

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 - Network Access Permit Process
- 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

**WGA**  
WALLBRIDGE GILBERT  
AZTEC

AS1158.3.1:2005  
LIGHTING DESIGN ROAD CATEGORY  
ALL ROADS PL

DATE: 19/12/2019  
NAME: L Lukonov (TechES)

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

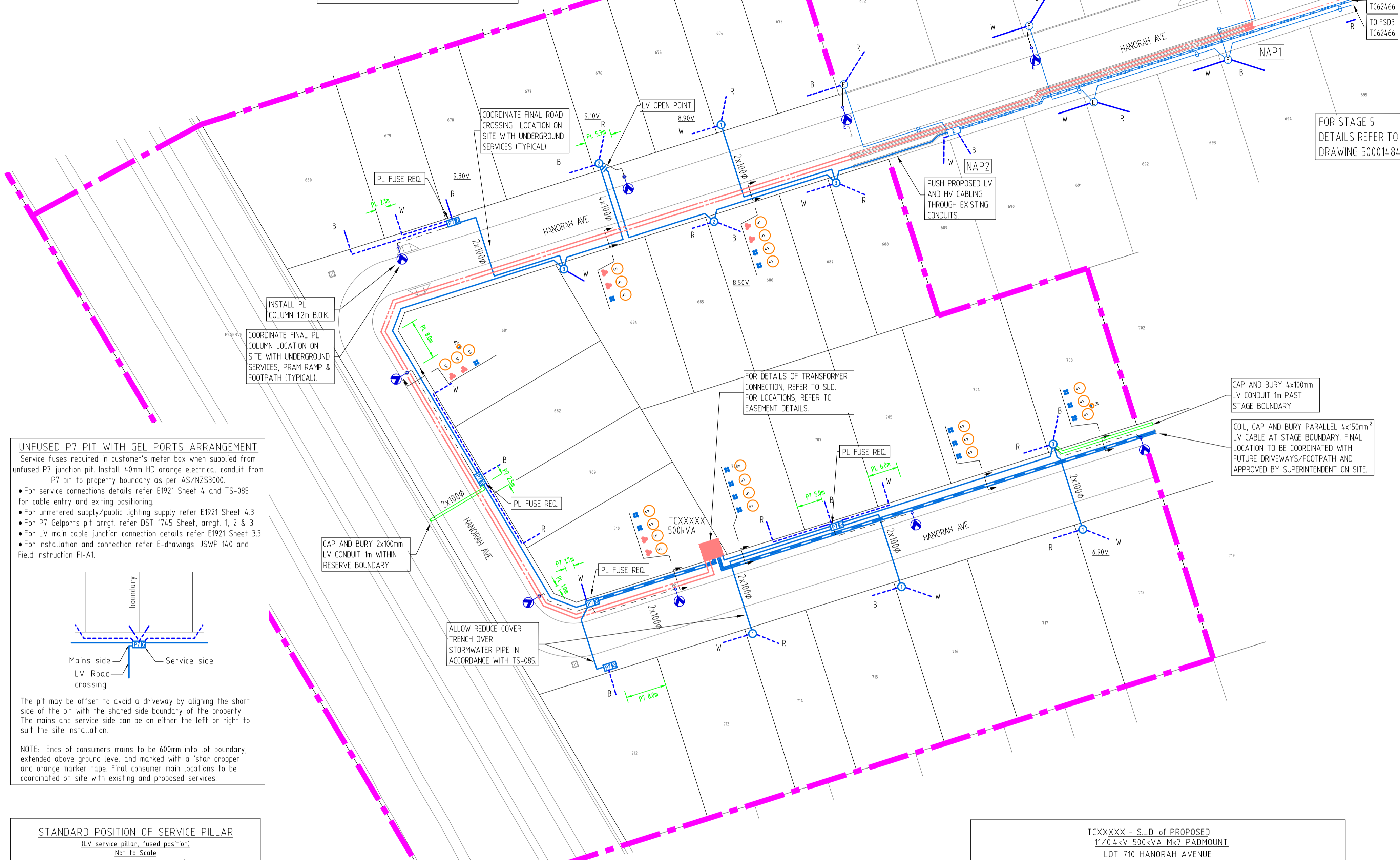
**PRELIMINARY ISSUE**  
NOT TO BE USED FOR CONSTRUCTION  
20 DECEMBER 2019

Hundred of Port Adelaide  
in the area named  
VIRGINIA  
City Of Playford

FOR STAGE 5  
DETAILS REFER TO  
DRAWING 50001484.2

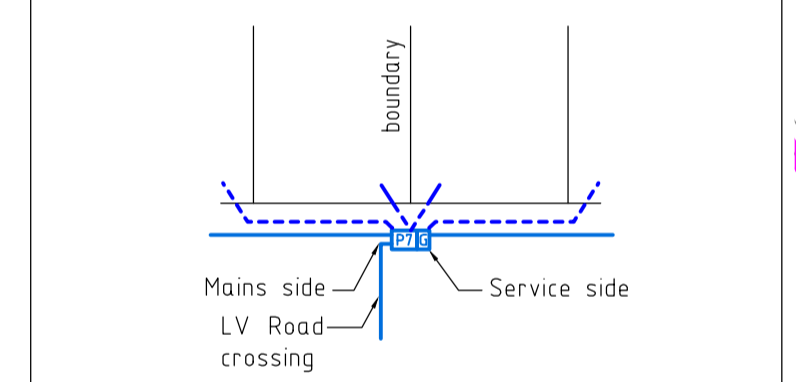
**LEGEND**

- PROPOSED 3x95mm<sup>2</sup> 11kV XLPE CABLE (CK6006)
- EXISTING 95mm<sup>2</sup> 11kV CABLE
- PROPOSED 150mm<sup>2</sup> LV UBC XLPE CABLE (CK5310)
- EXISTING 150mm<sup>2</sup> LV CABLE
- PROPOSED PARALLEL 150mm<sup>2</sup> LV UBC XLPE CABLE (CK5310)
- EXISTING PARALLEL 150mm<sup>2</sup> LV UBC XLPE CABLE
- PROPOSED PUBLIC LIGHTING CABLE 6mm<sup>2</sup> TWIN & 6mm<sup>2</sup> EARTH IN 40mm CONDUIT
- EXISTING PUBLIC LIGHTING CABLE
- PROPOSED 10mm 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 CONSUMER MAIN CONDUIT
- PROPOSED LV UNDERGROUND OPEN POINT
- PROPOSED SPARE CONDUITS
- EXISTING SPARE CONDUITS
- LV/HV CABLES CAPPED IN CABLE PIT E1926/E1919
- TRAFFICABLE P7 UNFUSED LV JUNCTION PIT WITH GEL PORTS, P7 PIT TO BE REINFORCED WITH 200mm CONCRETE SURROUND, #12 BAR TOP AND BOTTOM 480mm DEEP AND STEEL LID AS PER E1921 SHT 7.3
- EXISTING JUNCTION PIT.
- PROPOSED FUSED RADIAL PILLAR.
- PROPOSED FUSED LOOP PILLAR.
- PROPOSED FUSED-T/OFF PILLAR.
- EXISTING SERVICE PILLAR.
- PROPOSED 11kV CABLE JOINT.
- PROPOSED PADMOUNT TRANSFORMER.
- 11kV AEROSCREENED, 4000K, BLACK FINISH (E1942/222) MOUNTED ON BLACK 65kV MODERN COLUMN WITH 15m OUTREACH (W/A/011)
- EXISTING LED LUMINAIRE
- BOUNDARY/PROPERTY LINE
- KERB LINE



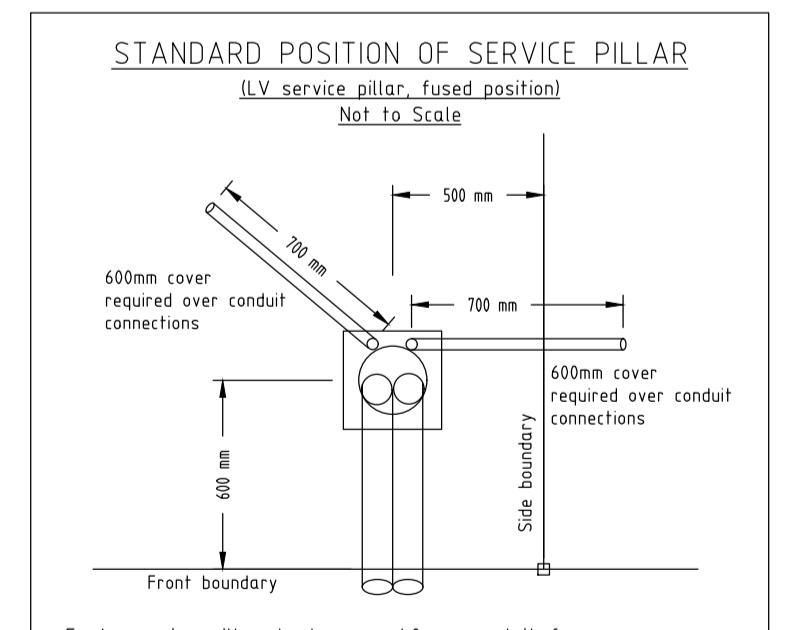
**UNFUSED P7 PIT WITH GEL PORTS ARRANGEMENT.**  
Service fuses required in customer's meter box when supplied from unfused P7 junction pit. Install 40mm HD orange electrical conduit from P7 pit to property boundary as per AS/NZS3000.

- For service connections details refer E1921 Sheet 4 and TS-085 for cable entry and exiting positioning.
- For un-metered 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.

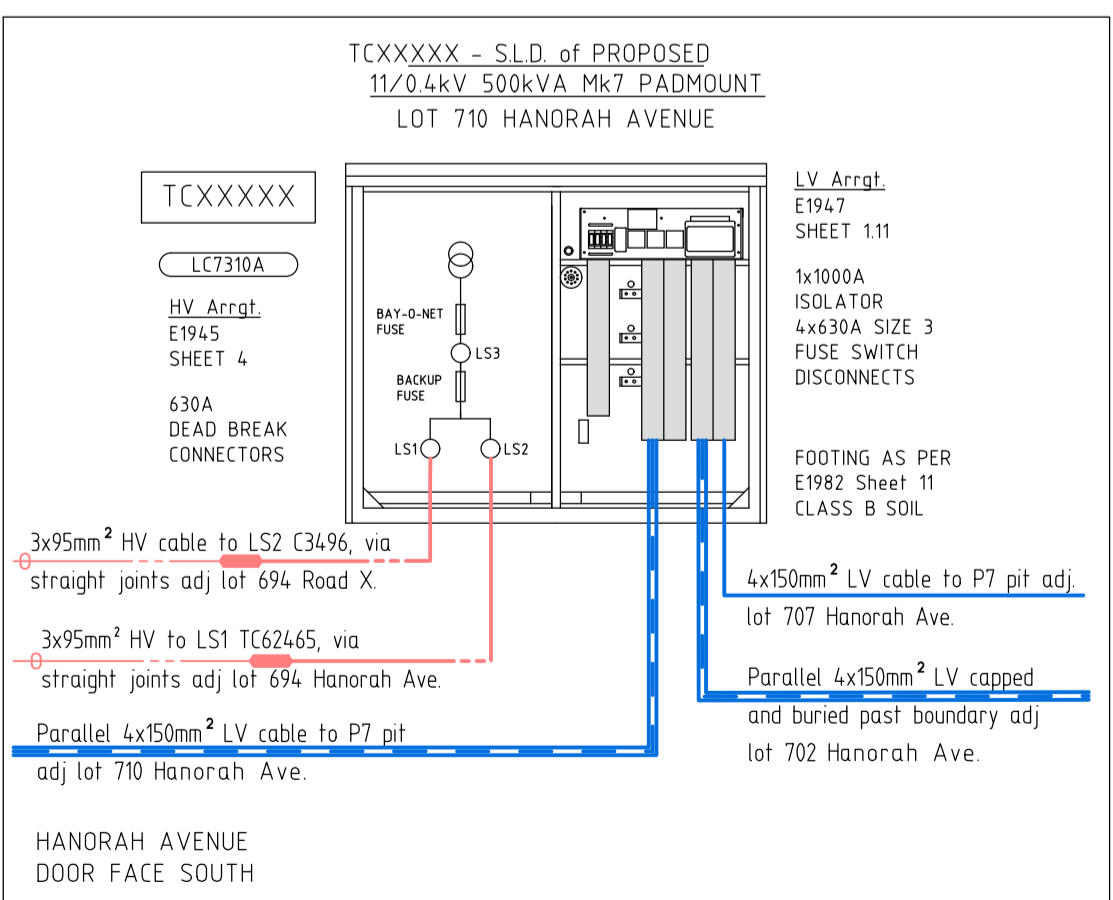
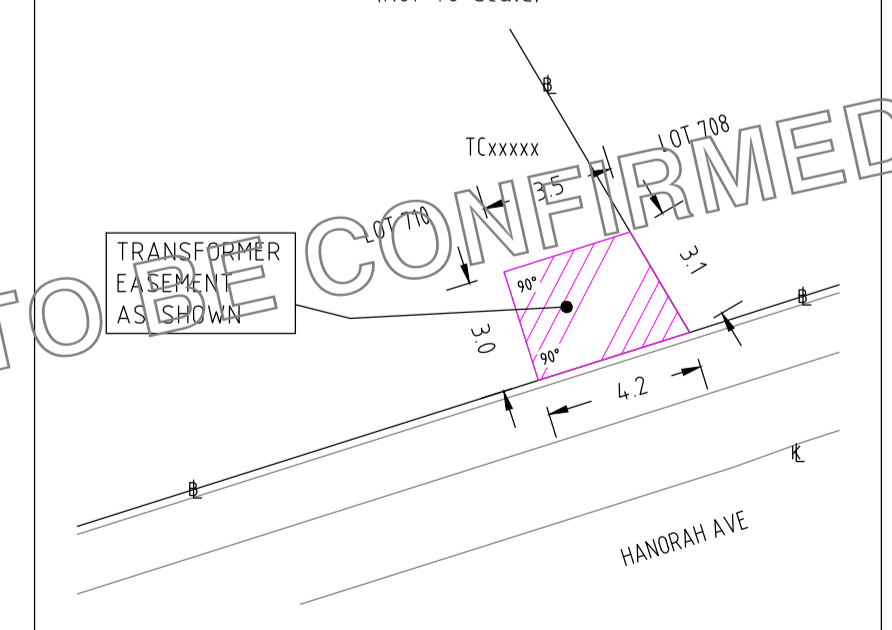
NOTE: Ends of consumers mains to be 600mm into lot boundary, extended above ground level and marked with a 'star dropper' and orange marker tape. Final consumer main locations to be coordinated on site with existing and proposed services.



Each service pillar to have a 40mm conduit for the alignment 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.

**PROPOSED SA POWER NETWORKS TRANSFORMER LOCATION AND EASEMENT DETAILS**  
(Not to scale)



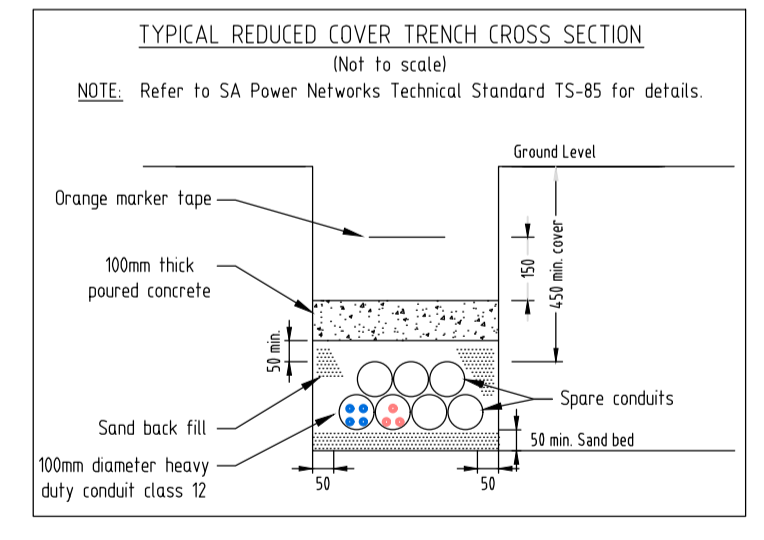
**SCOPE OF WORKS**

- CONTESTABLE WORKS**  
Electrical Contractor to:
- Undertake all new work within development.
  - Provide completed TS-105 C1 & C2 forms.
  - Provide 'As Constructed' drawings 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

- NAP 1**
- Cut into existing looped HV cable adj lot 694 Hanorah Ave. Supply & install 2 sets 3x95mm<sup>2</sup> HV straight joints.
- NAP 2**
- Push 4x150mm<sup>2</sup> LV cable through existing conduit into existing P7 pit adj lot 690 Hanorah Ave 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.
  - The developer will undertake the civil works on request by SA Power Networks or its contractors. The developer is responsible for all costs associated with civil works.

- NON CONTESTABLE WORKS**  
SA Power Networks to:
- Terminate 4x150mm<sup>2</sup> LV cable into P7 pit adj lot 690 Hanorah Ave.
  - SA Power Networks to carry out testing, connection and energising of the development including public lighting.



EDGE OF COMMON SERVICE TRENCH (from boundary line) 0.7m  
PUBLIC LIGHTING ALIGNMENT (from back of kerb) 1.0m

**DESIGN INFORMATION**  
Termite resistant cable: YES  
Earthing: CMEN  
The Design ADM / 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.

**NOTES:**

- 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.
- Cables to be laid in 1x100mm dia. LD (low duty) orange conduit at all road crossings unless otherwise stated. Road crossing conduits for radial (type) service pits are to extend to the boundary line of the property and be fully continuous. Other road crossings to extend 900mm beyond kerb.
- The conduit for a radial low voltage road crossing installation needs to be continuous (fully conduit) as per E1904 Sheet 4, with conduit between pillars installed in such way that it will facilitate quick cable replacement. If this is achieved a spare conduit is not required.
- 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 112 and appendix D requirements.
- For NBN Developments, install the CST Road Crossing 90° to the allotment boundary.
- Cables to have 1000mm minimum cover.
- 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 E1919.
- Electrical contractor to provide 45° sweep bends. Provide lube injection points prior to each bend for long cable pulling distances. Refer SA Power Networks E1906 drawings for detailed requirements.
- 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.
- Phasing of consumer connections as shown.
- Public lighting to be all-night burning.
- Number of allotments - 29 Lots (174x4kVA)
- Number of public lights - 7x7W LED (IFI Tariff).
- Developer - Lanser Communities.
- Consulting Engineer - Tonkin Consulting.
- Surveyor - Alexander Symonds Pty Ltd.
- Due to the schematic nature of the drawing, the position of equipment shown is indicative only. Actual locations should be verified on site.
- 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.
- 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.
- SA Power Networks is responsible for the connecting and energising of the stage.
- 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.
- 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.
- 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: WGA150565

ZONE MGA-54-GDA94  
MAP REF: 6628-20  
GRID REF: 275853.80  
6159905.90

**NBFA** NON BUSHFIRE RISK AREA

FEEDER NO: EL-20  
FEEDER NAME: SUPPLE ROAD 11kV  
SUBSTATION NO: SSD-184  
SUBSTATION NAME: VIRGINIA  
ASSET OWNER: SA POWER NETWORK  
PROJECT DEFINITION: NOTIFICATION TYPE: PROJECT TYPE  
NC-14724 CN RD

275722.10 E  
6159737.40 N

**PRELIMINARY**

DRAWN	L LUKANOV	20-12-19	Head Office: 1 Anzac Highway Keswick South Australia 5035
DESIGNED	L LUKANOV	19-12-19	Postal address: GPO Box 77 Adelaide South Australia 5001
CHECKED	J PARKER	20-12-19	Corporate switchboard: 08 8404 5667 19:00am - 5:00pm Monday to Friday)
PROJECT MANAGER	T CADDY HOLDEN HILL (08) 8366 7429		www.sapowernetworks.com.au

DRAWN				DESIGNED				CHECKED				PROJECT MANAGER			
L	L	J	T	L	L	J	T	L	L	J	T	L	L	J	T
L	L	J	T	L	L	J	T	L	L	J	T	L	L	J	T
L	L	J	T	L	L	J	T	L	L	J	T	L	L	J	T

SCALE				SHEET 1 OF 1				REV			
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**SHEDDY ROAD, STAGE 8B**  
**PROPOSED UNDERGROUND RESIDENTIAL DEVELOPMENT**  
DEV 292/D071/14