TITLE	DRAWING NO.	REVISION					
		A	B	C	D	E	*
INTEGRATED SCHEMATICS INDEX	2P-599-0002/1	X	X	X	X		
LOCATORS INDEX	2P-599-0002/2	X					
ELECTRICAL SYMBOLS	BSK-7452	X					
CAR GENERAL ARRG'T	2P-521-0101	X					
ELECTRICAL DEVICES LIST (CIRCUIT BREAKERS)	2P-521-0102/1	X					
ELECTRICAL DEVICES LIST (SWITCHES)	2P-521-0102/2	X					
ELECTRICAL DEVICES LIST (SWITCHES)	2P-521-0102/3	X					
ELECTRICAL DEVICES LIST (RELAYS & CONTACTORS)	2P-521-0103/1	X					
ELECTRICAL DEVICES LIST (RELAYS & CONTACTORS)	2P-521-0103/2	X					
ELECTRICAL DEVICES LIST (MAGNET VALVES)	2P-521-0103/3	X					
LOCO CONTROL T.L	2P-521-0104	X	X	X			
DOOR & COMMUNICATION T.L	2P-521-0105	X	X	X	X		
480V AC POWER & CONTROL TRAINLINES	2P-521-0106	X	X	X	X		
OVERHEAD HEATING & AIR CONDITIONING	2P-521-0107	X	X	X			
FLOOR HEATING - OPERATING AND PASSENGER COMPARTMENTS	2P-521-0108	X	X	X			
BATTERY CHARGER POWER CIRCUIT & DC DISTRIBUTION	2P-521-0109/1	X	X				
BATTERY CHARGER CONTROLS	2P-521-0109/2	X					
POWER SUPPLY CIRCUIT & DC DISTRIBUTION	2P-521-0110	X	X	X			
CAR NUMBER BOARDS, AIR GAUGE LIGHTS, MARKER LIGHTS & HEAD LIGHTS	2P-521-0111	X	X	X	X		
COMMUNICATION SYSTEM	2P-521-0112/1	X	X	X			
P/A AMPLIFIER	2P-521-0112/2	X	X				
ENGINEMAN CONTROL HEAD	2P-521-0112/3	X	X				
CONDUCTOR CONTROL HEAD	2P-521-0112/4	X	X				
COMPRESSOR LINE AMPLIFIER PCB.	2P-521-0112/5	X					
POWER AMPLIFIER BOARD	2P-521-0112/6	X					
REGULATOR	2P-521-0112/7	X					
DC TO AC INVERTER	2P-521-0112/8	X					
CONDUCTOR BELL CIRCUIT	2P-521-0112/9	X	X	X	X	X	
2L DOOR CONTROL	2P-521-0113/1	X	X				
2R DOOR CONTROL	2P-521-0113/2	X	X				
SIDE DOOR INDICATING LIGHTS & BODY END DOOR UNLATCH CIRCUIT	2P-521-0113/3	X	X	X			
1L DOOR CONTROL	2P-521-0113/4	X	X	X			
1R DOOR CONTROL & NO-MOTION SIGNALS	2P-521-0113/5	X	X	X			
BELL & DOOR CLOSING TIME DELAY CIRCUIT	2P-521-0113/6	X					

TITLE	DRAWING NO.	REVISION					
		A	B	C	D	E	*
DOOR OPERATOR OPENING CONTROL SIGNAL	2P-521-0113/7	X	X				
DOOR OPERATOR	2P-521-0113/8	X					
DOOR OPERATOR	2P-521-0113/9	X					
TRACTION CONTROL	2P-521-0114	X	X	X	X	X	
AIR BRAKE CONTROL	2P-521-0115	X	X	X			
SANDING AND WHEEL SLIP CONTROL	2P-521-0116	X	X	X	X		
POWER SUPPLY, AMP., CAB SIGN & DEC. UNITS (ATC)	2P-521-0117/1	X	X	X			
SHAPER LIMITER, SPEED GOVERNOR & FLASHER PCB. (ATC)	2P-521-0117/2	X	X	X	X		
CAB SIGNAL INDICATOR CIRCUIT (ATC)	2P-521-0117/3	X	X	X			
ALERTNESS SYSTEM	2P-521-0118/1	X	X				
ALERTER CONTROL CIRCUIT	2P-521-0118/2	X					
ALERTER ALARM CIRCUIT	2P-521-0118/3	X					
SPEED RECORDER SYSTEM	2P-521-0119/1	X					
POWER SUPPLY, SPEED COMPUTER & OVERSPEED CIRCUITS	2P-521-0119/2	X					
STYLUS & CHART DRIVE CIRCUITS	2P-521-0119/3	X	X				
120V AC DISTRIBUTION SYSTEM	2P-521-0120	X	X				
VESTIBULE & MAIN PASSENGER LIGHTING	2P-521-0121	X	X	X	X	X	
PLATFORM LIGHTS, ANTI-FREEZE HEATERS & OUTLETS	2P-521-0122	X	X				
H.V.A.C. CONTROLS	2P-521-0123	X	X				
HVAC STATUS INDICATING LIGHTS	2P-521-0124	X	X				
CAB HEATING CONTROL	2P-521-0125	X	X	X			
TEMPERATURE REGULATOR	2P-521-0126/1	X	X	X			
TEMPERATURE REGULATOR	2P-521-0126/2	X	X				
TEMPERATURE / FUNCTION CHART	2P-521-0127	X	X				
REFRIGERANT CIRCUIT	2P-521-0128	X					
ELECTRICAL WIRING TOP TIER	2P-525-0025/1						
MISCELLANEOUS ELECTRICAL COMPONENTS	1P-525-0016-1	X	X				
AIR PIPING SCHEMATIC	OP-429-0024/1						J
AIR PIPING SCHEMATIC	OP-429-0024/L1						J
AIR PIPING SCHEMATIC	OP-429-0025/1						F
AIR PIPING SCHEMATIC	OP-429-0025/L1						F

600 - 1600

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

NOTE:
* THIS COLUMN IS RESERVED FOR MORE REVISION THAN "E"; IN THAT CASE, THE "X" MUST BE REPLACED BY THE LETTER WHICH CORRESPOND TO THE NEW REVISION.

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	D	DWG. INDEX UPDATING	J.C.M. 91-01-07
R.L.	C	DWG. INDEX UPDATING	J.C.M. 89-04-21
R.L.	B	DWG. INDEX UPDATING	J.C.M. 89-04-10
R.L.	A	SEE B.D.R. #28-061	J.C.M. 88-09-21

Conçu / Designed	D. MOQUIN	Date 88-09-19
Dessiné / Drawn	J.C. MAROIS	Date 88-09-19
Vérifié / Checked	D. MOQUIN	Date 88-09-23
Contrôle de poids / Weight Control		Date
Ing. de sécurité / Safety engineer		Date
Chargé de projet / Project engineer	R. L'ECUYER	Date 88-09-23
Ens. suivant / Next assy		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale	—	Titre / Title	INTEGRATED SCHEMATICS INDEX
Feuille / Sheet	1 de 1	Numéro du dessin / Drawing number	2P-599-0002/1
		A2	Révision / Revision D

IMP. DIR. G1

TITLE	DRAWING NO.	REVISION					
		A	B	C	D	E	*
INTERIOR ARRG'T	2P-521-0130	X					
ELECTRICAL LOCKER (TOP VIEW)	2P-521-0131/1	X					
ELECTRICAL LOCKER (INSIDE FRONT VIEW "A")	2P-521-0131/2	X					
ELECTRICAL LOCKER (INSIDE SIDE VIEWS "B" & "C")	2P-521-0131/3	X					
ELECTRICAL LOCKER (INSIDE BACK VIEW "D")	2P-521-0131/4	X	X				
ATC SHELF LAYOUT	2P-521-0131/5	X	X				
OPERATING COMPARTMENT RIGHT SIDE	2P-521-0132/1	X					
CONSOLE LEFT HAND PANEL, ENG. CONTROL PANEL & EMERG. BOX	2P-521-0132/2	X	X				
26-C BRAKE VALVE WITH AIR MANIFOLD	2P-521-0132/3	X					
ASPECT DISPLAY UNIT	2P-521-0132/4	X					
OPERATING COMPARTMENT LEFT SIDE	2P-521-0133	X					
VESTIBULE CEILING EQUIPMENT	2P-521-0135						
HVAC OVERHEAD EVAPORATOR BLOWER UNIT	2P-521-0136	X					
VESTIBULE LAYOUT	2P-521-0137	X					
DOOR POCKET ARRG'T	2P-521-0138	X					

TITLE	DRAWING NO.	REVISION					
		A	B	C	D	E	*
UNDERCAR ARRG'T	2P-521-0140/1	X					
UNDERCAR 480VAC CIRCUIT BREAKER BOX	2P-521-0140/2	X					
BATTERY CHARGER INTERNAL LAYOUT	2P-521-0140/3	X					
POWER SUPPLY INTERNAL LAYOUT	2P-521-0140/4	X					
HVAC COMPRESSOR CONDENSER UNIT	2P-521-0140/5	X					
BRAKE CONTROL UNIT	2P-521-0140/6	X					
TRACK RECEIVER ASS'Y	2P-521-0140/7	X					
CAR END CONNECTOR ARRG'T	2P-521-0140/8						

NOTE:
* THIS COLUMN IS RESERVED FOR MORE REVISION THAN "E"; IN THAT CASE, THE "X" MUST BE REPLACED BY THE LETTER WHICH CORRESPOND TO THE NEW REVISION.

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
RL	A	DWG. INDEX UPDATING.	J.C.M. 91-01-07

Conçu / Designed	D. MOQUIN 89-03-01
Dessiné / Drawn	J.C. MAROIS 89-03-02
Vérifié / Checked	R. L'ECUYER 89-04-24
Contrôle de poids / Weight Control	
Ing. de sécurité / Safety engineer	
Chargé de projet / Project engineer	R. L'ECUYER 89-04-24
Ens. suivant / Next assy	

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: LOCATORS INDEX

Numéro du dessin / Drawing number: 2P-599-0002/2

A2

Révision: A

IMP. DIR. G1

GENERAL CONTACTS

CONTACTOR, RELAY		TIMER					
N. O.	N. C.	N. O.	N. C.	N. O. C. DELAY	N. C. O. DELAY	N. O. O. DELAY	N. C. C. DELAY
		TDO OR TDC	TDO OR TDC				

SWITCH CONTACTS

TOGGLE TYPE					KNIFE	CAM		PUSH BUTTON				
SPST	SPDT	MULTI-POSITION	N.C. MOM. OPENING	N.O. MOM. CLOSING		N. C.	N. O.	MOM. CLOSING	MOM. OPENING	MAINT. CLOSING	MUSHROOM MOM. C.	MUSHROOM MOM. O.
										M		

AIR FLOW SWITCH		PRESSURE SWITCH		LEVEL SWITCH		FOOT SWITCH		THERMOSTAT		LIMIT SWITCH - SPRING RETURN			
N. O. C. WITH FLOW ↑	N. C. O. WITH FLOW ↑	N. O. C. WITH PRESS.↑	N. C. O. WITH PRESS.↑	N. C. O. WITH LEVEL ↑	N. O. C. WITH LEVEL ↑	OPEN WITH FOOT PRESSURE	CLOSE WITH FOOT PRESSURE	N. O. C. WITH TEMP. ↑	N. C. O. WITH TEMP.↑	N. O.	N. O. HELD C.	N. C.	N. C. HELD O.

RESISTORS				CAPACITORS		
FIXED	VARIABLE	RHEOSTAT	POWER RESISTOR	GENERAL	VARIABLE	POLARIZED
		CW				

SEMI CONDUCTORS

OSCILLA-TOR	VARISTOR	THER-MISTOR	DIODE	LIGHT EMITTING DIODE	ZENER DIODE	THYRISTOR SCR	BIPOLAR JCT. (BJT)		JCT. FIELD (JFET)		FIELD EFFECT (MOSFET)	
							PNP	NPN	N-CHANNEL	P-CHANNEL	N-CHANNEL	P-CHANNEL
SHAPE		T°					B C E	B C E	G D S	G D S	G D S	G D S

TRANSMISSION PATH

BUS BAR WITH CONN.	NOT CONN.	CONNECTED	CONNECTED TO		COMMON RETURN
			CHASSIS	GROUND	
					* CONN. IDENT.

COILS

RELAY OR CONTACTOR	SOLENOID

COILS

INDUCTOR		MOTOR OR GENERATOR FIELDS		
AIR CORE	IRON CORE	SHUNT	SERIES	COMP. OR COMM.

TRANSFORMERS

GENERAL	CURRENT	POTENTIAL

ROTATING MACHINES

GENERATOR	MOTOR	ARMATURE
G	M	A

CIRCUIT PROTECTORS

FUSE	LIGHTNING ARRESTOR	CIRCUIT BREAKER		THERMAL OVERLOAD	MAGNETIC BLOW-OUT
		THERMAL OVERLOAD	MAGNETIC OVERLOAD		

MISCELLANEOUS

TEST POINT	1 COND. SHIELDED	SPLICE	COND. NOT CONNECTED
A		S	

CONNECTORS

CONTACTS	CONTACTS ENGAGED	OUTLET CONTACT
FEM. (SOCKET) ⟝ MALE (PIN) →	⟝ ←	MALE ■ FEM □

ACOUSTIC DEVICES

BELL	BUZZER	LOUD-SPEAKER	HORN	MICRO-PHONE

MISCELLANEOUS

ANTENNA	BATTERY		MAGNETIC PICK-UP	PICK-UP		CURRENT SENSOR	SHUNT	VOLTAGE SENSOR	TC	READ-OUT DEVICES		PIEZO ELECTRIC CRYSTAL
	SINGLE CELL	MULTI-CELL		PANTO-GRAPH	SHOE				TEMP. MEASURING	AMMETER	VOLTMETER	
	+ −							VS		A	V	

MISCELLANEOUS

INCANDE-SCENT LAMP	FLUO. LAMP 4-TERM.	INDICATING LIGHT
		*COLOR CODE

LOGIC SYMBOLS

AND GATE	OR GATE	EXCLUSIVE OR GATE	YES GATE (BUFFER)	NAND GATE	NOR GATE	NOT GATE (INVERTER)	EXCLUSIVE NOR GATE	OPERATIONAL AMPLIFIER (OP. AMP.)
A B | OUT 0 0 | 0 0 1 | 0 1 0 | 0 1 1 | 1	A B | OUT 0 0 | 0 0 1 | 1 1 0 | 1 1 1 | 1	A B | OUT 0 0 | 0 0 1 | 1 1 0 | 1 1 1 | 0	A | OUT 0 | 0 1 | 1	A B | OUT 0 0 | 1 0 1 | 1 1 0 | 1 1 1 | 0	A B | OUT 0 0 | 1 0 1 | 0 1 0 | 0 1 1 | 0	A | OUT 0 | 1 1 | 0	A B | OUT 0 0 | 1 0 1 | 0 1 0 | 0 1 1 | 1	

NOTE:
BOMBARDIER STANDARD IS BASED ON ANSI Y32.2, 1975, IEEE PUBL. STD. 315,1975
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

		Date
Conçu / Designed	R. L'ECUYER	88-08-25
Dessiné / Drawn	N. MAKI	88-08-25
Vérifié / Checked	P. COURCHESNE	88-08-26
Contrôle de poids / Weight Control		Date
Ing. de sécurité / Safety engineer		Date
Chargé de projet / Project engineer	R. L'ECUYER	88-08-26
Ens. suivant / Next assy		Date

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Boucherville / La Pocatière, Québec, Canada

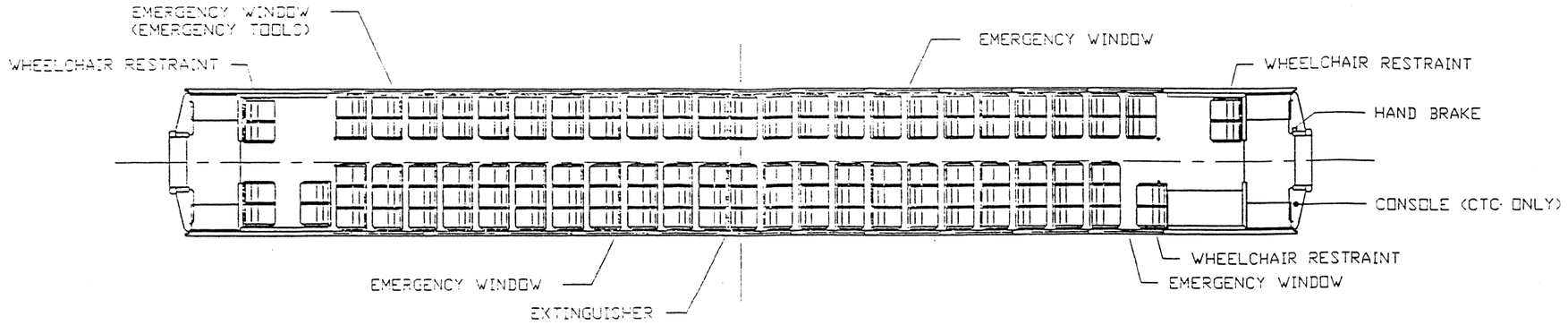
Echelle / Scale: —
Feuille / Sheet: 1 of 1

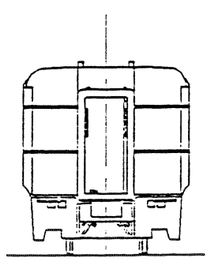
Titre / Title: ELECTRICAL SYMBOLS
Numéro de dessin / Drawing number: BSK-7452
A2
Révision / Revision: A

IMP. DIR. G1

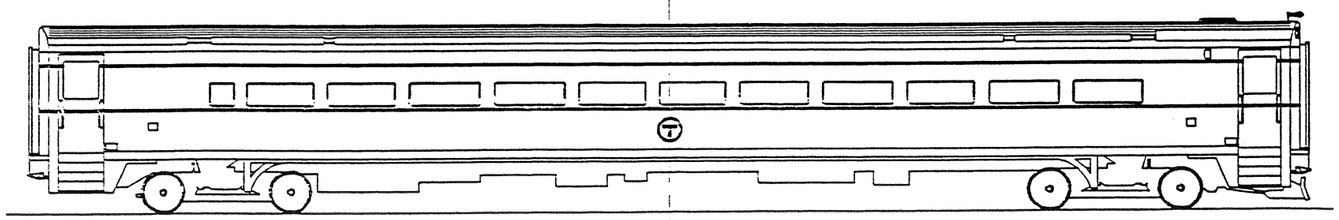
C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
C.P. P.E.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-16

2P-521-0101

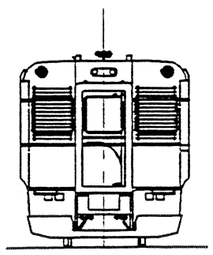




NO.1 AND NO.2 ENDS
OF BTC
AND NO.2 END
OF CTC



RIGHT SIDE



NO.1 END
CTC

MBTA 030-CARS 504-554
MBTA 028-CARS 398-453 CTC(EVEN NUMBERS)-BTC(ODD NUMBERS)

G.HILL	–	–	RL	RL	SEE B.D.R.	–	17/01/91	A
DESSINE DRAWN	POIDS WEIGHT	R.M.&S./ S.S.A	VERIFIE CHECKED	APPROBATION APPROVED	DESCRIPTION	ZONE	DATE	REV.

			Date
Conception-Dessinateur	G.HILL		89/04/20
Dessiné-Drawn	G.HILL		89/04/20
Vérifié-Checked	R.L'ECUYER		89/04/24
Contrôle de poids-Weight Control	–		–
R.M.&S./S.S.A.	–		–
Approuvé-Approved	R.L'ECUYER		89/04/24
Ent. surveillant-Asst engr	–		

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Boucherville / La Pocatière, Québec, Canada

Échelle Scale: –
Titre Title: CAR GENERAL ARRANGEMENT
Format Size: A2
Chapitre Chapter: 5
Numéro du dessin Drawing number: 2P-521-0101
Feuille Sheet: 1 of 1
Révision: A

023

Bouch.

ABBR.	DESCRIPTION	SCHEMATIC DIAGRAM LOCATOR DRAWINGS	ZONE
ACB	ALERTOR	0118/1	BD-4
B1B	A/C BLOWER FAN NO.1	0107	D-2
B2B	A/C BLOWER FAN NO.2	0107	D-3
BCB	BATT. CHARGER 75 VDC	0109/1	C-4
BIB	BRAKE INDICATING LIGHTS	0115	BD-4
C2B	A/C CONDENSER FAN NO.2	0107	D-2
CB1	BATTERY CHARGER LOAD OUTPUT	0109/1	BC-2
CB2	BATTERY CHARGER BATTERY OUTPUT	0109/1	B-2
CB2A	P/A AMPLIFIER	0112/1	D-3
CC1B	A/C COMPRESSOR CONDENSER FAN NO.1	0107	D-3
CCB	CAR CONTROL	0109/1	BD-1
CCHB	COMPRESSOR CRANKCASE HEATER	0107	C-3
CHB	CAB HEATING CONTROL	0125	A-1
CHLB	CAB HEATER LEFT SIDE	0108	D-1
CHRB	CAB HEATER RIGHT SIDE	0108	D-1
CNB	NUMBER BOARDS	0111	BD-4
COLB	CONVENIENCE OUTLETS LEFT	0122	B-2
COLR	CONVENIENCE OUTLETS RIGHT	0122	B-2
CSB	COMMUNICATION SYSTEM	0112/1	BD-4
DCB	DOOR CONTROL	0113/5	D1
DOB	DOOR OPERATOR	0113/8	D-4
EPB	ELECTRO-PNEUMATIC BRAKE BREAKER	0115	BD-1
ERB	ENGINE RUN BREAKER	0114	D-1
FH1B	FLOOR HEAT 1	0108	D-2
FH2B	FLOOR HEAT 2	0108	D-1
GFB	GENERATOR FIELD	0114	D-3
GLB	GAUGE LIGHTS	0111	BD-3
HCB	HVAC CONTROL	0123	AD-4
HLB	HEADLIGHT	0111	BD-2
MB	MAIN POWER 480 VAC	0106	B-2
MLB	MARKER LIGHTS	0111	BD-2
MTB	TRANSFORMER 480 / 120 VAC	0120	D-4
OBCB	OVERHEAD BLOWER CONTACTORS	0123	AD-4

ABBR.	DESCRIPTION	SCHEMATIC DIAGRAM LOCATOR DRAWINGS	ZONE
OH1B	OVERHEAD HEAT 1	0107	D-2
OH2B	OVERHEAD HEAT 2	0107	D-3
PHB	PROTECTIVE HEATERS	0122	B-1
PLB	MAIN PASSENGER LIGHTING	0121	B-1
PSB	POWER SUPPLY 64 VDC	0110	D-1
RB	RADIO	0112/1	BC-1
SRB	SPEED RECORDER	0119/1	BD-1
TCB	CAB SIGNAL & SPEED CONTROL	0117/1, 0117/2	C-4, BD-4
VPLB	VESTIBULE & PLATFORM LIGHTS	0122	B-2
WHB	WINDSHIELD HEATERS	0125	BD-1
WSB	WHEEL SLIDE SYSTEM	0116	AD-4

MBTA 030 - CARS 504-554
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS)- BTC (ODD NUMBERS)

		Init.	Date
Conception-Design	D.MOQUIN		89/04/24
Dessiné-Drawn	S.BINETTE		89/04/24
Vérifié-Checked	D.MOQUIN		89/04/24
Commande de poids-Weight Control	–		–
R.M.&S./S.S.A.	–		–
Approbation-Approved	R.L'ECUYER		89/04/24
Fin suivi-Next assy	–		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle Scale: 1=1
Titre Title: ELECTRICAL DEVICES LIST (CIRCUIT BREAKERS)
Format Size: A2
Chapitre Chapter: 5
Numéro du dessin Drawing number: 2P-521-0102/1
Feuille Sheets: 1 de 3
Révision Revision: A

DESSINÉ DRAWN	POIDS WEIGHT	R.M.&S./ S.S.A.	VÉRIFIÉ CHECKED	APPROBATION APPROVED	DESCRIPTION	ZONE	DATE	REV.
G.HILL	–	–	RL.	RL	SEE B.D.R.	–	91/01/91	A

028

ABBR	DESCRIPTION	COIL 2P-521-..	INTERLOCK CONTATS 2P-521-..			
			QTY	N.O.	QTY	N.C.
K101	DOOR CLOSED RELAY	0119/2			2	0119/2
K102	OVERSPEED RELAY	0119/2	2	0119/2	2	0119/2
K2	WINTER HEAT OVERHEAD RELAY	0126/2	1	0123		
K2(AS)	VIGILANCE MAGNET VALVE RELAY	0118/2	1	0118/2		
K2(E)	IC RELAY (ENG. CONT. HEAD)	0112/3	2	0112/3	2	0112/3
K3	HEAT RELAY	0126/2	1	0123		
K4	REHEAT RELAY	0126/2	1	0123		
K5	FULL COOL RELAY	0126/2	1	0123		
K6	PARTIAL COOL RELAY	0126/2	1	0123		
LCR	LAYOVER CONTROL RELAY	0123	2	0123	1	0123
LOR	LOCK-OUT RELAY	0123	1	0123	1	0123
LP	ACKNOWLEDGING RELAY (APPROACH SIGNAL)	0117/4	3	0117/4	4	0117/4
LRK	ACKNOWLEDGING INDICATION RELAY	0117/4	2	0117/3	2	0117/3
LS2R	LIMIT SWITCH RELAY	0113/8	1	0113/8		
MR	MASTER RELAY	0117/2	1	0117/2	1	0117/2
NMR 1,3	NO-MOTION RELAY (DOORS 1R & 2R)	0113/5	2	0113/2		
NMR 2,4	NO-MOTION RELAY (DOORS 1L & 2L)	0113/5	2 2	0113/1 0113/4		
OH11	OVERHEAD HEATER CONTACTOR 1st STAGE NO.1 END	0123	3 1	0107 0123		
OH12	OVERHEAD HEATER CONTACTOR 1st STAGE NO.2 END	0123	3 1 2	0107 0124 0123		
OH21	OVERHEAD HEATER CONTACTOR 2nd STAGE NO.1 END	0123	3 1 2	0107 0124 0123	1	0123
OH22	OVERHEAD HEATER CONTACTOR 2nd STAGE NO.2 END	0123	3 1	0107 0123		

ABBR	DESCRIPTION	COIL 2P-521-..	INTERLOCK CONTATS 2P-521-..			
			QTY	N.O.	QTY	N.C.
OR1 TO OR4	OPERATOR OPEN RELAY (FORM C)	0113/7	4 1 1	0113/7 0113/8 0113/9	1 1	0113/8 0113/9
OSR	BRAKE RELAY	0113/3	2	0117/3	2	0117/3
OTDR1 TO OTDR4	OPEN TIME DELAY (DOOR OPERATOR)	0113/7	4 3	0113/7 0113/8	3	0113/8
OTR1	OVERTEMPERATURE RELAY NO.1 END	0124	1	0124		
OTR2	OVERTEMPERATURE RELAY NO.2 END	0124	1	0124		
PDR	PUMP DOWN RELAY	0123	2	0123	1	0123
PHR	PROTECTIVE HEAT RELAY	0122	3	0122		
PS	PRESSURE SWITCH RELAY	0117/3	4	0117/3		
RC	REFRIGERANT COMPRESSOR CONTACTOR	0123	3 4 2	0107 0123 0124	1	0107
RER	REARWARD RELAY	0114	1	0114		
RL1	LOAD SHED RELAY	0109/1	1	0109/1		
RP	ACKNOWLEDGING RELAY (APPROACH MEDIUM)	0117/4	3	0117/4	4	0117/4
RR	RELEASE RELAY	0115	1	0115		
SP	ACKNOWLEDGING RELAY (RESTRICTING SIGNAL)	0117/4	3	0117/4	2	0117/4
TCO	TRACTION CUT-OUT RELAY	0114	4	0114	1	0114
TDOR	TRAINLINE DOOR OPEN RELAY	0114			1	0114
TDR	TIME DELAY RELAY (HVAC)	0123	2	0123		
TRDR1 TO TRDR4	TRAP DOOR RELAY	0113/8	1 1 1	0113/1 0113/2 0113/5	1 4	0113/9 0113/3
VZ	VELOCITY ZERO RELAY (ATC)	0117/3	1 3	0117/2 0117/3		
VZR	VELOCITY ZERO RELAY (DOOR)	0116	1	0113/5		

MBTA 030 - CARS 504-554
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS)-BTC (ODD NUMBERS)

	Init.	Date
Concepteur-Designer D.MOQUIN		89/04/24
Dessin-Drawn S.BINETTE		89/04/24
Vérifié-Checked D.MOQUIN		89/04/24
Contrôle de poids-Weight Control –		–
R.M.&S./S.S.A –		–
Approbation-Approved R.L'ECUYER		89/04/24
Date suivant-Next entry –		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle – Scale
Titre – Title
ELECTRICAL DEVICES LIST (RELAYS & CONTACTORS)

DESSINE DRAWN	POIDS WEIGHT	R.M.&S./ S.S.A	VERIFIE CHECKED	APPROBATION APPROVED	DESCRIPTION	ZONE	DATE	REV.
G.HILL	–	–	RL	RL	SEE B.D.R.	–	17/01/91	A

Format A2 Size
Chapitre 5 Chapter
Numéro du dessin 2P-521-0103/2 Drawing number
Feuille 2 de 3 Sheet
Révision A Revision

028

Bouch.

ABBR	DESCRIPTION	SCHEMATIC 2P-521-_	ZONE
AMV	APPLICATION MAGNET VALVE	0115	C-2
DMV1	DUMP MAGNET VALVE NO.1 END	0116	B-3
DMV2	DUMP MAGNET VALVE NO.2 END	0116	B-3
EMV	EMERGENCY MAGNET VALVE	0115	B-1
LV1	LINE MAGNET VALVE NO.1 END	0123	B-1
LV2	LINE MAGNET VALVE NO.2 END	0123	B-1
MV1	MODULATED MAGNET VALVE NO.1 END	0123	B-1
MV2	MODULATED MAGNET VALVE NO.2 END	0123	B-1
PBMV	PENALTY BRAKE MAGNET VALVE	0117/1 0117/3	B-3 B-1
RMV	RELEASE MAGNET VALVE	0115	C-2
SMVL	SANDING MAGNET VALVE LEFT	0116	C-2
SMVR	SANDING MAGNET VALVE RIGHT	0116	B-2
VMV	VIGILANCE MAGNET VALVE	0118/1	B-3

MBTA 030 - CARS 504-554
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS)-BTC (ODD NUMBERS)

G.HILL	-	-	RL
DESSINE DRAWN	POIDS WEIGHT	R.M.&S./ S.S.A	VERIFIE CHECKED

RL	SEE B.D.R.	-	17/12/91
APPROBATION APPROVED	DESCRIPTION	ZONE	DATE

	REV.
A	

	Init.	Date
Conception-Designed D.MOQUIN		89/04/24
Dessiné-Drawn S.BINETTE		89/04/24
Vérifié-Checked D.MOQUIN		89/04/24
Contrôle de copie-Version Control -		-
R.M.&S./S.S.A -		-
Approbation-Approved R.L'ECUYER		89/04/24
Ens. surveillé-Work supv -		

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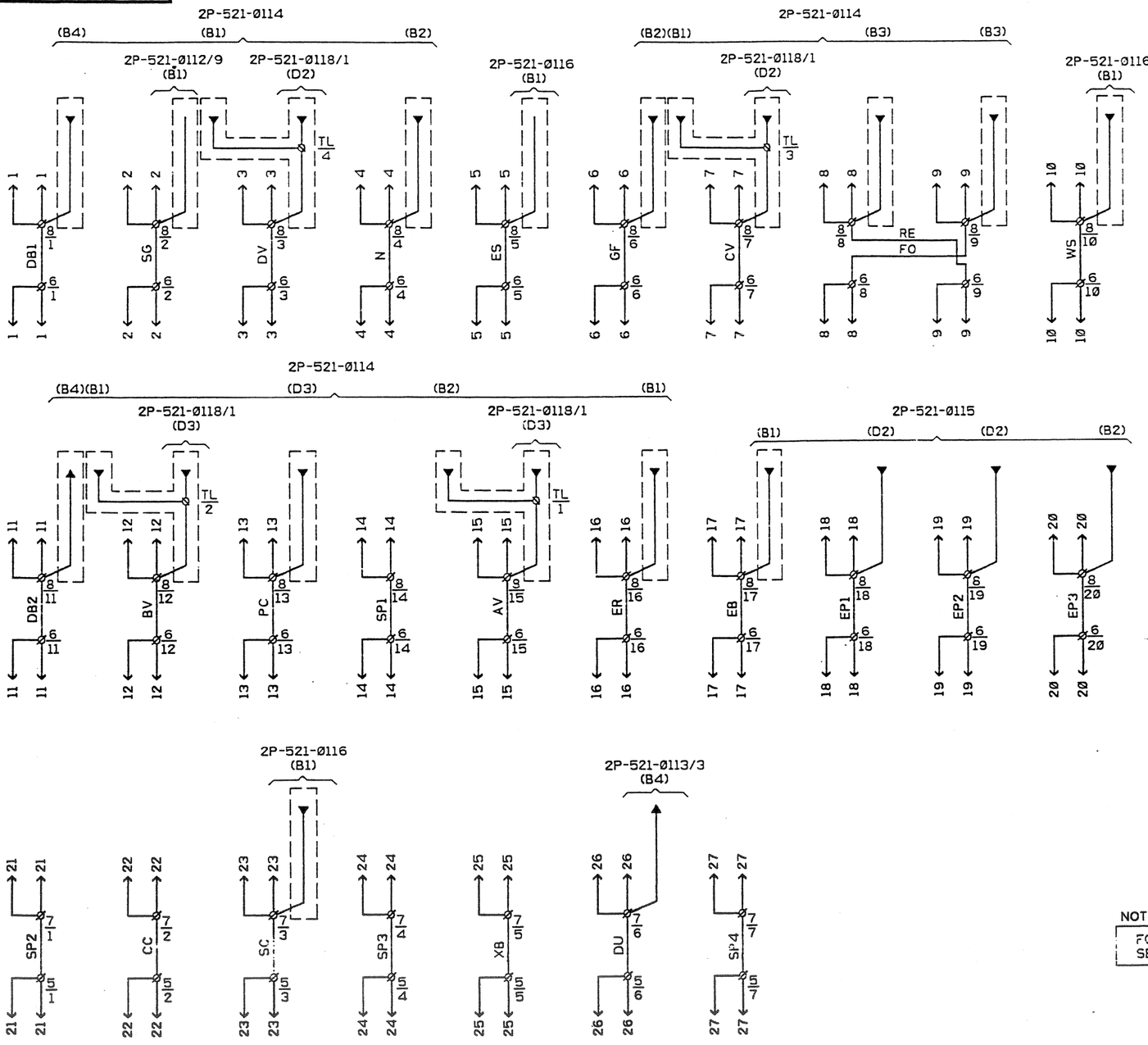
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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle Scale: -
Titre Title: ELECTRICAL DEVICES LIST (RELAYS & CONTACTORS)
Format Size: A2
Chapitre Chapter: 5
Numéro du dessin Drawing number: 2P-521-0103/3
Feuille Sheet: 3 de 3
Révision Revision: A

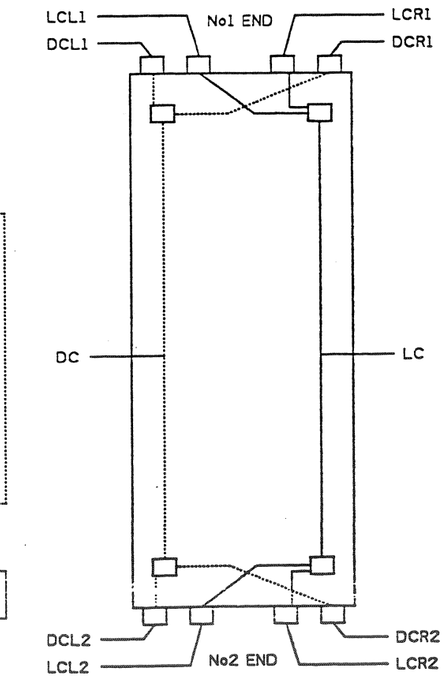
028

Bouch.

2P-521-0104



NO.1 END MARKER	NO.2 END MARKER	TRAINLINE DESIGNATION
1 - DB1	1 - DB1	DYNAMIC BRAKE RESET SWITCH
2 - SG	2 - SG	ATTENDANT CALL AND ALARM BELL
3 - DV	3 - DV	ENGINE SPEED D
4 - N	4 - N	NEGATIVE
5 - ES	5 - ES	EMERGENCY BRAKE SAND
6 - GF	6 - GF	GENERATOR FIELD
7 - CV	7 - CV	ENGINE SPEED C
8 - RE	9 - RE	CAR REVERSE
9 - FO	8 - FO	CAR FORWARD
10 - WS	10 - WS	WHEEL SLIP
11 - DB2	11 - DB2	DYNAMIC BRAKE FAULT LIGHT
12 - BV	12 - BV	ENGINE SPEED B
13 - PC	13 - PC	POSITIVE CONTROL
14 - SP1	14 - SP1	SPARE
15 - AV	15 - AV	ENGINE SPEED A
16 - ER	16 - ER	ENGINE RUN
17 - EB	17 - EB	EMERGENCY BRAKE MAGNET VALVE
18 - EP1	18 - EP1	BRAKE APPLICATION (SERVICE) M.V.
19 - EP2	19 - EP2	BRAKE RELEASE M.V.
20 - EP3	20 - EP3	BRAKE NEGATIVE
21 - SP2	21 - SP2	SPARE
22 - CC	22 - CC	COMPRESSOR CONTROL SPARE
23 - SC	23 - SC	SAND CONTROL
24 - SP3	24 - SP3	SPARE
25 - XB	25 - XB	HEADLIGHT CONTROL
26 - DU	26 - DU	BODY END DOOR RELEASE
27 - SP4	27 - SP4	TRAINLINE STEAM BLOWDOWN SPARE



NOTE:
FOR END CONNECTOR ARRG'T
SEE DWG. 2P-521-0140/8

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	C	DWG. REFERENCE INFO. UPDATED.	J.C.M. 89-02-09
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-09
R.L.	A	SEE B.D.R. #028-116	J.C.M. 88-10-25

		Date
Conçu / Designed	R. L'ECUYER	88-08-23
Dessiné / Drawn	J.C. MAROIS	88-08-23
Vérifié / Checked	D. MOQUIN	88-10-27
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-10-27
Ens. suivant / Next assy		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

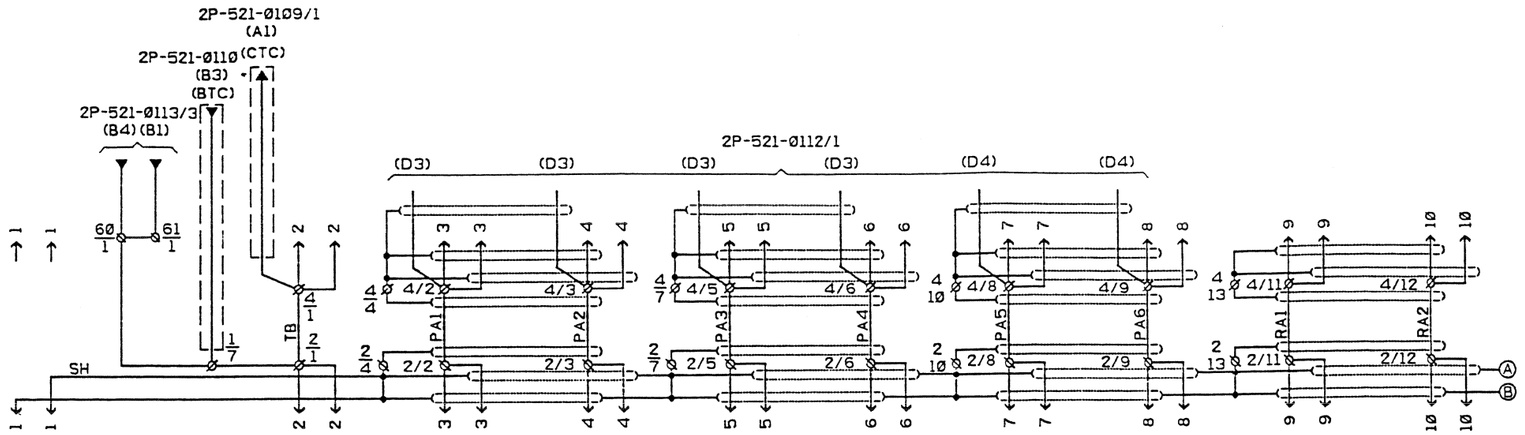
Titre: LOCO-CONTROL (LC) TRAINLINES (CTC-BTC)

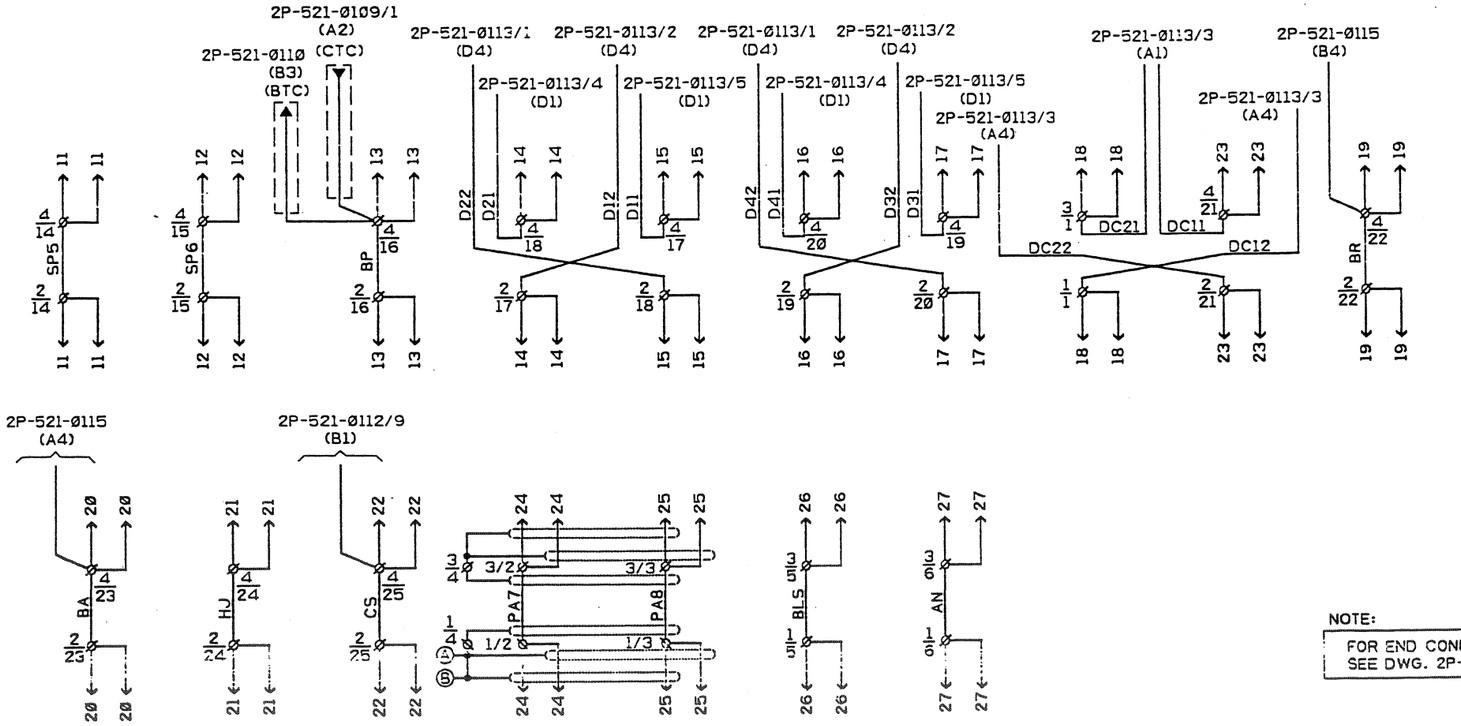
Échelle / Scale: —
Feuille / Sheet: 1 de 1
Numéro du dessin / Drawing number: 2P-521-0104
A2
Révision: C

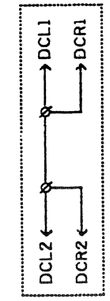
IMP. DIR. G1

2P-521-0105

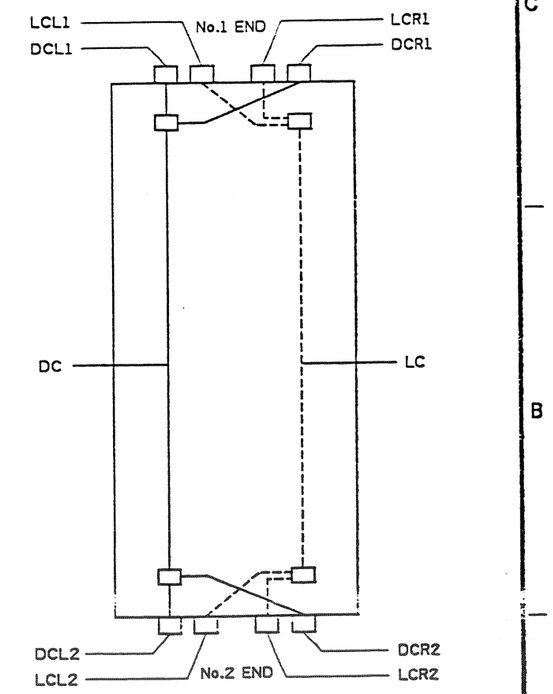
NO.1 END MARKER	NO.2 END MARKER	TRAINLINE DESIGNATION
1 -SH	1 -SH	SHIELD
2 -TB	2 -TB	BATTERY NEGATIVE (CAR)
3 -PA1	3 -PA1	PUBLIC ADDRESS
4 -PA2	4 -PA2	PUBLIC ADDRESS
5 -PA3	5 -PA3	INTERCOM
6 -PA4	6 -PA4	INTERCOM
7 -PA5	7 -PA5	P.A. CONTROL
8 -PA6	8 -PA6	P.A. CONTROL
9 -RA1	9 -RA1	RADIO SPARE
10 -RA2	10 -RA2	RADIO SPARE
11 -SP5	11 -SP5	DOOR CONTROL SPARE
12 -SP6	12 -SP6	DOOR CONTROL SPARE
13 -BP	13 -BP	BATTERY POSITIVE
14 -D21	15 -D22	DOOR CLOSING CONTROL (LEFT)
15 -D11	14 -D12	DOOR CLOSING CONTROL (RIGHT)
16 -D41	16 -D42	DOOR OPENING CONTROL (LEFT)
17 -D31	17 -D32	DOOR OPENING CONTROL (RIGHT)
18 -DC21	23 -DC22	CONDUCTOR'S DOOR CLOSE LIGHT (RIGHT)
19 -BR	19 -BR	ENGINEMAN'S BRAKE RELEASE LIGHT
20 -BA	20 -BA	ENGINEMAN'S BRAKE APPLIED LIGHT
21 -HJ	21 -HJ	HOT JOURNAL LIGHT SPARE
22 -CS	22 -CS	COMMUNICATING SIGNAL
23 -DC11	18 -DC12	CONDUCTOR'S DOOR CLOSE LIGHT (LEFT)
24 -PA7	24 -PA7	TAPE MUSIC SPARE
25 -PA8	25 -PA8	TAPE MUSIC SPARE
26 -BLS	26 -BLS	ENGINEMAN'S DOOR CLOSE LIGHT SPARE
27 -AN	27 -AN	ATTENDANT CALL SPARE







NOTE:
FOR END CONNECTOR ARRG'T SEE DWG. 2P-521-0140/8



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	D	DWG. REFERENCE INFO. UPDATED.	J.C.M. 89-05-16
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-18
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-09
R.L.	A	SEE B.D.R. #028-117	J.C.M. 88-10-25

Designed: R. L'ECUYER 88-08-23
Drawn: J.C. MAROIS 88-08-23
Checked: D. MOQUIN 88-10-27
Weight Control
Safety engineer
Project engineer: R. L'ECUYER 88-10-27
Next assy

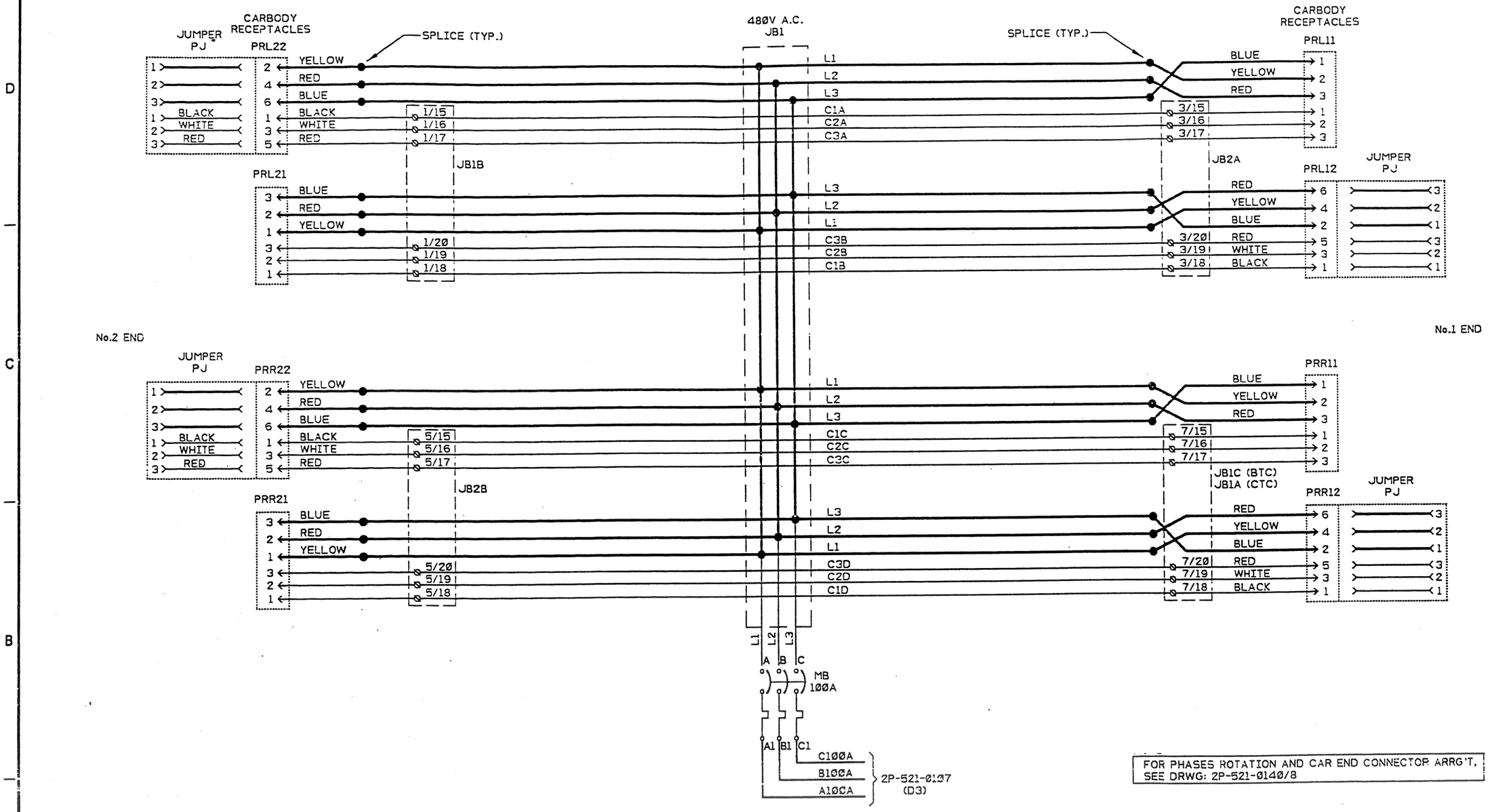
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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Scale: —
Title: DOOR & COMMUNICATION (DC) TRAINLINES (CTC-BTC)
Drawing number: 2P-521-0105
Size: A2
Revision: D
Sheet: 1 of 1

IMP. DIR. G1

2P-521-0106



FOR PHASES ROTATION AND CAR END CONNECTOR ARRG'T, SEE DRWG: 2P-521-0140/8

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	D	DWG. REFERENCE INFO. UPDATED	J.C.M. 89-05-16
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-18
R.L.	B	SEE B.D.R. #028-229	J.C.M. 88-12-05
R.L.	A	SEE B.D.R. #028-140	J.C.M. 88-11-02

Designed / Conçu: R. L'ECUYER 88-09-13
Drawn / Dessiné: J.C. MAROIS 88-09-13
Checked / Vérifié: R. L'ECUYER 88-09-19
Weight Control / Contrôle de poids: Date
Safety engineer / Ing. de sécurité: Date
Project engineer / Chargé de projet: R. L'ECUYER 88-09-19
Next assy / Ens. suivant: Date

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: —
Feuille / Sheet: 1 de 1
Titre / Title: 480V A.C. POWER & CONTROL TRAINLINES (CTC - BTC)
Numéro du dessin / Drawing number: 2P-521-0106
A2
Revision: D

IMP. DIR. G1

2P-521-0107

480VAC FROM "MB" 2P-521-0106

C100A
B100A
A100A

2P-521-0108

OVERHEAD HEATER/EVAPORATOR UNIT (EV2) NO.2 END

OVERHEAD HEATER/EVAPORATOR UNIT (EV1) NO.1 END

OH2B 30A
B2B 15A
CC1B 50A
C2B 20A
B1B 15A
OH1B 30A

TC2
TC1

C211
A211
A211B
A211C

1HP BM2
12KW EH22
8KW EH12
PT2
180°F / 150°F

PT1
8KW EH11
12KW EH21
1HP BM1

T1 T2 T3

112B
115B
115A
112A

A117A B117A C117A
A111B B111B C111B
A111A B111A C111A

A112A B112A C112A
A118A B118A C118A

2P-521-0109/1
2P521-0110

CCHB 5A

A115 B115 C115
A116 B116 C116

SP 4
SP 3
310
311

50/36
50/37

RC
CFC

OL4*
OL5*
OL2
OL1
OL3*

BF2
BF1

OH22
OH12
OH11
OH21

C111
B111
A111
A117
B117
C117

A112
B112
C112
C118
B118
A118

A115B B115B C115B
A115A B115A C115A
310A
311
A116A B116A C116A

46
51

C211
A211
A211B
A211C

2P-521-0124

CM1 1.5HP
CM 25HP (25A F.L.)
CCH 75W
CM2 1.5HP

COMPRESSOR CONDENSER UNIT (CCU) UNDERCAR

HEATING & AIR COND. CONTACTOR PANEL (ACCP)

NOTE:
* MANUAL RESET

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 91-01-07
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-01-17
R.L.	A	SEE B.D.R. #028-115	J.C.M. 88-10-25

Conçu / Designed	D. MOQUIN	88-08-23
Dessiné / Drawn	N. MAKI	88-08-23
Vérifié / Checked	D. MOQUIN	88-10-27
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-10-27
Ens. suivant / Next assy		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: OVERHEAD HEATING & AIR CONDITIONING (CTC - BTC)

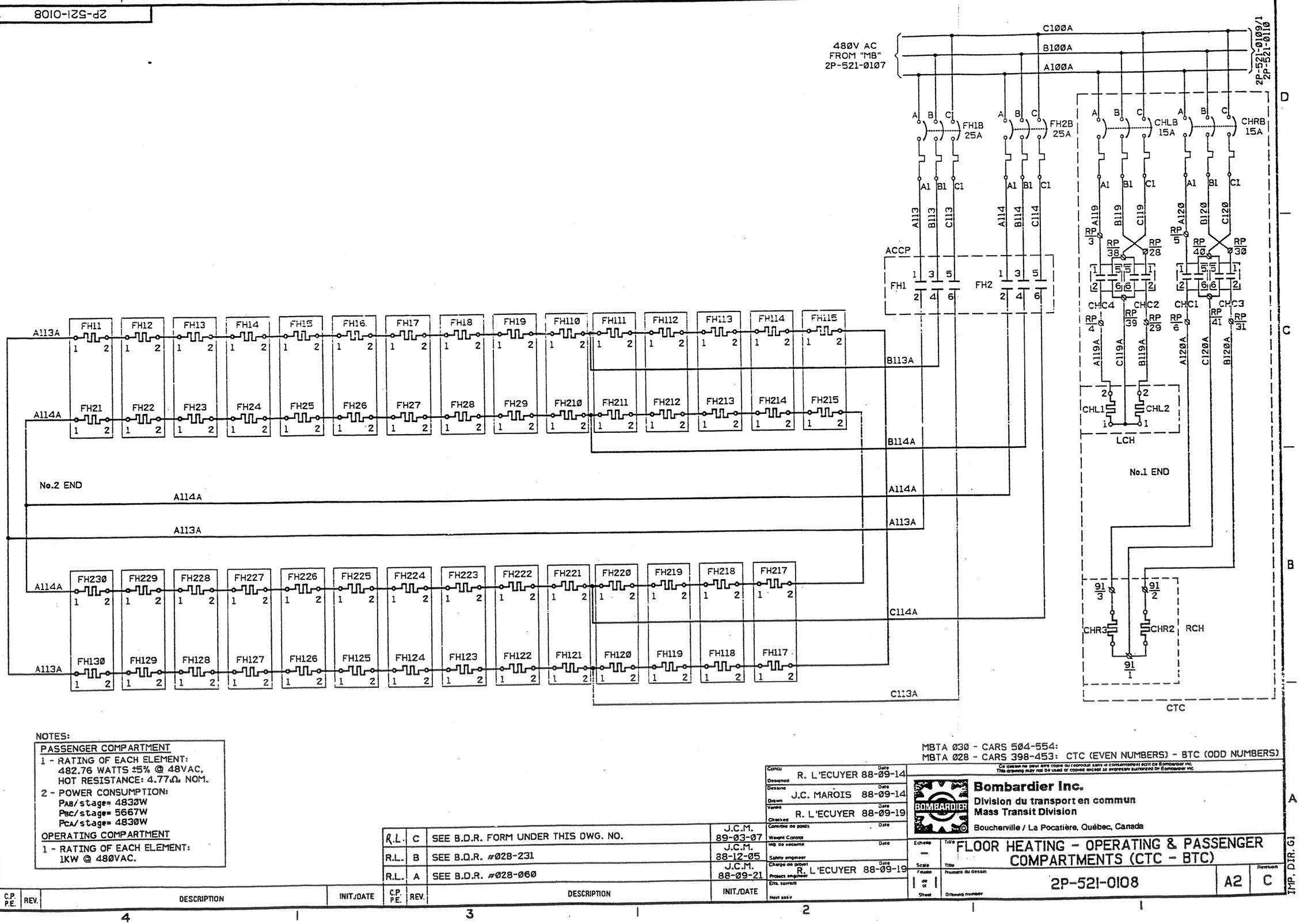
Numéro du dessin / Drawing number: 2P-521-0107

A2

Révision / Revision: C

IMP. DIR. 61

2P-521-0108



NOTES:

PASSENGER COMPARTMENT

1 - RATING OF EACH ELEMENT:
482.76 WATTS ±5% @ 48VAC.
HOT RESISTANCE: 4.77Ω NOM.

2 - POWER CONSUMPTION:
PAB/stage= 4830W
PBC/stage= 5667W
PCA/stage= 4830W

OPERATING COMPARTMENT

1 - RATING OF EACH ELEMENT:
1KW @ 480VAC.

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-03-07
R.L.	B	SEE B.D.R. #028-231	J.C.M. 88-12-05
R.L.	A	SEE B.D.R. #028-060	J.C.M. 88-09-21

		Date
Conçu / Designed	R. L'ECUYER	88-09-14
Dessiné / Drawn	J.C. MAROIS	88-09-14
Vérifié / Checked	R. L'ECUYER	88-09-19
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-19
Ens. suivant / Next assy		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 of 1

Titre / Title: FLOOR HEATING - OPERATING & PASSENGER COMPARTMENTS (CTC - BTC)

Numéro du dessin / Drawing number: 2P-521-0108

A2 | C

IMP. DIR. G1

2P-521-0109/1

PC101
CONTROL CARD
2P-521-0109/2

13 1 9 15 8 12 17 4 2 16 14 11 19 21 18 20 23 22

TB103 3 4 1 2

14V

T201

RED WHITE RED WHITE RED WHITE

SH1
75A/100mV

IL101
CL

S101
AC & LIGHT

S102
C.L.

S103
V.R.

CB1
60A

BCTB2
BB+ 1
3
NE+ 4
BP+ 6
BP 5
BP1
2
BB- 2

RL1 RL1

BUS BAR

BBP
SP 17
BBP1
BBP2

SWITCH & CIRCUIT BREAKER LOCKER PANEL
(CCHB) 2P-521-0107
(CSB) 2P-521-0112/1
(DOB) 2P-521-0113/5
(DCB) 2P-521-0113/8
(BIB) 2P-521-0115
(WSB) 2P-521-0116

TRAIN CONTROL CIRCUIT BREAKER PANEL
(CNB) 2P-521-0111
(GLB) 2P-521-0111
(HLB) 2P-521-0111
(MLB) 2P-521-0111
(TCB) 2P-521-0117/1
(ACB) 2P-521-0118/1
(SRB) 2P-521-0119/1
(WHB) 2P-521-0125
(RB) 2P-521-0112/1

BCA
A
P N
BP2A BP3A
FA1 2A
FA2 2A
2
1
BP2
1 2 BP3
P 100A P1 SH2

KS KNIFE SWITCH

BAT NI-CD 50 CELLS

100A
N N1 BN2
BATTERY BOX

BUS BAR
BBN1 BBN2
BBN
(EPB) 2P-521-0115

SP 18
P N
CCB 30A

P1 BP
N1 IB
(C4) (D4)
2P-521-0105

480V A.C. FROM "MB" 2P-521-0108
C100A
B100A
A100A
2P-521-0120

A B C
BCB 10A
A1 B1 C1

BCTB1
A102 AC1
B102 AC2
C102 AC3

480V

70V

R1 C1 R2 C2
R3 C3
R4 C4

MOV1 MOV2 MOV3

D104

PC104
SNUBBER ASS'Y
C21
4200µF
250V

P101 P102 P103

L201
6mH

MAGNETIC MODULE

CB2
60A

NOTE:
1 - LOAD SHED AT 52V.

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
RL	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-06
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 88-12-15

Designed R. L'ECUYER 88-10-04
Drawn J.C. MAROIS 88-10-04
Checked D. MOQUIN 88-10-27
Weight Control
Safety engineer
Project engineer R. L'ECUYER 88-10-27
Next assy

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Scale —
Sheet de 1 de 1

Title: BATTERY CHARGER POWER CIRCUIT & DC DISTRIBUTION (CTC)

Drawing number: 2P-521-0109/1 | A2 | B

IMP. DIR. G1

2P-521-0109/2

2P-521-0109/1

PCC101

UNFILTERED +18V

+18V DC

+10V DC

TP1 TP9 TP13

TP11 TP10

TP12 TP17 TP15

TP8

TP5 TP3

TP7 TP4 TP2 TP16 TP14

D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16 D17 D18 D19 D20 D21 D22 D23 D24 D25 D26 D27 D28

ZD1 ZD2 ZD3 ZD4 ZD5

SCR1 SCR2 SCR3

IC1 IC2 IC3 IC4

Q1

LED1 PHASE LOSS

R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19 R20 R22 R23 R25 R26 R27 R28 R29 R30 R31 R32 R33 R34 R35 R36 R37 R39 R40 R41 R42 R43 R44 R45 R46 R47 R48 R49 R50

P1

C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13 C14 C15 C16 C17 C18 C19 C20 C21 C22

NOTE:
1-BIASING RESISTORS (R23, R26, AND R29), SELECTED AT TEST. MAY BE A SINGLE OR DOUBLE (PARALLEL ONLY) RESISTOR(S).

TO RL1 (low side)

LOAD SHED RELAY DRIVER

D201 A148
R201 820Ω
OPTO 201
H11R2
R203 22K
ZD202 68V 1N4760A
R202 2.2K
Q201 2N5401
C202 .22µF
R206 4.7K
P201 1K 1W
Dropout
ZD201 7.5V 1N4737A
R208 1.5K
R209 10K 3W
D207
R148
R204 22K
C203 .22µF
Q203 2N5175
Q202 2N3440
R205 1K

TEMPERATURE COMPENSATION

P108 "Vout"
CW
R109 470
R102 6.49K
R101 2M
D105 1N4148
D106 1N4148
R110 4.12K 1%
Rt 1K+t 2%
R111 8.06K 1%
R112 34.8K 1%
R103 49.9K
R107 68K

MBTA Ø30 - CARS 504-554:
MBTA Ø28 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

Conçu Designed	D. MOQUIN	Date	88-09-11
Dessiné Drawn	J.C. MAROIS	Date	88-09-11
Vérifié Checked	D. MOQUIN	Date	88-09-25
Contrôle de poids Weight Control		Date	
Ing. de sécurité Safety engineer		Date	
Chargé de projet Project engineer	R. L'ECUYER	Date	88-09-25
Ens. suivant Next assy			

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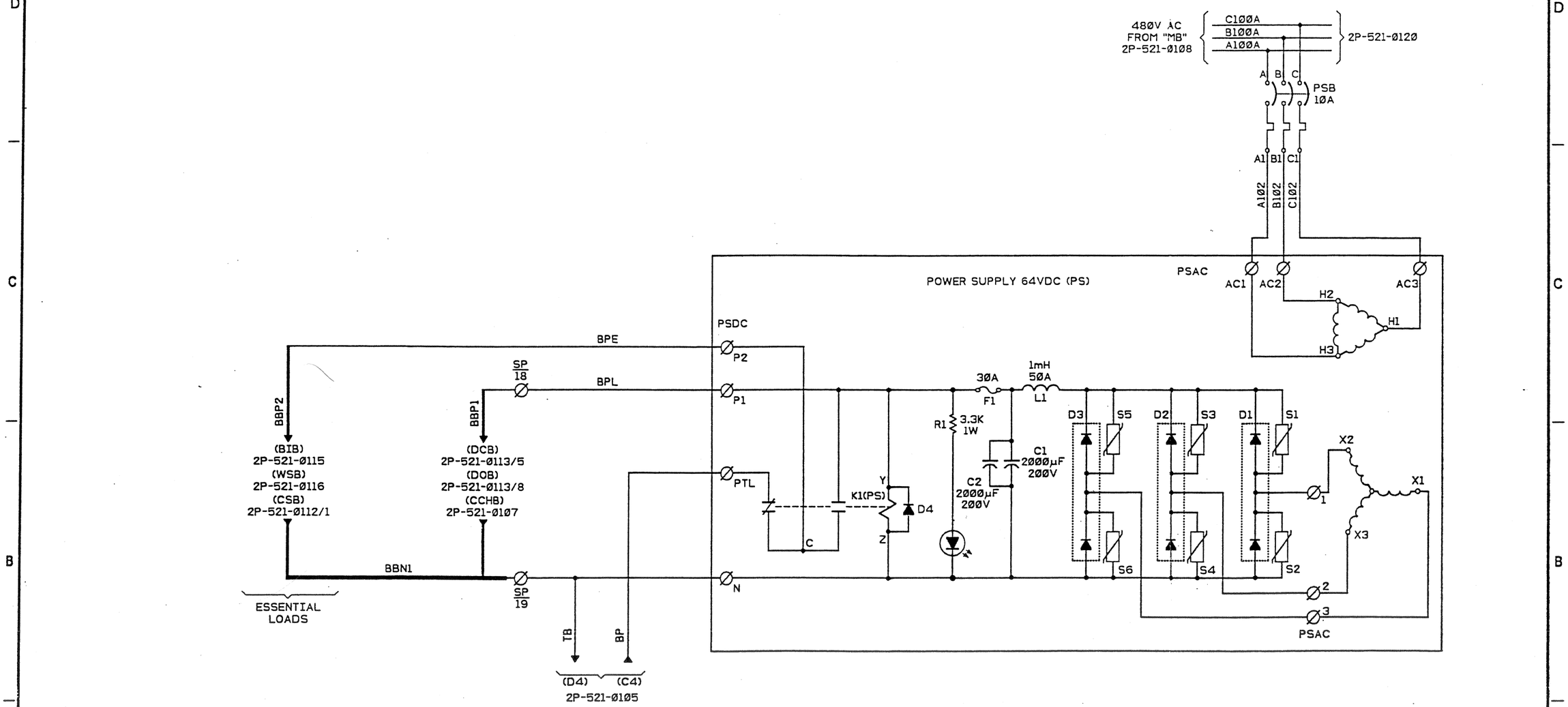
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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle Scale	–	Titre Title	BATTERY CHARGER CONTROLS (CTC-BTC)
Feuille Sheet	de of	Numéro du dessin Drawing number	2P-521-0109/2
		Format	A2
		Révision Revision	A

IMP. DIR. G1

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG.NO.	J.C.M. 89-04-06

2P-521-0110



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: BTC (ODD NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	C	DWG. UPDATED	J.C.M. 89-05-16
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-06
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 88-12-23

Conçu / Designed	D. MOQUIN	Date 88-08-19
Dessiné / Drawn	N. MAKI	Date 88-08-19
Vérifié / Checked	D. MOQUIN	Date 88-09-25
Contrôle de poids / Weight Control		Date
Ing. de sécurité / Safety engineer		Date
Chargé de projet / Project engineer	R. L'ECUYER	Date 88-09-25
Ens. suivant / Next assy		

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Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: de / of

Titre / Title: POWER SUPPLY CIRCUIT & DC DISTRIBUTION (BTC)

Numéro du dessin / Drawing number: 2P-521-0110

Révision: A2 C

IMP. DIR. G1

2P-521-0111

74V DC
2P-521-0109

BBP2 → P → CNB 5A → P1 → 390 → GL01

LEFT SIDE
S2

CNSL: YEL1, YEL2, BW2, BW1

75/2, 75/1, 75/3, 75/4

376H GLO4
376J GLO5
376K GLO6
376L GLO7
376M GLO8
376N GLO9
CNSB
GL-

391

76/3, 76/4, 76/1, 76/2

CNSR: BW1, BW2, BL1, BL2

S1
RIGHT SIDE

CAR NUMBER SIGNS
(40W TUBES)
(F40CW/U/3)

BBP2 → P → GLB 5A → P1 → 376 → 96/8 → R9 680Ω 5W → 96/11 → 376A → AG/1

AG/1 → (W) 1, 2 ; (W) 1, 2 → AG/2

AIR GAUGE
LIGHTS
(28V/.04 AMP. LAMPS)
#85 SYLVANIA
MINIATURE W. BASE
NO. 5449-014

377 → N1 → CNB → N → BBN2

GLB → N → BBN2

BBP2 → P → MLB 10A → P1 → 374 → 2 MLS 1

MLS 1 → R2 25Ω 100W (1, 2) 374B → ML2 (1, 2)

374A

MLS 1 → R4 25Ω 100W (1, 2) 374C → ML1 (1, 2)

MARKER LIGHTS
(60W/38V LAMPS)
(PAR 46)

375 → N1 → MLB → N → BBN2

BBP2 → P → HLB 20A → P1 → 378 → DIM / OFF / BRIGHT (1, 2, 3) → HLS

378A → R8 4Ω 225W → 378B → R5 4Ω 225W

34.5V 300W (HEAT SINK) Z2 → HL2 (1, 2) → 378G → R6 1Ω 100W (3) → 378E → 378F → HL1 (1, 2) ← 34.5V 300W (HEAT SINK) Z1

NO.1 END

378C, 378D → R7 2Ω/225W (2, 3, 1)

HEADLIGHTS
(200W/30V LAMPS)
(PAR 56)

379 → N1 → HLB → N → BBN2

2P-521-0109

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	D	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-16
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-06
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 88-12-06
R.L.	A	SEE B.D.R. #028-143	J.C.M. 88-11-02

Conçu / Designed	D. MOQUIN	88-09-13
Dessiné / Drawn	N. MAKI	88-09-13
Vérifié / Checked	D. MOQUIN	88-09-13
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-15
Ens. suivant / Next assy		

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Échelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: CAR NUMBER SIGNS, AIR GAUGE LIGHTS, MARKER LIGHTS & HEADLIGHTS (CTC)

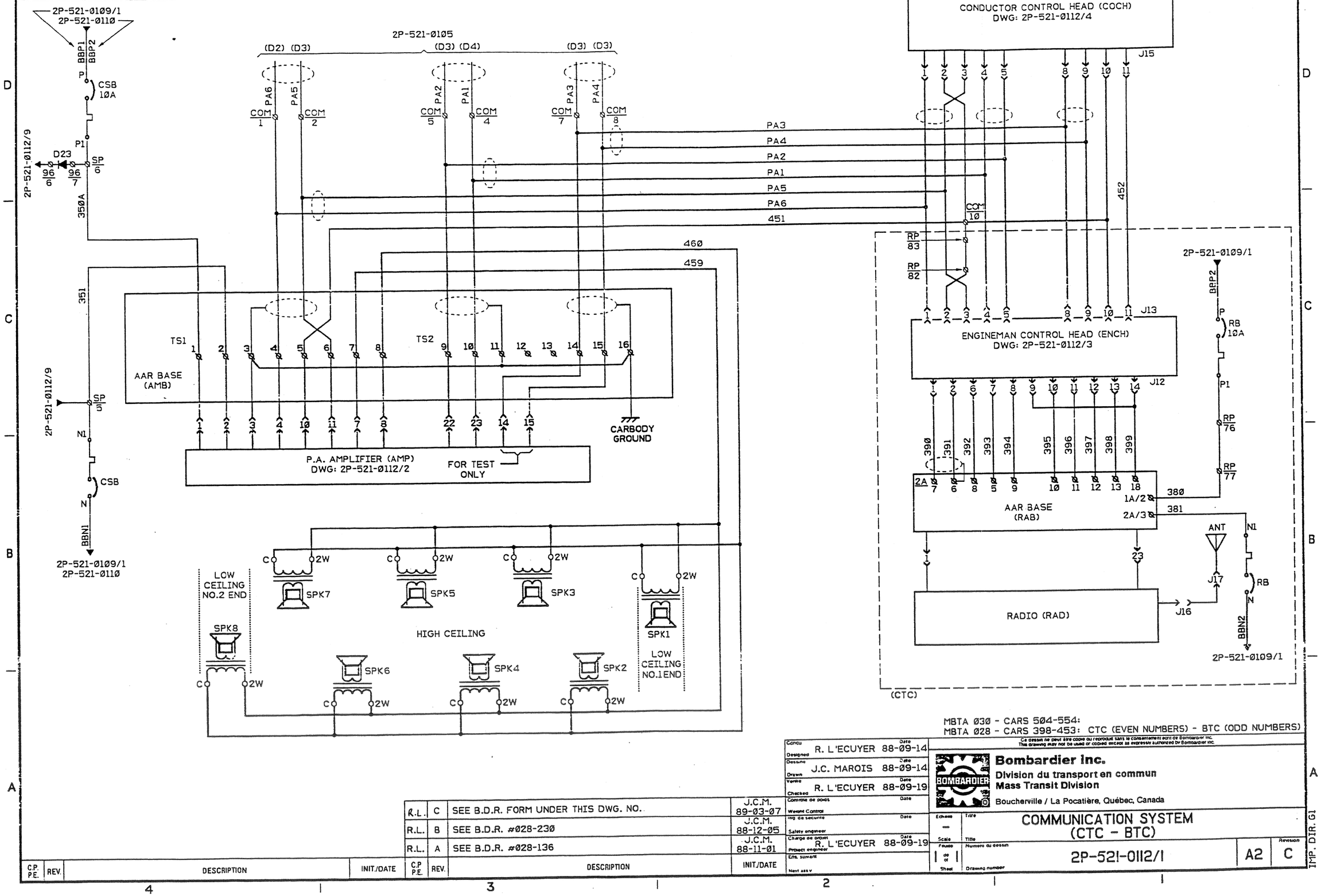
Numéro du dessin / Drawing number: 2P-521-0111

Format: A2

Révision / Revision: D

IMP. DIR. 61

2P-521-0112/1



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-03-07
R.L.	B	SEE B.D.R. #028-230	J.C.M. 88-12-05
R.L.	A	SEE B.D.R. #028-136	J.C.M. 88-11-01

		Date
Conçu / Designed	R. L'ECUYER	88-09-14
Dessiné / Drawn	J.C. MAROIS	88-09-14
Vérifié / Checked	R. L'ECUYER	88-09-19
Contrôle de poids / Weight Control		
Ing de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-19
Ens. suivant / Next assy		

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Échelle / Scale: —
Feuille / Sheet: 1 de / of 1

Titre / Title: COMMUNICATION SYSTEM (CTC - BTC)

Numéro du dessin / Drawing number: 2P-521-0112/1

A2 | C

IMP. DIR. 61

2P-521-0112/1

2P-521-0109/1
2P-521-0110
BBP1
BBP2
P
CSB
10A
P1
D23
SP
6
96
6
96
7
2P-521-0112/9
350A
N1
CSB
N
BBN1
2P-521-0109/1
2P-521-0110

2P-521-0105
(D2) (D3)
(D3) (D4)
(D3) (D3)
COM 1
PA6
PA5
COM 2
COM 5
PA2
PA1
COM 4
COM 7
PA3
PA4
COM 8

PA3
PA4
PA2
PA1
PA5
PA6
451
460
459
351

TS1
TS2
AAR BASE
(AMB)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
1 2 3 4 10 11 7 8 22 23 14 15

CARBODY
GROUND

P.A. AMPLIFIER (AMP)
DWG: 2P-521-0112/2
FOR TEST
ONLY

LOW
CEILING
NO.2 END
SPK8
SPK7
SPK6
SPK5
SPK4
SPK3
SPK2
SPK1
HIGH CEILING
LOW
CEILING
NO.1 END
C
2W

CONDUCTOR CONTROL HEAD (COCH)
DWG: 2P-521-0112/4
J15
1 2 3 4 5 8 9 10 11
452
COM
10
RP
83
RP
82

ENGINEMAN CONTROL HEAD (ENCH)
DWG: 2P-521-0112/3
J13
1 2 3 4 5 8 9 10 11
J12
1 2 6 7 8 9 10 11 12 13 14
390 391 392 393 394 395 396 397 398 399

2A
7 6 8 5 9 10 11 12 13 18
AAR BASE
(RAB)
1A/2
2A/3
380
381
1
23

RADIO (RAD)
J16
J17
ANT
N1
RB
N
BBN2
2P-521-0109/1

2P-521-0109/1
BBP2
P
RB
10A
P1
RP
76
RP
77

(CTC)

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-03-07
R.L.	B	SEE B.D.R. #028-230	J.C.M. 88-12-05
R.L.	A	SEE B.D.R. #028-136	J.C.M. 88-11-01

		Date
Conçu / Designed	R. L'ECUYER	88-09-14
Dessiné / Drawn	J.C. MAROIS	88-09-14
Vérifié / Checked	R. L'ECUYER	88-09-19
Contrôle de poids / Weight Control		
Ing de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-19
Ens. suivant / Next assy		

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Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: —
Feuille / Sheet: 1 de / of 1

Titre / Title: COMMUNICATION SYSTEM (CTC - BTC)

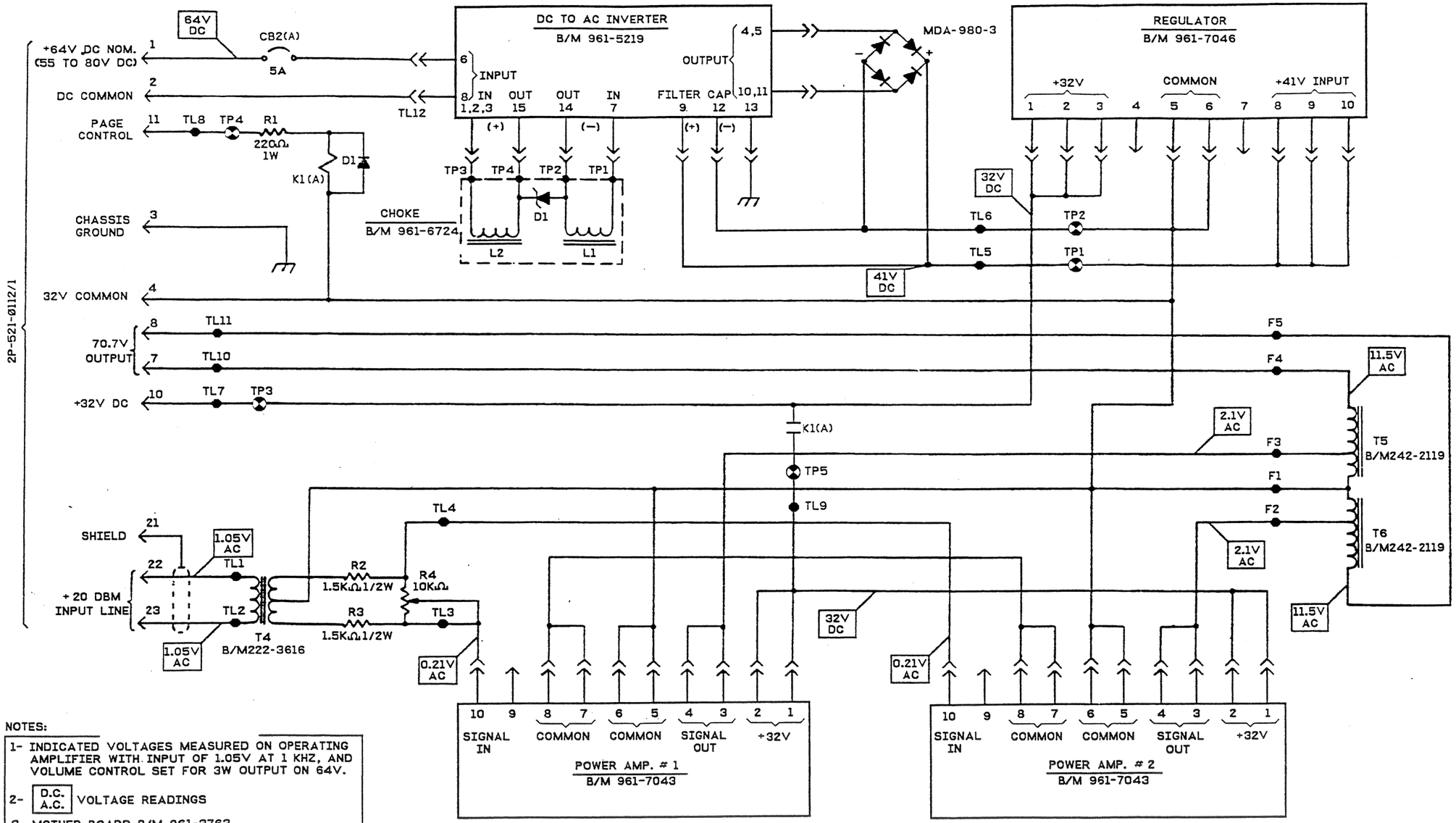
Numéro du dessin / Drawing number: 2P-521-0112/1

A2

Révision / Revision: C

IMP. DIR. G1

2P-521-0112/2



NOTES:

1- INDICATED VOLTAGES MEASURED ON OPERATING AMPLIFIER WITH INPUT OF 1.05V AT 1 KHZ, AND VOLUME CONTROL SET FOR 3W OUTPUT ON 64V.

2- D.C. / A.C. VOLTAGE READINGS

3- MOTHER BOARD B/M 961-3763

2P-521-0112/1

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
RL.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-21
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-06

Conçu / Designed	R. L'ECUYER	88-09-14
Dessiné / Drawn	J.C. MAROIS	88-09-14
Vérifié / Checked	R. L'ECUYER	88-09-19
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-19
Ens. suivant / Next assy		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: P/A AMPLIFIER (CTC - BTC)

Numéro du dessin / Drawing number: 2P-521-0112/2

A2

Révision: B

IMP. DIR. GI

2P-521-0112/3

NOTES:

1 - IN I.C. POSITION LEFT PART OF SWITCH IS ENGAGED. IN P.A. POSITION RIGHT PART OF SWITCH IS ENGAGED.
2 - ALL COMPONENTS MARKED WITH AN (*) ARE MOUNTED ON P.C. BOARD B/M 501-4733.
3 - ALL DIODES ARE 1N4004 UNLESS OTHERWISE SPECIFIED.

COMPRESSOR LINE AMP.
B/M 961-6792
2P-521-0112/5

1 32V DC
2 INPUT COMMON
3 INPUT HI
4 TI INPUT HI
5 TI OUTPUT HI TO LINE AMP.
6 TI 600Ω, INPUT-OUTPUT
7 TI C.T. (N.C.)
8 TI 600Ω, INPUT-OUTPUT
9 COMPRESSOR OUTPUT
10 LINE AMP. INPUT
11 COMPRESSOR DEFEAT
12 32V FOR LINE AMP.
13 LINE AMP. OUTPUT
14 32V DC COMMON

SW1(E) (SEE NOTE 1) RADIO P.A. I.C.

CONNECTOR "J12" (24 PINS), FOR CONTINUATION SEE DWG. C2154512SE

TWISTED PAIR

K1(E) K1(E) K1(E) K1(E)

D3* D4* D5*

L1 28V

R6* 220Ω 1W

R13* 330Ω 1/2W *C2 .47µF 50V → 1 HI
R10* 62Ω 1/2W
R7* 330Ω 1/2W C3* .47µF 50V → 2 COMMON
TWISTED PAIR
MICROPHONE

R11 100Ω 1W L2 (IN P.T.T. SW.) 28V → 3 N.C.
→ 4 COMMON
D7* D8* → 5 NORMALY LOW FROM SQUELCH (NOT USED)

P.T.T.(1) SWITCH

→ 6 7 RADIO OUT
→ 8 9 PRESS TO TALK

SW.2B → 10 CHANNEL 1, 11 CHANNEL 2, 12 CHANNEL 3, 13 CHANNEL 4, 14 COMMON

SW.2A
LED 1 → CHANNEL 1
LED 2 → CHANNEL 2
LED 3 → CHANNEL 3
LED 4 → CHANNEL 4

R8 3.3KΩ 1/2W
R9* 27KΩ 1/2W
R12* 100KΩ 1/2W
Q1* 2N5320
Q2* 2N5320

32VDC COMMON 1
32V DC 2
P.A. KEY 3 — D6 1N4004
P.A. +20 DBM TRAINLINE 4, 5 — TWISTED PAIR
SPEAKER MUTE 6, 7 — R3 27Ω 1W
I.C. 0 DBM TRAINLINE 8, 9 — TWISTED PAIR — 8 12 K2(E), 7 11 K2(E)
72V HI FROM "AAR" BASE 10
I.C.-OUTPUT-HI 11
I.C. SPEAKER-HI 12

LOUDSPEAKER

R4* 3.3Ω 1/2W R5 50Ω 1/2W

R2* 220Ω 1W D2 K1(E) 14 13
R1* 220Ω 1W D1 K2(E) 14 13

C1 .1µF,400V

CONNECTOR "J13" (15 PINS), FOR CONTINUATION SEE DWG C2154512SE.

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	B	DWG. COMPONENTS IDENT. UPDATED.	J.C.M. 89-05-16
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-03-30

Conçu / Designed: D. MOQUIN 88-12-07
Dessiné / Drawn: J.C. MAROIS 88-12-07
Vérifié / Checked: D. MOQUIN 89-01-24
Contrôle de poids / Weight Control
Ing de sécurité / Safety engineer
Chargé de projet / Project engineer: R. L'ECUYER 89-01-24
Ens. suivant / Next assy

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: ENGINEMAN CONTROL HEAD (CTC)

Numéro du dessin / Drawing number: 2P-521-0112/3

A2 | Révision / Revision: B

IMP. DIR. G1

2P-521-0112/3

NOTES:

1 - IN I.C. POSITION LEFT PART OF SWITCH IS ENGAGED.
IN P.A. POSITION RIGHT PART OF SWITCH IS ENGAGED.
2 - ALL COMPONENTS MARKED WITH AN (*) ARE MOUNTED ON P.C. BOARD B/M 501-4733.
3 - ALL DIODES ARE 1N4004 UNLESS OTHERWISE SPECIFIED.

COMPRESSOR LINE AMP.
B/M 961-6792
2P-521-0112/5

1	2	3	4	5	6	7	8	9	10	11	12	13	14
32V DC	INPUT COMMON	INPUT HI	TI INPUT HI	TI OUTPUT HI TO LINE AMP.	TI 600Ω INPUT-OUTPUT	TI C.T. (N.C.)	TI 600Ω INPUT-OUTPUT	COMPRESSOR OUTPUT	LINE AMP. INPUT	COMPRESSOR DEFEAT	32V FOR LINE AMP.	LINE AMP. OUTPUT	32V DC COMMON

SW1(E) (SEE NOTE 1) — RADIO: P.A. / I.C.

CONNECTOR "J12" (24 PINS), FOR CONTINUATION SEE DWG. C2154512SE

MICROPHONE: HI, TWISTED PAIR, COMMON
R13* 330Ω 1/2W; *C2 .47µF 50V
R10* 62Ω 1/2W
R7* 330Ω 1/2W; C3* .47µF 50V

N.C.
COMMON
NORMALLY LOW FROM SQUELCH (NOT USED)
R11 100Ω 1W; L2 (IN P.T.T. SW.) 28V
D5*, D7*, D8*
P.T.T.(1) SWITCH

RADIO OUT
PRESS TO TALK

SW.2B: CHANNEL 1, CHANNEL 2, CHANNEL 3, CHANNEL 4, COMMON

SW.2A: LED 1, LED 2, LED 3, LED 4 → CHANNEL 1, CHANNEL 2, CHANNEL 3, CHANNEL 4

R8 3.3KΩ 1/2W
R9* 27KΩ 1/2W
R12* 100KΩ 1/2W
Q1* 2N5320
Q2* 2N5320

TWISTED PAIR

D3*, D4*
K1(E) K1(E) K1(E)
L1 28V
R6* 220Ω 1W

32VDC COMMON 1
32V DC 2
P.A. KEY 3 — D6 1N4004
P.A. +20 DBM TRAINLINE 4, 5 — TWISTED PAIR
SPEAKER MUTE 6, 7 — R3 27.Ω.1W

I.C. 0 DBM TRAINLINE 8, 9 — TWISTED PAIR — K2(E) 8/12, K2(E) 7/11
72V HI FROM "AAR" BASE 10
I.C.-OUTPUT-HI 11
I.C. SPEAKER-HI 12

LOUDSPEAKER

R4* 3.3Ω 1/2W; R5 50Ω 1/2W
R2* 220Ω 1W; R1* 220Ω 1W
D2, D1

C1 .1µF ,400V

CONNECTOR "J13" (15 PINS), FOR CONTINUATION SEE DWG C2154512SE.

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT/DATE
R.L.	B	DWG. COMPONENTS IDENT. UPDATED.	J.C.M. 89-05-16
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-03-30

Conçu / Designed: D. MOQUIN 88-12-07
Dessiné / Drawn: J.C. MAROIS 88-12-07
Vérifié / Checked: D. MOQUIN 89-01-24
Contrôle de poids / Weight Control
Ing de sécurité / Safety engineer
Chargé de projet / Project engineer: R. L'ECUYER 89-01-24
Ens. suivant / Next assy

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: —
Feuille / Sheet: 1 de / of 1
Titre / Title: ENGINEMAN CONTROL HEAD (CTC)
Numéro du dessin / Drawing number: 2P-521-0112/3
A2
Révision: B

IMP. DIR. G1

2P-521-0112/4

COMPRESSOR LINE AMP.
MIDWEST B/M 961-7144

1	2	3	4	5	6	7	8	9	10	11	12	13	14
32V DC	INPUT GROUND	INPUT HI	TI INPUT HI	TI OUTPUT HI TO LINE AMP.	TI 600 INPUT- OUTPUT	TI C.T.	TI 600 INPUT- OUTPUT	COMPRESSOR OUTPUT	LINE AMP. INPUT	COMPRESSOR DEFEAT	32V FOR LINE AMP	LINE AMP. OUTPUT	32V DC COMMON

CONNECTOR J15 (12 PINS)

1 32V DC COMMON
2 32V DC
D1 1N4004
D2 1N4004
3 P.A. KEY TRAINLINE
4
5
P.A. +20 DBM TRAINLINE
TWISTED PAIRS
8
9
I.C. +20 DBM TRAINLINE
11 I.C.-SPKR-HI

P.T.T.(2) SWITCH
TWISTED PAIR
MIC.
C2 .1µF, 400V
SW1(C) P.A. OFF I.C.
LOUDSPEAKER

2P-521-0112/1

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	B	DWG. COMPONENTS IDENT. UPDATED.	J.C.M. 89-05-16
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-03-07

Conçu Designed	R. L'ECUYER	Date 88-09-14
Dessiné Drawn	J.C. MAROIS	Date 88-09-14
Vérifié Checked	R. L'ECUYER	Date 88-09-19
Contrôle de poids Weight Control		Date
Ing. de sécurité Safety engineer		Date
Chargé de projet Project engineer	R. L'ECUYER	Date 88-09-19
Ens. suivant Next assy		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle Scale —
Feuille Sheet 1 de of 1

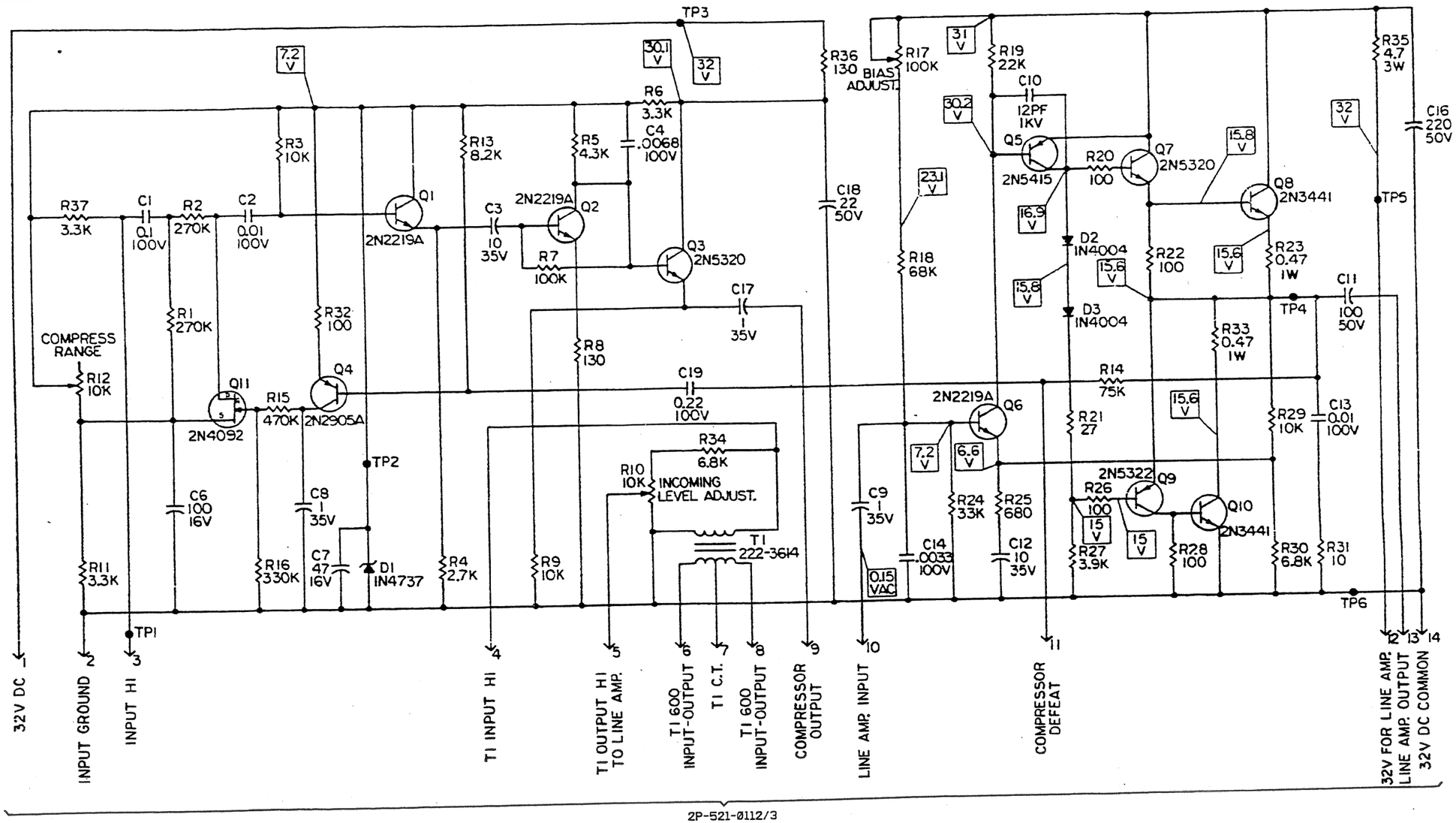
Titre Title: CONDUCTOR CONTROL HEAD (CTC - BTC)

Numéro du dessin Drawing number: 2P-521-0112/4

Format: A2
Révision Revision: B

IMP. DIR. G1

2P-521-0112/5



2P-521-0112/3
2P-521-0112/4

NOTE:
-FOR USE WITH TRANSISTORIZED MIC CARTRIDGES ONLY.

NOTES:

1- ALL CAPACITOR VALUES IN MICROFARADS EXCEPT AS NOTED.
2- ALL RESISTOR VALUES IN OHMS, 1/2 W, EXCEPT AS NOTED.
3- INDICATED VOLTAGES MEASURED ON OPERATING AMPLIFIER WITH INPUT OF -10dbm TO PRODUCE +10dbm AVERAGE +20dbm PEAK. OUTPUT NOTE COMPRESSION BEGINS AT -7dbm.
4- ALL VOLTAGES AC & DC MEASURED TO DC COMMON.
5- [ ] VOLTAGE READINGS DC EXCEPT AS NOTED.

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT/DATE
RL	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-16

Concu Designed	R. L'ECUYER	88-09-14
Dessiné Drawn	J.C. MAROIS	88-09-14
Vérifié Checked	R. L'ECUYER	88-09-19
Contrôle de poids Weight Control		
Ing. de sécurité Safety engineer		
Chargé de projet Project engineer	R. L'ECUYER	88-09-19
Ens. suivant Next assy		

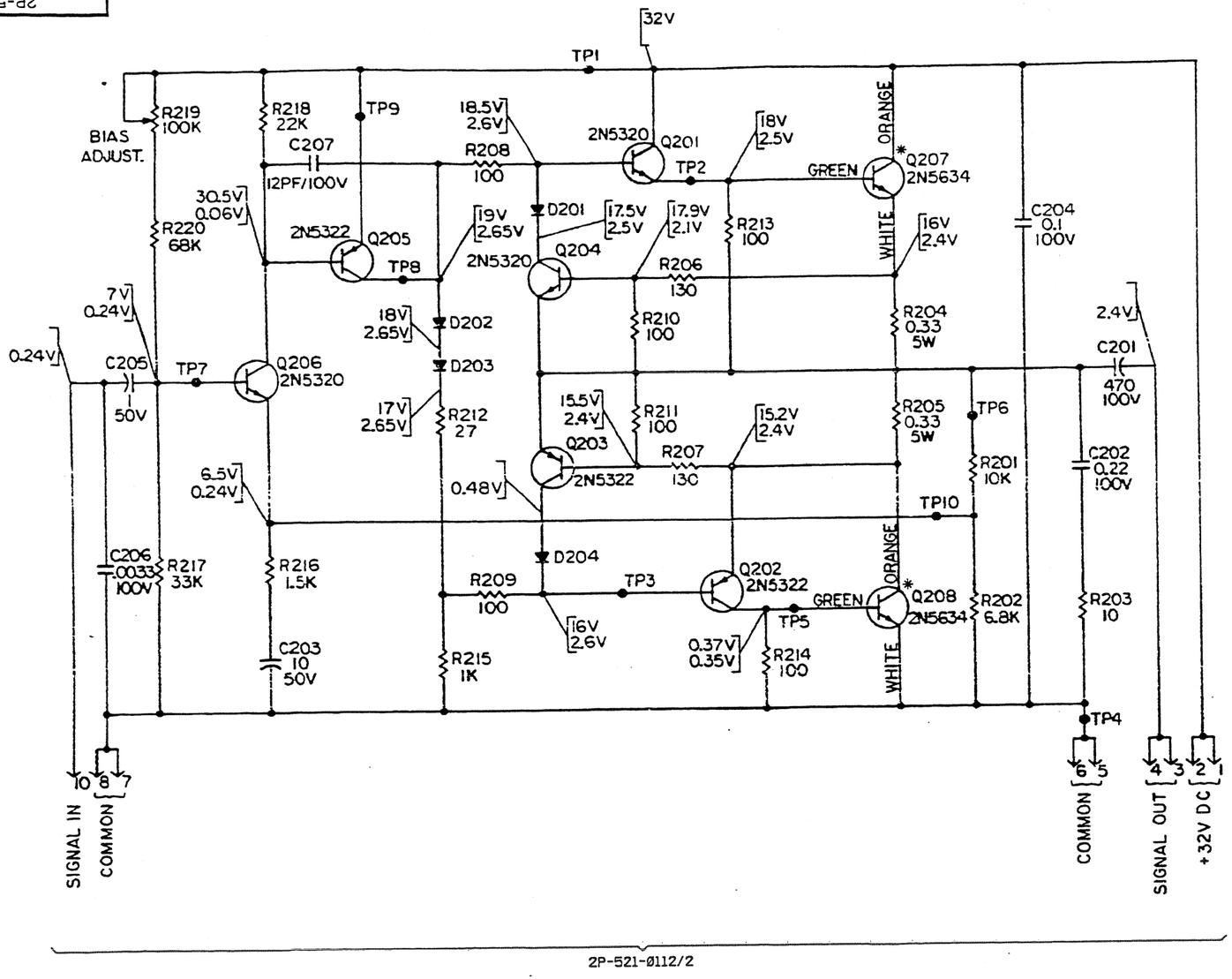
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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle Scale	Titre / Title	Révision
—	COMPRESSOR LINE AMPLIFIER PCB. (CTC - BTC)	
Feuille Sheet 1 de 1	Numéro du dessin / Drawing number: 2P-521-0112/5	A2 — A

IMP. DIR. 61

2P-521-0112/6



2P-521-0112/2

NOTES:

1 - ALL DIODES ARE 1N4004
2 - UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1/2 W AND RATED IN OHMS AND CAPACITORS IN MICROFARADS.
3 - *MOUNTED OFF BOARD.
4 - ALL VOLTAGES AC & DC MEASURED TO DC COMMON.
5 - ALL VOLTAGES ARE NOMINAL AND MAY VARY DEPENDING ON THE TYPE OF METER USED.
6 - DC / AC VOLTAGES READINGS
7 - ALL VOLTAGES ARE ±10%
8 - VOLTAGES MEASURED IN HOUSE UTILIZING POWER AMPLIFIER TEST FIXTURE USING A GR1808 AC MILLIVOLTMETERS AND A SIMPSON 260 VOM
INPUT: 0.24V@1K CYCLES
LOAD: 4Ω

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
RL	A	DWG. UPDATED.	J.C.M. 89-05-17

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

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Conçu / Designed	R. L'ECUYER	88-09-14
Dessiné / Drawn	J.C. MAROIS	88-09-14
Vérifié / Checked	R. L'ECUYER	88-09-19
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-19
Ens. suivant / Next assy		

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: —
Feuille / Sheet: 1 de / of 1

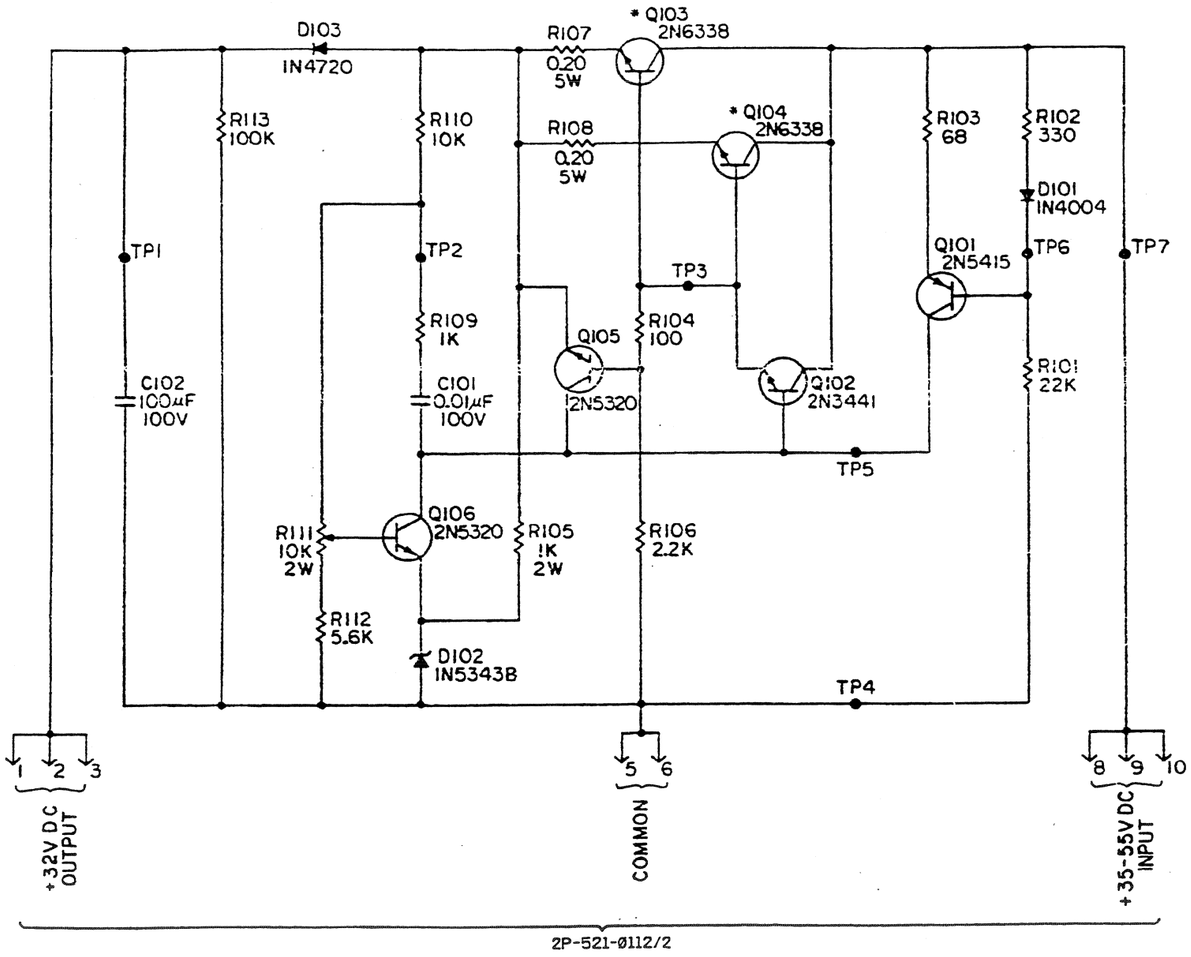
Titre / Title: POWER AMPLIFIER BOARD (CTC - BTC)

Numéro du dessin / Drawing number: 2P-521-0112/6

Révision / Revision: A2 A

IMP. DIR. G1

2P-521-0112/7



NOTES:

1- * COMPONENTS MOUNTED OFF BOARD.

2- ALL RESISTOR VALUES IN OHMS, 1/2 W, UNLESS OTHERWISE NOTED.

3- ALL VOLTAGES ARE ±10%.

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	DWG. UPDATED.	J.C.M. 89-05-17

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Conçu / Designed	R. L'ECUYER	88-09-14
Dessiné / Drawn	J.C. MAROIS	88-09-14
Vérifié / Checked	R. L'ECUYER	88-09-19
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-19
Ens. suivant / Next assy		

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de 1

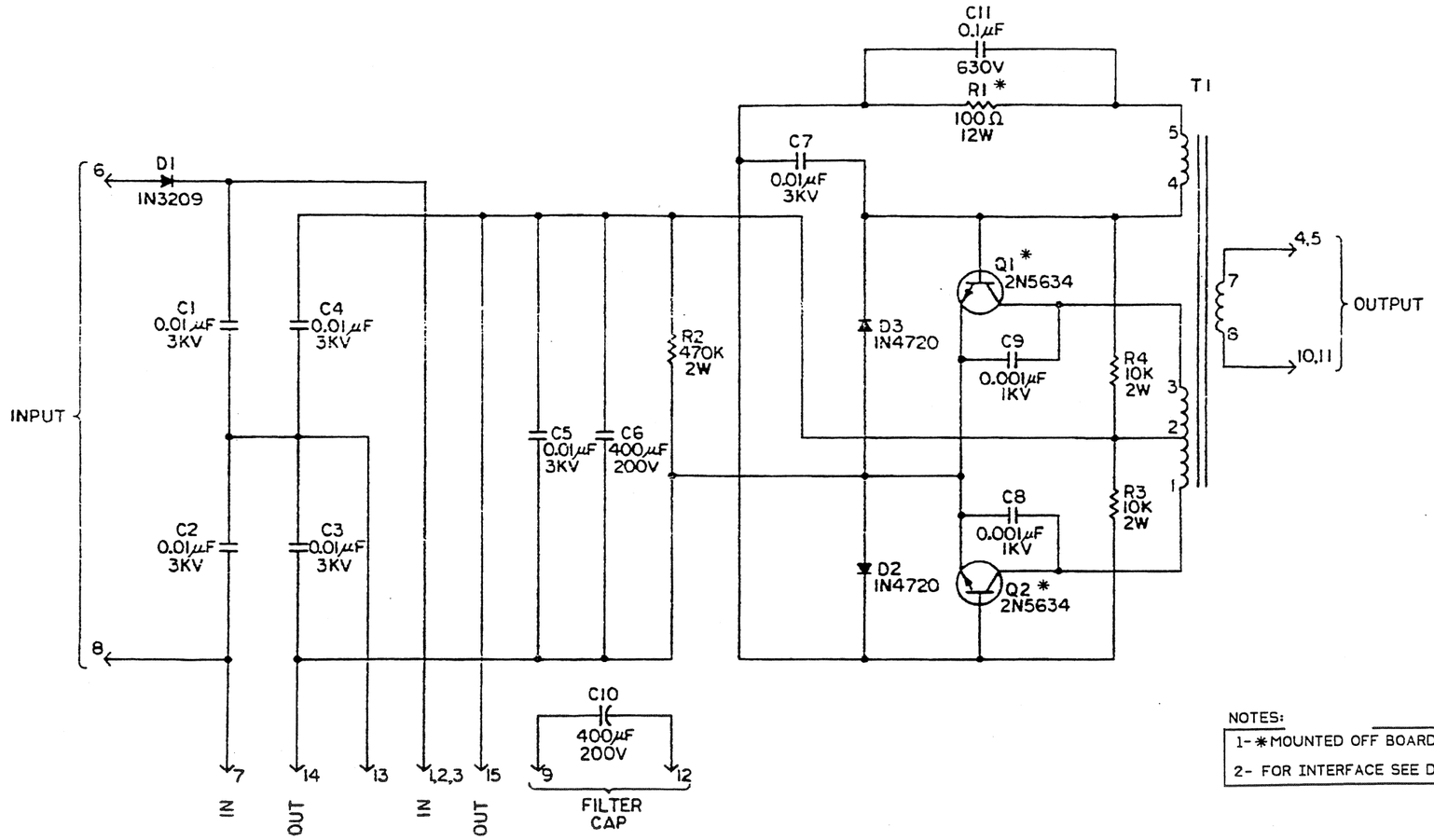
Titre / Title: REGULATOR (CTC - BTC)

Numéro du dessin / Drawing number: 2P-521-0112/7

A2 | Révision / Revision: A

IMP. DIR. G1

2P-521-0112/8



NOTES:

1- * MOUNTED OFF BOARD.

2- FOR INTERFACE SEE DWG: 2P-521-0112/2

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	DWG. UPDATED.	J.C.M. 89-05-17

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		Date
Conçu / Designed	R. L'ECUYER	88-09-14
Dessiné / Drawn	J.C. MAROIS	88-09-14
Vérifié / Checked	R. L'ECUYER	88-09-19
Contrôle de poids / Weight Control		
Ing de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-19
Ens. suivant / Next assy		

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: –
Feuille / Sheet: 1 de 1

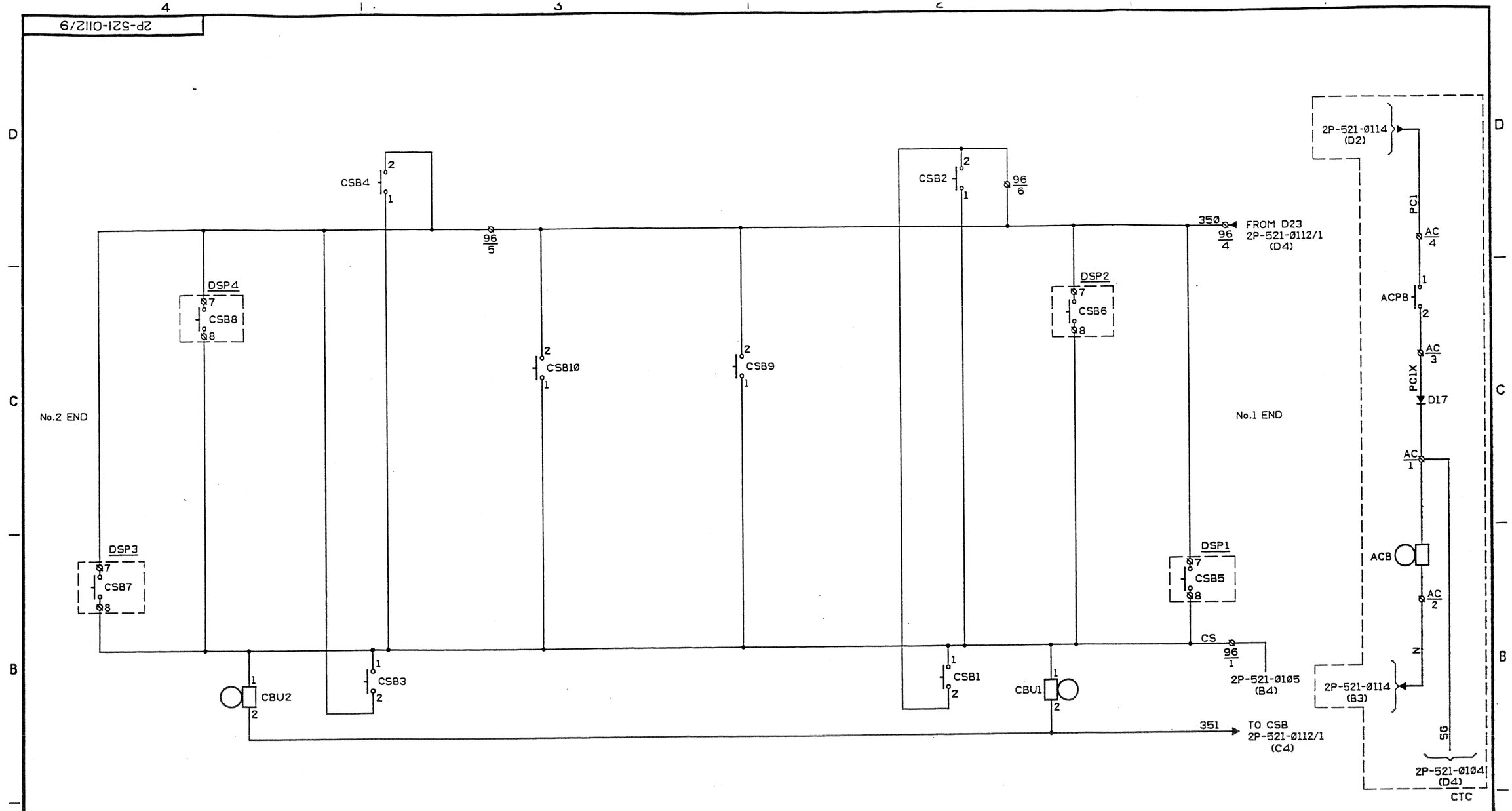
Titre / Title: DC TO AC INVERTER (CTC - BTC)

Numéro du dessin / Drawing number: 2P-521-0112/8

A2

Révision / Revision: A

IMP. DIR. G1



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	E	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-17
R.L.	D	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-10
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-01-25
R.L.	B	SEE B.D.R. #028-228	J.C.M. 88-12-05
R.L.	A	SEE B.D.R. #028-114	M.H. 88-10-26

		Date
Conçu / Designed	R. L'ECUYER	88.09.07
Dessiné / Drawn	J.C. MAROIS	88.09.07
Vérifié / Checked	D. MOQUIN	88-10-27
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-10-27
Ens. suivant / Next assy		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: CONDUCTOR BELL CIRCUIT (CTC – BTC)

Numéro du dessin / Drawing number: 2P-521-0112/9

Format: A2

Révision / Revision: E

IMP. DIR. G1

2P-521-0113/1

CUT-OUT
D22A
ZS2
D2
E2
D42A
THRU H2
A2
362
D22
D42
2P-521-0105
(C3)

DOOR CLOSING CONTROL (LEFT) D2 → 2P-521-0113/4 (D4)
DOOR OPENING CONTROL (LEFT) D4 → 2P-521-0113/4 (D4)
362 → 2P-521-0113/2 (D4)
PCB- 8+ → 2P-521-0113/2 (D4)

CLOSE OPEN
DCS4
1 4 A B 2 3
28 OPEN 26
DOLB DOLA
25 CLOSE 23
DCLB DCLA
11
3NO 10 4NC 9 3NC KS4
34 35
36
33
443D 7
D
LS2
N
8
441 441A
443B 19 442A 18
443C
31 21
443B 42
443E 20
2P-521-0113/3
(D3)
444A
446
13
TO CIRCUITRY
NOT INSTALLED
AND NOT USED
14 DOR4 11
34 DOR4 31
17
31
444
2P-521-0113/4
(C2)
23 20
DCR4 21 22
DOR4 24 21
441A 29
4NO KS4
441B 30
441B 43
5 TRDR
141 1A
6
3
31 NMR 2,4 34
DSR2
DSR4
63
443A 39
2P-521-0113/7
(D4)
DLO LOCAL OPEN
LOCAL CLOSE DLC
27
442 22
2P-521-0113/3
(D3)
24
443 18
NMR 2,4 21 24
A1 DOR4 A2 1
A1 DCR4 A2 1
363
2P-521-0113/2
(B4)

NOTE:
1- CIRCUIT SHOWN DE-ENERGIZED WITH DOOR CLOSED AND LOCKED.

LIMIT SWITCH POSITION:
LS2 → OPENING
DOOR CLOSED
DOOR OPENED

TERMINAL LEGEND:
- ⊘ DOOR CONTR. REL. PNL. (DRP)
- □ DOOR CONTR. SW. (DSP4)
- DOOR OPERATOR 2L (DO4)
- ⊠ INPUT/OUTPUT
- ◇ INTER-CONNECTION

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-07
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-06

Concu / Designed: D. MOQUIN 88-09-27
Dessine / Drawn: J.C. MAROIS 88-09-27
Verifie / Checked: D. MOQUIN 88-10-12
Controle de poids / Weight Control
Ing. de securite / Safety engineer
Charge de projet / Project engineer: R. L'ECUYER 88-10-26
Ens. suivant / Next assy

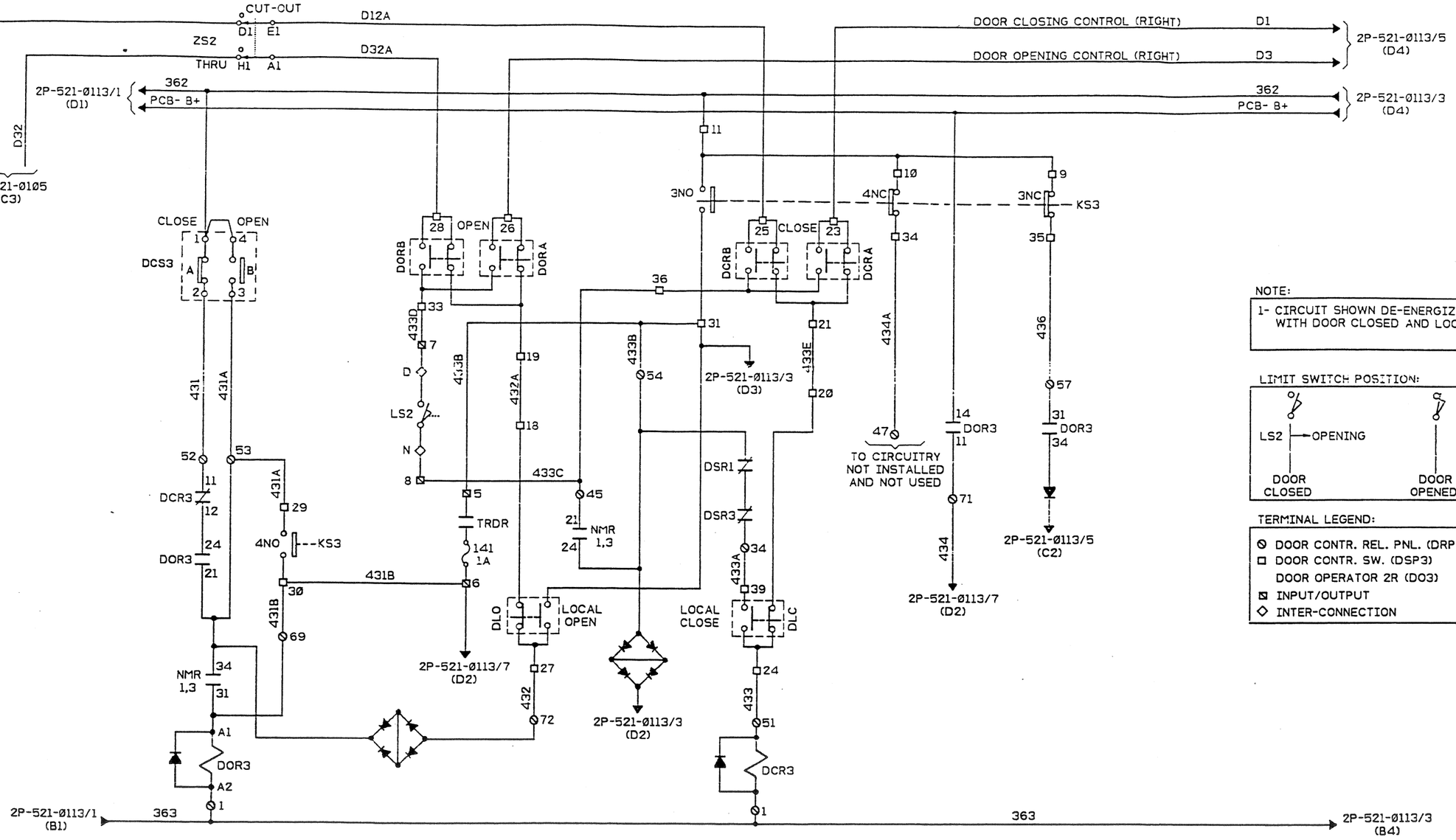
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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: —
Feuille / Sheet: 1 de 1
Titre / Title: 2L DOOR CONTROL (CTC-BTC)
Numero du dessin / Drawing number: 2P-521-0113/1
A2
Revision: B

IMP. DIR. A2

2P-521-0113/2



NOTE:

1- CIRCUIT SHOWN DE-ENERGIZED WITH DOOR CLOSED AND LOCKED.

LIMIT SWITCH POSITION:

TERMINAL LEGEND:

- ⊘ DOOR CONTR. REL. PNL. (DRP)
- □ DOOR CONTR. SW. (DSP3)
- DOOR OPERATOR 2R (DO3)
- ⊠ INPUT/OUTPUT
- ◇ INTER-CONNECTION

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-07
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-07

Conçu / Designed	D. MOQUIN 88-09-27
Dessiné / Drawn	J.C. MAROIS 88-09-27
Vérifié / Checked	D. MOQUIN 88-10-12
Contrôle de poids / Weight Control	
Ing. de sécurité / Safety engineer	
Chargé de projet / Project engineer	R. L'ECUYER 88-10-26
Ens. suivant / Next assy	

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Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: 2R DOOR CONTROL (CTC-BTC)

Numéro du dessin / Drawing number: 2P-521-0113/2

Format: A2

Révision: B

IMP. DIR. A2

2P-521-0113/3

362 PCB- B+ ← 2P-521-0113/2 (D1)

362 PCB- B+ → 2P-521-0113/4 (D4)

DUS 1 2 — 407

DOOR #2R DOOR #2L

2P-521-0113/1 (C2) — 21

2P-521-0113/2 (C2) — 21

2P-521-0113/4 (C3) — 21

2P-521-0113/5 (C3)

DOOR #1L DOOR #1R

DSR4 64 — DSR3 32 — DSR2 61 — DSR1 37

2P-521-0113/1 (B3) — 2P-521-0113/2 (B3) — 2P-521-0113/4 (B3) — 2P-521-0113/5 (B3)

LS1A — LS1A — LS1A — LS1A

17 — 405 — 17 — 405A — 17

16 — 401 — 16 — 401A — 16

PSS4 LS1B — PSS3 LS1B — PSS2 LS1B — PSS1 LS1B

400E — 400B — 406E — 406B

140 1A

TRDR — TRDR — TRDR — TRDR

400D — 400A — 406D — 406A

MLS4 B — MLS3 B — MLS2 B — MLS1 B

400C — 400 — 406C — 406

No2 END — No1 END

60/2 DUC2 — D22 — DU — TB — 61/2 DUC1 — D21

2P-521-0104 (B3) — 2P-521-0105 (D4) — 2P-521-0105 (D4)

KS4 1NC — KS3 1NC — KS2 1NC — KS1 1NC

KS4 2NO — KS3 2NO — KS2 2NO — KS1 2NC

12 — 96/20 — 70 — 33 — 59 — 38 — 12 — 96/18 — 363

DSR4 — DSR3 — DSR2 — DSR1

2P-521-0113/2 (B1) — 363 — 2P-521-0113/4 (B4)

2P-521-0114 (B1) — RP 92 — RP 94

DC11 — DC21

37 KS4 2NC 38 — 37 KS3 2NC 38 — 38 KS2 2NC 37 — 38 KS1 2NC 37

DC1 CONDUCTOR'S DOOR CLOSE LIGHT (LEFT)

DC2 CONDUCTOR'S DOOR CLOSE LIGHT (RIGHT)

DOOR #2L □ DSP4 — DOOR #2R □ DSP3 — DOOR #1L □ DSP2 — DOOR #1R □ DSP1

LT (4) (3) — LT (2) (1)

402 — 402A

600Ω 3W

DLB GREEN DLA — LDCL GREEN

DC12 DC22 → 2P-521-0105 (C2)

2P-521-0105 (C2)

NOTE:
CIRCUIT SHOWN DE-ENERGIZED WITH ALL DOORS CLOSED AND LOCKED.

LIMIT SW. POSITION:

	DOOR CLOSED	DOOR OPENED
LS1A	OPENING	
LS1B	OPENING	
PSS1 TO PSS4	CLOSING	

TERMINAL LEGEND:
- ⊘ DOOR CONTR. REL. PNL (DRP)
- □ CONTR. SW. PNL OF THE DOOR OPERATOR OF THE DOOR:
- ▨ INPUT/OUTPUT
- ◇ INTER-CONNECTION

MBTA Ø30 - CARS 504-554:
MBTA Ø28 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

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Conçu / Designed	D. MOQUIN	88-09-27	
Dessiné / Drawn	J.C. MAROIS	88-09-27	
Vérifié / Checked	D. MOQUIN	88-10-12	
Contrôle de poids / Weight Control			
Ing. de sécurité / Safety engineer			
Chargé de projet / Project engineer	R. L'ECUYER	88-10-27	
Ens. suivant / Next assy			

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de / of 1

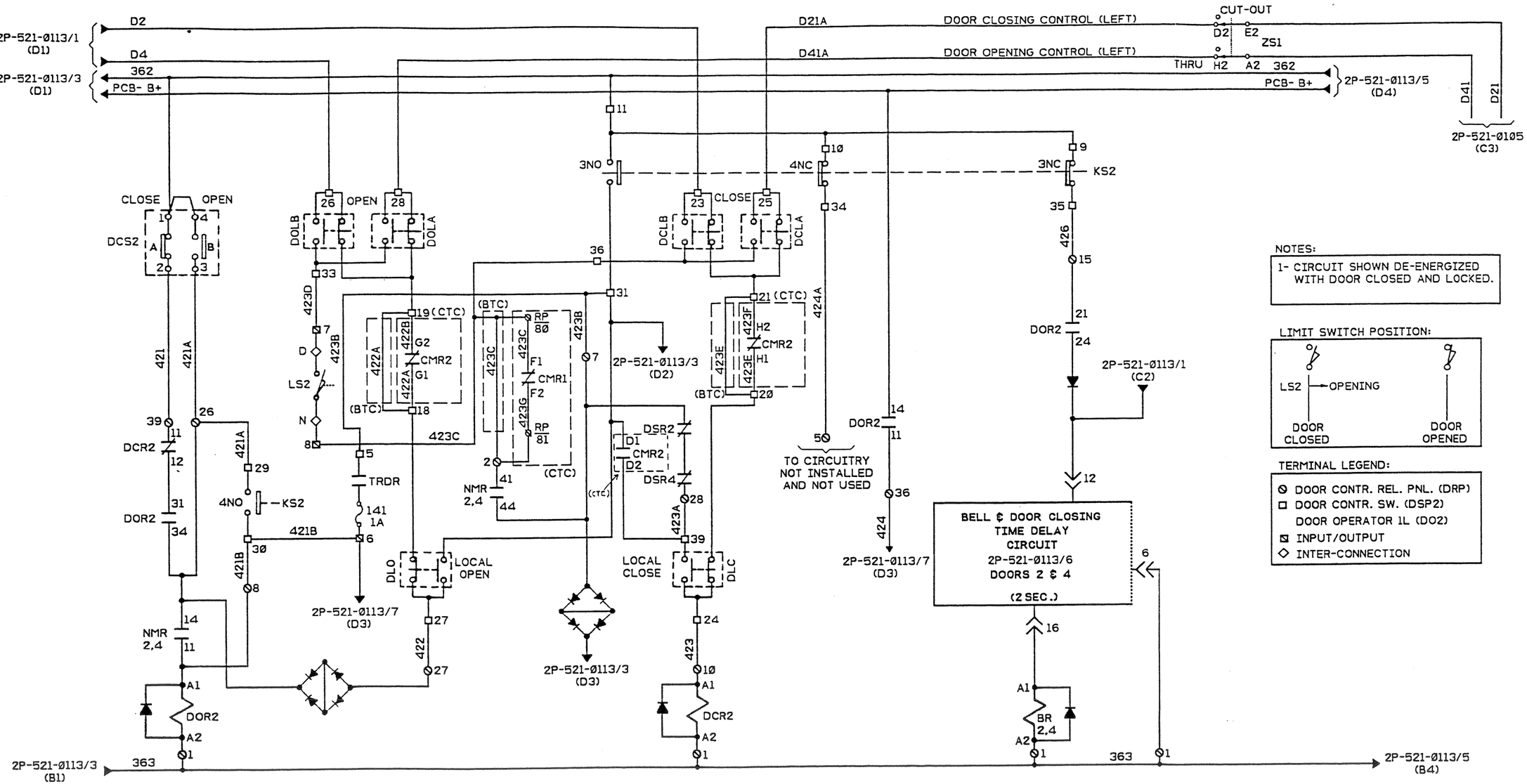
Titre / Title: SIDE DOOR INDICATING LIGHTS (CTC-BTC) & BODY END DOOR UNLATCH CIRCUIT

Numéro du dessin / Drawing number: 2P-521-0113/3

A2 | Révision / Revision: C

C.P.	REV.	DESCRIPTION	INIT./DATE
R.L.	C	SEE B.D.R FORM UNDER THIS DWG. NO.	J.C.M. 89-05-15
R.L.	B	SEE B.D.R FORM UNDER THIS DWG. NO.	J.C.M. 89-04-07
R.L.	A	SEE B.D.R FORM UNDER THIS DWG. NO.	J.C.M. 89-01-26

2P-521-0113/4



NOTES:

1- CIRCUIT SHOWN DE-ENERGIZED WITH DOOR CLOSED AND LOCKED.

LIMIT SWITCH POSITION:

TERMINAL LEGEND:

- ⊘ DOOR CONTR. REL. PNL. (DRP)
- □ DOOR CONTR. SW. (DSP2)
- DOOR OPERATOR 1L (DO2)
- ⊠ INPUT/OUTPUT
- ◇ INTER-CONNECTION

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 90-08-09
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-07
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-02

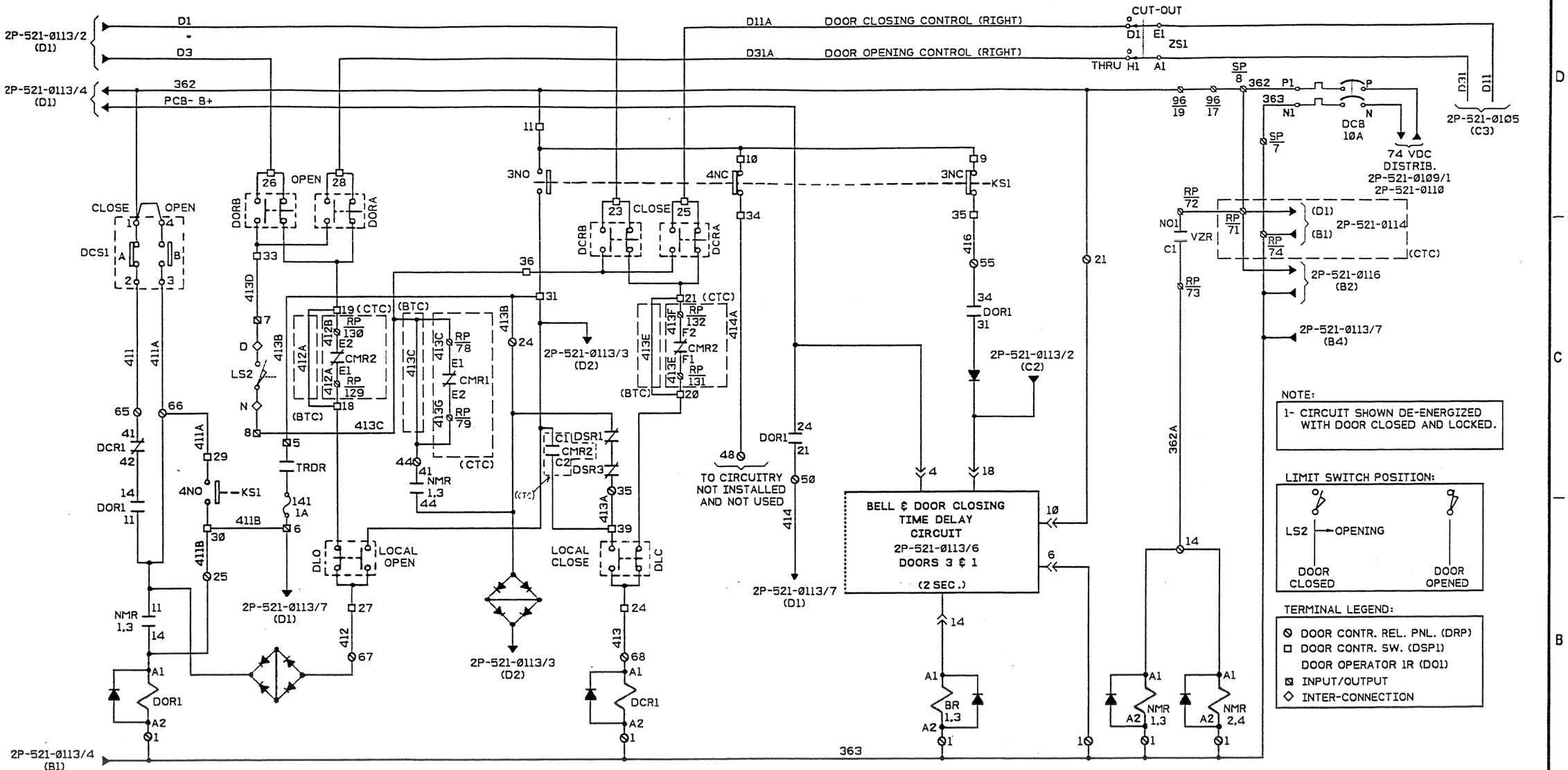
Conçu / Designed	D. MOQUIN	88-09-27
Dessiné / Drawn	J.C. MAROIS	88-09-27
Vérifié / Checked	D. MOQUIN	88-10-12
Contrôle de qualité / Warrant Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-10-27
Ens. suivant / Next assy		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: –
Feuille / Sheet: 1 de / of 1
Titre / Title: 1L DOOR CONTROL (CTC-BTC)
Numéro du dessin / Drawing number: 2P-521-0113/4
A2
Révision / Revision: C

IMP. DIR. A2



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 90-08-09
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-07
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-03

		Date
Conçu / Designed	D. MOQUIN	88-09-27
Dessiné / Drawn	J.C. MAROIS	88-09-27
Vérifié / Checked	D. MOQUIN	88-10-12
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-10-27
Ens. suivant / Next assy		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

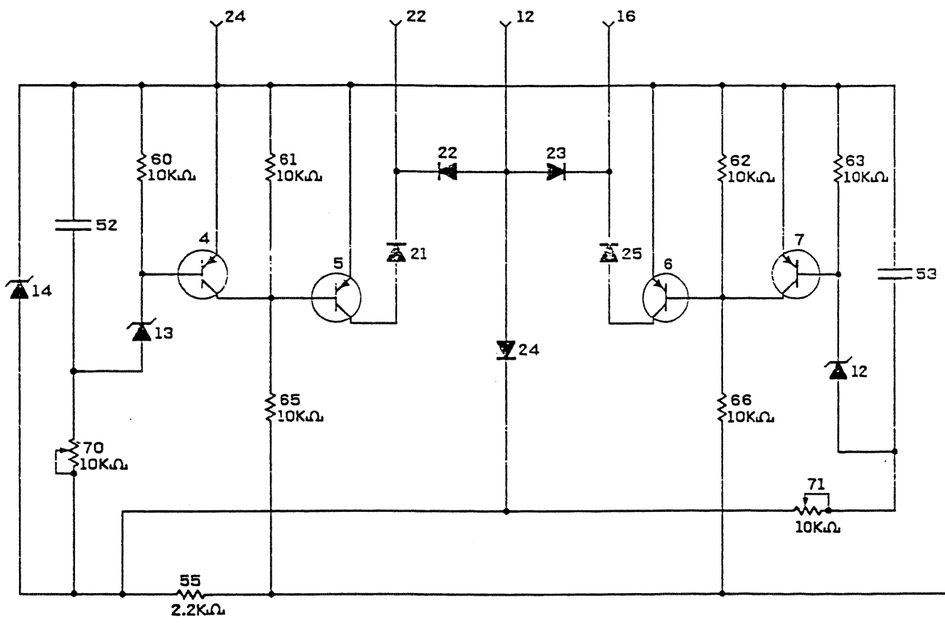
Échelle / Scale: —
Feuille / Sheet: 1 de / of 1

Titre / Title: 1R DOOR CONTROL & NO-MOTION SIGNALS (CTC-BTC)

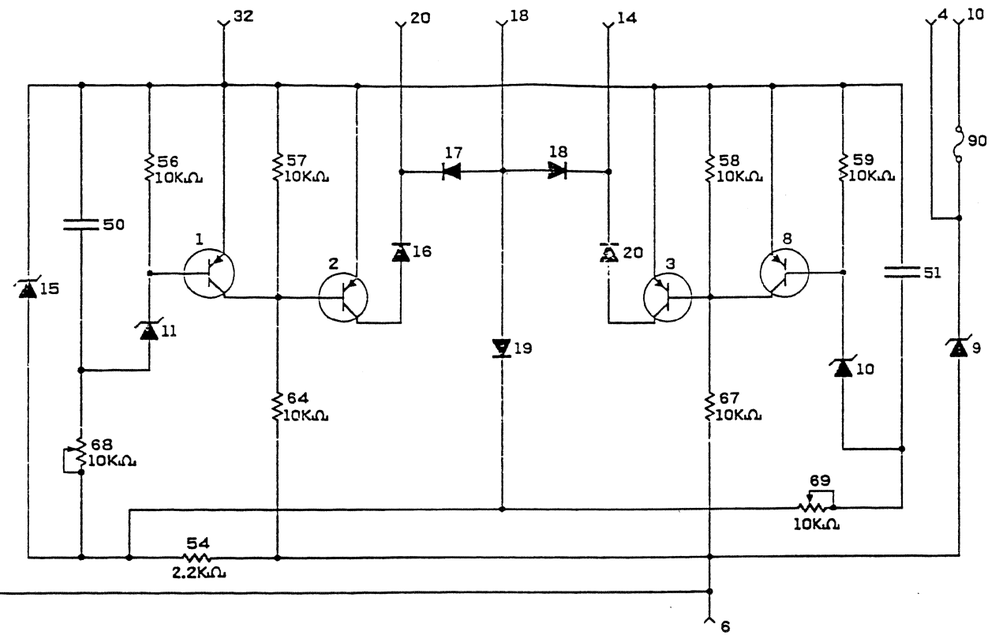
Numéro du dessin / Drawing number: 2P-521-0113/5 | A2 | Revision: C

IMP. DIR. A2

2P-521-0113/4



2P-521-0113/5



2P-521-0113/4
2P-521-0113/5

NOTE:

1- THIS CIRCUIT IS NOT APPLICABLE FOR THE TIME DELAY CIRCUITRY ONLY.

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-07

Conçu / Designed	D. MOQUIN	88-09-27
Dessiné / Drawn	J.C. MAROIS	88-09-27
Vérifié / Checked	D. MOQUIN	88-10-27
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-10-27
Ens. surveillé / Next assy		

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Mass Transit Division
Boucherville / La Pocatière, Quebec, Canada

Echelle / Scale: —
Feuille / Sheet: 1 de / of 1

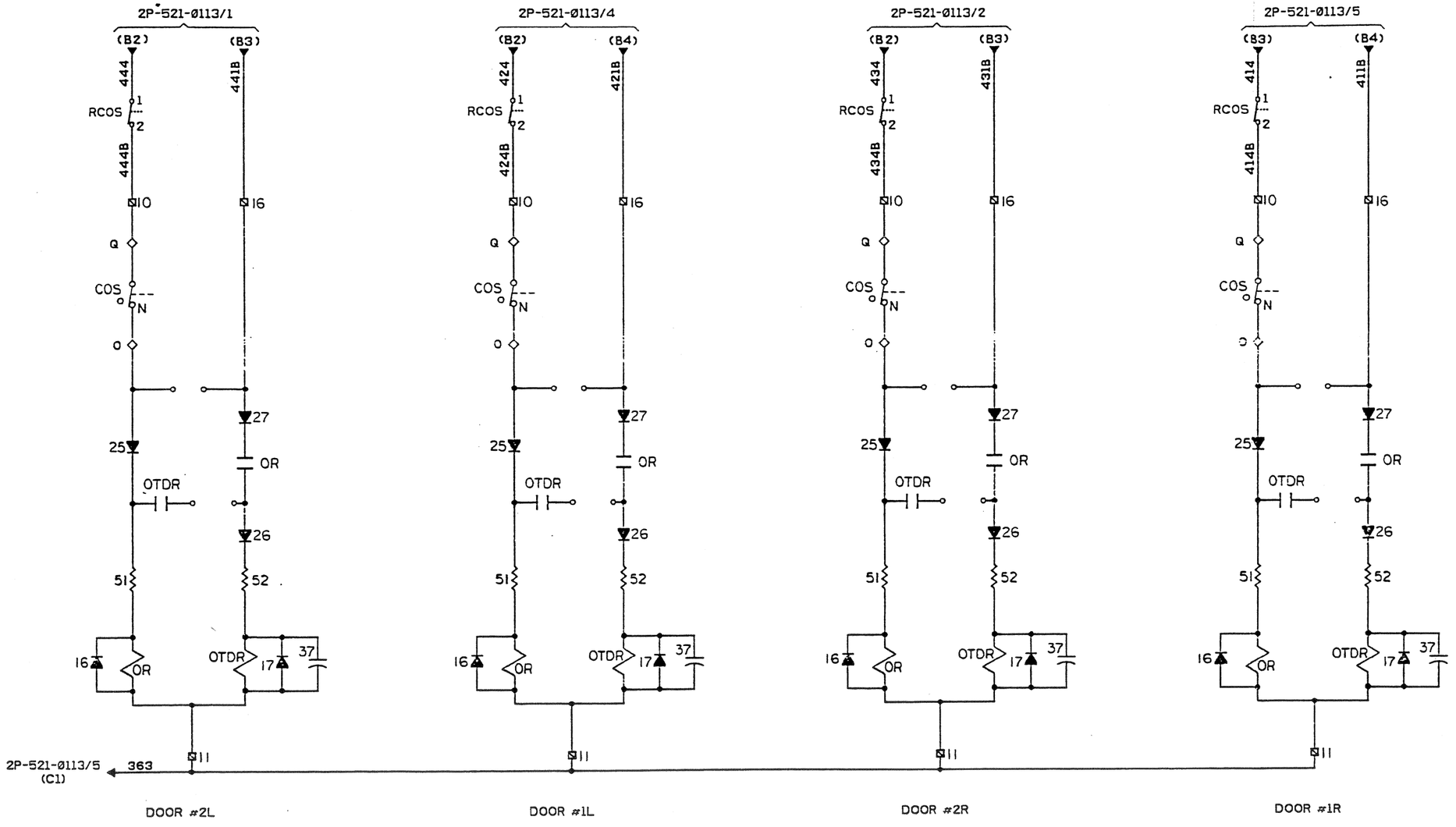
Titre / Title: BELL & DOOR CLOSING TIME DELAY CIRCUIT (CTC-BTC)

Numéro du dessin / Drawing number: 2P-521-0113/6

Format: A2

Révision / Revision: A

IMP. DIR. A2



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-07
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-03

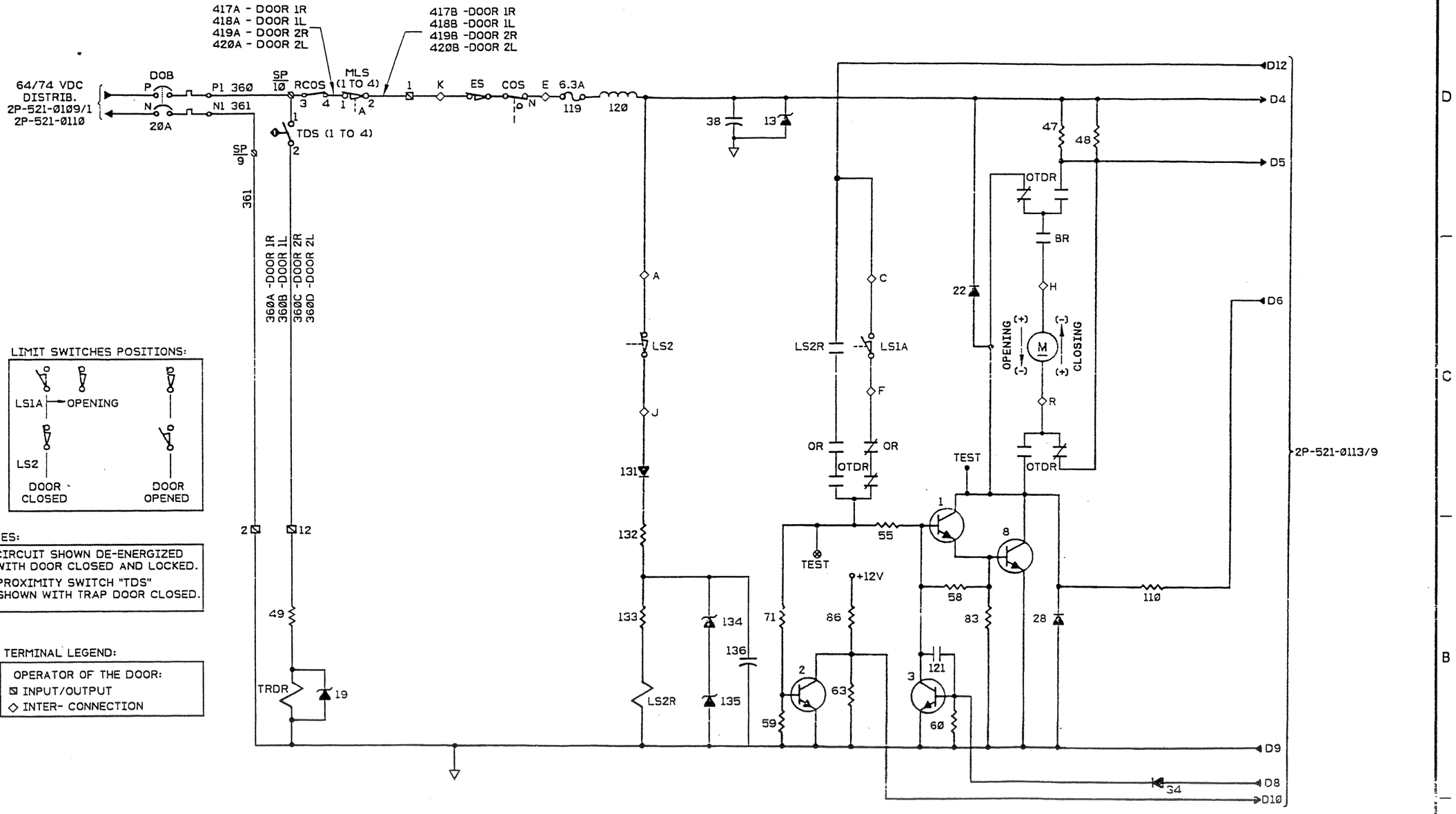
Conçu / Designed	D. MOQUIN	Date 88-09-27
Dessiné / Drawn	J.C. MAROIS	Date 88-09-27
Vérifié / Checked	D. MOQUIN	Date 88-10-12
Contrôle de poids / Weight Control		Date
Ing. de sécurité / Safety engineer		Date
Chargé de projet / Project engineer	R. L'ECUYER	Date 88-10-26
Ens. suivant / Next assy		

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Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de / of 1
Titre / Title: DOOR OPERATOR OPENING CONTROL SIGNAL (CTC-BTC)
Numéro du dessin / Drawing number: 2P-521-0113/7
Format: A2
Révision / Revision: B

IMP. DIR. A2



LIMIT SWITCHES POSITIONS:

NOTES:

1- CIRCUIT SHOWN DE-ENERGIZED WITH DOOR CLOSED AND LOCKED.
2- PROXIMITY SWITCH "TDS" SHOWN WITH TRAP DOOR CLOSED.

TERMINAL LEGEND:

OPERATOR OF THE DOOR:
⧅ INPUT/OUTPUT
◇ INTER- CONNECTION

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE	C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-03				

Conçu / Designed	D. MOQUIN	88-09-27
Dessiné / Drawn	J.C. MAROIS	88-09-27
Vérifié / Checked	D. MOQUIN	88-10-27
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-10-27
Ens. suivant / Next assy		

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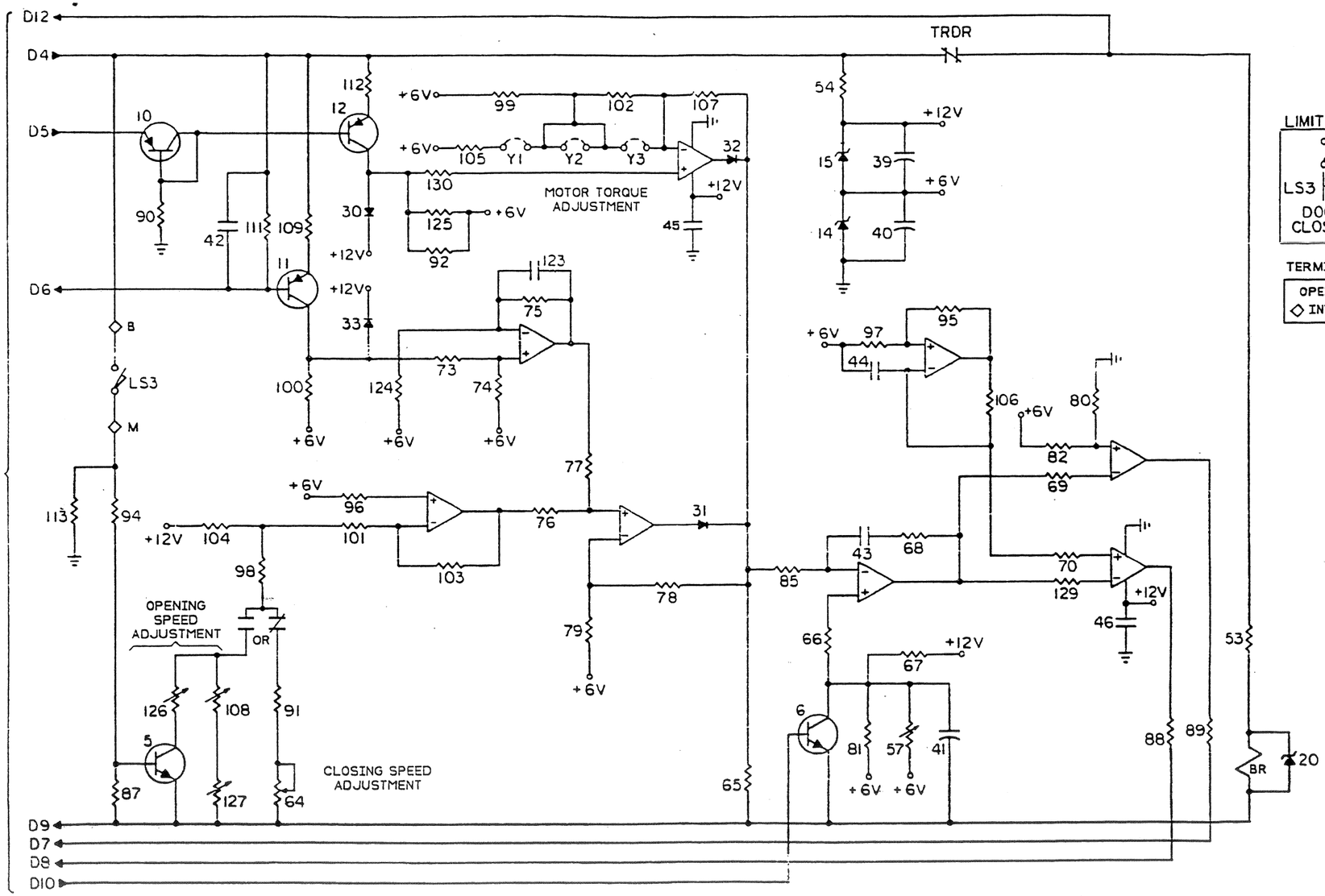
Bombardier Inc.
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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de / of 1

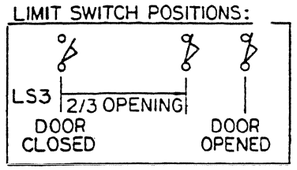
Titre / Title: DOOR OPERATOR TYPICAL FOR EACH DOOR (CTC-BTC)

Numéro du dessin / Drawing number: 2P-521-0113/8 | A2 | Révision / Revision: A

IMP. DIR. A2



LIMIT SWITCH POSITIONS:



TERMINAL LEGEND:

OPERATOR OF THE DOOR:
◇ INTER-CONNECTION

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-21

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Conçu / Designed	D. MOQUIN	88-09-27
Dessiné / Drawn	J.C. MAROIS	88-09-27
Vérifié / Checked	D. MOQUIN	88-10-27
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-10-27
Ens. suivant / Next assy		

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de / of

Titre / Title: DOOR OPERATOR
TYPICAL FOR EACH DOOR (CTC-BTC)

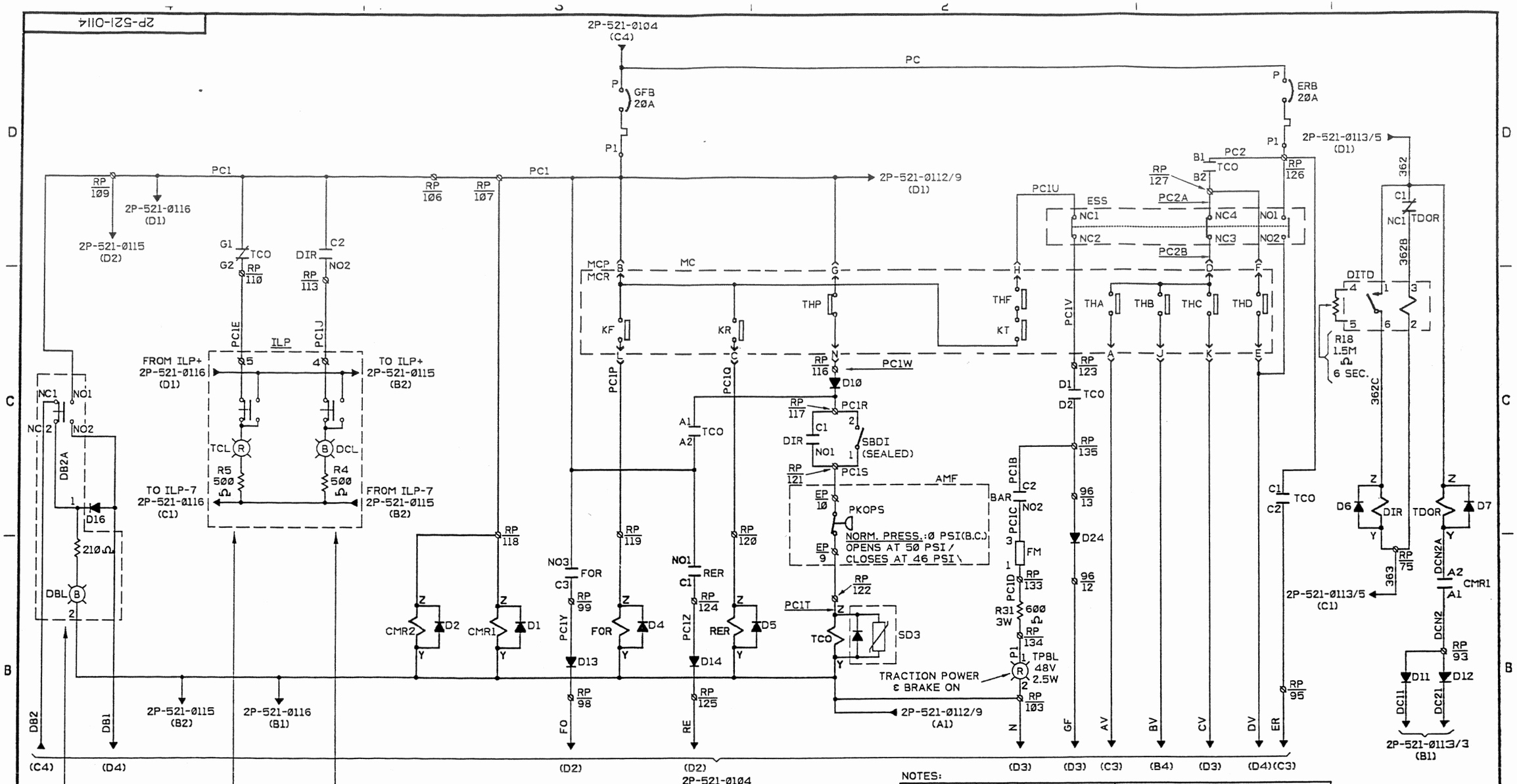
Numéro au dessin / Drawing number: 2P-521-0113/9

A2

Révision / Revision: A

IMP. DIR. A2

2P-521-0114



MC (TTH) (THROTTLE HANDLE)

⊸ ⊸	IDLE	1	2	3	4	5	6	7	8
THF	0	C	C	C	C	C	C	C	C
THP	C	0	0	0	0	0	0	0	0
THD	0	0	0	0	0	C	C	0	0
THC	0	0	0	C	C	C	C	C	C
THB	0	0	0	0	0	C	C	C	C
THA	0	0	C	0	C	0	C	0	C

MC (TKS) (REVERSER KEY)

⊸ ⊸	KO	FORWARD	NEUTRAL	REVERSE
KT	0	C	0	C
KR	0	0	0	C
KF	0	C	0	0

NOTES:

1 - CONTROL SWITCHES ARE AS FOLLOW:
TTH - IDLE POSITION
TKS - KO POSITION
ESS - RUN

2 - CIRCUIT SHOWN DE-ENERGIZED

3 - PRESSURE SWITCHES REPRESENTED IN NORMAL PRESSURE SITUATION ; NORMAL PRESSURE MEANS PRESSURE UNDER BRAKE RELEASED CONDITION

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453 (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L	E	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 91-01-07
R.L.	D	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-19
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-28
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-01-24
R.L.	A	SEE B.D.R. #028-142	J.C.M. 88-11-02

Conçu / Designed	D. MOQUIN	88-09-26
Dessiné / Drawn	J.C. MAROIS	88-09-26
Vérifié / Checked	D. MOQUIN	88-10-13
Contrôle de poids / Weight Control		Date
Ing. de sécurité / Safety engineer		Date
Chargé de projet / Project engineer	R. L'ECUYER	88-10-19
Ens. suivant / Next assy		

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Échelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: TRACTION CONTROL (CTC)

Numéro du dessin / Drawing number: 2P-521-0114

A2 | Révision: E

IMP. DIR. A2

2P-521-0115

2P-521-0109/1
2P-521-0110

P
BIB 10A
P1
SP 2
332

NORMAL PRESSURE
Ø PSI (B.C.)
DROP-OUT: 15 PSI \
PICK-UP: 20 PSI /

BCPS1
CNC CNO NC NO
332A
BCPS2
CNC CNO NC NO
332B
HBS 3 1 4 2

332D
RP 63
332C
RP 61
RP 64
D18
D19
RP 62
RP 65
Z D8 BAR Y
CTC

OFL
BALL 1 A 2
168/1 168/2
BRLL 1 G 2
168/3 168/4
EPBLL 1 W 2
168/5 168/6
OFR
BARL 1 A 2
167/1 167/2
BRRL 1 G 2
167/3 167/4
EPBRL 1 W 2
167/5 167/6

333A
96/15
332E
96/14

BIC
1 (FROM IND)
11 (B+)
R1
SCR1
R3
C1
V1
R2
C2
2 (TO IND)
12 (B-)
(RSC COM)
(ASC COM)
(ASC NC)
(RSC NO)

333
6W-75V

N1
SP 1
RP 66
RP 67
RP 68
BR
BA
(C2) 2P-521-0105
(B4)
BIB 10A
N
2P-521-0109/1
2P-521-0110

2P-521-0104
(C2)
EP2
EP1
8/195
FROM ILP+
2P-521-0113/3
(C2)
TO ILP-7
2P-521-0113/3
(B2)
EP3
2P-521-0104
(C2)

BIC
5 AMV+
AMV
AMV-
6
BIC
9 RMV+
RMV
10 RMV-

2P-521-0114
(D4)
PC1
RP 108
C1
EPR
NO1
PC1X
RP 105
EP 1
AR AR CEPR
RR
EP 7
EP 11
CEPR
PS-53
EP 3

BAR C1 NC1
BAR C1 NO1
PC1H RP 112
PC1G RP 111
PC1F
ILP
ILP 2 3 1
BRL BAL EPL
G A W
R2 500Ω R3 500Ω R1 500Ω
7 ILP 8
Z
2P-521-0114
(B4)
BRAKE RELEASE
BRAKE APPLIED
EP BRAKE
(CTC)

AMF
EP 12
900
P1

NORM. PRESS: 110 PSI (B.P)
CLOSES AT 20 PSI \
OPENS AT 24 PSI /
CEPS

NORM. PRESS: Ø PSI
PORT NO.35 OF A-1 CHARGING CUT-OFF PILOT VALVE.
CLOSES AT 50 PSI /
OPENS AT 46 PSI \
PS-35

NORM. PRESS: Ø PSI
PORT NO.53 OF A-1 CHARGING CUT-OFF PILOT VALVE.
OPENS AT 50 PSI /
CLOSES AT 46 PSI \
PS-53

TCS
A R
SEE NOTE 1

CERR
Z CERR Y
Z CEPR Y
Z AR Y
Y EMV Z
Y RR Z
Z D9 Y EPR
RP 91
RP 90
EP 13
EP 5
EB
EP3
N1
EPB 10A
N
2P-521-0109/1
2P-521-0104
(C3)

P
EPB 10A
2P-521-0109/1

MBTA Ø30 - CARS 504-554:
MBTA Ø28 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

NOTES:
1 - TCS-A CLOSES WHEN BRAKES ARE APPLIED & TCS-R CLOSES WHEN BRAKES ARE RELEASED } UNTIL $P_{ER} = P_{BP}$
2 - PRESSURE SWITCHES REPRESENTED IN NORMAL PRESSURE SITUATION; NORMAL PRESSURE MEANS PRESSURE UNDER BRAKE RELEASED CONDITION.
3 - CIRCUIT SHOWN DE-ENERGIZED.

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-12
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-28
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-01-19

Designed	D. MOQUIN	88-09-19
Drawn	J.C. MAROIS	88-09-19
Checked	D. MOQUIN	88-10-13
Weight Control		
Safety engineer		
Project engineer	R. L'ECUYER	88-10-19
Ens. suivant		
Next assy		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle: —
Scale
Feuille: 1 de 1
Sheet

Titre / Title: AIR BRAKE CONTROL (CTC - BTC)
Numéro du dessin / Drawing number: 2P-521-0115
A2
Révision: C

IMP. DIR. A2

2P-521-0116

2P-521-0109/1
2P-521-0110

P
WSB
10A
P1
330
SP 12
J1
F
B
J
H
SP 19

WHEEL SLIDE CONTROL UNIT (WSC)

J2 F A B J D H
J1 C D
J2 C V N R W U
J1 M A

331
335A
335
336
336A
330C
330B
337A
337
338
338A
334

4L
3L
2L
1L

WHT
SS1
132
JB8
BK
SS2
DMV2
DMV1
331B
331A
SEE NOTE 2
NO2
NO1
EDCO
C2
C1
131
JB9

4R
AXLE #4
TRUCK NO.2 END
3R
AXLE #3
2R
AXLE #2
TRUCK NO.1 END
1R
AXLE #1

NORMAL PRESSURE: 110 PSI (B.P.)
OPENS AT 25 PSI \
CLOSES AT 27.7 PSI /

SP 11
330A
330
WSCPS
C1
NC1

NORMAL PRESSURE: 0 PSI (B.S.)
OPENS AT 5 PSI /
CLOSES AT 2.3 PSI \

N1
WSB
10A
N
2P-521-0109/1
2P-521-0110

NOTES:
1- ESPS CLOSES ON EMERGENCY BRAKES APPLICATION.
2- JUMPER WIRE IS TO BE REMOVED BY CUSTOMER AT HIS DISCRETION. REMOVAL WILL CAUSE NULLIFICATION OF WHEEL SLIDE PROTECTION DURING EMERGENCY SITUATIONS (I.E. BRAKE PIPE PRESSURE BELOW 25 PSI.).
3- PRESSURE SWITCHES REPRESENTED IN NORMAL PRESSURE SITUATION; WHICH MEANS PRESSURE UNDER BRAKES RELEASED CONDITION.
4- CIRCUIT SHOWN DE-ENERGIZED.

2P-521-0114
NOTE 1
PC1
AMF
EP 2
LSB
TSB
ESPS
30sec.
EP 6
EP 4
NORM. PRESS: 0 PSI
(PORT NO.9 OF A-1 CHARGING
CUT-OFF PILOT VALVE)
CLOSES AT 50 PSI /
OPENS AT 46 PSI \
PC1I
PC1K
RP 96
RP 114
D20
DBR1
A1
N
RP 97
P
A2
PC1L
C4
FOR
NO4
RP 115
SD1
SMVL
PC1M
SMVR
SD2
SBDN
(SEALED)
RP 69
RP 104
RP 128
VZR
D3
Z
Y
363
362
ILP
+
6
7
TO ILP+
2P-521-0114
WSL
W
WSAB
R6
500Ω
FROM ILP-7
2P-521-0114
SC
ES
WS
2P-521-0114
(B4) (D3)
(D2)
2P-521-0104
2P-521-0113/5
(C1)
(CTC)

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	D	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-15
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-28
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-01-24
R.L.	A	SEE B.D.R. #028-141	J.C.M. 88-10-02

		Date
Conçu / Designed	R. L'ECUYER	88-09-16
Dessiné / Drawn	J.C. MAROIS	88-09-16
Vérifié / Checked	D. MOQUIN	88-09-26
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-26
Ent. suivante / Next assy		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: -
Feuille / Sheet: 1 de / of 1
Titre / Title: SANDING & WHEEL SLIDE CONTROL (CTC-BTC)
Numéro du dessin / Drawing number: 2P-521-0116
A2
Révision / Revision: D

IMP. DIR. A2

2P-521-0117/1

SHELF

2P-521-0109/1

P

TCB 10A

P1

BLK

TR1

WHT

TWISTED PAIR

604

606

RP 86

C2

NO2 606A

JB11

3

1 606

2 605

FOR

C1

605A NO1

RP 84

604

605

TWISTED PAIR

TR2

TCP

CSBP (SEALED)

B32

AMPLIFIER N383426

CRL

CAB SIGNAL TEST P.C.B. N451570-3502

R5 37.5Ω

U75 DECODING UNIT P.C.B. N451463-0501

APPROACH

120 DECODING UNIT P.C.B. N451463-0302

APPROACH MEDIUM

180 DECODING UNIT P.C.B. N451463-0301

CLEAR

50

601

TCP

ADU

OBTL

601D

CMR1

B1

B2

OBTS

HI LO

SCSW

F2 F1

COL

B32

643

630

629

631

DIMMED VOLTAGE

MR

NOTE1

52

50

48

25

27

5A

S-1

10

80

53

51

49

21

23

5A

VZ

DECK-2

C1

OFF

LO HI

TS

SPS

11

10

9

8

C2

DECK-1

100HZ

HOLD

RUN

OFF

C1

DECK-1

LTS

TO ACK BUTTON SEE DRAWING 2P-521-0117/3

C1 C4 C2 IC3 L

C1 C4 C2 IC3 R

C1 C4 C2 IC3 A

NORMAL PRESSURE:
Ø PSI (B.C.)
PICK-UP AT 40 PSI
DROP-OUT AT 35 PSI

601B

611B

601

611

53

N32

POWER SUPPLY N451033-2901

TWISTED PAIR

600A

610A

32V

TCC

600

610

N1

TCB

N

2P-521-0109/1

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

NOTE:

1- MR IS A DC POLAR STICK RELAY
180= 3Hz, 120= 2Hz, 75= 1.25Hz

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 91-01-07
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-15
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-01-26

Conçu / Designed	D. MOQUIN	88-09-15
Dessiné / Drawn	N. MAKI	88-09-15
Vérifié / Checked	D. MOQUIN	88-09-19
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-19
Ens. suivant / Next assy		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de / of 1

Titre / Title: POWER SUPPLY, AMPLIFIER, CAB SIGNAL PCB, & DEC. UNITS - ATC (CTC)

Numéro du dessin / Drawing number: 2P-521-0117/1

A2

Révision / Revision: C

IMP. DIR. A2

2P-521-0117/2

SHELF

B32

TCP

SEE NOTE 1

SS5

JB9 10 131 11 12

606E 606F

SHAPER LIMITER P.C.B. N451570-2401

SPEED GOVERNOR P.C.B. N451653-3201

(90 MPH) (45 MPH) (30 MPH) (20 MPH)(70 MPH)

WWS 30" 32" 31"

DUAL FLASHER P.C.B. N451653-0601

R6 100Ω

ADU

S

658 657

A R L

OSR LRK

VZ VZ PS LRK OSR PS LRK OSR

+B -B +A -A

VZ OSR PS

ADU SCSW OUT IN

632 633 634

CSBP (SEALED) N.O. N.C.

N32

TCP

NORM. PRESS.: 140 PSI
(PORT NO. 10 OF P-2-A VALVE)
OPEN AT 60 PSI
CLOSE AT 66 PSI

PBPS C1 NO1

ADU VZ OSKL AS

DIMMED VOLTAGE

D1 D2 CMR1 640 640A

N32 AA C32

NORM.PRESSURE:
Ø PSI (B.C.)
PICK-UP AT 40
DROP-OUT AT 35

SPS

PBMV

PS VZ PS LRK OSR PS

C2 NO2

MBTA Ø3Ø - CARS 5Ø4-554:
MBTA Ø28 - CARS 398-453: CTC (EVEN NUMBERS ØNLY)

NOTE:
1- SS5 IS LOCATED ON TRUCK NO.1 END, AXLE NO.2, WHEEL 2R.

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE	C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
				R.L.	D	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 91-01-07
				R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-19
				R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-01
				R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-01-26

		Date
Conçu / Designed	D. MOQUIN	88-09-15
Dessiné / Drawn	N. MAKI	88-09-15
Vérifié / Checked	D. MOQUIN	88-09-19
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-19
Enfil suivant / Next assy		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: SHAPER LIMITER, SPEED GOVERNOR & FLASHER PCB - ATC (CTC)

Numéro du dessin / Drawing number: 2P-521-0117/2

A2

Révision / Revision: D

IMP. DIR. A2

2P-521-0117/3

SHELF

TCP

B32

SEE NOTE 1

SS5

J89

10 606E 8 3

131

11 606F 9 18

12 10

SHAPER LIMITER P.C.B. N451570-2401

1 17 14 8 6 4

SPEED GOVERNOR P.C.B. N451653-3201

3C E 2

U S (85 MPH) (45 MPH) (30 MPH) (20 MPH)(65 MPH)

16 12 11 14 10 1A 6

WWS

30" 32" 31"

L B K 4 8

A R L

DUAL FLASHER P.C.B. N451653-0601

7,H 9,K 1 3 16 18

OSR LRK

ADU

S

m 658 33

k 657 32

+B -B +A -A VZ

+B -B +A -A OSR

+B -B +A -A PS

SCSW OUT IN

O 632 77

P 633 78

Q 634 79

N32

TCP

50 601

NORM. PRESS.: 140 PSI
(PORT NO. 10 OF P-2-A VALVE)
OPEN AT 60 PSI
CLOSE AT 66 PSI

PBPS

C1 NO1

87 601A

ADU

85 637 T VZ

10 20

81 636 S OSKL

DIMMED VOLTAGE

R6 100Ω

82 635 R AS C32

N32

80 640 Z

83 638 W AA

NORM.PRESSURE:
0 PSI (B.C.)
PICK-UP AT 40
DROP-OUT AT 35

SPS

VZ VZ PS LRK OSR PS LRK OSR

84 601C 8 7

88 602

PBMV

1 2

89 612

VZ PS LRK OSR PS

86 611A

C2 NO2

53 611

MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

NOTE:

1- SS5 IS LOCATED ON TRUCK NO.1 END, AXLE NO.2, WHEEL 2R.

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	D	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-15
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-19
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-01
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-01-26

		Date
Designed / Conçu	D. MOQUIN	88-09-15
Drawn / Dessiné	N. MAKI	88-09-15
Checked / Vérifié	D. MOQUIN	88-09-19
Weight Control / Contrôle de poids		
Safety engineer / Ing. de sécurité		
Project engineer / Chargé de projet	R. L'ECUYER	88-09-19
Next assy / Ens. suivant		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: –
Feuille / Sheet: 1 de 1

Titre / Title: SHAPER LIMITER, SPEED GOVERNOR & FLASHER PCB - ATC (CTC)

Numéro du dessin / Drawing number: 2P-521-0117/3

A2

Révision / Revision: D

IMP. DIR. A2

2P-521-0117/4

SHELF

ADU

TCP

B32

85 MPH

45 MPH

30 MPH

20 MPH

DIMMED VOLTAGE

623 54

622 56

621 58

624 60

620 30

627 55

626 57

625 59

628 61

N32

RP 2 LP 2

RP

LP

SP

8 18 D1

A R L

ACK BUTTON LOCATED ON TEST PANEL IN RACK

TO PIN 3 DECK 1 OF LOCAL TEST SW. 2P-521-0117/2

1N4007

RP 13 R3 200Ω 3

LP 12 R3 200Ω 2

SP 19 R4 200Ω 9

+B +A -B -A

R1 1KΩ 0.6 Sec.

C1 1000µF

LRK

641 68 a

642 69 b

644 62 d

645 63 e

646 70 f

647 71 g

648 64 h

649 72 j

655 66 u

656 67 v

650 73 n

651 65 p

652 74 r

60SP 44 w

61SP 45 x

62SP 46 y

63SP 47 z

653 75 s

654 76 t

AS SCSW

3B 4B 1B 2B

2A 1A

B32

3A 4A

1D 2D

3B 4B

3D 4D

N32

1E 2E

2B 1B

1C 2C

3C 4C

MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

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Conçu / Designed	D. MOQUIN	88-09-15	Date
Dessiné / Drawn	N. MAKI	88-09-15	Date
Vérifié / Checked	D. MOQUIN	88-09-21	Date
Contrôle de poids / Weight Control			Date
Ing. de sécurité / Safety engineer			Date
Chargé de projet / Project engineer	R. L'ECUYER	88-09-21	Date
Ens. suivant / Next assy			

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —

Feuille / Sheet: 1 de 1

Titre / Title: CAB SIGNAL INDICATOR CIRCUIT - ATC (CTC)

Numéro du dessin / Drawing number: 2P-521-0117/4

A2

Révision: B

IMP. DIR. A2

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-15
	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-01-26

2P-521-0118/1

2P-521-0109/1

BBP2

P

ACB 10A

P1

700 C1 | 700AA C2 CMR1

NORMAL PRESSURE= 0 PSI (B.C.)
PICK-UP AT 30 PSI /
DROP-OUT AT 7 PSI \

APS

C2 NC2

700A

700

700AA

2P-521-0104

(C3) (C4) (D2) (D3)

AV BV CV DV

ACBX

A F G J K

ALERTER CONTROL BOX (ACBX)
2P-521-0118/2

B R H P

700C

RP 89

D15 1N4003

RP 88

C1 NO1

700B

1 VMV 2

710

TL 5

N1

ACB 10A

N

BBN2

2P-521-0109/1

700AA

ALARM BOX (AB)
2P-521-0118/3

AB 3 5 4

702

ARS

NO1 NO2 2 W 1

700D

701

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 91-01-07
R.L.	A	SEE B.D.R. #028-227	J.C.M. 88-12-05

Conçu / Designed	D. MOQUIN	88-08-08
Dessiné / Drawn	N. MAKI	88-08-08
Vérifié / Checked	D. MOQUIN	88-09-21
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-21
Ens. suivant / Next assy		

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Échelle / Scale: —
Feuille / Sheet: 1 de 1

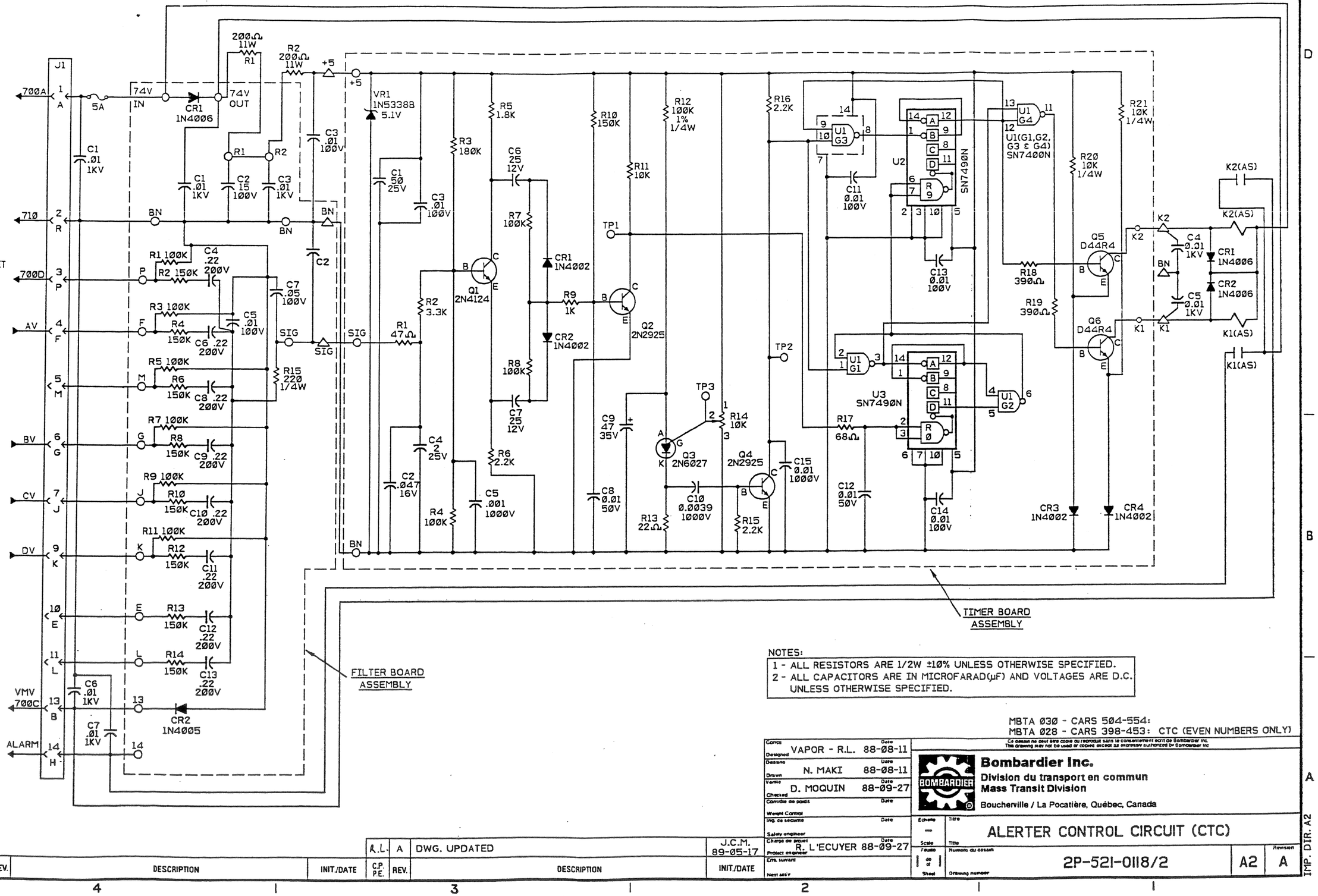
Titre / Title: ALERTNESS SYSTEM (CTC)

Numéro du dessin / Drawing number: 2P-521-0118/1

A2 | Révision / Revision: B

IMP. DIR. A2

2P-521-0118/2



NOTES:

1 - ALL RESISTORS ARE 1/2W ±10% UNLESS OTHERWISE SPECIFIED.
2 - ALL CAPACITORS ARE IN MICROFARAD(μF) AND VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.

MBTA Ø3Ø - CARS 5Ø4-554:
MBTA Ø28 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
A.L.	A	DWG. UPDATED	J.C.M. 89-05-17

Designed	VAPOR - R.L.	88-08-11
Drawn	N. MAKI	88-08-11
Checked	D. MOQUIN	88-09-27
Project engineer	R. L'ECUYER	88-09-27

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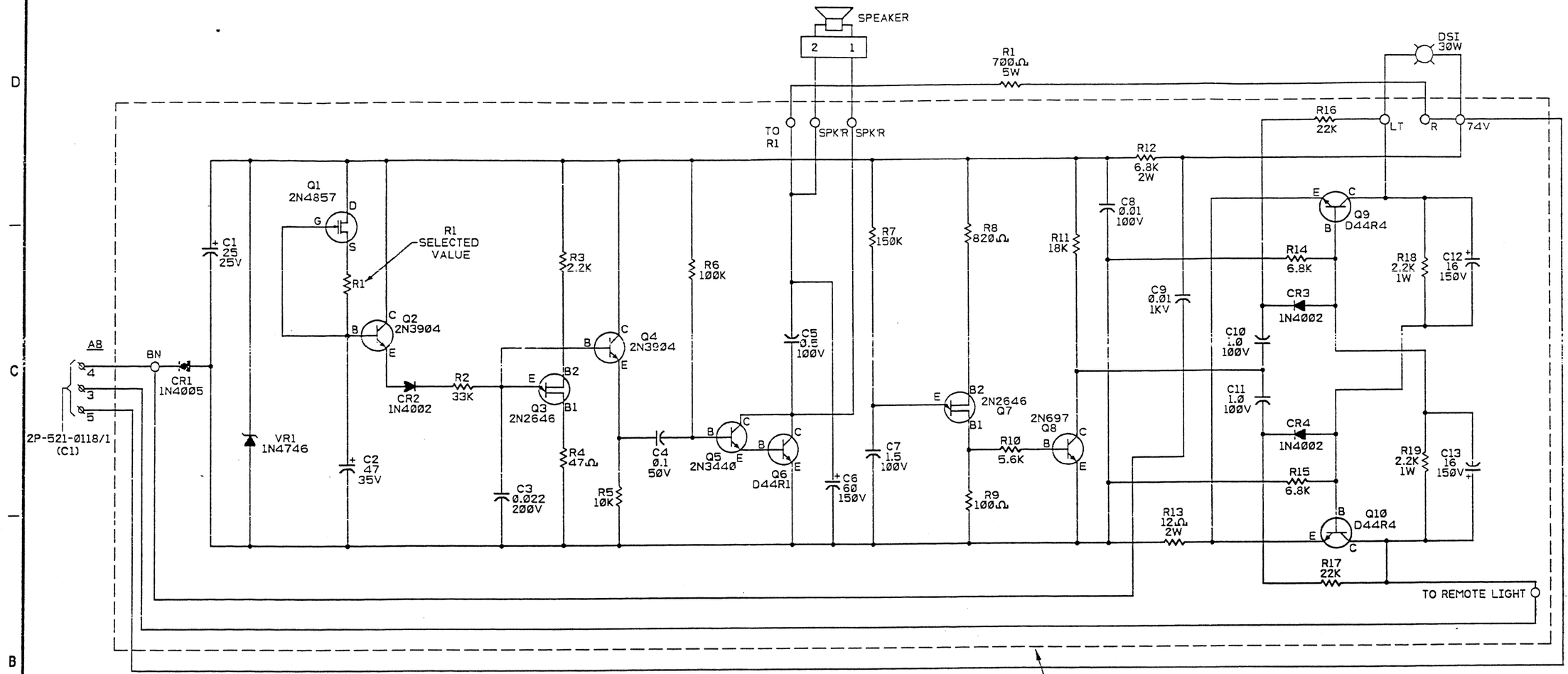
Bombardier Inc.
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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Scale: —
Sheet: 1 de 1

ALERTER CONTROL CIRCUIT (CTC)

Drawing number: 2P-521-0118/2 | A2 | Revision: A

IMP. DIR. A2



NOTES:

1 - ALL RESISTORS ARE 1/2W ±10% UNLESS OTHERWISE SPECIFIED.
2 - ALL CAPACITORS ARE IN MICROFARAD(μF) AND VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	DWG. UPDATED.	J.C.M. 89-05-17

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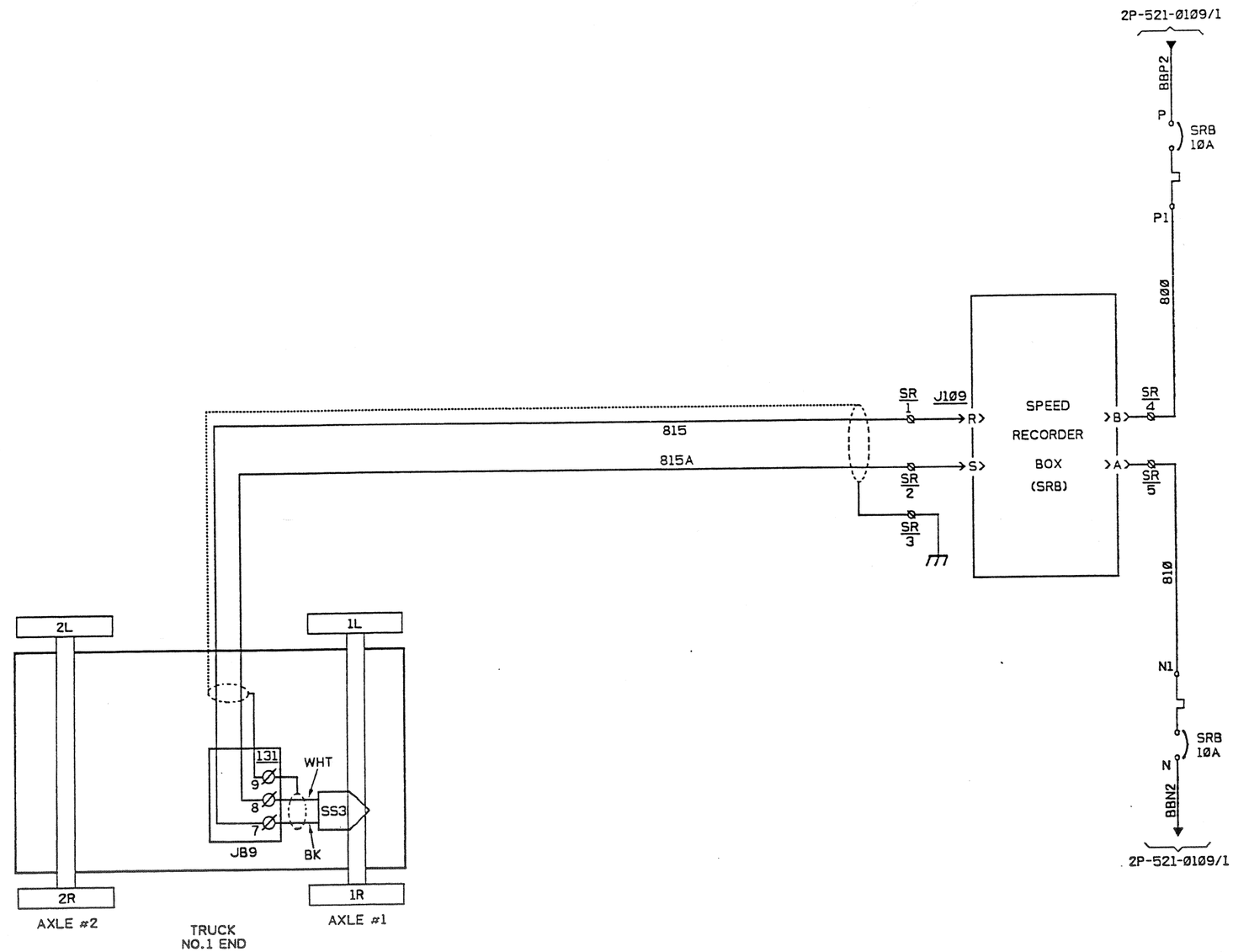
		Date
Conçu / Designed	VAPOR - R.L.	88-08-11
Dessiné / Drawn	N. MAKI	88-08-11
Vérifié / Checked	D. MOQUIN	88-09-27
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-27
Ens. suivant / Next assy		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Titre / Title: ALERTER ALARM CIRCUIT (CTC)

Échelle / Scale: —
Feuille / Sheet: 1 de / of 1
Numéro du dessin / Drawing number: 2P-521-0118/3
A2
Révision / Revision: A

IMP. DIR. A2



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 88-12-06

Designed / Conçu	D. MOQUIN	88.09.08
Drawn / Dessiné	J.C. MAROIS	88.09.08
Checked / Vérifié	D. MOQUIN	88-09-21
Weight Control / Contrôle de poids		
Safety engineer / Ing. de sécurité		
Project engineer / Chargé de projet	R. L'ECUYER	88-09-21
Engineering / Ens. supérieur		
Next assy		

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Echelle / Scale	—		
Feuille / Sheet	1 de 1		
Titre / Title	SPEED RECORDER SYSTEM (CTC)		
Numéro du dessin / Drawing number	2P-521-0119/1	A2	A

IMP. DIR. A2

2P-521-0119/2

SPEED COMPUTER

NOTES:
1 - ALL TRANSISTORS ARE 2N3567
2 - ALL DIODES ARE 1N4005
3 - ALL ZENER DIODES RATED 1W
4 - ALL CARBON RESISTORS RATED 1/2W
5 - ALL METAL FILM RESISTORS RATED 1/8W
6 - ALL CAPACITORS RATED 50VDC
7 - ALL INTEGRATED CIRCUITS ARE LM2245 OR MLM224L

J109-P
J109-N
-12V
+12V
R2 4.7K
SW2 P2
T1
J109-R
AXLE DRIVE INPUT 17.5Hz/MPH WITH 32" WHEEL DIAMETER
J109-S
INPUT TEST JACK
J110
C101 .01µF
1K 1W R1
C1 .047 µF
SW2 C2 1µF P3
D1
D2
R3 100K
R4 2.2K
T.P.1. BLK
R5 47ØK
R6 2.2K
TP2 ORN
R7 1K
Q1
C4 .Ø15µF
D6 1N914
D5 1N914
D3
D4
5.6V Z1
5.6V Z2
R86 1620 M.F.
-12V
R10 4.75K M.F.
R11 5ØK SW2 P6
R8 15K M.F.
R9 5ØK SW2 P5
C6 1µF
C5 1µF
R12 5ØK
R13 1M M.F. 1/4W
J1
R14 39.2K MF
TP3 YELLOW
SW2 P4
J109-T
EXT ES INPUT
J109-V
J108-B
J108-E
SW2 P1
2P-521-0119/3 (D4)
R61 33K
C21 10µF J5
J3
R65 2.2K
R66 100Ω
Q9
C22 10µF J2
R62 5ØK
R64 22K
R63 47Ω
O.S.#1
OVERSPEED CIRCUIT
(M1) R71 5K
R72 1K M.F.
D2Ø
C25 35µF
J109-M
J109-L
J109-J (M1)
J109-K (M1)
+12V
R57 2.2K
D18
5.6V Z6
C3Ø 150µF 35V
16V Z7
C28
Z8 16V
C29
J109-U
(+74V) 2A
J109-B
J108-I
F101
R109 4Ø 25W
L107 .7hy
12V 5ØW Z107
12V 5ØW Z108
-12V
L108 .7hy
R11Ø 4Ø 25W
C1ØØ .01µf.
V1ØØ GMOV
R1Ø8 6ØØ 25W
S1Ø3 NO NC
DI-1
CR122
TB1-1
TAPE SWITCH
T.D. STY.
(DOOR CLOSED W/TAPE)
TB1-6
S1Ø4 NO C
D12 NC
POWER SUPPLY CIRCUIT
Z111 5ØW 12V
K1Ø1
CR123
(-74V)
J109-A
J108-H
F102 2A
R1Ø4 125 25W
L1Ø3 .7hy
7.5V 1ØW Z1Ø3
7.5V 1ØW Z1Ø4 -7.5V
L1Ø4 .7hy
125 25W R1Ø5
R1Ø6 6Ø 25W
L1Ø5 .7hy
16V 1ØW Z1Ø5
16V 1ØW Z1Ø6
L1Ø6 .7hy
R1Ø7 6Ø 25W
+7.5V
2P-521-0119/3 (A4)
J109-E
GMOV V1Ø1
F103 2A
J109-D
GMOV V1Ø2
J109-C
D1ØØ
K1Ø2
MBTA Ø3Ø - CARS 5Ø4-554:
MBTA Ø28 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE	C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
				R.L.	A	SEE B.D.R. UNDER THIS DWG. NO.	J.C.M. 88-12-14

Conçu Designed	AEROQUIP	Date 88-09-02
Dessiné Drawn	J.C. MAROIS	Date 88-09-02
Vérifié Checked	D. MOQUIN	Date 88-11-01
Contrôle de poids Weight Control		Date
Ing. de sécurité Safety engineer		Date
Chargé de projet Project engineer	R. L'ECUYER	Date 88-11-01
Ens. suivant Next assy		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle Scale —
Feuille Sheet 1 of 1

Titre Title: POWER SUPPLY, SPEED COMPUTER & OVERSPEED CIRCUITS (CTC)

Numéro du dessin Drawing number: 2P-521-0119/2

A2 | Révision A

IMP. DIR. A2

2P-521-0119/3

2P-521-0119/2 (C3)

R27 30.1K MF
C15 10µF
R26 470
D22
D16
R28 50K
R30
R29 MF 412 1/4W
1M M.F. 1/4W
R31 MF 10K
R32 2.2K
R33 10K
Q5
A3
+12V
-12V

R77 10K
R79 2M
R78 10K
R80 220
R81 220
C16 .1uF
R82 2.2K
R83 270
D17
Z5 10V
R84 10K

STYLUS CIRCUIT

STYLUS SERVO POT.
CW
R150 10K

Q6 MJE 521
Q7 MJE 371
C17 150uF 35V
R85 10W 10Ω

R35 10K MF
R34 301K MF 1/4W
R36 10K MF
R37 10K MF
C32 .1uF
R40 10K
Q2
D11
R42 100
T1
D12 IN 914
R41 10K
C12 .1uF
C13 .1uF
V10 TP6
R39 470
C31 .1uF
Z4 7.5V

D13 IN 914
D14 IN 914
R43 4.7K
R44 4.7K
Q3
Q4
D15
R45 4.7K
C14 150uF 35V

TB1-4
TB1-2
TB1-3
CR116
CR115
STEPPER
MOTOR
B103

TB1-7
TB1-9
TB1-8
TB1-10
TB1-11
TB1-12
S102
S101
STYLUS MOTOR
B102
RED
BLK

2P-521-0119/2 (B2)

+12V
.01uF
C9 NPO
C10 .1uF
10K R22
R23 20K
C8 .1uF
VIF A4 AD537J
R24 7.32K MF
R25 5K
D7

CHART DRIVE CIRCUIT

EXT. CHART DRIVE TEST
J108-D
J108-B

TP7 GRN
½" PER MILE TAPE ADVA.
¼" PER MILE TAPE ADVA.
D10 IN914
D9 IN914
D8 IN 914
R38 10K MF
Z3 10V
C27 .1uF
COUNTER A5 CD4020 CJ
C11 .1uF
SW1

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

NOTES:
1 - ALL TRANSISTORS ARE 2N3567
2 - ALL DIODES ARE 1N4005
3 - ALL ZENER DIODES RATED 1W
4 - ALL CARBON RESISTORS RATED 1/2W
5 - ALL METAL FILM RESISTORS RATED 1/8W
6 - ALL CAPACITORS RATED 50VDC
7 - ALL INTEGRATED CIRCUITS ARE LM2245 OR MLM224L

C.P. P.E.	REV.	DESCRIPTION	INIT/DATE
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-19
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-01-09

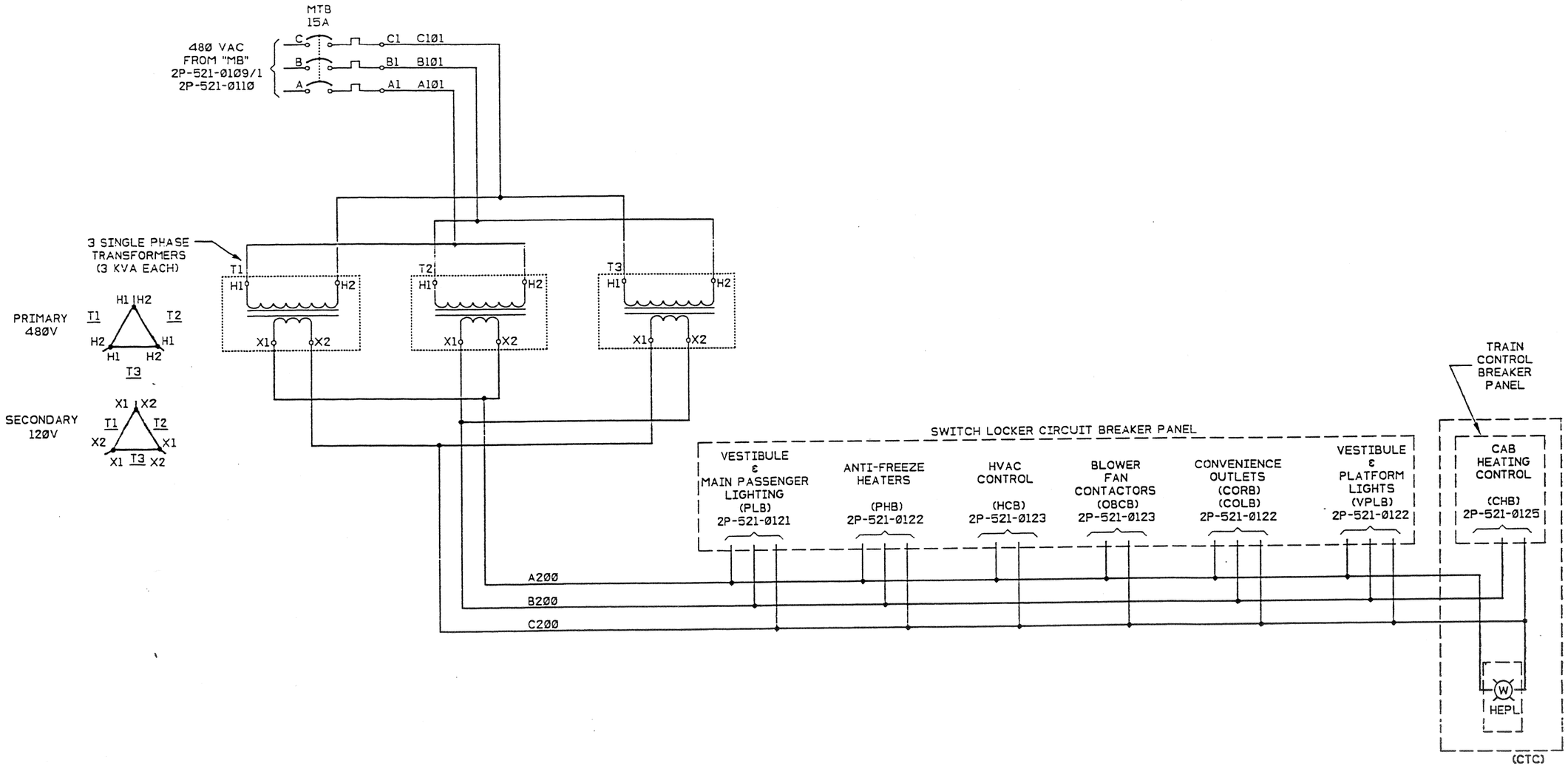
Conçu / Designed: D. MOQUIN 88-09-02
Dessiné / Drawn: J.C. MAROIS 88-09-02
Vérifié / Checked: D. MOQUIN 88-11-01
Contrôle de poids / Weight Control
Ing. de sécurité / Safety engineer
Chargé de projet / Project engineer: R. L'ECUYER 88-11-01
Ens. suivant / Next assy

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: -
Feuille / Sheet: 1 de 1
Titre / Title: STYLUS & CHART DRIVE CIRCUITS (CTC)
Numéro du dessin / Drawing number: 2P-521-0119/3
A2
Révision / Revision: B

IMP. DIR. A2



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-15
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 88-12-06

Conçu / Designed	D. MOQUIN	Date 88-08-18
Dessiné / Drawn	N. MAKI	Date 88-08-18
Vérifié / Checked	D. MOQUIN	Date 88-09-22
Contrôle de poids / Weight Control		Date
Ing. de sécurité / Safety engineer		Date
Chargé de projet / Project engineer	R. L'ECUYER	Date 88-09-22
Ens. suivant / Next assy		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

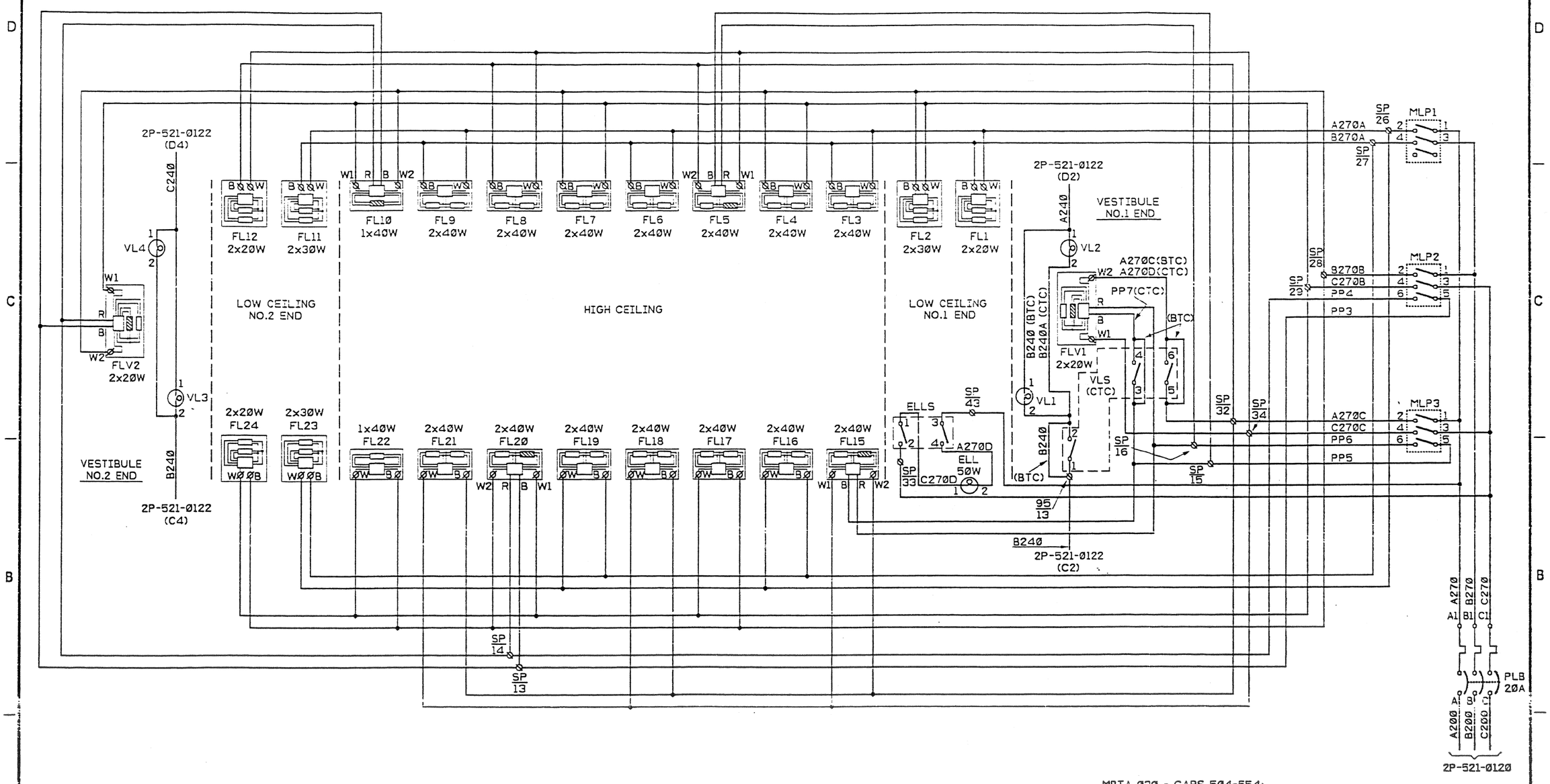
Échelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: 120V AC DISTRIBUTION SYSTEM (CTC-BTC)

Numéro du dessin / Drawing number: 2P-521-0120 | A2 | Revision: B

IMP. DIR. A2

2P-521-0121



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	E	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-24
R.L.	D	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-03-30
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-08
R.L.	B	SEE B.D.R. #028-118	J.C.M. 88-10-25
R.L.	A	SEE B.D.R. #028-062	J.C.M. 88-09-21

Conçu / Designed	R. L'ECUYER	88-09-14
Dessiné / Drawn	J.C. MAROIS	88-09-14
Vérifié / Checked	D. MOQUIN	88-09-22
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-09-22
Ens. suivant / Next assy		

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Échelle / Scale: —
Feuille / Sheet: de / of

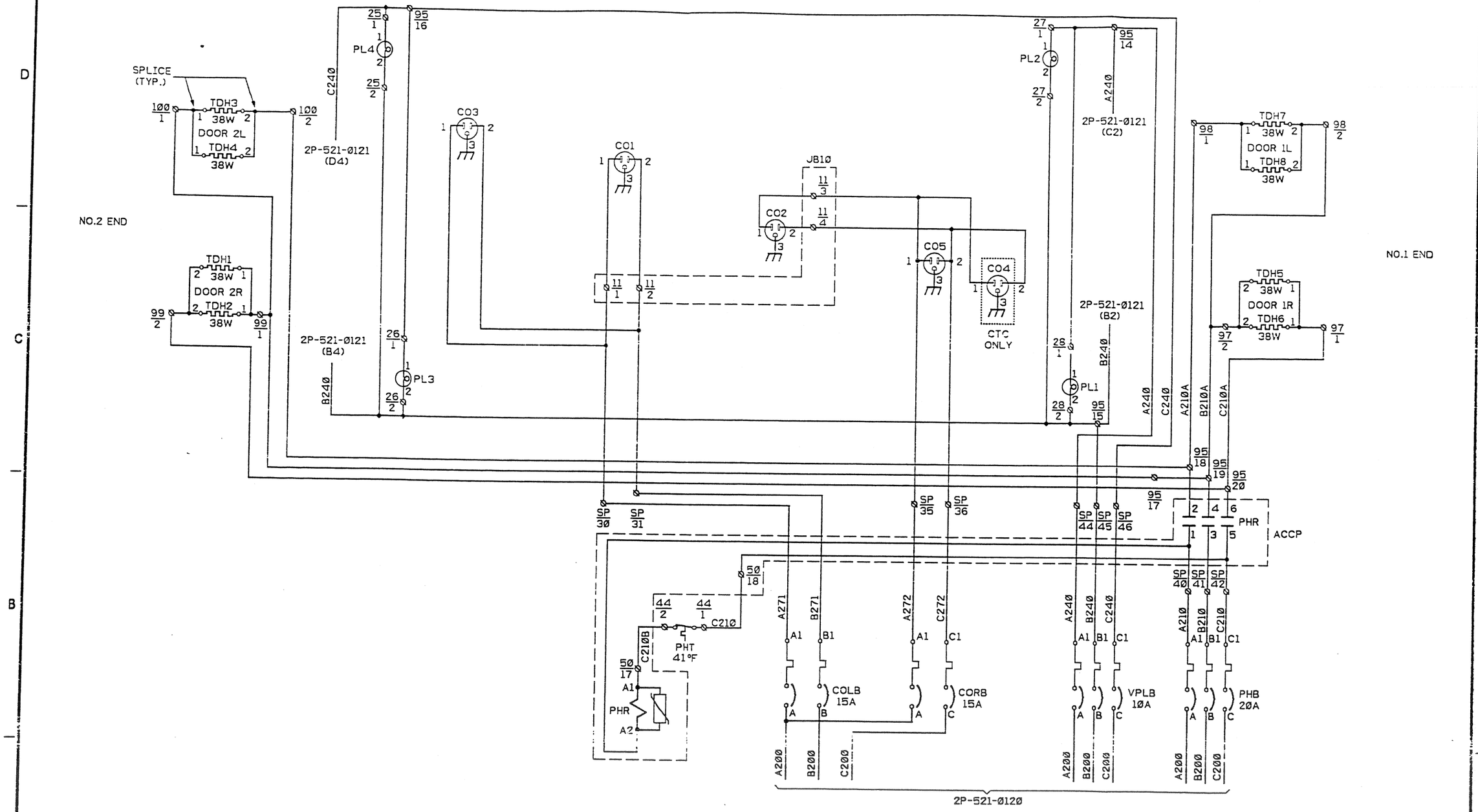
Titre / Title: VESTIBULE & MAIN PASSENGER LIGHTING (CTC - BTC)

Numéro au dessin / Drawing number: 2P-521-0121

A2

Révision / Revision: E

IMP. DIR. A2



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

NOTE:
1- HEATING TAPE: 10W/FT. (52°F) TYP.

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-02-08
R.L.	A	SEE B.D.R. #028-064	J.C.M. 88-09-24

Designed / Conçu	D. MOQUIN	88-08-21
Drawn / Dessiné	N. MAKI	88-08-21
Verified / Vérifié	D. MOQUIN	88-09-27
Checked / Contrôle de poids		
Weight Control		
Safety engineer / Ing. de sécurité		
Charge de projet / Project engineer	R. L'ECUYER	88-09-27
Ens. surveillé / Next assy		

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Echelle / Scale: —
Feuille / Sheet: de / of

Titre / Title: PLATFORM LIGHTS, ANTI-FREEZE HEATERS & OUTLETS (CTC & BTC)

Numéro du dessin / Drawing number: 2P-521-0122
A2
Révision / Revision: B

IMP. DIR. A2

2P-521-0123

FROM 120V AC 2P-521-0120

A200 FUS1 40A

2P-521-0124 (C1)

OBCB 10A

HCB 10A

A212

213A

BLS OFF ON

LHT 55°F (ADJ)

TF1

LTS1 LTS2

LTS

LCR

TC 1

A211A

HSS VENT NORMAL LAYOVER OFF

213

120-24V

214

215

TC 23

LCR

215A

TR 2P-521-0126/1 2P-521-0126/2

TRP TM TR TMR

FAT FAT1 FAT2

45A

(219) (222)

2P-521-0124 (C2)

V4 K3 HEAT (68°F)

V3 K4 REHEAT (73°F)

V1 K6 PARTIAL COOL (70°F)

V2 K5 FULL COOL (75°F)

216 217 219 220 221 222

TO HEAT 2P-521-0124 (D4)

TO REHEAT 2P-521-0124 (D3)

HR RC FH1 K2 (45°F)

C211A

TC 18 19 20 22

LCR

2P-521-0124 TO FH1 (N.O.) TO FH2 (N.O.) (C3)

FH1 FH2 OH21 OH22 OH12 OH11 PDR

2P-521-0124 62 TO OH21 (N.O.) (C2)

K1 (45°F)

216A 217A 218A 218B

AFPS2 AFPS1

NOTE 1

C211B

TDR PDR HTS HAND OFF AUTO

CLOSE 250 PSIG ±7 OPEN 180 PSIG ±10 CPS

OL1 CMT CFC RC OL3 OL2

HPS CLOSE 320 PSIG ±10 OPEN 425 PSIG ±7

LPS CLOSE 25 PSIG+1/2-1 OPEN 20 PSIG ±1

LOR 1sec. TDR 20sec.

R6 402K Ω 1/4W

R5 20K Ω 1/4W

BF1 BF2 OL4 (AUX.) OL5 (AUX.)

MPS CLOSE 330 PSIG±10 OPEN 400 PSIG±10

TO PARTIAL COOL 2P-521-0124 (D3)

TO FULL COOL 2P-521-0124 (D2)

EV1 LV1 MV1 EV2 LV2 MV2

113A 113B

C200 C211 FUS2 40A

SP 22 SP 50

2P-521-0124 FROM TB49-2 (A3)

BLS OFF ON

2P-521-0124 TO OH12 (N.O.) (C3)

TO HVAC STATUS INDIC. LIGHTS 2P-521-0124 (C4)

TO HVAC STATUS INDIC. LIGHTS 2P-521-0124 (B4)

2P-521-0124 (B1)

NOTE:
1 -ADJUSTED AT 1 IN. Hz0 CLOSE WHEN THERE IS AN AIR FLOW CAUSED BY THE OVERHEAD BLOWERS.

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-21
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-01-23

Designed D. MOQUIN 88-10-18
Drawn J.C. MAROIS 88-10-18
Checked D. MOQUIN 88-11-22
Project engineer R. L'ECUYER 88-11-22

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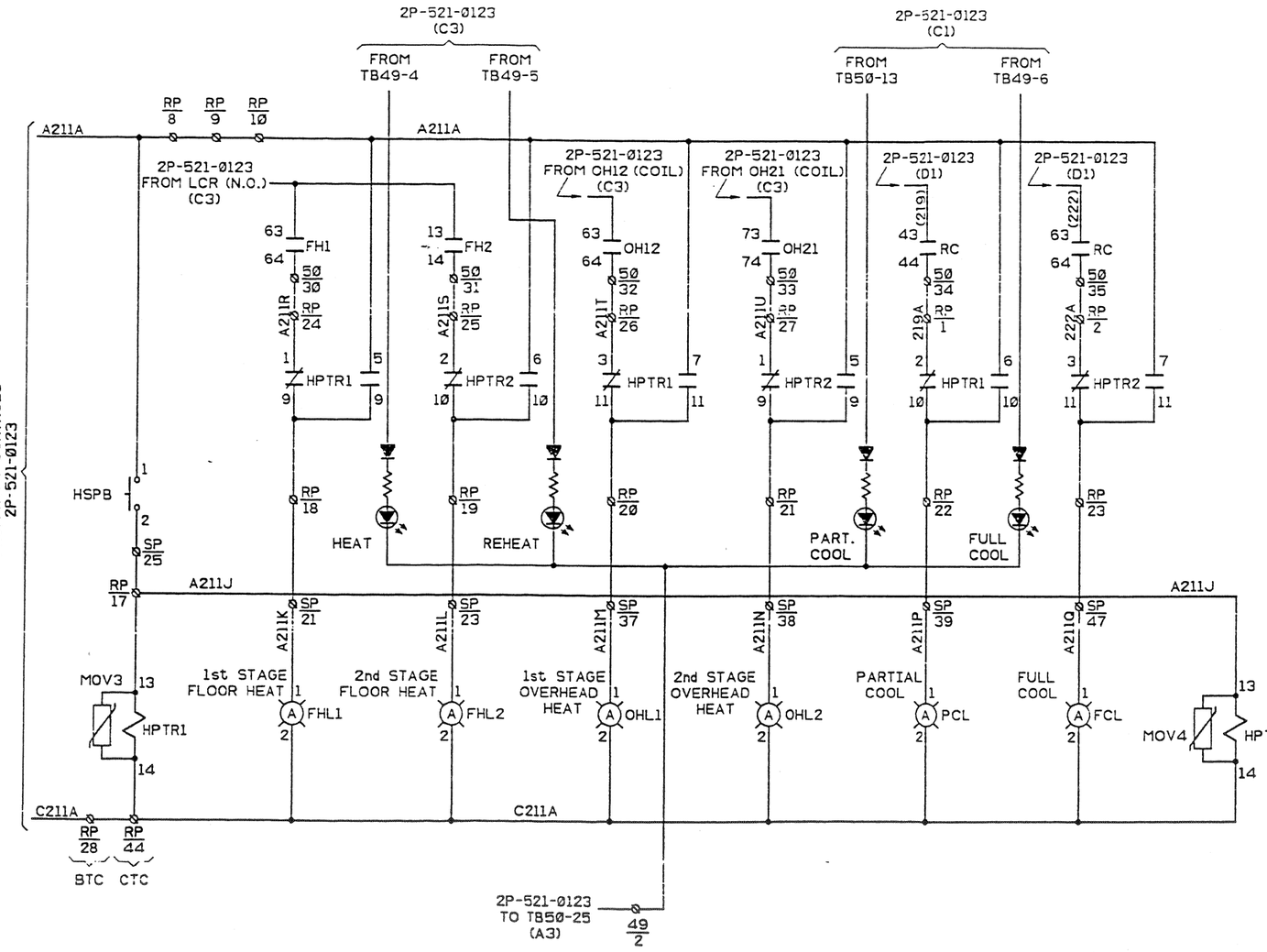
Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

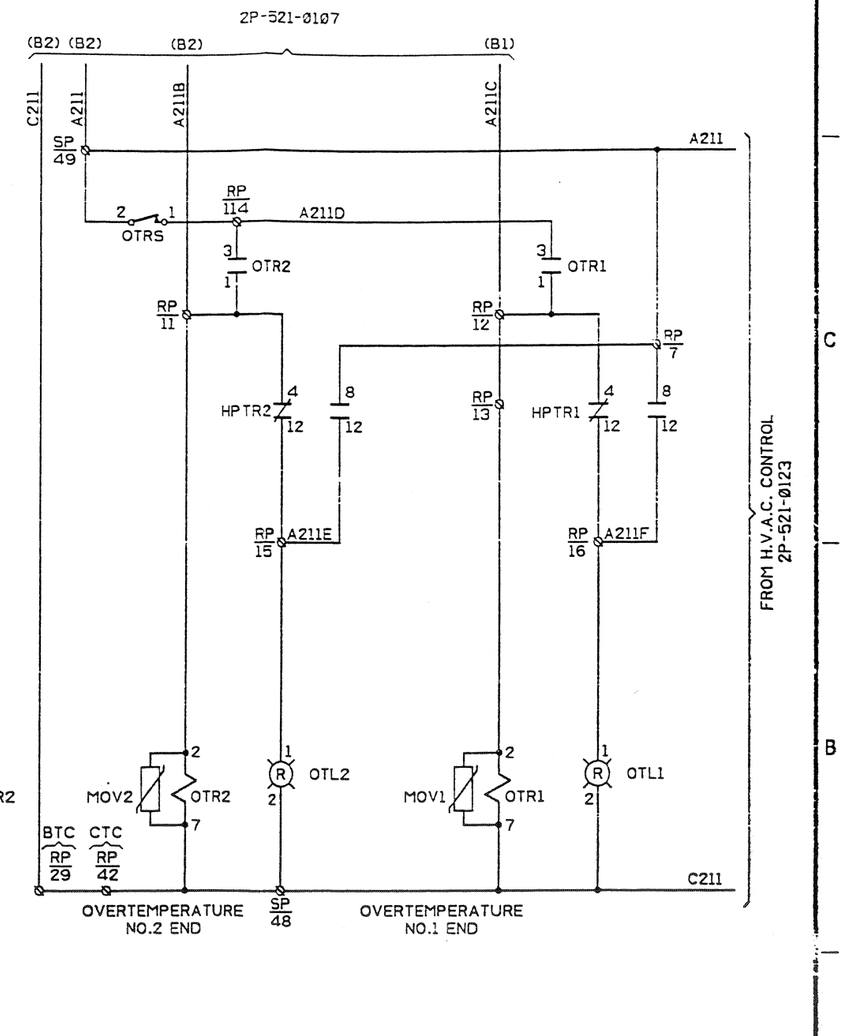
Title: H.V.A.C. CONTROLS (CTC-BTC)

Drawing number: 2P-521-0123 | Revision: A2 B

IMP. DIR. C2

2P-521-0124





MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-01-18
R.L.	A	SEE B.D.R. #028-137	J.C.M. 88-11-01

Designed / Conçu	D. MOQUIN	88.09.07
Drawn / Dessiné	J.C. MAROIS	88.09.07
Checked / Vérifié	D. MOQUIN	88-09-26
Weight Control / Contrôle de poids		
Safety engineer / Ing. de sécurité		
Project engineer / Chargé de projet	R. L'ECUYER	88-09-27
Next assy / Ens. suivant		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Scale / Échelle: —
Sheet / Feuille: 1 de 1

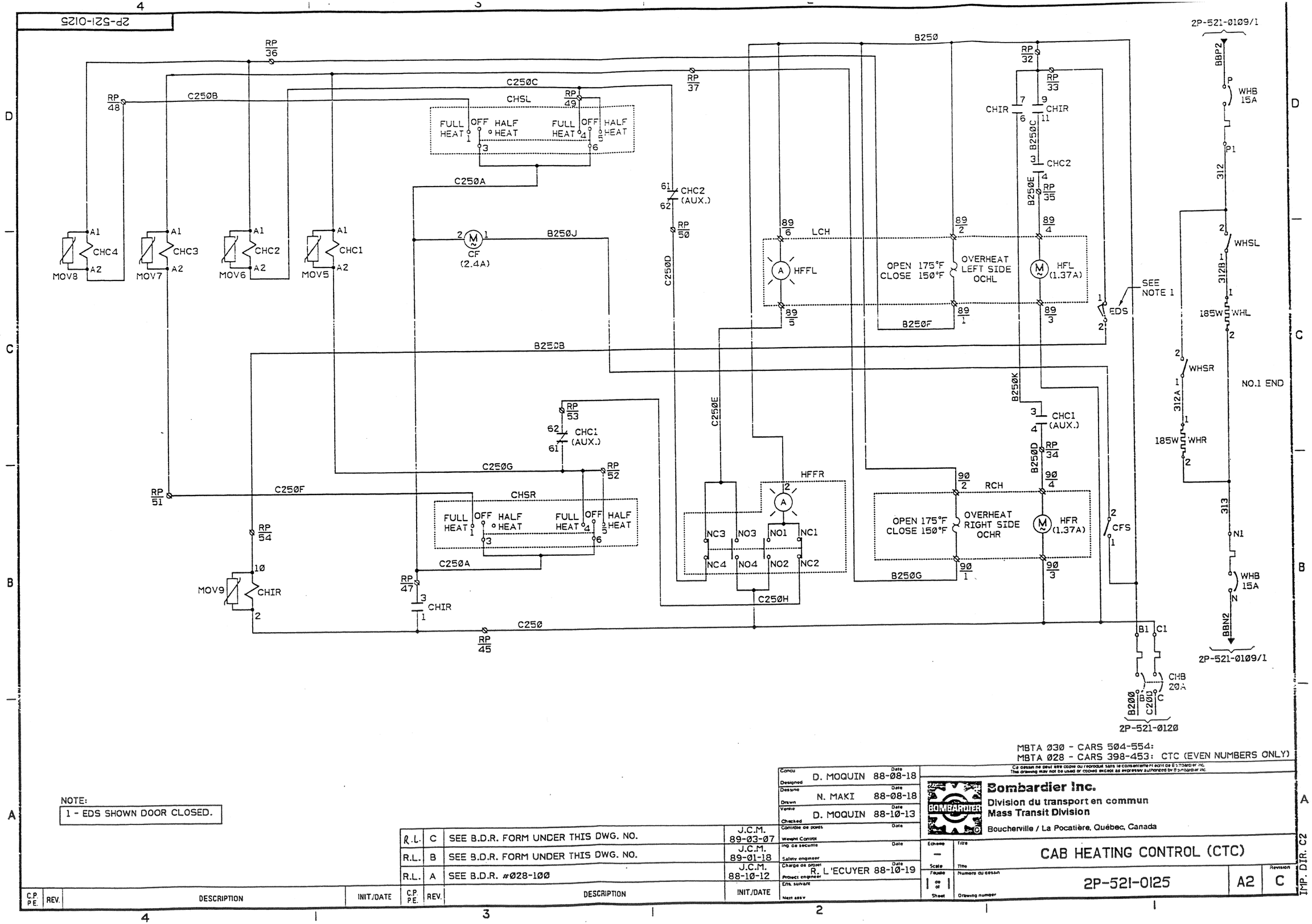
Title / Titre: HVAC STATUS INDICATING LIGHTS (CTC)

Drawing number / Numéro du dessin: 2P-521-0124

Revision: A2 B

IMP. DIR. C2

2P-521-0125



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

NOTE:
1 - EDS SHOWN DOOR CLOSED.

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	C	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-03-07
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-01-18
R.L.	A	SEE B.D.R. #028-100	J.C.M. 88-10-12

Designed / Conçu	D. MOQUIN	88-08-18
Drawn / Dessiné	N. MAKI	88-08-18
Checked / Vérifié	D. MOQUIN	88-10-13
Weight Control / Contrôle de poids		
Safety engineer / Ing. de sécurité		
Project engineer / Chargé de projet	R. L'ECUYER	88-10-19
Next assy / Ens. suivant		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: —
Feuille / Sheet: 1 of 1

Titre / Title: CAB HEATING CONTROL (CTC)

Numéro du dessin / Drawing number: 2P-521-0125

A2

Révision / Revision: C

IMP. DIR. C2

2P-521-0126/1

+12V
R61 2K
C9 0.1µF 50V
DZ1 1N55258
CK06BX104K
R17 8.25K
R19 FULL SCALE
R23 22K1
R60 10K
R59 11K
R70
R72
U6A U6B U6C
R1 10K
TO TH2
R22 12.1K
R21 36.5K
R16 215K
R15 215K
C3 1µF/50V CK06BX105K
EXTERIOR ØV=25°F 10V=70°F
C5 10µF/20V CS13BE106K
6.2V 2P-521-0126/2 (D4)
INTERIOR ØV=60°F 10V=80°F
U7A U7B U7C U7D
R2 10K
R3 10K
R25 11K
R71
R73
TO TH1
R64 2K87
R24 10K
R18 215K
R65 215K
C2 1µF/50V CK06BX105K
R26 8.25K
R20 FULL SCALE
R27 22K1
C4 10µF/20V CS13BE106K
KT1 *SM2-D1012
D15 1N4007
TEST RELAY
R62 3.65K TH1
RETURN AIR SENSOR
R63 20K5
FRESH AIR SENSOR
45A 1
45A 2
45A 3
TO FAT 2P-521-0123 (D2)
116 1
116 2
F1 1A
XFMR
120 / 12VAC
BDG1 MDA202
U2 LM78128T VI VO GND
C6 1000µF/25V Ø35-56101
C7 100µF/25V Ø35-56101
C1 10nF/1000V 341MKC-71103
D13 1N4007
Q6
R43 10K
R44 1.5K
+12VR
ØV

RP1A 1K
R78 4.02K
RP1B 1K
RP1C 1K 75.5°F
RP1D 1K 75°F
RP1E 1K 74.5°F
RP1F 1K 74°F
RP1G 1K 73.5°F
RP1H 1K 73°F
RP2A 1K 72.5°F
RP2B 1K 72°F
RP2C 1K 71.5°F
RP2D 1K 71°F
RP2E 1K 70.5°F
RP2F 1K 70°F
RP2G 1K 69.5°F
RP2H 1K 69°F
RP3A 1K 68.5°F
RP3B 1K 68°F
RP3C 1K 67.5°F
RP3D 1K 67°F
RP3E 1K 66.5°F
RP3F 1K 66°F
RP3G 1K
RP3H 1K
R8 11K
DIL 1 8X1K MDP-1603-102
DIL 2 8X1K
DIL 3 8X1K
2P-521-0126/2 (D4)
TO S4 2P-521-0126/2 (C3)
TO S3 2P-521-0126/2 (D3)
TO S2 2P-521-0126/2 (C3)
TO S1 2P-521-0126/2 (B3)
W4 FULL COOL
W3 PARTIAL COOL
W2 REHEAT
W1 HEAT
70°F
69°F
68°F
67°F
66°F

NOTES:
1- ALL TRANSISTORS ARE 2N2222, EXCEPT Q6 WHICH IS 2N2907.
2- ⊠ = TEST CONNECTOR

MBTA Ø30 - CARS 504-554:
MBTA Ø28 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	C	DWG. UPDATED	J.C.M. 89-05-15
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-04-19
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-03-07

Concu / Designed	D. MOQUIN	88-07-29
Dessine / Drawn	N. MAKI	88-07-29
Verifié / Checked	D. MOQUIN	89-01-24
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	89-01-24
Ens. suivant / Next assy		

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Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: TEMPERATURE REGULATOR (CTC-BTC)
Numéro du dessin / Drawing number: 2P-521-0126/1
A2
Révision / Revision: C

IMP. DIR. C2

2P-521-0126/2

2P-521-0126/1 (D1)

COOLING LOCK OUT

6.2V 2P-521-0126/1 (D4)

R42 422K, R41 10K, R40 422K, R11 10K, R29 210K, R30 210K, R31 10K, R32 210K, R34 210K, R35 10K, R36 210K, R37 210K, R12 10K, R45 210K, R46 210K, R56 10K, R14 10K, R57, R13 21K5, R4 10K, R69 20K @ 45°F, R5 10K, R68 133K @ 55°F, R6 10K, R66 20K @ 45°F, R7 10K, R67 20K @ 45°F, R53 10K, R54 10K, R55 10K, C8 0.1µF/50V CK06BX104K, R52 422K, R51 10K, R50 10K, R49 422K, R58 10K, R28 10K, R47 10K, R48 10K, R39 10K, R38 10K, R33 10K, R53 10K

U1B U1C U1D U5A U5B U5C U5D U3A U3B U3C U3D U4A U4B U4C U4D

S1 2P-521-0126/1 (B1)
S2 2P-521-0126/1 (C1)
S3 2P-521-0126/1 (D1)
S4 2P-521-0126/1 (D1)

REHEAT SET-UP
PARTIAL COOL
FULL COOL
REHEAT
HEAT
45°F AMB.
OVERHEAD HEATING
FLOOR HEATING

D11 1N4148, D12 1N4148, D3 1N4148, D2 1N4148, D1 1N4148, D17 1N4148, D16 1N4148

RN1A 10Kx9, RN1B 10K, RN1C 10K, RN1E 10Kx9, RN1F 10Kx9, RN1G 10Kx9, RN1H 10Kx9, RN1I 10Kx9

D18 1N4007, D19, D20, D21, D22, D23, D7 1N4007, D5 1N4007, D4 1N4007, D10 1N4007, D9 1N4007, D8 1N4007, D14 1N4007, DD6 1N4007

DZ2 N5525B 1N4007

K6 MAT48H (PARTIAL COOLING)
K5 MAT48H (FULL COOLING)
K4 MAT48H (REHEAT)
K3 MAT48H (HEAT)
K2 MAT48H (WHO)
K1 MAT48H (WHF)

Q2 Q7 Q1 Q3 Q4 Q5 Q8

LED6 LED5 LED4 LED3 LED2 LED1

R10 1K5, R9 1K5, R77 1K5, R76 1K5, R75 1K5, R74 1K5

W10 REHEAT OPTION 1

NOTES
1. ALL TRANSISTORS ARE 2N2222 EXEPT Q6 WHICH IS 2N2907
2. ⊠ : TEST CONNECTOR

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 91-01-07	
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-03-09	

C.P. P.E. | REV | DESCRIPTION | INIT./DATE | C.P. P.E. | REV | DESCRIPTION | INIT./DATE

Concu Designed	D. MOQUIN	88-07-29
Dessiné Drawn	N. MAKI	88-07-29
Vérifié Checked	D. MOQUIN	89-01-24
Contrôle de poids Weight Control		
Ing. de sécurité Safety engineer		
Chargé de projet Project engineer	R. L'ECUYER	89-01-24
Ens. suivant Next assy		

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Division du transport en commun
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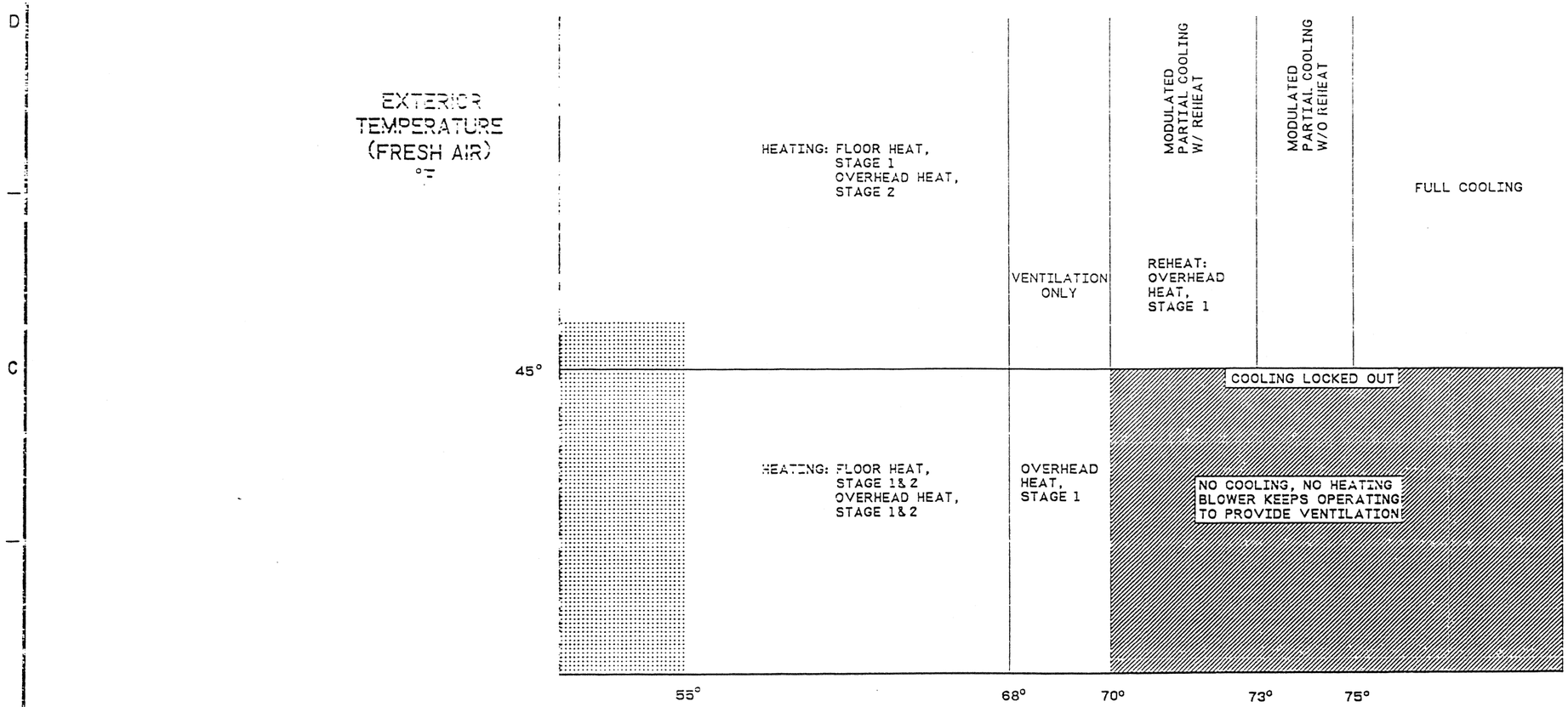
Echelle Scale: –
Feuille Sheet: 1 de 1

Titre Title: TEMPERATURE REGULATOR

Numéro du dessin Drawing number: 2P-521-0126/2

A2 | Révision Revision: B

IMP. DIR. C2



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

NO.	DESCRIPTION	INIT./DATE
B	SEE E.C.R. FORM UNDER THIS DWG. NO.	R.L. J.C.M. 91-01-07
A	DWG. UPDATED	R.L. J.C.M. 89-05-15

Conçu / Designed	D. MOQUIN	88-11-30
Dessiné / Drawn	J.C. MAROIS	88-11-30
Vérifié / Checked	D. MOQUIN	88-12-02
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	88-12-02
Ens. suivant / Next assy		

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Bombardier
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: TEMPERATURE / FUNCTION CHART (CTC-BTC)

Numéro du dessin / Drawing number: 2P-521-0127
Révision / Revision: A2 B

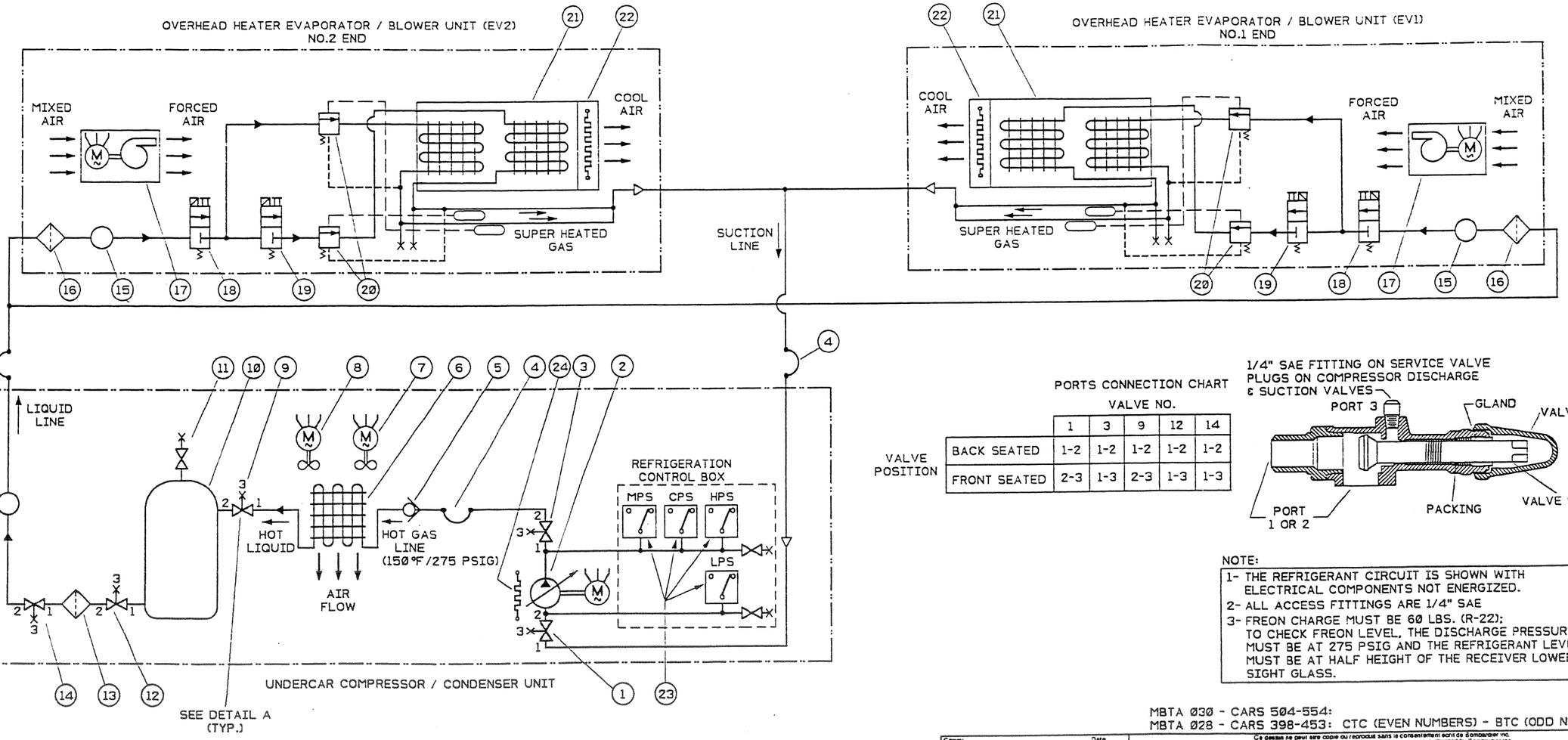
TYP. DIR. C2

2P-521-0128

ITEM	ABBR.	DESCRIPTION	REF. DRAWING
1		COMPR. SUCTION SHUTOFF SERVICE VALVE	
2	CM	MOTO-COMPRESSOR GROUP	
3		COMPRESSOR DISCHARGE SHUTOFF VALVE	
4		VIBRATION ELIMINATOR	
5		CHECK VALVE	
6		CONDENSER COIL	
7	CM1	CONDENSER FAN NO.1	
8	CM2	CONDENSER FAN NO.2 (INTERMITTENT)	

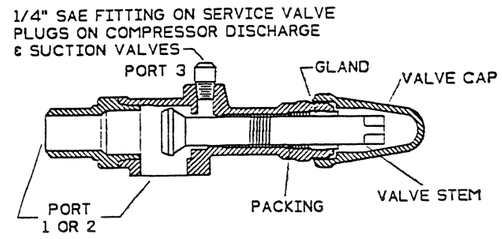
ITEM	ABBR.	DESCRIPTION	REF. DRAWING
9		RECEIVER INLET SHUTOFF VALVE	
10		RECEIVER (MOUNTED VERTICALLY)	
11		PURGE VALVE	
12		RECEIVER OUTLET SHUTOFF VALVE	
13		FILTER-DRIER	
14		FILTER-DRIER OUTLET SHUTOFF SERV. VALVE	
15		MOISTURE INDICATOR	
16		STRAINER	

ITEM	ABBR.	DESCRIPTION	REF. DRAWING
17	BM1/BM2	MOTOR-BLOWER UNIT	
18	LV1/LV2	LINE SOLENOID VALVE	
19	MV1/MV2	MODULATION SOLENOID VALVE	
20		EXPENSION VALVE	
21		EVAPORATOR COILS UNIT	
22	EH12/22	HEATER ELEMENTS UNIT	
22	EH11/21	HEATER ELEMENTS UNIT	
23		PRESSURE SWITCHES	
24	CCH	COMPRESSOR CRANKCASE HEATER	



PORTS CONNECTION CHART

VALVE POSITION	VALVE NO. 1	3	9	12	14
BACK SEATED	1-2	1-2	1-2	1-2	1-2
FRONT SEATED	2-3	1-3	2-3	1-3	1-3



NOTE:

1- THE REFRIGERANT CIRCUIT IS SHOWN WITH ELECTRICAL COMPONENTS NOT ENERGIZED.
2- ALL ACCESS FITTINGS ARE 1/4" SAE
3- FREON CHARGE MUST BE 60 LBS. (R-22): TO CHECK FREON LEVEL, THE DISCHARGE PRESSURE MUST BE AT 275 PSIG AND THE REFRIGERANT LEVEL MUST BE AT HALF HEIGHT OF THE RECEIVER LOWER SIGHT GLASS.

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-08

Conçu / Designed	FAIVELEY- R.L.	Date 89-05-08
Dessiné / Drawn	J.C. MAROIS	Date 89-02-27
Vérifié / Checked	R. L'ECUYER	Date 89-05-08
Contrôle de poids / Weight Control		Date
Ing. de sécurité / Safety engineer		Date
Chargé de projet / Project engineer	R. L'ECUYER	Date 89-05-08
Ens. suivant / Next assy		

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Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de 1

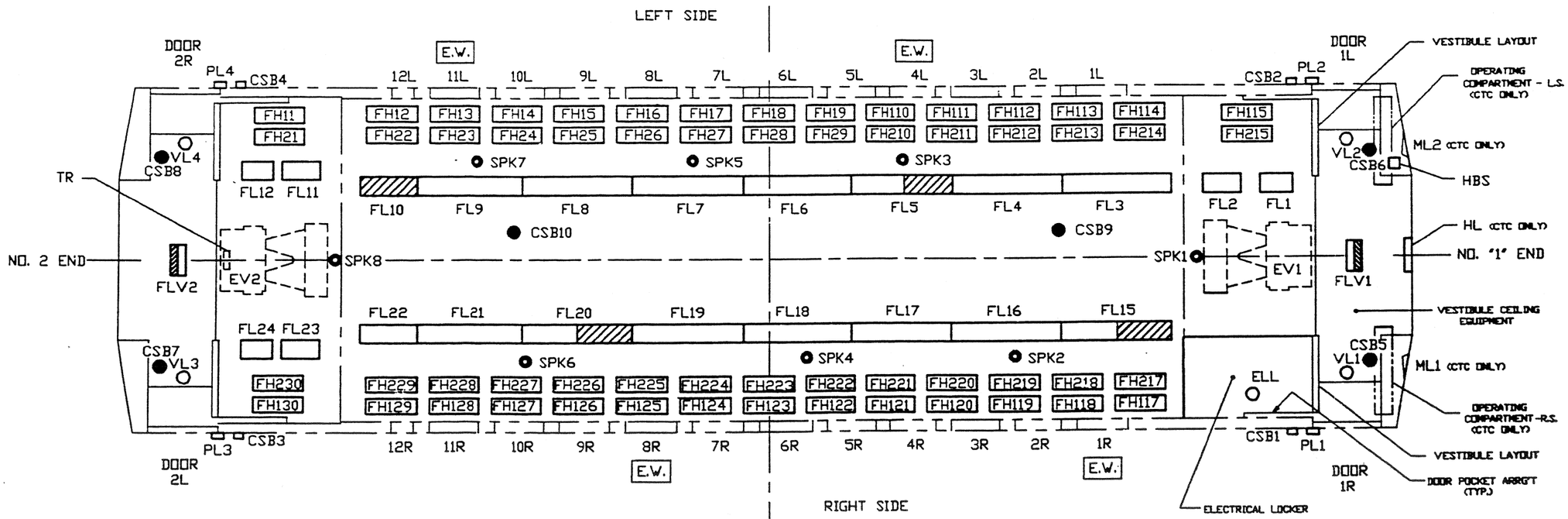
Titre / Title: HVAC REFRIGERANT CIRCUIT BLOCK DIAGRAM

Numéro du dessin / Drawing number: 2P-521-0128

Révision / Revision: A2 A

IMP. DIR. C2

ABBR	DESCRIPTION	REF. DRAWING	ABBR	DESCRIPTION	REF. DRAWING
FL1-24	FLUORESCENT LIGHTING	—	—	OPERATING COMPARTMENT - R. S.	2P-521-0132/1
FLV1-2	VESTIBULE FLUORESCENT LIGHTING	—	—	OPERATING COMPARTMENT - L. S.	2P-521-0133
HBS	HAND BRAKE SWITCH	—	—	ELECTRICAL LOCKER	2P-521-0131/1-4
HL	HEAD LIGHT	—	—	VESTIBULE CEILING EQUIPMENT	2P-521-0135
ML1-2	MARKER LIGHT	—	—	VESTIBULE LAYOUT	2P-521-0137
PL1-4	PLATFORM LIGHT	—	—	DOOR POCKET ARRG'T	2P-521-0138
SPK1-8	SPEAKER	—	CSB1-10	CONDUCTOR SIGNALING BUTTON	—
TR	TEMPERATURE REGULATOR	—	EV1-2	HVAC EVAPORATOR UNIT	2P-521-0136
VL1-4	VESTIBULE LIGHTING	—	ELL	ELECTRICAL LOCKER LIGHT	—
			FH11-130	FLOOR HEATING - FIRST STAGE	—
			FH21-230	FLOOR HEATING - SECOND STAGE	



MBTA 030-CARS 504-554
MBTA 028-CARS 398-453 CTC (EVEN NUMBERS) BTC (ODD NUMBERS)

G.HILL	–	–	RL.
DESSINÉ DRAWN	POIDS WEIGHT	R.M.&S./ S.S.A.	VÉRIFIÉ CHECKED

RL.	SEE B.D.R.	–
APPROBATION APPROVED	DESCRIPTION	ZONE

17/01/91	A	
DATE	REV.	

	Init.	Date
Conception-Dessiné: J.GRACIO		89/04/20
Dessiné-Drawn: J.GRACIO		89/04/20
Vérifié-Checked: R.L'ECUYER		89/04/24
Contrôle de la qualité-Quality Control	–	–
Approbation-Approved	–	–
Date d'émission-Issue date: R.L'ECUYER		89/04/24
Doc. suivant-Next entry: –		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle Scale: NTS
Titre Title: INTERIOR ARRANGEMENT (CTC-BTC)
Format Size: A2
Chapitre Chapter: 5
Numéro du dessin Drawing number: 2P-521-0130
Feuille Sheet: 1 de 1
Révision Revision: A

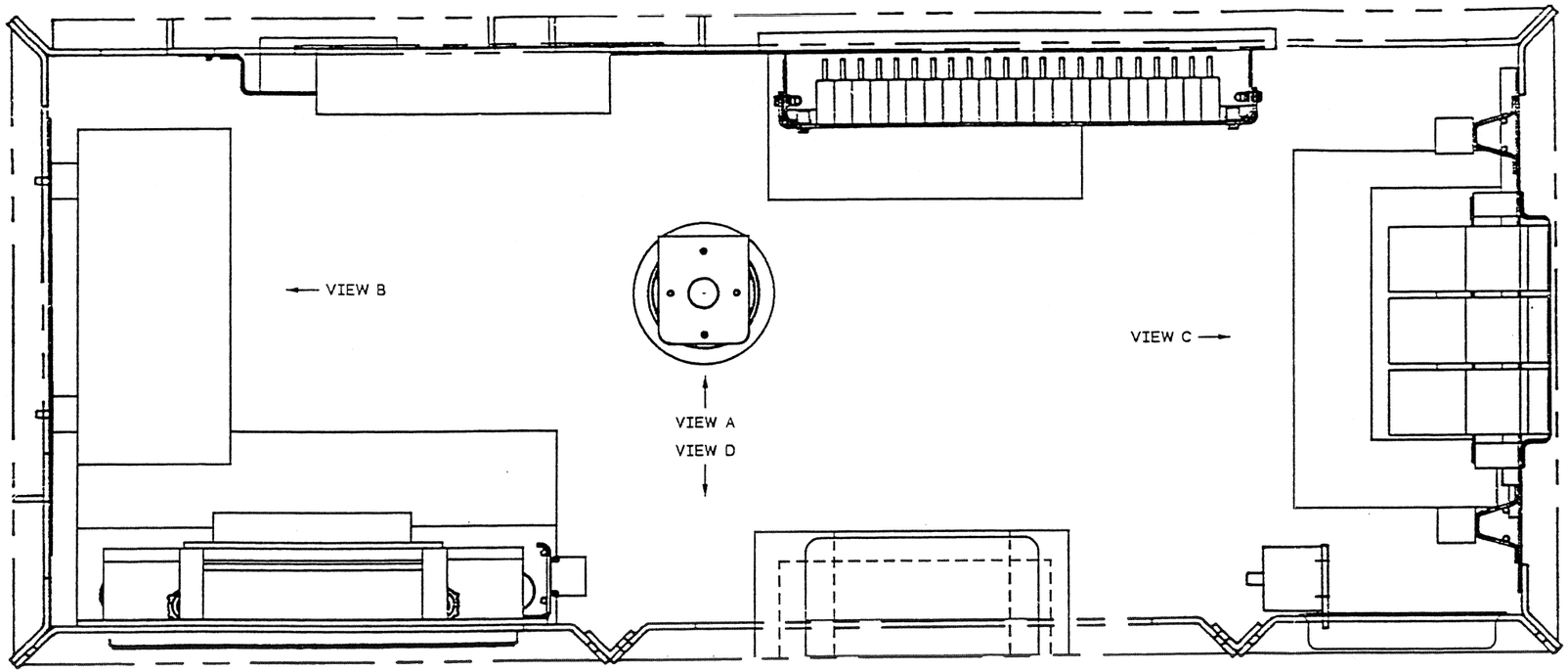
028

4 3 2 1

Bouch.

2P-521-0131/1

VIEW	QTY. CTC	QTY. TRL	REFERENCE DRAWING
A	1	1	2P-521-0131/2
B	1	1	2P-521-0131/3
C	1	1	2P-521-0131/3
D	1	1	2P-521-0131/4



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	EQUIPMENT CONFIGURATION UPDATED	J.C.M. 89-05-03

Conçu / Designed	D. MOQUIN 89-04-09
Dessiné / Drawn	J.C. MAROIS 89-04-10
Vérifié / Checked	R. L'ECUYER 89-04-12
Contrôle de pièces / Weight Control	
Ing. de sécurité / Safety engineer	
Chargé de projet / Project engineer	R. L'ECUYER 89-04-12
Ens. suivant / Next assy	

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Division du transport en commun
Mass Transit Division
Bouchervilie / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: ELECTRICAL LOCKER (TOP VIEW) (CTC-BTC)

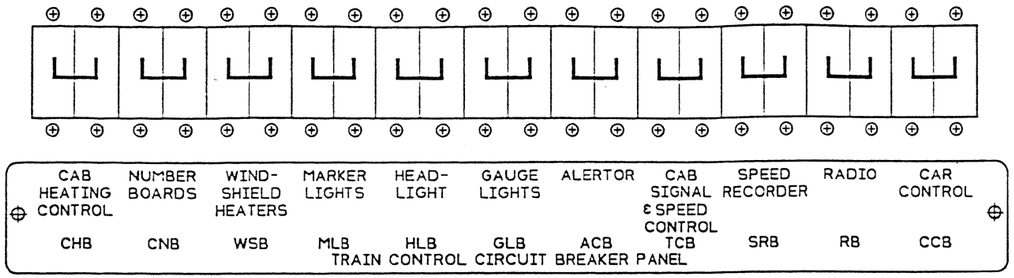
Numéro du dessin / Drawing number: 2P-521-0131/1

A2 | Révision / Revision: A

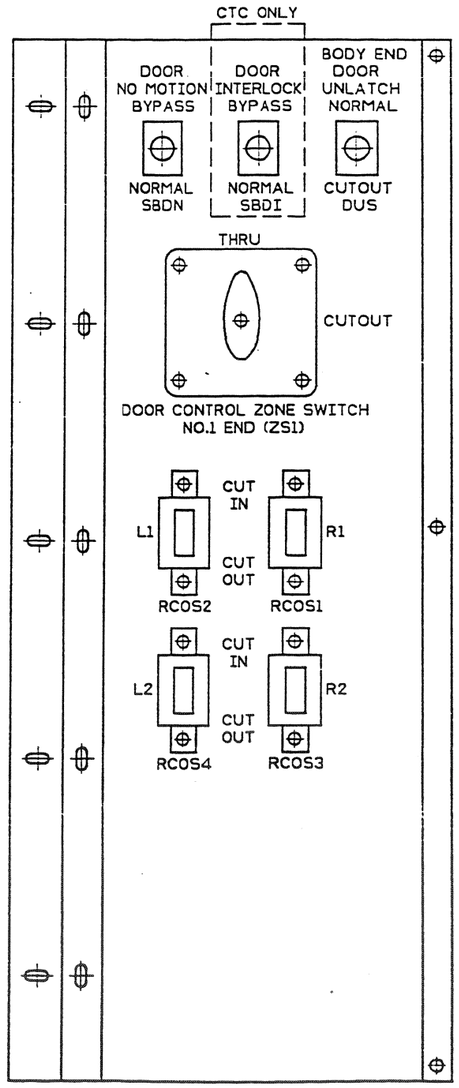
IMP. DIR. C2

2P-521-0131/2

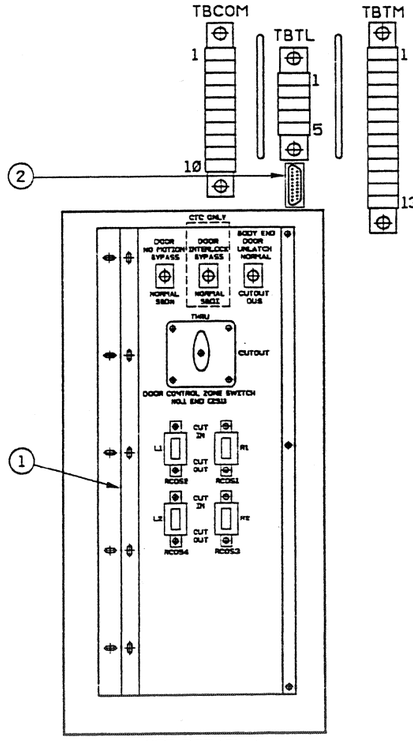
ITEM	CTC	BTC	ABBR.	DESCRIPTION
1	1	1	-	SWITCH PANEL ASS'Y
2	1	1	TMR	TEST MODULE RECEPTACLE
3	1	1	ELL	ELECTRICAL LOCKER LIGHT
4	1	-	-	TRAIN CONTROL CIRCUIT BREAKER PANEL
5	1	1	ACCP	HVAC CONTROL PANEL
6	1	-	ACBX	ALERTOR CONTROL BOX



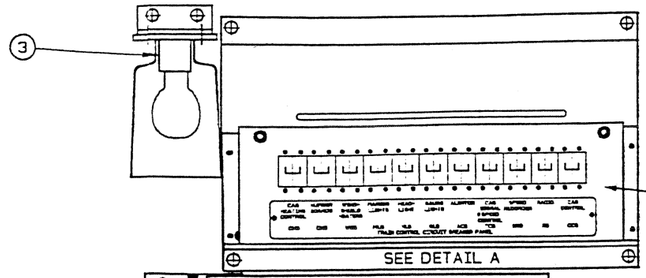
DETAIL A

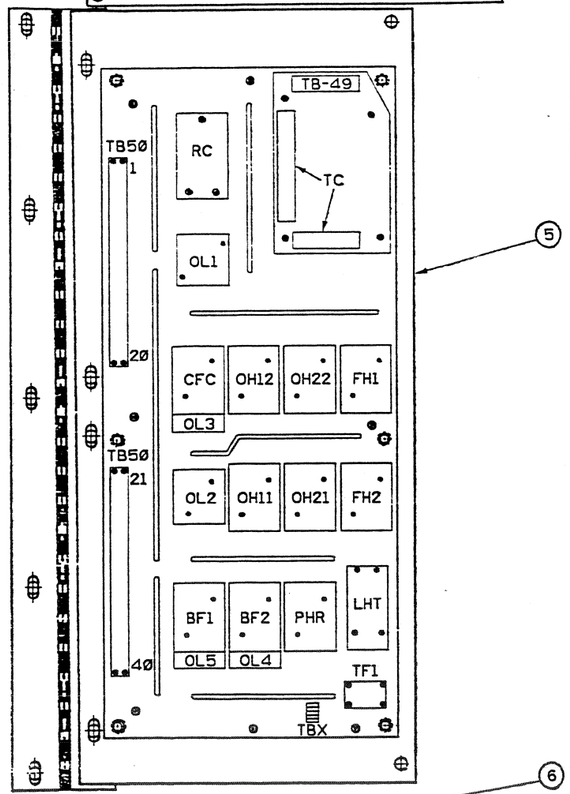


DETAIL B



SEE DETAIL B





MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT/DATE
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-03

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Conçu / Designed	D. MOQUIN	Date 89-04-10
Dessiné / Drawn	J.C. MAROIS	Date 89-04-10
Vérifié / Checked	D. MOQUIN	Date 89-04-10
Contrôle de poids / Weight Control		Date
Ing. de sécurité / Safety engineer		Date
Chargé de projet / Project engineer	R. L'ECUYER	Date 89-04-10
Ens. suivant / Next assy		

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: ELECT. LOCKER (INSIDE FRONT VIEW (A)) (CTC-BTC)

Numéro du dessin / Drawing number: 2P-521-0131/2

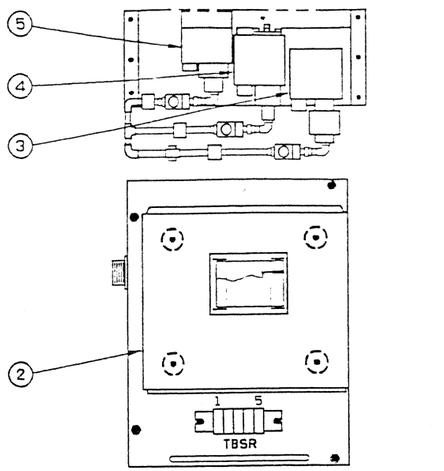
A2

Révision / Revision: A

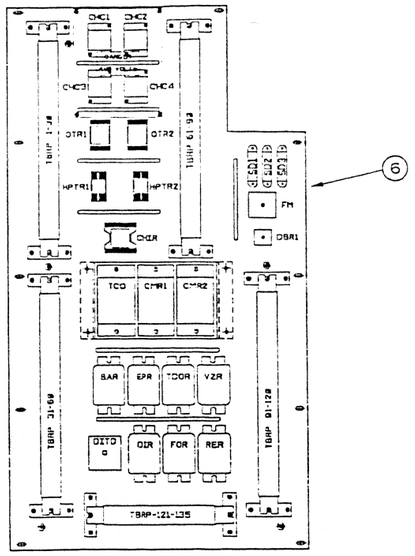
IMP. DIR. C2

2P-521-0131/3

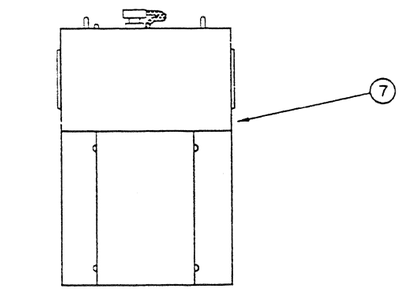
ITEM	CTC	BTC	ABBR.	DESCRIPTION
1	1	1	-	EMERGENCY MAGNET VALVE CUTOUT COCK
2	1	-	SRB	SPEED RECORDER BOX
3	1	1	WSCPS	WHEEL SLIP CALIBRATION PRESSURE SWITCH
4	1	-	SPS	ATC SUPPRESSION PRESSURE SWITCH
5	1	-	APS	ALERTOR PRESSURE SWITCH
6	1	1	-	RELAY PANEL ASS'Y
7	1	1		P.A. AMPLIFIER
8	1	-	TCC	ATC 32V CONVERTER

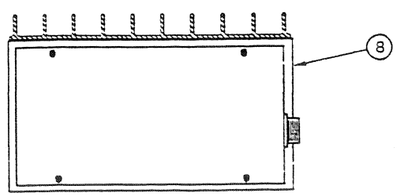


VIEW B

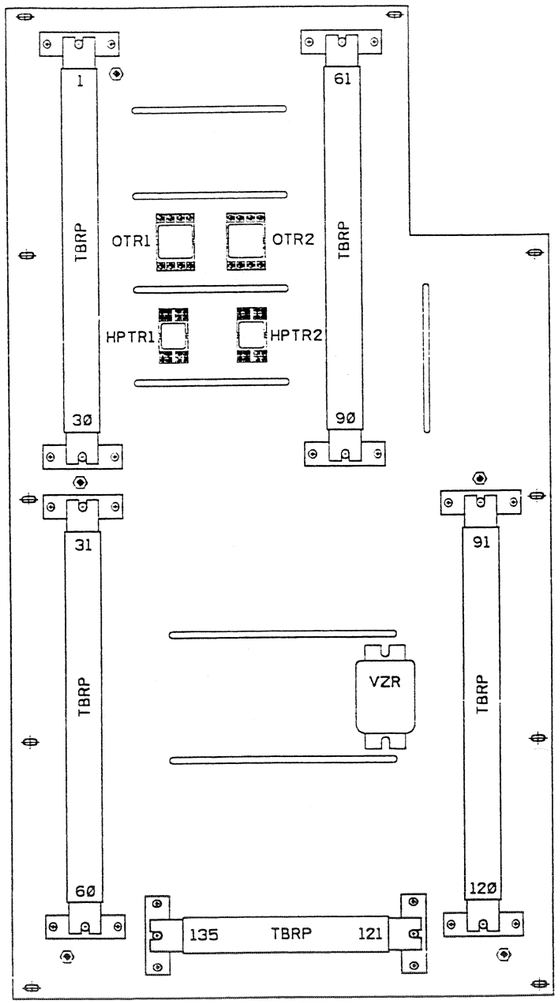


SEE DETAIL A

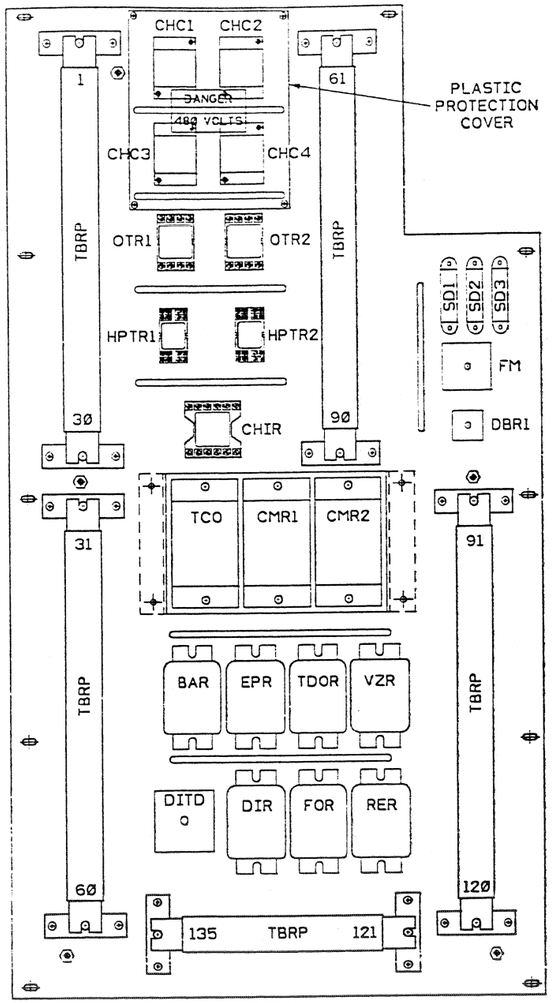




VIEW C



DETAIL A
(BTC ONLY)



DETAIL A
(CTC ONLY)

MBTA Ø3Ø - CARS 5Ø4-554:
MBTA Ø28 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-09

Conçu / Designed	D. MOQUIN	Date 89-04-10
Dessiné / Drawn	J.C. MAROIS	Date 89-04-10
Vérifié / Checked	D. MOQUIN	Date 89-04-10
Contrôle de poids / Weight Control		Date
Ing. de sécurité / Safety engineer		Date
Chargé de projet / Project engineer	R. L'ECUYER	Date 89-04-10
Ens. suivant / Next assy		

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Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: ELEC. LOCKER (INSIDE SIDE VIEWS (B & C)) (CTC-BTC)

Numéro du dessin / Drawing number: 2P-521-0131/3

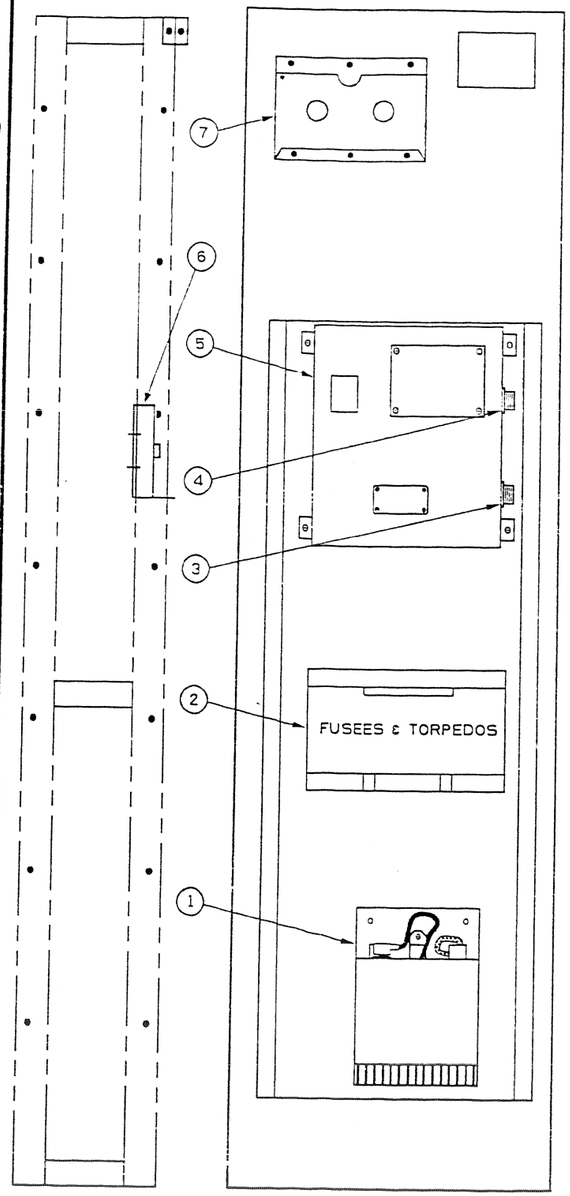
A2

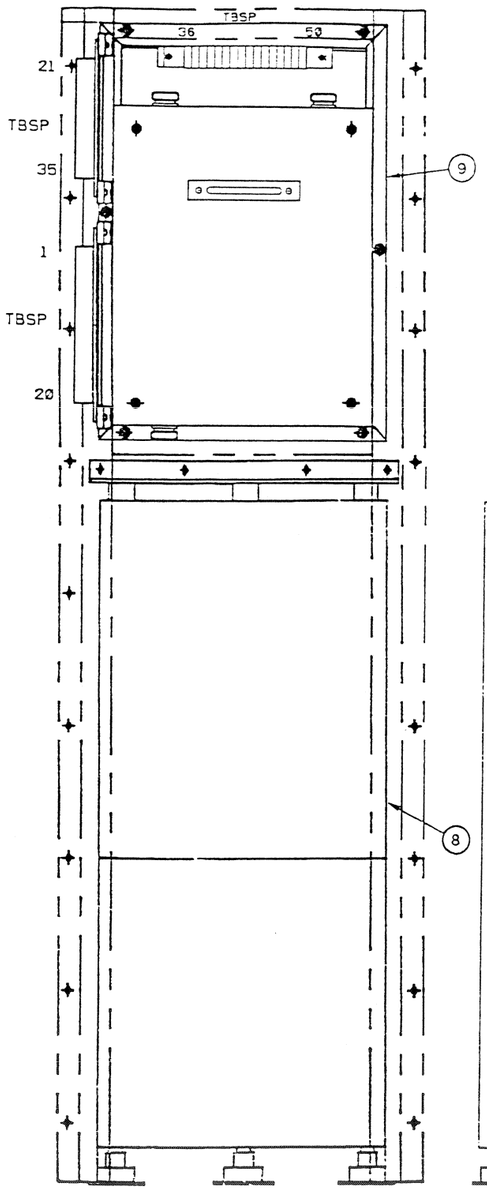
Révision / Revision: A

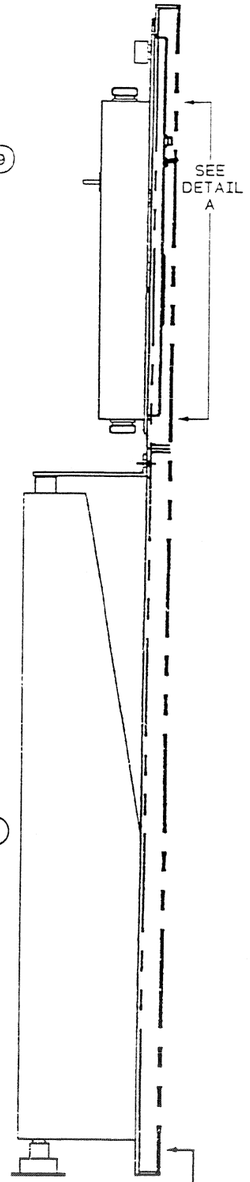
IMP. DIR. C2

2P-521-0131/4

ITEM	CTC	BTC	ABBR.	DESCRIPTION	REF. DRAWING
1	1	-	-	RADIO & "AAR" MOUNTING BASE	N/A
2	1	1	-	TORPEDOES BOX	N/A
3	1	1	J2	CONNECTOR	N/A
4	1	1	J1	CONNECTOR	N/A
5	1	1	WSC	WHEEL SLIP UNIT	N/A
6	1	1	ELS	ELECTRICAL LOCKER LIGHT SWITCH	N/A
7	1	1	-	BLUE CARD BOX	N/A
8	1	-	TCP	ATC CONTRCL PANEL (ATC SHELF)	2P-521-0131/5
9	1	-	-	SWITCH LOCKER & CIRCUIT BREAKER PANEL	N/A

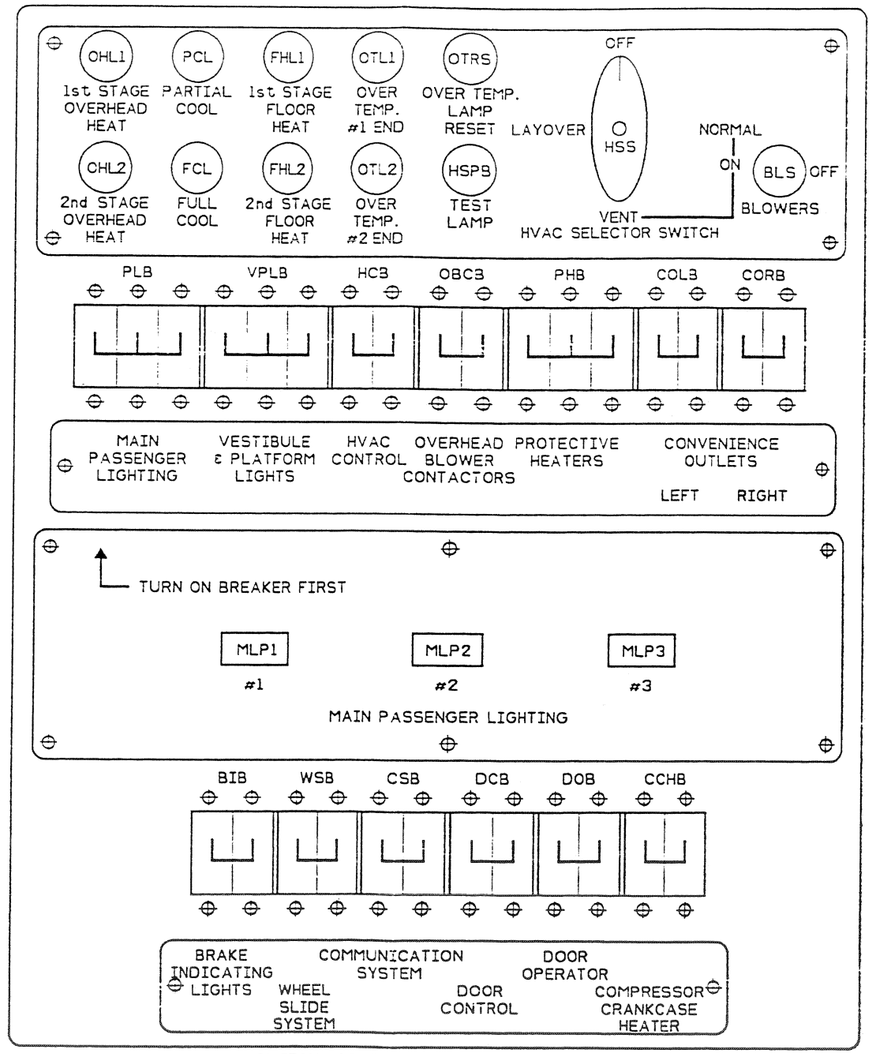






SIDE VIEW

FRONT VIEW OF ELECT. LOCKER



SWITCH LOCKER AND CIRCUIT BREAKER PANEL
DETAIL A
MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	B	DRAWING UPDATED	J.C.M. 89-05-03

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Conçu / Designed	R. L'ECUYER	89-04-05
Dessiné / Drawn	J.C. MAROIS	89-04-10
Vérifié / Checked	R. L'ECUYER	89-04-17
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	89-04-21
Ens. suivant / Next assy		

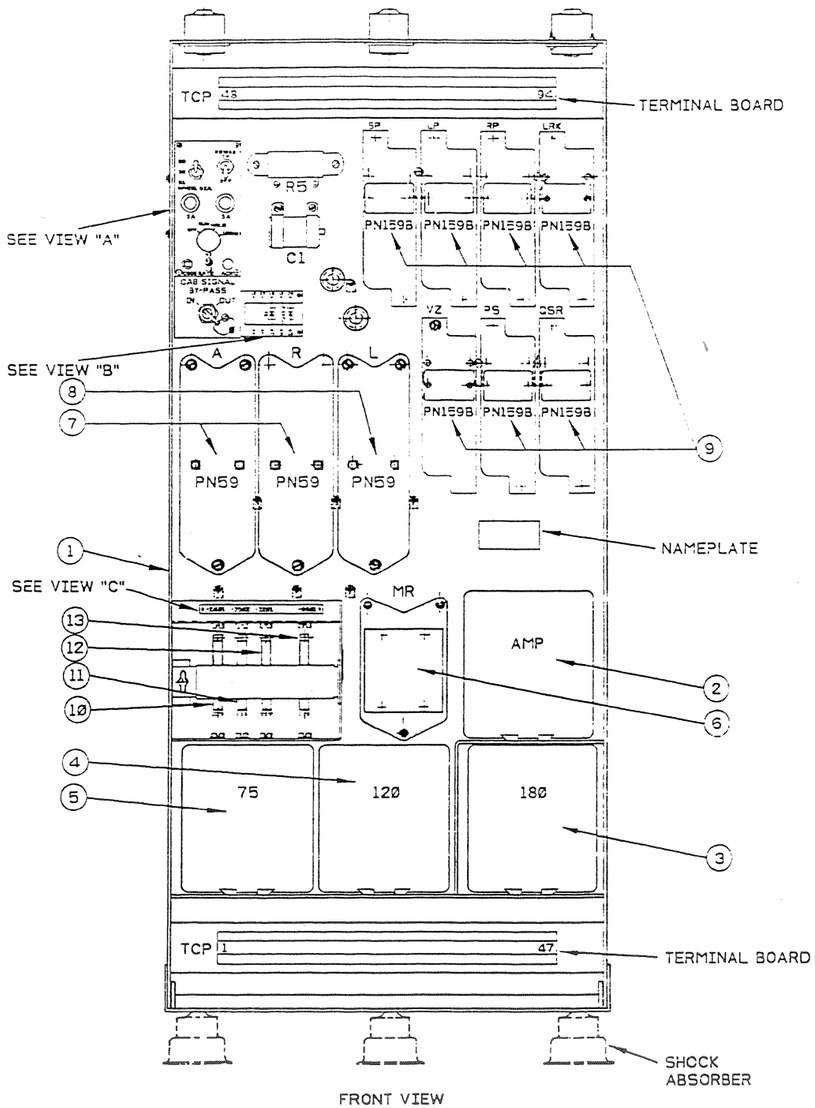
Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de / of 1
Titre / Title: ELEC. LOCKER (INSIDE BACK VIEW (D)) (CTC-BTC)
Numéro du dessin / Drawing number: 2P-521-0131/4
A2
Révision: B

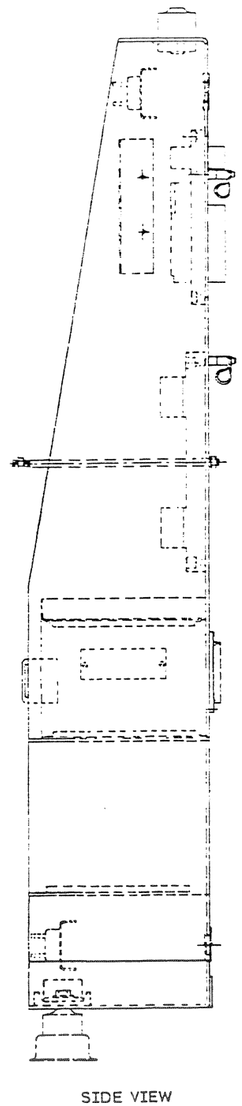
IMP. DIR. C2

2P-521-0131/5

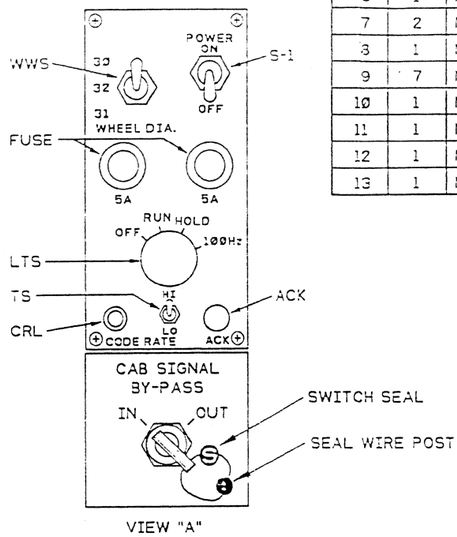
ITEMS NUMB.	ITEMS QTY.	PART IDENTIFICATION NUMBER	PART IDENTIFICATION SUFFIX	DESCRIPTION
1	1	N451643	8503	EQUIPMENT SHELF
2	1	N383426		AMPLIFIER
3	1	N451463	0301	180 DECODING UNIT
4	1	N451463	0302	120 DECODING UNIT
5	1	N451463	0501	75 DECODING UNIT
6	1	N326921		MASTER RELAY
7	2	N273665		PN59 RELAY
8	1	N436923	001	PN59 SLOW P.U. RELAY
9	7	N436788		PN159B RELAY
10	1	N451570	2401	SHAPER LIMITER P.C. BOARD
11	1	N451570	3502	CAB TEST BOARD
12	1	N451653	3201	SPEED GOVERN. P.C. BOARD
13	1	N451653	0601	DUAL FLASHER



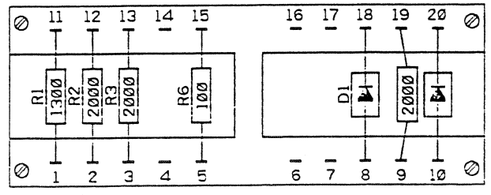
FRONT VIEW



SIDE VIEW



VIEW "A"



VIEW "B"

o -2401 -3502 -3201 -0601 o

VIEW "C"

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 91-01-07
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-15

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		Date
Conçu / Designed	D. MOQUIN	88-10-12
Dessiné / Drawn	J.C. MAROIS	88-10-12
Vérifié / Checked	D. MOQUIN	89-04-14
Contrôle de poids / Weight Control		
Ing de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	89-04-14
Ens. suivant / Next assy		

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: ATC SHELF LAYOUT (CTC)

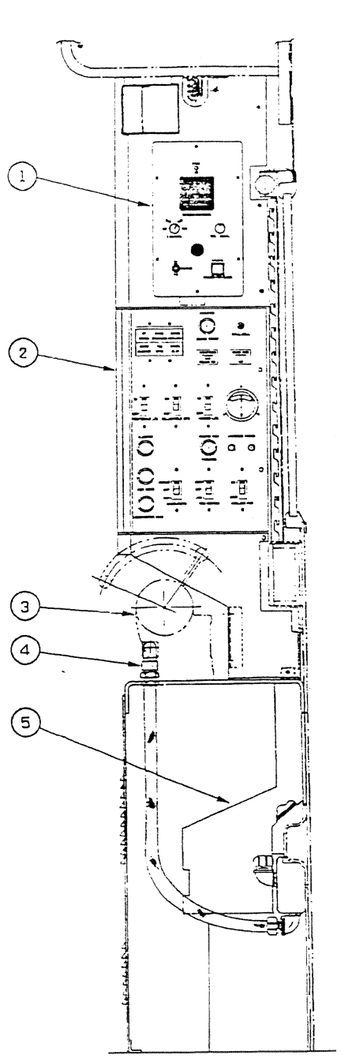
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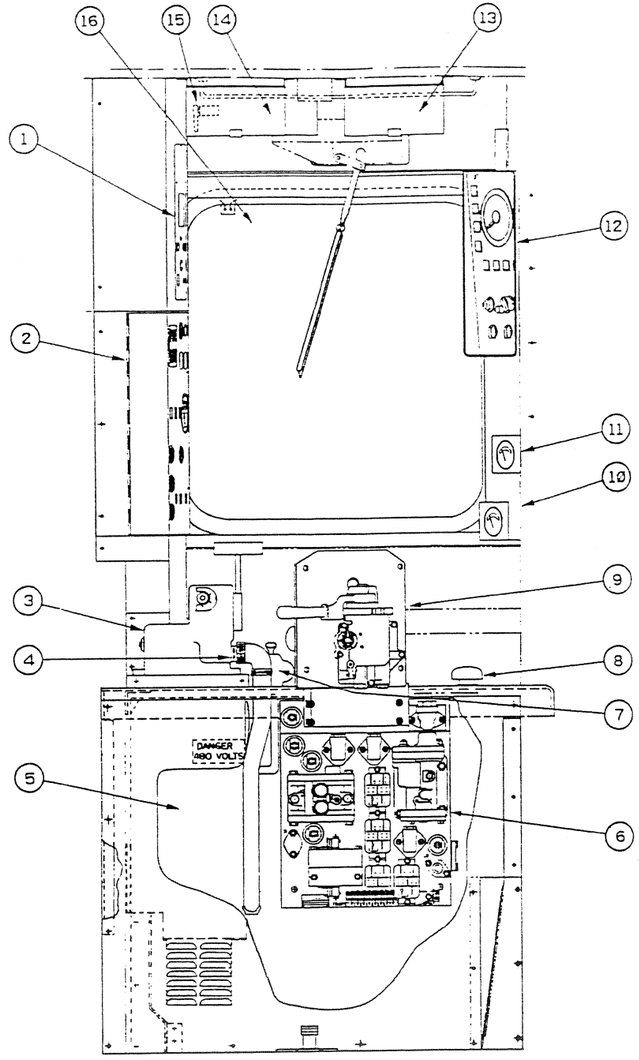
A2

Révision / Revision: B

IMP. DIR. C2

2P-521-0132/1





ITEM	ABBR.	DESCRIPTION	REF. DRAWING
1	ENCH	ENGINEMAN CONTROL HEAD (PA/IC, RADIO)	2P-521-0132/2
2		CONSOLE LEFT HAND PANEL	2P-521-0132/2
3	MC	MASTER CONTROLLER	
4	MCP	MASTER CONTROLLER PLUG (ELECTRICAL)	
5		CAB HEATER RIGHT SIDE (CHR1 & CHR2)	
6	AMF	26-C BRAKE VALVE AIR MANIFOLD	2P-521-0132/3
7		AIR HORN VALVE	
8		BELL VALVE	
9		26-C BRAKE VALVE	2P-521-0132/3
10	AG2	AIR GAUGE (MR/ER INDICATORS)	
11	AG1	AIR GAUGE (BC/BP INDICATORS)	
12	ADU	ASPECT DISPLAY UNIT	2P-521-0132/4
13		EMERGENCY SWITCH BOX	2P-521-0132/2
14		BRAKE VALVE HANDLE BOX (FOR STORAGE ONLY)	
15		AIR HORN CUTOUT COCK	
16	WHR	HEATED WINDSHIELD WITH TERMINAL BLOCK	

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	DWG. UPDATED	J.C.M. 89-05-08

Conçu / Designed	R. L'ECUYER	89-04-17
Dessiné / Drawn	J.C. MAROIS	89-04-13
Vérifié / Checked	R. L'ECUYER	89-04-17
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	89-04-17
Ens. suivant / Next assy		

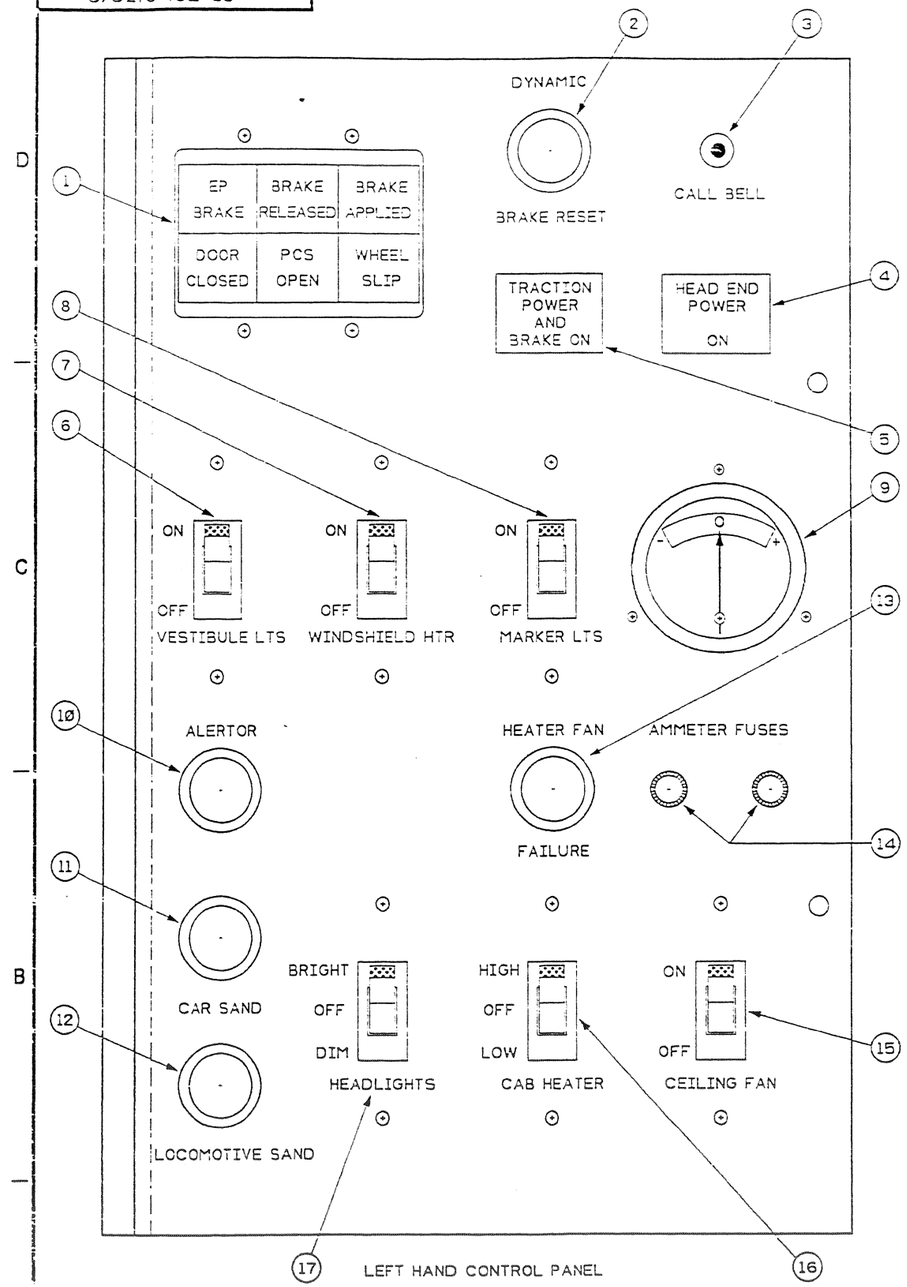
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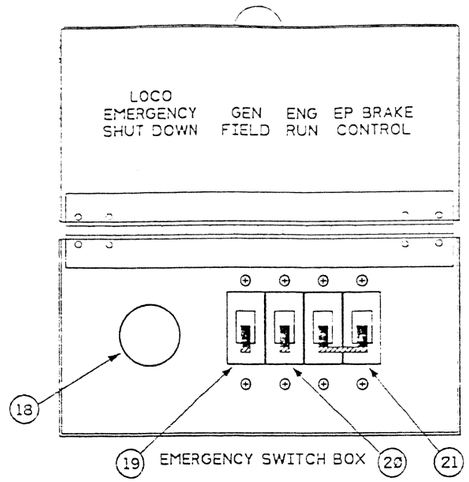
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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

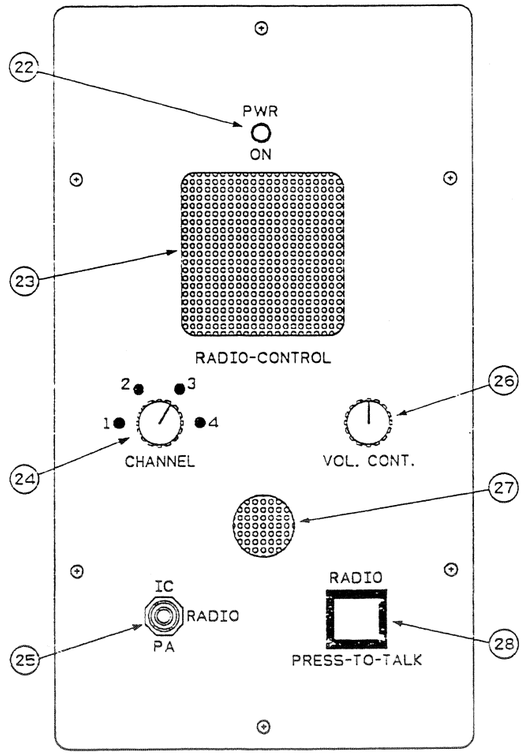
Échelle / Scale	Titre / Title		
—	OPERATING COMPARTMENT RIGHT SIDE (CTC)		
Feuille / Sheet 1 de / of 1	Numéro du dessin / Drawing number 2P-521-0132/1	A2	Révision / Revision A

IMP. DIR. C2

2P-521-0132/2







ITEM	ABBR.	DESCRIPTION	REF. DRAWING
1	ILP	INDICATING LIGHT PANEL C/W	
	EPL	ELECTRO-PNEUMATIC (PTT) WHITE LIGHT	
	BAL	BRAKE APPLIED (PTT) AMBER LIGHT	
	BRL	BRAKE RELEASE (PTT) GREEN LIGHT	
	DCL	DOORS CLOSED (PTT) BLUE LIGHT	
	TCL	TRACTION CUTOUT (PTT) RED LIGHT	
	WSL	WHEEL SLIP (PTT) WHITE LIGHT	
2	DBL	DYNAMIC BRAKE (PTT) BLUE LIGHT	
3	ACPB	ATTENDANT CALL PUSH-BUTTON	
4	HEPL	HEAD END POWER "ON" WHITE LIGHT (120VAC BULB)	
5	TPBL	TRACTION POWER & BRAKE "ON" RED LIGHT (48V BULB)	
6	VLS	VESTIBULE LIGHT TOGGLE SWITCH	
7	WHS	WINDSHIELD HEATER TOGGLE SWITCH	
8	MLS	MARKER LIGHT SWITCH	
9	BCA	BATTERY CHARGER AMMETER	
10	ARS	ALERTOR RESET PUSH-BUTTON & WHITE FLASHING LIGHT	
11	TSB	CAR SAND PUSH-BUTTON	
12	LSB	LOCOMOTIVE SAND PUSH-BUTTON	
13	HFFLR	HEATER FAN FAILURE LIGHT RIGHT (PTT) AMBER LIGHT	
14	FA1,FA2	AMMETER FUSES, 2A	
15	CFS	CEILING FAN TOGGLE SWITCH	
16	CHS	CAB HEATER TOGGLE SWITCH	
17	HLS	HEADLIGHTS TOGGLE SWITCH	
18	ESS	LOCO. EMERGENCY SHUTDOWN MUSHROOM BUTTON	
19	GFB	GENERATOR FIELD BREAKER, 20A	
20	ERB	ENGINE RUN BREAKER, 20A	
21	EPB	ELECTRO-PNEUMATIC BRAKE BREAKER, 10A	
22	L1	POWER ON LIGHT - 28VDC - BLUE LIGHT	
23		SPEAKER FOR RADIO RECEPTION	
24	SW2A/B	CHANNEL SELECTOR ROTARY SWITCH WITH RED LED'S	
25	SW1(E)	3 POS. ROTARY SWITCH - 2 POS. MOMENTARY (PA/IC)	
26	R5	VOLUME CONTROL POT., 50 1/2W	
27		MICROPHONE	
28	PTT	PRESS-TO-TALK SWITCH FOR RADIO TRANSMISSION	

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	B	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 91-01-07
R.L.	A	DWG. UPDATED TO MATCH MOUNTED EQUIPMENT.	J.C.M. 89-05-01

Designed / Conçu	R. L'ECUYER	89-04-17
Drawn / Dessiné	J.C. MAROIS	89-04-17
Checked / Vérifié	R. L'ECUYER	89-04-17
Weight Control / Contrôle de poids		
Safety engineer / Ing de securité		
Project engineer / Chargé de projet	R. L'ECUYER	89-04-17
Next assy / Ens. suivant		

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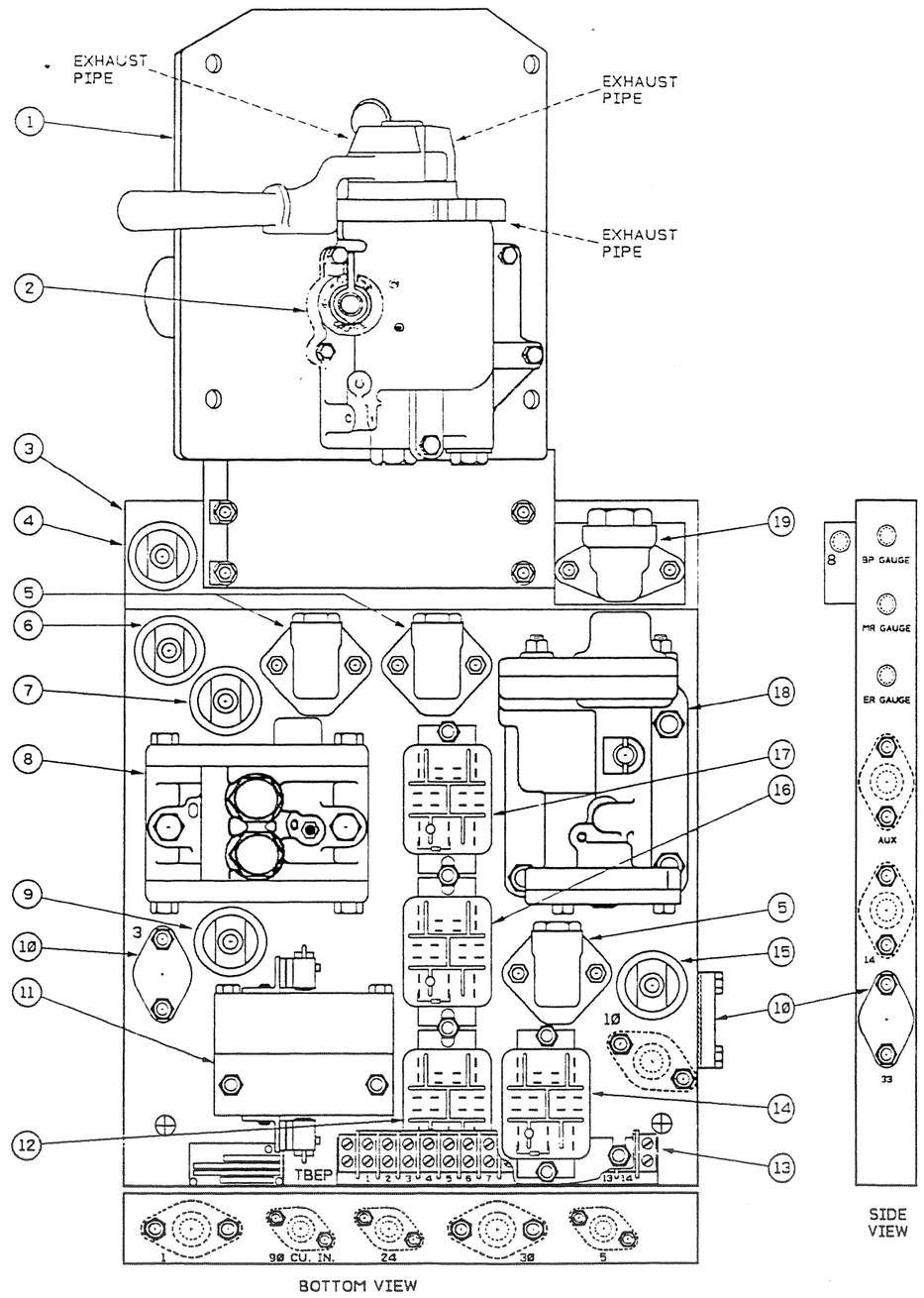
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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: —
Feuille / Sheet: 1 de / of 1
Titre / Title: CONSOLE LEFT HAND PANEL, ENGINEMAN CONTROL HEAD & EMERG. SWITCH BOX (CTC)
Numéro du dessin / Drawing number: 2P-521-0132/2
Format: A2
Revision: B

IMP. DIR. C2

2P-521-0132/3

ITEM	ABBR.	DESCRIPTION	REF. DRAWING
1		26-C BRAKE VALVE	
2		PILOT KNOB VALVE (CUTOFF)	
3	AMF	26-C AIR MANIFOLD	
4	PS-53	PRESSURE SWITCH #53	
5		DT-3 DOUBLE THROW CHECK VALVE	
6	PS-35	PRESSURE SWITCH #35	
7	ESPS	EMERGENCY SANDING PRESSURE SWITCH	
8		A-1 CHARGING CUTOFF PILOT VALVE	
9	CEPS	CHANGING END PROTECTION PRESSURE SWITCH	
10		BLANKING PLATE AND GASKET	
11	TCS	TRIPLE CONTROL SWITCH	
12	CEPR	CHANGING END PROTECTION RELAY	
13	EP	TERMINAL BLOCK LABELLED EP	
14	AR	APPLICATION RELAY	
15	PKOPS	POWER KNOCKOUT PRESSURE SWITCH	
16	RR	RELEASE RELAY	
17	CERR	CHANGING END RELEASE RELAY	
18		P-2-A APPLICATION VALVE	
19		FLANGE MOUNTED DOUBLE CHECK VALVE	



BOTTOM VIEW

SIDE VIEW

FLANGE FITTINGS TABULATION

PORT	FUNCTION
1	BRAKE PIPE
3	NOT USED
5	E.R.
8	800 CU. IN. RESERVOIR
10	TRAIN CONTROL
14	WIPER
24	130 CU. IN. RESERVOIR
30	MAIN RESERVOIR
33	NOT USED
AUX.	HORN
90 C.I.	A-1

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	PORTS INFO. & SIDE AND BOTTOM VIEWS ADDED.	J.C.M. 89-05-17

Conçu / Designed	NYAB - R.L.	89-04-13
Dessiné / Drawn	J.C. MAROIS	89-04-13
Vérifié / Checked	R. L'ECUYER	89-04-14
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	89-04-14
Ens. suivant / Next assy		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

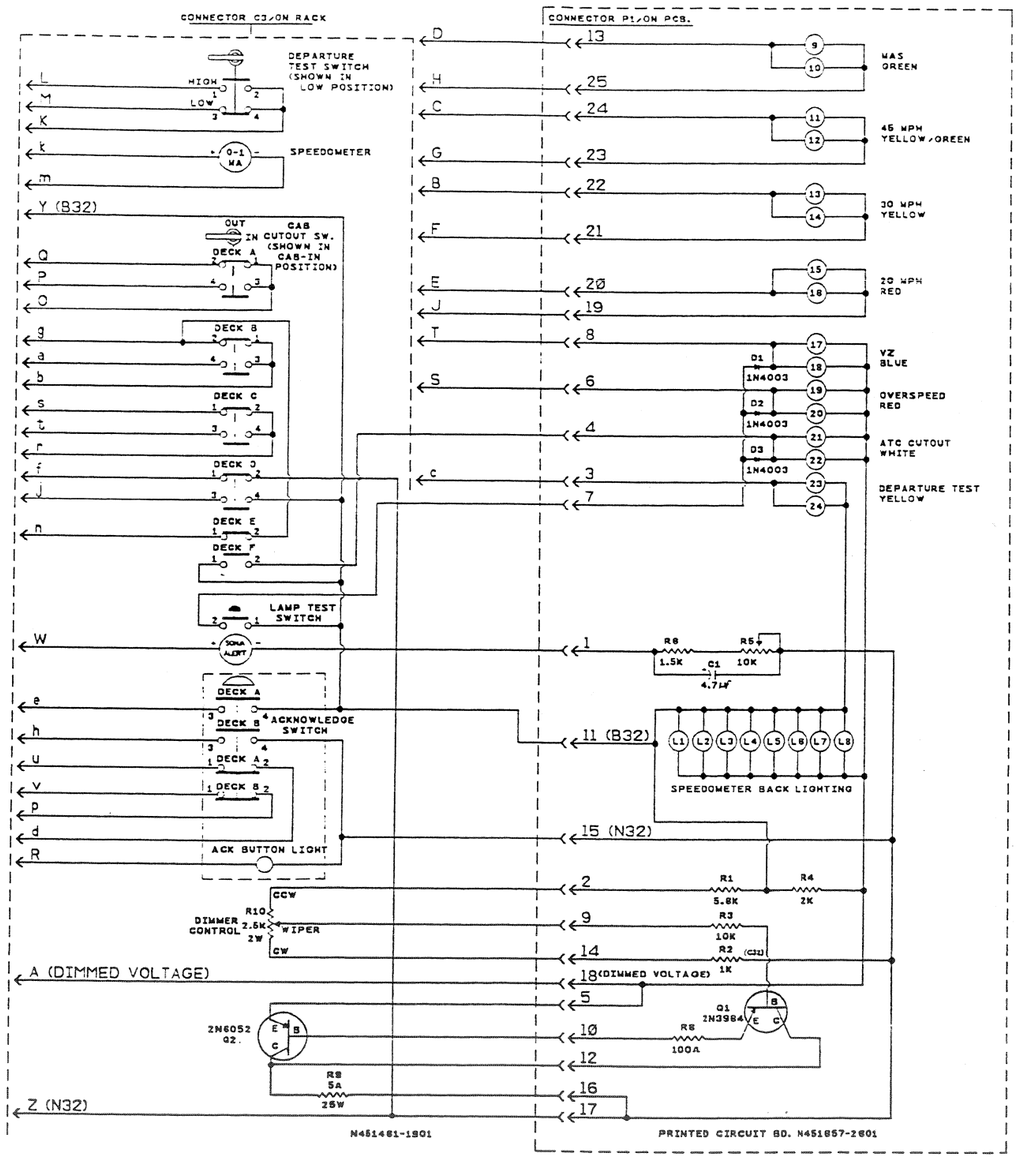
Échelle / Scale: —
Feuille / Sheet: 1 de / of 1
Titre / Title: 26-C BRAKE VALVE WITH AIR MANIFOLD (CTC)
Numéro du dessin / Drawing number: 2P-521-0132/3
Format: A2
Révision / Revision: A

IMP. DIR. C2

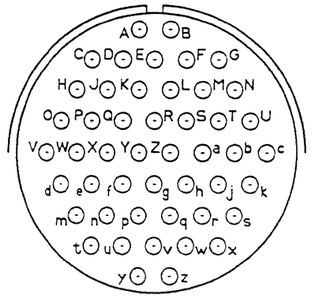
2P-521-0132/4

ITEM NO.	ABBREVIATION	DESCRIPTION
1	ADU	ASPECT DISPLAY UNIT
2	SCSW	SPEED CONTROL SWITCH
3	OBTS	ONBOARD TEST ROTARY SWITCH
4	OBTL	ONBOARD DEPARTURE TEST INDICATING LIGHT

ITEM NO.	ABBREVIATION	DESCRIPTION
5	COL	ATC CUT-OUT INDICATING LIGHT
6	OSKL	OVERSPEED INDICATING LIGHT
7	VZ	VELOCITY ZERO INDICATING LIGHT
8	AA	AUDIBLE ALARM
9	SILD	SPEED INDICATOR LIGHTING DIMMER CONTROL
10	AS	ACKNOWLEDGE SWITCH & RED INDICATING LIGHT
11	TS	INDICATING LIGHT TEST SWITCH
12	DUP	DISPLAY UNIT RECEPTACLE

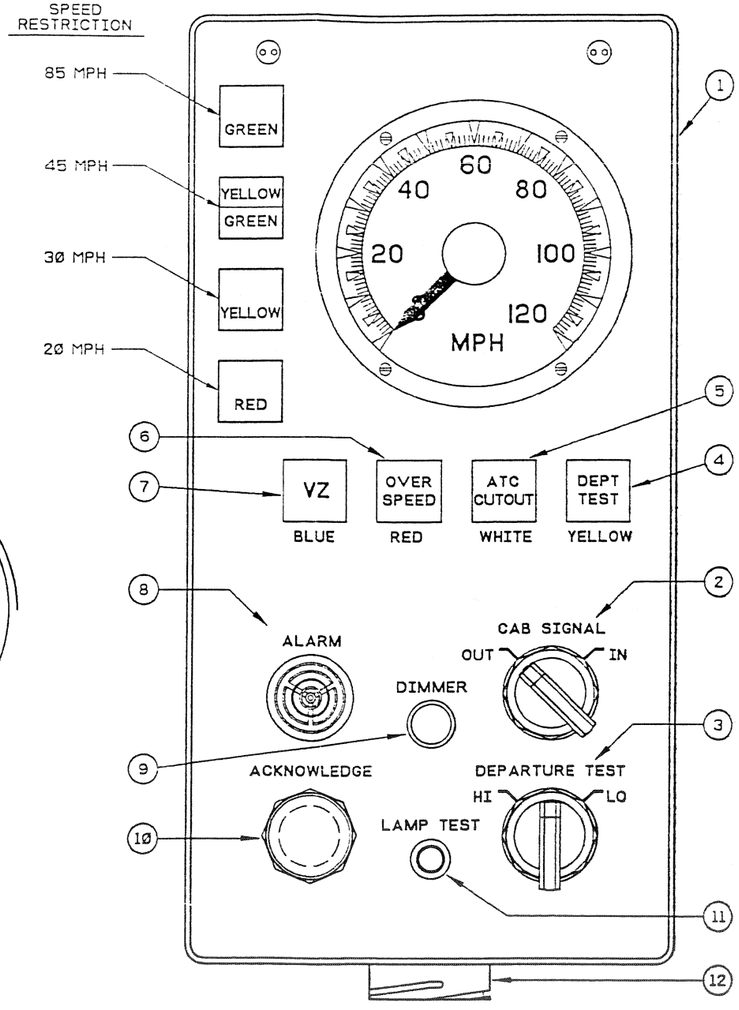


CONNECTOR
VEAM
CIR 030 38 10P F80



TO BE KEYED TOWARD FRONT

SPEED RESTRICTION



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	SCHEMATIC DIAGRAM ADDED & ITEMS 9 & 10 INVERSED	J.C.M. 89-05-29

Designed / Conçu	R. L'ECUYER	88-11-30
Drawn / Dessiné	J.C. MAROIS	88-11-30
Checked / Vérifié	R. L'ECUYER	88-12-03
Weight Control / Contrôle de poids		
Safety engineer / Ing. de sécurité		
Project engineer / Chargé de projet	R. L'ECUYER	88-12-03
Next assy / Ens. suivant		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Scale / Echelle: —
Sheet / Feuille: 1 de 1

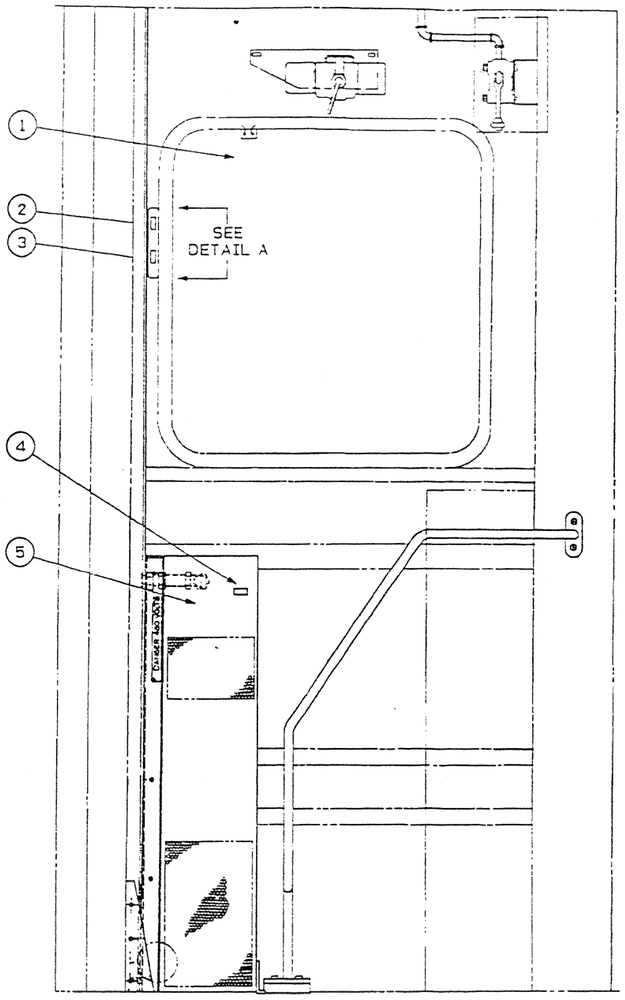
Title / Titre: ASPECT DISPLAY UNIT (CTC)

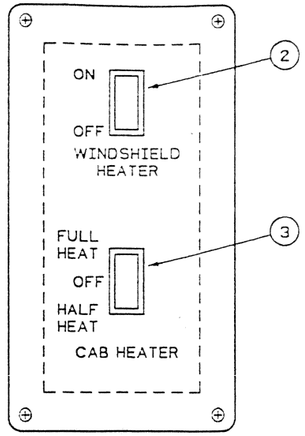
Drawing number / Numéro du dessin: 2P-521-0132/4

Size: A2 — Revision: A

IMP. DIR. C2

2P-521-0133





DETAIL A

ITEM	ABBR.	DESCRIPTION	REF. DRAWING
1	WHL	WINDSHIELD HEATING FILM - LEFT SIDE	
2	WHSL	WINDSHIELD HEATER TOGGLE SWITCH - LEFT SIDE	
3	CHSL	CAB HEATER TOGGLE SWITCH - LEFT SIDE	
4	HFFL	HEATER FAN FAILURE INDICATING LIGHT - LEFT SIDE	
5	-	CAB HEATER - LEFT SIDE (CHL1/CHL2) WITH FAN (HFL)	

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-03

Conçu Designed	R. L'ECUYER	Date 89-04-11
Dessiné Drawn	J.C. MAROIS	Date 89-04-20
Vérifié Checked	R. L'ECUYER	Date 89-04-24
Contrôle de poids Weight Control		Date
Ing. de sécurité Safety engineer		Date
Chargé de projet Project engineer	R. L'ECUYER	Date 89-04-24
Ens. suivant Next assy		

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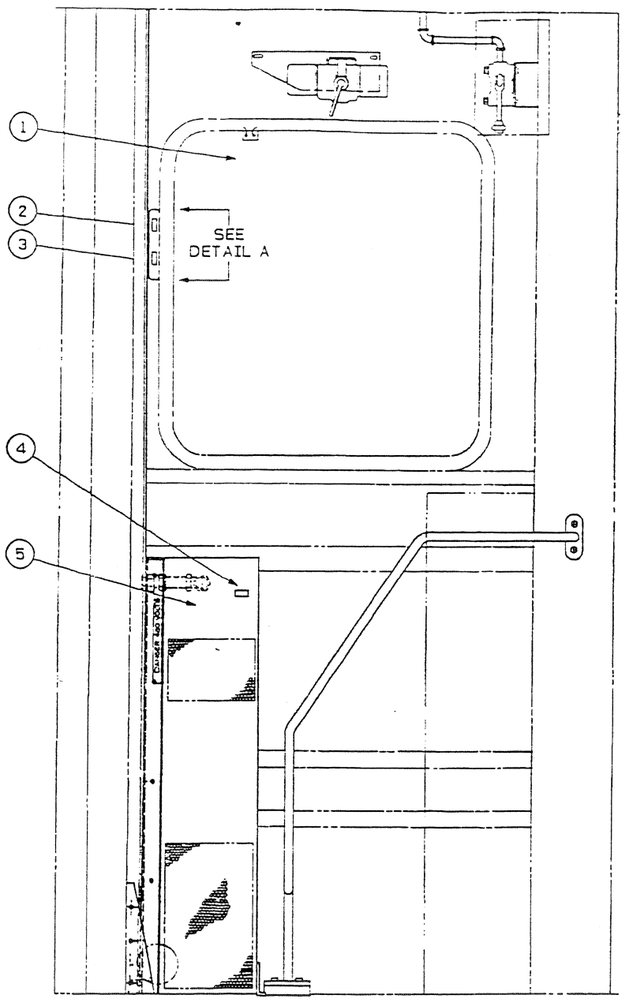
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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

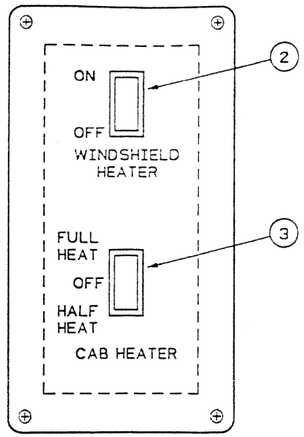
Echelle Scale	Titre Title		
–	OPERATING COMPARTMENT, LEFT SIDE (CTC)		
Feuille Sheet 1 de 1	Numéro du dessin Drawing number	2P-521-0133	A2 / Revision A

IMP. DIR. C2

2P-521-0133

ITEM	ABBR.	DESCRIPTION	REF. DRAWING
1	WHL	WINDSHIELD HEATING FILM - LEFT SIDE	
2	WHSL	WINDSHIELD HEATER TOGGLE SWITCH - LEFT SIDE	
3	CHSL	CAB HEATER TOGGLE SWITCH - LEFT SIDE	
4	HFFL	HEATER FAN FAILURE INDICATING LIGHT - LEFT SIDE	
5	-	CAB HEATER - LEFT SIDE (CHL1/CHL2) WITH FAN (HFL)	





DETAIL A

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

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C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-03

Conçu / Designed: R. L'ECUYER 89-04-11
Dessiné / Drawn: J.C. MAROIS 89-04-20
Vérifié / Checked: R. L'ECUYER 89-04-24
Contrôle de poids / Weight Control:
Ing. de sécurité / Safety engineer:
Chargé de projet / Project engineer: R. L'ECUYER 89-04-24
Ens. suivant / Next assy:

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: –
Feuille / Sheet: 1 de 1

Titre / Title: OPERATING COMPARTMENT, LEFT SIDE (CTC)

Numéro du dessin / Drawing number: 2P-521-0133 | A2 | Révision / Revision: A

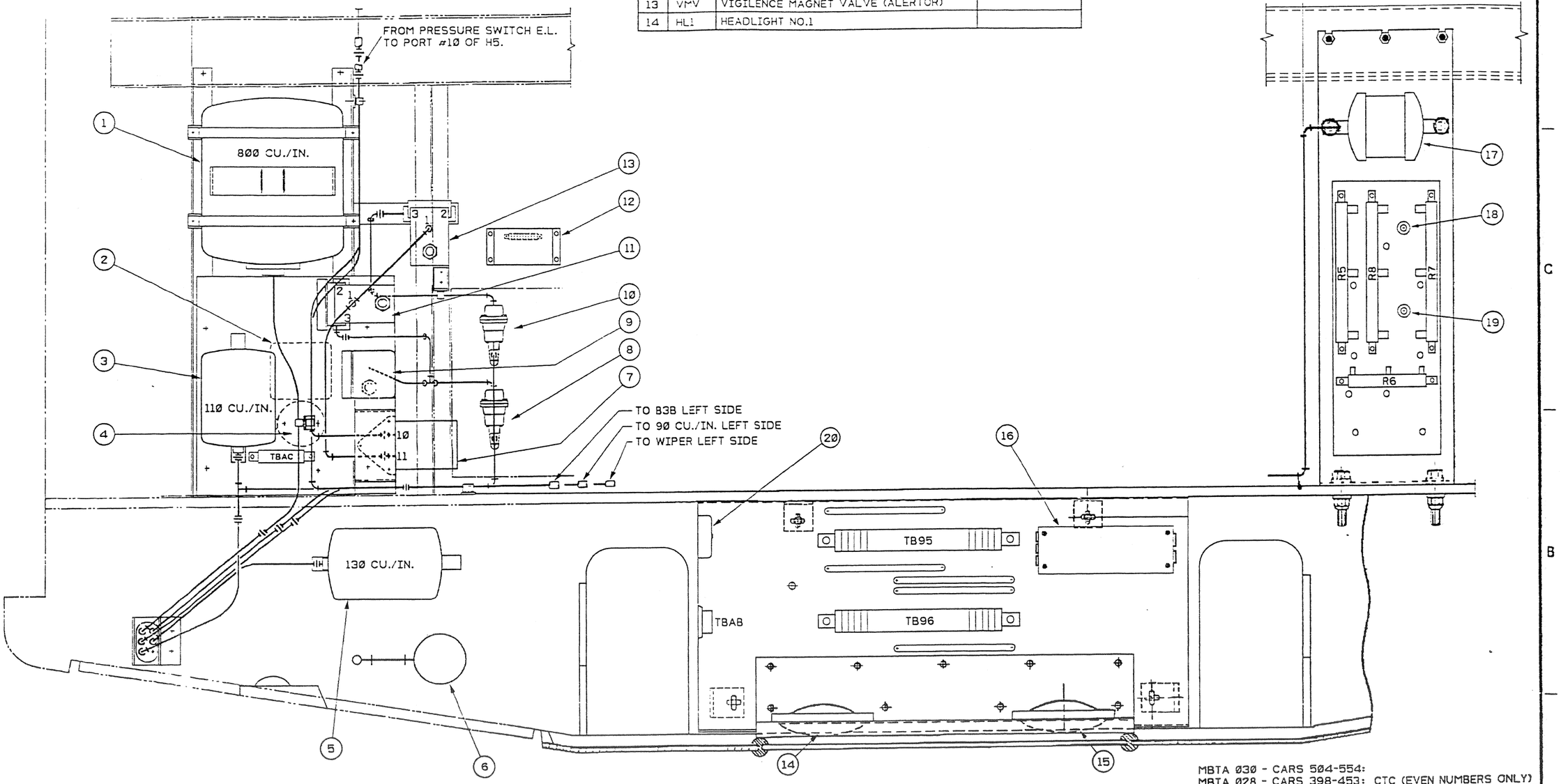
IMP. DIR. C2

2P-521-0135

ITEM	ABBR.	DESCRIPTION	REF. DRAWING
1	-	800 CU./IN. RESERVOIR (ATC)	
2	WSAB	WHEEL SLIP ALARM BUZZER	
3	-	110 CU./IN. RESERVOIR (ATC)	
4	CBU1	CONDUCTOR BELL	
5	-	130 CU./IN. RESERVOIR (ATC)	
6	-	1/2 OC-1-A FILTER FOR HORN	

ITEM	ABBR.	DESCRIPTION	REF. DRAWING
7	-	H-5 RELAYAIR VALVE (ATC)	
8	-	CUTOUT COCK FOR PBMV (ATC) SEALED	
9	PBPS	PENALTY BRAKE PRESSURE SWITCH (ATC)	
10	-	CUTOUT COCK FOR VMV (ALERTOR) SEALED	
11	PBMV	PENALTY BRAKE MAGNET VALVE (ATC)	
12	AB	ALARM BOX C/W TERMINAL (ALERTOR)	
13	VMV	VIGILENCE MAGNET VALVE (ALERTOR)	
14	HL1	HEADLIGHT NO.1	

ITEM	ABBR.	DESCRIPTION	REF. DRAWING
15	HL2	HEADLIGHT NO.2	
16	R2-R4	MARKER LIGHT RESISTOR ASS'Y	
17	-	90 CU./IN. RESERVOIR	
18	Z1	ZENER DIODE ON HEAT SINK (HEADLIGHT)	
19	Z2	ZENER DIODE ON HEAT SINK (HEADLIGHT)	
20	ACB	ATTENDANT CALL BELL	



MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

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Conçu / Designed	R. L'ECUYER	Date 89-04-07
Dessiné / Drawn	J.C. MAROIS	Date 89-04-13
Vérifié / Checked	R. L'ECUYER	Date 89-04-17
Contrôle de poids / Weight Control		Date
Ing. de sécurité / Safety engineer		Date
Chargé de projet / Project engineer	R. L'ECUYER	Date 89-04-17
Ens. suivant / Next assy		

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: VESTIBULE CEILING EQUIPMENT (CTC)

Numéro du dessin / Drawing number: 2P-521-0135

A2

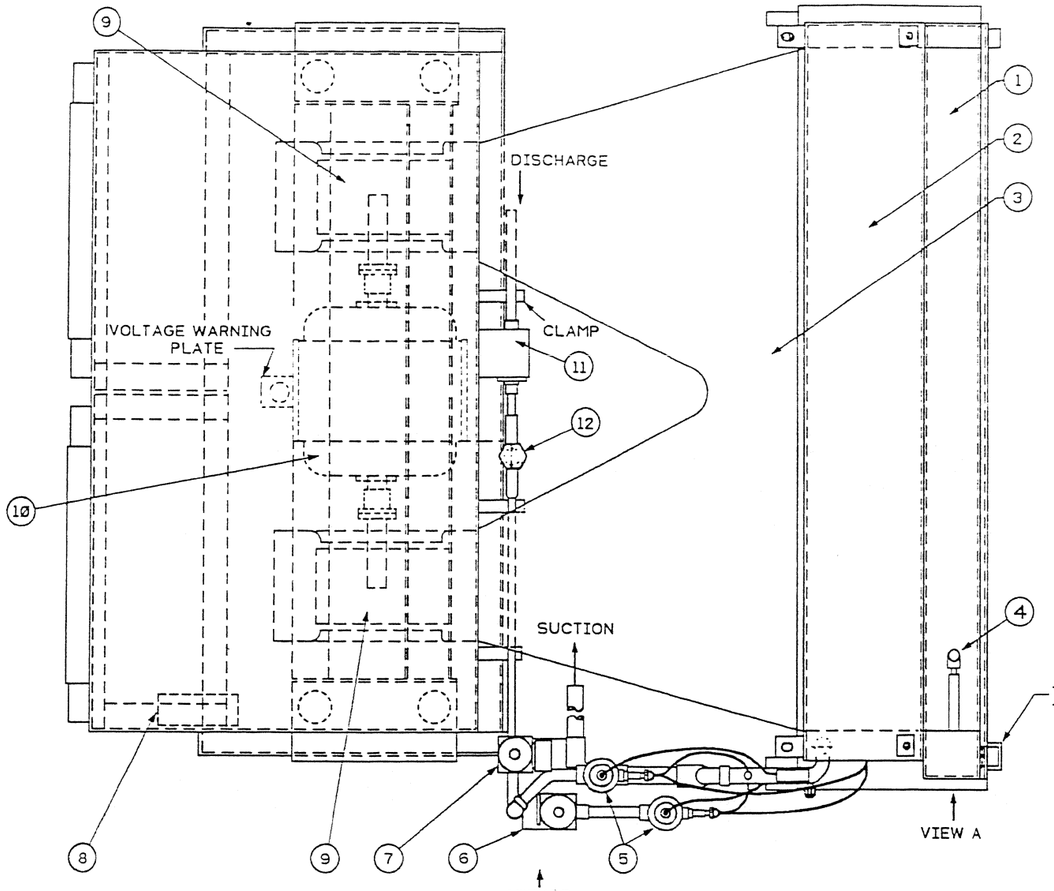
Révision / Revision: —

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE

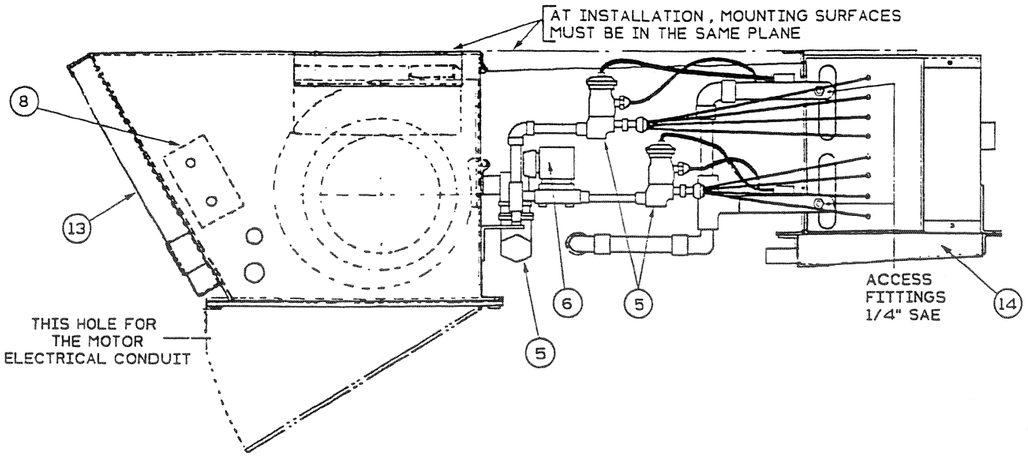
IMP. DIR. F2

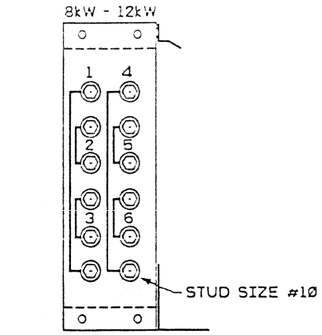
2P-521-0136

TOP VIEW



VIEW B





HEATER WIRING DIAGRAM
480V 3 PHASES
"△" CONNECTIONS

VIEW A

ITEM	ABBR.	DESCRIPTION
1		ELEC. HEATER 2 STAGES
2		EVAPORATOR COIL
3		FLEXIBLE DUCT
4		OVERHEAT THERMOSTAT 150°F ±
5		EXPANSION VALVE WITH SENSOR
6	MV1,MV2	FREON MODULATING MAGNET VALVE
7	LV1,LV2	FREON LIQUID MAGNET VALVE
8	AFPS1/2	AIR PRESS. DIFF. SWITCH
9		BLOWER WHEEL
10	BF1/BF2	BLOWER MOTOR
11		STRAINER
12		SIGHT GLASS WITH MOISTURE INDICATOR
13		FILTER
14		DRAIN PAN

NOTES:

- 6.15 TON WITH AN AIR FLOW OF 1800 CFM(TOTAL) AT 0.5 INCH EXTERNAL STATIC PRESSURE TO THE COMPLETE OVERHEAD UNIT
  - FRESH AIR: 600 CFM AT 95°F DB/78°F WB
  - RETURN AIR: 1200 CFM AT 77°F DB/60% RH
- BLOWER MOTOR 1.0 HP
- DESIGN VOLTAGE 480/3/60 (SYSTEM)
- APPROX. WEIGHT 360 LBS.
- MAX. PERMISSIBLE FREQUENCY 67 HZ
- MIN. PERMISSIBLE VOLTAGE 414/3/60 (SYSTEM) OR 460/3/64 (SYSTEM)
- REFRIGERANT R22

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT/DATE
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-02

Conçu / Designed	FAIVELEY R.L. 89-04-03
Dessiné / Drawn	J.C. MAROIS 89-04-17
Vérifié / Checked	R. L'ECUYER 89-04-20
Contrôle de poids / Weight Control	
Ing. de sécurité / Safety engineer	
Chargé de projet / Project engineer	R. L'ECUYER 89-04-20
Ens. surveré / Next assy	

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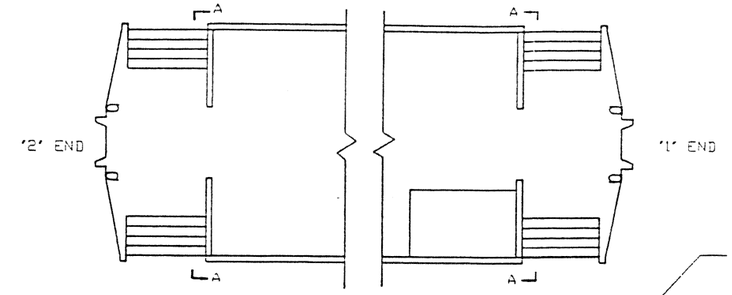
Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

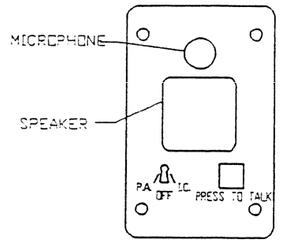
Échelle / Scale	—
Feuille / Sheet	1 de / of 1
Titre / Title	HVAC OVERHEAD EVAPORATOR BLOWER UNIT (CTC-BTC)
Numéro du dessin / Drawing number	2P-521-0136
Format	A2
Révision	A

IMP. DIR. F2

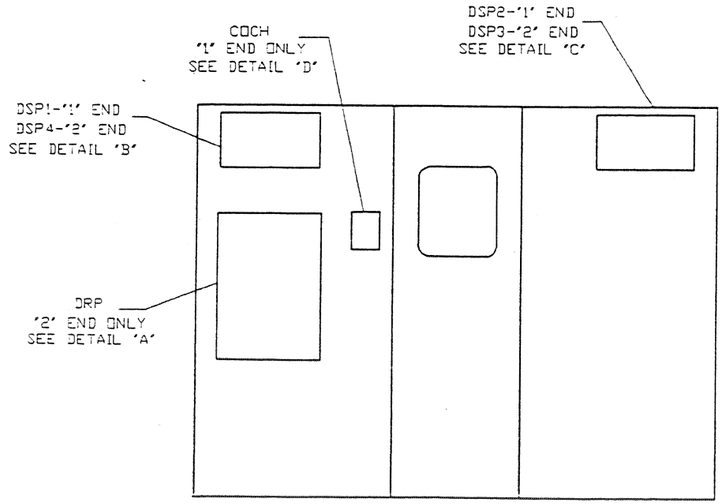
2P-521-0137

ABREV.	DESCRIPTION	REF. DWG
DRP	DOOR CONTROL RELAY PANEL	–
DSP	DOOR CONTROL SWITCH PANEL	–
COCH	CONDUCTOR CONTROL HEAD	–
ZS2	DOOR ZONE SWITCH	–

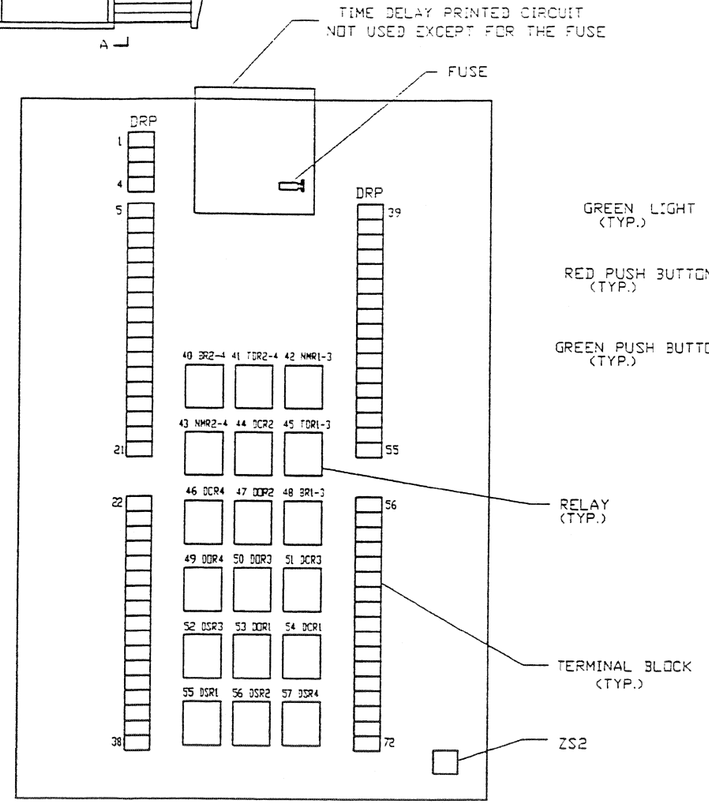




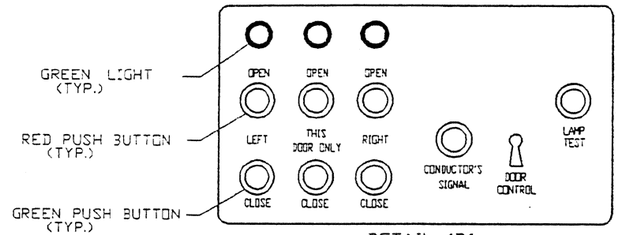
DETAIL 'D'



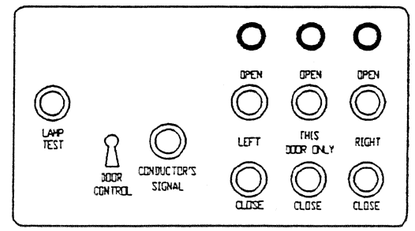
SECTION A-A



DETAIL 'A'



DETAIL 'B'
DSP1 & DSP4



DETAIL 'C'
DSP2 & DSP3

MBTA 030-CARS 504-554
MBTA 028-CARS 398-453: CTC (EVEN NUMBERS)-BTC (ODD NUMBERS)

G.HILL	–	–	RL	RL	SEE B.D.R.	–	17/01/71	B
DESSINE DRAWN	POIDS WEIGHT	R.M.&S./ S.S.A	VERIFIE CHECKED	APPROBATION APPROVED	DESCRIPTION	ZONE	DATE	REV.

		Init.	Date
Concepteur-Designer	J.GRACIO		89/04/14
Dessin-Drawn	J.GRACIO		89/04/14
Vérifié-Checked	R.L'ECUYER		89/04/17
Contrôle de projet-Project Control	–		–
R.M.&S./S.S.A	–		–
Approbation-Approved	R.L'ECUYER		89/04/17
Ens. suivant-Next assy	–		

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Division du transport en commun
Mass Transit Division

Boucherville / La Pocatière, Québec, Canada

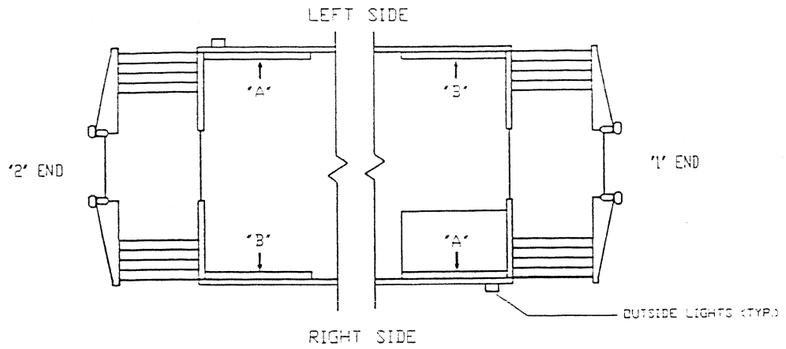
Echelle Scale: –
Titre Title: VESTIBULE LAYOUT (CTC–BTC)
Format Size: A2
Chapitre Chapter: 5
Numéro du dessin Drawing number: 2P–521–0137
Feuille Sheets: 1 of 1
Révision Revision: B

028

Bouch.

2P-521-0138

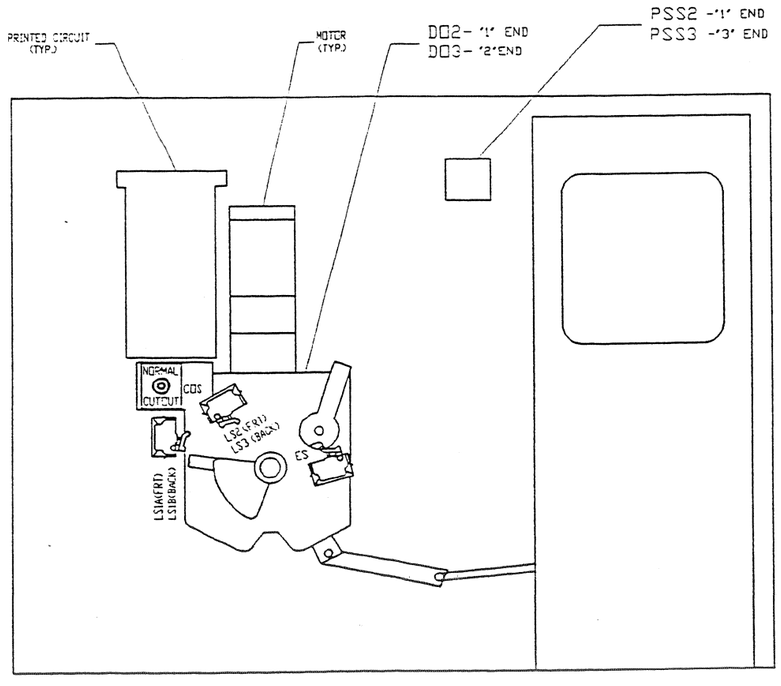
ABBR	DESCRIPTION	REF. DRAWING
DO1-4	DOOR OPERATOR	–
ES	EMERGENCY SWITCH	–
COS	CUTOUT SWITCH	–
LS1A	FULL CLOSE LIMIT SWITCH	–
LS1B	FULL CLOSE LIMIT SWITCH	–
LS2	FULL OPEN LIMIT SWITCH	–
LS3	OPENING CUSHION LIMIT SWITCH	–
PSS1-4	PANEL SENSING SWITCH	–
BARL	BRAKE APPLIED LIGHT - RIGHT SIDE	–
BALL	BRAKE APPLIED LIGHT - LEFT SIDE	–
BRRL	BRAKE RELEASED LIGHT - RIGHT SIDE	–
BRLL	BRAKE RELEASED LIGHT - LEFT SIDE	–
EPBRL	ELECTRO-PNEUMATIC BRAKE LIGHT-R.S.	–
EPBLL	ELECTRO-PNEUMATIC BRAKE LIGHT-L.S.	–



BARL -'1' END
BALL -'2' END
(AMBER)

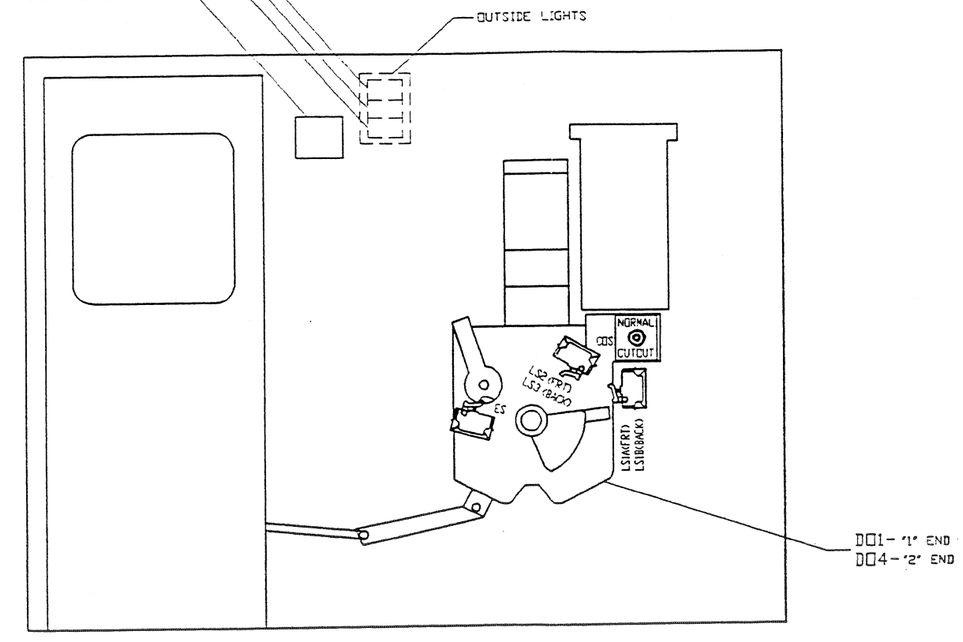
BRRL -'1' END
BRLL -'2' END
(GREEN)

EPBRL -'1' END
EPBLL -'2' END
(WHITE)



VEW 'B'

PSS1 -'1' END
PSS4 -'2' END



VEW 'A'

MBTA 030-CARS 504-554
MBTA 028-CARS 398-453 CTC (EVEN NUMBERS) BTC (ODD NUMBERS)

		Init.	Date
Concepteur-Designer	J.GRACIO		89/04/20
Dessinateur-Draftsman	J.GRACIO		89/04/17
Verifié-Checked	R.L'ECUYER		89/04/25
Contrôlé par modifications Controlled	–		–
R.M.&S./S.S.A.	–		–
Approuvé-Approved	R.L'ECUYER		89/04/26
Ens. surveillance assy	–		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle Scale	Titre Title		
NTS	DOOR POCKET ARRANGEMENT (CTC-BTC)		
Format Size: A2	Chapitre Chapter: 5	Numéro du dessin Drawing number: 2P-521-0138	Feuille Sheet: 1 of 1 — Révision: A

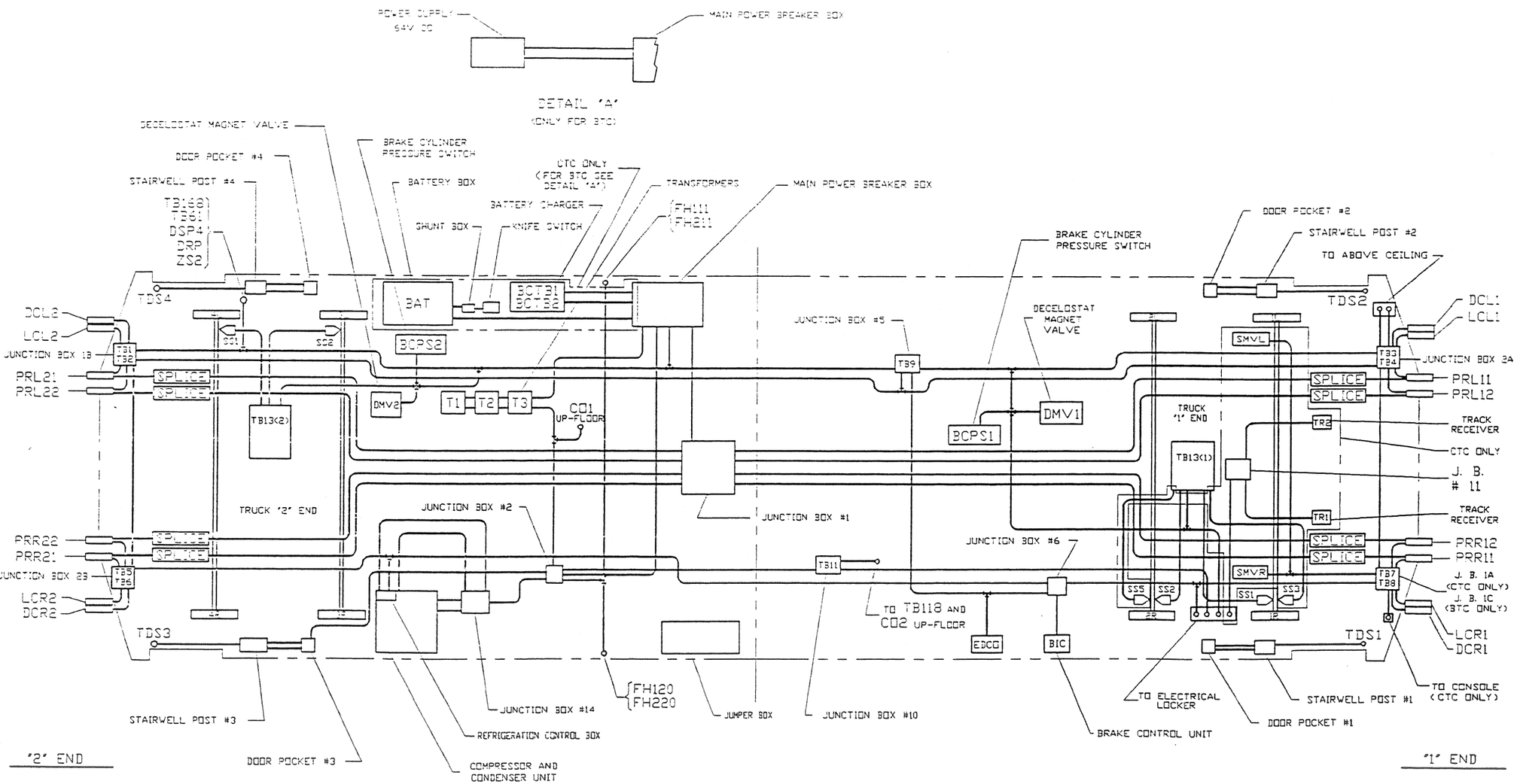
DESSINÉ DRAWN	POIDS WEIGHT	R.M.&S./ S.S.A.	VERIFIÉ CHECKED	APPROBATION APPROVED	DESCRIPTION	ZONE	DATE	REV.
GHILL	–	–	RL	RL	SEE B.D.R.	–	17/01/91	A

028

Bauch.

2P-521-0140/1

ABBR	DESCRIPTION	REF DRAWING
-	MAIN POWER BREAKER BOX	2P-521-0140/2
-	BATTERY CHARGER	2P-521-0140/3
-	POWER SUPPLY	2P-521-0140/4
-	COMPRESSOR/CONDENSER UNIT	2P-521-0140/5
-	BRAKE CONTROL UNIT	2P-521-0140/6
-	TRACK RECEIVER	2P-521-0140/7



MBTA 030-CARS 504-554
MBTA 028-CARS 398-453 CTC (EVEN NUMBERS) BTC (ODD NUMBERS)

		Init.	Date
Conception-Design	J.GRACIO		89/04/11
Dessin-Drawn	J.GRACIO		89/04/11
Vérifié-Checked	R.L'ECUYER		89/04/11
Contrôle de rouge-Vesprel Control	-		-
R.M.&S./C.S.A.	-		-
Approbation-Approved	R.L'ECUYER		89/04/11
Etat suivant-Next state	-		

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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

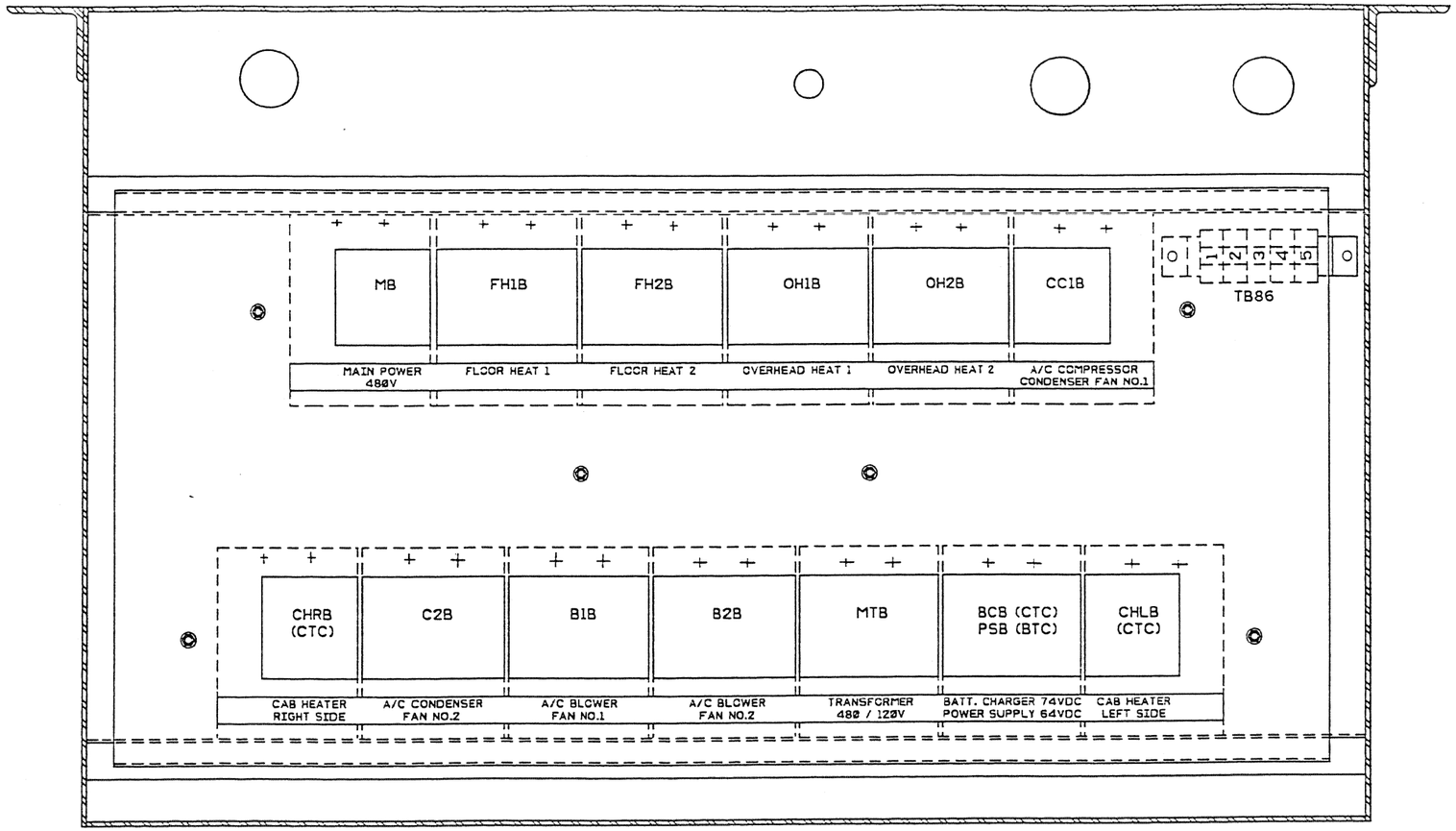
G.HILL	-	-	R.L	R.L	SEE B.D.R.	-	17/11/91	A
DESSINÉ DRAWN	POIDS WEIGHT	R.M.&S./ C.S.A.	VÉRIFIÉ CHECKED	APPROBATION APPROVED	DESCRIPTION	ZONE	DATE	REV.

028

Échelle Scale: NTS
Titre Title: U/C ARRANGEMENT (CTC-BTC)
Format Size: A2
Chapitre Chapter: 5
Numéro du dessin Drawing number: 2P-521-0140/1
Feuille Sheet: 1 of 7
Révision: A

Bouch.

2P-521-0140/2



MAIN POWER 480V	FLOOR HEAT 1	FLOOR HEAT 2	OVERHEAD HEAT 1	OVERHEAD HEAT 2	A/C COMPRESSOR CONDENSER FAN NO.1

CAB HEATER RIGHT SIDE	A/C CONDENSER FAN NO.2	A/C BLOWER FAN NO.1	A/C BLOWER FAN NO.2	TRANSFORMER 480 / 120V	BATT. CHARGER 74VDC POWER SUPPLY 64VDC	CAB HEATER LEFT SIDE

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 98-05-01

Conçu Designed	D. MOQUIN	Date 89-04-13
Dessiné Drawn	J.C. MAROIS	Date 89-04-13
Vérifié Checked	D. MOQUIN	Date 89-04-13
Contrôle de poids Weight Control		Date
Ing. de sécurité Safety engineer		Date
Chargé de projet Project engineer	R. L'ECUYER	Date 89-04-13
Ens. suivant Next assy		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle Scale: —
Feuille Sheet: 1 de of 1

Titre Title: UNDERCAR 480VAC CIRCUIT BREAKER BOX (CTC-BTC)

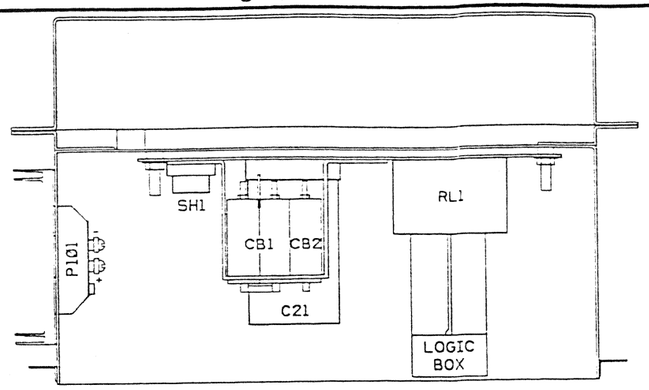
Numéro du dessin Drawing number: 2P-521-0140/2

Format: A2

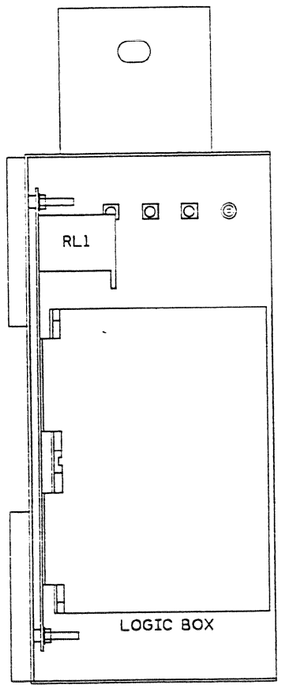
Révision Revision: A

IMP. DIR. F2

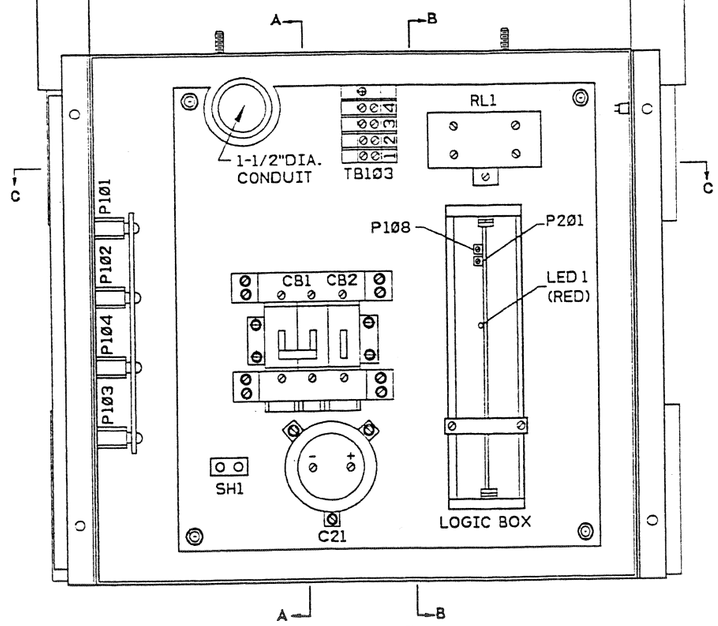
2P-521-0140/3



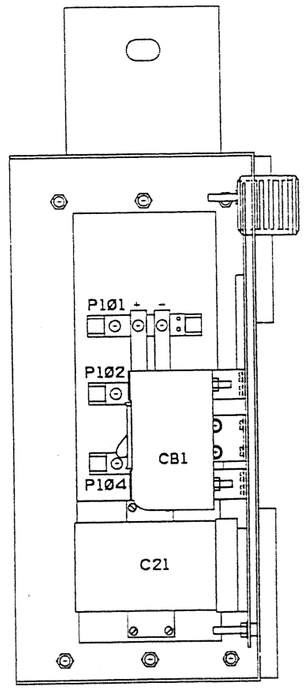
SECTION C-C



SECTION B-B



FRONT VIEW



SECTION A-A

C.P. P.E.	REV	DESCRIPTION	INIT./DATE
R.L.	A	DWG. UPDATED TO MATCH MOUNTED EQUIPMENT.	J.C.M. 89-05-08

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

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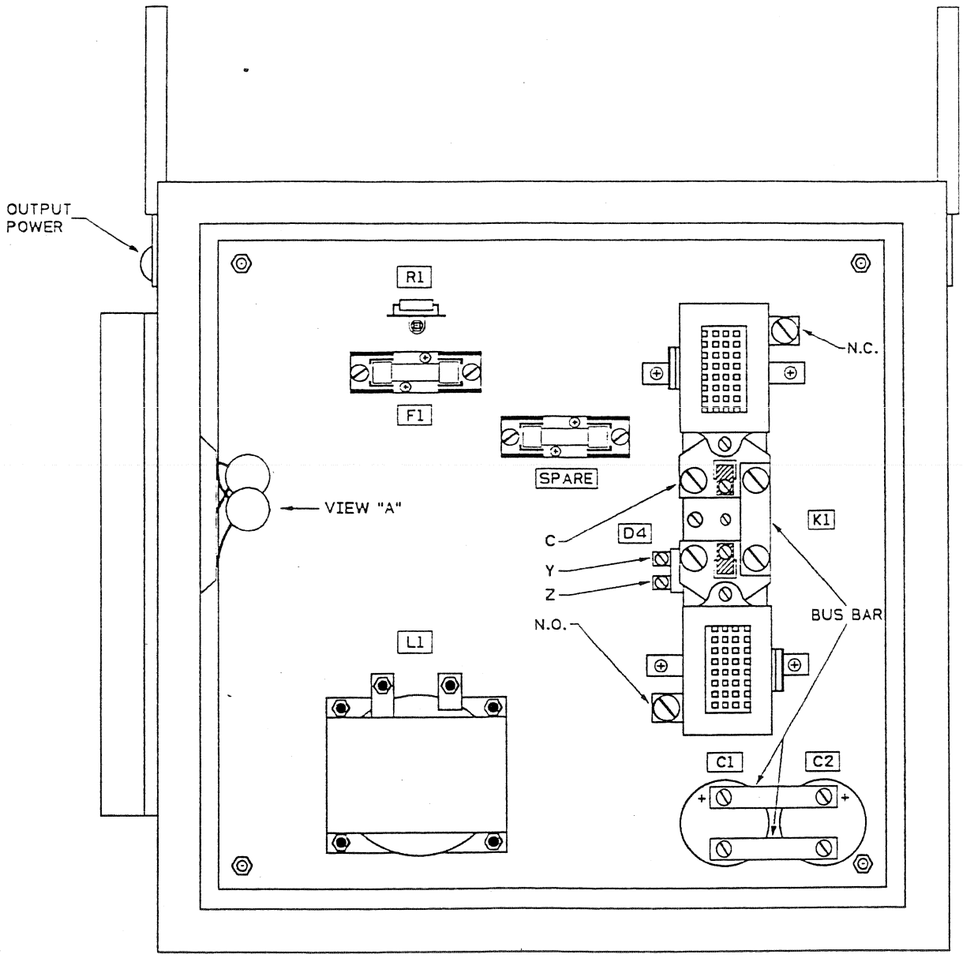
Conçu / Designed	SAB-NIFE, -R.L.	Date 89-04-11
Dessiné / Drawn	J.C. MAROIS	Date 89-04-18
Vérifié / Checked	R. L'ECUYER	Date 89-04-11
Contrôle de poids / Weight Control		Date
Ing. de sécurité / Safety engineer		Date
Chargé de projet / Project engineer	R. L'ECUYER	Date 89-04-11
Ens. suivant / Next assy		

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

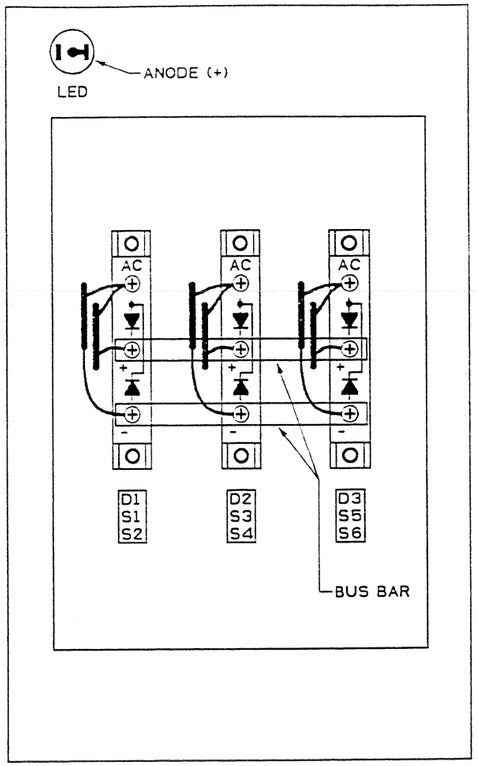
Échelle / Scale	–	Titre / Title	BATTERY CHARGER INTERNAL LAYOUT (CTC)
Feuille / Sheet	1 de 1	Numéro du dessin / Drawing number	2P-521-0140/3
		A2	Révision / Revision A

IMP. DIR. F2

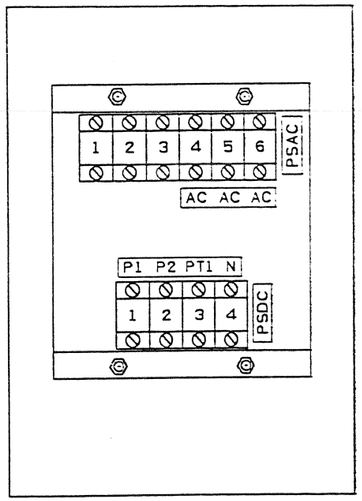
2P-521-0140/4



MAIN ACCESS



VIEW "A"



TRANSFORMER MODULE
REAR ACCESS

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: BTC (ODD NUMBERS ONLY)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
RL	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-01

Conçu / Designed	POCATEC-R.L. 89-04-11
Dessiné / Drawn	J.C. MAROIS 89-04-17
Vérifié / Checked	R. L'ECUYER 89-04-20
Contrôle de poids / Weight Control	
Ing. de sécurité / Safety engineer	
Chargé de projet / Project engineer	R. L'ECUYER 89-04-20
Ens. surveillant / Next assy	

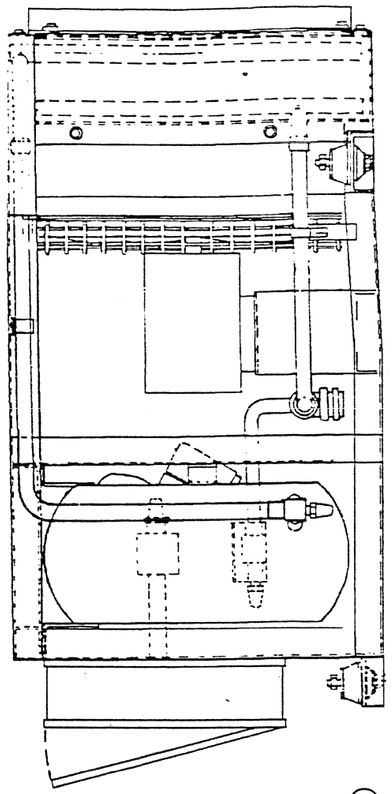
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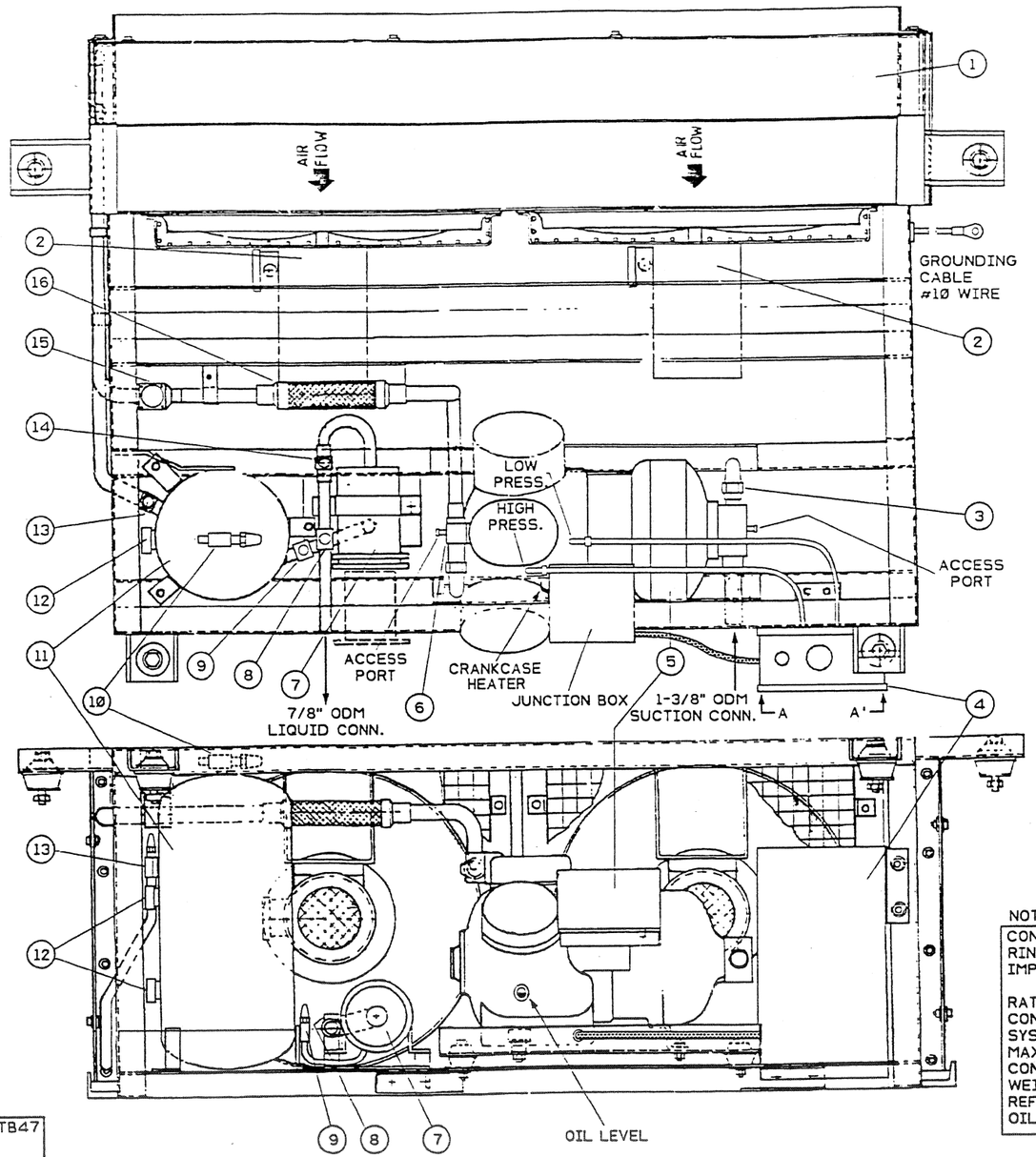
Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

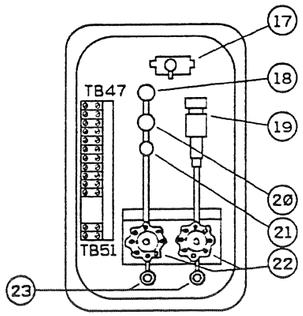
Échelle / Scale	—	Titre / Title	POWER SUPPLY INTERNAL LAYOUT (BTC)
Feuille / Sheet	1 de 1	Numéro du dessin / Drawing number	2P-521-0140/4
		Format	A2
		Révision / Revision	A

IMP. DIR. F2

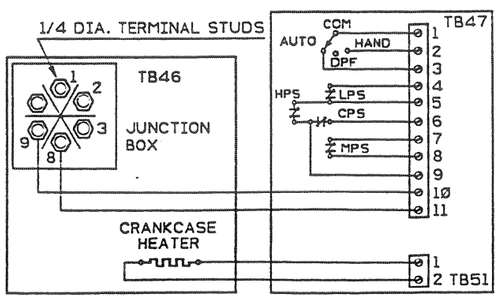
2P-521-0140/5







VIEW AA'
(SEE WIRING DIAGRAM BELOW)



ITEM	ABBR.	DESCRIPTION
1	-	CONDENSER COIL
2	CM1, 2	FAN & MOTOR ASS'Y (TERMINAL STUD SIZE #10)
3	-	COMPRESSOR SUCTION SHUTOFF SERVICE VALVE
4	-	REFRIGERATION CONTROL BOX
5	CM	COMPRESSOR MOTOR
6	-	COMPRESSOR DISCHARGE SHUTOFF VALVE
7	-	FILTER-DRIER
8	-	MOISTURE INDICATOR
9	-	RECEIVER OUTLET SHUTOFF VALVE
10	-	PURGE VALVE
11	-	LIQUID RECEIVER
12	-	SIGHT GLASS
13	-	RECEIVER INLET SHUTOFF VALVE
14	-	FILTER-DRIER OUTLET SHUTOFF SERVICE VALVE
15	-	CHECK VALVE
16	-	VIBRATION ELIMINATOR
17	HTS	AIR CONDITIONING TEST SWITCH
18	HPS	HIGH PRESSURE SWITCH (NOT ADJUSTABLE)
19	LPS	LOW PRESSURE SWITCH (NOT ADJUSTABLE)
20	MPS	MODULATION PRESSURE SWITCH (NOT ADJUSTABLE)
21	CPS	CONDENSER PRESSURE SWITCH (NOT ADJUSTABLE)
22		SHUTOFF VALVES
23	-	1/4" FLARE GAUGE CONNECTIONS WITH CHAINED CAPS

NOTE:

CONDENSER MOTORS PHASE SEQUENCE TO BE T1, T2, T3, FOR PROPER ROTATION. RING TERMINALS FOR #8 STUD COMPRESSOR MOTOR PHASE SEQUENCE NOT IMPORTANT COMPRESSOR WILL OPERATE IN EITHER DIRECTION OF ROTATION

RATING	12.3 TON
CONDENSER AMBIENT	105 F MAXIMUM
SYSTEM DESIGN VOLTAGE	480/3/60
MAX. PERMISSIBLE FREQUENCY	67 Hz
CONTROL VOLTAGE	120/1/60
WEIGHT	1100 LBS. APPROX.
REFRIGERANT	R22 (60 LBS.)
OIL LEVEL	HALF HEIGHT OF SIGHT GLASS

MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	DWG. SLIGHTLY UPDATED	J.C.M. 89-05-02

Designed: FAIVELEY-R.L. 89-04-03
Drawn: J.C. MAROIS 89-02-24
Checked: R. L'ECUYER 89-04-20
Weight Control:
Safety engineer:
Project engineer: R. L'ECUYER 89-04-20
Next assy:

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Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Echelle: - | Scale: -
Feuille: 1 de 1 | Sheet: 1 of 1

Titre / Title: HVAC COMPRESSOR CONDENSER UNIT (CTC-BTC)

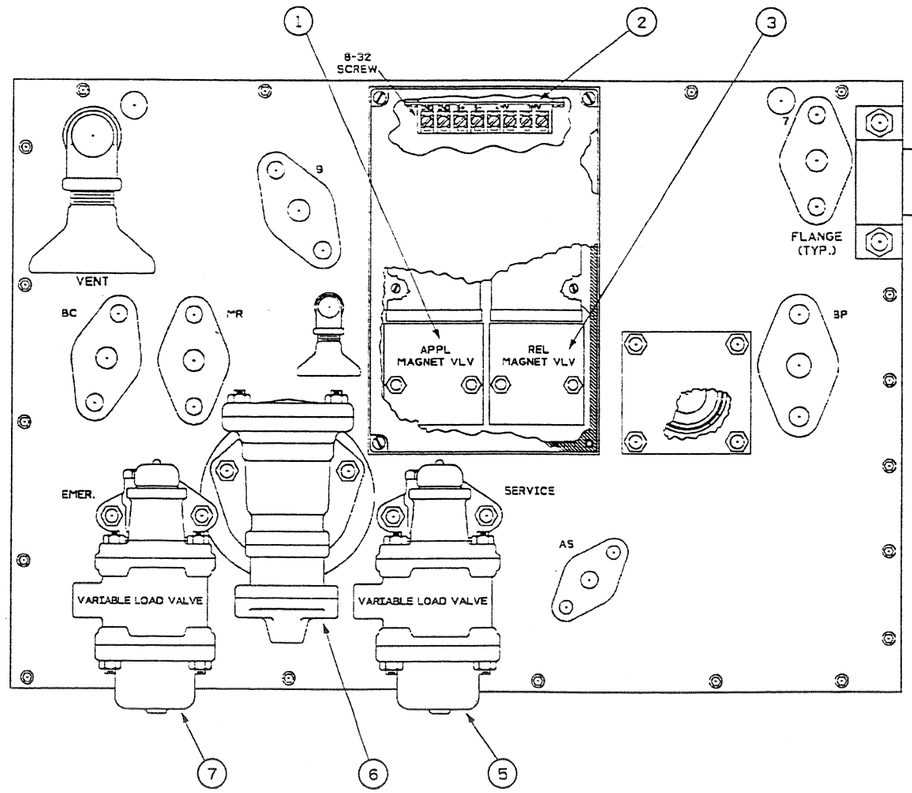
Numéro du dessin / Drawing number: 2P-521-0140/5

A2 | Révision / Revision: A

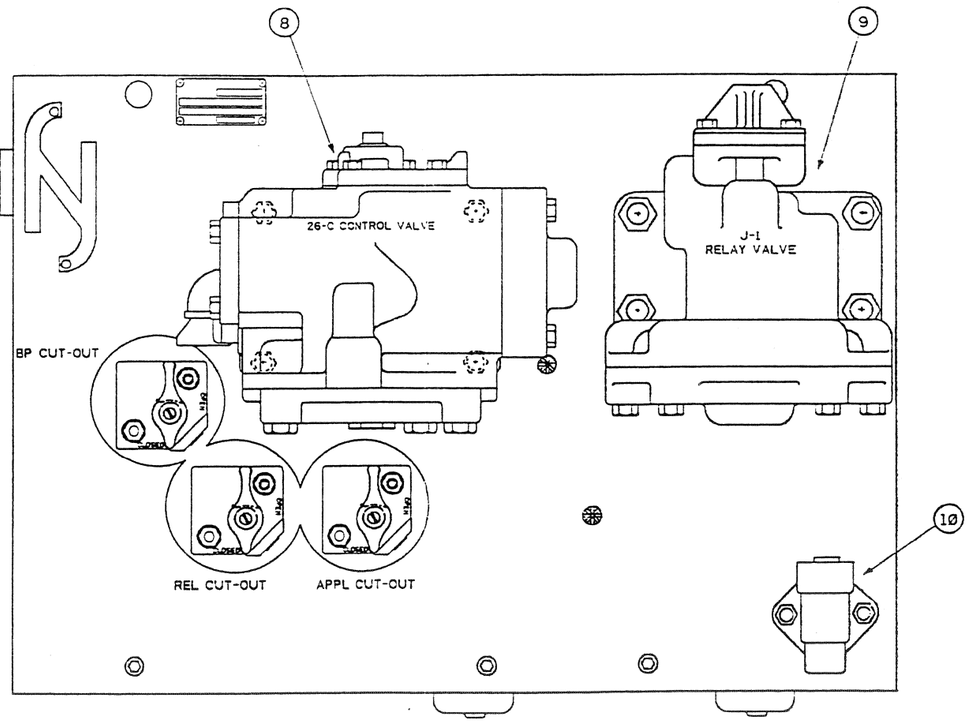
IMP. DIR. F2

2P-521-0140/6

ITEM	ABBR.	DESCRIPTION	REF. DRAWING
1	AMV	APPLICATION MAGNET VALVE (EP BRAKE)	
2	BIC	BRAKE INDICATION P.C. BOARD (EP BRAKE)	
3	RMV	RELEASE MAGNET VALVE	
4	-	RELEASE VALVE	
5	-	VARIABLE LOAD VALVE (SERV.)	
6	-	H-5 RELAYAIR VALVE	
7	-	VARIABLE LOAD VALVE (EMER.)	
8	-	26-C CONTROL VALVE	
9	-	J-1 RELAY VALVE	
10	-	DOUBLE CHECK VALVE	



REAR VIEW



FRONT VIEW

MBTA Ø30 - CARS 504-554:
MBTA Ø28 - CARS 398-453: CTC (EVEN NUMBERS) - BTC (ODD NUMBERS)

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE	C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
				R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-01

Concu Designed	NYAB - R.L.	Date 89-04-11
Dessine Drawn	J.C. MAROIS	Date 89-04-17
Verifie Checked	R. L'ECUYER	Date 89-04-24
Controle de poids Weight Control		Date
Ing de securite Safety engineer		Date
Charge de projet Project engineer	R. L'ECUYER	Date 89-04-24
Ens. suivant Next assy		

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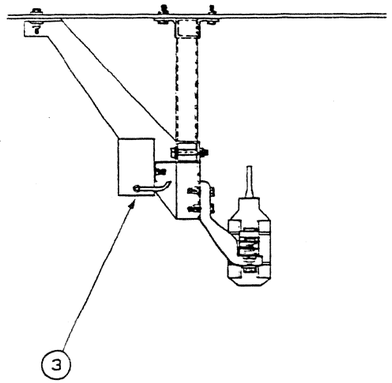
Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

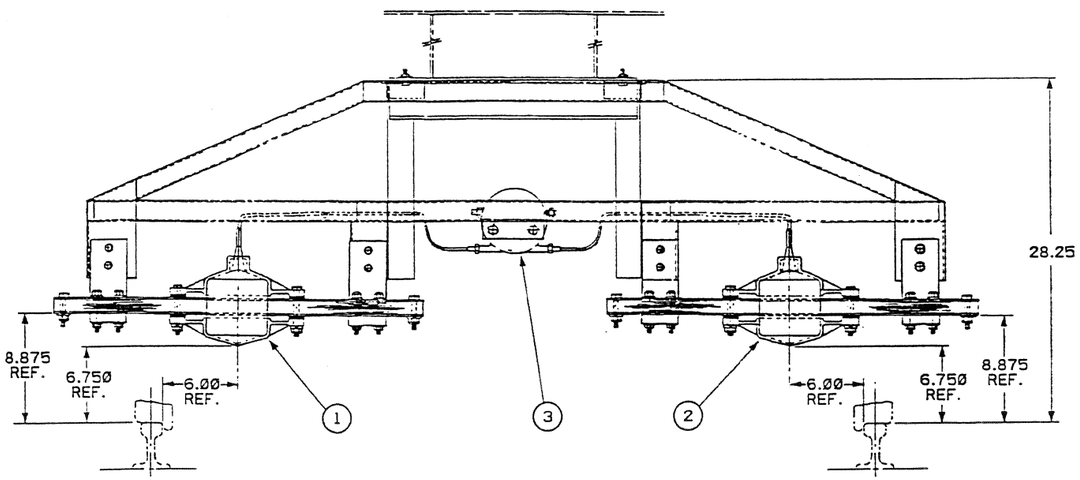
Echelle Scale	Titre Title		
-	BRAKE CONTROL UNIT (CTC-BTC)		
Feuille Sheet 1 de of 1	Numero du dessin Drawing number	2P-521-0140/6	A2 / Revision A

IMP. DIR. F2

2P-521-0140/7

ITEM	ABBR.	DESCRIPTION	REF. DRAWING
1	TR1	TRACK RECEIVER, RIGHT SIDE	
2	TR2	TRACK RECEIVER, LEFT SIDE	
3	JB11	JUNCTION BOX #11	





MBTA 030 - CARS 504-554:
MBTA 028 - CARS 398-453: CTC (EVEN NUMBERS ONLY)

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Conçu / Designed	U.S.S. - R.L.	89-04-11
Dessiné / Drawn	J.C. MAROIS	89-04-17
Vérifié / Checked	R. L'ECUYER	89-04-20
Contrôle de poids / Weight Control		
Ing. de sécurité / Safety engineer		
Chargé de projet / Project engineer	R. L'ECUYER	89-04-20
Ens. suivant / Next assy		

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Feuille / Sheet: 1 de 1

Titre / Title: TRACK RECEIVERS ASS'Y (CTC)

Numéro au dessin / Drawing number: 2P-521-0140/7 | A2 | Révision: A

C.P. P.E.	REV.	DESCRIPTION	INIT./DATE
R.L.	A	SEE B.D.R. FORM UNDER THIS DWG. NO.	J.C.M. 89-05-01

IMP. DIR. F2

2P-525-0025/1

DESCRIPTION	NEXT ASS'Y: 2P-599-0002 CARS 398 TO 453 CAB 2852552SE	NEXT ASS'Y: 2P-599-0002 CARS 398 TO 453 TRAILER 2852652SE	NEXT ASS'Y: (B) 2P-599-0001/1 CARS 454 TO 503 H/A 2952752SE	NEXT ASS'Y: (B) 2P-599-0001/1 CARS 454 TO 503 555 TO 558 R/A 2952851SE			
JUNCTION BOX #1B	0P-525-0001/1	0P-526-0001/1	0P-527-0001/1	0P-528-0001/1			
JUNCTION BOX #2B	0P-525-0002/1	0P-526-0002/1	0P-527-0002/1	0P-528-0002/1			
JUNCTION BOX #2A	0P-525-0003/1	0P-526-0003/1	0P-527-0003/1	0P-528-0003/1			
JUNCTION BOX #1A	0P-525-0004/1	---	---	---			
JUNCTION BOX #1C	---	0P-526-0004/1	0P-527-0004/1	0P-528-0004/1			
UNDERFRAME "1" END	0P-525-0005/1	0P-526-0005/1	0P-527-0005/1	0P-528-0005/1			
UNDERFRAME "2" END LEFT	0P-525-0006/1	0P-526-0006/1	0P-527-0006/1	0P-528-0006/1			
UNDERFRAME "2" END RIGHT	---	---	0P-527-0007/1	0P-528-0007/1			
SWITCH PANEL	---	---	0P-527-0008/1	0P-528-0008/1			
CEILING "1" END	0P-525-0007/1	0P-526-0007/1	0P-527-0009/1	0P-528-0009/1			
CEILING "2" END	0P-525-0008/1	0P-526-0008/1	0P-527-0010/1	0P-528-0010/1			
FLOOR "1" END	0P-525-0009/1	0P-526-0009/1	0P-527-0011/1	0P-528-0011/1			
FLOOR "2" END	0P-525-0010/1	0P-526-0010/1	0P-527-0012/1	0P-528-0012/1			
VESTIBULE "1" END	0P-525-0011/1	0P-526-0011/1	0P-527-0013/1	0P-528-0013/1			
VESTIBULE "2" END	0P-525-0012/1	0P-526-0012/1	0P-527-0014/1	0P-528-0014/1			
ELECTRICAL LOCKER	0P-525-0013/1/2/3	0P-526-0013/1/2	---	---			
CONSOLE	0P-525-0014/1	---	---	---			
UNDERFRAME BLOCK DIAGRAM	0P-525-0015/1	0P-526-0014/1	0P-527-0018/1	0P-528-0017/1			
TOILET	---	---	0P-527-0015/1	0P-528-0015/1			
LOCKER FOOD SERVICE	---	---	---	0P-528-0016/1			
READING LIGHTS "1" END	---	---	0P-527-0016/1	---			
READING LIGHTS "2" END	---	---	0P-527-0017/1	---			

DESSINÉ DRAWN	POIDS WEIGHT	R.M.&S./ S.S.A.	APPROBATION APPROVED		DESCRIPTION	ZONE	DATE	REV.
ML	-	-	J.C		SEE B.R.	-	89/09/20	B

TOLERANCES
Seul indication contraire
Unless otherwise noted

	Date
Conçu — Designed	
Dessiné — Drawn	GP 88/12/02
Vérifié — Checked	
Contrôle de poids — Weight Control	
R.M.&S. / S.S.A.	
Approbation — Approved	
Ens. suivant — Next ass'y	SEE TABLE

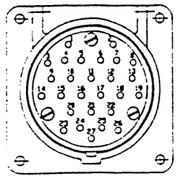
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Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

Échelle / Scale: —
Titre / Title: ELECT. WIRING TOP TIER
Format: A2 Size
Chapitre / Chapter: 5
Numéro du dessin / Drawing number: 2P-525-0025/1
Feuille / Sheet: 1 de 1
Révision: B

028/5/2825025

OP-525-0001/1



27 POINTS RECEPTACLE (BLACK)
(CL2)
VIEW WITH COVER REMOVED

PRL21



TYPE "A"

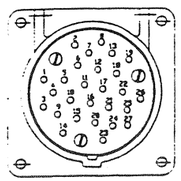
5 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

PRL22



TYPE "B"

5 POINTS RECEPTACLE
VIEW WITH COVER REMOVED



27 POINTS RECEPTACLE (BLUE)
DCL2)
VIEW WITH COVER REMOVED

LOCOMOTIVE CONTROL TRAINLINE (LCL2)

PIN	FUNCTION	MARKER	SIZE
1	DYNAMIC BRAKE RESET SWITCH	DB1	16
2	ATTENDANT CALL AND ALARM BELL	SG	16
3	ENGINE SPEED 3	3V	16
4	NEGATIVE	N	16
5	EMERGENCY BRAKE SAND	ES	16
6	GENERATOR FIELD	GF	16
7	ENGINE SPEED 2	2V	16
8	CAB FORWARD	FD	16
9	CAB REVERSE	RE	16
10	SHELL TIE		
11	DYNAMIC BRAKE FAULT LIGHT	DB2	16
12	ENGINE SPEED 1	1V	16
13	THROTTLE CONTROL	TH	16
14	BRAKE	SP1	16
15	ENGINE SPEED 4	4V	16
16	EMERGENCY BRAKE MAGNET VALVE	ER	16
17	BRAKE APPLICATION (SERVICE) R.V.	FB	16
18	BRAKE RELEASE R.V.	EP1	16
19	BRAKE NEGATIVE	EP2	16
20	SPARE	EP3	16
21	THROTTLING CONTROL SPARE	SP2	16
22	SAND CONTROL	CC	16
23	SPARE	SC	16
24	SPARE	SP3	16
25	HEADLIGHT CONTROL	XB	16
26	EMERGENCY BRAKE RELEASE	DU	16
27	TRAINLINE STEAM BLOWDOWN SPARE	SP4	16

NOTE: 1- POWER RECEPTACLE TYPE "A"
CABLE COLOR CODE

RECEPTACLE	PIN #	CABLE CODE
LARGE PINS POWER (CABLES #4/0 AWG)	1	YELLOW
	2	RED
	3	BLUE
SMALL PINS CONTROL (CABLES #10 AWG)	1	BLACK
	2	WHITE
	3	RED

NOTE: 2- POWER RECEPTACLE TYPE "B"
CABLE COLOR CODE

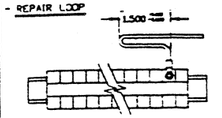
RECEPTACLE	PIN #	CABLE CODE
LARGE PINS POWER (CABLES #4/0 AWG)	2	YELLOW
	4	RED
	6	BLUE
SMALL PINS CONTROL (CABLES #10 AWG)	1	BLACK
	3	WHITE
	5	RED

DOOR AND COMMUNICATION TRAINLINE (DCL2)

PIN	FUNCTION	MARKER	SIZE
1	SHIELD	SH	16
2	BATTERY NEGATIVE (CAB)	TB	10
3	DIGITAL ADDRESS	DA1	16
4	DIGITAL ADDRESS	DA2	16
5	DIGITAL ADDRESS	DA3	16
6	DIGITAL ADDRESS	DA4	16
7	P.A. CONTROL	DA5	16
8	P.A. CONTROL	DA6	16
9	RADIO SPARE	DA7	16
10	RADIO SPARE	DA8	16
11	SPARE	SP5	16
12	CONTROL SPARE	SP6	16
13	DOOR CONTROL SPARE	BP	16
14	BATTERY POSITIVE	3P	10
15	ENGINEMAN'S BRAKE RELEASE RIGHT	DI2	16
16	ENGINEMAN'S BRAKE APPLIED RIGHT	D22	16
17	ENGINEMAN'S BRAKE RELEASED LEFT	D32	16
18	ENGINEMAN'S BRAKE APPLIED LEFT	D42	16
19	CONTROL SPARE	DC12	16
20	CONTROL SPARE	DC22	16
21	ENGINEMAN'S BRAKE RELEASED LIGHT (LEFT)	BR	16
22	ENGINEMAN'S BRAKE APPLIED LIGHT	BA	16
23	ENGINEMAN'S BRAKE RELEASED LIGHT	HJ	16
24	ENGINEMAN'S BRAKE APPLIED LIGHT	CS	16
25	CONTROL SPARE		
26	ANNUNCIATING LAMP		
27	ENGINEMAN'S LOCOMOTIVE HORN/CHIME LIGHT (RIGHT)		
28	ENGINEMAN'S LOCOMOTIVE HORN/CHIME LIGHT (LEFT)		
29	ENGINEMAN'S LOCOMOTIVE BELL LIGHT		
30	ENGINEMAN'S HORN RELEASE LIGHT SPARE		
31	ATTENDANT CALL SPARE		

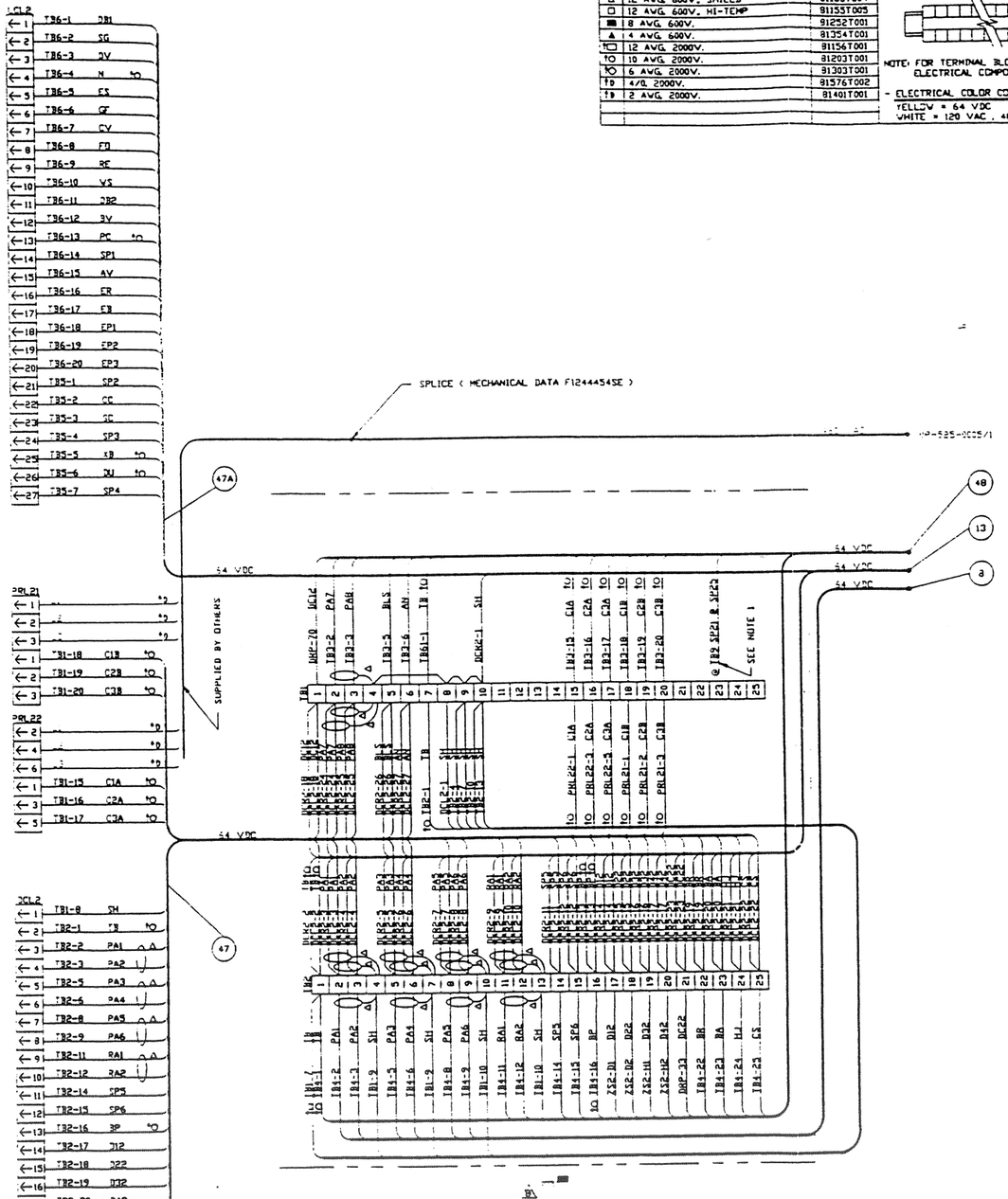
SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG. 600V. EXCEPT:	81155T001
●	16 AWG. 600V.	91056T001
○	16 AWG. 600V. SHIELD	91056T005
△	12 AWG. 600V. SHIELD	81155T004
□	12 AWG. 600V. HI-TEMP	81155T005
■	8 AWG. 600V.	91252T001
▲	4 AWG. 600V.	81354T001
ⓣ□	12 AWG. 2000V.	81156T001
ⓣ○	10 AWG. 2000V.	81203T001
ⓣ○	6 AWG. 2000V.	81303T001
ⓣ●	4/0 2000V.	81576T002
ⓣ●	2 AWG. 2000V.	81401T001

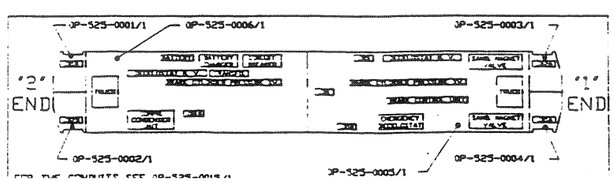
- REPAIR LOOP



NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 64 VDC
WHITE = 120 VAC , 480 VAC





REF. 52552SE

ML			SEE B.R.	89/04/06 B
GP	-	-	SEE B.D.R.	89/01/09 A

DESIGNED	PHIL BERTH	88/11/25
DRAWN	ML	88/11/25

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bourassa / La Pinière, Québec, Canada

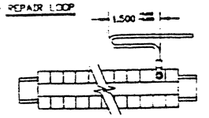
JCT. BOX 1B (CAB)

OP-525-0025/1

OP-525-0001/1 3 B

SYM	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V, EXCEPT:	811557D01
●	16 AWG, 600V.	810567D01
○	16 AWG, 600V, SHIELD	810567D05
△	12 AWG, 600V, SHIELD	811557D04
□	12 AWG, 600V, HI-TEMP	8H557D05
■	8 AWG, 600V.	812527D01
▲	4 AWG, 600V.	813547D01
▽	12 AWG, 2000V.	811567D01
▽	10 AWG, 2000V.	812037D01
◇	6 AWG, 2000V.	813037D01
T9	4/0, 2000V.	815767D02
T9	2 AWG, 2000V.	814017D01

- REPAIR LOOP



NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 74 VDC
WHITE = 120 VAC , 480 VAC



27 POINTS RECEPTACLE (BLACK)
(LCR2)
VIEW WITH COVER REMOVED

LOCOMOTIVE CONTROL TRAINLINE (LCR2)			
PIN	FUNCTION	MARKER	SIZE
1	DYNAMIC BRAKE RESET SWITCH	3B1	16
2	ALTERNANT FAIL AND ALARM BELL	5G	16
3	ENGINE SPEED 3	5V	16
4	LOCAL/REMOTE	4	16
5	EMERGENCY BRAKE SAND	5E	16
6	ENGINE FAIL	5F	16
7	ENGINE SPEED 4	5C	16
8	TRACTION MOTOR CUT OUT	5D	16
9	2ND DE VERSOR	5E	16
10	ENGINE SPEED 2	5S	16
11	DYNAMIC BRAKE FAIL LIGHT	5B2	16
12	ENGINE SPEED 1	5V	16
13	DYNAMIC BRAKE CONTROL	5C	16
14	BATTERY CHARGE	5P1	16
15	ENGINE SPEED A	5V	16
16	ENGINE RUN	5R	16
17	EMERGENCY BRAKE VALVE	5P2	16
18	BRAKE APPLICATION (SERVICE) 74V	5P3	16
19	BRAKE RELEASE 74V	5P4	16
20	BRAKE NEGATIVE	5N	16
21	SPARE	5A1	16
22	LOCOMOTIVE CONTROL SPARE	5A2	16
23	ENGINE CONTROL	5A3	16
24	SPARE	5A4	16
25	BATTERY CHARGE	5A5	16
26	SPARE	5A6	16
27	SPARE	5A7	16

PRR21



TYPE 'A'

5 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

NOTE: 1- POWER RECEPTACLE TYPE 'A'
CABLE COLOR CODE

RECEPTACLE	PIN #	CABLE	CODE
LARGE PINS POWER (CABLES #4/0 AWG)	1	YELLOW	
	2	RED	
	3	BLUE	
SMALL PINS CONTROL (CABLES #10 AWG)	1	BLACK	(BK)
	2	WHITE	(W)
	3	RED	(R)

PRR22

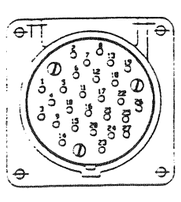


TYPE 'B'

6 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

NOTE: 2- POWER RECEPTACLE TYPE 'B'
CABLE COLOR CODE

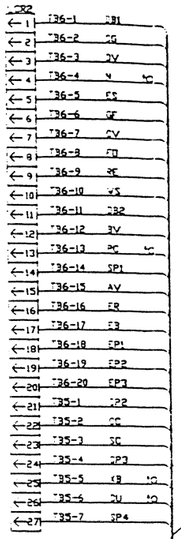
RECEPTACLE	PIN #	CABLE	CODE
LARGE PINS POWER (CABLES #4/0 AWG)	3	YELLOW	
	4	RED	
	6	BLUE	
SMALL PINS CONTROL (CABLES #10 AWG)	1	BLACK	
	3	WHITE	
	5	RED	

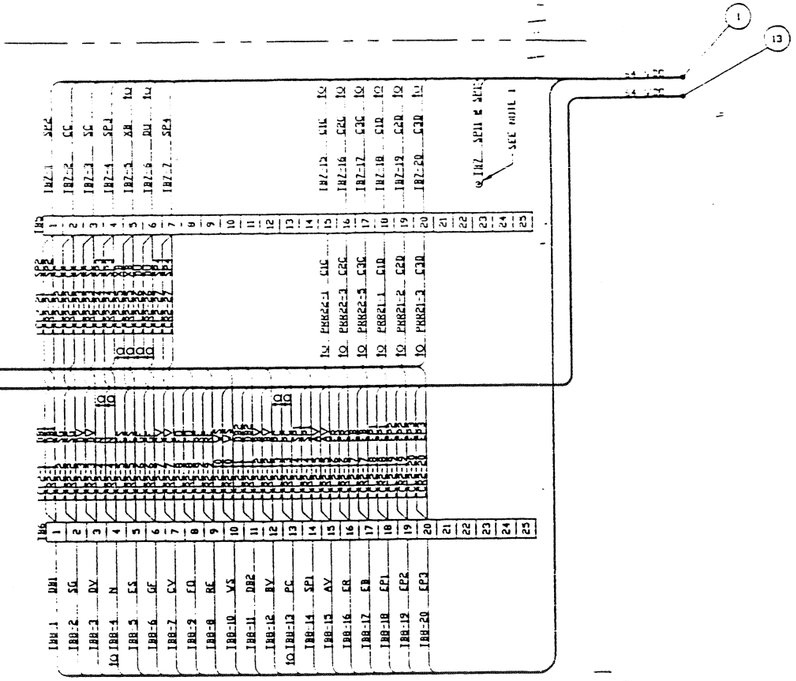


27 POINTS RECEPTACLE (BLUE)
(DCR2)
VIEW WITH COVER REMOVED

DOOR AND COMMUNICATION TRAINLINE (DCR2)			
PIN	FUNCTION	MARKER	SIZE
1	SPARE	3A1	16
2	BATTERY NEGATIVE (CAR)	3	16
3	SPARE	3A2	16
4	SPARE	3A3	16
5	SPARE	3A4	16
6	SPARE	3A5	16
7	SPARE	3A6	16
8	SPARE	3A1	16
9	SPARE	3A2	16
10	SPARE	3A7	16
11	SPARE	3A8	16
12	SPARE	3L5	16
13	ATTENDANT CALL SPARE	3N	16

FOR THE CONDUITS SEE OP-525-0015/1





NOTE: 1- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH

REF. 2552SE

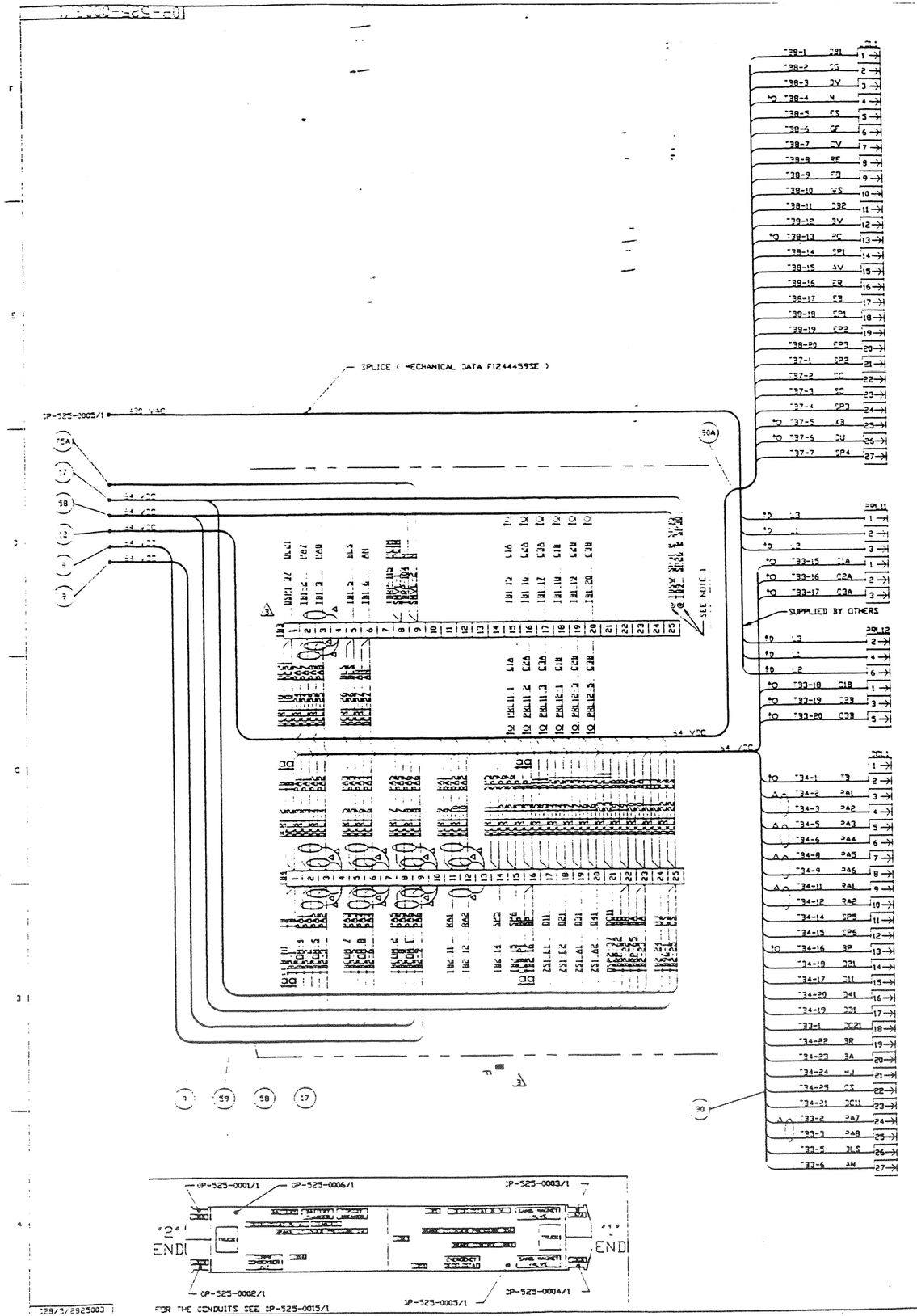
ML				SEE B.R.	89/04/06 B
GP	L	-	- F	SEE B.D.R.	- 89/01/09 A

	PHILBERT	88/11/25		
	ML	88/11/25		

Bombardier Inc.
Division de transport en commun
Mass Transit Division
Southernville / La Pocatière, Québec, Canada

JCT. BOX 2B (CAB)

OP-525-0025/1 | 16 | 5 | OP-525-0002/1 | 21 | F



FOR THE CONDUITS SEE 0P-525-0015/1

SYM	DESCRIPTION	TECH DESC.
	ALL WIRES 12 AWG, 600V. EXCEPT:	811557001
●	16 AWG, 600V.	810567001
○	16 AWG, 600V. SHIELD	812567003
△	12 AWG, 600V. SHIELD	811557004
▽	12 AWG, 600V. HI-TEMP	811557005
■	18 AWG, 600V.	812527001
▲	14 AWG, 600V.	813547001
▽	12 AWG, 2000V.	811567001
▽	10 AWG, 2000V.	812037001
◇	16 AWG, 2000V.	813037001
▽	4/0, 2000V.	815767002
▽	12 AWG, 2000V.	814017001

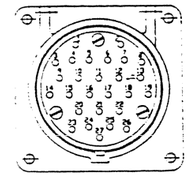
REPAIR LOOP 1.500

NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 76 VDC
WHITE = 120 VAC, 480 VAC

LOCOMOTIVE CONTROL TRAINLINE (LCL1)

PIN	FUNCTION	MARKER	SIZE
1	DYNAMIC BRAKE RELAY CONTACT	7B1	16
2	54 VDC SUPPLY	2A1	16
3	54 VDC SUPPLY	2A2	16
4	NEGATIVE	4N	16
5	DYNAMIC BRAKE CAND	4B	16
6	SPARE	2A3	16
7	SPARE	2A4	16
8	SPARE	2A5	16
9	SPARE	2A6	16
10	SPARE	2A7	16
11	DYNAMIC BRAKE FAULT LIGHT	2B3	16
12	SPARE	2A8	16
13	SPARE	2P5	16
14	SPARE	2P6	16
15	SPEED A	4V	16
16	SPARE	3P	16
17	EMERGENCY BRAKE VALVE	2J1	16
18	BRAKE APPLY SERVICE W.V.	2J1	16
19	BRAKE APPLY W.V.	2J1	16
20	BRAKE APPLY	2J1	16
21	SPARE	2J1	16
22	SPARE	2J1	16
23	SPARE	2J1	16
24	SPARE	2J1	16
25	SPEED A RTN	4N	16
26	SPARE	2P4	16
27	TRAINLINE SYSTEM BREAKDOWN SPARE	2P4	16



27 POINTS RECEPTACLE (BLACK) (LCL1)
VIEW WITH COVER REMOVED

NOTE: 1- POWER RECEPTACLE TYPE "A"
CABLE COLOR CODE

RECEPTACLE	PIN #	CABLE	CODE
LARGE PINS POWER (CABLES #4/0 AWG)	1	BLUE	
	2	YELLOW	
	3	RED	
SMALL PINS CONTROL (CABLES #10 AWG)	1	BLACK	(BK)
	2	WHITE	(W)
	3	RED	(R)

PRL11

TYPE "A"



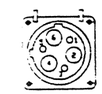
5 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

NOTE: 2- POWER RECEPTACLE TYPE "B"
CABLE COLOR CODE

RECEPTACLE	PIN #	CABLE	CODE
LARGE PINS POWER (CABLES #4/0 AWG)	2	BLUE	
	4	YELLOW	
	6	RED	
SMALL PINS CONTROL (CABLES #10 AWG)	1	BLACK	
	3	WHITE	
	5	RED	

PRL12

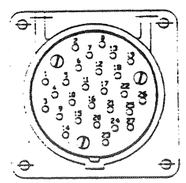
TYPE "B"



5 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

DOOR AND COMMUNICATION TRAINLINE (LCL1)

PIN	FUNCTION	MARKER	SIZE
1	SPARE	2A1	16
2	54 VDC NEGATIVE (CAB)	2A2	16
3	SPARE	2A3	16
4	SPARE	2A4	16
5	SPARE	2A5	16
6	SPARE	2A6	16
7	SPARE	2A7	16
8	SPARE	2A8	16
9	SPARE	2P5	16
10	SPARE	2P6	16
11	SPARE	2J1	16
12	SPARE	2J1	16
13	SPARE	2J1	16
14	SPARE	2J1	16
15	SPARE	2J1	16
16	SPARE	2J1	16
17	SPARE	2J1	16
18	SPARE	2J1	16
19	SPARE	2J1	16
20	SPARE	2J1	16
21	SPARE	2J1	16
22	SPARE	2J1	16
23	SPARE	2J1	16
24	SPARE	2J1	16
25	SPARE	2J1	16
26	SPARE	2J1	16
27	SPARE	2J1	16



27 POINTS RECEPTACLE (BLUE) (CCL1)
VIEW WITH COVER REMOVED

NOTE: 1- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH

REF. 525525SE

REV	DESCRIPTION	DATE	BY
	SEE S.R. 1028-102	89/04/14	B

PHILBERT 88/11/25
88/11/25

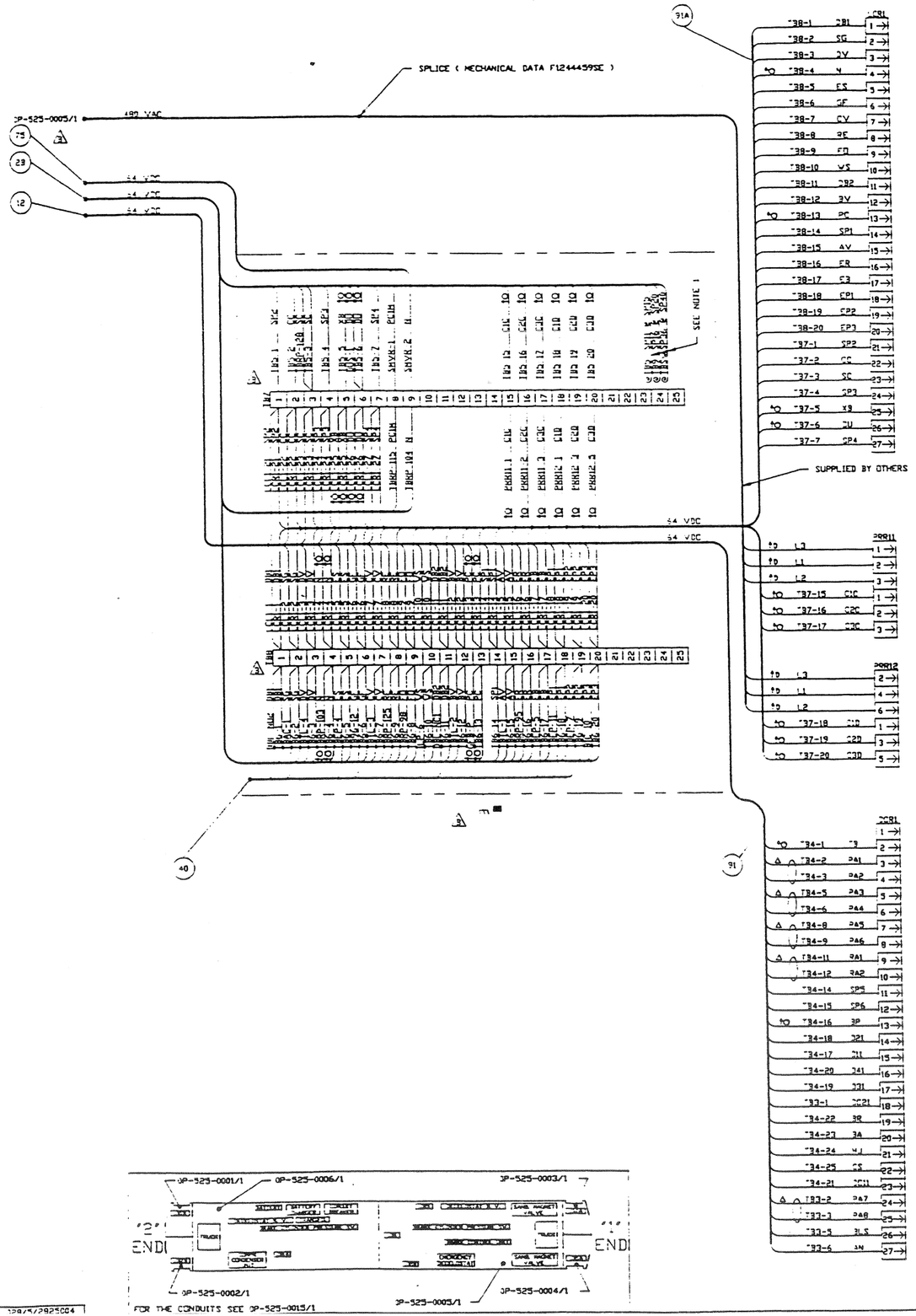
Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bouchervville / La Pocatiere, Québec, Canada

JCT. BOX 2A (CAB)

0P-525-0003/1 REV B

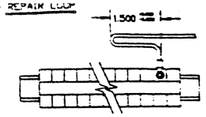
0P-525-0025/1

128/5/2825003



SYM	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V. EXCEPT:	81155T001
●	16 AWG, 600V.	81056T001
○	16 AWG, 600V, SHIELD	81056T005
△	12 AWG, 600V, SHIELD	81155T004
□	12 AWG, 600V, HI-TEMP	81155T005
■	8 AWG, 600V.	81252T001
▲	4 AWG, 600V.	81354T001
⊡	12 AWG, 2000V.	81156T001
⊙	10 AWG, 2000V.	91203T001
◇	6 AWG, 2000V.	91303T001
⊕	4/0, 2000V.	91576T002
⊕	2 AWG, 2000V.	81401T001

- REPAIR LOOP

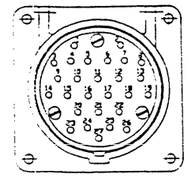


NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE

YELLOW = 75 VDC
WHITE = 120 VAC, 480 VAC

LOCOMOTIVE CONTROL TRAINLINE (LCR1)		
PIN	FUNCTION	WIRE MARKER	SIZE
1	+64V BATTERY	1	12
2	+64V BATTERY	1	12
3	+64V BATTERY	1	12
4	SPARE	SP1	16
5	SPARE	SP2	16
6	SPARE	SP3	16
7	SPARE	SP4	16
8	SPARE	SP5	16
9	SPARE	SP6	16
10	SPARE	SP7	16
11	SPARE	SP8	16
12	SPARE	SP9	16
13	SPARE	SP10	16
14	SPARE	SP11	16
15	SPARE	SP12	16
16	SPARE	SP13	16
17	SPARE	SP14	16
18	SPARE	SP15	16
19	SPARE	SP16	16
20	SPARE	SP17	16
21	SPARE	SP18	16
22	SPARE	SP19	16
23	SPARE	SP20	16
24	SPARE	SP21	16
25	SPARE	SP22	16
26	SPARE	SP23	16
27	SPARE	SP24	16



27 POINTS RECEPTACLE (BLACK)
(CR1)
VIEW WITH COVER REMOVED

NOTE: 1- POWER RECEPTACLE TYPE "A"
CABLE COLOR CODE

RECEPTACLE	PIN #	CABLE CODE
LARGE PINS POWER (CABLES #4/0 AWG)	1	BLUE
	2	YELLOW
	3	RED
SMALL PINS CONTROL (CABLES #10 AWG)	1	BLACK (BK)
	2	WHITE (W)
	3	RED (R)

NOTE: 2- POWER RECEPTACLE TYPE "B"
CABLE COLOR CODE

RECEPTACLE	PIN #	CABLE CODE
LARGE PINS POWER (CABLES #4/0 AWG)	2	BLUE
	4	YELLOW
	5	RED
SMALL PINS CONTROL (CABLES #10 AWG)	1	BLACK
	3	WHITE
	5	RED

PRR11

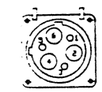
TYPE "A"



5 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

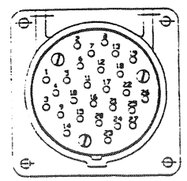
PRR12

TYPE "B"



5 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

DOOR AND COMMUNICATION TRAINLINE (DCR1)		
PIN	FUNCTION	WIRE MARKER	SIZE
1	SPARE	SP1	16
2	BATTERY NEGATIVE (CAR)	2	12
3	SPARE	SP2	16
4	SPARE	SP3	16
5	SPARE	SP4	16
6	SPARE	SP5	16
7	SPARE	SP6	16
8	SPARE	SP7	16
9	SPARE	SP8	16
10	SPARE	SP9	16
11	SPARE	SP10	16
12	SPARE	SP11	16
13	SPARE	SP12	16
14	SPARE	SP13	16
15	SPARE	SP14	16
16	SPARE	SP15	16
17	SPARE	SP16	16
18	SPARE	SP17	16
19	SPARE	SP18	16
20	SPARE	SP19	16
21	SPARE	SP20	16
22	SPARE	SP21	16
23	SPARE	SP22	16
24	SPARE	SP23	16
25	SPARE	SP24	16
26	SPARE	SP25	16
27	SPARE	SP26	16



27 POINTS RECEPTACLE (BLUE)
(DCR1)
VIEW WITH COVER REMOVED

NOTE: 1- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH

REF.
52552SE

REV	DESCRIPTION	DWN	APP
-	SEE BR 1G28-102		89/04/04 B
A	ALBERT	88/11/28	
	MJ	88/11/28	

Bombardier Inc.
Divisions de transport en commun
Mass Transit Division
Sourcenade / La Pocatière, Québec, Canada

JCT. BOX 1A (CAB)

JP-525-0004/1 | SIZE A0 | SHEET 3

JP-525-0023/1

OP-525-0005/1

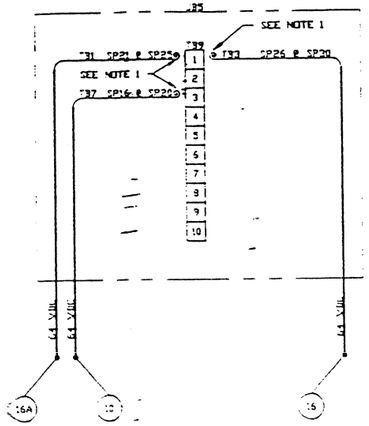
SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V, EXCEPT:	81155T001
●	16 AWG, 600V.	81156T001
○	16 AWG, 600V, SHIELD	81256T005
△	12 AWG, 600V, SHIELD	81155T004
□	12 AWG, 600V, HI-TEMP	81155T005
■	8 AWG, 600V.	81252T001
▲	4 AWG, 600V.	81254T001
10	12 AWG, 2000V.	81156T001
10	10 AWG, 2000V.	81203T001
10	6 AWG, 2000V.	81203T001
10	1/0, 2000V.	81176T002
10	2 AWG, 2000V.	81401T001

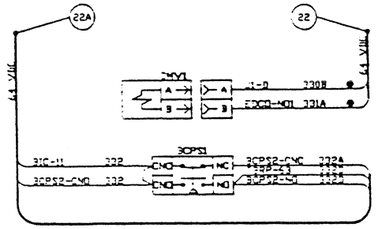
- REPAIR LOOP

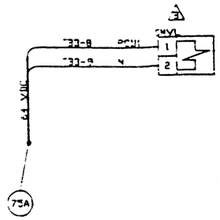
L500 mm

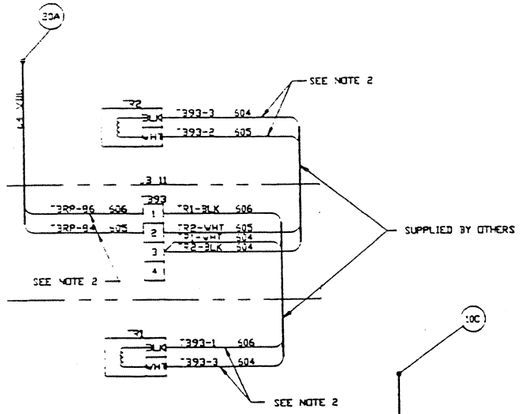
NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

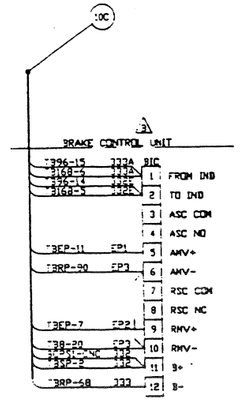
- ELECTRICAL COLOR CODE
  YELLOW = 75 VDC
  WHITE = 120 VAC, 480 VAC

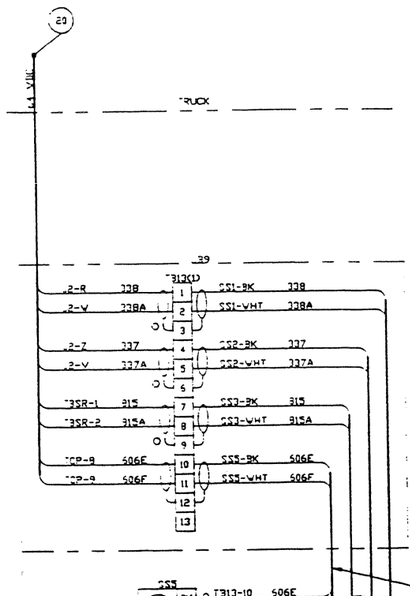


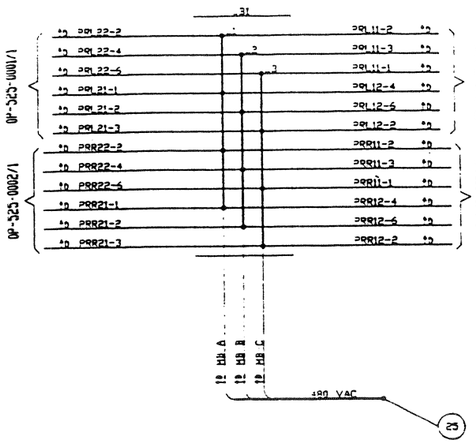


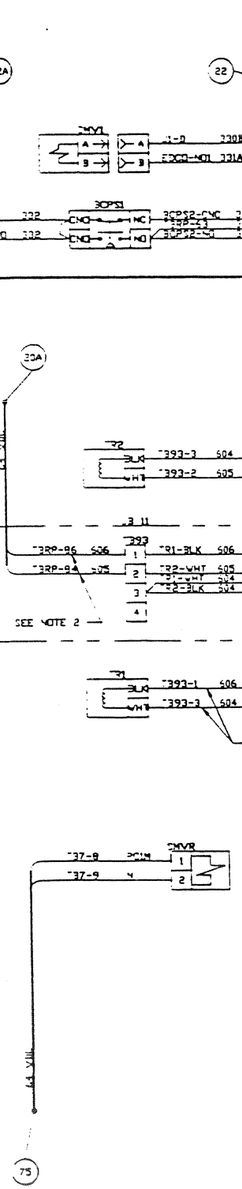


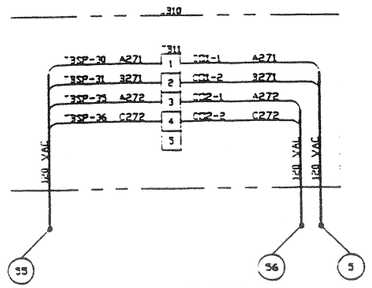


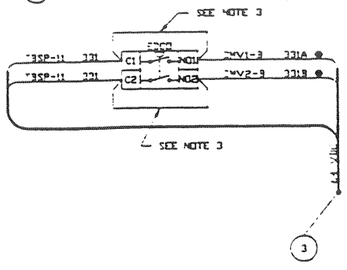


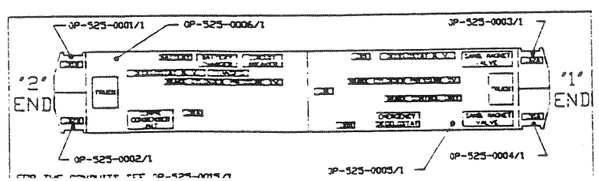












NOTES: 1- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH.
2- TWISTED PAIR (1 TURN/FOOT)
3- JUMPER WIRE IS TO BE REMOVED BY CUSTOMER AT HIS DISCRETION. REMOVAL WILL CAUSE NULLIFICATION OF WHEEL SLIDE PROTECTION DURING EMERGENCY SITUATIONS (I.E. BRAKE PIPE PRESSURE BELOW 25 PSI).
4- TERMINAL BLOCK DESIGNATION INSIDE BRAKE CONTROL UNIT.

REF. 525525SE

				SEE B.R. 1G28-102, 1G28-161	89/04/04 B
	PHILBERT	88/11/28			
		88/11/28			

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bourgmestre / La Pocatière, Québec, Canada

UNDERFRAME N° 1 (CAB)

OP-525-0005/1

2P-525-0025/1

OP-525-0007/1

SYM.	DESCRIPTION	PART
	ALL WIRES 12 AWG, 600V. EXCEPT:	81155T001
●	16 AWG, 600V.	81056T001
○	16 AWG, 600V. SHIELD	81056T005
△	12 AWG, 600V. SHIELD	81155T004
□	12 AWG, 600V. HI-TEMP	81155T005
■	8 AWG, 600V.	81252T001
▲	4 AWG, 600V.	81254T001
	12 AWG, 2000V.	81156T001
	10 AWG, 2000V.	81203T001
	6 AWG, 2000V.	81303T001
	4/0, 2000V.	81576T002
	2 AWG, 2000V.	81401T001

1.500

NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 64 VDC
WHITE = 120 VAC, 480 VAC

SUPPLIED BY OTHERS

ELECT. TRAYS 64 VDC

ELECT. TRAYS 120 VAC & 480 VAC

OP-525-0008/1

OP-525-0011/1

OP-525-0013/1

OR

OP-525-0014/1

NOTE: 1- THESE ARE 6 KNIFE CONNECTORS ASS'Y.

ELECTRICAL TRAYS AND CONDUITS

OP-525-0012/1

OP-525-0011/1

"2" END

"1" END

OP-525-0008/1
OP-525-0010/1

OP-525-0007/1
OP-525-0009/1

OP-525-0013/1/2/3

OP-525-0014/1

FOR THE CONDUITS SEE OP-525-0015/1

ML				SEE B.R. IG28-306	89/09/15 C
ML	-	-	-	SEE B.R. IG28-102, -161, -163	- 89/04/04 B
DRAWN	POSE VERIFIED	ENGINEER L.E.A.	APPROVED	DESCRIPTION	ZONE DATE P.N.

PHILBERT 88/11/28

ML 88/11/28

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bombardier / La Pocatière, Québec, Canada

CEILING N° 1 END (CAB)

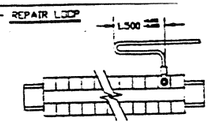
OP-525-0007/1

SIZE A0 SCALE 3/8 REV C

REF 52552SF

SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V. EXCEPT:	811551001
●	16 AWG, 600V.	810561001
○	16 AWG, 600V. SHIELD	810567005
△	12 AWG, 600V. SHIELD	811551004
□	12 AWG, 600V. HI-TEMP	811551005
■	8 AWG, 600V.	812521001
▲	4 AWG, 600V.	813541001
▲□	12 AWG, 2000V.	811561001
◇	10 AWG, 2000V.	812031001
◇◇	6 AWG, 2000V.	813031001
▽	4/0 2000V.	815761002
▽▽	2 AWG, 2000V.	814011001

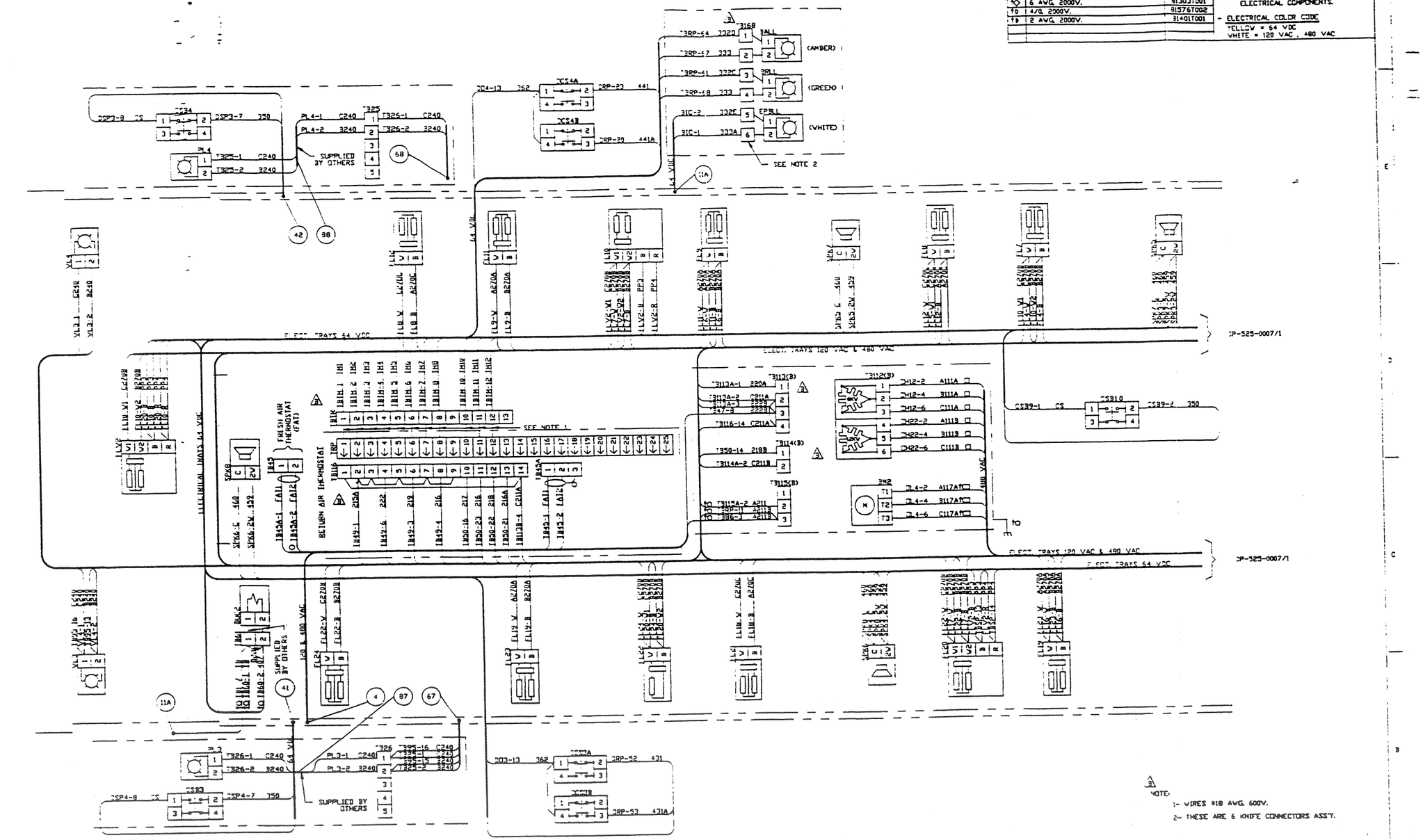
- REPAIR LOOP

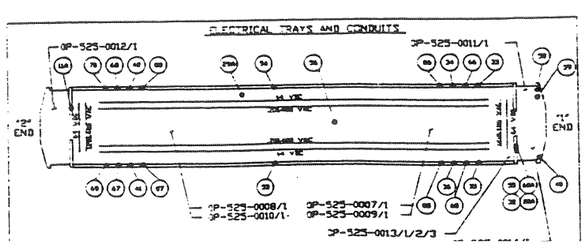


NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE

YELLOW = 64 VDC
WHITE = 120 VAC, 480 VAC





REF. 52552SF

SEE B.R 1G28-102, 1G28-114 - 89/04/04 B

PHILBERT 88/11/28

ML 88/11/28

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bombardier / La Pocatière, Québec, Canada

CEILING N° 2 END (CAB)

2P-525-0023/1

2P-525-0008/1 B

OP-525-0010/1

SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V. EXCEPT:	811557001
●	16 AWG, 600V.	810567001
○	16 AWG, 600V., SHIELD	810567005
△	12 AWG, 600V., SHIELD	811557004
□	12 AWG, 600V., HI-TEMP	811557005
■	8 AWG, 600V.	812527001
▲	4 AWG, 600V.	813547001
⊏□	12 AWG, 2000V.	811567001
⊏○	10 AWG, 2000V.	812037001
⊏◇	6 AWG, 2000V.	813027001
⊏▷	4/0, 2000V.	815767002
⊏▷	2 AWG, 2000V.	814017001

- REPAIR LOOP

L500

NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
  - YELLOW = 64 VDC
  - WHITE = 120 VAC, 480 VAC

98 42 70 68 54 3

SPLICES (B1985323SE)

29 VAC

TB395-17 B210A — TB100 1 — TDH3-1 B210A
TB395-18 A210A — TB100 2 — TDH3-2 A210A

29 VAC

TH3 TB100-1 B210A
TB100-2 A210A
10W/FH
TH4
10W/FH
64 VDC

TS3-1 360 — TS4 — 3D4-12 360D

TH11 TH12 TH13 TH14 TH15 TH16 TH17 TH18 TH19-1
TDH1-2 A113A
TDH2-2 A114A
TH21 TH22 TH23 TH24 TH25 TH26 TH27 TH28 TH29-1

ELECTRICAL TRAYS 120 VAC AND 480 VAC

OP-525 0009/1

TJ3 — TBSP-30 A271, TBSP-31 B271

TJ1 — TJ1-1 A271, TJ1-2 B271

120 VAC

29A

TS4-1 360 — TS3 — 3D3-12 360C

64 VDC

TH2
10W/FH
TH1
10W/FH
TB99-1 B210A
TB99-2 C210A

SPLICES (B1985323SE)

29 VAC

TB395-17 B210A — TB99 1 — TDH1-1 B210A
TB395-20 C210A — TB99 2 — TDH1-2 C210A

29 VAC

41 69 67 33 97

TH230 TH229 TH228 TH227 TH226 TH225 TH224 TH223 TH222-1
TDH2-2 A114A
TDH1-2 A113A
TH130 TH129 TH128 TH127 TH126 TH125 TH124 TH123 TH122-1

OP-525 0009/1

ELECTRICAL TRAYS AND CONDUITS

OP-525-0012/1 OP-525-0011/1

END END

64 VDC 120 VAC 120 VAC 64 VDC

OP-525-0008/1 OP-525-0007/1
OP-525-0010/1 OP-525-0009/1
OP-525-0013/1/2/3

REF. 52552SE

ML	-	-	- LF	SEE E.D.R.	- 89/04/04 B
PHILBERT			88/11/28		
			88/11/28		

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Beauharnois / Le Pizzaiere, Québec, Canada

FLOOR N° 2 END (CAB)

OP-525-0010/1 LIGHT B

A0 3

ELECTRICAL TRAYS 120 & 480 VAC

ELECTRICAL TRAYS 64 VDC

SEE NOTE 1

SEE NOTE 2

SEE NOTE 3

CONDUCTOR'S CONTROL HEAD

SEPARATED ROUTING

SEPARATED ROUTING (DOOR CLOSED) EDS

SUPPLIED BY OTHERS

SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG. 600V. EXCEPT:	81155T001
●	16 AWG. 600V.	81056T001
○	16 AWG. 600V. SHIELD	81056T005
△	12 AWG. 600V. SHIELD	81155T004
□	12 AWG. 2000V. HI-TEMP	81155T005
■	8 AWG. 600V.	81252T001
▲	4 AWG. 600V.	81354T001
†□	12 AWG. 2000V.	81156T001
†○	10 AWG. 2000V.	81203T001
†◇	6 AWG. 2000V.	81303T001
†◇	4/0. 2000V.	81576T002
†■	2 AWG. 2000V.	81401T001

- REPAIR LOOP

1.500

NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE

YELLOW = 64 VDC
WHITE = 120 VAC, 480 VAC

ELECTRICAL TRAYS AND CONDUITS

OP-525-0012/1

OP-525-0011/1

"2" END

"1" END

OP-525-0008/1
OP-525-0010/1

OP-525-0007/1
OP-525-0009/1

OP-525-0013/1/2/3

OP-525-0014/1

FOR THE CONDUITS SEE OP-525-0015/1

NOTE: 1- DOOR CLOSED AND LOCKED
2- MECHANICAL LOCK SWITCH SHOW NON-ACTUATED
3- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH

REF. 52552SE

SEE S.R. (IG28-344, -369)

L.PHILBERT 08/11/28

ML 08/11/28

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bouchervile / La Pocatiere, Québec, Canada

2P-525-0023/1

VESTIBULE N° 1 (CAB)

OP-525-0011/1

1/1 | S | 1:1 | E

OP-525-0012/1

ELECTRICAL TRAYS 64 VDC

ELECTRICAL TRAYS 120 & 480 VAC

SEE NOTE 1

SEE NOTE 2

SEE NOTE 3

64 VDC

SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG. 600V. EXCEPT:	81155T001
●	16 AWG. 600V.	81056T001
○	16 AWG. 600V. SHIELD	81056T003
△	12 AWG. 600V. SHIELD	81155T004
□	12 AWG. 600V. HI-TEMP	81155T003
■	8 AWG. 600V.	81252T001
▲	4 AWG. 600V.	81354T001
⬡	12 AWG. 2000V.	81156T001
⬡	10 AWG. 2000V.	81203T001
⬡	6 AWG. 2000V.	81303T001
⬡⬡	4/0 2000V.	81576T002
⬡⬡	2 AWG. 2000V.	81401T001

- REPAIR LOOP

NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 64 VDC

NOTE:
1- DOOR CLOSED AND LOCKED
2- MECHANICAL LOCK SWITCH SHOW NON-ACTUATED
3- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH

ELECTRICAL TRAYS AND CONDUITS

OP-525-0012/1
OP-525-0011/1
OP-525-0008/1
OP-525-0010/1
OP-525-0007/1
OP-525-0009/1
OP-525-0013/1/2/3

REF.				
52552SE	ML	-	SEE B.R.	9904066 B
	ML	-	SEE B.D.R.	- 89/01/13 A

PHD_BERT 88/11/28
ML 88/11/28

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bombardier / La Pocatière, Québec, Canada

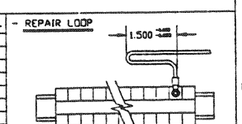
VESTIBULE N° 2 (CAB)

OP-525-0012/11 B

PIN	WIRE COLOR	PIN	WIRE COLOR
A	BLACK	S	RED/WHITE
B	RED	J	ORANGE/RED
C	ORANGE/BLACK	K	WHITE/RED
D	GREEN/BLACK		
E	BLUE/BLACK		
R	GREEN/WHITE		

SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V, EXCEPT:	81155T001
●	16 AWG, 600V.	81056T001
○	16 AWG, 600V, SHIELD	81056T005
△	12 AWG, 600V, SHIELD	81155T004
□	12 AWG, 2000V, HI-TEMP	81155T005
■	8 AWG, 600V.	81154T001
▲	4 AWG, 600V.	81354T001
◫	12 AWG, 2000V.	81156T001
⊙	10 AWG, 2000V.	81203T001
⊗	6 AWG, 2000V.	81303T001
⊡	4/0, 2000V.	81576T062
⊟	2 AWG, 2000V.	81401T001

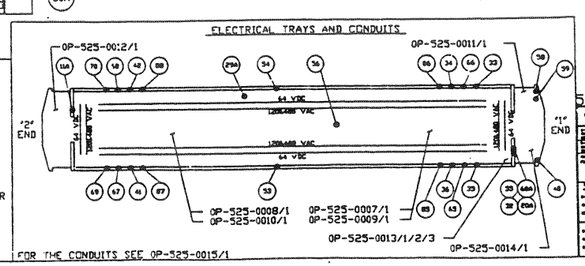
- REPAIR LOOP



NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 64 VDC
WHITE = 120 VAC , 480 VAC

ELECTRICAL TRAYS AND CONDUITS



FOR THE CONDUITS SEE OP-525-0015/1

NOTE: 1- TWISTED PAIR (1 TURN/FOOT)

REF. 52552SE

L.PHILBERT	98/11/20			SEE B.R. (IC28-144, -369-391)	
GP	98/11/20				

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Beauharnois / La Pocatière, Québec, Canada

ELECTRICAL LOCKER (CAB)

1/1 | A0 | 5 | OP-525-0013/1 | 132 | E

2P-525-0025/1

RELAY PANEL

INTER 120 VAC

CEILING 64 VDC

INTER 64 VDC

INTER 480 VAC

CEILING 480 VAC

CEILING 120 VAC

INTER 120 VAC

64 VDC

SEE NOTE 1

SEPARATED ROUTING

SEE NOTE 2

NOTE: 1- TWISTED PAIR (1 TURN/FOOT)
2- SPARE WIRES HAVE ABOUT 2 FEET IN LENGHT

REF. 52552SS

SEE B.B. (IG28-344, -391)

M	-	-	L.f.	-	98/11/18
			L.PHILBERT	98/11/28	
			GP	98/11/28	

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bouchervile - Le Pocatière, Québec, Canada

ELECTRICAL LOCKER (CAB)

2P-525-0023/1

1/1 | A0 | 5 | 0P-525-0013/2 | 2 2 3 | E

028/5/2825013-2

TRAIN CONTROL PANEL

HVAC CONTROL PANEL BOX

TEMPERATURE CONTROL PANEL

ATC 32V CONVERTER

RADIO AAR BASE

P.A. AMPLIFIER AAR BASE

WHEELSLIP CONTROL UNIT

SEE NOTE 2

SEPARATED ROUTING

SEE NOTE 1

ANTENNA J17 J16 SUPPLIED BY OTHERS

MULTICONDUCTOR (SUPPLIED BY OTHERS)

(LAYOVER THERMOS 55°F)

NOTE: 1- SPARE WIRES HAVE ABOUT 2 FEET IN LENGHT
2- TWISTED PAIR (1 TURN/FOOT)
3- WIRES #18 AVG, 600V.

REF. 52552SE

SEE B.R. (IG28-381, -391)

L.PHILBERT 98/11/28

ML 98/11/28

2P-525-0025/1

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bouchervile / La Pocatiere, Québec, Canada

ELECTRICAL LOCKER (CAB)

OP-525-0013/3

A0 | 3 | 393 | D

OP-525-0014/1

CEILING 64 VDC

CEILING 120 VAC

CEILING 480 VAC

CEILING 120 & 480 VAC

INTER 64 VDC

INTER 120 VAC

64 VDC

SEPARATED ROUTING

ENGINEMAN'S CONTROL HEAD

J13

J12

WHR

WHSR

WHL

WHSL

CHSL

CHSR

CHL1

CHL2

HFFR

CAB HEATER LEFT

CAB HEATER RIGHT

TB89

TB90

TB91

ACPB

DBL

TPBL (RED)

HEPL (WHITE)

ARS

TSB

LSB

ILP

MLS

VLS

BCA

FA1

FA2

CFS

ESS

GFB

ERB

EPB

MCP

MASTER CONTROLLER

AIR MANIFOLD

TBEP

ASPECT DISPLAY UNIT

DUP

AG1

AG2

TBAG

SEE NOTE 1

SEE NOTE 2

SUPPLIED BY OTHERS

(FULL HEAT)
(OFF)
(HALF HEAT)

RIGHT SIDE

LEFT SIDE

CAB HEATER RIGHT SIDE

(WINDSHIELD)

SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V. EXCEPT:	81155T001
●	16 AWG, 600V.	81056T001
○	16 AWG, 600V., SHIELD	81056T005
△	12 AWG, 600V., SHIELD	81155T004
□	12 AWG, 2000V., HI-TEMP	81155T005
■	8 AWG, 600V.	81252T001
▲	4 AWG, 600V.	81254T001
↑□	12 AWG, 2000V.	81156T001
↑○	10 AWG, 2000V.	81203T001
↑◇	6 AWG, 2000V.	91303T001
↑◇	4/0, 2000V.	81576T002
↑◇	2 AWG, 2000V.	81401T001

- REPAIR LOOP

1.500

NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 75 VDC
WHITE = 120 VAC, 480 VAC

ELECTRICAL TRAYS AND CONDUITS

OP-525-0012/1

OP-525-0011/1

"2" END

"1" END

OP-525-0008/1
OP-525-0010/1

OP-525-0007/1
OP-525-0009/1

OP-525-0013/1/2/3

OP-525-0014/1

FOR THE CONDUITS SEE OP-525-0015/1

REF. 52552SE

NOTE: 1- SPARE WIRES HAVE ABOUT 2 FEET IN LENGHT
2- TO BE REMOVED BY BOMBARDIER INC.

RGC		SEE S.R.(GS25-399)	
L.PHILBERT		98/11/20	
JP		98/11/20	

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bombardier / La Pocatière, Québec, Canada

CONSOLE (CAB)

1/1 | A0 | 5 | OP-525-0014/1

028/5/2825014

OP-525-0015/1

"2" END

"1" END

TRUCK "2" END

TRUCK "1" END

TRAP DOOR HEATER
STAIRWELL POST #4
DOOR POCKET #4
PLATFORM LIGHT
TRAP DOOR SW.
JUNCTION BOX 1B
TB1
TB2
TDS4
TB168
T361
2SP4
2RP
2S2
BATTERY BOX
BATTERY CHARGER
CIRCUIT BREAKER BOX
BCPS2
BRAKE APPLIED AND RELEASED
SPLICE 6P-444-0040
PRR31
PRR21
DMV2
T1
T2
T3
TRANSFORMERS
DECELOSTAT MAGNET VALVE
CO1 UP-FLOOR
JUNCTION BOX #1
JUNCTION BOX #5
T39
DECELOSTAT MAGNET VALVE
DMV1
BCPS1
BRAKE APPLIED AND RELEASED
PLATFORM LIGHT
DOOR POCKET #2
STAIRWELL POST #2
TRAP DOOR HEATER
TRAP DOOR SV.
TO ABOVE CEILING SVG GP-525-0007/1
TDS2
SMVL
TB3
TB4
JUNCTION BOX 2A
SPLICE 6P-444-0039
PRR11
PRR12
TB13K2
TB13K1
TO TB118 AND CO2 UP-FLOOR
TB11
JUNCTION BOX #2
COMPRESSOR AND CONDENSOR UNIT
JUNCTION BOX #4
JUNCTION BOX #6
SMVP
TB7
TB8
JUNCTION BOX 1A
JUNCTION BOX 2B
TDS3
TDS1
EDCU
BIC
BRAKE CONTROL UNIT
TO ELECTRICAL LOCKER
JUNCTION BOX #10
TRAP DOOR SW.
STAIRWELL POST #3
DOOR POCKET #3
PLATFORM LIGHT
TRAP DOOR HEATER
DOOR POCKET #1
STAIRWELL POST #1
TRAP DOOR HEATER
TRAP DOOR SW.
TO CONSOLE
FH215
FH115
FH21
FH11
FH111
FH211
FH120
FH220
FH130
FH230
FH117
FH217

CAB

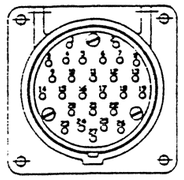
NIL	-	-	- L.A	SEE S.I.R.		- 89/04/05 B
ISSUE	MODIFICATION	S.I.R. NO.	APPROVED	DESCRIPTION	ZONE	DATE

PHILBERT 88/12/02
GP 88/12/02

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Beauharnois / La Pocatière, Québec, Canada

UNDERF. BLOCK DIAGRAM

OP-526-0001/1



27 POINTS RECEPTACLE (BLACK) (LCL2)
VIEW WITH COVER REMOVED

LOCOMOTIVE CONTROL TRAINLINE (LCL2)			
PIN	FUNCTION	MARKER	SIZE
1	DYNAMIC BRAKE RESET SWITCH	RS	14
2	ATTENDANT CALL AND ALARM BELL	AB	16
3	ENGINE SPEED B	EB	16
4	NEGATIVE	N	14
5	EMERGENCY BRAKE SAND	ES	14
6	ALTERNATOR FIELD	GF	14
7	ENGINE SPEED C	EC	16
8	CAB FORWARD	FD	14
9	CAB REVERSE	RE	14
10	VOLT	VS	14
11	DYNAMIC BRAKE FAULT LIGHT	DBF	14
12	ENGINE SPEED B	EB	16
13	THROTTLE CONTROL	TV	14
14	START	SP1	14
15	ENGINE SPEED A	EA	16
16	ENGINE RUN	ER	14
17	EMERGENCY BRAKE MAGNET VALVE	EB	14
18	BRAKE APPLICATION (GLOBE) MV.	BA	14
19	BRAKE RELEASE MV.	BR	14
20	BRAKE NEGATIVE	FP3	14
21	SPARE	SP2	14
22	COMPRESSOR CONTROL SPARE	CC	14
23	HORN CONTROL	HB	14
24	SPARE	SP3	14
25	MARKER LIGHT CONTROL	MB	14
26	EMERGENCY BRAKE FLASHER	EF	14
27	MAIN LINE STEAM GENERATOR SPARE	SP4	14

PRL21



TYPE "A"

6 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

NOTE: 1- POWER RECEPTACLE TYPE "A"
CABLE COLOR CODE

RECEPTACLE	PIN #	CABLE CODE
LARGE PINS POWER (CABLES #4/0 AWG)	1	YELLOW
	2	RED
	3	BLUE
	1	BLACK
SMALL PINS CONTROL (CABLES #10 AWG)	2	WHITE
	3	RED

PRL22

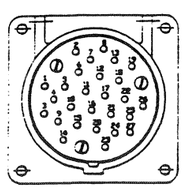


TYPE "B"

6 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

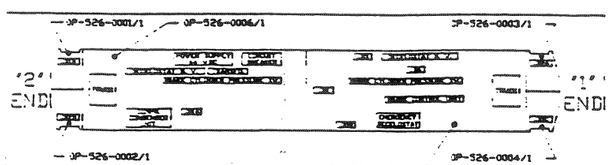
NOTE: 2- POWER RECEPTACLE TYPE "B"
CABLE COLOR CODE

RECEPTACLE	PIN #	CABLE CODE
LARGE PINS POWER (CABLES #4/0 AWG)	2	YELLOW
	4	RED
	6	BLUE
	1	BLACK
SMALL PINS CONTROL (CABLES #10 AWG)	3	WHITE
	5	RED



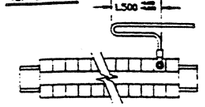
27 POINTS RECEPTACLE (BLUE) (DCL2)
VIEW WITH COVER REMOVED

DOOR AND COMMUNICATION TRAINLINE (DCL2)			
PIN	FUNCTION	MARKER	SIZE
1	SHIELD	SH	14
2	BATTERY NEGATIVE (CAB)	TB	14
3	AUDIO SET A WIRE	PA1	14
4	AUDIO SET A WIRE	PA2	14
5	AUDIO SET A WIRE	PA3	14
6	AUDIO SET A WIRE	PA4	14
7	AUDIO SET A WIRE	PA5	14
8	AUDIO SET A WIRE	PA6	14
9	SPARE	SP5	14
10	SPARE	SP6	14
11	SPARE	SP7	14
12	SPARE	SP8	14
13	SPARE	SP9	14
14	SPARE	SP10	14
15	SPARE	SP11	14
16	SPARE	SP12	14
17	SPARE	SP13	14
18	SPARE	SP14	14
19	SPARE	SP15	14
20	SPARE	SP16	14
21	SPARE	SP17	14
22	SPARE	SP18	14
23	SPARE	SP19	14
24	SPARE	SP20	14
25	SPARE	SP21	14
26	SPARE	SP22	14
27	SPARE	SP23	14



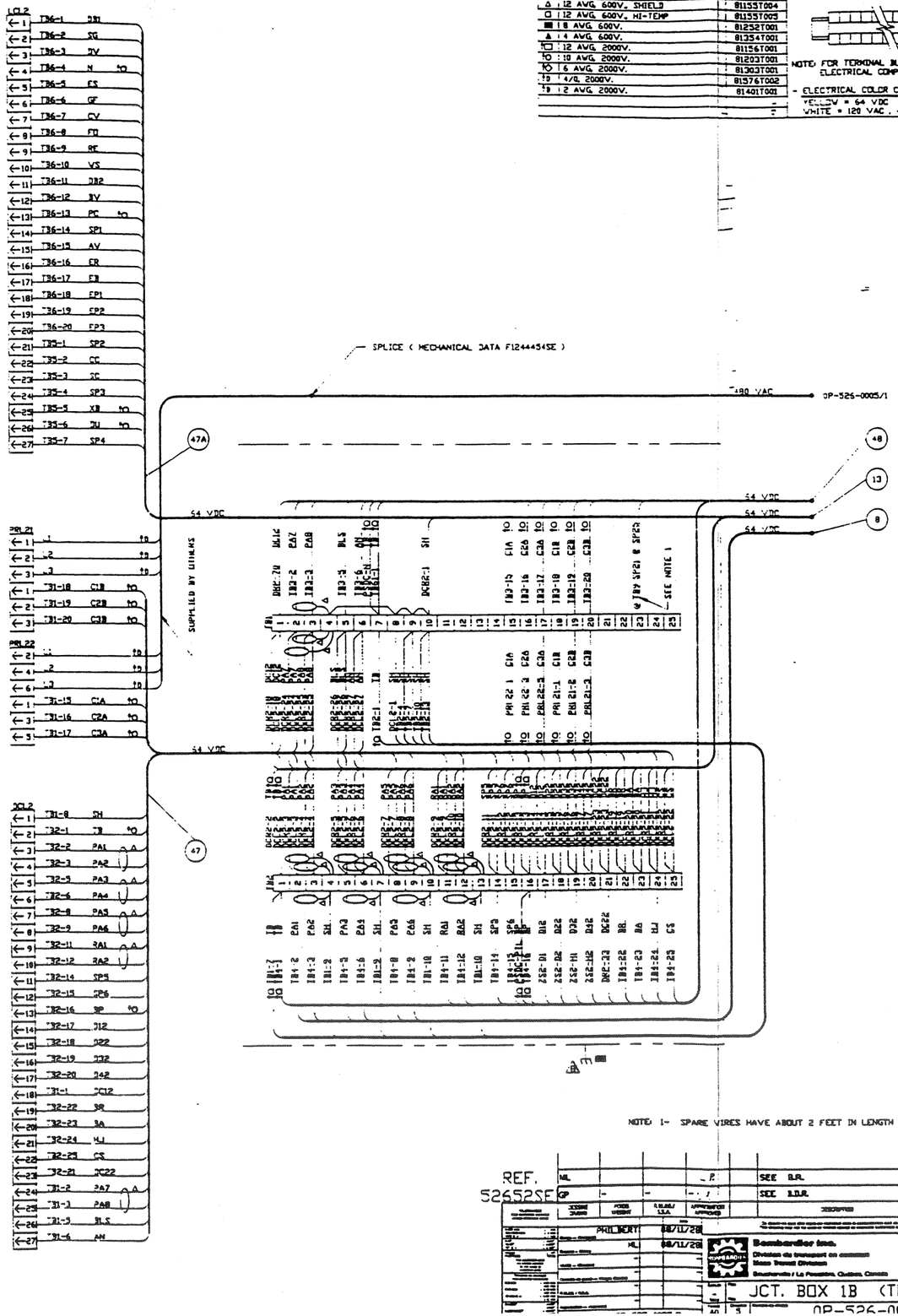
SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AVG. 600V. EXCEPT:	811557T001
●	16 AVG. 600V.	810567T001
○	16 AVG. 600V. SHIELD	910567T005
△	12 AVG. 600V. SHIELD	811557T004
□	12 AVG. 600V. HI-TEMP	811557T005
■	8 AVG. 600V.	812557T001
▲	4 AVG. 600V.	813547T001
10	12 AVG. 2000V.	811561T001
10	10 AVG. 2000V.	812037T001
10	6 AVG. 2000V.	813037T001
10	4/0 2000V.	815767T002
10	2 AVG. 2000V.	814017T001

- REPAIR LOOP



NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

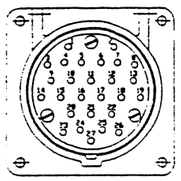
- ELECTRICAL COLOR CODE
YELLOW = 64 VDC
WHITE = 120 VAC, 480 VAC



NOTE: 1- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH

REF.					
52652SE	ML			SEE E.R.	EB04406 B
	GP	-	-	SEE E.D.R.	- 89/01/09 A

PHIL BERT	88/11/28	Bombardier Inc. Division du transport en commun Mass Transit Division Bombardier / La Pocatière, Québec, Canada	
ML	88/11/28	JCT. BOX 1B (TRL)	
		OP-526-0001/1	



27 POINTS RECEPTACLE (BLACK)
(LCR2)
VIEW WITH COVER REMOVED

LOCOMOTIVE CONTROL TRAINLINE (LCR2)

PIN	FUNCTION	MARKER	SIZE
1	DYNAMIC BRAKE RESET SWITCH	36	
2	ATTENDANT CALL AND ALARM BELL	SG	
3	ENGINE SPEED 3	DV	
4	NEUTRAL	N	
5	EMERGENCY BRAKE CAM	ES	
6	ENGINE SPEED 2	GF	
7	DYNAMIC BRAKE FAULT LIGHT	GV	
8	ENGINE SPEED 1	FD	
9	ALARM	RE	
10	ENGINE SPEED 4	VS	
11	EMERGENCY BRAKE MAGNET VALVE	DB2	
12	BRAKE CUT-IN/CUT-OUT (SERVICE) M.V.	BV	
13	BRAKE APPLY M.V.	PC	
14	BRAKE RELEASE	SP1	
15	LOCOMOTIVE CONTROL SPARE	AV	
16	LOCOMOTIVE CONTROL SPARE	FR	
17	LOCOMOTIVE CONTROL	FB	
18	EMERGENCY BRAKE MAGNET VALVE	FP1	
19	BRAKE APPLY M.V.	FP2	
20	STEAM BLOWDOWN SPARE	FP3	
21		SP2	
22		CC	
23		SC	
24		SP3	
25		XB	
26		DU	
27		SP4	

PRR21



TYPE "A"

6 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

NOTE: 1- POWER RECEPTACLE TYPE "A"
CABLE COLOR CODE

RECEPTACLE	PIN #	CABLE	CODE
LARGE PINS POWER (CABLES 84/0 AWG)	1	YELLOW	
	2	RED	
	3	BLUE	
	4	BLACK	(BK)
SMALL PINS CONTROL (CABLES #10 AWG)	2	WHITE	(W)
	3	RED	(R)

PRR22

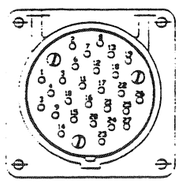


TYPE "B"

6 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

NOTE: 2- POWER RECEPTACLE TYPE "B"
CABLE COLOR CODE

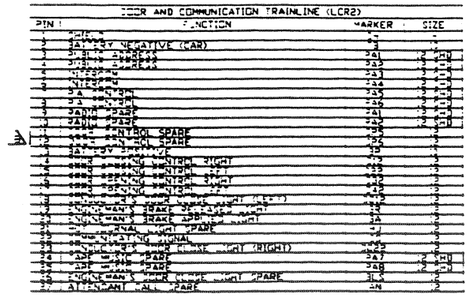
RECEPTACLE	PIN #	CABLE	CODE
LARGE PINS POWER (CABLES 84/0 AWG)	2	YELLOW	
	4	RED	
	6	BLUE	
	1	BLACK	
SMALL PINS CONTROL (CABLES #10 AWG)	3	WHITE	
	5	RED	

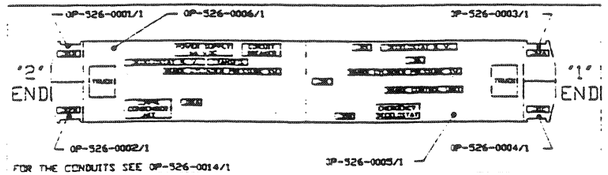


27 POINTS RECEPTACLE (BLUE)
(CCR2)
VIEW WITH COVER REMOVED

CREW AND COMMUNICATION TRAINLINE (LCR2)

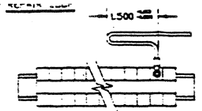
PIN	FUNCTION	MARKER	SIZE
1	BATTERY NEGATIVE (CAB)	31	
2		3A1	
3		3B2	
4		3A1	
5		3A4	
6		3A1	
7		3A2	
8		3A1	
9		3A2	
10		3A1	
11		3A2	
12		3A1	
13		3A2	
14		3A1	
15		3A2	
16		3A1	
17		3A2	
18		3A1	
19		3A2	
20		3A1	
21		3A2	
22		3A1	
23		3A2	
24		3A1	
25		3A2	
26		3A1	
27		3A2	





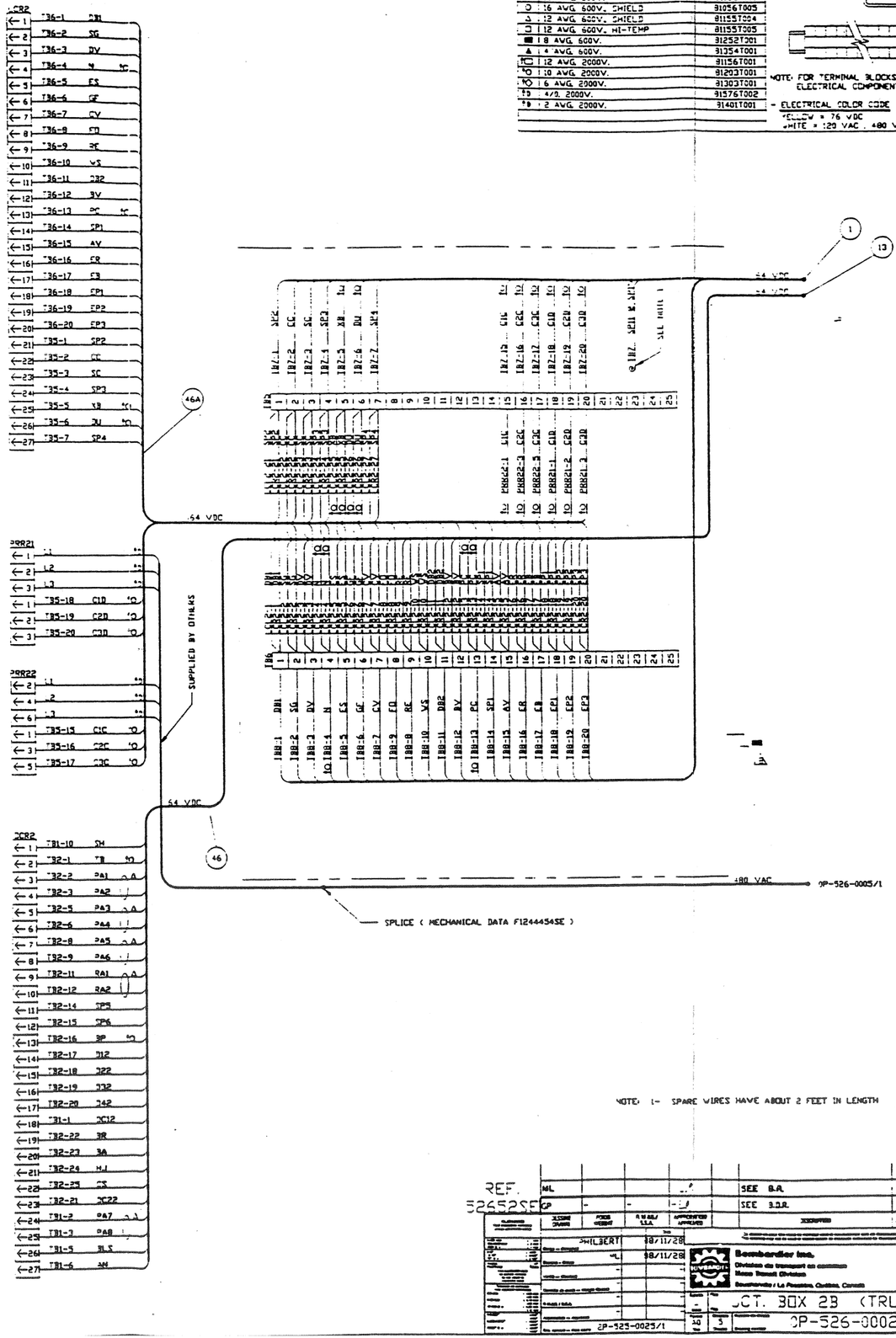
FOR THE CONDUITS SEE OP-526-0014/1

ITEM	DESCRIPTION	ECR DESIG.
	ALL WIRES 12 AWG. 600V. EXCEPT:	911557001
●	16 AWG. 600V.	910567001
○	16 AWG. 600V. SHIELD	910567005
△	12 AWG. 600V. SHIELD	911557004
□	12 AWG. 600V. HI-TEMP	911557005
■	8 AWG. 600V.	912527001
▲	4 AWG. 600V.	913547001
*□	12 AWG. 2000V.	911567001
*○	10 AWG. 2000V.	912037001
*◇	6 AWG. 2000V.	913037001
*◆	4/0. 2000V.	915767002
*●	2 AWG. 2000V.	914017001



NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 76 VDC
WHITE = 120 VAC, 480 VAC



NOTE: 1- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH

REF.						
526252SF	ML				SEE S.R.	89040061 B
	GP	-	-	-	SEE S.D.R.	- 89/01/09 A

	SHILBERT	88/11/28			
	ML	88/11/28			
	-	-			
	-	-			
	-	-			

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Bombardier / La Pocatière, Québec, Canada

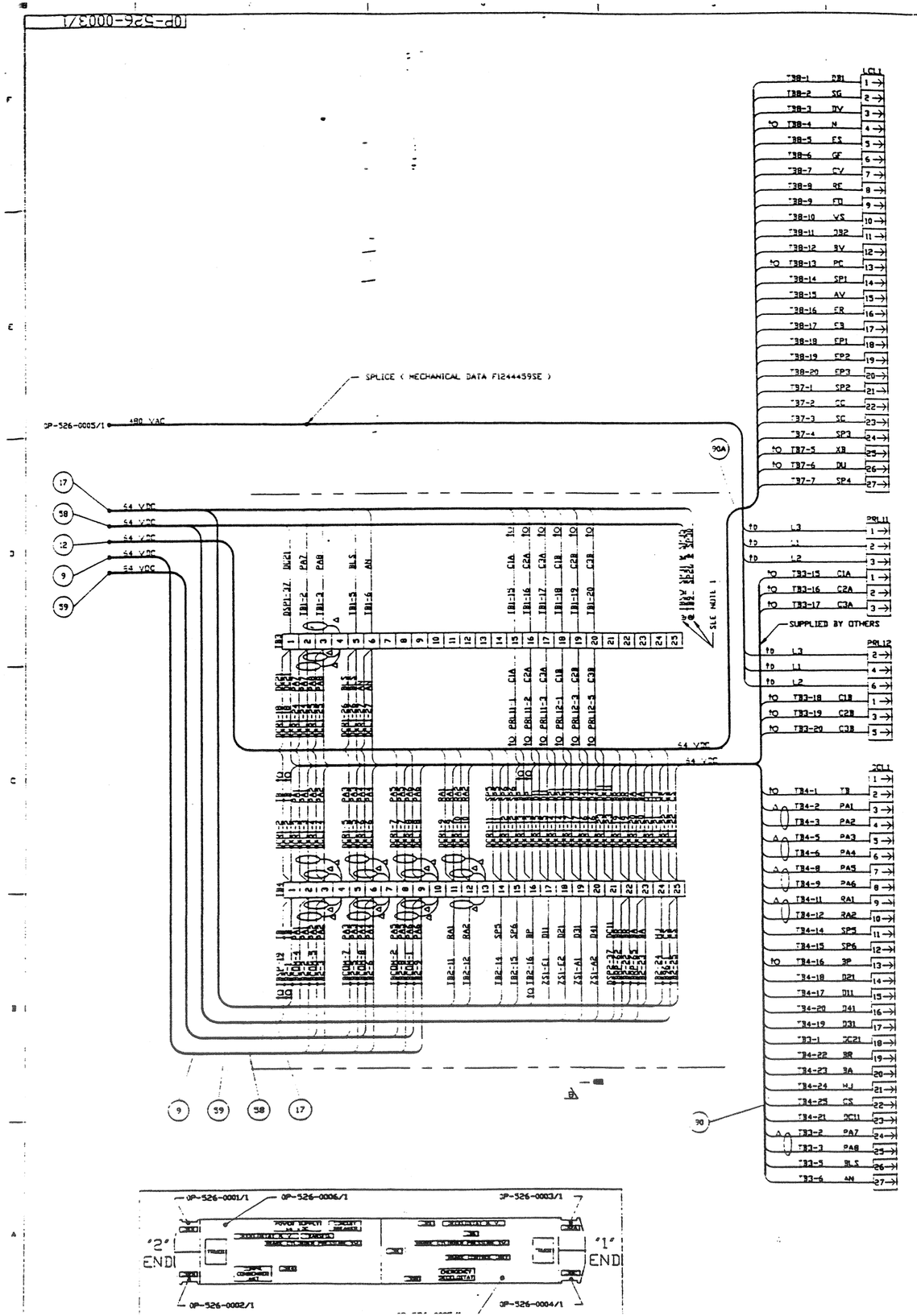
JCT. BOX 2B (TRL)

OP-526-0002/1

OP-525-0025/1

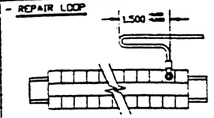
40 | 5

OP-526-0003/1



SYM	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V. EXCEPT:	81155T001
●	16 AWG, 600V.	81056T001
○	16 AWG, 600V. SHIELD	81056T005
△	12 AWG, 600V. SHIELD	81155T004
□	12 AWG, 600V. HI-TEMP	81155T005
■	8 AWG, 600V.	81252T001
▲	4 AWG, 600V.	81354T001
↑□	12 AWG, 2000V.	81156T001
↑○	10 AWG, 2000V.	81203T001
↑●	6 AWG, 2000V.	81303T001
↑▲	4/0, 2000V.	81576T002
↑▮	2 AWG, 2000V.	81401T001

- REPAIR LOOP



NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 74 VDC
WHITE = 120 VAC, 480 VAC

LOCOMOTIVE CONTROL TRAINLINE (LCL1)

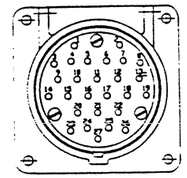
PIN	FUNCTION	MARKER	SIZE
1	DYNAMIC BRAKE RESET SWITCH	BR	16
2	ATTENDANT CALL AND ALARM BELL	54	16
3	ENGINE SPEED D	AV	16
4	NEGATIVE	N	12
5	EMERGENCY BRAKE SAND	FS	12
6	EMERGENCY BRAKE VALVE	GF	12
7	ENGINE SPEED C	CV	16
8	SAND SWITCH	RF	12
9	SAND FORWARD	FD	12
10	WHEEL SLIP	VS	16
11	DYNAMIC BRAKE FAULT LIGHT	JB2	16
12	ENGINE SPEED B	BV	16
13	DYNAMIC CONTROL	PC	16
14	SPARE	SP1	16
15	ENGINE SPEED A	AV	16
16	ENGINE RUN	ER	16
17	EMERGENCY BRAKE MAGNET VALVE	FB	16
18	BRAKE APPLICATION (SERVICE) M.V.	FP1	16
19	BRAKE RELEASE M.V.	FP2	16
20	BRAKE NEGATIVE	FP3	16
21	SPARE	SP2	16
22	COMPRESSOR CONTROL SPARE	SC	16
23	BAIL CONTROL	SC	16
24	SPARE	SP3	16
25	HEADLIGHT CONTROL	XR	16
26	BODY END DOOR RELEASE	DU	16
27	TRAIN LINE STEAM BLOWDOWN SPARE	SP4	12

NOTE: 1- POWER RECEPTACLE TYPE "A"
CABLE COLOR CODE

RECEPTACLE	PIN #	CABLE CODE
LARGE PINS POWER (CABLES #4/0 AWG)	1	BLUE
	2	YELLOW
	3	RED
SMALL PINS CONTROL (CABLES #10 AWG)	1	BLACK (BK)
	2	WHITE (W)
	3	RED (R)

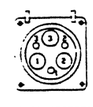
NOTE: 2- POWER RECEPTACLE TYPE "B"
CABLE COLOR CODE

RECEPTACLE	PIN #	CABLE CODE
LARGE PINS POWER (CABLES #4/0 AWG)	2	BLUE
	4	YELLOW
	6	RED
SMALL PINS CONTROL (CABLES #10 AWG)	1	BLACK
	3	WHITE
	5	RED



27 POINTS RECEPTACLE (BLACK) (LCL1)
VIEW WITH COVER REMOVED

PRL11



"TYPE "A"

6 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

PRL12

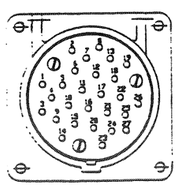


"TYPE "B"

6 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

DOOR AND COMMUNICATION TRAINLINE (DCL1)

PIN	FUNCTION	MARKER	SIZE
1	SHIELD	SH	
2	BATTERY NEGATIVE (CAB)	NA	12
3	BUS "A" ADDRESS	PA1	16
4	BUS "B" ADDRESS	PA2	16
5	SPARE	PA3	16
6	SPARE	PA4	16
7	SPARE	PA5	16
8	SPARE	PA6	16
9	SPARE	PA7	16
10	SPARE	PA8	16
11	SPARE	PA9	16
12	SPARE	PA10	16
13	BATTERY POSITIVE	NB	12
14	ENGINEMAN'S BRAKE VALVE LIGHT	BA	16
15	ENGINEMAN'S BRAKE VALVE LIGHT	BA	16
16	ENGINEMAN'S BRAKE VALVE LIGHT	BA	16
17	ENGINEMAN'S BRAKE VALVE LIGHT	BA	16
18	ENGINEMAN'S BRAKE VALVE LIGHT (RIGHT)	BA	16
19	ENGINEMAN'S BRAKE RELEASED LIGHT	BA	16
20	ENGINEMAN'S BRAKE APPLIED LIGHT	BA	16
21	SPARE	PA11	16
22	SPARE	PA12	16
23	ANNUNCIATING SIGNAL	PA13	16
24	ENGINEMAN'S HORN PHASE LIGHT (LEFT)	PA14	16
25	SPARE	PA15	16
26	SPARE	PA16	16
27	ENGINEMAN'S HORN PHASE LIGHT SPARE	PA17	16
28	ATTENDANT CALL SPARE	AN	16



27 POINTS RECEPTACLE (BLUE) (DCL1)
VIEW WITH COVER REMOVED

NOTE: 1- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH

REF. 52652SE

ML	-	-	-	SEE B.R.	B9D4D08 B
GP	-	-	-	SEE B.D.R.	- B9/01/09 A

PHILBERT 98/11/28
ML 98/11/28

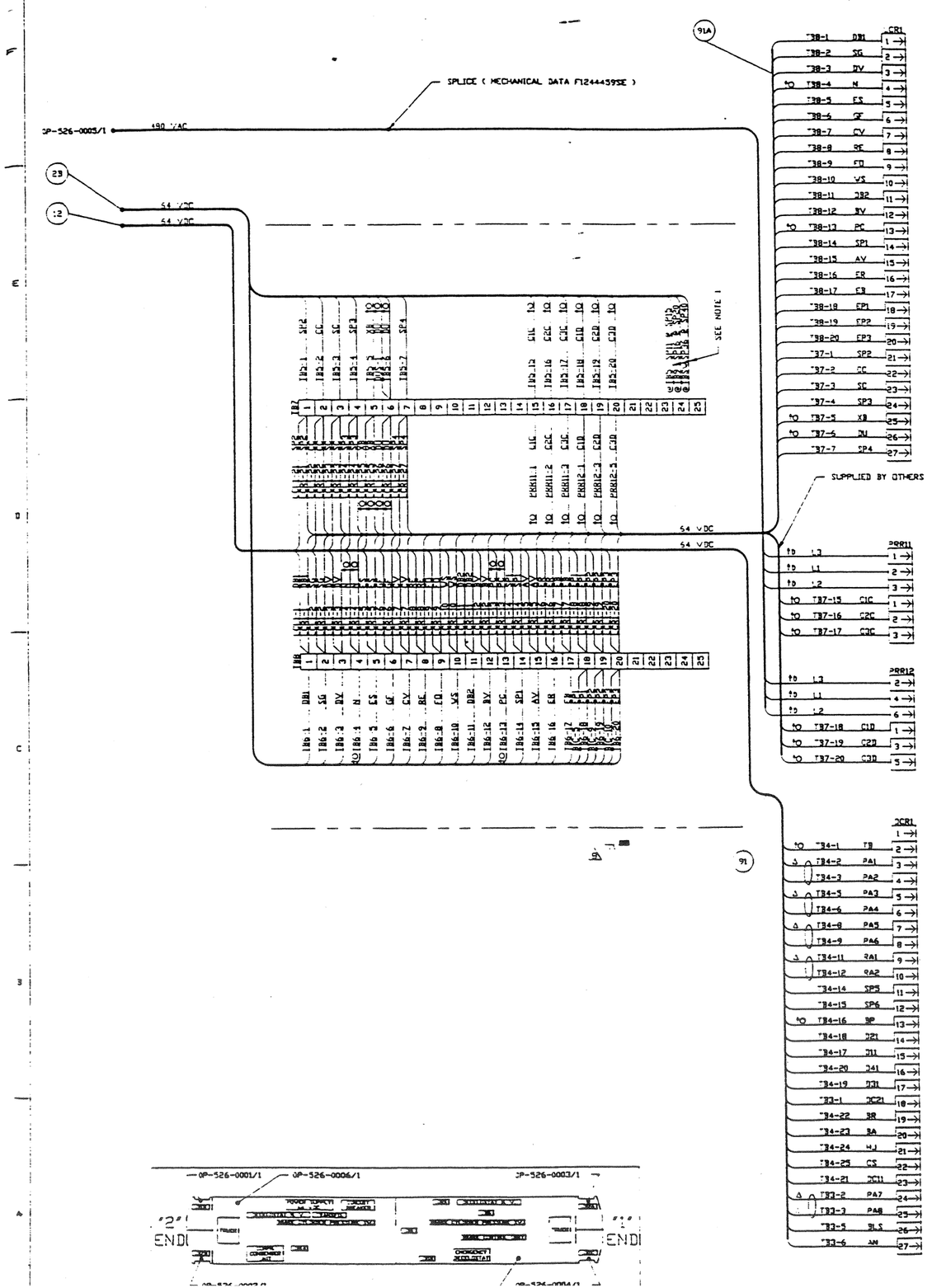
Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

JCT. BOX 2A (TRL)

OP-526-0003/1 21 B

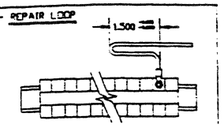
OP-525-0025/1

OP-526-0004/1



SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V. EXCEPT:	811557001
●	16 AWG, 600V.	810567001
○	16 AWG, 600V. SHIELD	810567005
△	12 AWG, 600V. SHIELD	811557004
□	12 AWG, 600V. HI-TEMP	811557005
■	8 AWG, 600V.	812527001
▲	4 AWG, 600V.	812547001
▭	12 AWG, 2000V.	811567001
⬠	10 AWG, 2000V.	912037001
⬡	6 AWG, 2000V.	913037001
⬢	4/0, 2000V.	915767002
⬢	2 AWG, 2000V.	914017001

- REPAIR LOOP



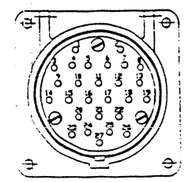
NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE

YELLOW = 76 VDC
WHITE = 120 VAC , 480 VAC

LOCOMOTIVE CONTROL TRAINLINE (LCR1)

PIN	FUNCTION	MARKER	SIZE
1	DYNAMIC BRAKE RESET SWITCH	J1	
2	ATTENDANT CALL AND ALARM BELL	AV	
3	ENGINE SPEED 3	3V	
4	NEGATIVE	4	
5	EMERGENCY BRAKE SAND	J5	
6	ENGINE SPEED 2	2V	
7	ENGINE SPEED 4	4V	
8	REVERSER	J8	
9	FORWARD	J9	
10	WHEEL SLIP	J10	
11	DYNAMIC BRAKE FAULT LIGHT	J11	
12	ENGINE SPEED 1	1V	
13	BATTERY CONTROL	J13	
14	BRAKE	J14	
15	ENGINE SPEED A	AV	
16	ENGINE RUN	J16	
17	EMERGENCY BRAKE MAGNET VALVE	J17	
18	BRAKE APPLICATION (SERVICE) M.V.	J18	
19	BRAKE RELEASE M.V.	J19	
20	BRAKE NEGATIVE	J20	
21	SPARE	J21	
22	TRACTION MOTOR CONTROL SPARE	J22	
23	BRAKE CONTROL	J23	
24	SPARE	J24	
25	HEADLIGHT CONTROL	J25	
26	PARKING AND BRAKE RELEASE	J26	
27	RAINLINE STEAM BLOWDOWN SPARE	SP4	



27 POINTS RECEPTACLE (BLACK) (LCR1)
VIEW WITH COVER REMOVED

NOTE: 1- POWER RECEPTACLE TYPE "A"
CABLE COLOR CODE

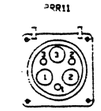
RECEPTACLE	PIN #	CABLE CODE	
LARGE PINS POWER (CABLES #4/0 AWG)	1	BLUE	
	2	YELLOW	
	3	RED	
	4	BLACK	(BK)
SMALL PINS CONTROL (CABLES #10 AWG)	2	WHITE	(W)
	3	RED	(R)

NOTE: 2- POWER RECEPTACLE TYPE "B"
CABLE COLOR CODE

RECEPTACLE	PIN #	CABLE CODE
LARGE PINS POWER (CABLES #4/0 AWG)	2	BLUE
	4	YELLOW
	5	RED
	1	BLACK
SMALL PINS CONTROL (CABLES #10 AWG)	3	WHITE
	5	RED

PRR11

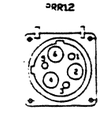
TYPE "A"



6 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

PRR12

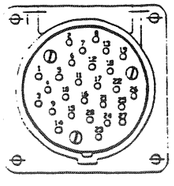
TYPE "B"



6 POINTS RECEPTACLE
VIEW WITH COVER REMOVED

JCR1 AND COMMUNICATION TRAINLINE (DCR1)

PIN	FUNCTION	MARKER	SIZE
1	SHIELD	SH	
2	BATTERY NEGATIVE (CAR)	J2	
3	PHYSICAL ADDRESS	JA1	
4	PHYSICAL ADDRESS	JA2	
5	PHYSICAL ADDRESS	JA3	
6	INTERLOCK	JA4	
7	TRACTION	JA5	
8	SPARE	JA6	
9	SPARE	JA7	
10	SPARE	JA8	
11	SPARE	JA9	
12	SPARE	JA10	
13	SPARE	JA11	
14	BATTERY SHUTDOWN	JA12	
15	DOOR CONTROL SPARE	JA13	
16	DOOR CONTROL SPARE	JA14	
17	BATTERY SHUTDOWN	JA15	
18	DOOR CONTROL SPARE	JA16	
19	DOOR CONTROL SPARE	JA17	
20	DOOR CONTROL SPARE	JA18	
21	ENGINEMAN'S DOOR CONTROL (RIGHT)	JA19	
22	ENGINEMAN'S BRAKE APPLICATION (RIGHT)	JA20	
23	ENGINEMAN'S BRAKE APPLICATION (LEFT)	JA21	
24	SPARE	JA22	
25	SPARE	JA23	
26	ENGINEMAN'S DOOR CLOSE LIGHT (LEFT)	JA24	
27	SPARE	JA25	
28	SPARE	JA26	
29	ENGINEMAN'S DOOR CLOSE LIGHT (RIGHT) SPARE	JA27	
30	ATTENDANT CALL SPARE	JA28	



27 POINTS RECEPTACLE (BLUE) (DCR1)
VIEW WITH COVER REMOVED

NOTE: 1- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH

REF.					
52652SE	ML			SEE B.R.	890406 B
	GP	-	-	SEE B.R.	- 89/01/09 A

PHILBERT	88/11/28	
	88/11/28	

Bombardier Inc.
Division de transport en commun
Mass Transit Division
Bombardier / La Pocatière, Québec, Canada

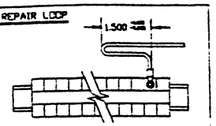
JCT. BOX 1C (TRL)

OP-526-0004/1

OP-526-0005/1

SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V. EXCEPT:	811557001
●	16 AWG, 600V.	810567001
○	16 AWG, 600V. SHIELD	812567005
△	12 AWG, 600V. SHIELD	811557004
□	12 AWG, 600V. HI-TEMP	811557003
■	8 AWG, 600V.	812527001
▲	4 AWG, 600V.	813547001
⊡	12 AWG, 2000V.	811567001
⊙	10 AWG, 2000V.	812937001
⊗	6 AWG, 2000V.	813637001
⊕	4/0, 2000V.	815767002
⊕	2 AWG, 2000V.	814017001

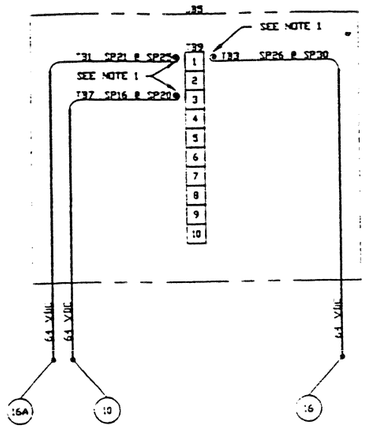
- REPAIR LOOP

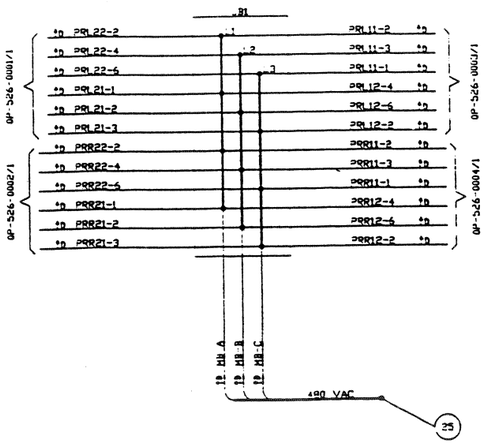


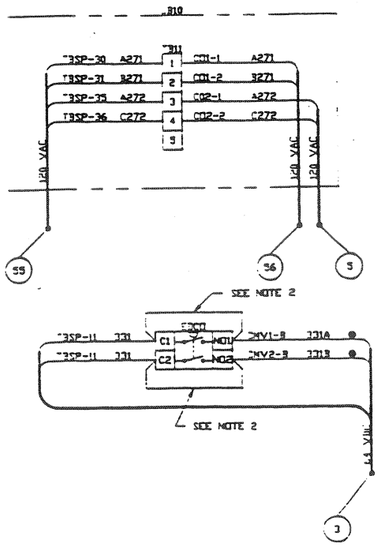
NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

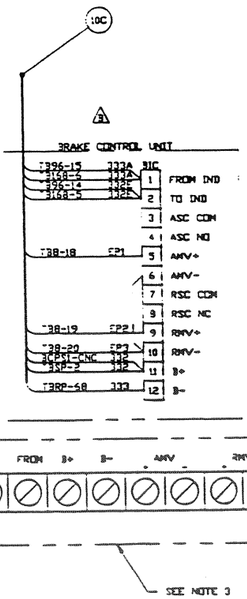
- ELECTRICAL COLOR CODE

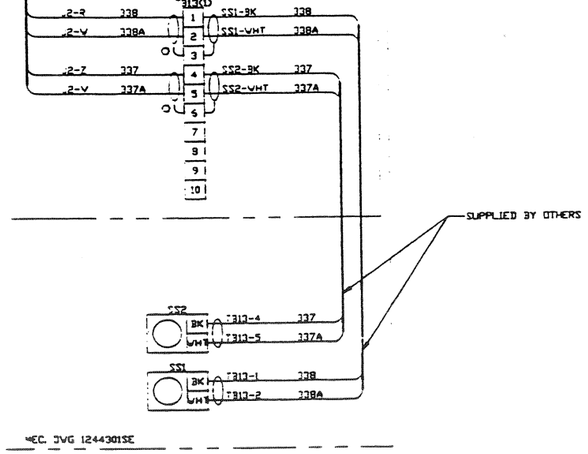
YELLOW = 76 VDC
WHITE = 120 VAC, 480 VAC







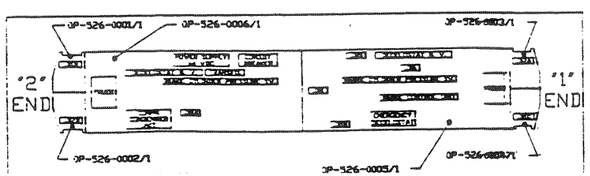




NOTES: 1- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH.

2- JUMPER WIRE IS TO BE REMOVED BY CUSTOMER AT HIS DISCRETION. REMOVAL WILL CAUSE NULLIFICATION OF WHEEL SLIDE PROTECTION DURING EMERGENCY SITUATIONS (I.E. BRAKE PIPE PRESSURE BELOW 25 PSI).

3- TERMINAL BLOCK DESIGNATION INSIDE BRAKE CONTROL UNIT.



REF. 526525E

			SEE B.R. IG28-161	- 89/04/06 B
	PHILBERT	88/11/28		
		88/11/28		

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bombardier / La Pocatière, Québec, Canada

UNDERFRAME N° 1 (TRL)

OP-526-0005/1 B

2P-526-0025/1

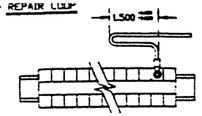
DE-526-0006/1

POWER SUPPLY 64 VDC

CIRCUIT BREAKER

SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V. EXCEPT:	811557001
●	16 AWG, 600V.	810567001
○	16 AWG, 600V. SHIELD	810567005
△	12 AWG, 600V. SHIELD	811557004
□	12 AWG, 600V. HI-TEMP	811557005
■	8 AWG, 600V.	812527001
▲	4 AWG, 600V.	813547001
⊓	12 AWG, 2000V.	811567001
⊓	10 AWG, 2000V.	812037001
⊓	6 AWG, 2000V.	813037001
*8	4/0, 2000V.	815767002
*9	2 AWG, 2000V.	814017001

- REPAIR LOOP



NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

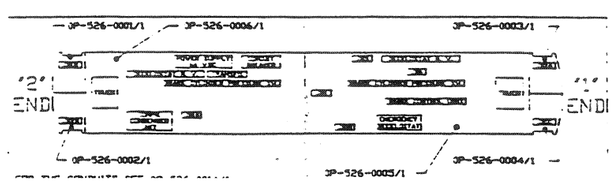
- ELECTRICAL COLOR CODE
YELLOW = 75 VDC
WHITE = 120 VAC, 480 VAC

SUPPLIED BY OTHERS

SPLICES IN THE TRANSFORMERS

NOTE: 1- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH

REF. DWG 1244301SE



ML			C.P.	SEE B.R.	8904061 B
GP	-	-	-	SEE B.D.R.	- 89/01/09 A
				PHILBERT	88/11/28
					88/11/28

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Boucherville / La Pocatière, Québec, Canada

UNDERFRAME N° 2 (TRL)

0P-526-0006/1

2P-525-0023/1

OP-526-0007/1

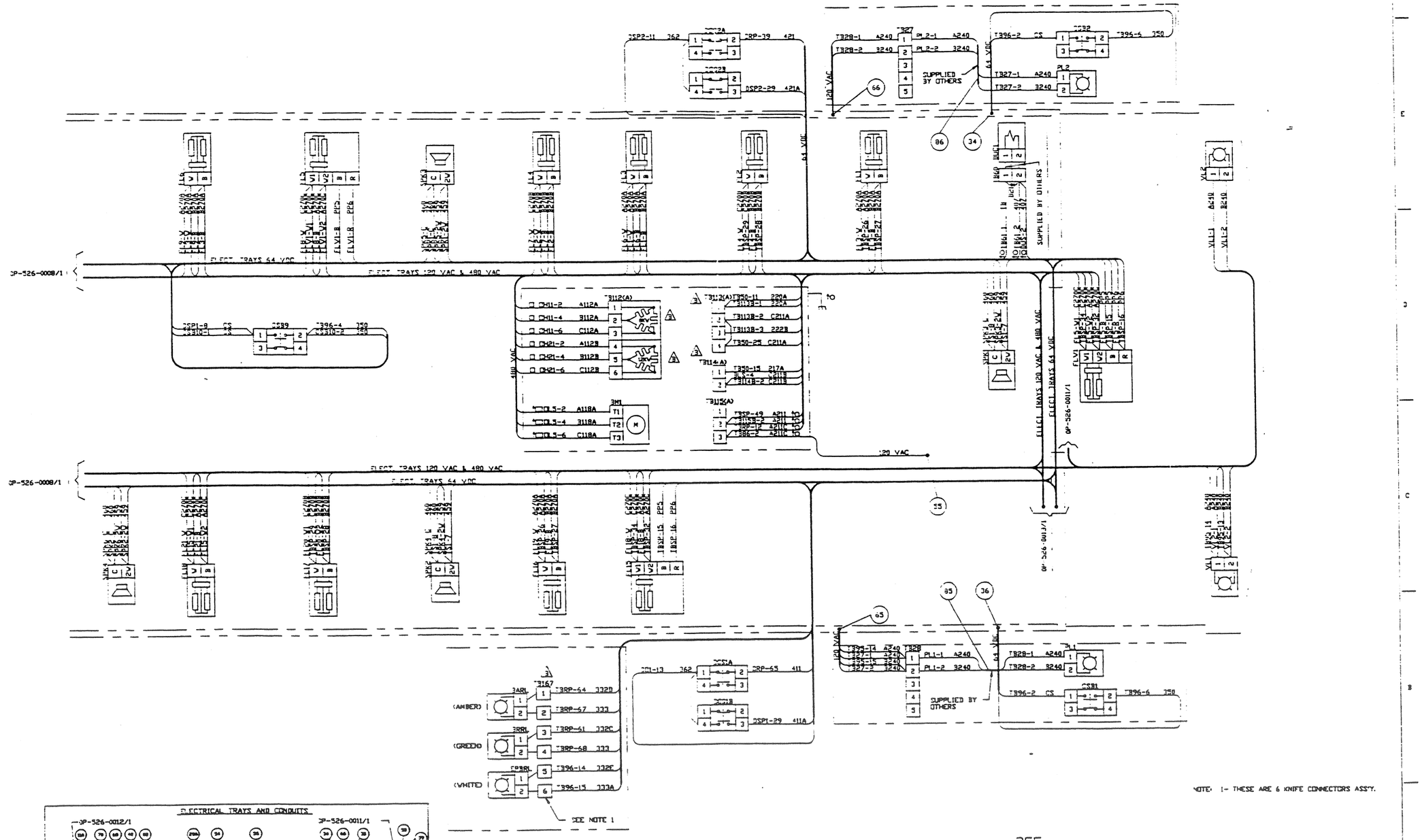
SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V. EXCEPT:	811557001
●	16 AWG, 600V.	810567001
○	16 AWG, 600V. SHIELD	810567005
△	12 AWG, 600V. SHIELD	811557004
□	12 AWG, 600V. HI-TEMP	811557003
■	8 AWG, 600V.	812527001
▲	4 AWG, 600V.	813547001
	12 AWG, 2000V.	811567001
	10 AWG, 2000V.	812037001
	6 AWG, 2000V.	813037001
	4/0, 2000V.	815767002
	2 AWG, 2000V.	814017001

- REPAIR LOOP

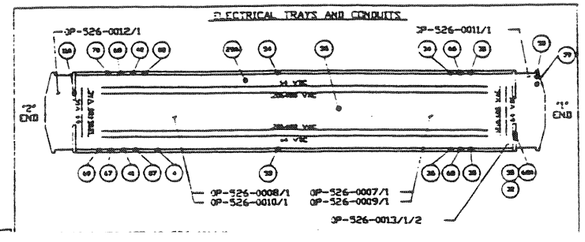
1.500

NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 64 VDC
WHITE = 120 VAC, 480 VAC



ELECTRICAL TRAYS AND CONDUITS



REF. 52652SF

SEE B.R. 1G28-102, 1G28-161 - 89/04/06 B

PHILBERT 88/11/28

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bourdonnelle / La Pinière, Québec, Canada

CEILING N° 1 END (TRL)

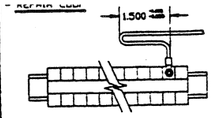
OP-526-0007/1 B

2P-525-0023/1

OP-526-0008/1

SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V. EXCEPT:	81155T001
●	16 AWG, 600V.	81056T001
○	16 AWG, 600V. SHIELD	81056T005
△	12 AWG, 600V. SHIELD	81155T004
□	12 AWG, 600V. HI-TEMP	81155T005
■	8 AWG, 600V.	81252T001
▲	4 AWG, 600V.	81354T001
⊓	12 AWG, 2000V.	81156T001
⊙	10 AWG, 2000V.	81203T001
◇	6 AWG, 2000V.	81303T001
⊕	4/0, 2000V.	81576T002
⊕	2 AWG, 2000V.	81401T001

- REPAIR CODE



NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 64 VDC
WHITE = 120 VAC, 480 VAC

ELECT. TRAYS 64 VDC

ELECT. TRAYS 120 VAC & 480 VAC

ELECTRICAL TRAYS 64 VDC

120 & 480 VAC

SEE NOTE 1

SEE NOTE 2

SUPPLIED BY OTHERS

FRESH AIR THERMOSTAT (FAT)

RETURN AIR THERMOSTAT

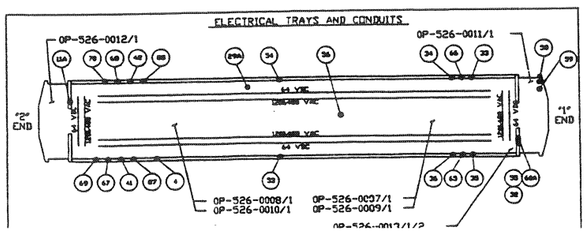
64 VDC

480 VAC

OP-525-0007/1

NOTE:
1- WIRES #18 AWG. 600V.
2- THESE ARE 6 KNIFE CONNECTORS ASS'Y.

ELECTRICAL TRAYS AND CONDUITS



REF. 52652SF

ML			C.P.	SEE B.R.	99/09/16 C
ML	-	-	- C.P.	SEE B.R. IG28-102, IG28-114	- 89/04/06 B
DESIGNED DESSINÉ	PROJ. MGMT GÉRANCE	R.M.M.U. E.E.A.	APPROVED APPROUVÉ	DESCRIPTION	ZONE DATE REV.

PHILBERT 98/11/26
ML 98/11/26

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Beauharnois / La Pocatière, Québec, Canada

CEILING N° 2 END (TRL)

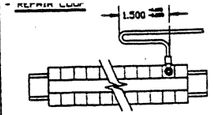
OP-526-0008/1 1:1 C

2P-525-0005/1

OP-526-0008/1

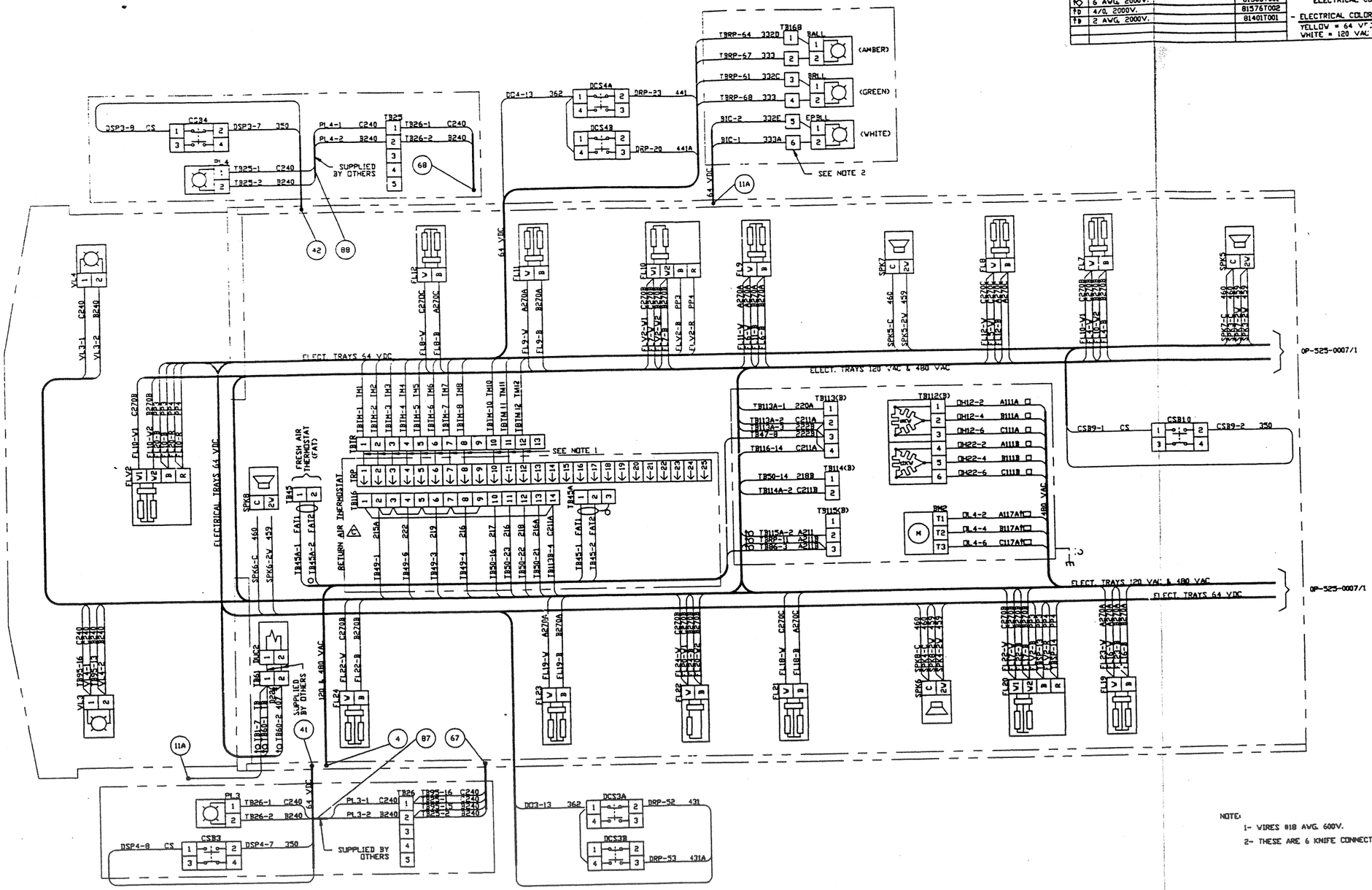
SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AVG. 600V. EXCEPT:	81155T001
●	16 AVG. 600V.	81056T001
○	16 AVG. 600V. SHIELD	81056T005
△	12 AVG. 600V. SHIELD	81155T004
□	12 AVG. 600V. HI-TEMP	81155T005
■	8 AVG. 600V.	81252T001
▲	4 AVG. 600V.	81354T001
⊡	12 AVG. 2000V.	81156T001
⊙	10 AVG. 2000V.	81203T001
◇	6 AVG. 2000V.	81303T001
⊕	4/0 2000V.	81576T002
⊕	2 AVG. 2000V.	81401T001

- REPAIR LOOP

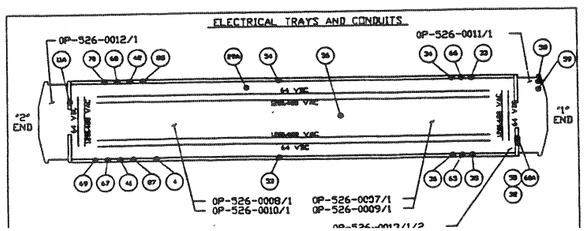


NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 64 VDC
WHITE = 120 VAC, 480 VAC



NOTE:
1- WIRES #18 AVG. 600V.
2- THESE ARE 6 KNIFE CONNECTORS ASS'Y.



REF. 52652SE

ML			C.P.	SEE B.R.	89/09/18 C
ML	-	-	C.P.	SEE B.R. IG28-102, IG28-114	- 89/04/05 B
DESIGNED DESIGNE	PROJ. MANAGER	A.M.E./E.E.A.	APPROVED APPROUVE	DESCRIPTION	ZONE DATE REV.

PHILBERT 88/11/28
ML 88/11/28

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bombardier / La Pinière, Québec, Canada

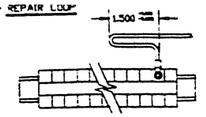
CEILING N° 2 END (TRL)
OP-526-0008/1 1:1 C

2P-525-0005/1

OP-526-0010/1

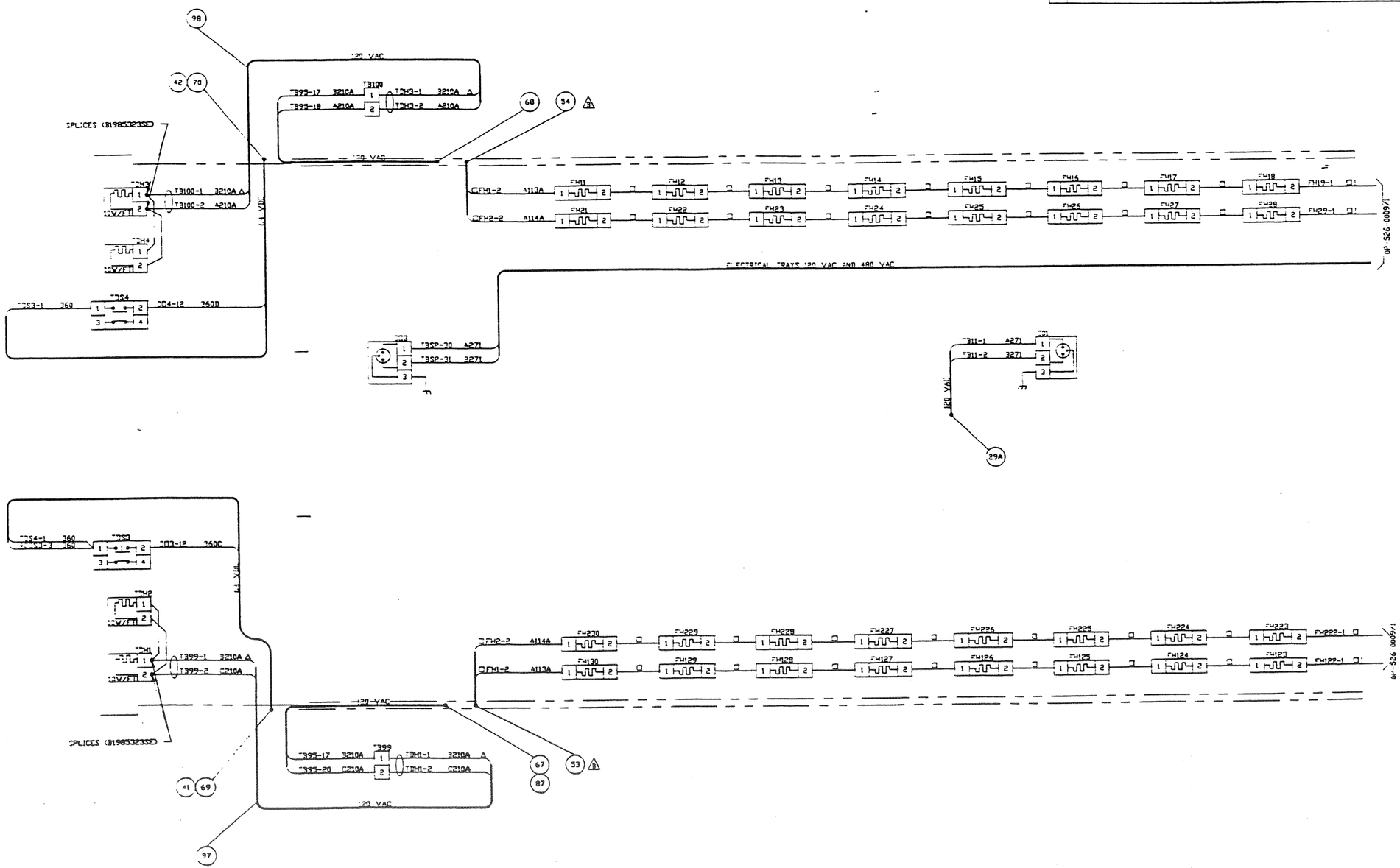
SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG. 600V. EXCEPT:	81155T001
●	16 AWG. 600V.	81056T001
○	16 AWG. 600V. SHIELD	81056T005
△	12 AWG. 600V. SHIELD	81155T004
□	12 AWG. 600V. HI-TEMP	81155T005
■	8 AWG. 600V.	81252T001
▲	4 AWG. 600V.	91354T001
▽	12 AWG. 2000V.	81156T001
▽	10 AWG. 2000V.	81203T001
▽	6 AWG. 2000V.	81303T001
▽	4/0 2000V.	81576T002
▽	2 AWG. 2000V.	91401T001

- REPAIR LOOP

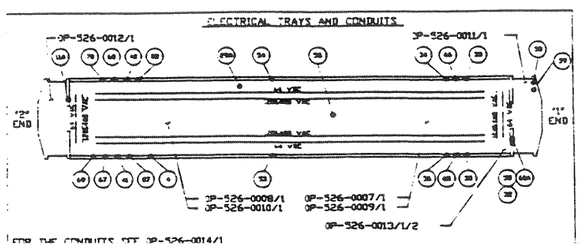


NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 64 VDC
WHITE = 120 VAC , 480 VAC



ELECTRICAL TRAYS AND CONDUITS



FOR THE CONDUITS SEE OP-526-0014/1

REF. 52652SE

				SEE B.D.R.	- 89/04/06 B
	PHILBERT	88/11/28			
		88/11/28			

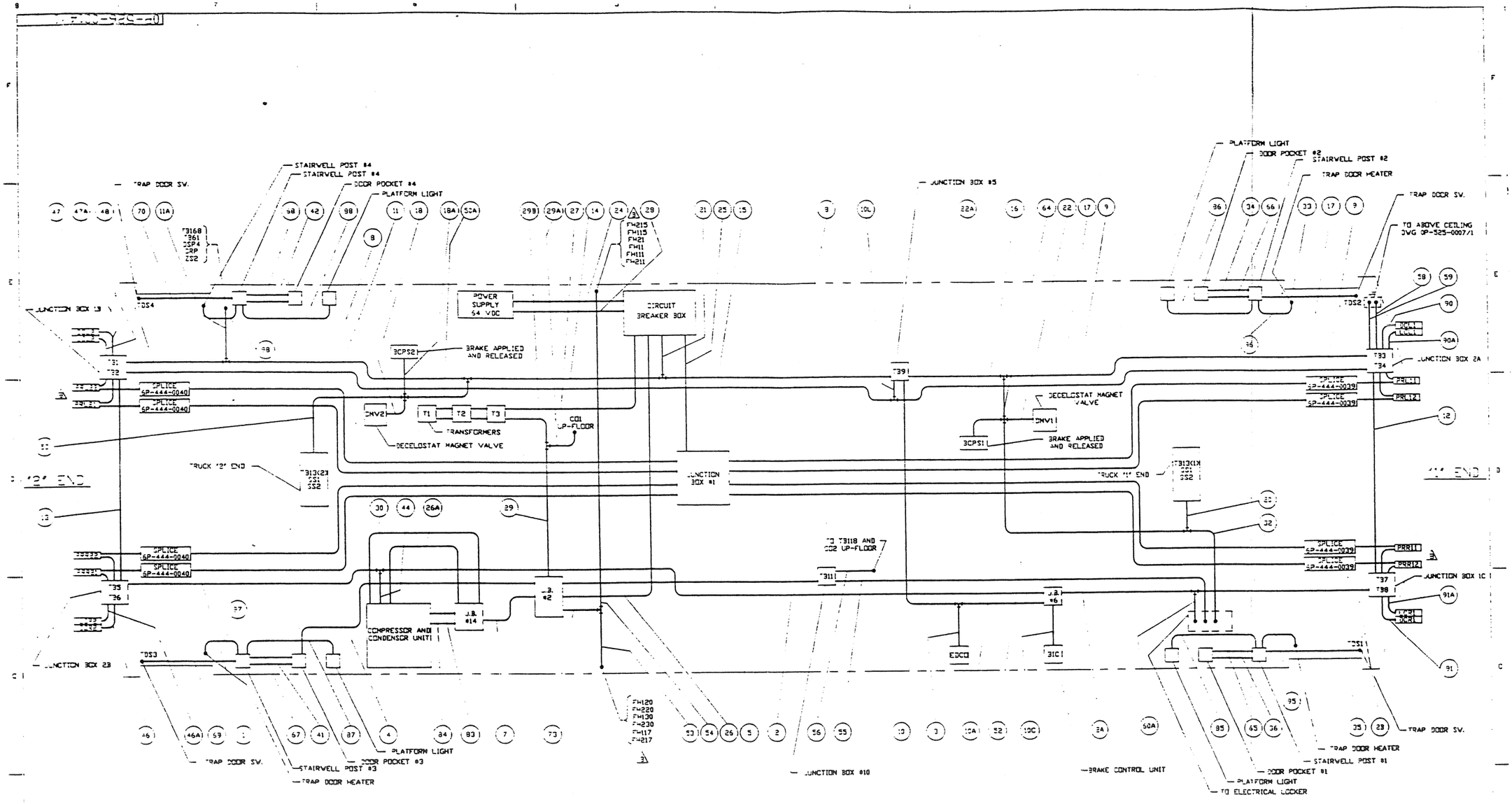
Bombardier Inc.
Division du transport en commun
Mass Transit Division
Beauharnois / La Pocatière, Québec, Canada

FLOOR N° 2 END (TRL)

OP-526-0010/1 B

2P-525-0025/1

TRAILER



SEE B.O.R. - 89/04/06

DRAWN	L.BERTI	88/12/02	
DESIGN			
CHECKED	JP	88/12/02	
ENGINEER APPROVED			
QUALITY APPROVED			

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Beauharnois / La Prairie, Québec, Canada

UNDERF. BLOCK DIAGRAM

SIZE A0 | SCALE 3 | DRAWING 6P-526-0014/1 | REV 3

2P-525-0023/1

OP-526-0011/1

ELECTRICAL TRAYS 64 VDC

ELECTRICAL TRAYS 120 & 480 VAC

SEE NOTE 1

SEE NOTE 2

SEE NOTE 3

CONDUCTOR'S CONTROL HEAD

SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG. 600V. EXCEPT:	811557001
●	16 AWG. 600V.	910567001
○	16 AWG. 600V. SHIELD	910567003
△	12 AWG. 600V. SHIELD	811557004
□	12 AWG. 600V. HI-TEMP	811557005
■	8 AWG. 600V.	812527001
▲	4 AWG. 600V.	813547001
▽□	12 AWG. 2000V.	811567001
▽○	10 AWG. 2000V.	812037001
▽◇	6 AWG. 2000V.	813037001
▽8	4/0 2000V.	815767002
▽8	2 AWG. 2000V.	814017001

- REPAIR LOOP

1.500

NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 64 VDC
WHITE = 120 VAC , 480 VAC

ELECTRICAL TRAYS AND CONDUITS

OP-526-0012/1

OP-526-0011/1

OP-526-0008/1
OP-526-0010/1

OP-526-0007/1
OP-526-0009/1

OP-526-0013/1/2

FOR THE CONDUITS SEE OP-526-0014/1

NOTE: 1- DOOR CLOSED AND LOCKED
2- MECHANICAL LOCK SWITCH SHOW NON-ACTUATED
3- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH

REF. 52652SE

SEE B.R. 1028-161 - 89/04/06 B

PHILBERT 88/11/28

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Saint-Bruno / La Pocatière, Québec, Canada

VESTIBULE N°1 (TRL)

OP-526-0011/1

2P-525-0025/1

:28/5/2826011

ELECTRICAL TRAYS 64 VDC
ELECTRICAL TRAYS 120 & 480 VAC
ELECTRICAL TRAYS 120 & 480 VAC
ELECTRICAL TRAYS 64 VDC
64 VDC
SEE NOTE 1
SEE NOTE 2
SEE NOTE 3
SEE NOTE 3
SEE NOTE 3
SEE NOTE 3
SEE NOTE 3
64 VDC
11A

SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG. 600V. EXCEPT:	81155T001
●	16 AWG. 600V.	81056T001
○	16 AWG. 600V. SHIELD	81056T005
△	12 AWG. 600V. SHIELD	81155T004
□	12 AWG. 600V. HI-TEMP	81155T005
■	8 AWG. 600V.	81252T001
▲	4 AWG. 600V.	81354T001
	12 AWG. 2000V.	81156T001
	10 AWG. 2000V.	81203T001
	6 AWG. 2000V.	81303T001
	4/0. 2000V.	81576T002
	2 AWG. 2000V.	81401T001

028/5/2826012

- REPAIR LOOP

1.500

NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE
YELLOW = 64 VDC
WHITE = 120 VAC , 480 VAC

ELECTRICAL TRAYS AND CONDUITS

0P-526-0012/1
0P-526-0011/1
64 VDC
120/480 VAC
120/480 VAC
64 VDC
"2" END
"1" END
0P-526-0008/1
0P-526-0010/1
0P-526-0007/1
0P-526-0009/1
0P-526-0013/1/2

FOR THE CONDUITS SEE 0P-526-0014/1

NOTE: 1- DOOR CLOSED AND LOCKED
2- MECHANICAL LOCK SWITCH SHOW NON-ACTUATED
3- SPARE WIRES HAVE ABOUT 2 FEET IN LENGTH

REF.
52652SE

ML	-	-	-	/	SEE B.R.	- 99/09/15 C
DESIGNED	PHILBERT	98/11/26				
DRAWN	ML	98/11/26				
CHECKED						
APPROVED						

Bombardier Inc.
Division de transport en commun
Mass Transit Division
Bombardier / La Pocatière, Québec, Canada

VESTIBULE N° 2 (TRL)

0P-526-0012/1 1:2 C

0P-526-0023/1

SWITCH LOCKER C.B. PANEL

CEILING 120 VAC

INTER. 120 VAC

120 VAC

SYM.	DESCRIPTION	TECH. DESC.
	ALL WIRES 12 AWG, 600V. EXCEPT:	81155T001
●	16 AWG, 600V.	81056T001
○	16 AWG, 600V. SHIELD	81056T005
△	12 AWG, 600V. SHIELD	81155T004
□	12 AWG, 600V. HI-TEMP	81155T005
▬	8 AWG, 600V.	81252T001
▲	4 AWG, 600V.	81354T001
▽	12 AWG, 2000V.	81156T001
▽0	10 AWG, 2000V.	81203T001
▽0	6 AWG, 2000V.	81303T001
▽0	4/0, 2000V.	81576T002
▽0	2 AWG, 2000V.	81401T001

- REPAIR LOOP

1.500

NOTE: FOR TERMINAL BLOCKS AND OTHER ELECTRICAL COMPONENTS.

- ELECTRICAL COLOR CODE

YELLOW = 64 VDC
WHITE = 120 VAC, 480 VAC

ELECTRICAL TRAYS AND CONDUITS

OP-526-0012/1

OP-526-0011/1

"2" END

"1" END

64 VDC

120/240 VAC

OP-526-0008/1
OP-526-0010/1

OP-526-0007/1
OP-526-0009/1

OP-526-0013/1/2

FOR THE CONDUITS SEE OP-526-0014/1

PNEUMATIC PANEL

VSCPS

INTER. 64 VDC

CEILING 64 VDC

DOOR CONTROL PANEL

RCDS1 RCDS2 RCDS3 RCDS4

DUS

SBDN (SEALED)

ZS1

CEILING 64 VDC

INTER. 64 VDC

TBCDM

64 VDC

64 VDC

64 VDC

REF. 52652SE

ML			L.P.	SEE B.R.		89/09/18 C
ML	-	-	L.P.	SEE B.R. IG28-102	-	89/04/06 B

PHILBERT 88/11/28

GP 88/11/28

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Bombardier / La Pocatière, Québec, Canada

ELECTRICAL LOCKER (TRL)

OP-526-0013/1 Issue C

A0 3

020/5/2826013

HVAC CONTROL PANEL BOX

TEMPERATURE CONTROL PANEL

CEILING 64 VDC

120 VAC INTER

CEILING 120 VAC

CEILING 480 VAC

64 VDC INTER

64 VDC CEILING

SEE NOTE 1

SEE NOTE 2

P.A. AMPLIFIER AAR BASE

WHEELSLIP CONTROL UNIT

(LAYOVER THERMOS 55°F)

NOTE: 1- SPARE WIRES HAVE ABOUT 2 FEET IN LENGHT
2- WIRES #18 AWG, 600 V.

REF. 52652SE

SEE B.R. (IG28-381)

L.PHILBERT 98/11/20

GP 98/11/20

Bombardier Inc.
Division du transport en commun
Mass Transit Division
Southernville / La Prairie, Québec, Canada

ELECTRICAL LOCKER (TRL)

OP-526-0013/2