

CONTAINER CRANE P168L(WS)-SUPER

IR1763-64 PORT OF KOPER, SLOVENIA

ELECTRICAL CONNECTION DRAWING

Drawing No: 4009-2627

CABLE COLOUR CODES		3 CORES	4 CORES	5 CORES	PROXIMITY LIMIT SWITCH
BROWN	BN	X	X	X	PIN 1
BLUE	BU	X		X	PIN 3
BLACK	BK		X	X	PIN 4
GREY	GR		X	X	
GREEN-YELLOW	G/Y	X	X	X	
WHITE	WH				PIN 2

3				Drawn	22.04.09	MC		LIEBHERR CONTAINER CRANES	TITLE	Drawing No. 4009-2627		=	CD
2				Checked								+	A
1										Project/ Work No. IR1763-4		Sheet	1+
	Modification	Date	Name		Date	Name		Copyright (c)					

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* Page List - Brief Listing                      Date: 18.02.09   Page:   1 *
*****
* Project      : IR1763-4                      * LIEBHERR CONTAINER CRANES LTD. *
* Drawing No.  : 4009-2627                    * KILLARNEY, CO.KERRY, IRELAND. *
* Material No. :                             * TEL. +353 64 70200 / 31511 *
* Type/Location: PORT OF KOPER, SLOVENIA      *
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Page      |Page Description      |Location |Date   |Name
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Installation: CD

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1         |TITLE                  |A        |13.02.09|MC
2         |CONTENTS               |         |18.02.09|MC
3         |TROLLEY TERMINAL BOX X6/X7 |         |13.02.09|MC
4         |TROLLEY TERMINAL BOX X6/X7 |         |13.02.09|MC
5         |GENERAL TERMINAL BOX X6/X7 |         |13.02.09|MC
6         |TROLLEY TERMINAL BOX X7   |         |13.02.09|MC
7         |INTERBUS               |         |13.02.09|MC
8         |TROLLEY TERMINAL BOX X6/X7 |         |13.02.09|MC
9         |X6 - TERMINAL LAYOUT    |         |13.02.09|MC
10        |SPREADER CABLES        |         |13.02.09|MC
11        |CAVOTEC CONNECTOR PIN LAYOUTS |         |18.02.09|MC
12        |TRAVEL 1 TERMINAL BOX X11 |         |13.02.09|MC
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15        |TRAVEL 2 TERMINAL BOX X12 |         |13.02.09|MC
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17        |TRAVEL 4 TERMINAL BOX X14 |         |13.02.09|MC
18        |TRAVEL 3 TERMINAL BOX X13 |         |13.02.09|MC
19        |TRAVEL 3 TERMINAL BOX X13 |         |13.02.09|MC
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22        |CABLE DRUM/GUIDE LIMITSWITCH |         |13.02.09|MC
23        |A-FRAME TERMINAL BOX X9   |         |13.02.09|MC
24        |TRIM SYSTEM TERMINAL BOX X31 |         |13.02.09|MC
25        |TRIM SYSTEM TERMINAL BOX X31 |         |13.02.09|MC
26        |BOOM/MAINBEAM TERM.BOX.X41/X42 |         |13.02.09|MC
27        |TRAVEL CONSOLE P20 + CHECKERS |         |13.02.09|MC

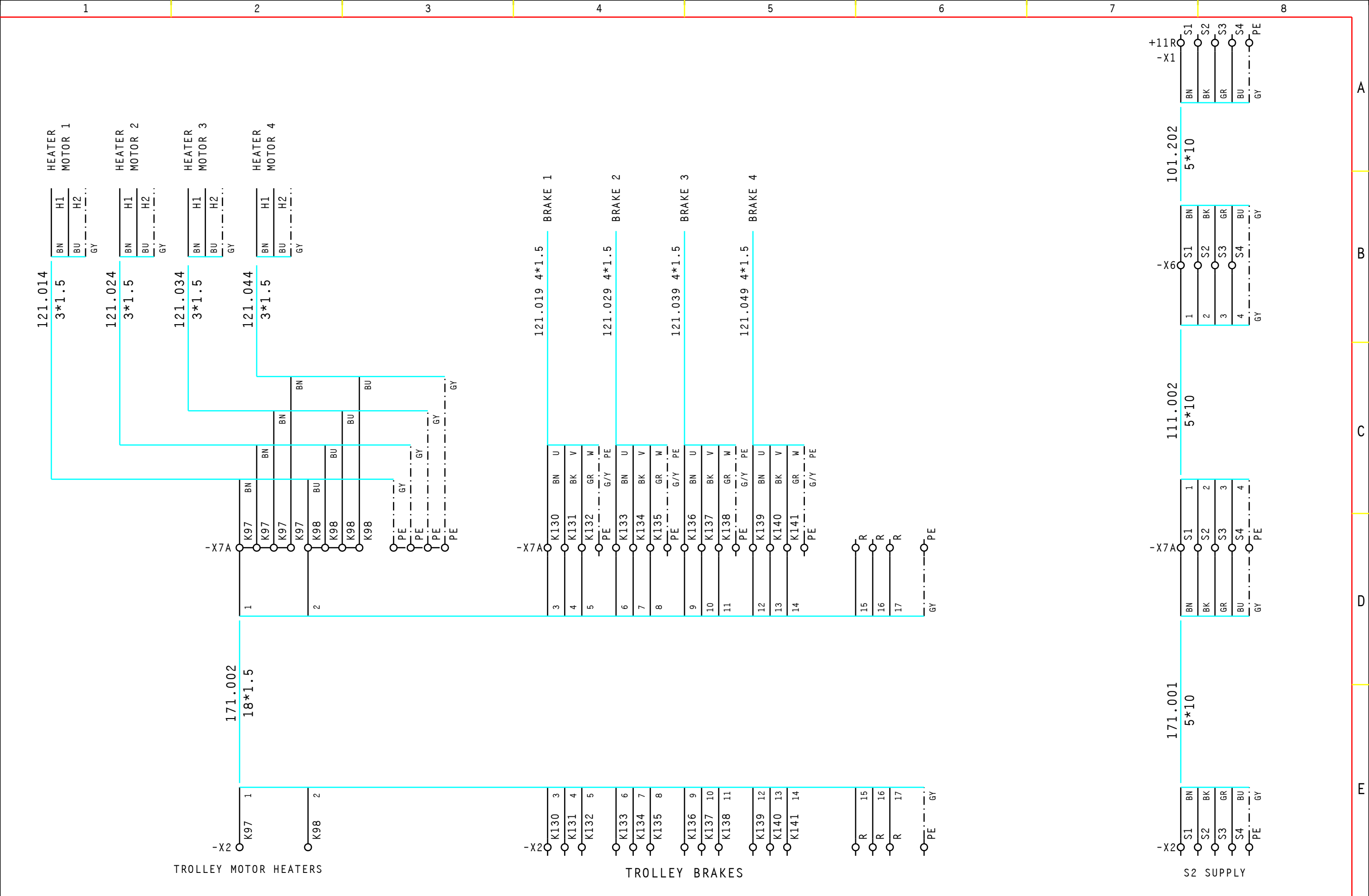
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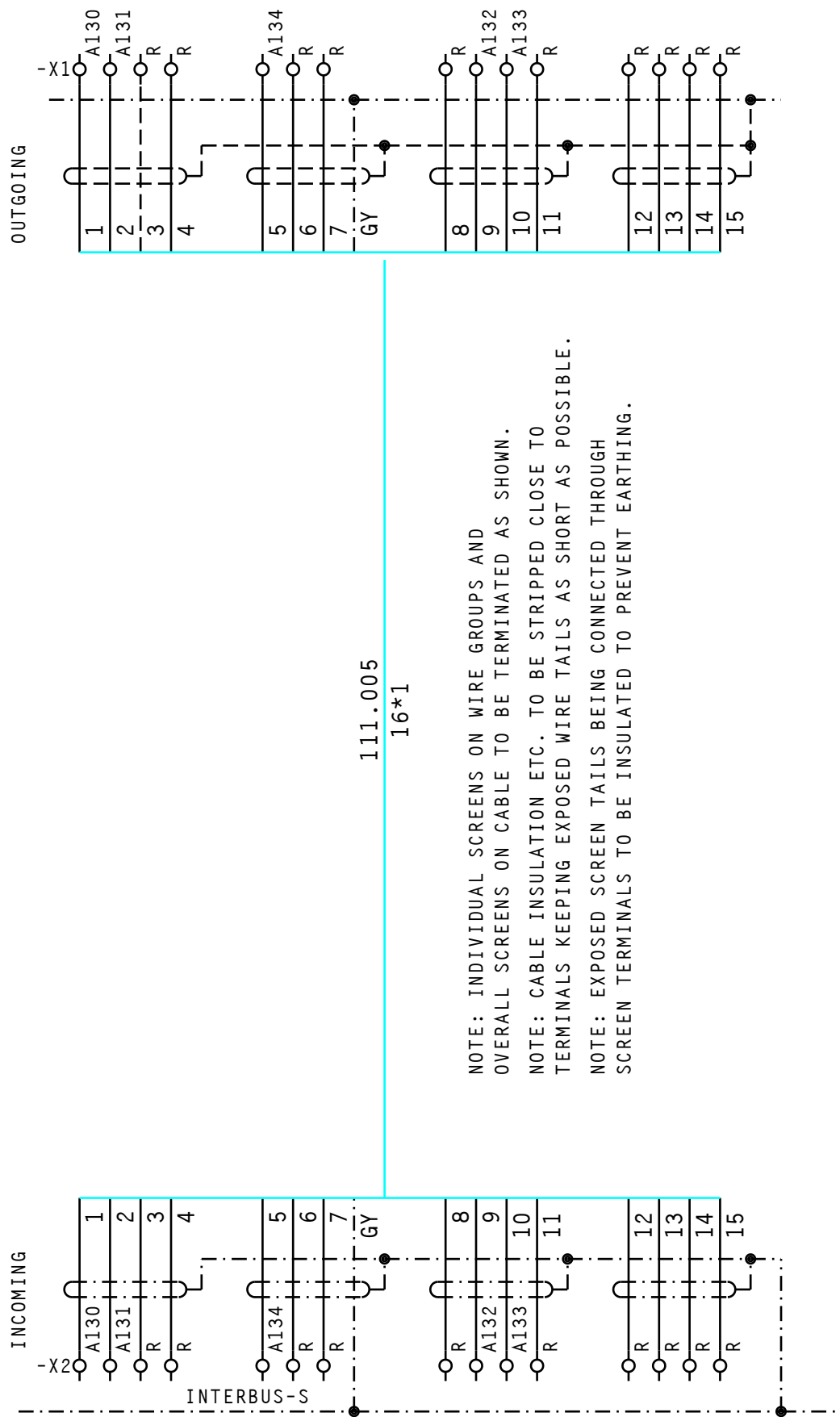


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Copyright (c)

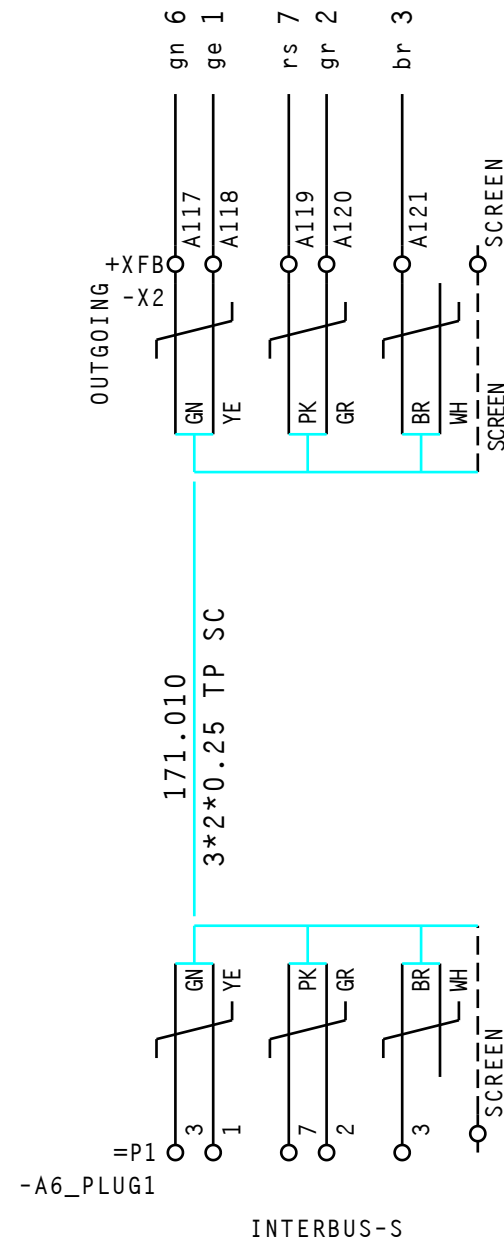
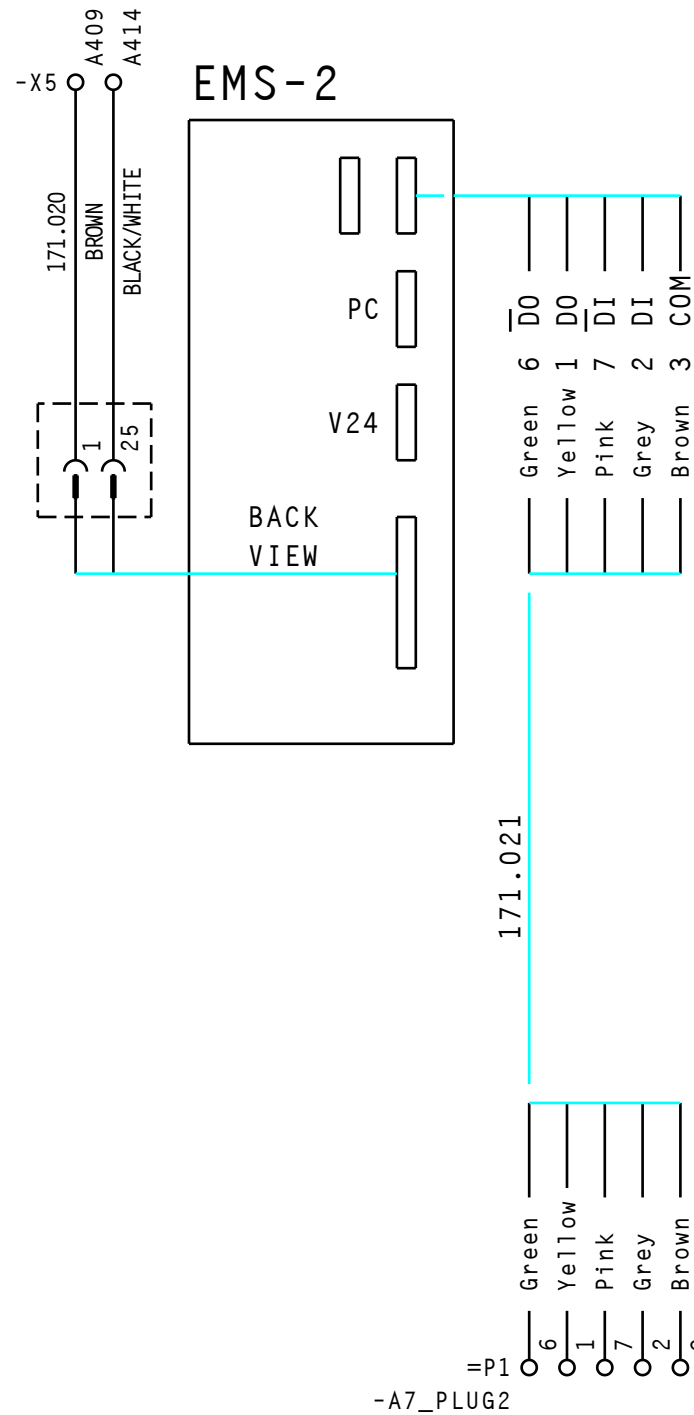
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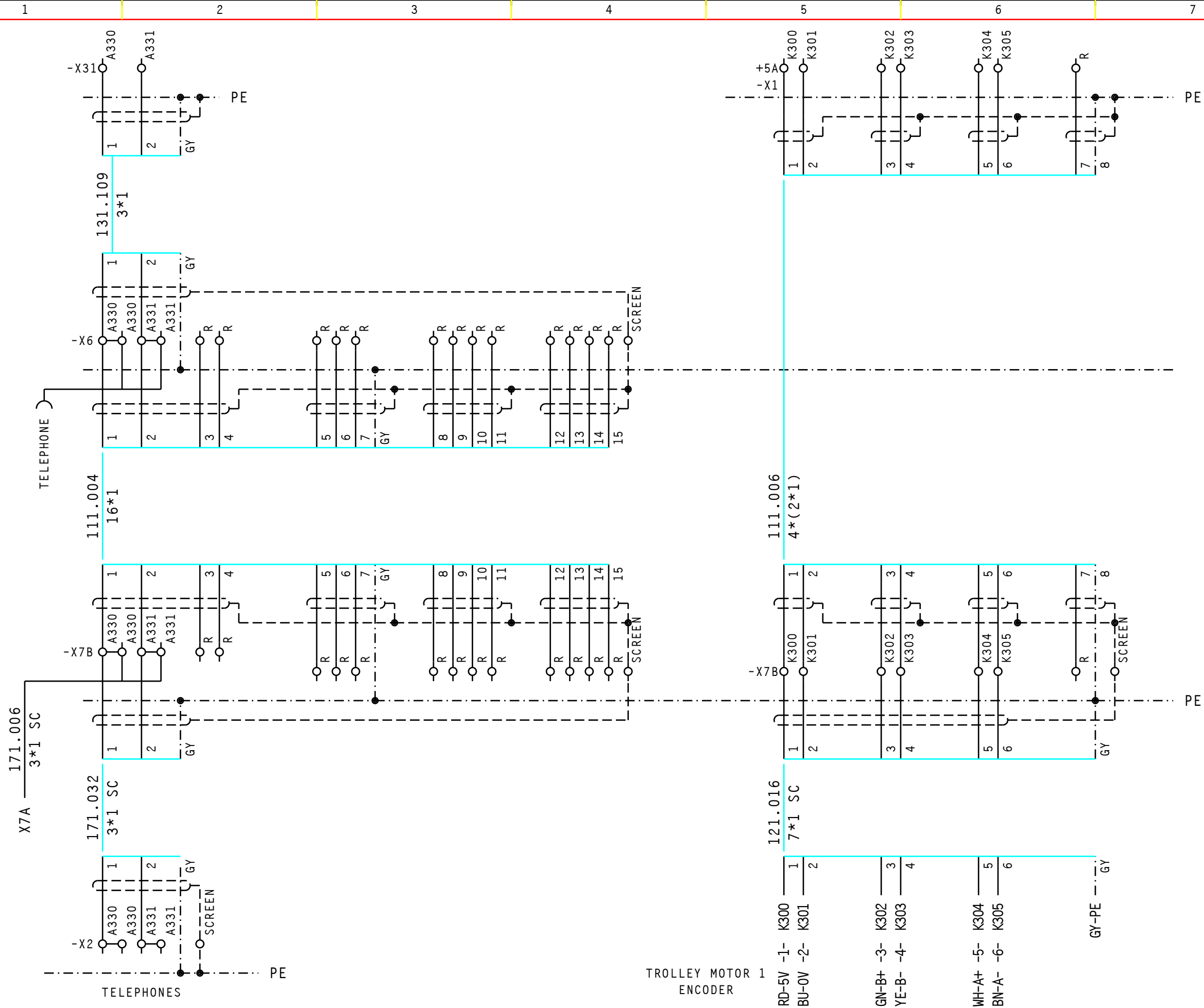
NOTE: INDIVIDUAL SCREENS ON WIRE GROUPS AND OVERALL SCREENS ON CABLE TO BE TERMINATED AS SHOWN.

NOTE: CABLE INSULATION ETC. TO BE STRIPPED CLOSE TO TERMINALS KEEPING EXPOSED WIRE TAILS AS SHORT AS POSSIBLE.

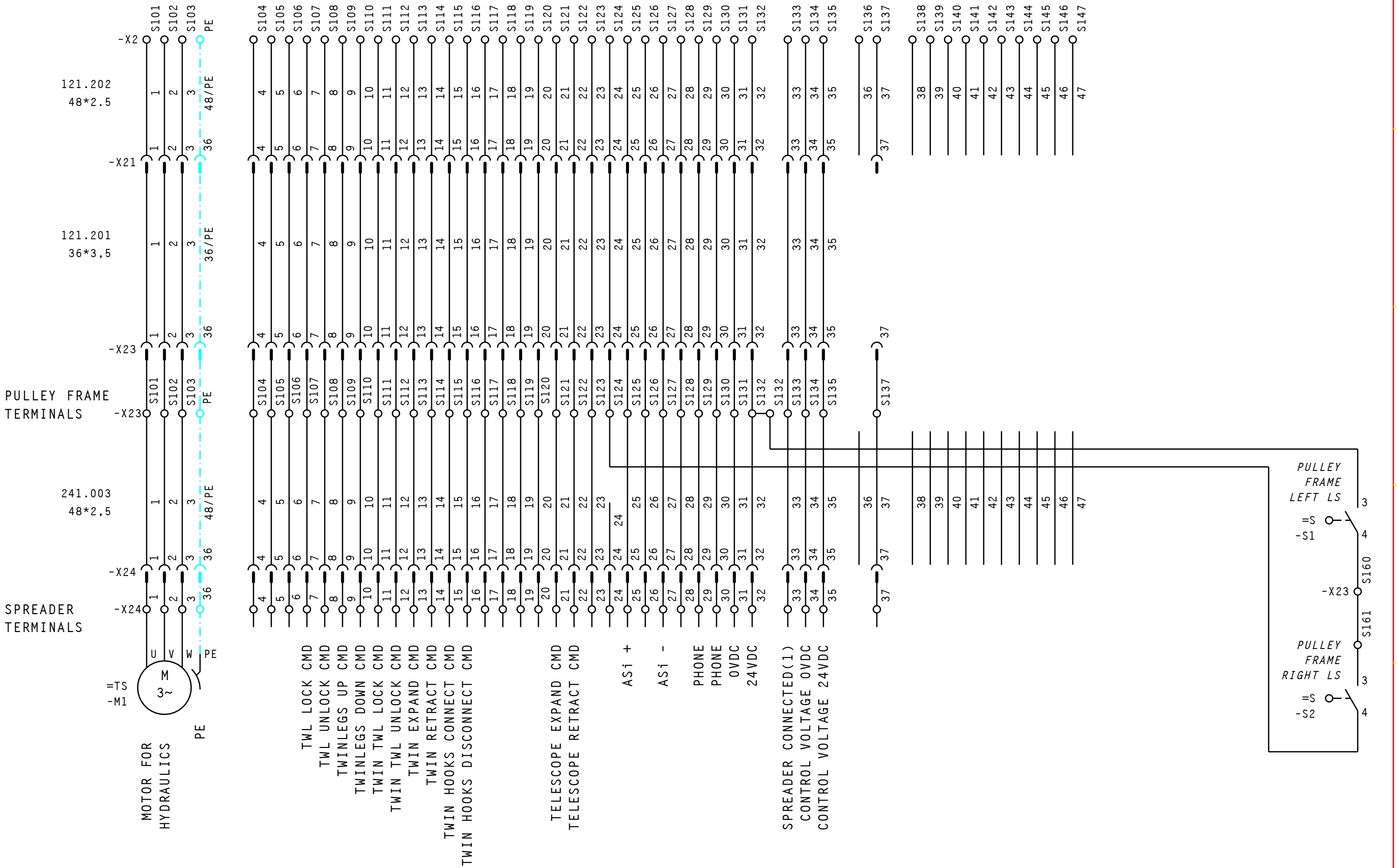
NOTE: EXPOSED SCREEN TAILS BEING CONNECTED THROUGH SCREEN TERMINALS TO BE INSULATED TO PREVENT EARTHING.



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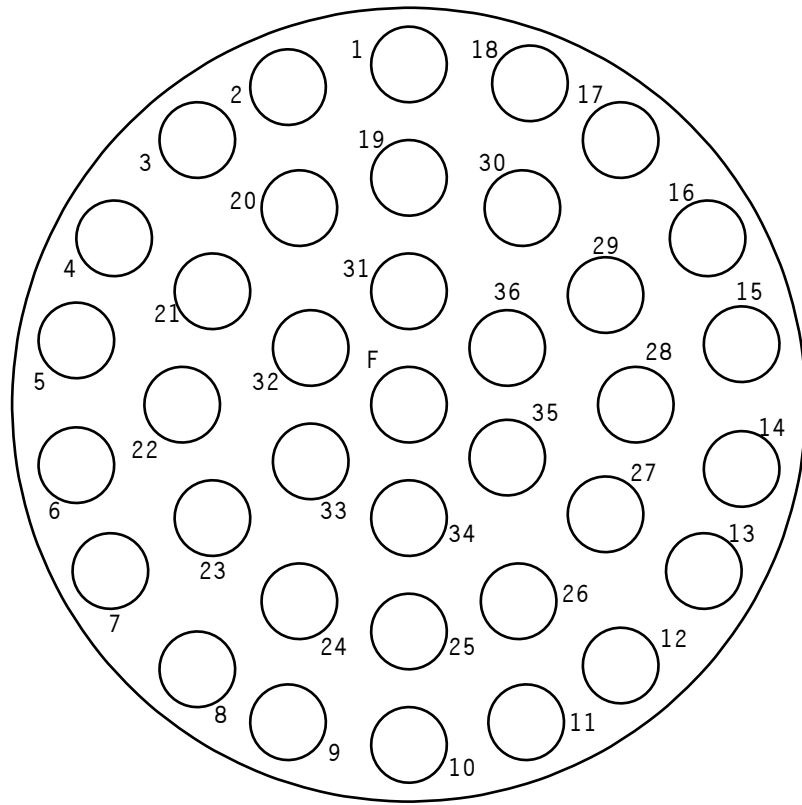


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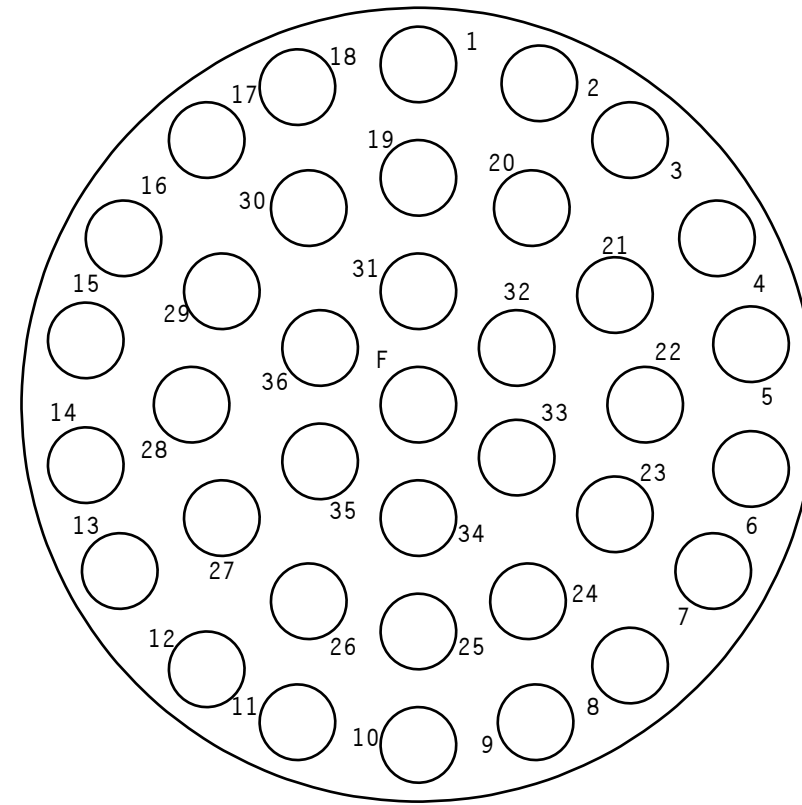


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	Modification	Date	Name		Date	Name		Copyright (c)		Project/ Work No. IR1763-4		

FEMALE (CAVOTEC)



MALE (CAVOTEC)



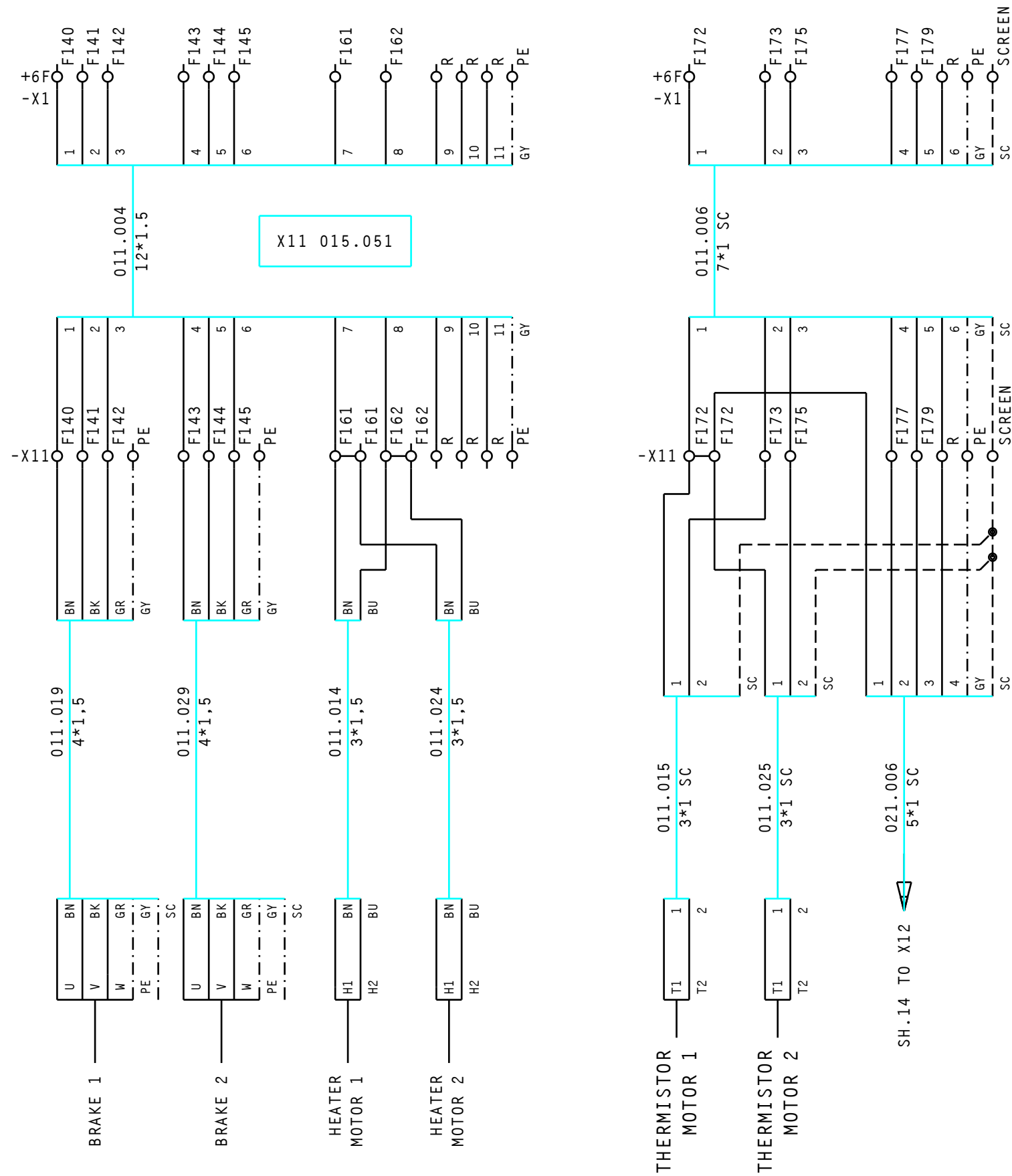
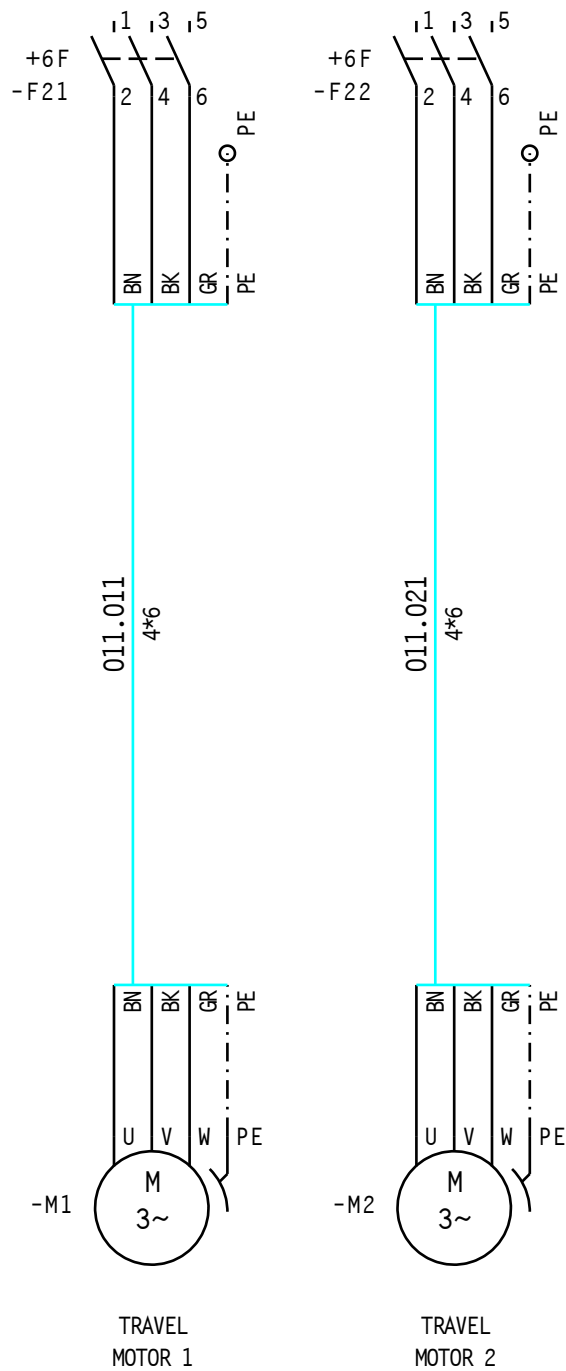
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B

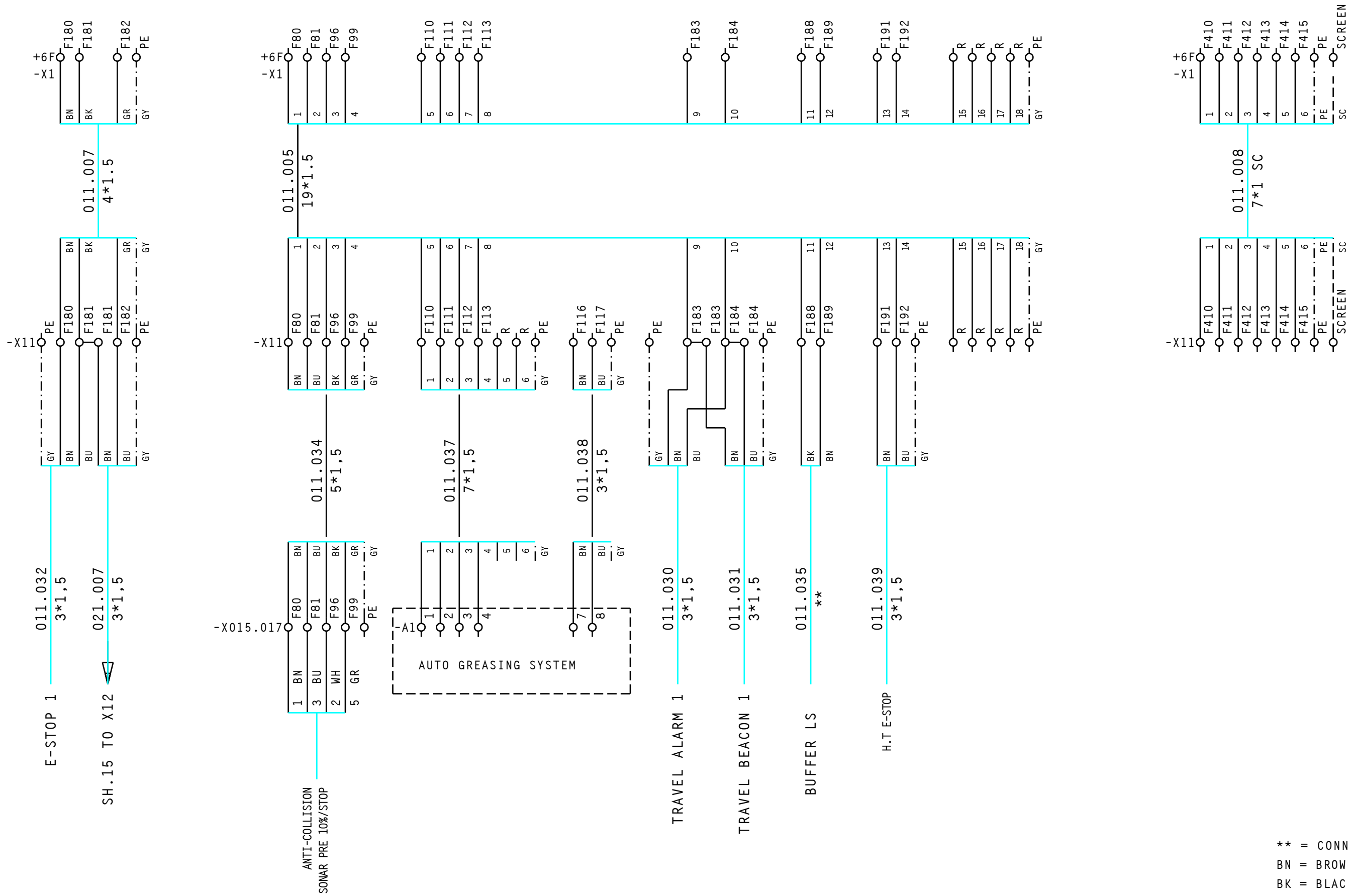
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D

E

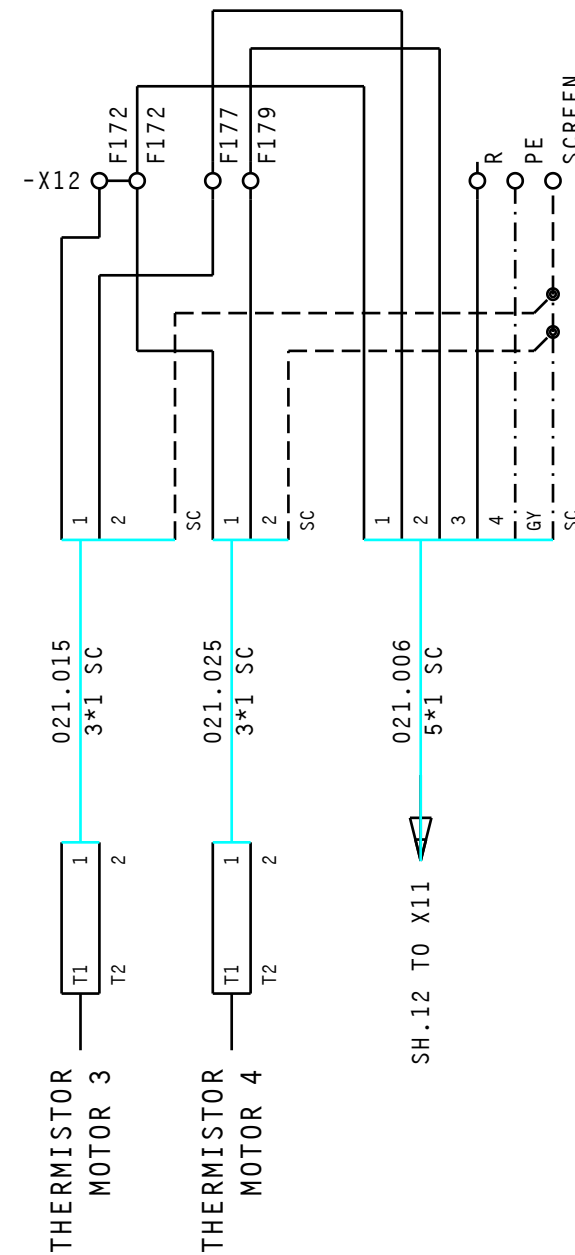
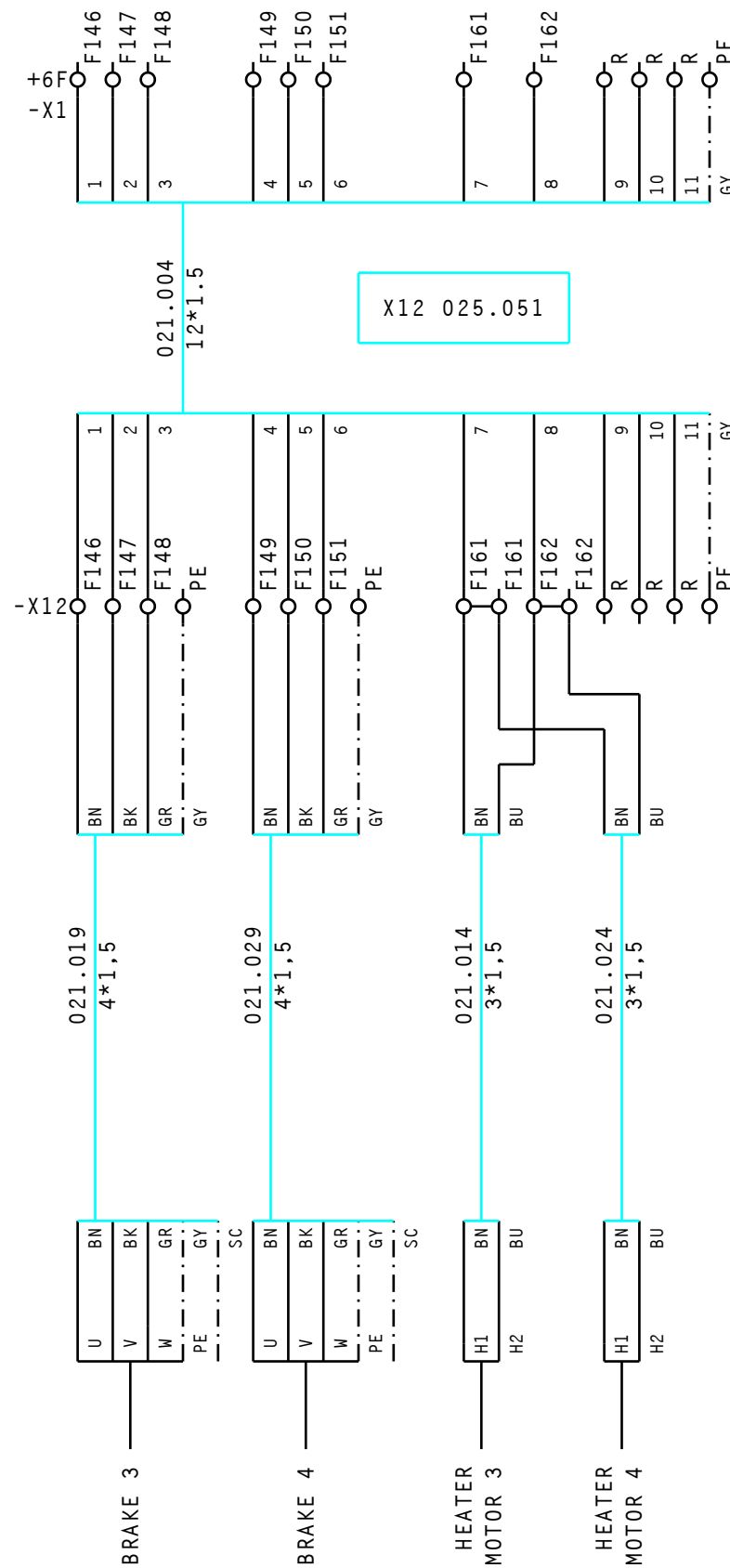
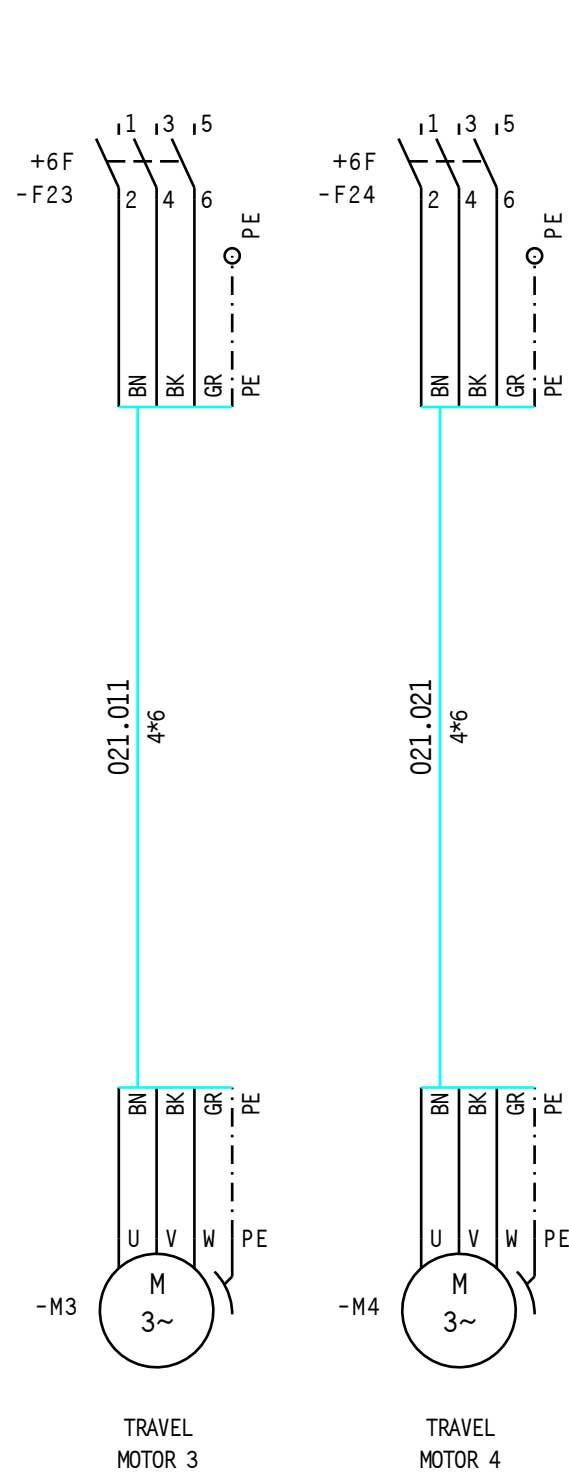


** = CONNECTOR + CABLE
 BN = BROWN
 BK = BLACK
 GR = GREY
 BU = BLUE
 G/Y= GREEN/YELLOW
 R = RESERVE TERMINAL



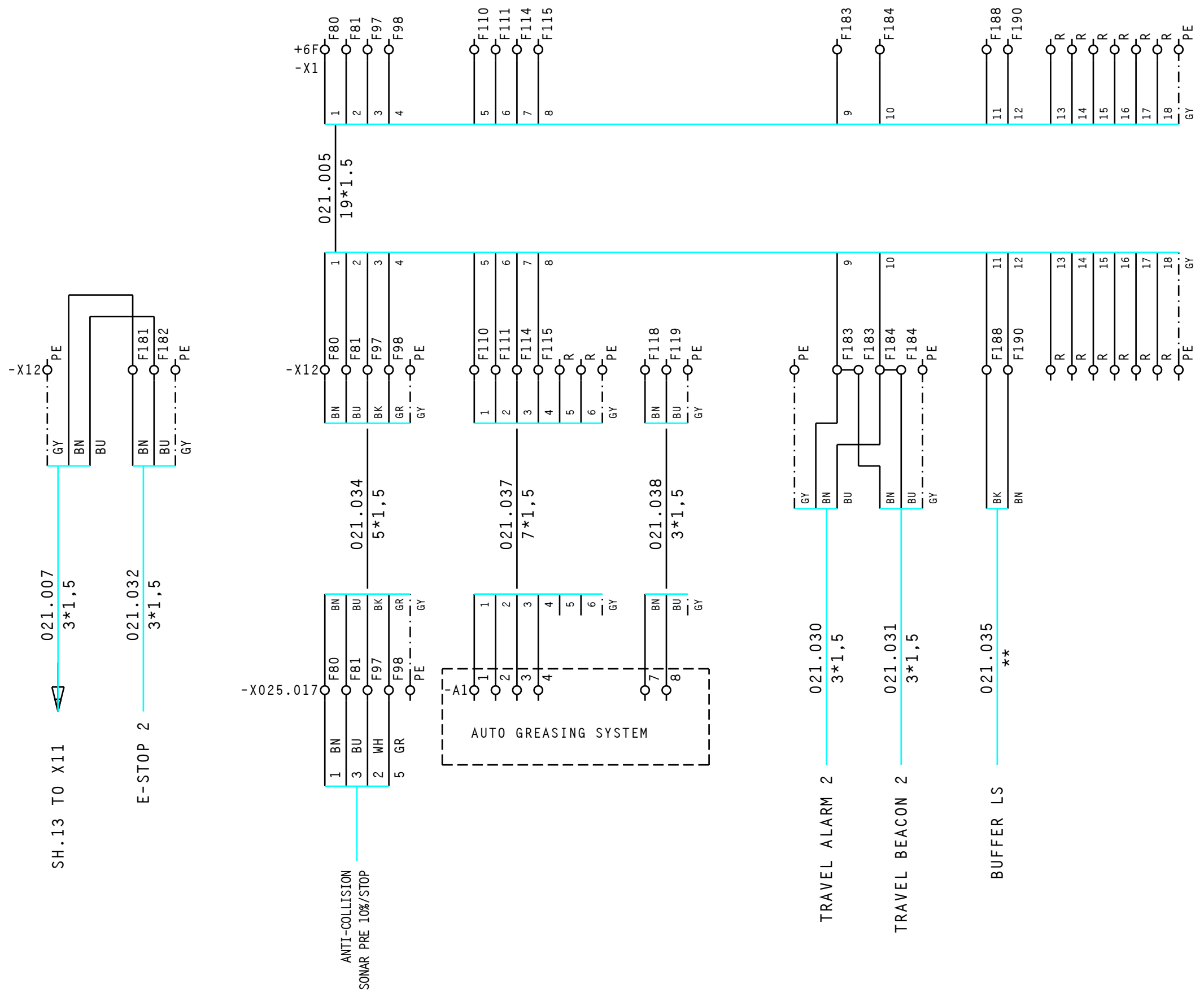
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Modification		Date	Name		Date	Name		Copyright (c)		Project/ Work No. IR1763-4		

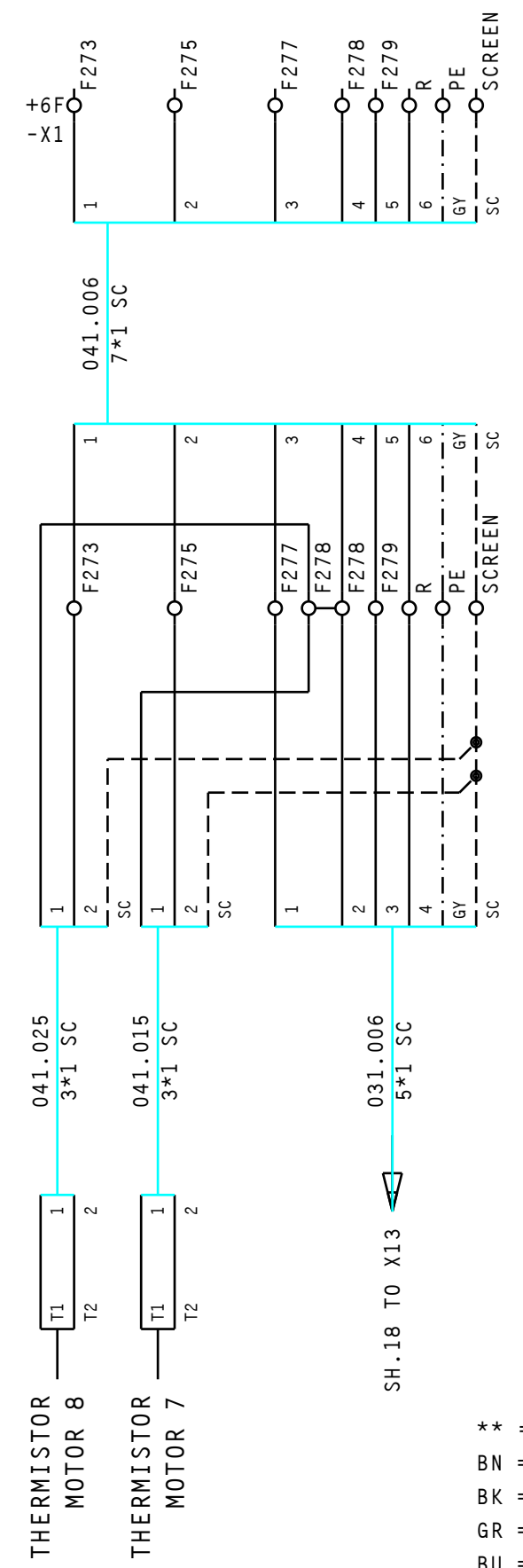
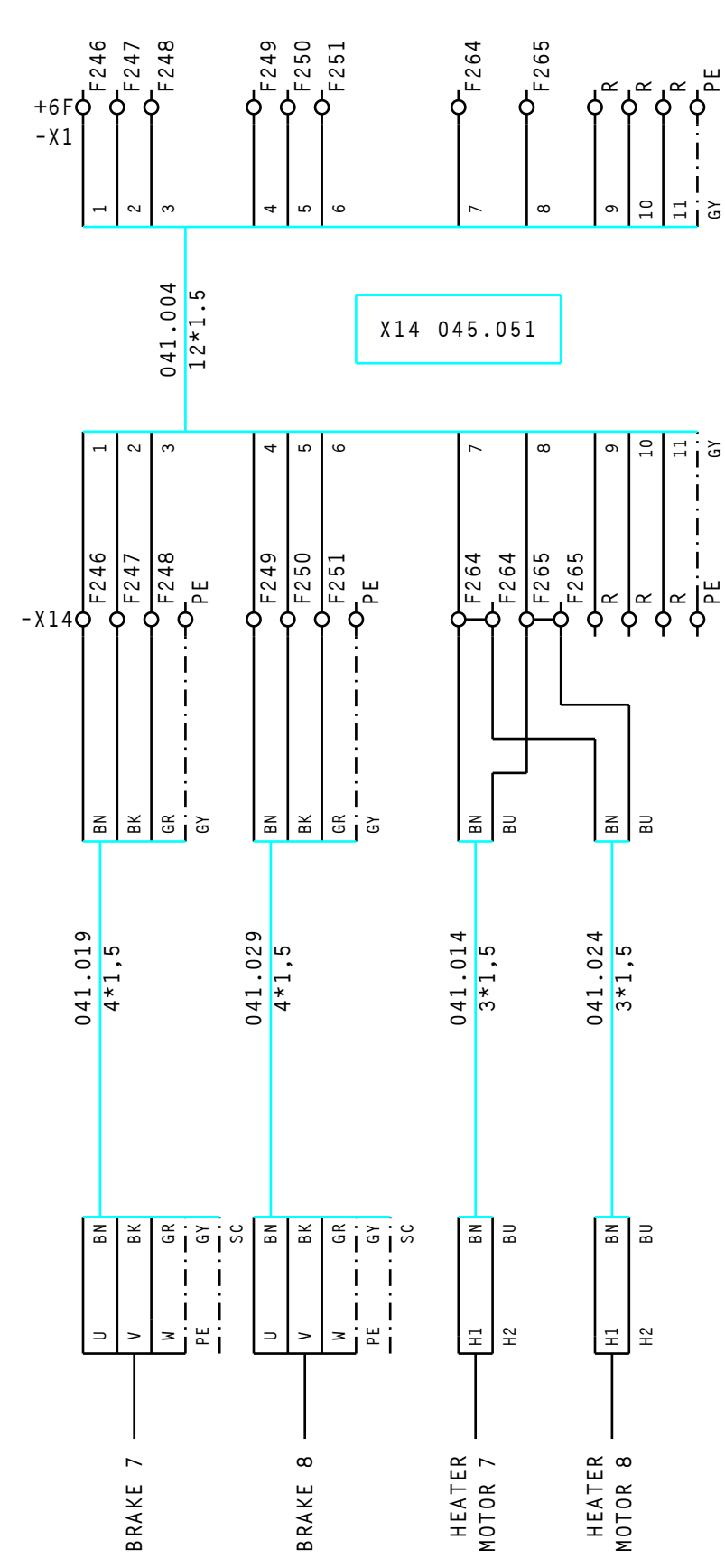
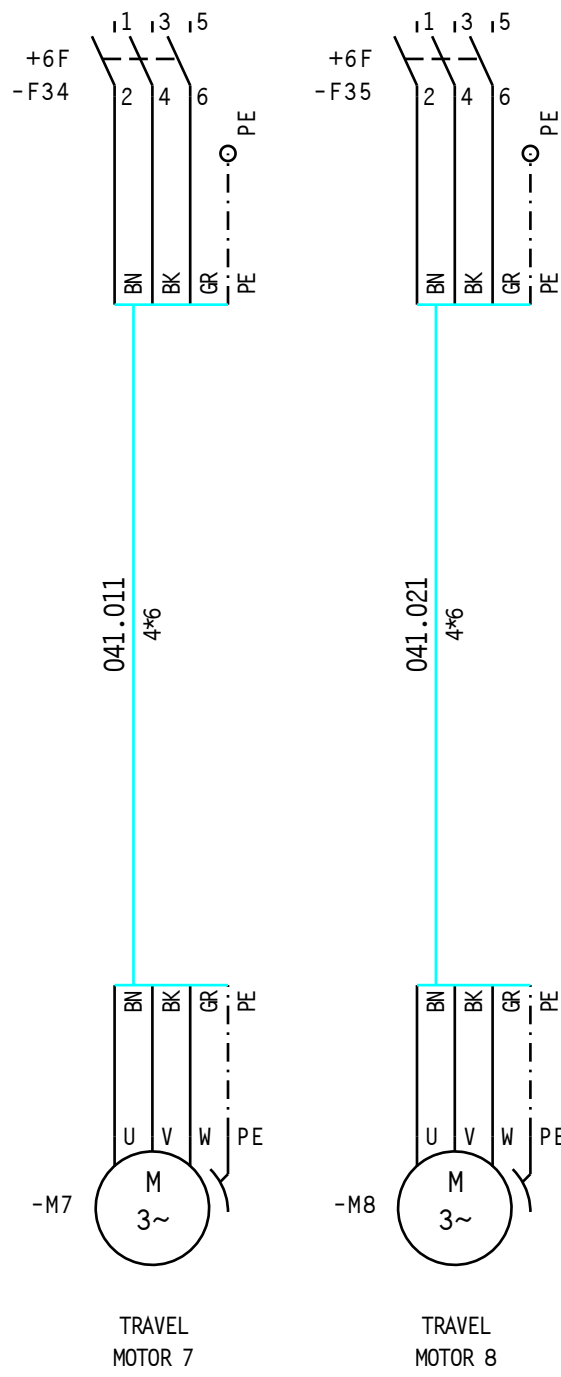


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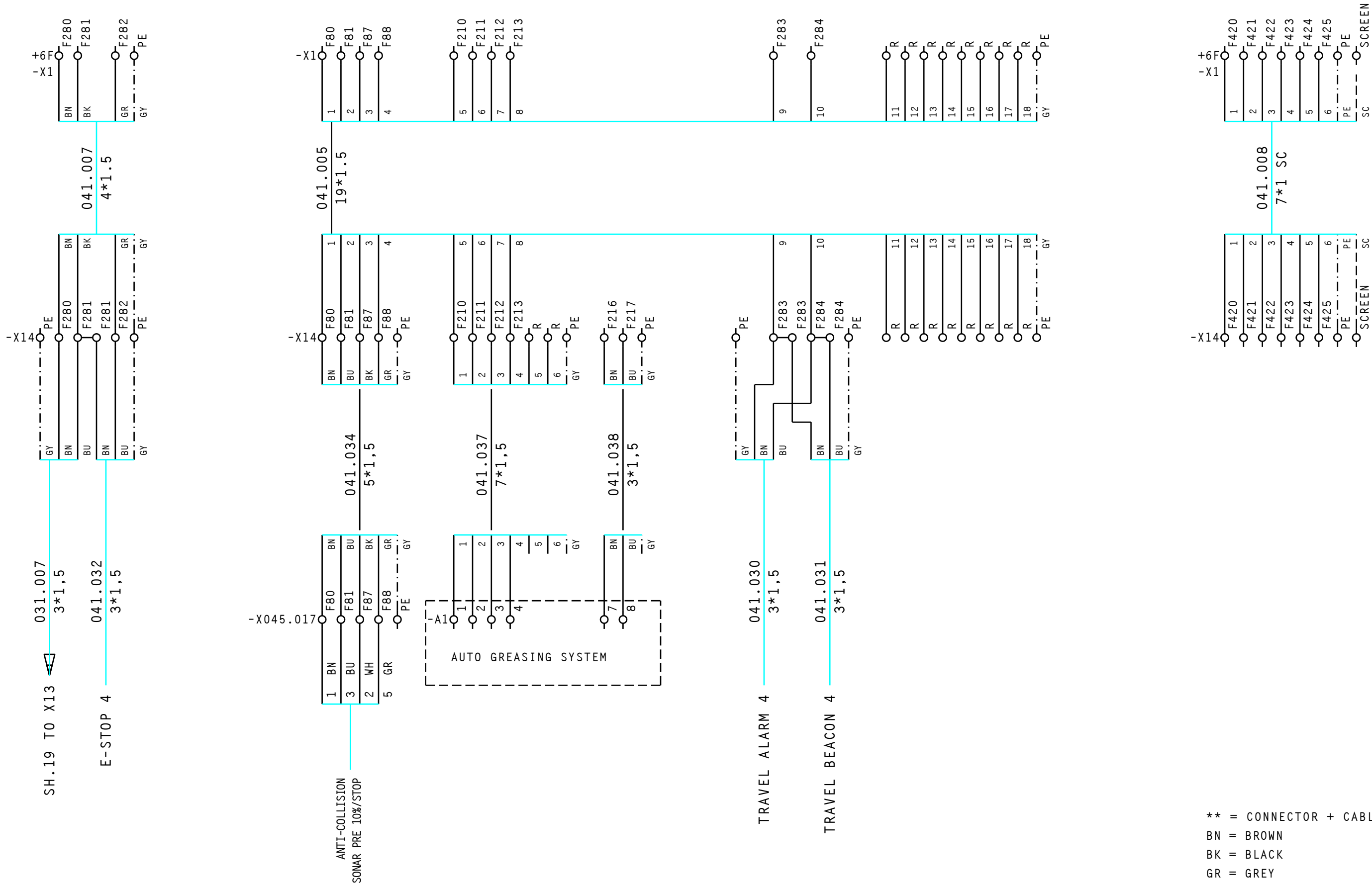
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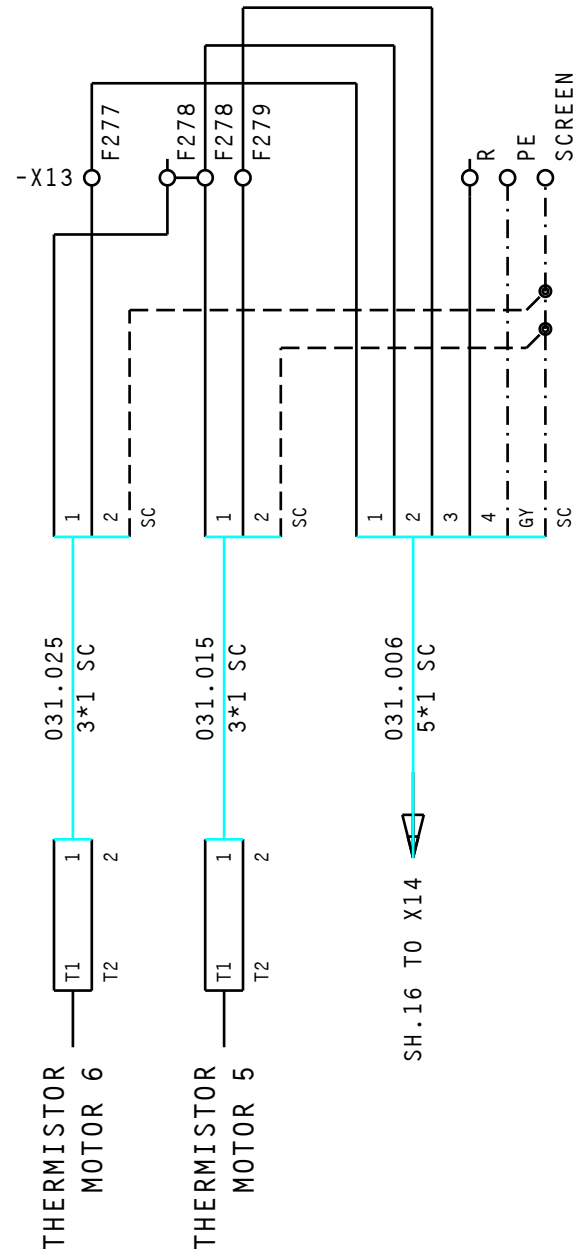
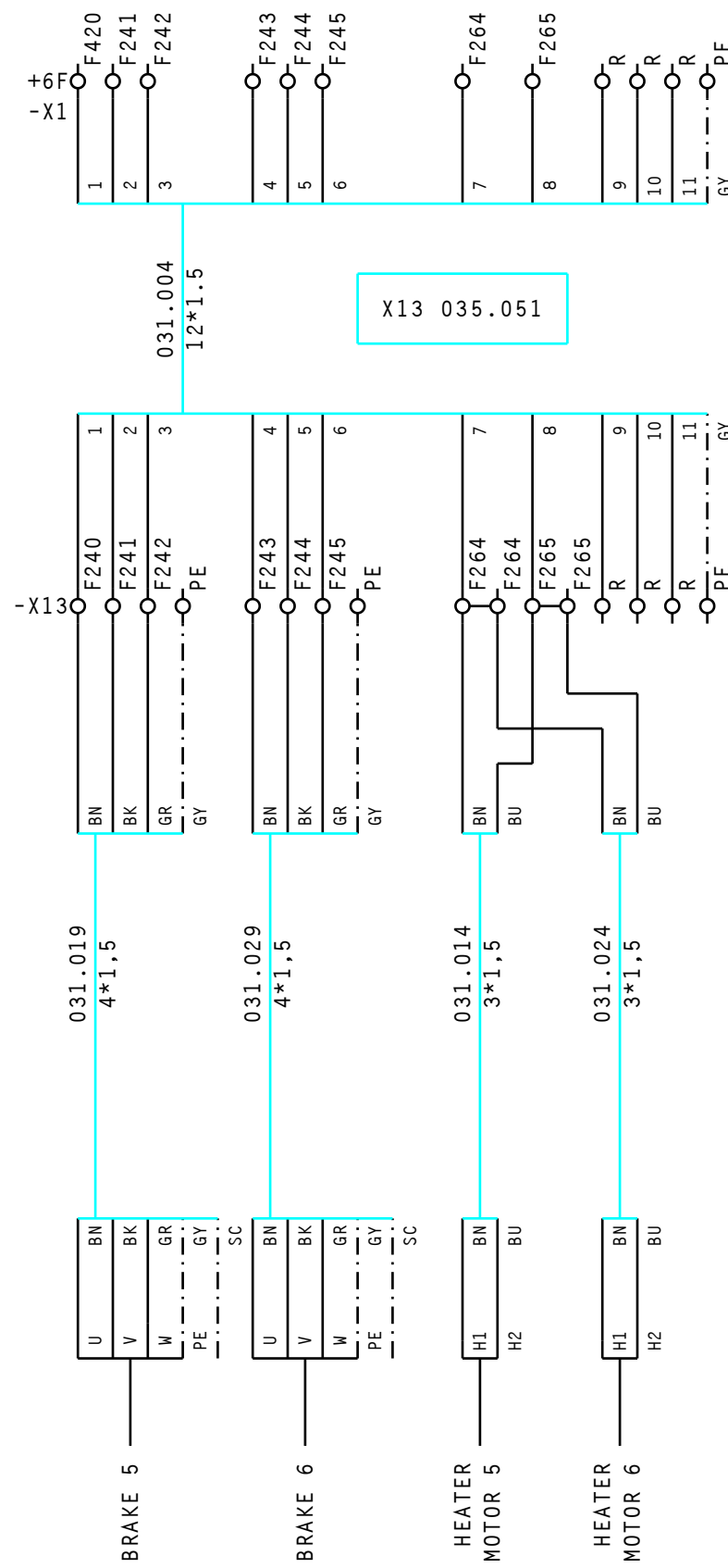
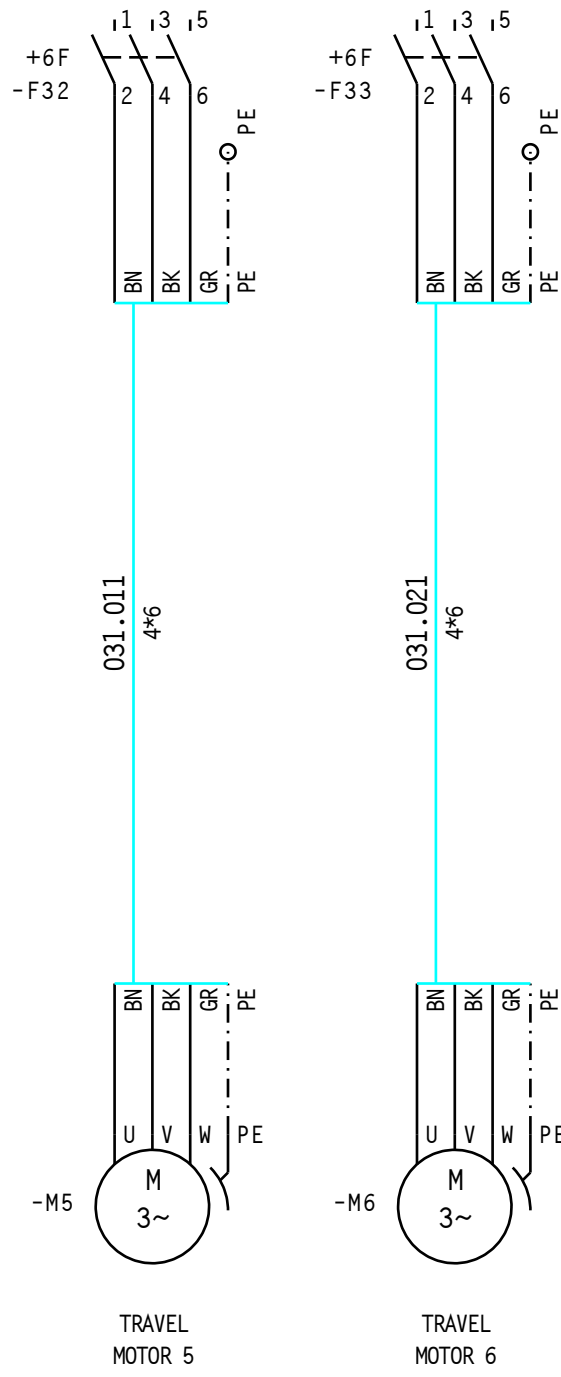
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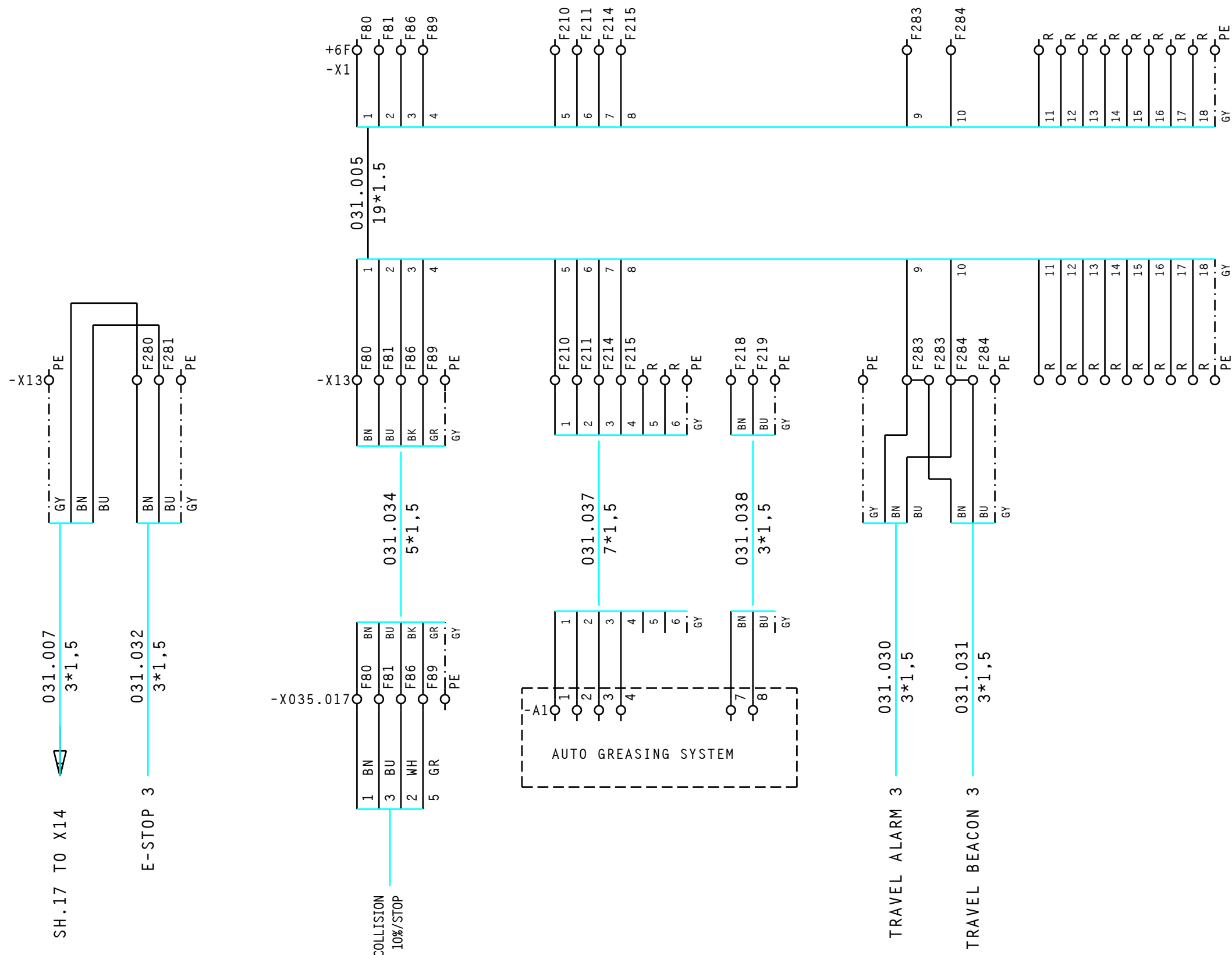
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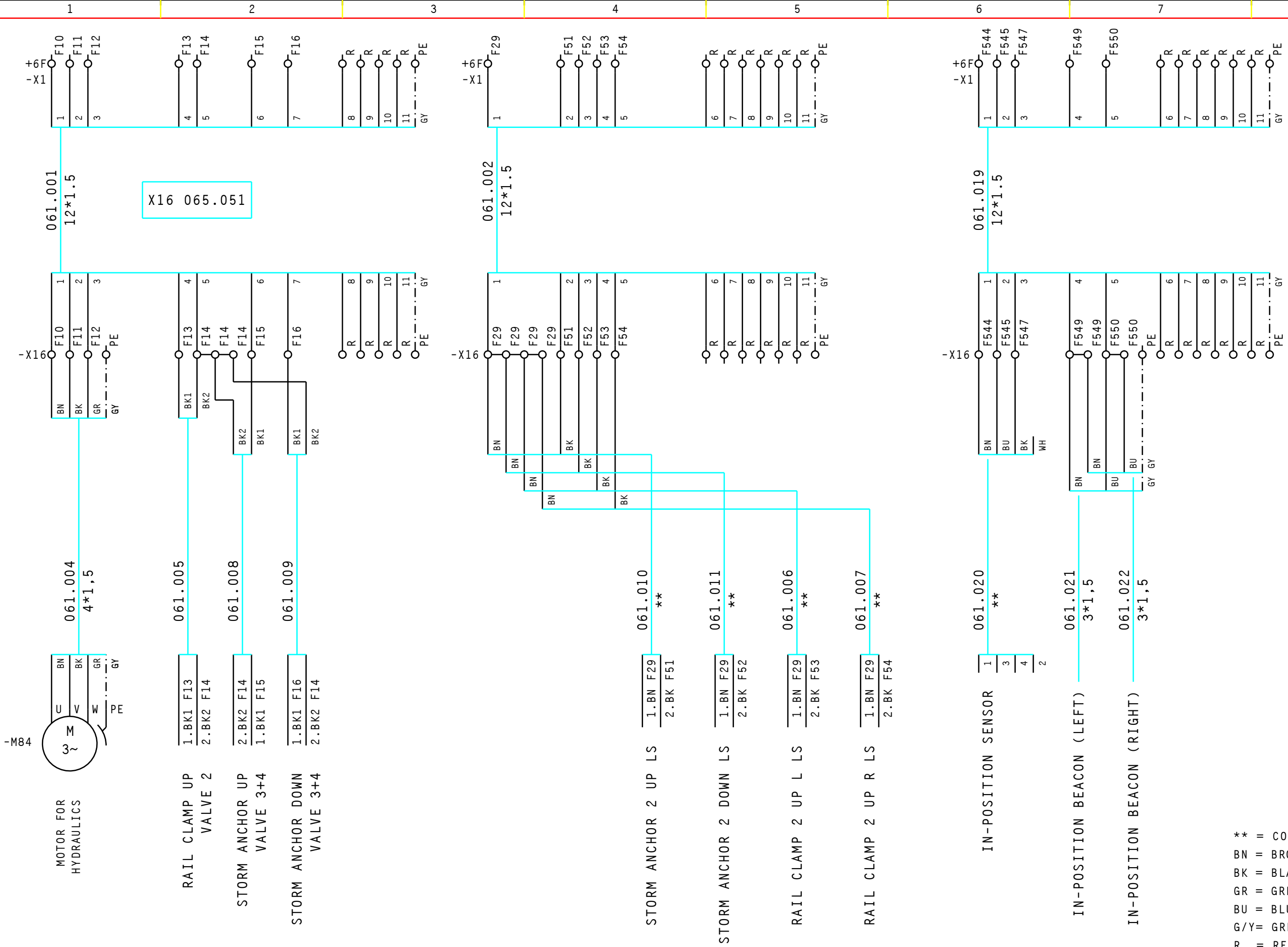
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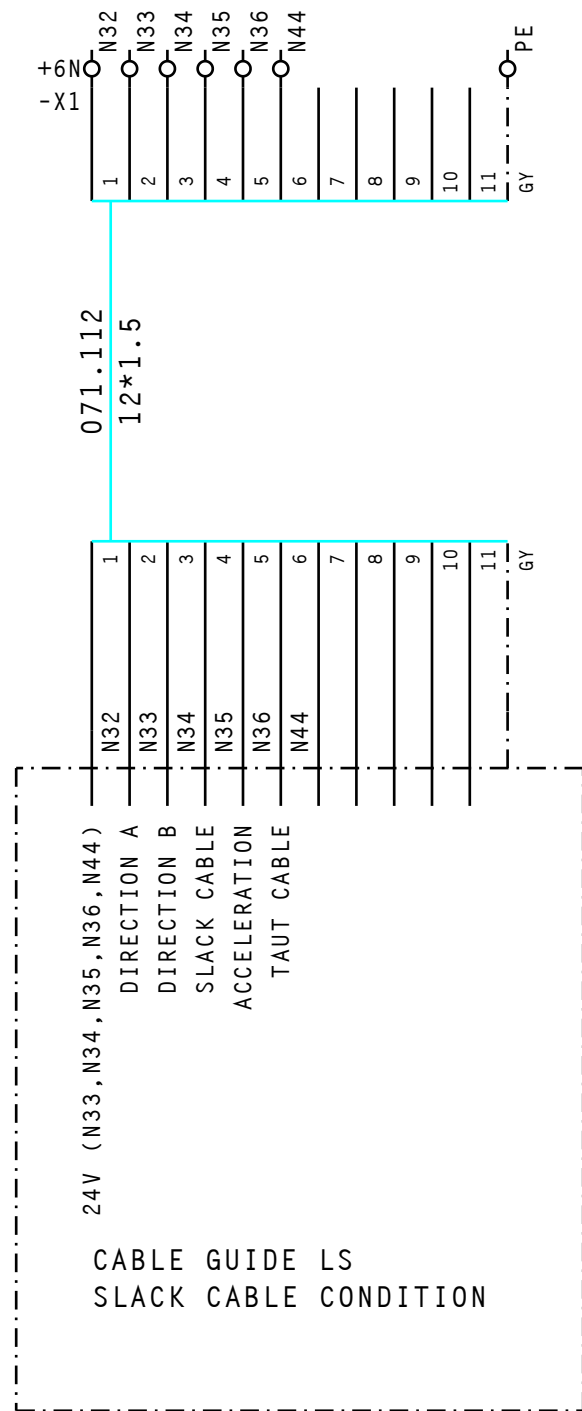
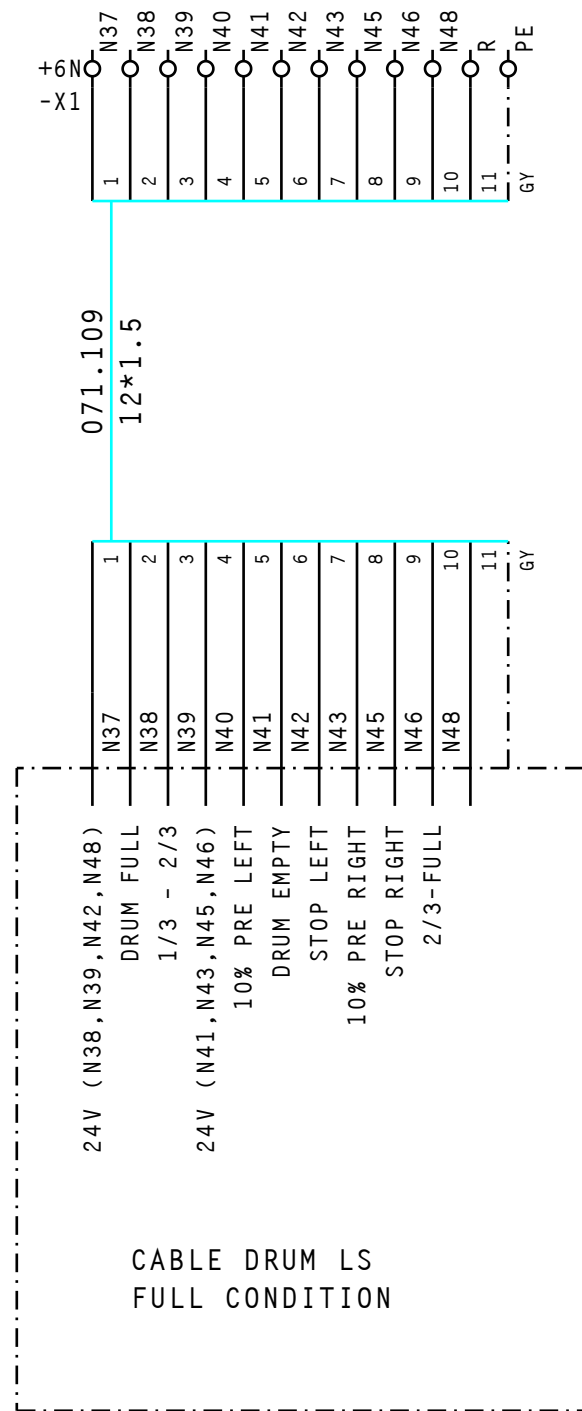
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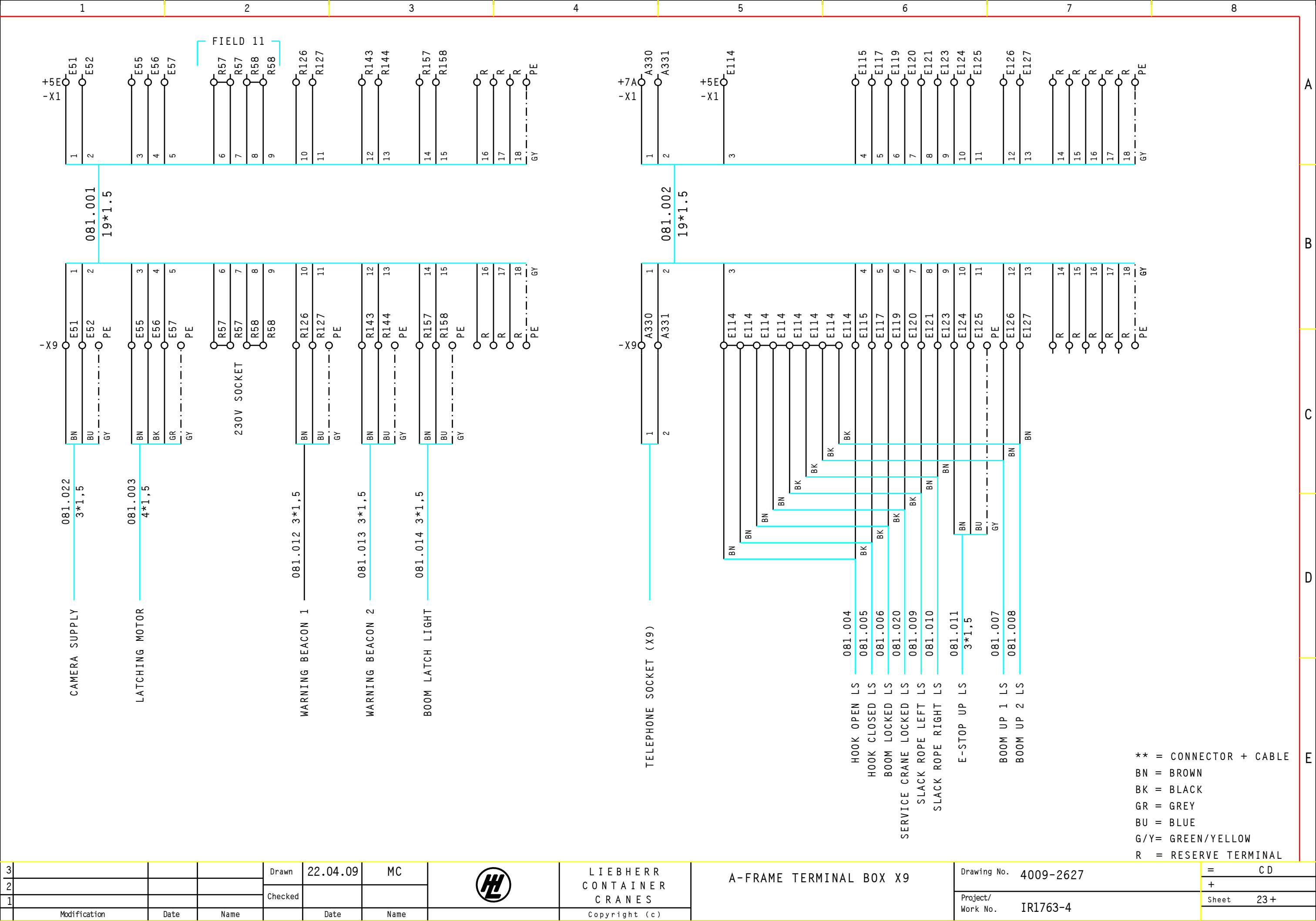
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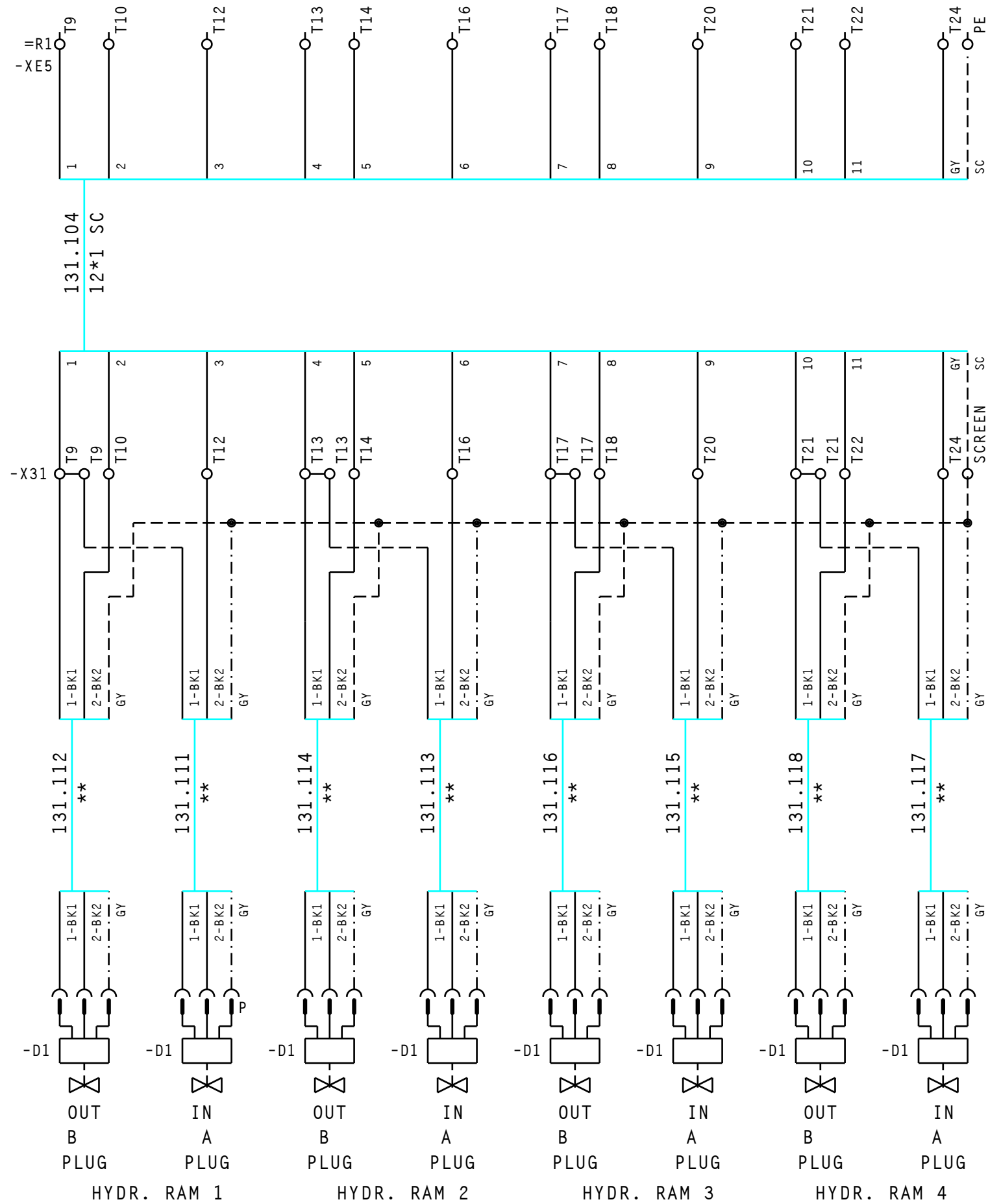
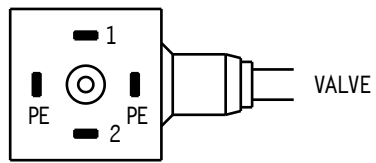
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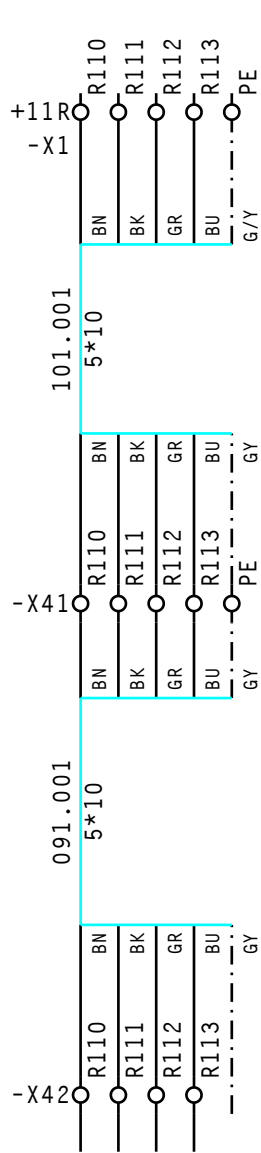


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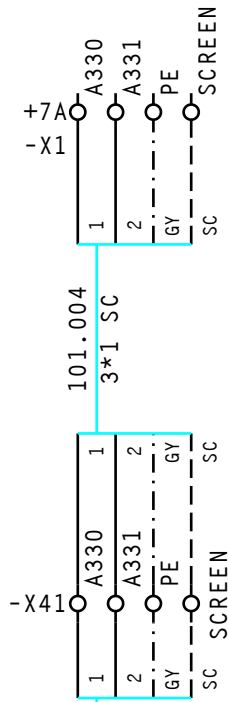


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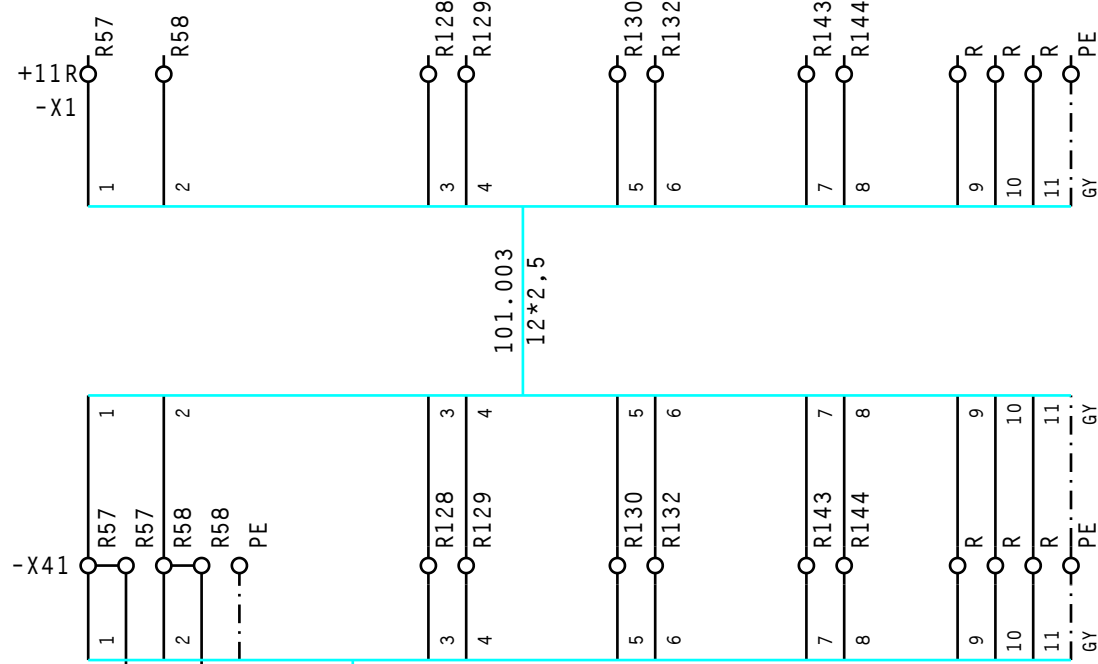
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FLOODLIGHTS



TELEPHONE

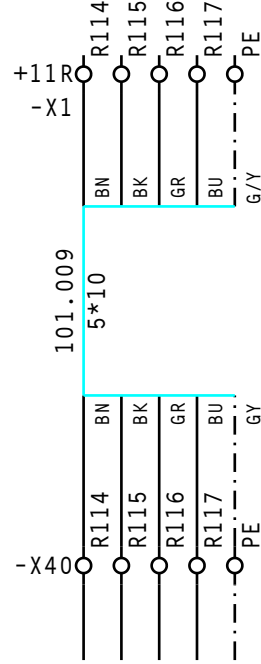


SOCKET 230V
X41

AIRCRAFT BEACON

ACCESS LIGHTS

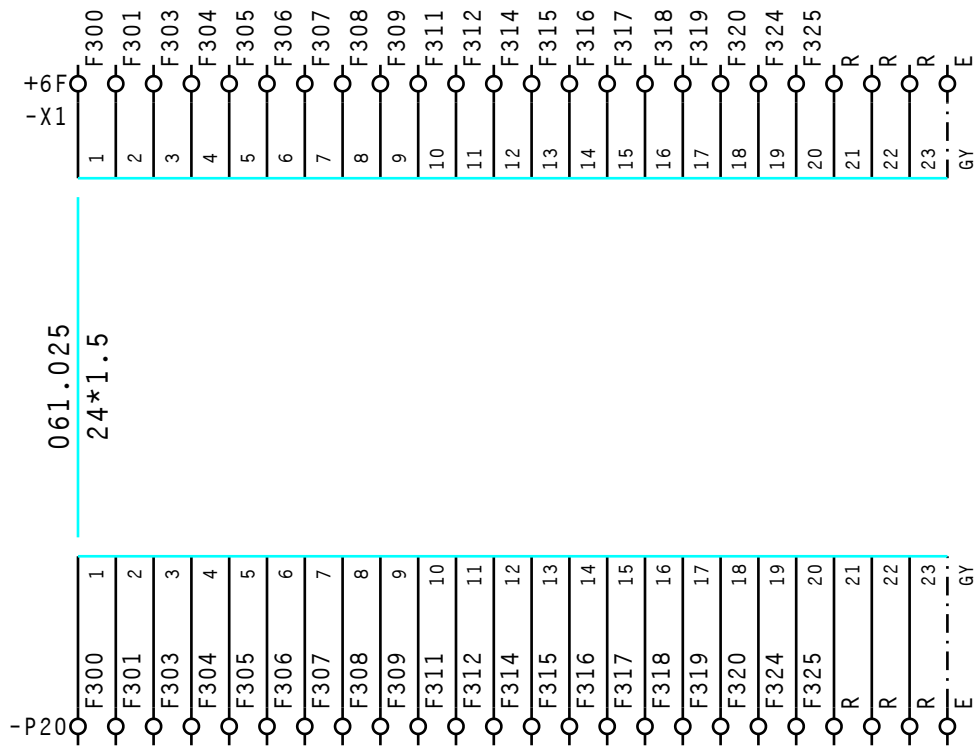
AIRCRAFT BEACON



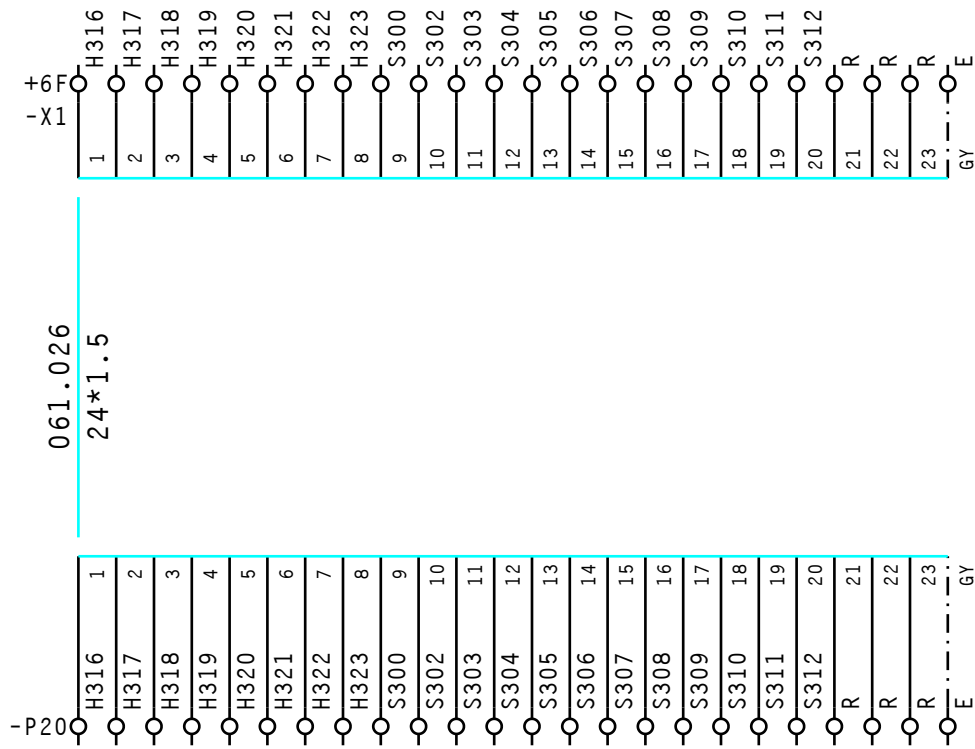
FLOODLIGHTS

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GR = GREY
BU = BLUE
G/Y= GREEN/YELLOW
R = RESERVE TERMINAL

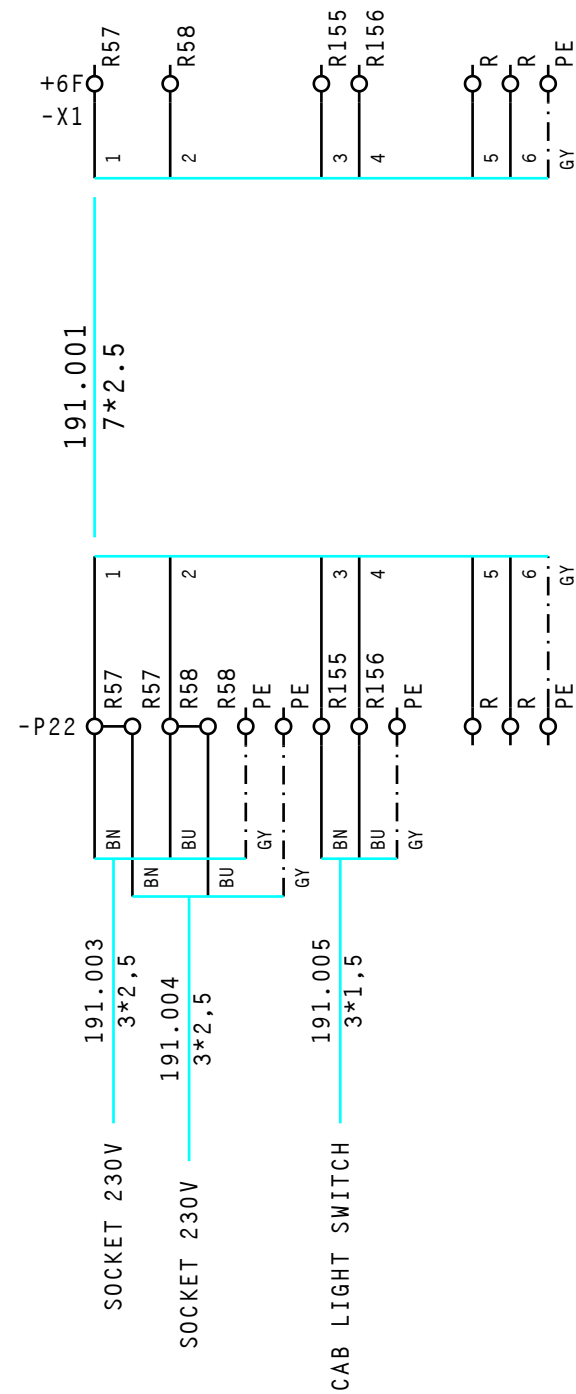
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1													Sheet	26 +
	Modification	Date	Name		Date	Name		Copyright (c)						



TRAVEL CONTROL CONSOLE
P20



TRAVEL CONTROL CONSOLE
P20



** = CONNECTOR + CABLE
BN = BROWN
BK = BLACK
GR = GREY
BU = BLUE
G/Y= GREEN/YELLOW
R = RESERVE TERMINAL

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2				Checked							+	
1											Sheet	27 -
	Modification	Date	Name		Date	Name		Copyright (c)		Project/ Work No. IR1763-4		

	1	2	3	4	5	6	7	8	
	1	(HOIST) LOWER	JOYSTICK (Spring to Neutral)	3	(TWISTLOCKS) OPEN	JOYSTICK (Spring Retutn)			
	2	(HOIST) HOIST	JOYSTICK (Spring to Neutral)	4	(TWISTLOCKS) CLOSE	JOYSTICK (Spring Return)			
	5			6	HORN	PUSHBUTTON Type			
	1A			6A	CRANE OFF	PUSHBUTTON - Red			
	1B	EMERGENCY STOP	PUSHBUTTON - Red (Mushroom)	6B	STORM ANCHORS DOWN	LAMP - Red			
	1C	E-STOP ACTIVATED	LAMP - Red	6C	STORM ANCHORS POSITION	LAMP - Yellow			
	1D			6D	WIND WARNING	LAMP - Yellow			
	2A			7A	RESERVE	Blanking Plug			
	2B			7B	STORM ANCHOR UP/DOWN	SELECTOR - 2 Pos.(MW type)			
	2C			7C	RESERVE	Blanking Plug			
	2D			7D	RESERVE	Blanking Plug			
	3A			8A	AUDIO CANCEL	PUSHBUTTON - Black			
	3B	OVERLOAD	LAMP - Red	8B	AUDIO ALARM	ACOUSTIC BUZZER			
	3C	OVERLOAD WARNING	LAMP - Yellow	8C	ELECTRICAL FAULT	LAMP - Red			
	3D			8D	DRIVER BYPASS	PUSHBUTTON - Black			
	4A			9A					
	4B			9B					
	4C			9C					
	4D	MICROPHONE	Microphone	9D					
	5A	CRANE ON	PUSHBUTTON/LAMP - Green	10A	BOOM ON	PUSHBUTTON/LAMP - Green			
	5B	STORM ANCHORS UP	LAMP - Green	10B	BOOM STOP	PUSHBUTTON - Red			
	5C	RAIL CLAMPS UP	LAMP - Green	10C	BOOM UP	PUSHBUTTON/LAMP - Yellow			
	5D	HIGH WIND	LAMP - Red	10D	BOOM DOWN	PUSHBUTTON/LAMP - Yellow			
3			Gez.	22.04.09	JC				= CL
2									+
1			Bearb.						Blatt 2+
	Änderung	Datum	Name		Datum	Name			Ident Nr.
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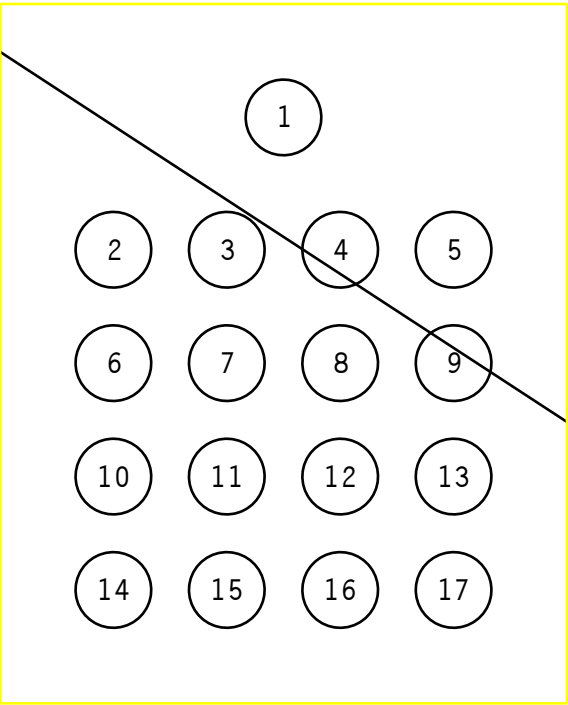
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7	(TROLLEY) FORWARD	JOYSTICK (Spring Retutn)	9	(TRAVEL) LEFT	JOYSTICK (Spring to Neutral)	A	
8	(TROLLEY) REVERSE	JOYSTICK (Spring Return)	10	(TRAVEL) RIGHT	JOYSTICK (Spring to Neutral)		
11			12	(FLIPPERS) UP/DOWN	PUSHBUTTON Type		
1E			6E			B	
1F	FLIPPER 1 (Select)	LATCH BUTTON/LAMP - Green	6F	RETRACT IN	PUSHBUTTON - Black		
1G	FLIPPER 2 (Select)	LATCH BUTTON/LAMP - Green	6G	EXPAND OUT	PUSHBUTTON - Black		
1H			6H	RESERVE	Blanking Plug	C	
2E			7E				
2F	FLIPPER 4 (Select)	LATCH BUTTON/LAMP - Green	7F	SET POSITION SEASIDE	PUSHBUTTON/LAMP - Yellow		
2G	FLIPPER 3 (Select)	LATCH BUTTON/LAMP - Green	7G	SET POSITION LANDSIDE	PUSHBUTTON/LAMP - Yellow	D	
2H			7H	RESERVE	Blanking Plug		
3G	BOOM READY	LAMP - Yellow	8E				
3H	GATE OPEN	LAMP - Red	8F			E	
13	LIST FORWARD	JOYSTICK (Spring to Neutral)	8G				
14	LIST REVERSE	JOYSTICK (Spring to Neutral)	8H				
15	TRIM LEFT	JOYSTICK (Spring to Neutral)	9E				
16	TRIM RIGHT	JOYSTICK (Spring to Neutral)	9F				
17	SKEW LEFT / RIGHT	JOYSTICK KNOB (Rotate)	9G				
18	ZERO TRIM / LIST / SKEW	PUSHBUTTON	9H				
4G	AUTO-PARK	PUSHBUTTON/LAMP - Yellow	10E				
4H	TROLLEY PARKED	LAMP - Yellow	10F	WASHER	PUSHBUTTON - Black		
5E			10G	WIPER OFF/ON (Symbol)	SELECTOR - 2 Pos.(MW type)		
5F	20' / 40' / 2x20' / 45'	SELECTOR - 4 Pos.(TO type)	10H	DEMISTOR (Symbol)	SELECTOR - 3 Pos.(MW type)		
5G	SPREADER OFF	PUSHBUTTON - Red					
5H	OFF/MAN/AUTO	SELECTOR 3 Pos (MW type)					

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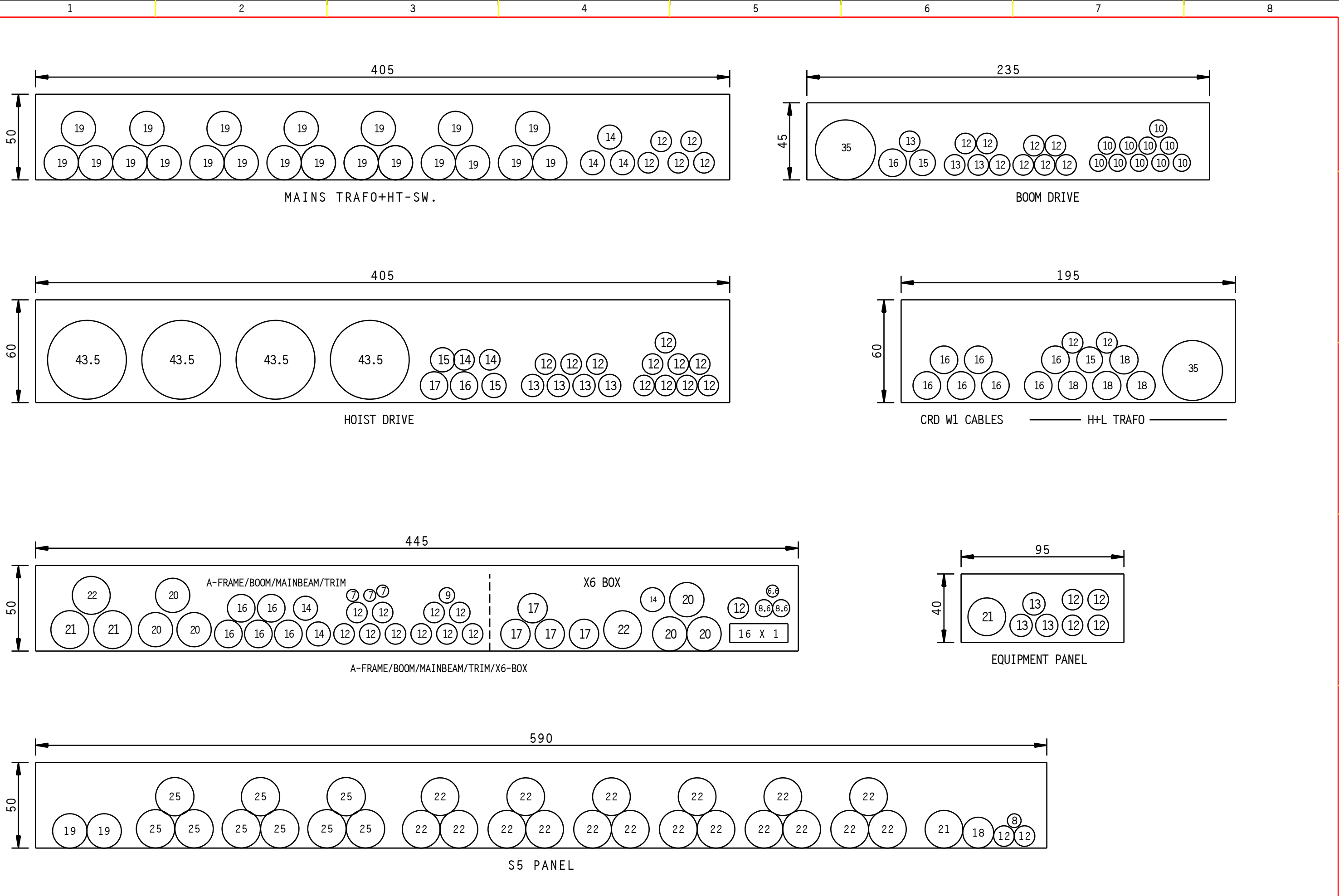
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1												Blatt	4+	
	Änderung	Datum	Name		Datum	Name		Copyright (c)			Ident. Nr.			

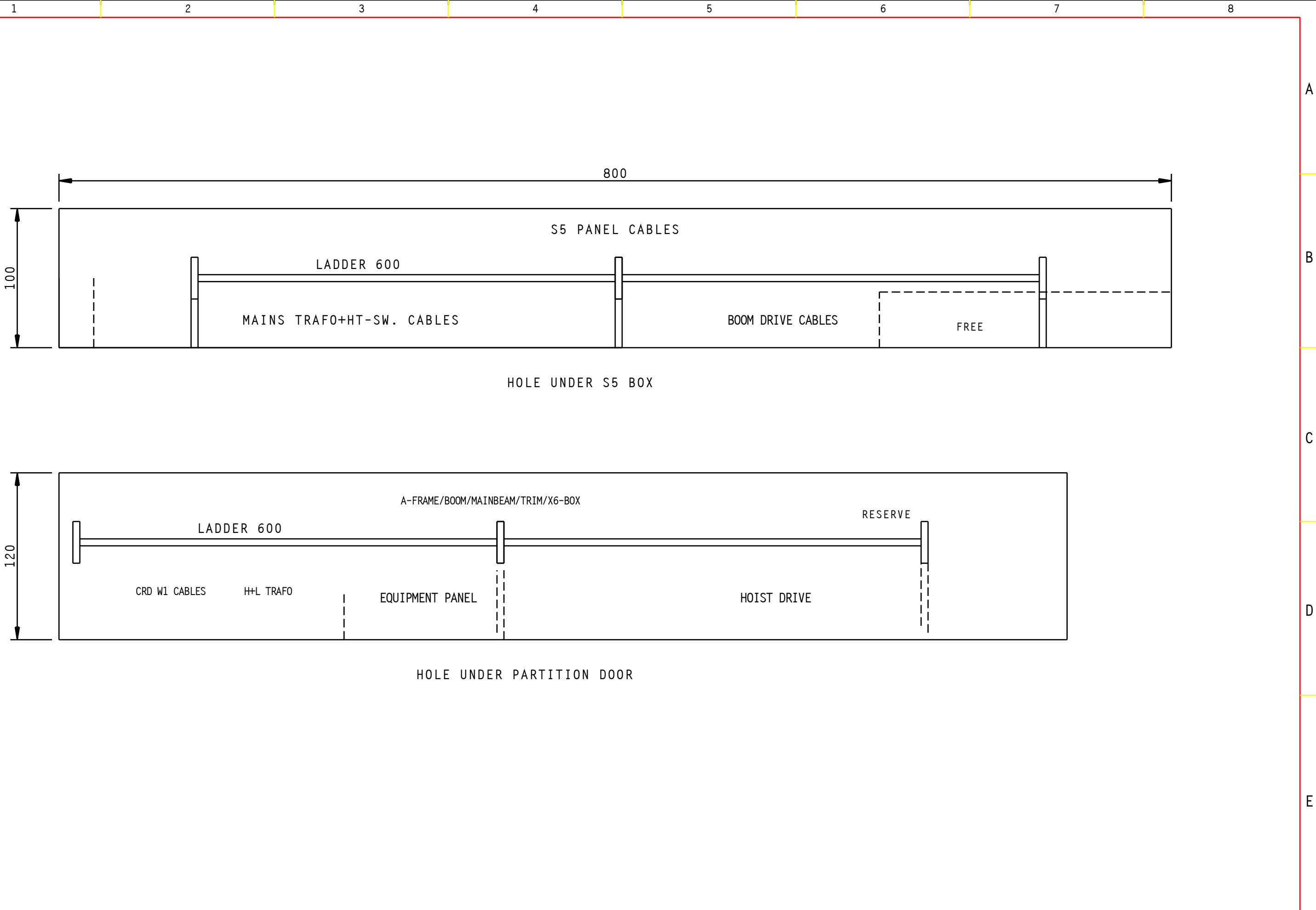
1				2				3				4				5				6				7				8																																																																																																																																				
<div><div><div>1</div><div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div><div>7</div><div>8</div><div>9</div><div>10</div><div>11</div><div>12</div><div>13</div><div>14</div><div>15</div><div>16</div><div>17</div><div>18</div><div>19</div><div>20</div><div>21</div><div>22</div><div>23</div><div>24</div><div>25</div></div></div></div> <div>STAINLESS STEEL EXECUTION</div>																								<table><tr><td>1</td><td>EMERGENCY STOP</td><td>PUSHBUTTON - Red (Mushroom)</td></tr><tr><td>2</td><td>CRANE OFF</td><td>PUSHBUTTON - Red</td></tr><tr><td>3</td><td>CRANE ON</td><td>PUSHBUTTON/LAMP - Green</td></tr><tr><td>4</td><td>HORN</td><td>PUSHBUTTON - Black</td></tr><tr><td>5</td><td>RESET</td><td>PUSHBUTTON/LAMP - Yellow</td></tr><tr><td>6</td><td>STORM/ANCHORS UP</td><td>LAMP - Green</td></tr><tr><td>7</td><td>STORM ANCHORS DOWN</td><td>LAMP - Red</td></tr><tr><td>8</td><td>RAIL CLAMPS UP</td><td>LAMP - Green</td></tr><tr><td>9</td><td>STORM ANCHOR POSITION</td><td>LAMP - Yellow</td></tr><tr><td>10</td><td>TRAVEL LEFT</td><td>PUSHBUTTON - Black</td></tr><tr><td>11</td><td>TRAVEL RIGHT</td><td>PUSHBUTTON - Black</td></tr><tr><td>12</td><td>SLOW / FAST</td><td>SELECTOR SWITCH 2 Pos.</td></tr><tr><td>13</td><td>STORM ANCHORS UP/DOWN</td><td>SELECTOR SWITCH 2 Pos.</td></tr><tr><td>14</td><td>UP/FORWARD</td><td>PUSHBUTTON - BLACK</td></tr><tr><td>15</td><td>DOWN/REVERSE</td><td>PUSHBUTTON - BLACK</td></tr><tr><td>16</td><td>HOIST/TROLLEY</td><td>SELECTOR SWITCH</td></tr><tr><td>17</td><td>CRANE DISABLE</td><td>KEYSWITCH - 2 Pos. 0/I</td></tr><tr><td>18</td><td>SPREADER OFF</td><td>PUSHBUTTON - Red</td></tr><tr><td>19</td><td>20' / 40' / 2X20' / 45'</td><td>SELECTOR - 4 Pos.</td></tr><tr><td>20</td><td>FLIPPER 1/2/3/4/ALL</td><td>SELECTOR - 5 Pos.</td></tr><tr><td>21</td><td>FLIPPER UP/DOWN</td><td>PUSHBUTTON - Black</td></tr><tr><td>22</td><td>TWISTLOCK OPEN/CLOSE</td><td>SELECTOR - 3 Pos. (spring to center off)</td></tr><tr><td>23</td><td>DEPOSIT BYPASS</td><td>KEYSWITCH - 2 Pos. 0/I (spring to off)</td></tr><tr><td>24</td><td>TWIN RETRACT IN</td><td>PUSHBUTTON - Black</td></tr><tr><td>25</td><td>TWIN EXPAND OUT</td><td>PUSHBUTTON - Black</td></tr></table>												1	EMERGENCY STOP	PUSHBUTTON - Red (Mushroom)	2	CRANE OFF	PUSHBUTTON - Red	3	CRANE ON	PUSHBUTTON/LAMP - Green	4	HORN	PUSHBUTTON - Black	5	RESET	PUSHBUTTON/LAMP - Yellow	6	STORM/ANCHORS UP	LAMP - Green	7	STORM ANCHORS DOWN	LAMP - Red	8	RAIL CLAMPS UP	LAMP - Green	9	STORM ANCHOR POSITION	LAMP - Yellow	10	TRAVEL LEFT	PUSHBUTTON - Black	11	TRAVEL RIGHT	PUSHBUTTON - Black	12	SLOW / FAST	SELECTOR SWITCH 2 Pos.	13	STORM ANCHORS UP/DOWN	SELECTOR SWITCH 2 Pos.	14	UP/FORWARD	PUSHBUTTON - BLACK	15	DOWN/REVERSE	PUSHBUTTON - BLACK	16	HOIST/TROLLEY	SELECTOR SWITCH	17	CRANE DISABLE	KEYSWITCH - 2 Pos. 0/I	18	SPREADER OFF	PUSHBUTTON - Red	19	20' / 40' / 2X20' / 45'	SELECTOR - 4 Pos.	20	FLIPPER 1/2/3/4/ALL	SELECTOR - 5 Pos.	21	FLIPPER UP/DOWN	PUSHBUTTON - Black	22	TWISTLOCK OPEN/CLOSE	SELECTOR - 3 Pos. (spring to center off)	23	DEPOSIT BYPASS	KEYSWITCH - 2 Pos. 0/I (spring to off)	24	TWIN RETRACT IN	PUSHBUTTON - Black	25	TWIN EXPAND OUT	PUSHBUTTON - Black	<table><tr><td>3</td><td></td><td></td><td></td><td>Gez.</td><td>22.04.09</td><td>JC</td><td></td><td>Maßstab</td><td>LIEBHERR-WERK BIBERACH GmbH</td><td rowspan="3">IR1763,4 - GANTRY CONSOLE P20</td><td>TYPE</td><td>4009-2627</td><td>=</td><td>CL</td></tr><tr><td>2</td><td></td><td></td><td></td><td rowspan="2">Bearb.</td><td></td><td></td><td rowspan="2"></td><td rowspan="2">:</td><td rowspan="2"></td><td>Zeich-Nr.</td><td rowspan="2">IR1763-4</td><td>+</td></tr><tr><td>1</td><td>Änderung</td><td>Datum</td><td>Name</td><td>Datum</td><td>Name</td><td>Copyright (c)</td><td>Blatt</td><td>5+</td><td>Ident. Nr.</td></tr></table>												3				Gez.	22.04.09	JC		Maßstab	LIEBHERR-WERK BIBERACH GmbH	IR1763,4 - GANTRY CONSOLE P20	TYPE	4009-2627	=	CL	2				Bearb.				:		Zeich-Nr.	IR1763-4	+	1	Änderung	Datum	Name	Datum	Name	Copyright (c)	Blatt	5+	Ident. Nr.
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1	Änderung	Datum	Name		Datum	Name					Copyright (c)		Blatt	5+	Ident. Nr.																																																																																																																																																	



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2	CRANE OFF	PUSHBUTTON - Red
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9	STORM ANCHORS POSITION	LAMP - Yellow
10	TRAVEL LEFT	PUSHBUTTON - Black
11	TRAVEL RIGHT	PUSHBUTTON - Black
12	SLOW / FAST	SELECTOR SWITCH 2 Pos.
13	STORM ANCHORS UP/DOWN	SELECTOR SWITCH
14	RESERVE	Blanking Plug
15	RESERVE	Blanking Plug
16	RESERVE	Blanking Plug
17	CRANE DISABLE	KEYSWITCH - 2 Pos. 0/I

STAINLESS STEEL EXECUTION





3				Drawn	22.04.09	MB		LIEBHERR CONTAINER CRANES		Drawing No. 4009-2627	=	CTRAYS
2				Checked							+	
1											Project/ Work No. IR1763-4	Sheet 2 -
	Modification	Date	Name		Date	Name		Copyright (c)				

CONTAINER CRANE P168L(WS)-SUPER

IR1763-64 PORT OF KOPER, SLOVENIA

ELECTRICAL INSTALLATION DRAWING - IR1763-64 EI-000000

Drawing No: 4009-2627

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1												Sheet 1+
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* Page List - Brief Listing Date: 17.02.09 Page: 1 *

* Project : IR1763-4 * LIEBHERR CONTAINER CRANES LTD. *
* Drawing No. : 4009-2627 * KILLARNEY, CO.KERRY, IRELAND. *
* Material No. : * TEL. +353 64 70200 / 31511 *
* Type/Location: PORT OF KOPER, SLOVENIA *

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Page	Page Description	Location	Date	Name
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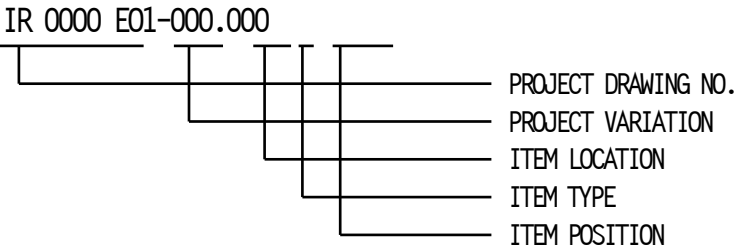
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2	CONTENTS		17.02.09	MC
3	DRAWING CODES/ABBREVIATIONS		23.05.08	MC
4	TRAVEL GEAR 1 + 2 SEASIDE		23.05.08	MC
5	TRAVEL GEAR 3 + 4 LANDSIDE		23.05.08	MC
6	ENDCARRIAGE - SEASIDE		11.09.08	MC
7	ENDCARRIAGE - LANDSIDE		29.10.08	MC
8	PORTAL, CRD + LIFT		23.05.08	MC
9	PORTAL, LIGHTING		23.05.08	MC
10	A-FRAME		23.05.08	MC
11	BOOM - MAINBEAM		23.05.08	MC
12	TRIM, LIST, SKEW SYSTEM		23.05.08	MC
13	FESTOON SYSTEM		20.01.09	MC
14	FESTOON SYSTEM LAYOUT		06.02.09	MC
15	TROLLEY GEAR		17.02.09	MC
16	SPREADER		23.05.08	MC
17	MACHINERY HOUSE - TRAFO		05.09.08	MC
18	MACHINERY HOUSE		17.02.09	MC
19	M-HOUSE AUXILIARIES		04.12.08	MC
20	ELECTRICAL HOUSE S5 FILTER		05.12.08	MC
21	ELECTRICAL HOUSE		23.05.08	MC
22	DRIVER'S CABIN		22.01.09	MC
23	ELECTRICAL INSTALLATION NOTES		23.05.08	MC

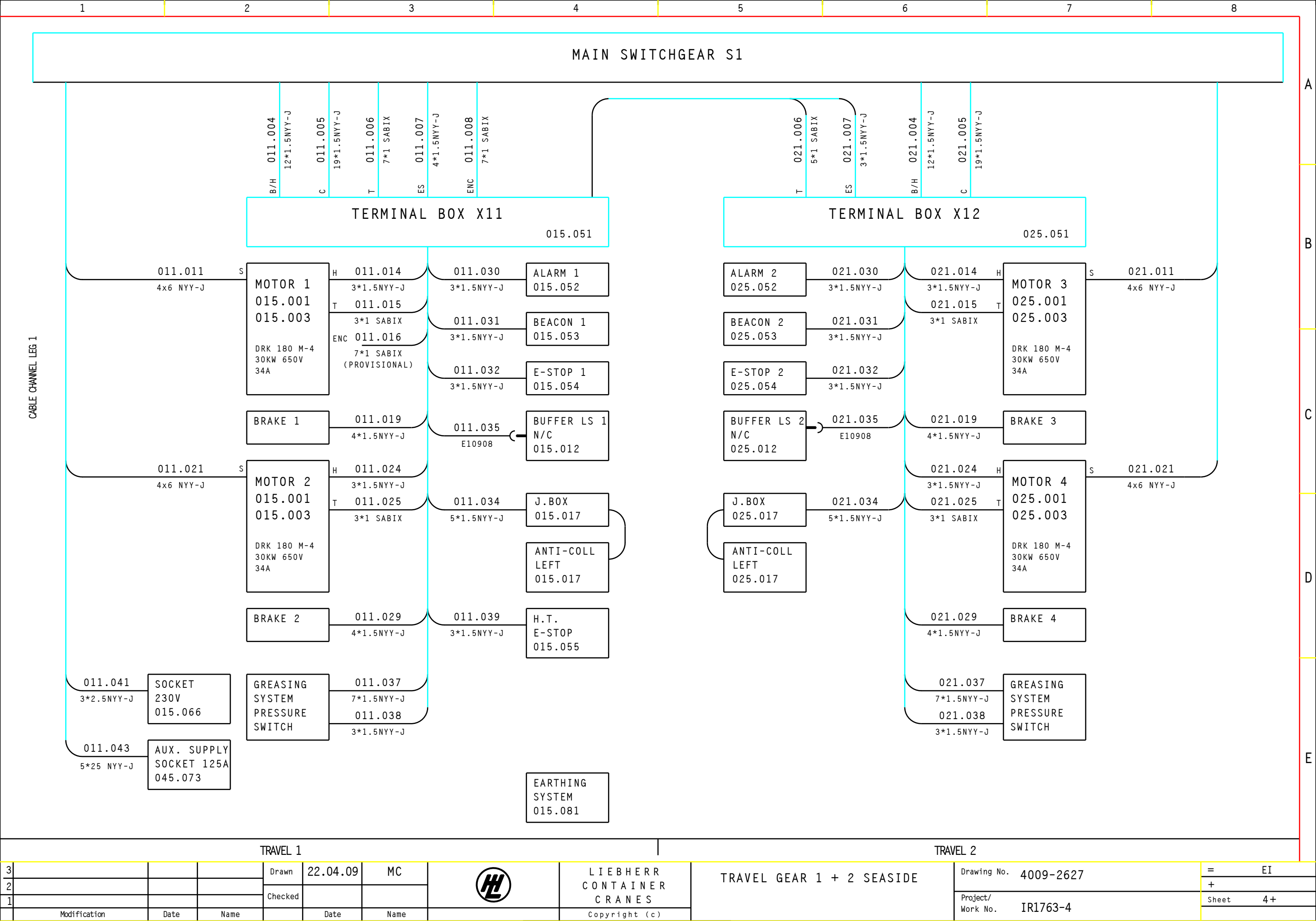
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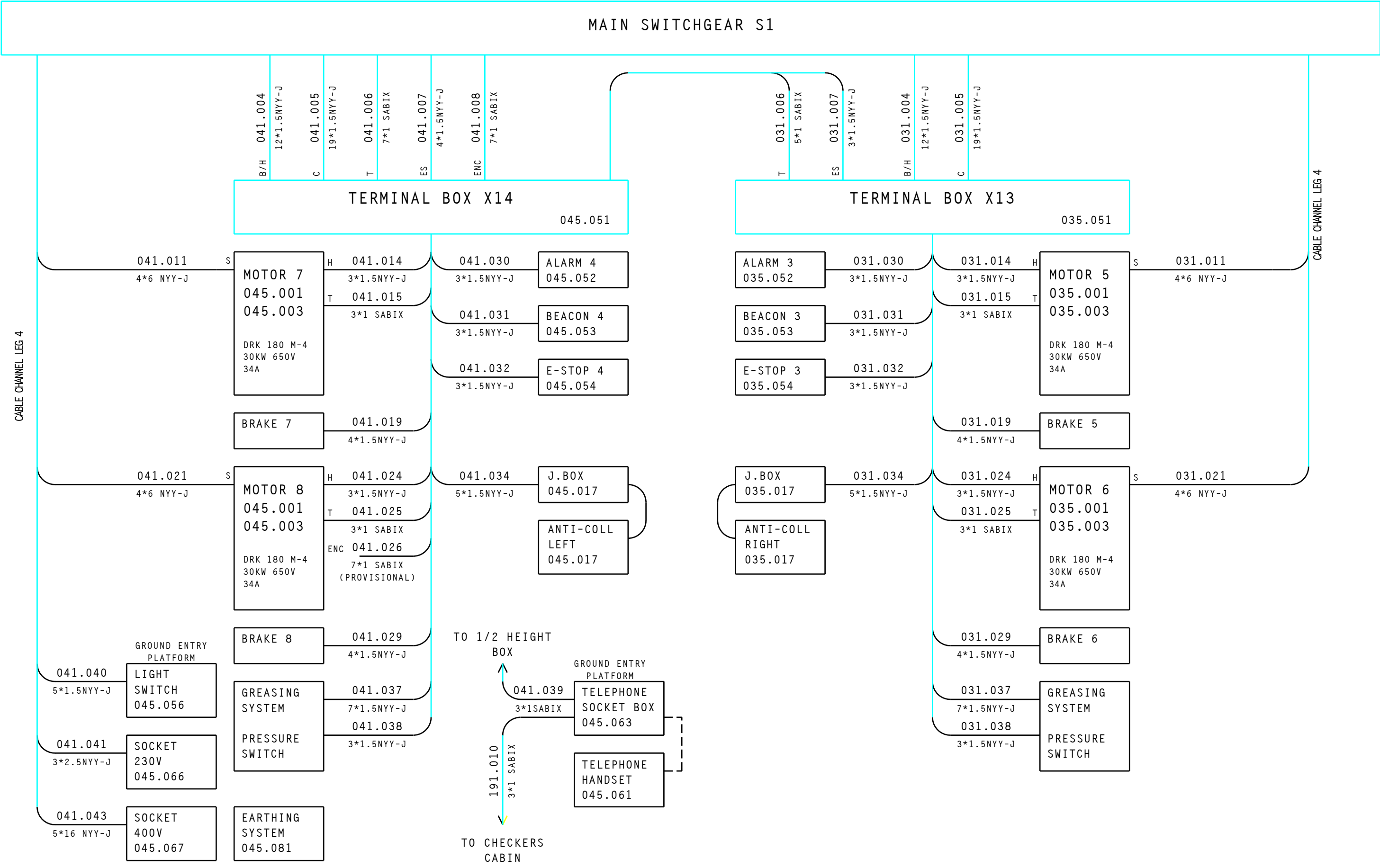
ITEM LOCATION	ITEM TYPE	ITEM NO.
01 - TRAVEL GEAR 1	1 - CABLES	001-010 DRIVE MOTORS
02 - TRAVEL GEAR 2	2 - CABLE CHANNELS	011-030 LIMIT SWITCHES
03 - TRAVEL GEAR 3	3 - CONDUITS	031-040 POWER EQUIPMENT
04 - TRAVEL GEAR 4	4 - RESERVE	041-050 CONTROL EQUIPMENT
05 - ENDCARRIAGE SEASIDE	5 - EQUIPMENT	051-099 AUXILIARY EQUIPMENT
06 - ENDCARRIAGE LANDSIDE		
07 - PORTAL		
08 - A-FRAME		
09 - BOOM / JIB		
10 - MAINBEAM		
11 - CABLE RAIL		
12 - TROLLEY		
13 - TRIM/LIST/SKEW		
14 - MACHINERY HOUSE - MAINBEAM		
15 - MACHINERY HOUSE - TROLLEY		
16 - ELECTRICAL HOUSE		
17 - DRIVER'S CABIN		
18 - BOOM CONTROL CABIN		
19 - CHECKER'S CABIN		
20 - LIFT PLATFORMS		
21 - LIFT MACHINERY HOUSE		
22 - LIFT CAR		
23 - SPREADER		
24 - PULLEY FRAME		
25 - SITE INSTALLATION		



ABBREVIATIONS
A - ARMATURE
E - EARTH
F - FIELD
C - CONTROL
B - BRAKE
ENC - ENCODER
VF - VENTILATOR FAN
H - HEATER
T - THERMISTOR
S - STATOR
R - ROTOR
LS - LIMIT SWITCH
M - MOTOR
HSL - HEATER SLIPRING
HM - HEATER MOTOR
HI - HEIGHT INDICATOR
PH - PHASE
Y - STAR POINT
TG - TACHO GENERATOR
TS - TELEPHONE SOCKET
V - VALVE
AL - ACCESS LIGHT
FL - FLOODLIGHT
WB - WARNING BEACON
A/C - AIR CONDITIONING



3				Drawn	22.04.09	MC		LIEBHERR CONTAINER CRANES	TRAVEL GEAR 1 + 2 SEASIDE	Drawing No. 4009-2627	=	EI
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1											Sheet	4 +
	Modification	Date	Name		Date	Name		Copyright (c)		Project/ Work No. IR1763-4		



TRAVEL 4			TRAVEL 3		
3			Drawn	22.04.09	MC
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1					
	Modification	Date	Name	Date	Name



LIEBHERR
CONTAINER
CRANES

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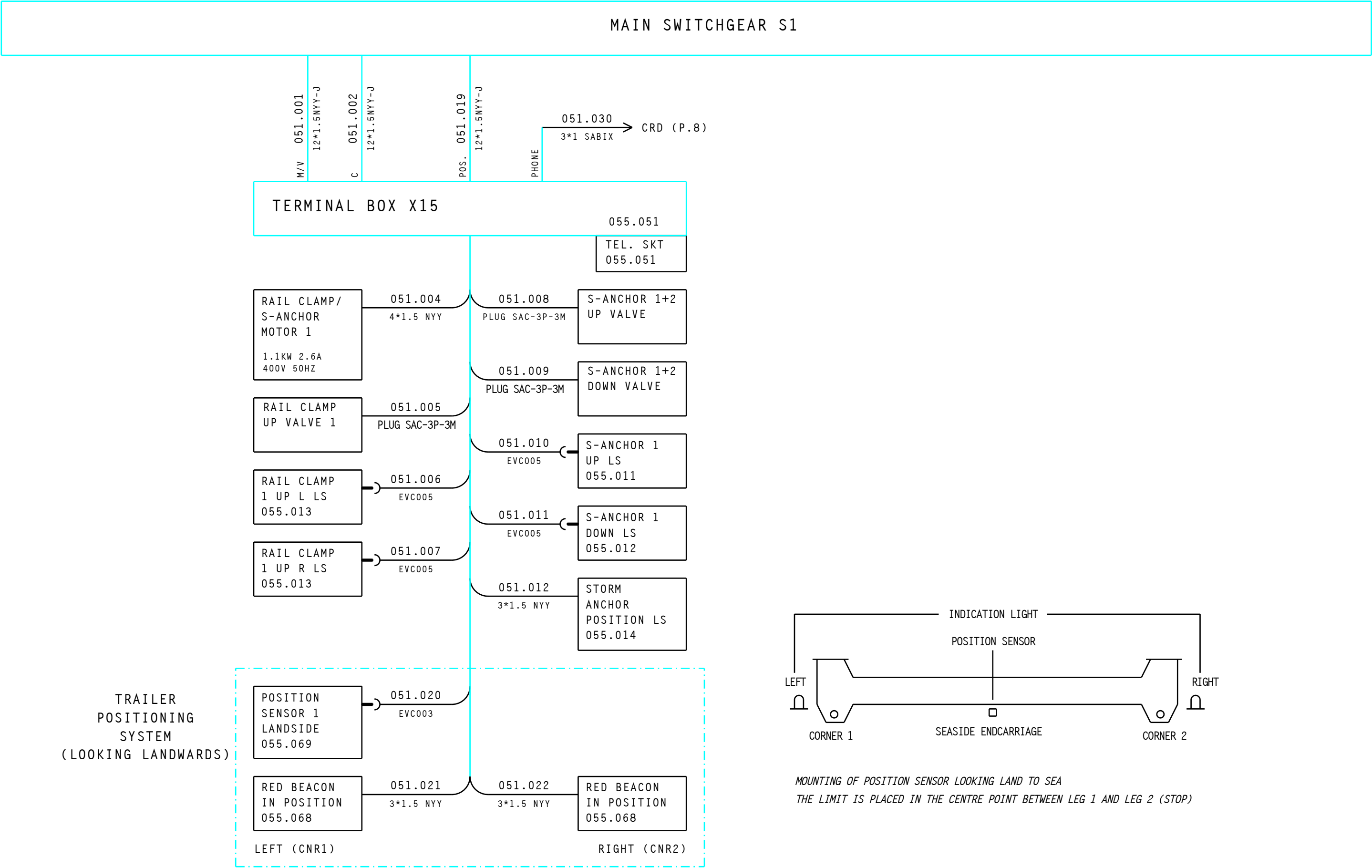
TRAVEL GEAR 3 + 4 LANDSIDE

Drawing No. 4009-2627

Project/
Work No. IR1763-4

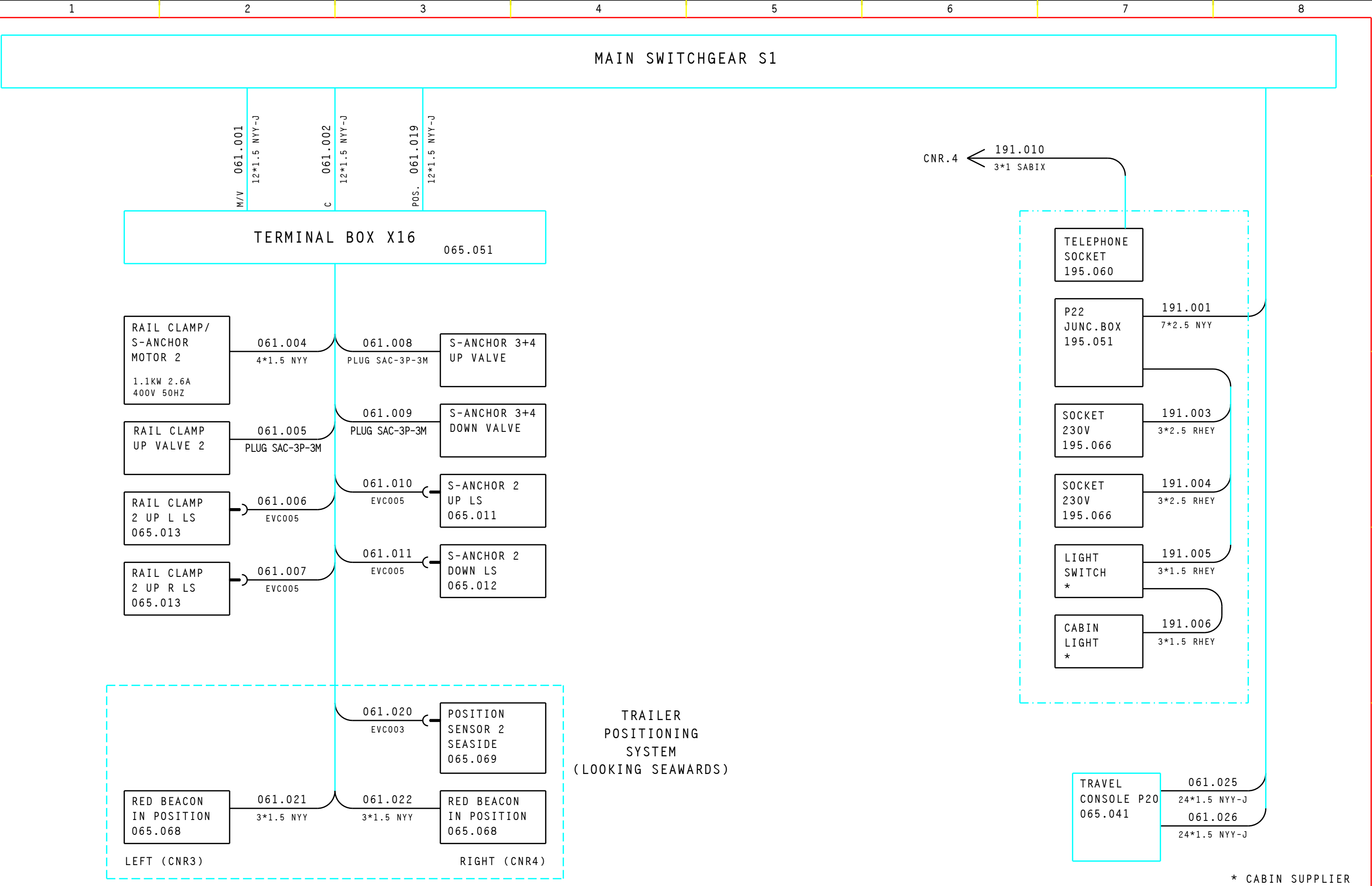
= EI

+ 5+



STORM ANCHOR/RAIL CLAMP - SEASIDE

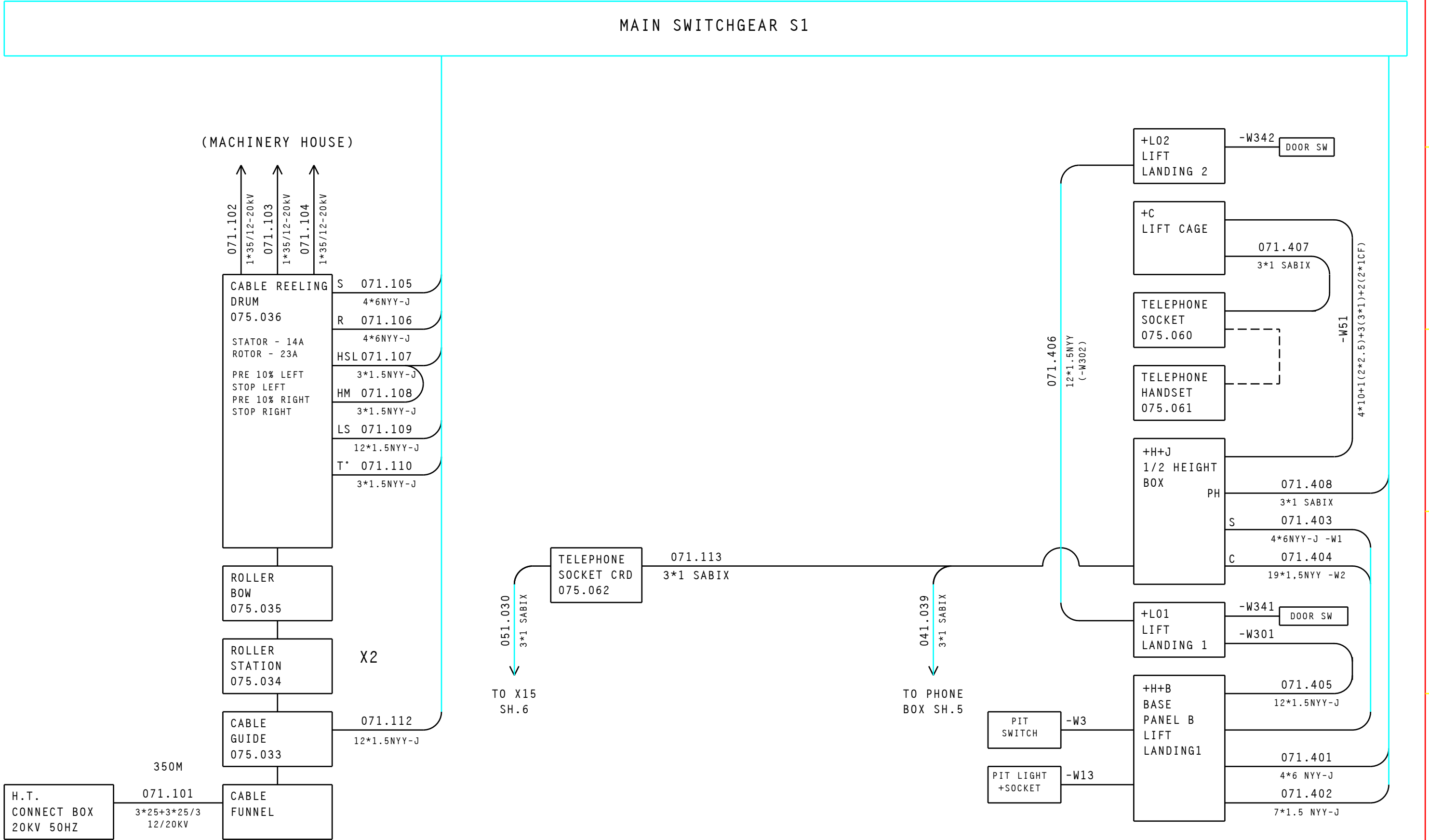
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	Modification	Date	Name		Date	Name		Copyright (c)		Project/ Work No. IR1763-4	Sheet 6+




STORM ANCHOR/RAIL CLAMP - LANDSIDE

CHECKERS CABIN - LANDSIDE

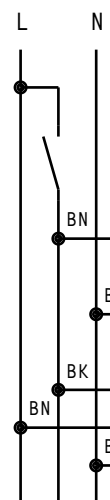
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	Modification	Date	Name		Date	Name		Copyright (c)					



PREPARED + CONNECTED
BY LIEBHERR

LEG 1/CILLBEAM 1-4								LEG 4					
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2				Checked							+		
1											Project/ Work No.	IR1763-4	Sheet
	Modification	Date	Name		Date	Name		Copyright (c)					

MAIN SWITCHGEAR S1



ACCESS LIGHTS
075.057

MACH/ELECT
HOUSE MAINBEAM
ENTRY PLATFORMS

071.420
5*1.5NYY-J

EMERGENCY
LIGHTS
075.059

ACCESS LIGHTS
075.057

MAIN ENTRY
/LIFT PLATFORMS

071.421
5*1.5NYY-J

EMERGENCY
LIGHTS
075.059

ACCESS LIGHTS
075.057

CRD
PLATFORM

071.422
3*1.5 NYY-J

BALLAST 18

071.441
5*2.5 NYY-J

FL.LIGHT 18
075.058

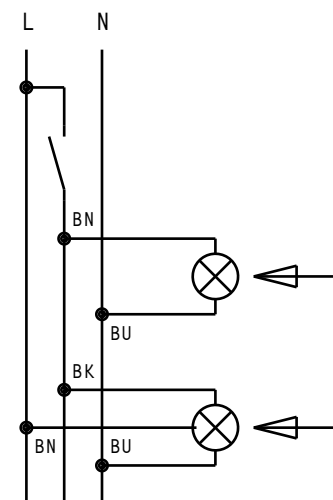
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3*2.5 NYY-J

BALLAST 15

071.443
3*2.5 NYY-J

FL.LIGHT 15
075.058

071.444
3*2.5 NYY-J



BALLAST 17

071.329
5*2.5 NYY-J

FL.LIGHT 17
075.058

071.330
3*2.5 NYY-J

BALLAST 16

071.331
3*2.5 NYY-J

FL.LIGHT 16
075.058

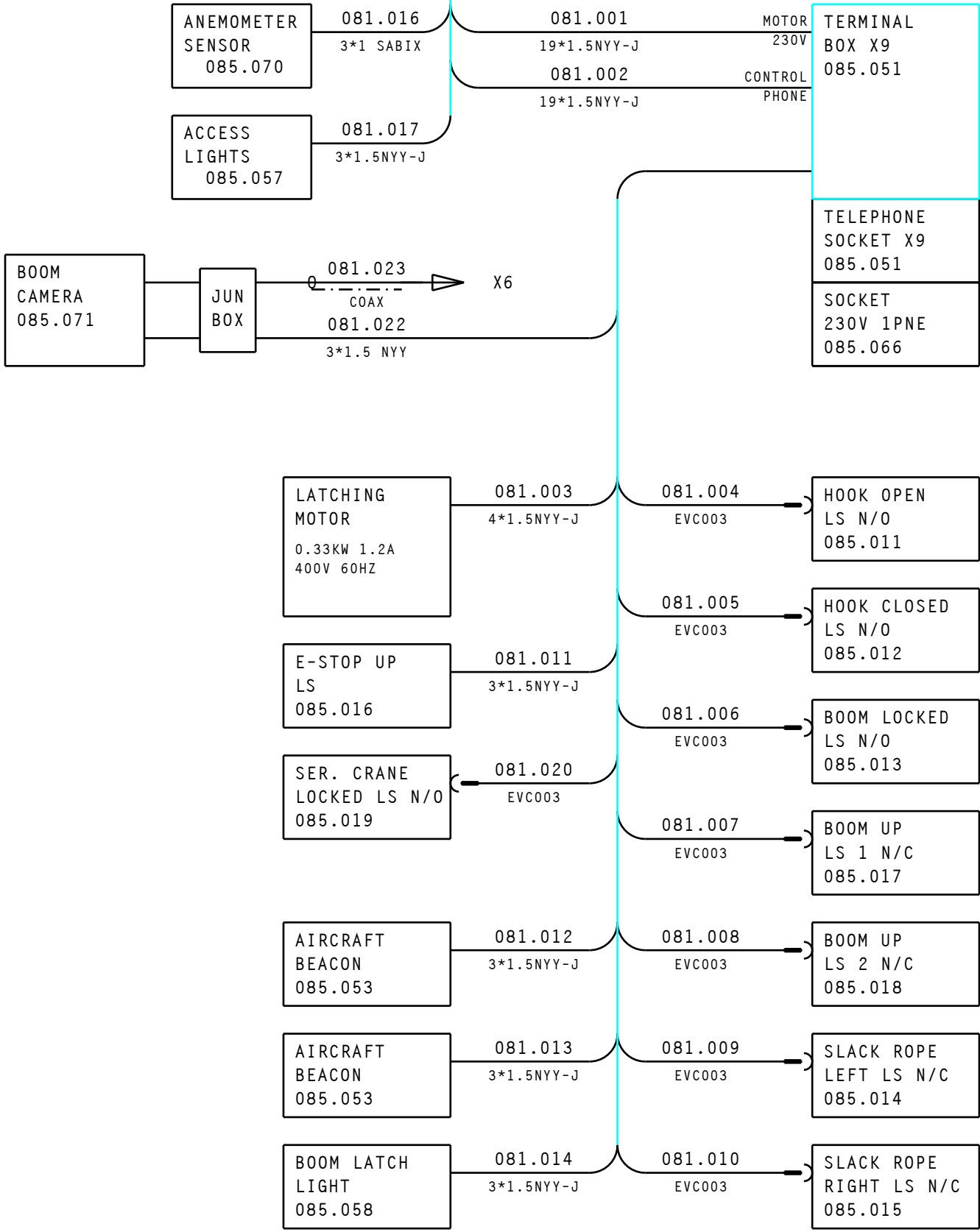
071.332
3*2.5 NYY-J

LEG 4/CILLBEAM 1-4

LEG 3/CILLBEAM 2-3

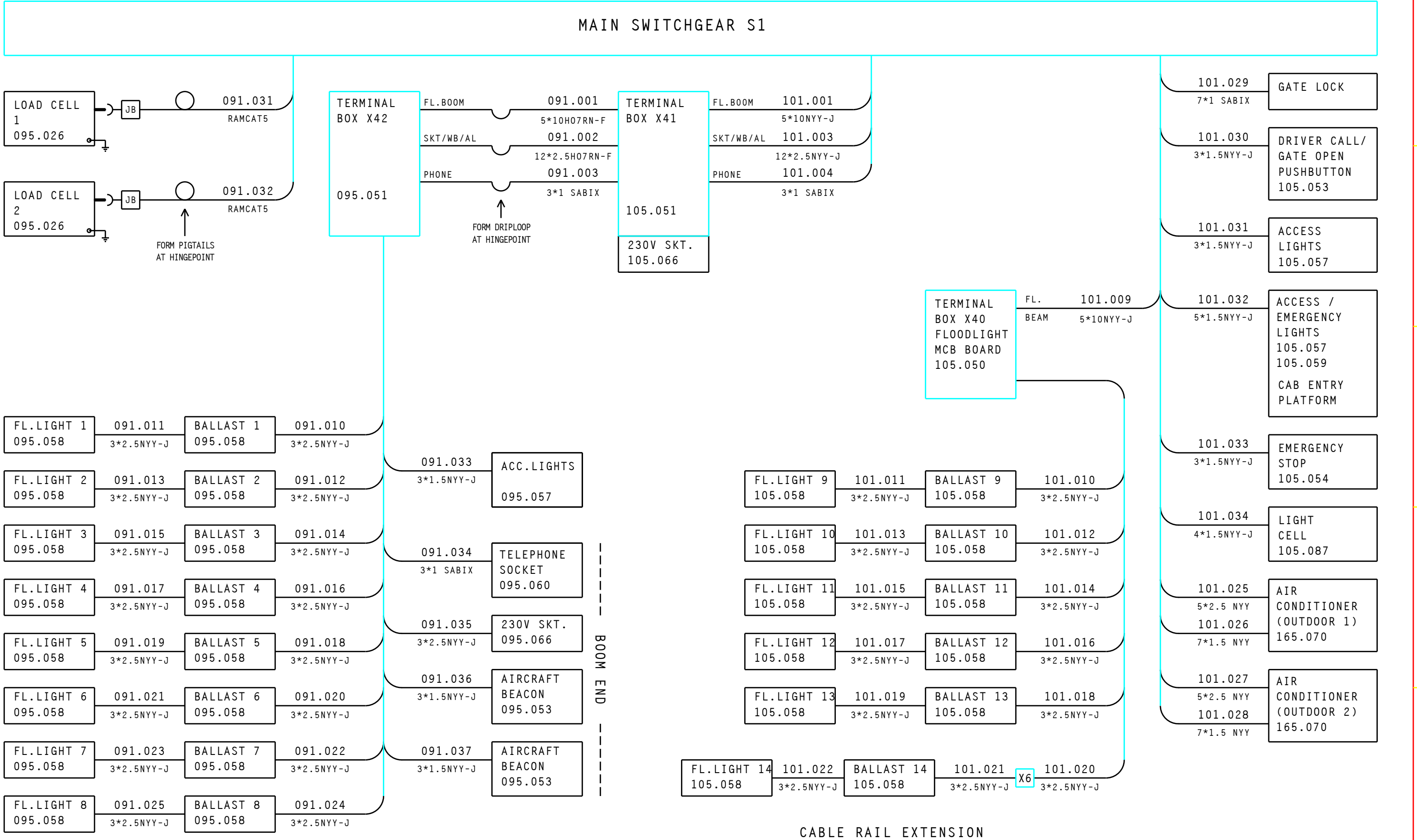
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MAIN SWITCHGEAR S1



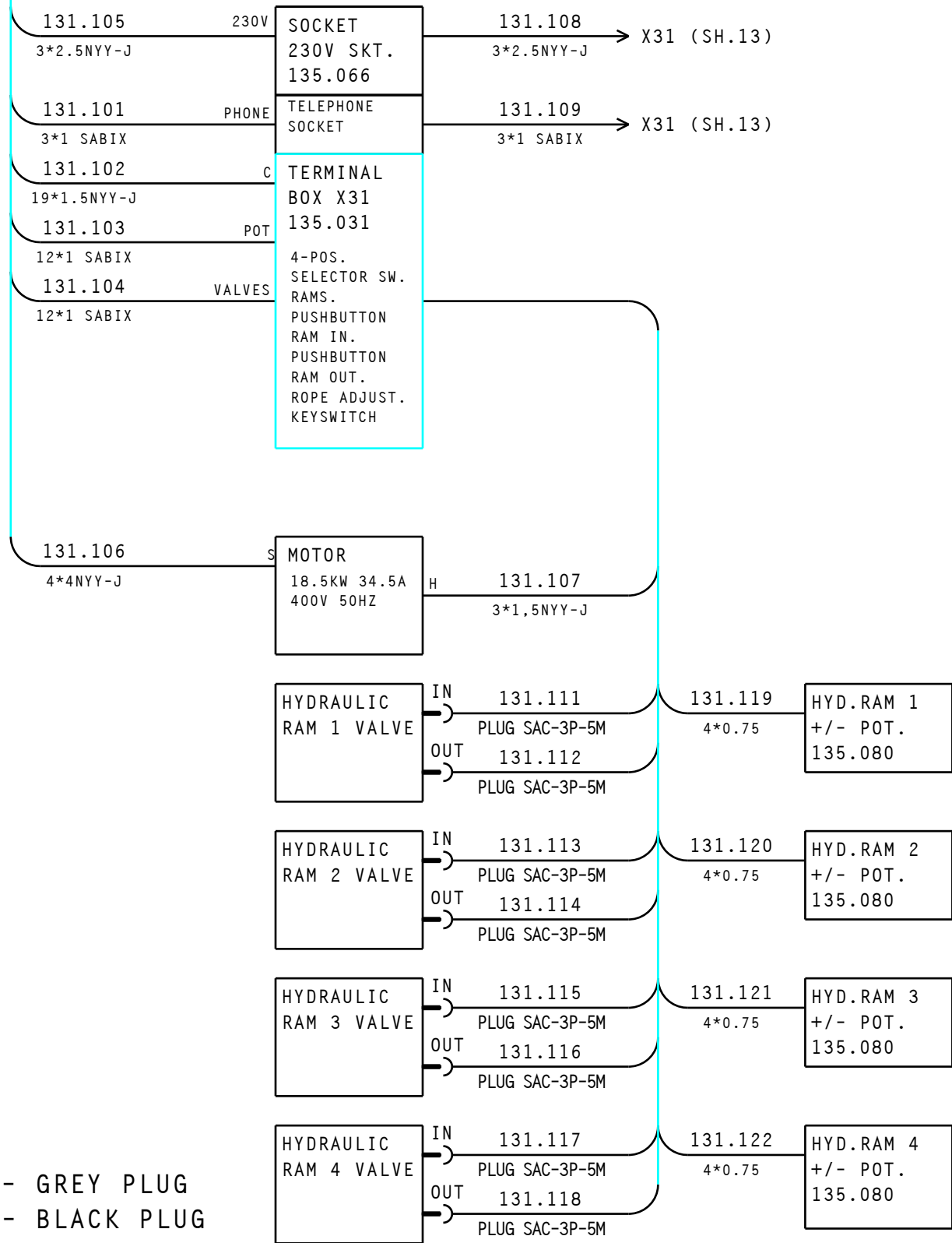
A-FRAME

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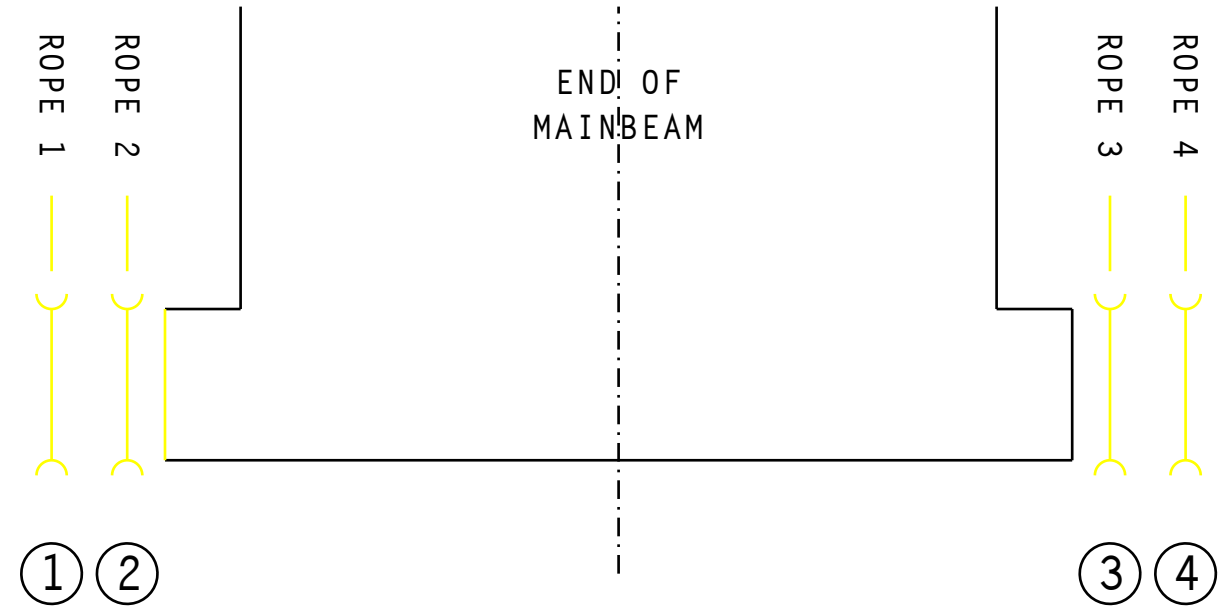


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Modification				Date	Name	Date	Name	Copyright (c)				

MAIN SWITCHGEAR S1

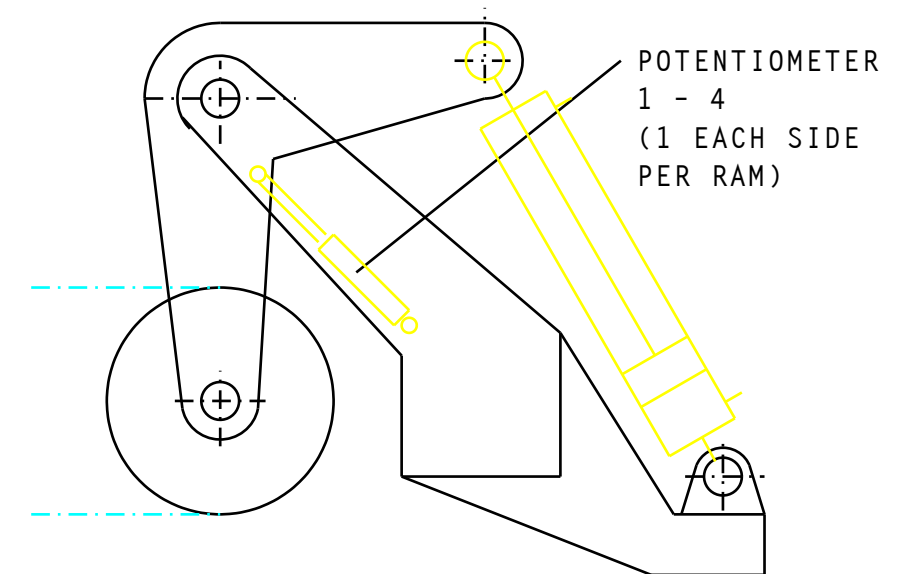


NOTE:
RAM IN - GREY PLUG
RAM OUT - BLACK PLUG



NOTE: RAMS MOVE IN PAIRS AS FOLLOWS.

TRIM PAIR (1 + 2) +/- AND (3 + 4) +/-
LIST PAIR (1 + 4) +/- AND (2 + 3) +/-
SKEW PAIR (1 + 3) +/- AND (2 + 4) +/-



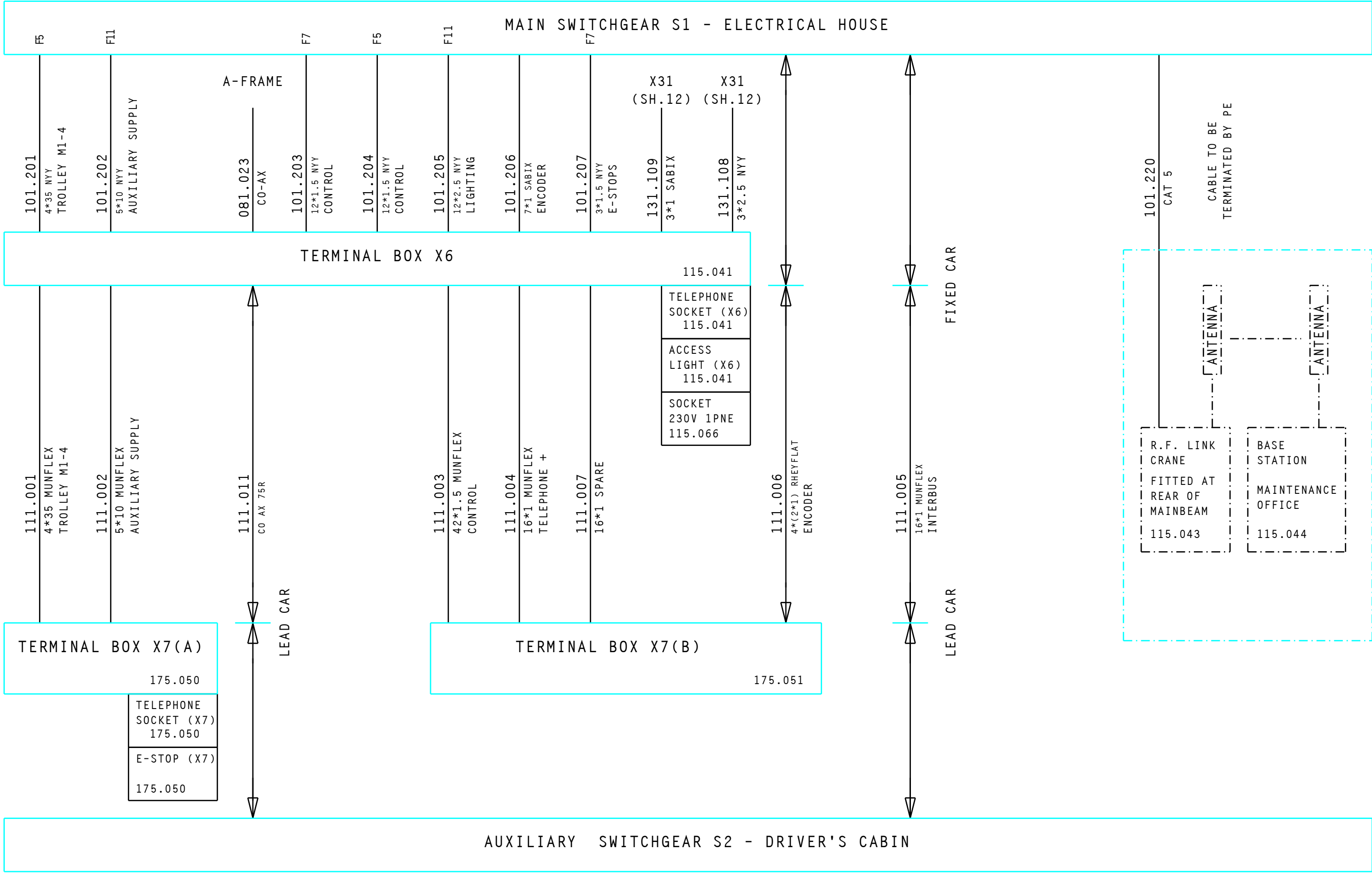
RAM OUT SHORTENS ROPES
RAM IN LENGTHENS ROPES

SIDE VIEW

TRIM, LIST
AND SKEW

* FITTED BY SUPPLIER

3				Drawn	22.04.09	MC		LIEBHERR CONTAINER CRANES	TRIM, LIST, SKEW SYSTEM	Drawing No. 4009-2627	= EI
2				Checked						Project/ Work No. IR1763-4	+
1								Copyright (c)			Sheet 12+
	Modification	Date	Name		Date	Name					



RAIL INP-180

WHEEL 100MM DIA. MIN.

HOIST ROPE SUPPORT
TROLLEY (SHORTER HARNESS)

NOTE:
BOLTED TO
RAIL

DROP 3.40M

DIMENSIONS

TOTAL TROLLEY TRAVEL (X)	96.00 Meters
PARKING AREA (Y)	7,5 Meters
NO. OF LOOPS $(X + Y) * 1.25 / L$ (ROPE SUPPORT = ODD)	= 19
LENGTH OF CABLE LOOP (L)	6.80 Meters
TOTAL CABLE LENGTH ON CARRIERS $[>(X + Y) * 1.25]$	129.4 Meters
CABLE LENGTH FROM MAINBEAM X6 TO END CLAMP	10.0 Meters
CABLE LENGTH FROM LEAD CAR TO TROLLEY	5.00 Meters
TOTAL CABLE LENGTH	144 Meters

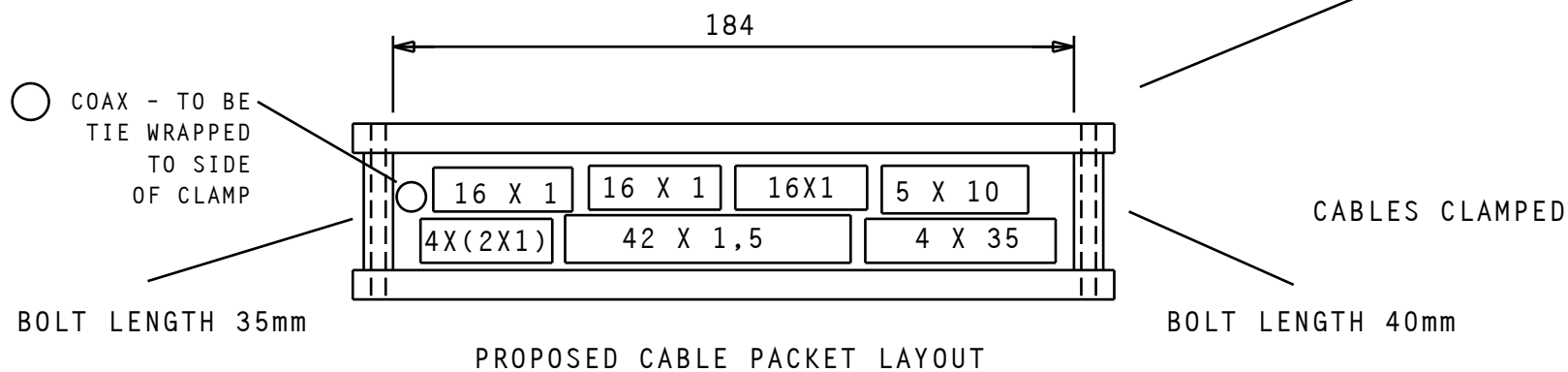
* LENGTH OF TOW ROPE DETERMINED BY SUPPLIER
TO BE APPROX. 10% LESS THAN CABLE LOOP

CARRIERS

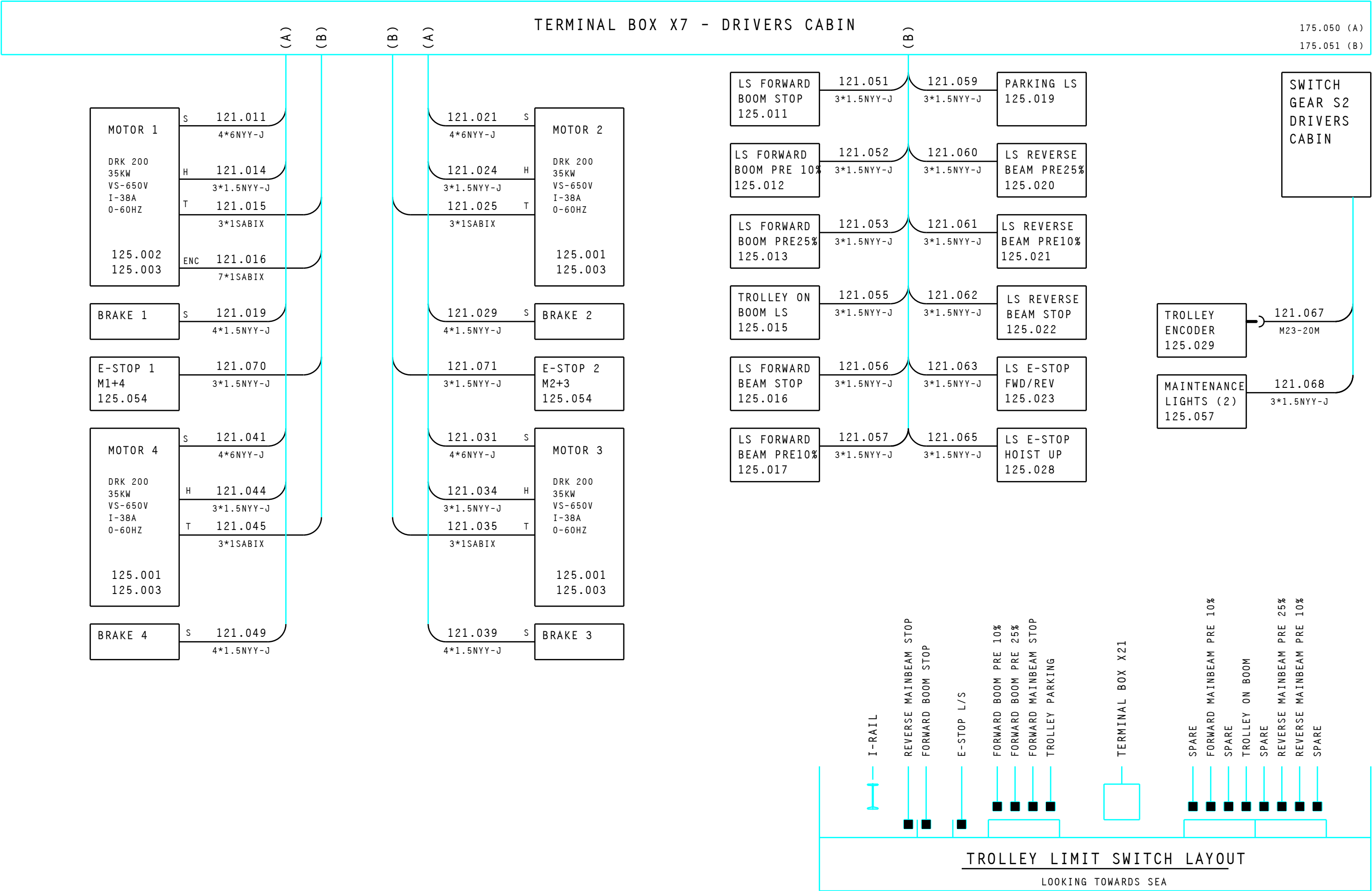
END CLAMP (RAIL)	1
TOWING CARRIER	2
REGULAR CARRIER	17
CABLE LOAD PER CARRIER	200KG. APPROX.
CARRIER CLAMPING SPACE	1 OFF

NOTE:

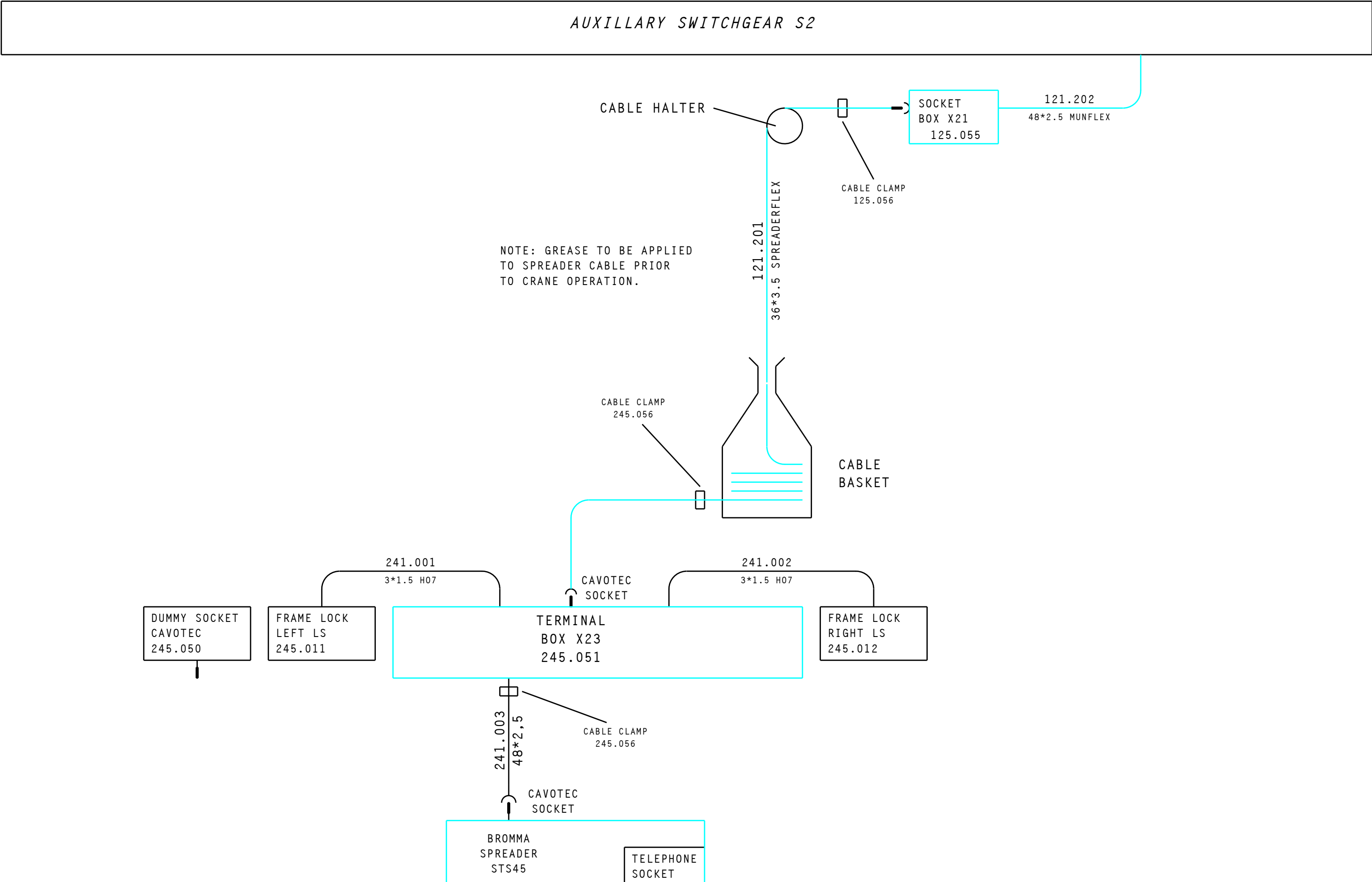
ELASTIC DAMPING DEVICE IN EVERY LOOP.
BUNGEE ROPE BETWEEN CABLE CLEAT AND
TOWING ROPE LENGTH 1.75M



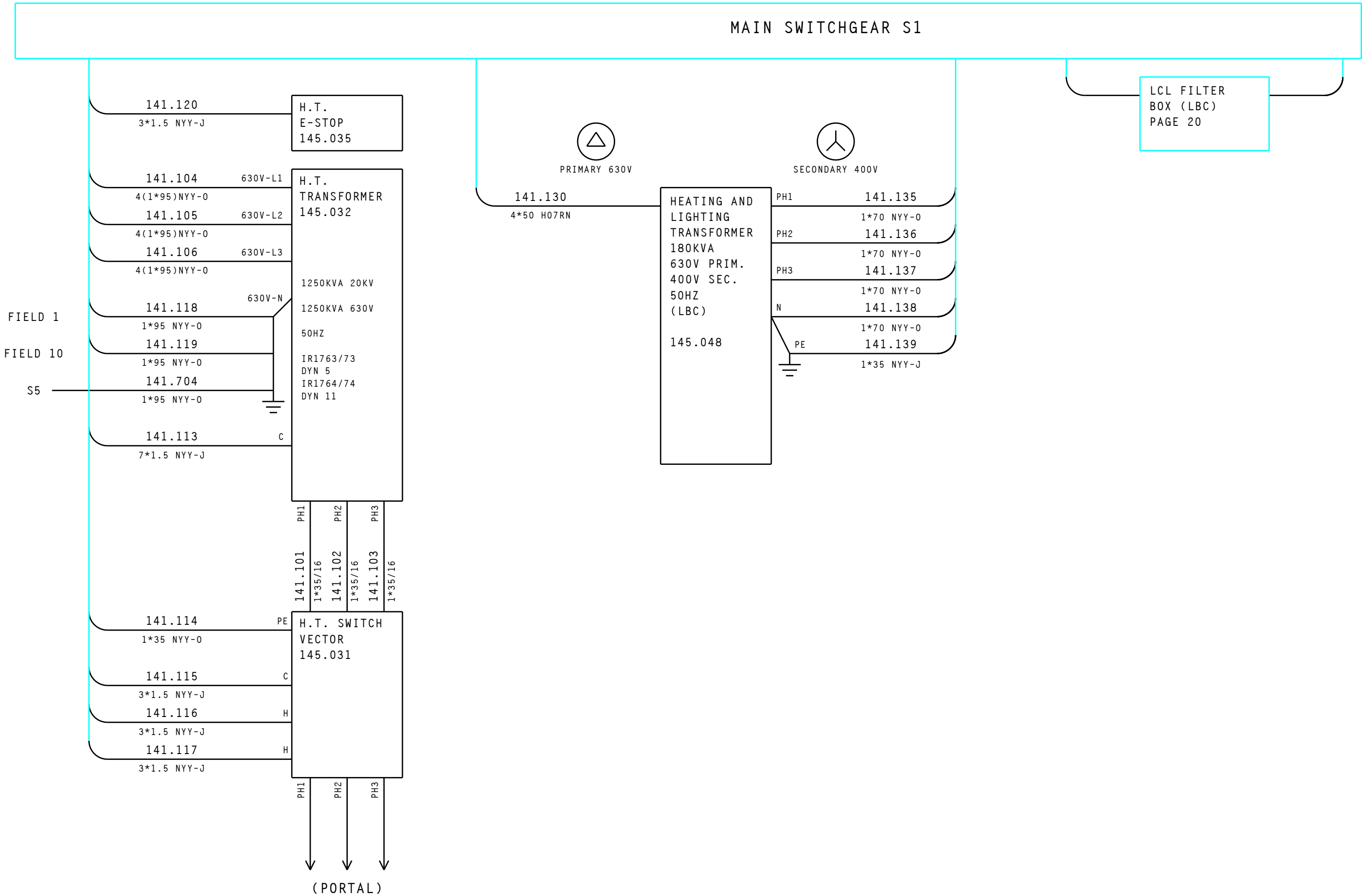
3				Drawn	22.04.09	MC		LIEBHERR CONTAINER CRANES	FESTOON SYSTEM LAYOUT	Drawing No. 4009-2627	= EI
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1											
	Modification	Date	Name		Date	Name		Copyright (c)		Project/ Work No. IR1763-4	Sheet 14+



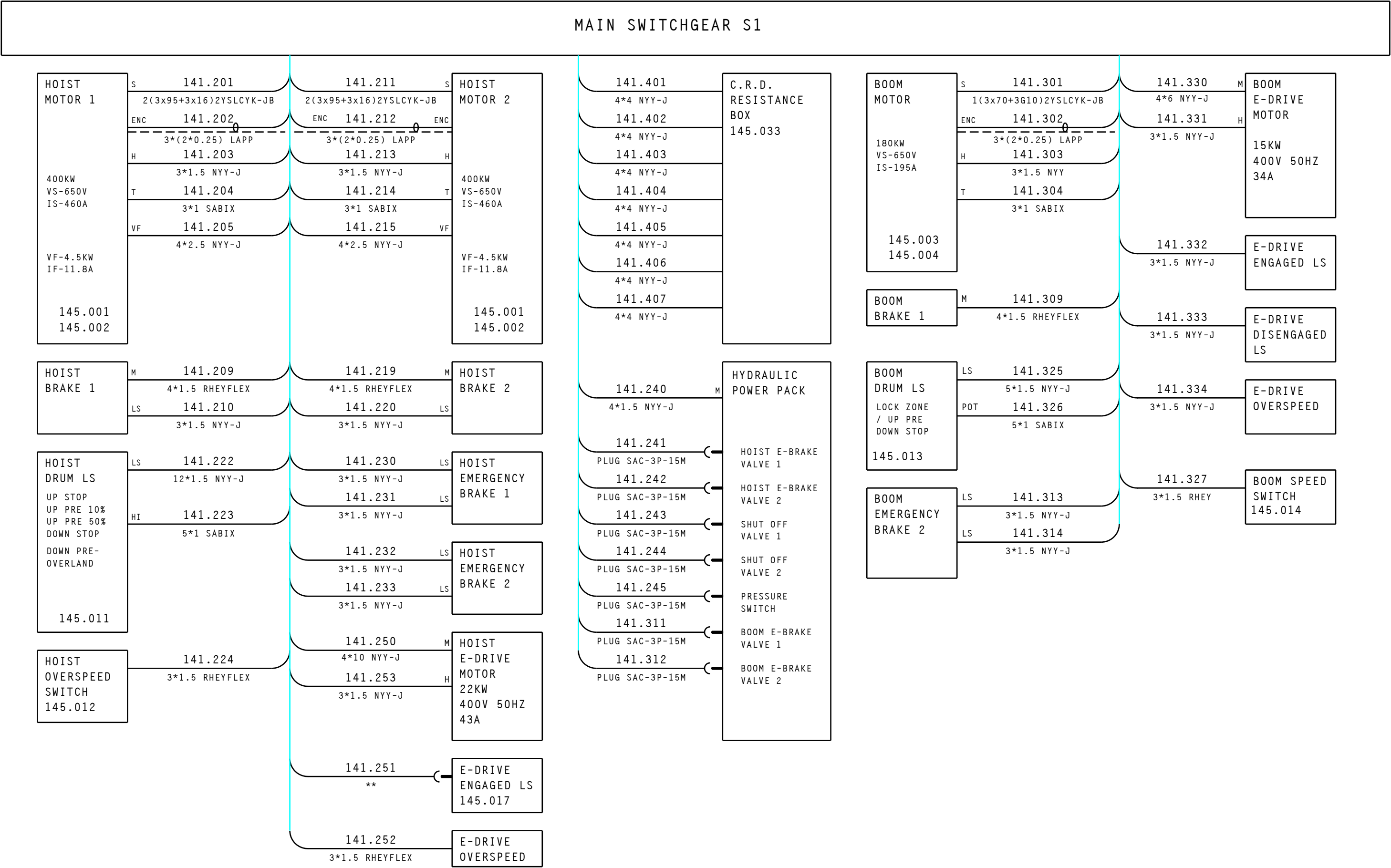
3				Drawn	22.04.09	MC		LIEBHERR CONTAINER CRANES	TROLLEY GEAR	Drawing No. 4009-2627 Project/ Work No. IR1763-4	= EI + Sheet 15+
2				Checked							
1											
	Modification	Date	Name		Date	Name		Copyright (c)			



3				Drawn	22.04.09	MC		LIEBHERR CONTAINER CRANES	SPREADER	Drawing No. 4009-2627	Project/ Work No. IR1763-4	=	EI
2				Checked								+	
1												Sheet	16+
	Modification	Date	Name		Date	Name		Copyright (c)					

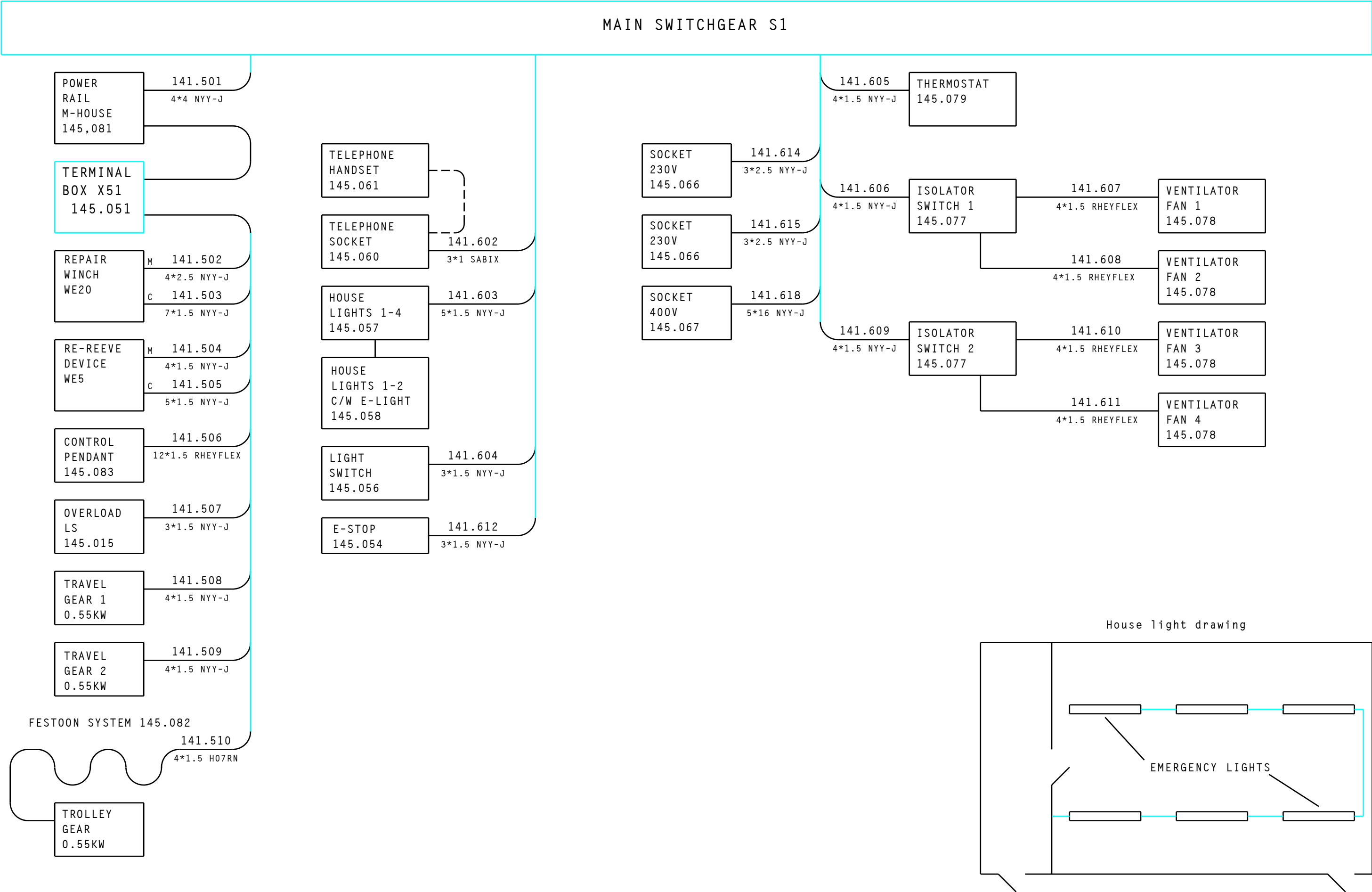


3				Drawn	22.04.09	MC		LIEBHERR CONTAINER CRANES	MACHINERY HOUSE - TRAFO	Drawing No. 4009-2627		=	EI
2				Checked								+	
1										Project/ Work No. IR1763-4		Sheet	17+
	Modification	Date	Name		Date	Name		Copyright (c)					



HOIST + BOOM GEAR

3				Drawn	22.04.09	MC		LIEBHERR CONTAINER CRANES	MACHINERY HOUSE	Drawing No. 4009-2627	=	EI
2				Checked							+	
1											Sheet	18+
	Modification	Date	Name		Date	Name		Copyright (c)		Project/ Work No. IR1763-4		

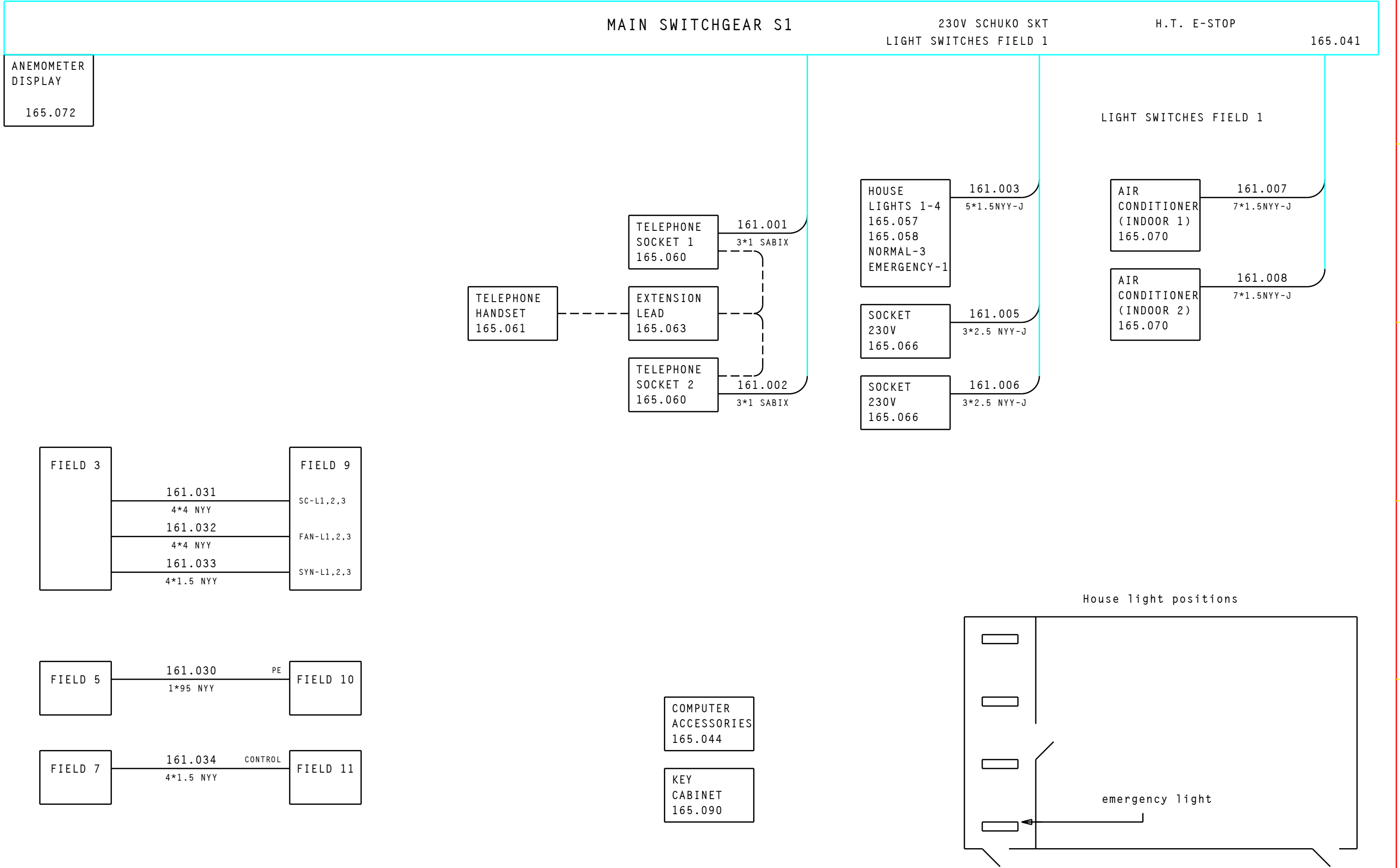


3				Drawn	22.04.09	MC		LIEBHERR CONTAINER CRANES	M-HOUSE AUXILIARIES	Drawing No. 4009-2627	=	EI
2				Checked							+	
1										Project/ Work No. IR1763-4	Sheet	19+
	Modification	Date	Name		Date	Name		Copyright (c)				

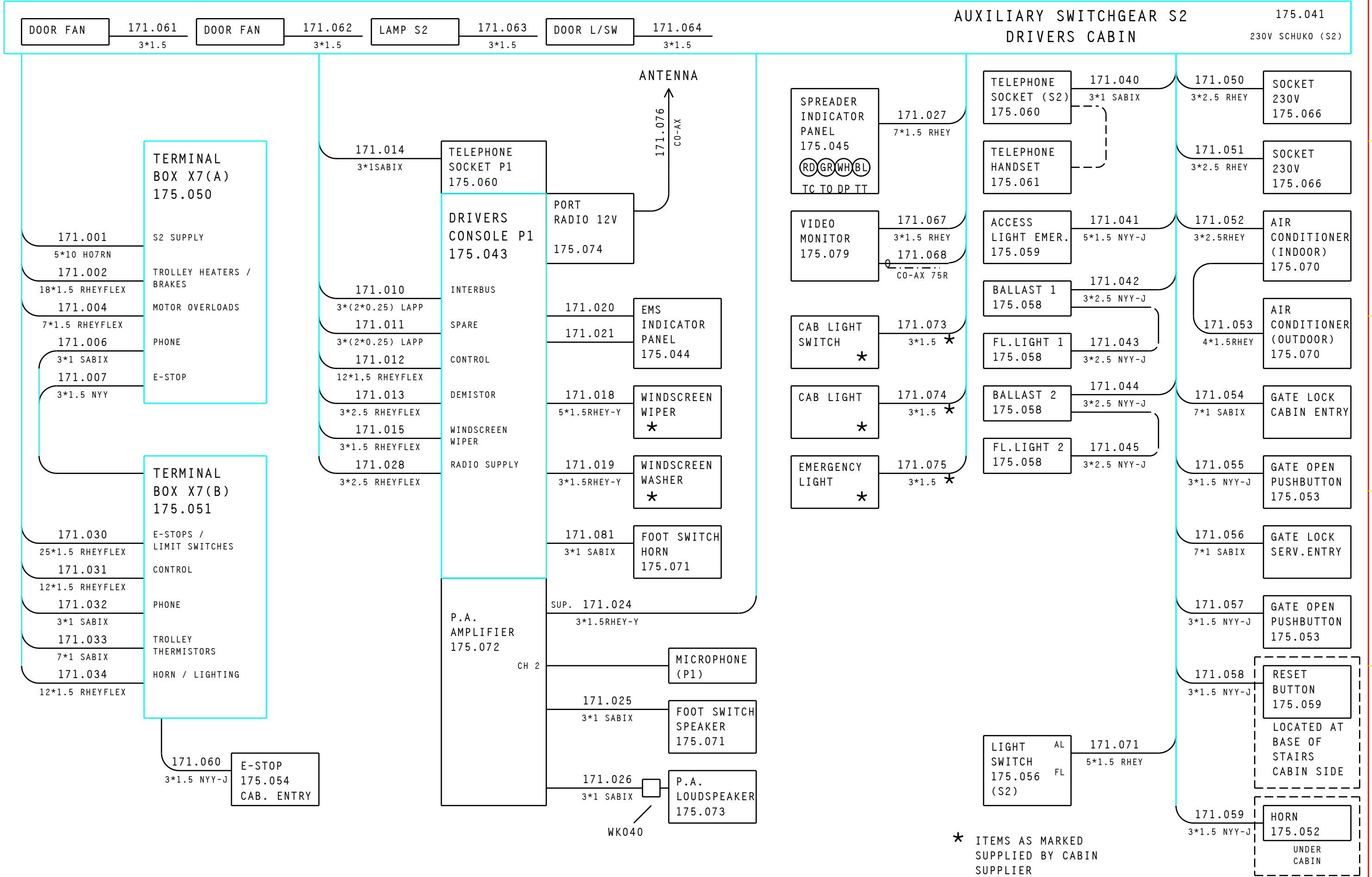
MAIN SUPPLY FILTER S5						MAIN SWITCHGEAR S1					
Q30M/1 Q30M/3 Q30M/5 K21M/2 K21M/4 K21M/6 K22M/2 K22M/4 K22M/6 K23M/2 K23M/4 K23M/6	A10-120	141.701	3(LAPP 1*120 FD 90 CY)	16-22	A10-120	+9A-Lm/U1					
	A10-120	141.702	3(LAPP 1*120 FD 90 CY)	16-22	A10-120	+9A-Lm/V1					
	A10-120	141.703	3(LAPP 1*120 FD 90 CY)	16-22	A10-120	+9A-Lm/W1					
	A10-95	141.705	2(LAPP 1*95 FD 90 CY)	16-22	A10-95	+3A-U1/L1					
	A10-95	141.706	2(LAPP 1*95 FD 90 CY)	16-22	A10-95	+3A-U1/L2					
	A10-95	141.707	2(LAPP 1*95 FD 90 CY)	16-22	A10-95	+3A-U1/L3					
	A10-95	141.708	2(LAPP 1*95 FD 90 CY)	16-22	A10-95	+3A-U2/L1					
	A10-95	141.709	2(LAPP 1*95 FD 90 CY)	16-22	A10-95	+3A-U2/L2					
	A10-95	141.710	2(LAPP 1*95 FD 90 CY)	16-22	A10-95	+3A-U2/L3					
	A10-95	141.711	2(LAPP 1*95 FD 90 CY)	16-22	A10-95	+3A-U3/L1					
	A10-95	141.712	2(LAPP 1*95 FD 90 CY)	16-22	A10-95	+3A-U3/L2					
	A10-95	141.713	2(LAPP 1*95 FD 90 CY)	16-22	A10-95	+3A-U3/L3					
24V CONTROL 230V CONTROL ANTI CONDENSATION HEATING E-STOP PHONE FAN	141.714	19*1.5 NY	16-22			+9A					
	141.715	12*1.5 NY	16-22			+7A					
	141.716	3*1.5 NY	8-12			+11A					
	141.717	3*1.5 NY	8-12			+7A					
	141.718	3*1 SABIX	8-12			+7A					
	141.719	3*1.5 NY	8-12			+9A					

141.601		TELEPHONE SOCKET(DOOR) 145.060
3*1 SABIX		

3				Drawn	22.04.09	MC		LIEBHERR CONTAINER CRANES	ELECTRICAL HOUSE S5 FILTER	Drawing No. 4009-2627		=	EI
2				Checked								+	
1										Project/ Work No. IR1763-4		Sheet	20+
	Modification	Date	Name		Date	Name		Copyright (c)					



3				Drawn	22.04.09	MC		LIEBHERR CONTAINER CRANES	ELECTRICAL HOUSE	Drawing No. 4009-2627	= EI	
2				Checked							+	
1											Sheet	21+
	Modification	Date	Name		Date	Name		Copyright (c)		Project/ Work No. IR1763-4		



* ITEMS AS MARKED
SUPPLIED BY CABIN
SUPPLIER

3				Drawn	22.04.09	MC		LIEBHERR CONTAINER CRANES	DRIVER'S CABIN	Drawing No. 4009-2627	= EI
2				Checked						+	
1										Project/ Work No. IR1763-4	Sheet 22 +
	Modification	Date	Name		Date	Name		Copyright (c)			

CABLING

L.V. CABLES FROM H.T. TRANSFORMER TO MAIN SUPPLY PANEL TO BE LAYED IN TREFOIL FORMATION.
L.V. POWER SUPPLY TO BE NEUTRALISED AT ONE PLACE ONLY i.e. N - E BUSBAR LINK IN MAIN SUPPLY PANEL.
GENERAL SCREENED-CABLE BRAID TO BE GROUNDED AT ONE END OF CABLE ONLY (SWITCHGEAR),
BRAID TO BE CUT BACK AND TAPED OVER AT NON-GROUNDED END (EQUIPMENT).
CABLES TO OUTDOOR EQUIPMENT WITH HORIZONTAL GLANDS TO HAVE FORMED DIP PREVENTING WATER INGRESS BY GLAND.
INTERBUS-S COMMUNICATIONS CABLING - NOTE SPECIAL CONSIDERATIONS.
5-CORE CABLE TO M/E-HOUSE LIGHTING - WIRE BROWN+BLUE TO LIVE+NEUTRAL, BLACK SWITCH WIRE, GREY NOT USED. G/Y TO E.
5-CORE CABLE TO MOTOR HEATERS/FIELDS - WIRE BROWN/BLUE CORES TO HEATERS, BLACK=F1/GREY=F2 TO FIELDS.
5-CORE CABLE TO EQUIPMENT REQUIRING 3P+N+E - WIRE BROWN/BLACK/GREY TO R,S,T RESPECTIVELY, BLUE TO N, G/Y TO E
HEAT-SHRINK SLEEVING RED (A1) OR BLACK (A2) TO BE USED ON FESTOON MULTI-CORE CABLES TO D.C. MOTOR ARMATURES.
YELLOW FLYING LEADS ON STEGMAN ENCODERS SHOULD BE FITTED WITH HEAT SHRINK SLEEVING TO PROTECT CABLE AGAINST UV,
AND ENVIROMENTAL EXPOSURE WHICH MAY CORRODE AND DISINTEGRATE THE INSULATION ON THESE CABLES.

COLOUR CODE FOR CABLES

3-CORE	4-CORE	5-CORE
BROWN	BROWN	BROWN
BLUE	BLACK	BLUE
GREEN/YELLOW	GREY	BLACK
	GREEN/YELLOW	GREY
		GREEN/YELLOW

SPREADER CABLE - CORRECT HANDLING

CORRECT HANDLING OF SPREADER CABLE IS NECESSARY FOR RELIABLE COILING OPERATION IN SPREADER BASKET/TUB.
TO ELIMINATE THE NEED FOR UNREELING AND RE-REELING AND TO FACILITATE PRE FITTING PLUGS/TERMINATIONS
IS ORDERED "JOY WOUND" ON TO A SPECIAL SHIPPING REEL WHERE BOTH ENDS ARE ACCESSIBLE.
DIRECTLY FEED THE CABLE INTO THE SPREADER BASKET IN A COUNTER-CLOCKWISE DIRECTION FROM THE TOP
OF THE TRANSPORT REEL. NO TWISTING OF THE CABLE SHOULD BE INDUCED WHILE IT IS FED INTO THE BASKET/TUB.
SILICONE GREASE TO BE APPLIED TO SPREADER CABLE (SPREADERFLEX OR CORDAFLEX) ON SITE PRIOR TO CRANE USAGE.
SCREENED CABLES (PHONES, JOYSTICKS ETC.) TO BE LOCATED AWAY FROM MAINS/MOTOR DC CABLES AT INSTALLATION.

EQUIPMENT

WATER DRAIN/ANTI-CONDENSATION PLUG TO BE REMOVED ON ALL DRIVE MOTORS PRIOR TO MOUNTING,
EXCEPT MOTORS WITH AIR/AIR HEAT EXCHANGERS WHERE PLUG AT NON DRIVE-END ONLY SHOULD BE REMOVED.
WATER DRAIN/ANTI-CONDENSATION PLUG TO BE REMOVED ON CABLE REELING DRUM AND GUIDE LIMIT SWITCHES.
BREATHERS TO BE FITTED TO MAIN SUPPLY AND SPREADER CABLE REELING DRUM GEARBOXES.
WATER DRAIN/ANTI-CONDENSATION HOLE TO BE DRILLED IN BASE OF ALL OUTDOOR ACCESS LIGHTS, BEACONS, ALARMS ETC.
RUST PREVENTION GREASE TO BE APPLIED TO COVER SECURING SCREWS ON CABLE AND EQUIPMENT TERMINAL BOXES,
CAPACITOR (6,8uF) TO BE FITTED ACROSS POWER SUPPLY TERMINALS OF 24VDC YODALARMS.
SPOT OF SILICONE OR GLUE TO BE PLACED AT REAR OF LEGEND PLATES.
ALL ELECTRICAL PANEL DOORS AND RAILS TO HAVE EARTH STRAP - SIZE 2.5 QMM.
SPEAKER OUTPUT FROM AMP TO BE WIRED THROUGH FOOT-SWITCH ON P.A. SYSTEM.
POTENTIOMETERS AND ENCODERS TO REMAIN DICONNECTED FOR FACTORY/SITE TESTING.
ALL ELECTRICAL CONNECTIONS IN, SWITCHBOXES, TERMINAL BOXES AND ITEMS OF EQUIPMENT SHOULD BE FULLY TIGHTENED.

DRAIN HOLES :-

EXTERNAL TERMINAL BOXES AND EQUIPMENT ITEMS TO HAVE WATER DRAIN HOLES DRILLED IN BASES.

COLOUR ABBREVIATIONS	
BLACK	= BK
BROWN	= BN
RED	= RD
ORANGE	= OG
YELLOW	= YL
GREEN	= GN
BLUE	= BU
VIOLET	= VT
GREY	= GY
WHITE	= WH
PINK	= PK
TURQUOISE	= TQ
LILAC	= LC
EARTH	= GN/YL (GREEN/YELLOW)

3				Drawn	22.04.09	MC		LIEBHERR CONTAINER CRANES	ELECTRICAL INSTALLATION NOTES	Drawing No. 4009-2627	= EI
2				Checked							+
1										Project/ Work No. IR1763-4	Sheet 23 -
	Modification	Date	Name		Date	Name		Copyright (c)			

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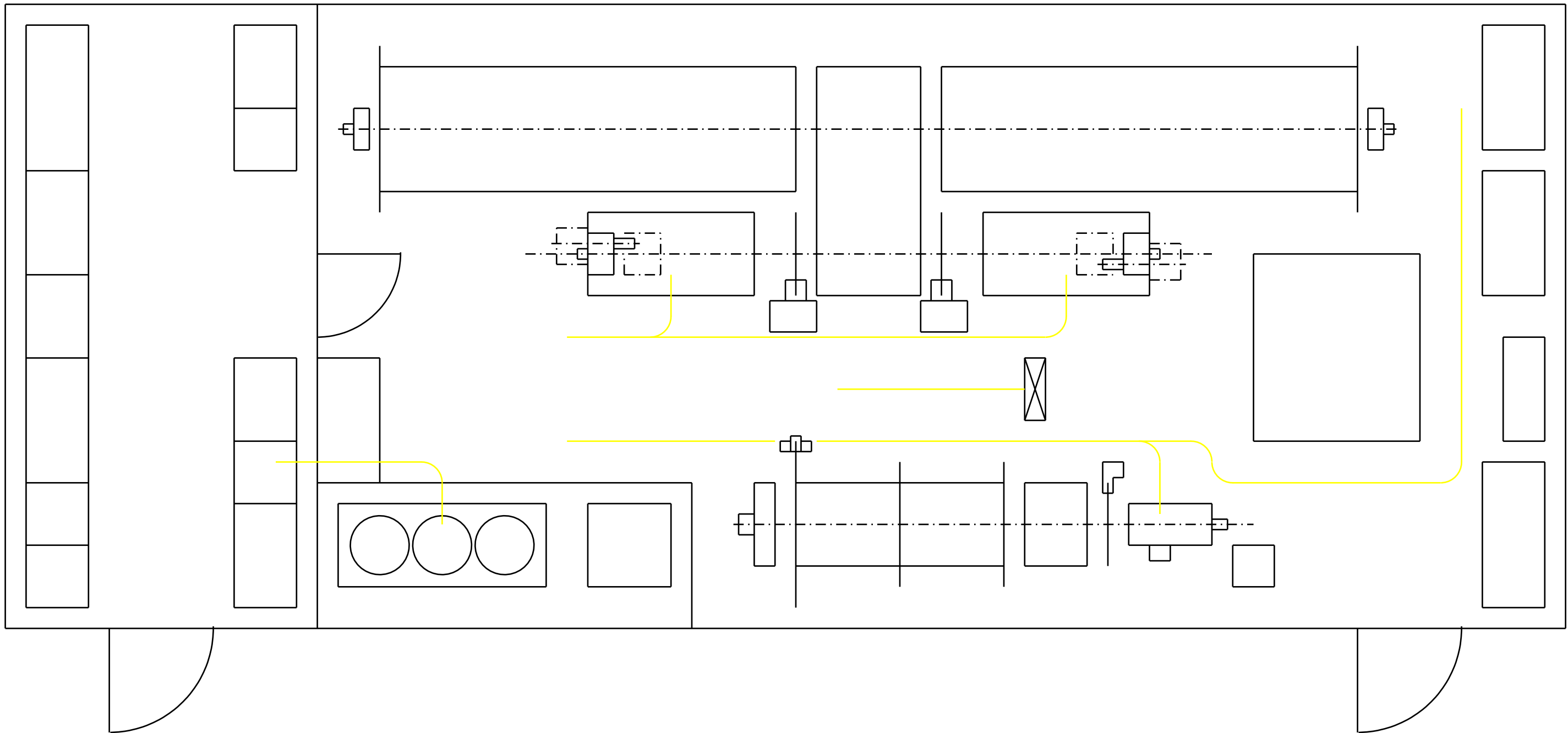
A

B

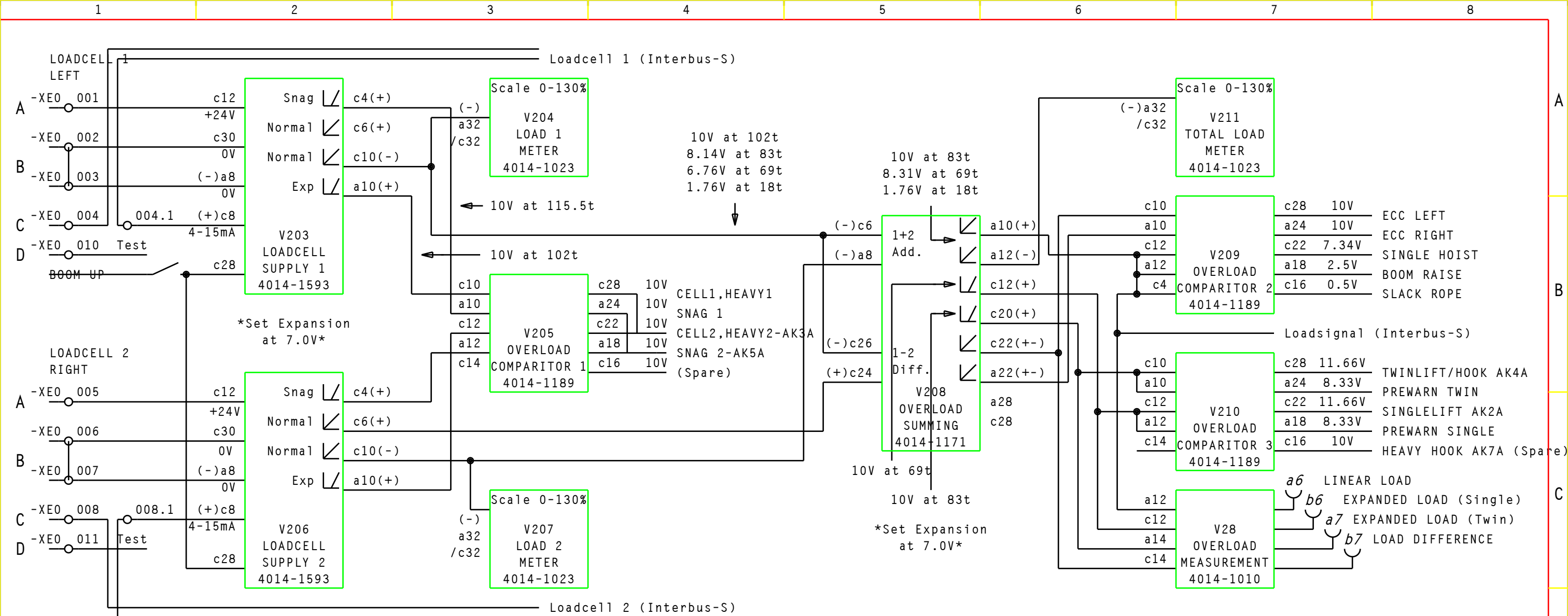
C

D

E



3				Drawn	22.04.09	MB		LIEBHERR CONTAINER CRANES		Drawing No. 4009-2627		=
2				Checked								+
1										Project/ Work No. IR1763-4		Sheet 2 -
Modification				Date	Name			Copyright (c)				



Loadcell Test => 4-15mA + 18mA test

SnagLoad - 115.5t => $115.5/102 \cdot 11 + 4 = 16.46\text{mA}$

MaxLoad - 102t => $11 + 4 = 15\text{mA}$

TwinLoad - 83t => $83/102 \cdot 11 + 4 = 12.95\text{mA}$

SingleLoad - 69t => $69/102 \cdot 11 + 4 = 11.44\text{mA}$

Spreader - 18t => $18/102 \cdot 11 + 4 = 5.94\text{mA}$

V203/V206:c4 - Snag Load - 115.5t = 10V (expanded)

V203/V206:c6/c10 - Max Load - 102t = +/-10V (linear)

V203/V206:c6/c10 - Twin Load - 83t = +/-8.14V (linear)

V203/V206:c6/c10 - Single Load - 69t = +/-6.76V (linear)

V203/V206:c6/c10 - Spreader Load - 18t = +/-1.76V (linear)

V203/V206:a10 - Max Load/Heavy Lift - 102t = 10V (expanded)

V208:a10/a12 - Twin Load (1+2) - 83t = 10V (linear)

V208:a10/a12 - Single Load (1+2) - 69t = 8.31V (linear)

V208:a10/a12 - Spreader Load (1+2) - 18t = 2.17V (linear)

V208:c12 - Single Load (1+2) - 69t = 10V (expanded)

V208:c20 - Twin Load (1+2) - 83t = 10V (expanded)

V208:c22/a22 - Ecc. (diff.1/2) - 100% = +/-10V (linear)

Eccentric Left = 10V
 Eccentric Right = 10V
 Single Hoist = $40\text{t} + 18\text{t} = 58\text{t} + 5\% = 60.9\text{t} / 83\text{t} = 7.34\text{V}$
 Boom Raise = $18\text{t} / 83\text{t} = 2.17\text{V} \Rightarrow \text{Set } 2.5\text{V}$
 Slack Rope = 0.5V

TwinLift/Hookbeam = $65\text{t} + 18\text{t} = 83\text{t} + 5\% = 87.15\text{t} \Rightarrow 11.66\text{V}$
 PreWarn TwinLift = $83\text{t} \cdot 95\% = 78.85\text{t} \Rightarrow 8.33\text{V}$
 SingleLift = $51\text{t} + 18\text{t} = 69\text{t} + 5\% = 72.45\text{t} \Rightarrow 11.66\text{V}$
 PreWarn Single = $69\text{t} \cdot 95\% = 65.55\text{t} \Rightarrow 8.33\text{V}$
 HeavyHook = N/A

Loads:

Heavy Lift : N/A
 Twin Lift : $65\text{t} + 18\text{t} = 83\text{t}$
 Single Lift : $51\text{t} + 18\text{t} = 69\text{t}$
 Hook Beam : $75\text{t} + 8\text{t} = 83\text{t}$

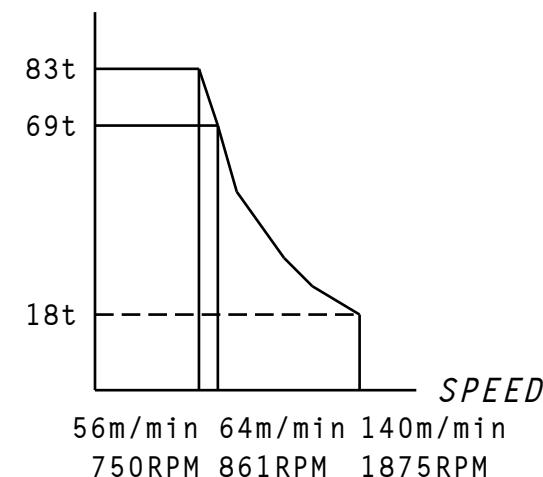
Speeds:

83t - 56m/min - 750rpm
 69t - 64m/min - 861rpm
 18t - 140m/min - 1875rpm

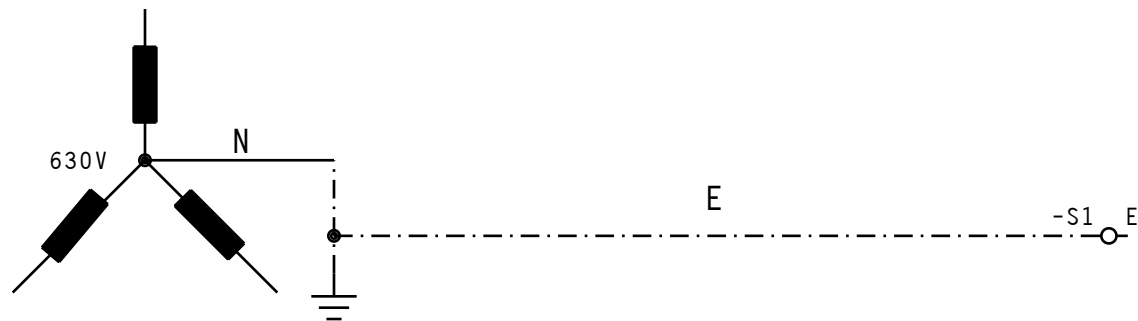
Hyperbola:

$18\text{t} / 83\text{t} \cdot 10 = 2.17\text{V}$

LOAD

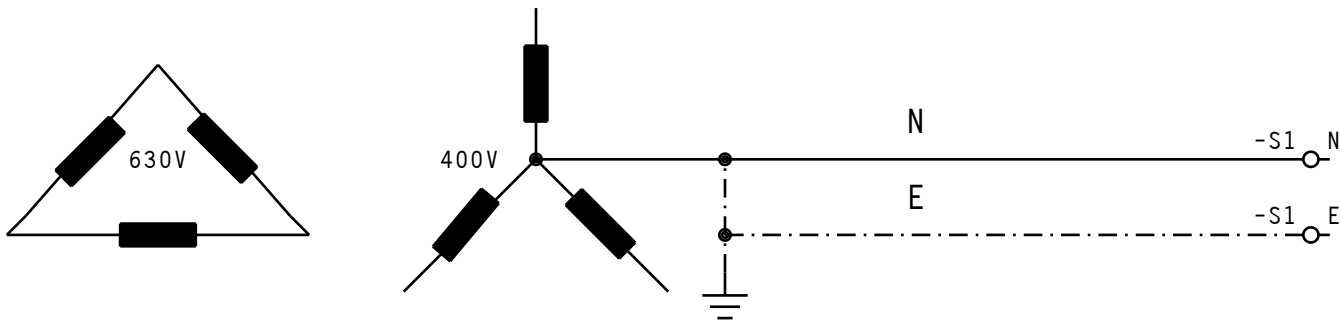


3			Gez.	22.04.09	JC		Maßstab	LIEBHERR-WERK	OVERLOAD SYSTEM DIAGRAM	TYPE	4009-2627	= OVERLOAD
2							:	BIBERACH GmbH				+
1			Bearb.							Zeich-Nr.	IR1763-4	Blatt 1-
	Änderung	Datum	Name	Datum	Name		Copyright (c)					Ident Nr.



Star-PE bond only at Transformer

MAIN TRANSFORMER



Star-PE bond only at Transformer
N-E bond only at Transformer
H+L TRANSFORMER

3				Drawn	22.04.09	JC		LIEBHERR CONTAINER CRANES	630V/400V N-E SCHEMATIC	Drawing No. 4009-2627	=	PE
2				Checked							+	
1										Project/ Work No. IR1763-4	Sheet 1-	
	Modification	Date	Name		Date	Name		Copyright (c)				

