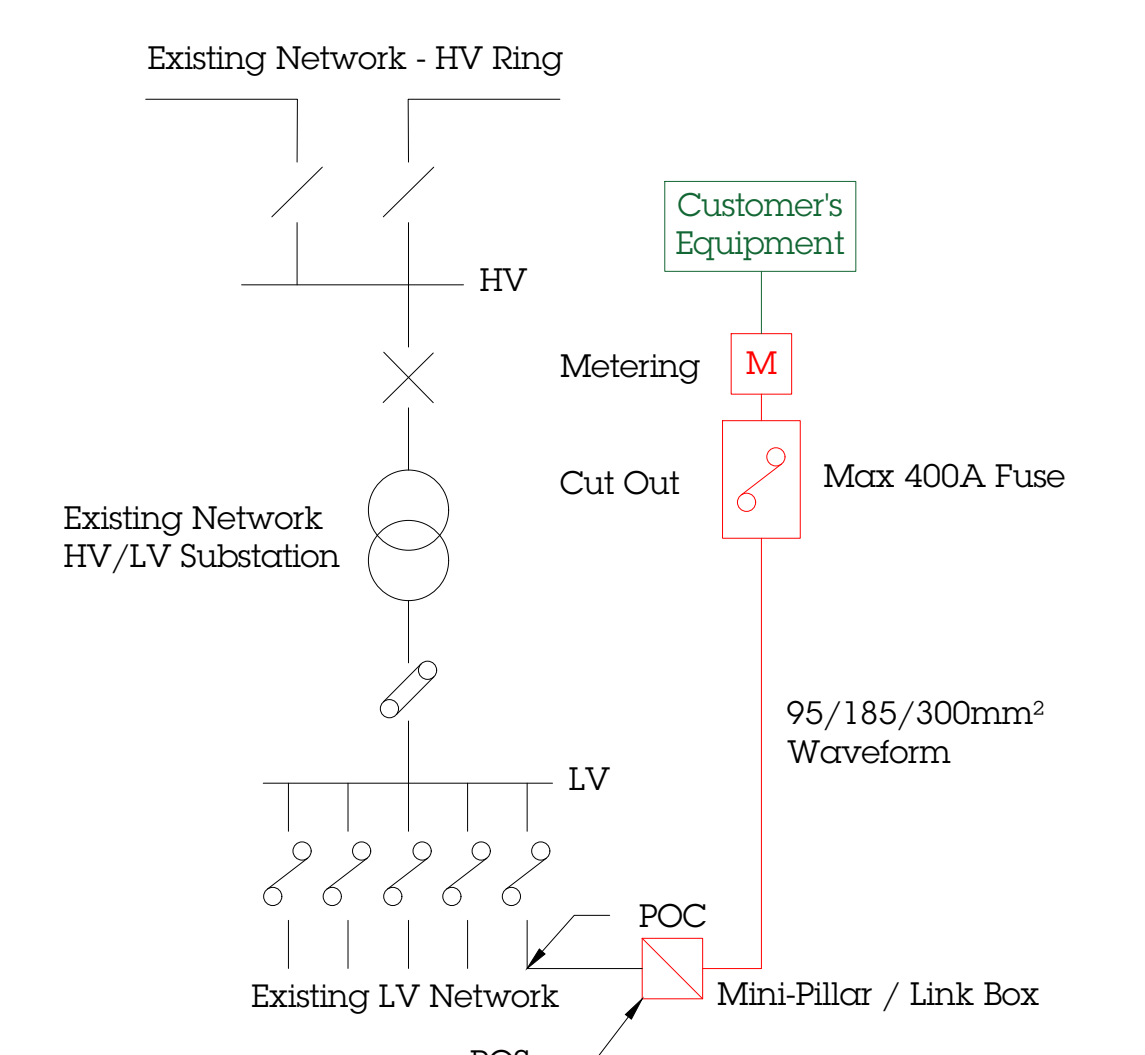
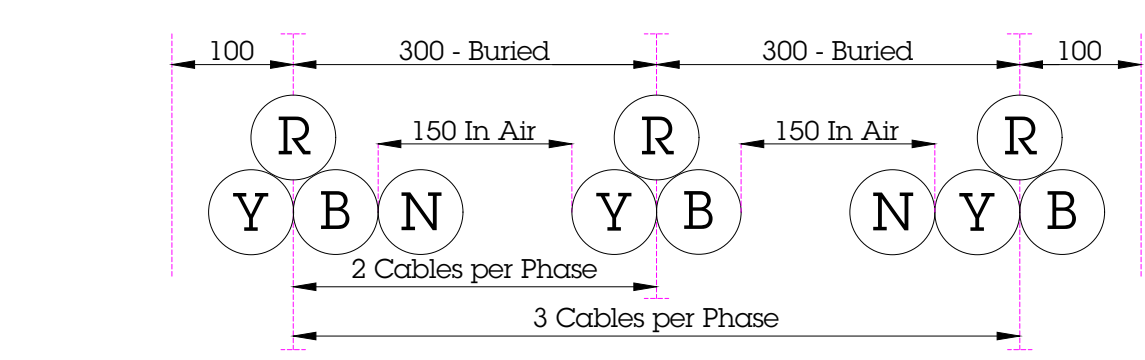


Project	N/A
Reference	N/A
Address	N/A
Client	N/A
Title	Standard Connection Arrangements
DNO	N/A
IDNO	N/A
Date	01-09-2023
Revision	Rev A
Design Engineer	Checked
Electric Connection	Offsite Length
Offsite Excavation	Onsite Excavation
Scale	NTS
Page No.	1 of 1
Status	Not For Construction



- Notes**
- Check that Volt Drop and Earth Loop Impedance limits are not exceeded
  - For 185 cable use a 400A heavy duty cut-out fused at 315A
  - For 300 cable use a 600A heavy duty cut-out fused at 400A
  - Cable ratings above are based on LV cables being ducted
  - UKPN and NPG require and will fund the cost of the Link Box.
  - Some Last Mile sites do not require a Point of Isolation.
  - For Multi-occupancy buildings 4 core SNE cables are to be used as per G87

Connected Load	Mini-Pillar Fuse Size	Cut-out Fuse Size	Service Cable Size	Metering CT Ratio
Up to 140kVA	200A	200A	95mm² Waveform (AWC)	200/5
Up to 217kVA	315A	315A	185mm² Waveform (AWC)	400/5
Up to 276kVA	400A	400A	300mm² Waveform (AWC)	400/5

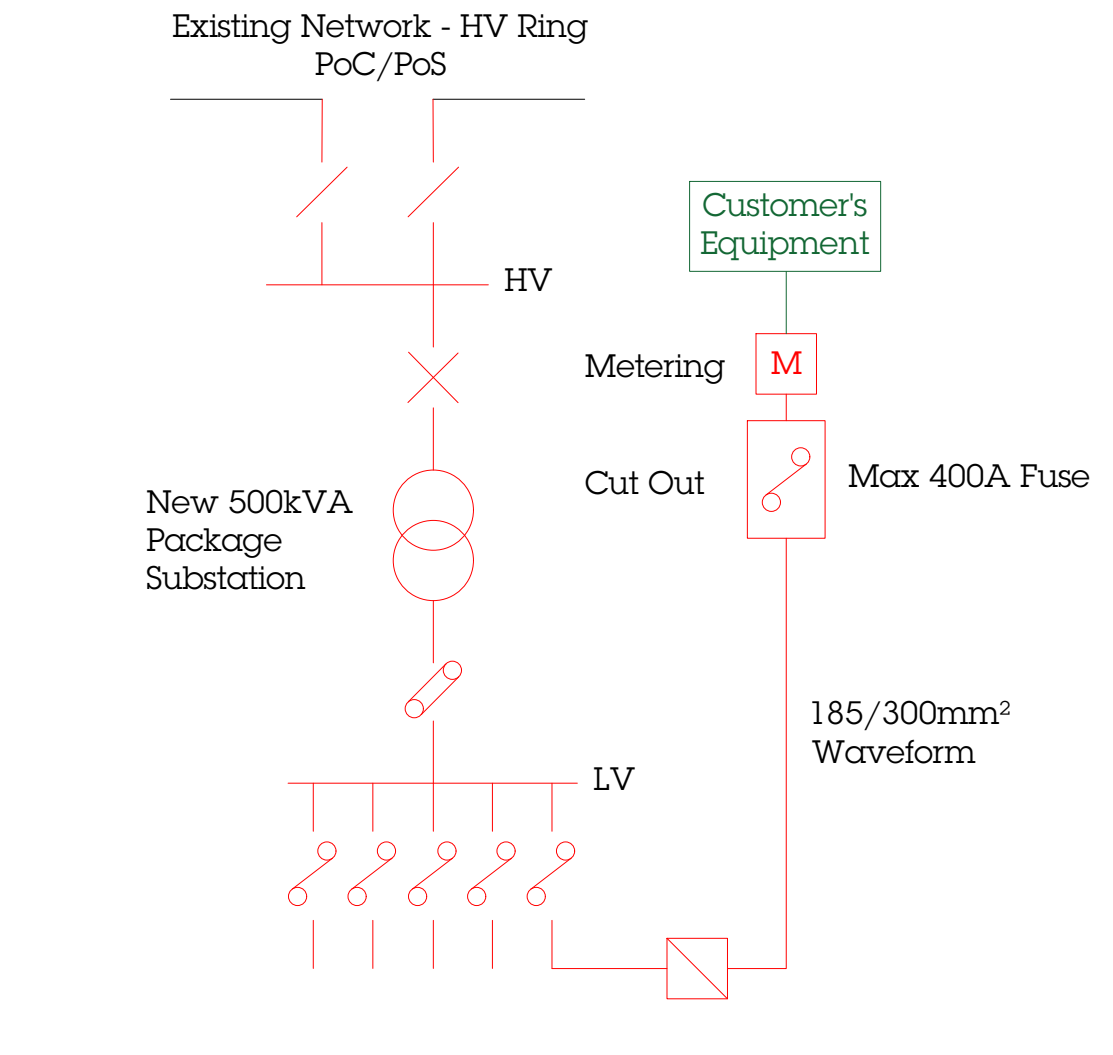


300mm² AWC			
Transformer Rating	No of 70mm² (120mm²) Copper Earthwires		
	1500kVA	3 (2)	2 (1)
Length of AWC			
1500kVA	0-40	41-100	

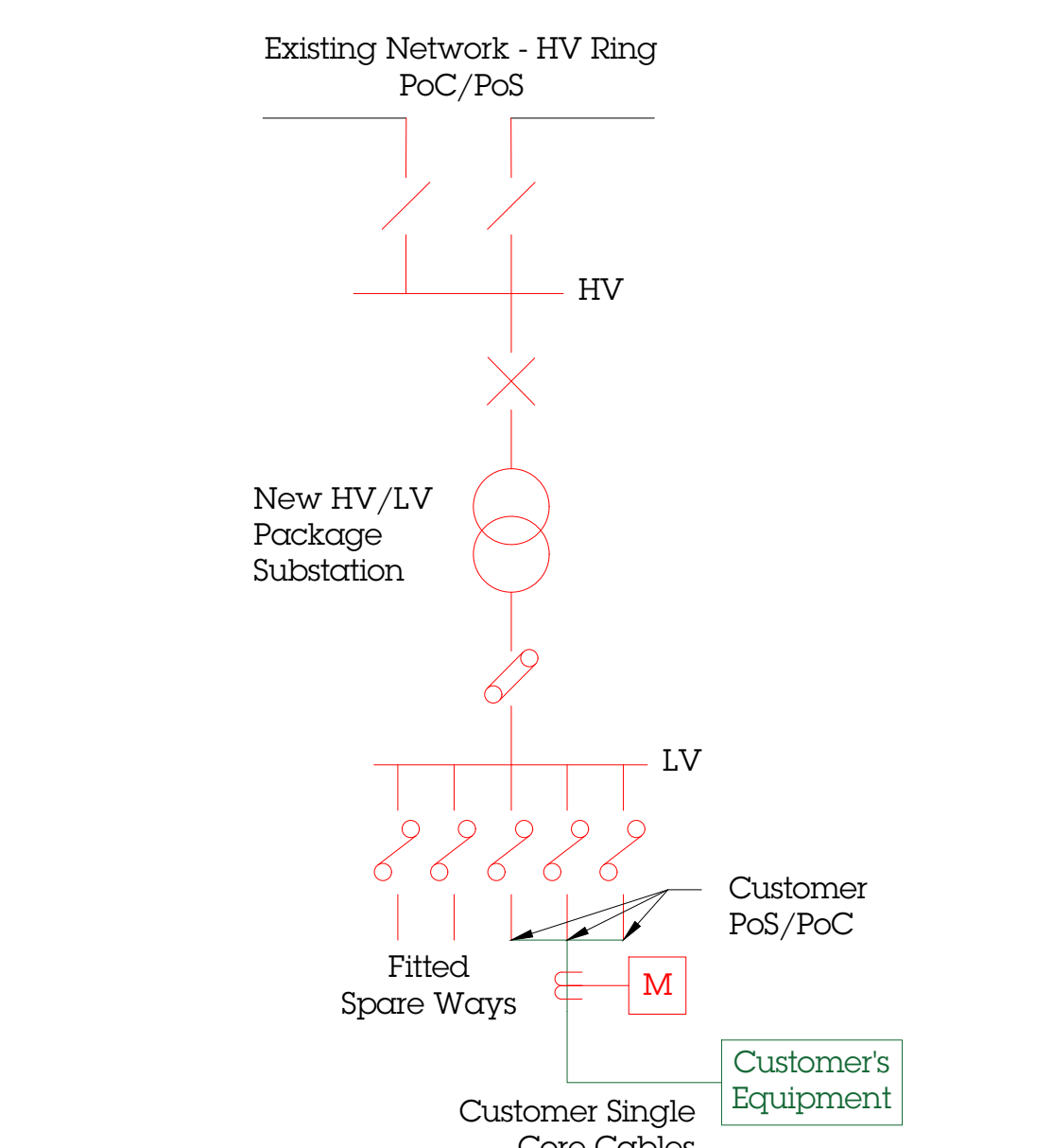
185mm² AWC			
Transformer Rating	No of 70mm² (120mm²) Copper Earthwires		
	1000kVA	3 (2)	2 (1)
800kVA	0-25	26-100	
500kVA	0-50	51-100	

Size of Bunched 3 Core Waveform	Number of Cables		Maximum Length - 100m					
			Summer Continuous - Note 2				In Air with 25°C Ambient - Note 1	
	Phase	Neutral	Amps	kVA	Amps	kVA	Amps	kVA
185mm² AWC	1	1	799	551	639	441	844	582
185mm² AWC	2	1	1403	968	1122	774	1483	1023
185mm² AWC	3	2	1806	1246	1445	997	1908	1317
300mm² AWC	1	1	1117	771	893	616	1230	849
300mm² AWC	2	1	1968	1358	1574	1085	2157	1495
300mm² AWC	3	2	2528	1744	2022	1395	2781	1919



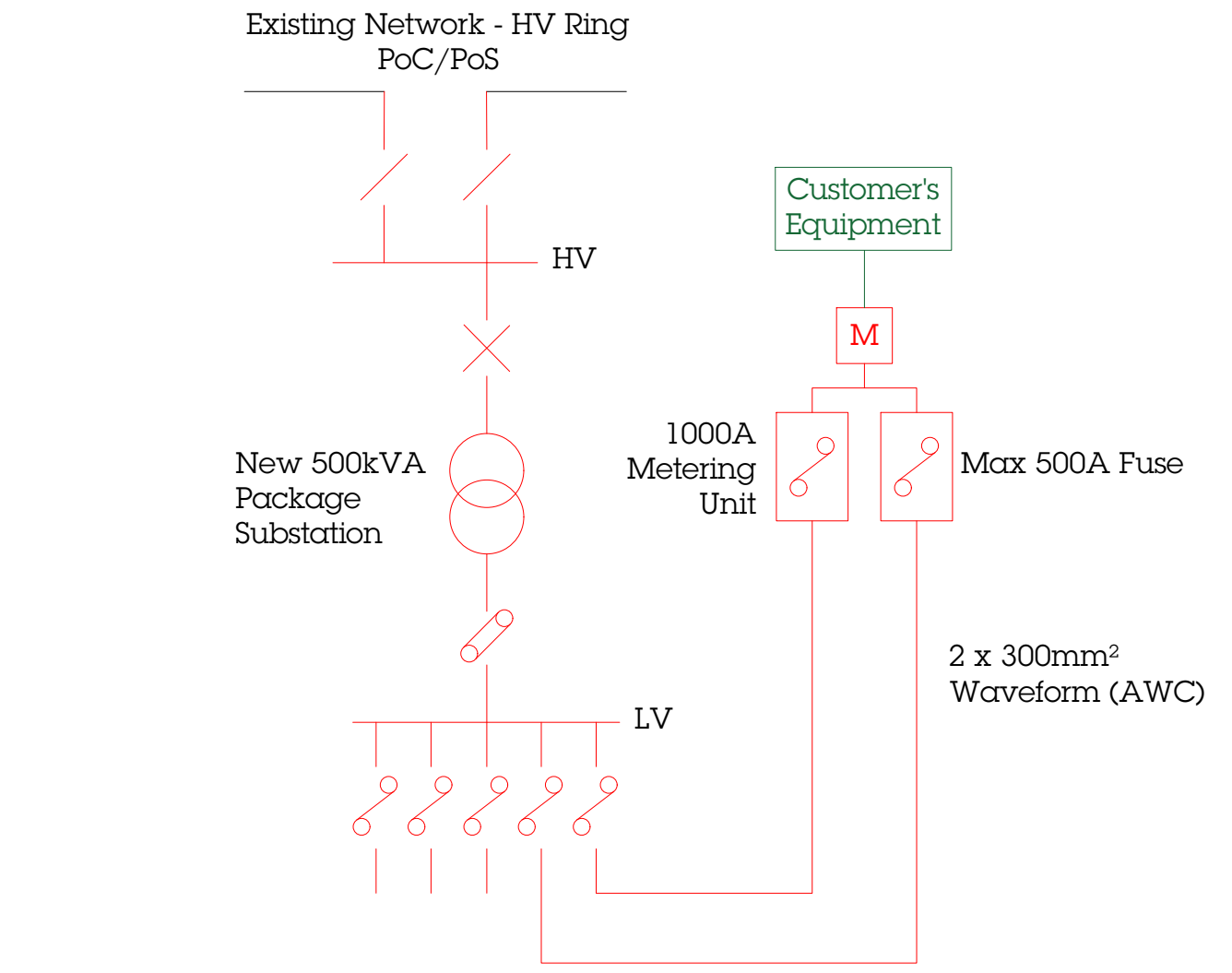
- Notes**
- Check that Volt Drop and Earth Loop Impedance limits are not exceeded
  - For 185 cable use a 400A heavy duty cut-out fused at 315A
  - For 300 cable use a 600A heavy duty cut-out fused at 400A
  - For Multi-occupancy buildings 4 core SNE cables are to be used as per G87
  - Any spare LV ways should be tailed out in 300mm² AWC and pot-ended
  - Above ratings are based on a ducted cable
  - Does the DNO Require an RTU
  - Has the DNO stipulated switchgear Manufacturer

Connected Load	Mini-Pillar Fuse Size	Cut-out Fuse Size	Service Cable Size	Metering CT Ratio
Up to 217kVA	315A	315A	185mm² Waveform (AWC)	400/5
Up to 276kVA	400A	400A	300mm² Waveform (AWC)	400/5



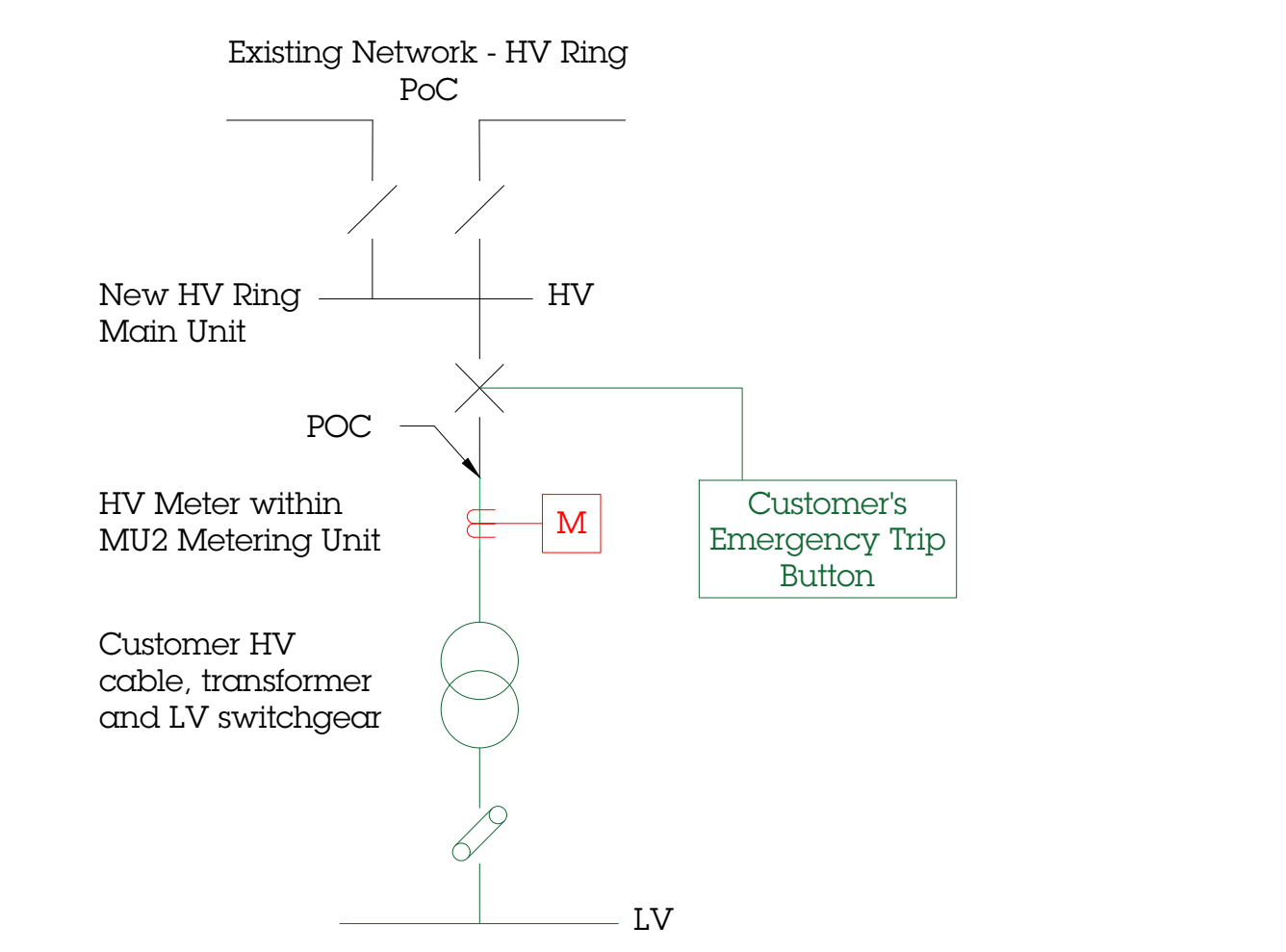
- Notes**
- For loads up to 1000kVA.
  - Customer owned single cores.
  - Integral package substations should be installed wherever possible.
  - Metering to be within 15m of substation.
  - C5 3SM TOC

Connected Load	Fuse Per Phase	Metering CT Ratio
301-360kVA	1 x 500A	500:5
361-453kVA	2 x 315A	800:5
454-575kVA	2 x 400A	800:5
576-680kVA	3 x 315A	1000:5
681-864kVA	3 x 400A	1250:5
865-1000kVA	3 x 500A	1500:5

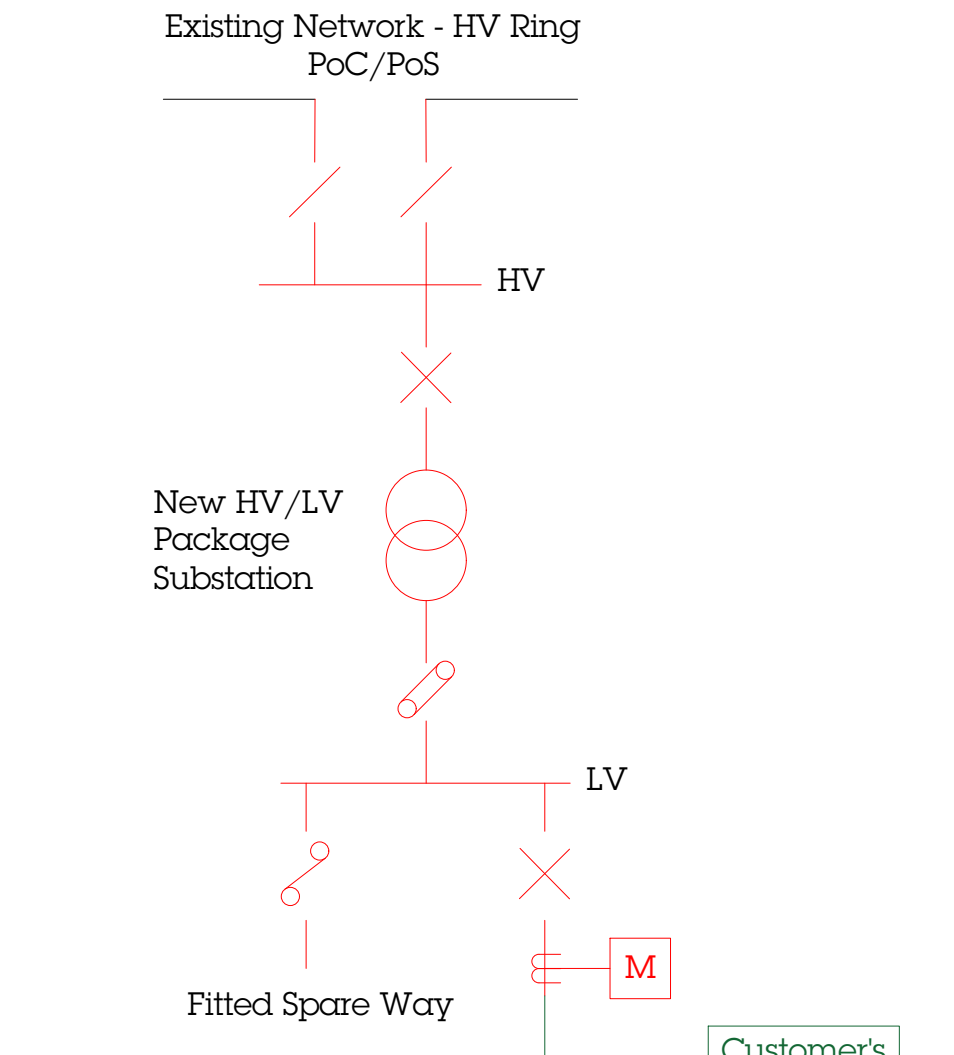


- Notes**
- Check that Volt Drop and Earth Loop Impedance limits are not exceeded
  - Maximum cable length should be 200m at full load
  - Both Cables must come from the same substation and terminate in the same switchroom
  - Both cables must be the same size, type and length

Connected Load	Transformer Size	Substation Fuse Size	Metering Unit Fuse Size	Service Cable Size
Up to 400kVA	500kVA	2 x 315A	2 x 315A	2 x 185mm² Waveform (AWC)
Up to 500kVA	500kVA	2 x 400A	2 x 400A	2 x 300mm² Waveform (AWC)
Up to 600kVA	1000kVA	2 x 500A	2 x 500A	2 x 300mm² Waveform (AWC)

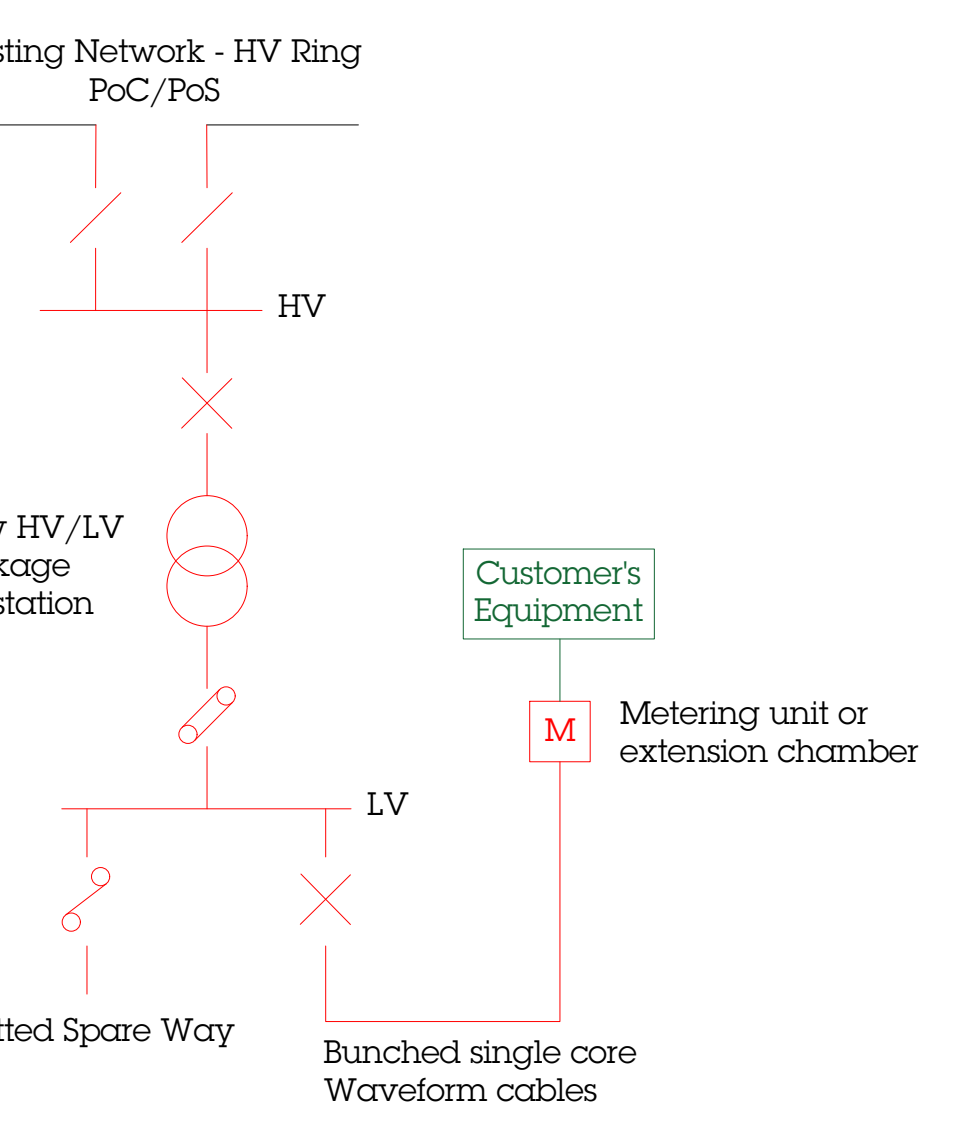


- Notes**
- Non-extensible Ring Main Unit with HV metering Unit
  - RMU
    - Schneider - RN2c 16/21-T1 with TLF protection - up to 1.0MVA
    - Schneider - RN2c 16/21-T2 with VIP 300 protection - up to 3.8MVA
  - Metering Unit
    - Schneider MU2 - M2 - 100/50/5 CTs up to 1.9MVA
    - Schneider MU2 - M3 - 200/100/5 CTs up to 3.8MVA
  - RMU to be located in GRP housing or brick substation on or outside the customer's property boundary with direct access from the public environment.
  - Customer's transformer may be sited adjacent to the substation or located remotely at the load centre
  - RMU circuit breaker rated at 200/630 amps load current with 3.15kA earth switch.
  - TLF protection on circuit breaker for transformers up to and including 1000kVA rating, relay protection for transformers above 1000kVA rating.
  - Provision must be made for remote emergency tripping of circuit breaker for use by the customer.
  - Metering shall be generally located within 15m of the substation by metering cable length.
  - LV supply to substation for VT, Small Power & Lighting to be provided by the customer.



- Notes**
- For loads up to 1000kVA.
  - Customer owned single cores.
  - Integral package substations should be installed wherever possible.
  - Metering to be within 15m of substation.

Connected Load	Transformer Size	Protection Rating
Up to 500kVA	500kVA	800A
Up to 860kVA	1000kVA	1250A
Up to 1000kVA	1000kVA	1600A



- Notes**
- In all cases the neutral cable must be installed close to a 3 phase bunch of cables as per figure below.
  - It is important that the cables are laid in tight trefoil formation, bound together to minimise the magnetic field emitted from the cables.
  - Meter chamber may be adopted.
  - All requirements are as the Scottish and Southern Electricity Networks TG-NET-CAB-013.

Schematic	
	HV RMU
	HV/LV Transformer
	LV Distribution Switchboard
	LV Linkbox/Mini Pillar
	Metering Unit
	LV Distribution Cabinet with Metering Unit
	Customer Installation
	Adopted Network

A	First Issue	CO	RB
		01-09-23	
Rev	Amendment	Drwn	Chkd
		Date	

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