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

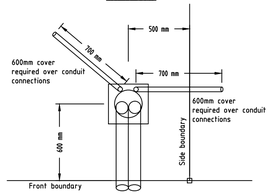
TS-085	Trenching and Conduit Standard for Underground Distribution Cable Networks
TS-099	Distribution and Sub-Transmission CAD Drafting Standards
TS-100	Electrical Design Standard for Underground Distribution Cable Networks
TS-101	Public Lighting - Design and Installation
TS-102	Easement Standard for 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.

STANDARD POSITION OF SERVICE PILLAR

(LV service pillar, fused position)
Not to Scale



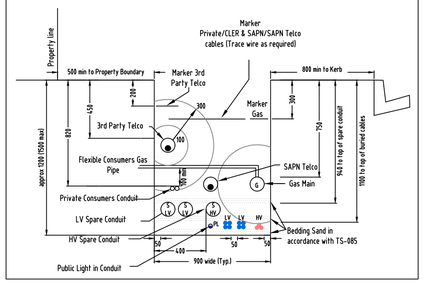
Each service pillar to have a 40mm conduit for the allotment on which it is placed, in addition to a neighbour connection shown. (Refer to E1978)

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

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

TYPICAL COMMON SERVICE TRENCH CROSS SECTION

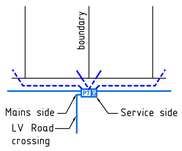
(Not to scale)
NOTE: Refer to SA Power Networks Technical Standard TS-85



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.

LEGEND

PROPOSED 3x630mm² 11kV XLPE CABLE (CK6039)	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 (RA5446)
EXISTING 630mm² 11kV CABLE	EXISTING SERVICE PIT
PROPOSED 3x95mm² 11kV XLPE CABLE (CK6006)	PROPOSED FUSED RADIAL PILLAR AS PER E1923 SHT 5 ARRGT 3 (RA5507).
EXISTING 95mm² 11kV CABLE	PROPOSED FUSED LOOP PILLAR AS PER E1923 SHT 5 ARRGT 1 (RA5507).
PROPOSED 150mm² LV UBC XLPE CABLE (CK5310)	PROPOSED FUSED-T/OFF PILLAR AS PER E1923 SHT 5 ARRGT 2 (RA5507).
EXISTING 150mm² LV CABLE	PROPOSED HV CABLE JOINT
PROPOSED PARALLEL 150mm² LV UBC XLPE CABLE (CK5310)	PROPOSED PADMOUNT TRANSFORMER.
PROPOSED PUBLIC LIGHTING CABLE 6mm² TWIN & 6mm² EARTH IN 40mm CONDUIT	17W STREETLED AEROSCREEN LED, 4000K, BLACK FINISH (EM4022) MOUNTED ON BLACK 6.5m MODERN COLUMN WITH 1.5m DECORATIVE MODERN OUTREACH (WA4017).
PROPOSED 40mm HD ORANGE ELECTRICAL CONDUIT & DRAW ROPE FOR CONSUMERS MAIN TOAS/NZS 3000. DEPTH 800mm. REFER TYPICAL CST CROSS SECTION & STANDARD SA POWER NETWORKS SERVICE PIT LOCATION ARRANGEMENT.	EXISTING LED LUMINAIRE
PROPOSED LV UNDERGROUND OPEN POINT	
PROPOSED SPARE CONDUITS	
EXISTING SPARE CONDUITS	
BOUNDARY/KERB LINE	

WGA
WALLBRIDGE GILBERT AZTEC

AS1158.3.1:2020
LIGHTING DESIGN — ROAD CATEGORY

- PHILIP AVENUE — PR3
- ALL OTHER ROADS — PR5

DATE: 29/01/2021
NAME: J Parker

COIL, CAP AND BURY 3x95mm² HV CABLE ADJ LOT 763 BOUNDARY. FINAL LOCATION TO BE COORDINATED WITH FUTURE DRIVEWAYS/FOOTPATH AND APPROVED BY SUPERINTENDENT ON SITE.

CAP AND BURY 2x100mm LV CONDUIT ADJ LOT 763 BOUNDARY. INSTALL CONDUIT SPACERS LAST 2m.

EXTEND 3x95mm² HV CABLE AT LOT 744 BOUNDARY AND LOOP AROUND AS PROVISION FOR SUPPLYING FUTURE STAGE. DO NOT EXCEED BENDING RADIUS OF CABLES. FINAL LOCATION OF LOOP TO BE COORDINATED ON SITE WITH SUPERINTENDENT. RECORD EXACT GPS LOCATION OF CABLE LOOP FOR INCLUSION ON AS CONSTRUCTED DRAWINGS.

CAP AND BURY 4x100mm LV CONDUIT ADJ LOT 744 BOUNDARY. INSTALL CONDUIT SPACERS LAST 2m.

CAP AND BURY 2x100mm LV CONDUIT ADJ LOT 770 BOUNDARY. INSTALL CONDUIT SPACERS LAST 2m.

4m WIDE SAPN CABLE EASEMENT.

COIL, CAP AND BURY PARALLEL 4x150mm² LV CABLE AND 3x95mm² & 3x630mm² HV CABLES ADJ LOT 771 BOUNDARY. FINAL LOCATION TO BE COORDINATED WITH FUTURE DRIVEWAYS/FOOTPATH AND APPROVED BY SUPERINTENDENT ON SITE.

CAP AND BURY 2x100mm LV CONDUIT ADJ LOT 771 BOUNDARY. INSTALL CONDUIT SPACERS LAST 2m.

CAP AND BURY 2x100mm LV CONDUIT ADJ LOT 791 BOUNDARY. INSTALL CONDUIT SPACERS LAST 2m.

EXTEND 3x95mm² HV CABLE AT LOT 791 BOUNDARY AND LOOP AROUND AS PROVISION FOR SUPPLYING FUTURE STAGE. DO NOT EXCEED BENDING RADIUS OF CABLES. FINAL LOCATION OF LOOP TO BE COORDINATED ON SITE WITH SUPERINTENDENT. RECORD EXACT GPS LOCATION OF CABLE LOOP FOR INCLUSION ON AS CONSTRUCTED DRAWINGS.

INSTALL PL COLUMN 12m B.O.K.

FOR DETAILS OF TRANSFORMER CONNECTION, REFER TO SLD. FOR LOCATIONS, REFER TO EASEMENT DETAILS.

COORDINATE FINAL ROAD CROSSING LOCATION ON SITE WITH UNDERGROUND SERVICES (TYPICAL).

COORDINATE FINAL PL COLUMN LOCATION ON SITE WITH UNDERGROUND SERVICES, DRIVEWAY & FOOTPATH (TYPICAL).

LV OPEN POINT

LOCATE ALL EXISTING CABLES PRIOR TO EXCAVATION. USE HYDRO EXCAVATION AS PER TS-85. REFER TO AS CONSTRUCTED DRAWINGS FOR GPS COORDINATES OF EXISTING HV CABLE LOOP.

PUSH PROPOSED LV CABLING THROUGH EXISTING CONDUITS.

CAP AND BURY 2x100mm LV CONDUIT ADJ LOT 775 BOUNDARY. INSTALL CONDUIT SPACERS LAST 2m.

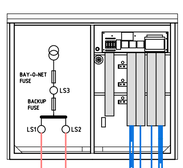
EXTEND 3x95mm² HV CABLE AT LOT 776 BOUNDARY AND LOOP AROUND AS PROVISION FOR SUPPLYING FUTURE STAGE. DO NOT EXCEED BENDING RADIUS OF CABLES. FINAL LOCATION OF LOOP TO BE COORDINATED ON SITE WITH SUPERINTENDENT. RECORD EXACT GPS LOCATION OF CABLE LOOP FOR INCLUSION ON AS CONSTRUCTED DRAWINGS.

TCxxxxx 500kVA

PRELIMINARY ISSUE
NOT TO BE USED FOR CONSTRUCTION
4 February 2021

TCxxxxx - S.L.D. of PROPOSED 11/0.4kV 500kVA Mk7 PADMOUNT

RESERVE OPP LOT 755 MUSICO STREET



3x95mm² HV cable capped and buried adj lot 763 boundary.

Parallel 4x150mm² LV cable to P7 pit adj lot 746 Musico Street.

4x150mm² LV cable to P7 pit adj lot 754 Musico Street.

3x95mm² HV cable to LS2 C3607 via straight joint adj lot 794 Philip Ave.

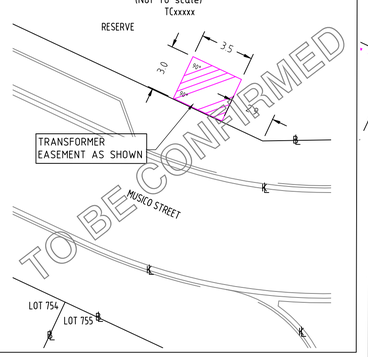
Parallel 4x150mm² LV cable capped and buried adj lot 771 Philip Ave boundary.

4x150mm² LV cable to service pillar adj lot 773 Musico Street.

MUSICO STREET
DOOR FACE SOUTH-WEST

PROPOSED SA POWER NETWORKS TRANSFORMER LOCATION, EASEMENT DETAILS

(Not to scale)



TO BE CONFIRMED

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.

SCALE 0 5 10 15 20 25 METRES 50

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.
- Supply and install 1 set of 3x630mm² HV cable straight joints adj lot 794 Philip Ave.
- Cut existing HV cable loop. Supply and install 2 sets of 3x95mm² HV straight joints:
  - Straight joint proposed HV cable coiled, capped and buried adj lot 771 to existing cable from LS2 TC65439.
  - Straight joint proposed HV cable from LS2 TCXXXXXX to existing cable from LS2 C3607.
- Push 2 sets of 4x150mm² LV cable through existing conduit into existing P7 pit adj lot 795 Philip Ave, 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.
- Use pre-fabricated conduit spacer systems at 2m intervals for up to 6m and finishing 200mm from the end of conduits at the stage boundary. (refer TS-085 section 7.5)

NON CONTESTABLE WORKS

SA Power Networks to:

- Terminate & connect 2 sets of 4x150mm² LV cable into existing P7 pit adj lot 795 Philip Ave.
- 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 section 11.2 and appendix D requirements.
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 clause 10.12. Cable markers are to be installed in cable easement as per E1979.
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 - 32 @ 6kVA = 192kVA total.
12. Number of public lights - 17x17W 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.
18. All walls, fences, ceilings and floors within 1.2m 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 connecting and energising of the stage.
20. Contractor to ensure Hydro Vacuum Excavation maximum working pressure is limited to 2000psi as per TS-085 section 10.14. 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.

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

SURVEYORS NAME:	MAP REF:	NBFRA	NON BUSHFIRE RISK AREA
SURVEY DATE:	GRID REF: 284130.31 E 6162748.21 N	FEEDER NO: EL-17	
CO-ORDINATE DATUM ZONE: MGA-54-GDA94 GROUND SCALE:		FEEDER NAME: CURTIS ROAD 11kV	
		SUBSTATION NO: SSD-273	
		SUB NAME: ANGLE VALE SUBSTATION	
HORIZ:		ASSET OWNER: SA POWER NETWORKS	
VERT:	283881.01 E 6162733.11 N	PROJECT DEFINITION: NC-017059 / NOTIFICATION TYPE: CN / PROJECT TYPE: RD	
		PRELIMINARY	

REV	DETAILS OF REVISION	RVD	CKD	INSP	APD	DATE
A	PRELIMINARY ISSUE - FOR COORDINATION ONLY	WGA	LL			04.02.21

DRAWN	J PARKER	
CHECKED	J PARKER	
INSPECTED		
APPROVED	N GOSDEN ELIZABETH (08) 8282 1543	

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Postal address:
GPO Box 77
Adelaide South Australia 5001

Corporate switchboard
08 8404 5667
09.00am - 5.00pm
Monday to Friday)

ABN 13 332 330 749

SA Power Networks

MUSICO - STAGE 3A
UNDERGROUND RESIDENTIAL DEVELOPMENT
DEV. No. 292/D068/17

SCALE	SHEET	SHEET 1 OF 1	REV
1:500	A1	500028988	A