

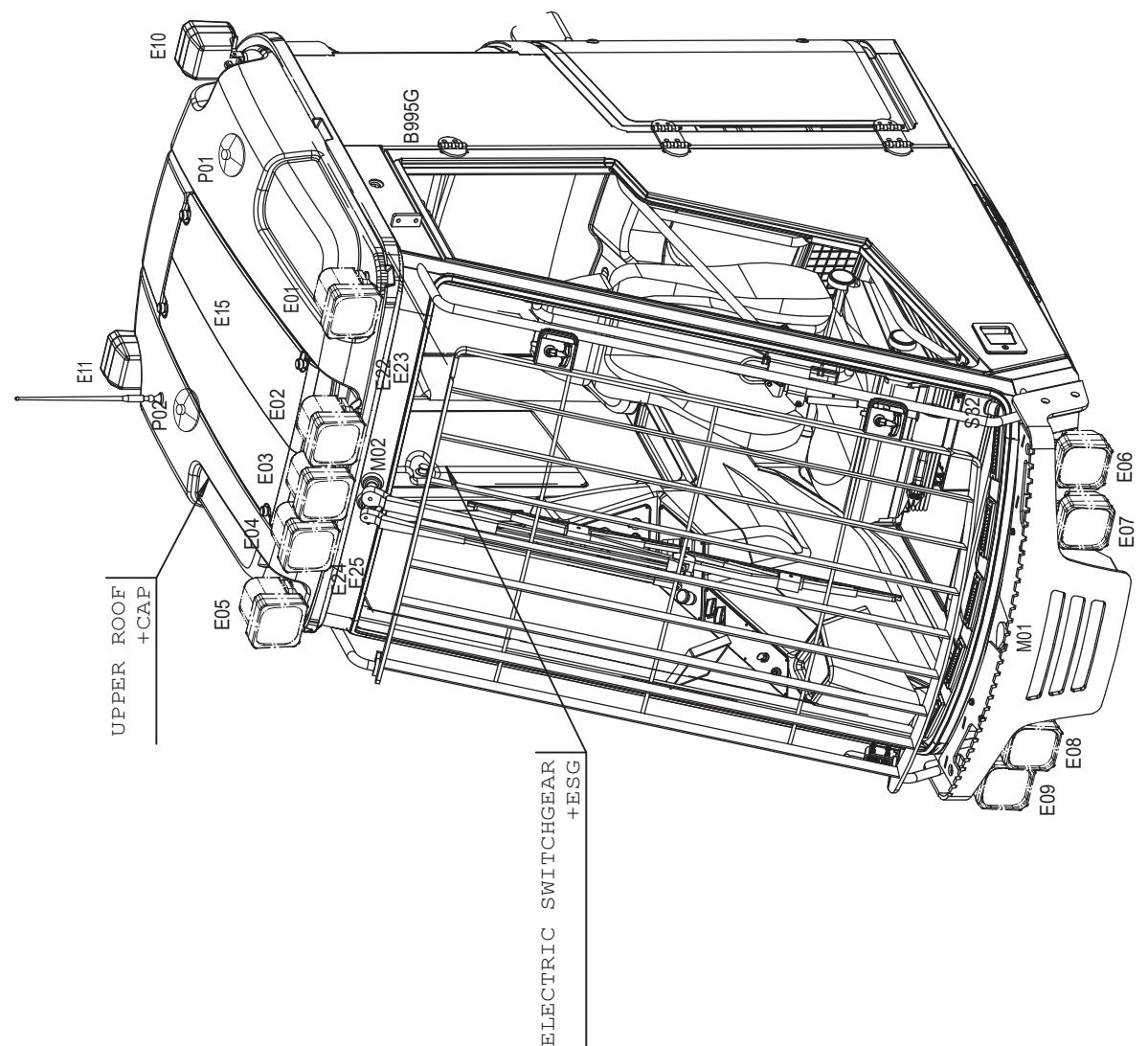
TABLE OF CONTENTS

SHEET	REVISION	CONTENTS	REVISION INFO
1	E	TABLE OF CONTENTS AND REVISION INFO	2019-09-02 JMO List updated
2	E	TABLE OF CONTENTS AND REVISION INFO	2019-09-02 JMO List updated
3		CABIN LAYOUT (OUTSIDE) / POS. REFER.	
4		CABIN LAYOUT (INSIDE) / POS. REFER.	
5	D	SIGNAL CONNECTOR X4001 FROM CARRIER	2019-04-09 JPA X120:14 updated
6		POWER SUPPLY OF CABIN	
7		POWER SUPPLY OF CABIN 2	
8		HMI MASTER POWER SUPPLY AND CAN BUS	
9		CONNECTIONS OF GUI MASTER	
10		CAN BUS TO AIMING UNIT	
11	E	CAN BUS, Advanced calculation unit	2019-12-23 JY1 GNSS connections changed
12	D	CAN BUS, TELE REMOTE	2019-04-09 JPA Connections to TREG updated.
13		CAN BUS, SENSOR GPS-COMPASS (SGC)	
14	B	LAN SWITCH, PROGRAMMING SOCKET	2018-07-31 JUU RockPulse connection added
15		CONNECTIONS OF DATA TRANSFER UNIT	
16		CAN BUS TO AUX CONTROL PANEL	
17		LAYOUT, VS AND CAN BUS OF RCP	
18		TRAM./DRILL. JOYSTICK, IPS	
19		RIGHT BOOM JOYSTICK (JJ2)	
20		RIGHT KEYBOARD MATRIX CONNECT.	
21		ROT. SPEED AND DRILL. PWR. ADJUSTMENT	
22		DRILL. PWR. AND FEED FORCE ADJUSTMENT	
23		LAYOUT, VS AND CAN BUS OF LCP	
24		LEFT ARM REST AND IPS (EXT)	
25		TRAMMING / RH JOYSTICK (JJ1)	
26		LEFT BOOM JOYSTICK (JJ2)	
27		LEFT KEYBOARD 1 MATRIX CONNECTIONS	
28		LEFT KEYBOARD 2 MATRIX CONNECT.	
29		LEDS OF LEFT KEYBOARD 2	
30		WATER INJ. AND FLUSH. FLOW ADJUSTMENT	
31		EM. STOP CIRCUIT OF CABIN	
32	F	FOOT PEDALS	2020-01-09 JY1 WS43 wire colors changed
33		RADIO RECEIVER CONNECTIONS	
34		DOOR SAFETY CIRCUIT	
35		CONTROL OF RELAYS	

SANDVIK

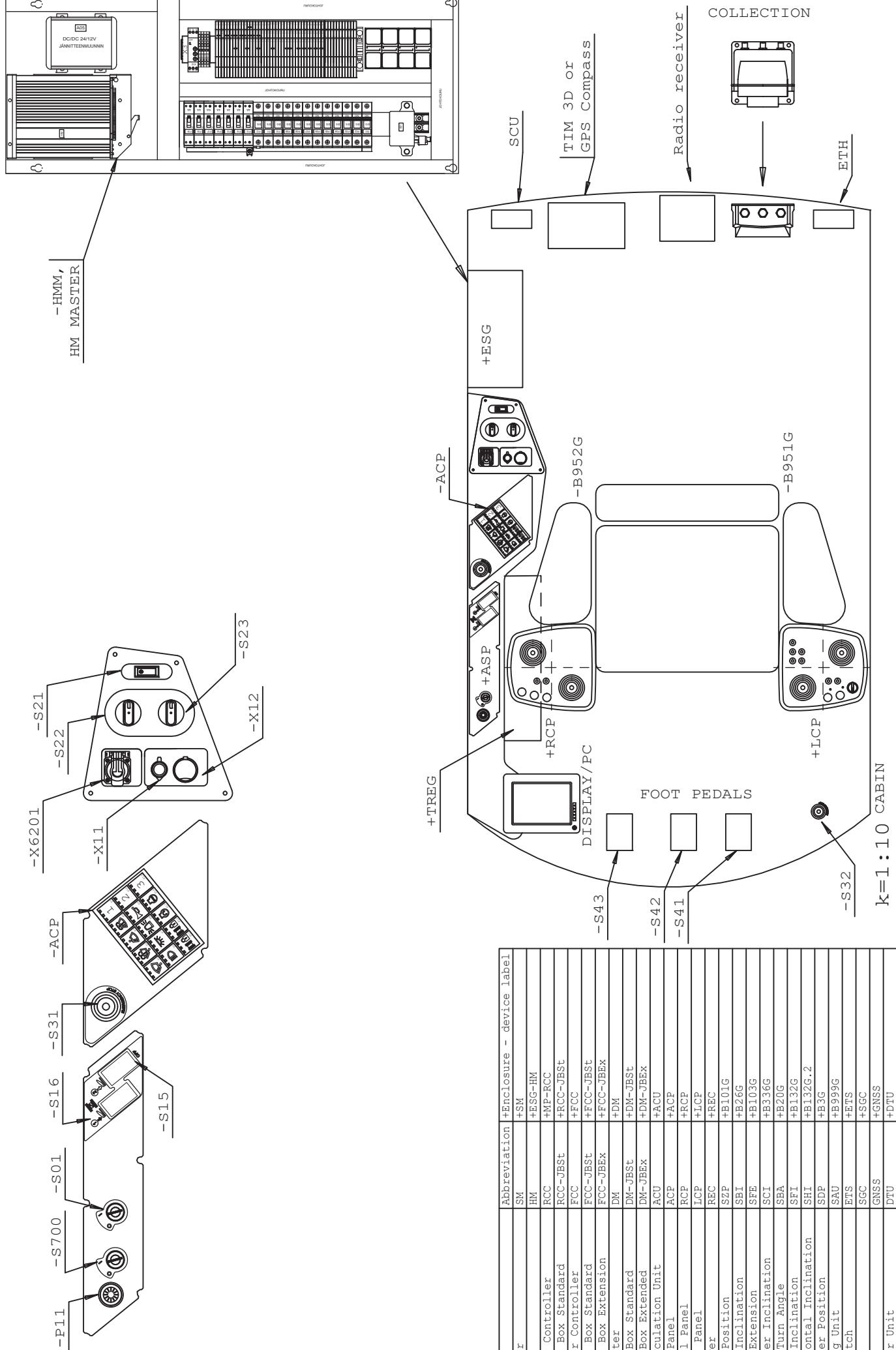
SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter without the prior written consent of Sandvik.	DRAWN BY	DATE	NAME	SANDVIK Pantera DPi Cabin	
Copyright © Sandvik Mining and Construction		CONTROL SYSTEMS		JUU	TABLE OF CONTENTS AND REVISION INFO	
		CHECKED	2018-04-20	RPA	SHEET 2 / 51	
		APPROVED	2018-04-20	MZA	DRAWING NR. BG01110396-F	
				CAB	ID-CODE BG01110396	

OTHER AREAS IN CABIN +CAB



SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manuscript or as subject matter in a new work without the prior written consent of Sandvik.		DRAWN BY JTU 2018-04-20	NAME CONTROL SYSTEMS	SANDVIK CABIN LAYOUT (OUTSIDE)	Pantera / POS.	Dpi REFER.	Cabin / OUTSIDE	SHEET 3 / 51	A3
			CHECKED RTA 2018-04-20	Dragonfly POSITION	CAB				DWG NR. BG0110396	
			APPROVED MESA 2018-04-20						ID-CODE: BG0110396	

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SANDVIK		SANDVIK Pantera DPi Cabin CABIN LAYOUT (INSIDE) / POS. REFER.	
		NAME	
		CONTROL SYSTEMS	NAME
		DRAWN BY	JUU
		APPROVED	MFA
		CHECKED	RTA
		Copyright © Sandvik Mining and Construction	REFER.
		TELECODE BG01110396-F	
		TELECODE BG01110396	

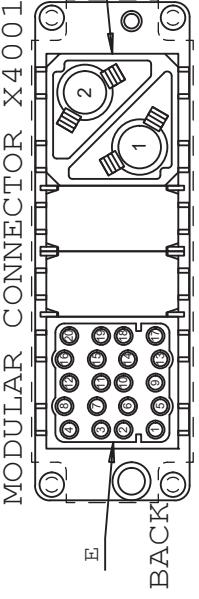
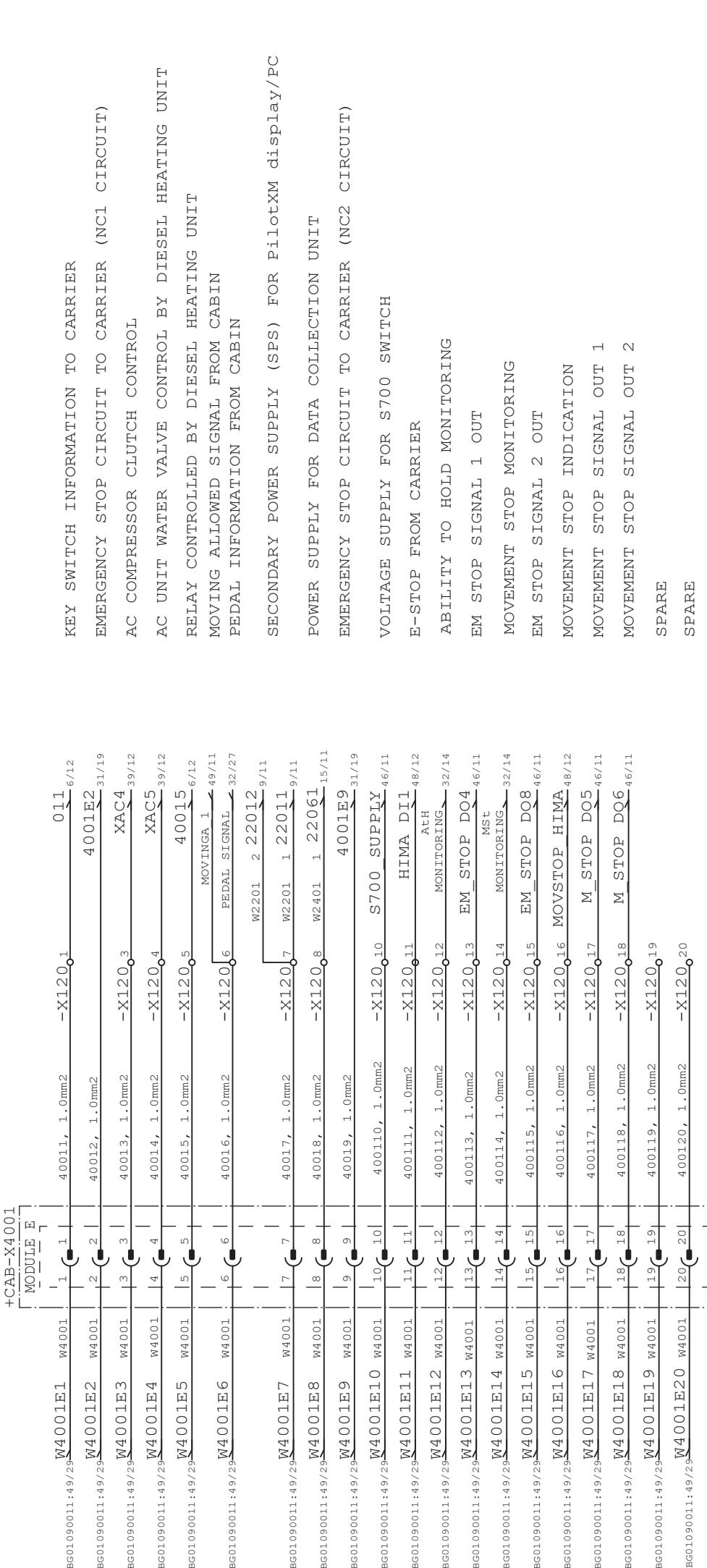
DATA
COLLECTION

SHEET 4 / 51 A3

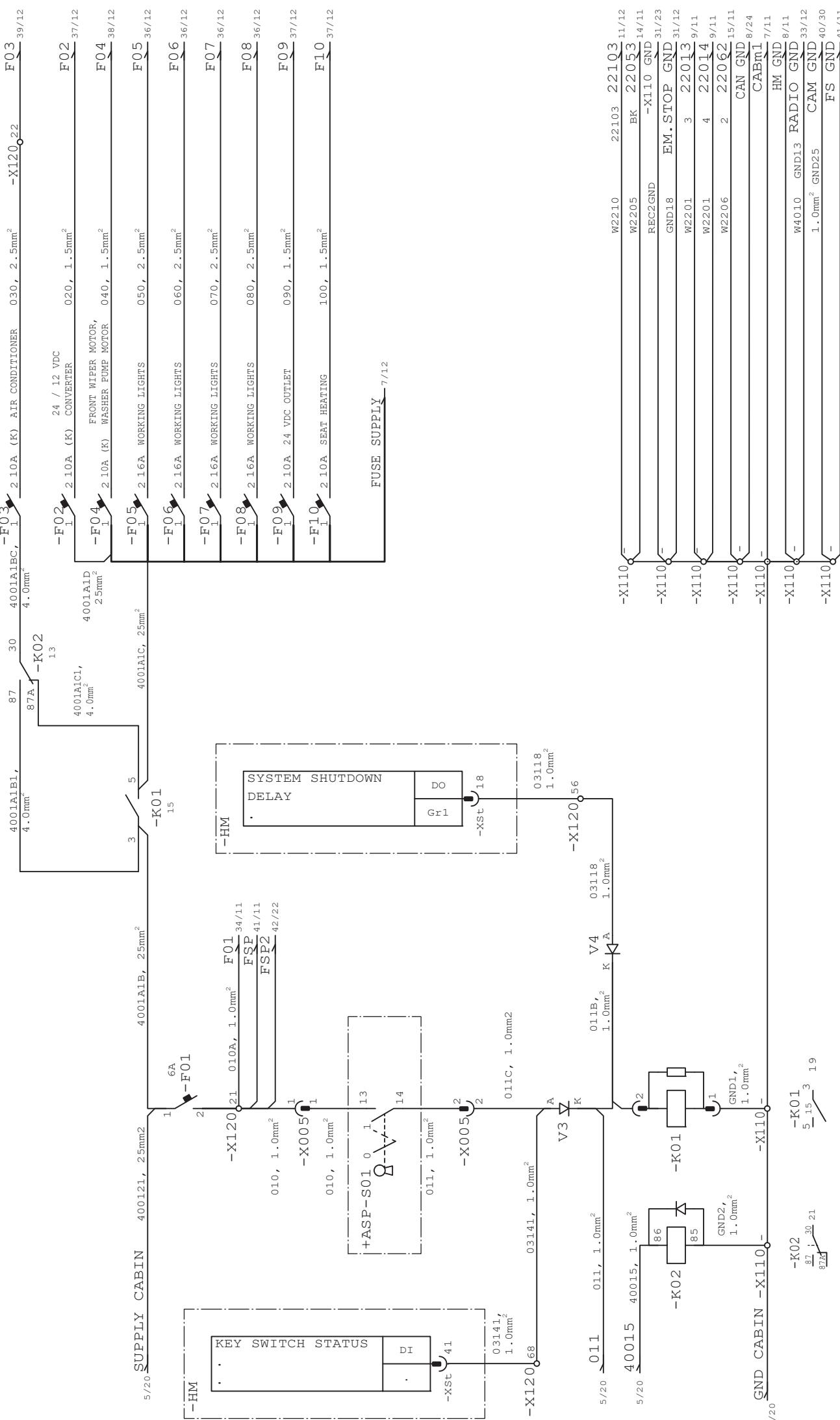
DIG NR BG01110396-F

TELECODE BG01110396

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	SHEET 5 / 51	A3
SANDVIK Pantera DPi Cabin SIGNAL CONNECTOR X4001 FROM CARRIER		Dwg NR BG01110396-F	
TILE-CODE BG01110396			

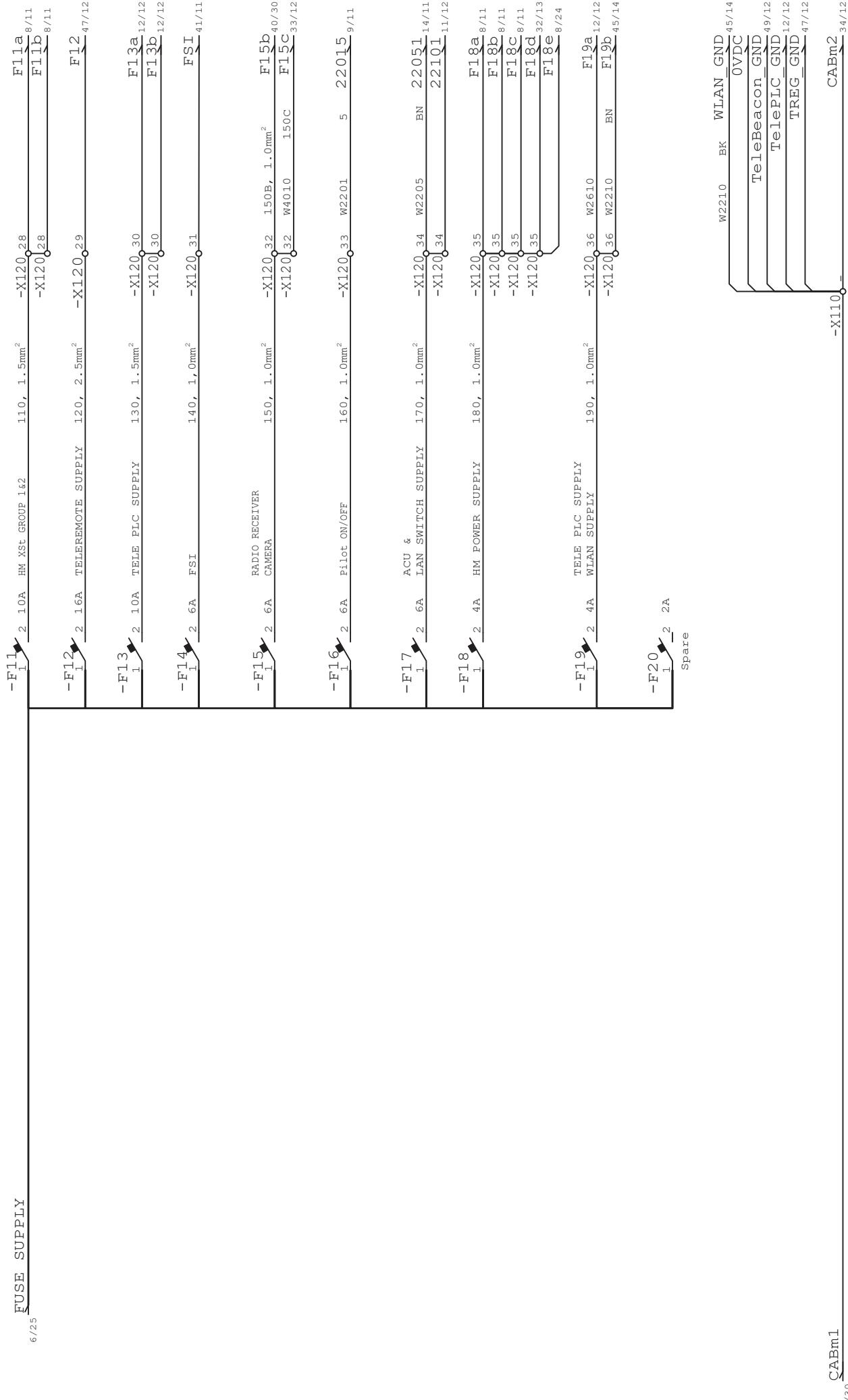


SANDVIK NOTICE! This document is the exclusive property of Sandvik and it must be... **CONFIDENTIAL**

SANDVIK Pantera DPi Cabin
POWER SUPPLY OF CABIN

Copyright © Sandvik Mining and Construction

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SANDVIK

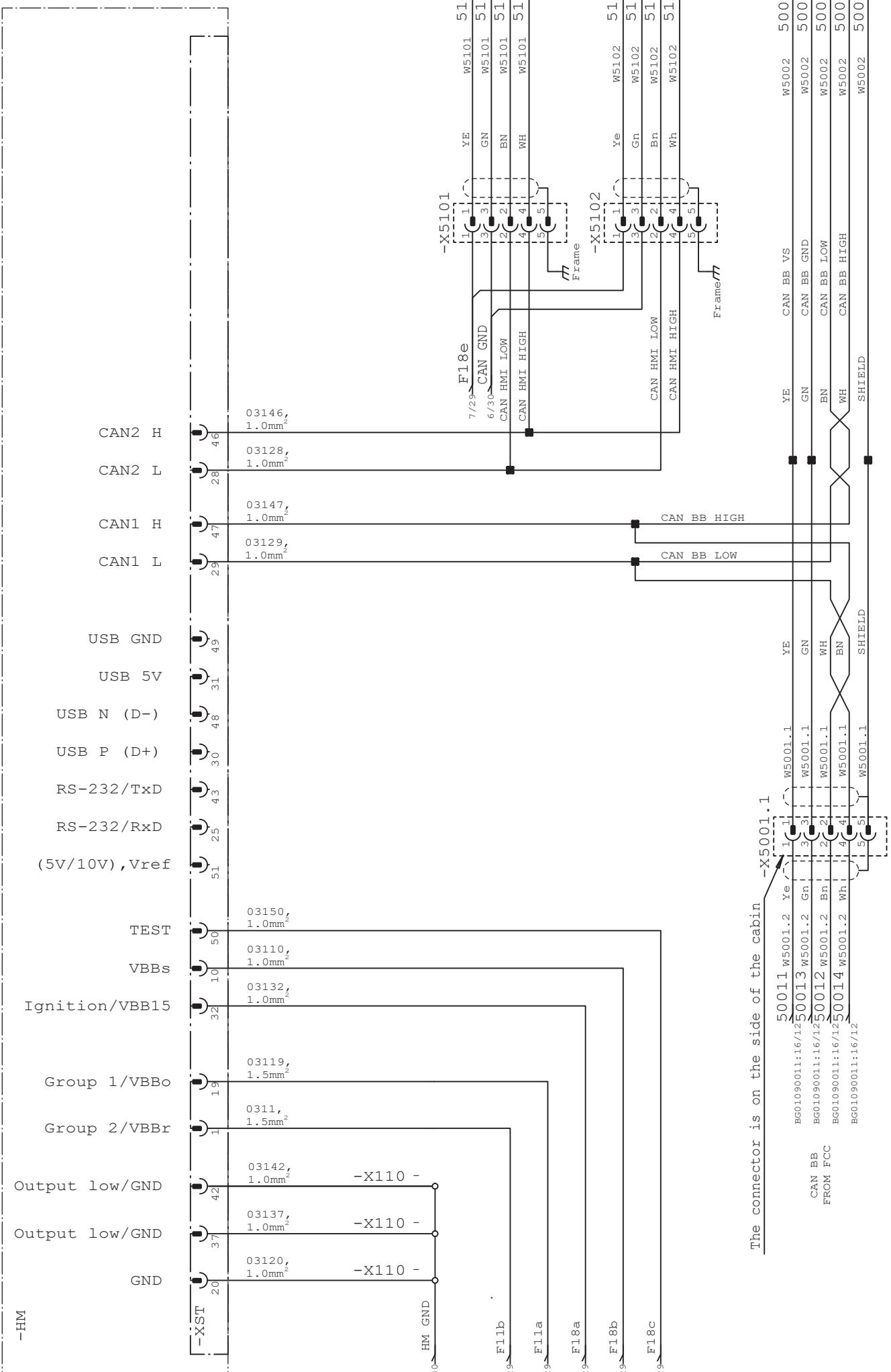
NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

Copyright © Sandvik Mining and Construction

NAME	DATE	DRAWN BY	2018-04-20	JUU	CONTROL SYSTEMS	SANDVIK Pantera DPi Cabin	SHEET 7 / 51	A3
POSITION	ESG	APPROVED	2018-04-20	MFA	Dragonfly	POWER SUPPLY OF CABIN 2	DING NR	BG01110396-F
TICK-CODE BG01110396								

Copyright © Sandvik Mining and Construction

1111 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30



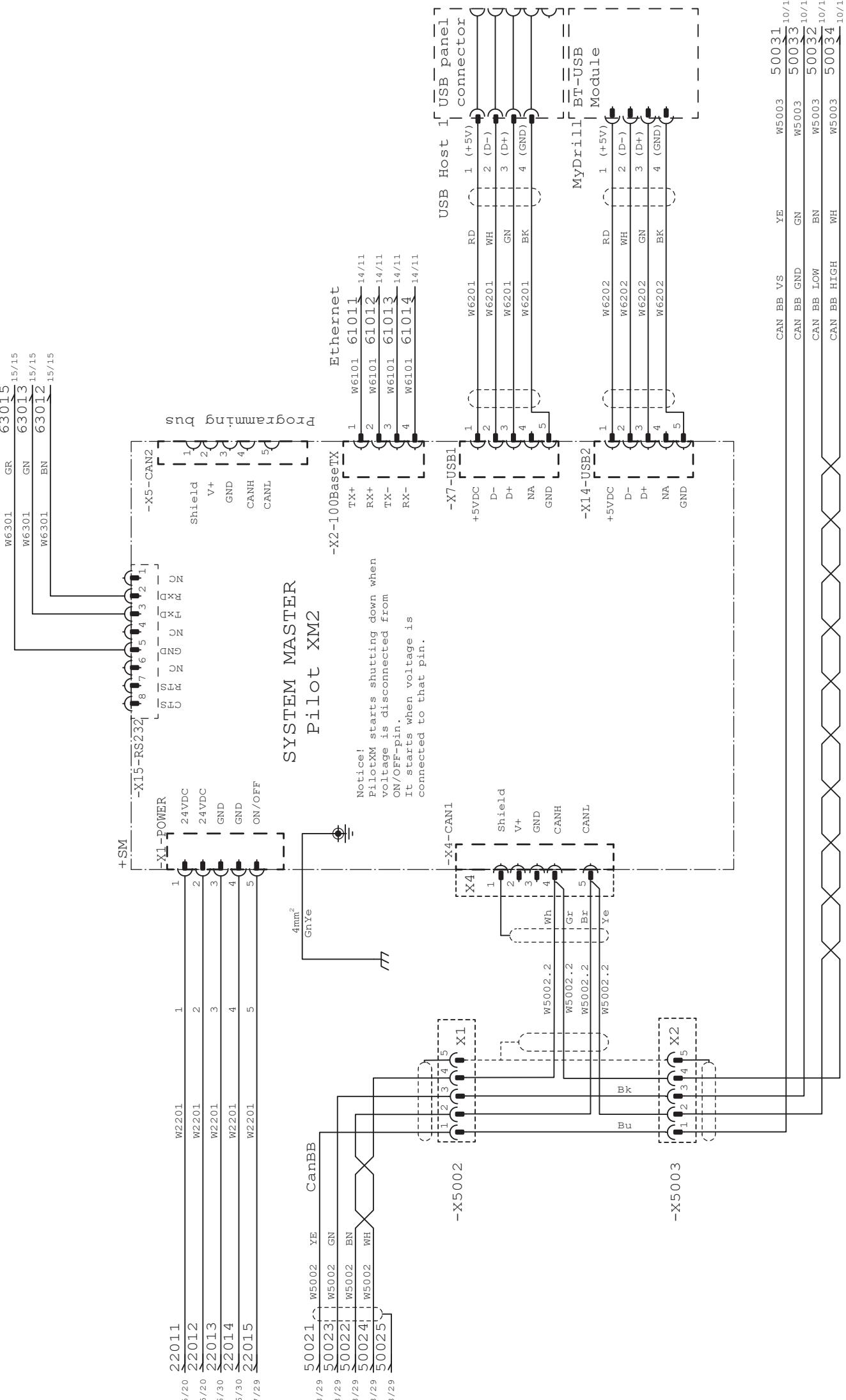
The connector is on the side of the cabin

SHEET 8 / 51 A3
 DWG NR BGO1110396-E
 VER. 00000 BGO1110396

SANDVIK NAME _____
NOTICE! This document is the exclusive
property of Sandvik and it must be
returned to Sandvik when no longer
needed.

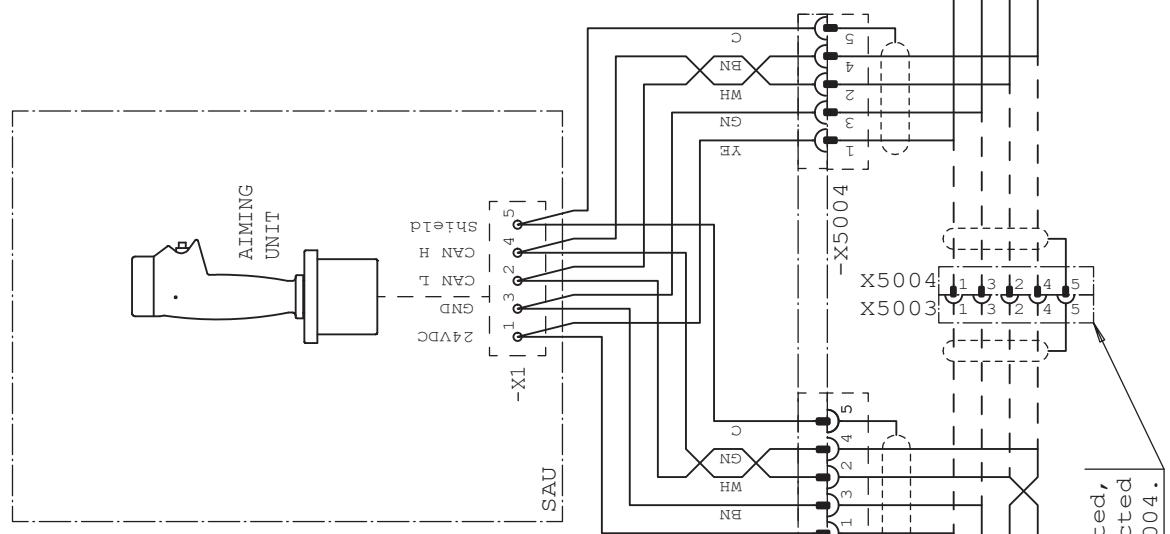
Copyright © Sandvik Mining and Construction

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30



11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

+B999G



If Aiming unit not mounted,
W5003 is connected
to W5004.

50031	W5003	YE	W5004	50041
50033	W5003	GN	GN	50043
50032	W5003	BN	BN	50042
50034	W5003	WH	WH	50044
9/30				11/12

50031	W5003	YE	W5004	50041
50033	W5003	GN	GN	50043
50032	W5003	BN	BN	50042
50034	W5003	WH	WH	50044
9/30				11/12

SANDVIK

Copyright © Sandvik Mining and Construction

NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

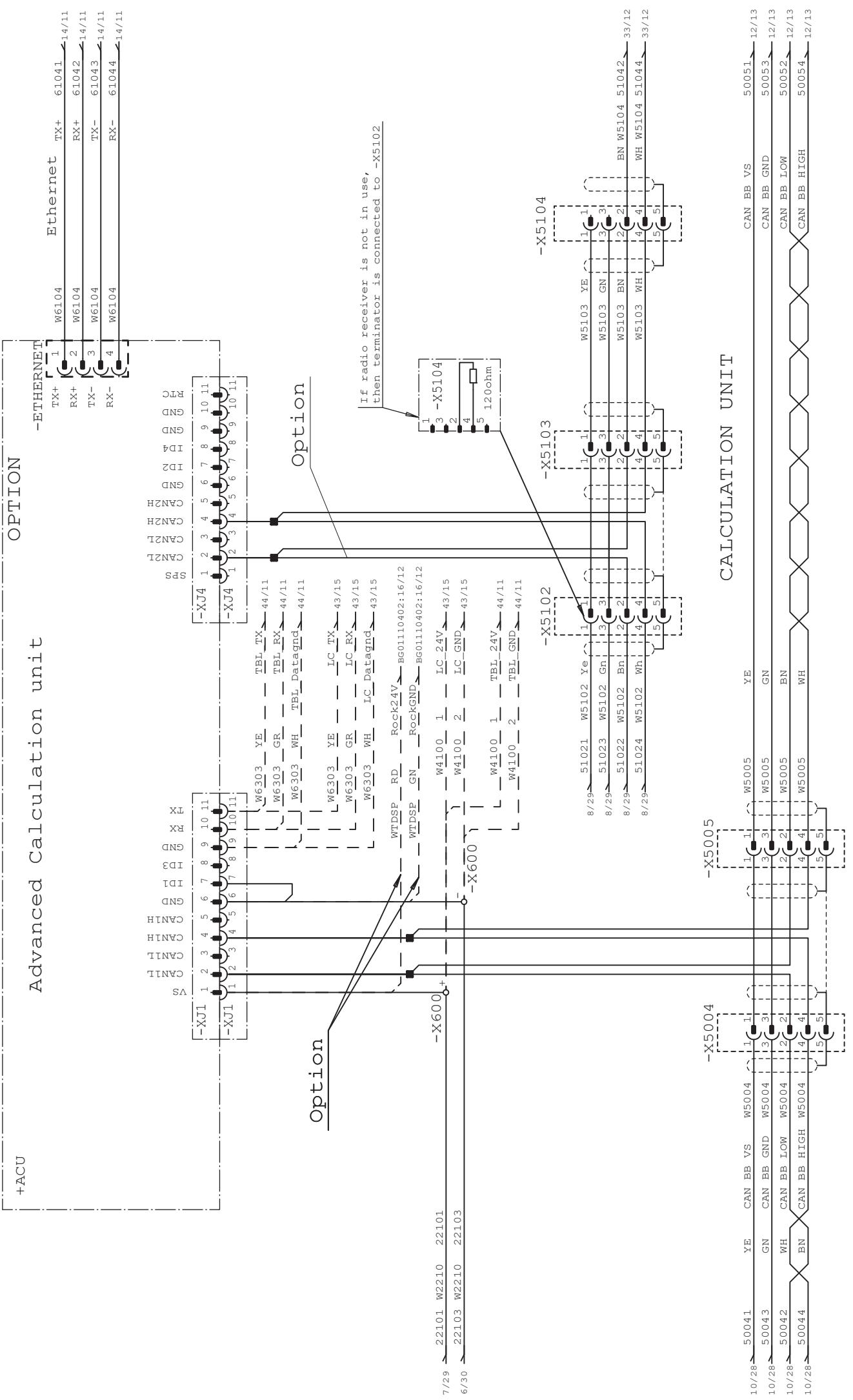
DATE DRAWN BY NAME
2018-04-20 JUU
CHECKED 2018-04-20 RTA
APPROVED 2018-04-20 MPA

SHEET 10 / 51
DRAWING NO. BGO1110396-F
FILE-CODE BGO1110396

CONTROL SYSTEMS
CAN BUS TO AIMING UNIT
Dragonfly POSITION CAB

A3

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SANDVIK

SANDVIK Mining and Construction

Copyright © Sandvik Mining and Construction

NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

Sheet 11 / 51 A3
Drawing No. BG01110396-F
Title-Code BG01110396

SANDVIK Pantera DPi Cabin
CAN BUS, Advanced calculation unit

CONTROL SYSTEMS

Dragonfly POSITION CAB

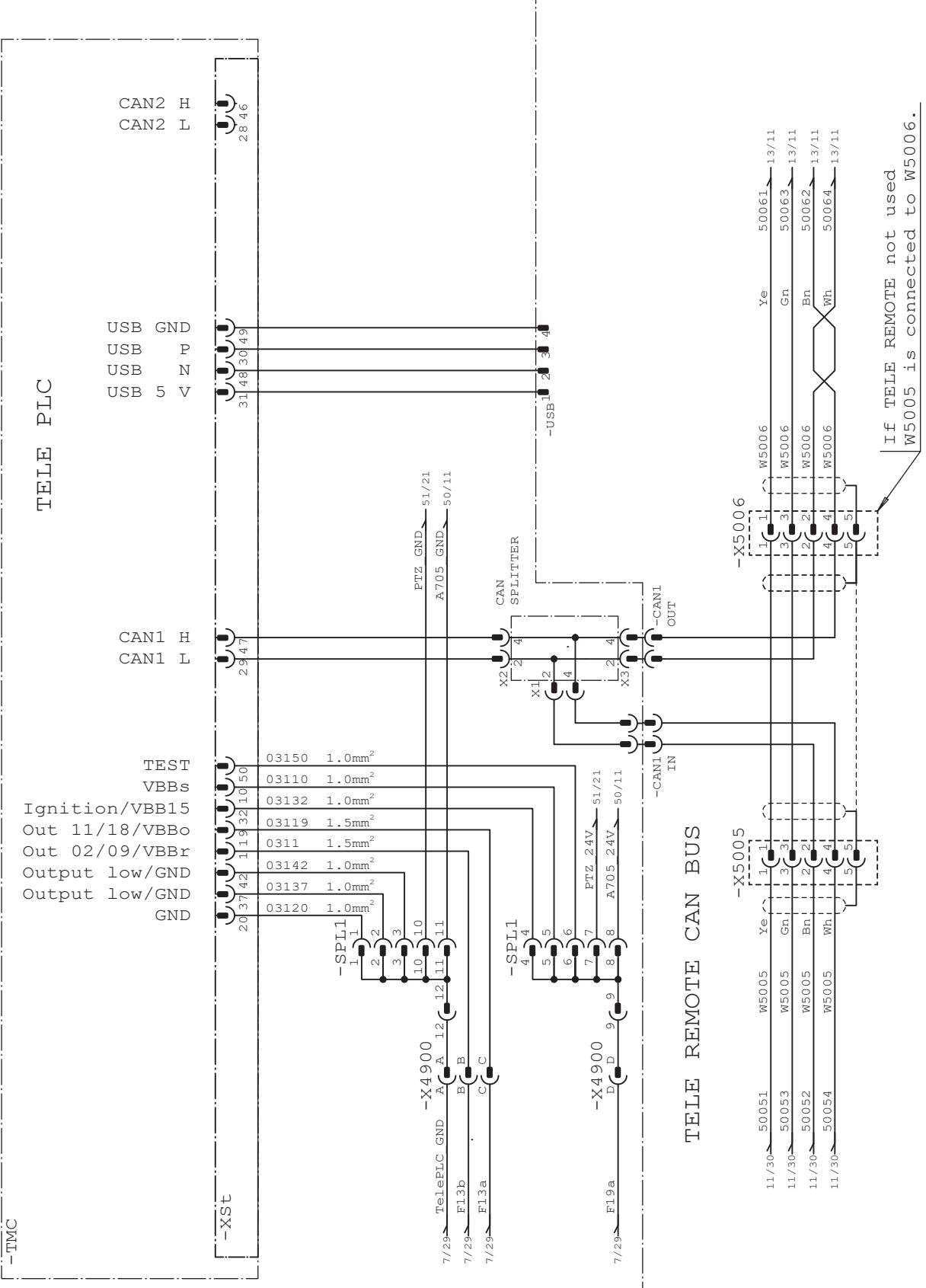
DRAWN BY 2018-04-20 JU
CHECKED 2018-04-20 RTA
APPROVED 2018-04-20 MPA

111 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

OPTION

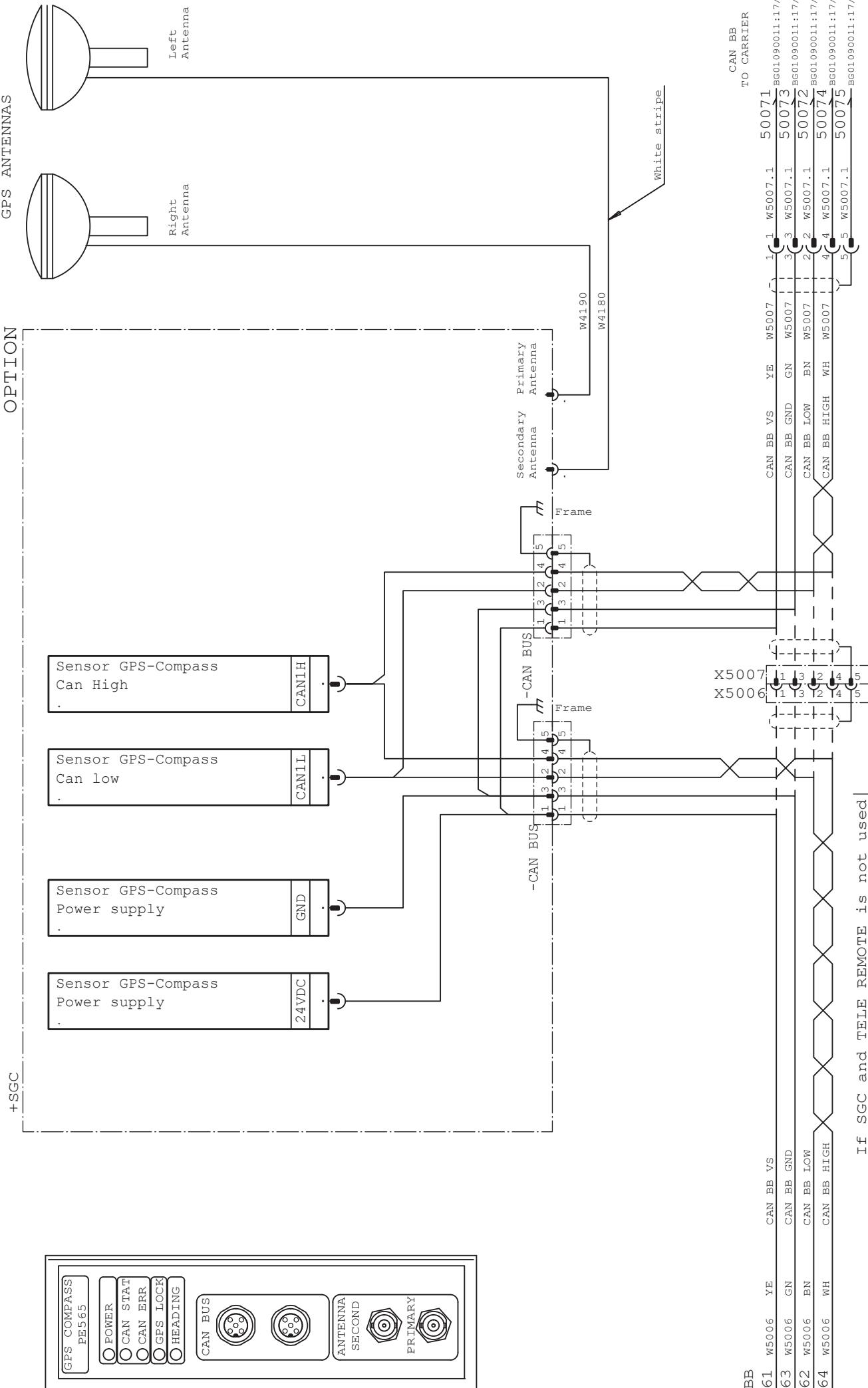
- 15 -

THE PTC



SANDVIK	NOTICER this document is the exclusive property of Sandvik and it must be returned to Sandvik. The document must not be copied, reproduced or disclosed to any third party or used in manufacture of products or used in any other manner without the prior written consent of Sandvik.		
	DRAWN BY	DATE	NAME
	JUJU	2018-04-20	
	CHECKED	2018-04-20	RTA
Copyright © Sandvik Mining and Construction			APPROVED
			2018-04-20
			MRA
SANDVIK Pantera DPi Cabin CAN BUS, TELE REMOTE			
CONTROL SYSTEMS			
Dragonfly			POSITION CAB
SHEET 12 / 51			A3
DWG NR BG01110396-E			
ID-CODE BG01110396			

卷之三



IF SGC and TELE REMOTE is not used
W5005 is connected to W5007.

CanBB	50061
	50063
	50062
	50064

CAN BB TO CARRIER

CAN BB VS	YE	W5007	1	1	W5007.1	50071
CAN BB GND	GN	W5007	3	3	W5007.1	50073
CAN BB LOW	BN	W5007	2	2	W5007.1	50072
CAN BB HIGH	WH	W5007	4	4	W5007.1	50074
			5	5	W5007.1	50075

The diagram shows a 6x6 grid with several horizontal and vertical lines connecting its intersections. A dashed box highlights a 2x2 subgrid in the bottom-right corner. Labels include '50007' at the top left, '60006' at the bottom left, and numbers 1 through 15 placed near specific grid points.

YE	CAN	BB	VS
GN	CAN	BB	GND
BN	CAN	BB	LOW
WH	CAN	BB	HIGH

CanBB	
50061	W5006
2/24	
50063	W5006
2/24	
50062	W5006
2/24	
50064	W5006
2/24	

SANDVIK Pantera DPi Cabin
CAN BUS , SENSOR GPS-COMPASS (SGC)

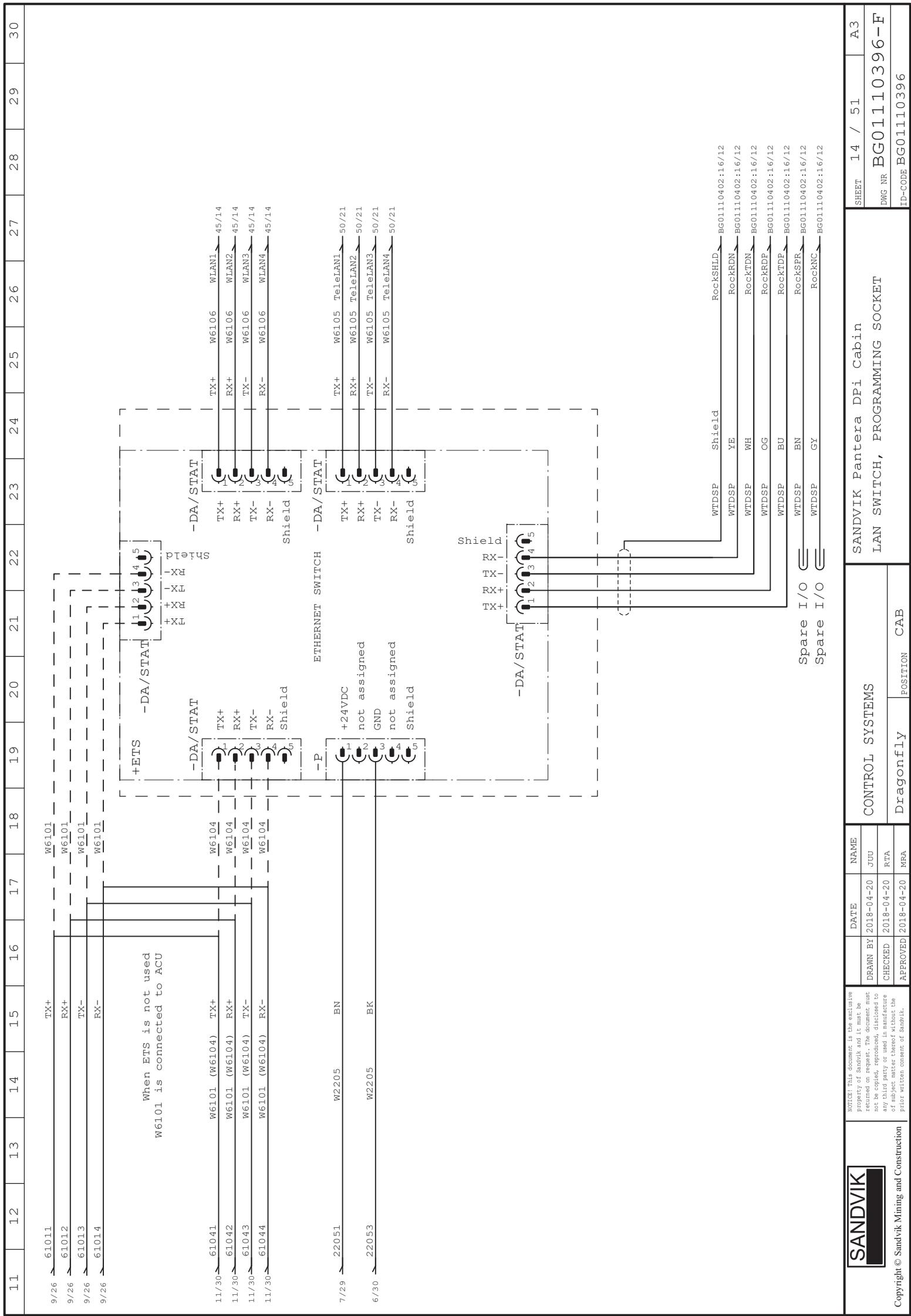
ASGP SYSTEMS

NAME	DATE	CONTROL
JUU	18-04-20	
RTA	18-04-20	

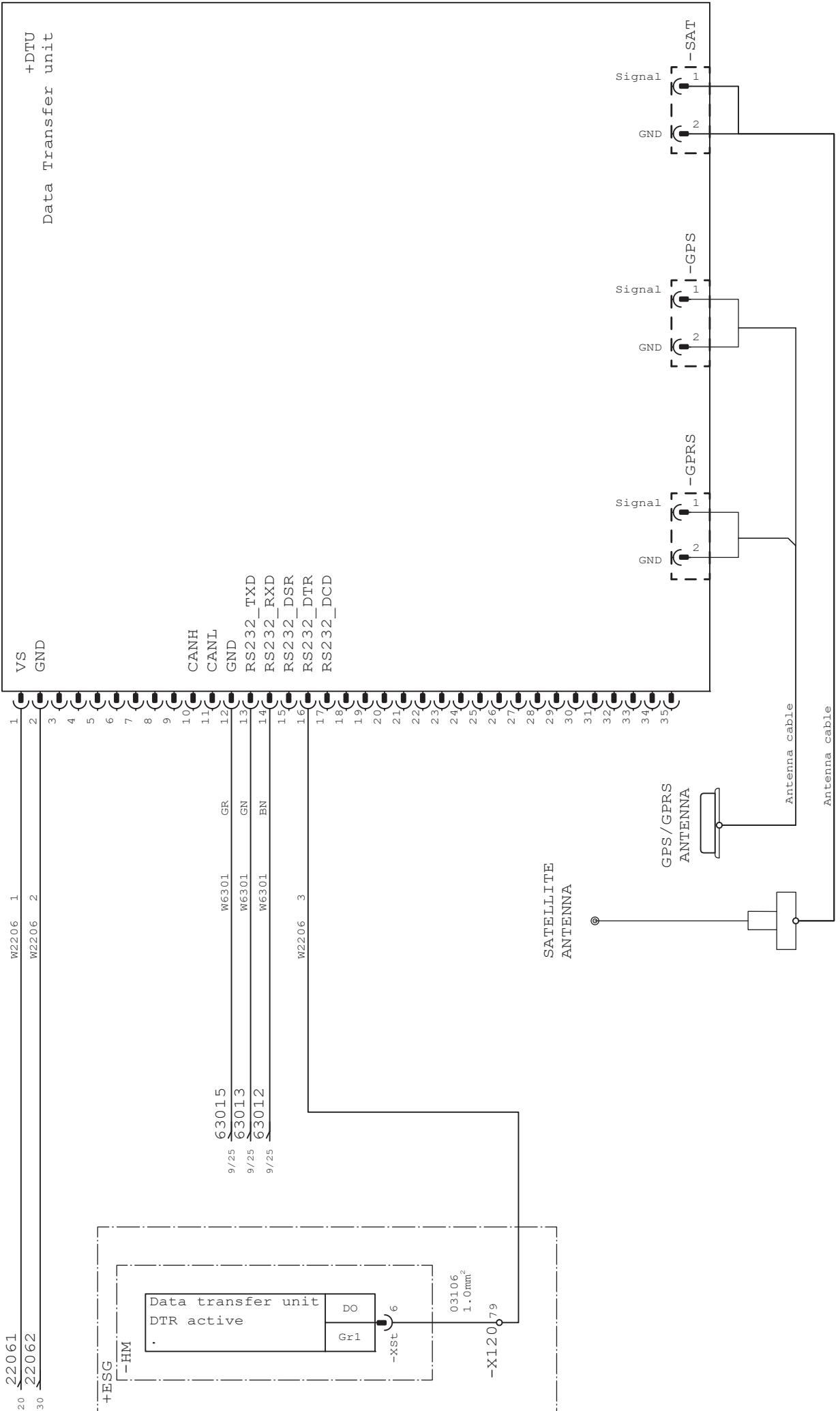
ENTITLED	D	DRAWN BY	20
TO THE	BY	CHECKED	20
RECEIVED	RECORDED	RECORDED	20

K NOTICE! This document
property of Sandvik
returned on request
not be copied, reprinted
any third party or
of subject matter
print without con-

SANDVI
Copyright © Sandvik Mining a



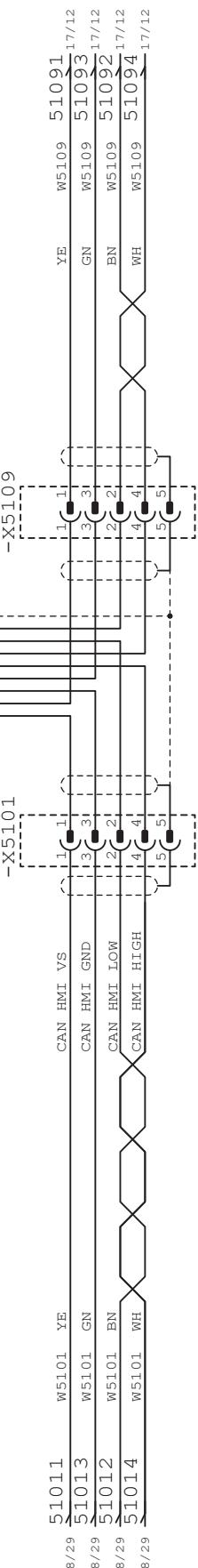
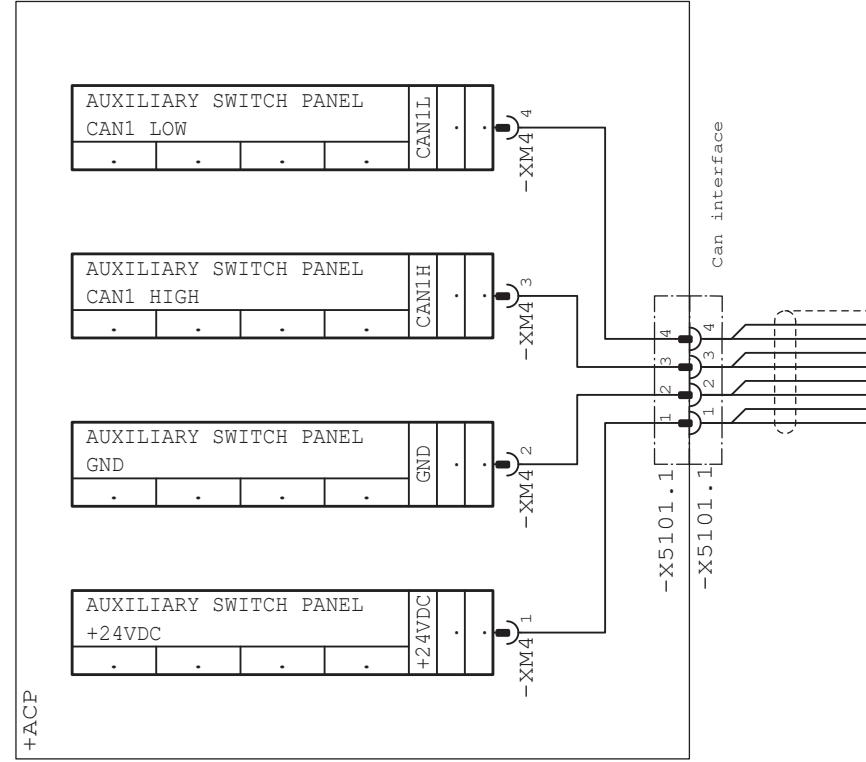
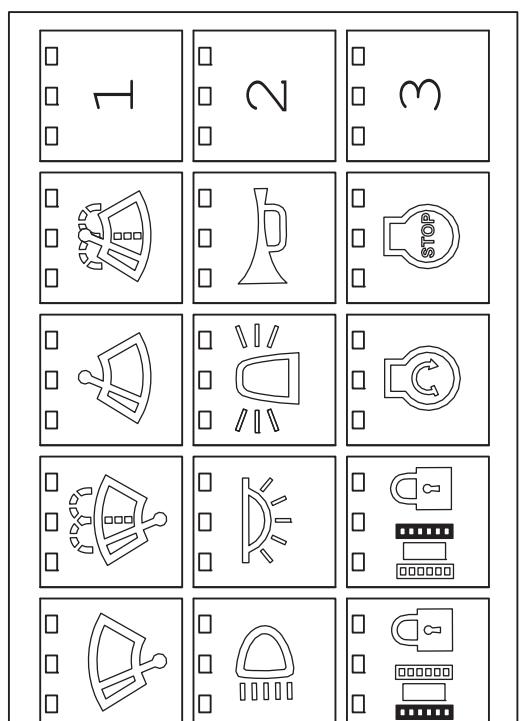
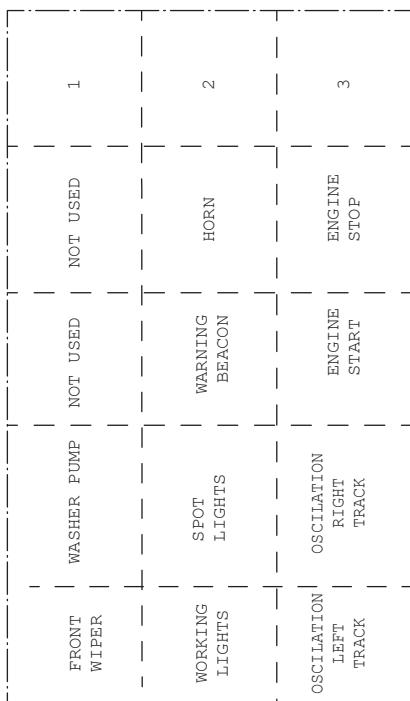
卷之三



SANDVIK	NOTICE! This document is the exclusive property of Sandvik. It must be returned on request. The document must not be copied or reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.			NAME DRAWN BY JUU DATE 2018-04-20	NAME CHECKED RTA DATE 2018-04-20	NAME APPROVED MRA DATE 2018-04-20	NAME CAB POSITION CAB	CONTROL SYSTEMS	SANDVIK Pantera DPi Cabin CONNECTIONS OF DATA TRANSFER UNIT	SHEET 15 / 51	DIG NR BG01110396-E	A3
	Copyright © Sandvik Mining and Construction									ID-CODE BG01110396		

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

BUTTON MATRIX OF ACP



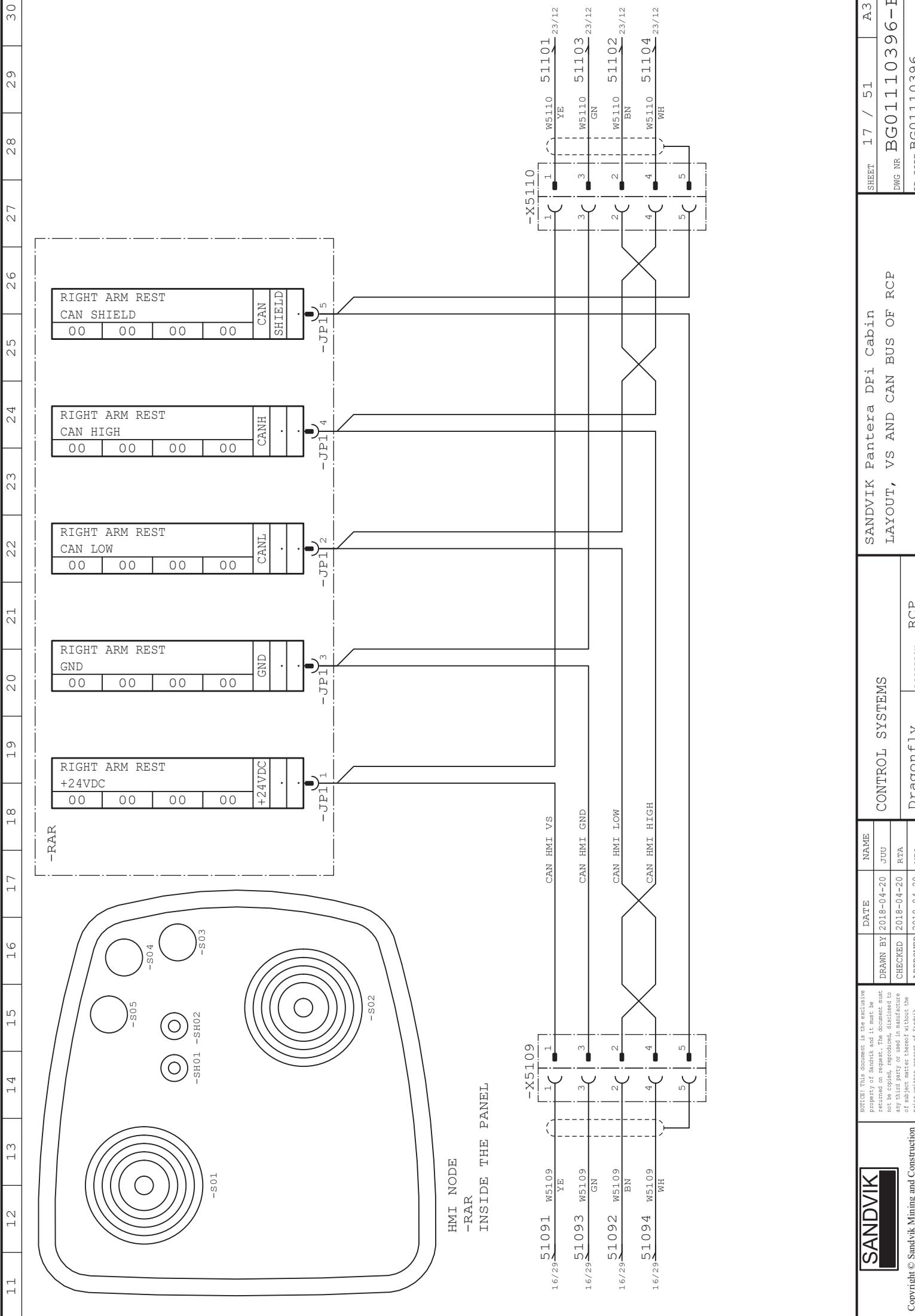
SHEET 16 / 51 A3
DING NR BG01110396-F
TE-CODE BG01110396

SANDVIK Pantera DPi Cabin
CAN BUS TO AUX CONTROL PANEL

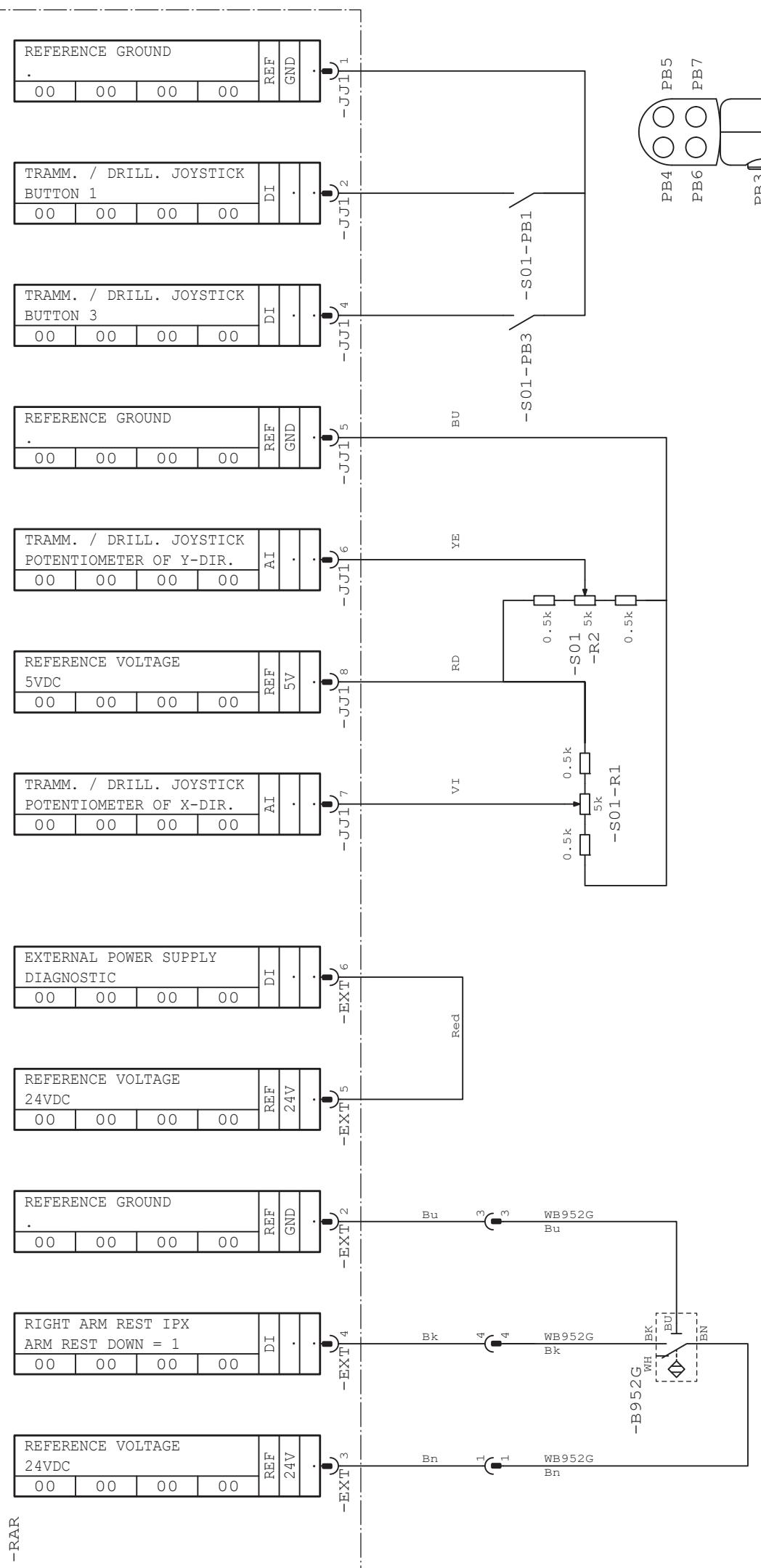
CONTROL SYSTEMS
Dragonfly POSITION ACP

SANDVIK

NAME
DRAWN BY 2018-04-20 JU
CHECKED 2018-04-20 RTA
APPROVED 2018-04-20 MPA



11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



VI=VIOLET
RD=RED
YE=YELLOW
BU=BLUE
BN=BROWN
BK=BLACK

SANDVIK	NOTICE: This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	DATE DRAWN BY CHECKED APPROVED	NAME JU RTA MPA	SHEET 18 / 51	A3
		2018-04-20			
		2018-04-20			
		2018-04-20			

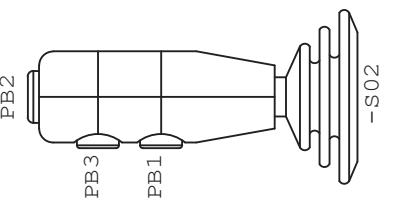
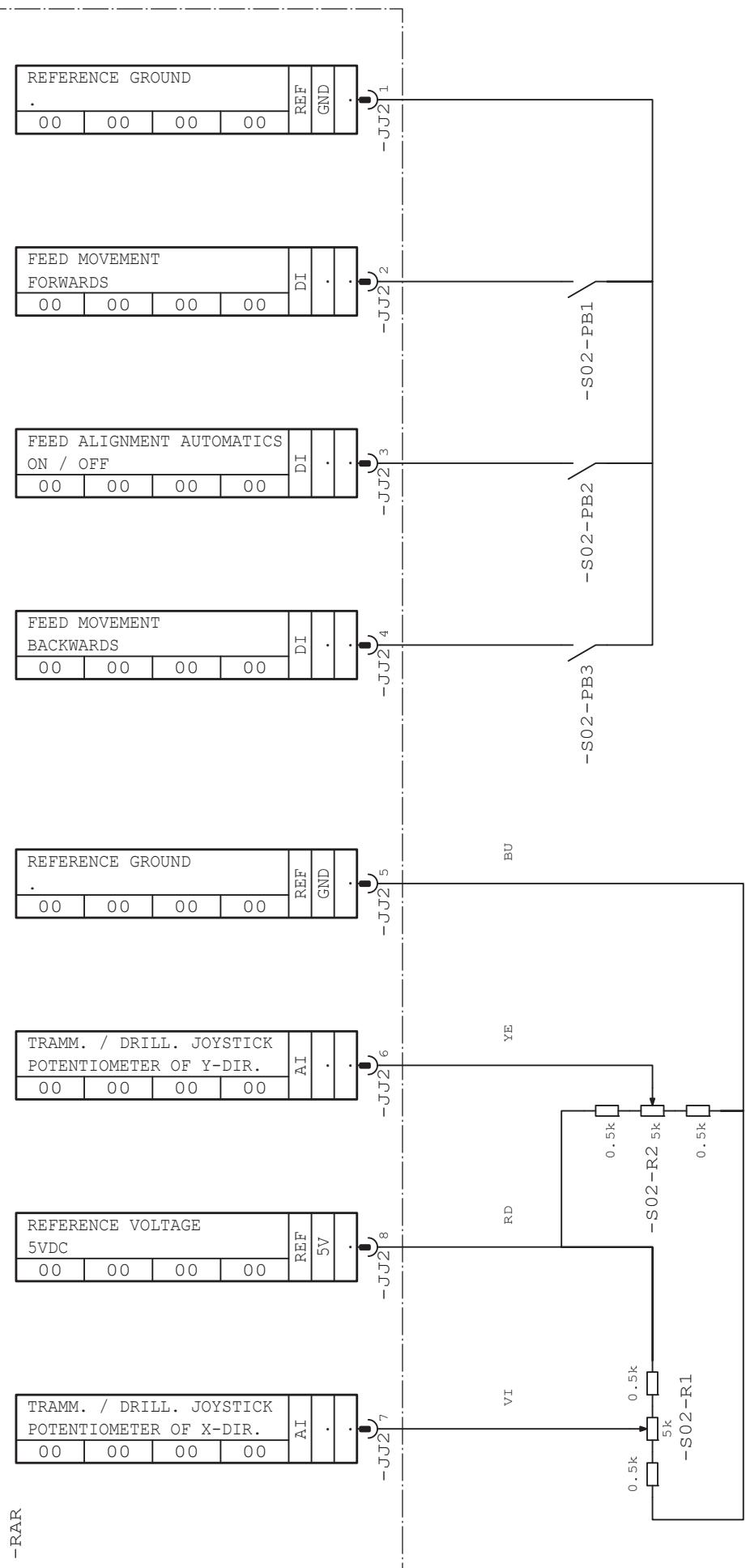
DIGIT NR: BG01110396-F
FILE-CODE: BG01110396

SANDVIK

Copyright © Sandvik Mining and Construction

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

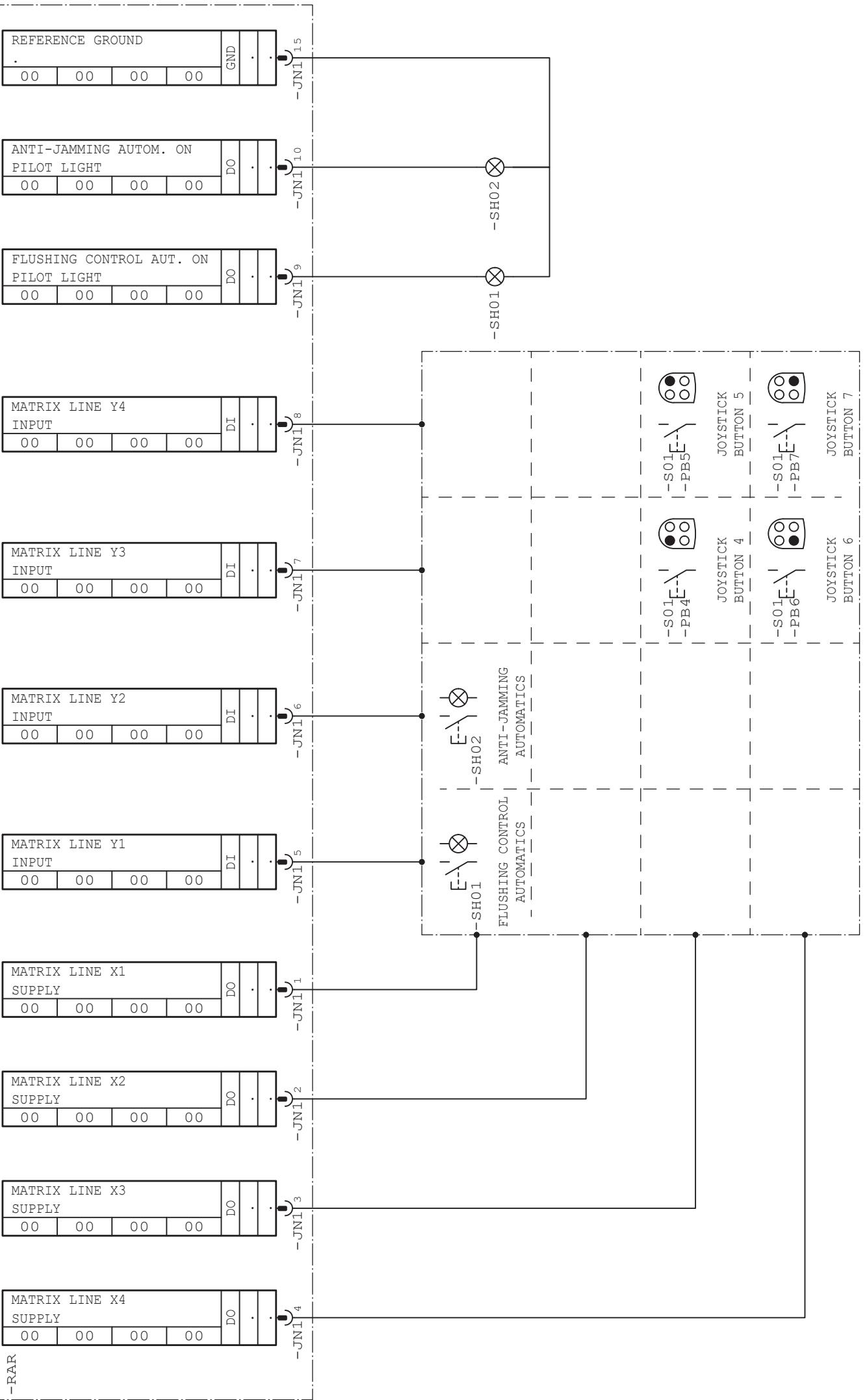
-RAR



SHEET 19 / 51	A3
DRAWN BY JUU	CONTROL SYSTEMS
CHECKED 2018-04-20 RTA	SANDVIK Pantera DPi Cabin
APPROVED 2018-04-20 MPA	RIGHT BOOM JOYSTICK (JJ2)
DRAGONFLY POSITION RCP	
TIL-CODE BG01110396-F	
TIL-CODE BG01110396	

SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.
Copyright © Sandvik Mining and Construction	DRAWN BY 2018-04-20 JUU CHECKED 2018-04-20 RTA APPROVED 2018-04-20 MPA

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

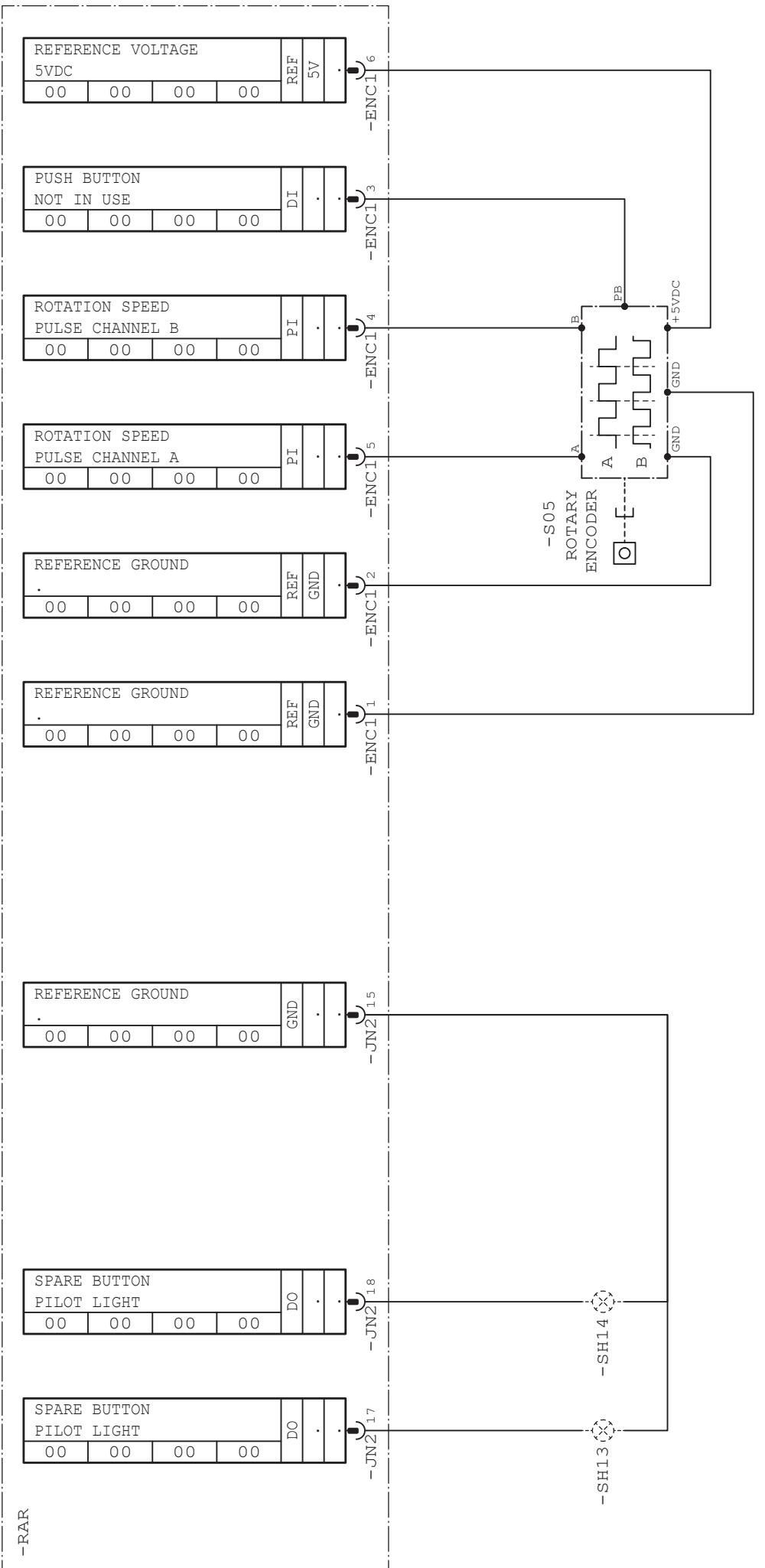

SANDVIK

 SANDVIK Pantera DPi Cabin
RIGHT KEYBOARD MATRIX CONNECT.

 SHEET 20 / 51 A3
DRAWING NR BG01110396-F
FILE-CODE BG01110396

 NOTICE! This document is the exclusive
property of Sandvik and it must be
returned on request. The document must
not be copied, reproduced, disclosed to
any third party or used in manufacture
of subject matter thereof without the
prior written consent of Sandvik.

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----


SANDVIK

Copyright © Sandvik Mining and Construction

Position RCP

ROT. SPEED AND DRILL. PWR. ADJUSTMENT

 SHEET 21 / 51 A3
DING NR BG01110396-F
TE-CODE BG01110396

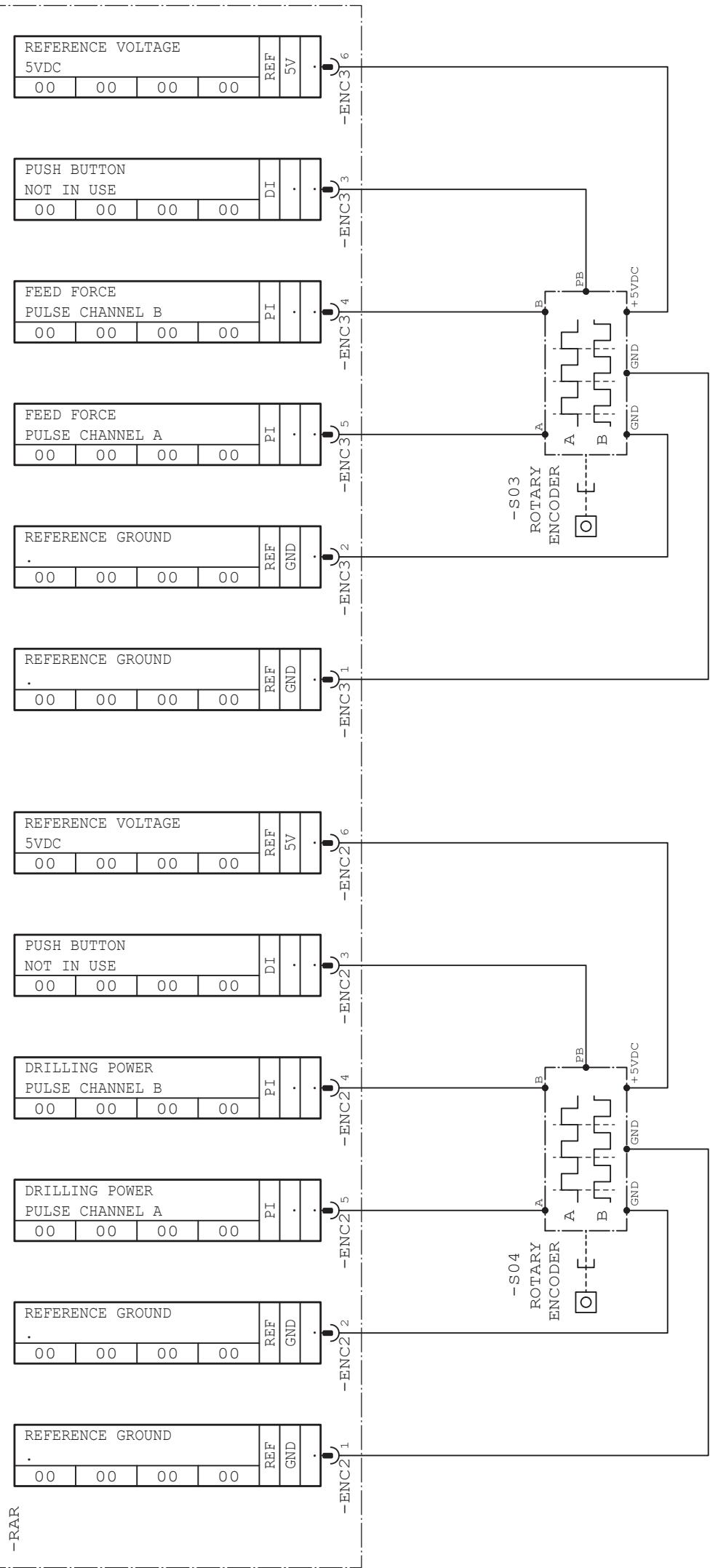
NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

 DRAWN BY JUU DATE 2018-04-20
CHECKED 2018-04-20 RTA
APPROVED 2018-04-20 MPA

CONTROL SYSTEMS

SANDVIK Pantera DPI Cabin

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



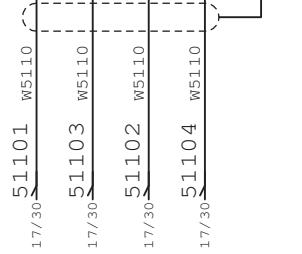
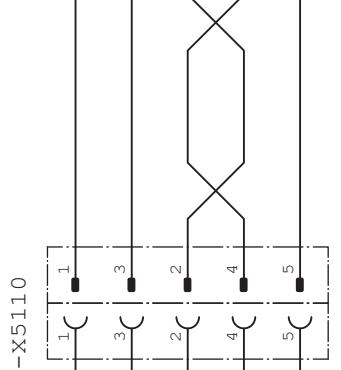
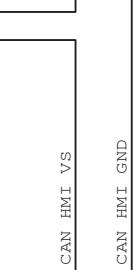
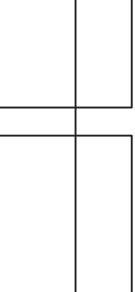
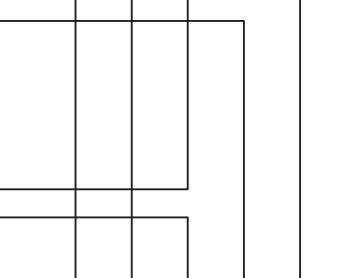
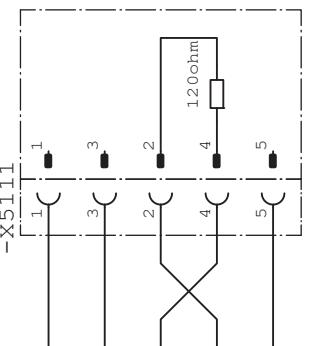
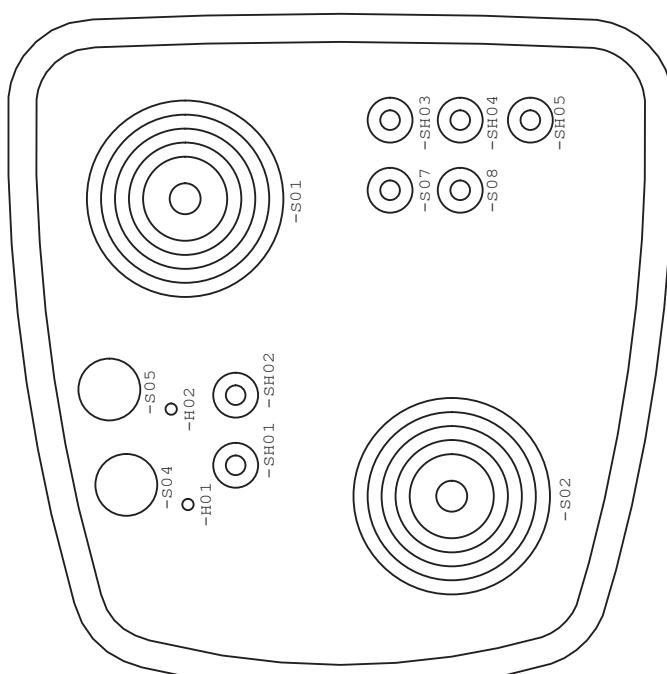
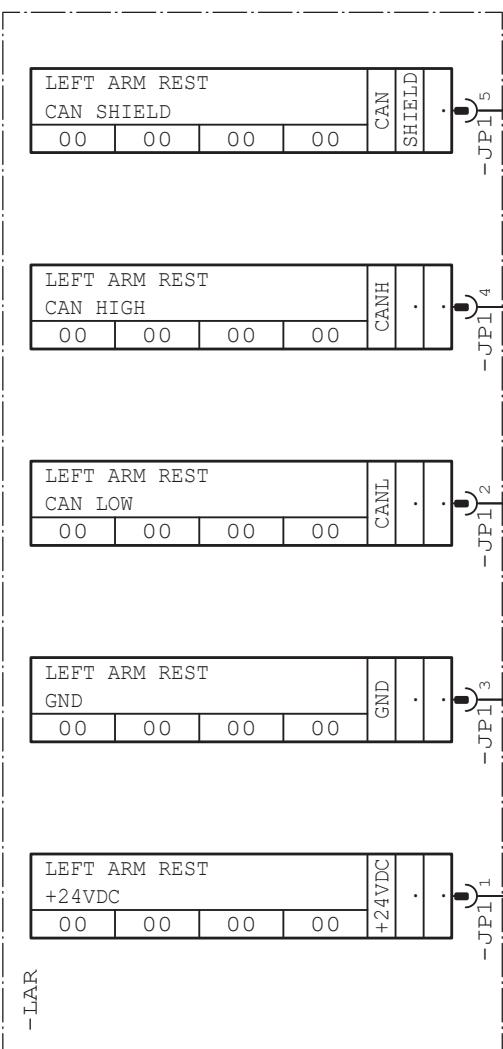
SHEET 22 / 51	A3
DIG NR BG01110396-F	
FILE-CODE BG01110396	

SANDVIK Pantera DPi Cabin	
DRILL. PWR. AND FEED FORCE ADJUSTMENT	

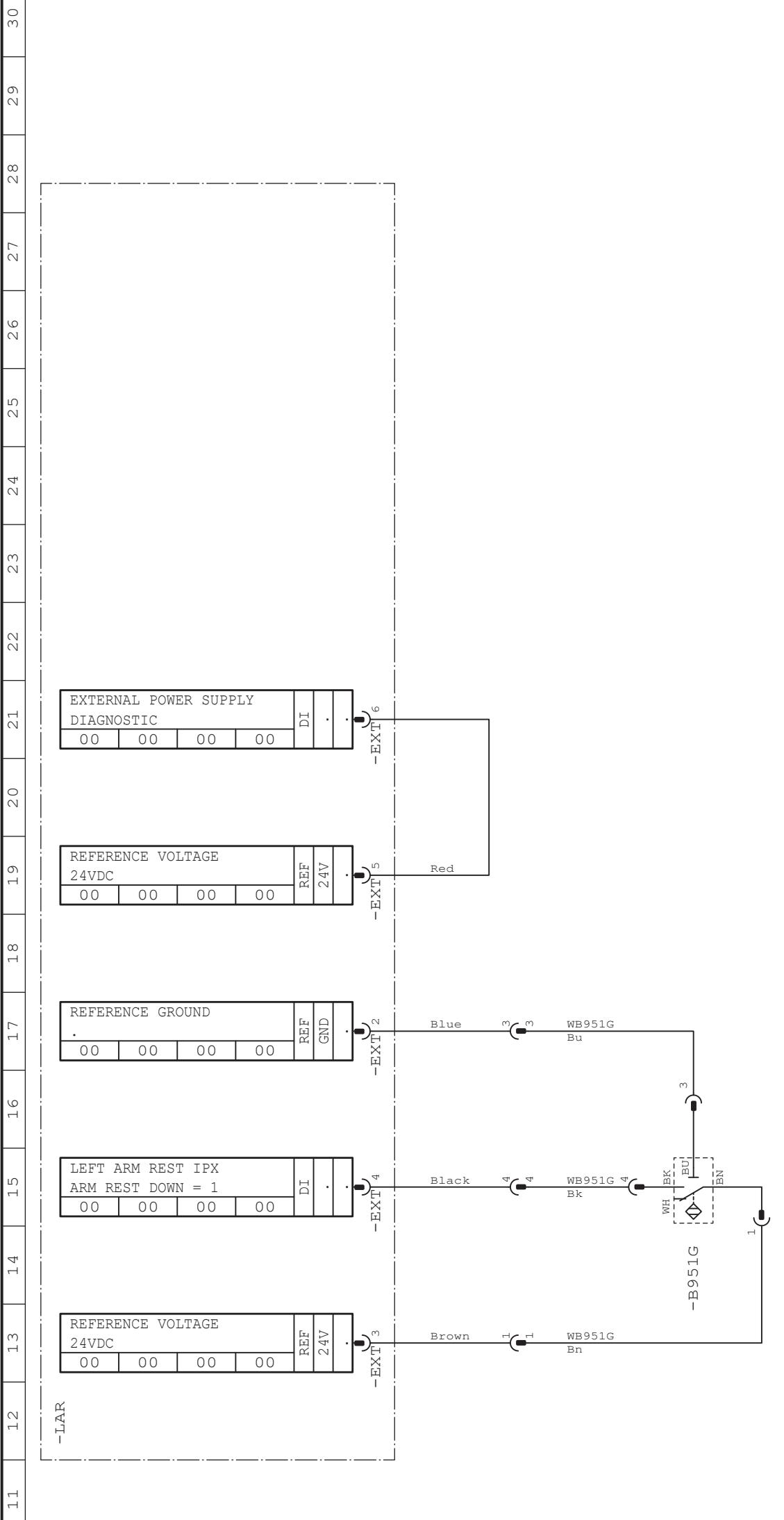
CONTROLS SYSTEMS	
Dragonfly	RCP

SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.
	DRAWN BY 2018-04-20 JUU
	CHECKED 2018-04-20 RTA
	APPROVED 2018-04-20 MPA

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



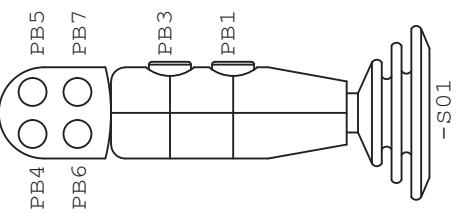
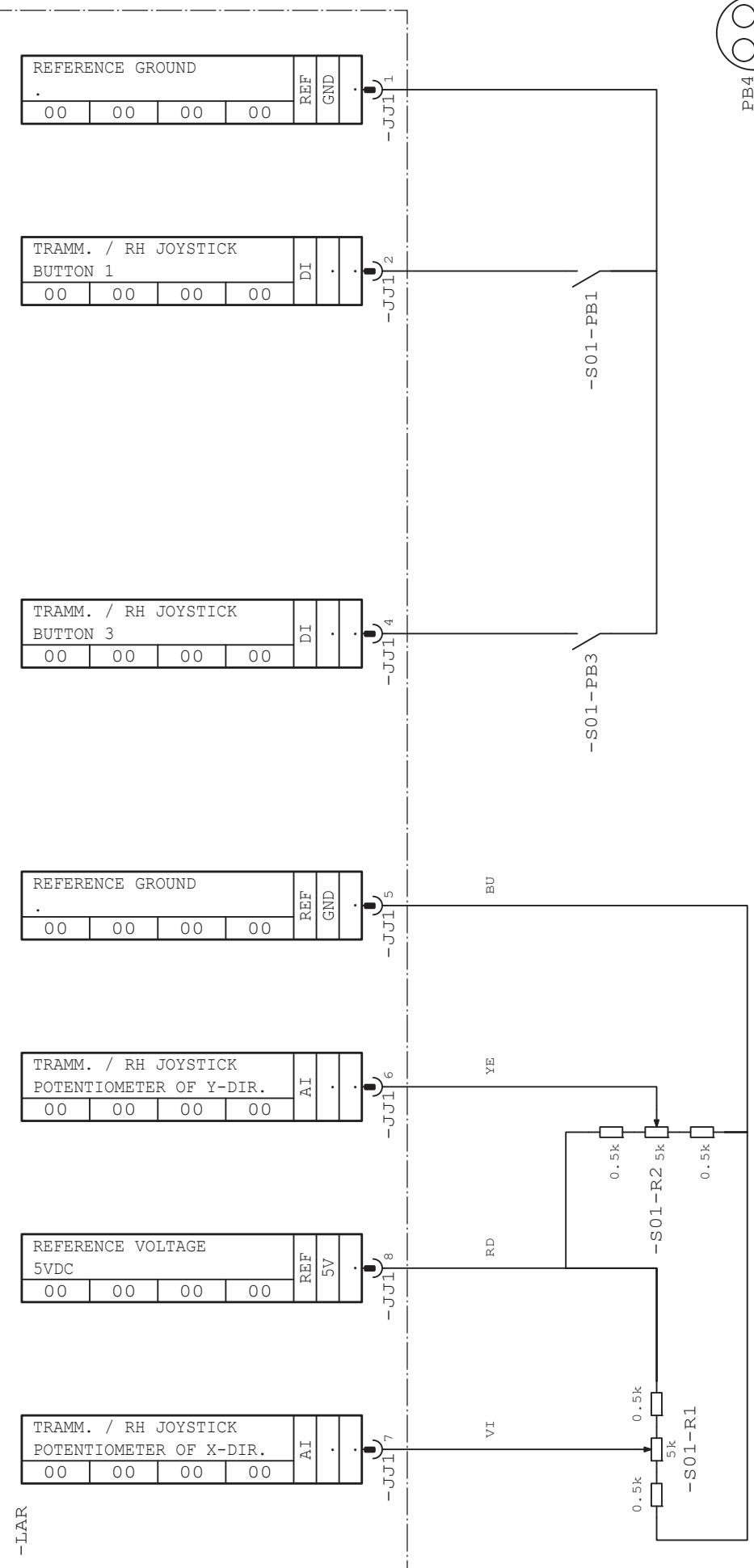
SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	DATE DRAWN BY CHECKED APPROVED	NAME JUU RTVA MFA	CONTROL SYSTEMS	SHEET 23 / 51	A3
		17/30-2018-04-20			DING NR	BG01110396-F
		17/30-2018-04-20			FILE-CODE	BG01110396



SHEET 24 / 51 A3
DING NR BG01110396-F
ITC-CODE BG01110396

SANDVIK		NOTICE: This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of any subject matter thereof without the prior written consent of Sandvik.		CONTROL SYSTEMS	
		NAME	DATE	DRAWN BY	REVISION
		JUU	2018-04-20	DRAVEN	
		RTA	2018-04-20	CHECKED	
		MRA	2018-04-20	APPROVED	
		Dragonfly		POSITION	I

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

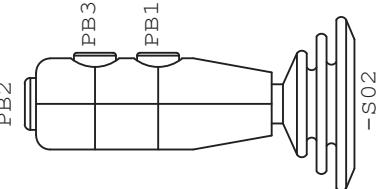
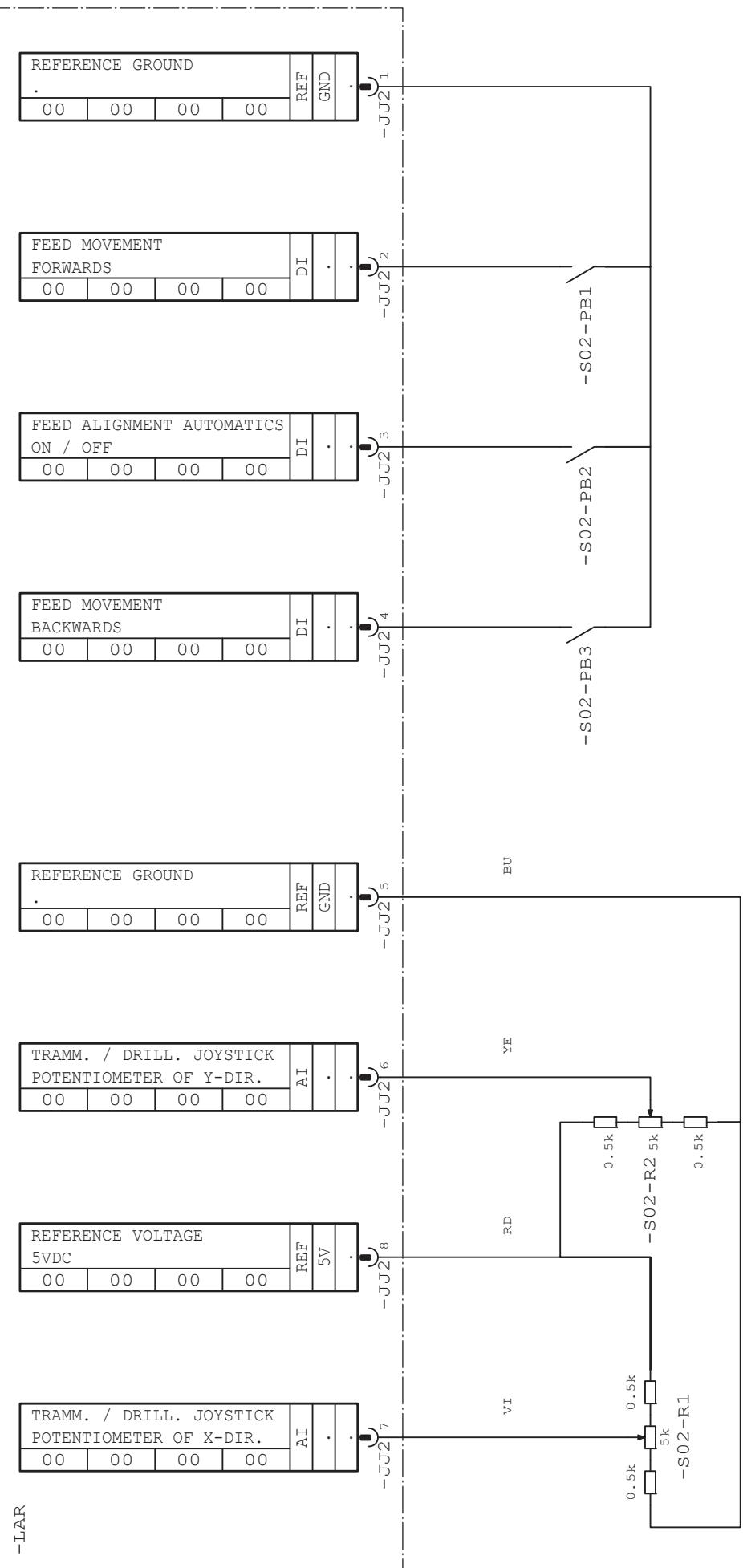


SHEET 25 / 51	A3
DRAWN BY JUU	CONTROL SYSTEMS
CHECKED 2018-04-20 RTA	SANDVIK Pantera DPi Cabin
APPROVED 2018-04-20 MPA	TRAMMING / RH JOYSTICK (JJ1)
DING NR BG01110396-F	
FILE-CODE BG01110396	

SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.
Copyright © Sandvik Mining and Construction	

Copyright © Sandvik Mining and Construction

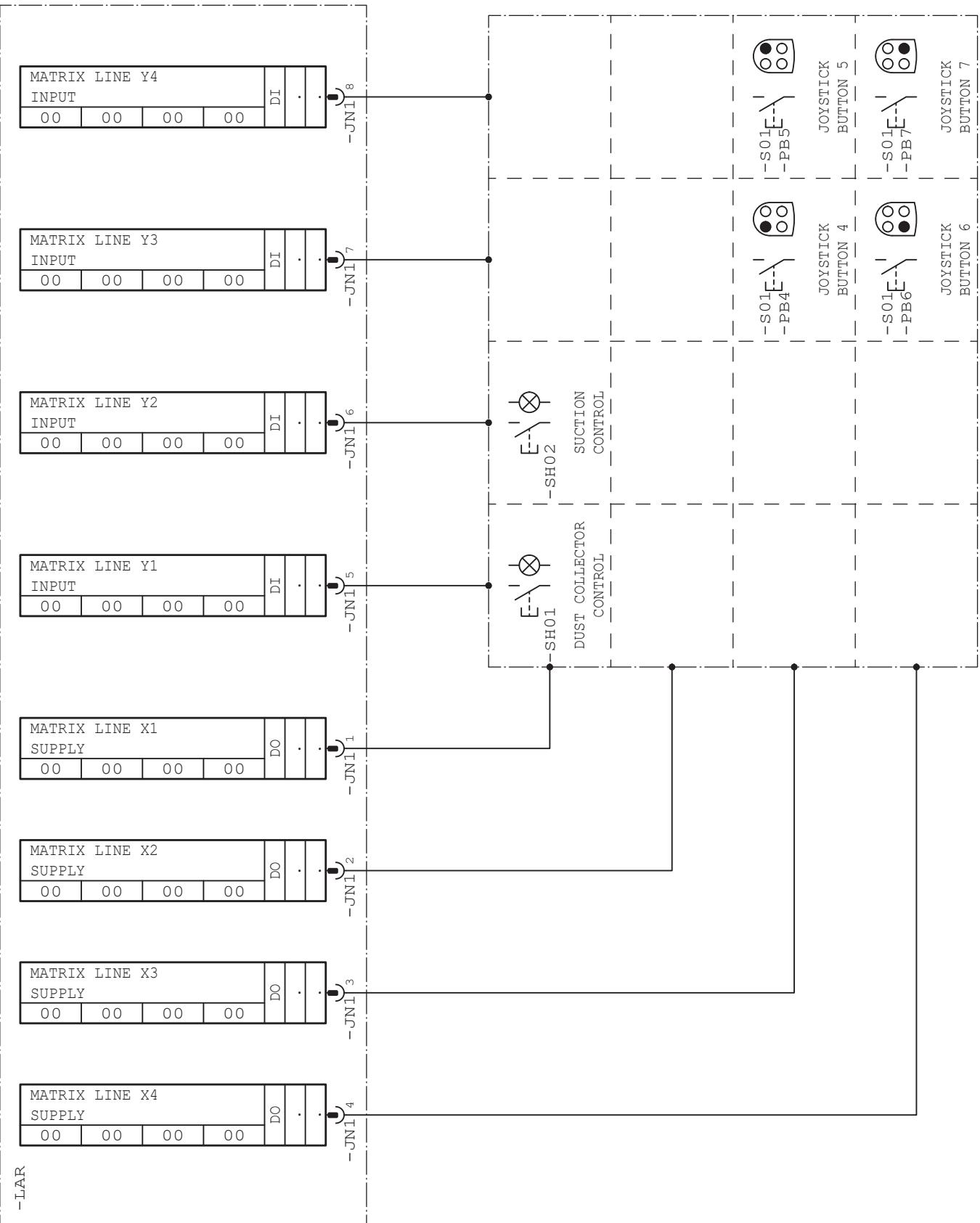
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SHEET 26 / 51	A3
DRAWN BY JUU	CONTROL SYSTEMS
CHECKED 2018-04-20 RTA	LEFT BOOM JOYSTICK (JJ2)
APPROVED 2018-04-20 MPA	Dragonfly POSITION LCP
SANDVIK Pantera DPi Cabin	
Copyright © Sandvik Mining and Construction	
TIL-CODE BG01110396-F	
TIL-CODE BG01110396	

NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	
SHEET 26 / 51	A3
DRAWN BY JUU	CONTROL SYSTEMS
CHECKED 2018-04-20 RTA	LEFT BOOM JOYSTICK (JJ2)
APPROVED 2018-04-20 MPA	Dragonfly POSITION LCP
SANDVIK Pantera DPi Cabin	
Copyright © Sandvik Mining and Construction	
TIL-CODE BG01110396-F	
TIL-CODE BG01110396	

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

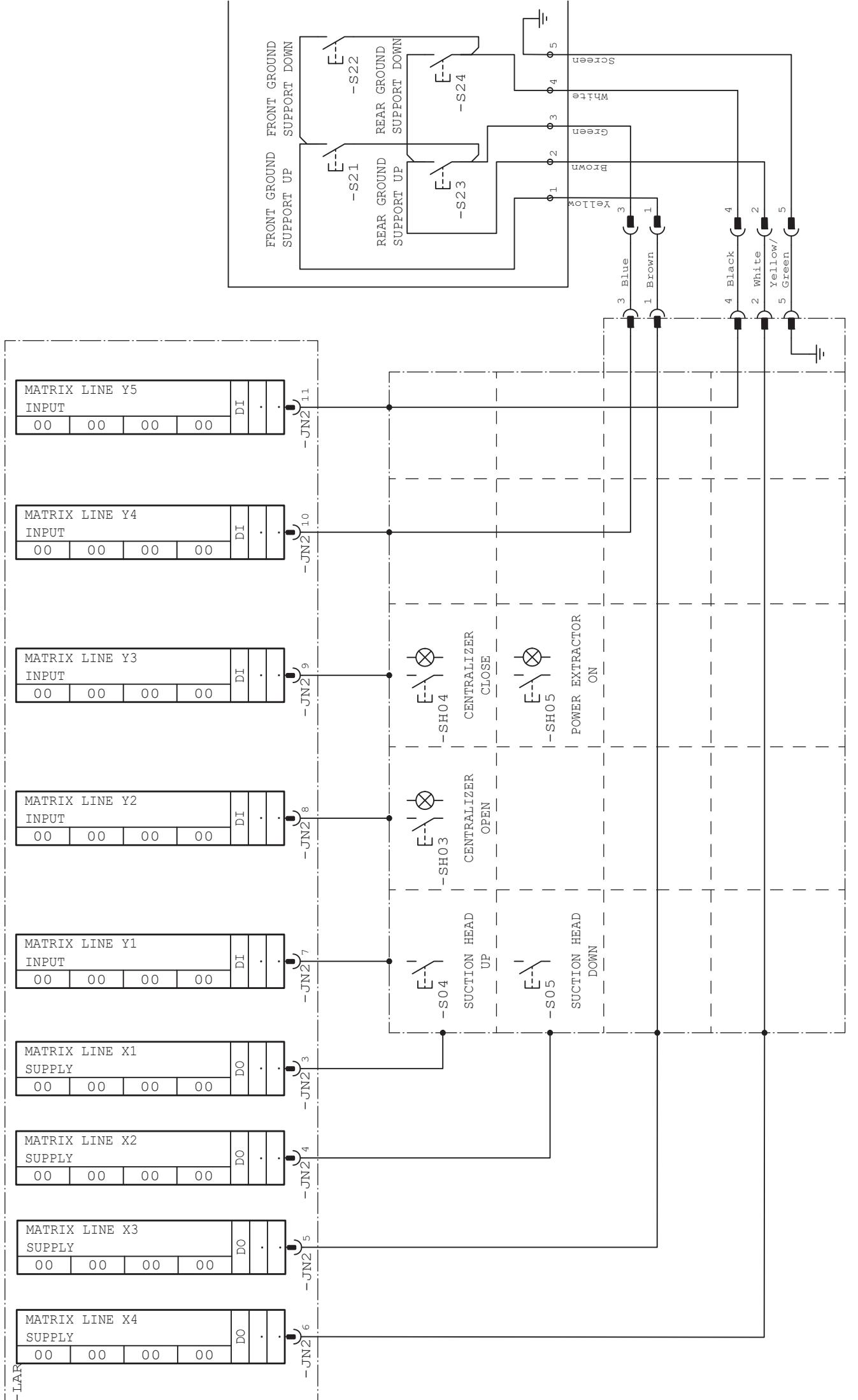

SANDVIK

 NOTICE! This document is the exclusive
property of Sandvik and it must be
returned on request. The document must
not be copied, reproduced, disclosed to
any third party or used in manufacture
of subject matter thereof without the
prior written consent of Sandvik.

Copyright © Sandvik Mining and Construction

 SHEET 27 / 51 A3
DING NR BG01110396-F
FILE-CODE BG01110396

 SANDVIK Pantera DPi Cabin
LEFT KEYBOARD 1 MATRIX CONNECTIONS



—LAR

SANDVIK

Copyright © Sandvik Mining and Construction

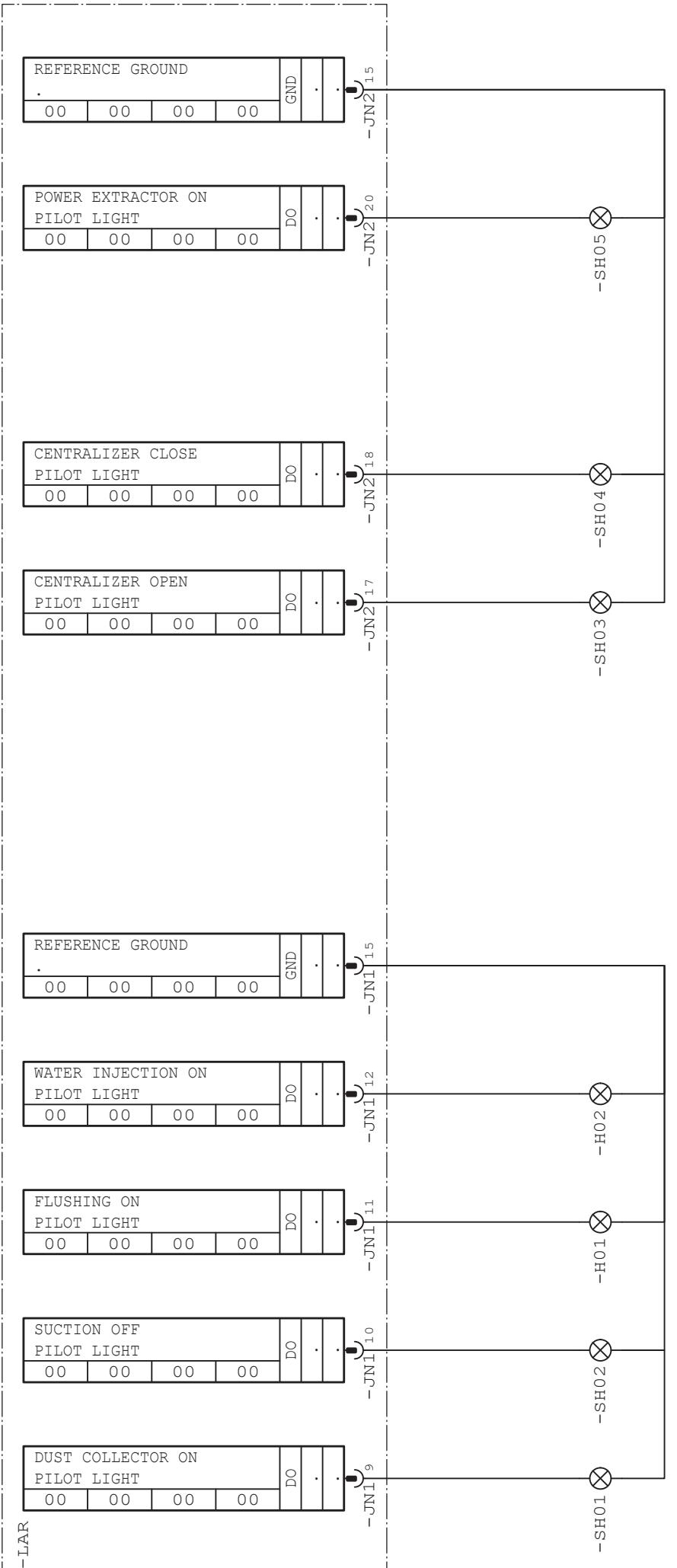
ROBOT SYSTEMS

SANDVIK Pantera DPi Cabin

SHEET 28 / 51 A3

SHEET 28 / 51 A3

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SHEET 29 / 51	A3
DRAWING NR BG01110396-F	
FILE-CODE BG01110396	

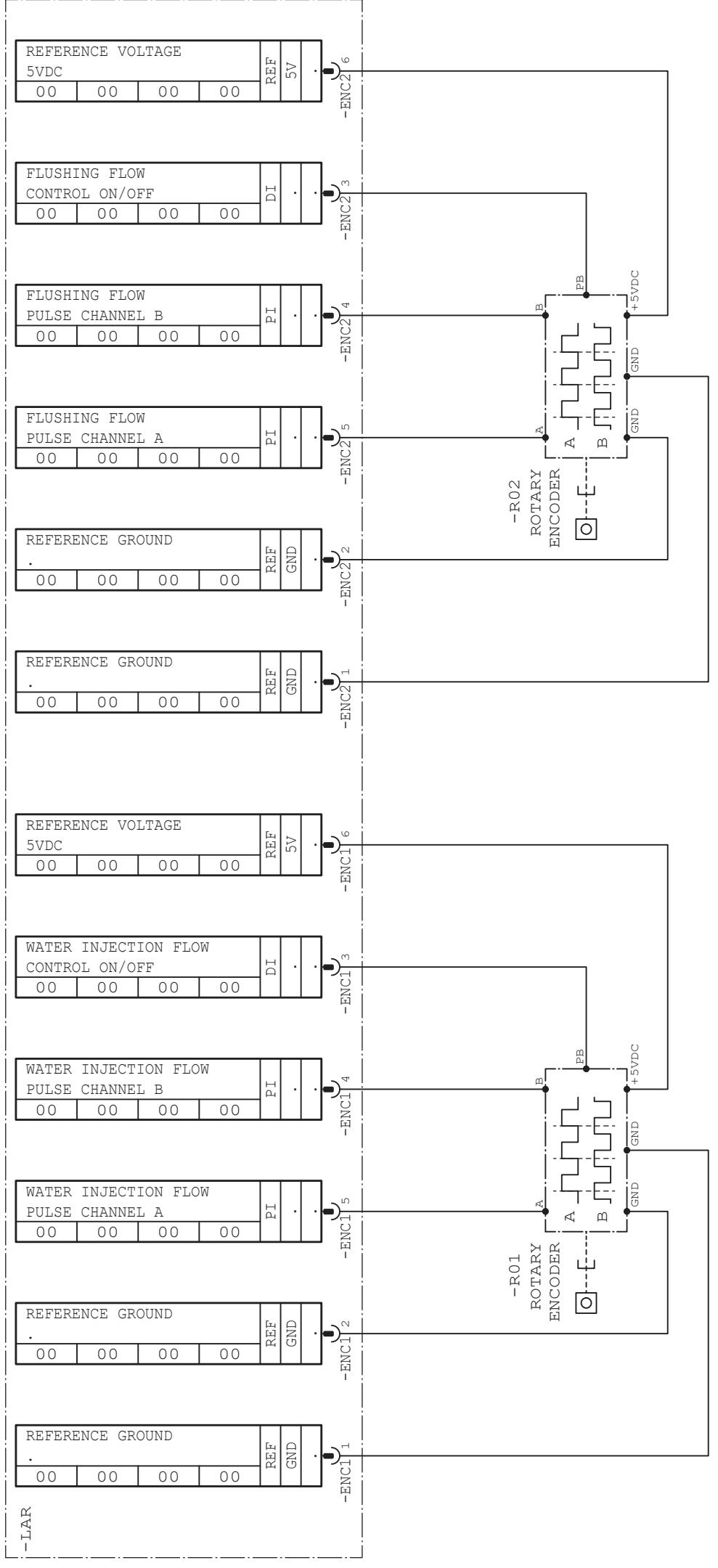
SANDVIK Pantera Dpi Cabin
LEDS OF LEFT KEYBOARD 2

CONTROL SYSTEMS
Dragonfly POSITION LCP

SANDVIK

SHEET 29 / 51	A3
DRAWING NR BG01110396-F	
FILE-CODE BG01110396	

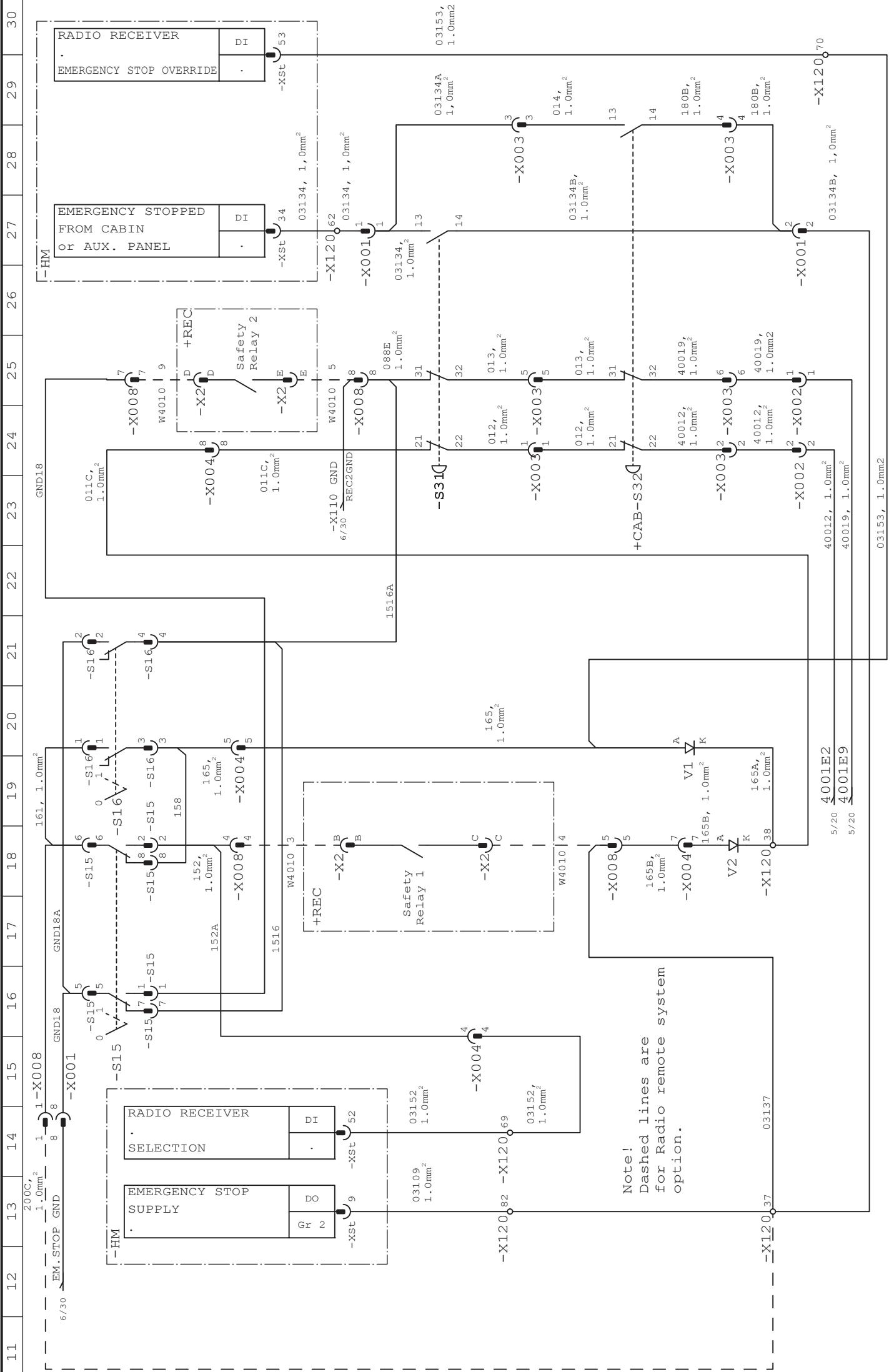
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	SHEET 30 / 51	A3
DRAWN BY JUU	DATE 2018-04-20	NAME
CHECKED RTVA	DATE 2018-04-20	APPROVED 2018-04-20
DING NR BG01110396-F		
FILE-CODE BG01110396		

SANDVIK Pantera DPI Cabin
WATER INJ. AND FLUSH. FLOW ADJUSTMENT

SANDVIK	CONTROL SYSTEMS
Dragonfly	POSITION
LCP	



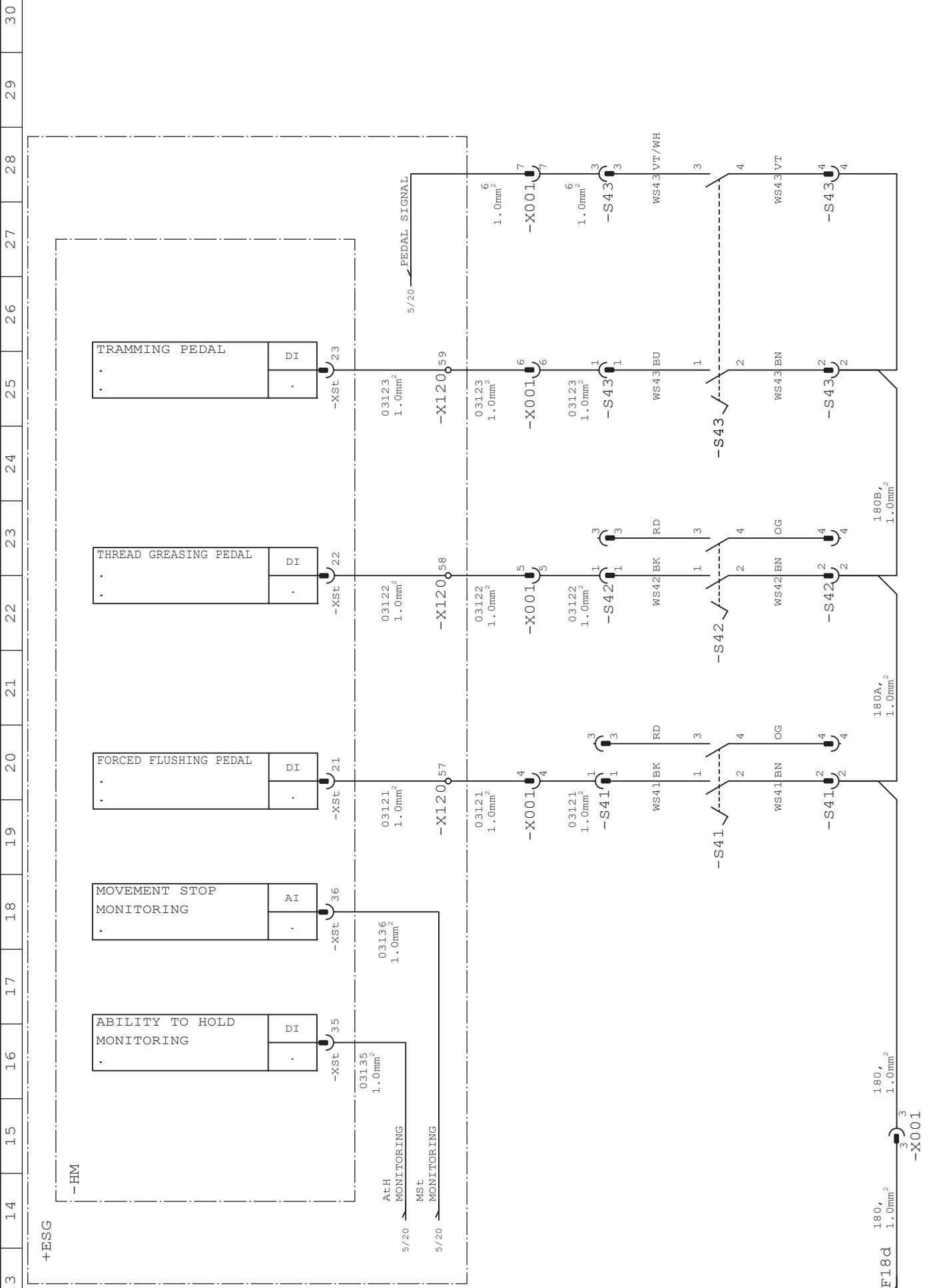
Note!
Dashed lines are
for Radio remote system
option.

SHEET	31 / 51	A3
DMG NR	BG01110396-F	
ID-CODE	BG01110396	

ESG NDN

SANDVIK CONTROL SYSTEMS
NOTICE: This document is the exclusive property of Sandvik and it must be returned on request. The document must remain the property of Sandvik.

Copyright © Sandvik Mining and Construction

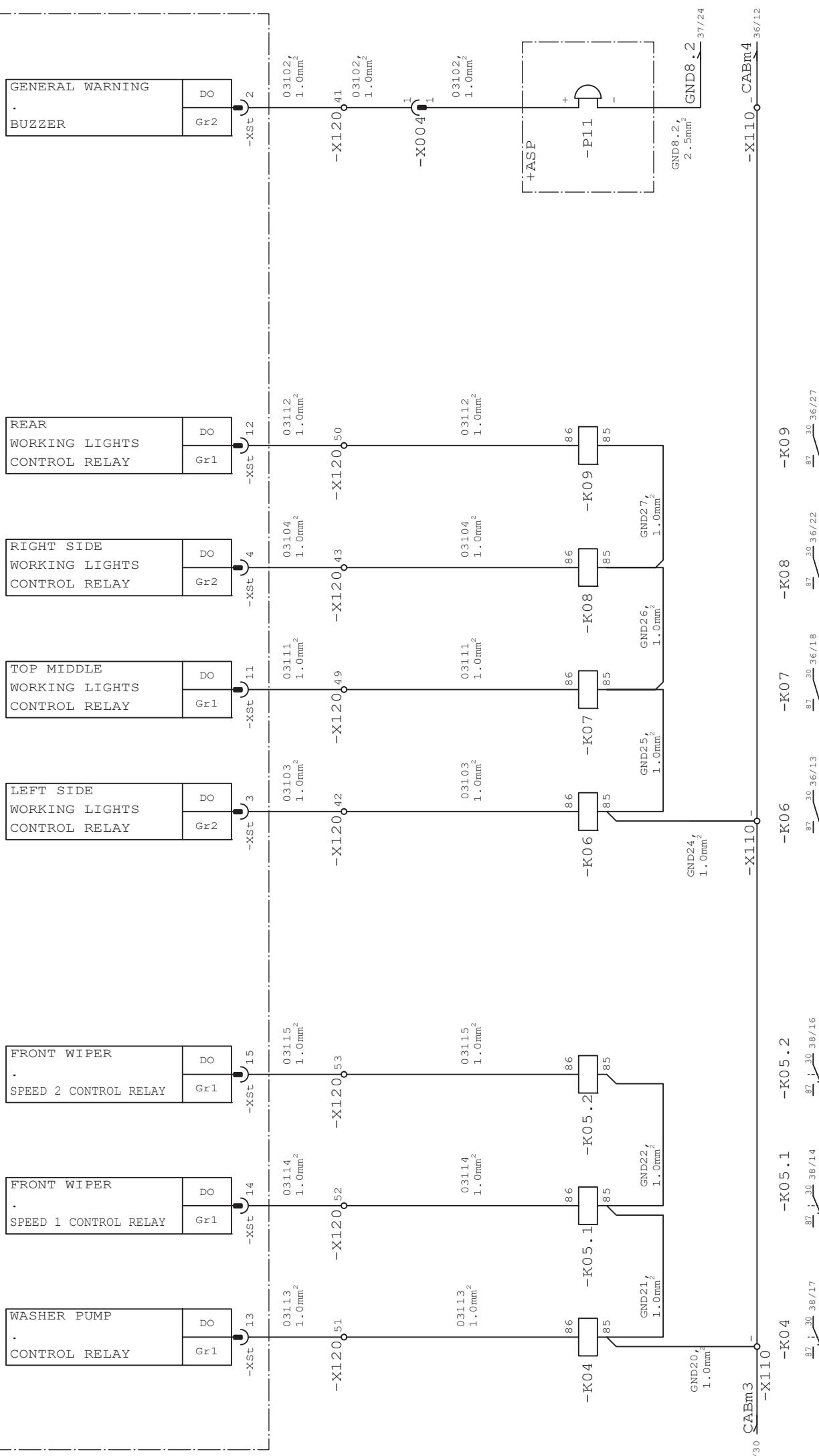


SHEET 32 / 51 A3
DING NR. BG01110396-E
ID-CODE BG01110396

CONTROL SYSTEMS			
Dragonfly	POSITION	CAB	
DRAWN BY	DATE	NAME	
CHECKED	2018-04-20	JUU	
APPROVED	2018-04-20	RTA	
SANDVIK			
Copyright © Sandvik Mining and Construction			

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

-HM



SHEET 35 / 51 A3
DRAWING NR. BG01110396-F
FILE-CODE BG01110396

NOTICE: This document is the exclusive property of Sandvik and it must be returned to Sandvik if requested. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

NAME JUU
DRAWN BY 2018-04-20
CHECKED 2018-04-20
APPROVED 2018-04-20

CONTROL SYSTEMS
Dragonfly POSITION ESG

SANDVIK

Copyright © Sandvik Mining and Construction

34/30 CABm3 -X110 -K04 -K05.1 -K05.2 -K06 -K07 -K08 -K09

87 30 38/17 87 30 38/14 87 30 38/16 87 30 36/13 87 30 36/18 87 30 36/22 87 30 36/27

36/12 -X110 -CABm4

36/12 GND8 :2 2 .5mm 37 / 24

36/12 GND24, 1.0mm² -X110 -

36/12 GND21, 1.0mm² -K04 -K05.1 -K05.2 -K06 -K07 -K08 -K09

36/12 GND22, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND25, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND26, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND11, 1.0mm² -X120 42 -X120 43 -X120 49 -X120 50 -X120 53 -X120 52 -X120 51

36/12 GND10, 1.0mm² -X120 41 -X120 50 -X120 49 -X120 43 -X120 42 -X120 53 -X120 52 -X120 51

36/12 GND12, 1.0mm² -X120 41 -X120 50 -X120 49 -X120 43 -X120 42 -X120 53 -X120 52 -X120 51

36/12 GND13, 1.0mm² -X120 51 -X120 53 -X120 52 -X120 51 -X120 51 -X120 53 -X120 52 -X120 51

36/12 GND14, 1.0mm² -X120 52 -X120 51 -X120 53 -X120 52 -X120 51 -X120 53 -X120 52 -X120 51

36/12 GND15, 1.0mm² -X120 53 -X120 51 -X120 52 -X120 53 -X120 51 -X120 52 -X120 53 -X120 51

36/12 GND16, 1.0mm² -X120 51 -X120 53 -X120 52 -X120 51 -X120 53 -X120 52 -X120 51 -X120 53

36/12 GND17, 1.0mm² -X120 52 -X120 51 -X120 53 -X120 52 -X120 51 -X120 53 -X120 52 -X120 51

36/12 GND18, 1.0mm² -X120 53 -X120 51 -X120 52 -X120 53 -X120 51 -X120 52 -X120 53 -X120 51

36/12 GND19, 1.0mm² -X120 51 -X120 53 -X120 52 -X120 51 -X120 53 -X120 52 -X120 51 -X120 53

36/12 GND20, 1.0mm² -X110 -

36/12 GND21, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND22, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND23, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND24, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND25, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND26, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND27, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND28, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND29, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND30, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND31, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND32, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND33, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND34, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND35, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND36, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND37, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND38, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND39, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND40, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND41, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND42, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND43, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND44, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND45, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND46, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND47, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND48, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND49, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND50, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND51, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND52, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND53, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND54, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND55, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND56, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND57, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND58, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND59, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND60, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND61, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND62, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND63, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND64, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND65, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND66, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND67, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND68, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND69, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND70, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND71, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND72, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND73, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND74, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND75, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND76, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND77, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND78, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND79, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND80, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND81, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND82, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND83, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND84, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND85, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND86, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND87, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND88, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND89, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND90, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND91, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND92, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND93, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND94, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND95, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND96, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND97, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND98, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND99, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND100, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND101, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND102, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND103, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND104, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND105, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND106, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND107, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND108, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND109, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND110, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND111, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND112, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND113, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND114, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND115, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND116, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND117, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND118, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND119, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND120, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND121, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND122, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND123, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND124, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND125, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND126, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND127, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND128, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND129, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND130, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND131, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND132, 1.0mm² -K06 -K07 -K08 -K09

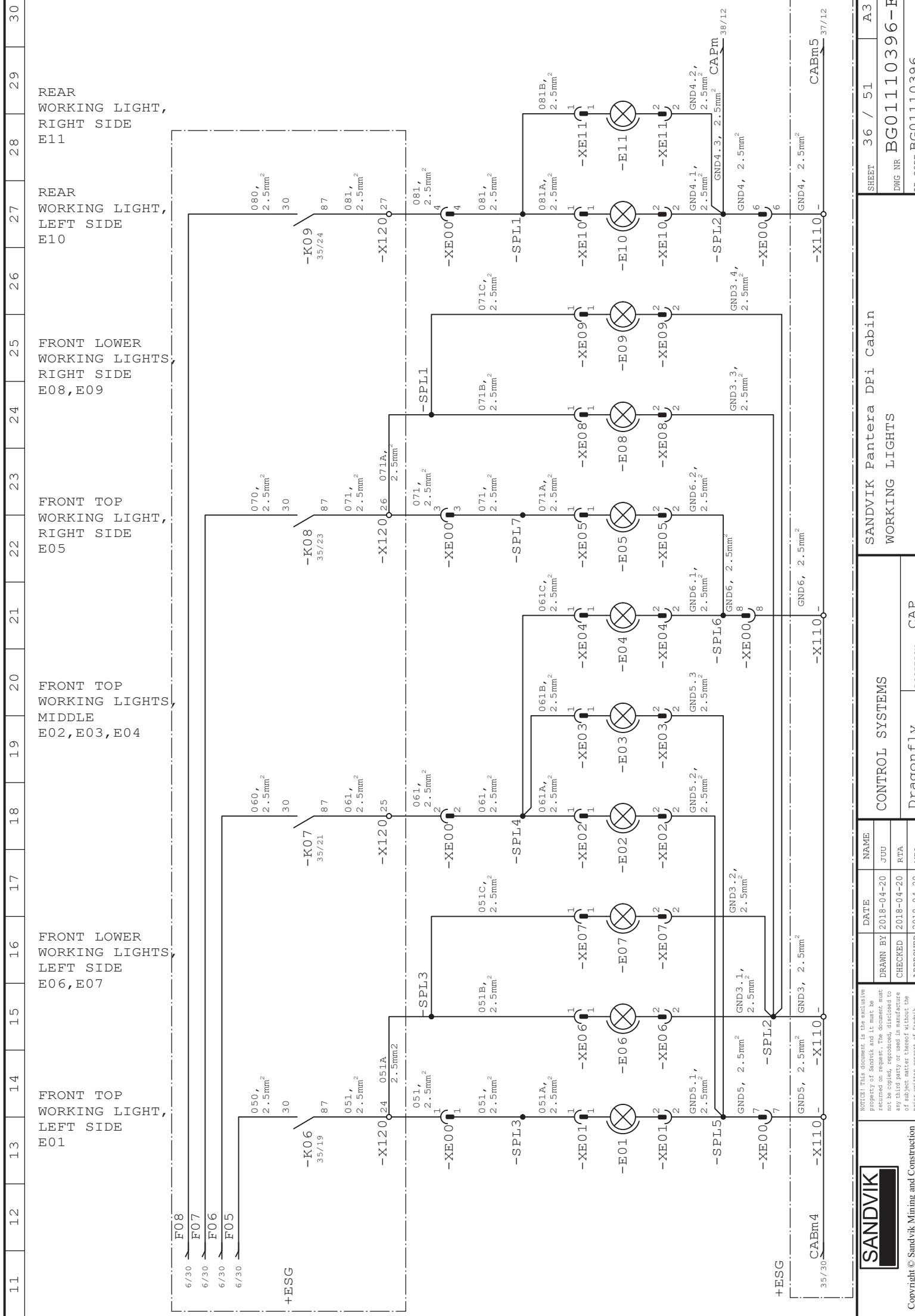
36/12 GND133, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND134, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND135, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND136, 1.0mm² -K06 -K07 -K08 -K09

36/12 GND137, 1.0mm² -K06 -K07 -K08 -K09



SANDVIK Pantera Cabin
 WORKING LIGHTS
 DRAWING NO. BG01110396-F
 SHEET 36 / 51 A3
 DRILL CODE BG01110396
 DRILL CODE BG01110396
 DRILL CODE BG01110396
 DRILL CODE BG01110396

NOTICE: This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.
 Copyright © Sandvik Mining and Construction
 Approved: 2018-04-20
 Drawn by: 2018-04-20
 Checked: 2018-04-20

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

SEAT HEATING

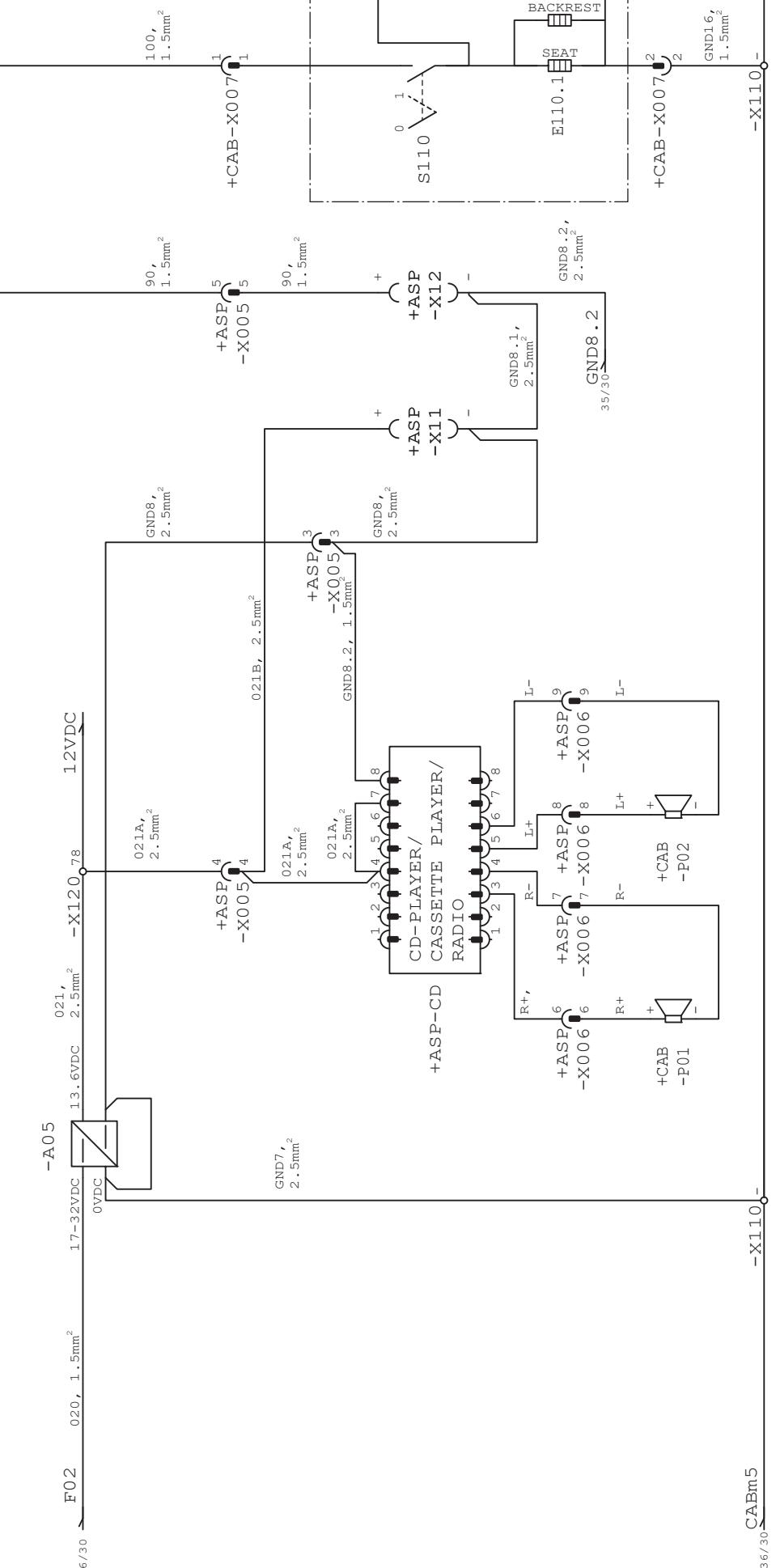
24V OUTLET

12V OUTLET

RIGHT REAR SPEAKER

LEFT REAR SPEAKER

DC / DC - CONVERTER

F10
F09
F02
F09**SANDVIK**

SHEET 37 / 51 A3

DRAWN BY JUU CONTROL SYSTEMS
CHECKED RTA APPROVED 2018-04-20 MPADING NR BG01110396-F
FILE-CODE BG01110396

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

INTERIOR LIGHT

INTERIOR LIGHT
CONTROL 2

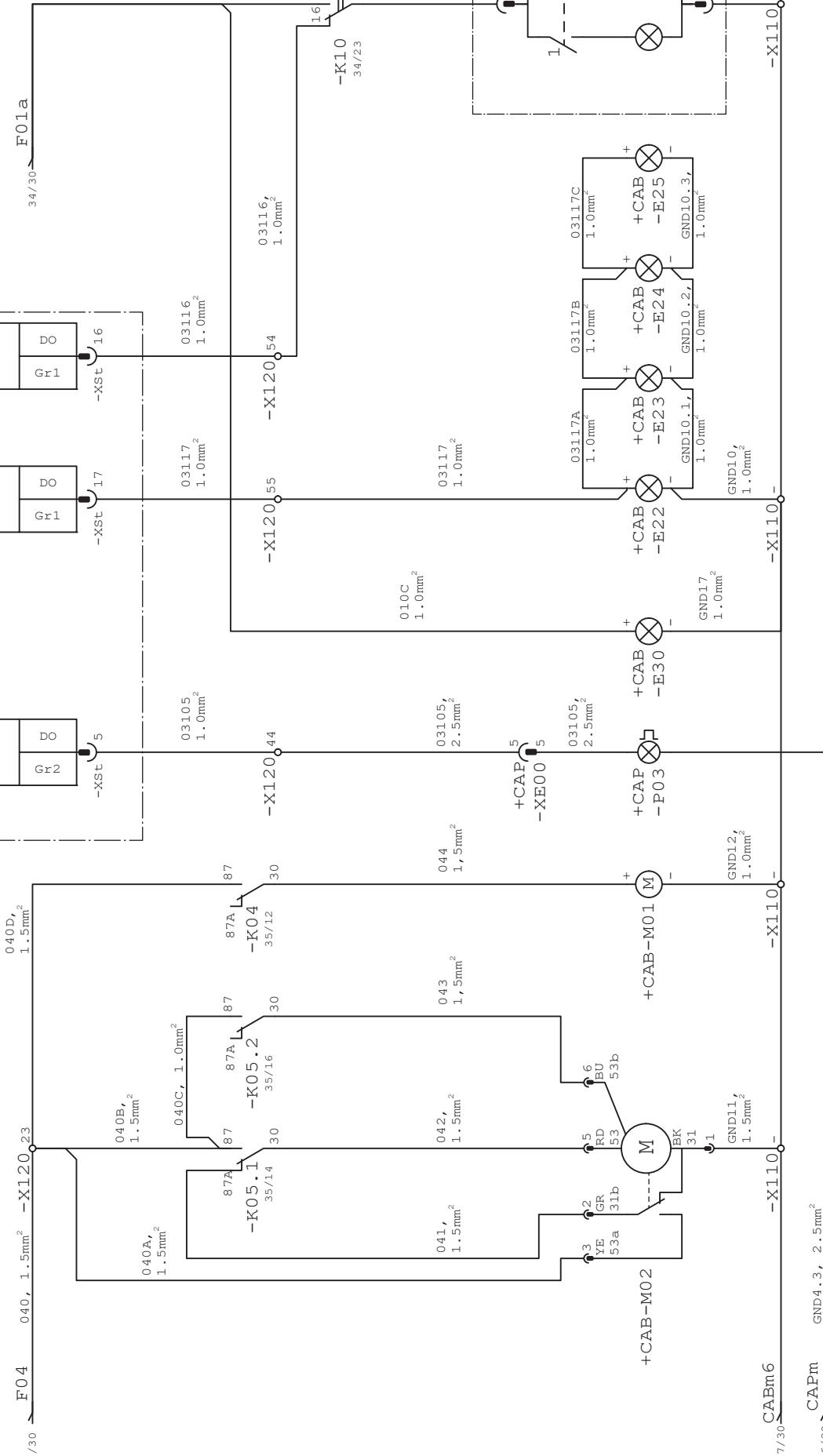
INTERIOR LIGHT
CONTROL 1

WARNING BEACON
CONTROL RELAY

WASHER PUMP
MOTOR

MOTOR OF
FRONT WIPER

COLOURS
BU = BLUE
BN = BROWN
BK = BLACK
WH = WHITE
GY = GRAY
PK = PINK
TR = TRANSPARENT
VI = VIOLET
YE = YELLOW
GR = GREEN
Y/G = YEL/GRE
RD = RED
OR = ORANGE



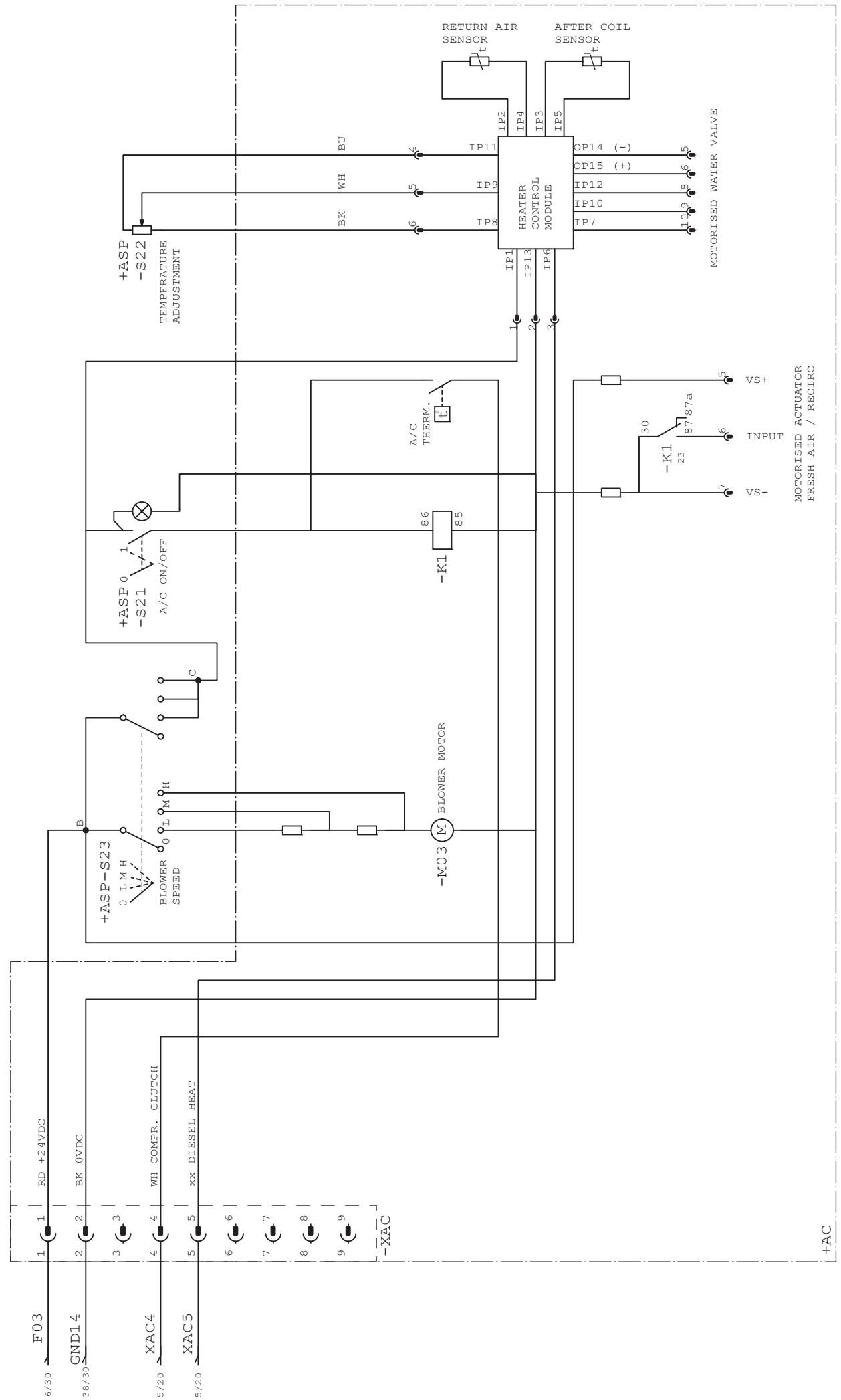
SANDVIK

SANDVIK

SANDVIK Pantera DPi Cabin
WIPER, WASHER PUMP, INTER. LIGHTS

SHEET 38 / 51 A3
Dwg NR BG01110396-F
Title-Code BG01110396

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



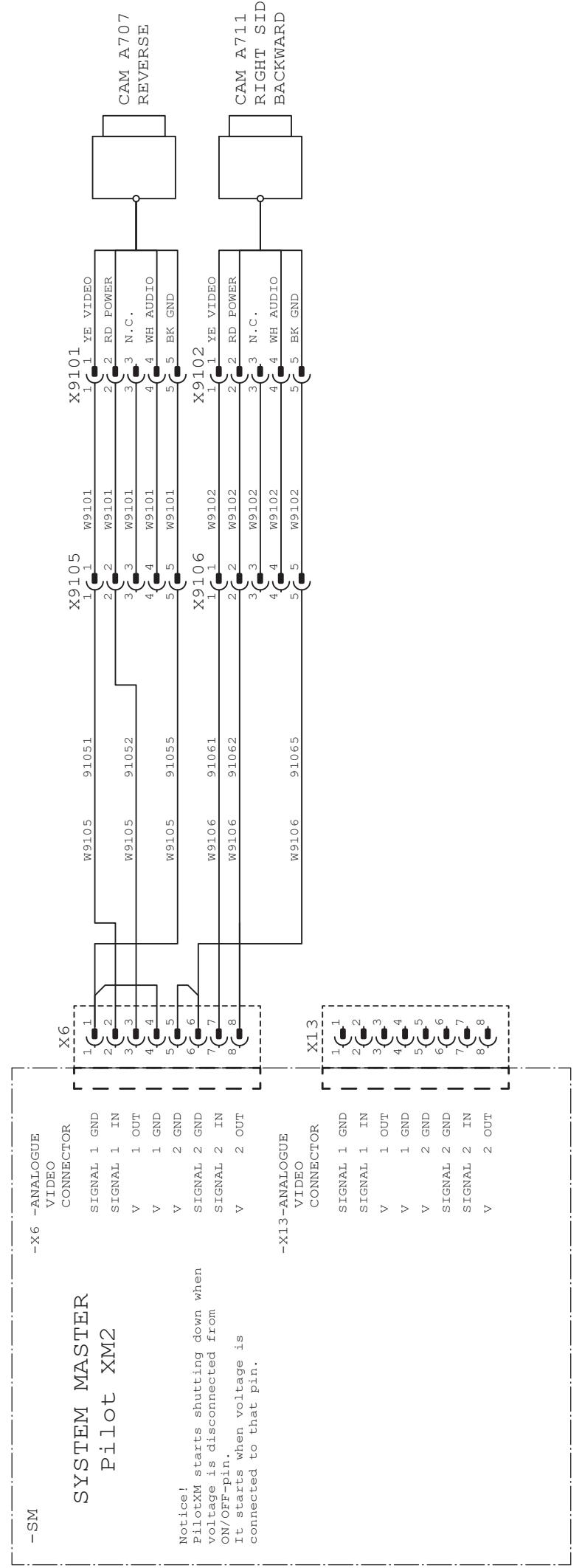
SANDVIK

Copyright © Sandvik Mining and Construction
TUE-CODE BG01110396-F

+AC

SHEET	39	/	51	A3
DING NR	BG01110396-F			
TUE-CODE	BG01110396			

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

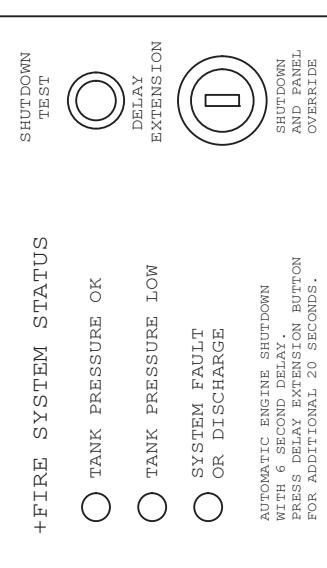


SHEET 40 / 51	A3
DING NR BG01110396-F	
FILE-CODE BG01110396	

SANDVIK		CONTROL SYSTEMS		SANDVIK Pantera Dpi Cabin BACKKEYE CONNECTIONS	
DRAWN BY 2018-04-20 JUU	DATE 2018-04-20 JUU	APPROVED 2018-04-20 MFA	POSITION CAB	Dragonfly	POSITION CAB
CHECKED 2018-04-20 RTA					

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

OPTION

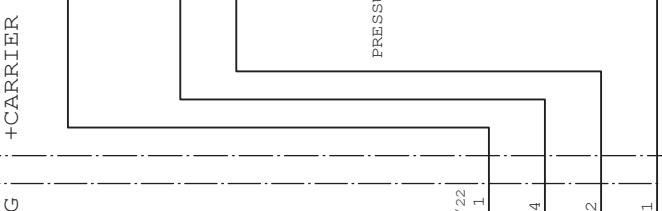


6/17

7/29

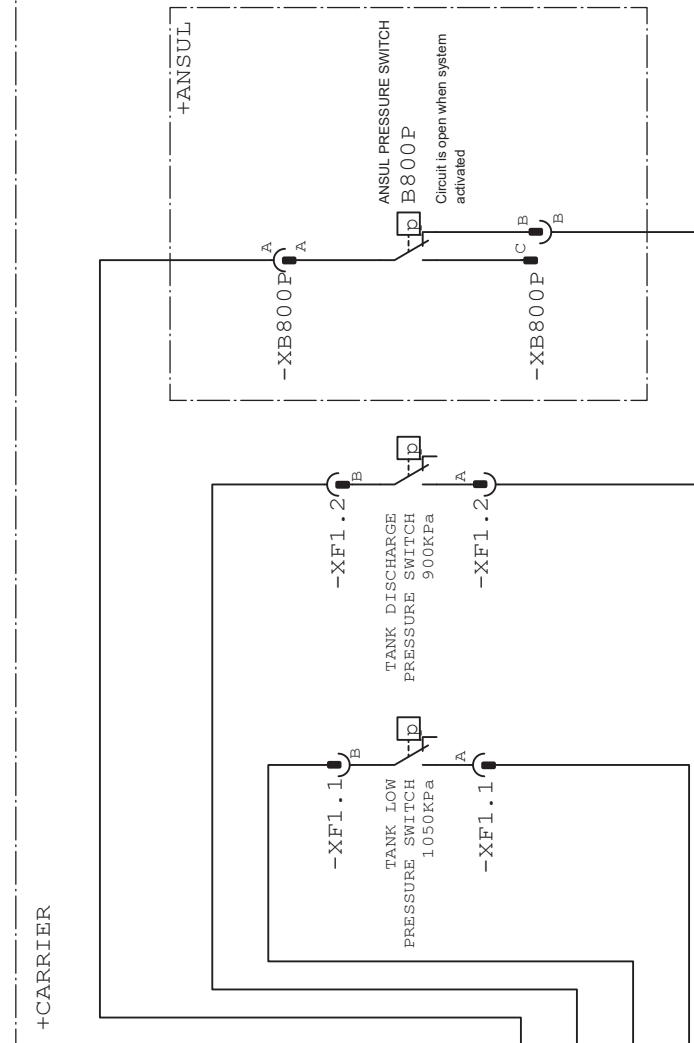
6/30

+ESG

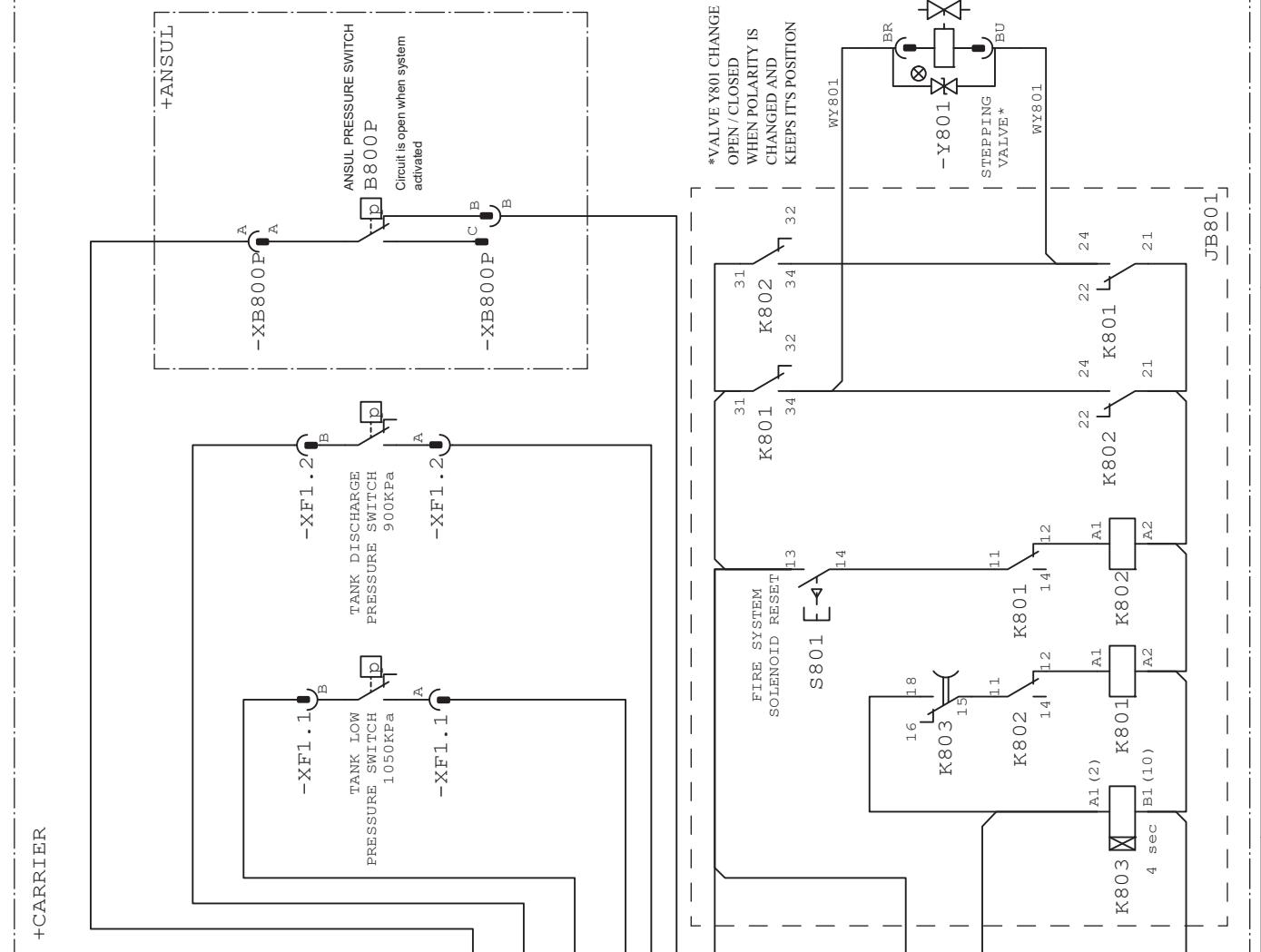


7/29

6/30



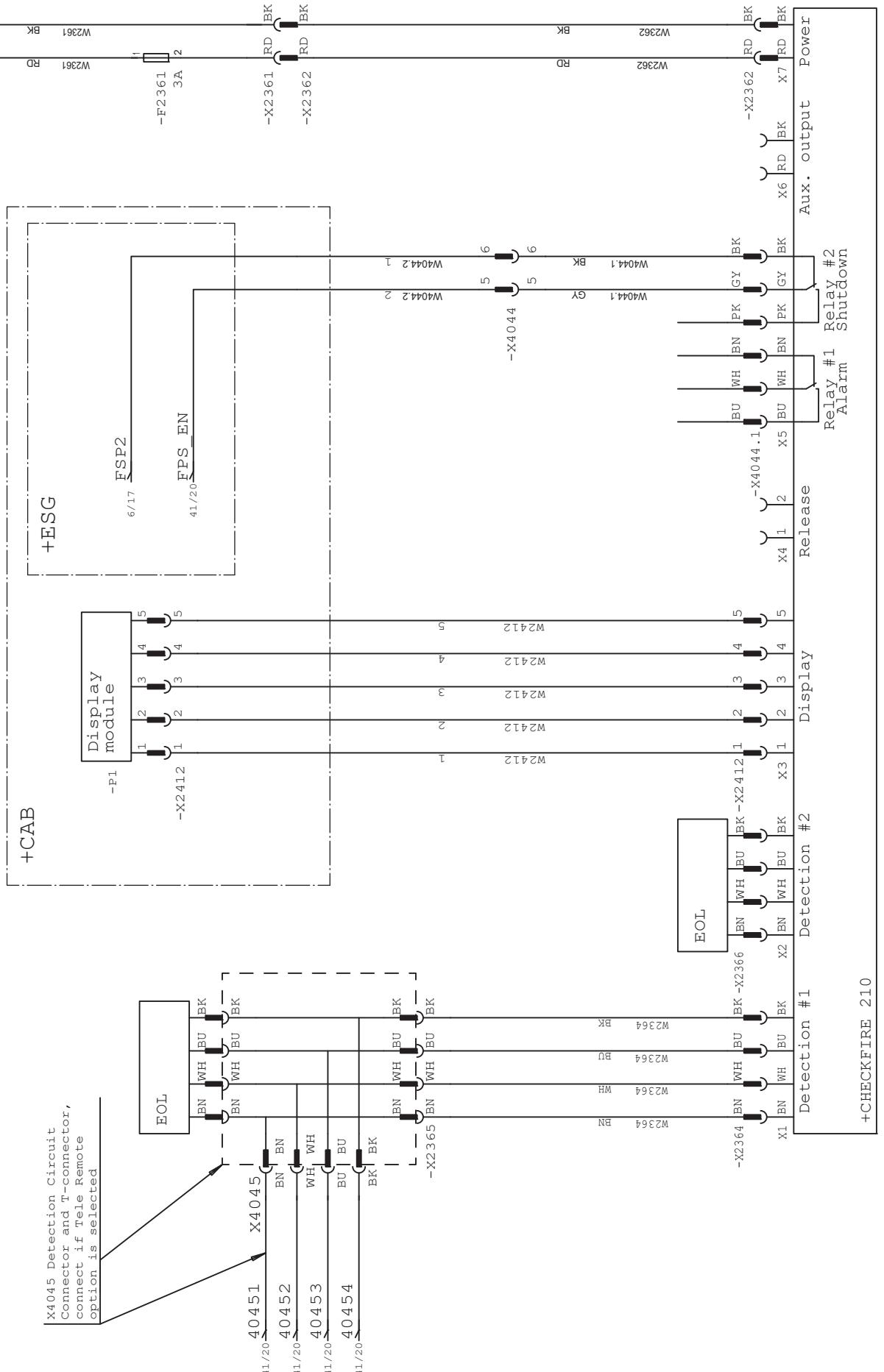
6/30



11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

BG01090011:8/18 Ansul GND

BG01090011:8/18 Ansul PWR



SANDVIK

Copyright © Sandvik Mining and Construction

SANDVIK Pantera DPi Cabin

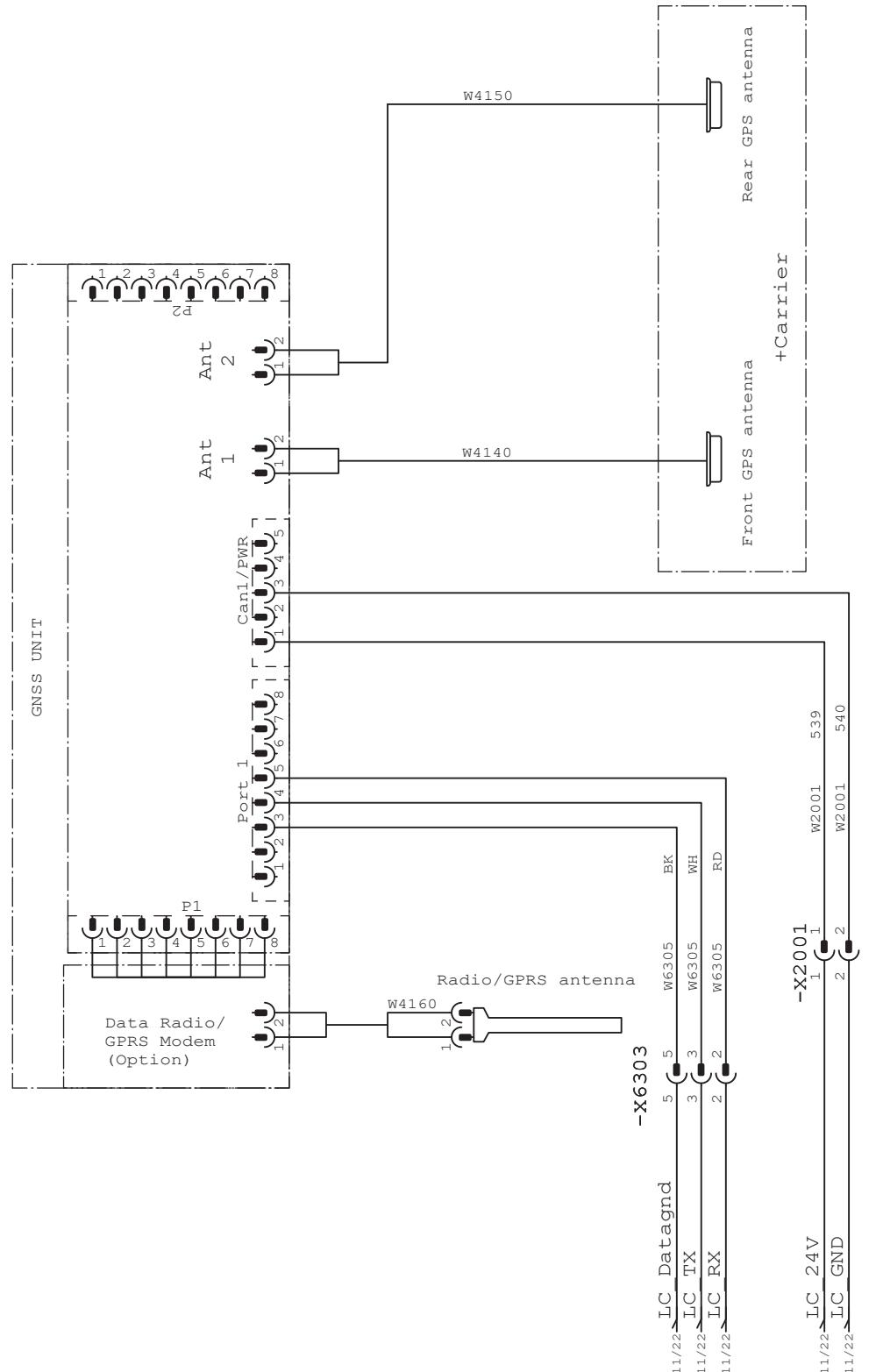
FIRE PREVENTION SYSTEM, ANSUL 210

SHEET 42 / 51 A3

Dwg Nr. BG01110396-F

ID-Code BG01110396

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



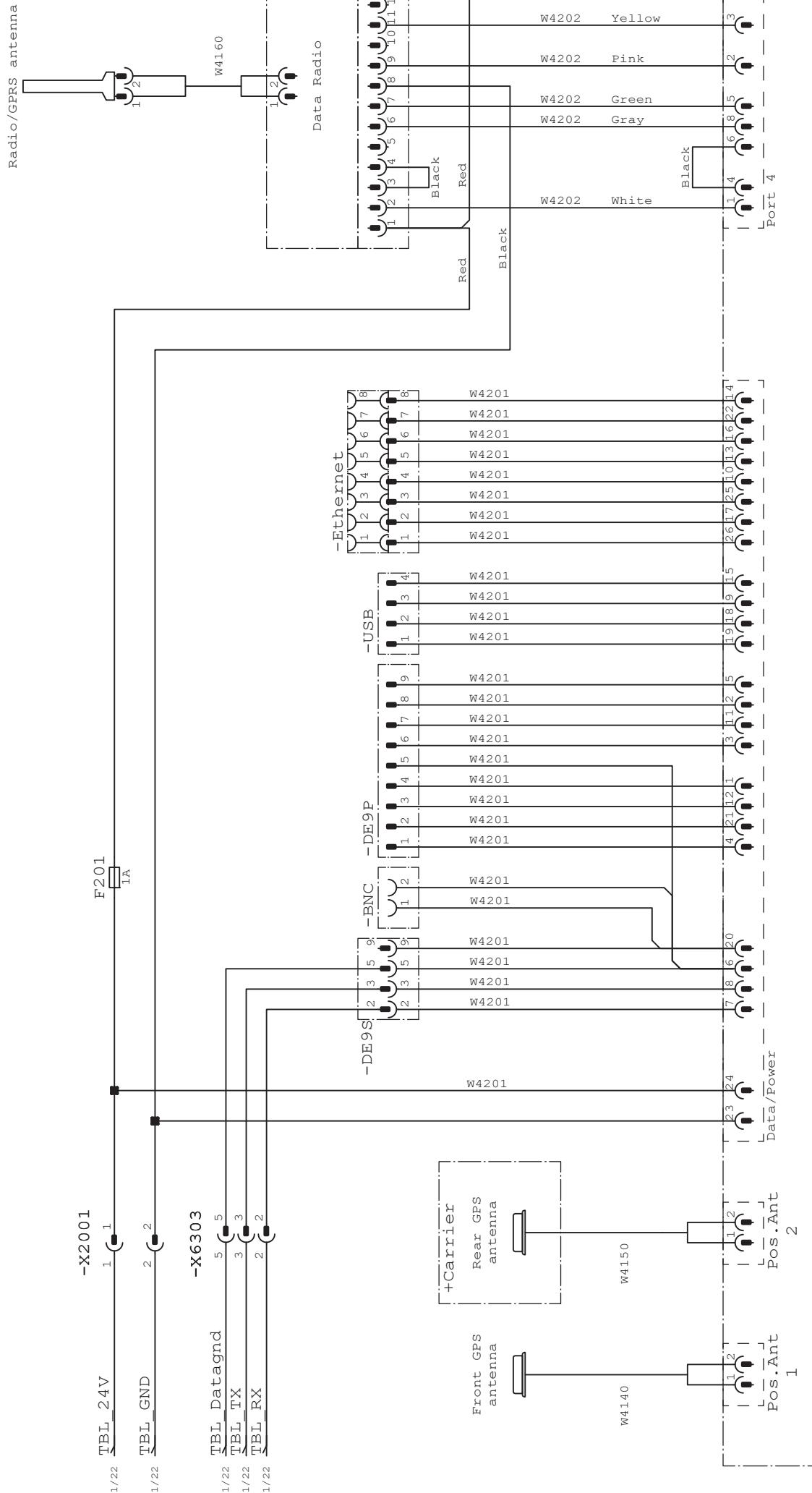
SANDVIK
Copyright © Sandvik Mining and Construction

NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

NAME	DATE	DRAWN BY	2018-04-20	JUU	CONTROL SYSTEMS	SANDVIK Pantera DPi Cabin
POSITION	CAB	CHECKED	2018-04-20	RVA	TIM3D LEICA'S CONNECTIONS	BG01110396-F
APPROVED	2018-04-20	MA	Dragonfly			TITLE-CODE BG01110396

SHEET	43	/	51	A3
DOC NR	BG01110396-F			

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



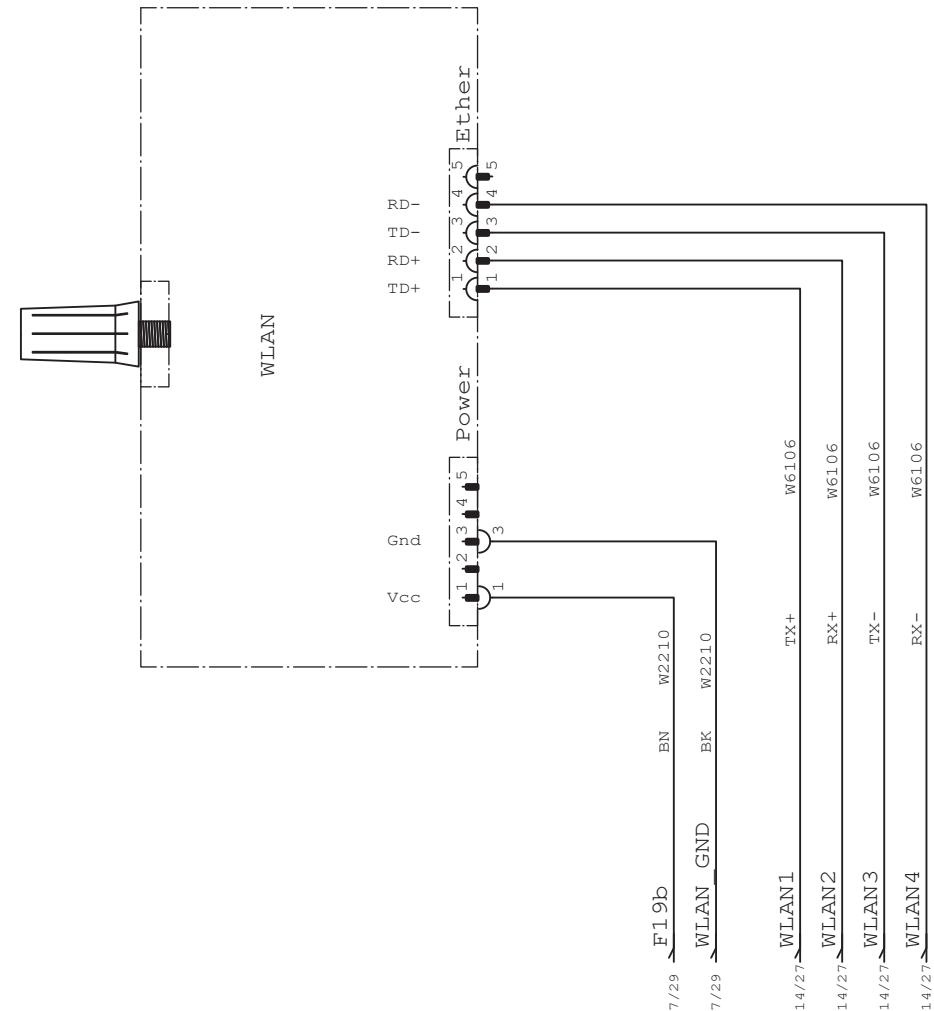
TRIMBLE GNSS UNIT

SHEET	44	/	51	A3
DING NR	BG01110396-F			
TELE-CODE	BG01110396			

SANDVIK	CONTROL SYSTEMS		
NOTICE: This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter hereof without the prior written consent of Sandvik.	DATE	NAME	
DRAWN BY	2018-04-20	JUU	
CHECKED	2018-04-20	RTA	
APPROVED	2018-04-20	MFA	
	Dragonfly	POSITION	CAB

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

WLAN antenna

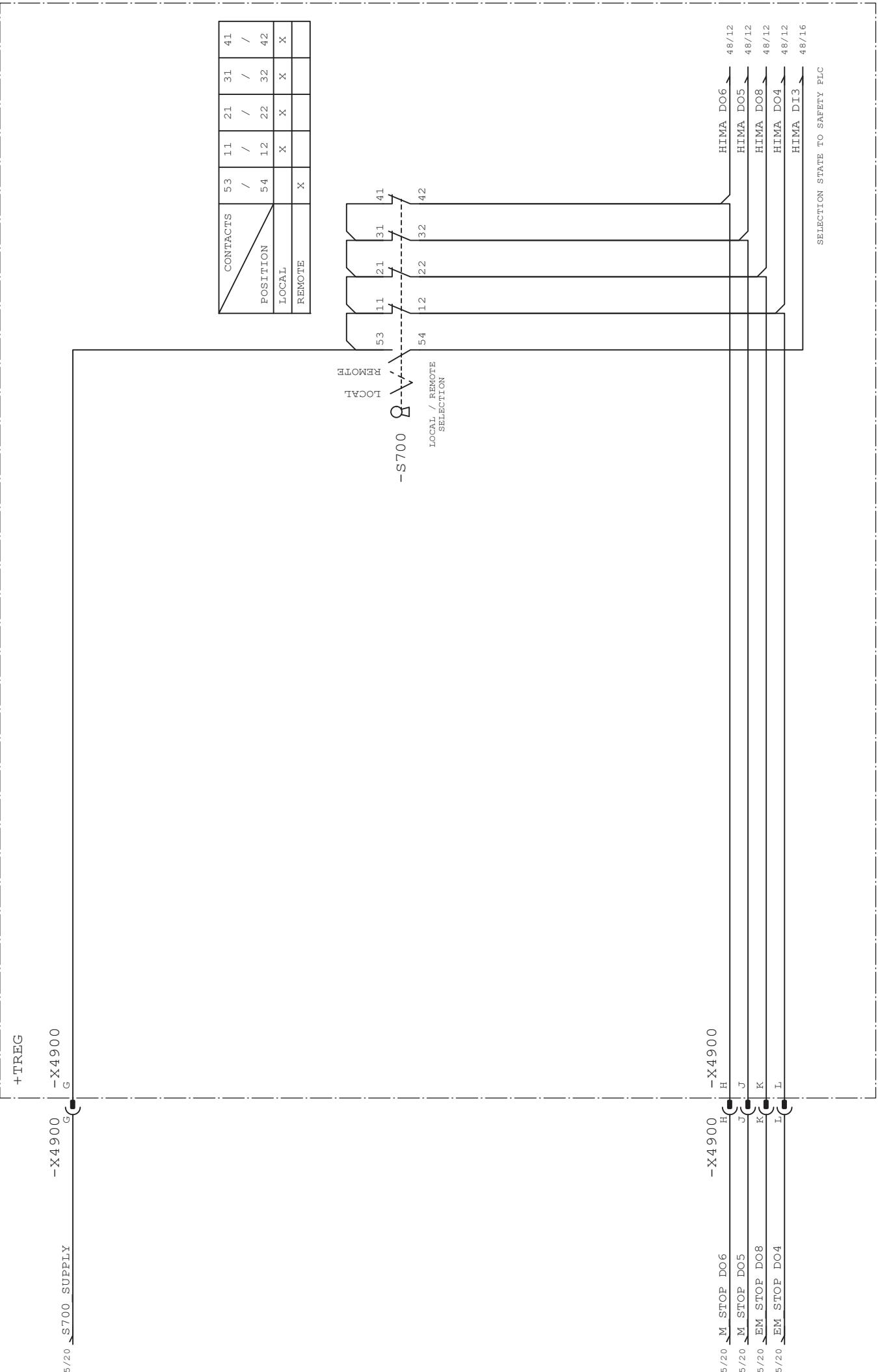


SANDVIK

Copyright © Sandvik Mining and Construction
TILL-CODE BG01110396-F

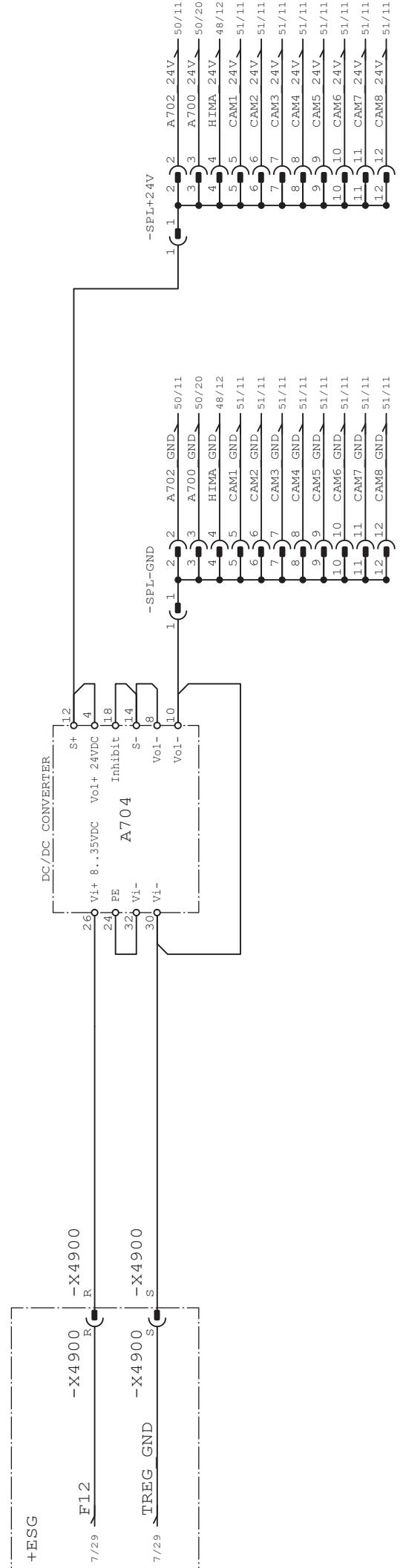
NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	SHEET 45 / 51	A3
DRAWN BY 2018-04-20 JUU	DRAWN BY 2018-04-20 JUU	
CHECKED 2018-04-20 RTA	CHECKED 2018-04-20 RTA	
APPROVED 2018-04-20 MPA	APPROVED 2018-04-20 MPA	
CONTROL SYSTEMS		SANDVIK Pantera DPi Cabin
Dragonfly POSITION CAB		SANDVIK WLAN
DING NR BG01110396-F		
TILL-CODE BG01110396		

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.			
Copyright © Sandvik Mining and Construction			NAME	
			DRAWN BY	2018-04-20 JUW
			CHECKED	2018-04-20 RTA
			APPROVED	2018-04-20 MPA
CONTROL SYSTEMS		POSITION	ESG	
Dragonfly				
SHEET 46 / 51				
DRAWING NR BG01110396-F				
FILE-CODE BG01110396				

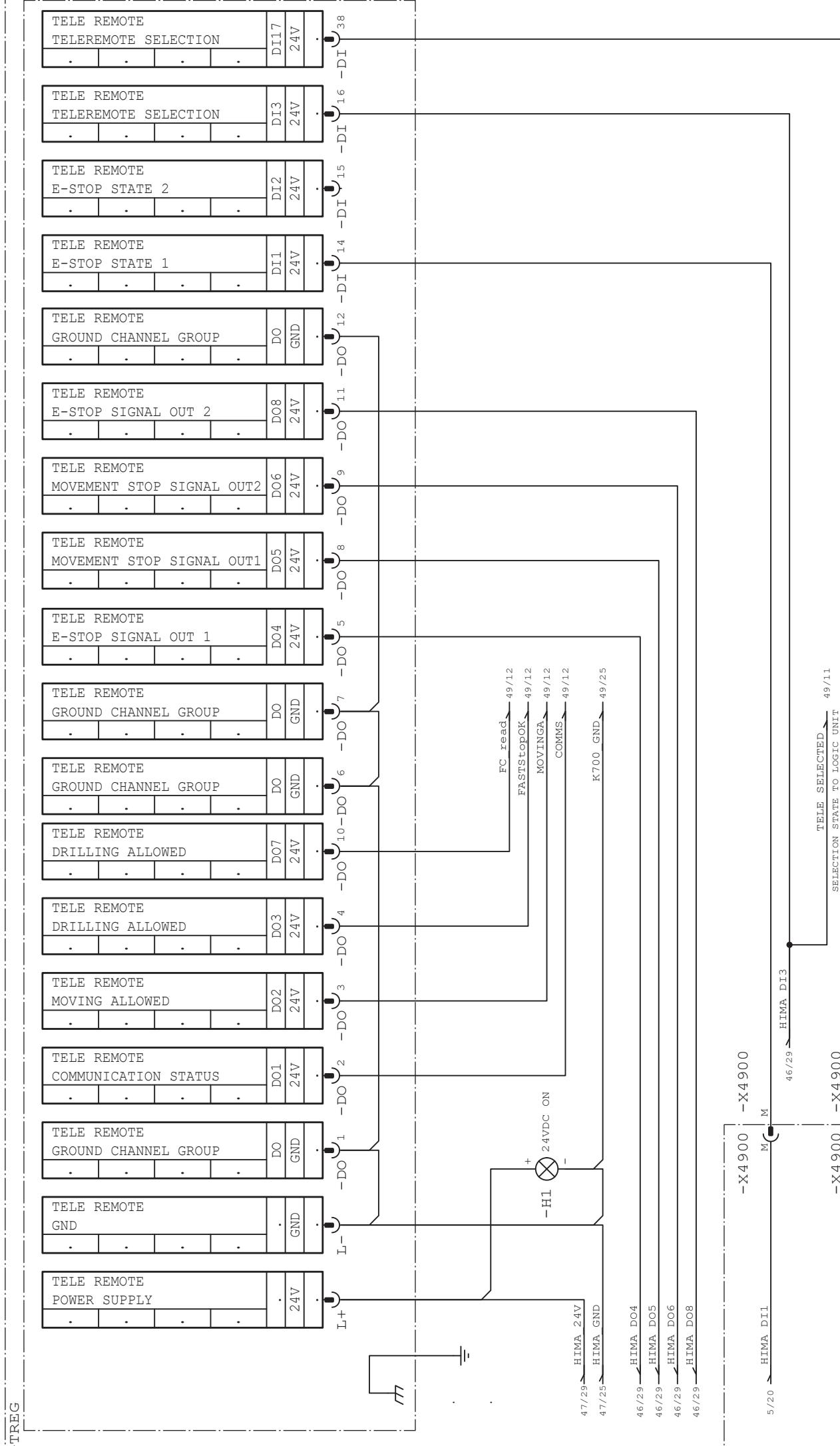
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SHEET	47	/	51	A3
DIG NR	BGO1110396-F			
FILE-CODE	BGO1110396			

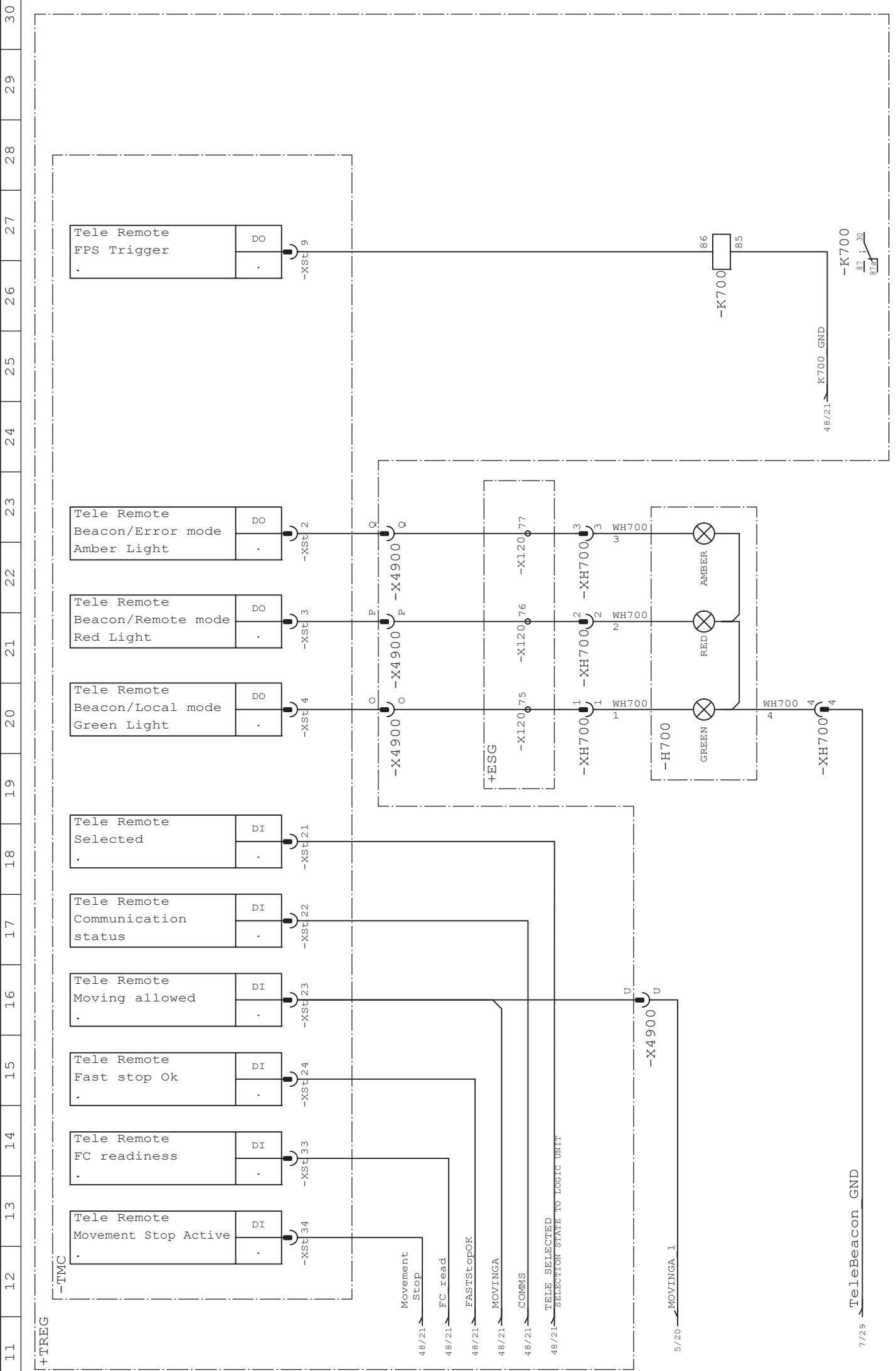
SANDVIK		NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.		NAME		DATE		NAME		DATE		NAME	
Copyright © Sandvik Mining and Construction		CONTROL SYSTEMS		SANDVIK Pantera DPi Cabin		TELE REMOTE ONBOARD GW PC		SANDVIK		NAME		DATE	
		Dragoonfly		TREG		RTA		JUU		APPROVED		2018-04-20	
		TREG		TREG		RTA		2018-04-20		APPROVED		2018-04-20	

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----


SANDVIK

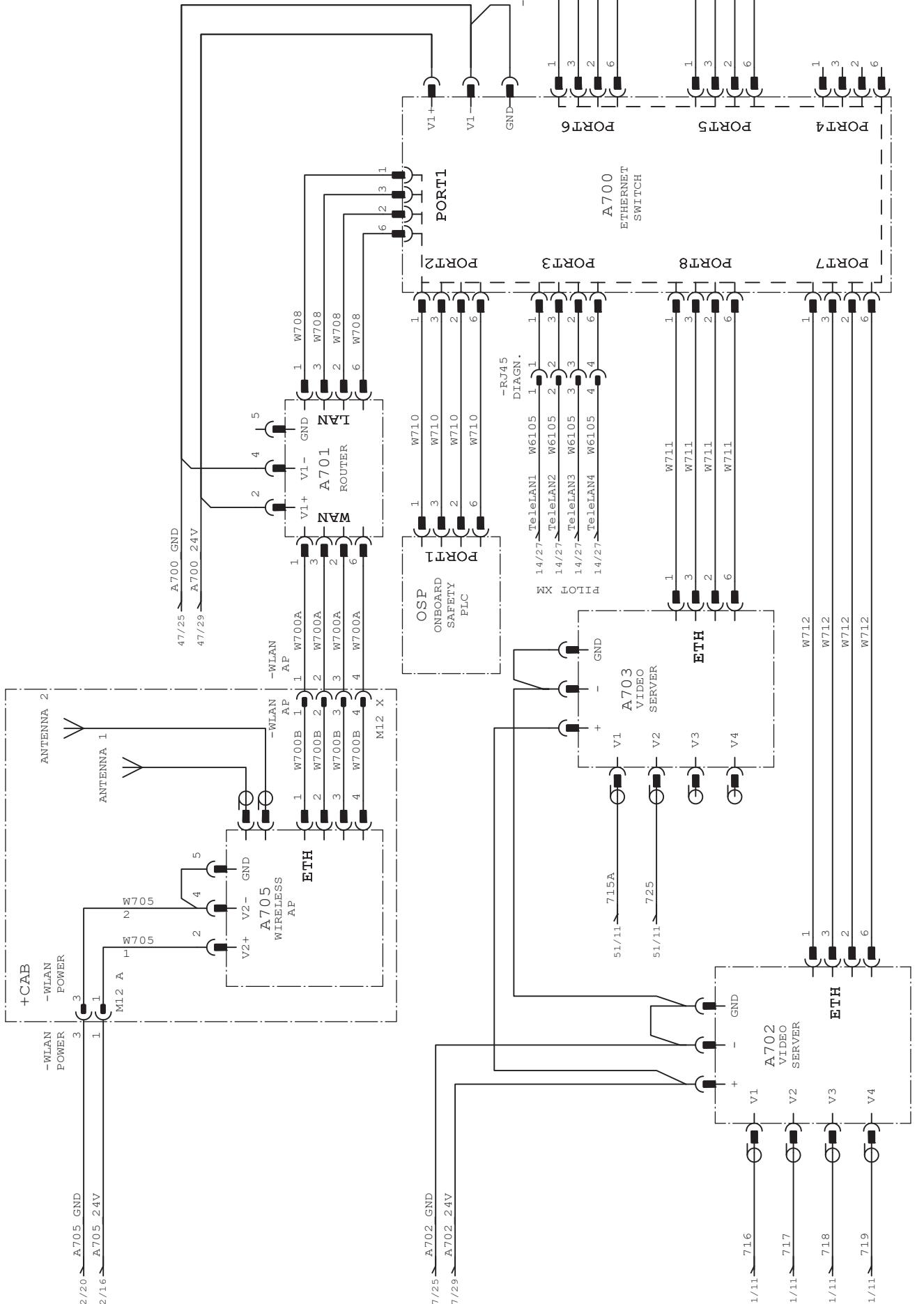
 SANDVIK Pantera DPi Cabin
TELEREMOTE Hima

 SHEET 48 / 51
DING NR BG01110396-F
TELECODE BG01110396



SANDVIK		CONTROL SYSTEMS		
POSITION	CAB	DrAGONFLY	DATE	NAME
		DRAWN BY	2018-04-20	JUU
		CHECKED	2018-04-20	RTA
		APPROVED	2018-04-20	MRA

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SANDVIK

© Sandvik Mining and Construction

Copyright © Sandvik Mining and Construction

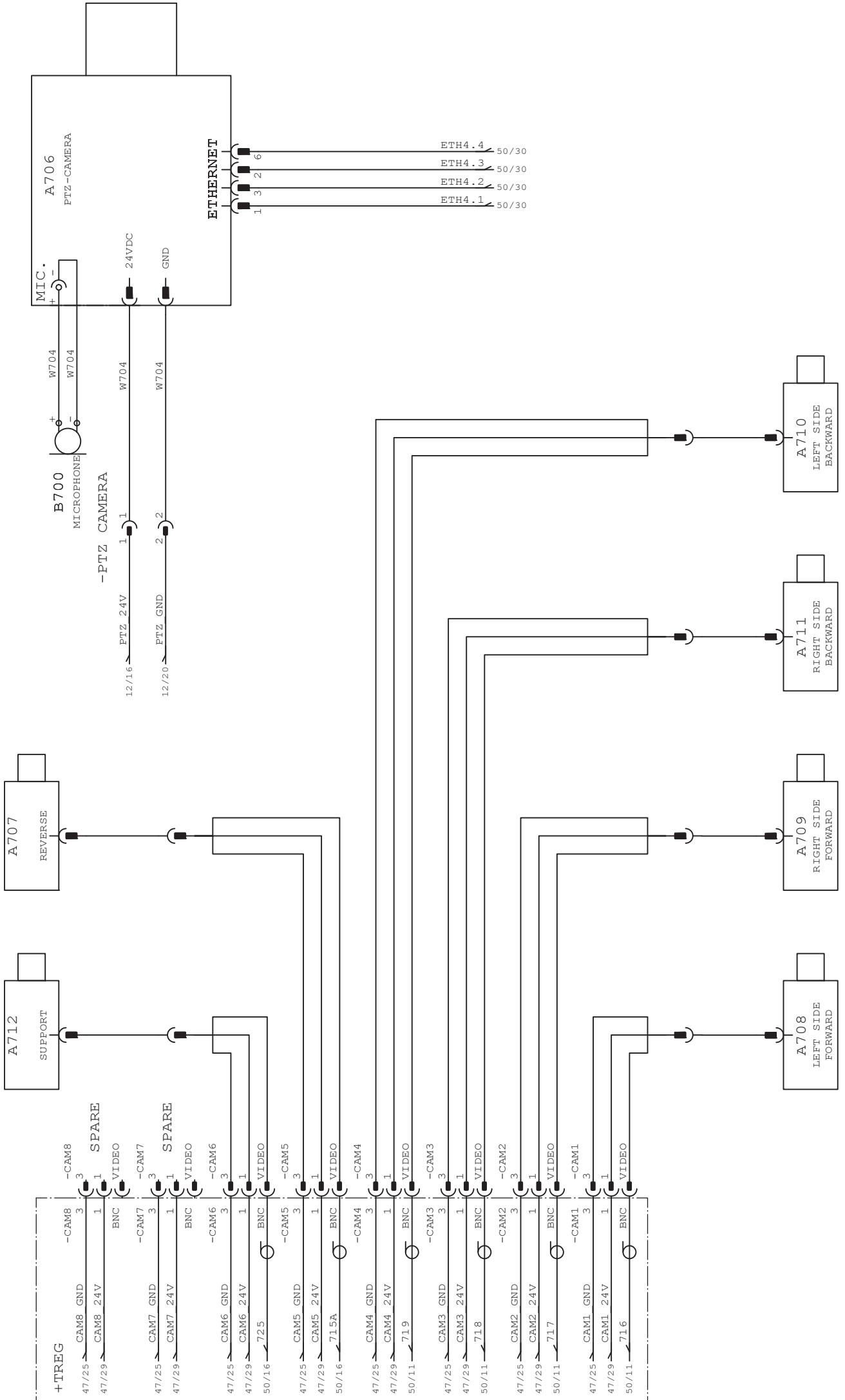
SANDVIK Pantera DPi Cabin
TELE REMOTE ETHERNET CONNECTIONS

NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	DATE	NAME
DRAWN BY	2018-04-20	JUU
CHECKED	2018-04-20	RVA
APPROVED	2018-04-20	MFA

CONTROL SYSTEMS	POSITION	TREG
Dragonfly	POSITION	TREG

SHEET	50 / 51	A3
DOC NR	BG01110396-F	
FILE-CODE	BG01110396	

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----


SANDVIK

NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

Copyright © Sandvik Mining and Construction

 SANDVIK Pantera DPi Cabin
TELE REMOTE CAMERAS

 SHEET 51 / 51 A3
Dwg NR BG01110396-F
ID-CODE BG01110396

TABLE OF CONTENTS

SHEET	REVISION	CONTENTS	REVISION INFO
1	E	CONTENTS AND INDEX LIST	2019-09-02 JMO List updated
2	E	CONTENTS AND INDEX LIST	2019-09-02 JMO List updated
3	B	LAYOUT	2018-07-25 JUU RCJB removed
4		BLOCK DIAGRAM MP	
5	B	BLOCK DIAGRAM MP & RCC	2018-07-25 JUU RCJB removed
6	D	BLOCK DIAGRAM FCC	2019-04-15 JPA Y127 added
7		BLOCK DIAGRAM FCC	
8	E	24VDC SUPPLY, MAIN FUSES	2019-09-02 JMO Added power supply for fire prevention system
9	B	CONTROL FUSES	2018-07-25 JUU Rear carrier harness changes
10	D	CONTROL FUSES	2019-04-09 JPA Movement stop monitoring added
11		EMERGENCY STOP CIRCUIT	
12		EMERGENCY STOP TRIP WIRE	
13	B	MAIN RELAYS	2018-07-25 JUU Relay wire colors updated
14	B	RCC POWER SUPPLY	2018-08-14 JUU References, spare conn. shown, XEx:51 changed
15		FCC POWER SUPPLY	
16	B	CAN BB FCC & RCC	2018-08-14 JUU X5022 connector changed to X5 terminal block
17		CAN BB, CARRIER INCLINATOR	
18		CAN BB, BOOM ANGLE & SWING SENSORS	
19		CAN BB, BOOM LIFT SENSOR	
20		ENGINE CONTROL AND COLD START TIER3	
21	D	TIER3 / STAGE V ENGINE INTERFACES	2019-04-01 JPA Engine connections updated
22	D	ARD FUEL PUMP, STAGE V/Tier3 C9 .3B	2019-04-09 JPA Sheet description updated
23		PETU INTERFACE, STAGE V ONLY	
24		CEM INTERFACE, STAGE V ONLY	
25		EBERSPÄCHER WATER HEATER	
26		REARLIGHTS, OPTIONAL LIGHTS	
27	E	MOVEMENT ALARM, 24V OUTLET	2020-01-08 RTA Added B926L
28	E	FILLING PUMPS, GRINDER	2019-12-19 JYL X4:31, 32 and 33 doubled
29	B	HYDRAULIC OIL PUMP CONTROL	2018-07-25 JUU RCJB removed
30		HYDRAULIC OIL	
31		COOLING FAN, AIR FLUSHING	
32		AIR OUT, FUEL FILL. PUMP. HORN	
33		BOOM CONTROL VALVES	
34		FUEL LEVEL	
35	B	SHANK LUBRICATION	2018-08-14 JUU -X5 marking added

SANDVIK

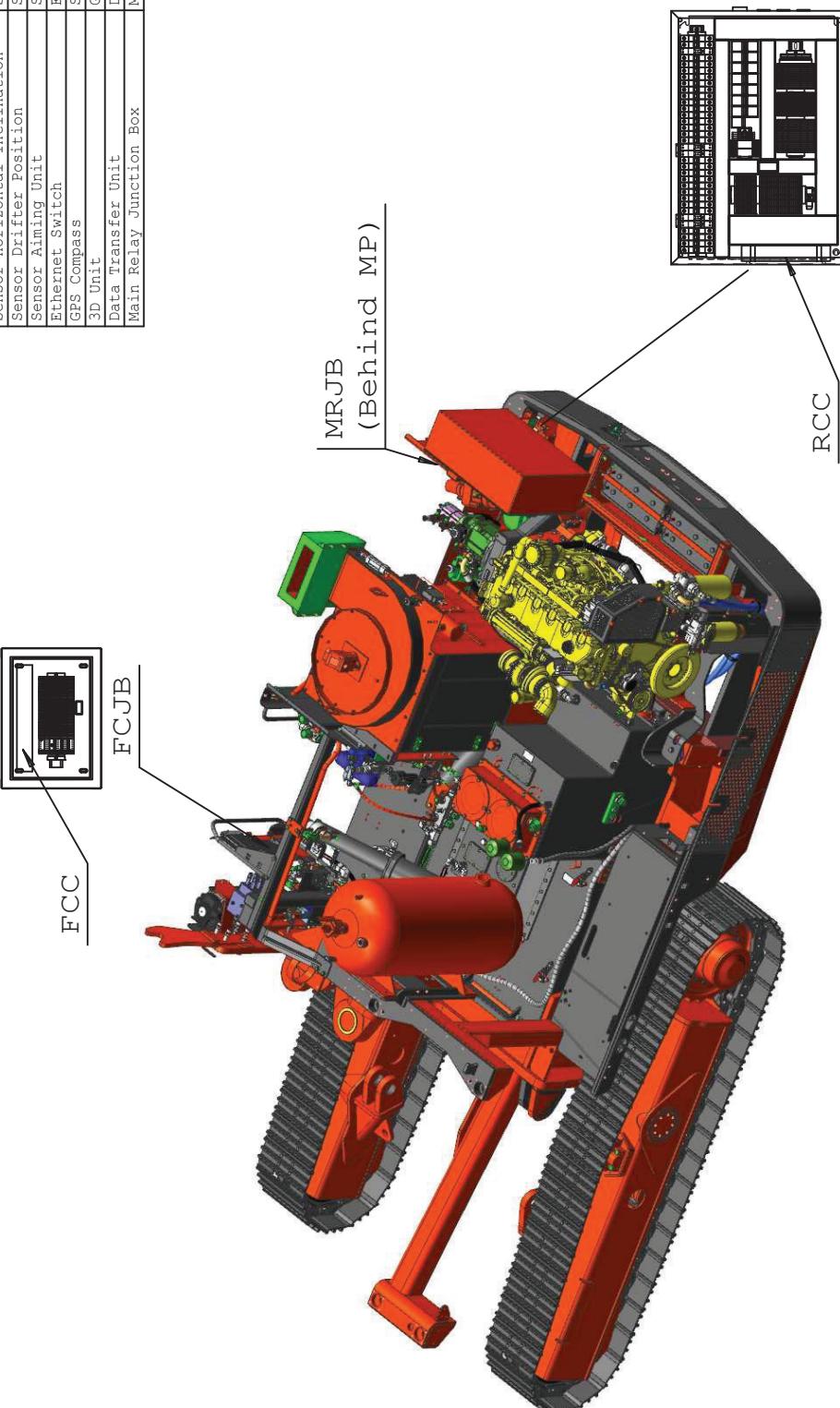
NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

Copyright © Sandvik Mining and Construction

Pantera Dpi, Carrier circuit diagram CONTENTS AND INDEX LIST	SHEET 1 / 49
Dragonfly POSITION CARRIER	DIGI NR BG01090011-E
APPROVED 2018-03-20 MPA	TD-CODE BG01090011

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Name	Abbreviation	+Enclosure - device label
System Master	SM	+SM
HMI Master	HM	+ESG-HM
Rear Carrier Controller	RCC	+MP-RCC
Front Carrier Controller	FCC	+FCC
FC Junction Box	FCJB	+FCJB
Drilling Master	DM	+DM
DM Junction Box Standard	DMJB	+DMJB
Advanced Calculation Unit	ACU	+ACU
Aux Control Panel	ACP	+ACP
Right Control Panel	RCP	+RCP
Left Control Panel	LCP	+LCP
Radio Receiver	REC	+REC
Sensor Boom Position	S7P	+B101G
Sensor Boom Inclination	SBI	+B22G
Sensor Feed Extension	SFE	+B103G
Sensor Carrier Inclination	SCI	+B336G
Sensor Boom Turn Angle	SBA	+B20G
Sensor Feed Inclination	SFI	+B132G
Sensor Horizontal Inclination	SHI	+B132G_2
Sensor Drifter Position	SDP	+B3G
Sensor Aiming Unit	SAU	+B99G
Ethernet Switch	ETS	+ETS
GPS Compass	SSC	+SSC
3D Unit	GNSS	+GNSS
Data Transfer Unit	DTU	+DTU
Main Relay Junction Box	MRJB	+MRJB



SANDVIK

NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

Copyright © Sandvik Mining and Construction
APPROVED 2018-03-20 MPA
DRAWN BY 2018-03-20 JU
CHECKED 2018-03-20 RPA
DATE 2018-03-20 NAME JU
CARRIED POSITION CARRIER

Pantera DPI, Carrier circuit diagram LAYOUT

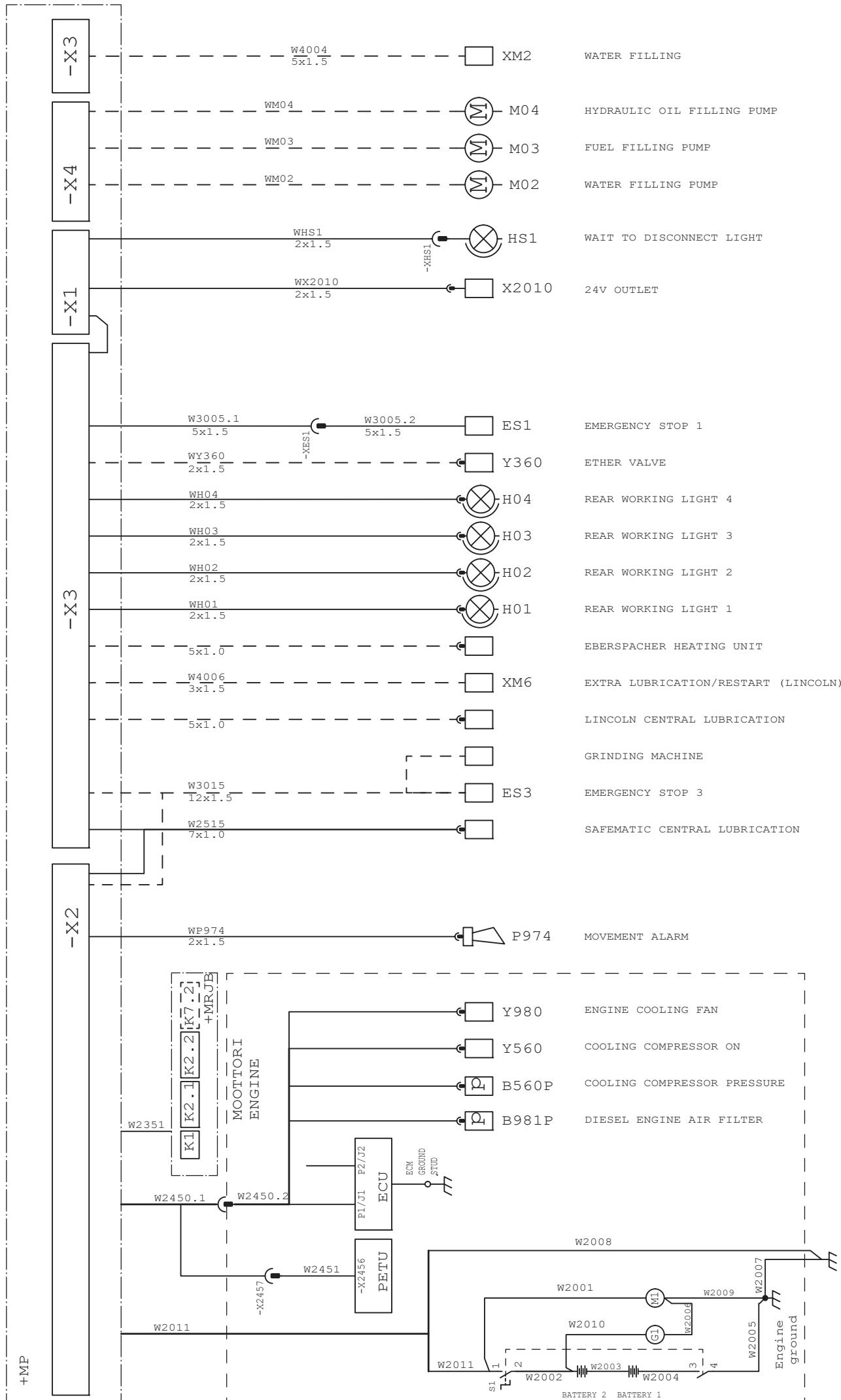
MP (Main Power)

SHEET	3 / 49	A3
DWG NR	BG01090011-E	
FILE-CODE	BG01090011	

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

OPTION -----

+MP

**SANDVIK**

NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

Pantera DPI, Carrier circuit diagram	
SHEET 4 / 49	A3
BLOCK DIAGRAM MP	
DWG NR	BG01090011-E
TILL-CODE	BG01090011

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

+MP

OPTION - - -

XE_x

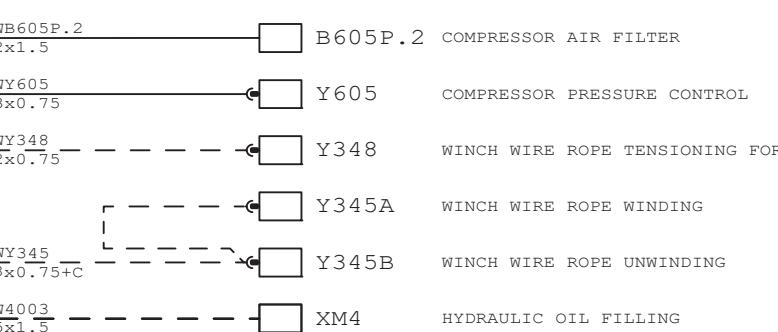
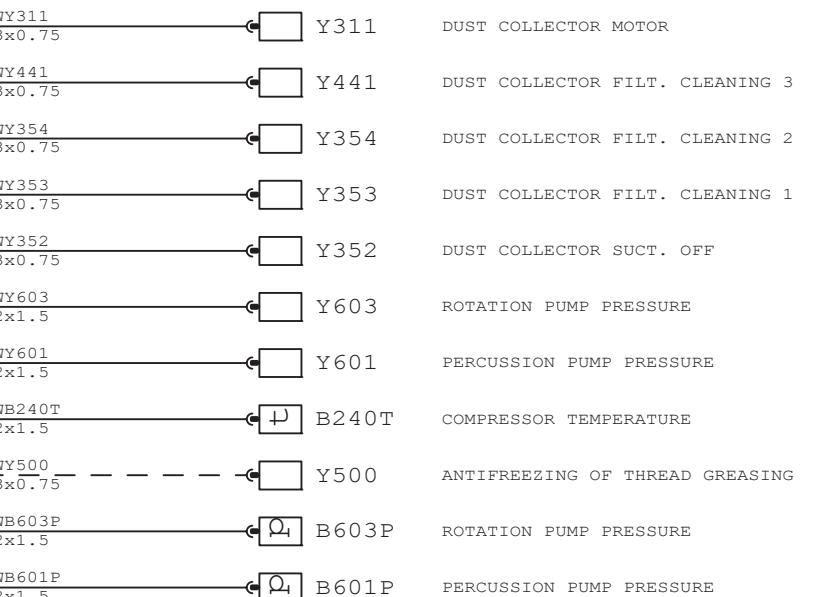
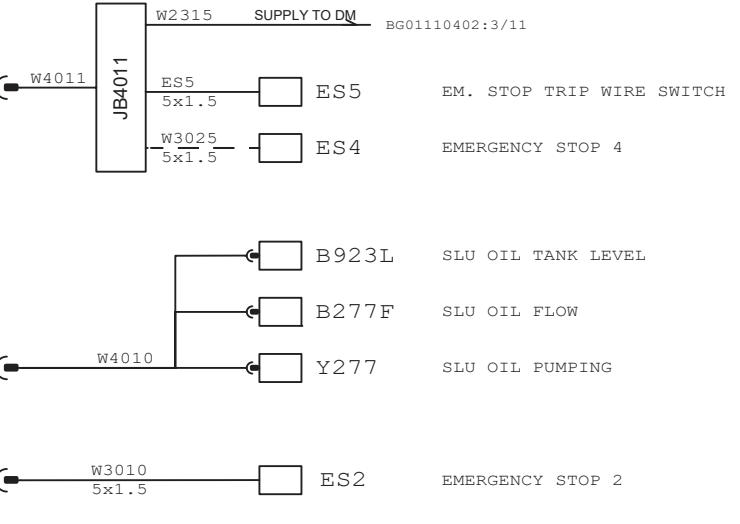
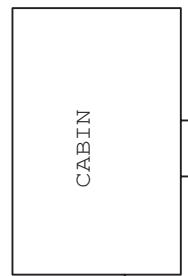
XSt

-RCC

-X2

-X2101

W4001, FGQB 6/11



SANDVIK

CARRIER

Pantera DPi, Carrier circuit diagram
BLOCK DIAGRAM MP & RCCSHEET 5 / 49
DING NR BG01090011-E
FILE-CODE BG01090011

A3

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

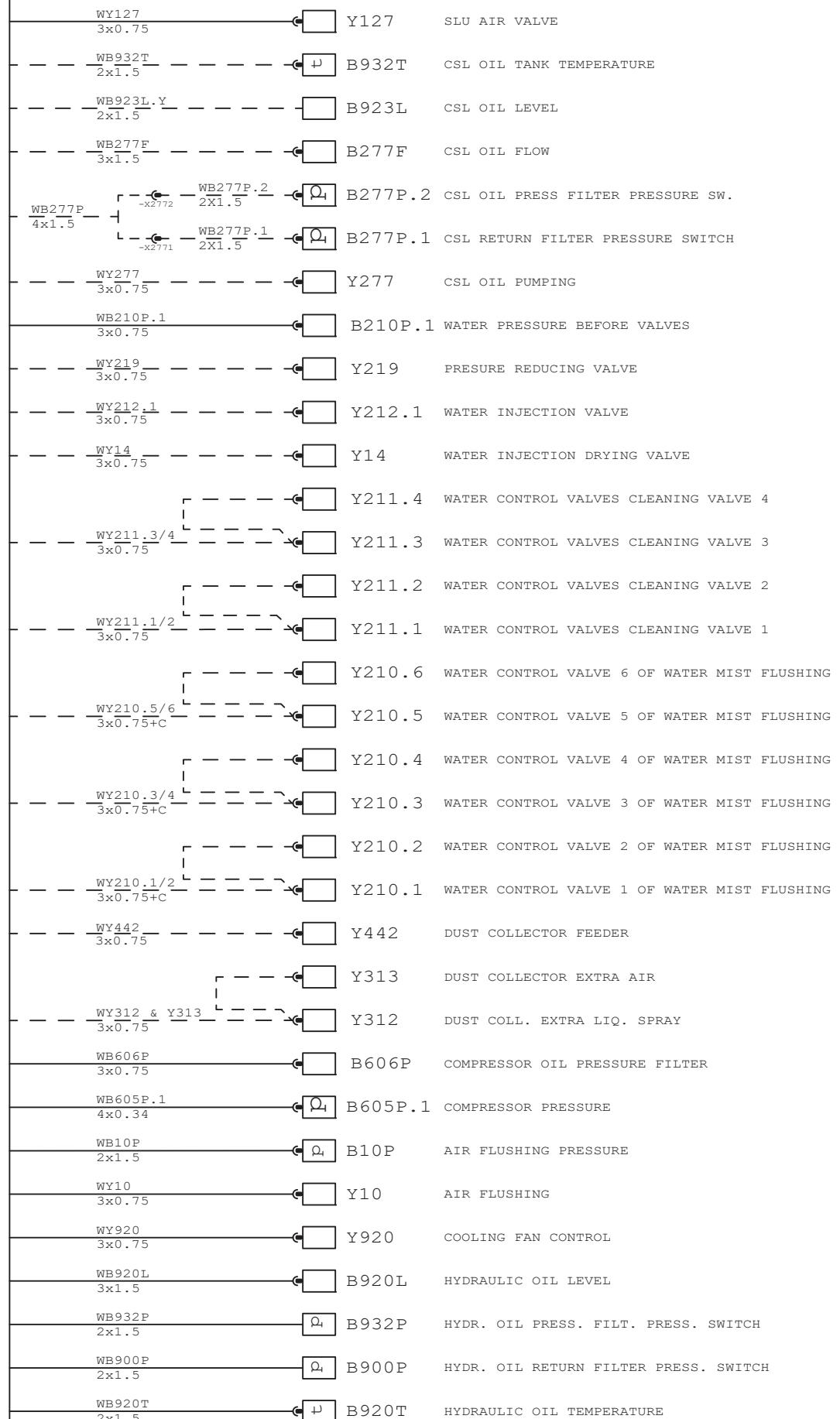
OPTION - - - - -

W4001_FCJBW4001

+FCJB

XEX - FCC

XSt



SHEET 6 / 49	A3
DWG NR BGO1090011-E	TE-CODE BGO1090011

Pantera DPI, Carrier circuit diagram	BLOCK DIAGRAM FCC
--------------------------------------	-------------------

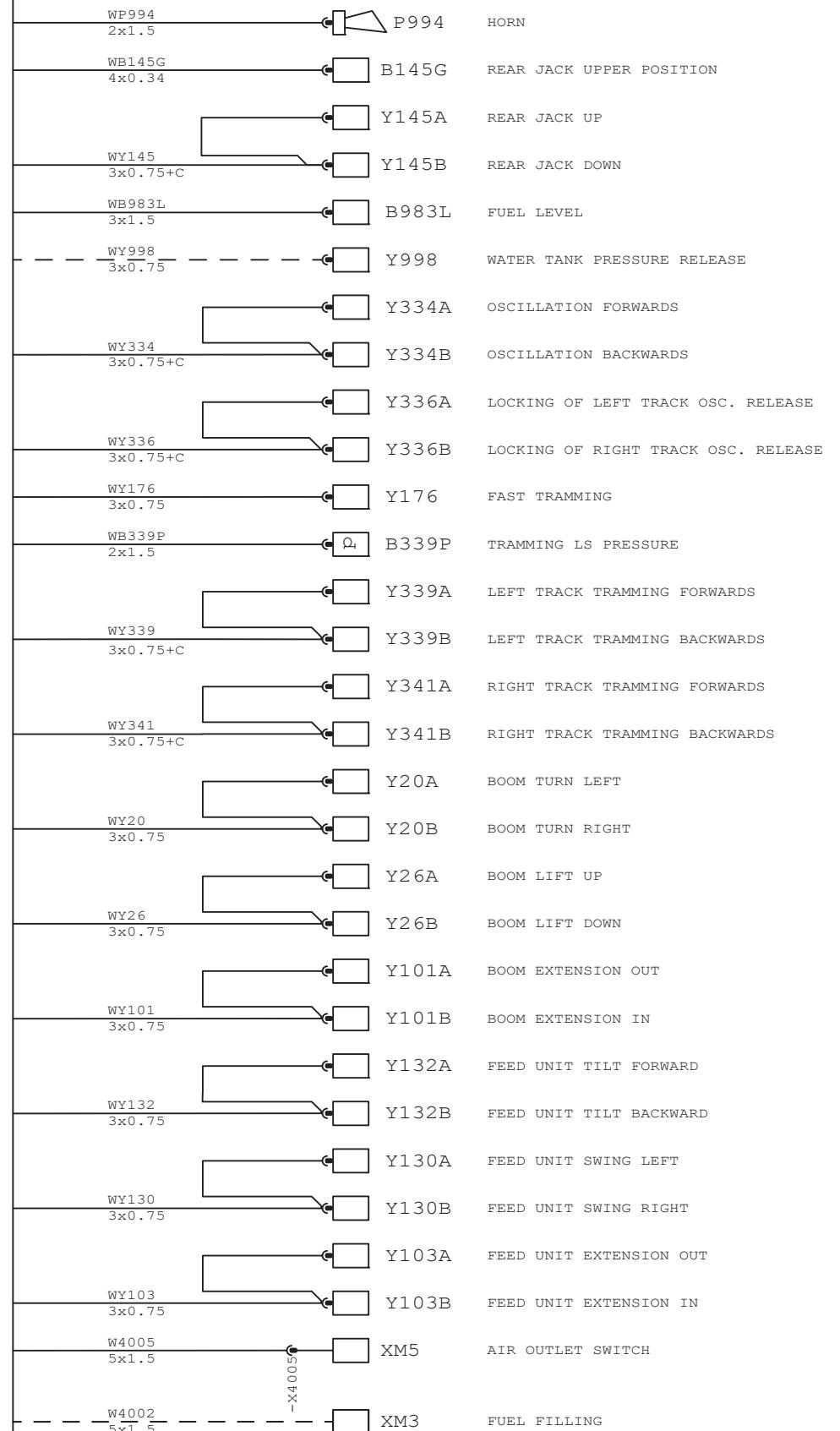
CONTROL SYSTEMS	CARRIER POSITION
Dragonfly	RTA
APPROVED 2018-03-20	MPA

NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	
DRAWN BY 2018-03-20	JUU
CHECKED 2018-03-20	RTA
APPROVED 2018-03-20	MPA

SANDVIK	Copyright © Sandvik Mining and Construction
---------	---

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
OPTION - - - - -																			

+FCJJB

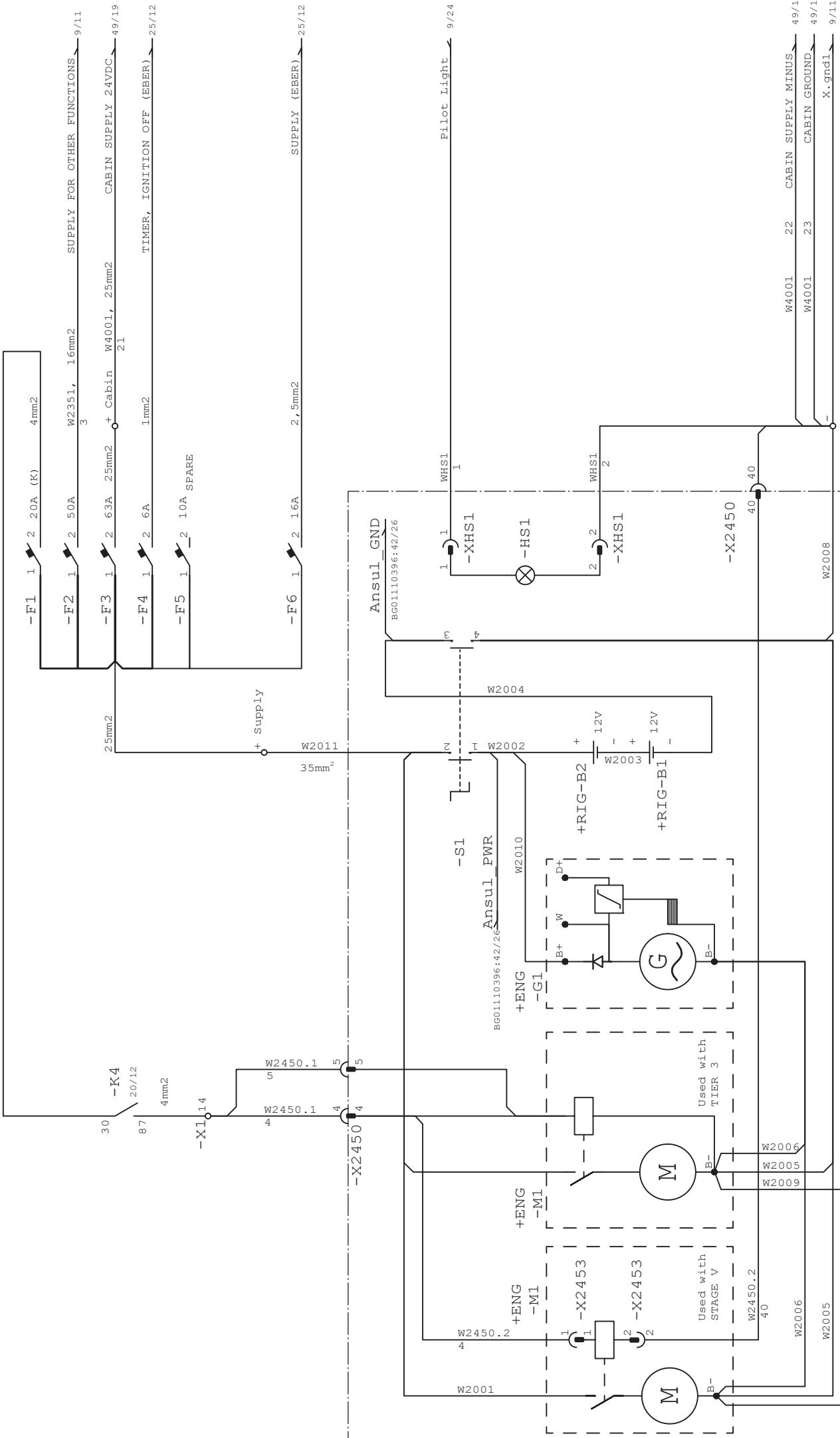


SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.		
	DRAWN BY	DATE	NAME
	2018-03-20	JUU	
	CHECKED	2018-03-20	RTVA
	APPROVED	2018-03-20	MFA
Pantera DPi, Carrier circuit diagram BLOCK DIAGRAM FCC		SHEET 7 / 49	
		DING NR BG01090011-E	
		FILE-CODE BG01090011	

SANDVIK

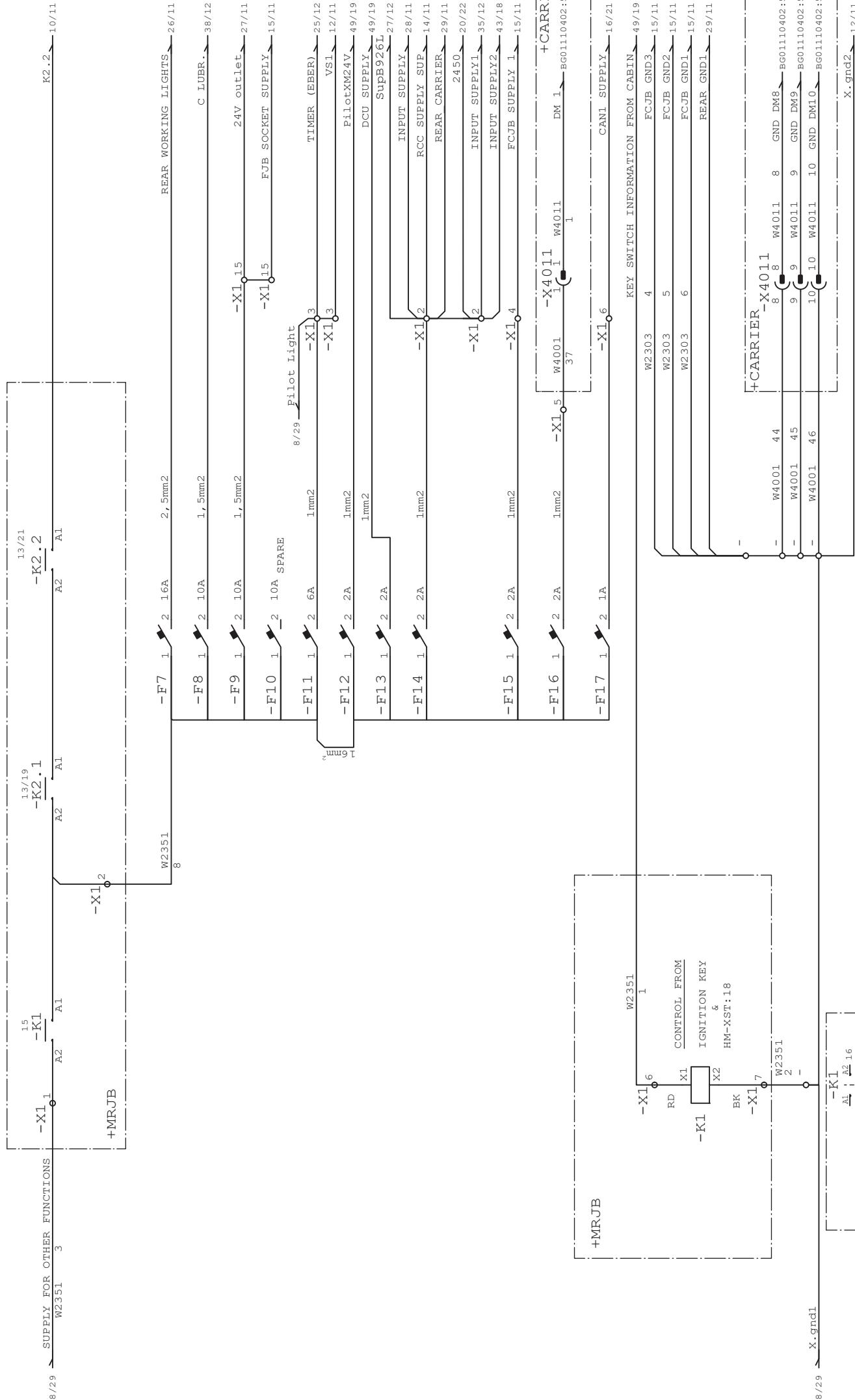
Copyright © Sandvik Mining and Construction

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SANDVIK	Pantera DPi, Carrier circuit diagram				SHEET 8 / 49	A3
	24VDC SUPPLY, MAIN FUSES					
Copyright © Sandvik Mining and Construction	CONTROL SYSTEMS	JUU	RTA	APPROVED	2018-03-20	2018-03-20
	Dragonfly	MP	POSITION	MP		

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SANDVIK

Pantera DPI, Carrier circuit diagram
CONTROL SYSTEMS

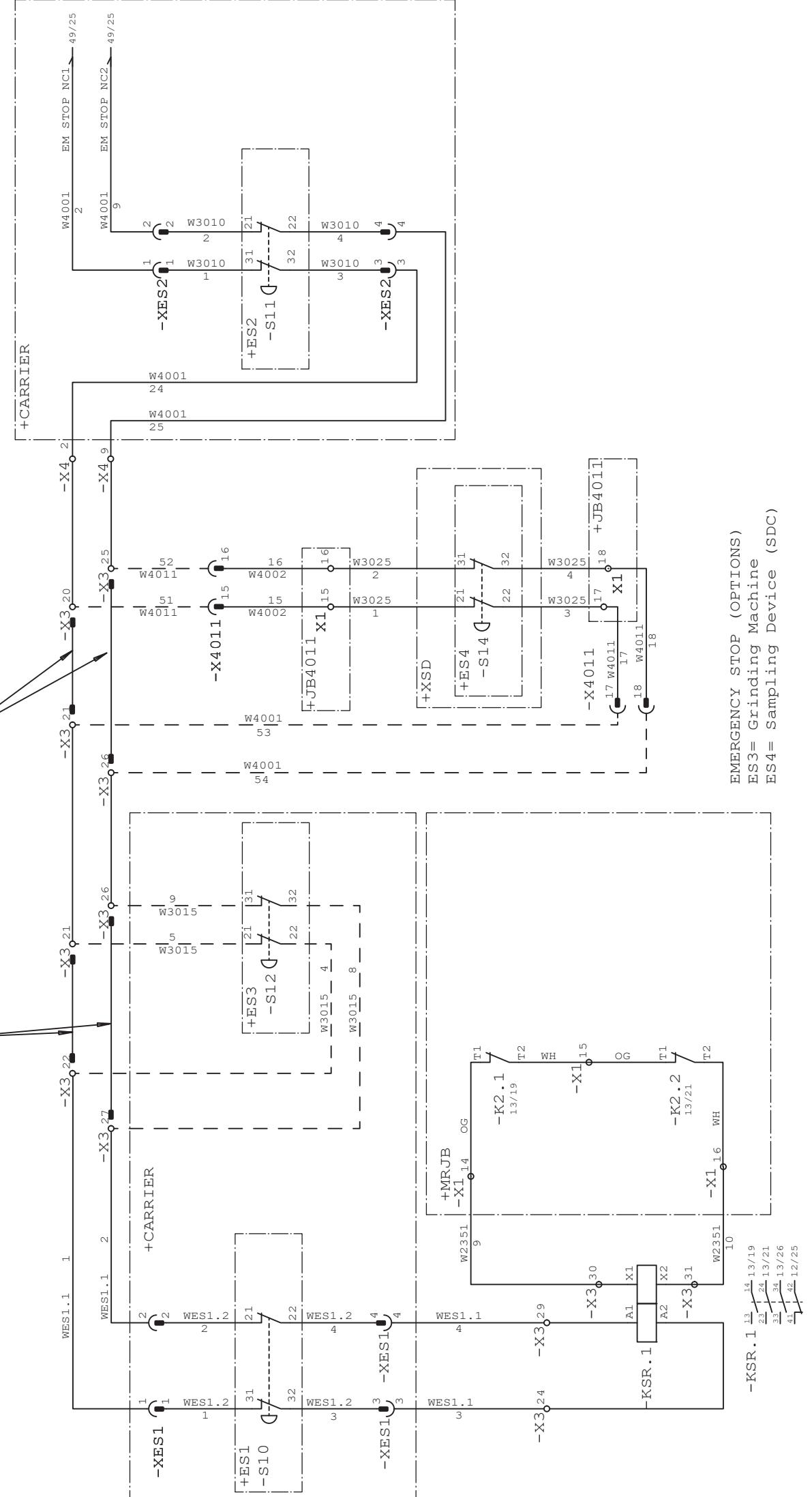
Sheet 9 / 49	A3
Dwg Nr. BG01090011-E	
Title-Code BG01090011	

30

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

Remove jumper bars, between
X3:22-X3:21 and X3:27-X3:26, when
S12 is connected.

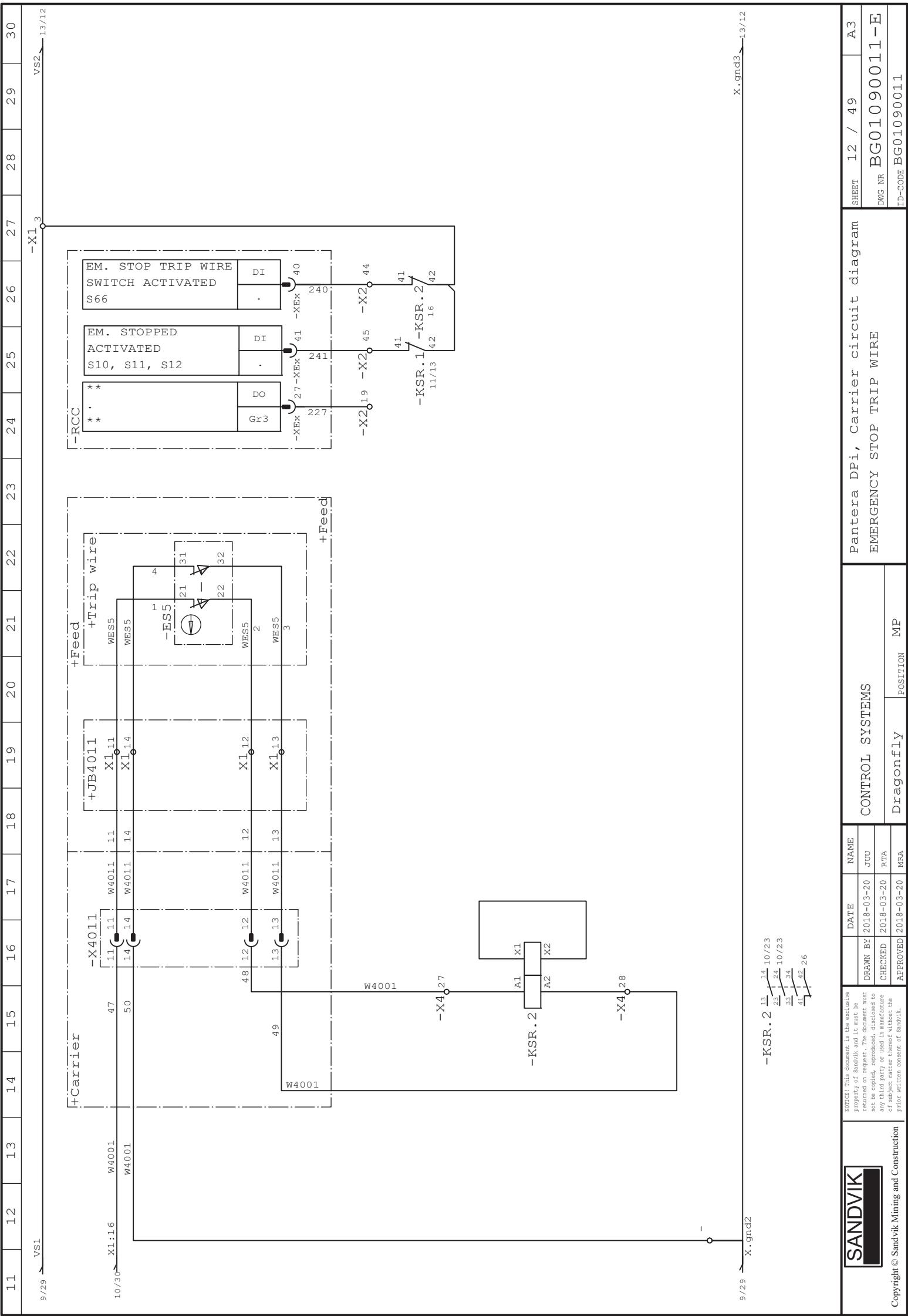
Remove jumper bars, between
X3:21-X3:20 and X3:26-X3:25, when
S14 is connected.



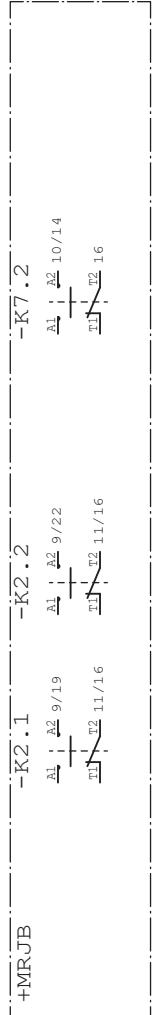
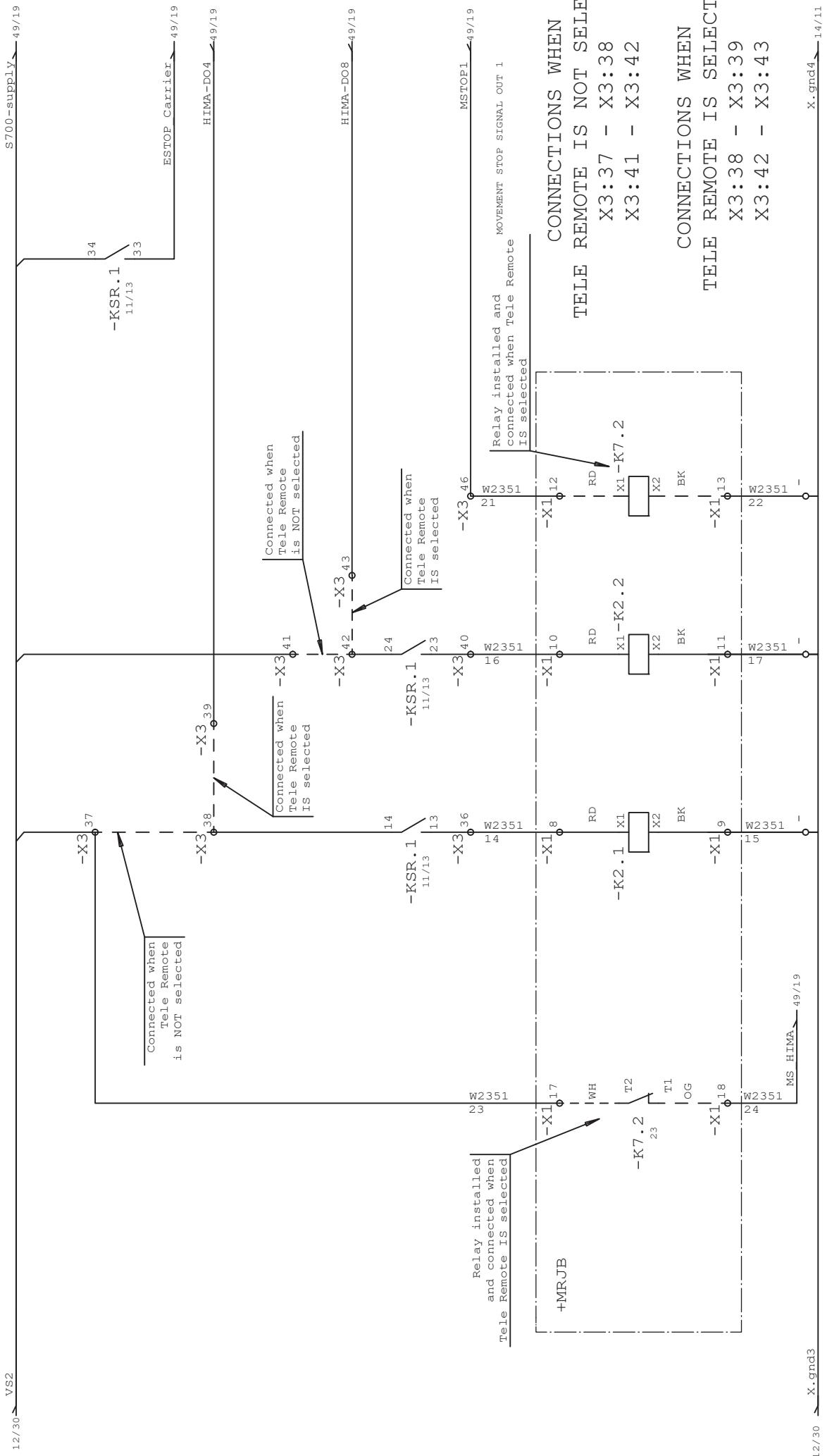
SHEET 11 / 49
DING NR BG01090011-E
FILE-CODE BG01090011

SANDVIK
Copyright © Sandvik Mining and Construction

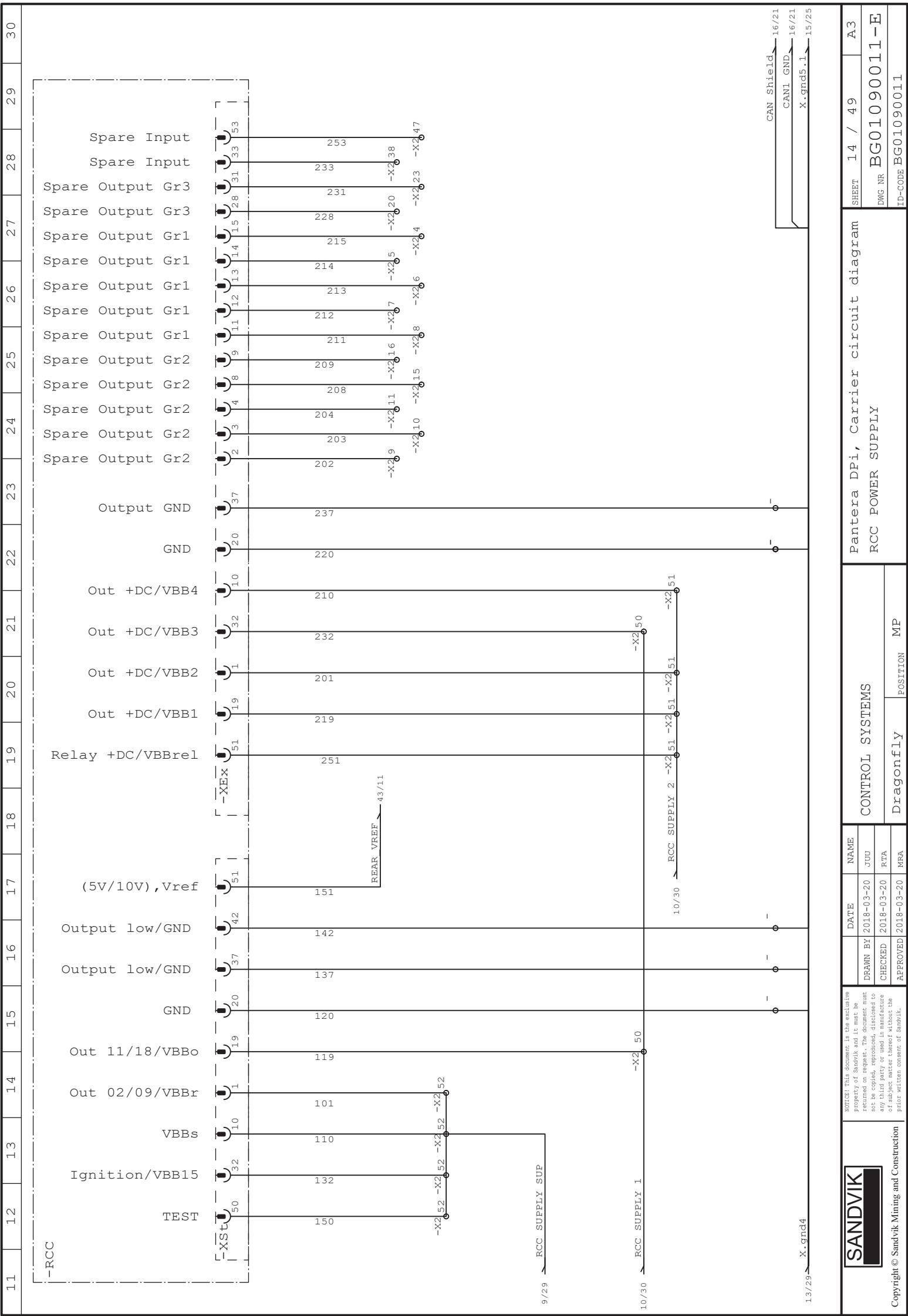
Copyright © Sandvik Mining and Construction

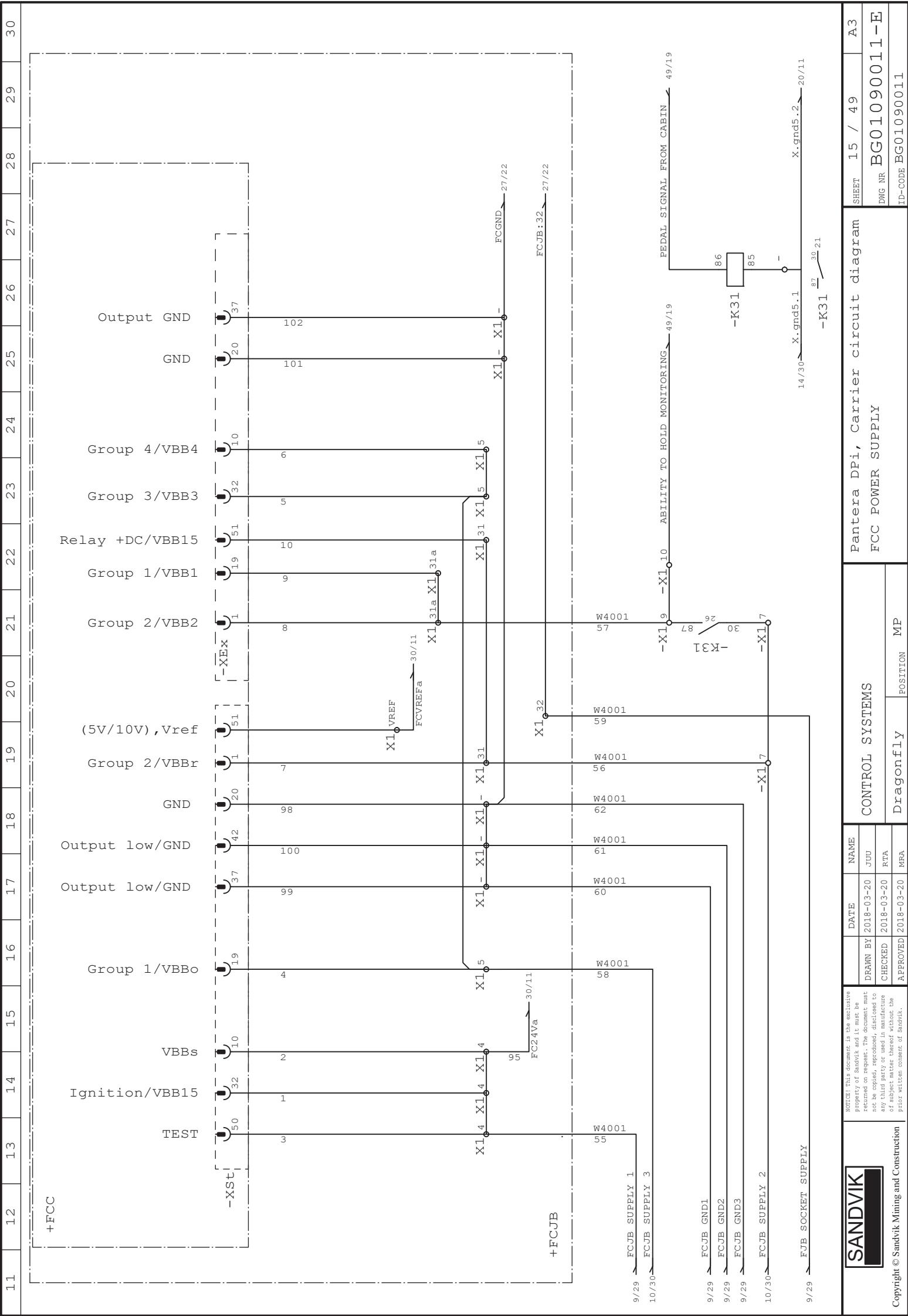


11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

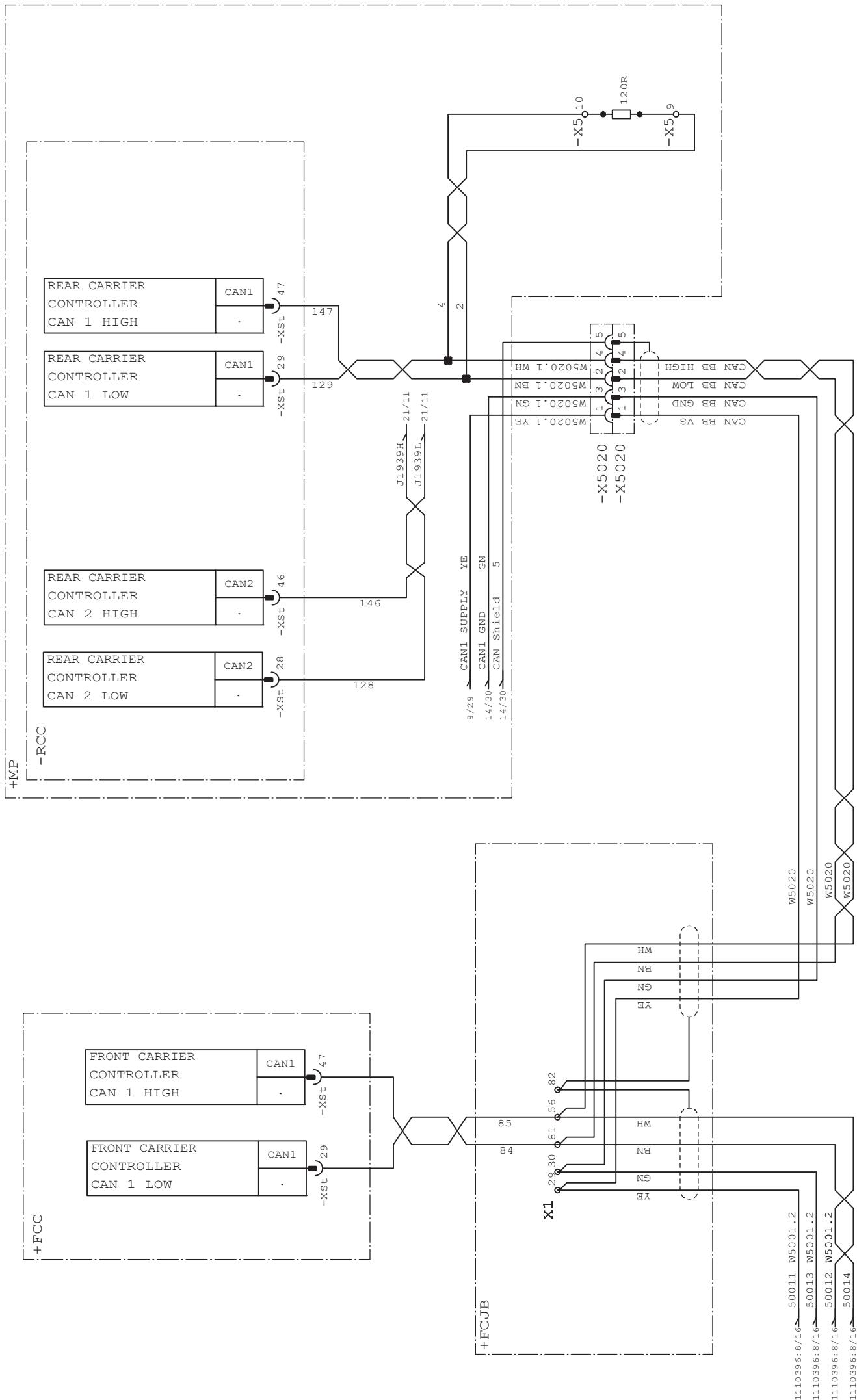


SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	DATE DRAWN BY CHECKED APPROVED	NAME JUW RTA MPA	CONTROL SYSTEMS	Pantera DPI, Carrier circuit diagram MAIN RELAYS	SHEET 13 / 49	DOC NR BG01090011-E	AS3
Copyright © Sandvik Mining and Construction				TIL-CODE BG01090011				



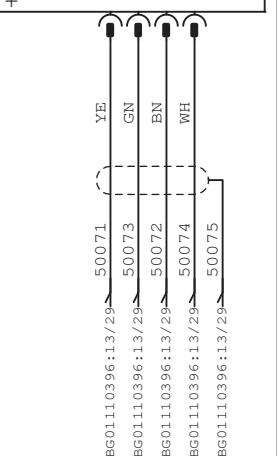
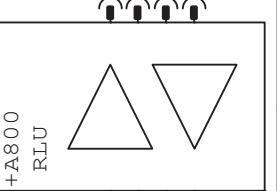
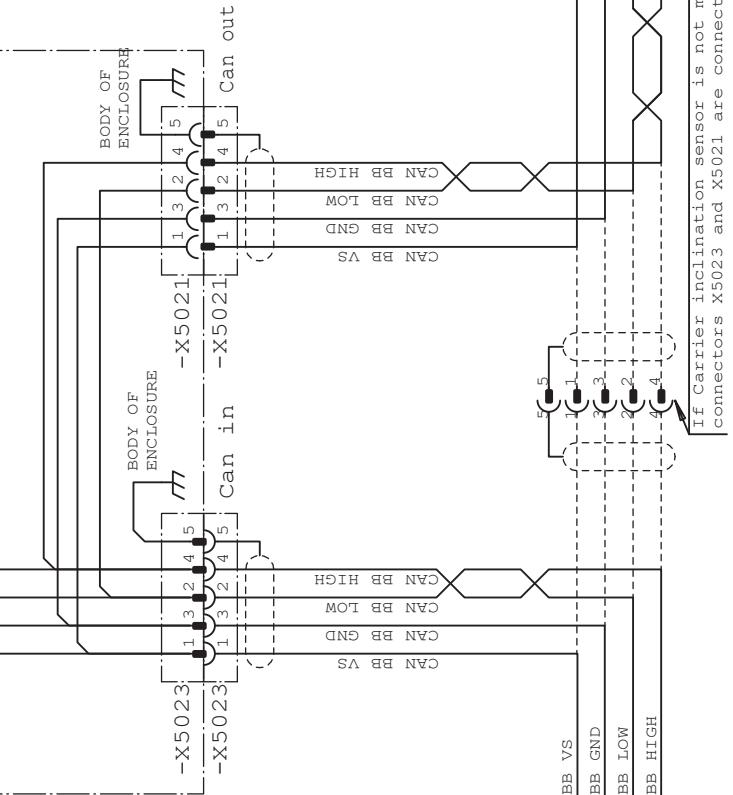
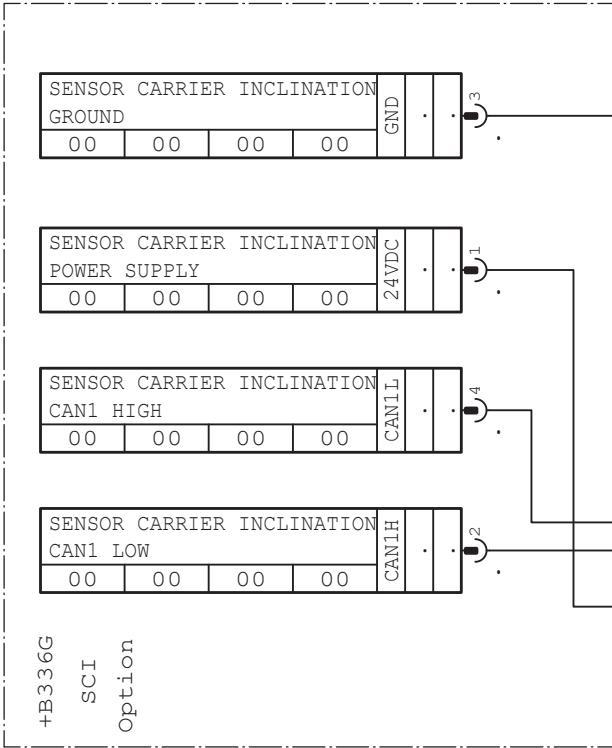


11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	CAN BB FCC & RCC	Pantera DPI, Carrier circuit diagram
		Approved 2018-03-20 MPA	Sheet 16 / 49
		Drawn by 2018-03-20 JUU	Doc. Nr. BG01090011-E
		Checked 2018-03-20 RTA	Part-Code BG01090011

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



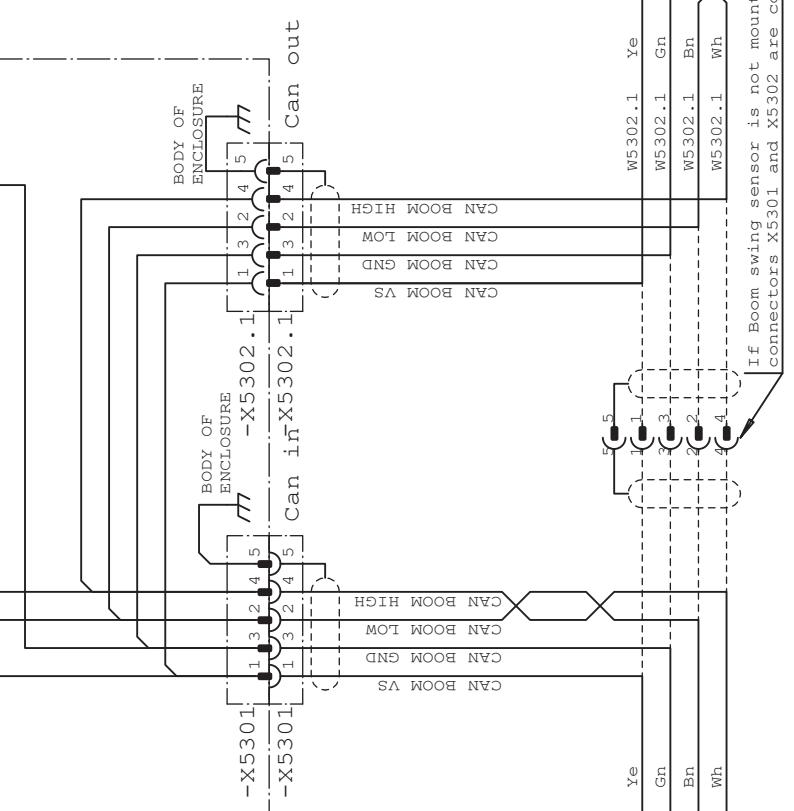
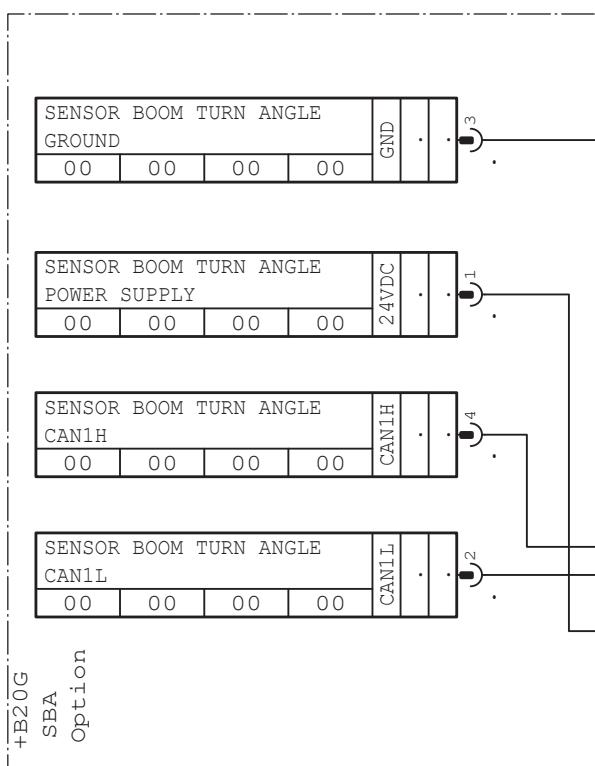
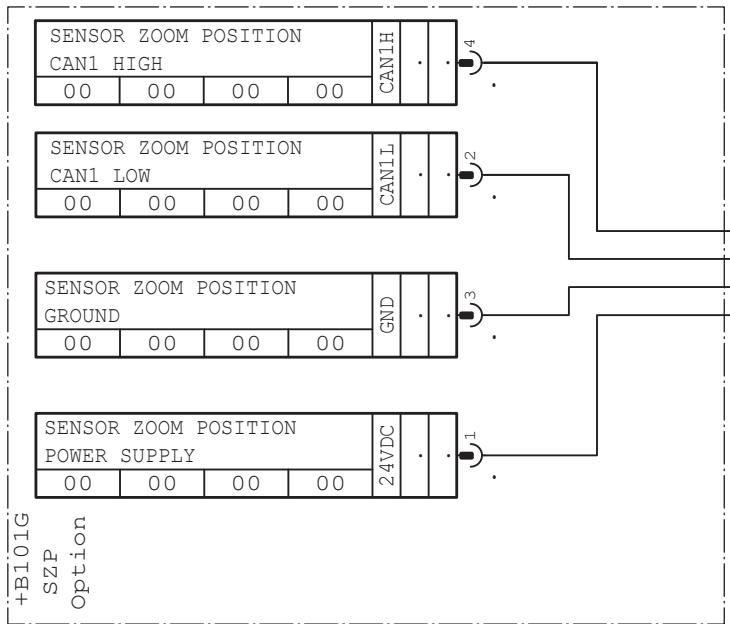
SANDVIK

Copyright © Sandvik Mining and Construction
Prior written consent of Sandvik.

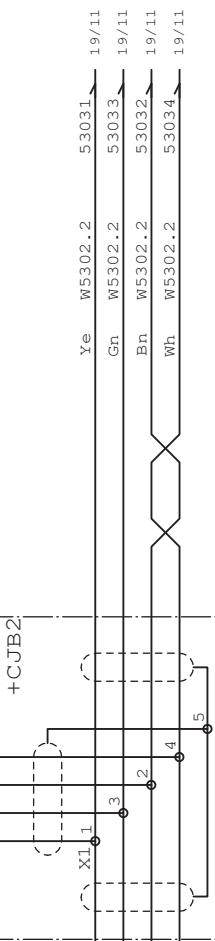
Pantera DPI, Carrier circuit diagram
CAN BB, CARRIER INCLINATOR

NAME	DATE	DRAWN BY	CHECKED	APPROVED	Sheet	17 / 49	A3
CONTROL SYSTEMS	2018-03-20	JUU	RTA	MPA	DING NR	BG01090011-E	FILE-CODE BG01090011
Dragonfly	2018-03-20						
POSITION CARRIER							

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



If zoom position sensor is not mounted, connectors X5301 and X5303 are connected together



SHEET	18 / 49	A3
DWG NR	BG01090011-E	
FILE-CODE	BG01090011	

Pantera DPI, Carrier circuit diagram
CAN BB, BOOM ANGLE & SWING SENSORS

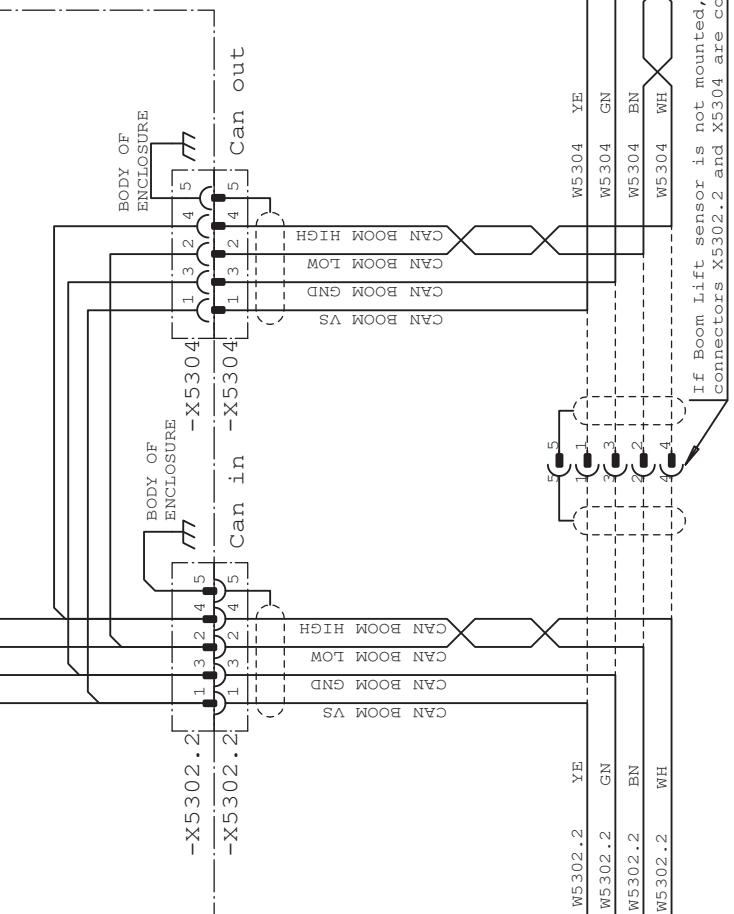
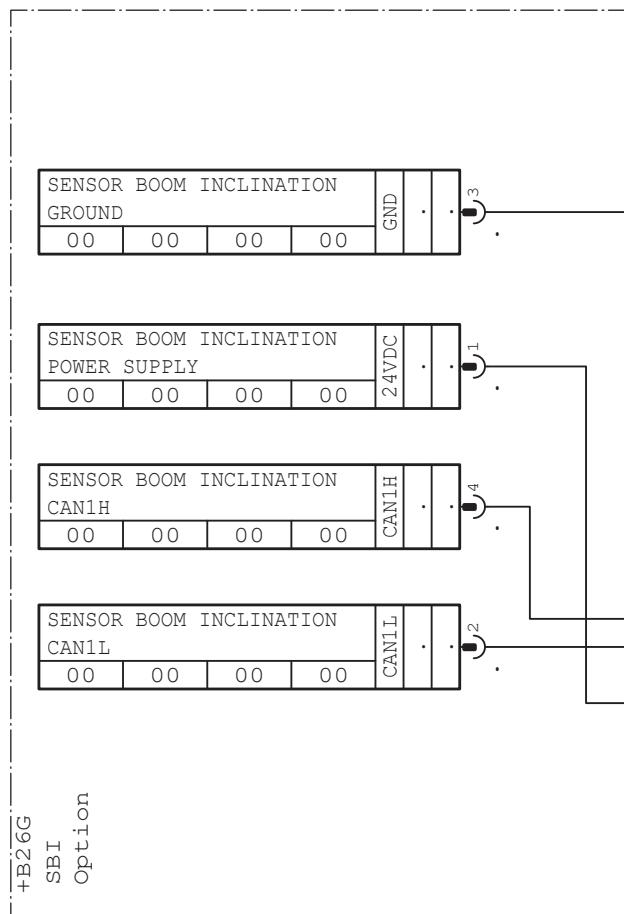
CONTROL SYSTEMS	Dragonfly	POSITION CARRIER
DATE	NAME	DATE
DRAWN BY 2018-03-20	JUU	DRAWN BY 2018-03-20
CHECKED 2018-03-20	RTA	CHECKED 2018-03-20
APPROVED 2018-03-20	MFA	APPROVED 2018-03-20

SANDVIK

NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

Copyright © Sandvik Mining and Construction

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

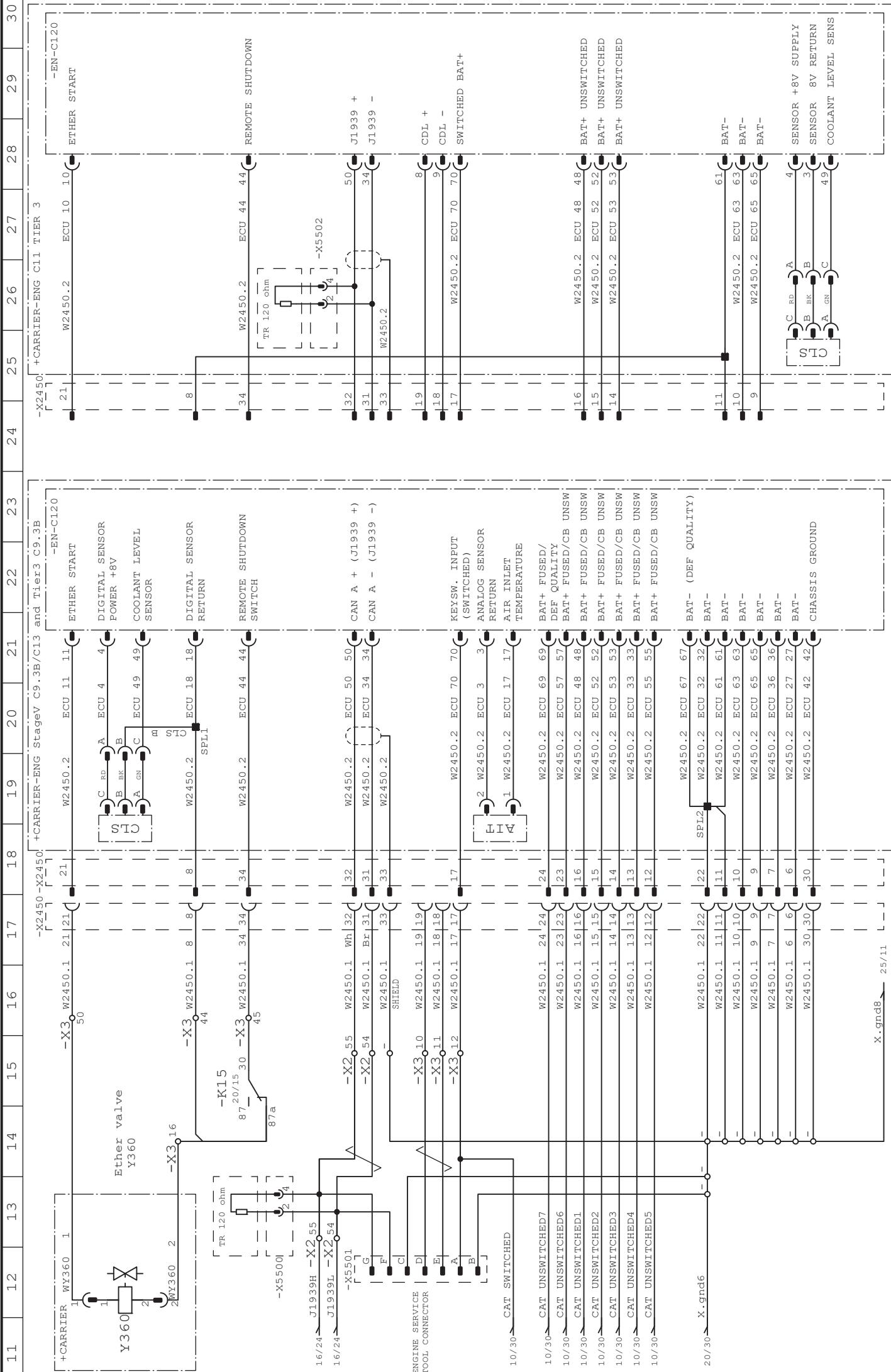


SANDVIK

Copyright © Sandvik Mining and Construction
Till-Code BG010900011

Pantera DPi, Carrier circuit diagram
CAN BB, BOOM LIFT SENSOR

NAME	DATE	DRAWN BY	CHECKED	APPROVED	Sheet	19 / 49	A3
CONTROL SYSTEMS	2018-03-20	JUU	RTVA	MFA	DING NR	BG01090011-E	
Dragonfly	2018-03-20				FILE-CODE	BG01090011	



SANDVIK © 2000 Sandvik AB. All rights reserved. Sandvik AB, Sandvik, the Sandvik logo and the Sandvik Trade Dress are registered trademarks of Sandvik AB.

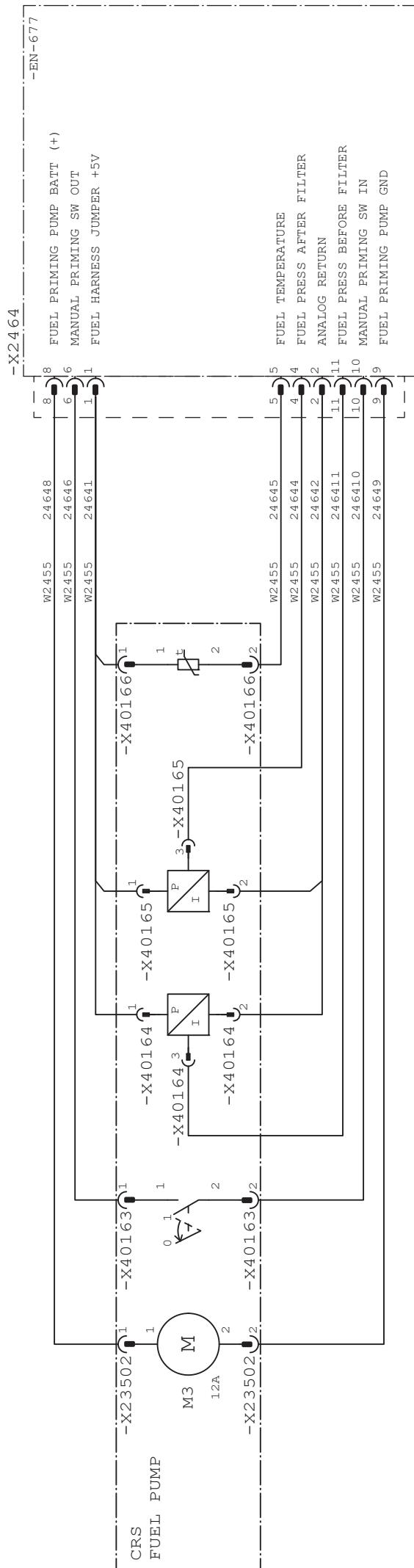
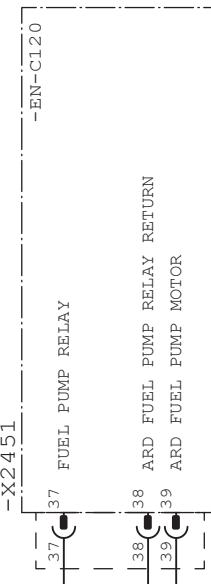
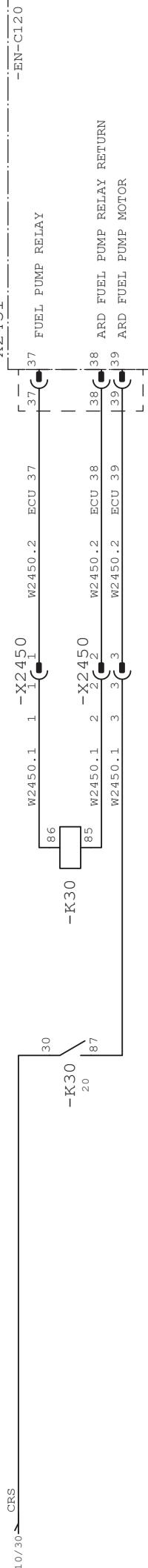
SANDVIK

SHEET 21 / 49 A3

SHEET 21 / 49 A3

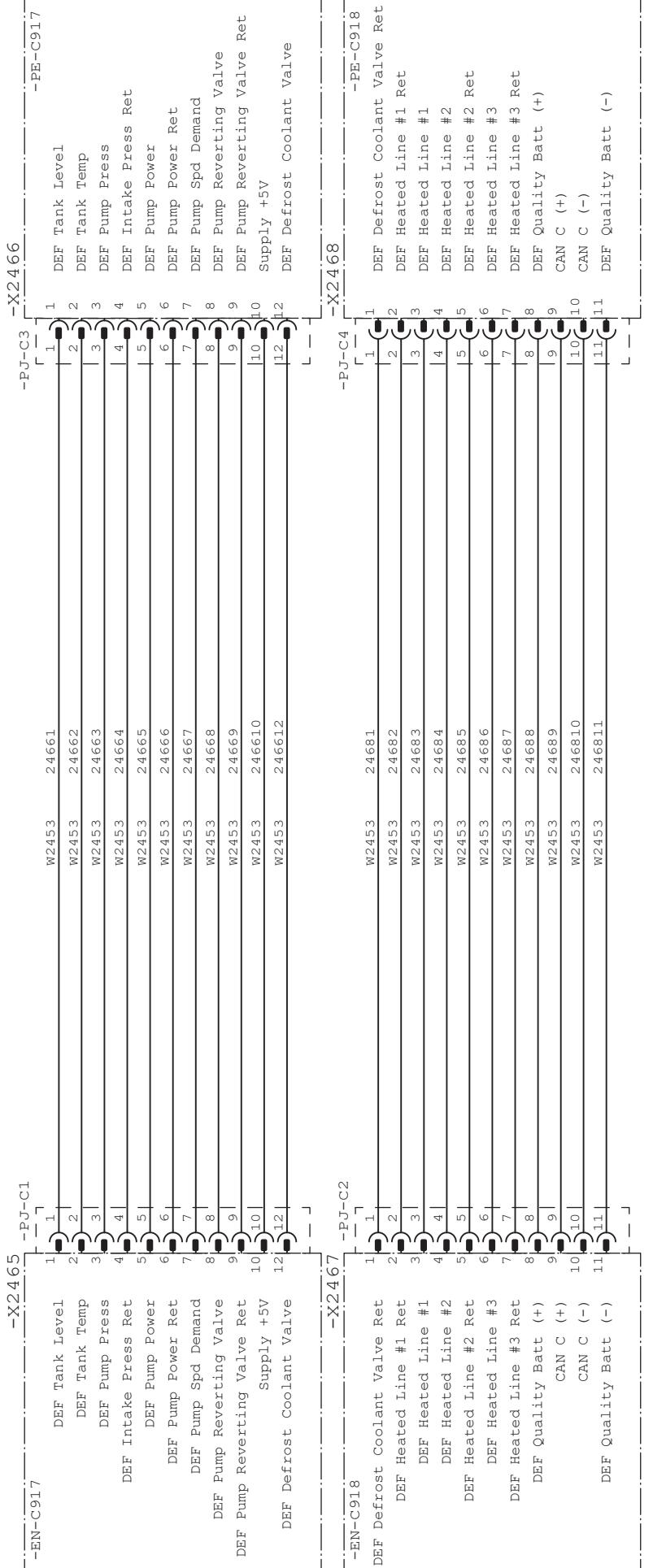
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

10/30



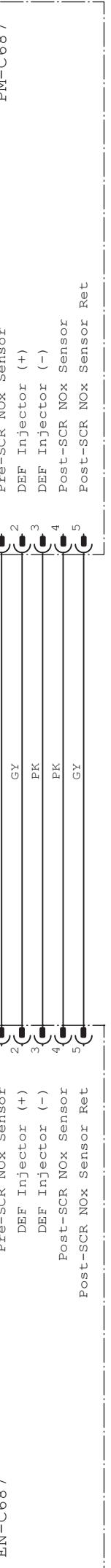
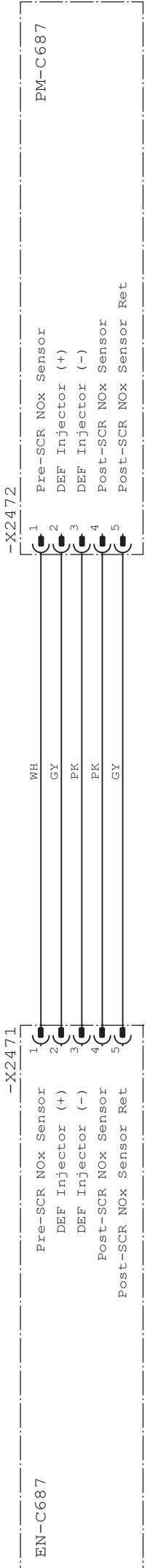
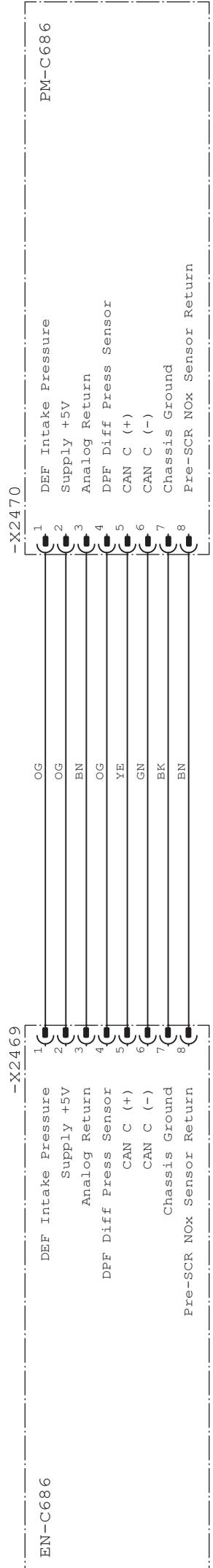
SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	DATE DRAWN BY CHECKED APPROVED	NAME JUU RTA MPA	CONTROL SYSTEMS Pantera DPi, Carrier circuit diagram ARD FUEL PUMP, STAGE V/Tier3 C9.3B	SHEET 22 / 49	A3
Copyright © Sandvik Mining and Construction					DWG NR BG01090011-E	TEC-CODE BG01090011

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.			DATE DRAWN BY CHECKED APPROVED	NAME JUU RTA MPA	CONTROL SYSTEMS Dragonfly	Pantera DPI, Carrier circuit diagram PETU INTERFACE, STAGE V ONLY POSITION ENG	Sheet 23 / 49	A3
Copyright © Sandvik Mining and Construction				DRAWN BY 2018-03-20	JUU			DING NR BG01090011-E	FILE-CODE BG01090011

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.			SHEET 24 / 49	A3
	DRAWN BY	DATE	NAME		
	2018-03-20	JUU	CONTROL SYSTEMS		
	CHECKED	2018-03-20	RTA		
	APPROVED	2018-03-20	MFA	Dragonfly	ENG
Copyright © Sandvik Mining and Construction			Pantera DPI, Carrier circuit diagram CEM INTERFACE, STAGE V ONLY	DING NR BG01090011-E FILE-CODE BG01090011	

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

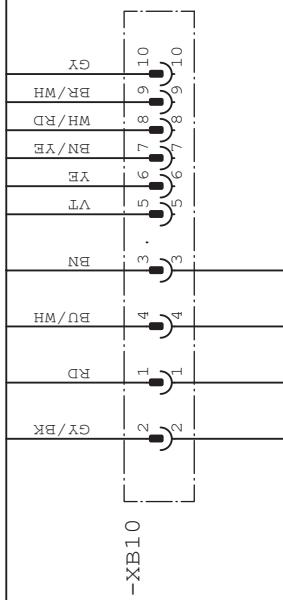
+MP



SEE MORE DETAILED EBERSPÄCHER
CONNECTIONS FROM EBERSPÄCHER
INSTRUCTION MANUAL

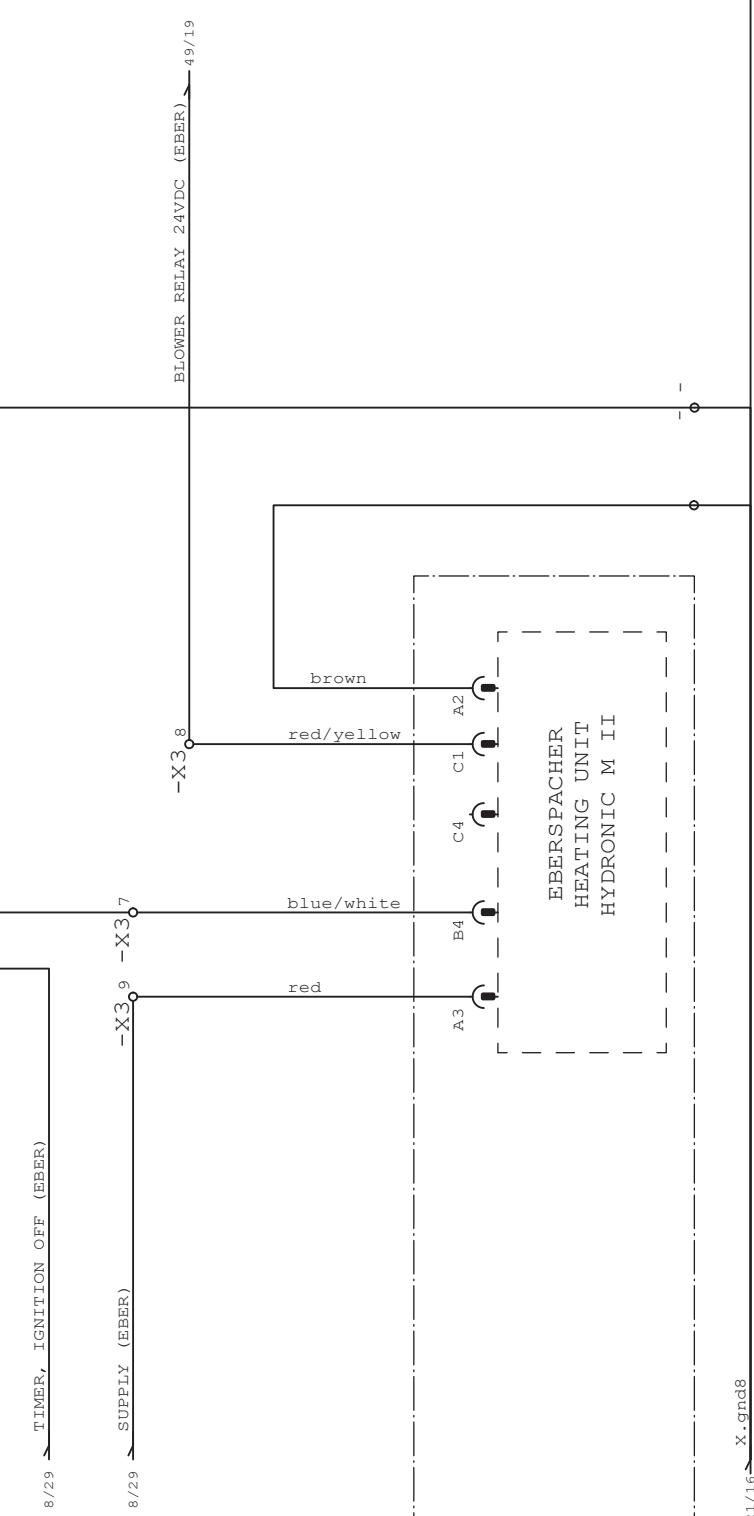
9/29

TIMER (EBER)



9/29

TIMER, IGNITION OFF (EBER)



8/29

SUPPLY (EBER)

8/29

BLOWER RELAY 24VDC (EBER)

49/19

21/16

x.gnd8

x.gnd9

26/11

SANDVIK

Copyright © Sandvik Mining and Construction
Prior written consent of Sandvik.

Pantera DPi, Carrier circuit diagram

EBERSPÄCHER WATER HEATER

Sheet 25 / 49

A3

Drawing No. BG01090011-E

Part-Code BG01090011

A3

Approved 2018-03-20

RTA

JUU

DRAWN BY

2018-03-20

CHECKED

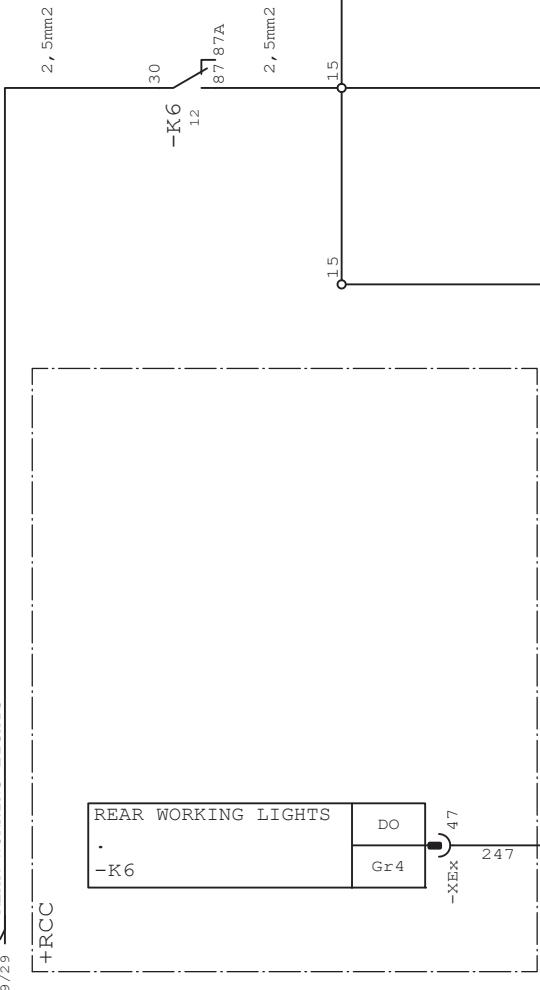
2018-03-20

APPROVED

2018-03-20

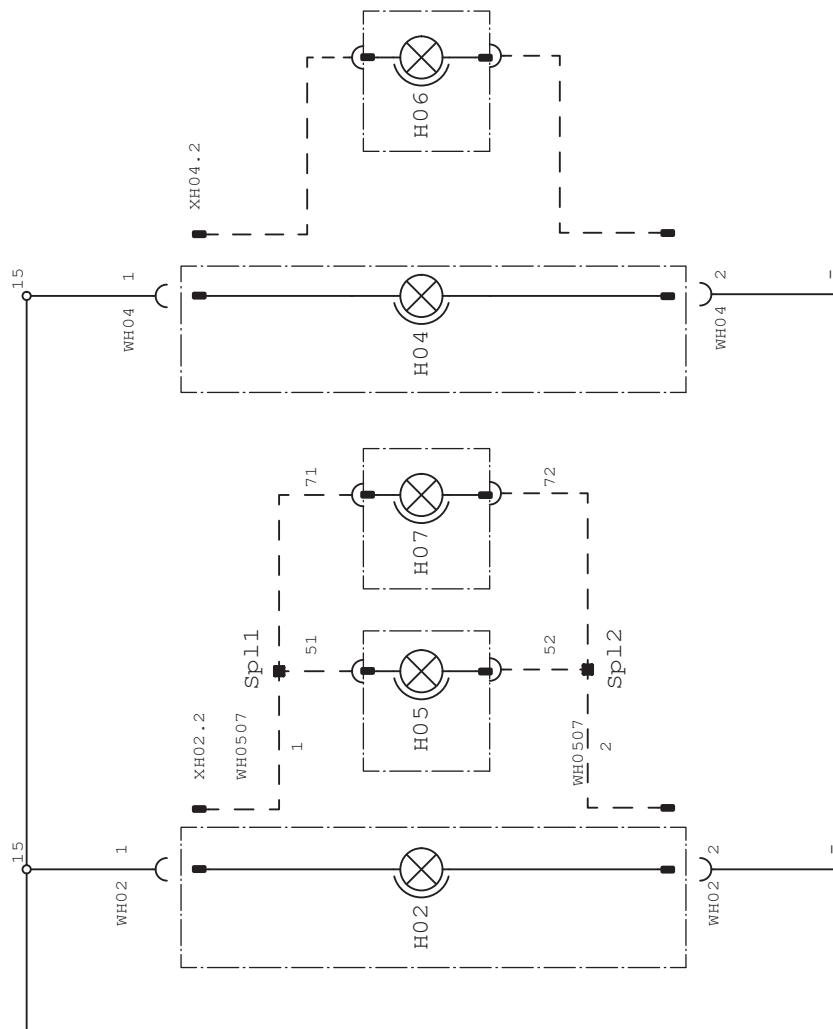
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

9/29 REAR WORKING LIGHTS



REAR WORKING LIGHTS

IF OPTIONAL LED WORKING LIGHTS ARE
SELECTED H05, H06 AND H07 ARE
CONNECTED INSTEAD OF H02 AND H04.



X.gnd10 27/11
LEFT WORKING SIDE WORKING LIGHT 6

INNER LEFT REAR WORKING LIGHT 4

RIGHT SIDE WORKING LIGHT 5

RIGHT FRONT WORKING LIGHT 7

RIGHT REAR WORKING LIGHT 1

INNER RIGHT REAR WORKING LIGHT 3

OUTER RIGHT REAR WORKING LIGHT 2

SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	NAME	DATE	NAME	DATE	NAME	DATE	NAME
		JUU	2018-03-20	RVA	2018-03-20	RTA	2018-03-20	MFA
		DRAFONFLY	APPROVED	DRAGONFLY	APPROVED	DRAGONFLY	APPROVED	DRAGONFLY
		POSITION		POSITION		POSITION		POSITION

TI-CODE BG01090011-E

TELECODE BG01090011

27/11

A3

DWG NR

BG01090011-E

27/11

26 / 49

26

Pantera DPi, Carrier circuit diagram

REARLIGHTS, OPTIONAL LIGHTS

27/11

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

26

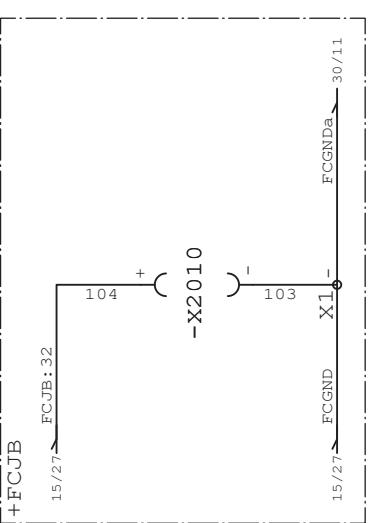
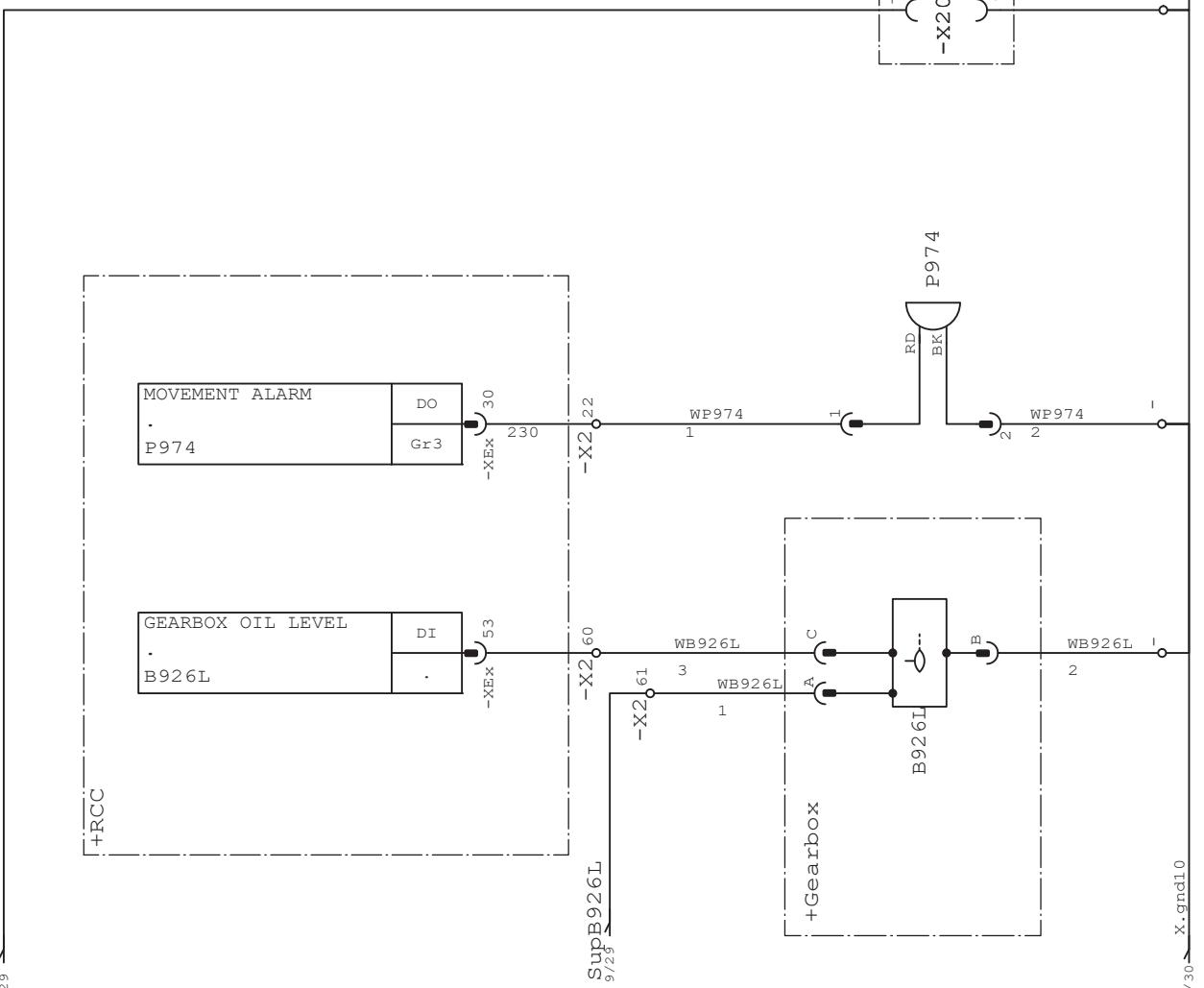
26

26

26

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

9/7/29 24V outlet



28/11
X.gnd11

SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.		
Copyright © Sandvik Mining and Construction	DRAWN BY	DATE	NAME
	JUU	2018-03-20	CONTROL SYSTEMS
	RTA	2018-03-20	MOVEMENT ALARM, 24V OUTLET
	APPROVED	2018-03-20	Dragonfly POSITION MP

HEET 27 / 49	A3
DING NR	BG01090011-E
FILE-CODE	BG01090011

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

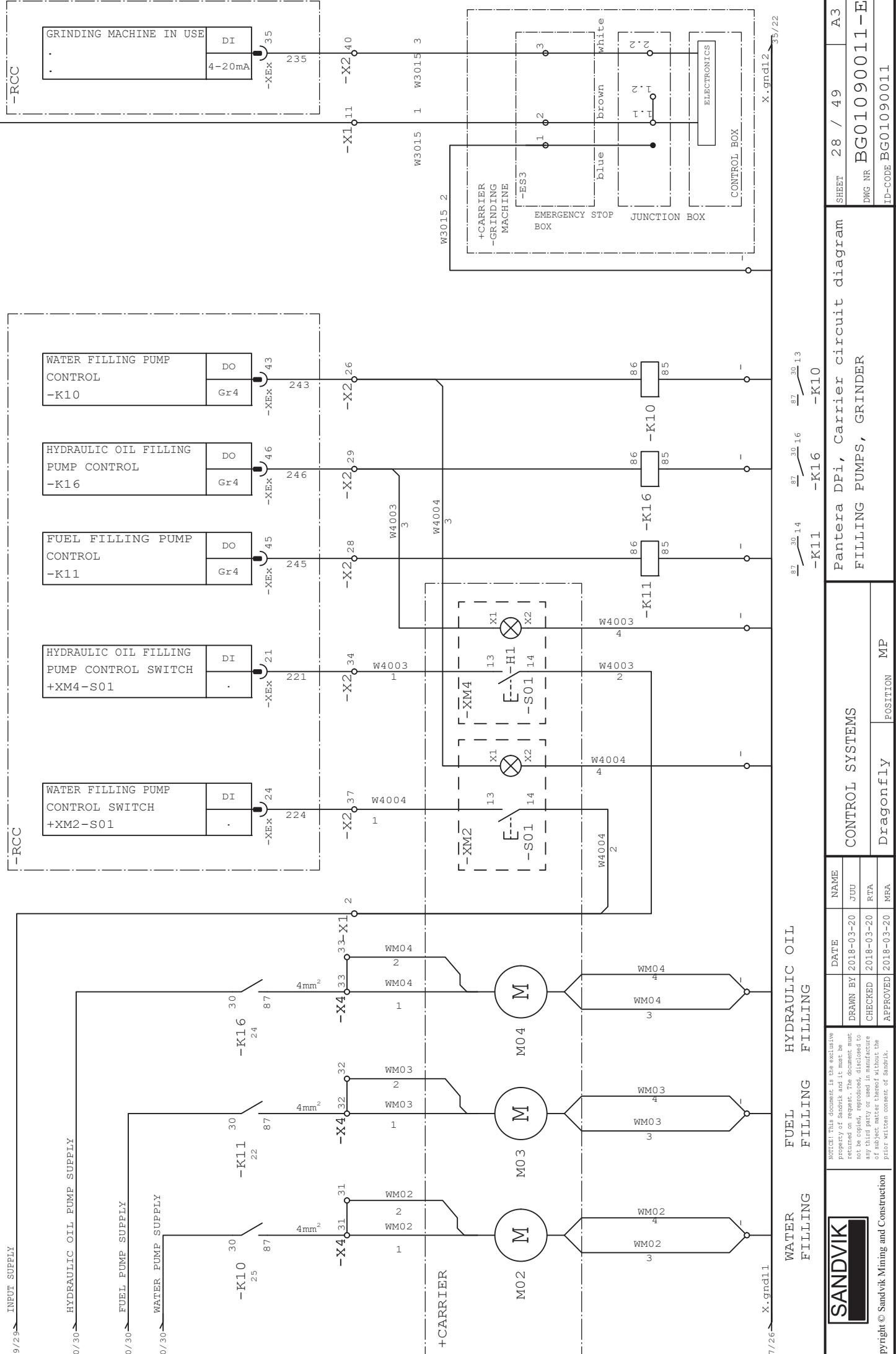
10/30 GRINDER SUPPLY

9/29 INPUT SUPPLY

10/30 HYDRAULIC OIL PUMP SUPPLY

10/30 WATER PUMP SUPPLY

10/30 FUEL PUMP SUPPLY

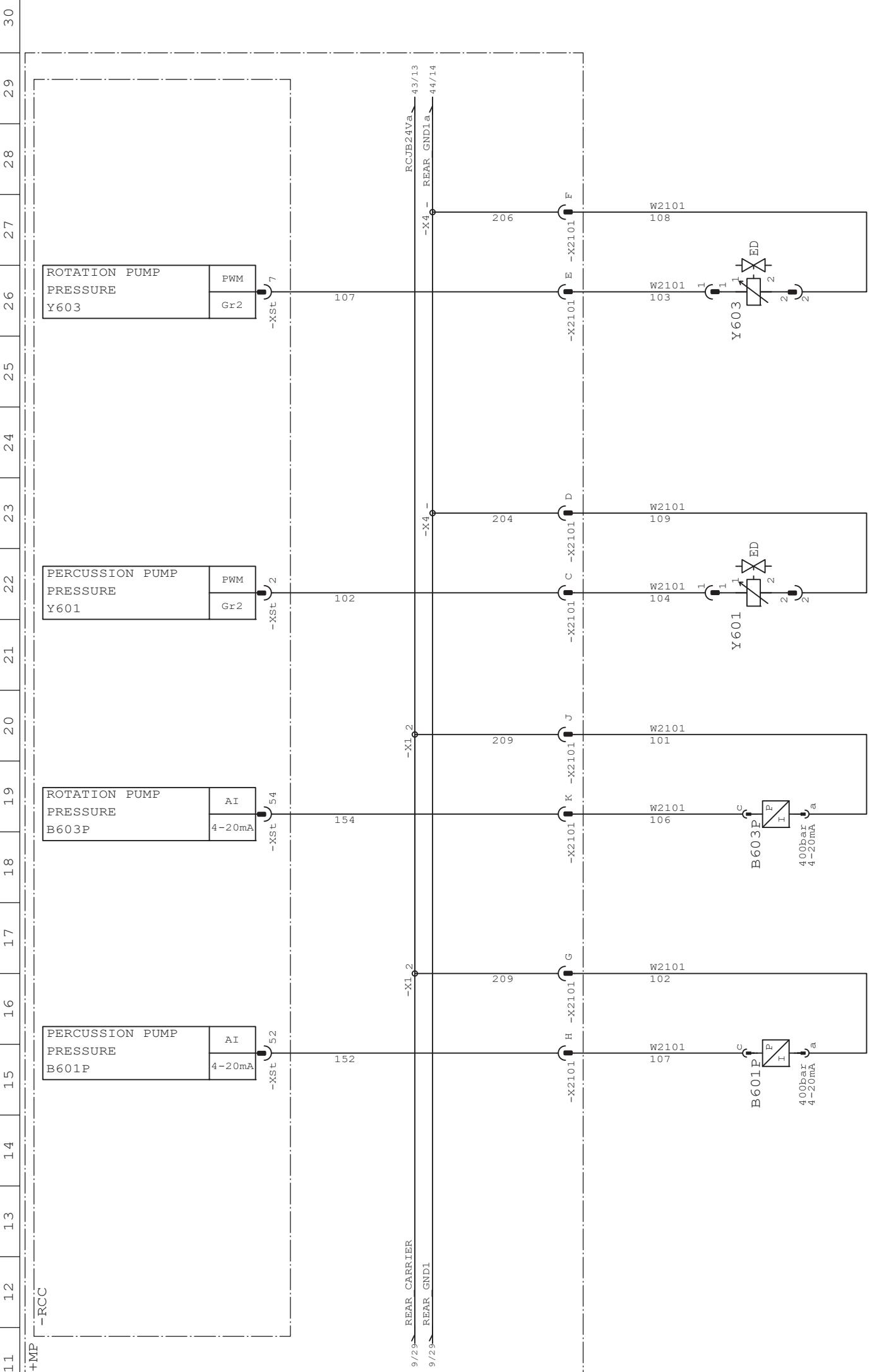


SANDVIK

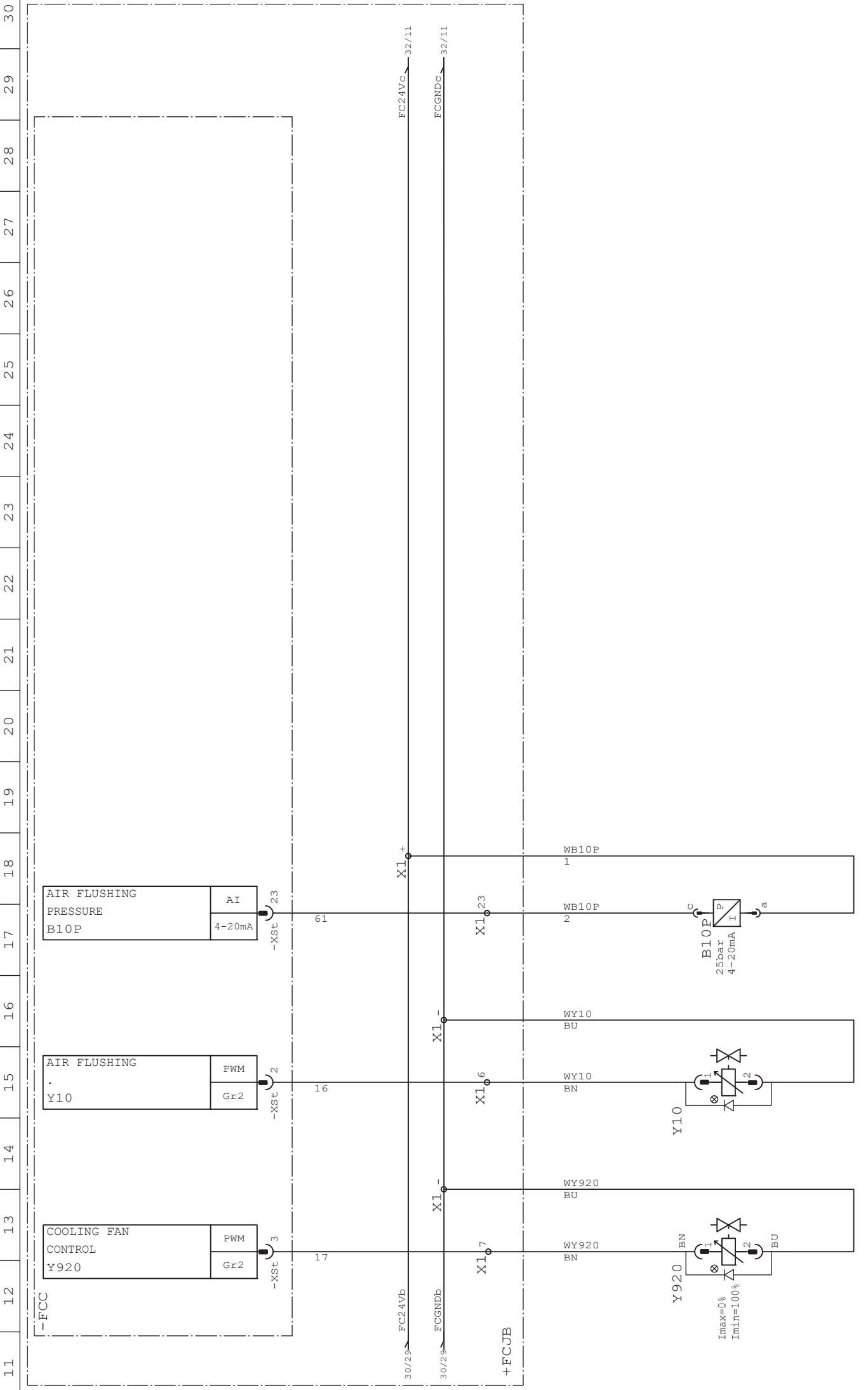
Copyright © Sandvik Mining and Construction
Till-Code BG01090011-E

Pantera DPI, Carrier circuit diagram
FILLING PUMPS, GRINDER

NAME	DATE	DRAWN BY	2018-03-20	JUU
NAME	DATE	CHECKED	2018-03-20	RVA
APPROVED	2018-03-20	MA	Dragonfly POSITION MP	
SHEET 28 / 49 A3				
DRAWING NR BG01090011-E				
TILL-CODE BG01090011				



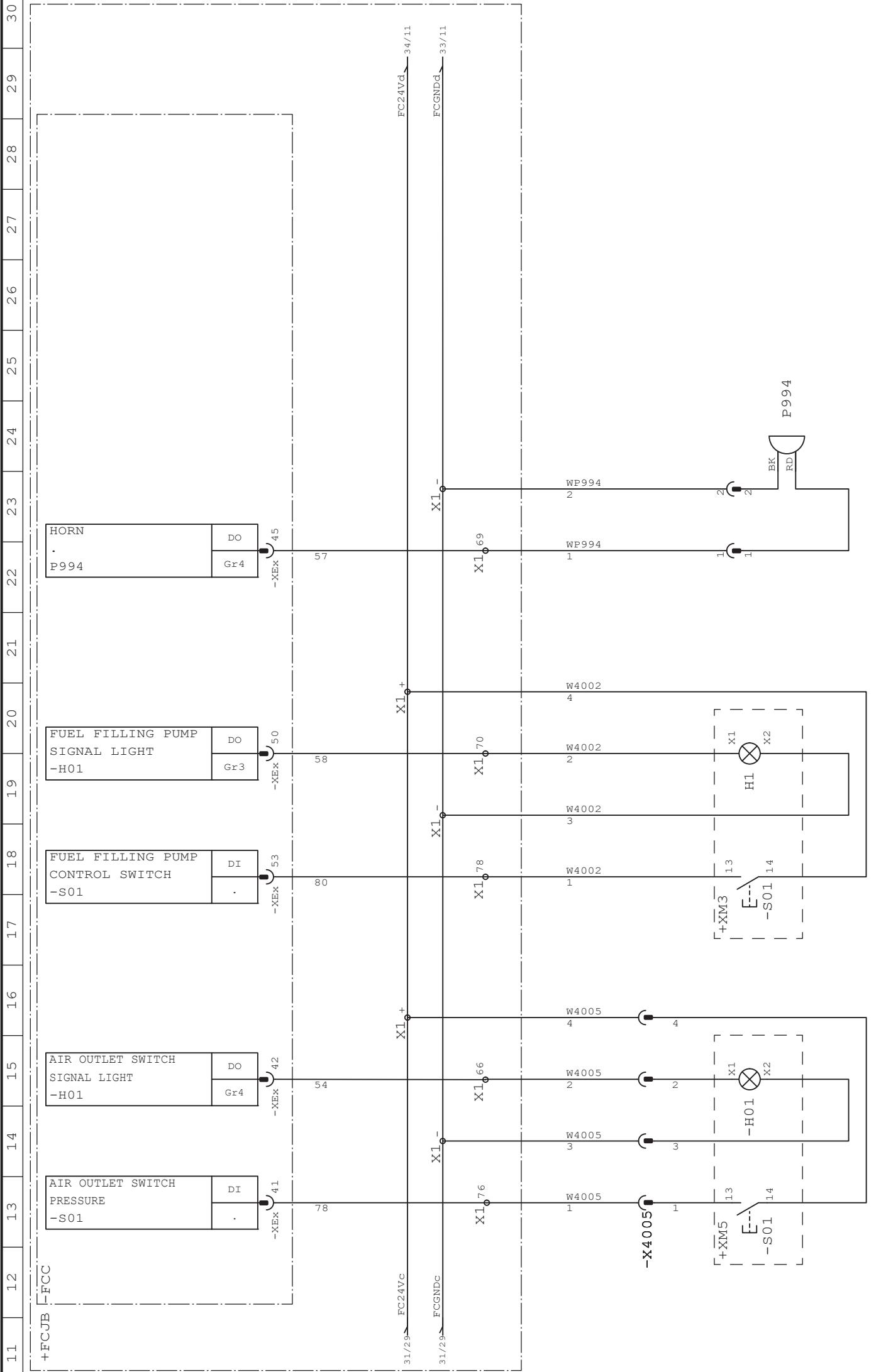
SANDVIK	NOTICE: This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	DATE: 2018-03-20	NAME: JU	CONTROL SYSTEMS	SHEET: 29 / 49	A3
		DRAWN BY: 2018-03-20	JU	Dragonfly	DIAG NR: BG01090011-E	
		CHECKED: 2018-03-20	RVA	POSITION: CARRIER	FILE-CODE: BG01090011	
		APPROVED: 2018-03-20	MFA			



SHEET	31 / 49	A3
DWG NR	BG01090011-E	
FILE-CODE	BG01090011	

Pantera DPI, Carrier circuit diagram	CONTROL SYSTEMS
Dragonfly POSITION	CARRIER

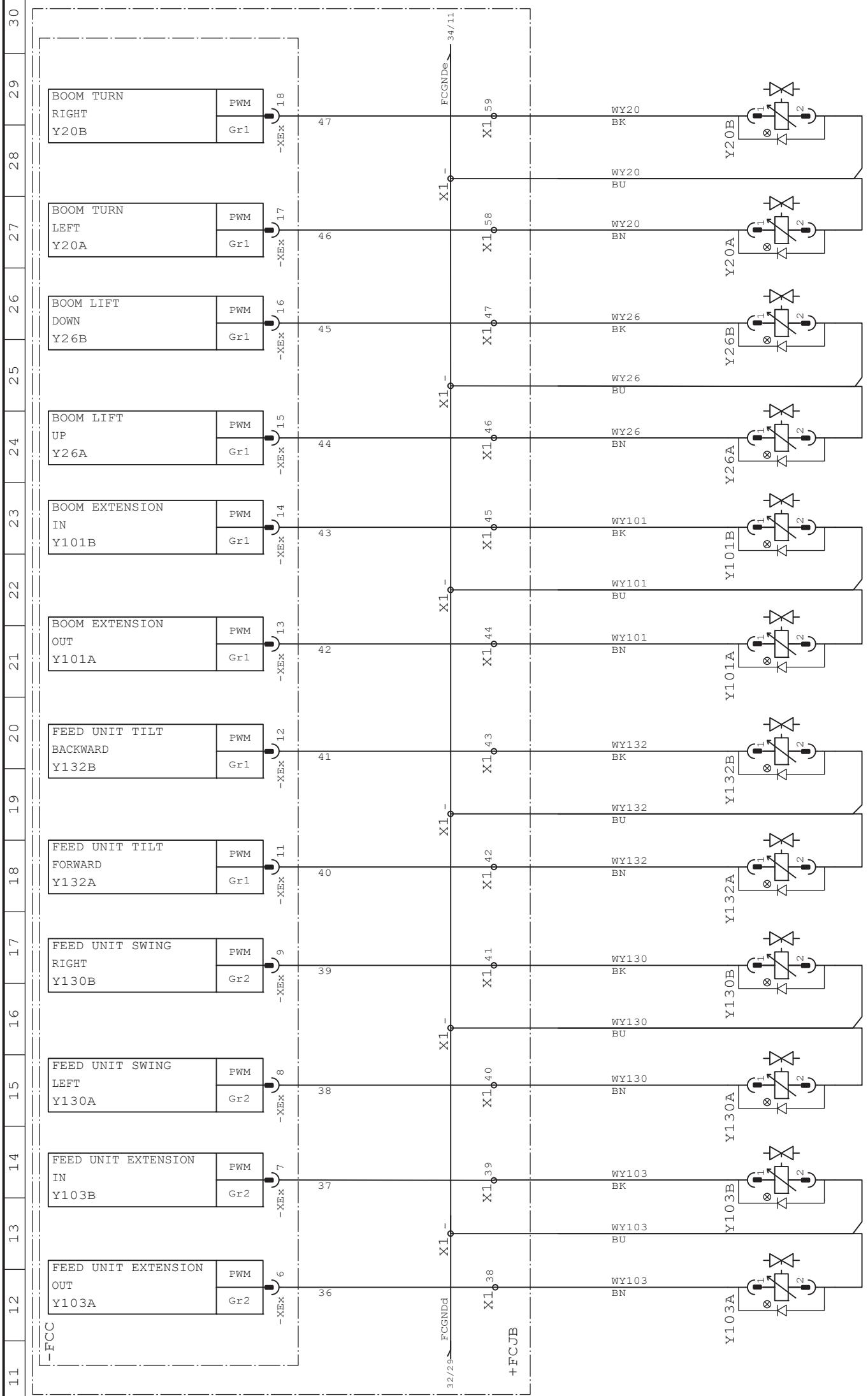
SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.
Copyright © Sandvik Mining and Construction	DATE DRAWN BY 2018-03-20 JUU
	CHECKED 2018-03-20 RTA
	APPROVED 2018-03-20 MPA



SANDVIK

Copyright © Sandvik Mining and Construction

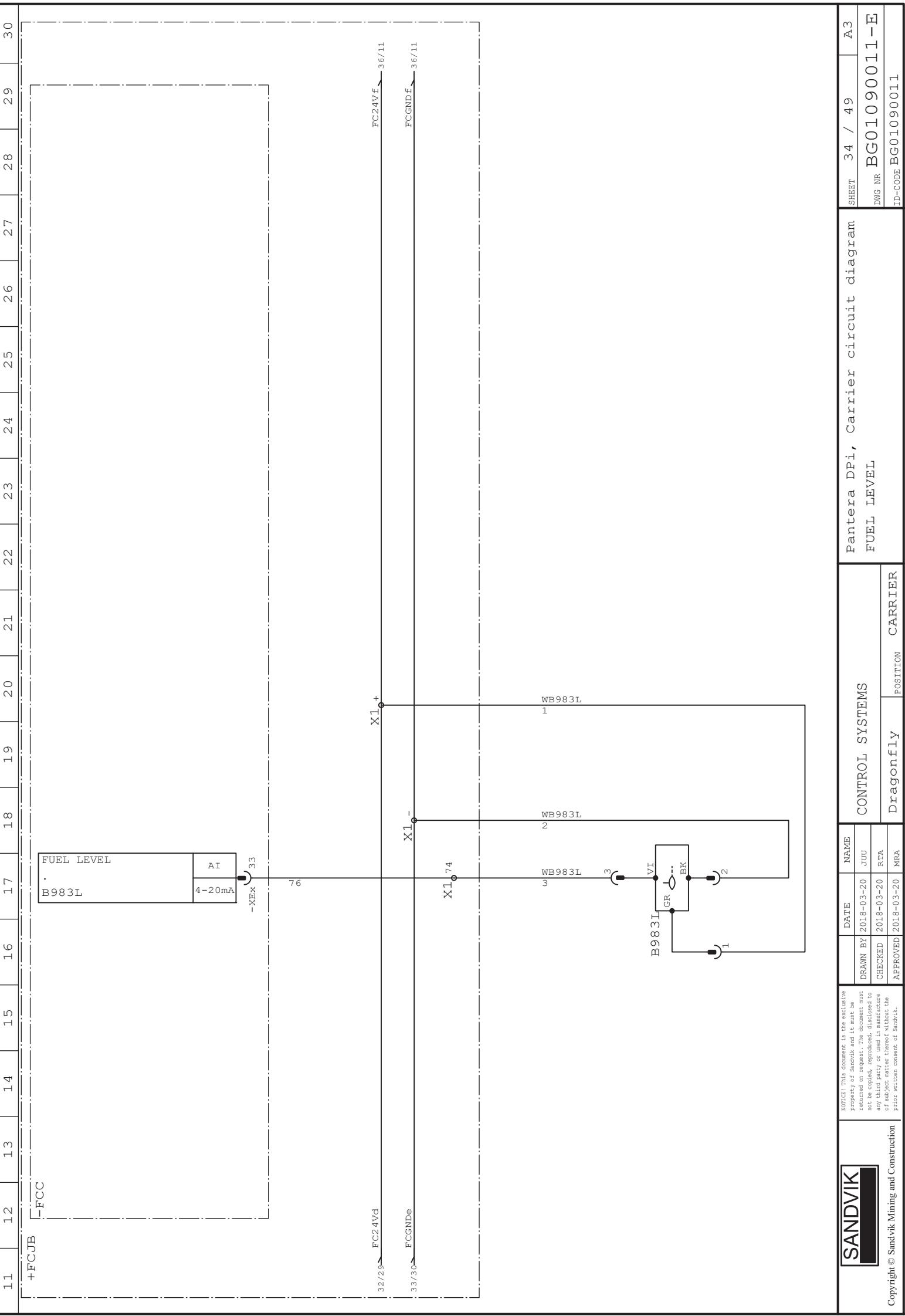
Pantera DPi, Carrier circuit diagram
AIR OUT, FUEL FILL. PUMP. HORN
SHEET 32 / 49 A3
DWG NR BG01090011-H
ID-CODE BG01090011



Pantera DPI, Carrier circuit diagram
BOOM CONTROL VALVES

Sheet 33 / 49 A3
Dwg NR BG01090011-E
Title-Code BG01090011

SANDVIK



11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

+MP

-RCC

SHANK LUBRICATION UNIT
OIL FLOW
B277F

FRQ
54

-XEx

254

SHANK LUBRICATION UNIT
OIL PUMPING
Y277

DO
Gr3

-XEx

229

SHANK LUBRICATION UNIT
SLU OIL TANK LEVEL
B923L

AI
4-20mA

-XEx

255

-X2.48

-X2.21

-X4.26

-X4.25

-X5.49

-X5.7

-X5.6

-X5.5

-X5.4

-X5.3

-X5.2

-X5.1

-X4.2

-X4.1

-X4.23

-X4.22

-X4.21

-X4.20

-X4.19

-X4.18

-X4.17

-X4.16

-X4.15

-X4.14

-X4.13

-X4.12

-X4.11

-X4.10

-X4.9

-X4.8

-X4.7

-X4.6

-X4.5

-X4.4

-X4.3

-X4.2

-X4.1

-X4.24

-X4.23

-X4.22

-X4.21

-X4.20

-X4.19

-X4.18

-X4.17

-X4.16

-X4.15

-X4.14

-X4.13

-X4.12

-X4.11

-X4.10

-X4.9

-X4.8

-X4.7

-X4.6

-X4.5

-X4.4

-X4.3

-X4.2

-X4.1

-X4.24

-X4.23

-X4.22

-X4.21

-X4.20

-X4.19

-X4.18

-X4.17

-X4.16

-X4.15

-X4.14

-X4.13

-X4.12

-X4.11

-X4.10

-X4.9

-X4.8

-X4.7

-X4.6

-X4.5

-X4.4

-X4.3

-X4.2

-X4.1

-X4.24

-X4.23

-X4.22

-X4.21

-X4.20

-X4.19

-X4.18

-X4.17

-X4.16

-X4.15

-X4.14

-X4.13

-X4.12

-X4.11

-X4.10

-X4.9

-X4.8

-X4.7

-X4.6

-X4.5

-X4.4

-X4.3

-X4.2

-X4.1

-X4.24

-X4.23

-X4.22

-X4.21

-X4.20

-X4.19

-X4.18

-X4.17

-X4.16

-X4.15

-X4.14

-X4.13

-X4.12

-X4.11

-X4.10

-X4.9

-X4.8

-X4.7

-X4.6

-X4.5

-X4.4

-X4.3

-X4.2

-X4.1

-X4.24

-X4.23

-X4.22

-X4.21

-X4.20

-X4.19

-X4.18

-X4.17

-X4.16

-X4.15

-X4.14

-X4.13

-X4.12

-X4.11

-X4.10

-X4.9

-X4.8

-X4.7

-X4.6

-X4.5

-X4.4

-X4.3

-X4.2

-X4.1

-X4.24

-X4.23

-X4.22

-X4.21

-X4.20

-X4.19

-X4.18

-X4.17

-X4.16

-X4.15

-X4.14

-X4.13

-X4.12

-X4.11

-X4.10

-X4.9

-X4.8

-X4.7

-X4.6

-X4.5

-X4.4

-X4.3

-X4.2

-X4.1

-X4.24

-X4.23

-X4.22

-X4.21

-X4.20

-X4.19

-X4.18

-X4.17

-X4.16

-X4.15

-X4.14

-X4.13

-X4.12

-X4.11

-X4.10

-X4.9

-X4.8

-X4.7

-X4.6

-X4.5

-X4.4

-X4.3

-X4.2

-X4.1

-X4.24

-X4.23

-X4.22

-X4.21

-X4.20

-X4.19

-X4.18

-X4.17

-X4.16

-X4.15

-X4.14

-X4.13

-X4.12

-X4.11

-X4.10

-X4.9

-X4.8

-X4.7

-X4.6

-X4.5

-X4.4

-X4.3

-X4.2

-X4.1

-X4.24

-X4.23

-X4.22

-X4.21

-X4.20

-X4.19

-X4.18

-X4.17

-X4.16

-X4.15

-X4.14

-X4.13

-X4.12

-X4.11

-X4.10

-X4.9

-X4.8

-X4.7

-X4.6

-X4.5

-X4.4

-X4.3

-X4.2

-X4.1

-X4.24

-X4.23

-X4.22

-X4.21

-X4.20

-X4.19

-X4.18

-X4.17

-X4.16

-X4.15

-X4.14

-X4.13

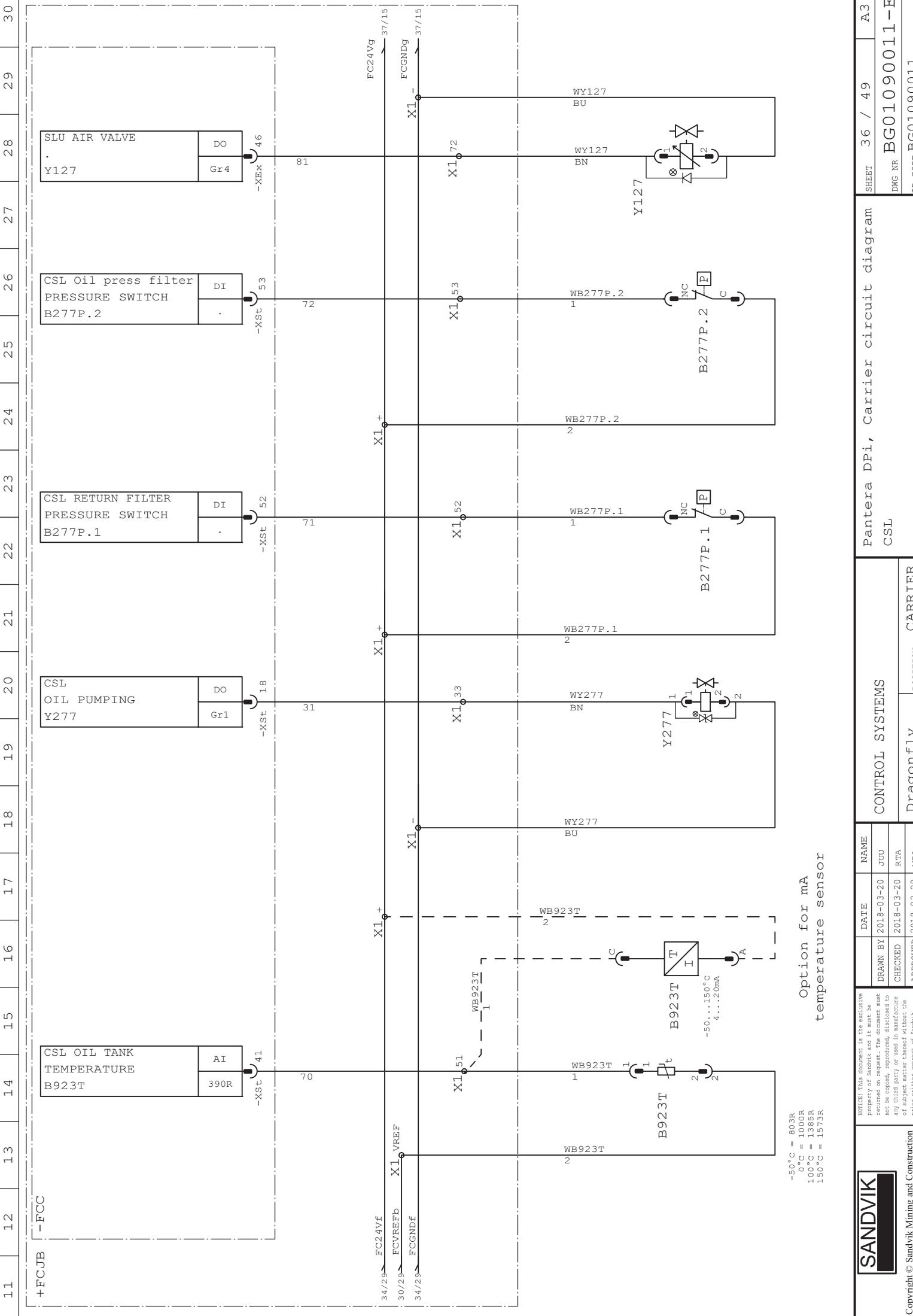
-X4.12

-X4.11

-X4.10

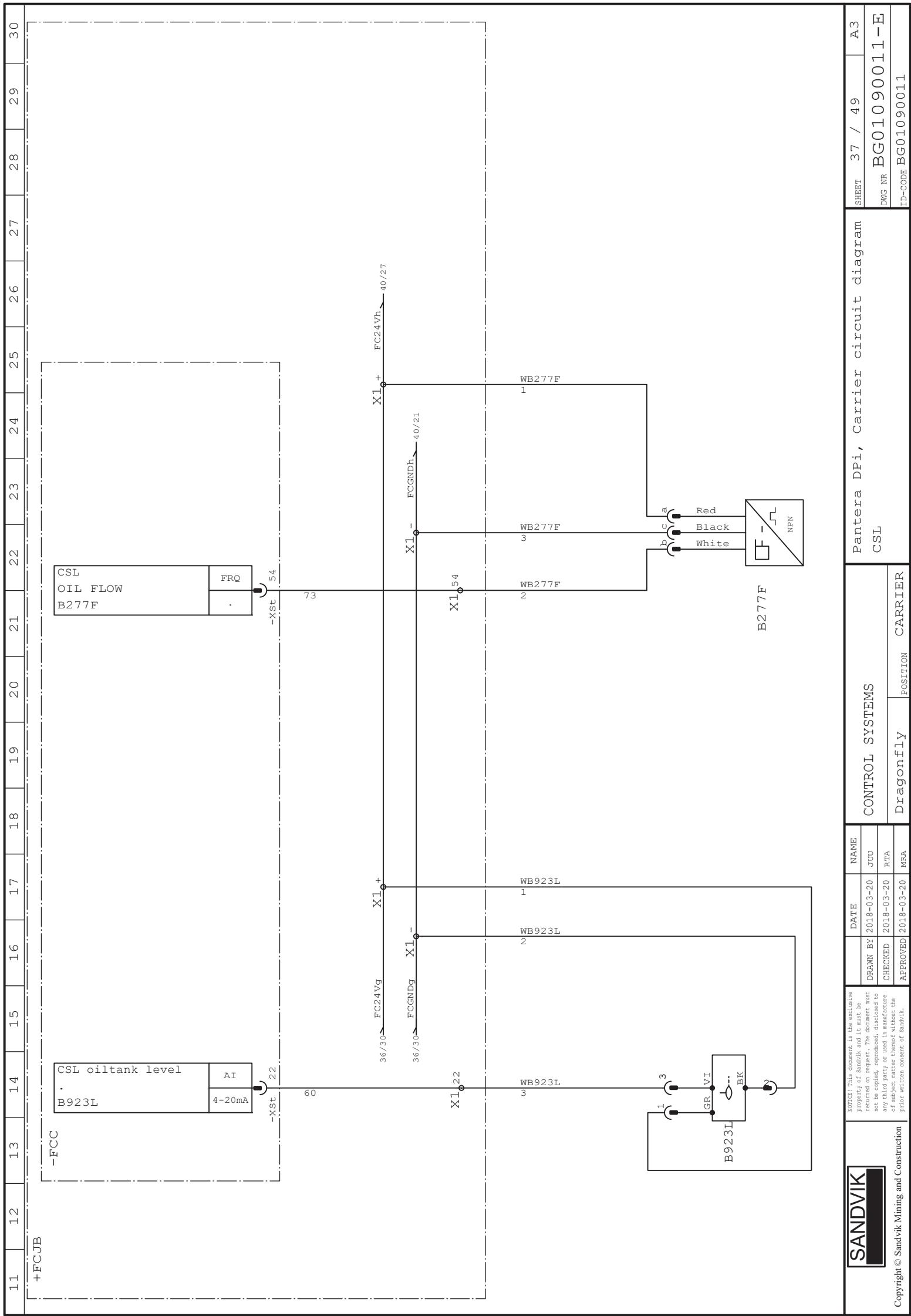
-X4.9

-X4.8



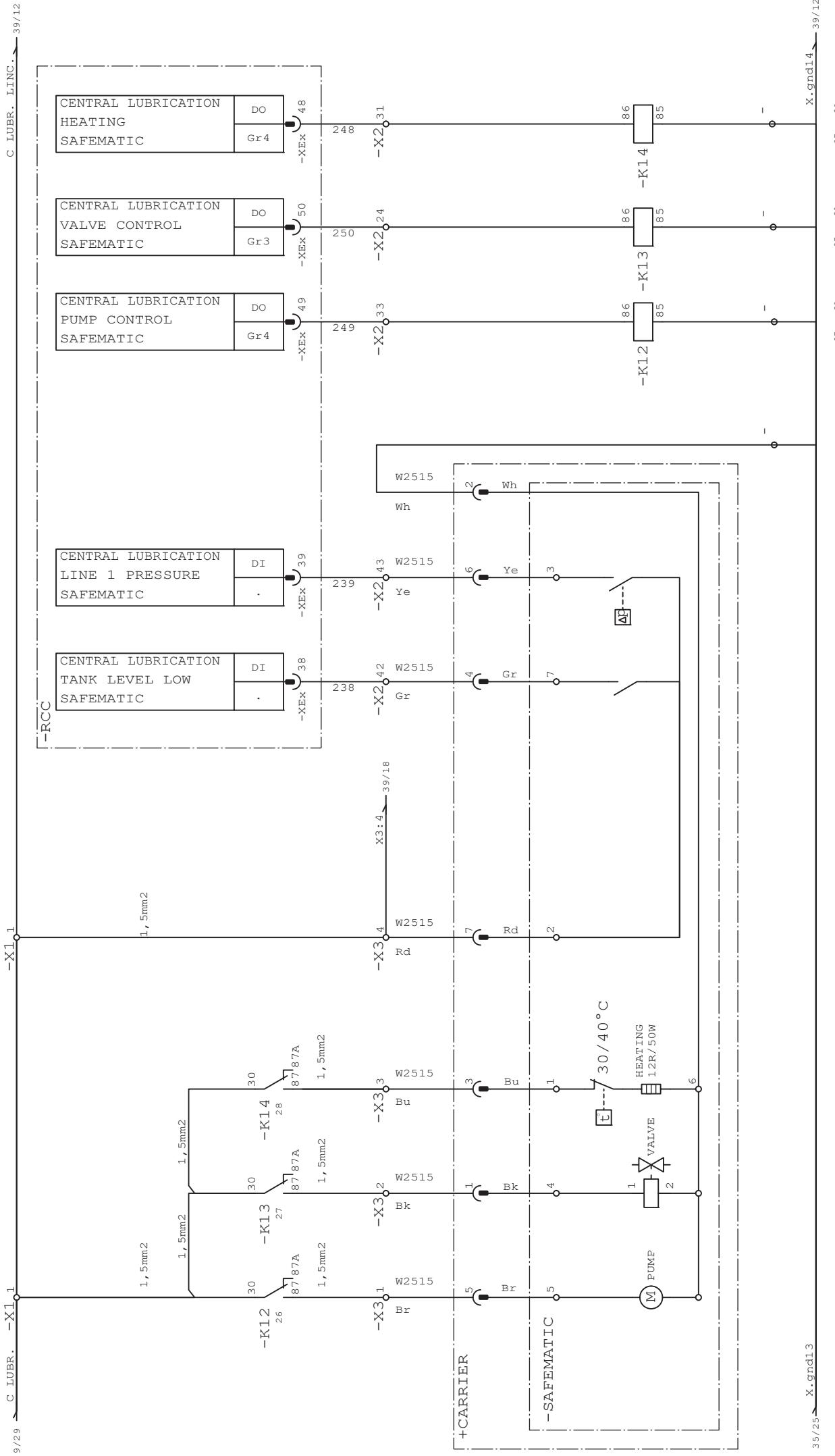
SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned to Sandvik. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.		
Copyright © Sandvik Mining and Construction	DATE	NAME	CONTROL SYSTEMS
	DRAWN BY 2018-03-20	JUU	Pantera DPI, Carrier circuit diagram
	CHECKED 2018-03-20	RVA	CSL
	APPROVED 2018-03-20	MFA	Dragonfly
			POSITION CARRIER

HEET 36 / 49	A3
DIG NR BG01090011-E	
FILE-CODE BG01090011	



11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

9/29 C LUBR. -X1.1
C LUBR. LINC. -RCC 39/12



Sheet 38 / 49 A3
DING NR BG01090011-E
TE-CODE BG01090011

SANDVIK

Copyright © Sandvik Mining and Construction

Pantera DPI, Carrier circuit diagram

SAFEMATIC CENTRAL LUBRICATION

39/12

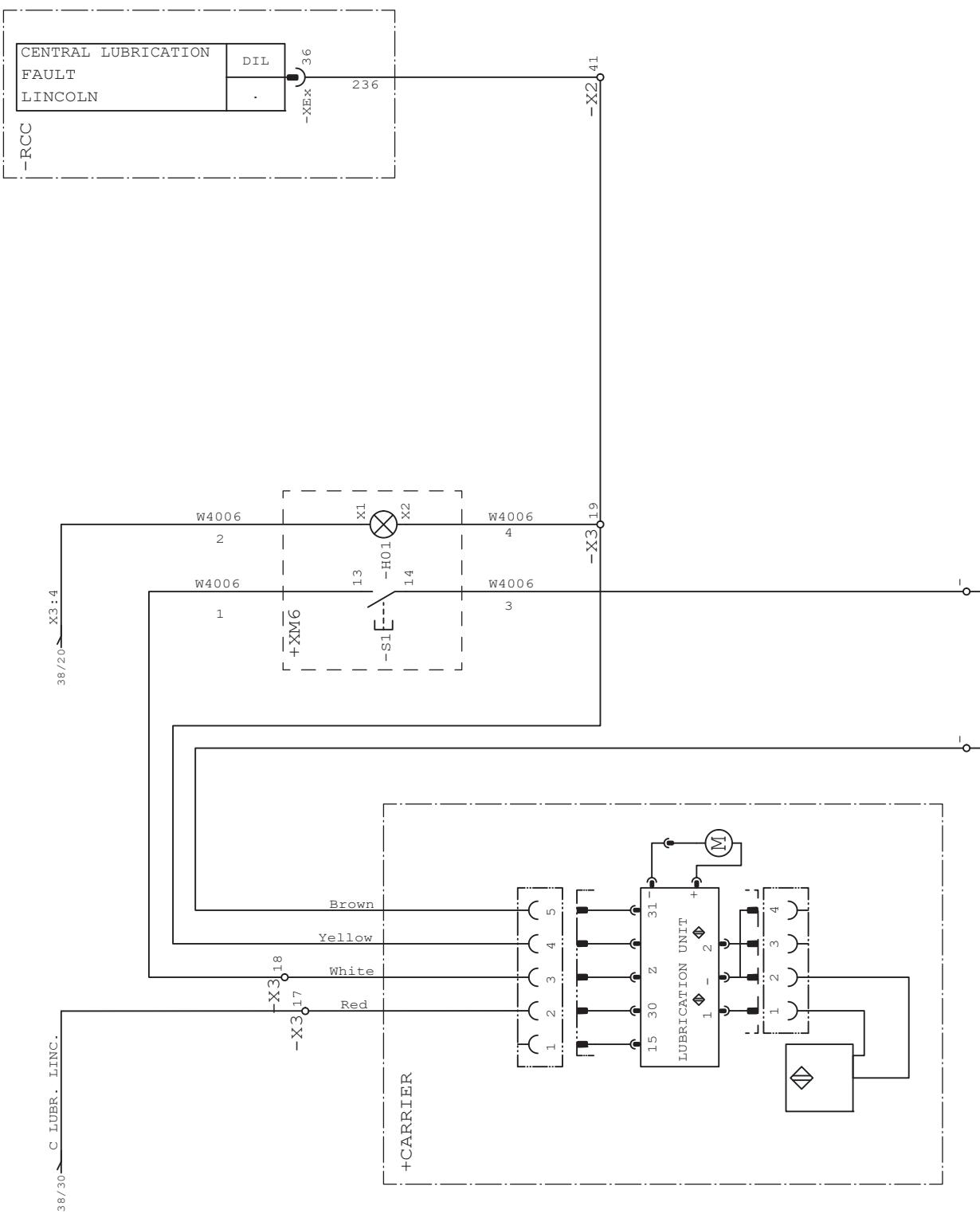
NOTICE: This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without prior written consent of Sandvik.

Approved: 2018-03-20 MPA

Drawn by: 2018-03-20 JUU

Checked: 2018-03-20 RTA

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

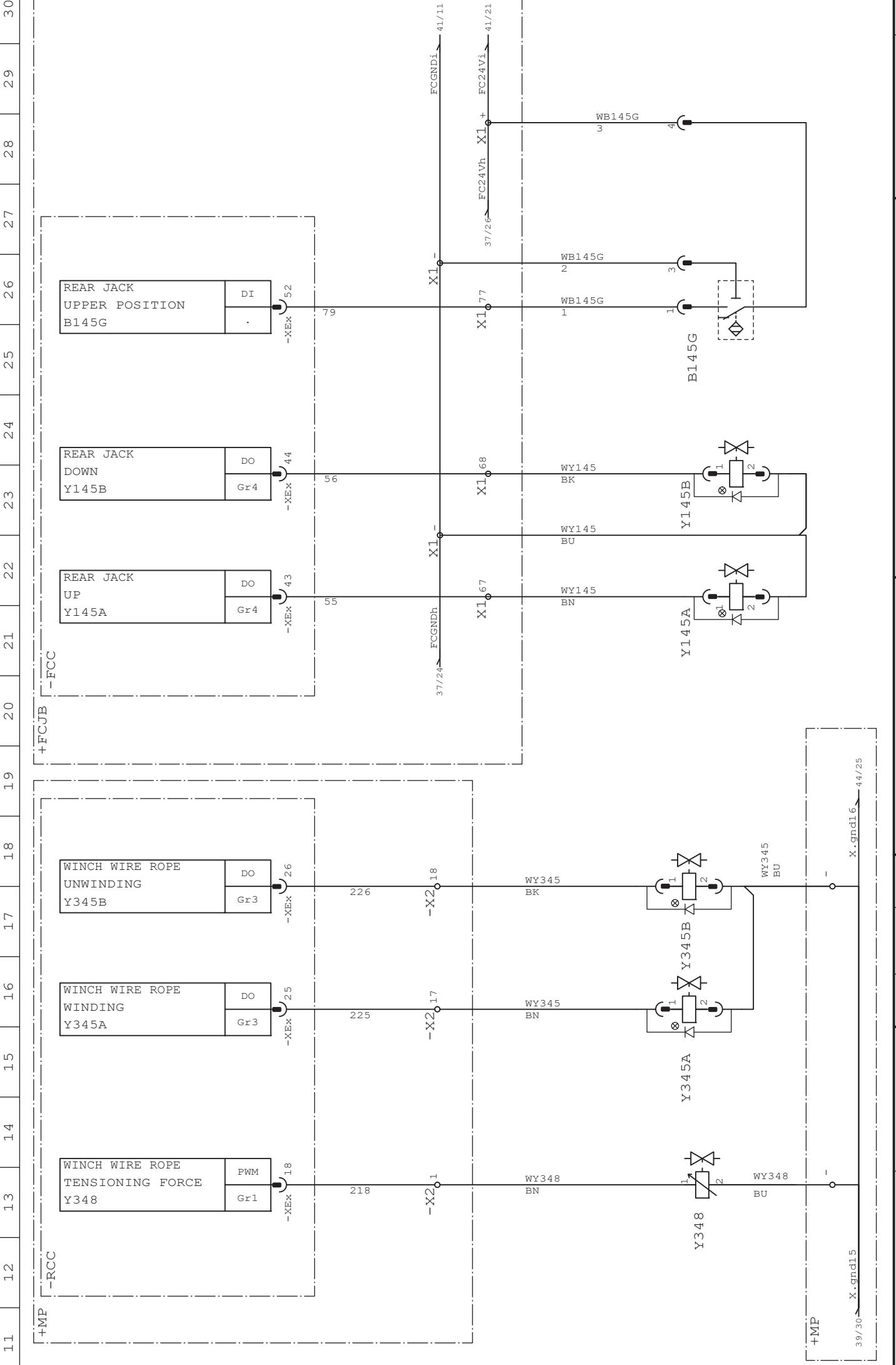


38/30 - C LUBR. LINCOLN
38/20 - X.gnd14
X.gnd15 - 40/12

Pantera DPi, Carrier circuit diagram		SHEET 39 / 49	A3
LINCOLN CENTRAL LUBRICATION		DWG NR BGO1090011-E	
TIT-CODE BGO1090011			

SANDVIK		NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	
		DATE DRAWN BY 2018-03-20 JUU	NAME
		CHECKED 2018-03-20 RTA	
		APPROVED 2018-03-20 MPA	
Dragonfly	POSITION MP		

Copyright © Sandvik Mining and Construction

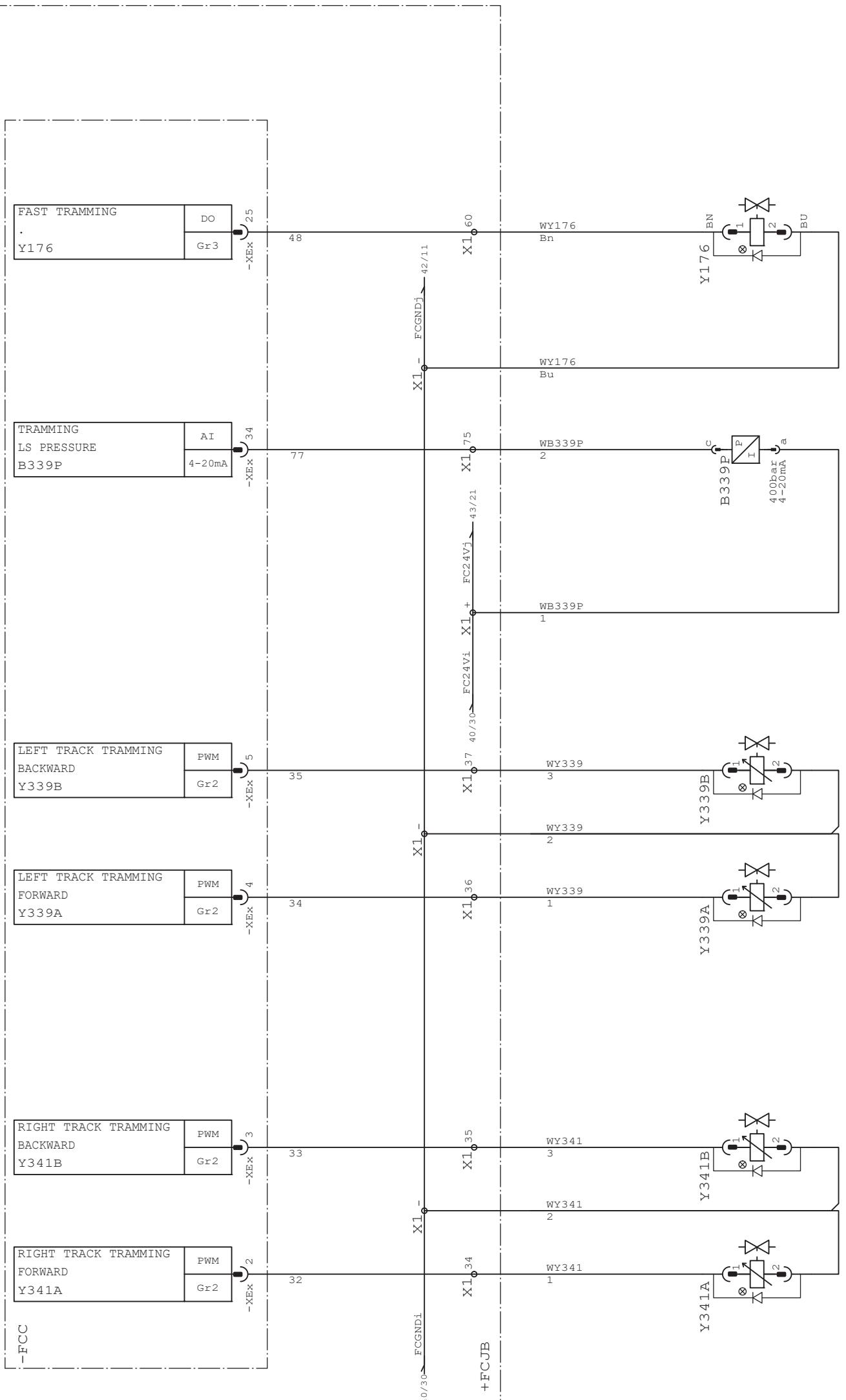


SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	DATE	NAME	CONTROL SYSTEMS	
		DRAWN BY	JUU	Dragonfly	CARRIER
		CHECKED	RTVA		
		APPROVED	MFA		

DWG NR: BGO1090011-E
FILE-CODE: BGO1090011

Copyright © Sandvik Mining and Construction	40 / 49	A3
---	---------	----

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



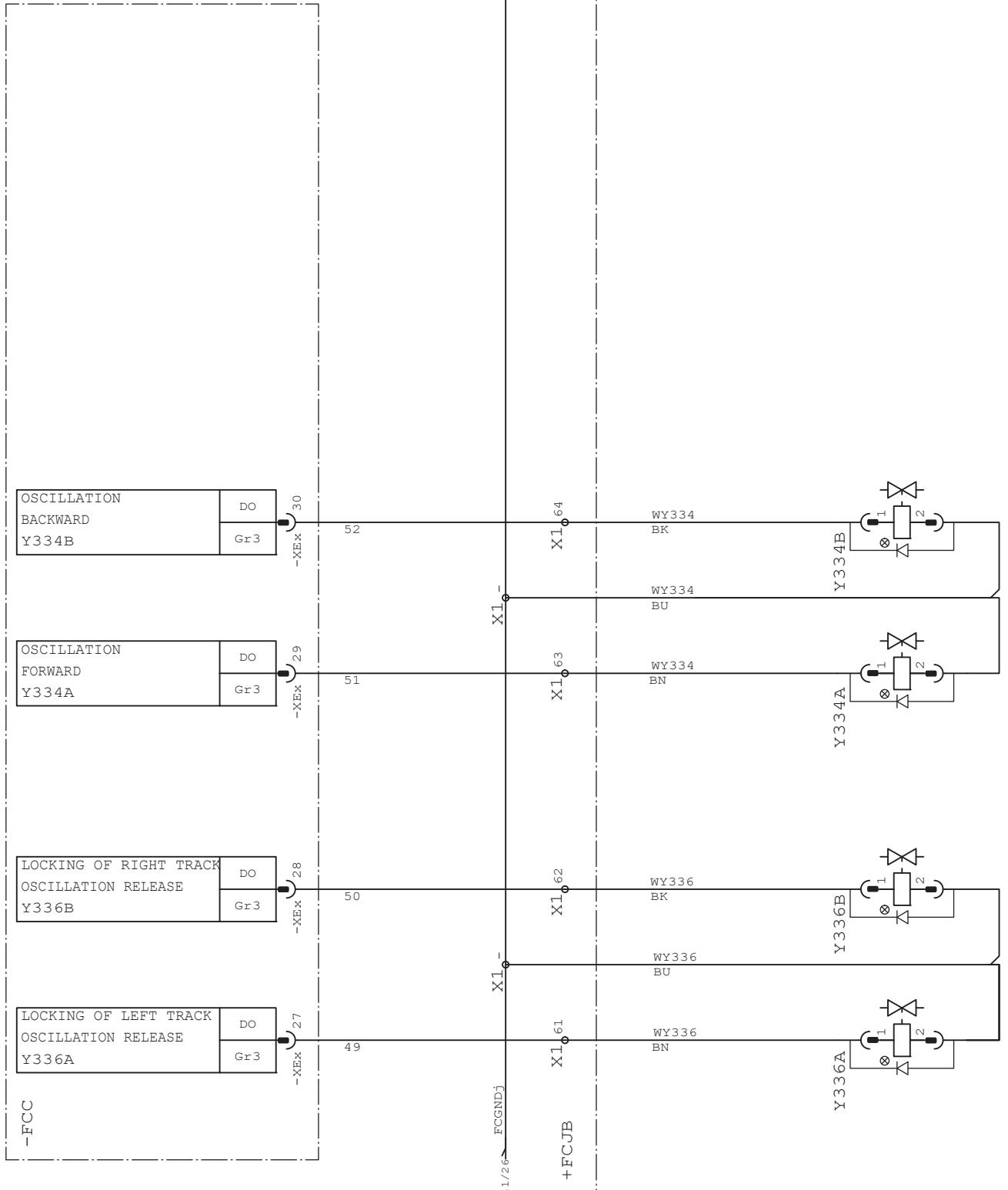
SHEET	41 / 49	A3
DWG NR	BG01090011-E	
FILE-CODE	BG01090011	

Pantera DPI, Carrier circuit diagram
TRAMMING

CONTROL SYSTEMS
Dragonfly POSITION CARRIER

SANDVIK
Copyright © Sandvik Mining and Construction
Notice! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----


SANDVIK

 Copyright © Sandvik Mining and Construction
 Prior written consent of Sandvik,

SHEET

42 / 49

A3

DRAWING NR

BG01090011-E

 TIT-CODE BG01090011
 TIT-CODE BG01090011

Pantera DPi, Carrier circuit diagram

OSCILLATION

CARRIERS

POSITION

CARRIER

APPROVED

2018-03-20

MFA

CHECKED

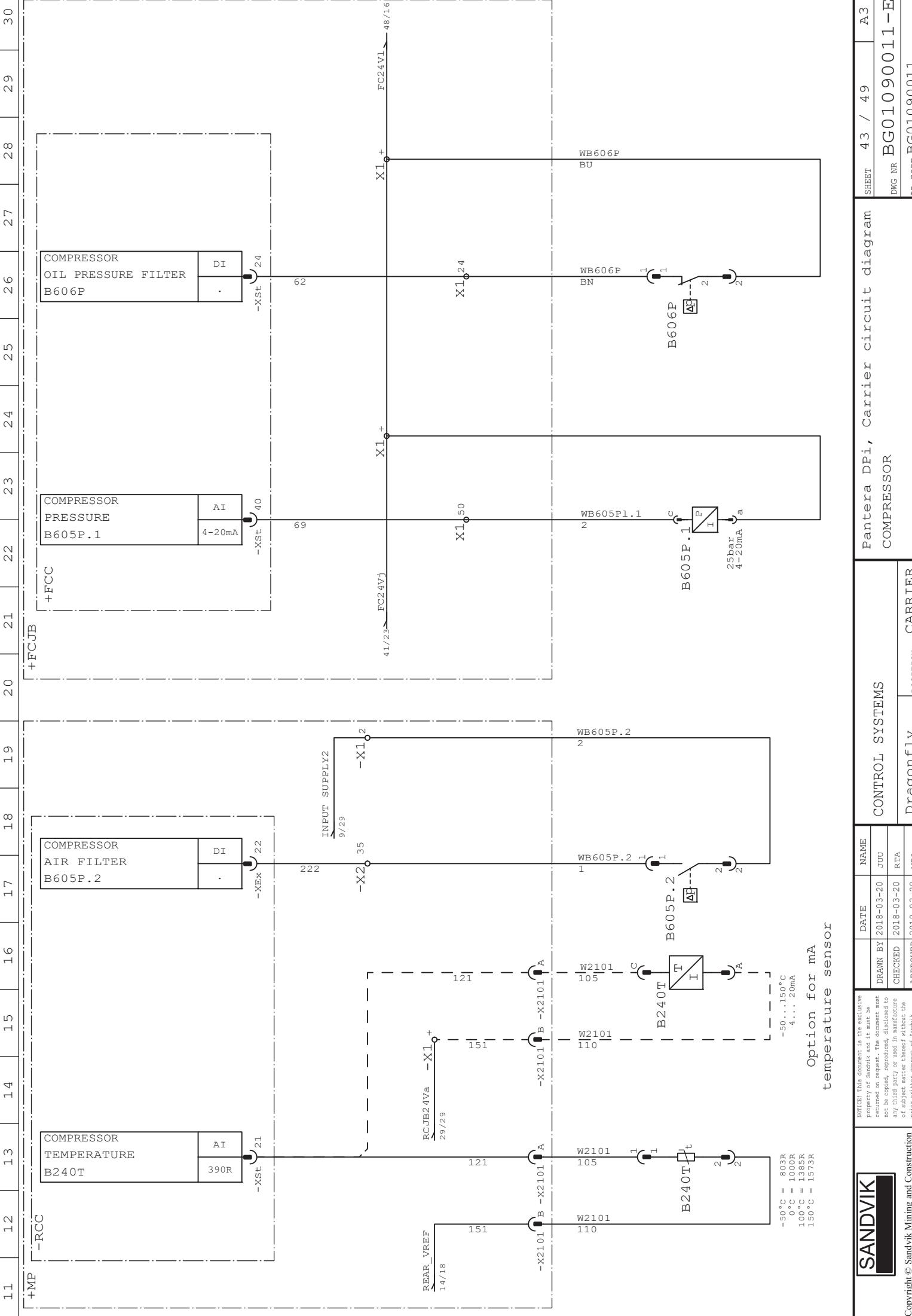
2018-03-20

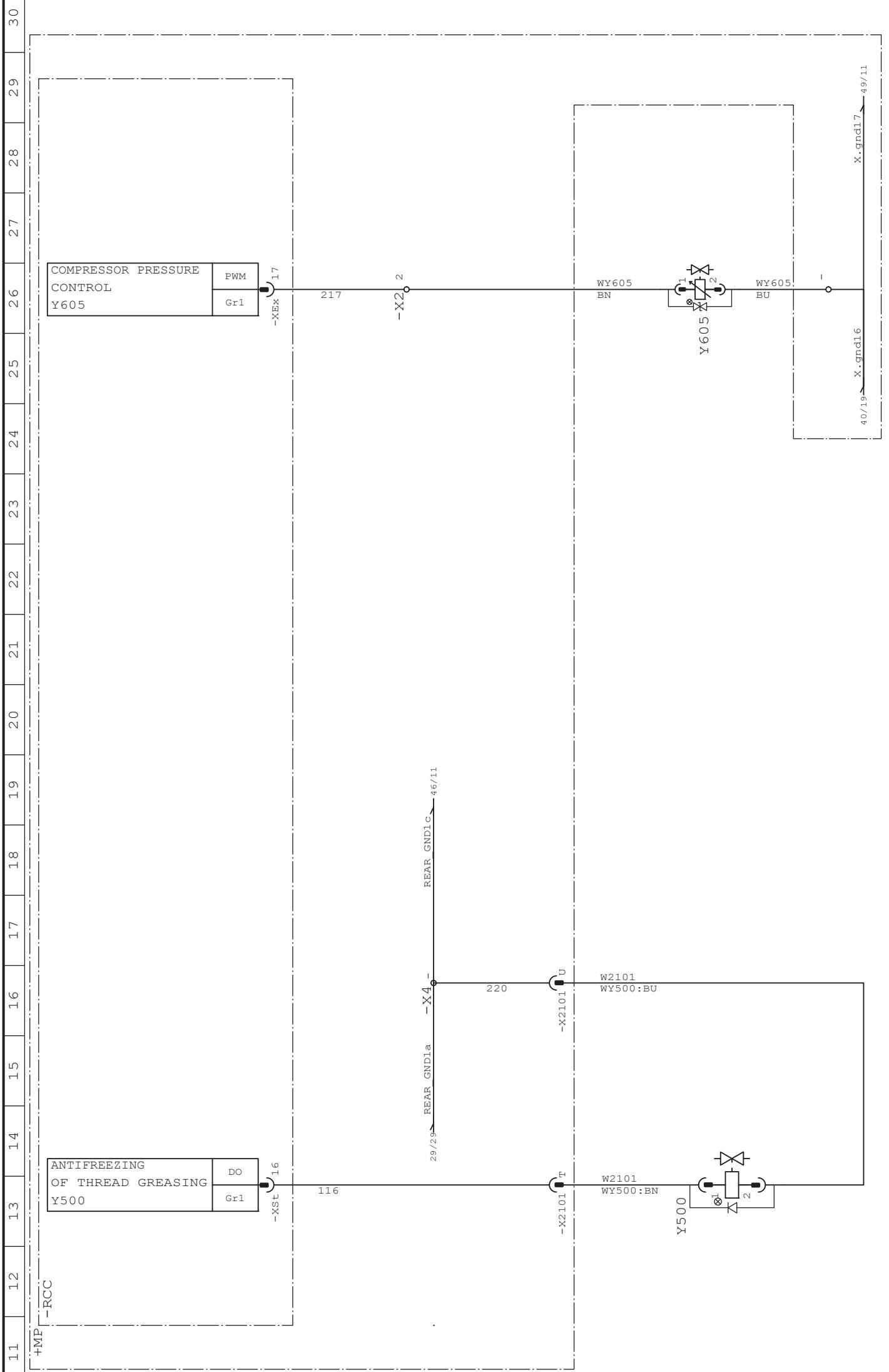
RTA

DRAWN BY

JUU

NAME

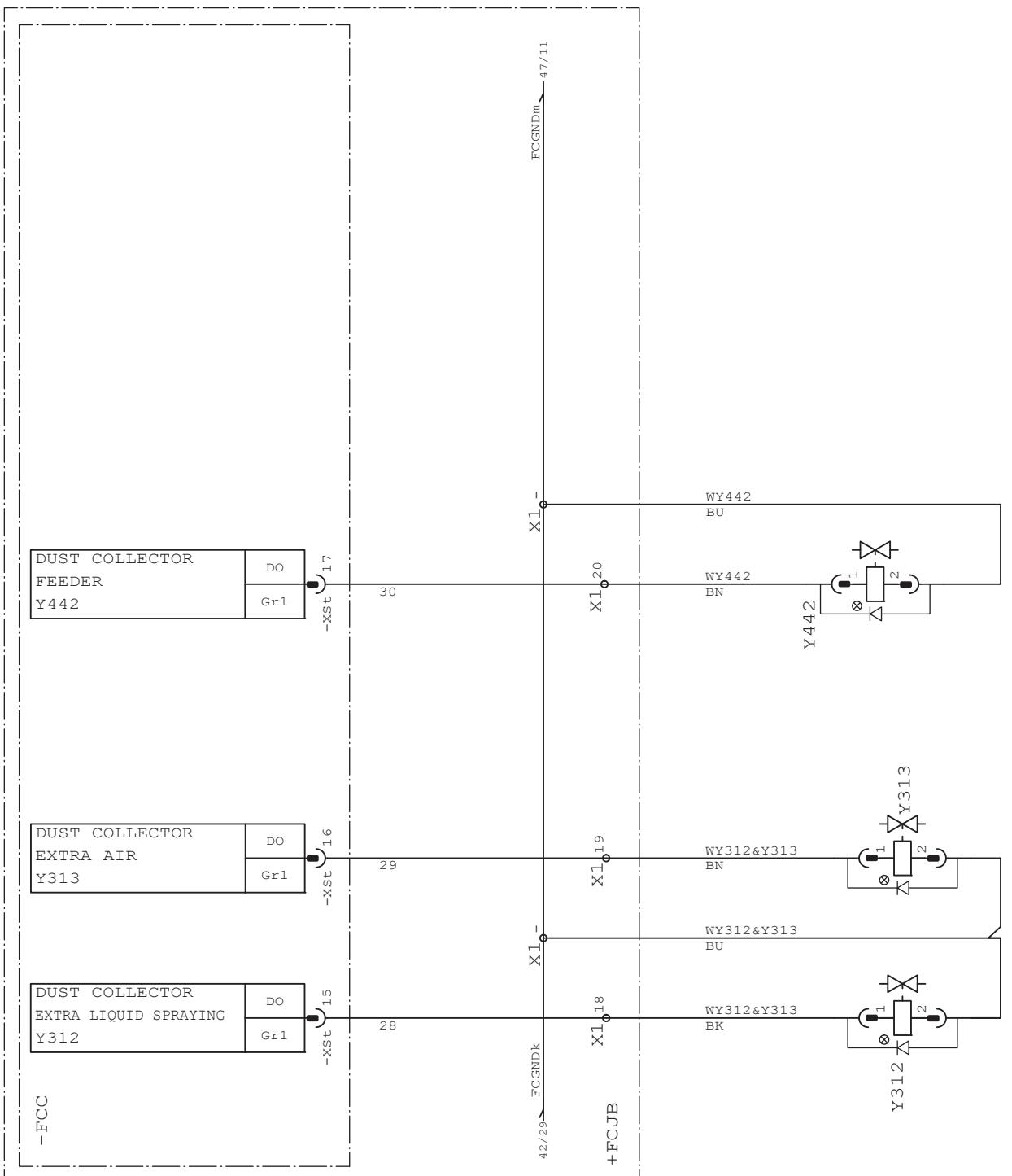




SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.		
	DRAWN BY 2018-03-20 JUU	NAME	DATE 2018-03-20
	CHECKED 2018-03-20 RTA	CONTROL SYSTEMS	44 / 49
	APPROVED 2018-03-20 MPA	Dragonfly POSITION	A3
		CARRIER	DIAG NR BGO1090011-E
			FILE-CODE BGO1090011

Copyright © Sandvik Mining and Construction

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

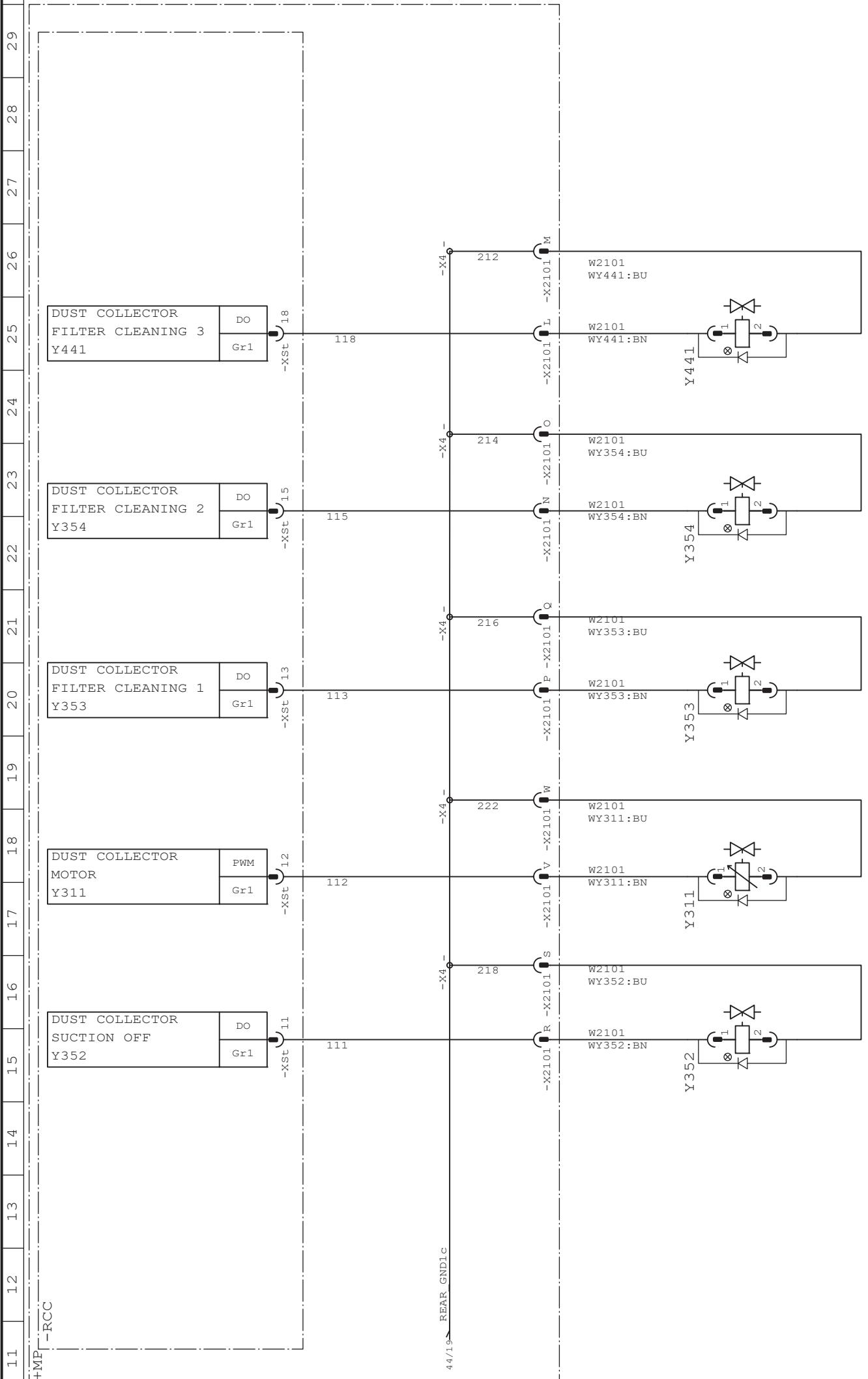

SANDVIK

 Copyright © Sandvik Mining and Construction
TILL-CODE BG01090011

 Pantera Dpi, Carrier circuit diagram
DUST COLLECTOR

 SHEET 45 / 49
DRAWING NR BG01090011-E
TILL-CODE BG01090011

 NOTICE! This document is the exclusive
property of Sandvik and it must be
returned on request. The document must
not be copied, reproduced, disclosed to
any third party or used in manufacture
of subject matter thereof without the
prior written consent of Sandvik.
A3



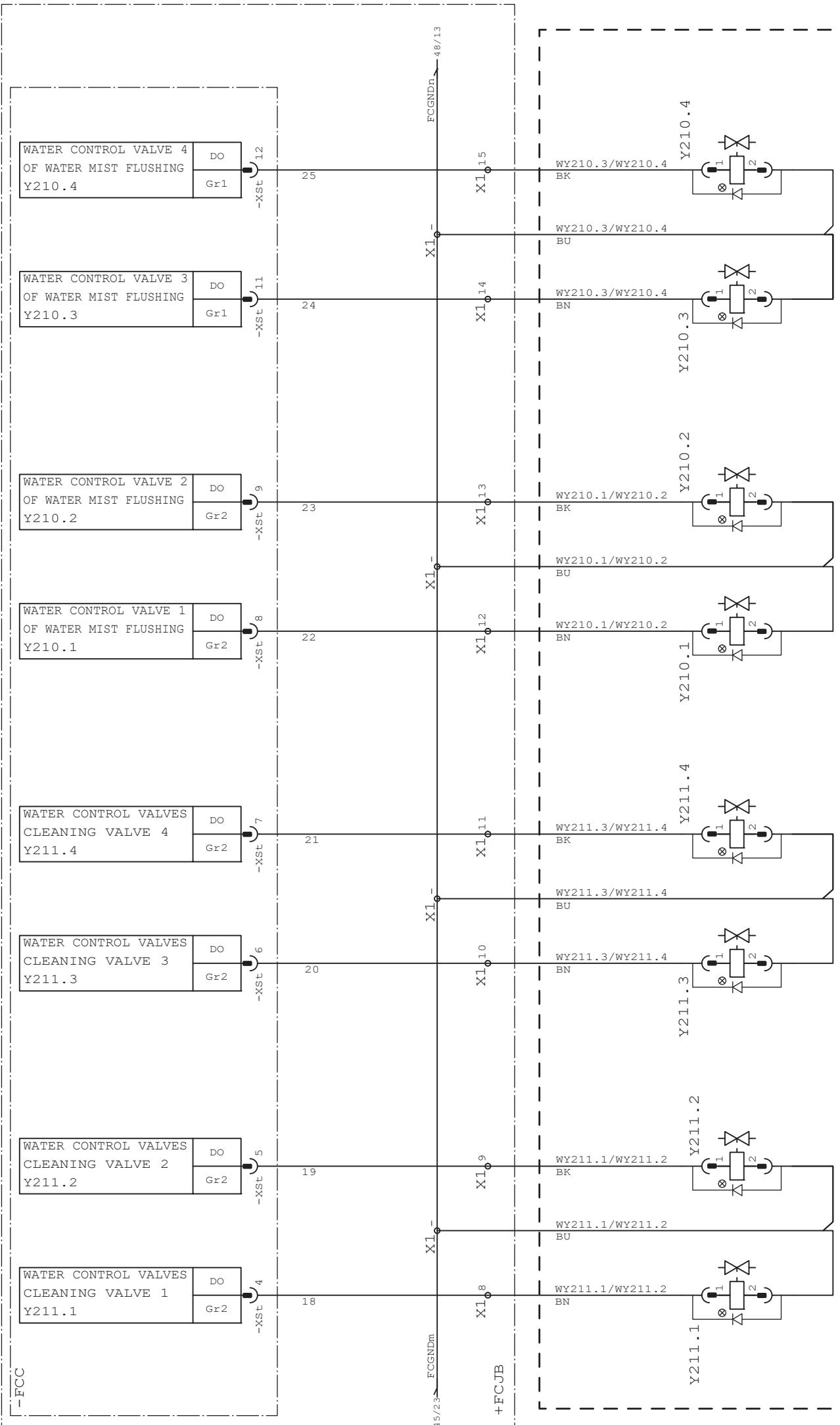
SANDVIK

Copyright © Sandvik Mining and Construction

Pantera DPi, Carrier circuit diagram
DUST COLLECTOR

SHEET	46 / 49	A3
DWG NR		BG01090011-E
TR-Code		
BG01090011		

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



These will NOT BE CONNECTED with proportional controlled Water Injection

SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	DRAWN BY 2018-03-20 JUU	NAME JUU
		CHECKED 2018-03-20 RTA	CONTROL SYSTEMS
		APPROVED 2018-03-20 MPA	Dragonfly POSITION CARRIER

Sheet 47 / 49 A3

Dwg Nr BG01090011-E

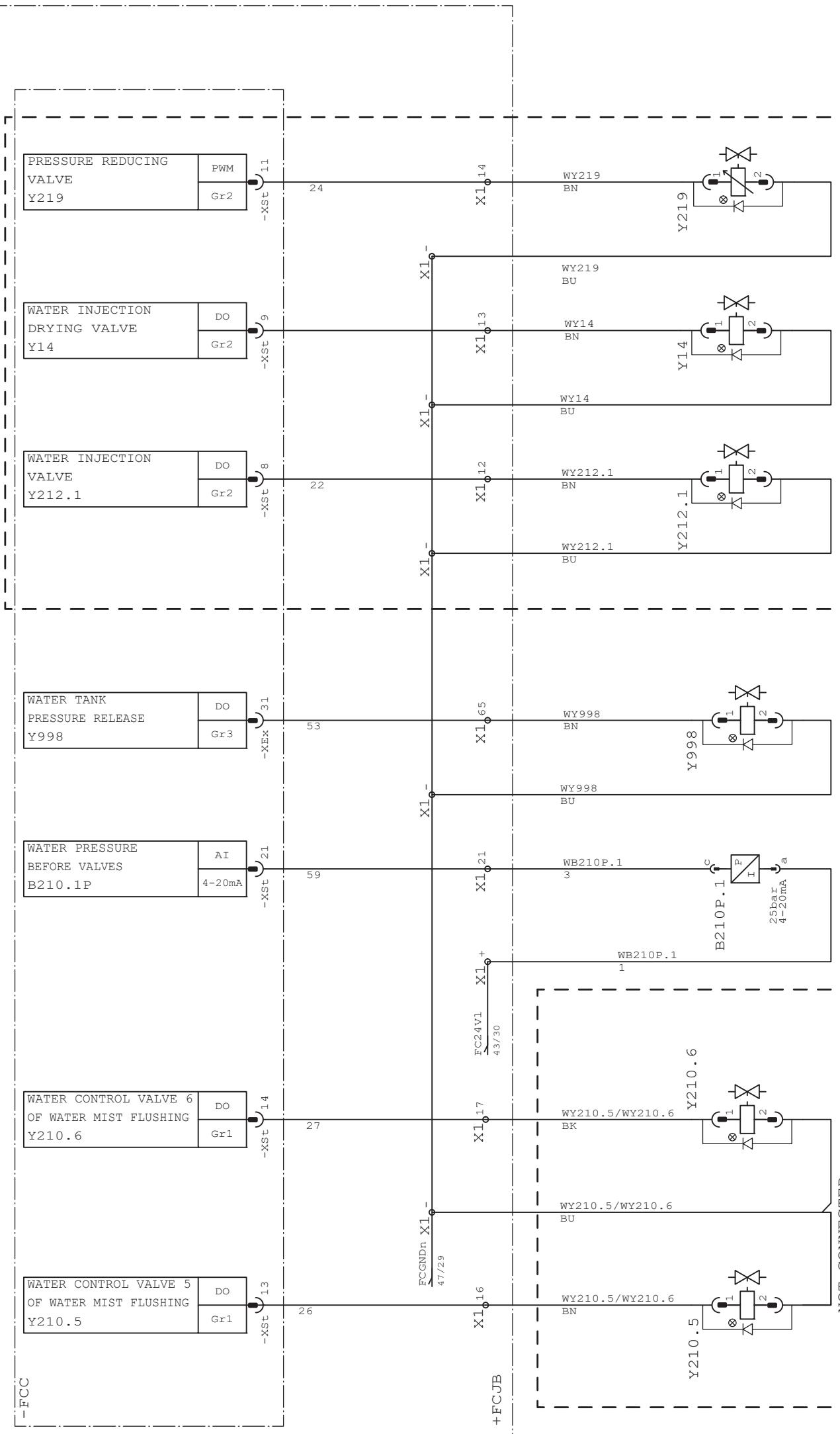
File-Code BG01090011

Pantera DPI, Carrier circuit diagram
WATER INJECTION

Copyright © Sandvik Mining and Construction

SANDVIK

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



These will ONLY BE CONNECTED
with proportional controlled Water Injection

SANDVIK	NAME	DATE	DRAWN BY	2018-03-20	JUU
			CHECKED	2018-03-20	RTA
			APPROVED	2018-03-20	MPA
	CONTROL SYSTEMS				
	Dragonfly	POSITION	CARRIER		

Pantera DPI, Carrier circuit diagram
WATER INJECTION, DUST MIZER

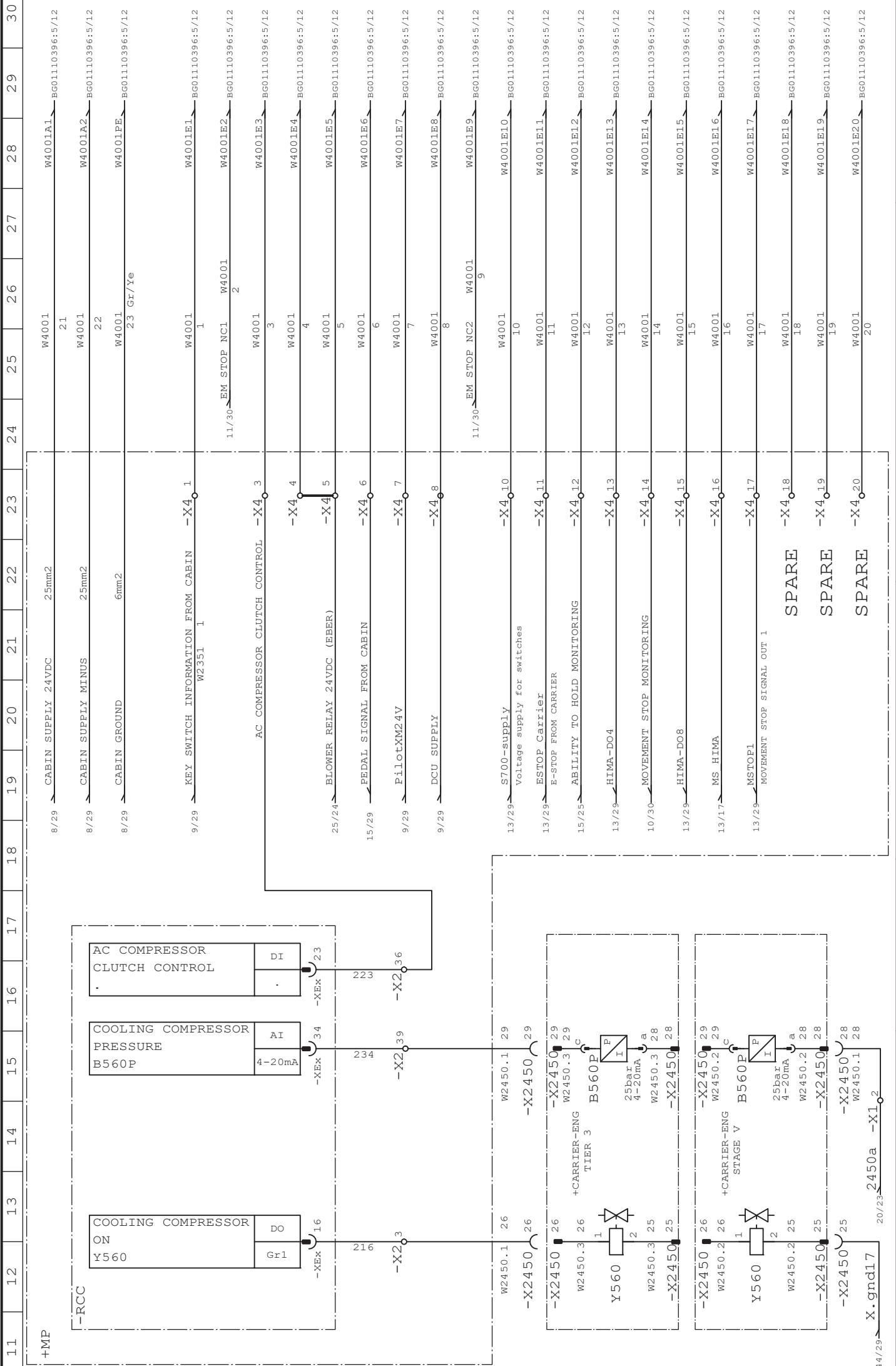
Sheet 48 / 49

A3

DIG NR

BG01090011-E

FILE-CODE BG01090011



SHEET 49 / 49 A3
DRAFTING NR BG01090011-1
DRAFT-CODE BG01090011

SATELLITES

SANDVIK

Copyright © Sandvik Mining and Construction

TABLE OF CONTENTS

SANDVIK

Copyright © Sandvik Mining and Construction

SYSTEMS

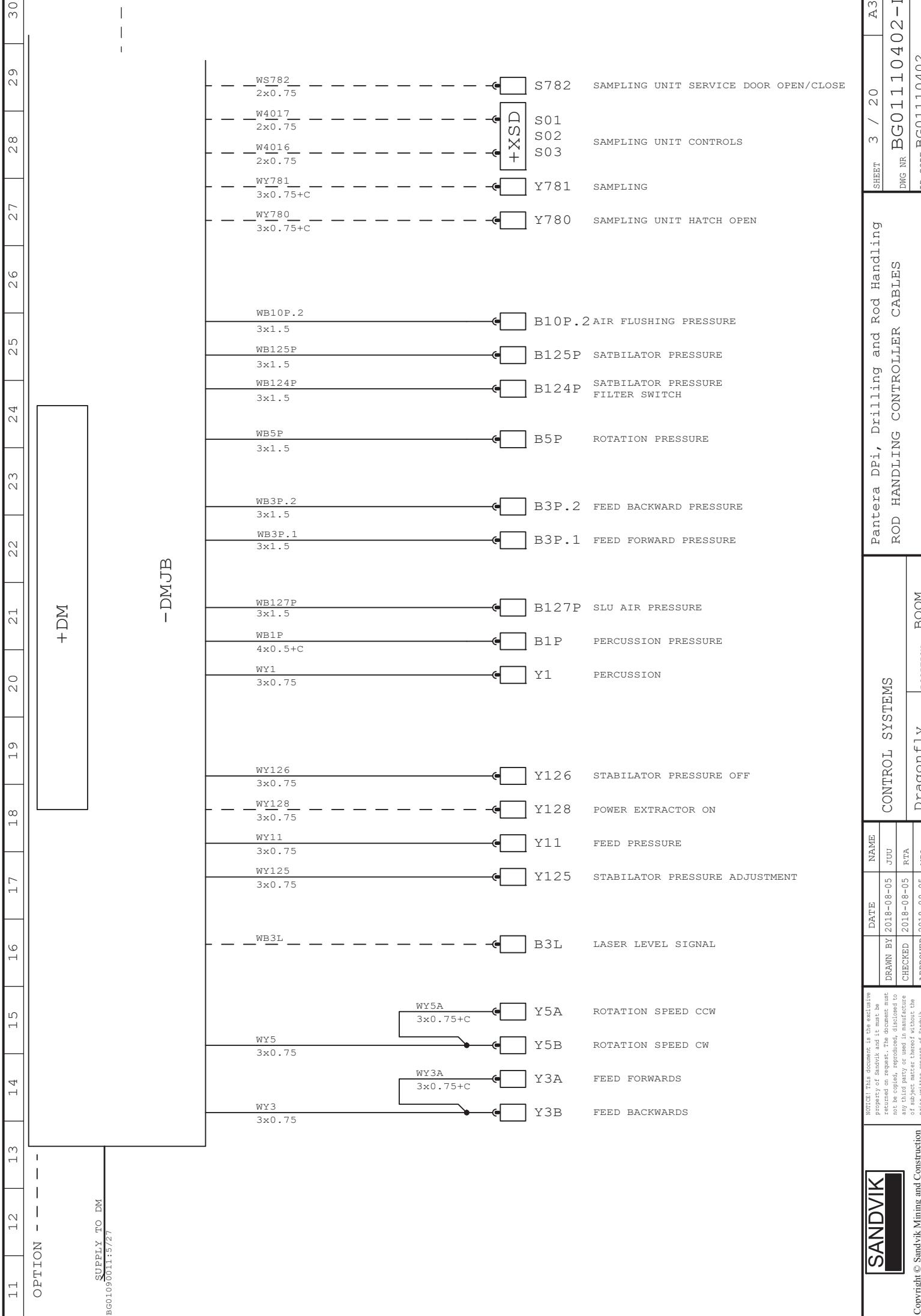
Pantera DPi, Drilling and Rod Handling SHEET 1 / 20

DWG NR BG01110402-1
TD-CODE BG01110402

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Name	Abbreviation	+Enclosure - device label
System Master	SM	+SM
HMI Master	HM	+ESG-HM
Rear Carrier Controller	RCC	+MP-RCC
RC Junction Box	RCJB	+RCJB
Front Carrier Controller	FCC	+FCC
FC Junction Box	FCJB	+FCJB
Drilling Master	DM	+DM
DM Junction Box Standard	DMJB	+DMJB
Advanced Calculation Unit	ACU	+ACU
Aux Control Panel	ACP	+ACP
Right Control Panel	RCP	+RCP
Left Control Panel	LCP	+LCP
Radio Receiver	REC	+REC
Sensor Zoom Position	SZP	+B101G
Sensor Boom Inclination	SBI	+B26G
Sensor Feed Extension	SFE	+B103G
Sensor Carrier Inclination	SCI	+B336G
Sensor Boom Turn Angle	SBA	+B20G
Sensor Feed Inclination	SFI	+B132G
Sensor Horizontal Inclination	SHI	+B132G.2
Sensor Drifter Position	SDP	+B3G
Sensor Aiming Unit	SAU	+B999G
Ethernet Switch	ETS	+ETS
GPS Compass	SGC	+SGC
3D Unit	GNSS	+GNSS
Data Transfer Unit	DTU	+DTU

SANDVIK



SHEET 3 / 20 A3
 DING NR BG01110402-D
 TIT-CODE BG01110402
 NOTICE: This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter hereof without the prior written consent of Sandvik.
SANDVIK
 Copyright © Sandvik Mining and Construction

Pantera DPi, Drilling and Rod Handling
ROD HANDLING CONTROLLER CABLES

CONTROL SYSTEMS	BOOM POSITION
Drillonfly	BOOM

NAME

JUU

RTA

MFA

APPROVED

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

2018-08-05

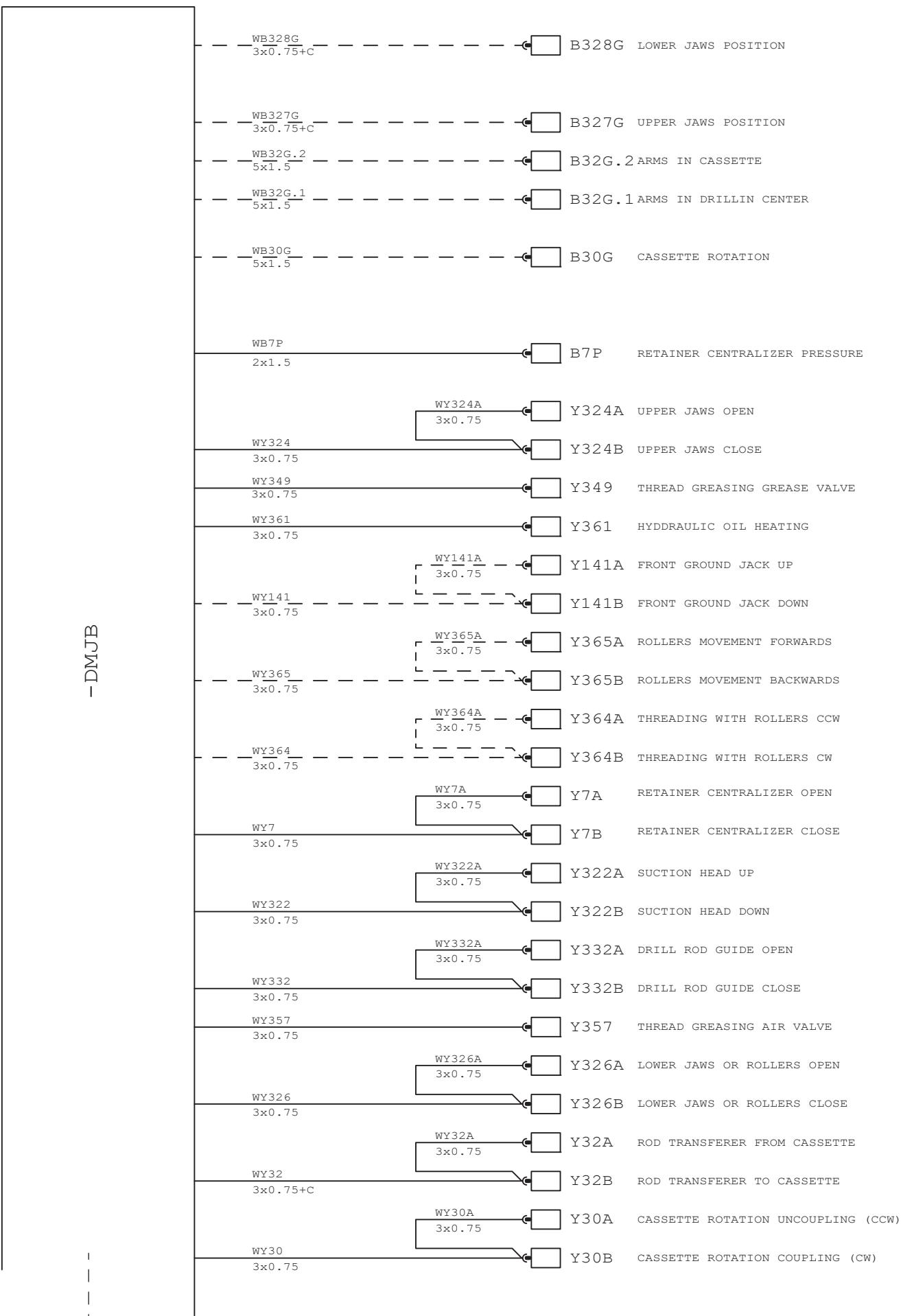
2018-08-05

2018-08-05

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

OPTION - - - - -

- DMJB



SANDVIK

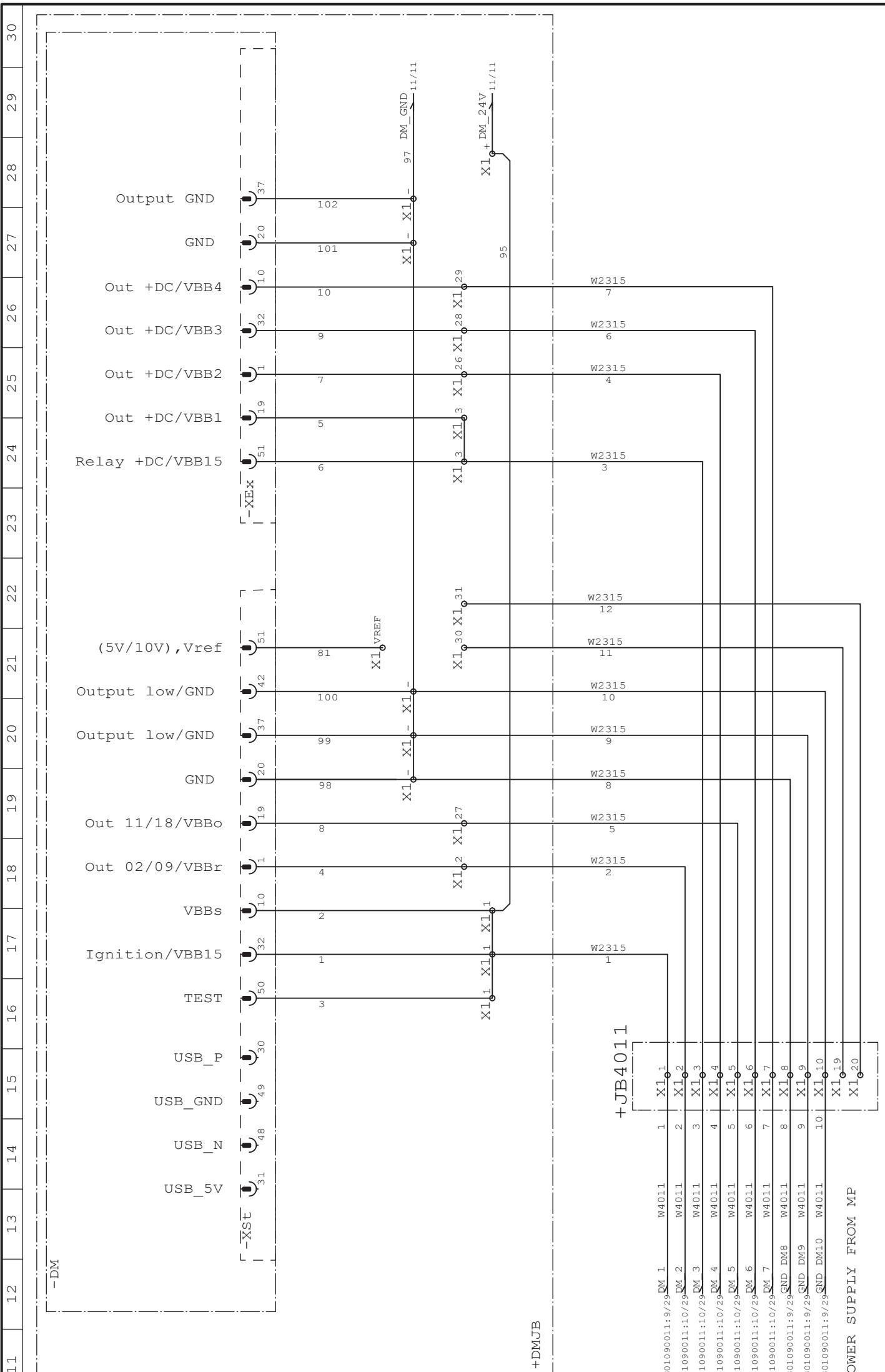
NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

Copyright © Sandvik Mining and Construction

Pantera DPi, Drilling and Rod Handling
DRILLING MASTER CABLES

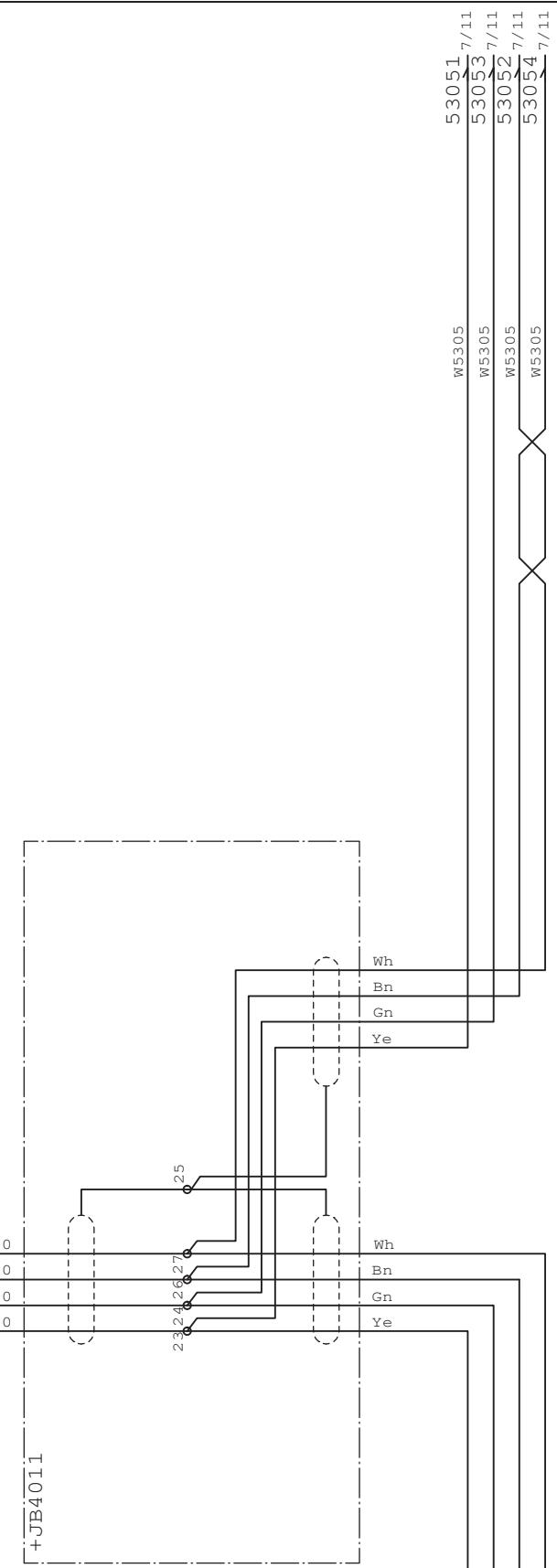
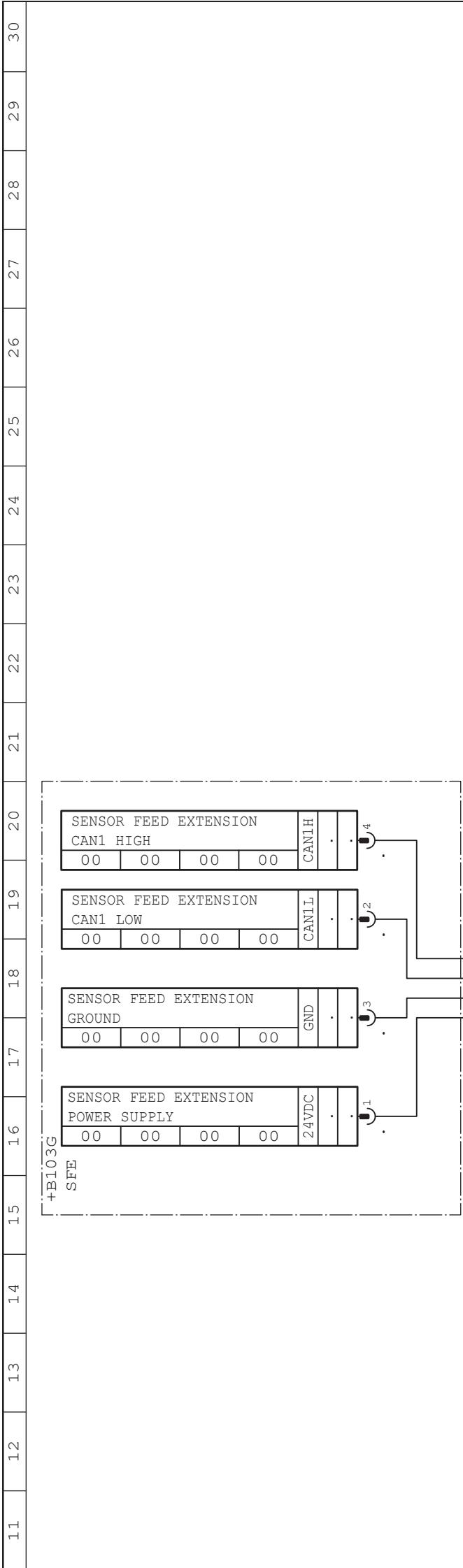
Sheet 4 / 20
Dwg NR BG01110402-D
Title-Code BG01110402

OPTION - - - - -



SHEET# 5 / 20 A3
DWG NR BG01110402-D
ID-CODE BG01110402

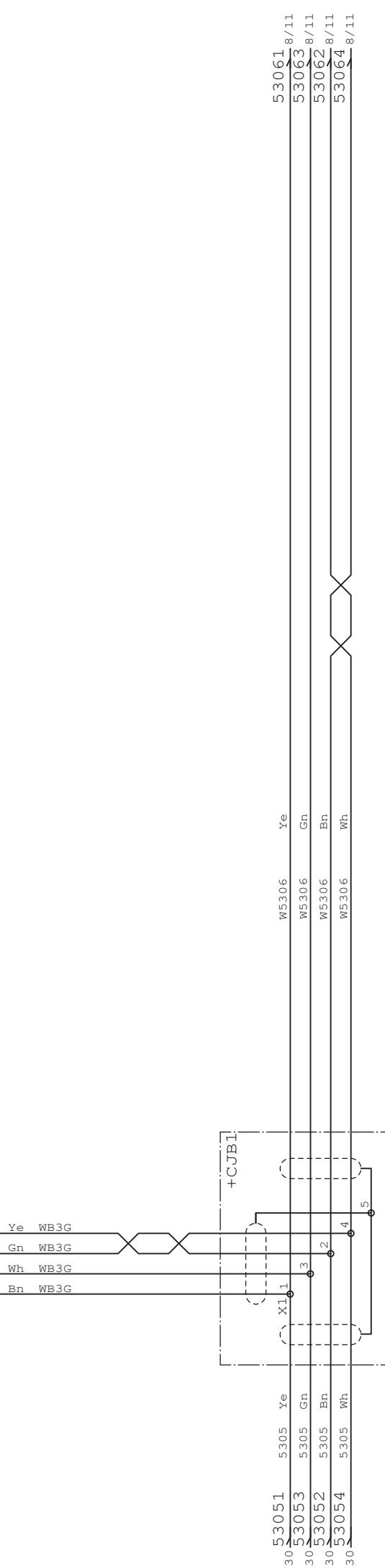
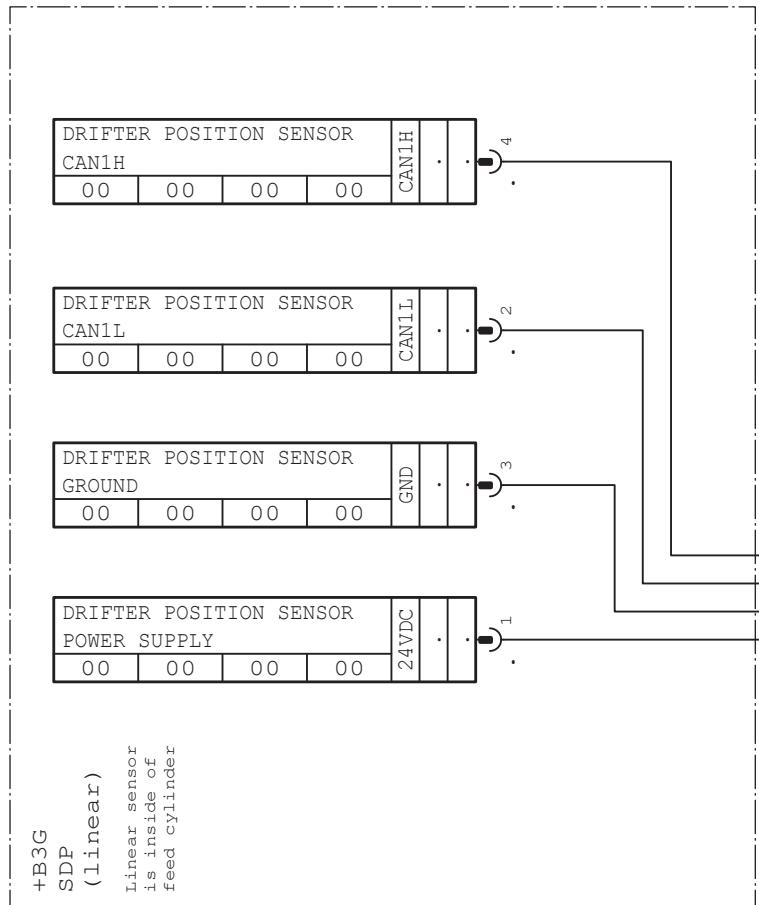
SANDVIK	NOTICE this document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject parts based without prior written consent of Sandvik.	DATE DRAWN BY CHECKED APPROVED	NAME JUU RTA MRA	CONTROL SYSTEMS	Dragonfly	POSITION BOOM
© Sandvik Mining and Construction						



Pantera DPi, Drilling and Rod Handling			
CAN FEED, FEED EXTENSION SENSOR			
CONTROL SYSTEMS		BOOM	
SHEET	6 / 20	A3	
DWG NR.	BG01110402-D		ID-CODE BG01110402
NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter released within the prior written consent of Sandvik.			
BG01090011:19/24	53041 W5304	DATE	NAME
BG01090011:19/24	53043 W5304	DRAWN BY	JUU
BG01090011:19/24	53042 W5304	CHECKED	RPA
BG01090011:19/24	53044 W5304	APPROVED	MRA

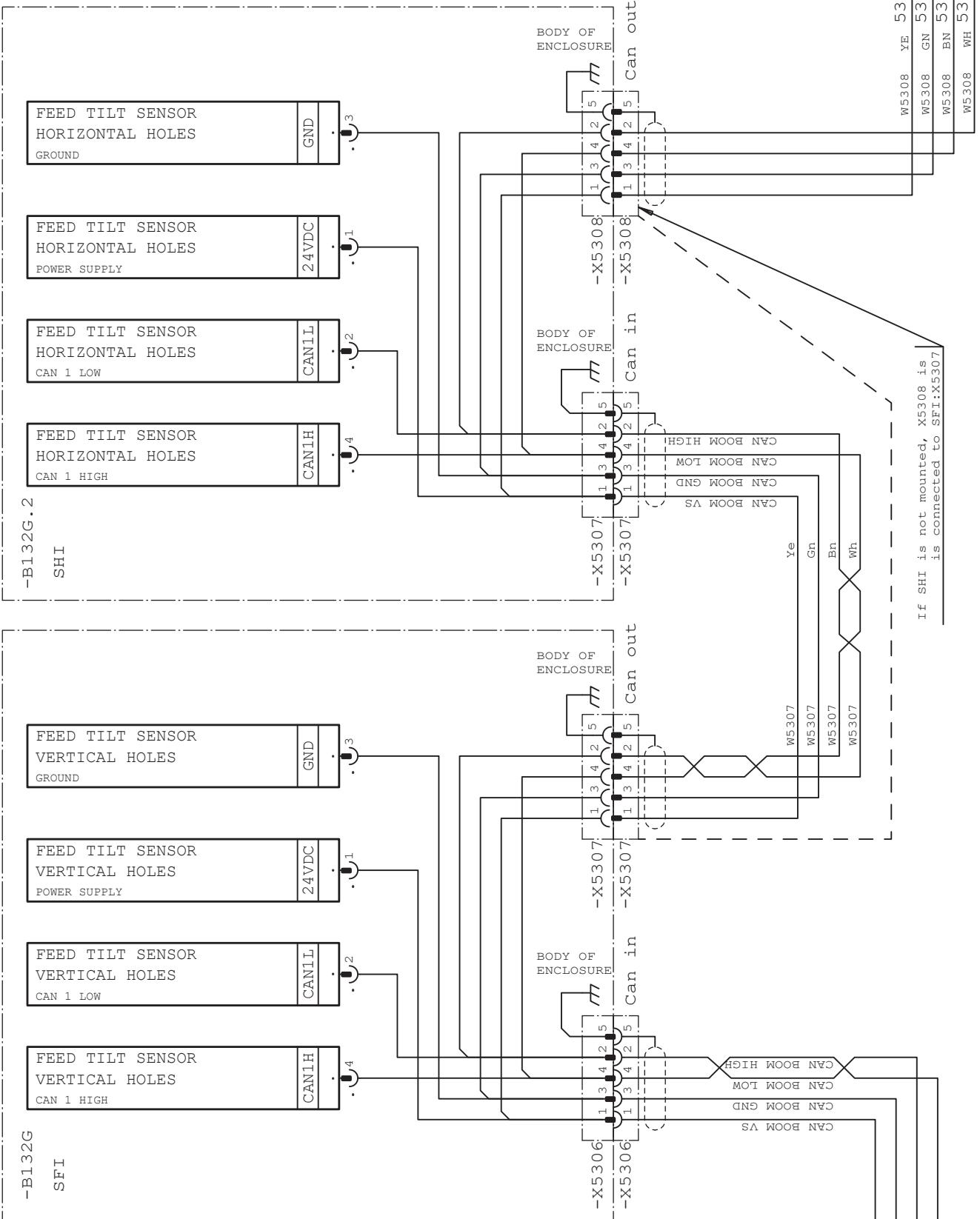
SANDVIK
Copyright © Sandvik Mining and Construction

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



SANDVIK	DATE DRAWN BY 2018-08-05 JU CHECKED 2018-08-05 RTA APPROVED 2018-08-05 MRA	NAME CONTROL SYSTEMS Pantera DPi, Drilling and Rod Handling CAN BB, DRIFTER POSITION SENSOR DragonFly POSITION BOOM	7 / 20	A3
Copyright © Sandvik Mining and Construction	Dwg Nr BG01110402-D Dwg Code BG01110402			

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----


SANDVIK

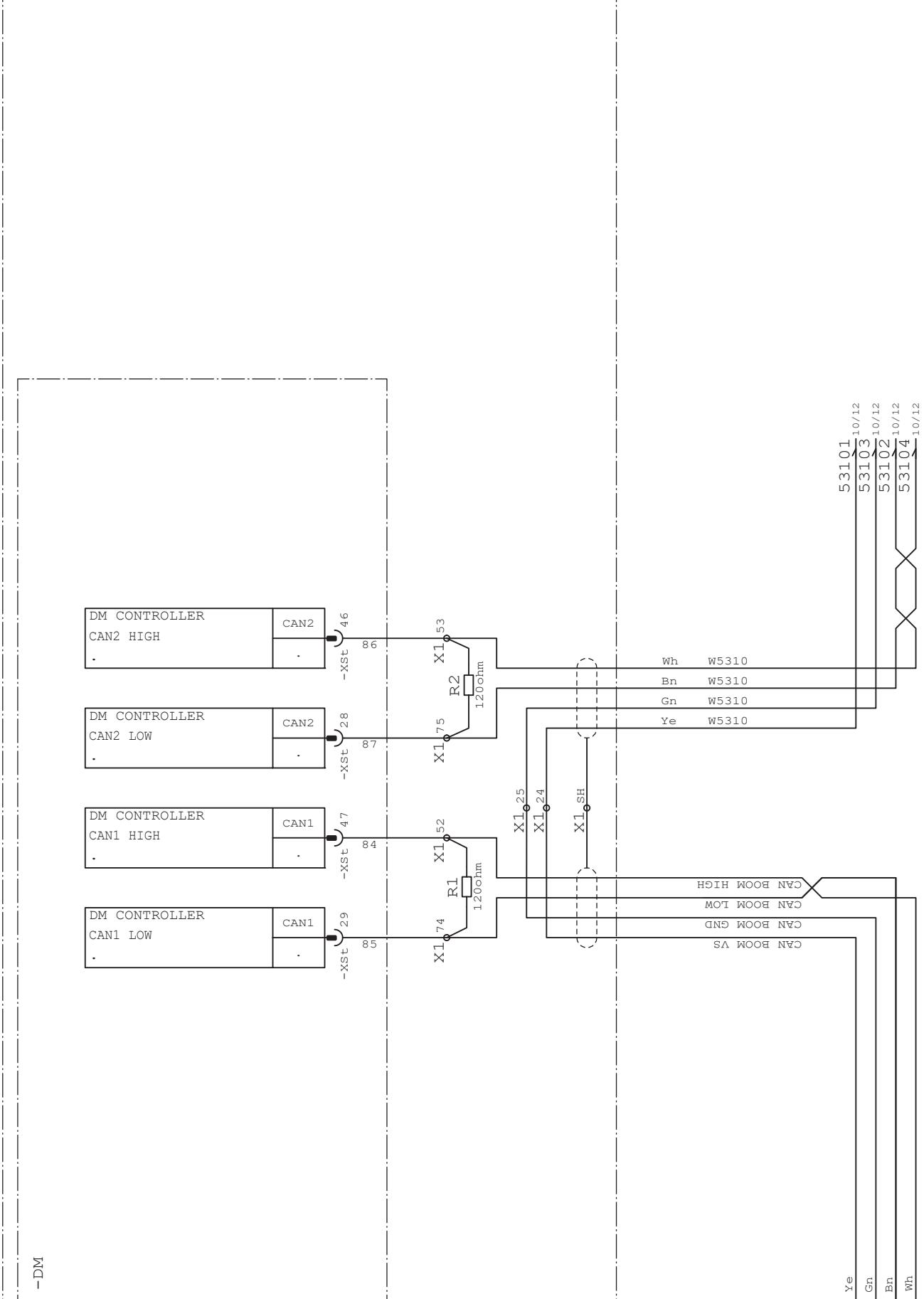
Copyright © Sandvik Mining and Construction

Pantera DPi, Drilling and Rod Handling
CAN BB, FEED UNIT TILT SENSOR

Sheet 8 / 20
A3
Dwg NR BG01110402-D
Tilt-Code BG01110402

NAME JUU
DATE 2018-08-05
DRAWN BY 2018-08-05 RTA
CHECKED 2018-08-05 MPA
APPROVED 2018-08-05

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



53081	W5308	Ye	53101	1.0/12
53083	W5308	Gn	53103	1.0/12
53082	W5308	Bn	53102	1.0/12
53084	W5308	Wh	53104	1.0/12

SHEET	9 / 20	A3
DWG NR	BG01110402-D	
TITLE-CODE	BG01110402	

Pantera DPi, Drilling and Rod Handling
CAN BB, DM

CONTROL SYSTEMS

Dragonfly

POSITION

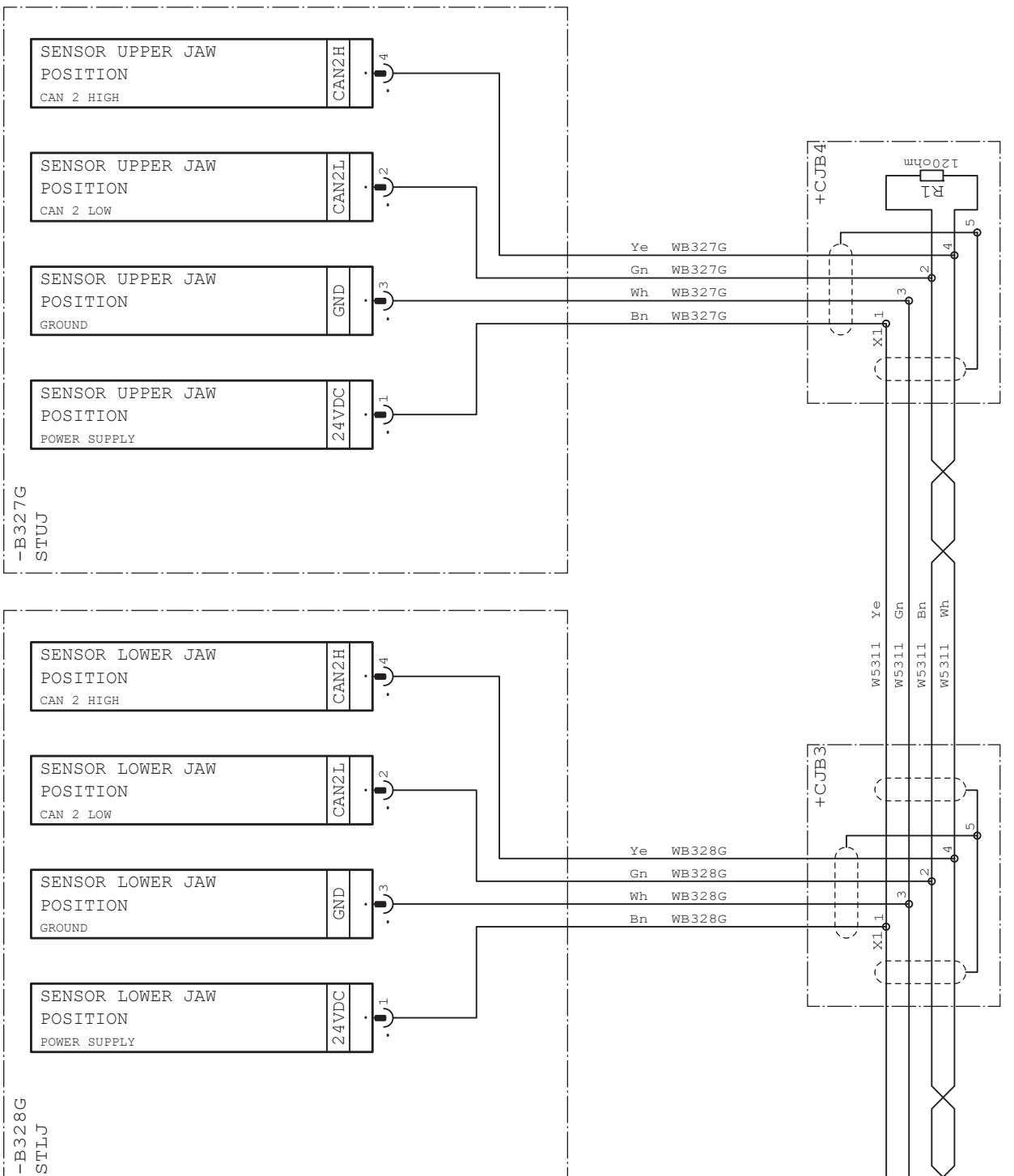
BOOM

NAME	DATE	DRAWN BY	CHECKED	APPROVED
JUU	2018-08-05	2018-08-05	2018-08-05	2018-08-05
RVA				
MFA				

SANDVIK

NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.

Copyright © Sandvik Mining and Construction



NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the

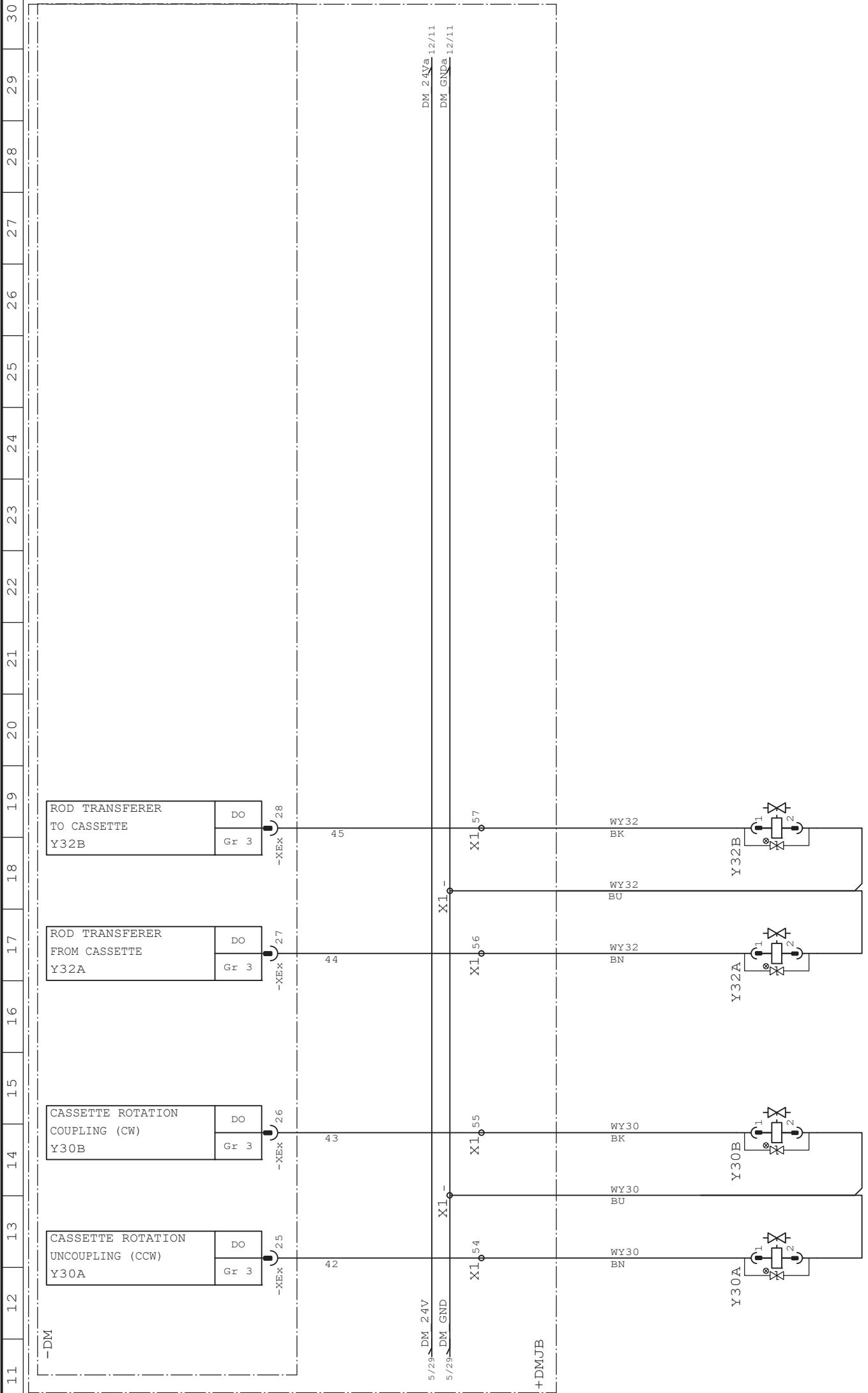
SANDVIK

Copyright © Sandvik Mining and Construction

CONTROL SYSTEMS

Pantera DPI, Drilling and Rod Handling
CAN BB, LOWER & UPPER JAW POSITION

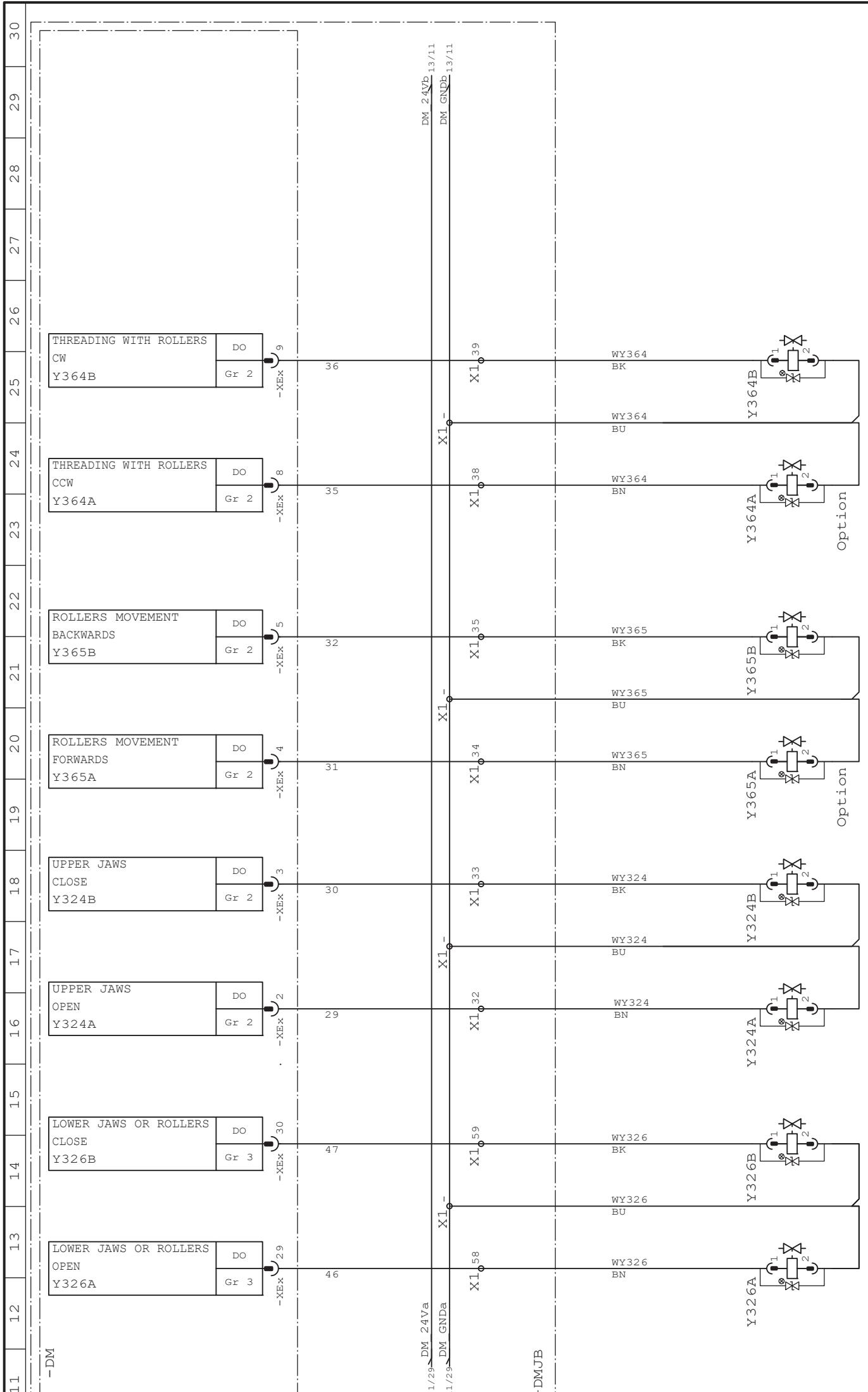
SHEET 10 / 20 A3
DWG NR BG01110402-D
BG01110402



SHEET 11 / 20 A3
DRAWING NR. BG01110402-I
ITEM-CODE BG01110402

SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned if requested. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of similar products without the prior written consent of Sandvik.	NAME DRAWN BY JUU	DATE 2018-08-05	CONTROL SYSTEMS
		CHECKED RTA	2018-08-05	Dragonfly
		APPROVED MRA	2018-08-05	POST

Copyright © Sandvik Mining and Construction



SANDVIK

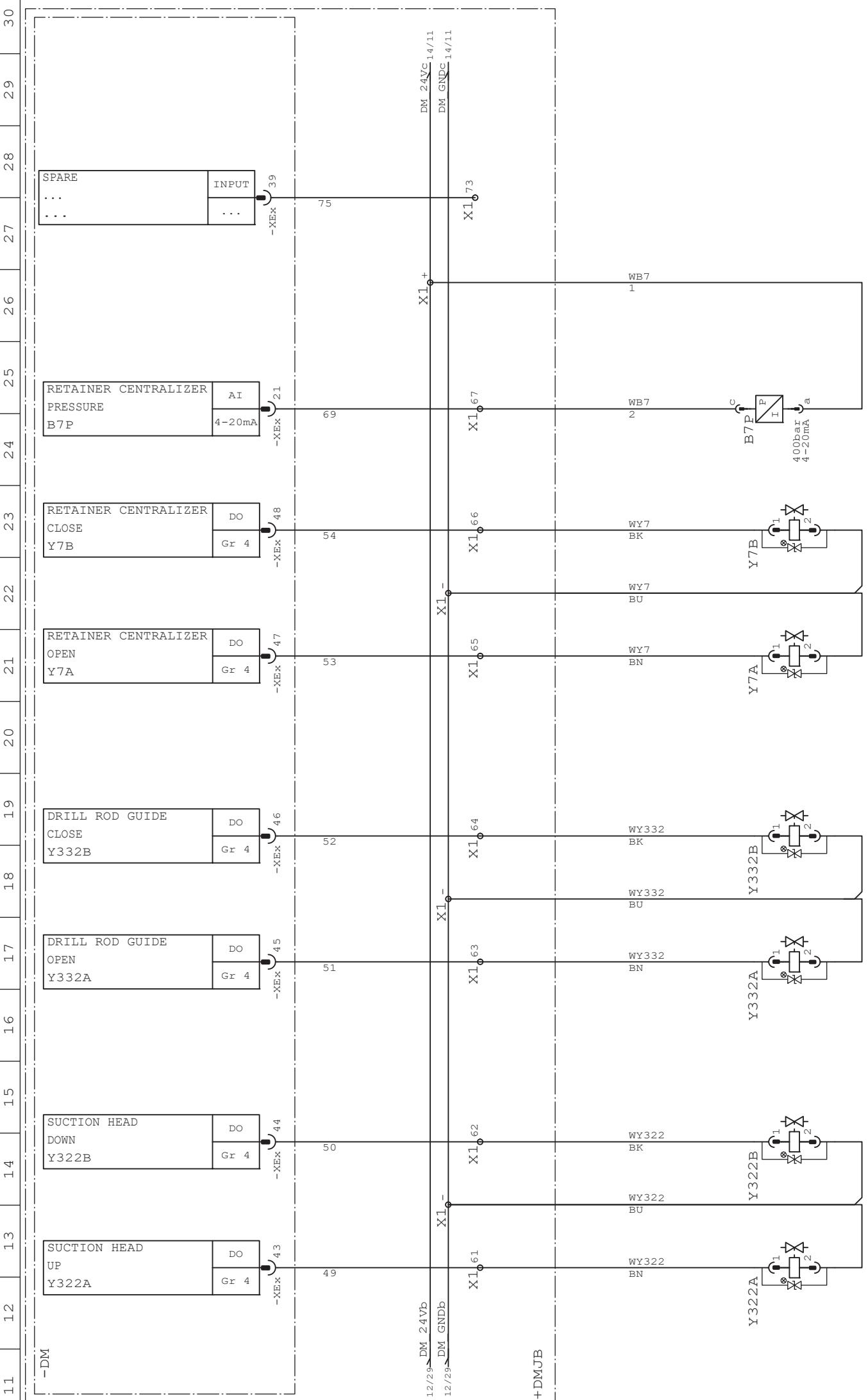
Copyright © Sandvik Mining and Construction

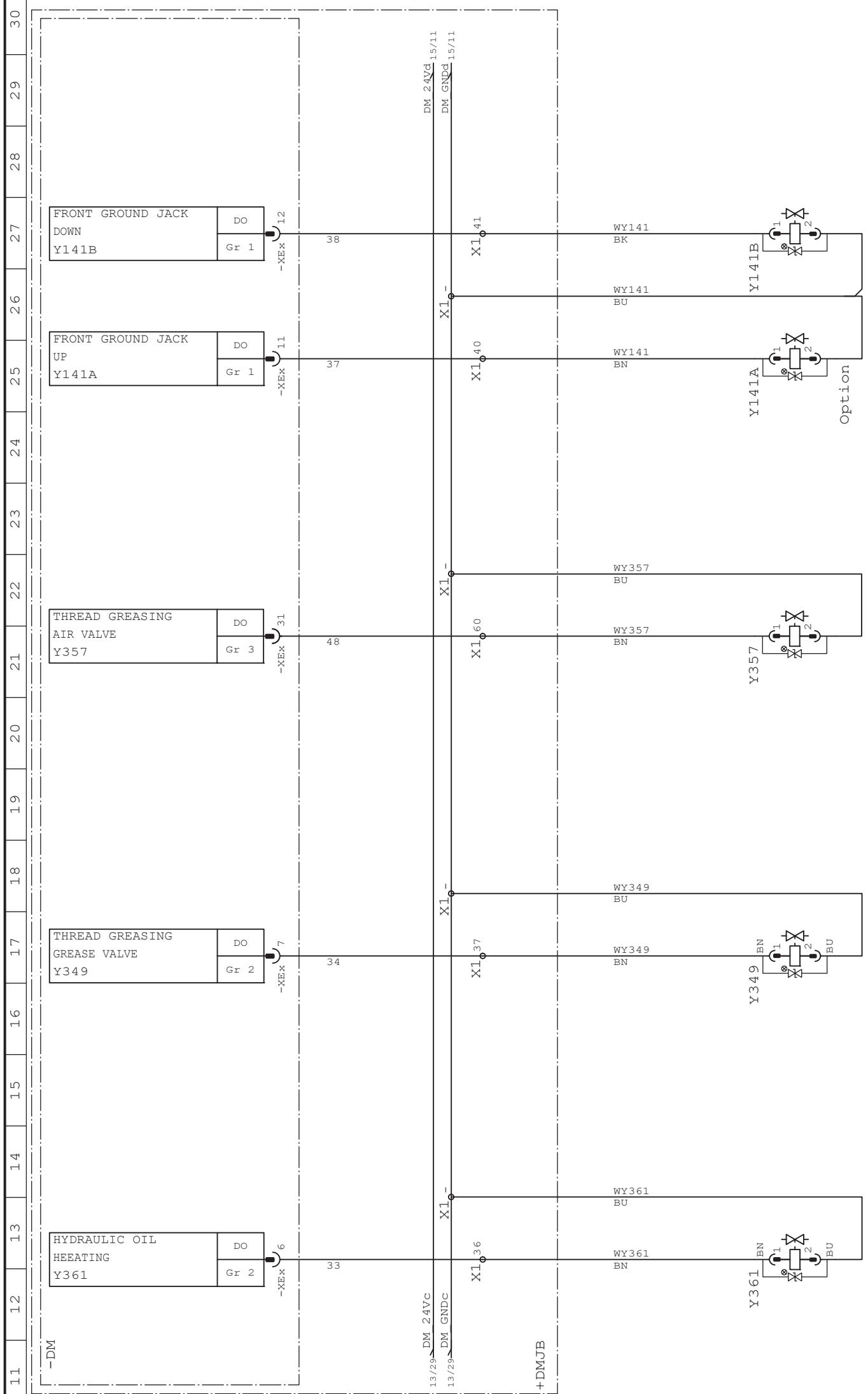
CONTROL SYSTEMS

Pantera DPI, Drill
JAWS OR ROLLERS

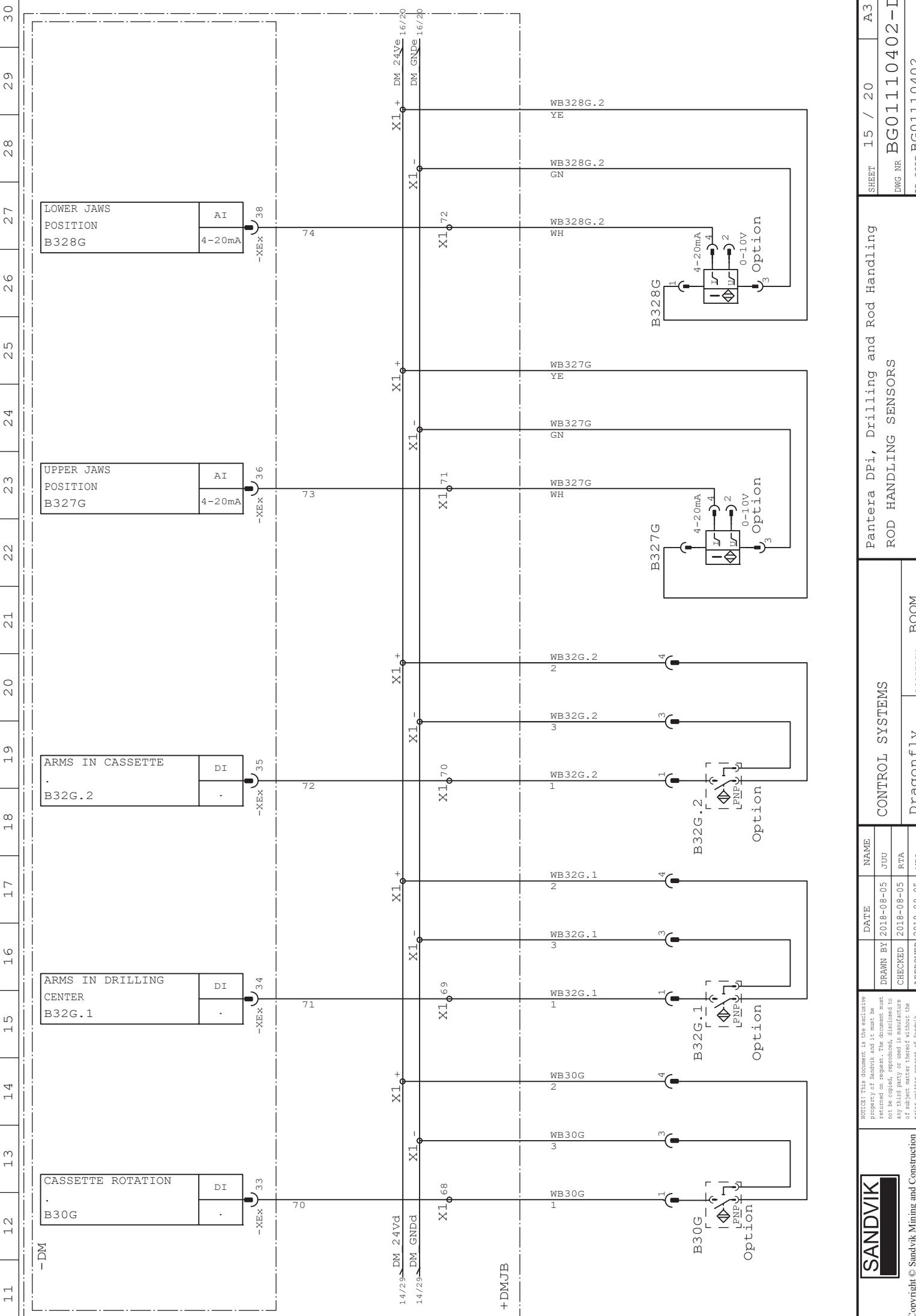
BG01110402-

The schematic diagram illustrates a control logic for four solenoid valves (Y324A, Y324B, Y326A, Y326B) connected to four limit switches (X1-58, X1-59, X1-32, X1-34). The circuit is powered by a 24V source (WY324) and includes a ground connection (GNDa). The logic is organized into two main vertical columns. The left column contains limit switches X1-58 and X1-59, which are connected in series with solenoids Y326A and Y326B respectively. The right column contains limit switches X1-32 and X1-34, which are connected in series with solenoids Y324A and Y324B respectively. Each solenoid valve is represented by a symbol with two ports, labeled 1 and 2, indicating the direction of flow. The connections between the limit switches and the solenoids are shown as solid lines, while the power and ground connections are indicated by dashed lines.





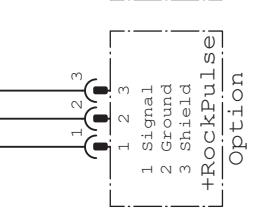
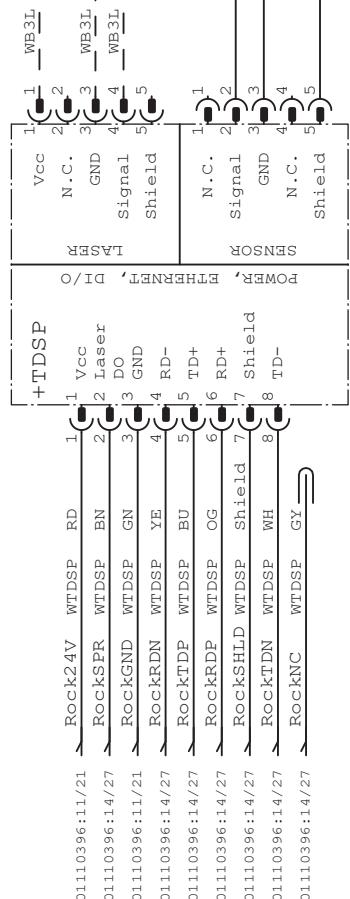
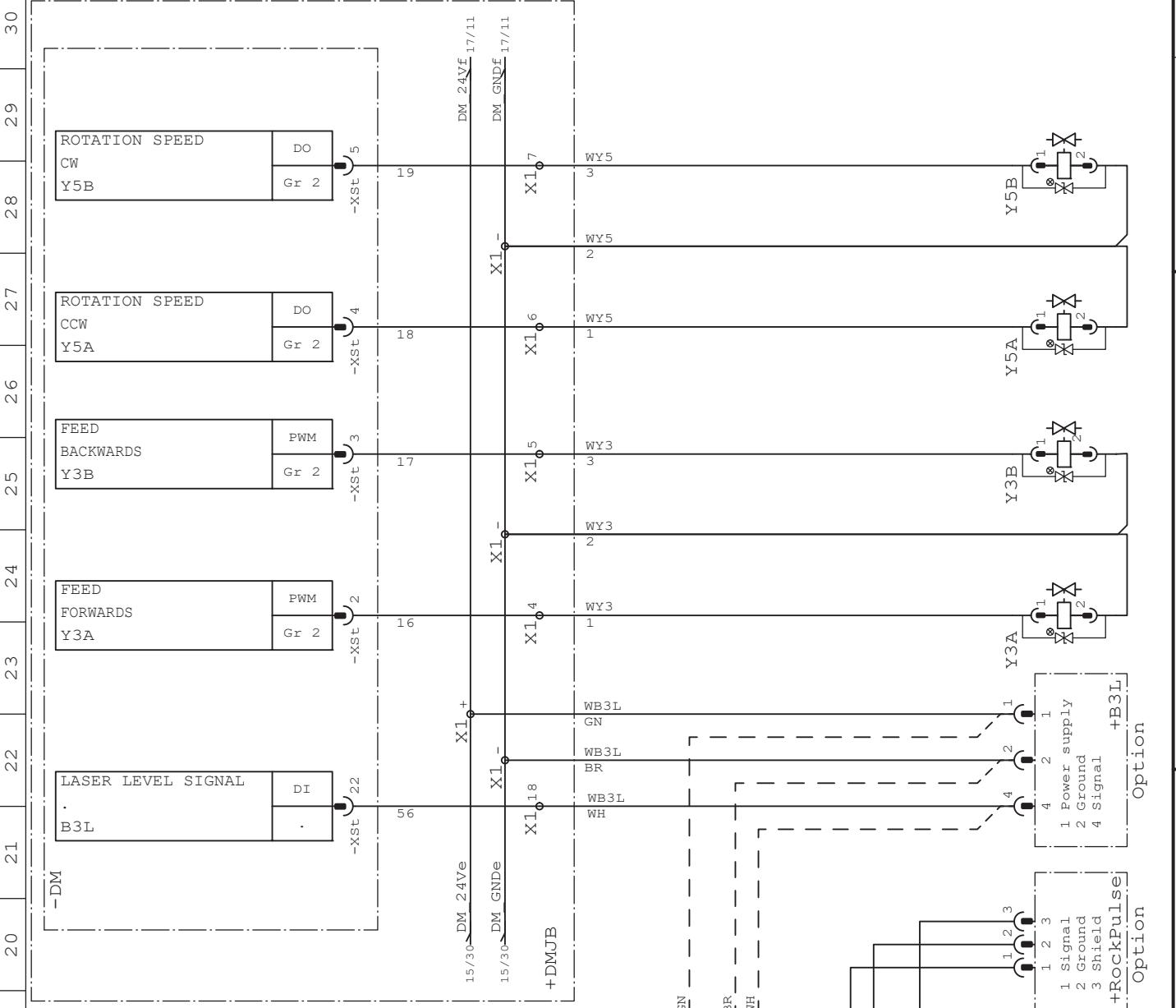
SHEET 14 / 20 A3
DWG NR BG01110402-D
ID-CODE BG01110402



Pantera DPi, Drilling and Rod Handling
ROD HANDLING SENSORS

SHEET 15 / 20 A3
DRAWING NR. BG01110402-D
TILE-CODE BG01110402

SANDVIK



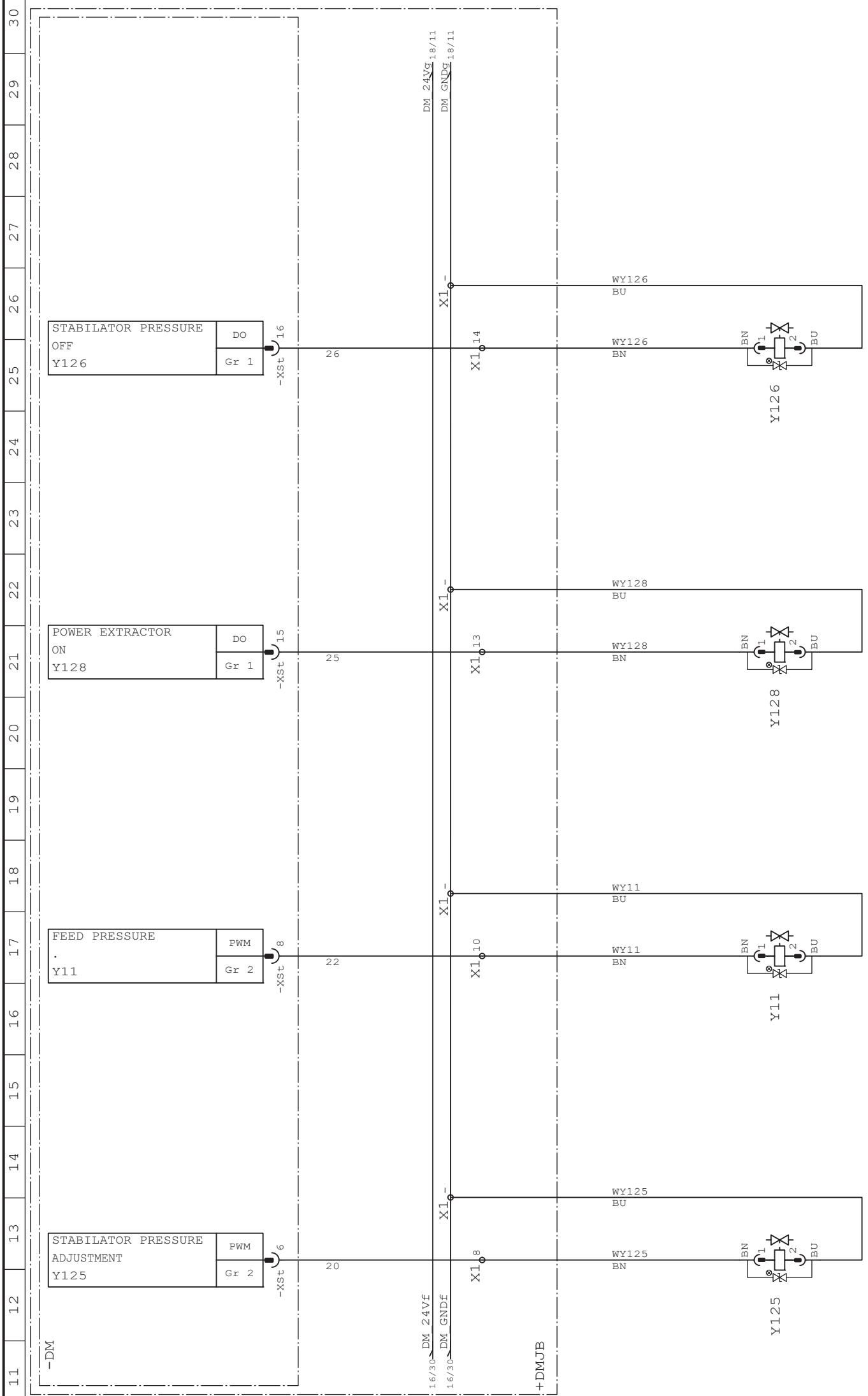
Option

Option

Pantera DPi, Drilling and Rod Handling
FEED MOVEMENTS AND ROTATION

SHEET 16 / 20
DRAWING NR. BG01110402-D
TILE-CODE BG01110402

SANDVIK		CONTROL SYSTEMS			Pantera DPi, Drilling and Rod Handling FEED MOVEMENTS AND ROTATION			
NOTICE!	This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter hereof without the prior written consent of Sandvik.	DRAWN BY	DATE	NAME	DRAFTER	APPROVED	DATE	NAME
			2018-08-05	JUU	RVA	2018-08-05	MFA	
		CHECKED	2018-08-05					
		APPROVED	2018-08-05					

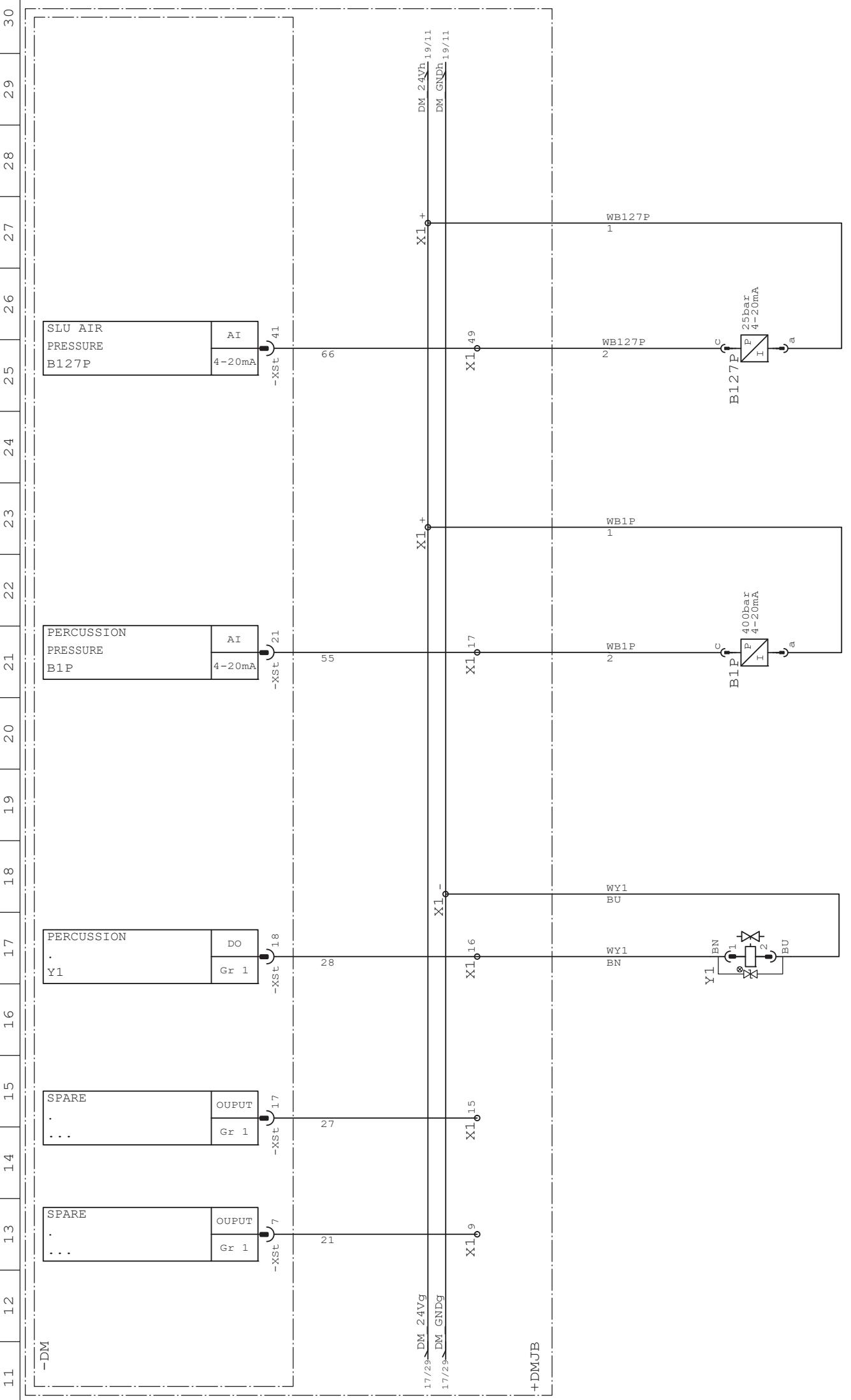


SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	DATE DRAWN BY CHECKED APPROVED	NAME JU RTA MFA	17 / 20	A3
		2018-08-05 2018-08-05 2018-08-05	JU RTA MFA		DWG NR BG01110402-D TIT-CODE BG01110402

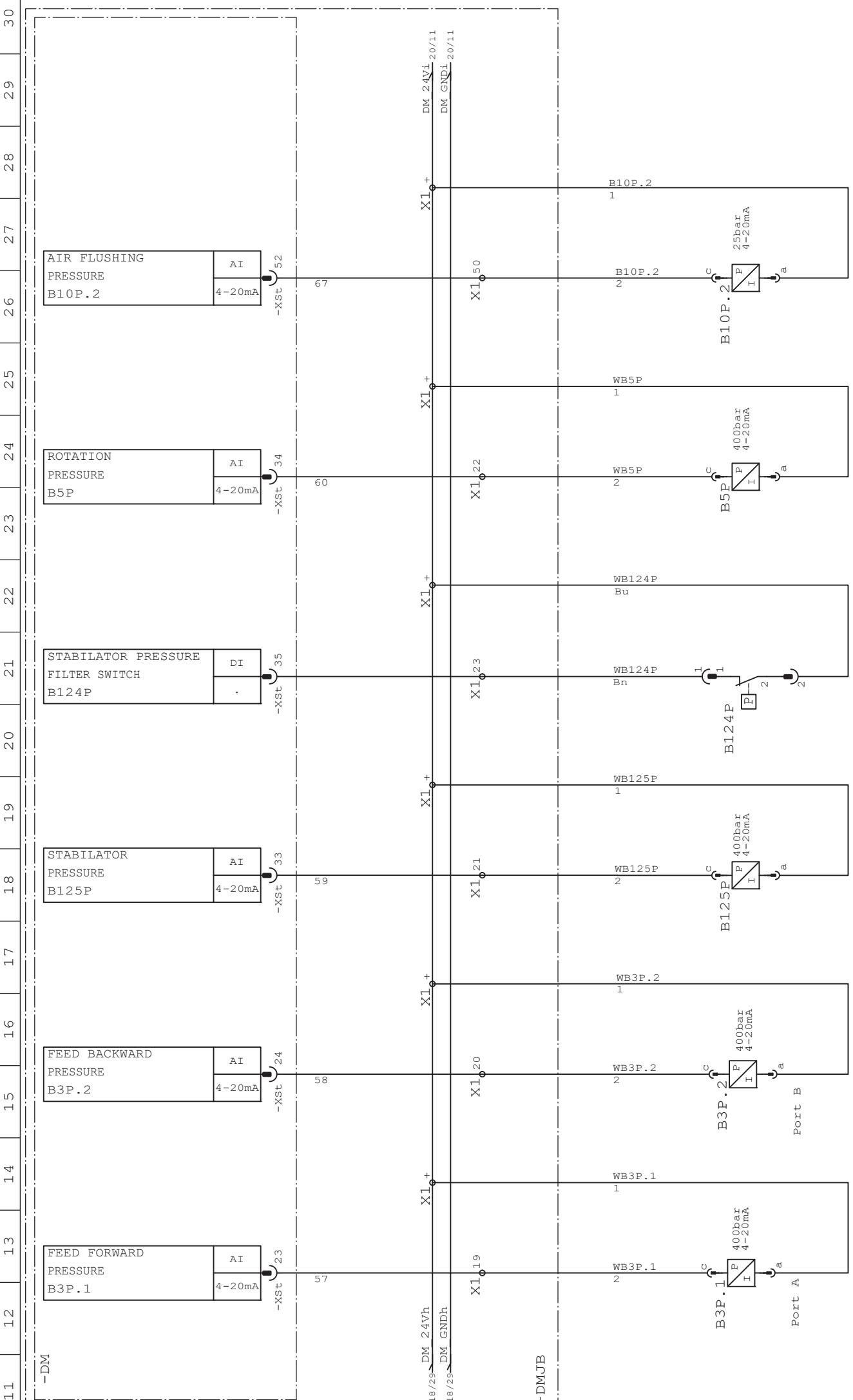
Pantera DPi, Drilling and Rod Handling DRILLING VALVES

Dragonfly	POSITION
-----------	----------

SANDVIK



SANDVIK	NOTICE! This document is the exclusive property of Sandvik and it must be returned on request. The document must not be copied, reproduced, disclosed to any third party or used in manufacture of subject matter thereof without the prior written consent of Sandvik.	DATE DRAWN BY 2018-08-05 JUU	NAME	18 / 20	A3
		CHECKED 2018-08-05 RTA	CONTROL SYSTEMS	DING NR BG01110402-D	
		APPROVED 2018-08-05 MPA	Dragonfly POSITION BOOM	FILE-CODE BG01110402	



Pantera DPi, Drilling and Rod Handling
DRILLING AND AIR PRESSURE SENSORS

SHEET	19 / 20	A3
DWG NR	BG01110402-D	
FILE-CODE	BG01110402	

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

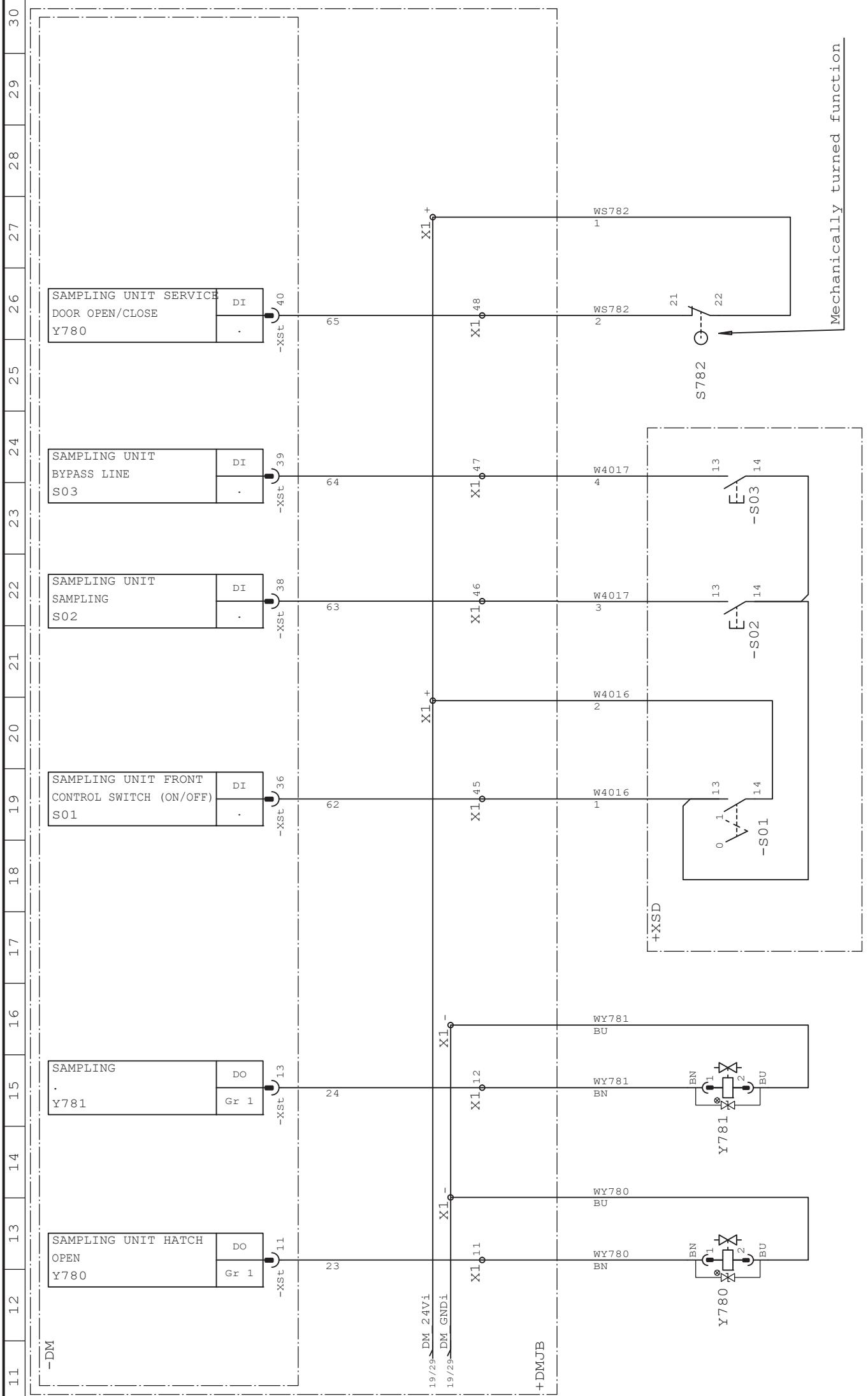
27

28

29

30

SANDVIK



Pantera DPi, Drilling and Rod Handling SDC CONTROLS		SHEET 20 / 20	A3
		DWG NR BG01110402-D	
		FILE-CODE BG01110402	

Pantera DPi, Drilling and Rod Handling
SDC CONTROLS

NOTICE! This document is the exclusive
property of Sandvik and it must be
returned on request. The document must
not be copied, reproduced, disclosed to
any third party or used in manufacture
of subject matter thereof without the
prior written consent of Sandvik.

SANDVIK