150 PVC
07	446.74	1062.66	DN 225 PVC
06	615.92	615.92	DN 225 PVC

ACTUAL

Easement to be taken on final plan of division

Easement Or Land To Be Acquired	Reference For Acquisition	Special Conditions	Signature & Date

Amendment -

Rev	Date	Drn.	Description.
A	25.06.15	GPB	SEWER MAIN AND PUMPING MAIN ALIGNMENT ALTERED

LEGEND
H.Bend = Horizontal Vario-bend
V.Bend = Vertical Vario-bend
MSE = Maintenance Shaft Elbow
MSJ = Maintenance Shaft Junction
MST = Maintenance Shaft Terminal
MS = Maintenance Shaft
MH = Maintenance Hole
IO = Inspection Opening

FREE ASSET

Standard SA Water Notes:
. All connections to be Ø100mm. UNO
. All easements to be 3m. wide UNO
. Sewer to be located centrally in easement UNO
. Connection Locations refer SCM page K1
. All connections to be laid similar to K3 & K4 UNO
. All lines are available both sides UNO

Government of South Australia
SA Water

CONSTRUCTION DRAWING RECEIVED Date :
CPC Issued Date : | CONTRACT No. : 18/15
FOR FURTHER INFORMATION VIDE
DRAINAGE AREA : Outside Adelaide
COUNCIL : Town of Gawler
D.P. : | L.D. : 490/D038/14
CADASTRE REFERENCE : 6628-13-c&d | G.G.Date :

AUTHORIZATION
Signature : / / Date :
Name :
CHARTERED ENGINEER

WALLBRIDGE GILBERT
Consulting Engineers

JOB NO	DESIGN	DRAWN	CHECKED	DIRECTOR
WAD070975	GPB	GPB	AL	DB

GAWLER EAST
EAST RIDING
SEWER AND PUMPING MAIN IN CALTON ROAD AND SA WATER LAND
LOCATION PLAN

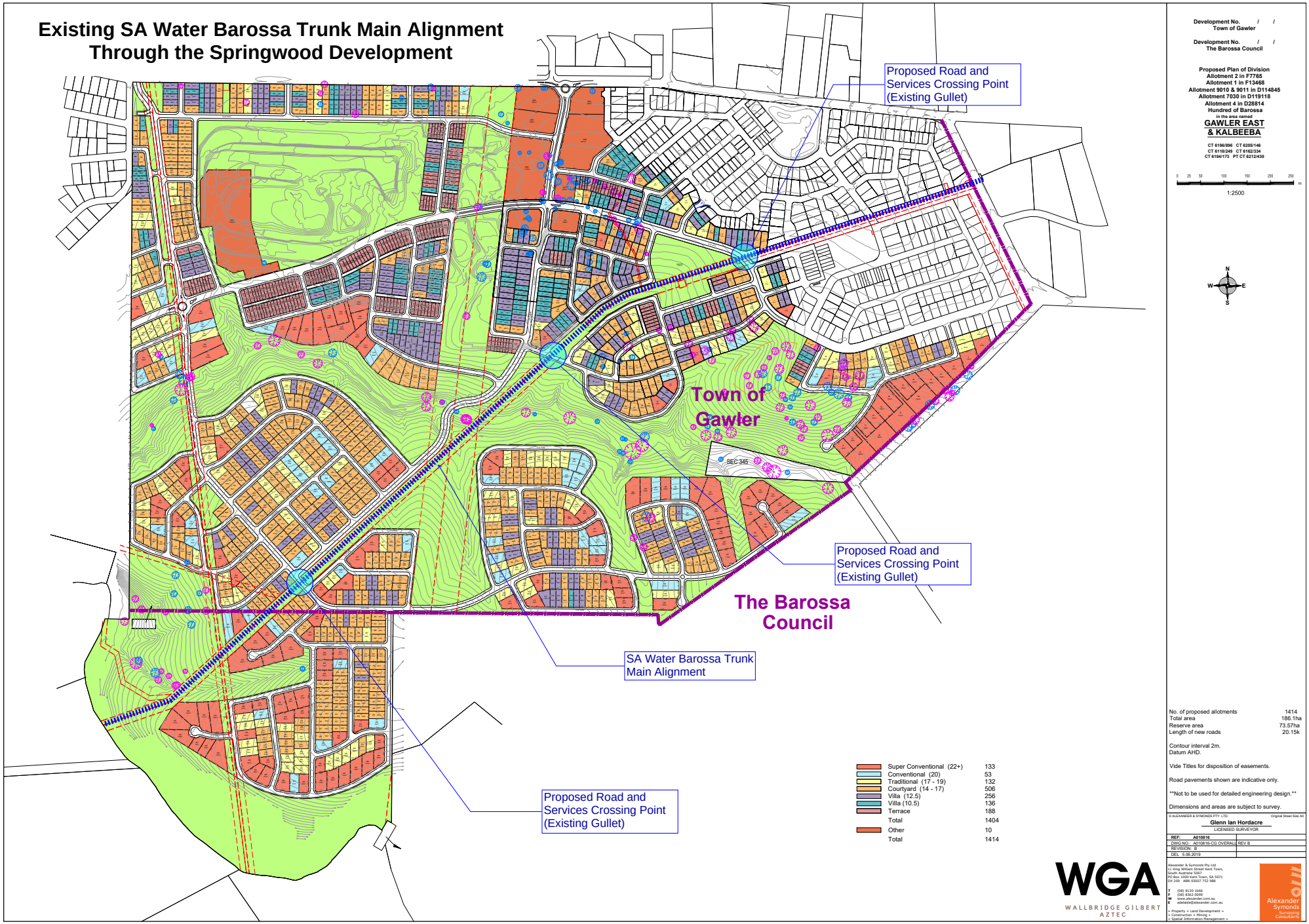
SHEET SIZE A1 | SA WATER DOCKET NUMBER 90002/15 | REVISION A
SHEET 1 OF 10
DRAWING NUMBER 2015 - 3007 - 01 (YEAR NUMBER SHEET)

BAR CODE

WGA
WALLBRIDGE GILBERT AZTEC

Springwood Development
Existing Potable Water Infrastructure

Existing SA Water Barossa Trunk Main Alignment Through the Springwood Development



Development No. / /
Town of Gawler

Development No. / /
The Barossa Council

Proposed Plan of Division
Allotment 2 in F7765
Allotment 1 in F13468
Allotment 9010 & 9011 in D114845
Allotment 7030 in D119118
Allotment 4 in D28814
Hundred of Barossa
in the area named
GAWLER EAST & KALBEEBA

CT 6186/896 CT 6205/146
CT 6119/249 CT 6162/334
CT 6184/173 PT CT 6212/430

0 25 50 100 150 200 250 m
1:2500

N
W E
S

No. of proposed allotments	1414
Total area	186.1ha
Reserve area	73.57ha
Length of new roads	20.15k

Contour interval 2m.
Datum AHD.

Vide Titles for disposition of easements.

Road pavements shown are indicative only.

Not to be used for detailed engineering design.

Dimensions and areas are subject to survey.

Original Sheet Size A0

Glenn Ian Hordacre
LICENSED SURVEYOR

REF:	A010816
DWG NO:	A010816-CO OVERALL
REVISION:	B
DEL	5.06.2019

REV B

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11 King William Street Kent Town, South Australia 5067
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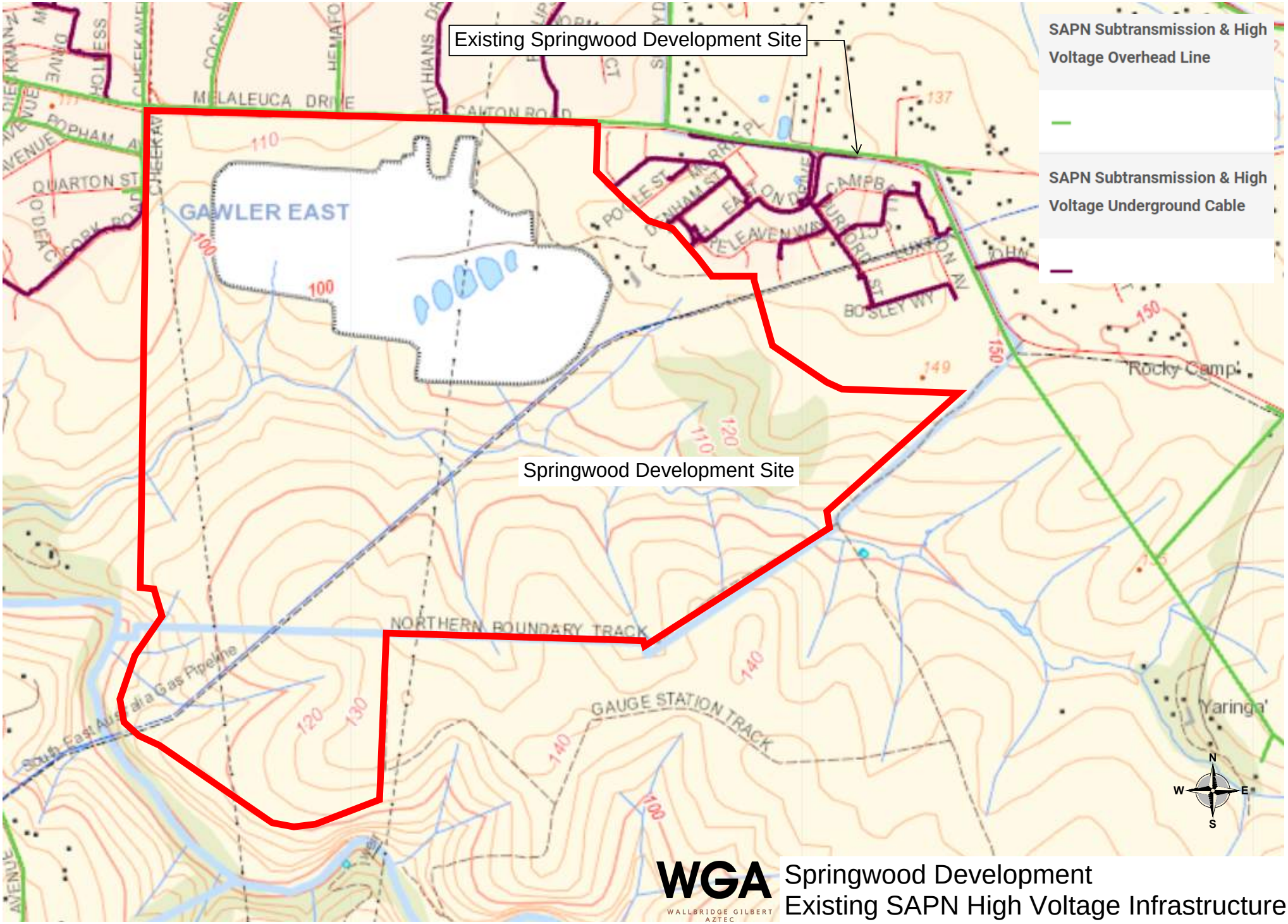
E adelaide@alexander.com.au

+ Property + Land Development +
+ Construction + Mining +
+ Spatial Information Management +

Alexander Symonds Surveying Consultants

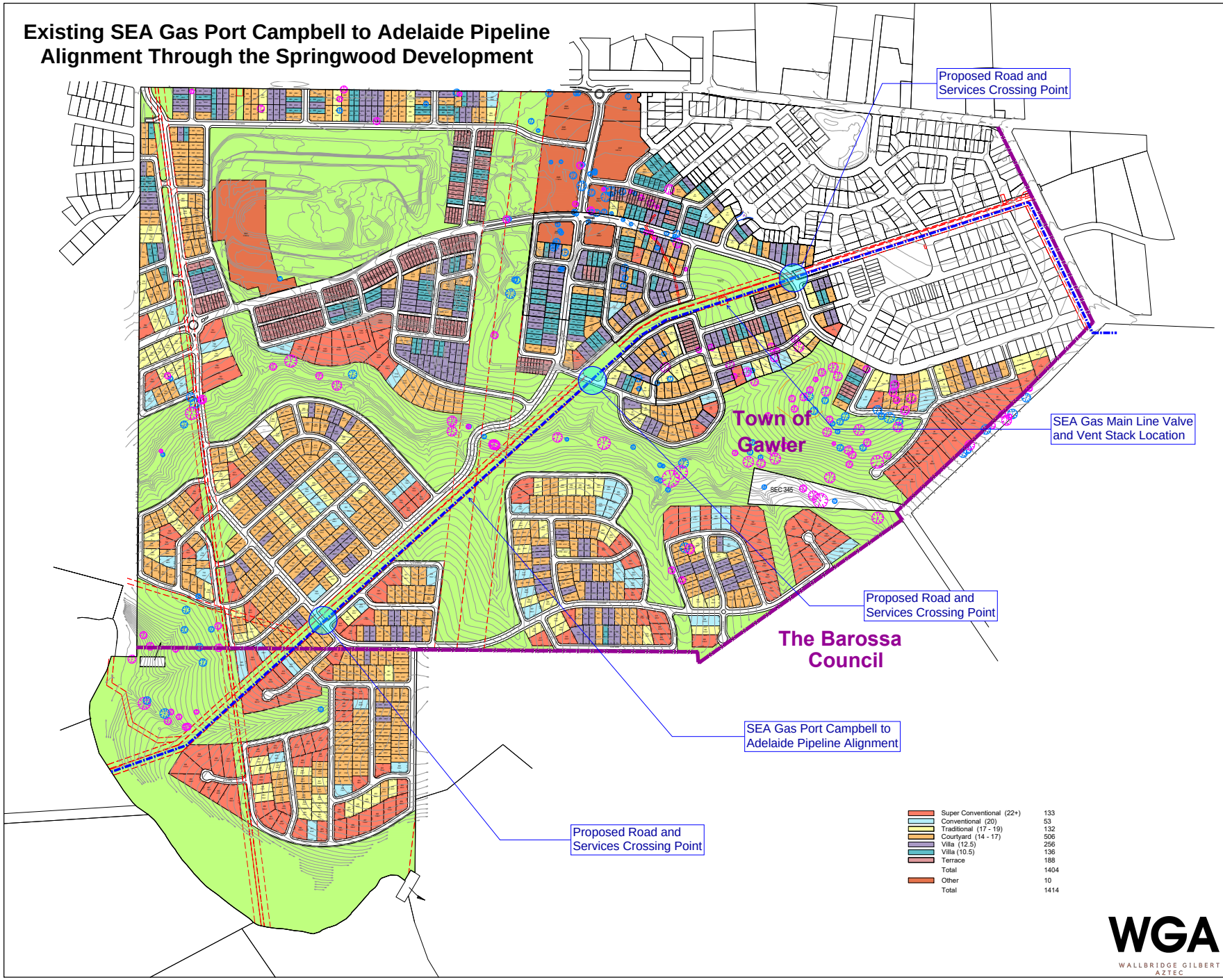
WGA
WALLBRIDGE GILBERT AZTEC



WGA
WALLBRIDGE GILBERT AZTEC

Springwood Development
Existing SAPN High Voltage Infrastructure

Existing SEA Gas Port Campbell to Adelaide Pipeline Alignment Through the Springwood Development



Development No. / /
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CT 6186/896 CT 6205/146
CT 6119/249 CT 6162/334
CT 6184/173 PT CT 6212/430

0 25 50 100 150 200 250 m
1:2500

N
W E
S

	Super Conventional (22+)	133
	Conventional (20)	53
	Traditional (17 - 19)	132
	Courtyard (14 - 17)	506
	Villa (12.5)	256
	Villa (10.5)	136
	Terrace	188
	Total	1404
	Other	10
	Total	1414

No. of proposed allotments	1414
Total area	186.1ha
Reserve area	73.57ha
Length of new roads	20.15k

Contour interval 2m.
Datum AHD.

Vide Titles for disposition of easements.

Road pavements shown are indicative only.

Not to be used for detailed engineering design.

Dimensions and areas are subject to survey.

Original Sheet Size A0

Glenn Ian Hordacre
LICENSED SURVEYOR

REF:	A010816
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+ Property + Land Development +
+ Construction + Mining +
+ Spatial Information Management +

Alexander Symonds Surveying Consultants

WGA
WALLBRIDGE GILBERT AZTEC

PROPERTY

OWNER DETAILS	CT521□198 SA233 M M□AMES	CT521□199 SA233 M M□AMES	CT5□82658 SA23□ M R□TAYLOR	RP7537 SA235 Cit□o□P□a□ord	CT5136656 SA236 Ljubic B □ R□	CT5□81□□8 SA237 □E □ C A□DOUGHTY

R.O.W. SCHEMATIC 20 / 0 / 20

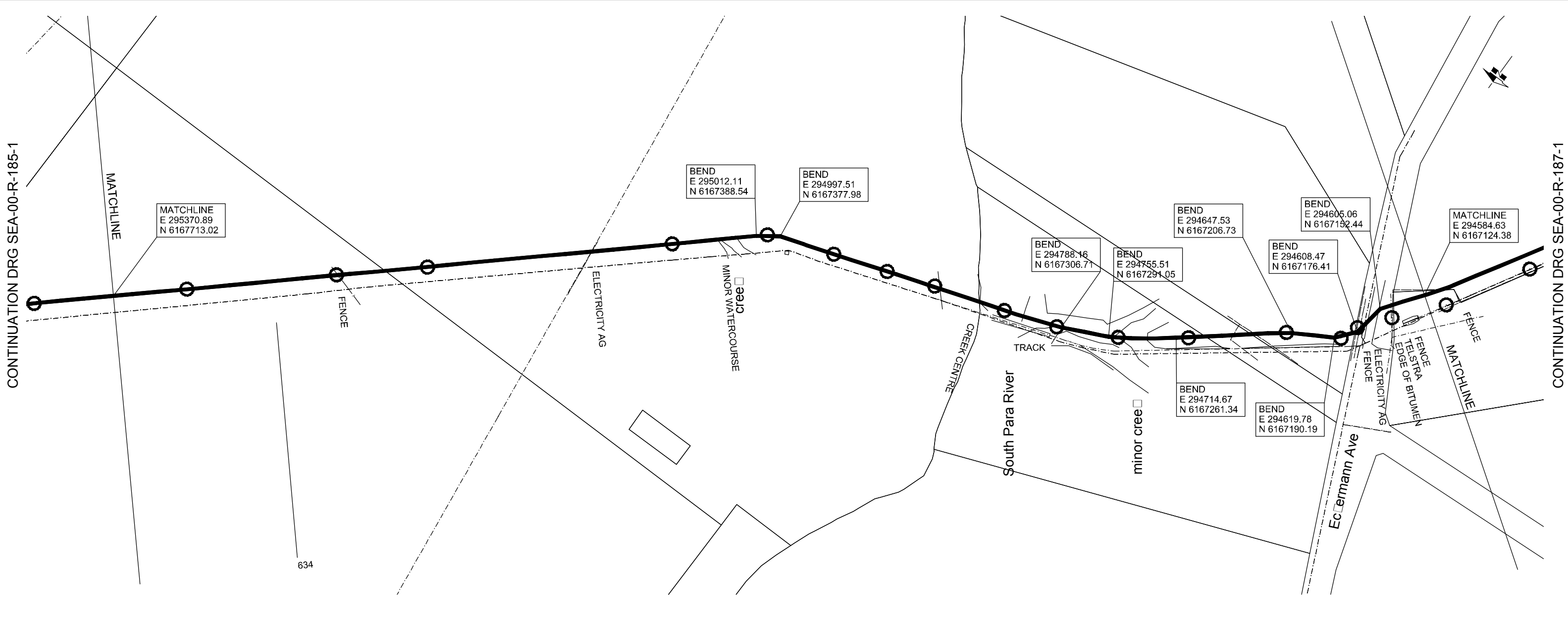
2.6L 2.7L 2.6L 2.7L 2.6L 2.5L 2.3L 3.2L 7.□L 7.6L 8.1L 1□.2L 1□6L 12.□L 13.3L 8.2L 9.5L 0.□L

12.5R 12.□R 12.3R 12.□R 12.5R 12.3R 12.5R 12.□R 12.5R 12.8R 7.8R 7.□R 7.0R 5.6R 7.□R 7.6R 9.0R 8.7R 15.1R

ENVIRONMENTAL

FLORA/FAUNA MGT	Native Vegetation
WEED MGT	
DISEASE MGT	
SOILS MGT	Watercourse (□ermit)
HERITAGE MGT	Heritage Monitors

PLAN DETAIL



SURVEY

FEATURE						
CODE	FN FN	EL a	WC	CC	FN EL a EB	TE FN
POINT NUMBER	□3321 □3321	□3326	80993	□3317	□332□ □3327 □3318	□3329 □3325
MEASURED DIST (MD)	63□0□9 63□0□9	63□2□0	63□337	63□537	63□825 63□827 63□8□0	63□856 63□857

DESIGN

DEFLECTION ANGLE	6d06'56"	17d56'50"	1d07'09"	2d01'23"	5d1□□2"	8d09'33"	2d5□'36"	2d17'20"	2d□3'□"	6d16'11"	20d01'59"	31d1□'□5"	26d57'05"	2d0□'20"
POINT NUMBER	13791	13792	13793	1379□	13795	13796	13797	13798	13799	13800	13801	13802	13803	1380□
MEASURED DIST (MD)	63□36□	63□382	63□502	63□568	63□603	63□6□0	63□657	63□673	63□759	63□777	63□809	63□827	63□851	63□869

ENGINEERING

APPURTENANCE	
WALL THICKNESS	12.1
DEPTH OF COVER MINIMUM (mm)	1200 1300 1200 1500 1□00 1300 1200 1300 1200 1□00 1500 1600 1□00 1500 1200 1□00 1300 1500 1600 1500 1□00 1500 2000 1500 1200 1000 1□00 1500 1□00 1300 1□00 1300 1□00 1700 2200 1300
COATING	1.275 Tri□am / 3mm Tri□am / 1.275 Tri□am
MARKER TAPE	Ni□ / Mar□er ta□e
PIPE LOCATION CLASS	T1

SCALE

MEASURED DIST 633.880 — 63□0 — 63□5 — 63□886

DESIGN KP SCALE 631.625 — 632.0 — 632.5 — 632.625

DESIGN KP □ MEASURED DIST - 2.255

LOCALITY DIAGRAM

SCALE 1□100□000

CROSSING TABLE

POINT NUMBER	CODE	DRAWING NUMBER	WALL THICK	DEPTH COVER	COATING	OFFSETS U/S	OFFSETS D/S	MARKER TAPE	OFFSETS U/S	OFFSETS D/S
□3326	EL a	SEA-99-C-01□	12.1	1300	1.275 Tri			Ni□		
80993	WC		12.1	1□00	1.275 Tri			Ni□		
□3317	CC	SEA-99-C-005	12.1	2000	1.275 Tri			Ni□		
□3327	EL a	SEA-99-C-01□	12.1	1□00	1.275 Tri			Ni□		
□3318	EB	SEA-99-C-01□	12.1	1700	3mm Tri			Ni□		
□3329	TE	SEA-99-C-025	12.1	2200	1.275 Tri			M□r ta□e		

APPURTENANCE TABLE

POINT NUMBER	CODE	DRAWING NUMBER	OFFSET	TYPE CODE	CP NO.	TYPE DESC.

SCALE 0 50 100 150 200

REVISION TABLE

REV	DATE	DESCRIPTION	DRN	CHK	□A
□	19/08/0□	GENERAL PLAN UPDATES	KA□	S□R	MHD
3	20/01/0□	AS BUILT DATA ADDED	KA□	S□R	MHD
2	25/03/03	POST-RISK ASSESSMENT	KA□	S□R	MHD
1	07/03/03	ENGINEERING RE-DESIGN	KA□	S□R	MHD
0	03/12/02	PRE RISK ASSESMENT	KA□	S□R	MHD
A	17/10/02	ISSUED FOR DISCUSSION	S□R	MHD	FYF

LUCAS

Spie Capag Australia Pty

SOUTH EAST AUSTRALIA SEA gas

SCL□V S□ie Ca□ag / Lucas □V

Spie Capag s.a.

FYFE

PIPELINE ALIGNMENT PLAN

SHEET 186 OF 2□2

PORT CAMPBELL to ADELAIDE PIPELINE

DRN	S□R	KP RANGE 631.625 - 632.625
DGN	KBR	MEASURED DIST 633.880 - 63□886
CHK	□□B	SCL□V APPROVAL - SPIE
□A	MHD	DRAWING No. SEA-00-R-186-1 REV □
DATE	19/08/0□	

PROPERTY

OWNER DETAILS	CT5555600 SA229 D G□LAW-SMITH		CT525□989 SA231 H D□AMES □ ORS

R.O.W. SCHEMATIC (20 / 0 / 20)

6.7L 6.□L 6.2L 0.9L 1.1L 1.2L 1.6L 1.8L 2.0L 5.7L 5.8L 5.7L 5.6L 5.5L 5.□L □7L 2.□L

20.3R 20.5R 20.9R 1□1R 13.9R 13.7R 13.□R 13.2R 13.0R 9.0R 9.□R 9.1R 9.3R 9.□R 9.5R 9.6R 12.□R

ENVIRONMENTAL

FLORA/FAUNA MGT

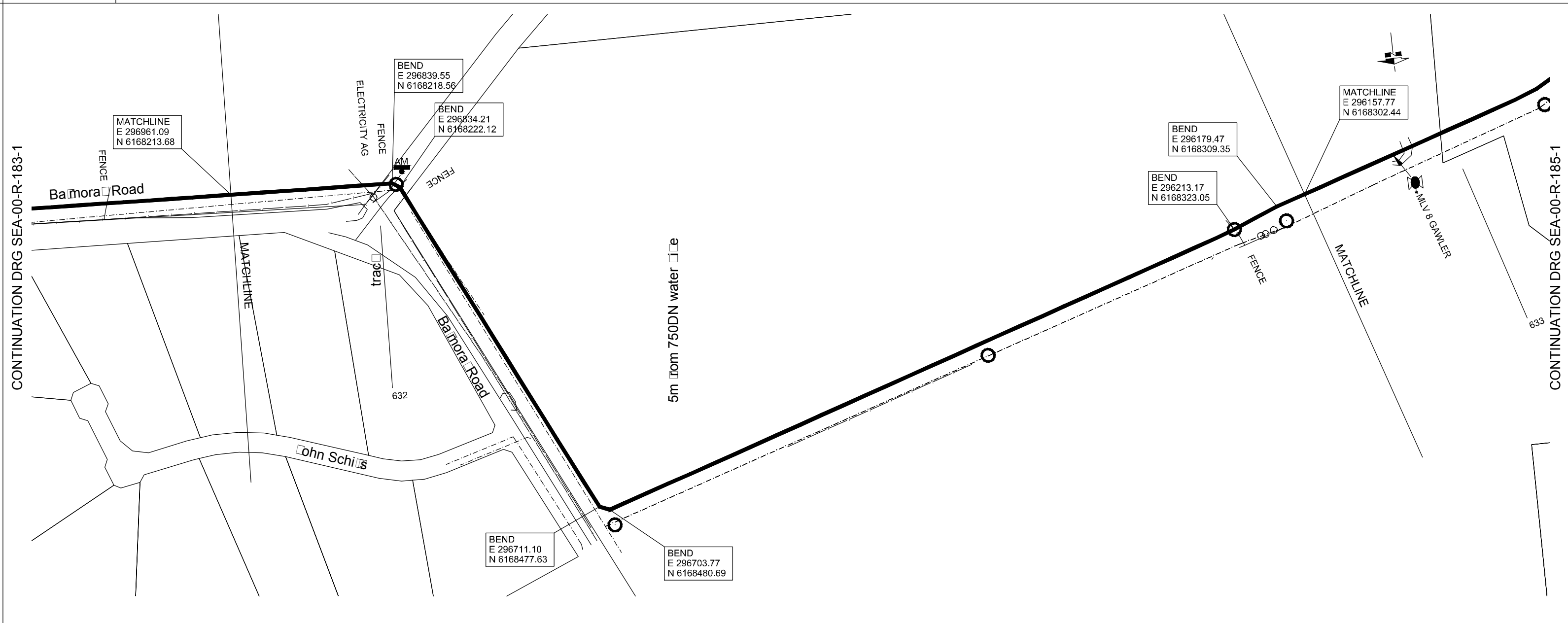
WEED MGT

DISEASE MGT

SOILS MGT

HERITAGE MGT

PLAN DETAIL



SURVEY

FEATURE				
CODE	EL a	FN	FN	FN
POINT NUMBER	□3291	□3289	□3290	□3286
MEASURED DIST (MD)	631.989	632.005	632.026	632.82□

DESIGN

DEFLECTION ANGLE	31d18'28"	30d□2'□7"	□0d29'03"	□0d50'0□"	1d17'5□"	3d□6'07"	1d11'□9"	3d□8'□1"
POINT NUMBER	13779	13780	13781	13782	13783	1378□	13785	13786
MEASURED DIST (MD)	632.011	632.017	632.301	632.309	632.809	632.82□	632.8□3	632.861

ENGINEERING

APPURTENANCE

WALL THICKNESS: 10.1 | 12.1 | 10.1 | 12.1 | 10.1

DEPTH OF COVER MINIMUM (mm): 1200 1300 1200 1300 1500 1300 1□00 1300 1200 1300 1600 1□00 1300 1500 1□00 1500 1□00 1500 1300 1□00 1500 1□00 1500 1□00 1500 1□00 1200 1300

COATING: 1.275 Tri□am | Tri□aminate | 1.275 Tri□am | Tri□aminate | 1.275 Tri□am

MARKER TAPE: Mar□er ta□e | Concrete s□ab | Ni□ | Mar□er ta□e | Ni□

PIPE LOCATION CLASS: R2

SCALE

MEASURED DIST 631.889 632.0 632.5 632.88□

DESIGN KP SCALE 629.625 630.0 630.5 630.625

DESIGN KP □MEASURED DIST - 2.26□

LOCALITY DIAGRAM

SCALE 1□100□000

CROSSING TABLE

POINT NUMBER	CODE	DRAWING NUMBER	WALL THICK	DEPTH COVER	COATING	OFFSETS U/S	OFFSETS D/S	MARKER TAPE	OFFSETS U/S	OFFSETS D/S
□3291	EL a	SEA-99-C-01□	10.1	1200	1.275 Tri			ConcS□ab		

APPURTENANCE TABLE

POINT NUMBER	CODE	DRAWING NUMBER	OFFSET	TYPE CODE	CP NO.	TYPE DESC.

SCALE 0 50 100 150 200

REVISION TABLE

REV	DATE	DESCRIPTION	DRN	CHK	□A
□	19/08/0□	GENERAL PLAN UPDATES	KA□	S□R	MHD
3	20/01/0□	AS BUILT DATA ADDED	KA□	S□R	MHD
2	25/03/03	POST-RISK ASSESSMENT	KA□	S□R	MHD
1	07/03/03	ENGINEERING RE-DESIGN	KA□	S□R	MHD
0	03/12/02	PRE RISK ASSESMENT	KA□	S□R	MHD
A	17/10/02	ISSUED FOR DISCUSSION	S□R	MHD	FYF

[redacted]
Spie Capag Australia Pty
LUCAS
SOUTH EAST AUSTRALIA SEA gas
SCL□V S□ie Ca□ag / Lucas □V
[redacted]
Spie Capag s.a.
FYFE

PIPELINE ALIGNMENT PLAN
SHEET 18□ OF 2□2
PORT CAMPBELL to ADELAIDE PIPELINE

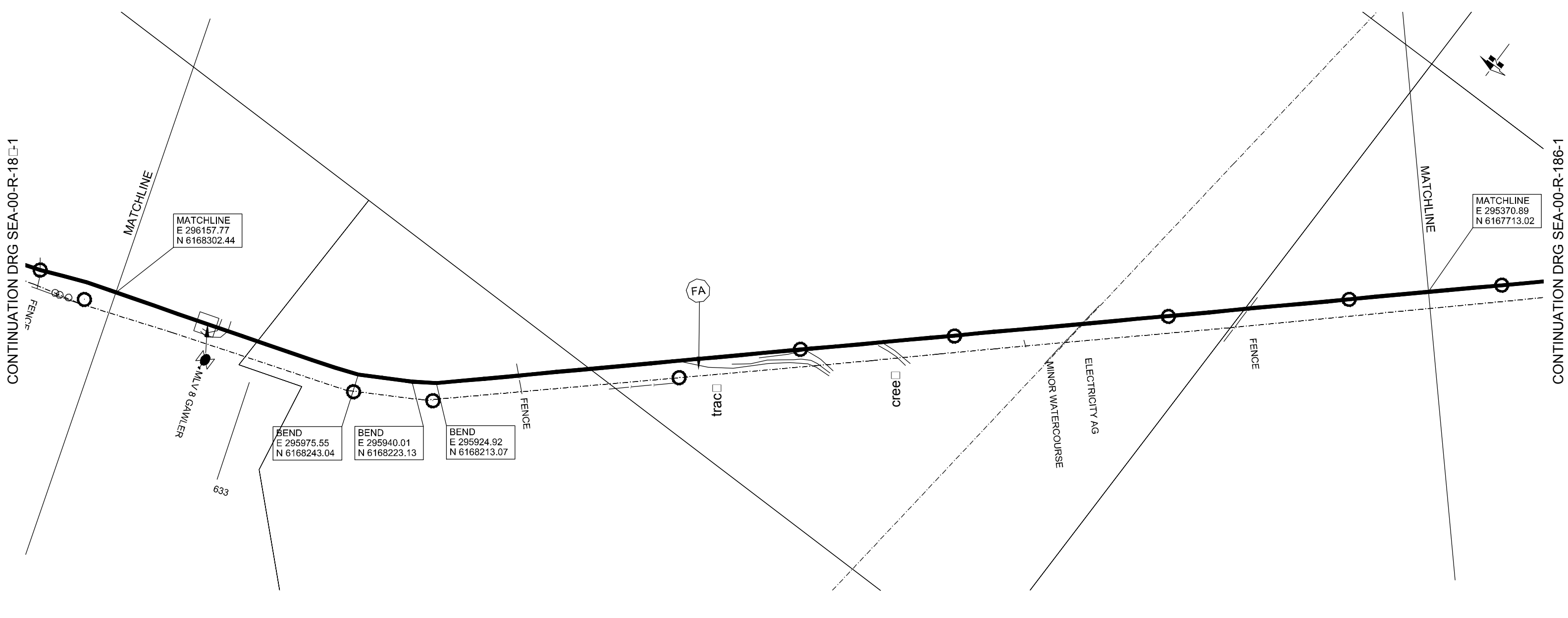
DRN	S□R	KP RANGE 629.625 - 630.625	
DGN	KBR	MEASURED DIST 631.889 - 632.88□	
CHK	□□B	SCL□V APPROVAL - SPIE	
□A	MHD	DRAWING No.	REV
DATE	19/08/0□	SEA-00-R-18□-1	□

PROPERTY					
OWNER DETAILS	CT525□989 SA231 H D□AMES □ ORS	CT586653□ SA232 CSR READYMIX PTY LTD	CT525□893 SA231 H D□AMES □ ORS	CT521□198 SA233 M M□AMES	

R.O.W. SCHEMATIC (20 / 0 / 20): 2.□L 12.□R | 2.5L 12.5R | 1.7L 12.6R | 2.1L 12.7R | 2.□L 12.6R | 2.3L 12.7R | 2.□L 12.6R | 2.5L 12.□R | 2.6L 12.5R | 12.3R | 12.□R | 2.7L 12.2R | 12.□R | 12.3R | 2.6L 12.5R

ENVIRONMENTAL	
FLORA/FAUNA MGT	Native Vegetation
WEED MGT	
DISEASE MGT	
SOILS MGT	Watercourse (□ermit)
HERITAGE MGT	

PLAN DETAIL



SURVEY					
FEATURE					
CODE	FN	WC	EL a	FN
POINT NUMBER	□3306	80992	□3308	□3307
MEASURED DIST (MD)	633.196	633.590	633.619	633.7□5

DESIGN				
DEFLECTION ANGLE	2d2□29"	8d58□7"	□d53'1□"	8d16□1"
POINT NUMBER	13787	13788	13789	13790
MEASURED DIST (MD)	633.057	633.075	633.116	633.13□

ENGINEERING

APPURTENANCE	MLV 8; FA
WALL THICKNESS	10.1 / 12.1 / 10.1 / 12.1 / 10.1 / 12.1 / 10.1 / 12.1
DEPTH OF COVER MINIMUM (mm)	1300 1□00 1200 1□00 1300 1□00 1500 1600 1500 1600 1□00 1600 1□00 1600 1500 1600 1200 1300 1500 1600 1200 1□00 1300 1200 1300 1200 1300 1200
COATING	1.275 Tri□am / Tri□aminate / 1.275 Tri□am
MARKER TAPE	Ni□
PIPE LOCATION CLASS	R2 / T1

SCALE
MEASURED DIST 632.88□ 633.0 633.5 633.880
DESIGN KP SCALE 630.625 631.0 631.5 631.625
DESIGN KP □ MEASURED DIST - 2.259

LOCALITY DIAGRAM
SCALE 1□100 000

CROSSING TABLE

POINT NUMBER	CODE	DRAWING NUMBER	WALL THICK	DEPTH COVER	COATING	OFFSETS U/S	OFFSETS D/S	MARKER TAPE	OFFSETS U/S	OFFSETS D/S
80992	WC		10.1	1□00	1.275 Tri			Ni□		
□3308	EL a	SEA-99-C-01□	10.1	1300	1.275 Tri			Ni□		

APPURTENANCE TABLE

POINT NUMBER	CODE	DRAWING NUMBER	OFFSET	TYPE CODE	CP NO.	TYPE DESC.
82278		SEA-99-E-018		FA		Potentia□measurement test □oint

SCALE 0 50 100 150 200

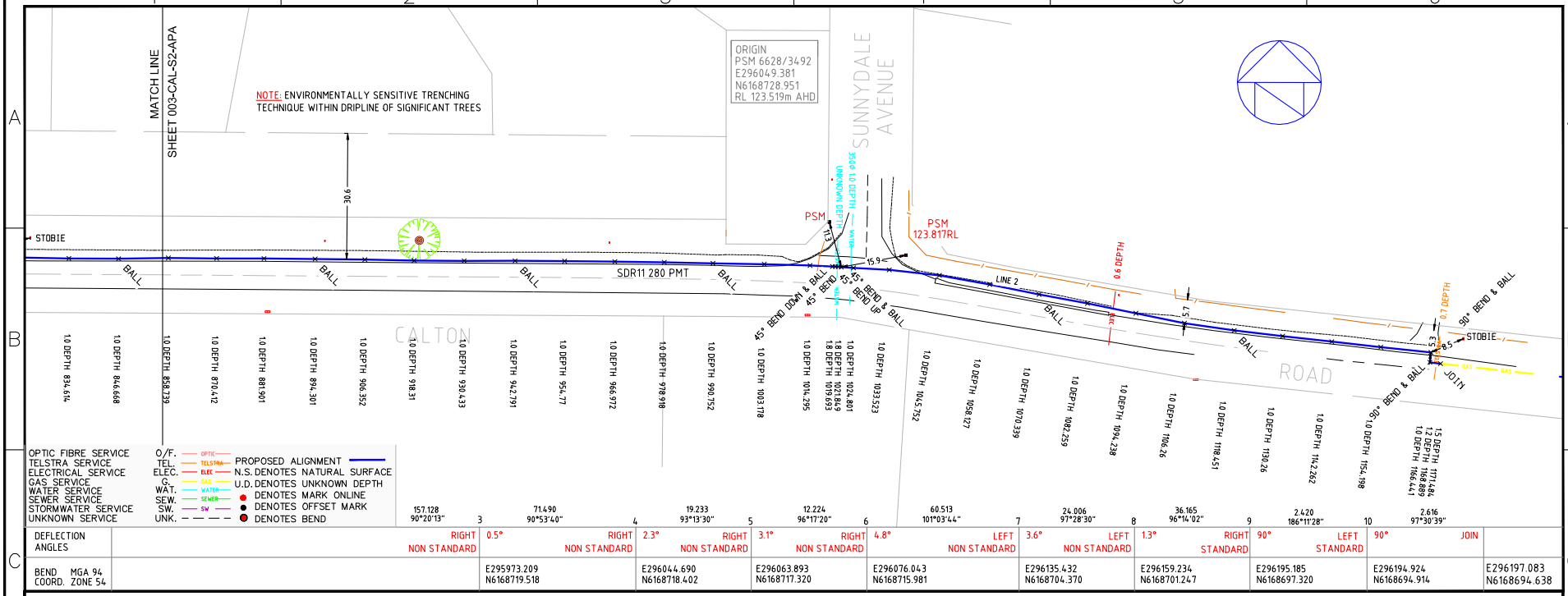
REVISION TABLE

REV	DATE	DESCRIPTION	DRN	CHK	□A
□	19/08/0□	GENERAL PLAN UPDATES	KA□	S□R	MHD
3	20/01/0□	AS BUILT DATA ADDED	KA□	S□R	MHD
2	25/03/03	POST-RISK ASSESSMENT	KA□	S□R	MHD
1	07/03/03	ENGINEERING RE-DESIGN	KA□	S□R	MHD
0	03/12/02	PRE RISK ASSESMENT	KA□	S□R	MHD
A	17/10/02	ISSUED FOR DISCUSSION	S□R	MHD	FYF

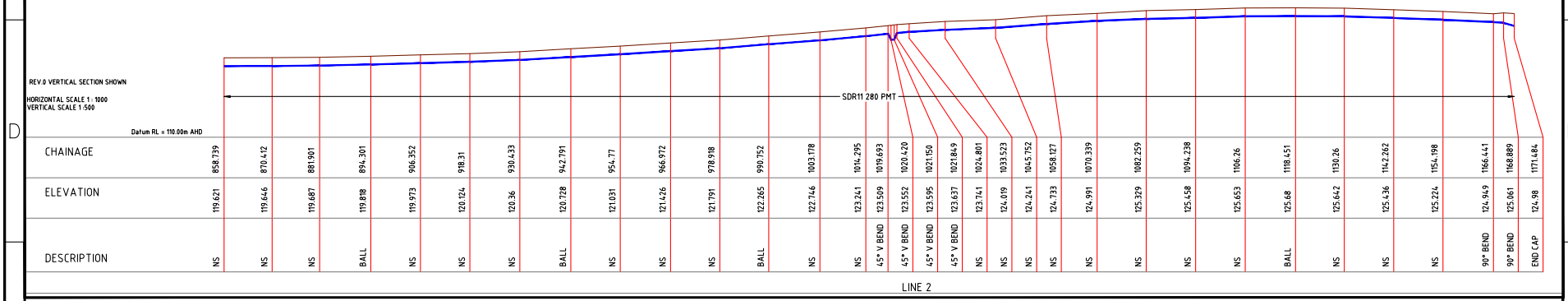
[redacted] Spie Capag Australia Pty LUCAS
SOUTH EAST AUSTRALIA SEA gas
SCL□V S□ie Ca□ag / Lucas □V
[redacted]
Spie Capag s.a.
FYFE

PIPELINE ALIGNMENT PLAN
SHEET 185 OF 2□2
PORT CAMPBELL to ADELAIDE PIPELINE

DRN	S□R	KP RANGE 630.625 - 631.625	
DGN	KBR	MEASURED DIST 632.88□ - 633.880	
CHK	□□B	SCL□V APPROVAL - SPIE	
□A	MHD	DRAWING No.	REV
DATE	19/08/0□	SEA-00-R-185-1	□



DEFLECTION ANGLES		RIGHT NON STANDARD	0.5° RIGHT NON STANDARD	2.3° RIGHT NON STANDARD	3.1° RIGHT NON STANDARD	4.8° LEFT NON STANDARD	3.6° LEFT NON STANDARD	1.3° RIGHT STANDARD	90° LEFT STANDARD	90° JOIN	
BEND MGA 94 COORD. ZONE 54			E295973.209 N6168719.518	E296044.690 N6168718.402	E296063.893 N6168717.320	E296076.043 N6168715.981	E296135.432 N6168704.370	E296159.234 N6168701.247	E296195.185 N6168697.320	E296194.924 N6168694.914	E296197.083 N6168694.638



CHAINAGE	ELEVATION	DESCRIPTION
858.739	119.621	NS
870.412	119.646	NS
881.901	119.687	NS
894.301	119.818	BALL
906.352	119.973	NS
918.31	120.124	NS
930.433	120.36	NS
942.791	120.728	BALL
954.77	121.031	NS
966.972	121.426	NS
978.918	121.791	NS
990.752	122.265	BALL
1003.178	122.746	NS
1014.295	123.241	NS
1019.693	123.509	45° V BEND
1020.420	123.552	45° V BEND
1021.150	123.595	45° V BEND
1021.849	123.637	45° V BEND
1024.801	123.741	NS
1033.523	124.019	NS
1045.752	124.241	NS
1058.127	124.733	NS
1070.339	124.991	NS
1082.259	125.329	NS
1094.238	125.458	NS
1106.26	125.653	NS
1118.451	125.68	BALL
1130.26	125.642	NS
1142.262	125.436	NS
1154.198	125.224	NS
1166.441	124.949	90° BEND
1168.889	125.061	90° BEND
1171.484	124.98	END CAP

REV.	DESCRIPTION	DATE	SURVEY	DRAWN	CHECKED	APPROVED
0	PROPOSED ALIGNMENT	28.06.2012				
1	0.4m SHIFT IN ALIGNMENT AND SURVEY MARKS ADDED	09.08.2012	MB	SJC		D. ENGLAND
2	CHANGE IN ALIGNMENT (BEND 9–12) TO AVOID RECENT TRENCH	14.01.2013	SJC	SJC		
3	AS CONSTRUCTED	23.05.2013	PMP	PMP		

NOTES: ALL SERVICES SHOWN ARE INDICATIVE ONLY. ALL SERVICES SHOULD BE EXCAVATED TO CONFIRM DEPTH AND LOCATION PRIOR TO CONSTRUCTION.

SURVEY BY: ENGINEERING SURVEYS PTY LTD
Tel +61 8 8340 4469
www.engsurveys.com.au
DATE: MAY 2013

APA Group
APT O&M Services Pty Ltd
A.B.N. 11 112 358 586
Envestra
Investing in energy infrastructure
A.B.N. 19 078 551 685

TITLE: AS CONSTRUCTED SURVEY
CALTON ROAD GAWLER EAST
NMEST 280 PMT

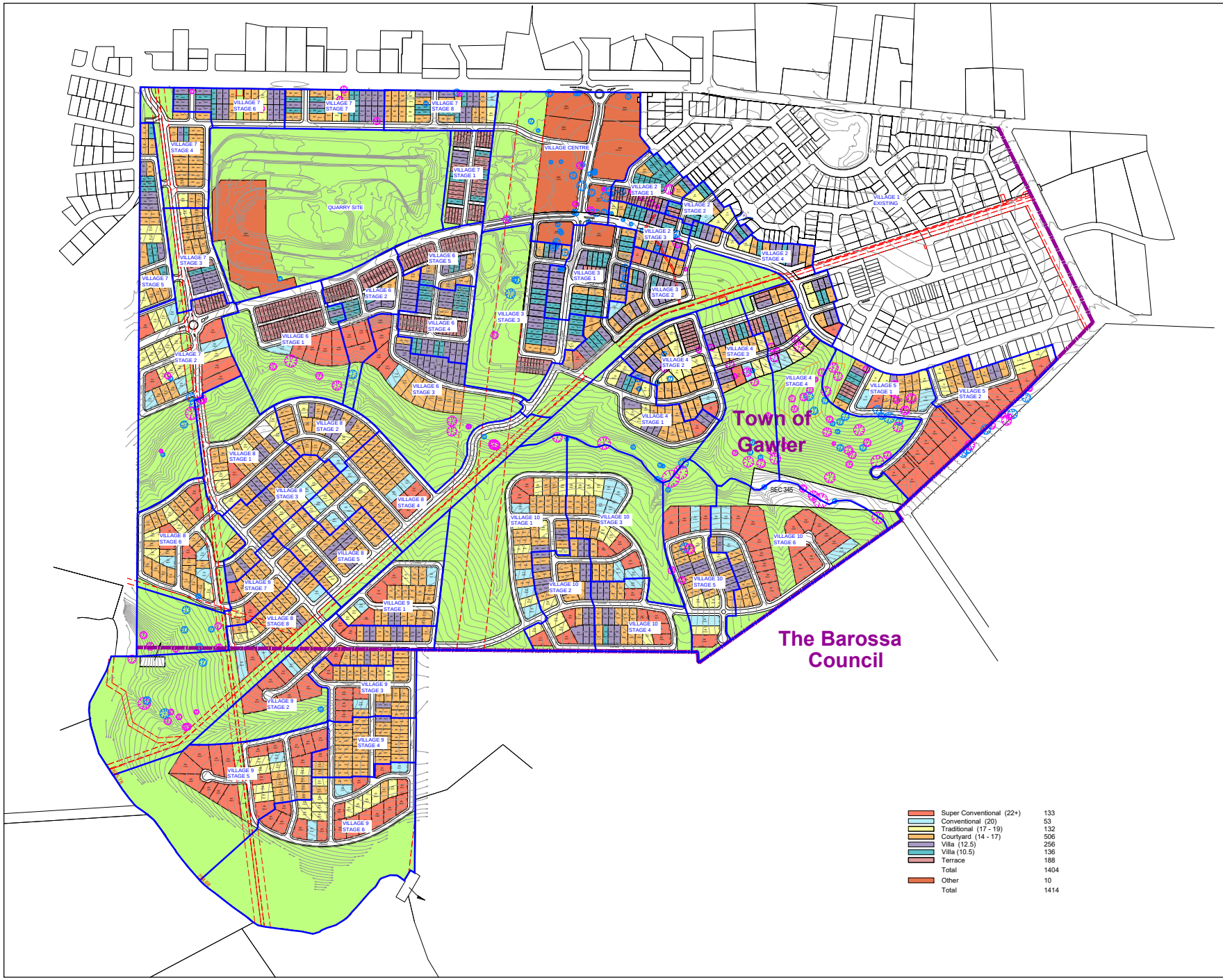
SHEET 004 OF 004

METREAGE 858.3 TO METREAGE 1171.4

MAP: 24–C	SCALE: A3 1:1000	DATE: 28/06/2012	DESIGNED:	DRAWN:	CHECKED:	APPROVED:	W/O No. 578907	DRG. No. 004–CAL–S2–APA	A3

APPENDIX C

STAGING PLAN



Development No. / /
Town of Gawler

Development No. / /
The Barossa Council

Proposed Plan of Division
Allotment 2 in F7765
Allotment 1 in F13468
Allotment 9010 & 9011 in D114845
Allotment 7030 in D119118
Allotment 4 in D28814
Hundred of Barossa
in the area named
GAWLER EAST & KALBEEBA

CT 6186/896 CT 6205/146
CT 6119/249 CT 6162/334
CT 6184/173 PT CT 6212/430

0 25 50 100 150 200 250 m
1:2500

N
W E
S

No. of proposed allotments	1414
Total area	186.1ha
Reserve area	73.57ha
Length of new roads	20.15k

Contour interval 2m.
Datum AHD.

Vide Titles for disposition of easements.

Road pavements shown are indicative only.

Not to be used for detailed engineering design.

Dimensions and areas are subject to survey.

Original Sheet Size A0

Glenn Ian Hordacre
LICENSED SURVEYOR

REF:	A010816
DWG NO.:	A010816-CO OVERALL
REVISION:	B
DEL	5.06.2019

REV B

Alexander & Symonds Pty Ltd
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South Australia 5067
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W www.alexander.com.au
E adelaide@alexander.com.au

+ Property + Land Development +
+ Construction + Mining +
+ Spatial Information Management +

Alexander Symonds Surveying Consultants

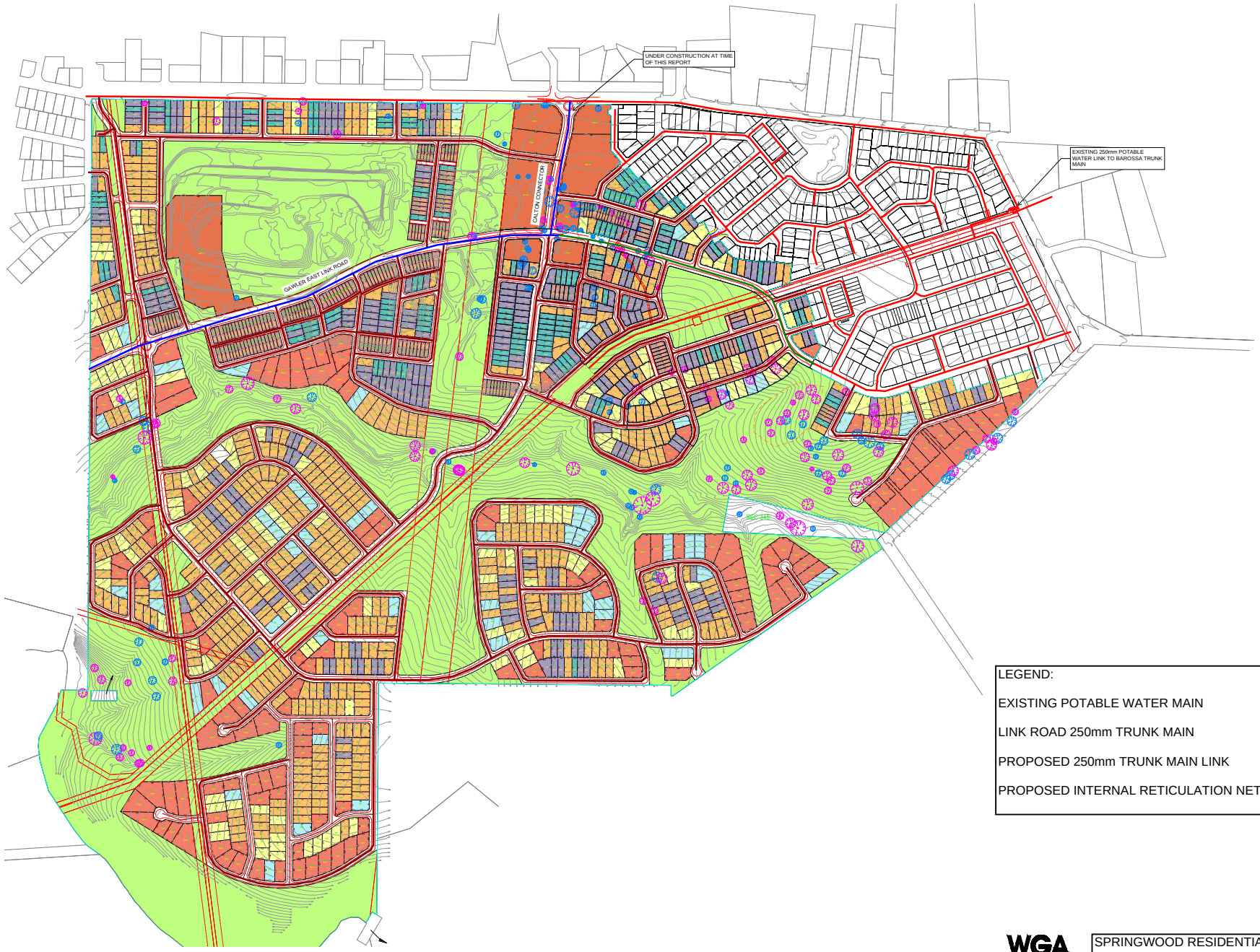
APPENDIX D

SERVICES MASTER PLANS

WGA
WALLBRIDGE GILBERT ASTHO
60 Wyatt Street, Adelaide
South Australia 5000
Telephone 08 8223 7433
Email adelaide@wga.com.au

SPRINGWOOD RESIDENTIAL DEVELOPMENT
PLANNING APPLICATION

CONCEPT SEWER MASTERPLAN



WGA
WALLBRIDGE GILBERT ASTEHO
60 Wyatt Street, Adelaide
South Australia 5000
Telephone 08 8223 7433
Email adelaide@wga.com.au

SPRINGWOOD RESIDENTIAL DEVELOPMENT
PLANNING APPLICATION

CONCEPT POTABLE WATER MASTERPLAN

Scott McClean
SENIOR CIVIL ENGINEER

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