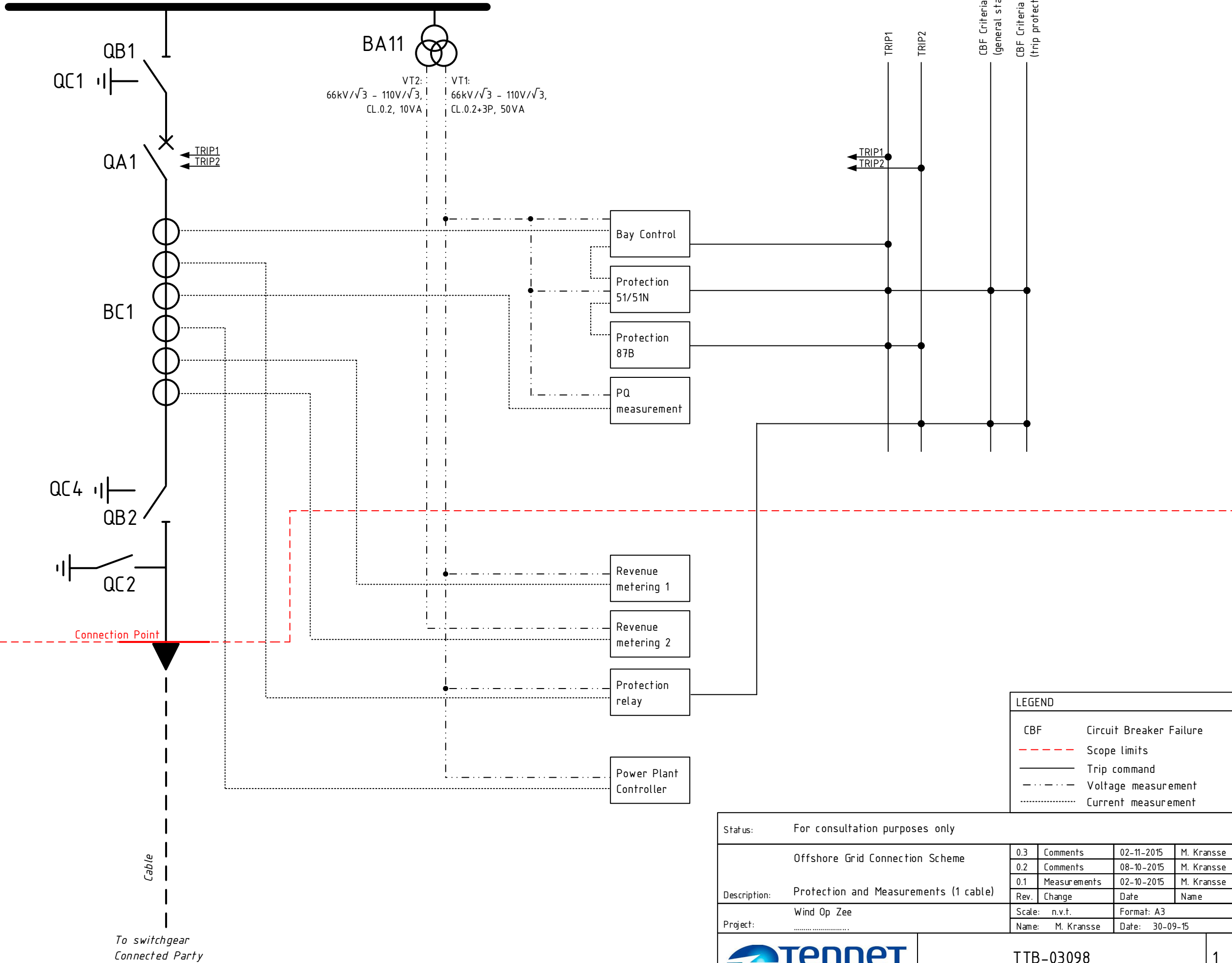


66 kV busbar

- CT1: 1250 / 1A, 5PR20, 15VA
- CT2: 1250 / 1A, 5PR20, 15VA
- CT3: 400/600/800/1250 / 1A, 0,2Fs5, 15VA
- CT4: 400/600/800/1250 / 1A, 0,2Fs5, 15VA
- CT5: 400/600/800/1250 / 1A, 0,2Fs5, 15VA
- CT6: 400/600/800/1250 / 1A, 0,2Fs5, 15VA



TenneT
Connected Party (CP)

Connection Point

Cable

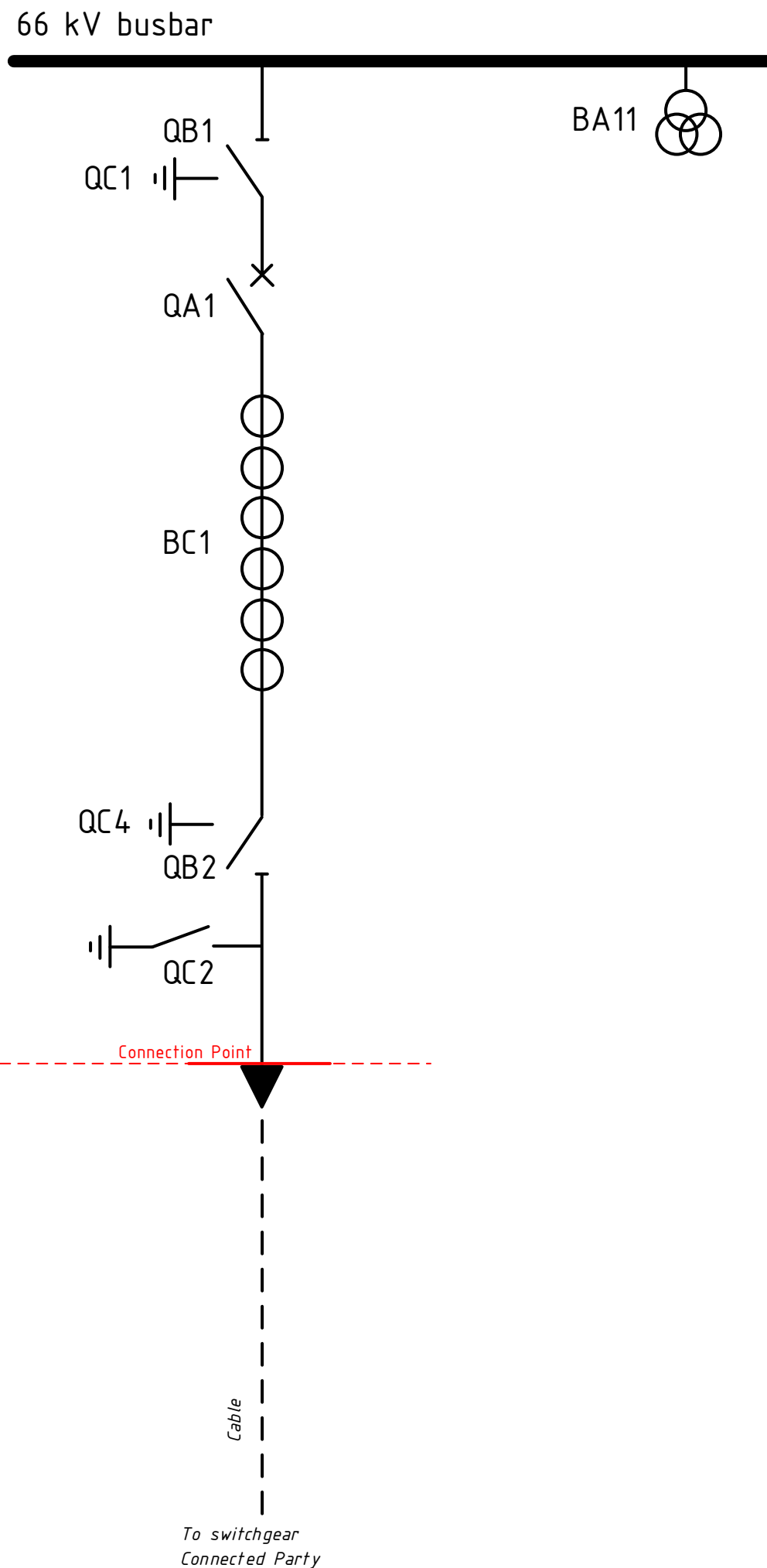
To switchgear
Connected Party

Designations
not final yet

LEGEND	
CBF	Circuit Breaker Failure
- - - - -	Scope limits
—————	Trip command
- · - · - ·	Voltage measurement
········	Current measurement

Status:	For consultation purposes only				
Description:	Offshore Grid Connection Scheme	0.3	Comments	02-11-2015	M. Kransse
		0.2	Comments	08-10-2015	M. Kransse
	Protection and Measurements (1 cable)	0.1	Measurements	02-10-2015	M. Kransse
Project:	Wind Op Zee	Rev.	Change	Date	Name
	Scale:	n.v.t.	Format:	A3
		Name:	M. Kransse	Date:	30-09-15

	Drawing nr:	TTB-03098	sheet	1
	VISIO filename:vsd	systnr:



Switchgear on TenneT platform			
Component	TenneT (local)	TenneT (remote)	Connected Party
QB1	Oper./Sign.	Oper./Sign.	--
QC1	Oper./Sign.	Oper./Sign.	--
QA1	Oper./Sign.	Oper./Sign.	Oper. ¹⁾
QB2	Oper./Sign.	Oper./Sign.	Sign.
QC4	Oper./Sign.	Oper./Sign.	--
QC2	Oper./Sign.	Oper./Sign.	Sign.

1) Only switch off the circuit breaker by trip

Switchgear in wind turbines			
Component	TenneT (local)	TenneT (remote)	Connected Party
66 kV discon.	Sign. ²⁾	Sign. ²⁾	Oper./Sign.
66 kV earth.sw.	Sign. ³⁾	Sign. ³⁾	Oper./Sign.
66 kV circ.br.	--	--	Oper./Sign.

2) Position of disconnectors in the string shall be signalled to TenneT as a combined signal for interlocking purposes::
 - String disconnected (Earthing allowed) /
 - String connected (Earthing not allowed)

3) Position of earthing switches in the string shall be signalled to TenneT as a combined signal for interlocking purposes:
 - String connected to earth (Energization not allowed)/
 - String not connected to earth (Energization allowed)

TenneT
Connected Party (CP)

Connection Point

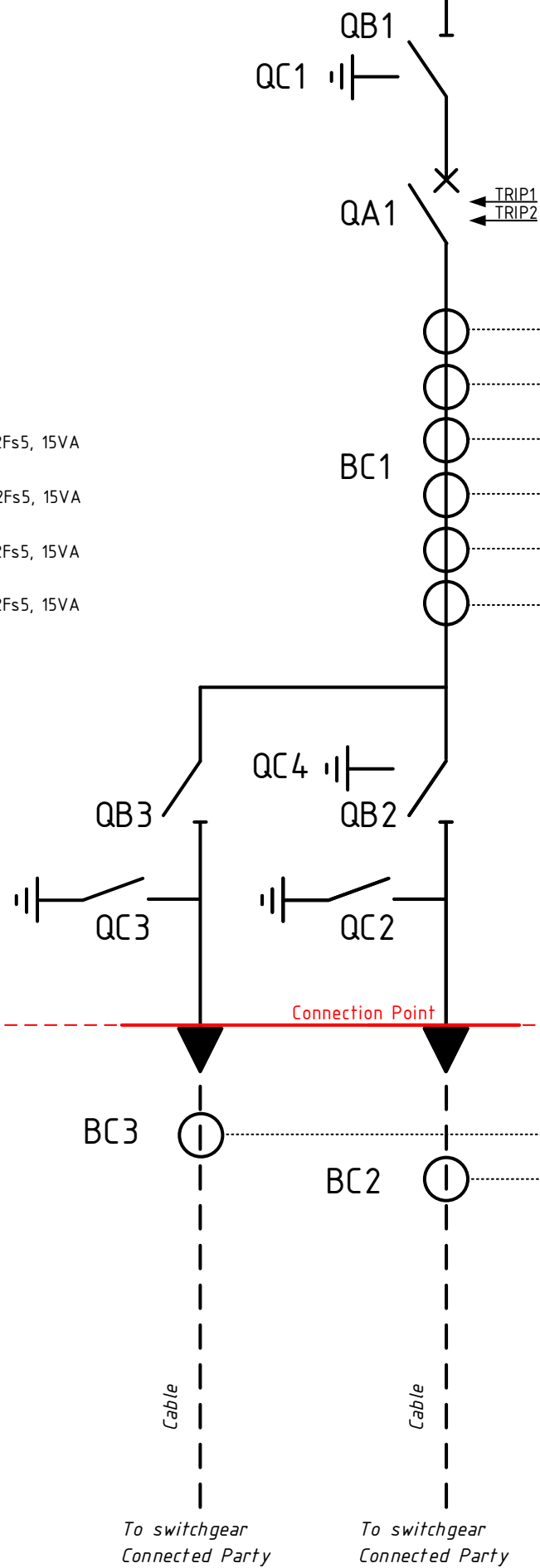
Cable

To switchgear
Connected Party

Designations
not final yet

Status:	For consultation purposes only				
Description:	Offshore Grid Connection Scheme	0.3	Comments	02-11-2015	M. Kransse
	Operation and Signalling (1 cable)	0.2	Comments	08-10-2015	M. Kransse
		0.1	Measurements	02-10-2015	M. Kransse
Project:	Wind Op Zee	Rev.	Change	Date	Name
		Scale:	n.v.t.	Format:	A3
		Name:	M. Kransse	Date:	30-09-15
		Drawing nr: TTB-03098		sheet 2	
		VISIO filename:vsd		systnr:	

66 kV busbar

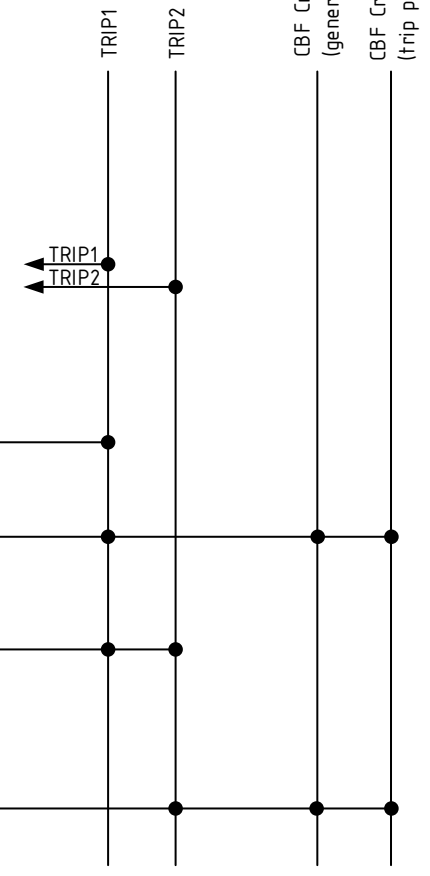


BA11
 VT2: $66kV/\sqrt{3} - 110V/\sqrt{3}$, CL.0.2, 10VA
 VT1: $66kV/\sqrt{3} - 110V/\sqrt{3}$, CL.0.2+3P, 50VA

- CT1: 1250 / 1A, 5PR20, 15VA
- CT2: 1250 / 1A, 5PR20, 15VA
- CT3: 400/600/800/1250 / 1A, 0,2Fs5, 15VA
- CT4: 400/600/800/1250 / 1A, 0,2Fs5, 15VA
- CT5: 400/600/800/1250 / 1A, 0,2Fs5, 15VA
- CT6: 400/600/800/1250 / 1A, 0,2Fs5, 15VA

Bay Control
 Protection 51/51N
 Protection 87B
 PQ measurement

Revenue metering 1
 Revenue metering 2
 Protection relay(s)
 Power Plant Controller



TenneT
 Connected Party (CP)

Connection Point

CT: scope CP
 CT: scope CP

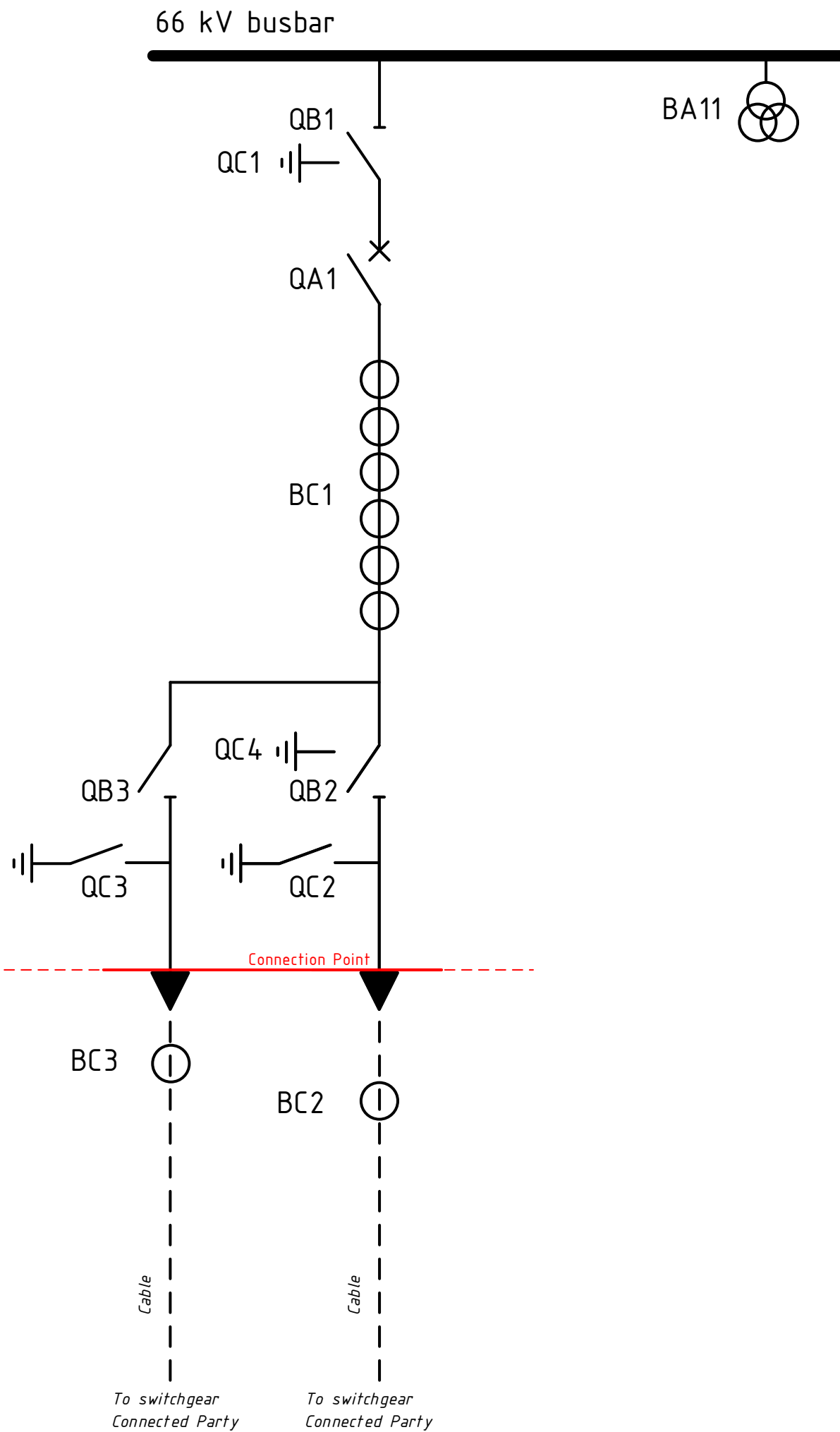
Designations
 not final yet

LEGEND			
CBF	Circuit Breaker Failure		
- - - - -	Scope limits		
—	Trip command		
- · - · - ·	Voltage measurement		
· · · · ·	Current measurement		

Status:	For consultation purposes only				
Description:	Offshore Grid Connection Scheme	0.3	Comments	02-11-2015	M. Kransse
	Protection and Measurements (2 cables)	0.2	Comments	08-10-2015	M. Kransse
		0.1	Measurements	02-10-2015	M. Kransse
Project:	Wind Op Zee	Scale:	n.v.t.	Format:	A3
		Name:	M. Kransse	Date:	30-09-15

Drawing nr: **TTB-03098** sheet **3**

VISIO filename:vsd systnr:



TenneT
Connected Party (CP)

CT: scope CP

CT: scope CP

Designations
not final yet

Switchgear on TenneT platform			
Component	TenneT (local)	TenneT (remote)	Connected Party
QB1	Oper./Sign.	Oper./Sign.	--
QC1	Oper./Sign.	Oper./Sign.	--
QA1	Oper./Sign.	Oper./Sign.	Oper. ¹⁾
QB2	Oper./Sign.	Oper./Sign.	Sign.
QC4	Oper./Sign.	Oper./Sign.	--
QB3	Oper./Sign.	Oper./Sign.	Sign.
QC2	Oper./Sign.	Oper./Sign.	Sign.
QC3	Oper./Sign.	Oper./Sign.	Sign.

1) Only switch off the circuit breaker by trip

Switchgear in wind turbines			
Component	TenneT (local)	TenneT (remote)	Connected Party
66 kV discon.	Sign. ²⁾	Sign. ²⁾	Oper./Sign.
66 kV earth.sw.	Sign. ³⁾	Sign. ³⁾	Oper./Sign.
66 kV circ.br.	Sign. ⁴⁾	Sign. ⁴⁾	Oper./Sign.

2) Position of disconnectors in the string shall be signalled to TenneT as a combined signal for interlocking purposes:
 - String disconnected (Earthing allowed) /
 - String connected (Earthing not allowed)

3) Position of earthing switches in the string shall be signalled to TenneT as a combined signal for interlocking purposes:
 - String connected to earth (Energization not allowed)/
 - String not connected to earth (Energization allowed)

Status: For consultation purposes only				
Description: Offshore Grid Connection Scheme	0.3	Comments	02-11-2015	M. Kransse
	0.2	Comments	08-10-2015	M. Kransse
	0.1	Measurements	02-10-2015	M. Kransse
Description: Operation and Signalling (2 cables)	Rev.	Change	Date	Name
Project: Wind Op Zee	Scale:	n.v.t.	Format:	A3
	Name:	M. Kransse	Date:	30-09-15
		Drawing nr: TTB-03098		4
		VISIO filename:vsd		systnr: