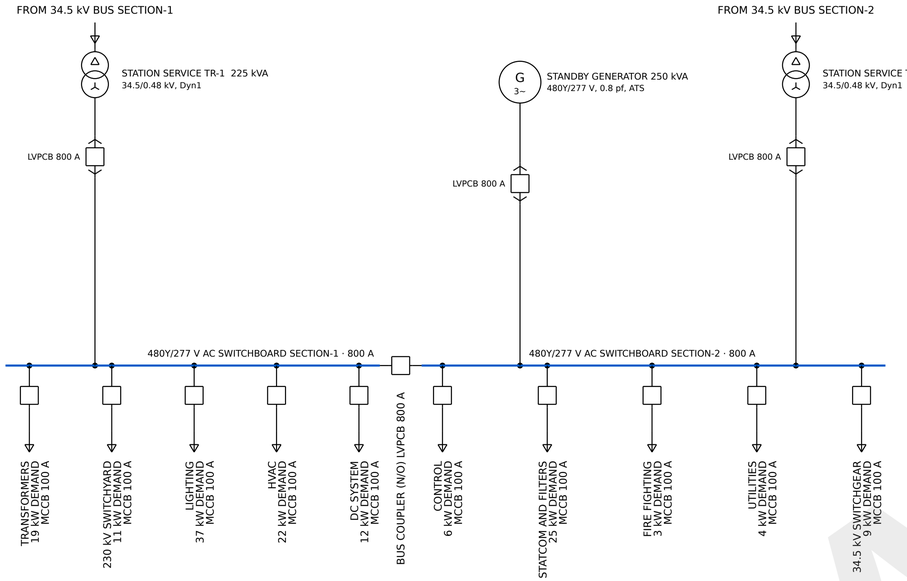
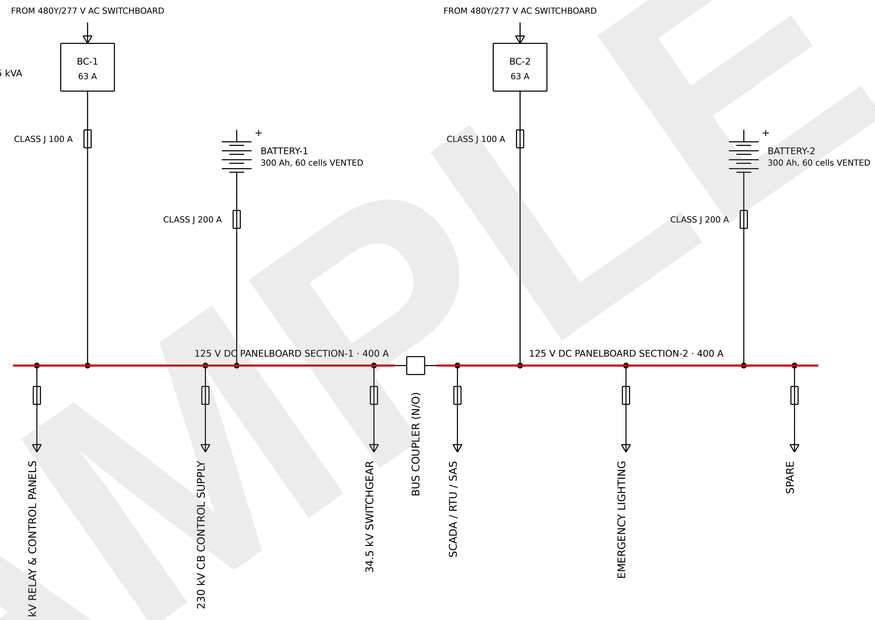
480Y/277 V AC SWITCHBOARD

Interlock: at most two of the three incomers are closed. The generator feeds Section-1 through the coupler.



125 V DC PANELBOARD

2 × 100 % batteries and chargers. One charger and one battery feed each section.



STATION SERVICE

Maximum demand √(148² + 81²) = 169 kVA (148 kW, 81 kvar). With the 1.2 margin 203 kVA: station service transformers 2 × 225 kVA.

Standby generator 250 kVA for the full station service load (223 kVA required).

The main electric fire-water pump (37.0 kW) starts across the line with a 14.8 % voltage dip (limit 15.0 %).

Battery 2 × 300 Ah vented lead-calcium, 60 cells: float 135 V, end of discharge 105 V. IEEE Std 485 requires 241 Ah for 8 h.

Chargers 2 × 63 A. IEEE Std 946 requires 52.8 A.

LOADS BY GROUP (CONNECTED / DEMAND kW)

Transformers: 20.0 / 18.9

230 kV switchyard: 20.9 / 11.5

Lighting: 37.0 / 37.0

HVAC: 21.6 / 21.6

DC system: 22.8 / 12.4

Control: 6.0 / 6.0

STATCOM and filters: 24.8 / 24.8

Fire fighting: 42.5 / 2.8

Utilities: 58.7 / 4.3

34.5 kV switchgear: 9.2 / 9.2

NOTES

1. Load ratings are the design's values. Change them in the load list on the Station service step.
2. The telecom supplier provides the 48 V DC telecom battery and charger.
3. Not to scale.
4. Ratings are at or above the full-load current: power circuit breakers in the IEEE C37.13-2015 frame sizes, molded-case breakers, fuses and boards in typical ratings. DC feeder fuses and cables are sized at detail design.

SubstationLayout

REV	DATE	DESCRIPTION	BY
0	4 Nov 2026	Issued	Sample engineer

PROJECT	Sample 230/34.5 kV pooling substation
CLIENT	Sample client
LOCATION	Sample site
TITLE	STATION SERVICE: 480Y/277 V AC AND 125 V DC SLD 230/34.5 kV POOLING SUBSTATION, 250 MW

	NAME	DATE
DRAWN	Sample engineer	4 Nov 2026
CHECKED	Sample engineer	4 Nov 2026
APPROVED	Sample engineer	4 Nov 2026

DRG. NO.	SSL-E-AUX-001	REV.	0
SCALE	NTS	SIZE ANSI D	Sheet 1 of 1

SAMPLE

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