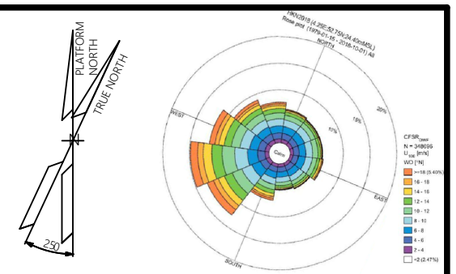
DRAWING NO. 1723001595-EL-DG-00013

REV. 00

CONTRACTOR	ROSETTI
CUSTOMER	ROSETTI
PROJECT TITLE	BASE LOAD POWER HUB (BLPH)
CONTRACT NO.	CW-I-WP4-2023-05
DRAWING/DOCUMENT NUMBER	1723001595-EL-DG-00015
EQUIPMENT	66kV 40kA GIS LOCAL CONTROL PANEL CP-100E1
DRAWING TITLE	CIRCUIT AND WIRING DIAGRAM
REVISION NO.	03



Reference documents

No.	Reference	Title
1	1723001595-EL-DA-00006	BASE LOAD POWER HUB (BLPH) - 66kV Switchgear(GIS) - General arrangement drawing including foundation load calculation
2	1723001595-EL-DG-00010	Connection diagram
3	1723001595-EL-DG-00012	Functional logic diagram
4	1723001595-EL-DG-00013	BASE LOAD POWER HUB (BLPH) - 66kV Switchgear (GIS) - Single line diagram
5	1723001595-EL-DG-00014	BASE LOAD POWER HUB (BLPH)- 66 kv SWITCHGEAR (GIS) - GAS SINGLE LINE DIAGRAM
6	1723001595-EL-DG-00015	Circuit and wiring diagram
7	1723001595-EL-DG-00016	Inter-panel wiring diagram
8	1723001595-EL-DG-00017	Inter-panel logic diagram
9	1723001595-EL-LIS-00008	Utility load schedule
10	1723001595-EL-LIS-00011	Switchgear IO list
11	1723001595-EL-SO-00019	IED interrogation and programming software
12	1723001595-EL-SO-00020	Relay IED configuration files
13	1723001595-EL-SO-00021	IEC 61850 configuration files

HYOSUNG HEAVY INDUSTRIES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	18/10/24	Y.D.LEE	Y.W.LEE	S.J.CHO	ACCEPTED FOR CONSTRUCTION (AFC)
02	06/08/24	Y.D.LEE	Y.W.LEE	S.J.CHO	ISSUE FOR CLIENT REVIEW (ICR)
01	05/06/24	Y.D.LEE	Y.W.LEE	S.J.CHO	ISSUE FOR CLIENT REVIEW (ICR)
00	01/02/24	Y.D.LEE	Y.W.LEE	S.J.CHO	ISSUE FOR CLIENT REVIEW (ICR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
66kV SWITCHGEAR (GIS)
CIRCUIT AND WIRING DIAGRAM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1_:_NS
DRAWN Y.D.LEE	CHECKED Y.W.LEE	APPROVED S.J.CHO	DATE 10/11/23
A1	DRAWING NO. 1723001595-EL-DG-00015	SHEET 1	REV. 03

File Name : DRAWING_NO.

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00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

EQUIPMENT: 66kV, 40kA GIS

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

LOCATION: HOLLANDSE KUST NOORD WIND PARK

TITLE: LIST OF CONTENTS

DWG. NO.: 1723001595-EL-DG-00015

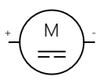
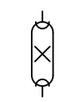
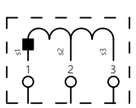
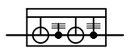
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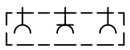
REV. 03

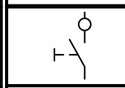
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SYMBOL LIST

SYMBOL	DESG.	DESCRIPTION
	-K	RELAY
	-K	TIMER RELAY
	-K	POLE DISCRIPANCY RELAY
	-B	ELECTRICAL COUNTER
	-Y	SOLENOID AND COIL
	-K	THERMAL PROTECTION RELAY
	-K	MAKE CONTACT
	-K	BREAK CONTACT
	-K	CHANGE-OVER CONTACT
	-K	CONTACTOR, MAIN MAKE CONTACT
	-K	TIME DELAY CHANGE-OVER CONTACT
	-M	DC MOTOR
	-H	FLUORESCENT LAMP
	-T	CURRENT TRANSFORMER
	-LPIT	VOLTAGE & CURRENT TRANSFORMER (3Ø X 2) (LPIT TYPE)

SYMBOL	DESG.	DESCRIPTION
	-S	KEY ROTARY SWITCH MAKE CONTACT (MAINTAINED TYPE)
	-S	KEY ROTARY SWITCH BREAK CONTACT (MAINTAINED TYPE)
	-S	PUSH BUTTON SWITCH MAKE CONTACT (AUTOMATIC RETURN TYPE)
	-S	PUSH BUTTON SWITCH BREAK CONTACT (AUTOMATIC RETURN TYPE)
	-S	3-POSITION KEY ROTARY SWITCH MAKE CONTACT (MAINTAINED TYPE)
	-S	4-POSITION KEY ROTARY SWITCH MAKE CONTACT (MAINTAINED TYPE)
	-S	POSITION SWITCH, NORMAL MAKE CONTACT OF AUXILIARY SWITCH
	-S	POSITION SWITCH, NORMAL BREAK CONTACT OF AUXILIARY SWITCH
	-S	POSITION SWITCH, EARLY MAKE CONTACT OF AUXILIARY SWITCH
	-S	POSITION SWITCH, LATELY BREAK CONTACT OF AUXILIARY SWITCH
	-S	POSITION SWITCH, WIPING CONTACT OF AUXILIARY SWITCH
	-TH, -HD	THERMOSTAT AND HUMIDISTAT SELF-OPERATING, MAKE CONTACT
	-REC	RECEPTACLE
	-U	EARTH
	-VT	VOLTAGE TRANSFOMER
	-LPVT	VOLTAGE TRANSFORMER (3Ø X 2) (LPVT TYPE)

SYMBOL	DESG.	DESCRIPTION
	-PS	PRESSURE SWITCH, MAKE CONTACT AT GIS NORMAL PRESSURE
	-PS	PRESSURE SWITCH, BREAK CONTACT AT GIS NORMAL PRESSURE
	-L	LIMIT SWITCH, MAKE CONTACT
	-L	LIMIT SWITCH, BREAK CONTACT
	-L	LIMIT SWITCH, CHANGE-OVER CONTACT
	-X	SOLID TYPE TERMINAL
	-X	CONNECTING LINK TYPE TERMINAL
	-X	KNIFE TYPE TERMINAL
	-MX	PLUG AND SOCKET, TERMINAL FOR CABLE CONNECTION
	-E	HEATING ELEMENT
	-R	RESISTOR
	-H	LAMP
	-H	LIGHT EMITTING DIODE (LED)
	-F	MCB MINIATURE CIRCUIT BREAKER
	-SA -LA	SURGE ARRESTER, LIGHTING ARRETER

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00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: SYMBOL LIST	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

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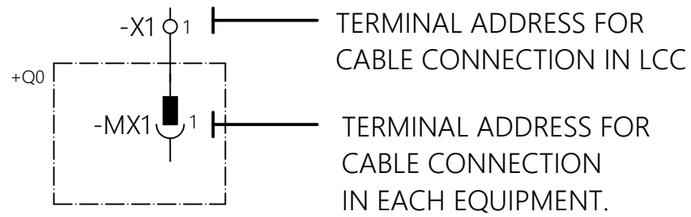
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DRAWING PRINCIPLES

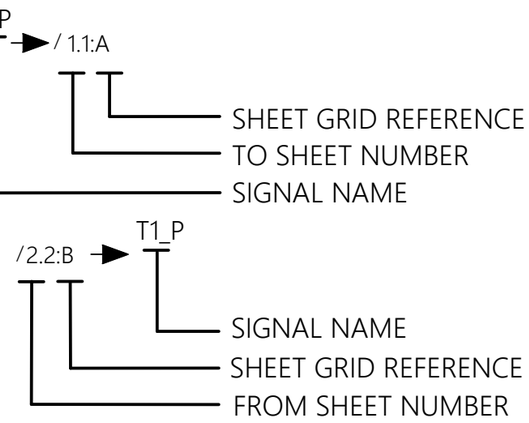
PRESENTATION OF TERMINALS



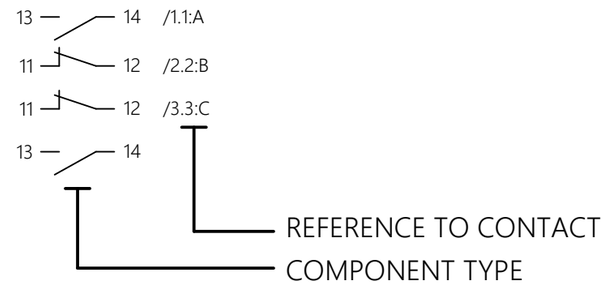
PRESENTATION OF CABLE CONNECTION SCHEDULE



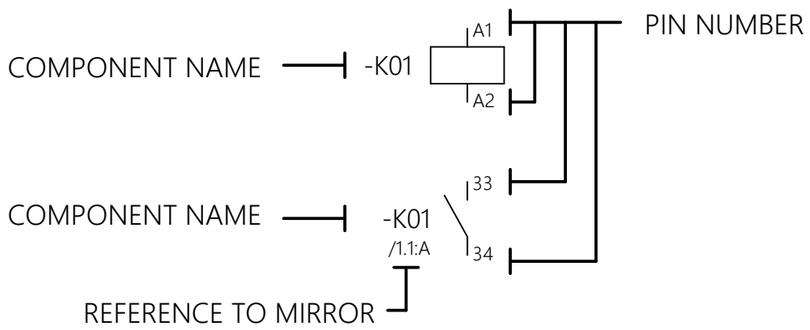
PRESENTATION OF SHEET TO SHEET REFERENCE



PRESENTATION OF THE MIRROR



PRESENTATION OF COMPONENTS



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HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: DRAWING PRINCIPLE	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

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CONT. 7

DESCRIPTION OF WIRE SYSTEM

1.1 EMPLOYED WIRE

450/750V HALOGEN FREE INSULATED FLEXIBLE WIRE (IEC 60332-2-2)

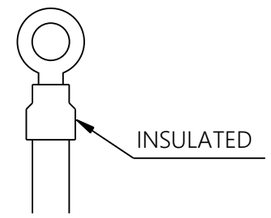
1.2 WIRE COLORING & SIZE

KIND OF CIRCUIT			WIRE COLOR	SIZE[mm²]	AUX CAP		REMARK
					LETTER	COLOR	
AC CIRCUIT	1-PHASE AC CIRCUIT (HEATER)	PHASE	GRAY	2.5	L	WHITE	
		NEUTRAL	GRAY	2.5	N	WHITE	
DC CIRCUIT	DC SUPPLY CIRCUIT	POSITIVE(+ve)	GRAY	1.5	+	WHITE	
		NEGATIVE(-ve)	GRAY	1.5	-	WHITE	
	DC CONTROL CIRCUIT		GRAY	1.5	+ or -	WHITE	
	TRIP CIRCUIT		GRAY	1.5	TRIP	RED	
	ALARM CIRCUIT		GRAY	1.5			
CT CIRCUIT	R/Y/B/N		GRAY	2.5			
VT CIRCUIT	R/Y/B/N		GRAY	2.5			
EARTH (FOR GROUNDING)			GREEN WITH YELLOW STRIPS	2.5			

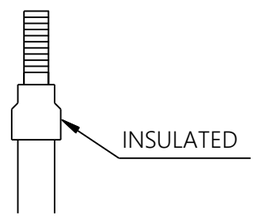
1) PLEASE REFER TO DETAIL FERRULE(AUX CAP) ON '4.3) AUX CAP'.

2. CRIMP TERMINAL

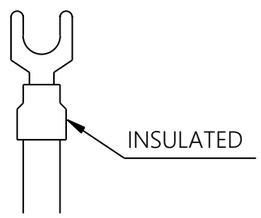
1) RING TYPE



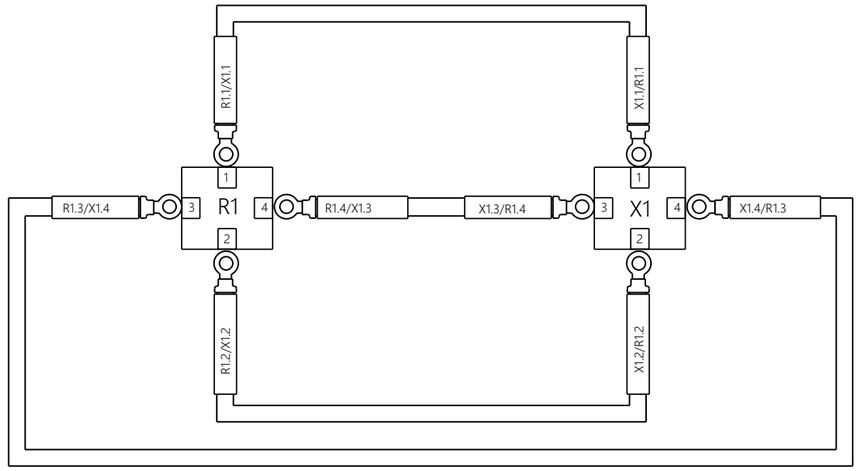
2) BLADE TYPE



3) SPADE TYPE

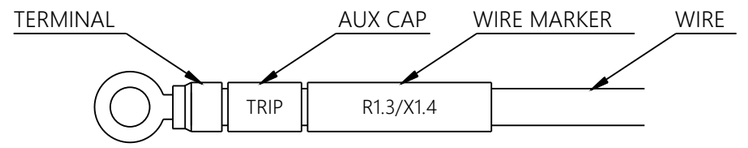


3. INSERTION OF WIRE MARK



4. WIRING MARKER(FERRULES)

1) DETAIL OF WIRING



2) LETTERS OF WIRE MARKER

a. THE LETTERS STARTS FROM LEFT TO RIGHT

b. BLACK LETTER ON WHITE BACK GROUND

3) AUX CAP

a. WHITE LETTER ON RED BACK GROUND (LETTER : TRIP)

b. BLACK LETTER ON WHITE BACK GROUND (DC CIRCUIT, LETTER : +)

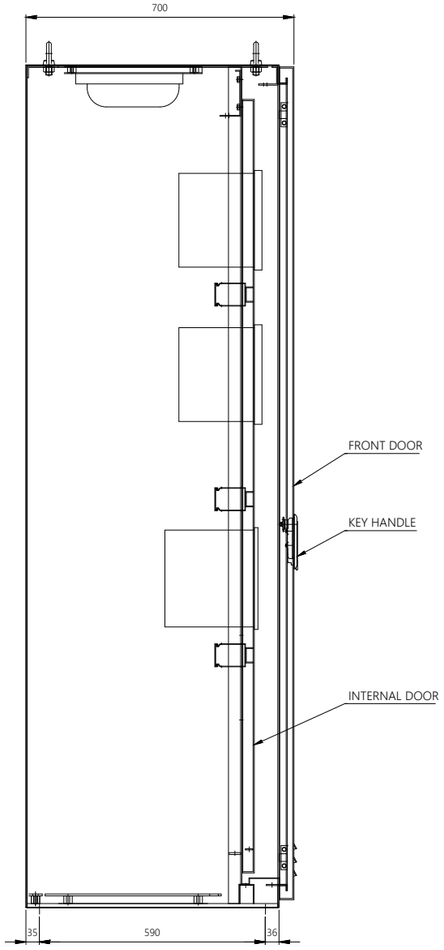
b. BLACK LETTER ON WHITE BACK GROUND (DC CIRCUIT, LETTER : -)

d. BLACK LETTER ON WHITE BACK GROUND (AC CIRCUIT, LETTER : L/L1/L2/L3)

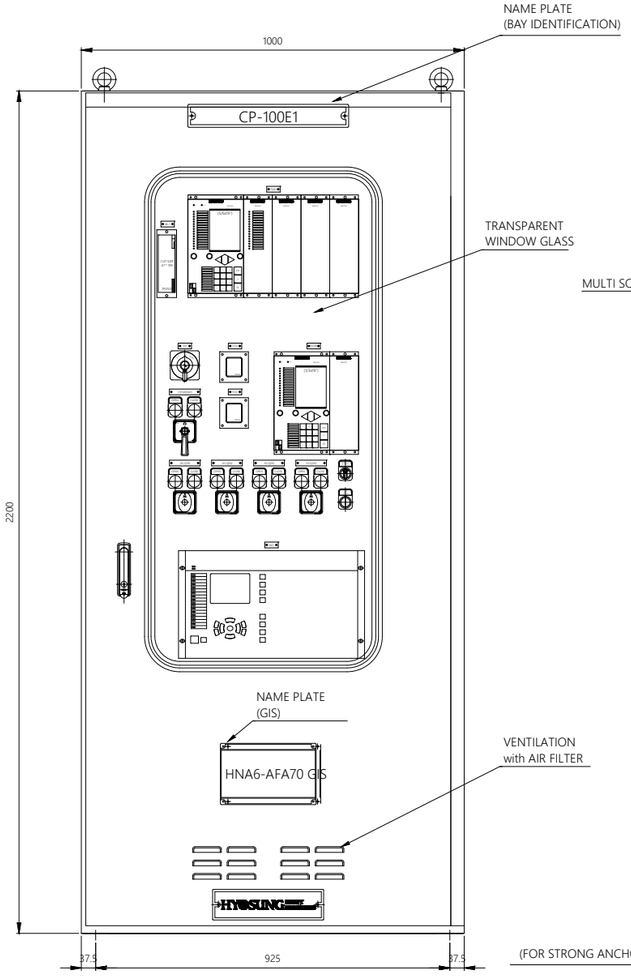
e. BLACK LETTER ON WHITE BACK GROUND (AC CIRCUIT, LETTER : N)

5. CRIMP TERMINAL PVC INSULATION COLOR

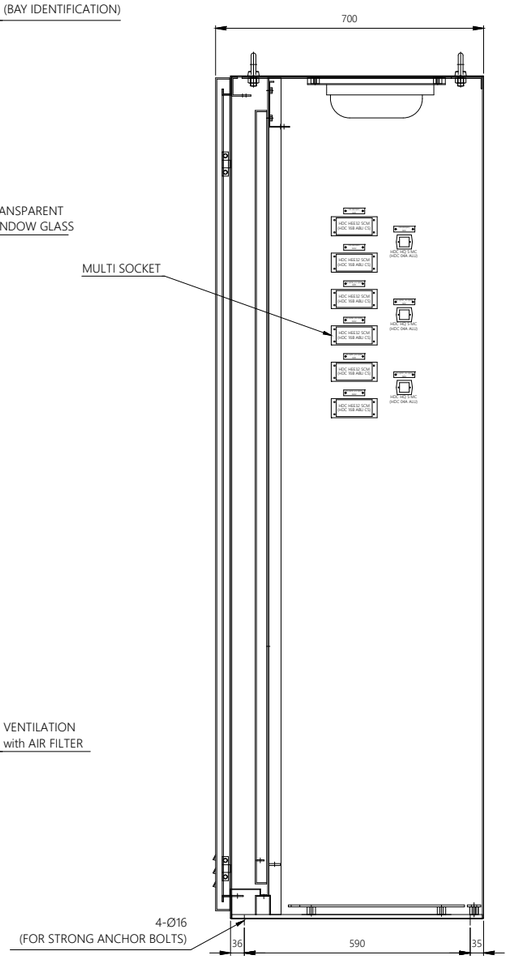
WIRE SIZE	COLORING
1.5mm ^{2}	RED
2.5mm ^{2}	BLUE
4.0mm ^{2}	YELLOW



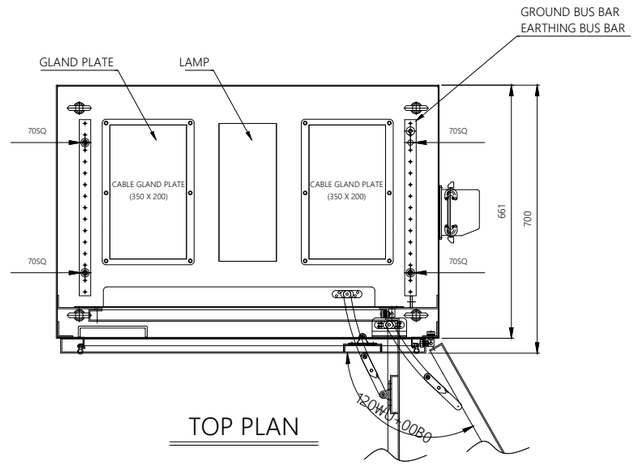
LEFT SIDE VIEW



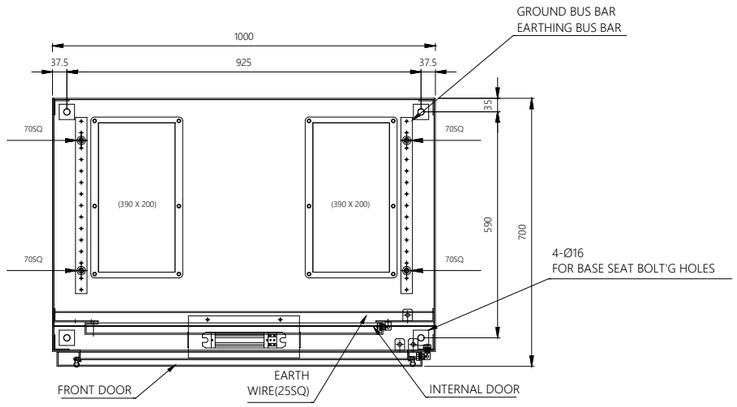
FRONT VIEW



RIGHT SIDE VIEW



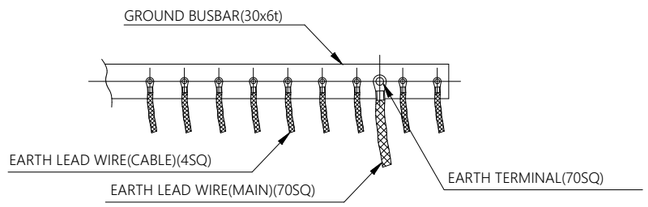
TOP PLAN



BASE PLAN

NOTE

1. COLOR OF PAINT : EXTERNAL: RAL 7032, INTERNAL: RAL 7032
2. INSTALATION : INDOOR
3. IP : 55
4. METAL THICKNESS OF PANEL : SPHC 2.3mm
5. THICKNESS OF PANEL PAINT : EXTERNAL: 120 MICRONS(MINIMUM)
   : INTERNAL: 120 MICRONS(MINIMUM)
6. GROUND BUS BAR : 6T X 30
7. GRAND PLATE : 3T AL PLATE
8. FRONT DOOR OPENING ANGLE : 120°
9. PANEL WEIGHT : 850[kg] (APPROXIMATE)

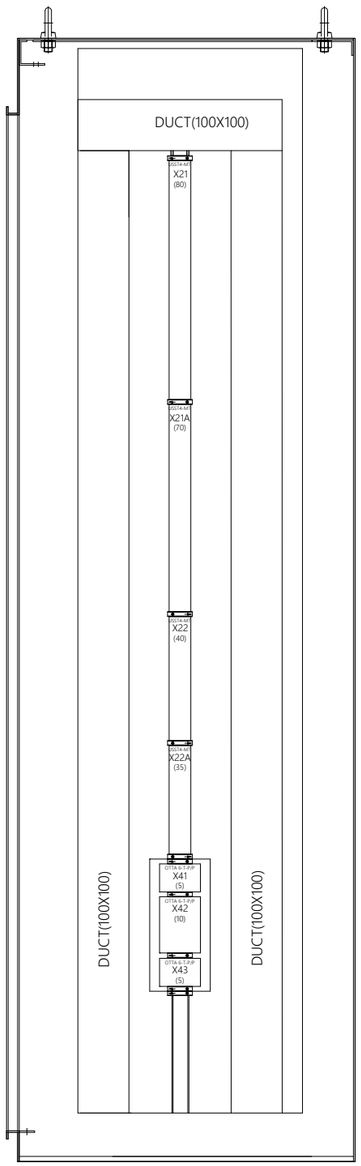


DETAIL "B"

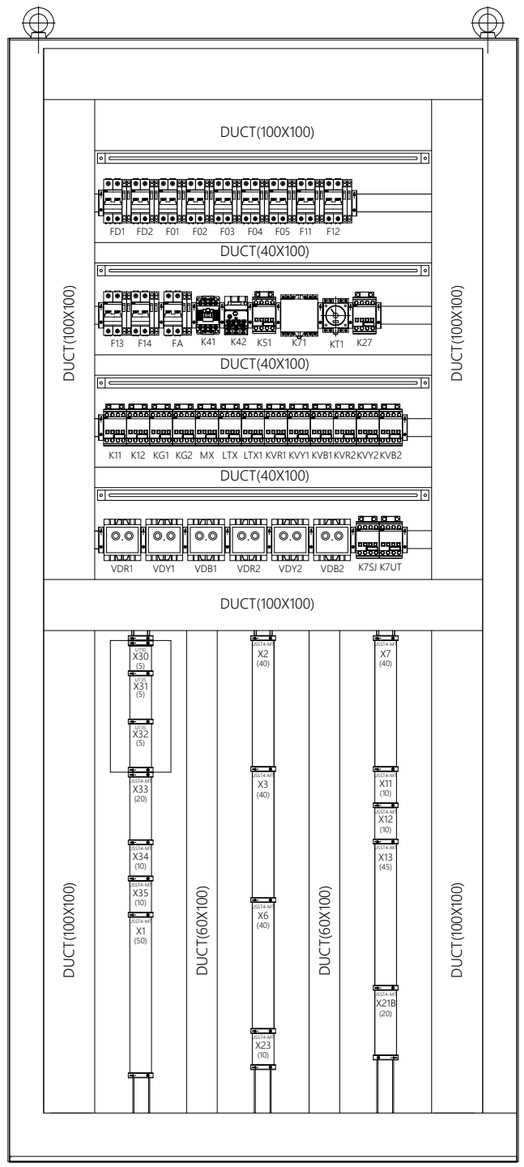
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

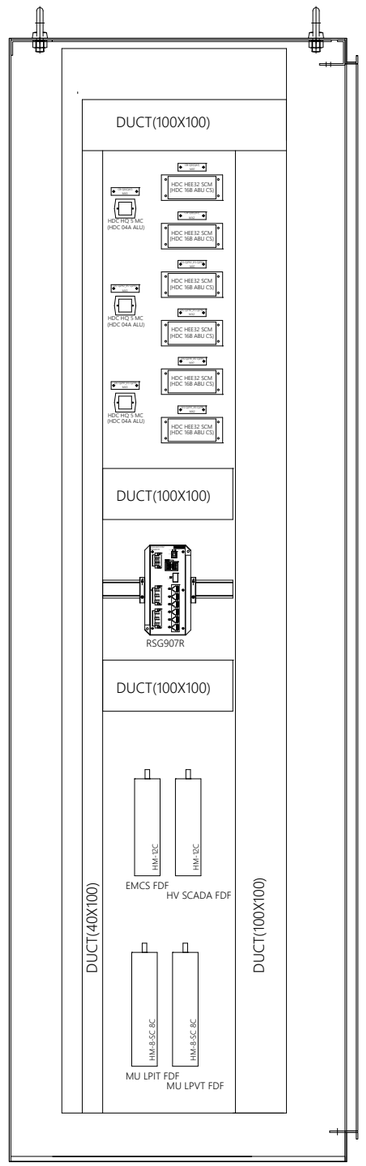
SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: LCC EXTERNAL VIEW	REV. 03	SH. 8 / 72
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015 / CONTRACT NO: CW-I-WP4-2023-05		CONT. 9



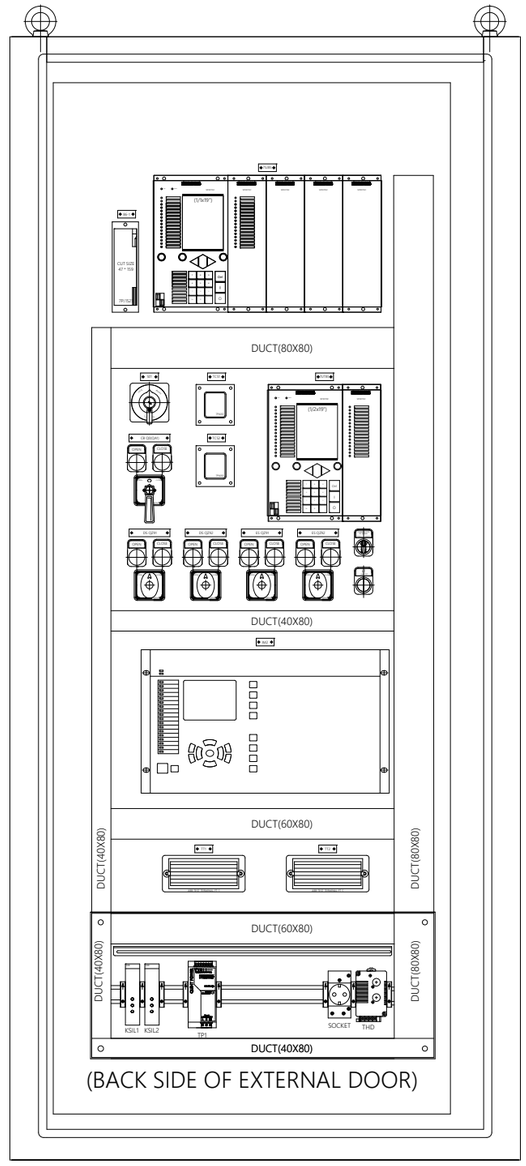
LEFT MOUNTING PLATE



FRONT MOUNTING PLATE



RIGHT MOUNTING PLATE



(BACK SIDE OF EXTERNAL DOOR)

INTERNAL DOOR

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

TITLE: LCC INTERNAL VIEW

REV. 03

SH. 9 / 72

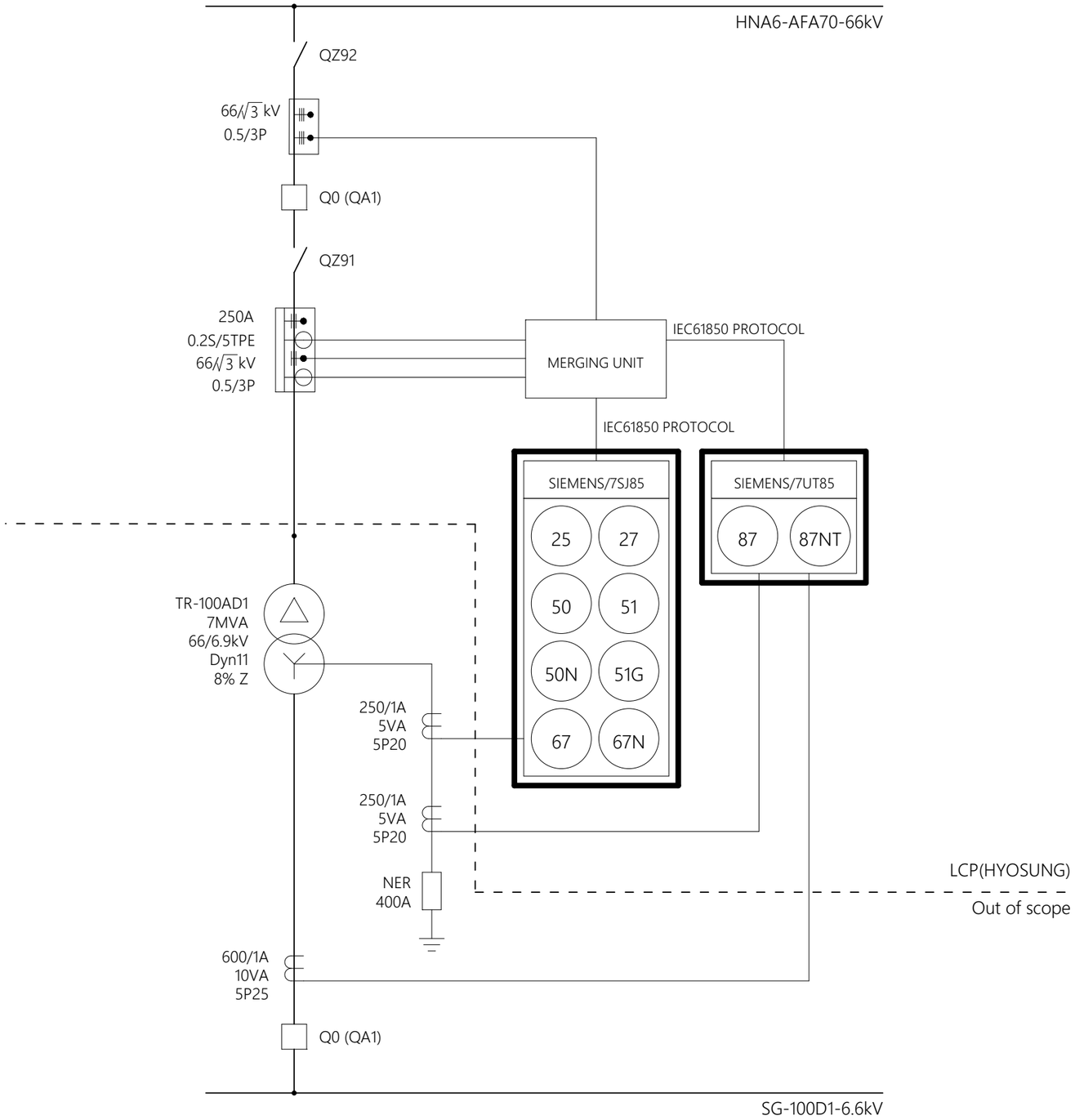
EQUIPMENT: 66kV, 40kA GIS

LOCATION: HOLLANDSE KUST NOORD WIND PARK

DWG. NO.: 1723001595-EL-DG-00015

CONTRACT NO: CW-I-WP4-2023-05

CONT. 10



❏ SYMBOL

SYMBOL	DESCRIPTION
	VOLTAGE & CURRENT TRANSFORMER (3Ø X 2) (LPIT TYPE)
	VOLTAGE TRANSFORMER (3Ø X 2) (LPVT TYPE)

❏ LPVT SPECIFICATION

PRIMARY VOLTAGE [kV], Upr	66/ √3	
ACCURACY CLASS	0.5	3P
	METERING	PROTECTION

❏ LPIT SPECIFICATION

LPCT	RATED PRIMARY CURRENT [A], Ipr	In 250, Imax 1250	
	ACCURACY CLASS	0.2S	5TPE
		METERING	PROTECTION
LPVT	PRIMARY VOLTAGE [kV], Upr	66/ √3	
	ACCURACY CLASS	0.5	3P
		METERING	PROTECTION

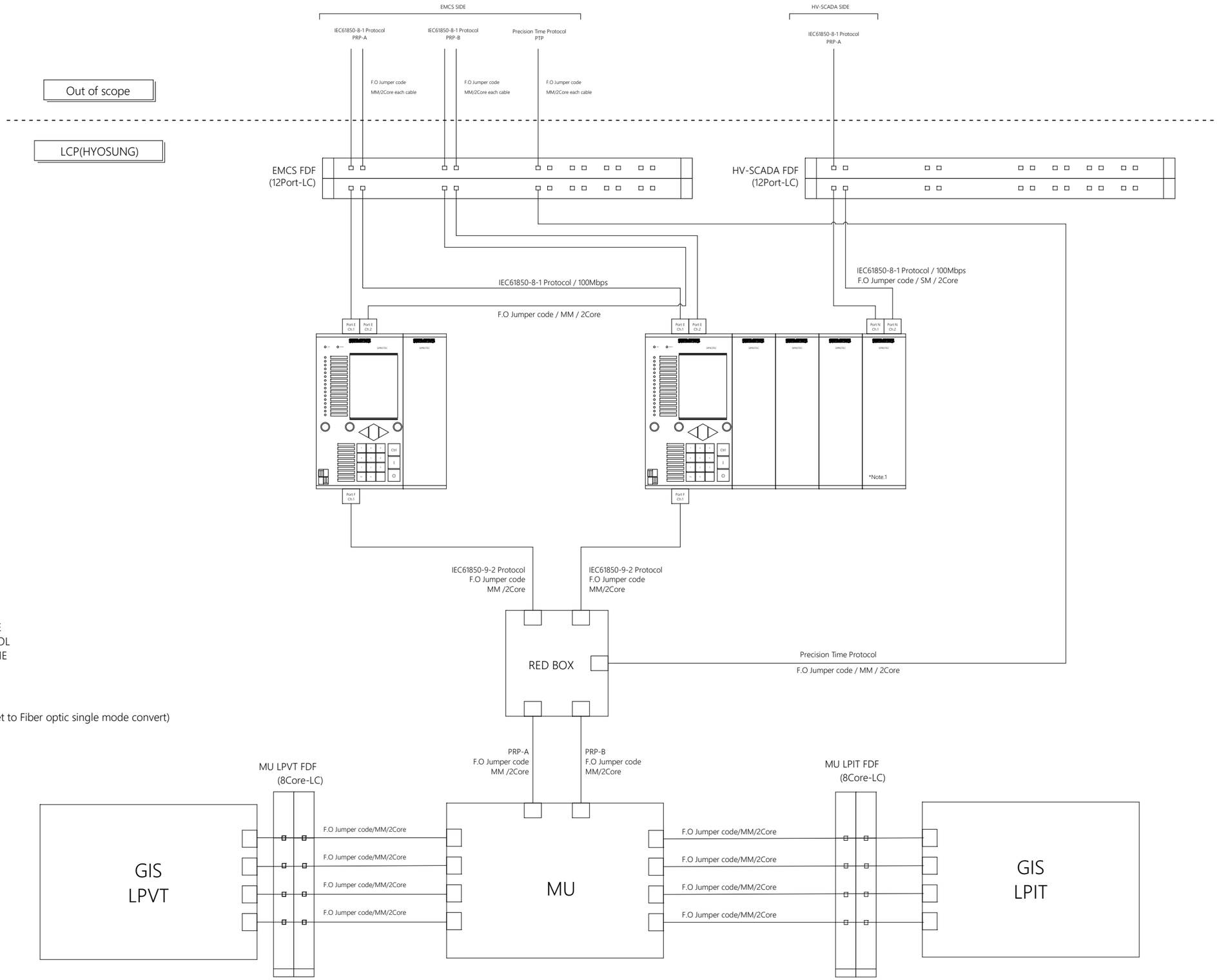
❏ ABBREVIATIONS

- LPVT : LOW POWER VOLTAGE TRANSFORMER
- LPCT : LOW POWER CURRENT TRANSFORMER
- EVT : ELECTRONIC VOLTAGE TRANSFORMER
- ECT : ELECTRONIC CURRENT TRANSFORMER
- VDR/Y/B : VOLTAGE DETECTOR R/Y/B PHASE
- VD1 : VOLTAGE DETECTOR 1

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
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02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: PROTECTION SINGLE LINE DIAGRAM	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 17230015595-EL-DG-00015 / CONTRACT NO: CW-I-WP4-2023-05	SH. 10 / 72 CONT. 11



❏ ABBREVIATIONS

- LCC : LOCAL CONTROL CUBICLE
- PRP : PRECISION TIME PROTOCOL
- FDF : FIBER DISTRIBUTION FRAME

Note.1
- Communication module(Ethernet to Fiber optic single mode convert)

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: MU SYSTEM CONFIGURATION	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015 / CONTRACT NO: CW-I-WP4-2023-05	SH. 11 / 72 CONT. 12

AC MAIN SUPPLY

LCP LIGHTING CIRCUIT

SOCKET OUTLET

LCP HEATING CIRCUIT

+DP-200N1
-Q37

AC POWER DISTRIBUTION 230V AC BOARD

-TB NO (L)

Cable 83118-CEL

-X30 1

-FA (32A) 1 2

-X33 2

L / 13:1A

-X33 3

NO NC

-DLS
CLOSE WHEN DOOR OPEN

COM

-SOCKET a PE b

GND -E

3 4

-THD /12:7C
TH : -10~50℃
HD : 30~90%

1 2

-THD /12:6C
THERMO & HUMIDISTAT

x1 x2

-FL1

1 2

-HEATER1
AC 230V / 100W

-FA /12:2B 4 3

-X33 12

-X33 13

-TB NO (N)

Cable 83118-CEL

-X30 2

N / 13:1E

-FA
S202-C-2P-32A
S2C-H6R_1/14, 1/11, 1/12
S2C-H6R_2/14, 2/11, 2/12

1 2 /12:2B
3 4 /12:2E
1/14 1/12 1/11 /33:6B
2/14 2/12 2/11

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
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01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: AC POWER DISTRIBUTION-1	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 12 / 72

CONT. 13

CB Q0(QA1) OPERATING
MECHANISM
HEATING CIRCUIT

DS QZ92_ES QZ92 OPERATING
MECHANISM
HEATING CIRCUIT

DS QZ91_ES QZ91 OPERATING
MECHANISM
HEATING CIRCUIT

12:7A / L

-X33 4 -X33 5 -X33 6 -X33 7

-CB Q0(QA1)
-MX3 3 -MX3 1

+CB Q0(QA1)
-MX3 3 -MX3 1

-THD
TH:-10~50℃
HD:30~80%
3 4

-HEATER1
AC 240V
100W
a b

-THD
THERMO &
HUMIDISTAT
~ 1 2

-MX3 2

-CB Q0(QA1)
-MX3 2

-X33 14

-DS QZ92_ES QZ92
-MX3 1

+DS QZ92_ES QZ92
-MX3 1

-THD
TH : 5℃
HD : 80%
3 4

-HEATER
58W
a b

-THD
THERMO &
HUMIDISTAT
~ 1 2

-MX3 2

-DS QZ92_ES QZ92
-MX3 2

-X33 15

-DS QZ91_ES QZ91
-MX3 1

+DS QZ91_ES QZ91
-MX3 1

-THD
TH : 5℃
HD : 80%
3 4

-HEATER
58W
a b

-THD
THERMO &
HUMIDISTAT
~ 1 2

-MX3 2

-DS QZ91_ES QZ91
-MX3 2

-X33 16

-K27
AC
SUPPLY
SUPERVISION
A1 A2

12:7E / N

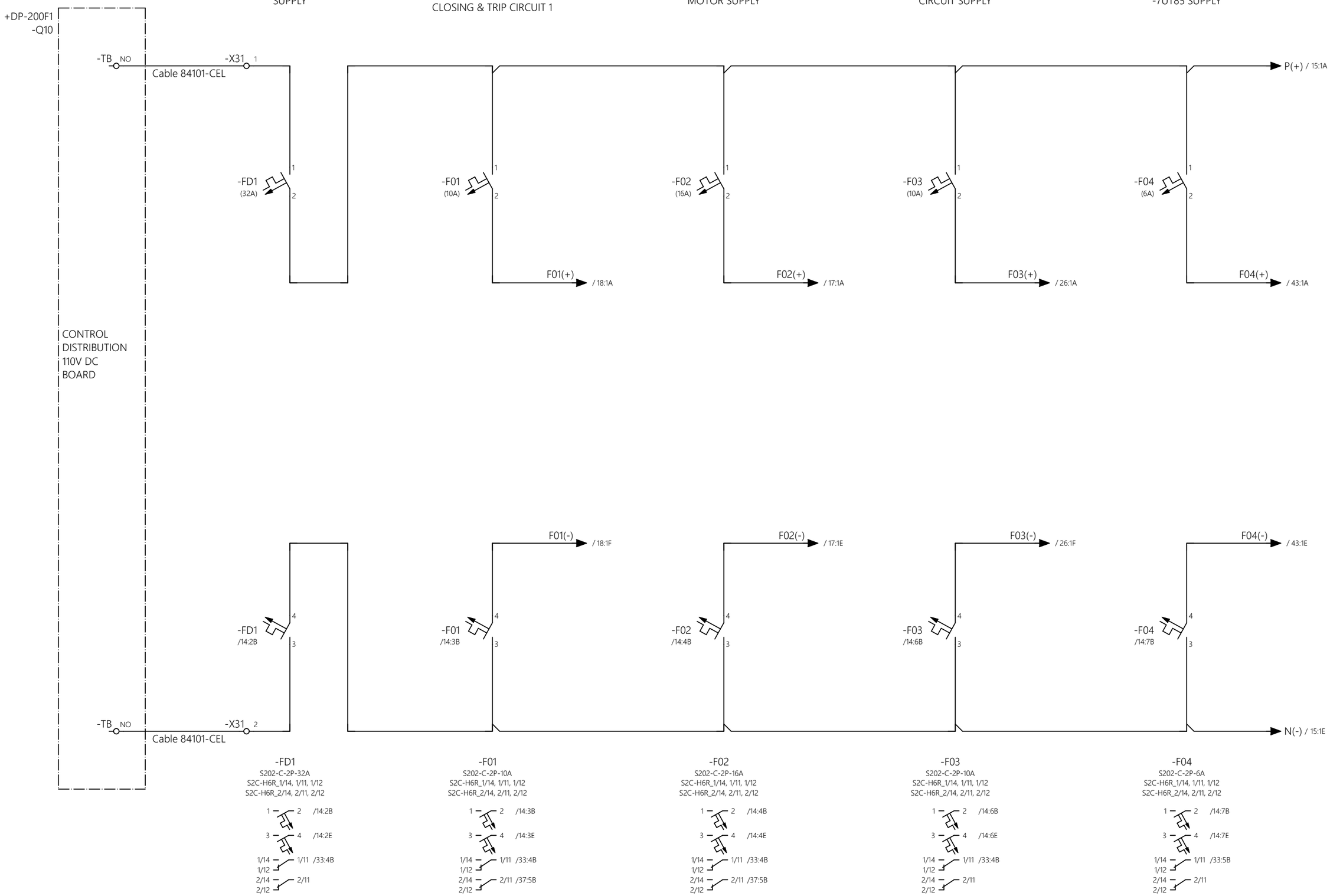
NF22E-13

13 — 14
21 — 22 /33:7B
31 — 32
43 — 44

03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
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01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: AC POWER DISTRIBUTION-2	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05
		SH. 13 / 72	CONT. 14



HYOSUNG HEAVY INDUSTRIES

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

SUBSTATION: BLPH

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

TITLE: DC POWER DISTRIBUTION-1

EQUIPMENT: 66kV, 40kA GIS

LOCATION: HOLLANDSE KUST NOORD WIND PARK

DWG. NO.: 1723001595-EL-DG-00015

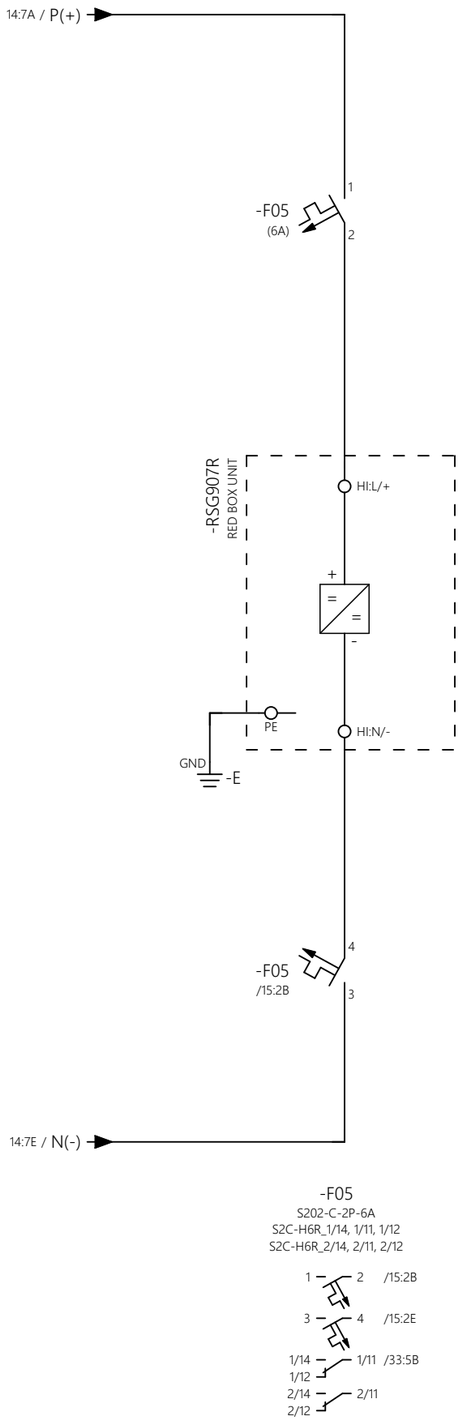
CONTRACT NO: CW-I-WP4-2023-05

REV. 03

SH. 14 / 72

CONT. 15

RED BOX UNIT:
RSG907R SUPPLY



-F05
S202-C-2P-6A
S2C-H6R_1/14, 1/11, 1/12
S2C-H6R_2/14, 2/11, 2/12

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
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01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

TITLE: DC POWER DISTRIBUTION-2

REV. 03

SH. 15 / 72

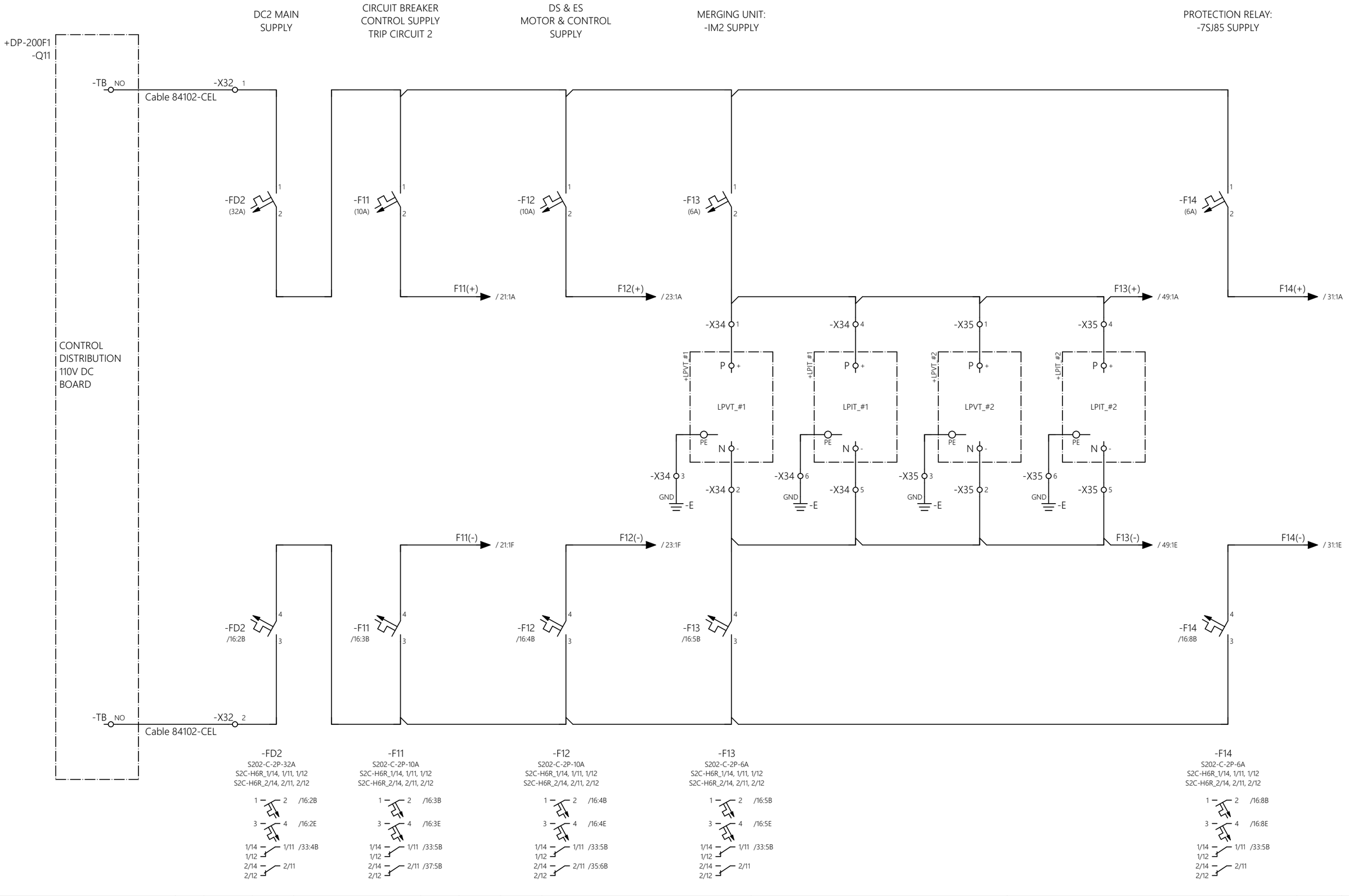
EQUIPMENT: 66kV, 40kA GIS

LOCATION: HOLLANDSE KUST NOORD WIND PARK

DWG. NO.: 1723001595-EL-DG-00015

CONTRACT NO: CW-I-WP4-2023-05

CONT. 16



HYOSUNG HEAVY INDUSTRIES

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: DC POWER DISTRIBUTION-3	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 16 / 72

CONT. 17

CB MOTOR
OPERATING CIRCUIT

CB SPRING EXCESSIVE
RUN TIME

14:5C / F02(+)

-K51
/17:5E
CB SPRING
CHARGE EXCESSIVE
RUN TIME ALARM

-K42
/17:3B
CB MOTOR
CONTROL

-K41
/17:2E
CB MOTOR
CONTACTOR

-K42
CB MOTOR
CONTROL
(5~8A)

-X1

-CB Q0(QA1)

+CB Q0(QA1)

-MX1

-L5

-L1

-L4

-M

COM
NO
NC
R
BK

-K42
/17:3B
(5~8A)
CB MOTOR
CONTROL

-K41
/17:2E
CB MOTOR
CONTACTOR

-KT1
CB MOTOR
RUNTIME
CHECK
'A' Mode, 18 sec

-KT1
/17:4E
CB MOTOR
RUNTIME
CHECK

-K51
CB SPRING
CHARGE EXCESSIVE
RUN TIME ALARM

-K41
CB MOTOR
CONTACTOR

A1
A2

14:5D / F02(-)

MC-22b(DC110V)

1 2 /17:3A
3 4
5 6 /17:3E
31 32
43 44

MT-32/2H6.5

1 2 /17:3B
3 4
6 5 /17:3E
95 96 /17:2B
97 98 /35:3B

AT8N

3 1 /17:5E
4
6 8
5

NF22E-13

13 14 /35:4B
21 22 /17:2A
31 32 /35:5B
43 44

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
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01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

TITLE: CB MOTOR OPERATING CIRCUIT

REV. 03

SH. 17 / 72

EQUIPMENT: 66kV, 40kA GIS

LOCATION: HOLLANDSE KUST NOORD WIND PARK

DWG. NO.: 1723001595-EL-DG-00015

CONTRACT NO: CW-I-WP4-2023-05

CONT. 18

CB Q0(QA1) CLOSE

CB Q0(QA1) TRIP

LOR RESET COMMAND

LOR SET COMMAND 7SJ85 RELAY

LOR SET COMMAND 7UT85 RELAY

LOR SET COMMAND TR-100AD1 PROTECTION TRIP

14:4C / F01(+)

F01(+) / 19:1A

-S01 LOCAL /54:3B

-CS1

-X13 15

Cable 82010-CEC

+6.6kV SWG.

-TB NO

CB OPEN

-TB NO

Cable 82010-CEC

-X13 16

-X13 17

-X13 18

+DS QZ92_ES QZ92

-DS QZ92_ES QZ92

-X2 29

-MX2 15

-MX2 15

67

-S1

68

-MX2 16

-MX2 16

-X2 30

-X6 29

+DS QZ91_ES QZ91

-DS QZ91_ES QZ91

-MX2 15

-MX2 15

67

-S1

68

-MX2 16

-MX2 16

-X6 30

-X2 17

-MX2 7

-MX2 7

27

-S1

28

-MX2 8

-MX2 8

-X2 18

-X6 17

-MX2 7

-MX2 7

27

-S1

28

-MX2 8

-MX2 8

-X6 18

-K11 CB Q0(QA1) CLOSE

A1

A2

-K12 CB Q0(QA1) TRIP

A1

A2

-CS1

-86-1 HIGH SPEED TRIP RELAY

25 +Ve

27 +Ve

-Ve 26

-Ve 28

-7SJ85 PROTECTION IED

-X21A 27

IO207:3.C6

RESET COMMAND

IO207:3.C5

-X21A 28

-7SJ85 PROTECTION IED

-X21A 29

IO207:3.C8

TRIP COMMAND

IO207:3.C7

-X21A 30

-7UT85 PROTECTION IED

-X22A 1

IO203:1.D1

TRIP COMMAND

IO203:1.D2

-X22A 2

-TT1

5

6

-TT2

5

6

-X13 19

Cable 82012-CEC

+6.6kV SWG.

-TB NO

-TB NO

Cable 82012-CEC

-X13 20

-K7SJ /28:2E 7SJ85 FAILURE

21

22

-K7UT /28:4E 7UT85 FAILURE

21

22

+R

-X13 21

-TB NO

-TB NO

-X13 22

14:4D / F01(-)

F01(-) / 19:1F

NF22E-13

13 14 /19:3B

21 22

31 32

43 44

NF22E-13

13 14 /20:6B

21 22

31 32

43 44 /21:5B

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

EQUIPMENT: 66kV, 40kA GIS

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

LOCATION: HOLLANDSE KUST NOORD WIND PARK

TITLE: CB CLOSE & TRIP-1 CONTROL CIRCUIT

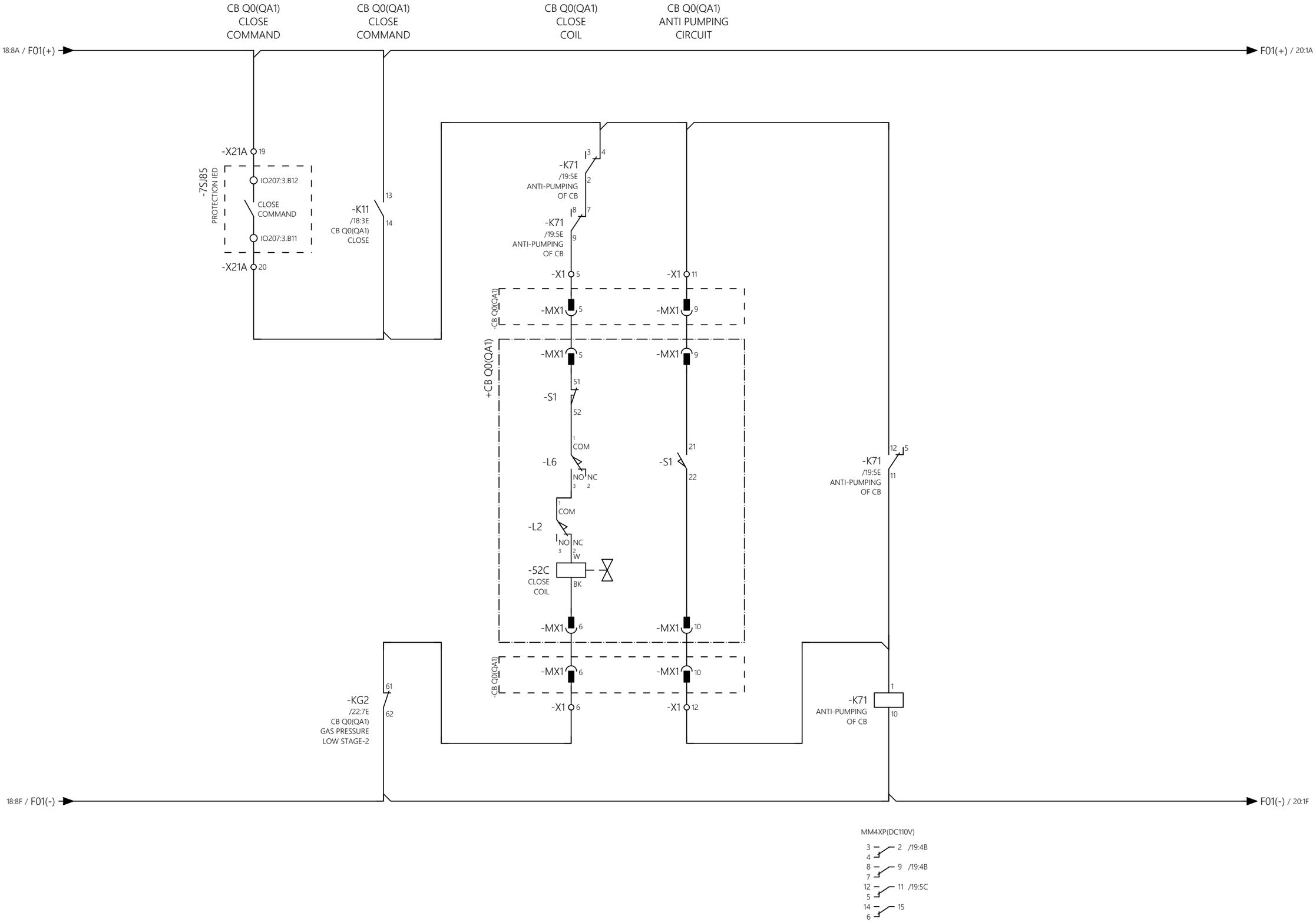
DWG. NO.: 1723001595-EL-DG-00015

CONTRACT NO: CW-I-WP4-2023-05

REV. 03

SH. 18 / 72

CONT. 19



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: CB CLOSE-1 CONTROL CIRCUIT	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05
		SH. 19 / 72	CONT. 20

REMOTE TRIP-1 COMMAND

REMOTE TRIP-1 COMMAND

CB Q0(QA1) TRIP COIL-1 50/50N, 51/51G, 67, 67N

CB Q0(QA1) TRIP COIL-1 87

CB Q0(QA1) TRIP COIL-1 86

CB TRIP-1 COMMAND

CB TRIP-1 COMMAND

PROTECTION TRIP SIGNAL

19:7A / F01(+)

F01(+) / 22:1A

-X21B 1

-X21B 3

-X21A 31

-X22A 3

-86-1 HIGH SPEED TRIP RELAY

9

11

MAKE CONTACT

+R

-TB NO

-TB NO

-X21B 2

-X21B 4

-X21A 32

-X22A 4

-7SJ85 PROTECTION IED

IO207:3.C12

TRIP COMMAND

IO207:3.C11

-7UT85 PROTECTION IED

IO203:1.D3

TRIP COMMAND

IO203:1.D4

-TT1

1

2

3

4

-KSIL1 /20:2E TRIP SAFETY SYSTEM

41

42

-K12 /18:3E CB Q0(QA1) TRIP

13

14

-RS1 DISABLED

3

4

-TCS1 Circuit Supervision Relay

X11 5

1

-K1

-K2

-K3

12

4

8

2

X11 6

X11 7

X11 8

X11 9

SIS SAFETY SYSTEM DC 24V INPUT

+SIS

/ (-)

/ (+)

SIS SAFETY SYSTEM

-TB NO

-TB NO

-X13 13

-X13 14

-KSIL1 DC 24V TRIP SAFETY SYSTEM

R1

X4

R2

-X1 13

-X1 19

+CB Q0(QA1)

-MX1 13

-MX1 17

25

53

-S1

-S1

26

54

W

-52T1 TRIP COIL-1

BK

-MX1 14

-CB Q0(QA1)

-MX1 14

-X1 14

-KG2 /22:7E CB Q0(QA1) GAS PRESSURE LOW STAGE-2

21

22

19:7F / F01(-)

F01(-) / 22:1F

BSR10

13 — 14 /22:4B

23 — 24

33 — 34

41 — 42 /20:5B

03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

TITLE: CB TRIP-1 CONTROL CIRCUIT

REV. 03

SH. 20 / 72

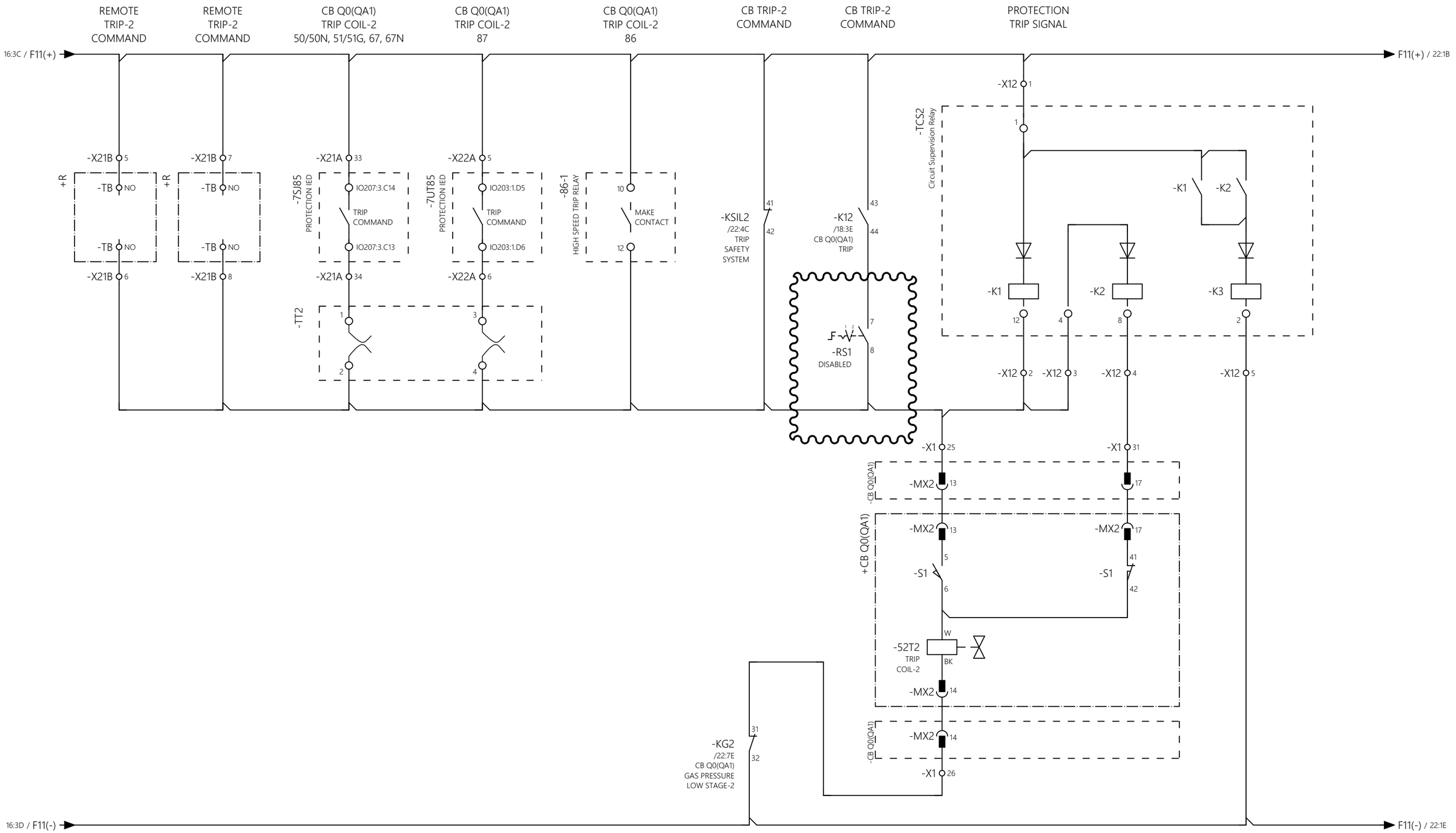
EQUIPMENT: 66kV, 40kA GIS

LOCATION: HOLLANDSE KUST NOORD WIND PARK

DWG. NO.: 1723001595-EL-DG-00015

CONTRACT NO: CW-I-WP4-2023-05

CONT. 21



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: CB TRIP-2 CONTROL CIRCUIT-1	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 21 / 72

CONT. 22

SAFETY SYSTEM POWER

SIS SAFETY SYSTEM DC 24V INPUT

CB Q0(QA1) GIS PRESSURE LOW STAGE-1

CB Q0(QA1) GIS PRESSURE LOW STAGE-2

20:8A / F01(+)

21:8A / F11(+)

-TP1

L(+)

+V

N(-)

GND

-V

GND

-U

-SRPW1 / 37:3A

-SRPW2 / 37:3B

-KSIL1
/20:2E
TRIP
SAFETY
SYSTEM

-KSIL2
DC 24V
TRIP
SAFETY
SYSTEM

R1

X4

R2

+GD_1

X11 1

-TB 1

-PS1

P

≤4.7 bar.G
1ST ALARM

-TB 2

X11 3

X11 2

-TB 3

-PS2

≤4.5 bar.G
2ST ALARM

-TB 4

X11 4

21:8F / F11(-)

-KG1
CB Q0(QA1)
GAS PRESSURE
LOW STAGE-1

-KG2
CB Q0(QA1)
GAS PRESSURE
LOW STAGE-2

A1

A2

20:8F / F01(-)

BSR10

13 — 14
23 — 24
33 — 34
41 — 42 /21:5B

NF22E-13

13 — 14 /35:2B
21 — 22
31 — 32
43 — 44

NF22E-13
CA4-22N

13 — 14 /35:2B
21 — 22 /20:5E
31 — 32 /21:5E
43 — 44
53 — 54
61 — 62 /19:3E
71 — 72
83 — 84

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

TITLE: CB GAS PRESSURE LOW STAGE-1/2 CIRCUIT

REV. 03

SH. 22 / 72

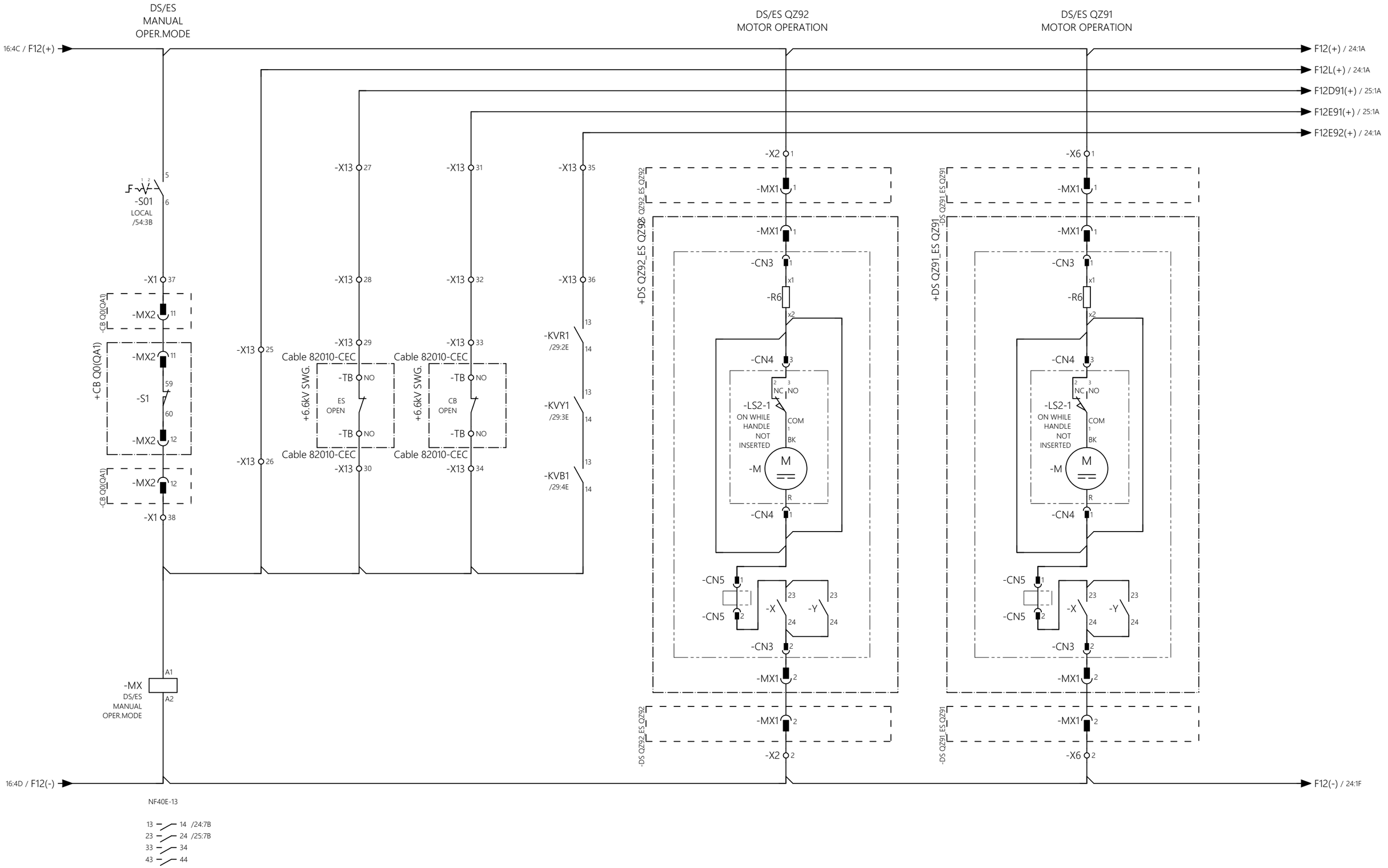
EQUIPMENT: 66kV, 40kA GIS

LOCATION: HOLLANDSE KUST NOORD WIND PARK

DWG. NO.: 1723001595-EL-DG-00015

CONTRACT NO: CW-I-WP4-2023-05

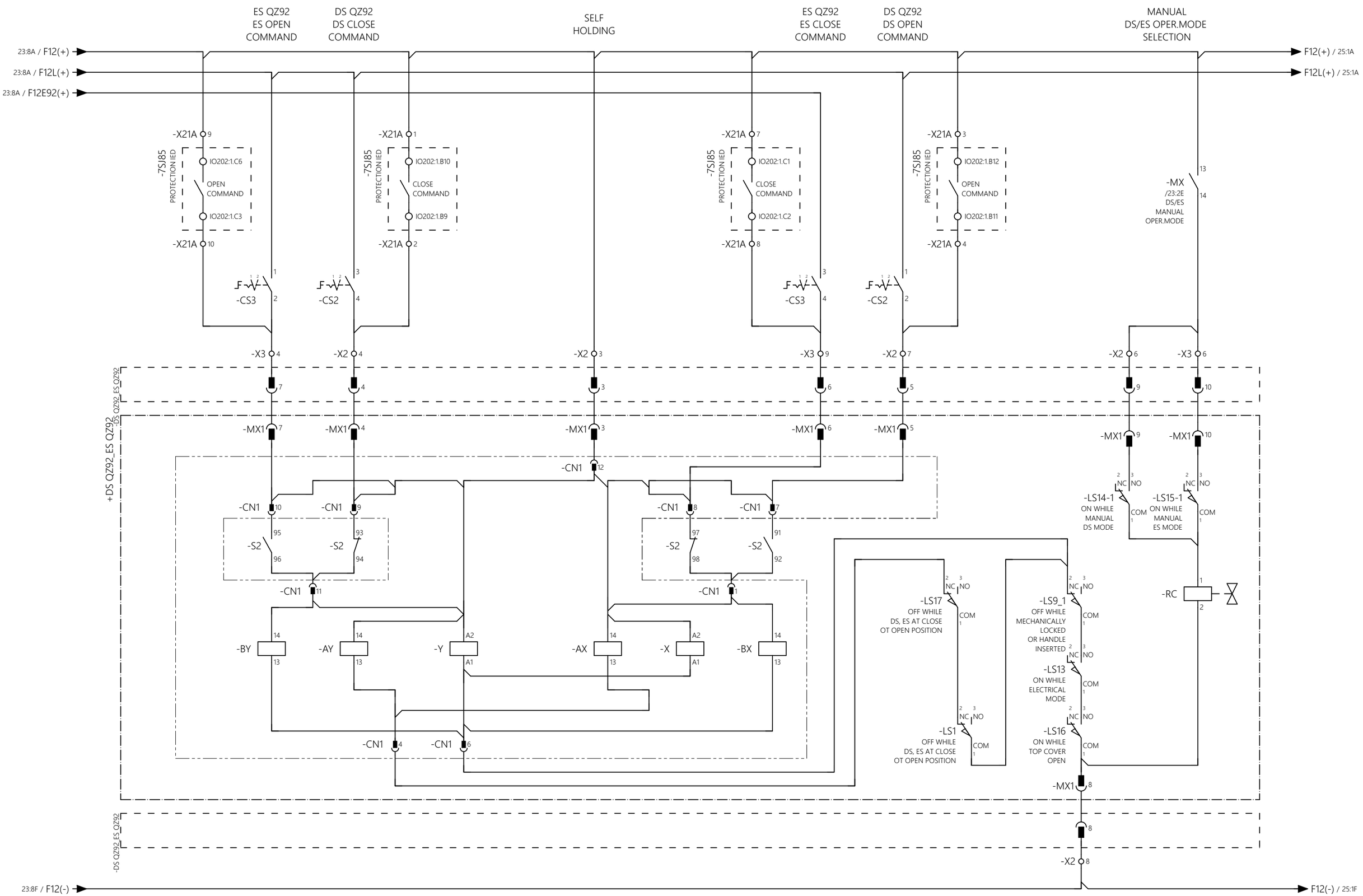
CONT. 23



03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: QZ91/QZ92(DS & ES) MOTOR CIRCUIT	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05
		SH. 23 / 72	CONT. 24



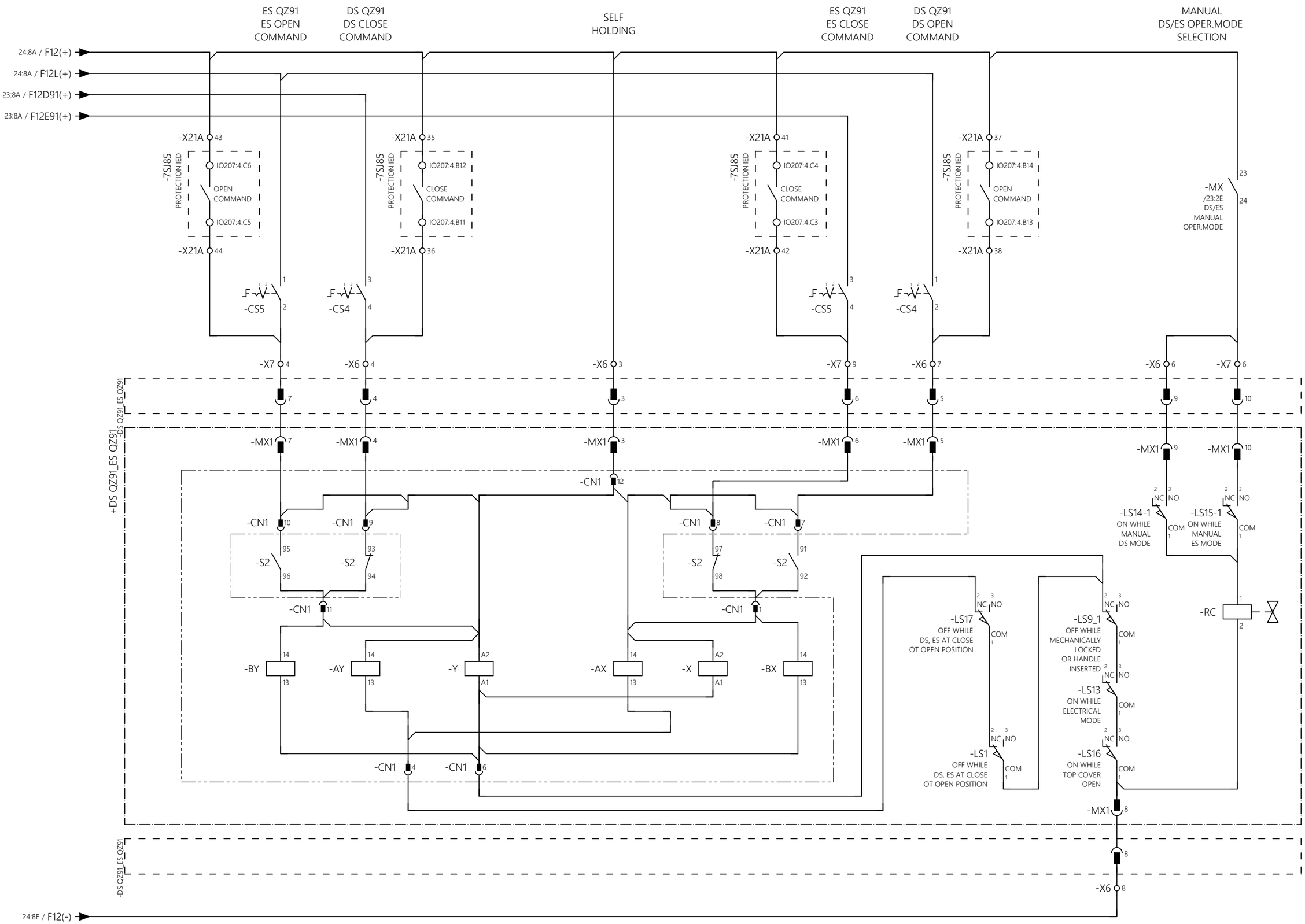
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: DS QZ92_ES QZ92(DS & ES) CONTROL CIRCUIT	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 24 / 72

CONT. 25



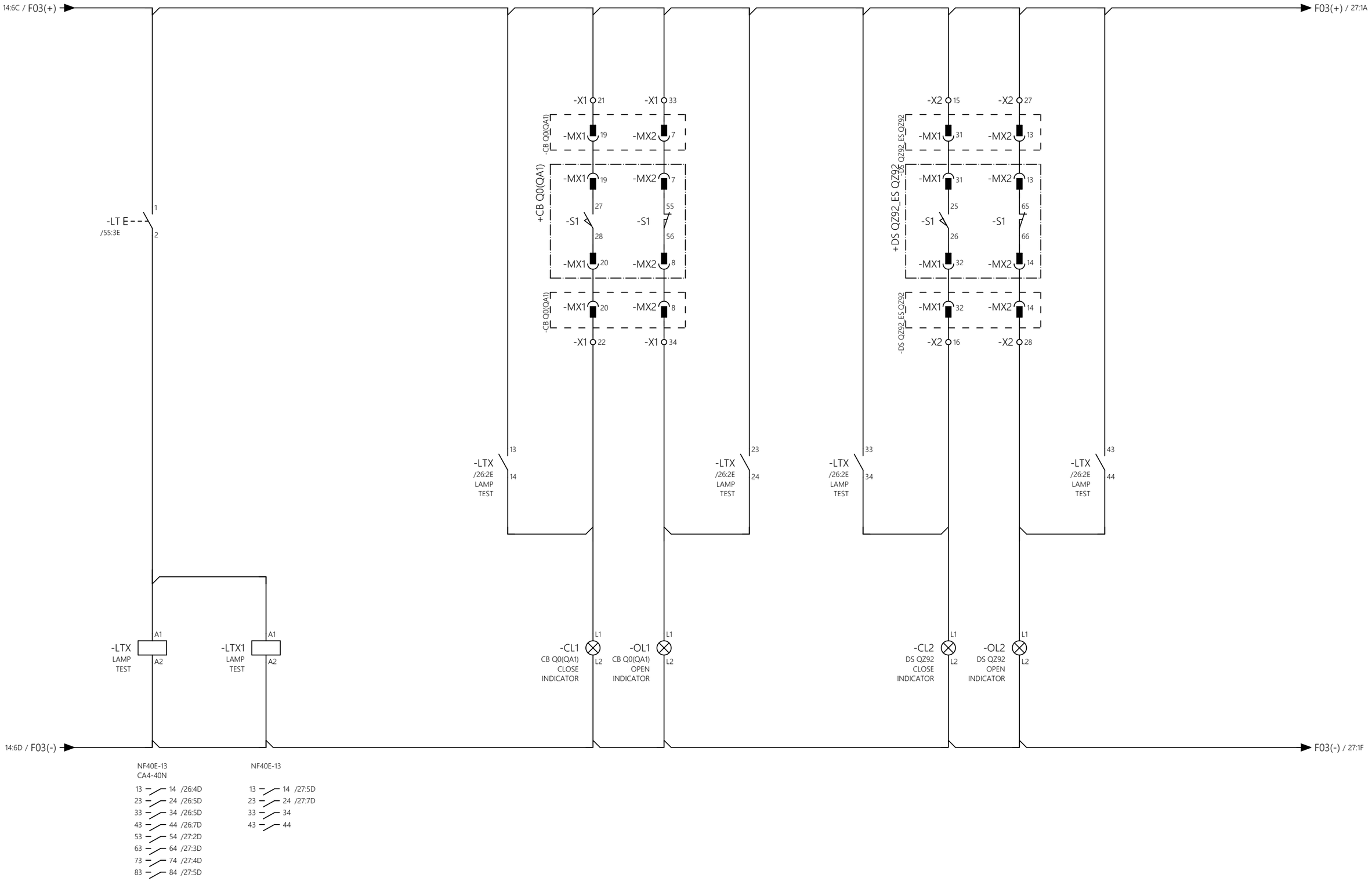
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: DS QZ91_ES QZ91(DS & ES) CONTROL CIRCUIT	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 25 / 72

CONT. 26



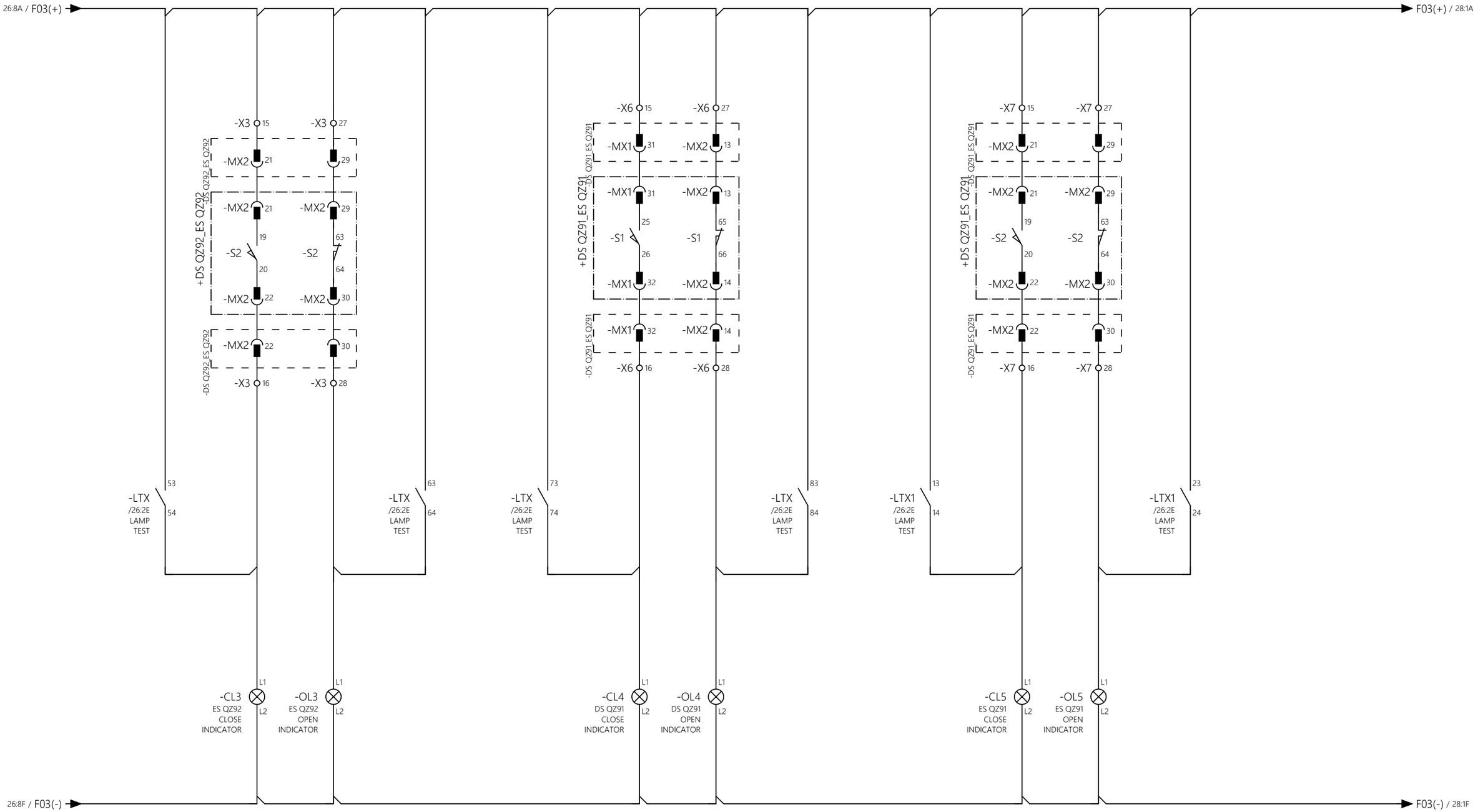
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: LAMP & INDICATOR CIRCUIT-1	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 26 / 72

CONT. 27



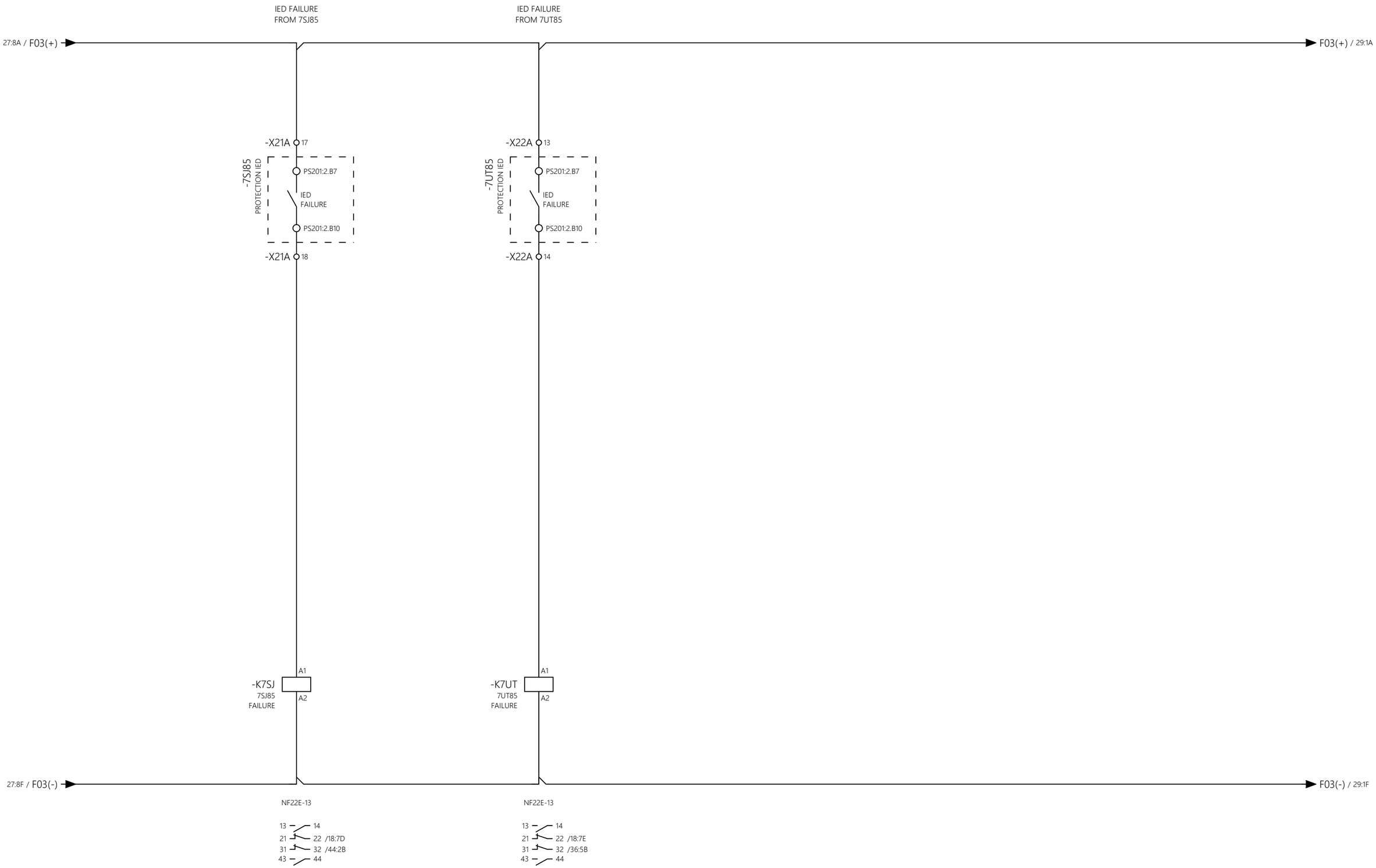
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: LAMP & INDICATOR CIRCUIT-2	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 27 / 72

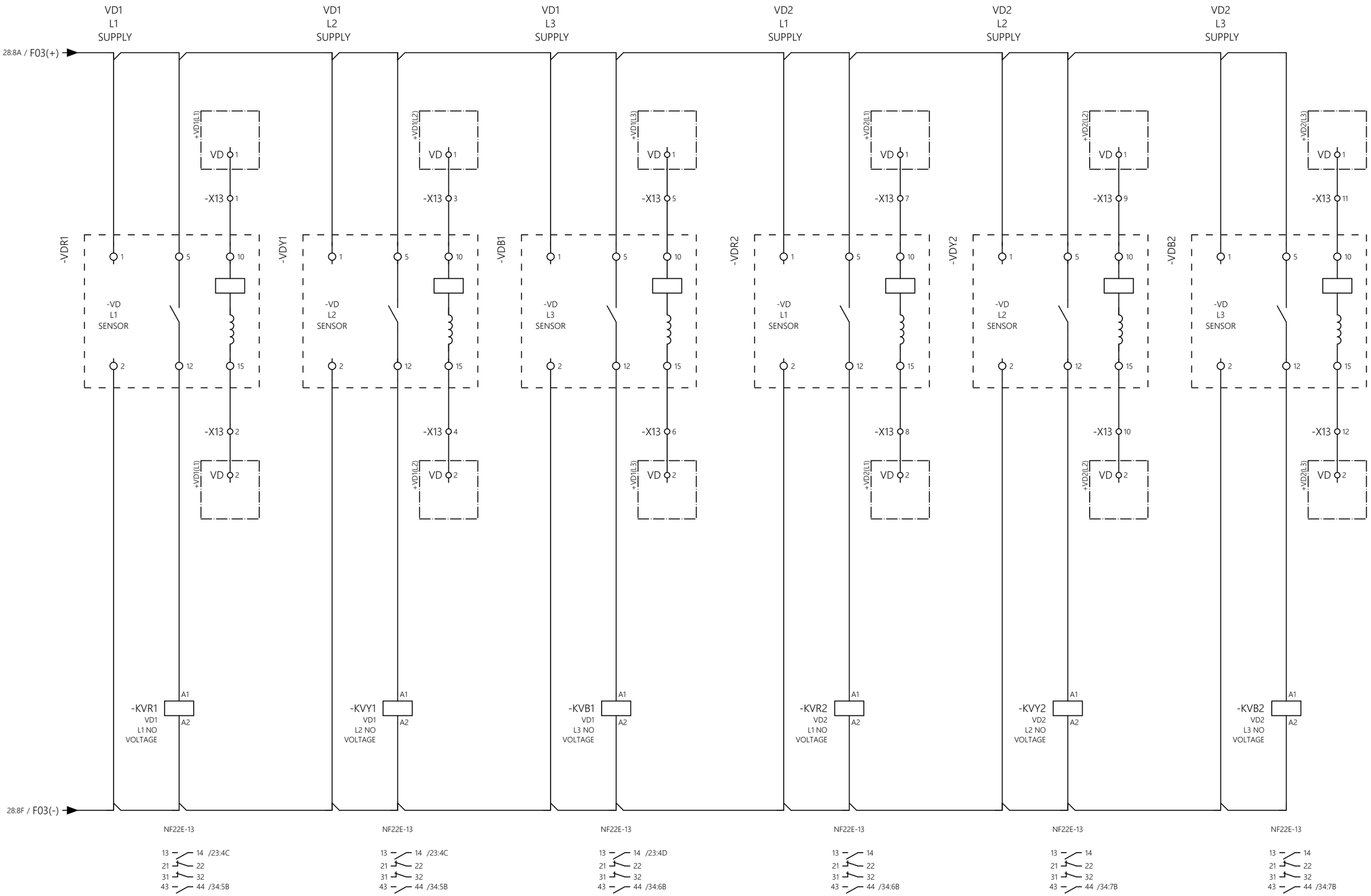
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REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: IED FAILURE CIRCUIT	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05
		SH. 28 / 72	CONT. 29



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

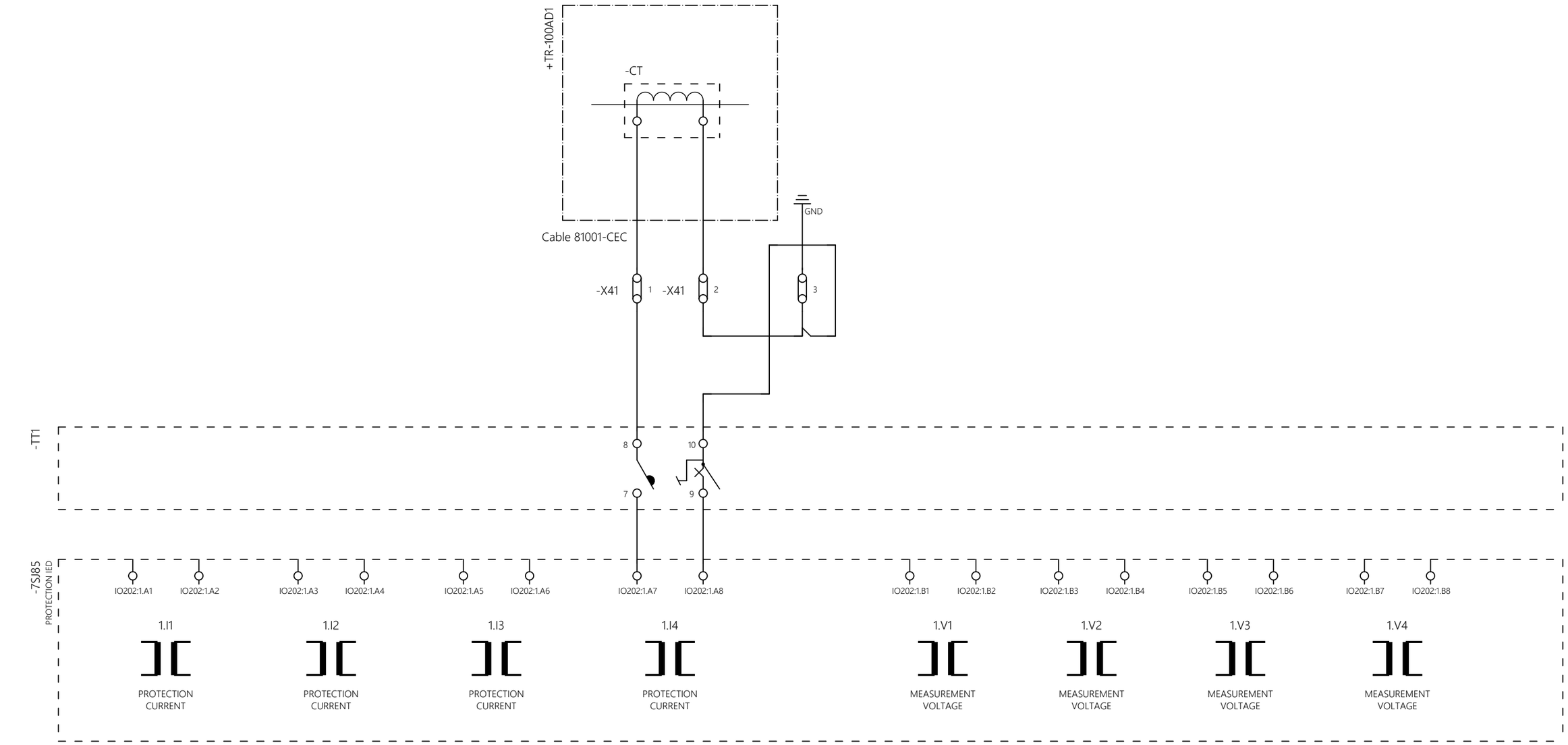
HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: VOLTAGE DUPLICATOR	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 29 / 72

CONT. 30

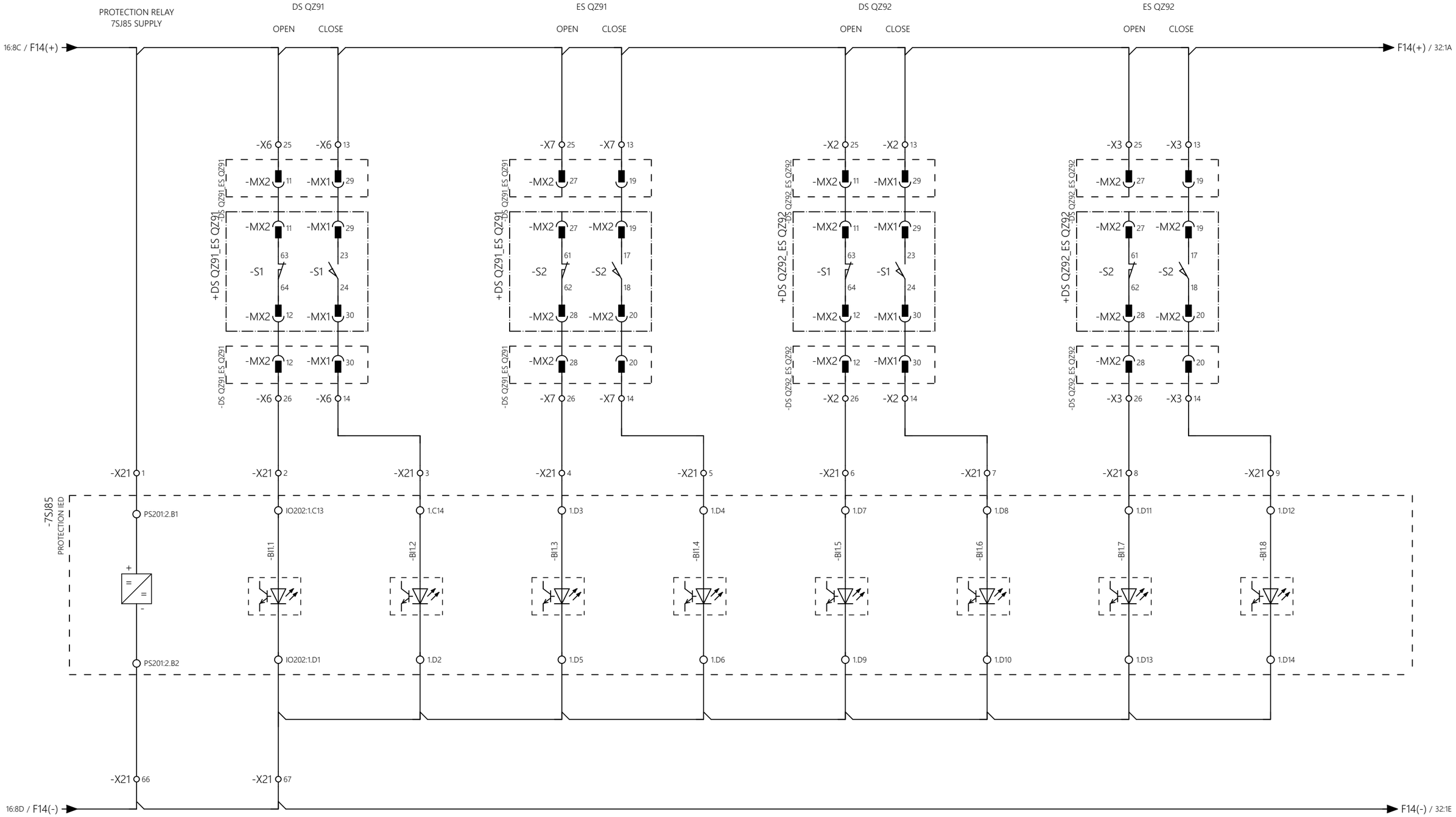
1	2	3	4	5	6	7	8
SPARE	SPARE	SPARE	TR-100AD1 STAR POINT CT	SPARE	SPARE	SPARE	SPARE



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: 7SJ85(PROTECTION RELAY) METERING CIRCUIT	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015 / CONTRACT NO: CW-I-WP4-2023-05	SH. 30 / 72 / CONT. 31



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: 7SJ85(PROTECTION RELAY) INPUT SIGNAL CIRCUIT-1	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 31 / 72

CONT. 32

SPARE SPARE SPARE

31:8A / F14(+) → F14(+) / 33:1A

-X21 10 -X21 11 -X21 12

-7SJ85 PROTECTION IED

PS201:2.B12 2.B14 2.B13

-BI2.1 -BI2.2 -BI2.3

PS201:2.B11

-X21 68

31:8E / F14(-) → F14(-) / 33:1E

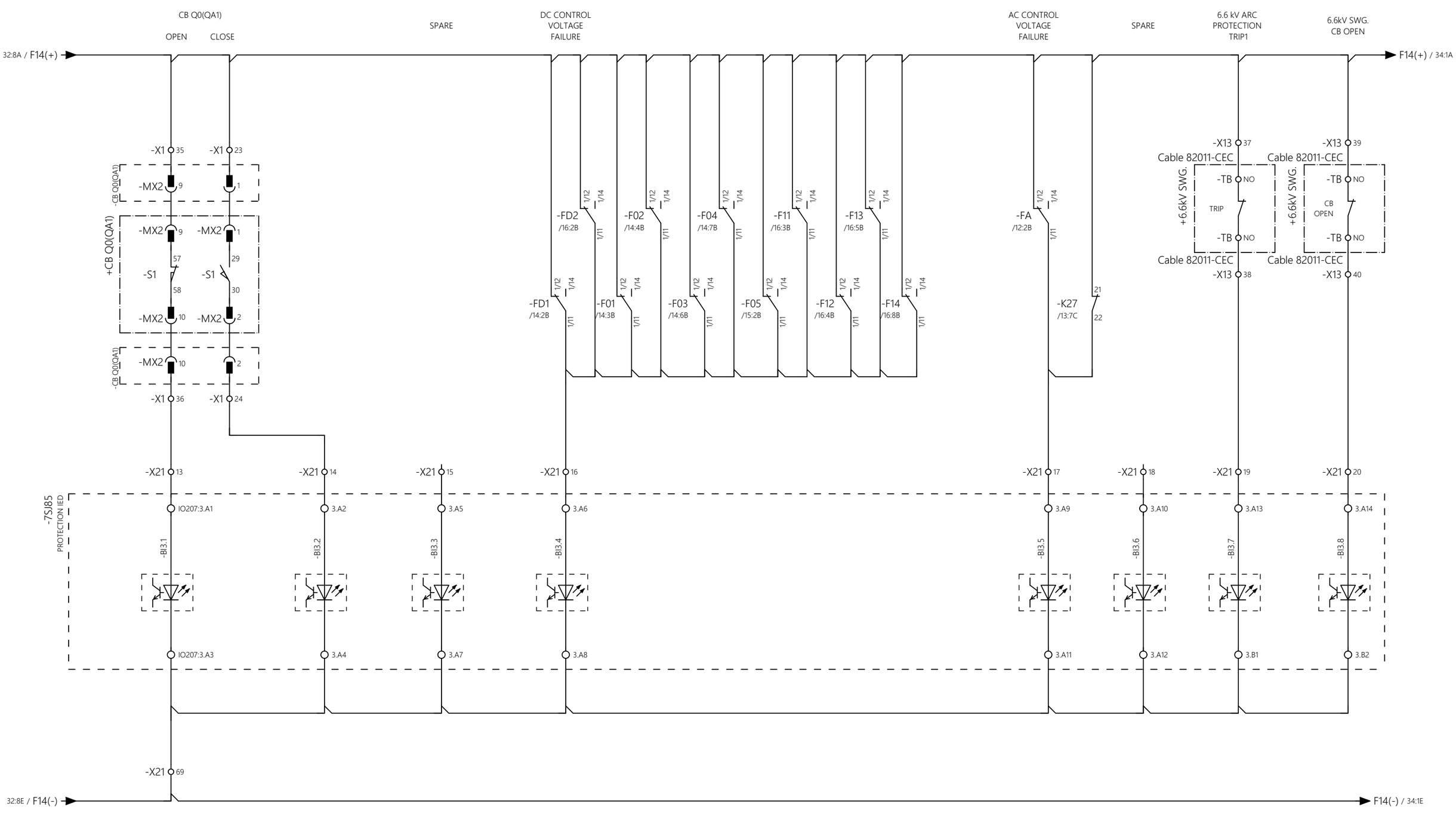
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: 7SJ85(PROTECTION RELAY) INPUT SIGNAL CIRCUIT-2	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 32 / 72

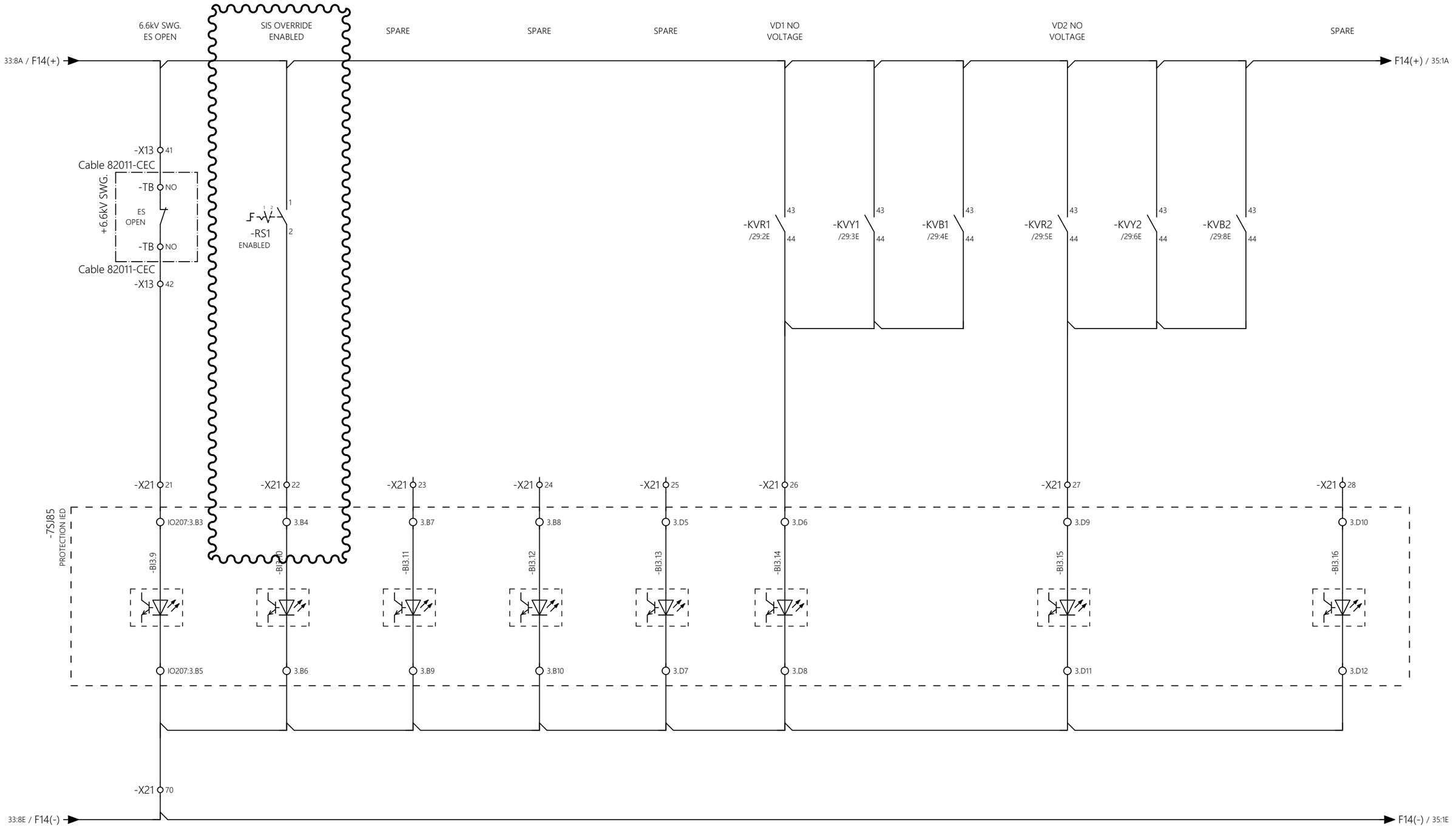
CONT. 33



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

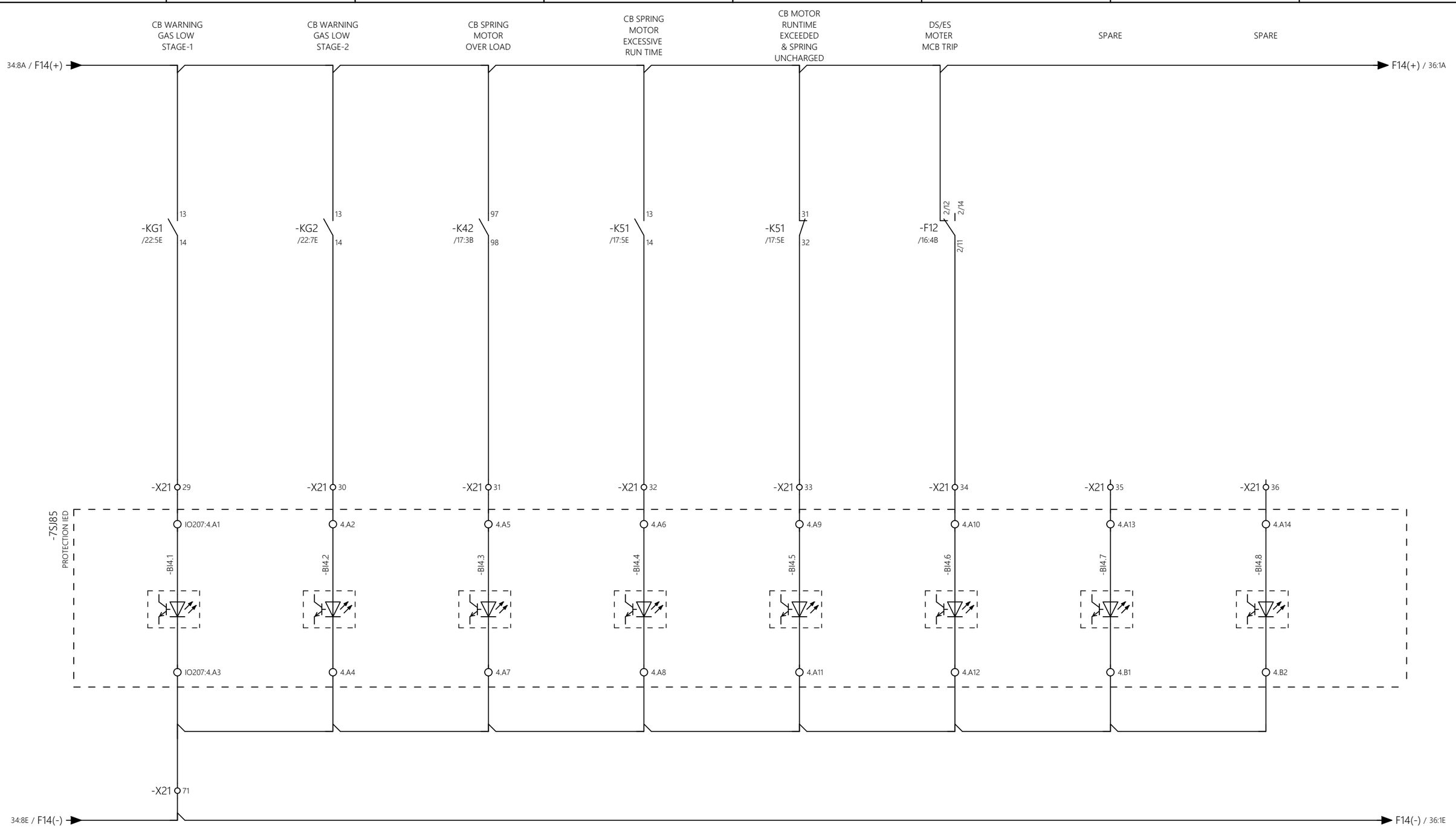
SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: 7SJ85(PROTECTION RELAY) INPUT SIGNAL CIRCUIT-3	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015 / CONTRACT NO: CW-I-WP4-2023-05	SH. 33 / 72
			CONT. 34



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: 7SJ85(PROTECTION RELAY) INPUT SIGNAL CIRCUIT-4	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05
		SH. 34 / 72	CONT. 35



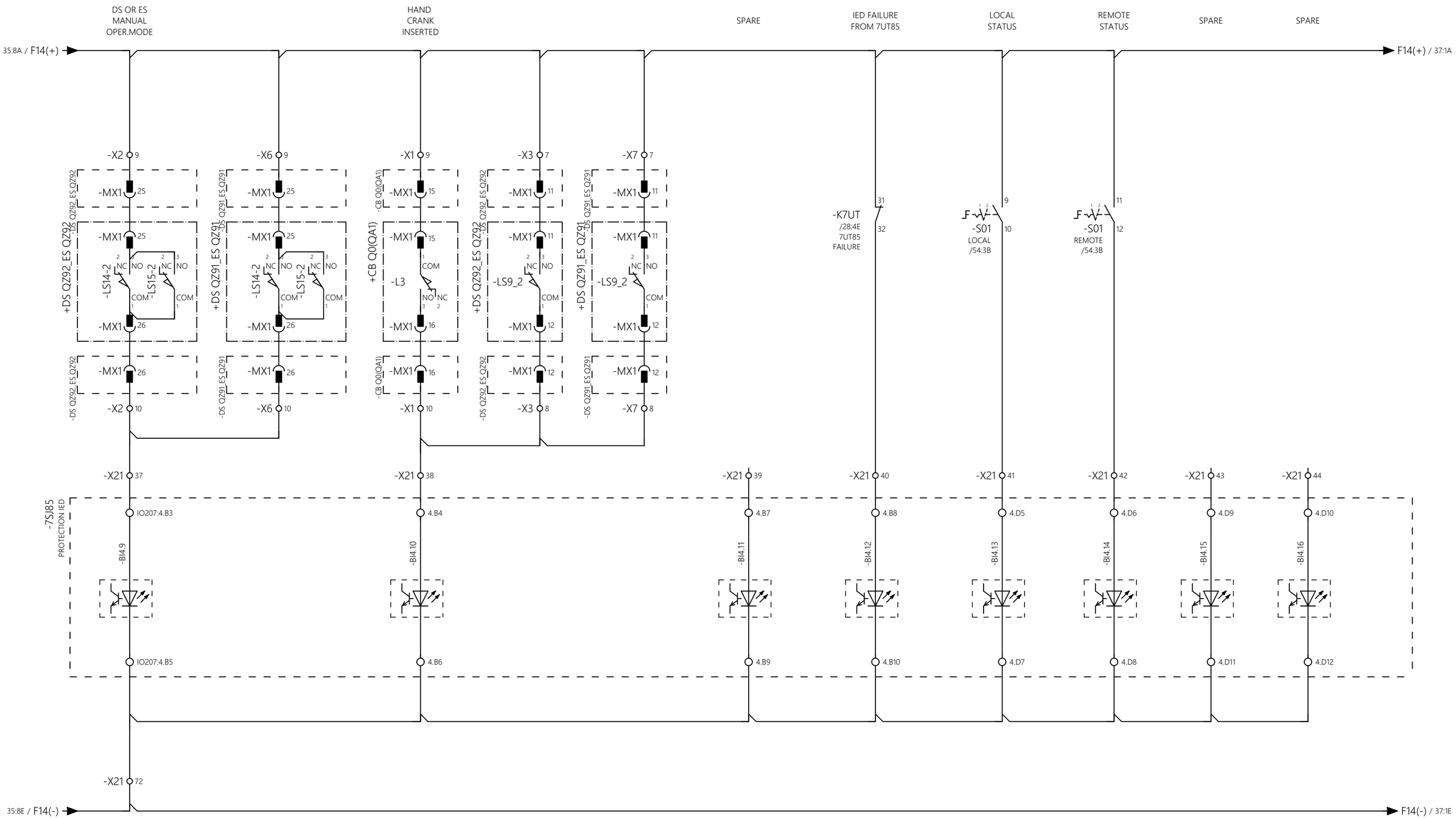
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: 7SJ85(PROTECTION RELAY) INPUT SIGNAL CIRCUIT-5	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 35 / 72

CONT. 36



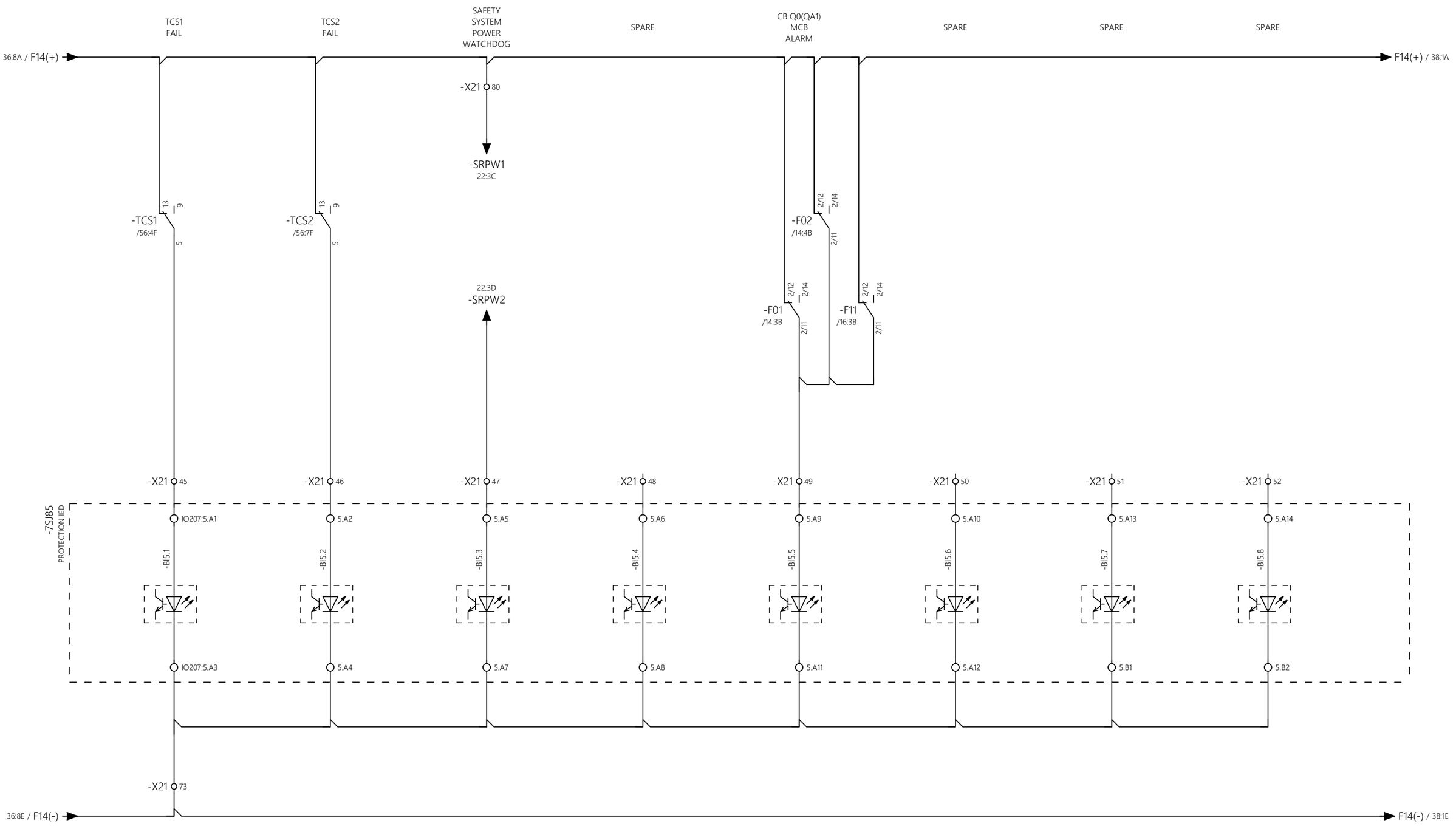
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: 7SJ85(PROTECTION RELAY) INPUT SIGNAL CIRCUIT-6	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 36 / 72

CONT. 37



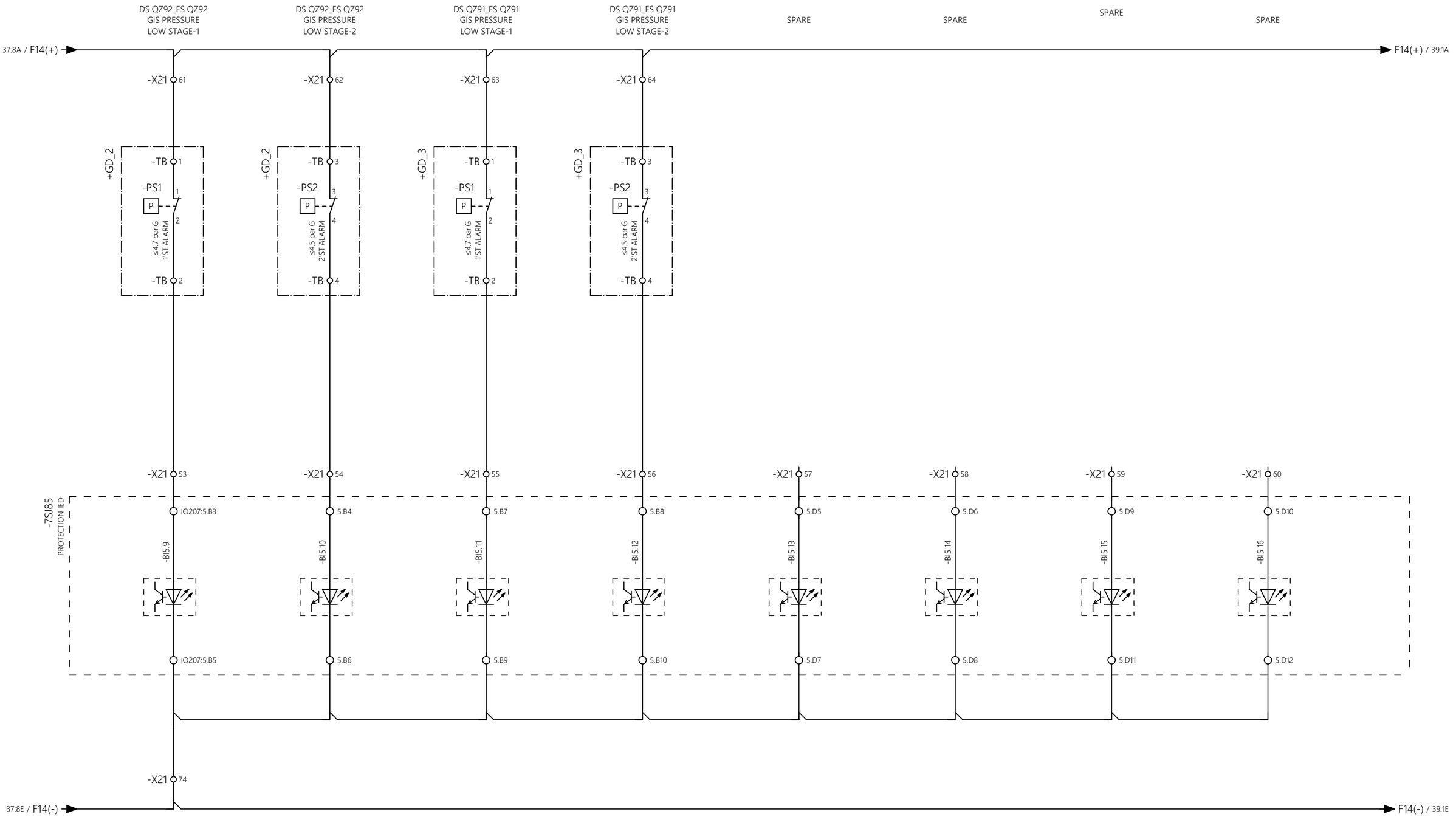
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: 7SJ85(PROTECTION RELAY) INPUT SIGNAL CIRCUIT-7	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 37 / 72

CONT. 38



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: 7SJ85(PROTECTION RELAY) INPUT SIGNAL CIRCUIT-8	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 38 / 72

CONT. 39

PROTECTION RELAY
7SJ85(CB202)
SUPPLY

38:8A / F14(+)

-X21 75

-7SJ85
PROTECTION IED

CB202:6.A1

+
=
=
-

CB202:6.A2

-X21 76

38:8E / F14(-)

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

TITLE: 7SJ85(PROTECTION RELAY) INPUT SIGNAL CIRCUIT-9

EQUIPMENT: 66kV, 40kA GIS

LOCATION: HOLLANDSE KUST NOORD WIND PARK

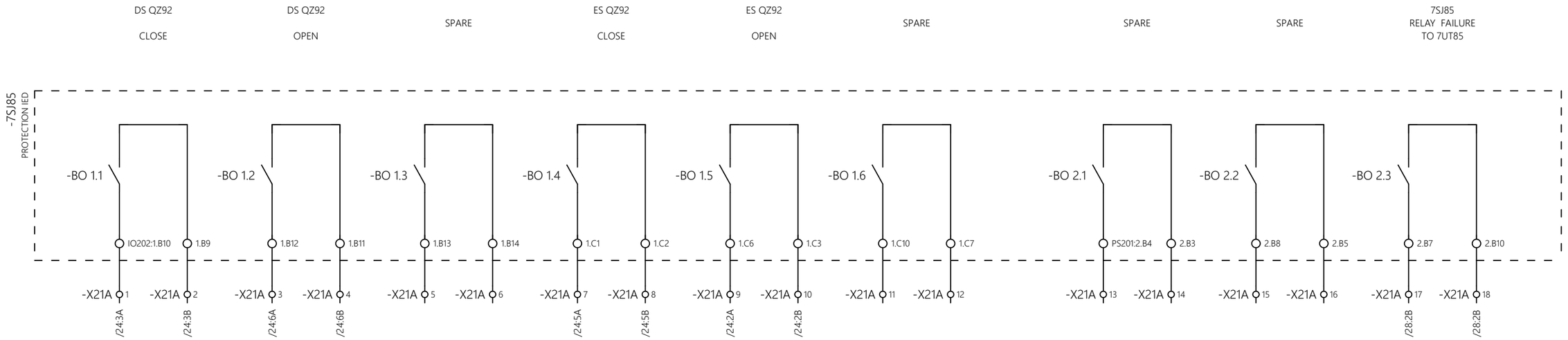
DWG. NO.: 1723001595-EL-DG-00015

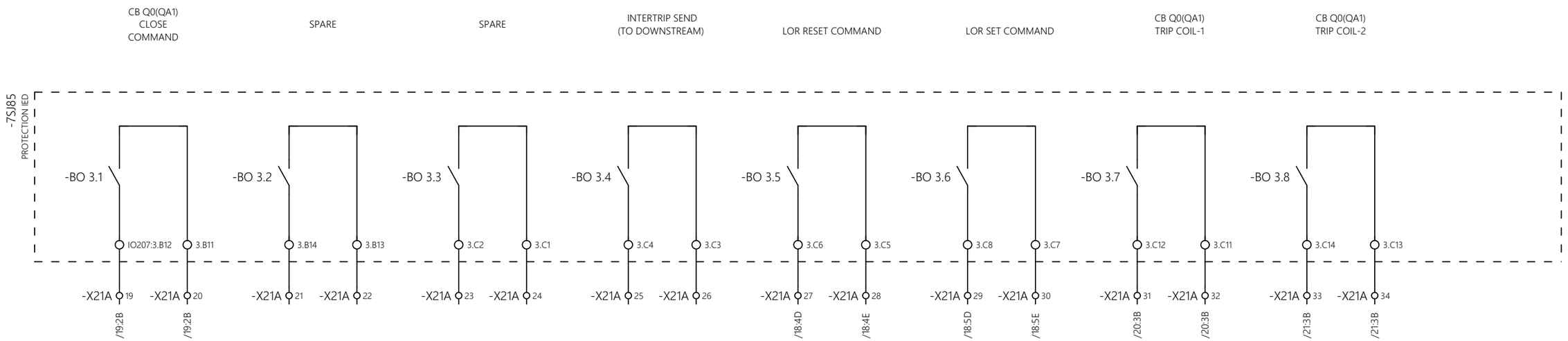
CONTRACT NO: CW-I-WP4-2023-05

REV. 03

SH. 39 / 72

CONT. 40

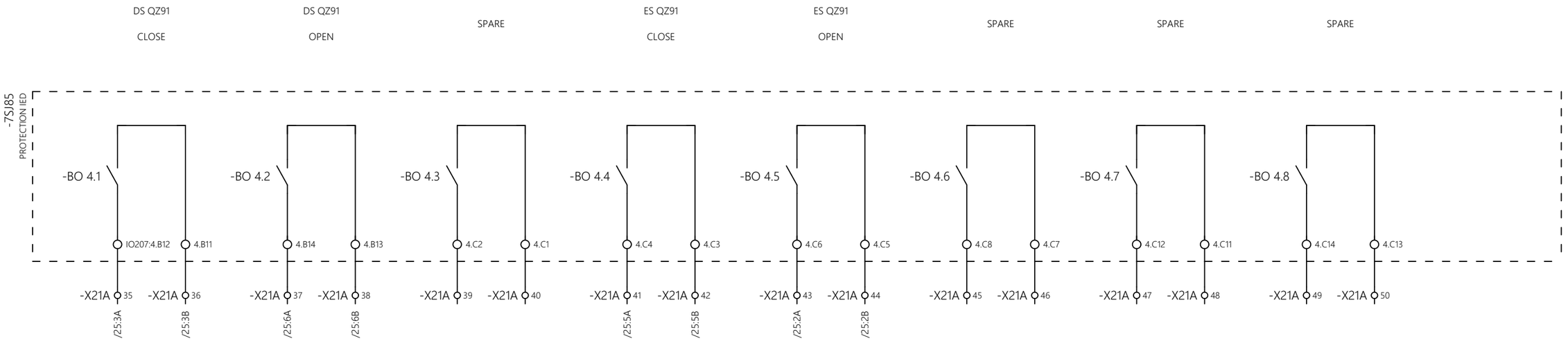


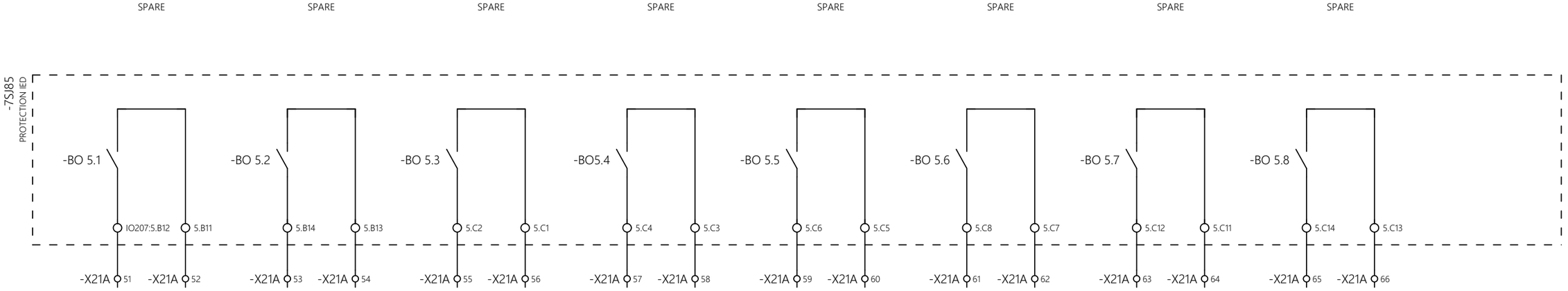


03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: 7SJ85(PROTECTION RELAY) OUTPUT SIGNAL CIRCUIT-1	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015 / CONTRACT NO: CW-I-WP4-2023-05	SH. 40 / 72
			CONT. 41





REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

EQUIPMENT: 66kV, 40kA GIS

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

LOCATION: HOLLANDSE KUST NOORD WIND PARK

TITLE: 7SJ85(PROTECTION RELAY) OUTPUT SIGNAL CIRCUIT-2

DWG. NO.: 1723001595-EL-DG-00015

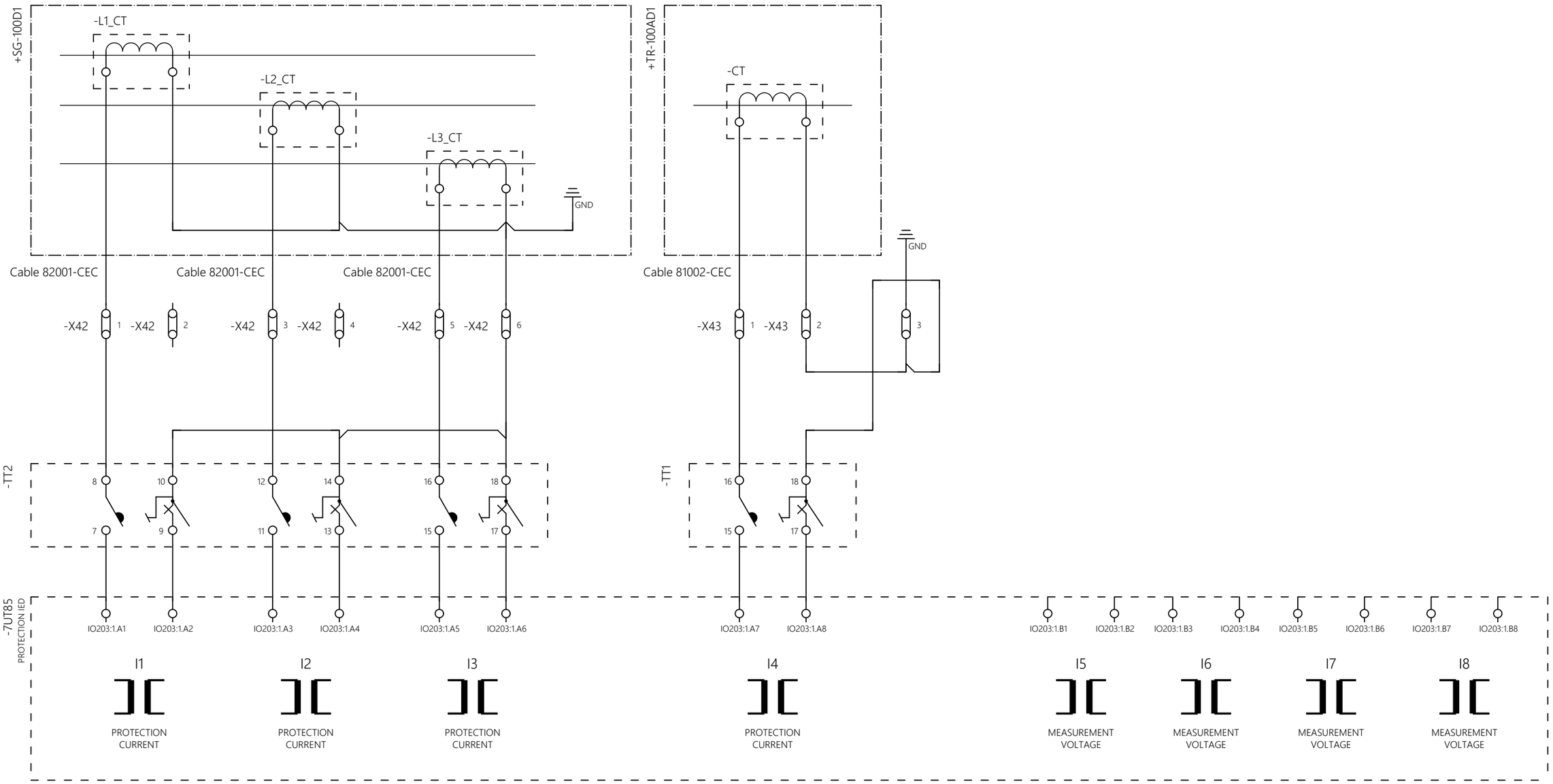
CONTRACT NO: CW-I-WP4-2023-05

REV. 03

SH. 41 / 72

CONT. 42

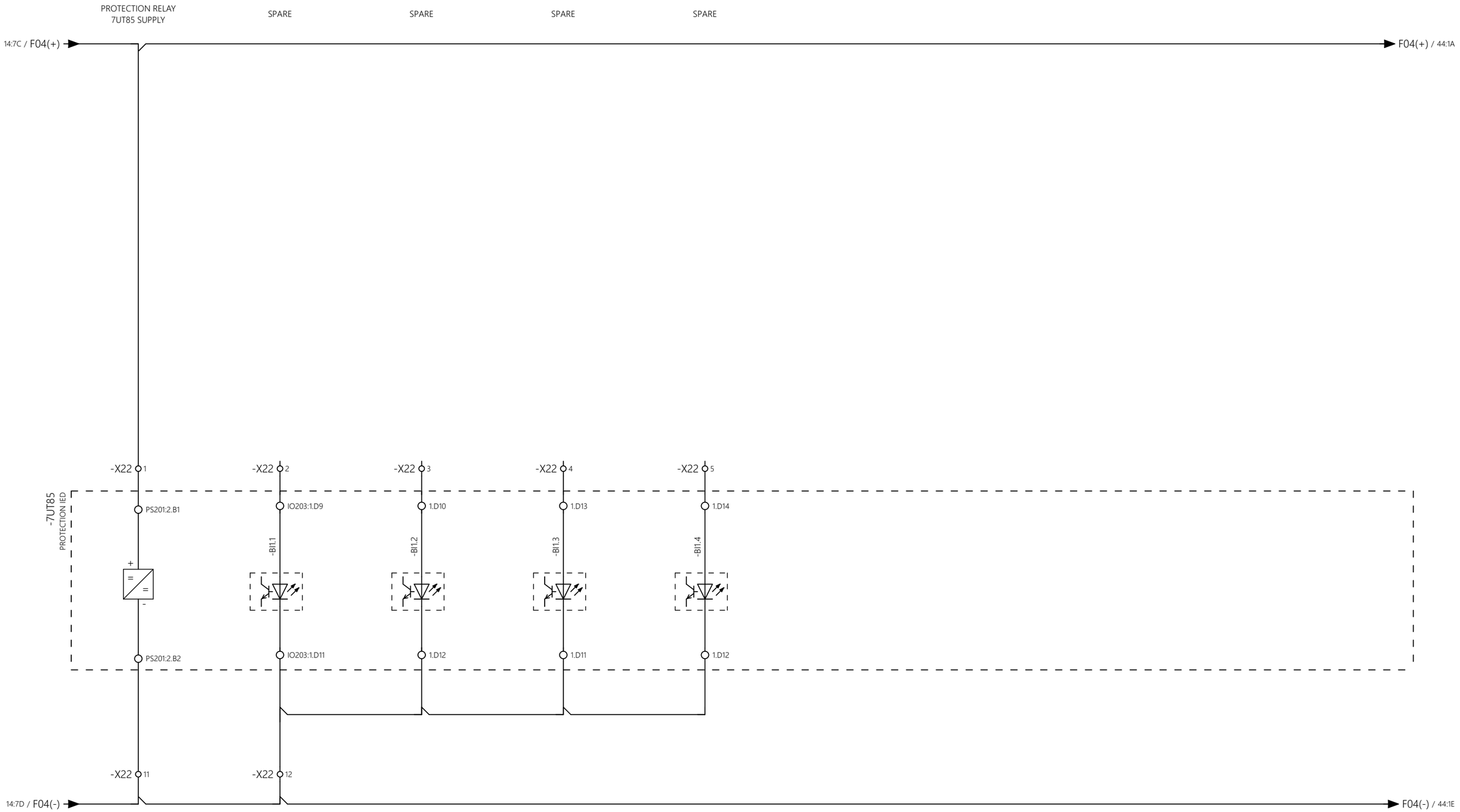
1	2	3	4	5	6	7	8
SG-100D1 L1 CT	SG-100D1 L2 CT	SG-100D1 L3 CT	TR-100AD1 STAR POINT CT		SPARE	SPARE	SPARE	SPARE



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: 7UT85(PROTECTION RELAY) METERING CIRCUIT	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05
		SH. 42 / 72	CONT. 43



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: 7UT85(PROTECTION RELAY) INPUT SIGNAL CIRCUIT-1	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015 / CONTRACT NO: CW-I-WP4-2023-05	SH. 43 / 72
			CONT. 44

IED FAILURE
FROM 7SJ85

SPARE

SPARE

43:8A / F04(+)

-K7SJ
/28:2E
7SJ85
FAILURE

31

32

-X22 6

-X22 7

-X22 8

-7UT85
PROTECTION IED

PS201:2.B12

2.B14

2.B13

-BI2.1

-BI2.2

-BI2.3

PS201:2.B11

-X22 13

43:8E / F04(-)

F04(-) / 45:1E

03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

TITLE: 7UT85(PROTECTION RELAY) INPUT SIGNAL CIRCUIT-2

REV. 03

SH. 44 / 72

EQUIPMENT: 66kV, 40kA GIS

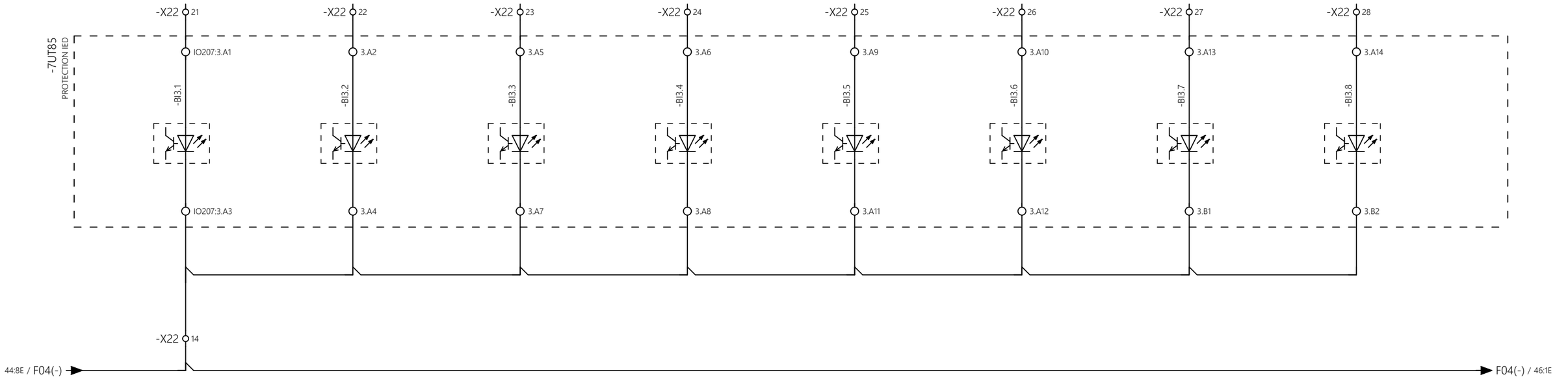
LOCATION: HOLLANDSE KUST NOORD WIND PARK

DWG. NO.: 1723001595-EL-DG-00015

CONTRACT NO: CW-I-WP4-2023-05

CONT. 45

SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

EQUIPMENT: 66kV, 40kA GIS

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

LOCATION: HOLLANDSE KUST NOORD WIND PARK

TITLE: 7UT85(PROTECTION RELAY) INPUT SIGNAL CIRCUIT-3

DWG. NO.: 1723001595-EL-DG-00015

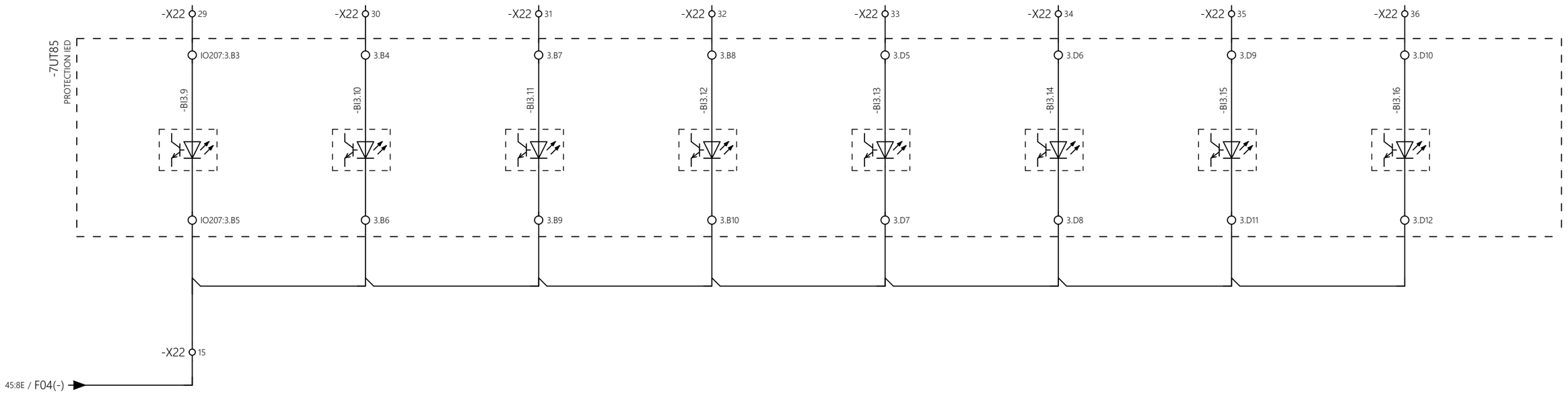
CONTRACT NO: CW-I-WP4-2023-05

REV. 03

SH. 45 / 72

CONT. 46

SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

EQUIPMENT: 66kV, 40kA GIS

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

LOCATION: HOLLANDSE KUST NOORD WIND PARK

TITLE: 7UT85(PROTECTION RELAY) INPUT SIGNAL CIRCUIT-4

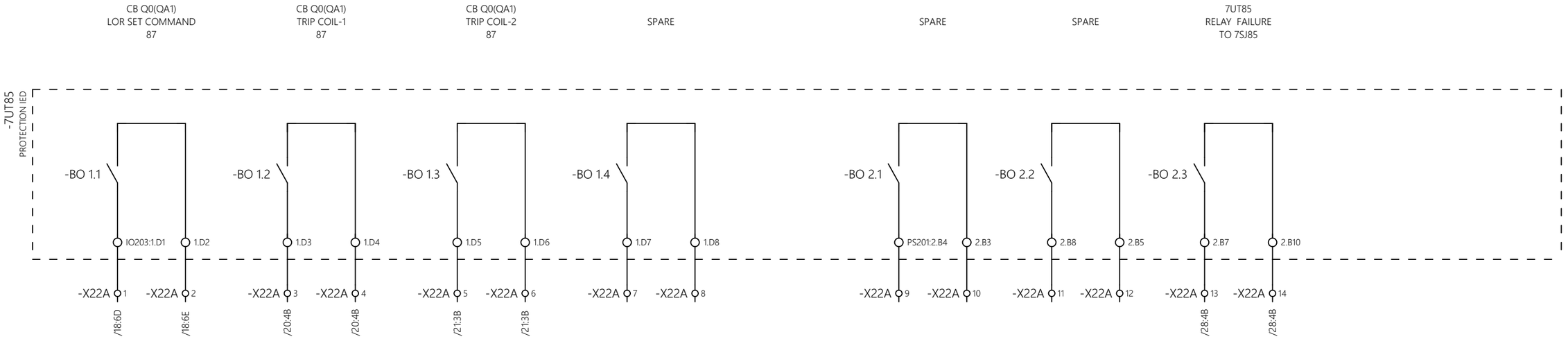
DWG. NO.: 1723001595-EL-DG-00015

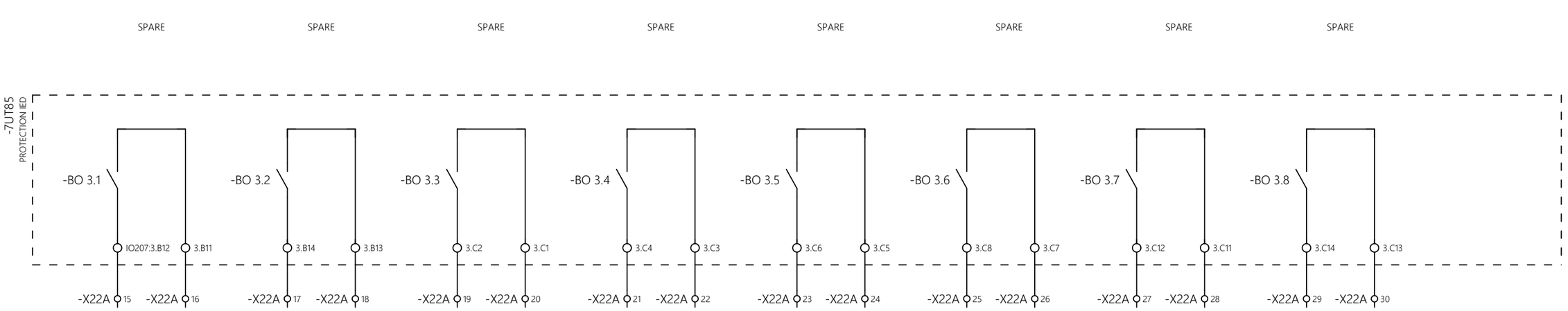
CONTRACT NO: CW-I-WP4-2023-05

REV. 03

SH. 46 / 72

CONT. 47





REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

EQUIPMENT: 66kV, 40kA GIS

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

LOCATION: HOLLANDSE KUST NOORD WIND PARK

TITLE: 7UT85(PROTECTION RELAY) OUTPUT SIGNAL CIRCUIT-1

DWG. NO.: 1723001595-EL-DG-00015

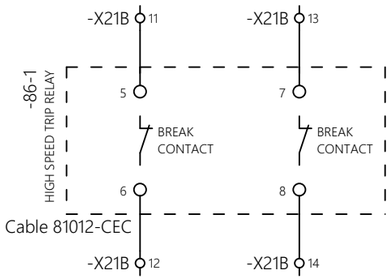
CONTRACT NO: CW-I-WP4-2023-05

REV. 03

SH. 47 / 72

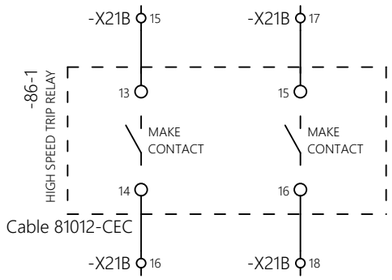
CONT. 48

-86-1
HIGH SPEED TRIP RELAY
SPARE CONTACT



To 6.6 kV incomer

-86-1
HIGH SPEED TRIP RELAY
SPARE CONTACT



To 6.6 kV incomer

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

EQUIPMENT: 66kV, 40kA GIS

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

LOCATION: HOLLANDSE KUST NOORD WIND PARK

TITLE: SPARE SIGNAL CIRCUIT

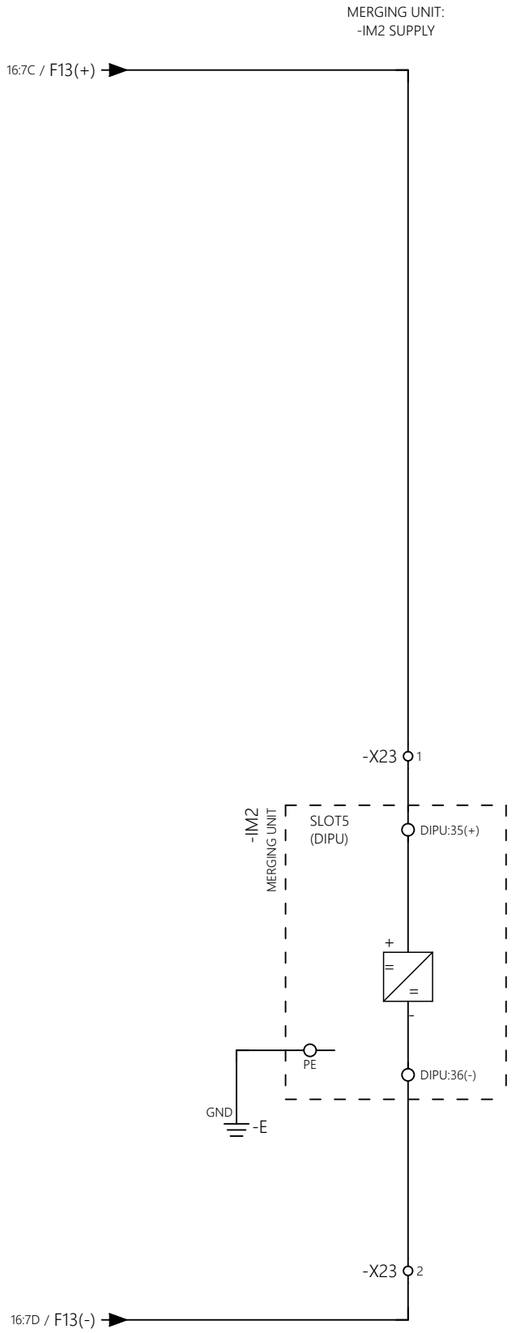
DWG. NO.: 1723001595-EL-DG-00015

CONTRACT NO: CW-I-WP4-2023-05

REV. 03

SH. 48 / 72

CONT. 49



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

TITLE: IM2(MERGING UNIT) CIRCUIT-1

REV. 03

SH. 49 / 72

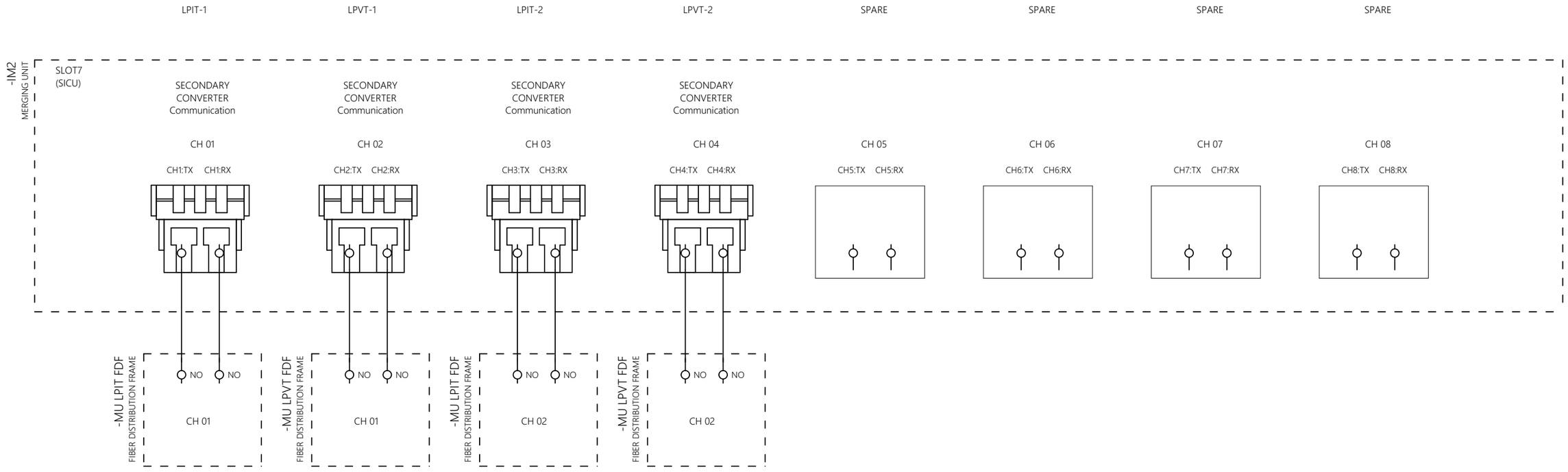
EQUIPMENT: 66kV, 40kA GIS

LOCATION: HOLLANDSE KUST NOORD WIND PARK

DWG. NO.: 1723001595-EL-DG-00015

CONTRACT NO: CW-I-WP4-2023-05

CONT. 50



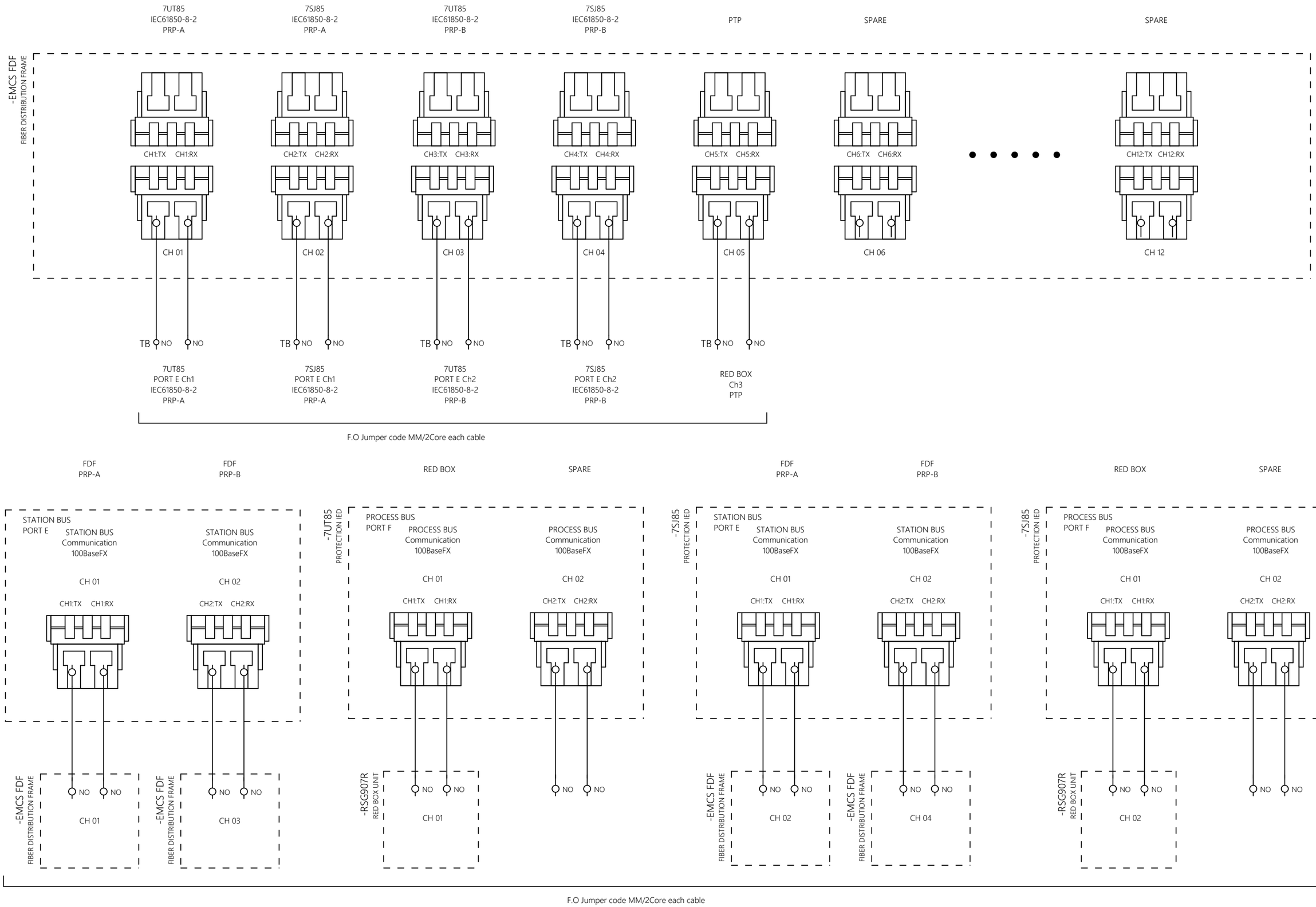
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: IM2(MERGING UNIT) CIRCUIT-2	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 50 / 72

CONT. 51



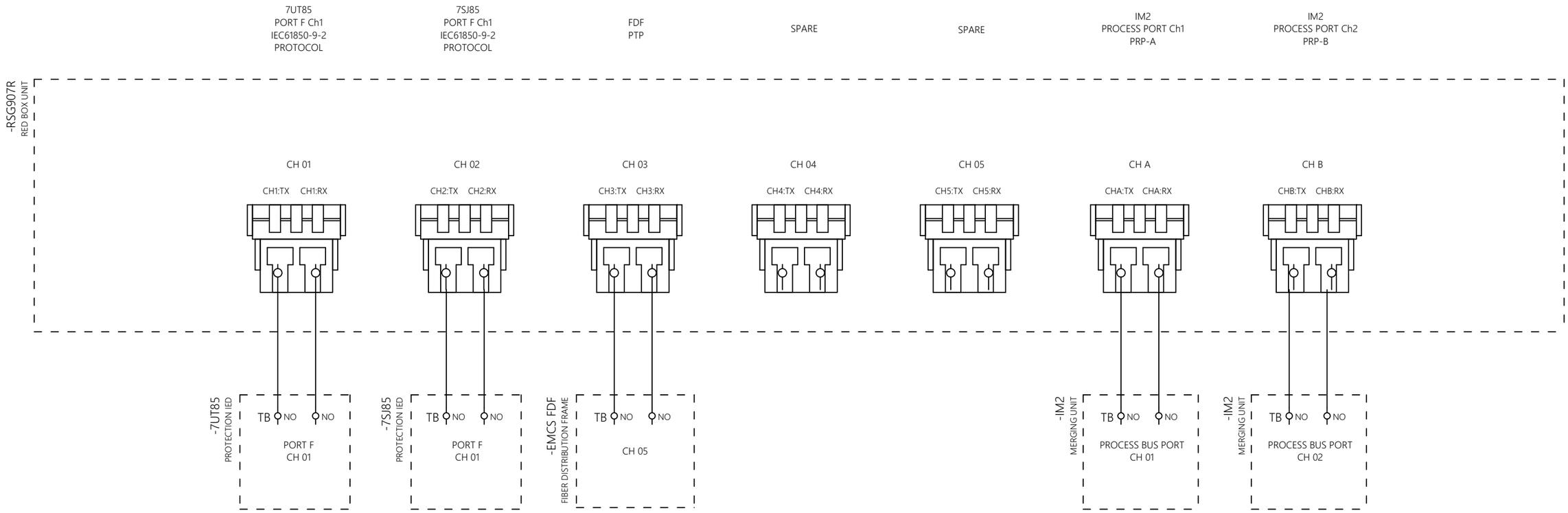
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: IED & FDF CIRCUIT-1	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 51 / 72

CONT. 52



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

EQUIPMENT: 66kV, 40kA GIS

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

LOCATION: HOLLANDSE KUST NOORD WIND PARK

TITLE: IED & FDF CIRCUIT-2

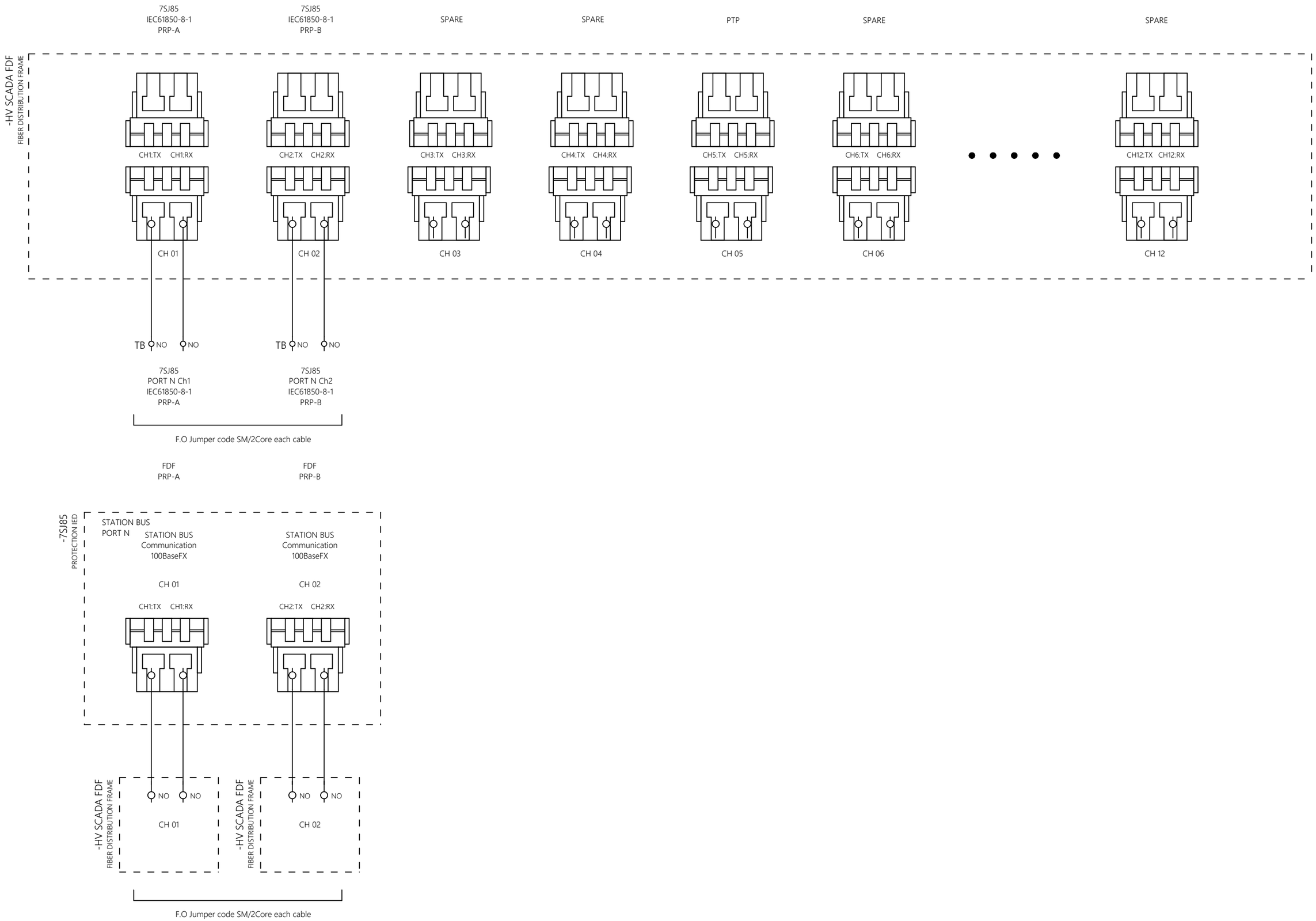
DWG. NO.: 1723001595-EL-DG-00015

CONTRACT NO: CW-I-WP4-2023-05

REV. 03

SH. 52 / 72

CONT. 53



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

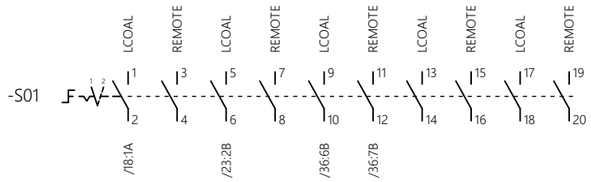
HYOSUNG HEAVY INDUSTRIES

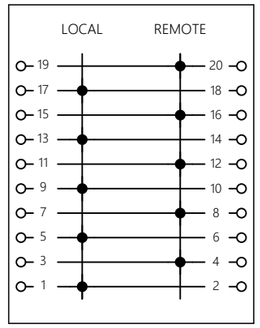
SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: IED & FDF CIRCUIT-3	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

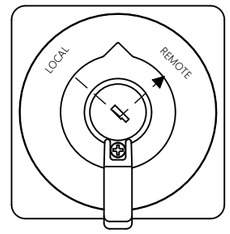
SH. 53 / 72

CONT. 54

-S01
LOCAL/REMOTE
2-POSITION KEY SWITCH

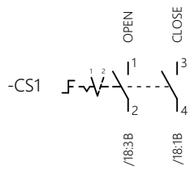


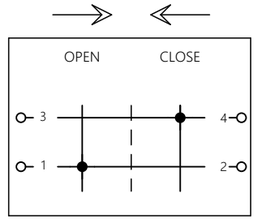


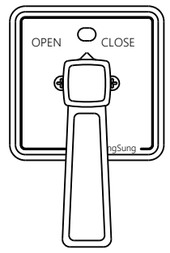


KEY LOCKABLE SWITCH (-S01)
▶ KEY REMOVABLE POSITION

-CS1
CB Q0(QA1)
CAM SWITCH

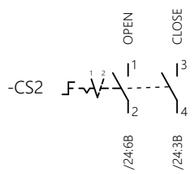


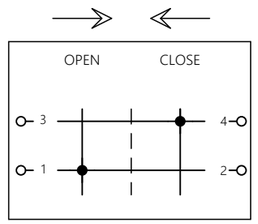


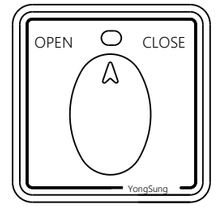


CONTROL CAM SWITCH (CS1)
HANDLE COLOR : RED

-CS2
DS QZ92
CAM SWITCH

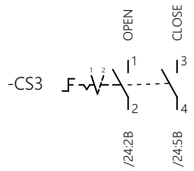


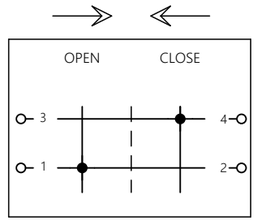




CONTROL CAM SWITCH (CS2)
HANDLE COLOR : BLACK

-CS3
ES QZ92
CAM SWITCH





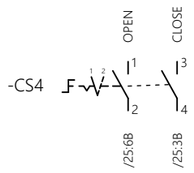
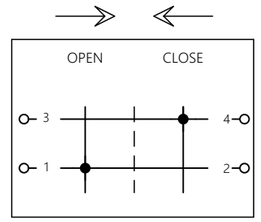
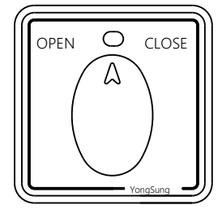
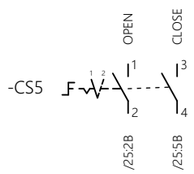
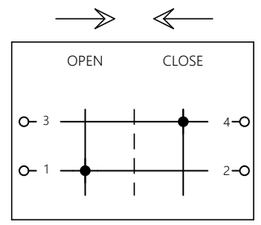
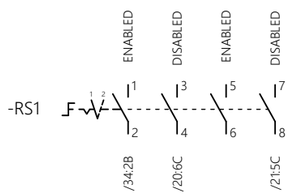
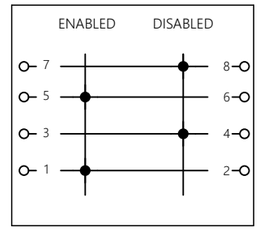
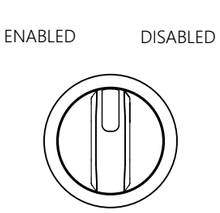
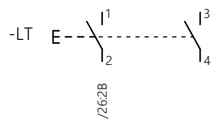


CONTROL CAM SWITCH (CS3)
HANDLE COLOR : BLACK

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: ARRANGEMENT FOR LCC SWITCH-1	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015 / CONTRACT NO: CW-I-WP4-2023-05	SH. 54 / 72 · CONT. 55

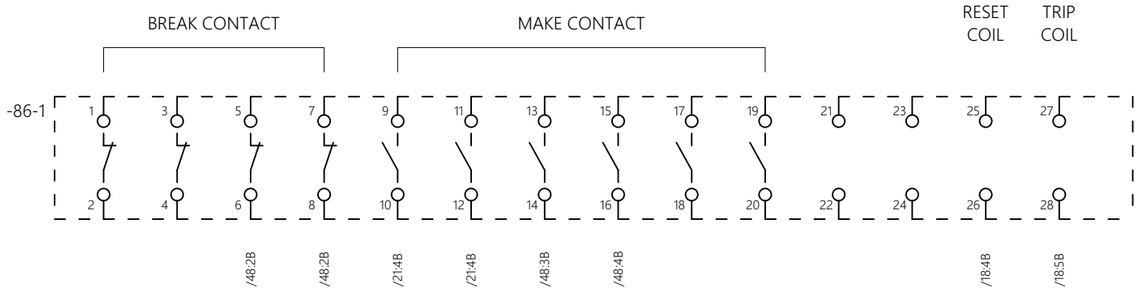
-CS4 DS QZ91 CAM SWITCH	   ***CONTROL CAM SWITCH (CS4)*** HANDLE COLOR : BLACK
-CS5 ES QZ91 CAM SWITCH	   ***CONTROL CAM SWITCH (CS5)*** HANDLE COLOR : BLACK
-RS1 OVERRIDE FOR SIS SIGNAL ROTARY SWITCH	   ***ROTARY SWITCH (RS1)***
-LT LAMP TEST PUSH BUTTON SWITCH	

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

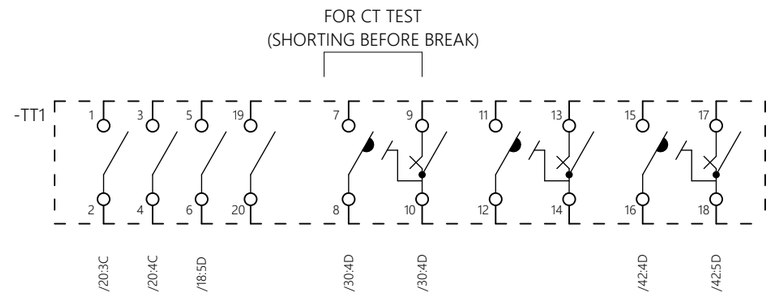
HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: ARRANGEMENT FOR LCC SWITCH-2	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015 / CONTRACT NO: CW-I-WP4-2023-05	SH. 55 / 72 / CONT. 56

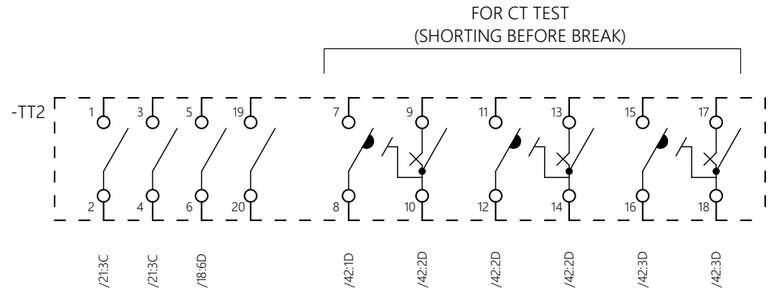
-86-1
HIGH SPEED TRIP RELAY
FOR
86



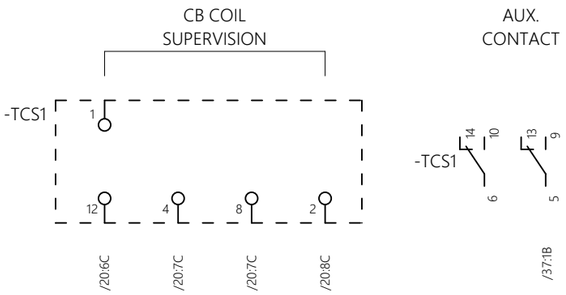
-TT1
FLEXITEST SWITCH
FOR
7SJ85



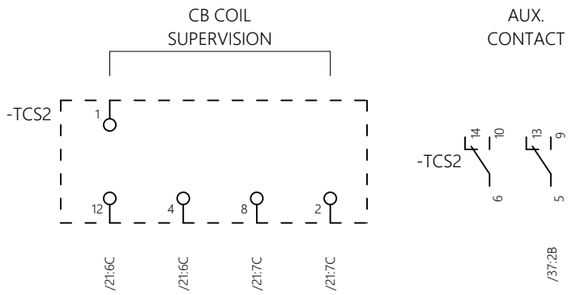
-TT2
FLEXITEST SWITCH
FOR
7UT85



-TCS1
CIRCUIT SUPERVISION RELAY
FOR
TCS



-TCS2
CIRCUIT SUPERVISION RELAY
FOR
TCS



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

EQUIPMENT: 66kV, 40kA GIS

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

LOCATION: HOLLANDSE KUST NOORD WIND PARK

TITLE: ARRANGEMENT FOR LCC SWITCH-3

DWG. NO.: 1723001595-EL-DG-00015

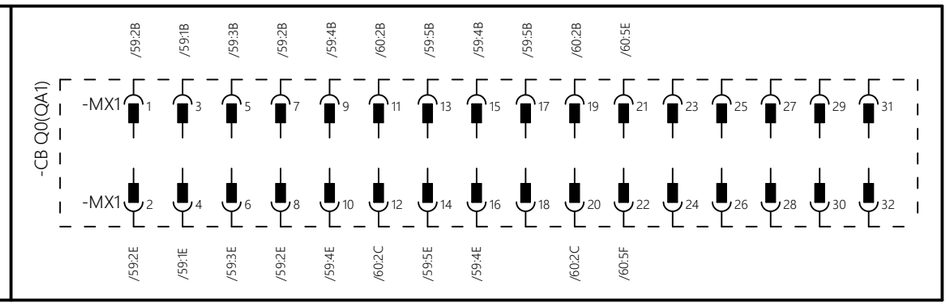
CONTRACT NO: CW-I-WP4-2023-05

REV. 03

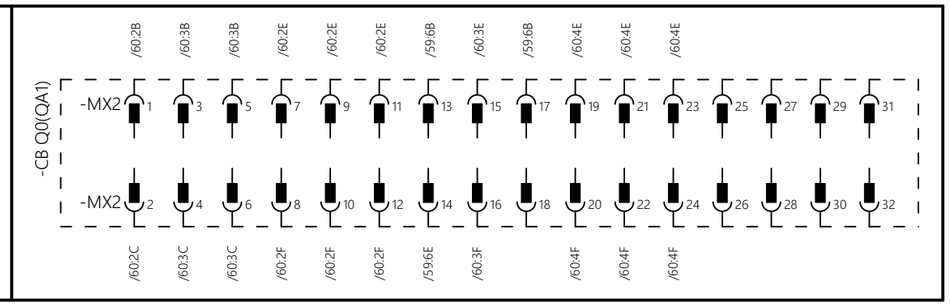
SH. 56 / 72

CONT. 57

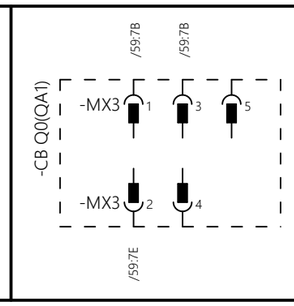
CB
MULTY SOCKET
FOR CB Q0(QA1) (MX1)



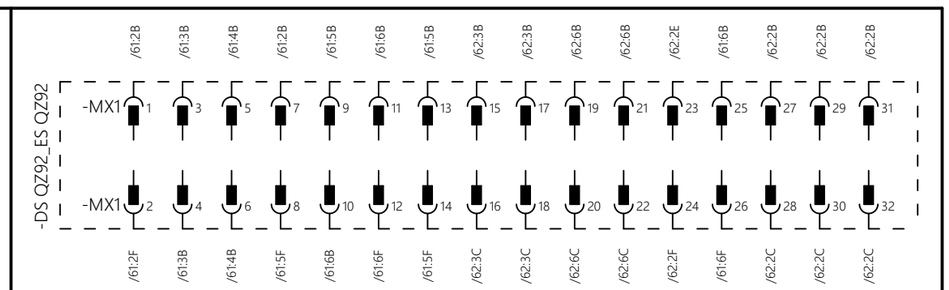
CB
MULTY SOCKET
FOR CB Q0(QA1) (MX2)



CB
MULTY SOCKET
FOR CB Q0(QA1) (MX3)



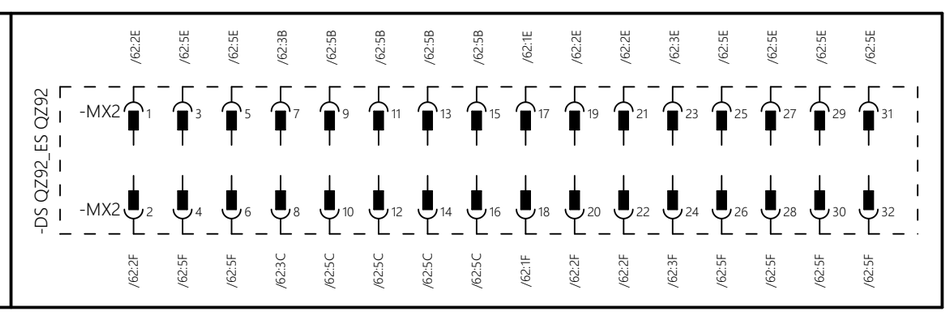
DS
MULTY SOCKET
FOR DS QZ92 (MX1)



DS/ES
MULTY SOCKET
FOR DS QZ92_ES QZ92(MX3)



ES
MULTY SOCKET
FOR ES QZ92(MX2)



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

EQUIPMENT: 66kV, 40kA GIS

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

LOCATION: HOLLANDSE KUST NOORD WIND PARK

TITLE: ARRANGEMENT FOR LCC SWITCH-4

DWG. NO.: 1723001595-EL-DG-00015

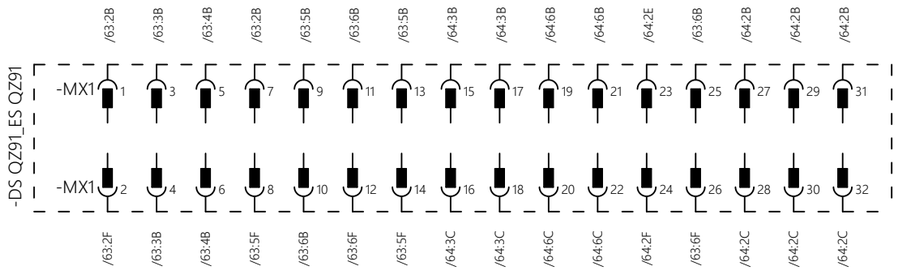
CONTRACT NO: CW-I-WP4-2023-05

REV. 03

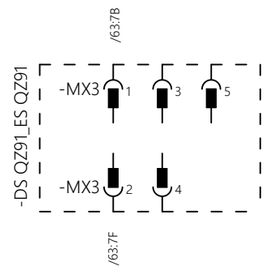
SH. 57 / 72

CONT. 58

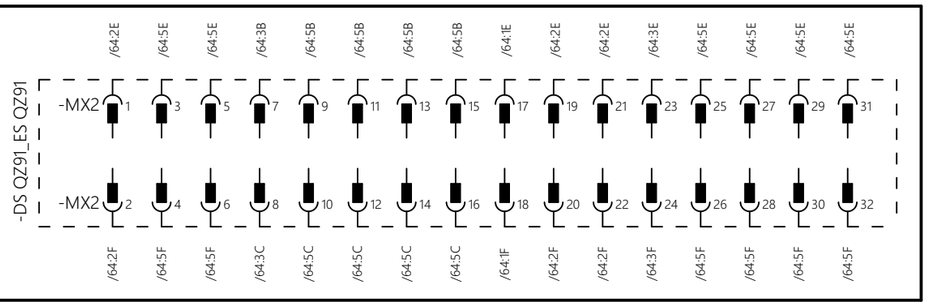
DS
MULTY SOCKET
FOR DS QZ91 (MX1)



DS/ES
MULTY SOCKET
FOR DS QZ91_ES QZ91(MX3)



ES
MULTY SOCKET
FOR ES QZ91(MX2)



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH

EQUIPMENT: 66kV, 40kA GIS

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

LOCATION: HOLLANDSE KUST NOORD WIND PARK

TITLE: ARRANGEMENT FOR LCC SWITCH-5

DWG. NO.: 1723001595-EL-DG-00015

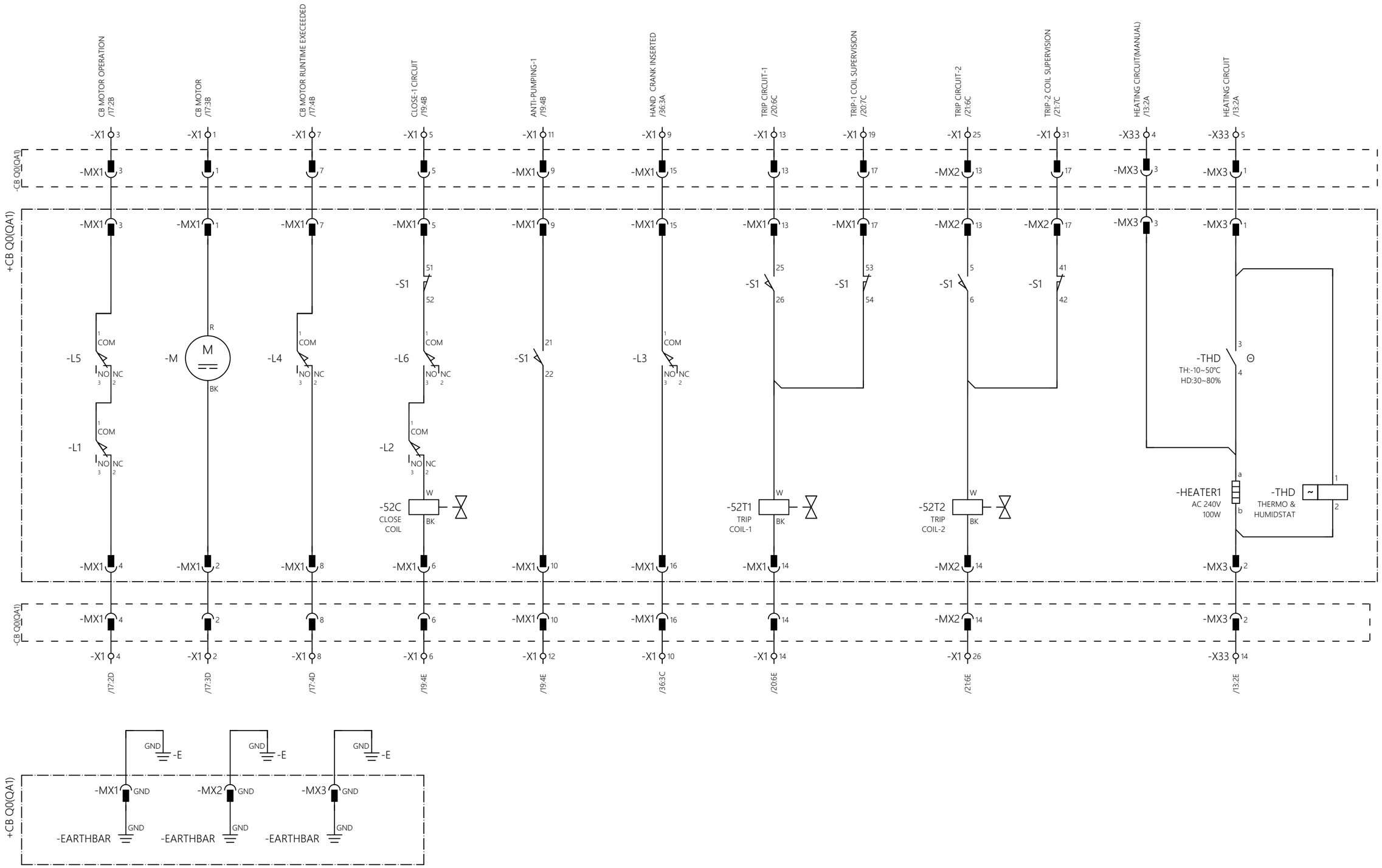
CONTRACT NO: CW-I-WP4-2023-05

REV. 03

SH. 58 / 72

CONT. 59

CB Q0(QA1)(CB) OPERATING MECHANISM REFERENCE DRAWING

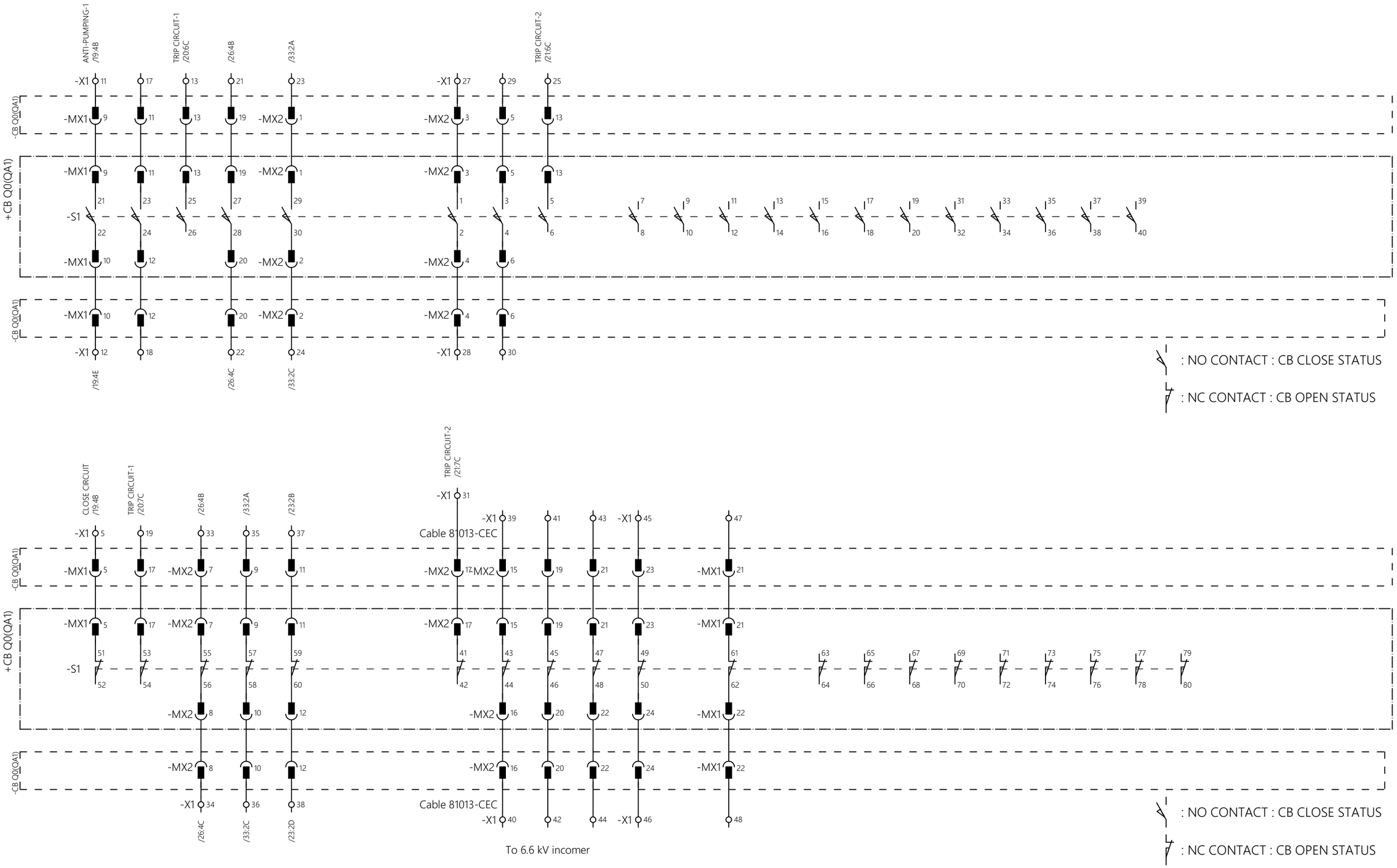


03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: ARRANGEMENT FOR CB Q0(QA1)(CB) OPTD MECH. BOX	REV. 03 / SH. 59 / 72
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015 / CONTRACT NO: CW-I-WP4-2023-05	CONT. 60

CB Q0(QA1)(CB) AUXILIARY CONTACTS REFERENCE DRAWING



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

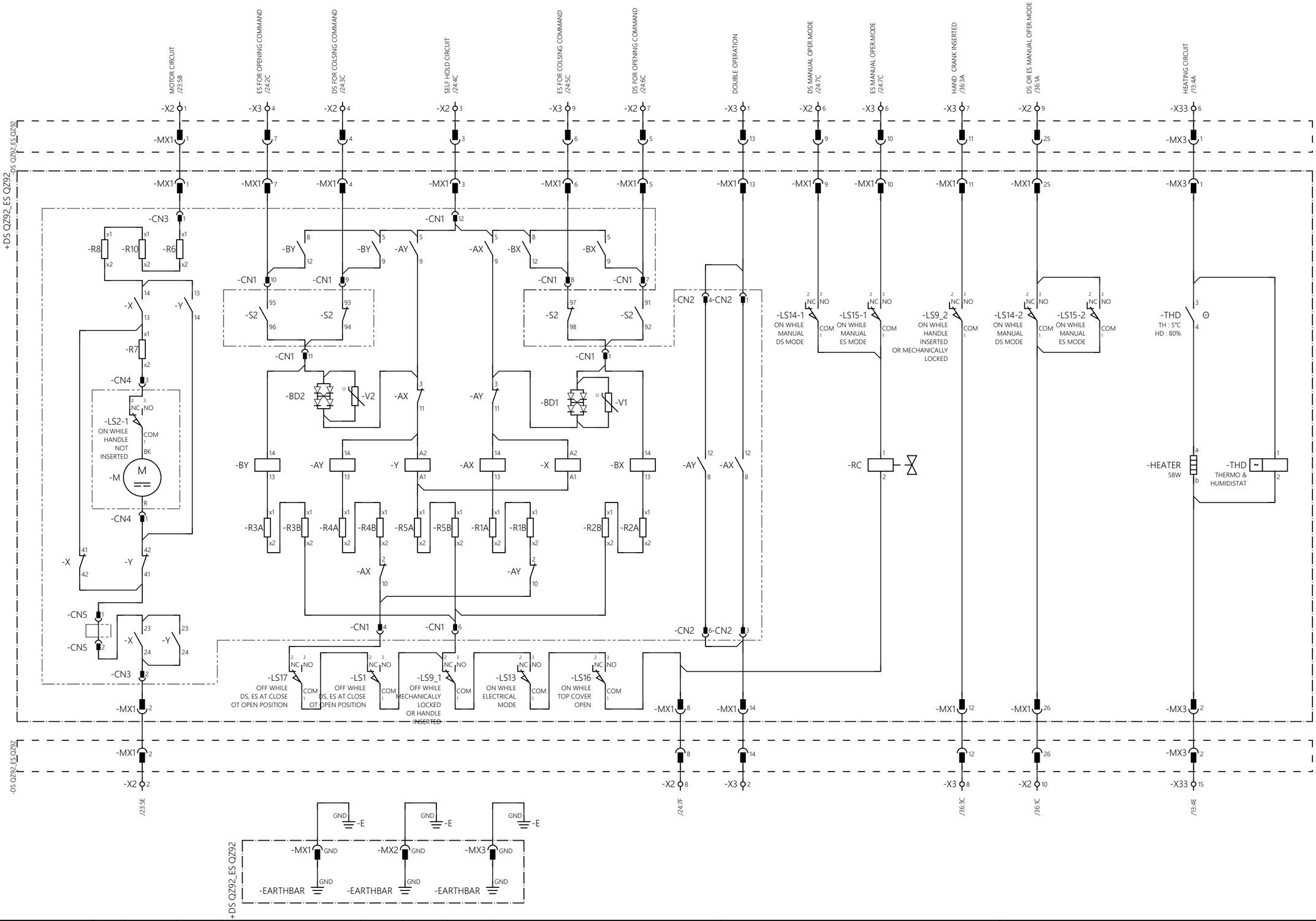
HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: CB Q0(QA1)(CB) AUXILIARY CONTACTS	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 60 / 72

CONT. 61

DS QZ92_ES QZ92(DS & ES) OPERATING MECHANISM REFERENCE DRAWING

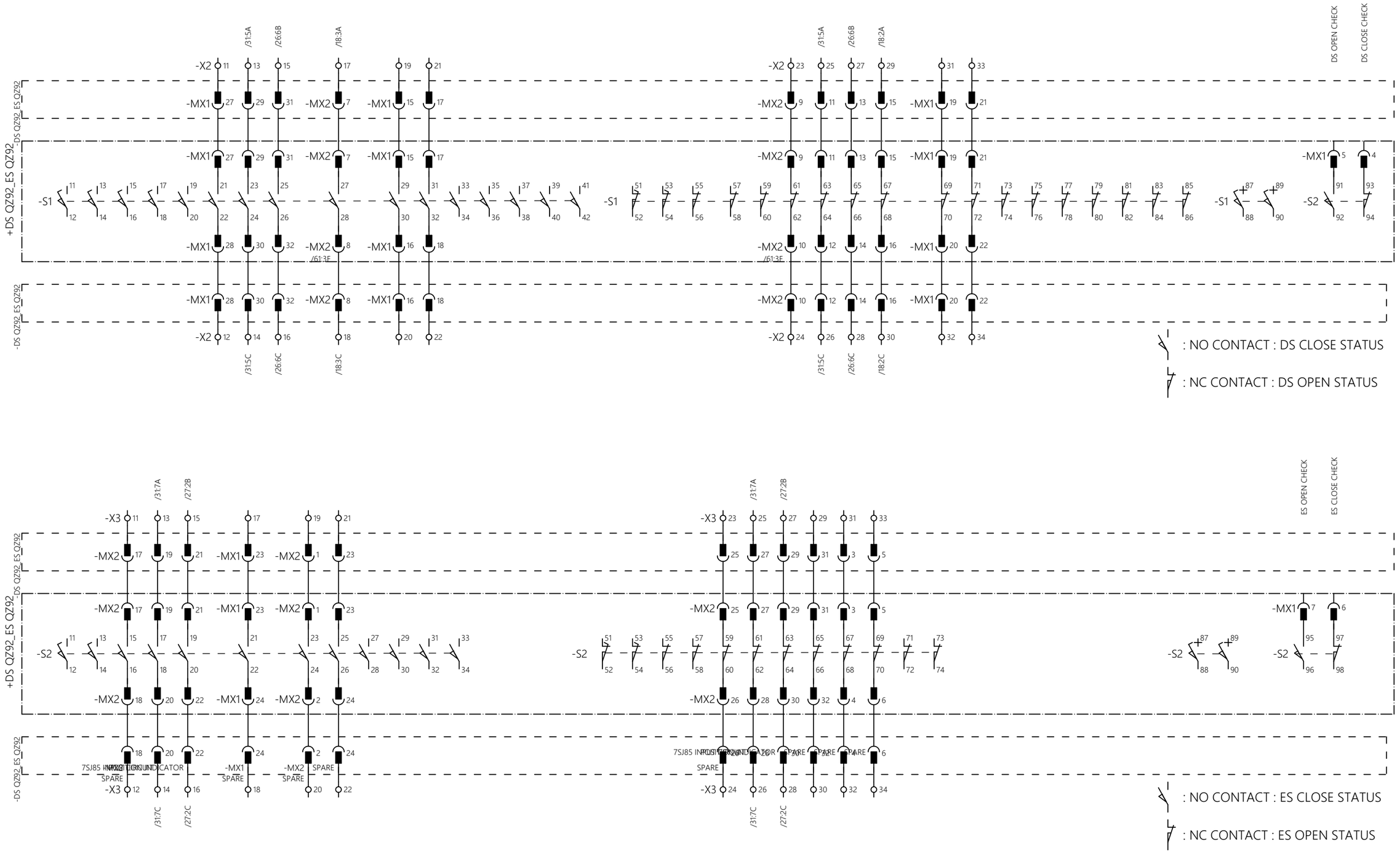


REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: ARRANGEMENT FOR DS QZ92_ES QZ92(DS & ES) OPTD MECH. BOX	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015 / CONTRACT NO: CW-I-WP4-2023-05	SH. 61 / 72 / CONT. 62

DS QZ92_ES QZ92(DS & ES) AUXILIARY CONTACTS REFERENCE DRAWING



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

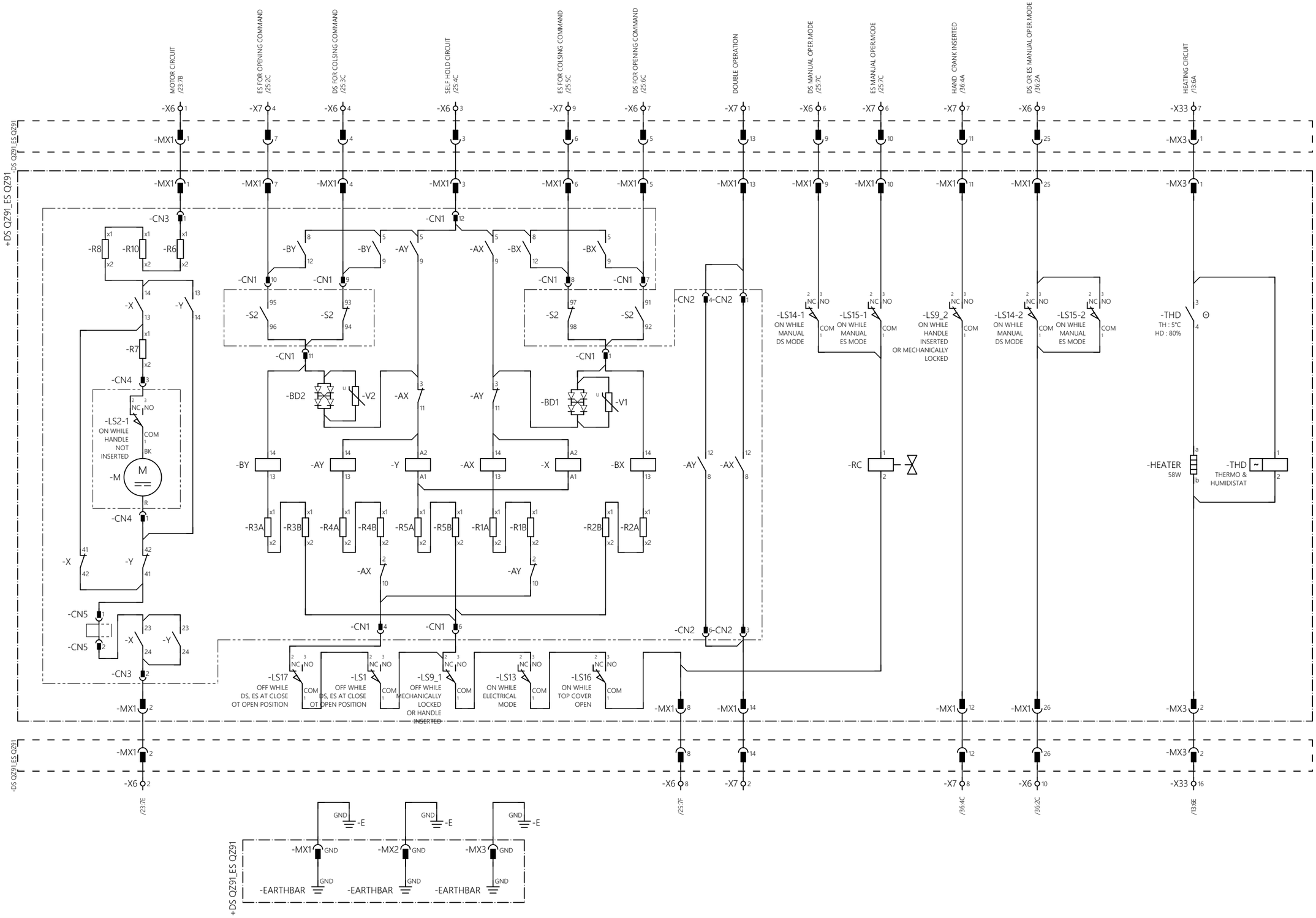
HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: DS QZ92_ES QZ92(DS & ES) AUXILIARY SWITCH	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015	CONTRACT NO: CW-I-WP4-2023-05

SH. 62 / 72

CONT. 63

DS QZ91_ES QZ91(DS & ES) OPERATING MECHANISM REFERENCE DRAWING

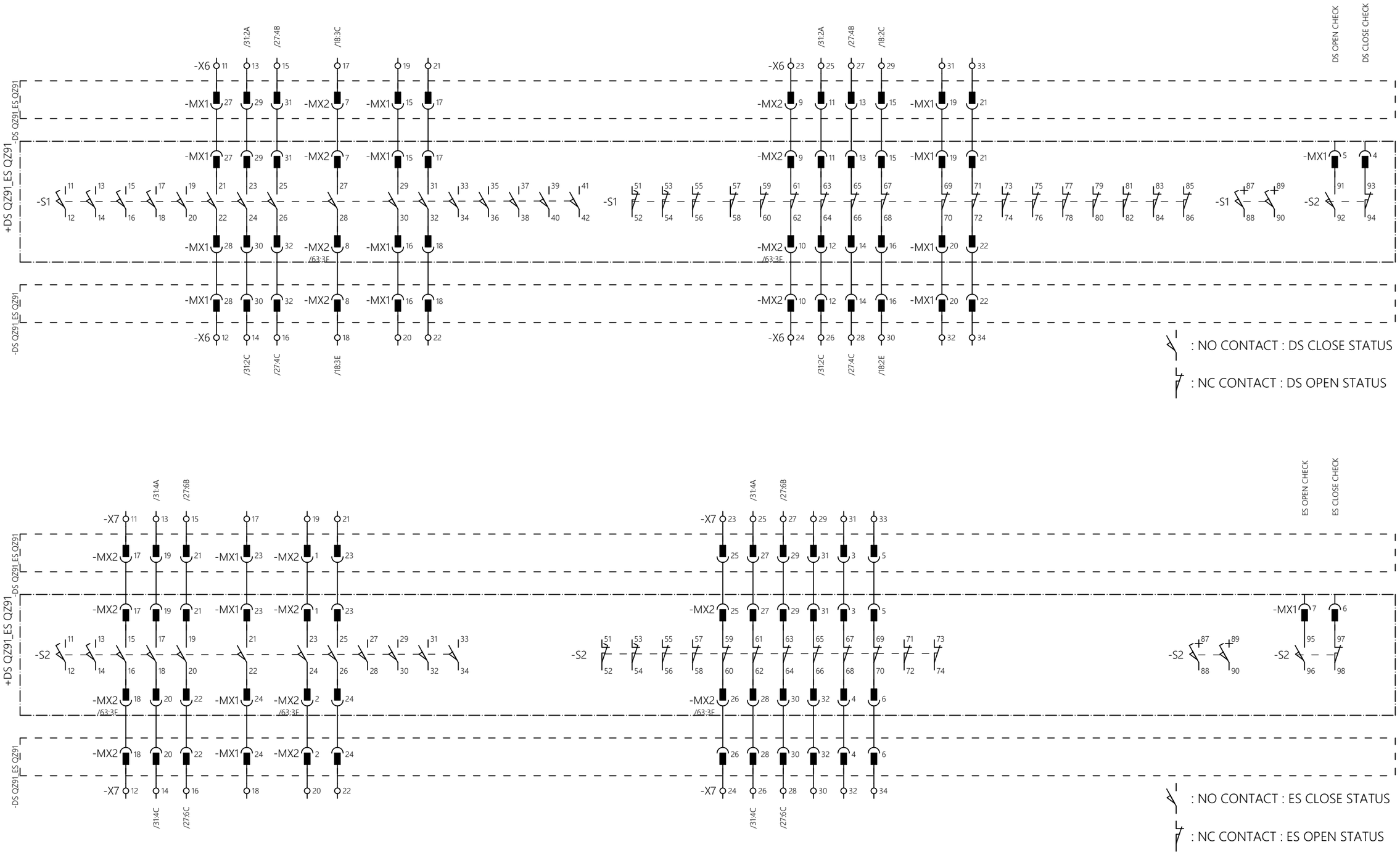


03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: ARRANGEMENT FOR DS QZ91_ES QZ91(DS & ES) OPTD MECH. BOX	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015 / CONTRACT NO: CW-I-WP4-2023-05	SH. 63 / 72
			CONT. 64

DS QZ91_ES QZ91(DS & ES) AUXILIARY CONTACTS REFERENCE DRAWING



REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

HYOSUNG HEAVY INDUSTRIES

SUBSTATION: BLPH	DOC. TYPE: CIRCUIT AND WIRING DIAGRAM	TITLE: DS QZ91_ES QZ91(DS & ES) AUXILIARY SWITCH	REV. 03
EQUIPMENT: 66kV, 40kA GIS	LOCATION: HOLLANDSE KUST NOORD WIND PARK	DWG. NO.: 1723001595-EL-DG-00015 / CONTRACT NO: CW-I-WP4-2023-05	SH. 64 / 72
			CONT. 65

DEVICE TAG	DEVICE DESCRIPTION / FUNCTION	PART NUMBER	MANUFACTURER	/Page.Path
-86-1	PROTECTION RELAY FOR HIGH SPEED TRIP RELAY FOR 86 High speed trip, high burden with contact type (hand reset and electrical reset) and hand reset flag	7PJ1524	SIEMENS	/56.A2
-CB Q0(QA1)	MULTI SOCKET FOR CB MULTY SOCKET FOR CB Q0(QA1) (MX1) MULTI SOCKET CRIMP TERMINAL / 32 pin / AC 500 V / 16 A	HEE32 +HQ-5 +HEE32	WEIDMULLER	/57.A2
-CL1	PILOT LAMP FOR CB Q0(QA1) CLOSE INDICATOR DC 110V , RED COLOR, LED	YSBPL2-DL11R	YONGSUNG	/26.E4
-CL2	PILOT LAMP FOR DS QZ92 CLOSE INDICATOR DC 110V , RED COLOR, LED	YSBPL2-DL11R	YONGSUNG	/26.E6
-CL3	PILOT LAMP FOR ES QZ92 CLOSE INDICATOR DC 110V , RED COLOR, LED	YSBPL2-DL11R	YONGSUNG	/27.E2
-CL4	PILOT LAMP FOR DS QZ91 CLOSE INDICATOR DC 110V , RED COLOR, LED	YSBPL2-DL11R	YONGSUNG	/27.E4
-CL5	PILOT LAMP FOR ES QZ91 CLOSE INDICATOR DC 110V , RED COLOR, LED	YSBPL2-DL11R	YONGSUNG	/27.E6
-CS1	SELECTOR SWITCH FOR CB Q0(QA1) CAM SWITCH SELECT SWITCH / PISTOL TYPE HANDLE / PULL AND TURN TYPE	YSDNC3102-64RP20B	YONG SUNG	/54.C3
-CS2	SELECTOR SWITCH FOR DS QZ92 CAM SWITCH SELECT SWITCH / EGG TYPE HANDLE / PULL AND TURN TYPE	YSDNC3102-64RE20B	YONG SUNG	/54.D3
-CS3	SELECTOR SWITCH FOR ES QZ92 CAM SWITCH SELECT SWITCH / EGG TYPE HANDLE / PULL AND TURN TYPE	YSDNC3102-64RE20B	YONG SUNG	/54.F3
-CS4	SELECTOR SWITCH FOR DS QZ91 CAM SWITCH SELECT SWITCH / EGG TYPE HANDLE / PULL AND TURN TYPE	YSDNC3102-64RE20B	YONG SUNG	/55.B3
-CS5	SELECTOR SWITCH FOR ES QZ91 CAM SWITCH SELECT SWITCH / EGG TYPE HANDLE / PULL AND TURN TYPE	YSDNC3102-64RE20B	YONG SUNG	/55.C3

DEVICE TAG	DEVICE DESCRIPTION / FUNCTION	PART NUMBER	MANUFACTURER	/Page.Path
-DLS	LIMIT SWITCH FOR LCP LIMIT SWITCH / DC125 V, 10 A / AC250V, 3A / HINGE ROLLER LEVER / SCREW TERMINAL(WITH TOOTHED WASHER)	X-10GW2-B	OMRON	/12.C3
-DS QZ91_ES QZ91	MULTI SOCKET FOR DS MULTY SOCKET FOR DS QZ91 (MX1) MULTI SOCKET CRIMP TERMINAL / 32 pin / AC 500 V / 16 A	HEE32 +HEE32 +HQ-5	WEIDMULLER	/58.A2
-DS QZ92_ES QZ92	MULTI SOCKET FOR DS MULTY SOCKET FOR DS QZ92 (MX1) MULTI SOCKET CRIMP TERMINAL / 32 pin / AC 500 V / 16 A	HEE32 +HEE32 +HQ-5	WEIDMULLER	/57.D2
-EMCS FDF	FDF FOR FIBER DISTRIBUTION FRAME 12PORT, LC TYPE	HM-12-LC 12C	HARRY RND	/51.A1
-F01	MINIATURE CIRCUIT BREAKER FOR CIRCUIT BREAKER CONTROL SUPPLY CLOSING & TRIP CIRCUIT 1 DOUBLE POLE, 10A	S202-C-2P-10A +S2C-H6R_1/14, 1/11, 1/12 +S2C-H6R_2/14, 2/11, 2/12	ABB	/14.B3
-F02	MINIATURE CIRCUIT BREAKER FOR CIRCUIT BREAKER MOTOR SUPPLY DOUBLE POLE, 16A	S202-C-2P-16A +S2C-H6R_1/14, 1/11, 1/12 +S2C-H6R_2/14, 2/11, 2/12	ABB	/14.B4
-F03	MINIATURE CIRCUIT BREAKER FOR INDICATION CIRCUIT SUPPLY DOUBLE POLE, 10A	S202-C-2P-10A +S2C-H6R_1/14, 1/11, 1/12 +S2C-H6R_2/14, 2/11, 2/12	ABB	/14.B6
-F04	MINIATURE CIRCUIT BREAKER FOR PROTECTION RELAY -7UT85 SUPPLY DOUBLE POLE, 6A	S202-C-2P-6A +S2C-H6R_1/14, 1/11, 1/12 +S2C-H6R_2/14, 2/11, 2/12	ABB	/14.B7
-F05	MINIATURE CIRCUIT BREAKER FOR RED BOX UNIT RSG907R SUPPLY DOUBLE POLE, 6A	S202-C-2P-6A +S2C-H6R_1/14, 1/11, 1/12 +S2C-H6R_2/14, 2/11, 2/12	ABB	/15.B2
-F11	MINIATURE CIRCUIT BREAKER FOR CIRCUIT BREAKER CONTROL SUPPLY TRIP CIRCUIT 2 DOUBLE POLE, 10A	S202-C-2P-10A +S2C-H6R_1/14, 1/11, 1/12 +S2C-H6R_2/14, 2/11, 2/12	ABB	/16.B3
-F12	MINIATURE CIRCUIT BREAKER FOR DS & ES MOTOR & CONTROL SUPPLY DOUBLE POLE, 10A	S202-C-2P-10A +S2C-H6R_1/14, 1/11, 1/12 +S2C-H6R_2/14, 2/11, 2/12	ABB	/16.B4
-F13	MINIATURE CIRCUIT BREAKER FOR MERGING UNIT -IM2 SUPPLY DOUBLE POLE, 6A	S202-C-2P-6A +S2C-H6R_1/14, 1/11, 1/12 +S2C-H6R_2/14, 2/11, 2/12	ABB	/16.B5

DEVICE TAG	DEVICE DESCRIPTION / FUNCTION	PART NUMBER	MANUFACTURER	/Page.Path
-F14	MINIATURE CIRCUIT BREAKER FOR PROTECTION RELAY -7SJ85 SUPPLY DOUBLE POLE, 6A	S202-C-2P-6A +S2C-H6R_1/14, 1/11, 1/12 +S2C-H6R_2/14, 2/11, 2/12	ABB	/16.B8
-FA	MINIATURE CIRCUIT BREAKER FOR AC MAIN SUPPLY DOUBLE POLE, 32A	S202-C-2P-32A +S2C-H6R_1/14, 1/11, 1/12 +S2C-H6R_2/14, 2/11, 2/12	ABB	/12.B2
-FD1	MINIATURE CIRCUIT BREAKER FOR DC1 MAIN SUPPLY DOUBLE POLE, 32A	S202-C-2P-32A +S2C-H6R_1/14, 1/11, 1/12 +S2C-H6R_2/14, 2/11, 2/12	ABB	/14.B2
-FD2	MINIATURE CIRCUIT BREAKER FOR DC2 MAIN SUPPLY DOUBLE POLE, 32A	S202-C-2P-32A +S2C-H6R_1/14, 1/11, 1/12 +S2C-H6R_2/14, 2/11, 2/12	ABB	/16.B2
-FL1	FLUORESCENT LAMP INPUT : AC 110~240V, 50/60Hz	DH6W-340/RC	DONG HEE	/12.D3
-HEATER1	SPACE HEATER Space Heater / AC 230 V / 100W	RHTS-100W(230V)	RUN ELEC.	/12.D6
-HV SCADA FDF	FDF FOR RED BOX UNIT 12PORT, LC TYPE	HM-12-LC 12C	HARRY RND	/53.A1
-IM2	MERGING UNIT FOR MERGING UNIT MERGING UNIT. AC/DC 100~250V	IM2	HYOSUNG	/49.D2
-K7SJ	CONTROL RELAY FOR 7SJ85 FAILURE 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13	ABB	/28.E2
-K7UT	CONTROL RELAY FOR 7UT85 FAILURE 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13	ABB	/28.E4
-K11	CONTROL RELAY FOR CB Q0(QA1) CLOSE 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13	ABB	/18.E3
-K12	CONTROL RELAY FOR CB Q0(QA1) TRIP 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13	ABB	/18.E3

DEVICE TAG	DEVICE DESCRIPTION / FUNCTION	PART NUMBER	MANUFACTURER	/Page.Path
-K27	CONTROL RELAY FOR AC SUPPLY SUPERVISION 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13	ABB	/13.C7
-K41	MAGNETIC CONTACTOR FOR CB MOTOR CONTACTOR DC 110V / 3 MC + 1 NO 1 NC	MC-22b(DC110V)	LS ELECTRIC	/17.E2
-K42	THERMAL OVERLOAD RELAY FOR CB MOTOR CONTROL 1NO 1NC (5~8A)	MT-32/2H6.5	LS ELECTRIC	/17.B3
-K51	CONTROL RELAY FOR CB SPRING CHARGE EXCESSIVE RUN TIME ALARM 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13	ABB	/17.E5
-K71	CONTROL RELAY FOR ANTI-PUMPING OF CB DC 110 V / 4NO/NC / Operate time : 50ms max / Release time : 30ms max / DC-Switching type	MM4XP(DC110V)	OMRON	/19.E5
-KG1	CONTROL RELAY FOR CB Q0(QA1) GAS PRESSURE LOW STAGE-1 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13	ABB	/22.E5
-KG2	CONTROL RELAY FOR CB Q0(QA1) GAS PRESSURE LOW STAGE-2 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13 +CA4-22N	ABB	/22.E7
-KSIL1	SAFETY RELAY FOR TRIP SAFETY SYSTEM DC 24V / 3NO+1NC	BSR10	ABB	/20.E2
-KSIL2	SAFETY RELAY FOR TRIP SAFETY SYSTEM DC 24V / 3NO+1NC	BSR10	ABB	/22.C4
-KT1	TIMER FOR CB MOTOR RUNTIME CHECK DC 24-240 V / AC 100-240 V (50/60HZ) / 2NO/NC	AT8N	AUTONICS	/17.E4
-KVB1	CONTROL RELAY FOR VD1 L3 NO VOLTAGE 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13	ABB	/29.E4
-KVB2	CONTROL RELAY FOR VD2 L3 NO VOLTAGE 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13	ABB	/29.E8

DEVICE TAG	DEVICE DESCRIPTION / FUNCTION	PART NUMBER	MANUFACTURER	/Page.Path
-KVR1	CONTROL RELAY FOR VD1 L1 NO VOLTAGE 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13	ABB	/29.E2
-KVR2	CONTROL RELAY FOR VD2 L1 NO VOLTAGE 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13	ABB	/29.E5
-KVY1	CONTROL RELAY FOR VD1 L2 NO VOLTAGE 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13	ABB	/29.E3
-KVY2	CONTROL RELAY FOR VD2 L2 NO VOLTAGE 100-250V50/60HZ-DC / 2NO+2NC Screw clamp connections	NF22E-13	ABB	/29.E6
-LT	PUSH BUTTON FOR LAMP TEST PUSH BUTTON SWITCH Ø25, 2a, BLACK, AUTO RETURN	YSB12-20B	YONG SUNG	/55.E3
-LTX	CONTROL RELAY FOR LAMP TEST 100-250V50/60HZ-DC / 4NO+0NC Screw clamp connections	NF40E-13 +CA4-40N	ABB	/26.E2
-LTX1	CONTROL RELAY FOR LAMP TEST 100-250V50/60HZ-DC / 4NO+0NC Screw clamp connections	NF40E-13	ABB	/26.E2
-MU LPIT FDF	FDF FOR FIBER DISTRIBUTION FRAME 8PORT, LC TYPE	HM-8-LC 8C	HARRY RND	/50.C1
-MU LPVT FDF	FDF FOR FIBER DISTRIBUTION FRAME 8PORT, LC TYPE	HM-8-LC 8C	HARRY RND	/50.C2
-MX	CONTROL RELAY FOR DS/ES MANUAL OPER.MODE 100-250V50/60HZ-DC / 4NO+0NC Screw clamp connections	NF40E-13	ABB	/23.E2
-OL1	PILOT LAMP FOR CB Q0(QA1) OPEN INDICATOR DC 110V , GREEN COLOR, LED	YSBPL2-DL11G	YONGSUNG	/26.E4
-OL2	PILOT LAMP FOR DS QZ92 OPEN INDICATOR DC 110V , GREEN COLOR, LED	YSBPL2-DL11G	YONGSUNG	/26.E6

DEVICE TAG	DEVICE DESCRIPTION / FUNCTION	PART NUMBER	MANUFACTURER	/Page.Path
-OL3	PILOT LAMP FOR ES QZ92 OPEN INDICATOR DC 110V , GREEN COLOR, LED	YSBPL2-DL11G	YONGSUNG	/27.E2
-OL4	PILOT LAMP FOR DS QZ91 OPEN INDICATOR DC 110V , GREEN COLOR, LED	YSBPL2-DL11G	YONGSUNG	/27.E4
-OL5	PILOT LAMP FOR ES QZ91 OPEN INDICATOR DC 110V , GREEN COLOR, LED	YSBPL2-DL11G	YONGSUNG	/27.E6
-RS1	ROTARY SWITCH FOR ES QZ91 CAM SWITCH ROTARY SWITCH FOR 2 POSITION	YSBR2-222B	YONG SUNG	/55.D3
-RSG907R	RED BOX FOR RED BOX UNIT 4 x 100BASE-FX + 3 x 1000 BASE-X (SFP), 3 x 1 Gbit/s SFP ports, LO 24/48 VDC (12 – 60 VDC), HI (85 – 264 VAC / 88 – 300 VDC)	RSG907R	SIEMENS	/15.C2
-S01	KEY CAM SWITCH 76X76mm / 20A / MANUAL RETURN TYPE	YSKDNC2504-79M20	YONG SUNG	/54.B3
-7SJ85	PROTECTION RELAY FOR PROTECTION IED Firmware:Current version, Binary inputs:59, Binary outputs:33 Relays, Power Supply:DC 60 V-250 V, AC 100 V-230 V	7SJ85 +7SJ85	SIEMENS	/31.D1
-SOCKET	SOCKET FOR AC 220V RECEPTACLE SOCKET OUTLET / AC 250 V / 16 A / 2P	M1173	ABB	/12.C4
-TCS1	TCS FOR Circuit Supervision Relay DC 110/125 V, Rated Voltage : 82.5 to 137.5, 1-phase, With base	7PA30	SIEMENS	/56.E2
-TCS2	TCS FOR Circuit Supervision Relay DC 110/125 V, Rated Voltage : 82.5 to 137.5, 1-phase, With base	7PA30	SIEMENS	/56.E6
-THD	THERMO-HUMIDSTAT FOR HEATER CIRCUIT Temperature Range : -10 ~ 50°C Humidity range : 30 ~ 90 %	RHC-90-HS	RUN ELEC.	/12.C7
-TP1	POWER SUPPLY FOR SAFETY RELAY Input data : AC input voltage : 85 VAC ~ 264 VAC, DC input voltage : 90 VDC ~ 350 VDC, AC frequency range : 45 Hz ~ 65 Hz Output data : setting range of the output voltage : 22.5 VDC ~ 28.5 VDC, Output current : 3.5 A	QUINT-PS-100-240AC/24DC/3.5	PHOENIX CONTACT	/22.C1

DEVICE TAG	DEVICE DESCRIPTION / FUNCTION	PART NUMBER	MANUFACTURER	/Page.Path
-TT1	TEST SWITCH FOR FLEXITEST SWITCH FOR 7SJ85 4 Potential 6 Current Flexitest Switch.	FT-1-129A514G01	ABB	/56.C2
-TT2	TEST SWITCH FOR FLEXITEST SWITCH FOR 7UT85 4 Potential 6 Current Flexitest Switch.	FT-1-129A514G01	ABB	/56.D2
-7UT85	PROTECTION RELAY FOR PROTECTION IED Firmware:Current version, Binary inputs:7, Binary outputs:7 Relays, Power Supply:DC 60 V-250 V, AC 100 V-230 V	7UT85	SIEMENS	/43.D1
-VDB1	VOLTAGE SENSOR FOR VD RELAY VOLTAGE SENSOR, 0.2~12V(AC/DC), DC100/110V	SDV-DM4, 0.2~12V, DC100/110V	OMRON	/29.B4
-VDB2	VOLTAGE SENSOR FOR VD RELAY VOLTAGE SENSOR, 0.2~12V(AC/DC), DC100/110V	SDV-DM4, 0.2~12V, DC100/110V	OMRON	/29.B7
-VDR1	VOLTAGE SENSOR FOR VD RELAY VOLTAGE SENSOR, 0.2~12V(AC/DC), DC100/110V	SDV-DM4, 0.2~12V, DC100/110V	OMRON	/29.B1
-VDR2	VOLTAGE SENSOR FOR VD RELAY VOLTAGE SENSOR, 0.2~12V(AC/DC), DC100/110V	SDV-DM4, 0.2~12V, DC100/110V	OMRON	/29.B5
-VDY1	VOLTAGE SENSOR FOR VD RELAY VOLTAGE SENSOR, 0.2~12V(AC/DC), DC100/110V	SDV-DM4, 0.2~12V, DC100/110V	OMRON	/29.B2
-VDY2	VOLTAGE SENSOR FOR VD RELAY VOLTAGE SENSOR, 0.2~12V(AC/DC), DC100/110V	SDV-DM4, 0.2~12V, DC100/110V	OMRON	/29.B6

TERMINAL SUMMARY

HS_HIS_F14_TIBAT

TERMINAL DESIGNATION	FUNCTION	MANUFACTURER	TYPE	QUANTITY	TERMINAL DIARAM REFERENCE PAGE
-X1	TERMINAL BLOCK FOR CB Q0(QA1)(CB) FOR CIRCUIT	PHOENIX CONTACT	USST 4-MT	50	
-X2	TERMINAL BLOCK FOR DS QZ92 DS OPERATING MECHANISM CIRCUIT	PHOENIX CONTACT	USST 4-MT	40	
-X3	TERMINAL BLOCK FOR ES QZ92 ES OPERATING MECHANISM CIRCUIT	PHOENIX CONTACT	USST 4-MT	40	
-X6	TERMINAL BLOCK FOR DS QZ91 DS OPERATING MECHANISM CIRCUIT	PHOENIX CONTACT	USST 4-MT	40	
-X7	TERMINAL BLOCK FOR ES QZ91 ES OPERATING MECHANISM CIRCUIT	PHOENIX CONTACT	USST 4-MT	40	
-X11	TERMINAL BLOCK FOR CB CLOSE & TRIP-1 CIRCUIT	PHOENIX CONTACT	USST 4-MT	10	
-X12	TERMINAL BLOCK FOR CB TRIP-2 CIRCUIT	PHOENIX CONTACT	USST 4-MT	10	
-X13	TERMINAL BLOCK FOR EXTERNAL CIRCUIT	PHOENIX CONTACT	USST 4-MT	45	
-X21	TERMINAL BLOCK FOR 7SJ85 INPUT CIRCUIT	PHOENIX CONTACT	USST 4-MT	80	
-X21A	TERMINAL BLOCK FOR 7SJ85 OUTPUT CIRCUIT	PHOENIX CONTACT	USST 4-MT	70	
-X21B	TERMINAL BLOCK FOR EXTERNAL CIRCUIT	PHOENIX CONTACT	USST 4-MT	20	
-X22	TERMINAL BLOCK FOR 7UT85 INPUT CIRCUIT	PHOENIX CONTACT	USST 4-MT	40	
-X22A	TERMINAL BLOCK FOR 7UT85 OUTPUT CIRCUIT	PHOENIX CONTACT	USST 4-MT	35	
-X23	TERMINAL BLOCK FOR IM2 INPUT CIRCUIT	PHOENIX CONTACT	USST 4-MT	10	
-X30	TERMINAL BLOCK FOR DP-200N1 CIRCUIT	PHOENIX CONTACT	UT10	5	
-X31	TERMINAL BLOCK FOR DP-200F1 CIRCUIT	PHOENIX CONTACT	UT35	5	
-X32	TERMINAL BLOCK FOR DP-200F1 CIRCUIT	PHOENIX CONTACT	UT35	5	
-X33	TERMINAL BLOCK FOR HEATER CIRCUIT	PHOENIX CONTACT	USST 4-MT	20	
-X34	TERMINAL BLOCK FOR LPVT/LPIT-1 CIRCUIT	PHOENIX CONTACT	USST 4-MT	10	
-X35	TERMINAL BLOCK FOR LPVT/LPIT-2 CIRCUIT	PHOENIX CONTACT	USST 4-MT	10	
-X41	TERMINAL BLOCK FOR TR-100AD1 CT CIRCUIT	PHOENIX CONTACT	OTTA 6-T-P/P	5	
-X42	TERMINAL BLOCK FOR SG-100D1 CT CIRCUIT	PHOENIX CONTACT	OTTA 6-T-P/P	10	
-X43	TERMINAL BLOCK FOR TR-100AD1 CT CIRCUIT	PHOENIX CONTACT	OTTA 6-T-P/P	5	

HYOSUNG HEAVY INDUSTRIES

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.
03	18/10/24	Y.D.LEE	ACCEPTED FOR CONSTRUCTION (AFC)	Y.D.LEE	Y.W.LEE	S.J.CHO
02	06/08/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
01	05/06/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO
00	01/02/24	Y.D.LEE	ISSUE FOR CLIENT REVIEW (ICR)	Y.D.LEE	Y.W.LEE	S.J.CHO

SUBSTATION: BLPH

EQUIPMENT: 66kV, 40kA GIS

DOC. TYPE: CIRCUIT AND WIRING DIAGRAM

LOCATION: HOLLANDSE KUST NOORD WIND PARK

TITLE: TERMINAL SUMMARY

DWG. NO.: 1723001595-EL-DG-00015

CONTRACT NO: CW-I-WP4-2023-05

REV. 03

SH. 72 / 72

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