Job Name: Nav Canada

Job Number: 200610-003

CAR ID:=CAR3

Date: Jul-08-2020 05:46 PM UTC

Reference Designators

++BLD : Building
+FIRE : Fire Panel
+GEN : Generator
++MR : Machine Room
+GOV : Governor
+MRC : Machine Room Controller
+MRD : Main Machine Room Disconnect
+MRD2 : Auxiliary Machine Room Disconnect
+MRSM : Smoke Sensors
+MTR : Machine/Motor
+SCE : Security System
+SEISMIC : Seismic Sensor
+UPS : Battery Backup Unit(Uninterrupted Power Supply)
++C : Car
+COP : Car Operating Panel
+CTC : Car Top Controller
+CTI : Car Top Inspection Station
+CTS : Car Top Safeties
+DOOR : Door Operator
+ESCH : Escape Hatch
+FAN : Fan
+CPI : Car Position Indicator
+LDS : Landing System
+LIGHT : Light
+LWD : Load Weighing Device
++HOIST : Hoistway
+BFL : Bottom Final Limit
+TFL : Top Final Limit
+BUF : Buffer
+HLB : Hall Station at the Bottom Landing
+HLT : Hall Station at the Top Landing
+HPI : Hall Position Indicator
+HOIST : General Hoistway Location
+PIT : Hoistway Pit
+LSD : Landing System

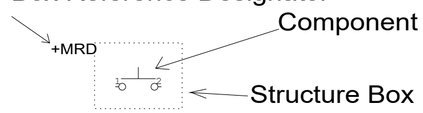
Symbol Definitions

	BUZZER
	Normally Closed Contact
	Normally Open Contact
	Key Switch
	Lamp
	Normally Open Push Button
	Normally Closed Push Button
	Switch
	Twisted Wire Pair
PCB Input/Output 	
	Terminal Block
	Relay/Contactor Coil

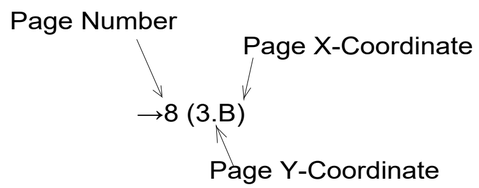
Structure Box Example

If a component, that is shown on a particular page, is located in a different physical location than what is indicated, at the bottom of the page, by the Car, Installation Site, and Mounting Location, then the component(s) will be surrounded by a structure box that indicates where the component(s) are physically located.

Structure Box Reference Designator



Cross Reference Example



ENGINEER:	CHECKED BY:	JOB NO:	JOB NAME:	CAR	INSTALATION SITE	MOUNTING LOCATION	SHEET NO:	CHANGE DATE	PRINT DATE
jeff			Nav Canada	=CAR3	++	+			08/11/20

CAR	Installation Site	Mounting location	Description	Sheet Number	Idx.
=CAR3	++	+	Deckblatt	0001	27
=CAR3	++	+	Verteiler-Legende	0001	28
=CAR3	++	+	Job Data	0003	29
=CAR3	++	+	Car Tables	0004	30
=CAR3	++	+MRC	MRSRU Overview	0005	31
=CAR3	++	+MRC	Main Power Distribution	0006	32
=CAR3	++	+MRC	Drive and Regen	0007	33
=CAR3	++	+MRC	Power Supplies, Brakes, and Hall PI	0008	34
=CAR3	++	+MRC	MR Board Power, Comm, and IO connections 1	0009	35
=CAR3	++	+MRC	MR IO Connections 1	0010	36
=CAR3	++	+MRC	MR Traveler and Group Connections	0011	37
=CAR3	++	+CTC	CT Traveler, and CT Board Overview	0012	38
=CAR3	++	+CTC	CT Power Supply	0013	39
=CAR3	++	+CTC	CT Connections 1	0014	40
=CAR3	++	+CTC	CT Power, Comm, and Landing System	0015	41
=CAR3	++	+COP	COP Board Overview	0016	42
=CAR3	++	+COP	COP Expansion Board Overview 1	0017	43
=CAR3	++	+COP	COP Board Power, Comm	0018	44
=CAR3	++	+COP	COP IO Connections 1	0019	45
=CAR3	++	+CTI	Car Top Inspection Box	0020	46
=CAR3	++	+HALL	Hall Lantern Overview	0021	47
=CAR3	++	+HALL	HALL CALL DIP Switches 1	0022	48

ENGINEER:	CHECKED BY:	JOB NO:	JOB NAME:	CAR	INSTALATION SITE	MOUNTING LOCATION	SHEET NO:	CHANGE DATE	PRINT DATE
jeff			Nav Canada	=CAR3	++	+			08/11/20

VERSION: C4	GROUP/ SIMPLEX:	MACHINE ROOM: X	CARTOP: X	COP: X	FIRE CODE: ASME A17.1:2010	ADDITIONAL:

Job Specifications

Car	Group#	Group Car ID	Contract Speed	Floors	Capacity	Main Line Voltage	Motor Volts	Motor HP	Motor FLA	Motor Poles	Motor RPM	Motor Freq	ISO KVA	Minimum ISO AWG	Minimum Drive AWG	Minimum Motor AWG	Disc. Size	Drive
CAR2	Group 1	0	200	7	2000	600	575	15	15.2	6	1164	60	N/A	N/A	14	14	20	LU5M0027DAC-D01
CAR3	Group 1	1	200	7	2000	600	575	15	15.2	6	1164	60	N/A	N/A	14	14	20	LU5M0027DAC-D01

Car	Doors	DR Breaker Voltage	Brake Pick	Brake Hold	Brake Ohm	Brake Amp	M. Cont. P/N	B.1 Cont. P/N	Encoder PPR	EBrake	B.2 Cont. P/N	EBrake Pick	EBrake Hold	EBrake Ohm	EBrake Amp	DBR Ohm Range	DBR Min. Wattage
CAR2	1	220	104	52	48	2.17	CA7-23-10-120	CA7-12E-10-24E	2048	HW Gripper	N/A	N/A	N/A	N/A	N/A	49.84 - 54.82 Ohms	2432
CAR3	1	220	104	52	48	2.17	CA7-23-10-120	CA7-12E-10-24E	2048	HW Gripper	N/A	N/A	N/A	N/A	N/A	49.84 - 54.82 Ohms	2432

ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR =CAR3	INSTALATION SITE ++	MOUNTING LOCATION +	SHEET NO: 3	CHANGE DATE	PRINT DATE 08/11/20

********** ORDER NOTES **********

ORDER SMARTRISE PRE-LABELED TRAVELER CABLE
ORDER SMARTRISE HOISTWAY CABLE

******** 469-678-8000 DIAL 1 ********

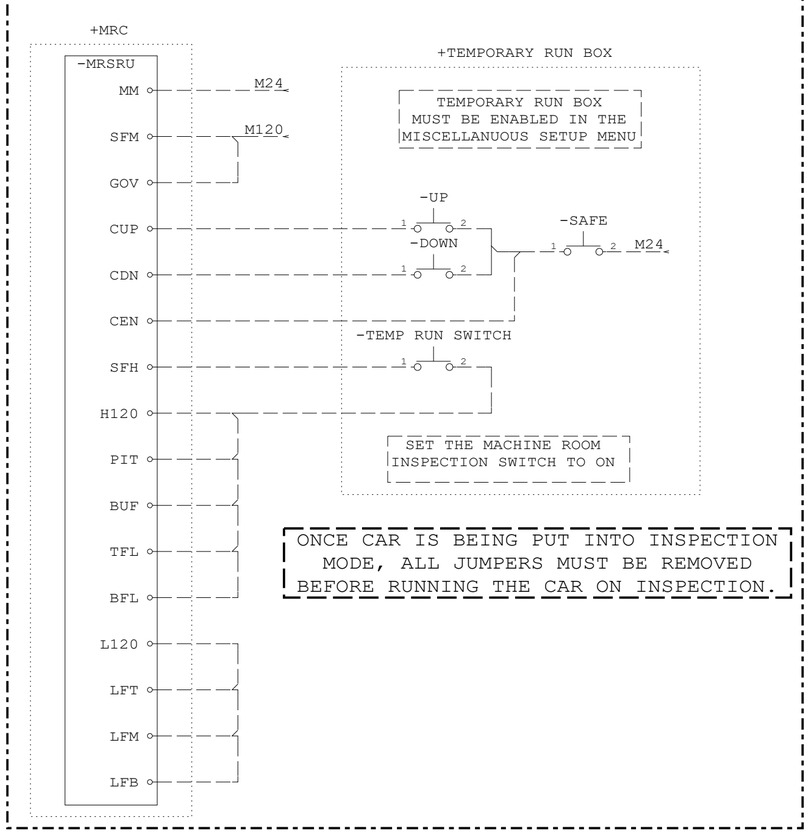
SMARTRISE CONTROLLERS WIRE COLORING SCHEME	
WIRE COLOR:	
BLACK	MAIN LINE VOLTAGE
RED	CONTROL CONDUCTORS (50-600 VOLTS)
WHITE	RETURN (50-600 VOLTS)
BLUE	POWER (0-50 VOLTS)
BLUE/WHITE	RETURN (0-50 VOLTS)
GREEN/YELLOW	EQUIPMENT GROUNDING CONDUCTOR

NOTE:
WIRES NOTED [1] ARE 14 AWG
WIRES NOTED [2] ARE 20-24 AWG SHIELDED PAIRS
ANYTHING UNMARKED IS 18 AWG

TRAVELING WIRES		
WIRE:	RECOMMENDED:	
CN1+ [2]	Pair : 1	
CN1- [2]	Pair : 1	
CN2+ [2]	Pair : 2	
CN2- [2]	Pair : 2	
TP1 [2]	Pair : 3	
TP2 [2]	Pair : 3	
REF	1	
120	2	
DRF	3	
N	4	
BLK [1]	BLACK	
WHT [1]	WHITE	
PE [1]	GREEN	

HOISTWAY WIRES		
WIRE:	RECOMMENDED:	
PIT	1	
BUF	2	
BFL	3	
TFL	4	
SFH	5	
H120	6	
ABD	7	
CE3	8	
FK	9	
FR	10	
H24	11	
REF	12	
ATU	13	
ATD	14	
ABU	15	
L120	16	
LFT	17	
LFM	18	
LFB	19	

CONSTRUCTION MODE



DRIVE PARAMETERS		
PARAMETER SECTION	PARAMETER NAME	PARAMETER VALUE
Drive A1		
	CONTRACT CAR SPD	200
	CONTRACT MTR SPD	1164
	ENCODER PULSES	2048
	MTR TORQUE LIMIT	275%
	REGEN TORQ LIMIT	275%
	SPD DEV LOW LVL	20%
	SPD DEV LOW TIME	2.0 SEC
	NTSD SPEED	10
S-CURVE A2		
	ACCEL RATE 0	599.99
	DECEL RATE 0	599.99
	JERK@ACCEL START	60
	JERK@ACCEL END	60
	JERK@DECEL START	60
	JERK@DECEL END	60
POWER CONVER A4		
	INPUT VOLTAGE	0
MOTOR A5		
	MTR RATED POWER	15
	MTR RATED VOLTS	575
	MAX FREQUENCY	60
	MOTOR RATED FLA	15.2
	NUMBER OF POLES	6
	RATED MOTOR SPEED	1164
USER SWITCHES C1		
	SPD COMMAND SRC	Serial HPV Ref
	RUN COMMAND SRC	Serial HPV Seq
	SERIAL MODE	HPV MODE 1
	TERM A1 LEVEL	0-10 VDC
	TERM A2 LEVEL	0-10 VDC
	NTSD MODE	EXTERNAL
LOGIC INPUTS C2		
	TERM S1 FUNC SEL	Drive Enable
	TERM S2 FUNC SEL	Term Not Used
	TERM S3 FUNC SEL	NTSD INPUT 1
	TERM S4 FUNC SEL	Term Not Used
	TERM S5 FUNC SEL	Term Not Used
	TERM S6 FUNC SEL	Term Not Used
	TERM S7 FUNC SEL	Term Not Used
	TERM S8 FUNC SEL	Term Not Used
LOGIC OUTPUTS C3		
	M1-M2 FUNC SEL	SPEED REG RELEASE
ANALOG OUTPUTS C4		
	TERM FM FUNC SEL	SFS Output Speed
	TERM AM FUNC SEL	Motor Speed
BASICS U8		
	CONTROL METHOD	Closed Loop Vect
AUTOTUNE U9		
	TUNING MODE SEL	Tune - No Rotate 1

ENGINEER: jeff

CHECKED BY:

JOB NO: 200610-003

JOB NAME: Nav Canada

CAR =CAR3

INSTALLATION SITE ++

MOUNTING LOCATION +MRC

SHEET NO: 5

CHANGE DATE

PRINT DATE 08/11/20

SMARTRISE ENGINEERING INC

-MRSRU

J4: 1 CW-, 2 CW+, 3, 4

J19: 24V / 48V

J16: 1 PWR, 2 PWR, 3 PWR, 4 PWR, 5 REF, 6 REF, 7 REF, 8 REF

PWR →9(0.A)

REF →9(0.A)

GN Term

J29: CN2+ 6, CN2- 5, REF 4, REF 3, CN1+ 2, CN1- 1

CAR NETWORK 2 →9(4.A)

REF →9(3.A)

REF →9(3.A)

CAR NETWORK 1 →9(2.A)

J14: 601 8, 602 7, 603 6, 604 5, 605 4, 606 3, 607 2, 608 1

J23: LRT 8, LRM 7, LRB 6, LFT 5, LFM 4, LFB 3, L120 2, 1

FRONT TOP INTERLOCK →9(3.E)

FRONT MIDDLE INTERLOCK →9(3.E)

FRONT BOTTOM INTERLOCK →9(2.E)

L120 →9(2.E)

J24: ATU 8, ATD 7, ABU 6, ABD 5, EB 4, 3, 2, GOV 1

ACCESS TOP UP →9(5.E)

ACCESS TOP DOWN →9(4.E)

ACCESS BOTTOM UP →9(4.E)

ACCESS BOTTOM DOWN →9(4.E)

EMERGENCY BRAKE →8(3.F)

GOVERNOR →9(7.A)

J31: PIT 8, BUF 7, TFL 6, BFL 5, SFH 4, H120 3, SFM 2, M120 1

PIT SWITCH →9(7.E)

BUFFER →9(7.E)

TOP FINAL LIMIT →9(6.E)

BOTTOM FINAL LIMIT →9(6.E)

SFH →9(6.E)

H120 →9(5.E)

SFM →8(3.F)

M120 →9(8.A)

SW A MS

SW B

J28: 1 NTS, 2 TX+, 3 TX-, 4 RX+, 5 RX-, 6 REF

NTS OUT →7(1.F)

DRIVE COMM →7(4.F)

J27: 1 BN+, 2 BN-, 3 AN+, 4 AN-, 5 GN+, 6 GN-

BRAKE NETWORK →8(7.I)

AUX NETWORK →8(4.A)

GROUP NETWORK →9(1.E)

J12: 1 501, 2 502, 3 503, 4 504, 5 505, 6 506, 7 507, 8 508

Traction Loss Reset →10(0.A)

J25: 1 CUP, 2 CDN, 3 MM, 4 MB2C, 5 MBC, 6 MMC, 7 CEN, 8

MBC →9(0.E)

MMC →9(0.E)

J26: 1 SAFE, 2 EBS, 3 120V, 4 N, 5 PE, 6, 7, 8

SAFE →9(0.E)

EBS →6(3.I)

120V →9(1.E)

N →9(1.E)

PE →6(1.F)

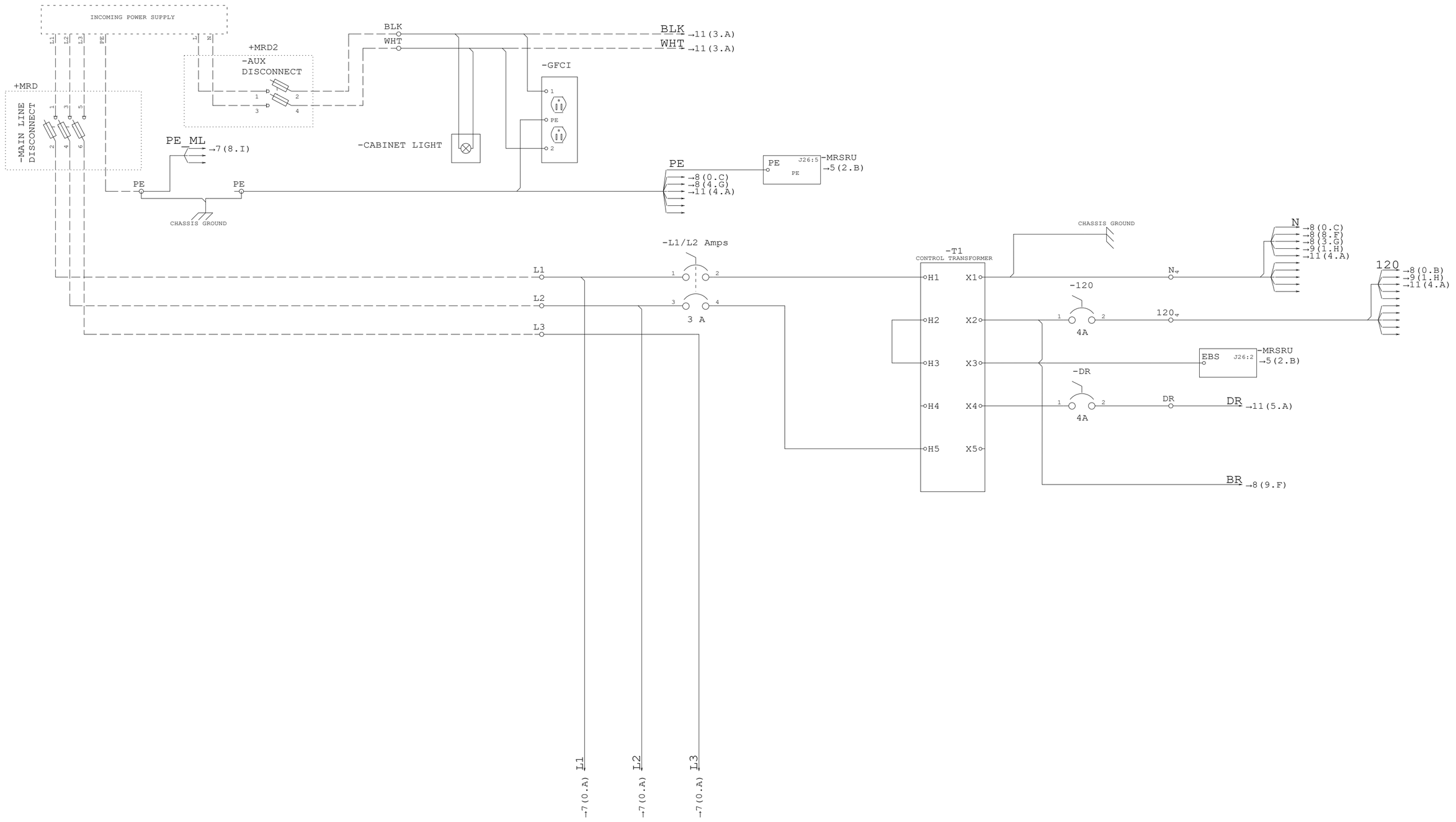
EBS 6 AMP

EB2 11 14, EB1 21 24, EB3 21 24, EB4 14 11

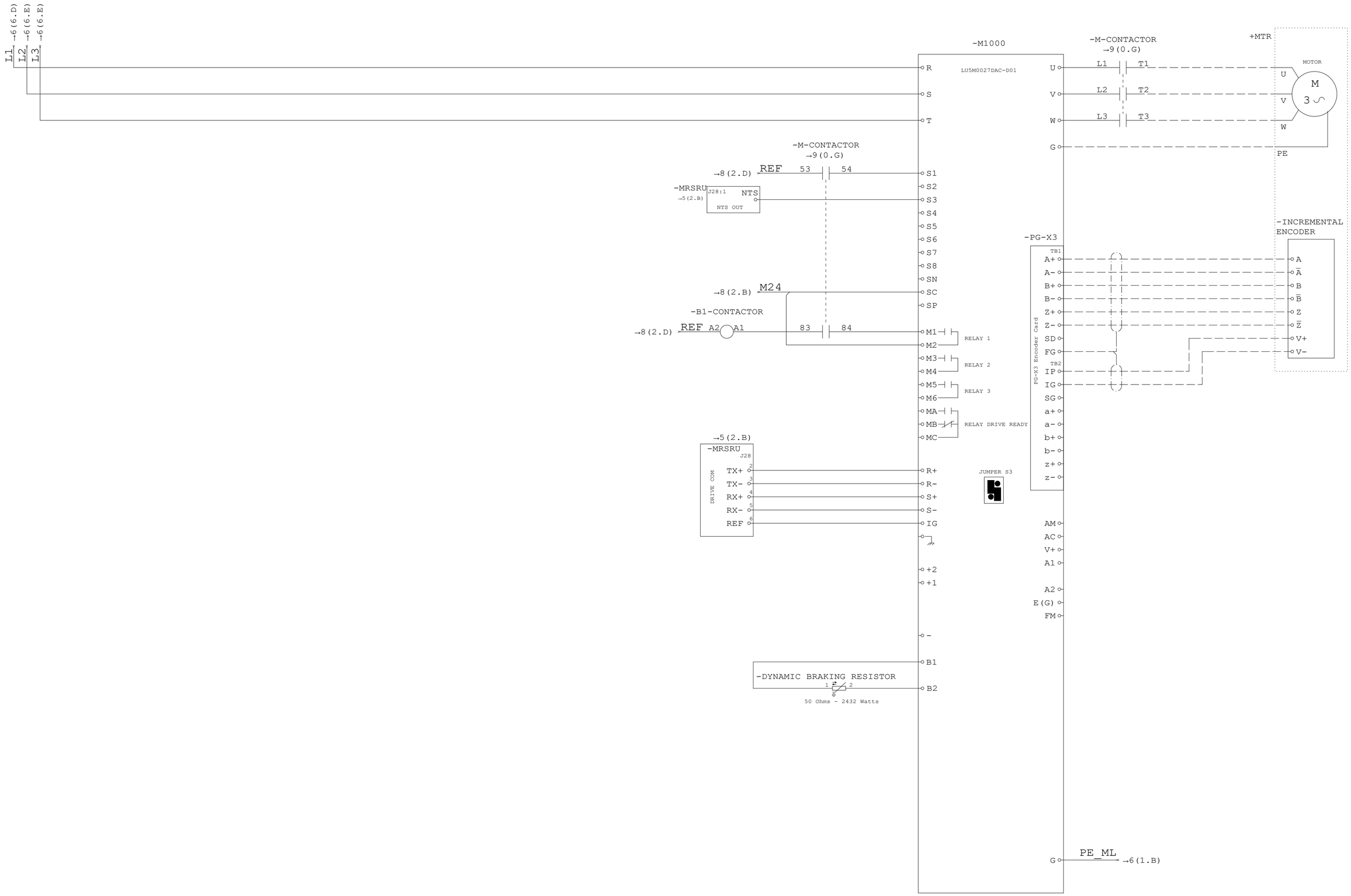
SFP 14 11

SOUT 2 AMP

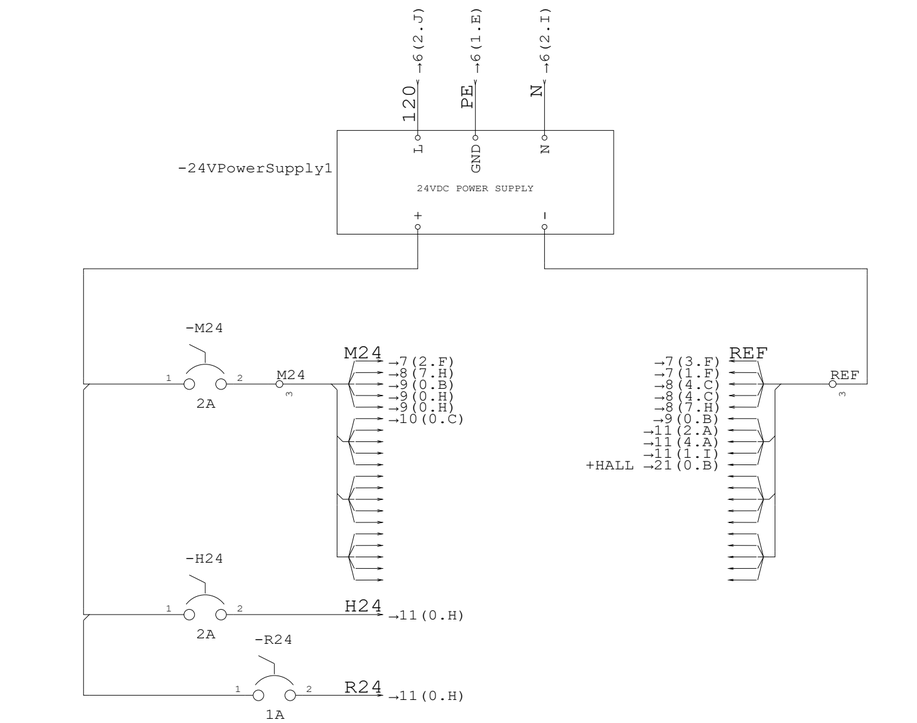
SFM 11 14

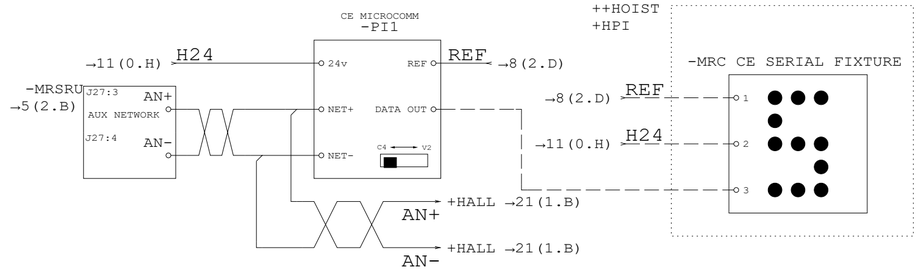


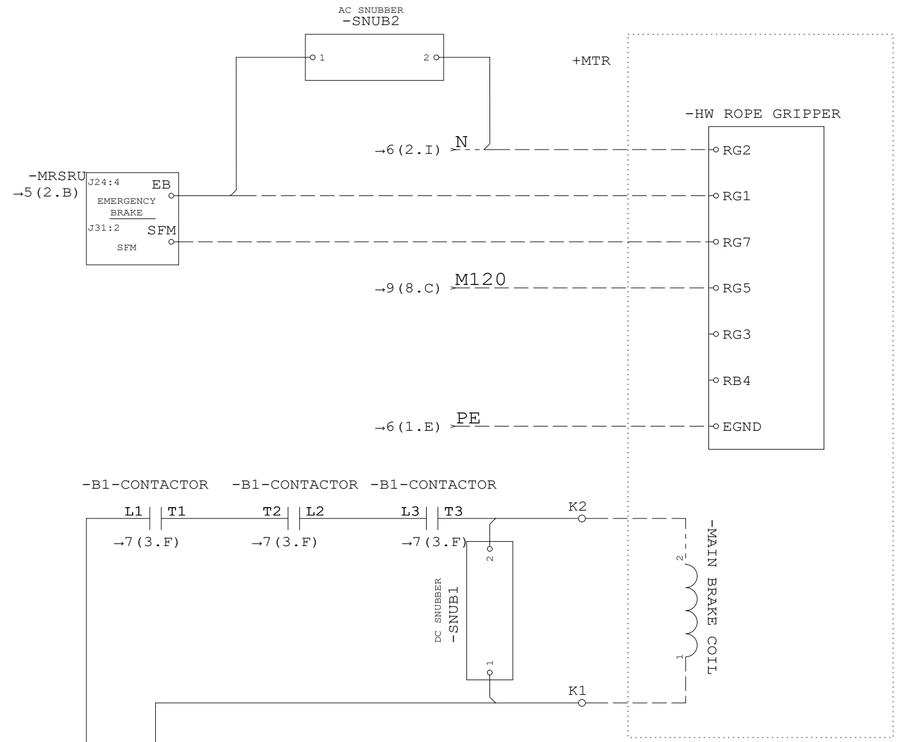
ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR =CAR3	INSTALATION SITE ++	MOUNTING LOCATION +MRC	SHEET NO: 6	CHANGE DATE	PRINT DATE 08/11/20

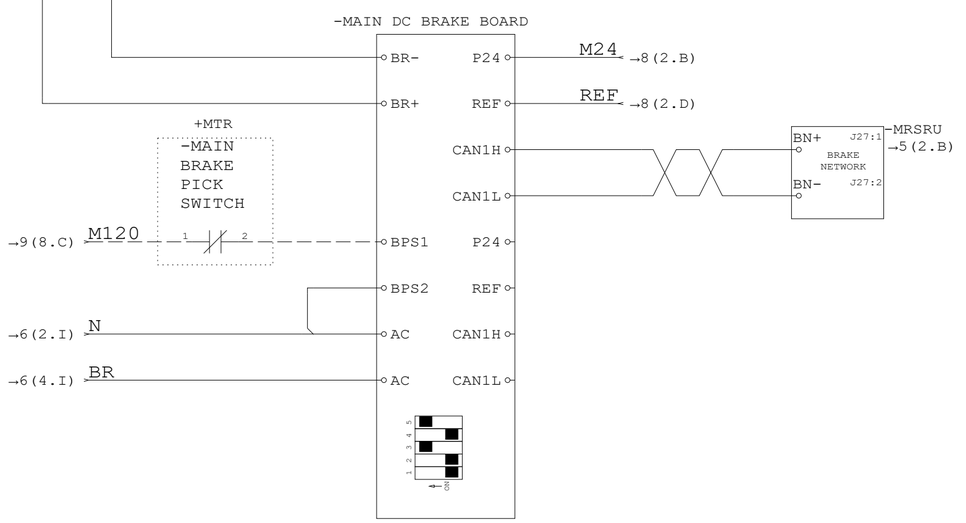


ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR =CAR3	INSTALATION SITE ++	MOUNTING LOCATION +MRC	SHEET NO: 7	CHANGE DATE	PRINT DATE 08/11/20

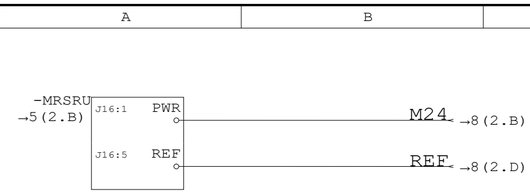


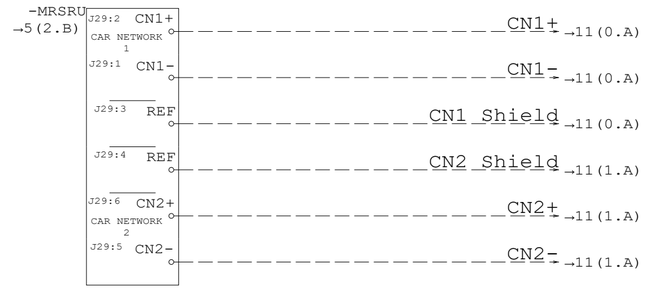


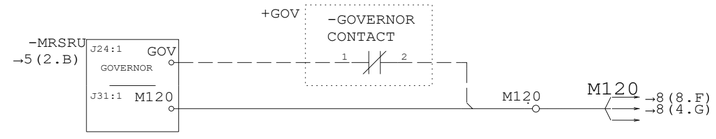


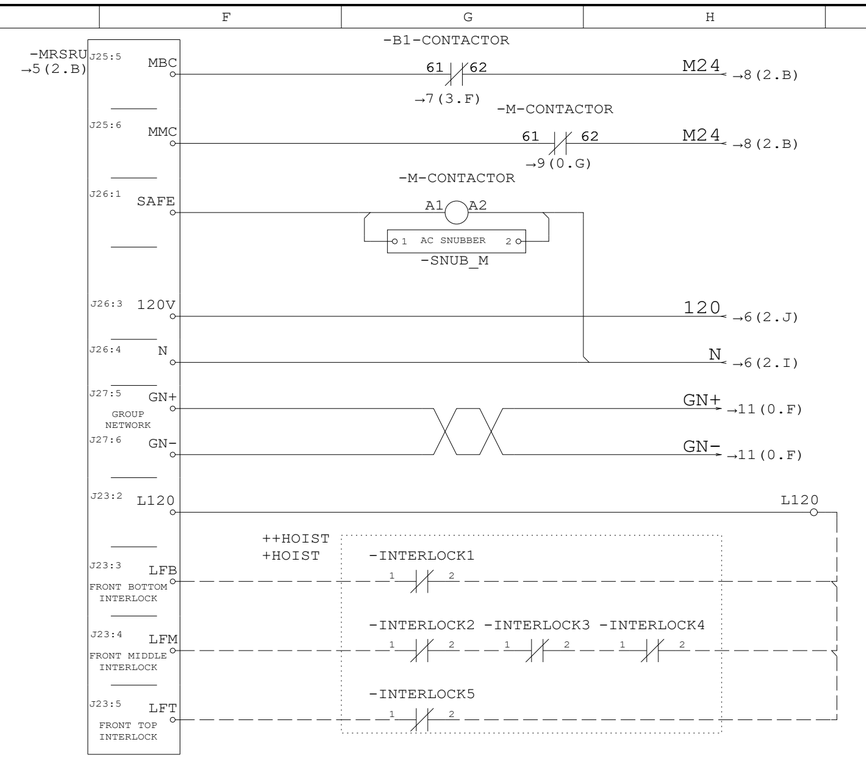


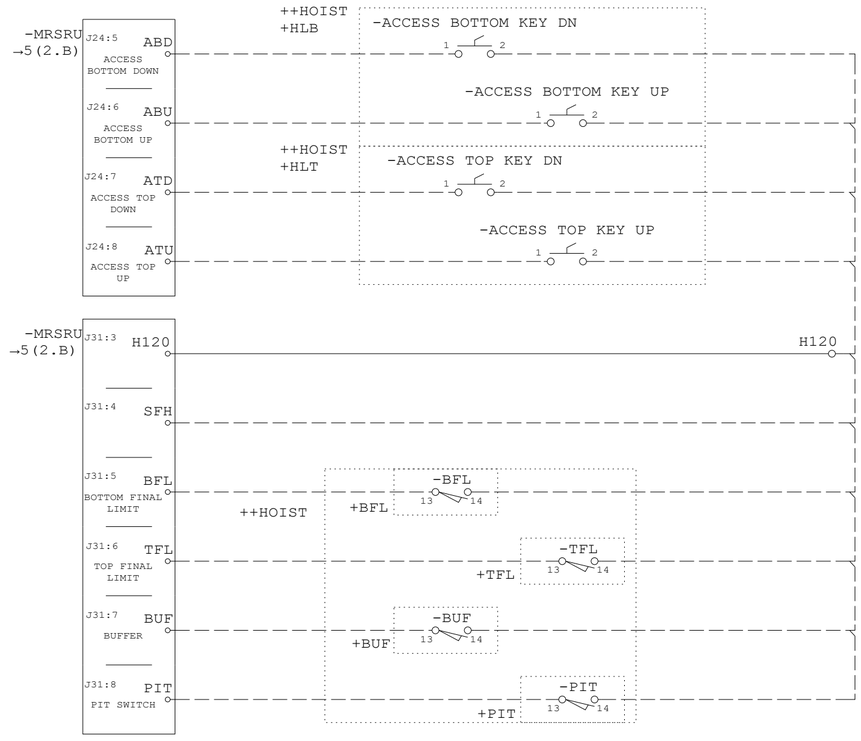
ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR =CAR3	INSTALATION SITE ++	MOUNTING LOCATION +MRC	SHEET NO: 8	CHANGE DATE	PRINT DATE 08/11/20



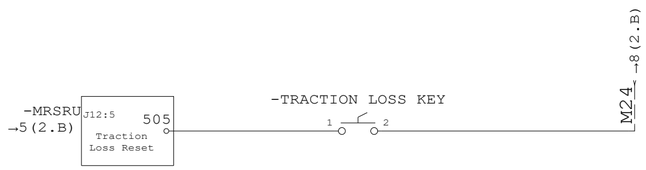




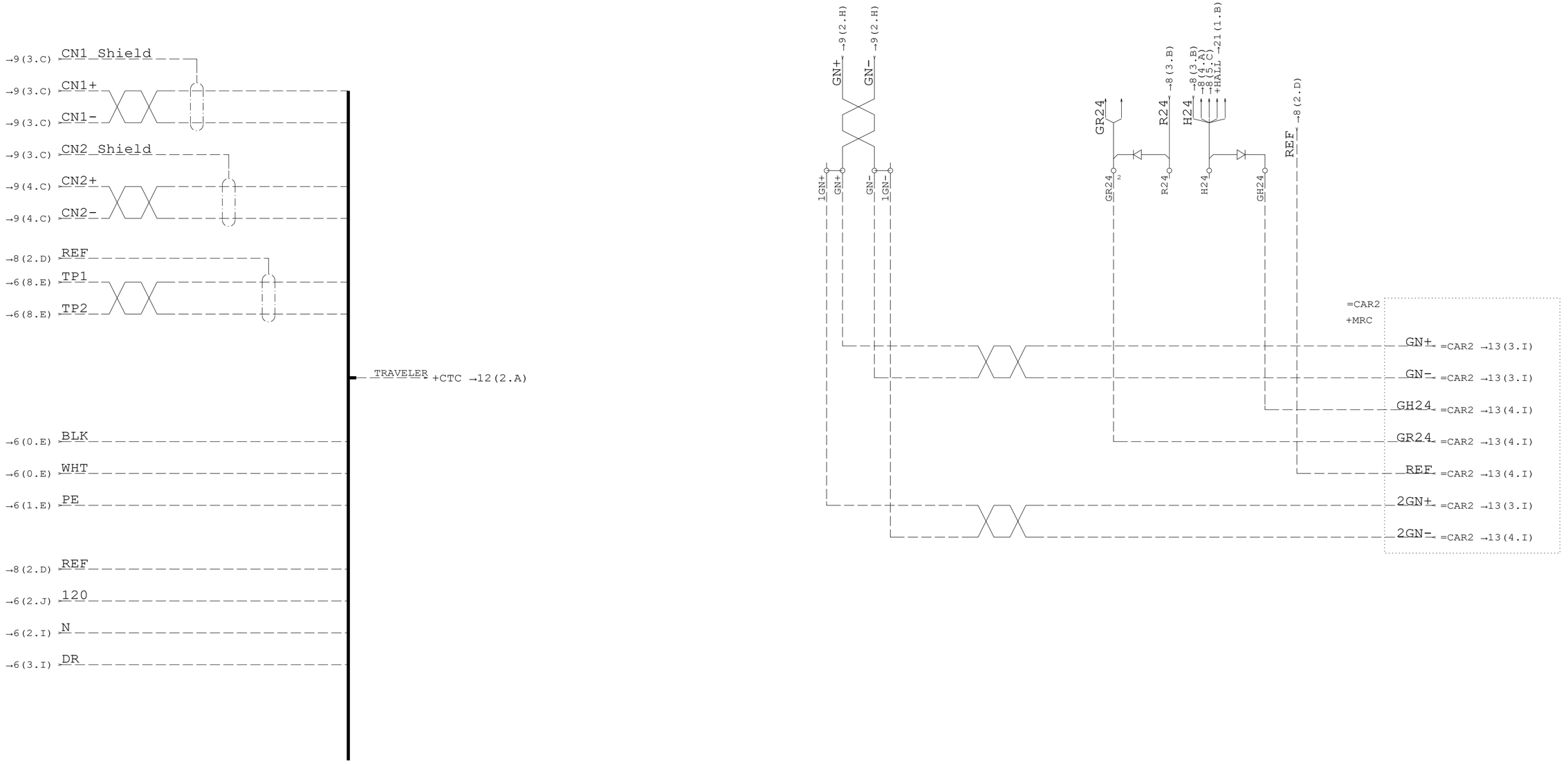




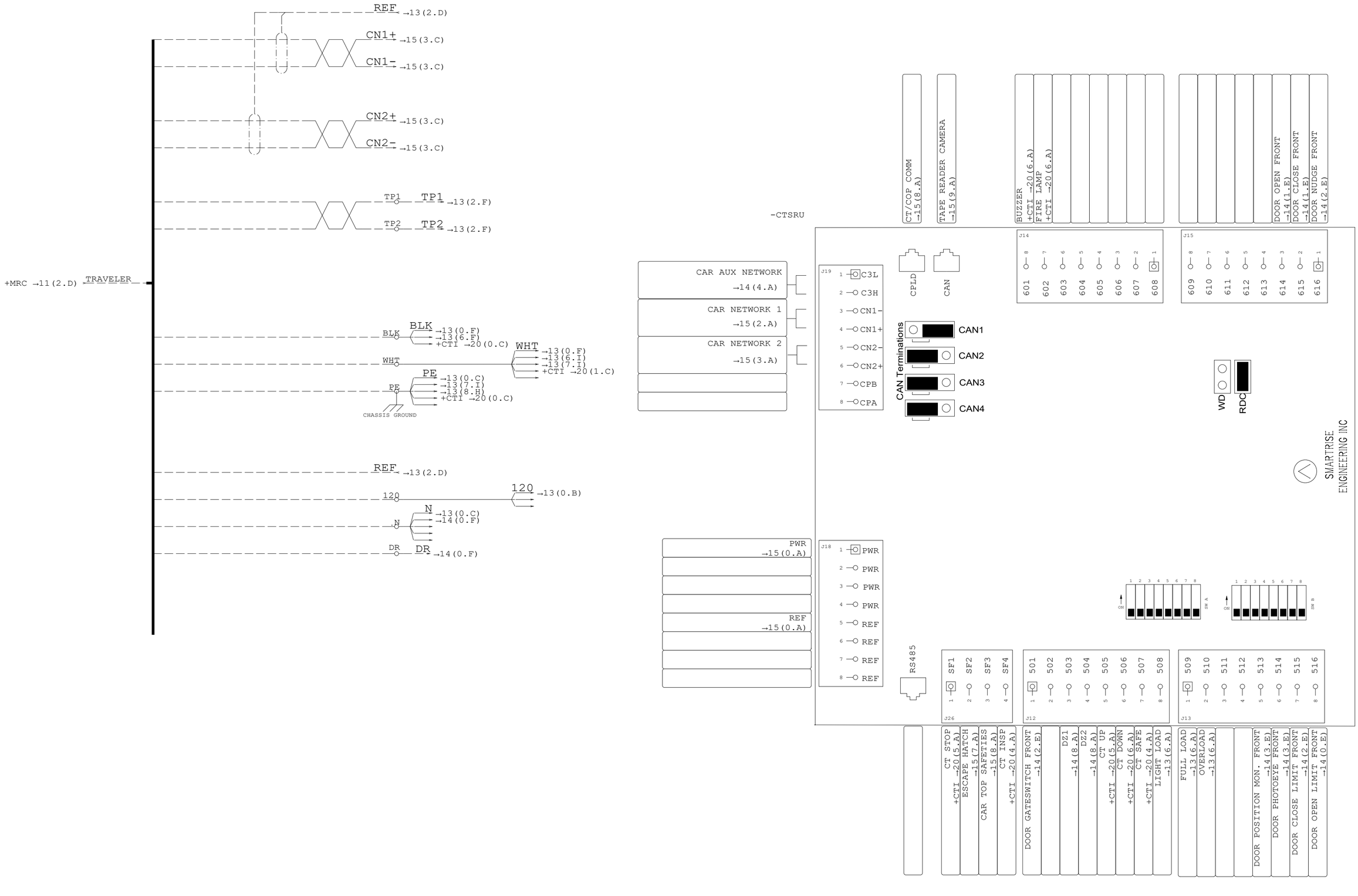
ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR	INSTALATION SITE	MOUNTING LOCATION	SHEET NO:	CHANGE DATE	PRINT DATE
				=CAR3	++	+MRC	9		08/11/20



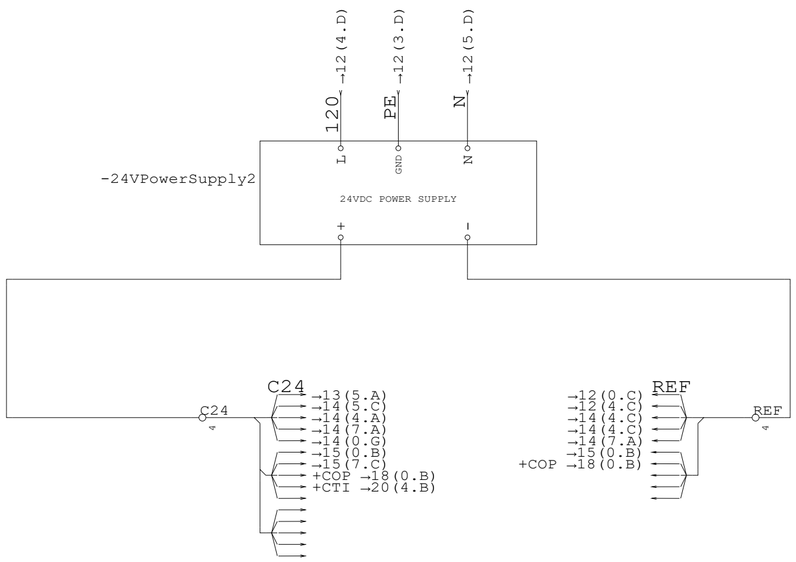
ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR =CAR3	INSTALATION SITE ++	MOUNTING LOCATION +MRC	SHEET NO: 10	CHANGE DATE	PRINT DATE 08/11/20

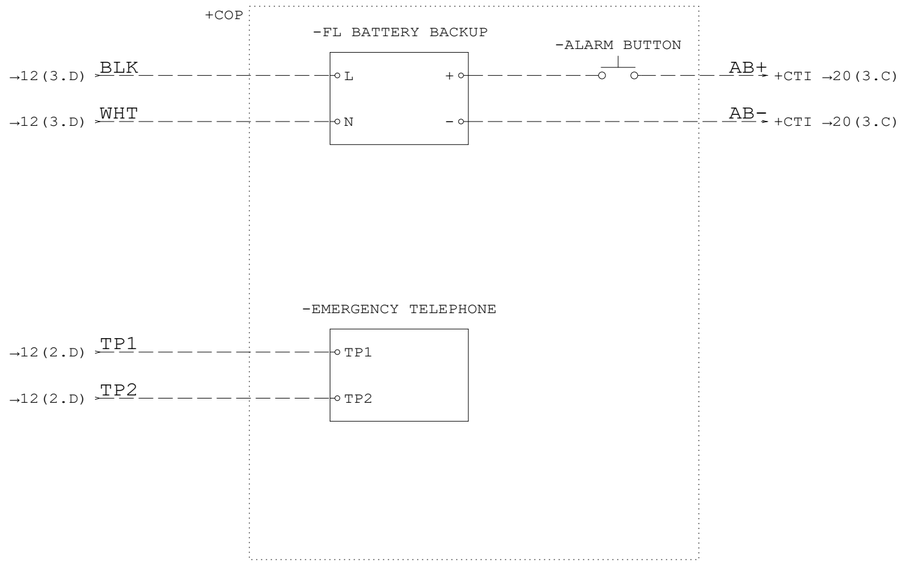


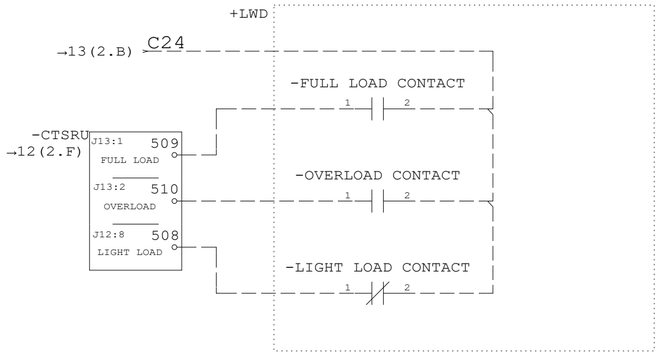
ENGINEER:	CHECKED BY:	JOB NO:	JOB NAME:	CAR	INSTALATION SITE	MOUNTING LOCATION	SHEET NO:	CHANGE DATE	PRINT DATE
jeff		200610-003	Nav Canada	=CAR3	++	+MRC	11		08/11/20

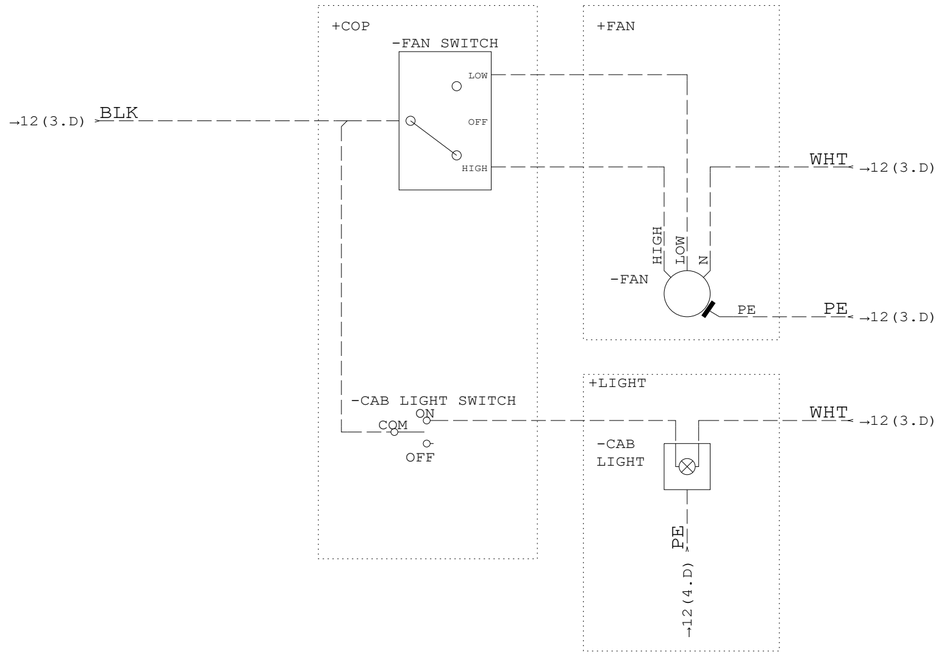


ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR =CAR3	INSTALATION SITE ++	MOUNTING LOCATION +CTC	SHEET NO: 12	CHANGE DATE	PRINT DATE 08/11/20

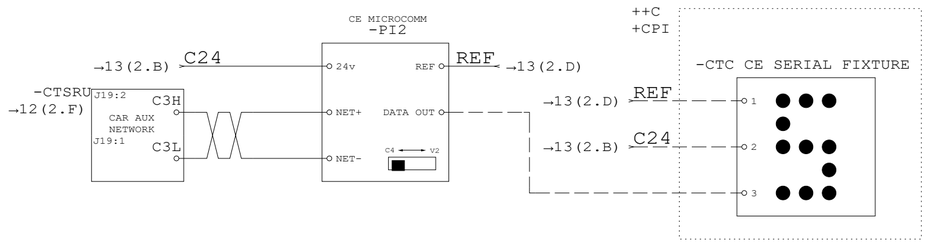


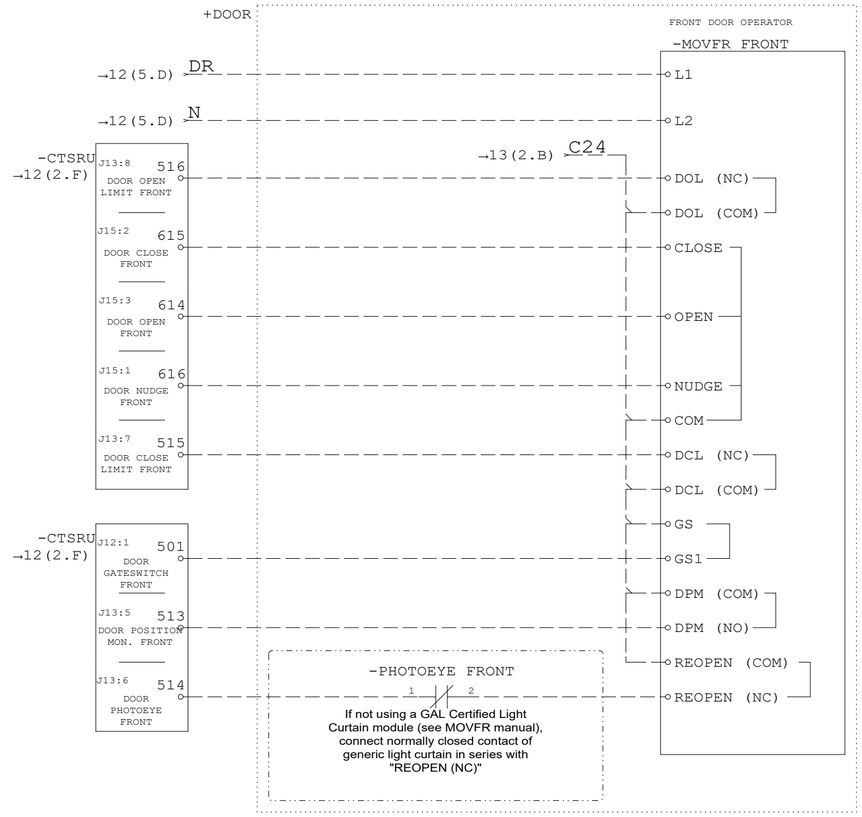


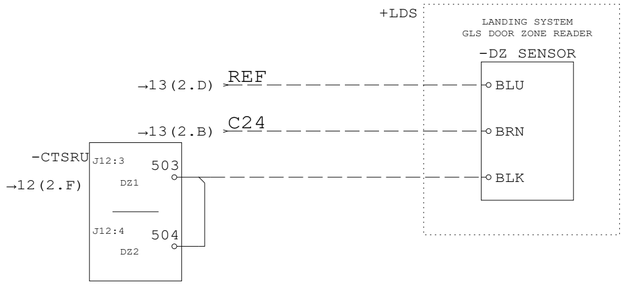




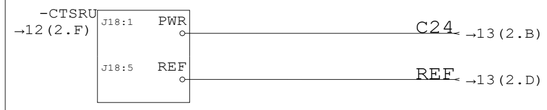
ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR =CAR3	INSTALATION SITE ++	MOUNTING LOCATION +CTC	SHEET NO: 13	CHANGE DATE	PRINT DATE 08/11/20

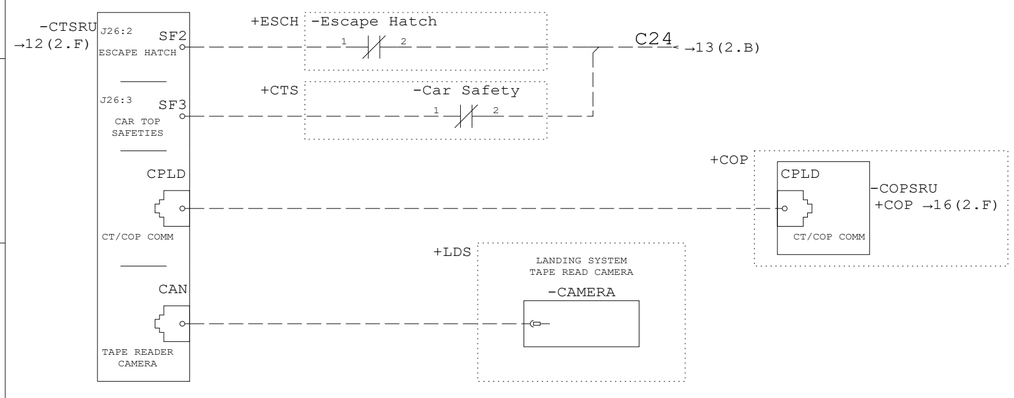




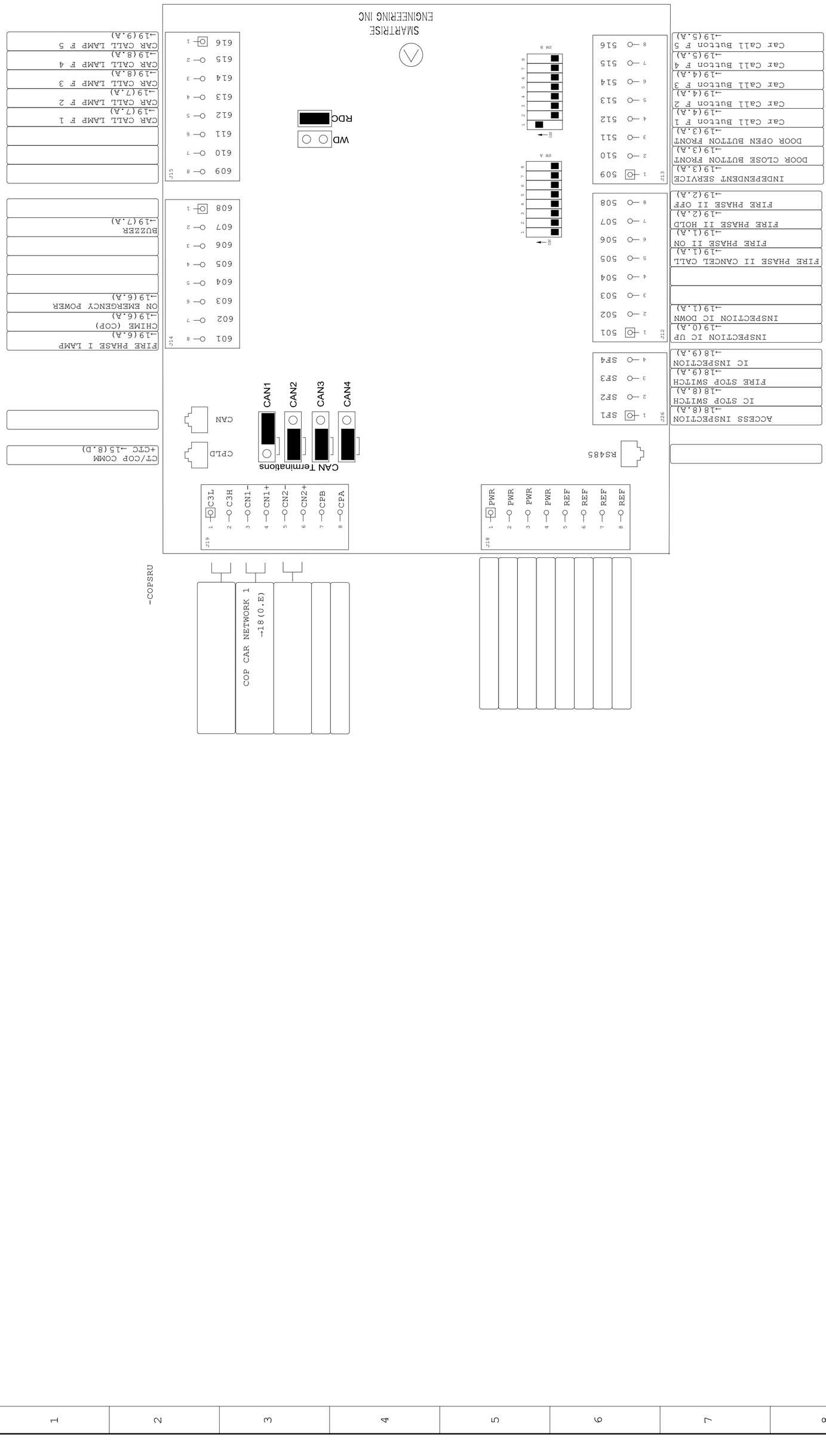


ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR =CAR3	INSTALATION SITE ++	MOUNTING LOCATION +CTC	SHEET NO: 14	CHANGE DATE	PRINT DATE 08/11/20

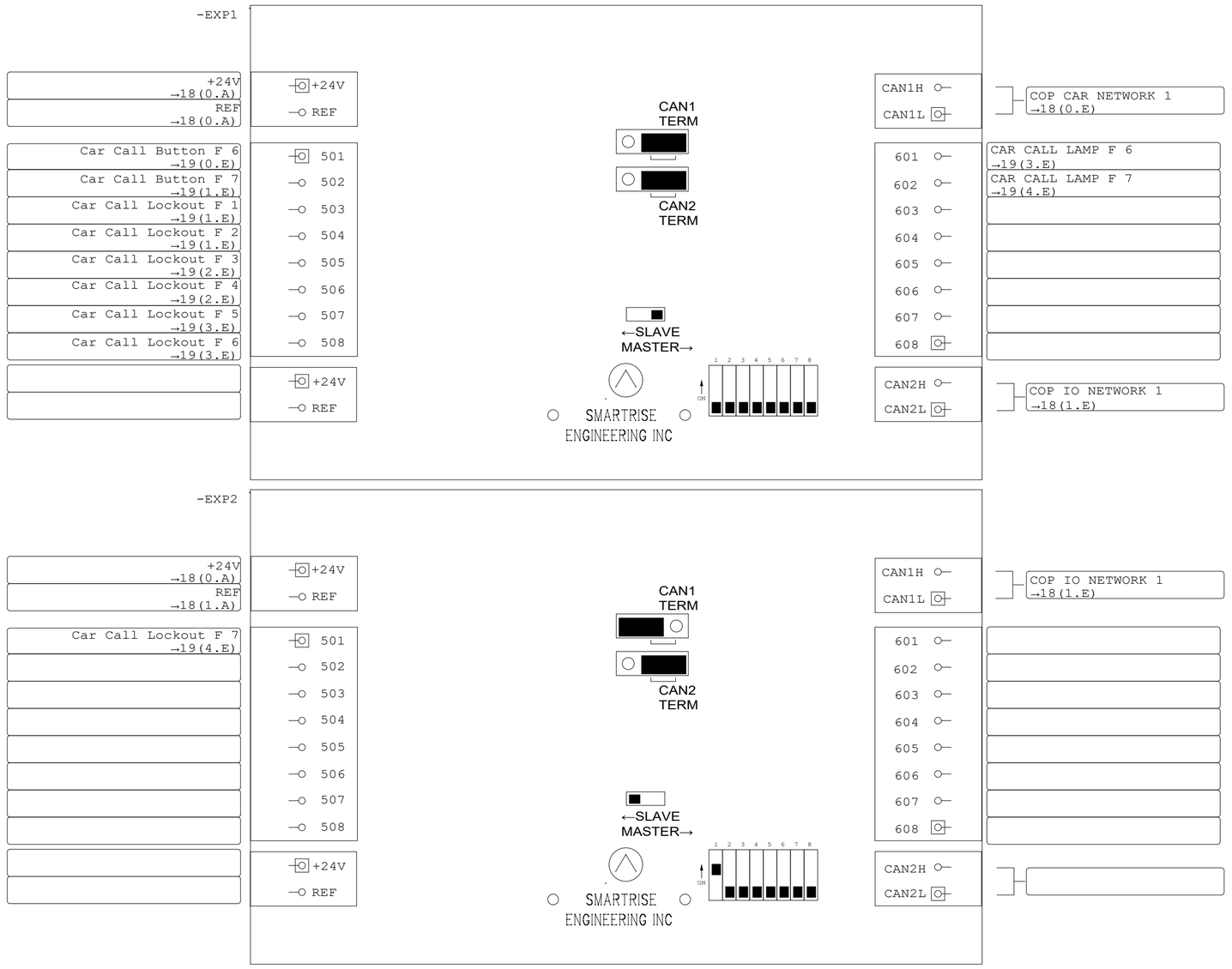




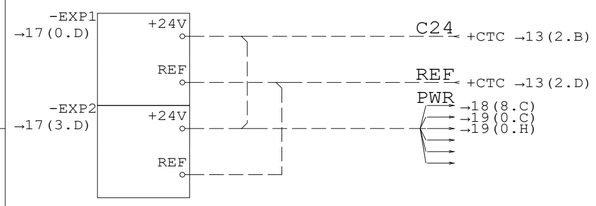
ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR =CAR3	INSTALATION SITE ++	MOUNTING LOCATION +CTC	SHEET NO: 15	CHANGE DATE	PRINT DATE 08/11/20

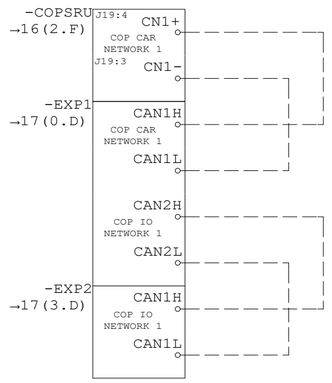


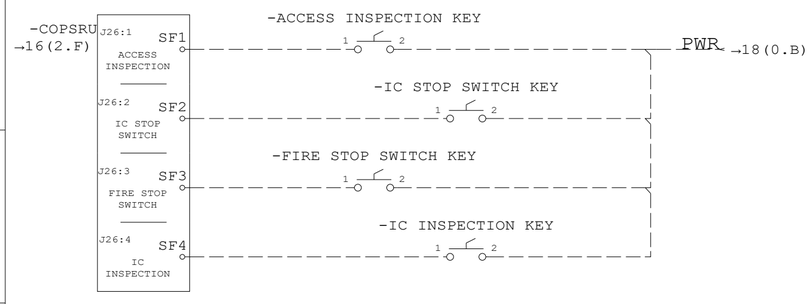
ENGINEER: jeff	
CHECKED BY:	
JOB NO: 200610-003	
JOB NAME: Nav Canada	
CAR =CAR3	
INSTALATION SITE ++	
MOUNTING LOCATION +COP	
SHEET NO: 16	
CHANGE DATE	
PRINT DATE 08/11/20	



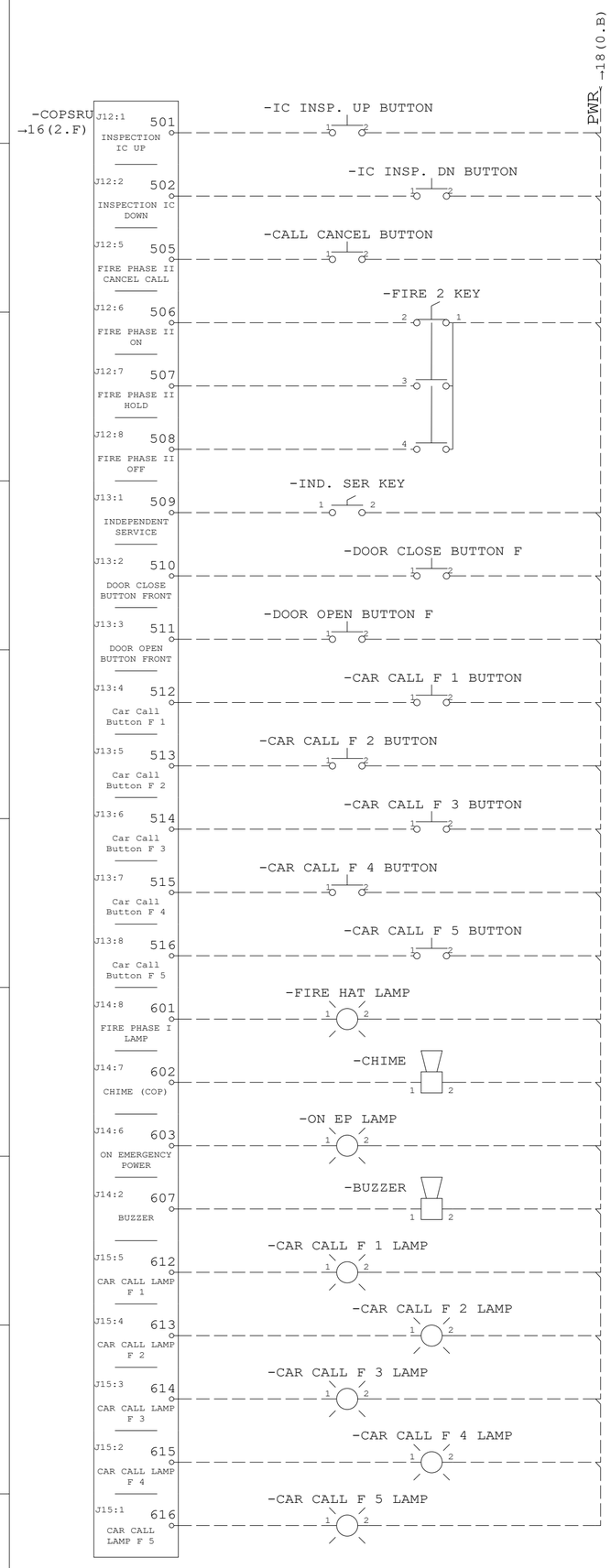
ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR	INSTALATION SITE	MOUNTING LOCATION	SHEET NO: 17	CHANGE DATE	PRINT DATE
				=CAR3	++	+COP			08/11/20

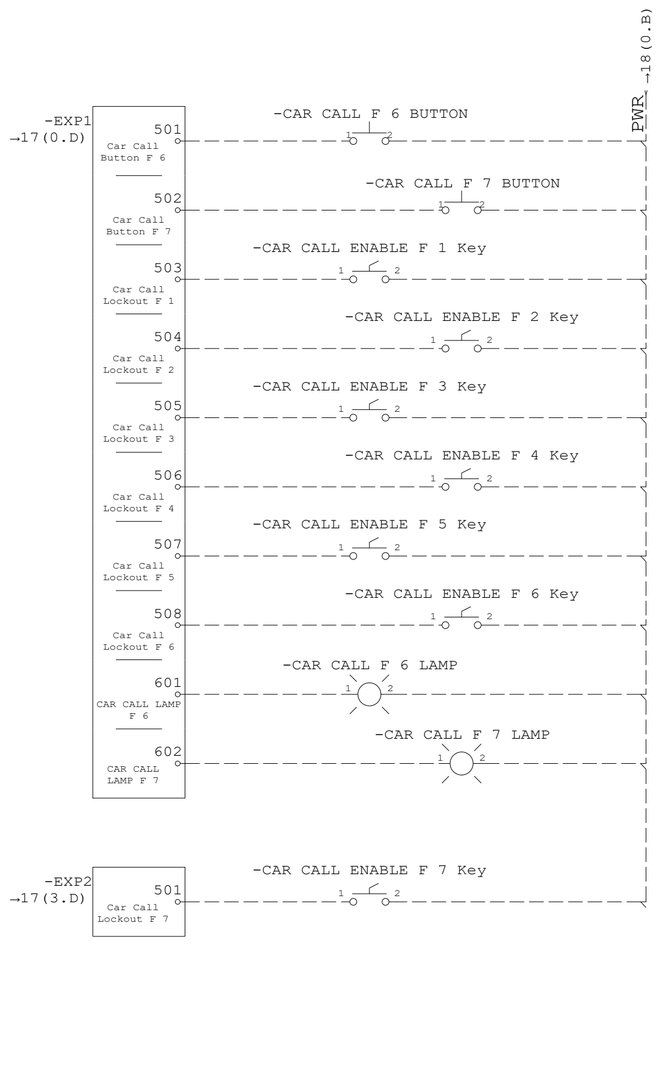




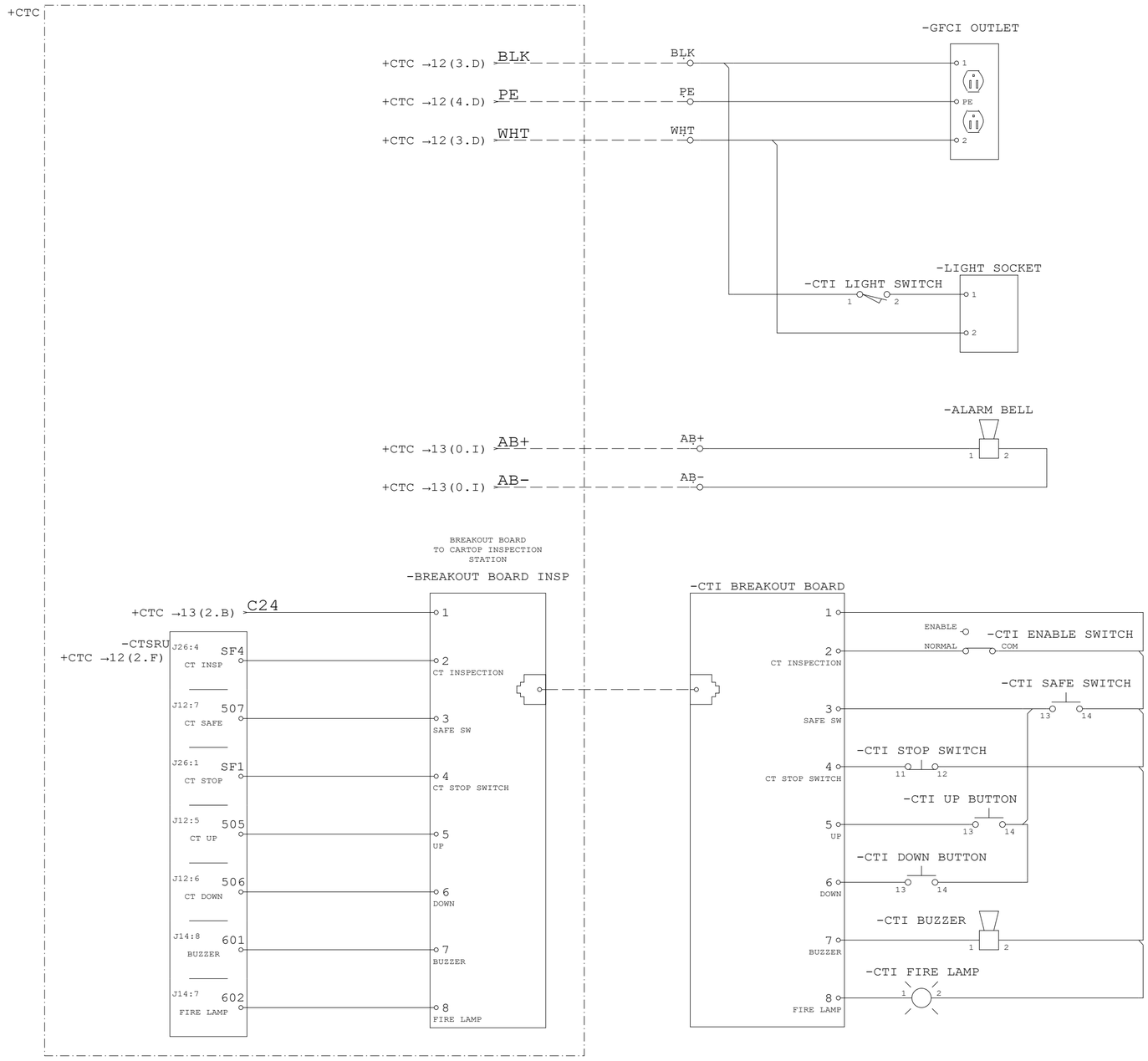


ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR =CAR3	INSTALATION SITE ++	MOUNTING LOCATION +COP	SHEET NO: 18	CHANGE DATE	PRINT DATE 08/11/20



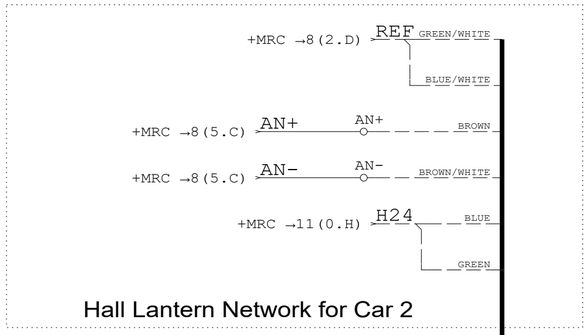


ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR =CAR3	INSTALATION SITE ++	MOUNTING LOCATION +COP	SHEET NO: 19	CHANGE DATE	PRINT DATE 08/11/20

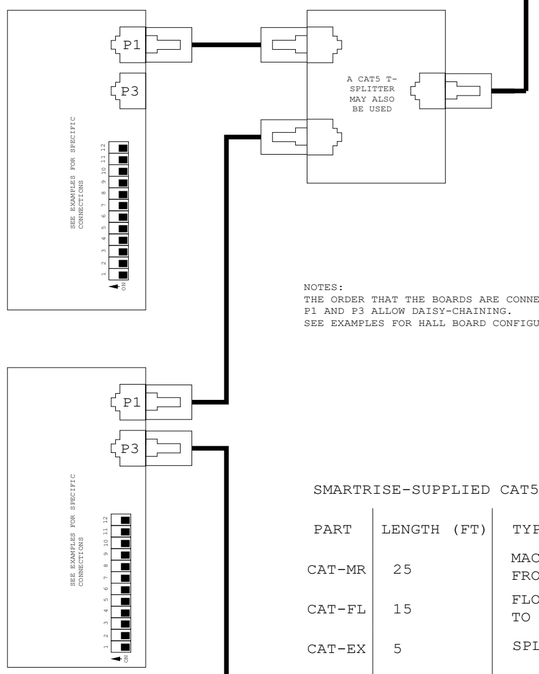


ENGINEER:	CHECKED BY:	JOB NO:	JOB NAME:	CAR	INSTALATION SITE	MOUNTING LOCATION	SHEET NO:	CHANGE DATE	PRINT DATE
jeff		200610-003	Nav Canada	=CAR3	++	+CTI	20		08/11/20

=CAR3
+MRC



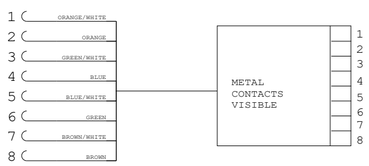
Hall Lantern Network for Car 2



NOTES:
THE ORDER THAT THE BOARDS ARE CONNECTED IS NOT IMPORTANT.
P1 AND P3 ALLOW DAISY-CHAINING.
SEE EXAMPLES FOR HALL BOARD CONFIGURATIONS

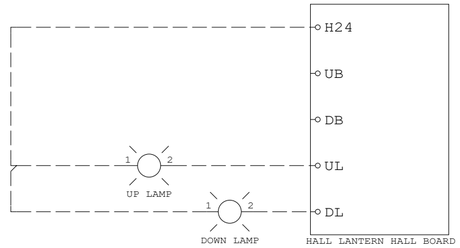
SMARTRISE-SUPPLIED CAT5 CABLES

PART	LENGTH (FT)	TYPICAL USE
CAT-MR	25	MACHINE ROOM TO HOISTWAY, FRONT TO REAR RISER
CAT-FL	15	FLOOR TO FLOOR, HALL CALL TO HALL LANTERN
CAT-EX	5	SPLITTER TO HALL CALL
CAT-BX	1	HALL CALL TO FIRE RECALL BOARD OR ACCESS BOARD

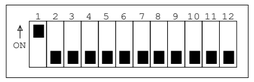


STANDARD T-568B

NOTE:
THE HALL BOARD PHYSICALLY FURTHEST FROM THE SIGNAL SOURCE NEEDS TO HAVE DIP 12 IN THE "ON" POSITION



ENGINEER: jeff	CHECKED BY:	JOB NO: 200610-003	JOB NAME: Nav Canada	CAR =CAR3	INSTALATION SITE ++	MOUNTING LOCATION +HALL	SHEET NO: 21	CHANGE DATE	PRINT DATE 08/11/20

LANDING	FRONT	REAR	PI	TYPE	SWITCH SETTINGS
1	X		B	HALL LANTERN	
2	X		M	HALL LANTERN	
3	X		2	HALL LANTERN	
4	X		3	HALL LANTERN	
5	X		4	HALL LANTERN	
6	X		5	HALL LANTERN	
7	X		6	HALL LANTERN	

ENGINEER:	CHECKED BY:	JOB NO:	JOB NAME:	CAR	INSTALATION SITE	MOUNTING LOCATION	SHEET NO:	CHANGE DATE	PRINT DATE
jeff		200610-003	Nav Canada	=CAR3	++	+HALL	22		08/11/20