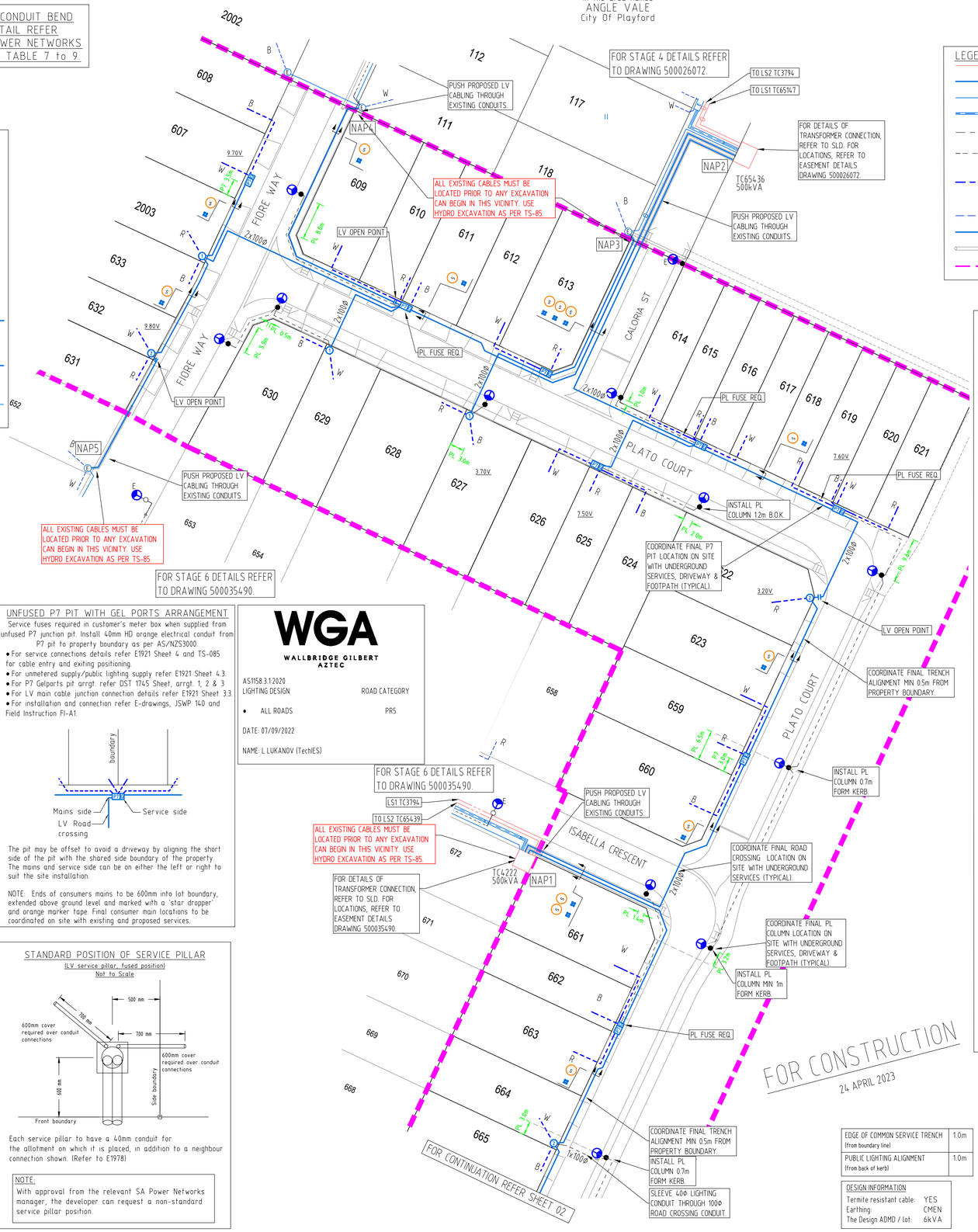
THIS DRAWING TO BE READ IN CONJUNCTION WITH THE FOLLOWING SA POWER NETWORKS TECHNICAL STANDARDS

TS-085	Trenching and Conduit Standard for Underground Distribution Cable Networks
TS-099	Distribution and Sub-Transmission CAD Drafting Standards
TS-100	Electrical Design Standard for Underground Distribution Cable Networks
TS-101	Public Lighting - Design and Installation
TS-102	Easement Standard for Distribution Networks
TS-105	Testing for Underground & Overhead Distribution Powerlines up to and including 33kV Networks
TS-107	Overhead Line Design Standard for Transmission & Distribution Systems
TS-108	Technical Standard for Distribution Equipment and Transformer Rooms
TS-109	Earthing of the Distribution Network
NICC-400	Information for an Applicant Undertaking a Contestable Extension
NICC-404	Working in the Vicinity of SA Power Networks Infrastructure - Network Access Permit Process

Visit SA Power Networks web site for the current version of the Technical Standards

FOR CONDUIT BEND DETAIL REFER SA POWER NETWORKS TS-085 TABLE 7 to 9.

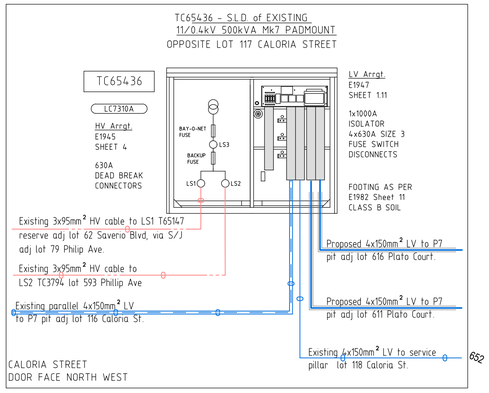
Hundred of Munno Para
in the area named
ANGLE VALE
City Of Playford



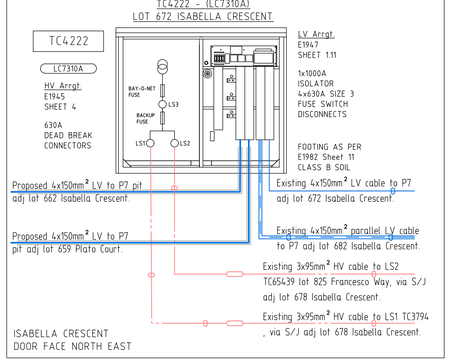
LEGEND

EXISTING 95mm² 11kV CABLE	PROPOSED TRAFFICABLE P7 UNFUSED LV JUNCTION PIT WITH GELPORTS. P7 PIT TO BE REINFORCED WITH 200mm CONCRETE SURROUND, N12 BAR TOP AND BOTTOM 480mm DEEP AS PER E1921 SHT 7.3
PROPOSED 150mm² LV UBC XLPE CABLE (CKS310)	EXISTING P7 UNFUSED LV JUNCTION.
EXISTING 150mm² LV CABLE	PROPOSED FUSED RADIAL PILLAR.
EXISTING PARALLEL 150mm² LV UBC XLPE CABLE	PROPOSED FUSED LOOP PILLAR.
PROPOSED PUBLIC LIGHTING CABLE 6mm² TWIN & 6mm² EARTH IN 40mm CONDUIT	PROPOSED FUSED-T/OFF PILLAR.
EXISTING PUBLIC LIGHTING CABLE	EXISTING SERVICE PILLAR.
PROPOSED 40mm HD ORANGE ELECTRICAL CONDUIT & DRAW ROPE FOR CONSUMERS MAIN TO AS/NZS 3000. DEPTH 800mm. REFER TYPICAL CST CROSS SECTION & STANDARD SA POWER NETWORKS SERVICE PIT LOCATION ARRANGEMENT.	EXISTING PADMOUNT TRANSFORMER.
EXISTING CONSUMERS MAIN	17W STREETLED AEROSCREEN LED, 4000K, BLACK FINISH (EM4022) MOUNTED ON BLACK 6.5m MODERN COLUMN WITH 1.5m DECORATIVE MODERN OUTREACH (WA4017).
PROPOSED LV UNDERGROUND OPEN POINT	
EXISTING SPARE CONDUITS	EXISTING LED LUMINAIRE
BOUNDARY OF DESIGN AREA	

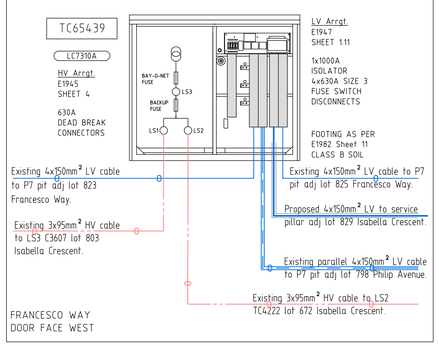
TC65436 - SLD of EXISTING 11/0.4kV 500kVA Mk7 PADMOUNT
OPPOSITE LOT 117 CALORIA STREET



S.L.D. OF EXISTING 11/0.4kV 500kVA LOOP Mk7 PADMOUNT TRANSFORMER TC4222 - (LC7310A) LOT 672 ISABELLA CRESCENT



TC65439 - SLD of EXISTING 11/0.4kV 500kVA Mk7 PADMOUNT
LOT 825 FRANCESCO WAY



UNFUSED P7 PIT WITH GEL PORTS ARRANGEMENT

Service fuses required in customer's meter box when supplied from unfused P7 junction pit. Install 40mm HD orange electrical conduit from P7 pit to property boundary as per AS/NZS3000.

- For service connections details refer E1921 Sheet 4 and TS-085 for cable entry and exiting positioning.
- For unmetered supply/public lighting supply refer E1921 Sheet 4.3.
- For P7 Gelports pit arrgt. refer DST 1745 Sheet, arrgt. 1, 2 & 3.
- For LV main cable junction connection details refer E1921 Sheet 3.3.
- For installation and connection refer E-drawings, JSWP 140 and Field Instruction FI-A1.

The pit may be offset to avoid a driveway by aligning the short side of the pit with the shared side boundary of the property. The mains and service side can be on either the left or right to suit the site installation.

NOTE: Ends of consumers mains to be 600mm into lot boundary, extended above ground level and marked with a 'star dropper' and orange marker tape. Final consumer main locations to be coordinated on site with existing and proposed services.

STANDARD POSITION OF SERVICE PILLAR

(LV service pillar, fused position)
Not to Scale

Each service pillar to have a 40mm conduit for the allotment on which it is placed, in addition to a neighbour connection shown. (Refer to E1978)

NOTE:
With approval from the relevant SA Power Networks manager, the developer can request a non-standard service pillar position.

WGA
WALLBRIDGE GILBERT AZTEC

AS1158.3.1:2020 LIGHTING DESIGN — ROAD CATEGORY
- ALL ROADS — PR5

DATE: 07/09/2022

NAME: L LUKANOV (TechIES)

SCOPE OF WORKS

CONTESTABLE WORKS
Electrical Contractor to:

- Undertake all new work within development.
- Provide completed TS-105 C1 & C2 forms.
- Provide 'As Constructed' drawings within 7 days of submitting certificate of compliance to SA Power Networks Network Management group at no charge.
- Provide documented results proving condition of the existing assets to NPO prior commencing works on any existing infrastructure.
  - megger and phase ID all cables
  - megger all screens and carry out core to screen/earth test for all HV cables
  - contact NPO for direction if any faults discovered.
- Obtain networks access permits for work near live network assets and excavate jointing bays to facilitate works.

NAP1
- Locate all existing underground cables prior to excavation.
- Push 2 sets of 4x150mm² LV cable through existing conduit into existing transformer TC4222 lot 672 Isabella Crescent., cap for termination by SA Power Networks.

NAP2
- Locate all existing underground cables prior to excavation.
- Push 2 sets of 4x150mm² LV cable through existing conduit into existing transformer TC65436 reserve opp lot 117 Caloria St, cap for termination by SA Power Networks.

NAP3
- Locate all existing underground cables prior to excavation
- Push 4x150mm² LV cable through existing conduit into existing service pillar lot 118 Caloria St, cap for termination by SA Power Networks.

NAP4
- Locate all existing underground cables prior to excavation.
- Push 4x150mm² LV cable through existing conduit into existing service pillar lot 111 Fiore Way, cap for termination by SA Power Networks.

NAP5
- Locate all existing underground cables prior to excavation.
- Push 4x150mm² LV cable through existing conduit into existing service pillar lot 652 Fiore Way, cap for termination by SA Power Networks.

NAP6
- Locate all existing underground cables prior to excavation.
- Push 4x150mm² LV cable through existing conduit into existing transformer TC65439 lot 825 Francesco Way vault, cap for termination by SA Power Networks.

Developer Civil Contractor to:

- Comply with requirements of NICC-404, TS105-C1 & C2 when working in the vicinity of the electricity network.
- Undertake civil on request by SA Power Networks.

NON CONTESTABLE WORKS
SA Power Networks to:

- Terminate & connect 2 sets of 4x150mm² LV cable onto FSD1 & FSD2 TC4222 lot 672 Isabella Crescent.
- Terminate & connect 2 sets of 4x150mm² LV cable onto FSD3 & FSD4 TC65436 reserve opp lot 117 Caloria St.
- Terminate & connect 4x150mm² LV cable into S/P lot 118 Caloria St.
- Terminate & connect 4x150mm² LV cable into S/P lot 111 Fiore Way.
- Terminate & connect 4x150mm² LV cable into S/P lot 652 Fiore Way.
- Terminate & connect 4x150mm² LV cable onto FSD3 TC65439 lot 825 Francesco Way.
- SA Power Networks to carry out testing, connection and energising of the development, including public lighting.

NOTES:

1. Developer responsible for trenching in accordance with SA Power Networks trenching & conduit standard TS-085. Construction to be in accordance with SA Power Networks technical standards and SA Power Networks 'E' drawings.
2. Cables to be laid in 1x100mm dia. LD (low duty) orange conduit at all road crossings unless otherwise stated. Road crossing conduits for radial (type1) service pits are to extend to the boundary line of the property and be fully continuous. Other road crossings to extend 900mm beyond kerb.
3. The conduit for a radial low voltage road crossing installation needs to be continuous (fully conduited) as per E1904 Sheet 4, with conduit between pillars installed in such away that it will facilitate quick cable replacement. If this is achieved a spare conduit is not required.
4. Spare conduits for LV cables are to be inserted to approximately 25mm and capped within P7 pits. HV spares are to be diverted around pits, as per TS-085.
5. For NBN Developments, install the CST Road Crossing 90° to the allotment boundary.
6. Cables to have 1000mm minimum cover.
7. Cables through easements to be installed in conduit with spare and marker tape as per TS-085. Cable markers are to be installed in cable easement as per TS-085 Appendix A.
8. Any existing underground services shown on these drawings are indicative only, no claim is made that the existing services shown are accurate or complete. Other services may be present which shall be the contractor's responsibility to locate and depth prior to any construction works. Any cable system and equipment must be treated as energised unless otherwise confirmed by SA Power Networks.
9. Phasing of consumer connections as shown.
10. Public lighting to be all-night burning.
11. Number of allotments - 50 lots = 300kVA total
12. Number of public lights - 15 x 17W LED (TFI Tariff).
13. Developer - Lanser Communities.
14. Consulting Engineer - Kellogg Brown & Root Pty Ltd.
15. Surveyor - Alexander Symonds Pty Ltd.
16. Due to the schematic nature of the drawing, the position of equipment shown is indicative only. Actual locations should be verified on site.
17. Retaining walls are required around transformer and switching cubicle easements where the final level changes by more than 300mm in the 2.0m adjacent the easement. The walls are to be built prior to installation of the transformer or switching cubicle and are to be located on the easement. Refer to TS-085, TS-100 and TS-102.
18. All walls, fences, ceilings and floors within 12m of the padmount transformer station shall have a 3 hour fire rating as determined by the Building Code of Australia.
19. SA Power Networks is responsible for the connection and energisation of the stage.
20. Contractor to ensure Hydro Vacuum Excavation maximum working pressure is limited to 2000psi as per TS-085. Any proposed excavation methods adjacent SA Power Networks infrastructure should be in accordance with NICC-404. Network Access Permits (NAP) required for works on and/or around SA Power Networks exclusion and/or restricted zones as per NICC-404 section 9.1 - figures 1,2 and 3.
21. Contractor to provide as constructed drawings to SA Power Networks for approval prior to practical completion. Changes can be made by design consultant for hourly rate charge or AutoCAD format drawings can be purchased from consultant for revision by contractor.
22. Construction by -
'As Constructed' details provided by -
WGA is not responsible for the accuracy of the 'As Constructed' details provided.

EDGE OF COMMON SERVICE TRENCH (from boundary line)	1.0m
PUBLIC LIGHTING ALIGNMENT (from back of kerb)	1.0m

DESIGN INFORMATION
Termite resistant cable: YES
Earthing: CMEN
The Design ADMD / lot: 6kVA

NOTE:
Any changes to be made on site to the location of the common service trench, and/or electrical & street lighting equipment must first be verified by the electrical designer and the project manager/engineering consultant. Any changes to work within proposed SA Power Networks easements must also be verified by the project surveyor.

THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 500036485 SHEET 2

WGA
WALLBRIDGE GILBERT AZTEC
60 Wyatt Street, Adelaide
South Australia 5000
Telephone 08 8223 7433
Email adelaide@wga.com.au
WGA Project No. WGA189172

SURVEYORS NAME:	Alexander Symonds
SURVEY DATE:	
CO-ORDINATE DATUM	
ZONE: MGA-54-GDA94	
GROUND SCALE:	
HORIZ:	
VERT:	
MAP REF:	6628-19-c
GRID REF:	284430.30 E, 6162866.90 N
	284050.10 E, 6162501.50 N
NBFRA	NON BUSHFIRE RISK AREA
FEEDER NO:	EL-17
FEEDER NAME:	CURTIS RD 11kV
SUBSTATION NO:	SSD-273
SUB NAME:	ANGLE VALE
ASSET OWNER:	SA POWER NETWORKS
PROJECT DEFINITION	NC-020822
NOTIFICATION TYPE	CN
PROJECT TYPE	RD

FOR CONSTRUCTION

SCALE 0 5 10 15 20 25 METRES 50

REV	DETAILS OF REVISION	RVD	CKD	INSP	APD	DATE
E	FOR CONSTRUCTION	WGA	LL		SK	24.04.23
D	PRELIMINARY ISSUE - PL UPDATED	WGA	LL			20.04.23
C	PRELIMINARY ISSUE - ADDITIONAL LOTS	WGA	LL			30.03.23
B	PRELIMINARY ISSUE	WGA	LL			17.10.22
A	PRELIMINARY ISSUE - FOR COORDINATION ONLY	WGA	LL			11.09.22

DRAWN	T TOFIGHI	01-08-22
CHECKED	L LUKANOV	07-09-22
INSPECTED		
APPROVED	SAAD KHAN ELIZABETH 0488 743 421	24-04-23

Head Office:
1 Anzac Highway
Keswick South Australia 5035
Postal address:
GPO Box 77
Adelaide South Australia 5001
Corporate switchboard:
08 8404 5667
(9.00am - 5.00pm
Monday to Friday)
ABN: 13 332 330 749

SA Power Networks

MUSICO - STAGE 7
UNDERGROUND RESIDENTIAL DEVELOPMENT
DEV. No. 292/D068/17

SCALE	SHEET	SHEET 1 OF 2	REV
1:500	A1	500036485	E

Hundred of Munno Para
in the area named
ANGLE VALE
City Of Playford

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE FOLLOWING SA POWER NETWORKS TECHNICAL STANDARDS

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NICC-400	Information for an Applicant Undertaking a Contestable Extension
NICC-404	Working in the Vicinity of SA Power Networks Infrastructure - Network Access Permit Process

Visit SA Power Networks web site for the current version of the Technical Standards

FOR CONDUIT BEND DETAIL REFER SA POWER NETWORKS TS-085 TABLE 7 to 9

WGA
WALLBRIDGE GILBERT AZTEC

AS1158.3.1:2020
LIGHTING DESIGN — ROAD CATEGORY
• ALL ROADS — PR5

DATE: 07/09/2022

NAME: L LUKANOV (TechIES)

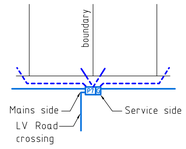
LEGEND

- EXISTING 95mm² 11kV CABLE
- PROPOSED 150mm² LV UBC XLPE CABLE (CKS310)
- EXISTING 150mm² LV CABLE
- EXISTING PARALLEL 150mm² LV UBC XLPE CABLE
- PROPOSED PUBLIC LIGHTING CABLE 6mm² TWIN & 6mm² EARTH IN 40mm CONDUIT
- EXISTING PUBLIC LIGHTING CABLE
- PROPOSED 40mm HD ORANGE ELECTRICAL CONDUIT & DRAW ROPE FOR CONSUMERS MAIN TO AS/NZS 3000. DEPTH 800mm. REFER TYPICAL CST CROSS SECTION & STANDARD SA POWER NETWORKS SERVICE PIT LOCATION ARRANGEMENT.
- EXISTING CONSUMERS MAIN
- PROPOSED LV UNDERGROUND OPEN POINT
- EXISTING SPARE CONDUITS
- BOUNDARY OF DESIGN AREA
- PROPOSED TRAFFICABLE P7 UNFUSED LV JUNCTION PIT WITH GELPORTS. P7 PIT TO BE REINFORCED WITH 200mm CONCRETE SURROUND, N12 BAR TOP AND BOTTOM 480mm DEEP AS PER E1921 SHT 7.3
- EXISTING P7 UNFUSED LV JUNCTION.
- PROPOSED FUSED RADIAL PILLAR.
- PROPOSED FUSED LOOP PILLAR.
- PROPOSED FUSED-T/OFF PILLAR.
- EXISTING SERVICE PILLAR.
- EXISTING PADMOUNT TRANSFORMER.
- 17W STREETLED AEROSCREEN LED, 4000K, BLACK FINISH (EM4022) MOUNTED ON BLACK 6.5m MODERN COLUMN WITH 1.5m DECORATIVE MODERN OUTREACH (WA4017).
- EXISTING LED LUMINAIRE

UNFUSED P7 PIT WITH GEL PORTS ARRANGEMENT

Service fuses required in customer's meter box when supplied from unfused P7 junction pit. Install 40mm HD orange electrical conduit from P7 pit to property boundary as per AS/NZS3000.

- For service connections details refer E1921 Sheet 4 and TS-085 for cable entry and exiting positioning.
- For unmetered supply/public lighting supply refer E1921 Sheet 4.3.
- For P7 Gelports pit arrgt. refer DST 1745 Sheet, arrgt. 1, 2 & 3.
- For LV main cable junction connection details refer E1921 Sheet 3.3.
- For installation and connection refer E-drawings, JSWP 140 and Field Instruction FI-A1.

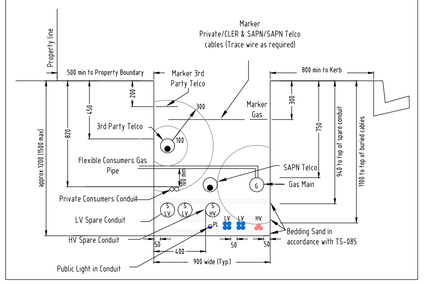


The pit may be offset to avoid a driveway by aligning the short side of the pit with the shared side boundary of the property. The mains and service side can be on either the left or right to suit the site installation.

NOTE: Ends of consumers mains to be 600mm into lot boundary, extended above ground level and marked with a 'star dropper' and orange marker tape. Final consumer main locations to be coordinated on site with existing and proposed services.

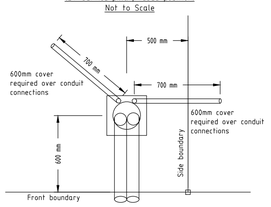
TYPICAL COMMON SERVICE TRENCH CROSS SECTION

(Not to scale)
NOTE: Refer to SA Power Networks Technical Standard TS-85



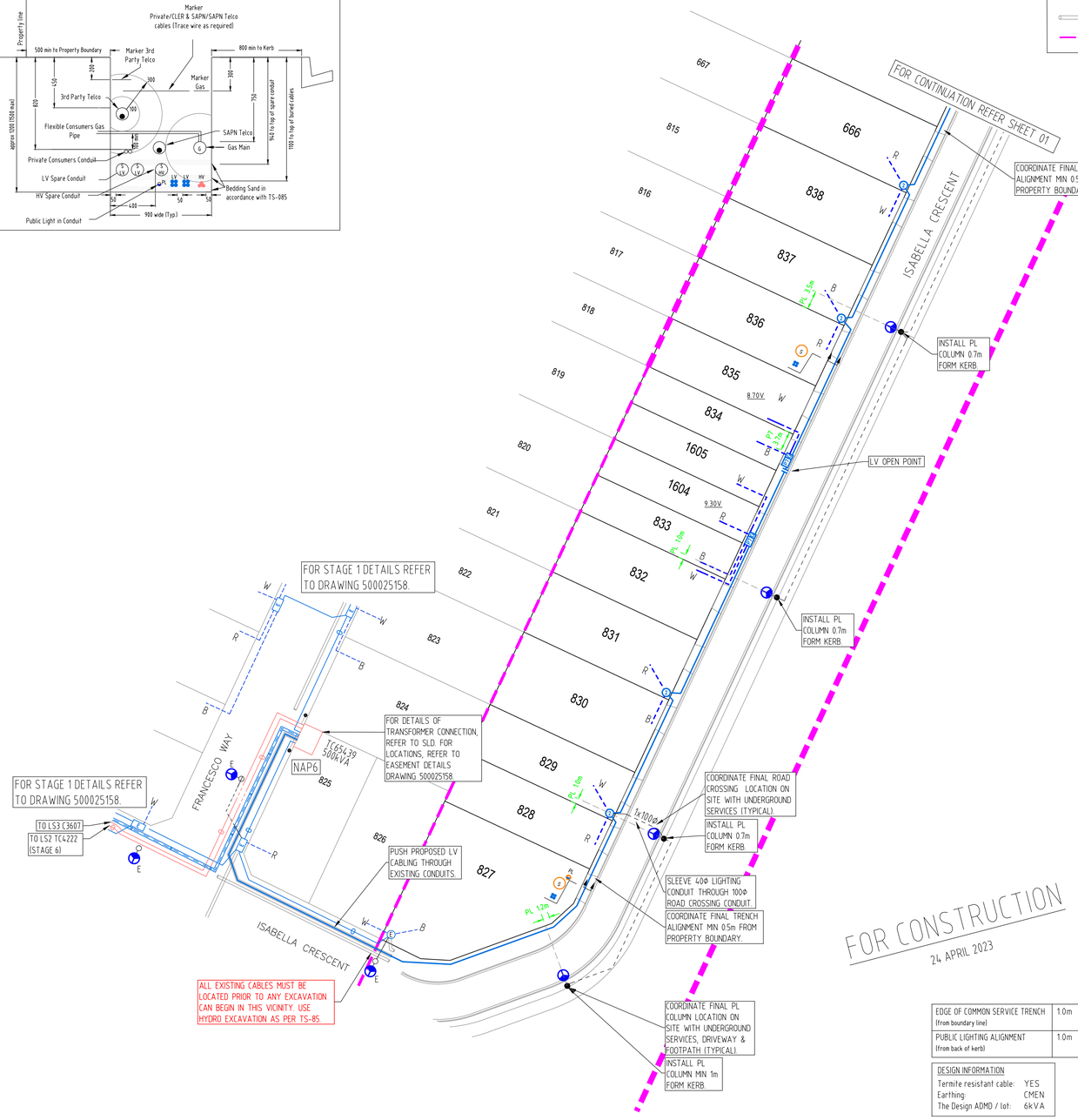
STANDARD POSITION OF SERVICE PILLAR

(LV service pillar, fused position)
Not to Scale



Each service pillar to have a 40mm conduit for the allotment on which it is placed, in addition to a neighbour connection shown. (Refer to E1978)

NOTE:
With approval from the relevant SA Power Networks manager, the developer can request a non-standard service pillar position.



NOTES:

1. Developer responsible for trenching in accordance with SA Power Networks trenching & conduit standard TS-085. Construction to be in accordance with SA Power Networks technical standards and SA Power Networks 'E' drawings.
2. Cables to be laid in 1x100mm dia. LD (low duty) orange conduit at all road crossings unless otherwise stated. Road crossing conduits for radial (type1) service pits are to extend to the boundary line of the property and be fully continuous. Other road crossings to extend 900mm beyond kerb.
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6. Cables to have 1000mm minimum cover.
7. Cables through easements to be installed in conduit with spare and marker tape as per TS-085. Cable markers are to be installed in cable easement as per TS-085 Appendix A.
8. Any existing underground services shown on these drawings are indicative only, no claim is made that the existing services shown are accurate or complete. Other services may be present which shall be the contractor's responsibility to locate and depth prior to any construction works. Any cable system and equipment must be treated as energised unless otherwise confirmed by SA Power Networks.
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10. Public lighting to be all-night burning.
11. Number of allotments - 50 lots = 300kVA total
12. Number of public lights - 15 x 17W LED (TFI Tariff).
13. Developer - Lanser Communities.
14. Consulting Engineer - Kellogg Brown & Root Pty Ltd.
15. Surveyor - Alexander Symonds Pty Ltd.
16. Due to the schematic nature of the drawing, the position of equipment shown is indicative only. Actual locations should be verified on site.
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18. All walls, fences, ceilings and floors within 12m of the padmount transformer station shall have a 3 hour fire rating as determined by the Building Code of Australia.
19. SA Power Networks is responsible for the connection and energisation of the stage.
20. Contractor to ensure Hydro Vacuum Excavation maximum working pressure is limited to 2000psi as per TS-085. Any proposed excavation methods adjacent SA Power Networks infrastructure should be in accordance with NICC-404 Network Access Permits (NAP) required for works on and/or around SA Power Networks exclusion and/or restricted zones as per NICC-404 section 9.1 - figures 1,2 and 3.
21. Contractor to provide as constructed drawings to SA Power Networks for approval prior to practical completion. Changes can be made by design consultant for hourly rate charge or AutoCAD format drawings can be purchased from consultant for revision by contractor.
22. Construction by -
'As Constructed' details provided by -
WGA is not responsible for the accuracy of the 'As Constructed' details provided.

THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 500036485 SHEET 1

EDGE OF COMMON SERVICE TRENCH (from boundary line)	1.0m
PUBLIC LIGHTING ALIGNMENT (from back of kerb)	1.0m

DESIGN INFORMATION
Termite resistant cable: YES
Earthing: CMEN
The Design ADMD / lot: 6kVA

NOTE:
Any changes to be made on site to the location of the common service trench, and/or electrical & street lighting equipment must first be verified by the electrical designer and the project manager/engineering consultant. Any changes to work within proposed SA Power Networks easements must also be verified by the project surveyor.

WGA
WALLBRIDGE GILBERT AZTEC
60 Wyatt Street, Adelaide
South Australia 5000
Telephone 08 8223 7433
Email adelaide@wga.com.au
WGA Project No. WGA189172

SURVEYORS NAME: Alexander Symonds	MAP REF: 6628-19-c
SURVEY DATE:	GRID REF: 284430.30 E 6162866.90 N
CO-ORDINATE DATUM ZONE: MGA-54-GDA94	
GROUND SCALE:	
HORIZ:	284050.10 E 616250.50 N
VERT:	

NBFRA — NON BUSHFIRE RISK AREA

FEEDER NO: EL-17
FEEDER NAME: CURTIS RD 11kV
SUBSTATION NO: SSD-273
SUB NAME: ANGLE VALE
ASSET OWNER: SA POWER NETWORKS

PROJECT DEFINITION	NOTIFICATION TYPE	PROJECT TYPE
NC-020822	CN	RD

FOR CONSTRUCTION

SCALE 0 5 10 15 20 25 METRES 50

REV	DETAILS OF REVISION	RVD	CKD	INSP	APD	DATE
E	FOR CONSTRUCTION	WGA	LL		SK	24.04.23
D	PRELIMINARY ISSUE - PL UPDATED	WGA	LL			20.04.23
C	PRELIMINARY ISSUE - ADDITIONAL LOTS	WGA	LL			30.03.23
B	PRELIMINARY ISSUE	WGA	LL			17.10.22
A	PRELIMINARY ISSUE - FOR COORDINATION ONLY	WGA	LL			11.09.22

DRAWN	T TOFIGHI	01-08-22
CHECKED	L LUKANOV	07-09-22
INSPECTED		
APPROVED	SAAD KHAN ELIZABETH 0488 743 421	24-04-23

Head Office:
1 Anzac Highway
Keswick South Australia 5035
Postal address:
GPO Box 77
Adelaide South Australia 5001
Corporate switchboard
08 8404 5667
(9.00am - 5.00pm
Monday to Friday)
ABN: 13 332 330 749

SA Power Networks

MUSICO - STAGE 7
UNDERGROUND RESIDENTIAL DEVELOPMENT
DEV. No. 292/D068/17

SCALE		SHEET 2 OF 2	REV
1:500	A1	500036485	E