



Western Power

Western Power Corporation
 Networks Business Unit
 System Optimisation Branch

SUBDIVISION DESIGN GUIDELINE - NUMBER 03 (Revision 1, 27/10/05)

Guideline for completing transformer load tables on design drawings

According to the “Subdivision Design Drawing Minimum Requirements” issued on 18/06/2003 in the Subdivision Designers meeting, designers are required to show ‘Feeder loading and volt drop tables’ (alternatively called ‘Transformer Load Tables’) on the design drawing submitted for conformance review. This guideline is issued to assist designers in completing ‘Transformer Load Tables’.

The following table demonstrates a ‘Transformer Load Table’ that is acceptable to Western Power.

TRANSFORMER LOCATION & DETAIL	CIRCUIT NO.	FUSE AMPS	CABLE mm 2	CIRCUIT NAME	VOLT DROP	AMPS	kVA	TOTAL AMPS
LOT 1325 PRIMARY SCHOOL SITE 630kVA 22KV (827A)	1	315	240	CONTIGUOUS SUPPLY (EXISTING SCHOOL)	0.1V	348	250	812
	2	315	240	LOT 1513 – LOT 1825	3.2V	88	63	
	3	315	240	LOT 1513 – LOT 1825 (WORKING END)	3.3V	138	99	
	4	315	240	EXISTING CIRCUIT (STREET NAME)	8.5V	125	90	
	5	315	240	EXISTING CIRCUIT (POS LOT 400)	7.9V	113	81	

The following is a guide of how to complete the table:

TRANSFORMER LOCATION & DETAIL: It must provide the following information:

- Lot number of the lot where the transformer is installed.
- Type of land use if known, e.g. primary school site, POS etc.
- Rated kVA and rated current.
- Rated voltage (6.6KV, 11KV, 22KV or 33KV)
- Rated current of WPC standard 3-ph transformer as follows:
 - 63kVA - 83A
 - 160kVA - 210A
 - 315kVA - 413A
 - 500kVA - 656A
 - 630kVA - 827A
 - 1000kVA - 1312A

CIRCUIT NUMBER: Circuits should be numbered from left to right when viewed from the front of the LV frame.

CIRCUIT NAME: Circuits should be named as follows:

- If the load is contiguous with transformer substation site, it must be named “CONTIGUOUS SUPPLY” with the nature of land use, e.g. “EXISTING SCHOOL”. See circuit No. 1 of the above table.
- If the feeder supplies only a pump via a pillar, it must be named “PUMP SUPPLY” with pump size in kVA, the nature of land use and Lot number, e.g. “PUMP SUPPLY 3.5kVA (POS LOT 400)”.
- Use Lot numbers where the feeder changes direction or branches off and the Lot number of the last pillar fed by that feeder or the Lot number where the feeder ends as a working end along the longest route. See circuits No. 2 &3 of the above table.
- For existing circuit, name the feeder “EXISTING CIRCUIT “ with street name or the lot number at the end of the LV feeder, such as “POS LOT 400”. See circuits No. 4 & 5 of the above table.

VOLT DROP: The worst volt drop along the LV circuit including any branches calculated by LV Design.

AMPS: The total current on the LV circuit calculated by LV Design.

kVA: Total kVA of each circuit converted from AMPS on that circuit.

TOTAL AMPS: Sum of AMPS of all circuits calculated by LV Design.

NOTE: **Circuits which are not used should be marked “SPARE” or “FUTURE”.**

Document History

Date Issued	Description	Revision
08/04/2004	Original Issue	-
27/10/2005	Updated for release on website. Aesthetic changes made, such as logo resized, font and formatting.	1