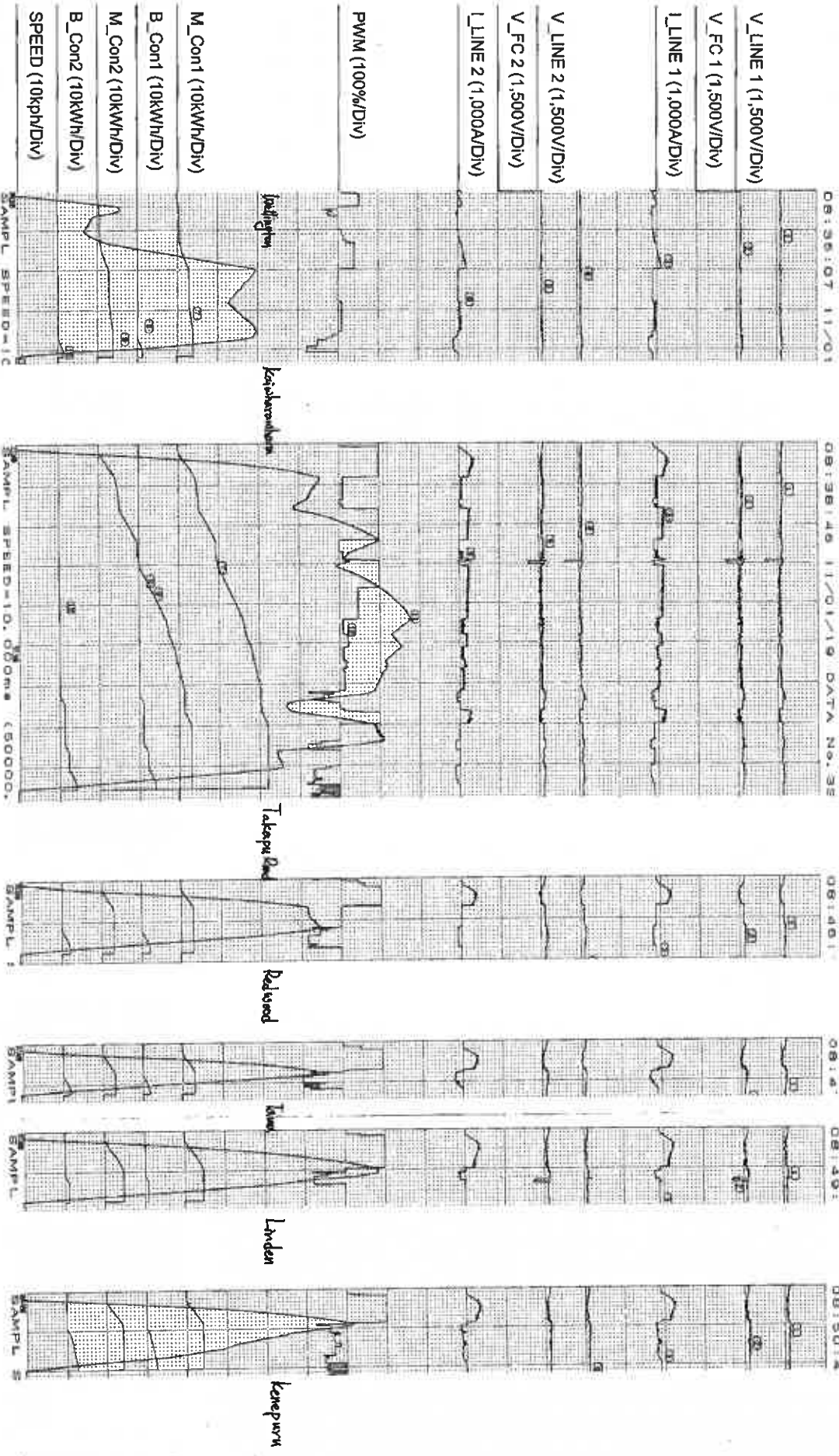


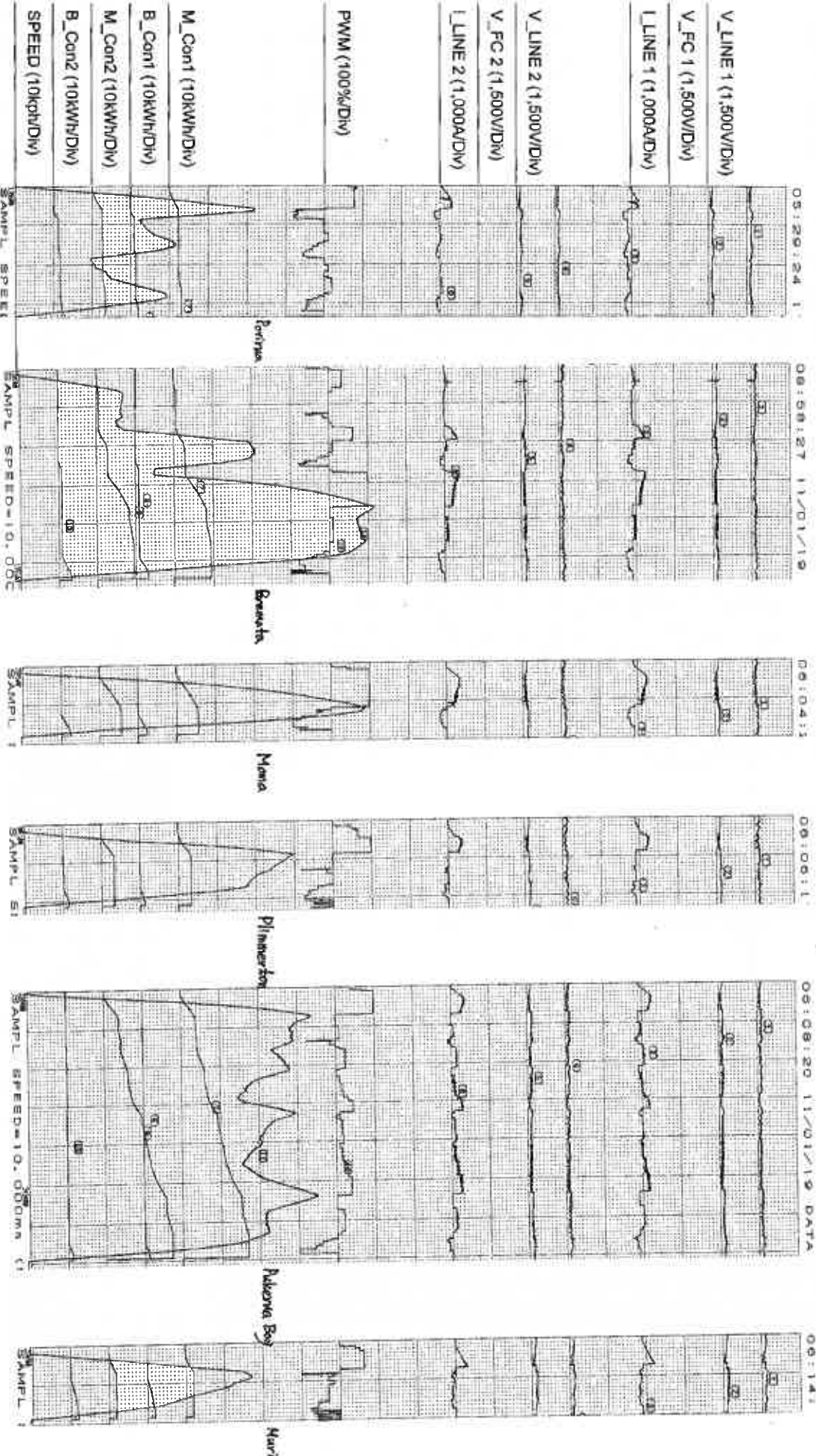
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station → Paraparaumu Station (Dry Track Condition)
CHART NO.	NWMMF - 019 - 1

Signal Description	
V_LINE1	Line Voltage for TCU1
V_FC1	FC Voltage for TCU1
I_LINE1	Line Current for TCU1
V_LINE2	Line Voltage for TCU2
V_FC2	FC Voltage for TCU2
I_LINE2	Line Current for TCU2
PWM	PWM Command
M_con1	Energy consumption for Motoring of TCU1
B_con1	Energy consumption for Braking of TCU1
M_con2	Energy consumption for Motoring of TCU2
B_con2	Energy consumption for Braking of TCU2
SPEED	Vehicle Velocity



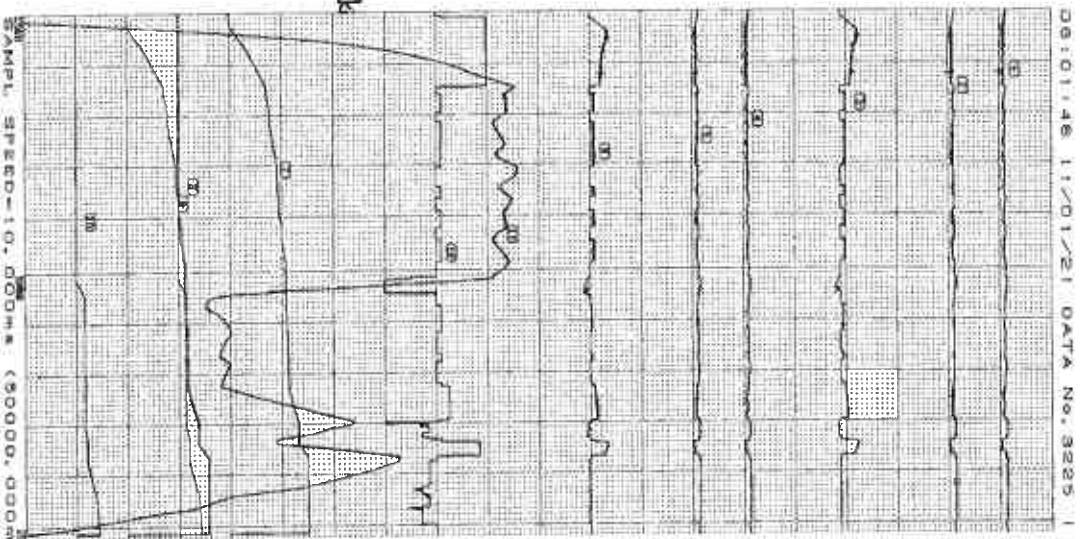
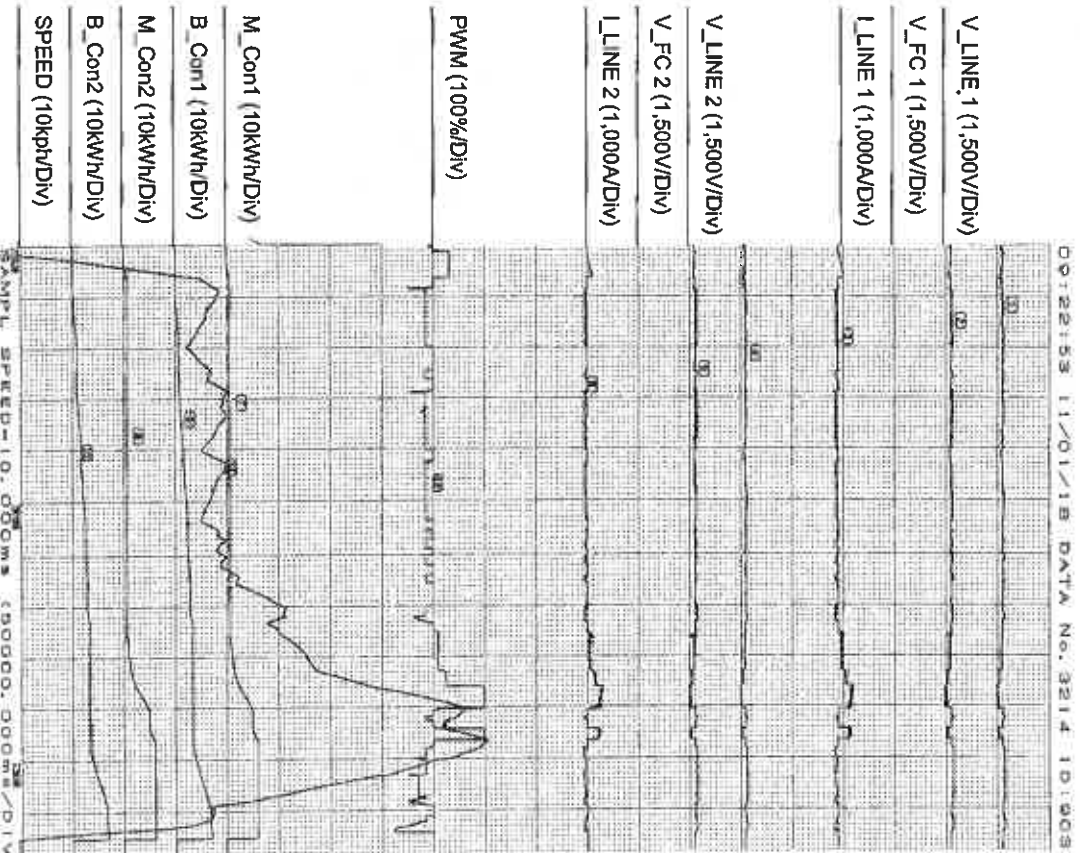
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station - Paraparaumu Station (Dry Track Condition)
CHART NO.	NWMMF - 019 - 2

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		SPEED	Energy consumption for Braking of TCU2
			Vehicle Velocity



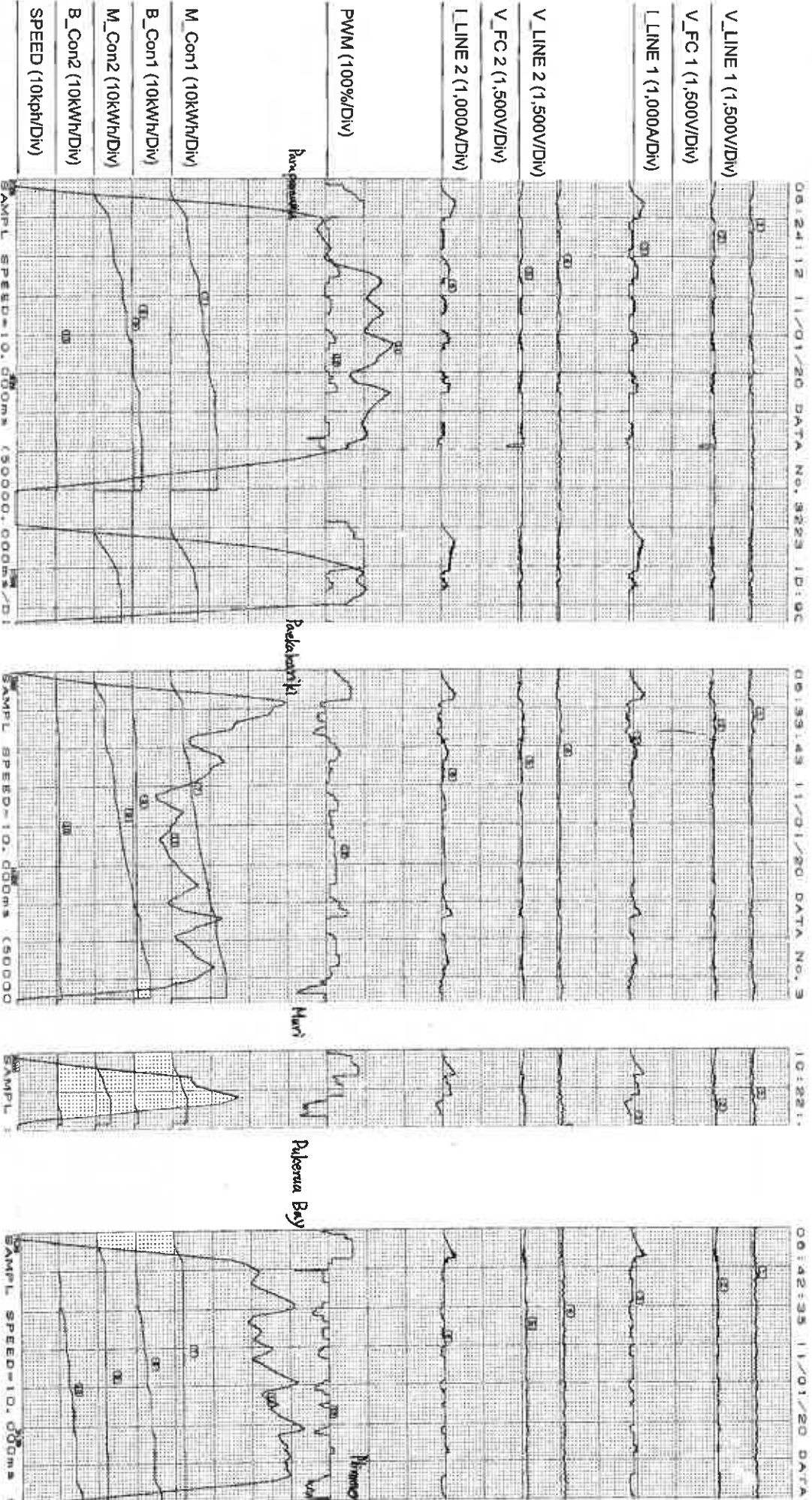
PROJECT	New Zealand Wellington EMU 66R
CAR NUMBER	1st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station → Paraparaumu Station (Dry Track Condition)
CHART NO.	NWMMMF - 019 - 3

Signal Description					
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2	B_con2	Energy consumption for Braking of TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command	SPEED	Vehicle Velocity
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1		
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1		
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2		



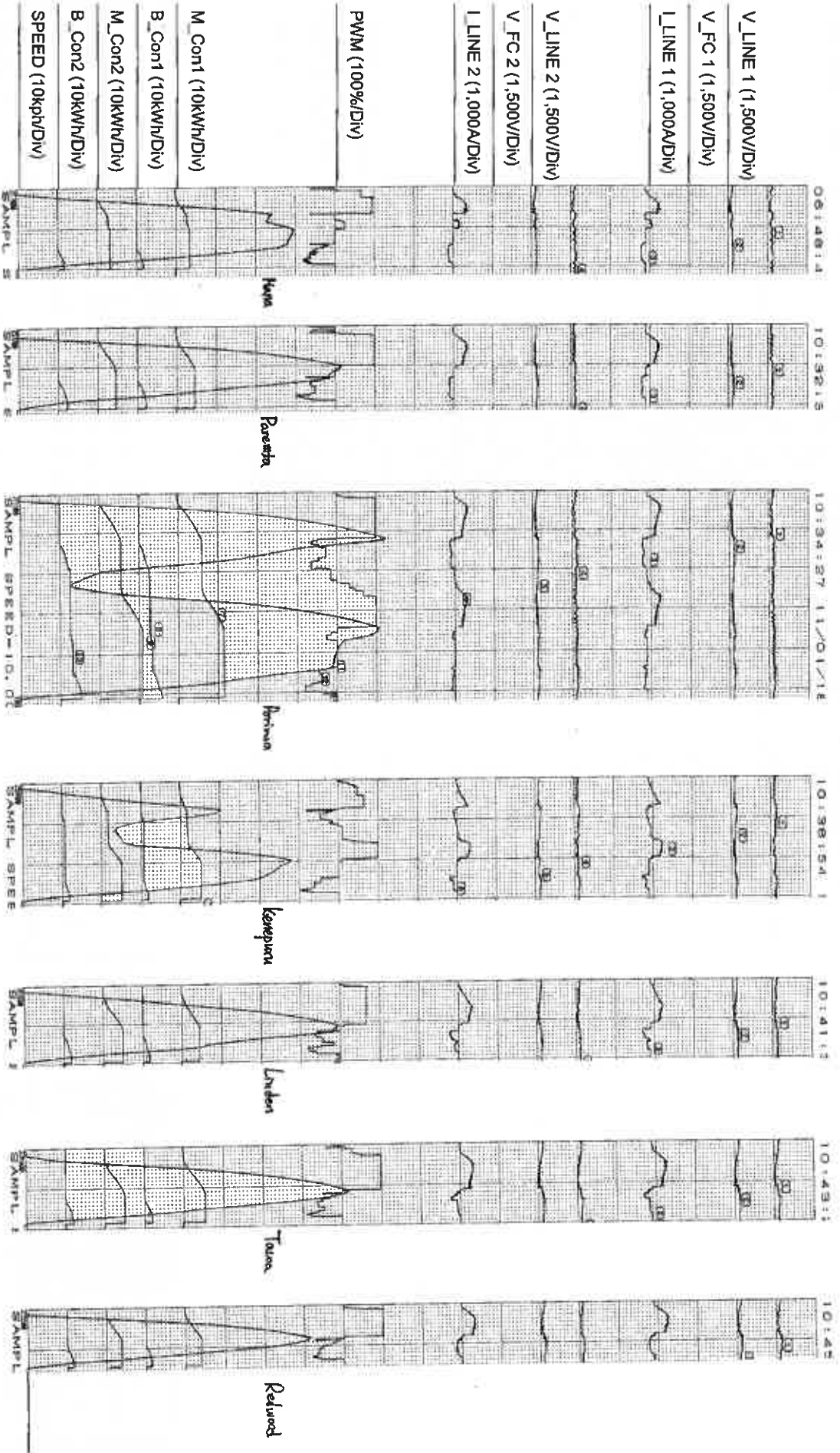
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Paraparaumu Station → Wellington Station (Dry Track Condition)
CHART NO.	NWMMF - 020 - 1

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		B_con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



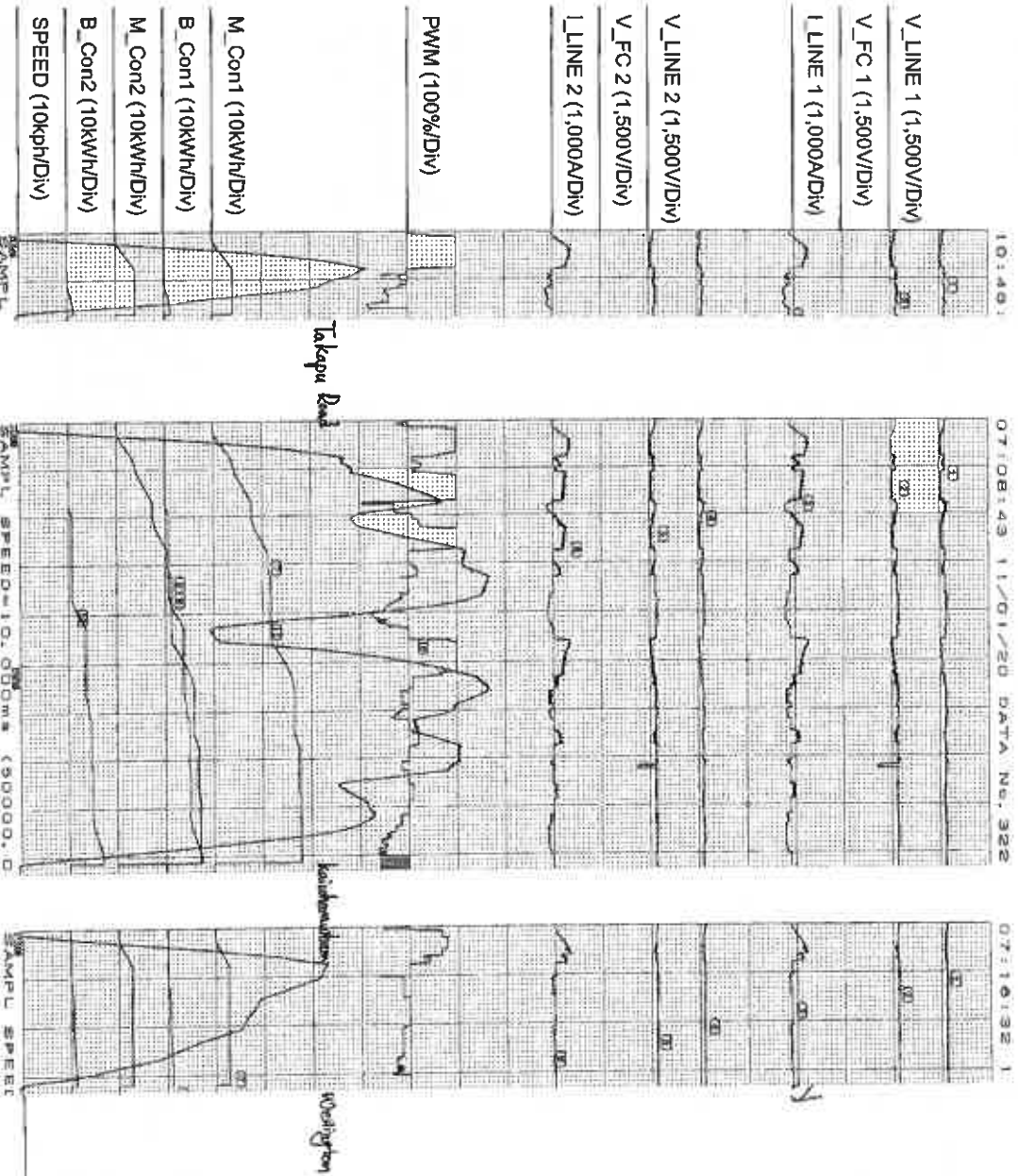
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Paraparaumu Station → Wellington Station (Dry Track Condition)
CHART NO.	NWMMF - 020 - 2

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		B_con2 SPEED	Energy consumption for Braking of TCU2
			Vehicle Velocity



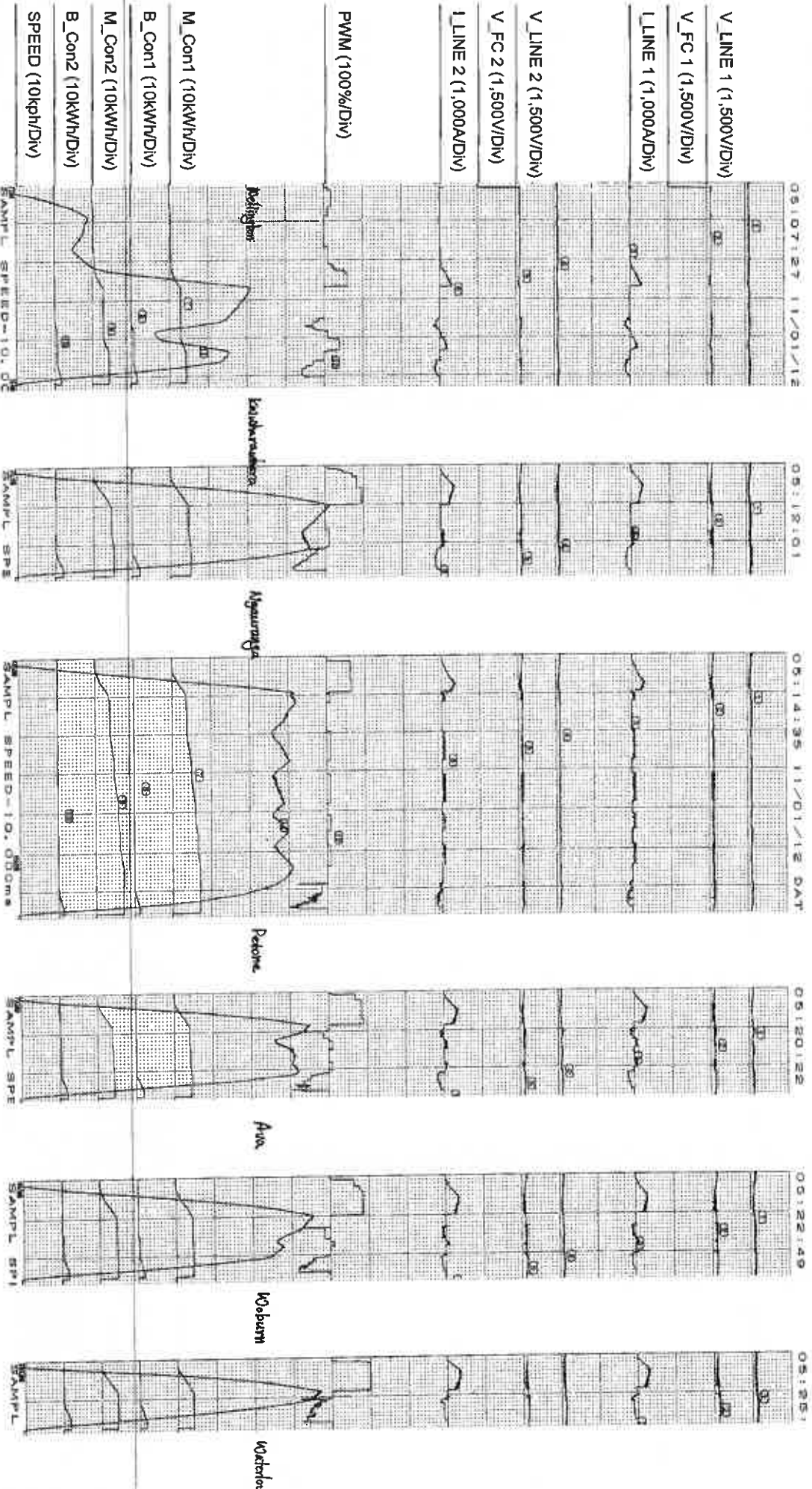
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Paraparaumu Station → Wellington Station (Dry Track Condition)
CHART NO.	NWMMMF - 020 - 3

Signal Description					
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2	B_con2	Energy consumption for Braking of TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command	SPEED	Vehicle Velocity
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1		
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1		
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2		



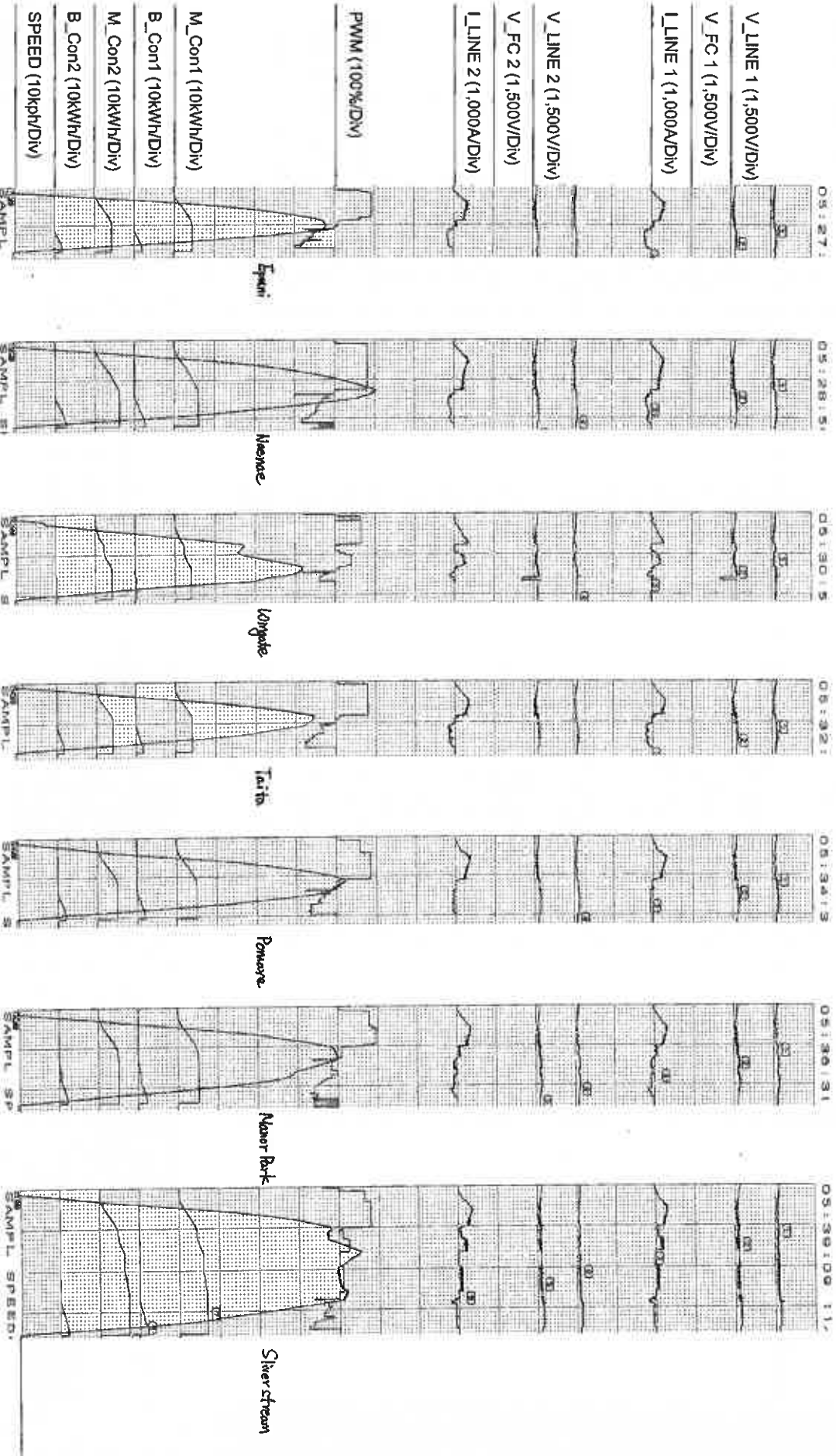
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station → Upper Hutt Station (Dry Track Condition)
CHART NO.	NWMMF - 021 - 1

Signal Description	
V_LINE1	Line Voltage for TCU1
V_FC1	FC Voltage for TCU1
I_LINE1	Line Current for TCU1
V_LINE2	Line Voltage for TCU2
V_FC2	FC Voltage for TCU2
I_LINE2	Line Current for TCU2
PWM	PWM Command
M_Con1	Energy consumption for Motoring of TCU1
B_Con1	Energy consumption for Braking of TCU1
M_Con2	Energy consumption for Motoring of TCU2
B_Con2	Energy consumption for Braking of TCU2
SPEED	Vehicle Velocity



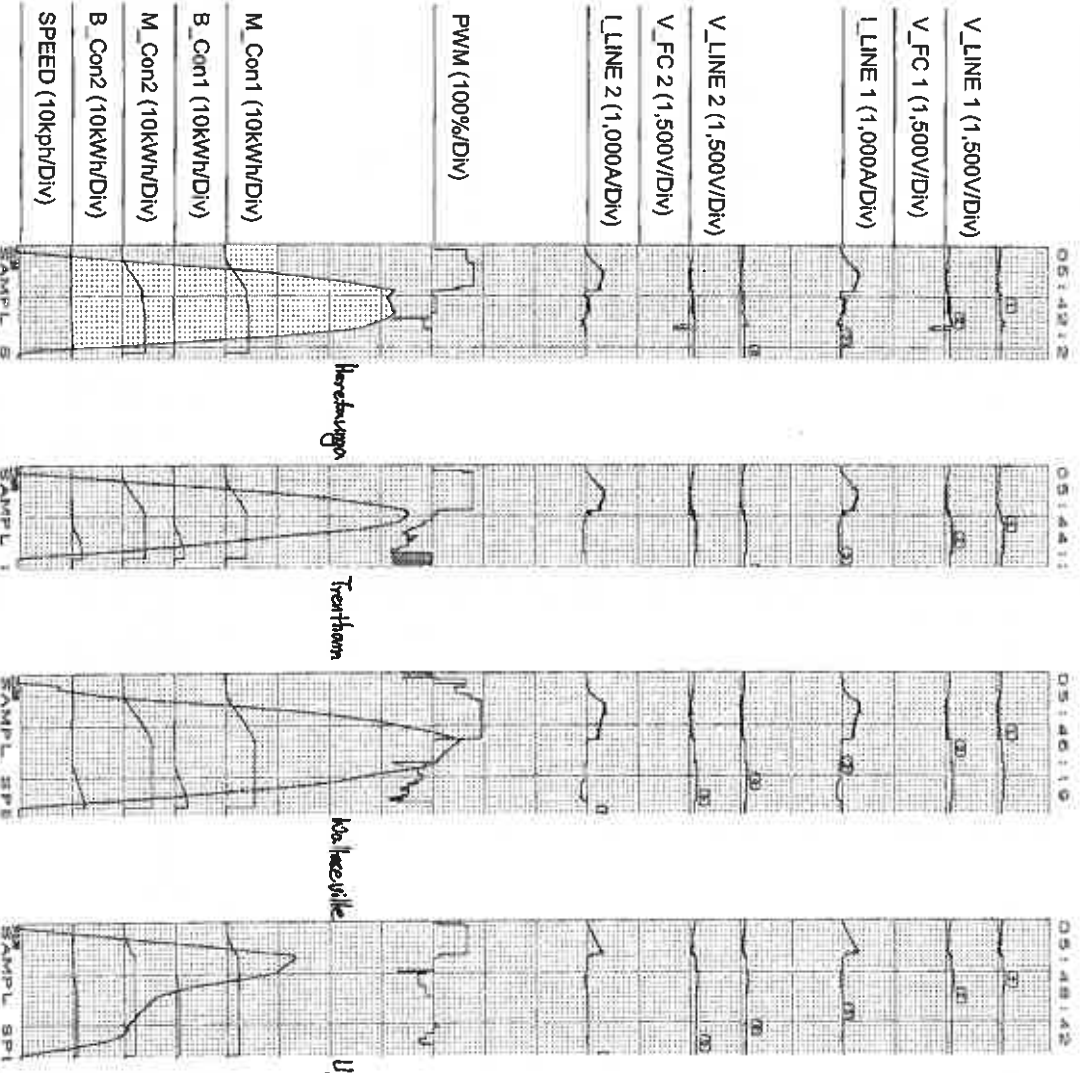
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station - Upper Hutt Station (Dry Track Condition)
CHART NO.	NWMMF - 021 - 2

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		B_con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



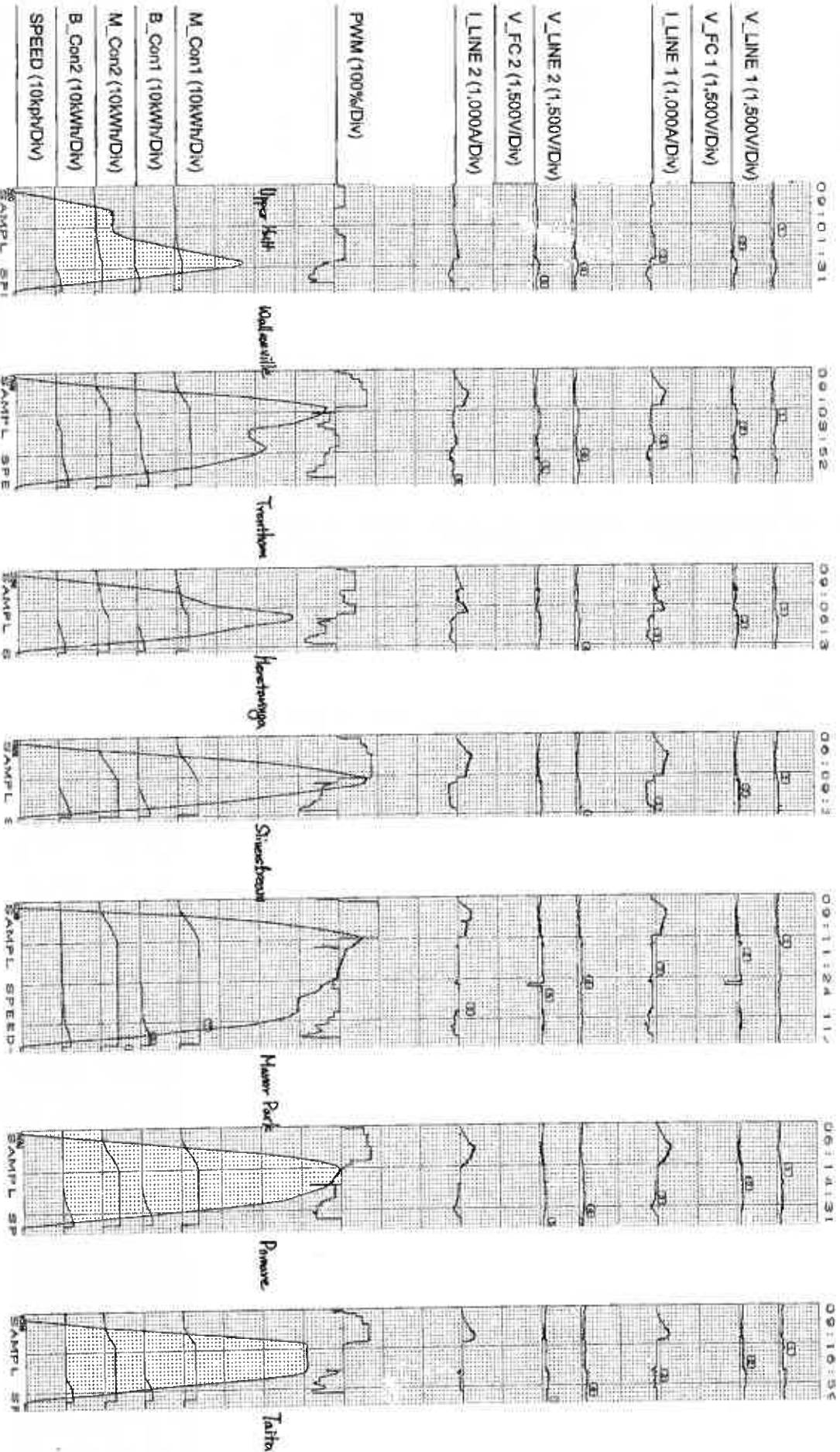
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station → Upper Hutt Station (Dry Track Condition)
CHART NO.	NWMMF - 021 - 3

Signal Description			
V_LINE1	Line Voltage for TCU1	L_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_Con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_Con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_Con2	Energy consumption for Motoring of TCU2
		B_Con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



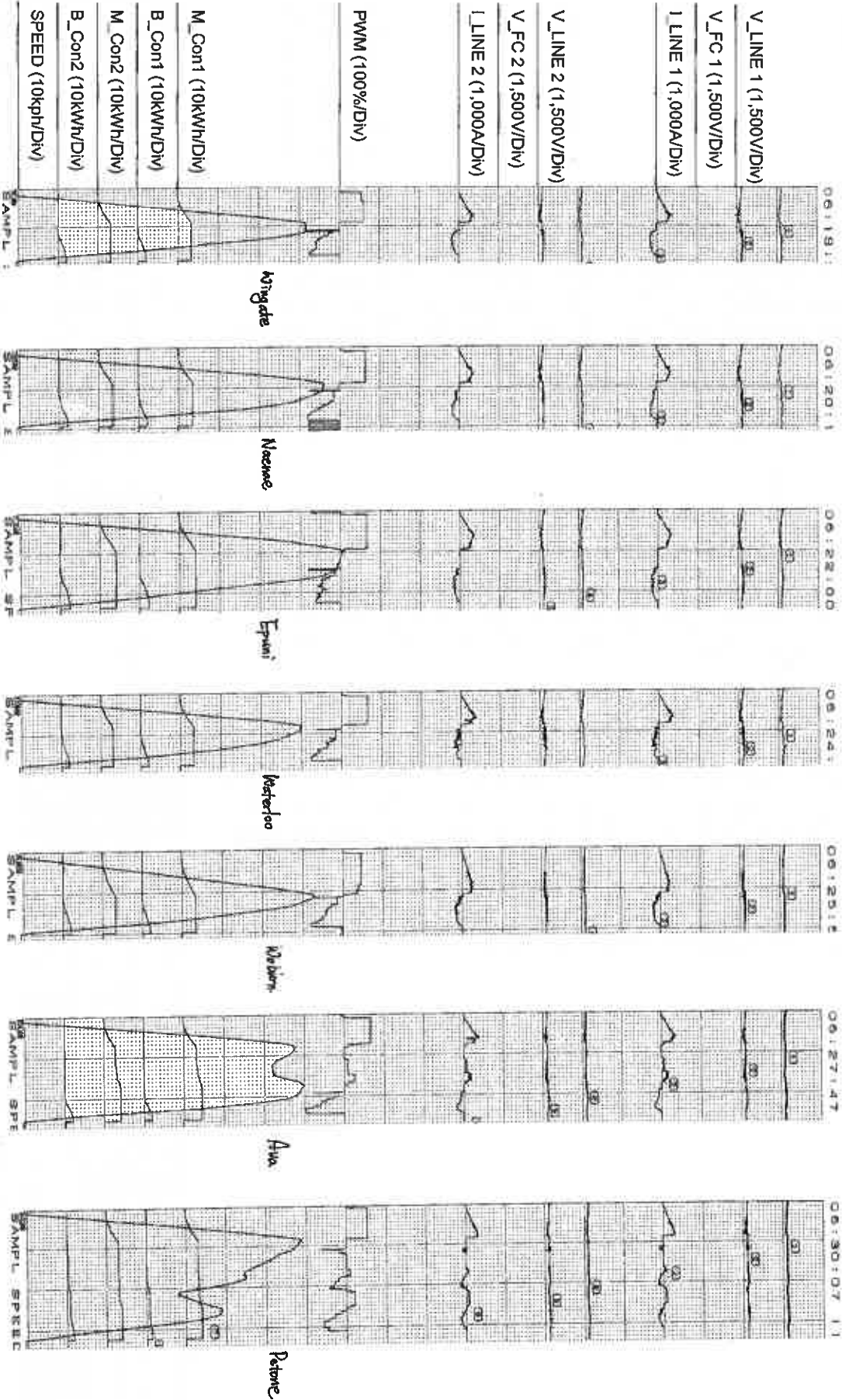
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Upper Hutt Station → Wellington Station (Dry Track Condition)
CHART NO.	NWMMF - 022 - 1

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		SPEED	Energy consumption for Braking of TCU2
			Vehicle Velocity



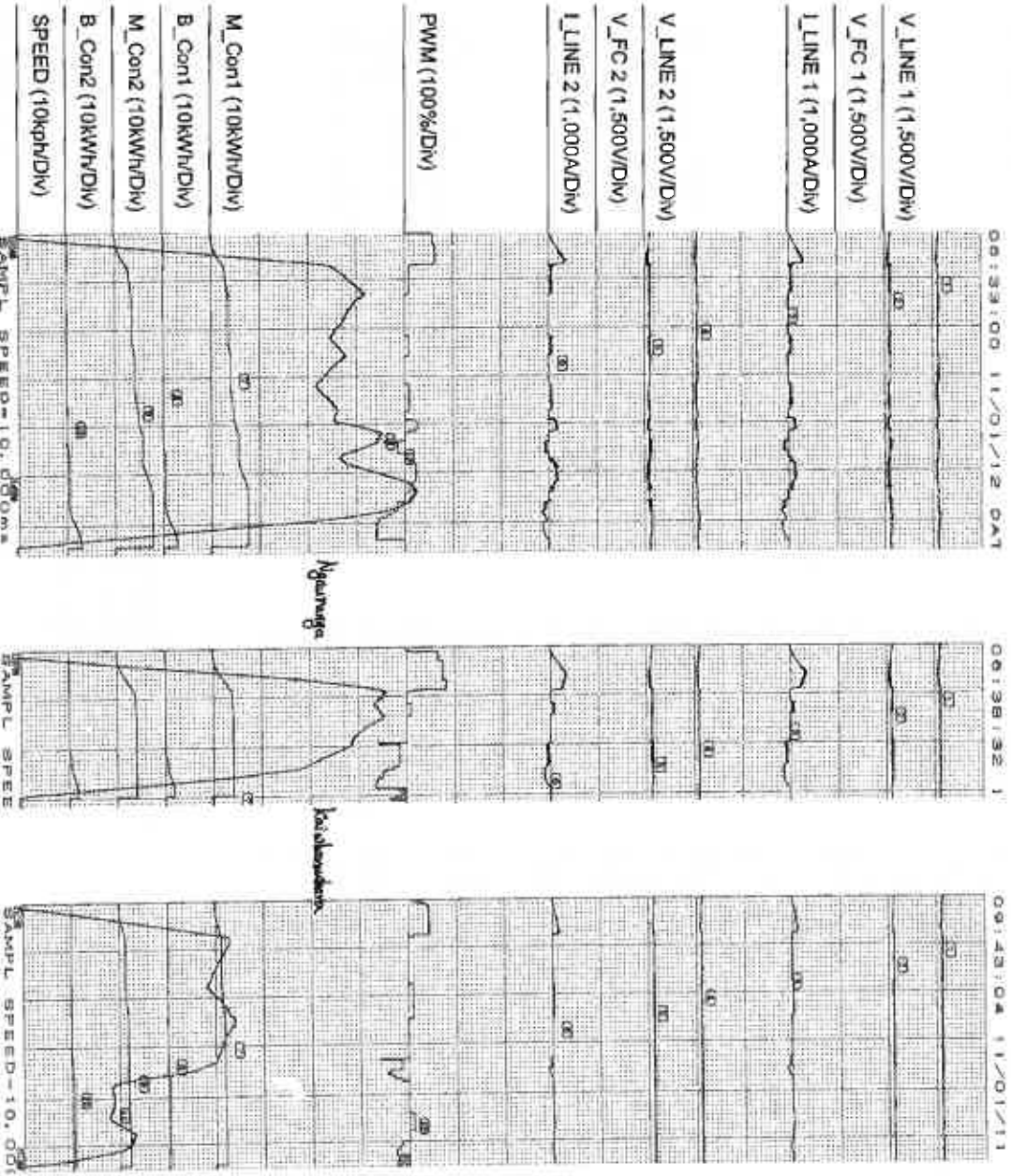
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Upper Hutt Station - Wellington Station (Dry Track Condition)
CHART NO.	NWMMMF - 022 - 2

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		B_con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



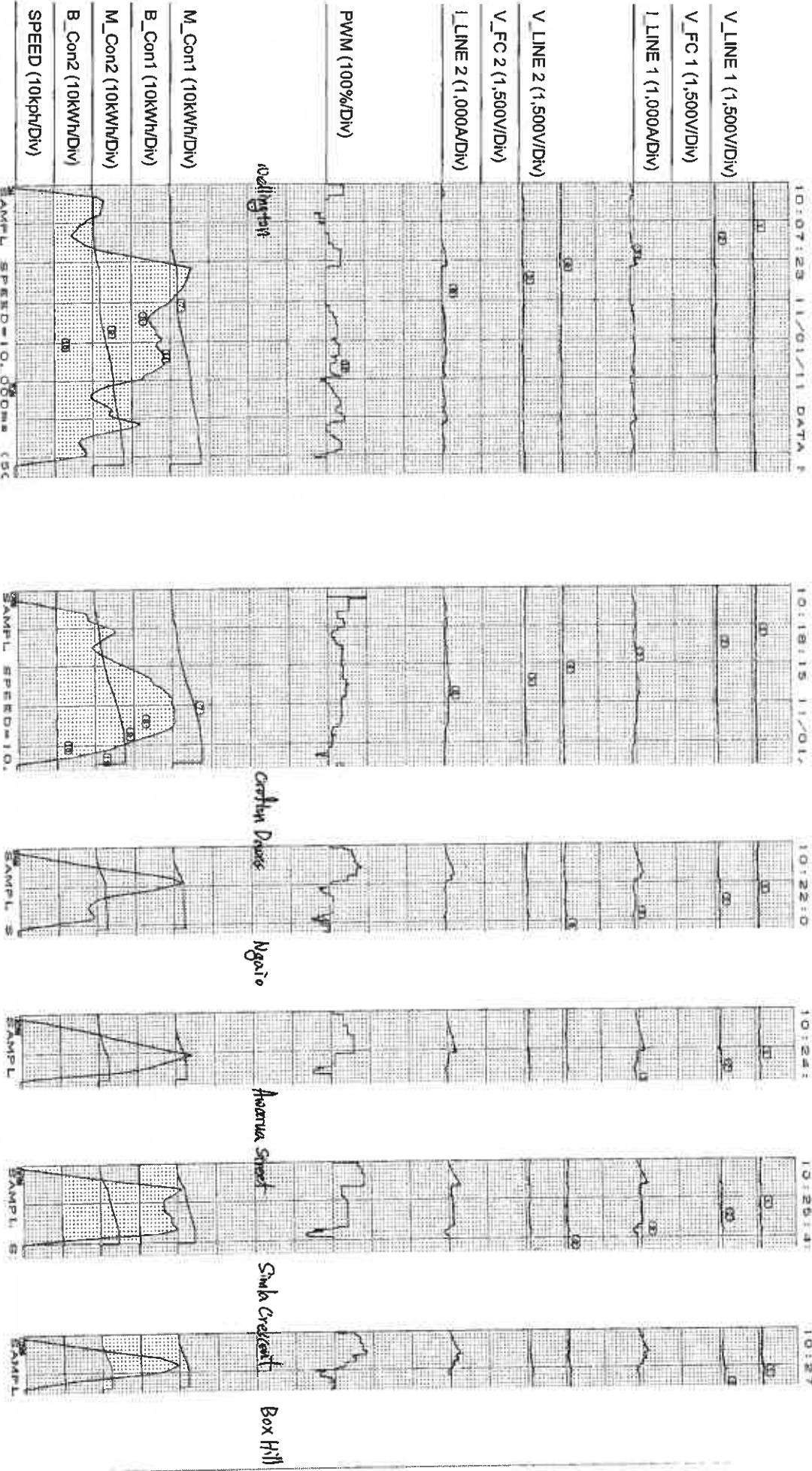
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Upper Hutt Station – Wellington Station (Dry Track Condition)
CHART NO.	NWMMF – 022 - 3

Signal Description					
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2	B_con2	Energy consumption for Braking of TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command	SPEED	Vehicle Velocity
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1		
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1		
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2		



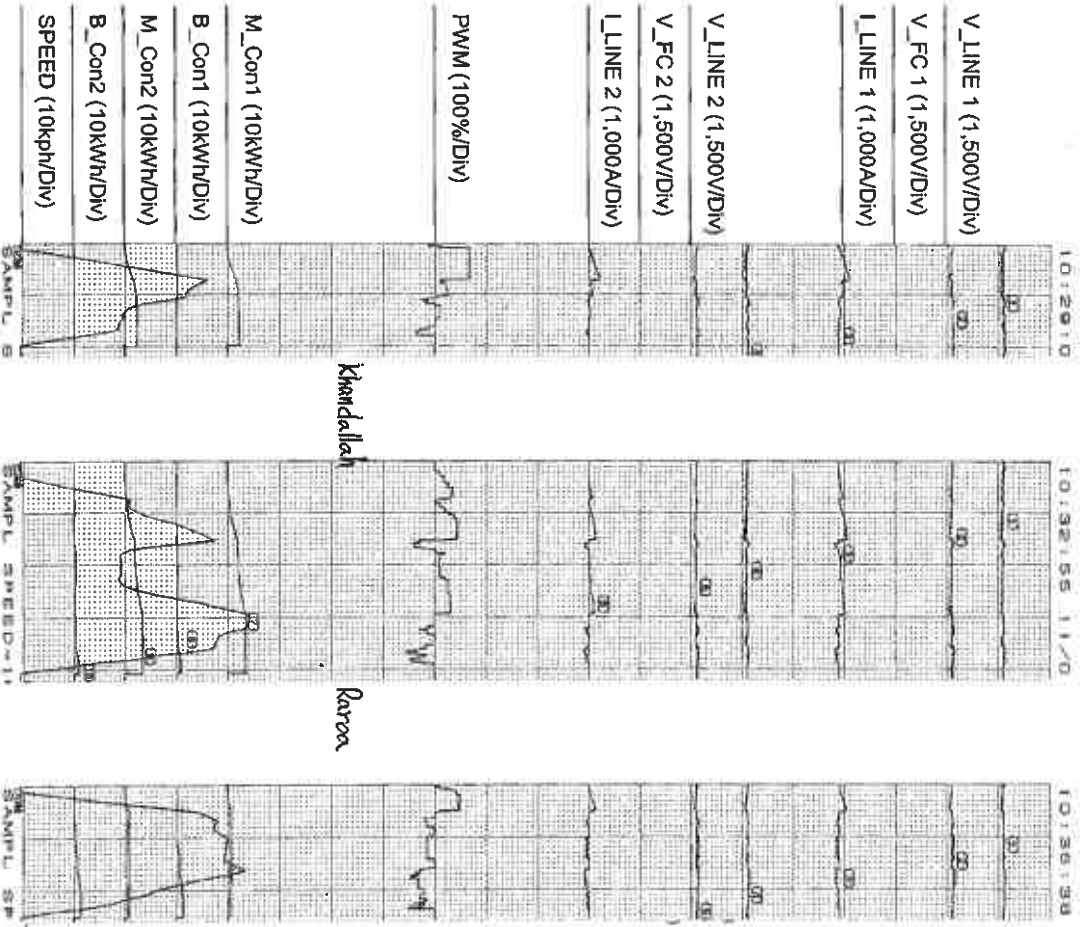
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station → Johnsonville Station (Dry Track Condition)
CHART NO.	NWMMF - 023 - 1

Signal Description	
V_LINE1	Line Voltage for TCU1
V_FC1	FC Voltage for TCU1
I_LINE1	Line Current for TCU1
V_LINE2	Line Voltage for TCU2
V_FC2	FC Voltage for TCU2
I_LINE2	Line Current for TCU2
PWM	PWM Command
M_con1	Energy consumption for Motoring of TCU1
B_con1	Energy consumption for Braking of TCU1
M_con2	Energy consumption for Motoring of TCU2
B_con2	Energy consumption for Braking of TCU2
SPEED	Vehicle Velocity



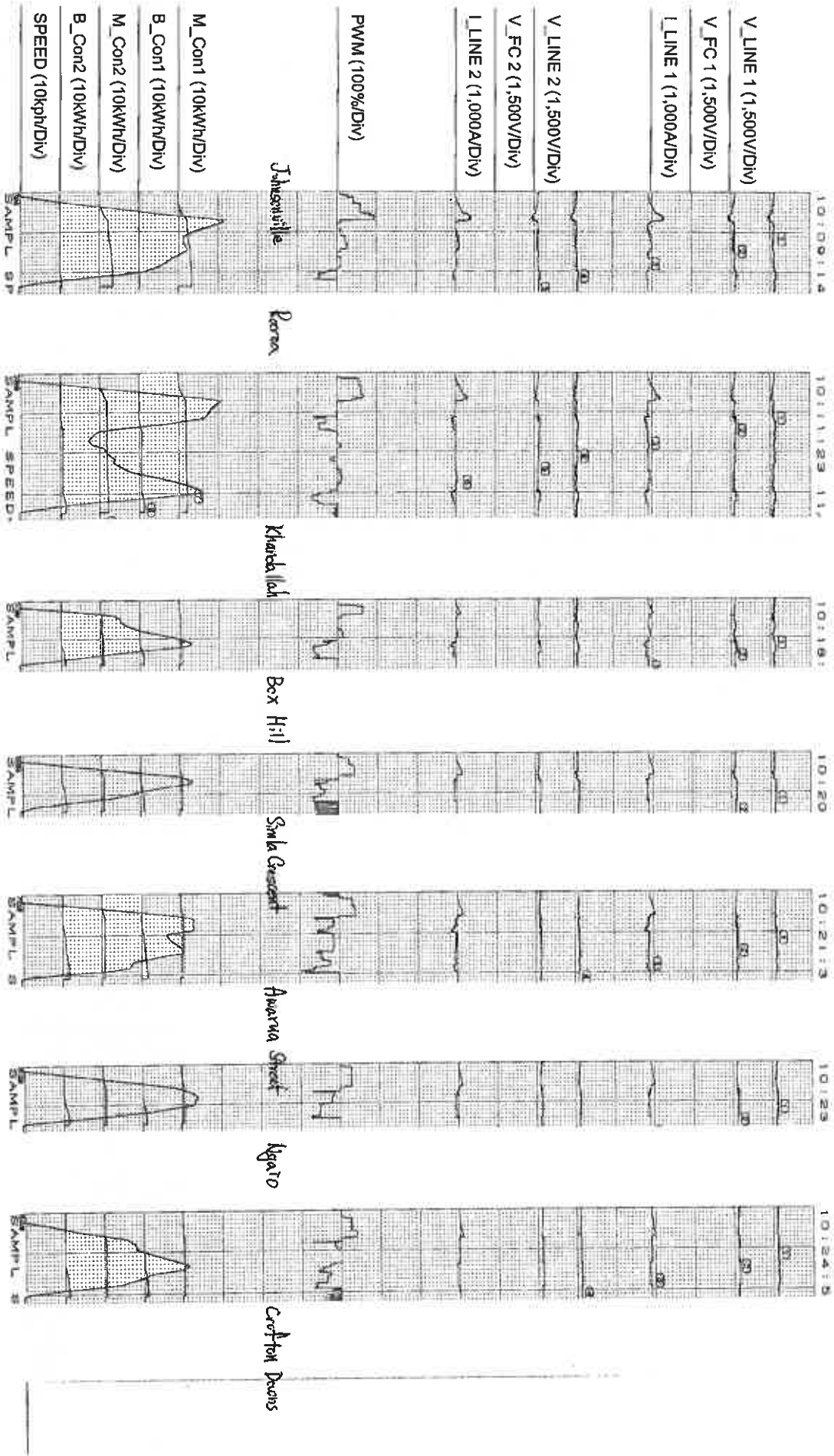
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station → Johnsonville Station (Dry Track Condition)
CHART NO.	NWMMF - 023 - 2

Signal Description					
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2	B_con2	Energy consumption for Braking of TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command	SPEED	Vehicle Velocity
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1		
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1		
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2		



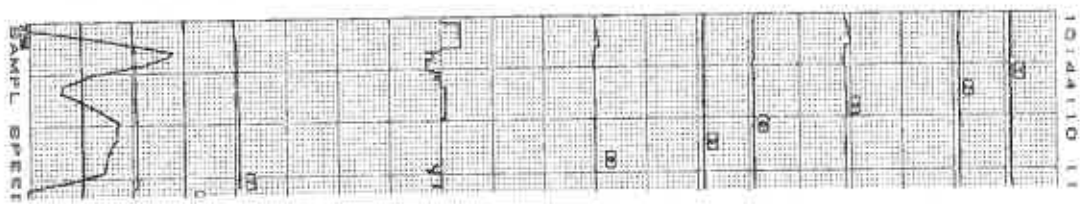
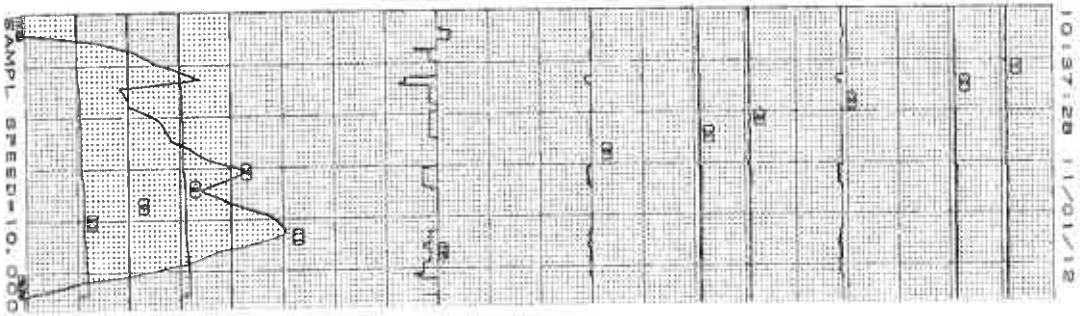
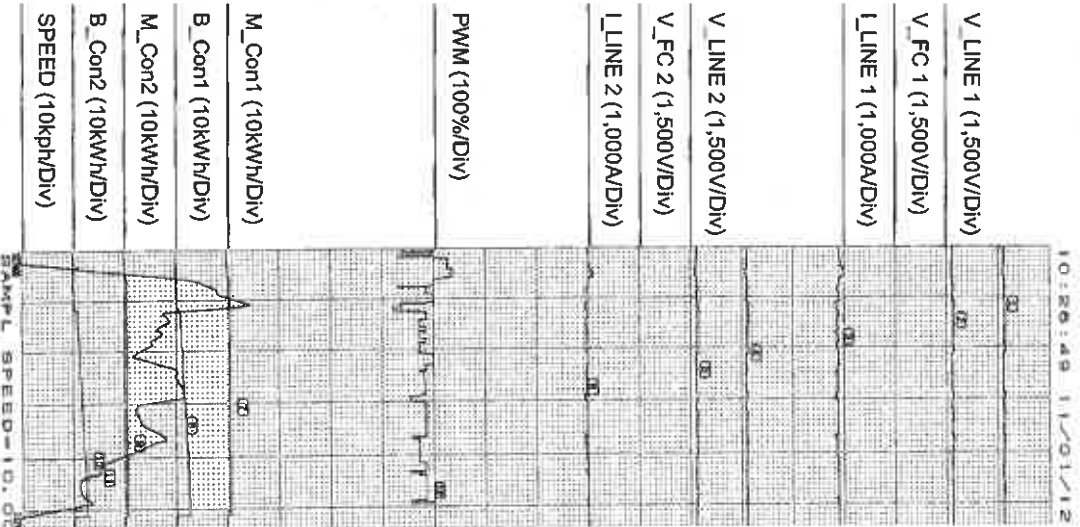
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Johnsonville Station - Wellington Station (Dry Track Condition)
CHART NO.	NWMMF - 024 - 1

Signal Description			
V_LINE1	Line Voltage for TCU1	V_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	B_con2
I_LINE1	Line Current for TCU1	M_con1	SPEED
V_LINE2	Line Voltage for TCU2	B_con1	Vehicle Velocity
V_FC2	FC Voltage for TCU2	M_con2	
			Energy consumption for Braking of TCU2
			Energy consumption for Motoring of TCU1
			Energy consumption for Braking of TCU1
			Energy consumption for Motoring of TCU2



PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Johnsonville Station - Wellington Station (Dry Track Condition)
CHART NO.	NWMMF - 024 - 2

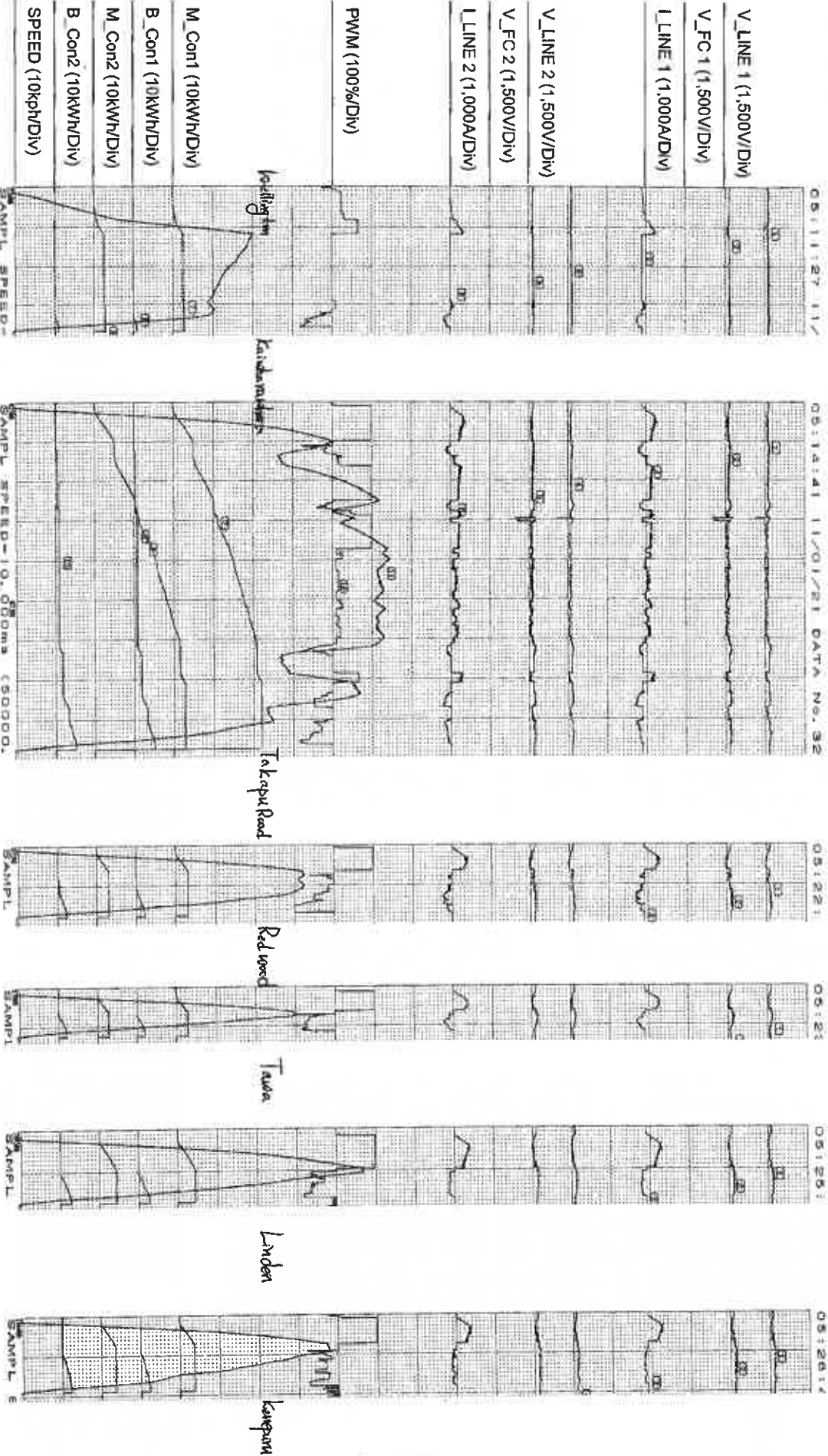
Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		B_con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



Wellington

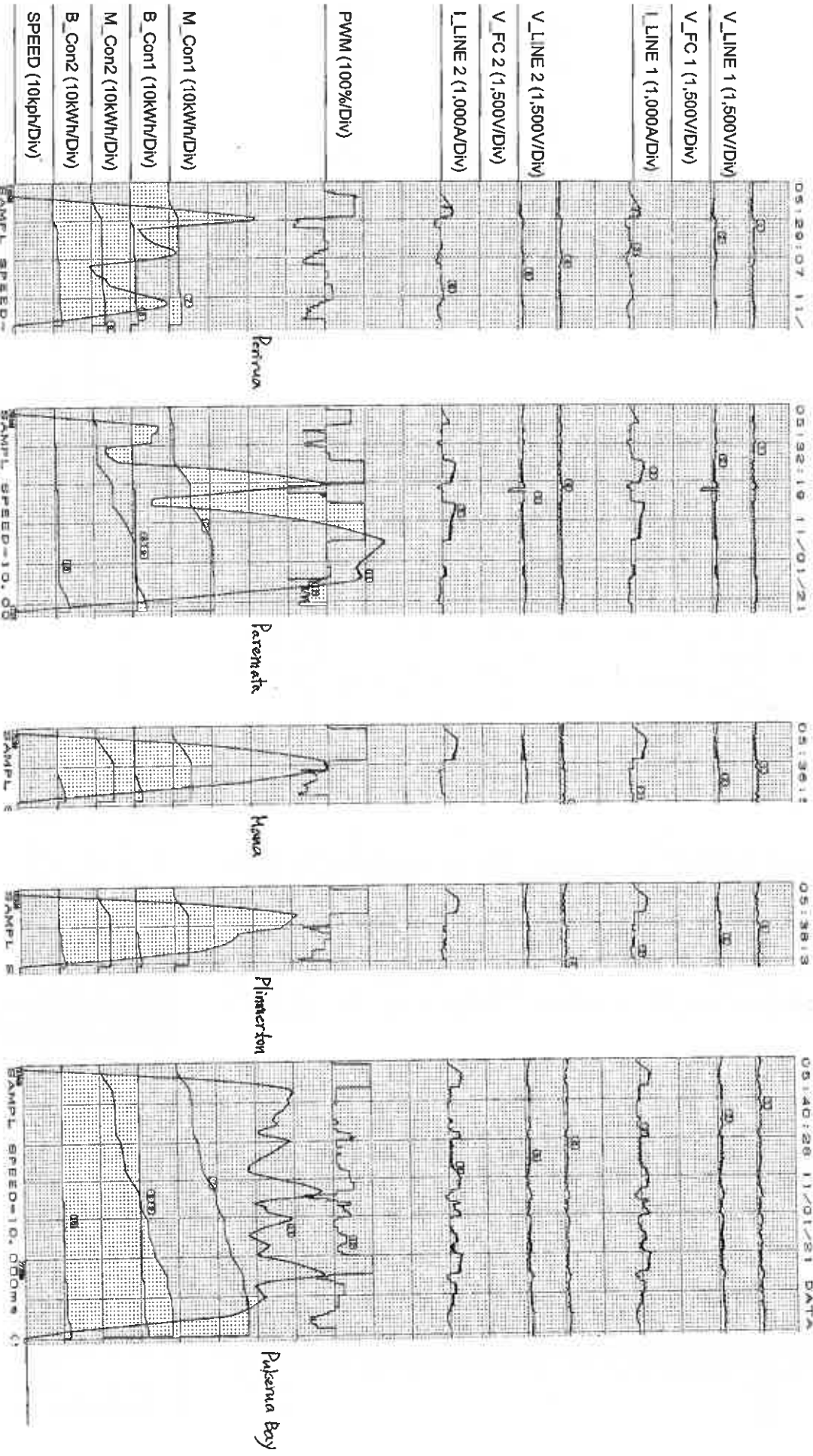
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station → Paraparaumu Station (Wet Track Condition)
CHART NO.	NWMMF - 025 - 1

Signal Description	
V_LINE1	Line Voltage for TCU1
V_FC1	FC Voltage for TCU1
I_LINE1	Line Current for TCU1
V_LINE2	Line Voltage for TCU2
V_FC2	FC Voltage for TCU2
I_LINE2	Line Current for TCU2
PWM	PWM Command
M_con1	Energy consumption for Motoring of TCU1
B_con1	Energy consumption for Braking of TCU1
M_con2	Energy consumption for Motoring of TCU2
B_con2	Energy consumption for Braking of TCU2
SPEED	Vehicle Velocity



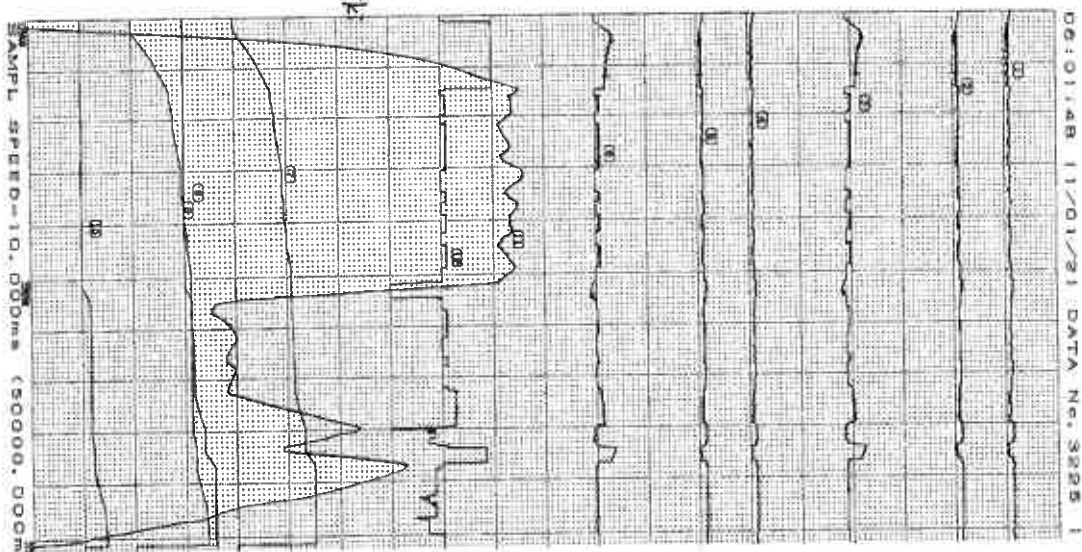
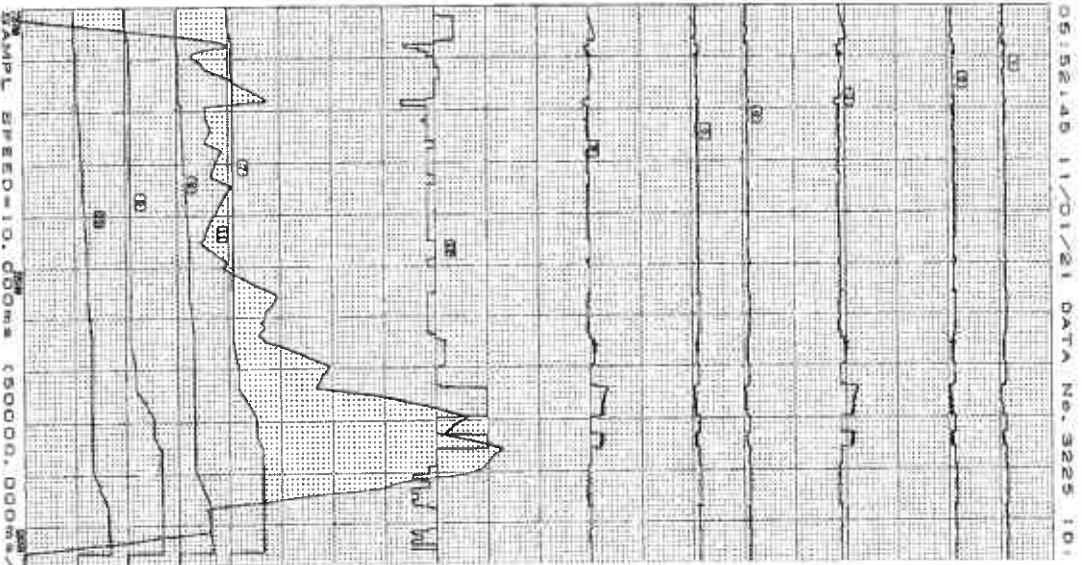
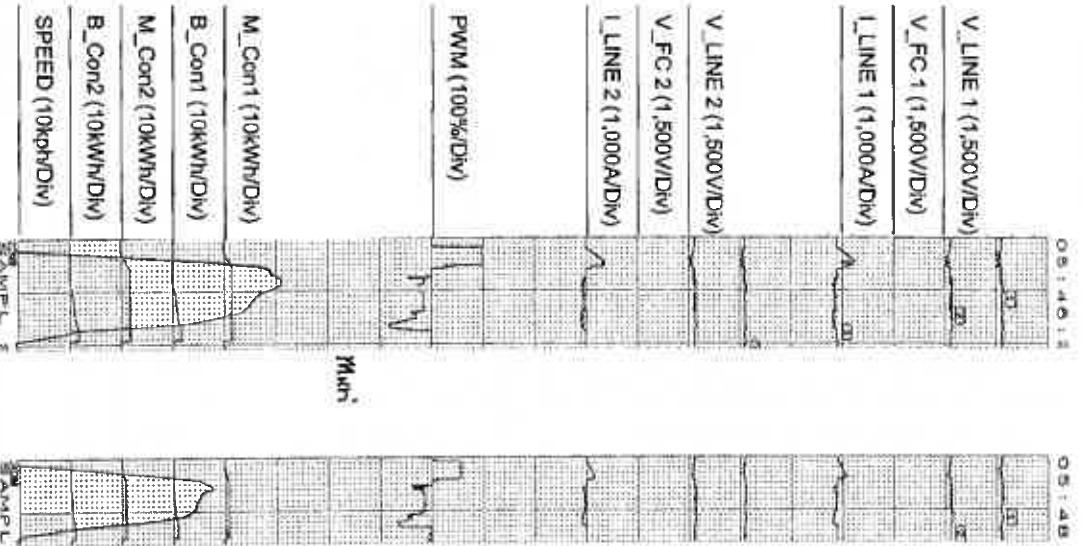
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station → Paraparaumu Station (Wet Track Condition)
CHART NO.	NWMMF - 025 - 2

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_cont1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_cont1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_cont2	Energy consumption for Motoring of TCU2
		B_cont2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



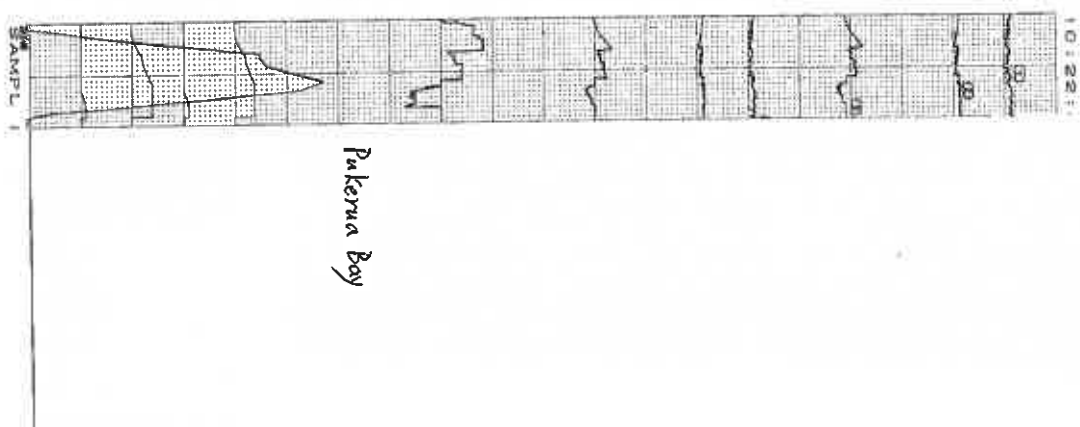
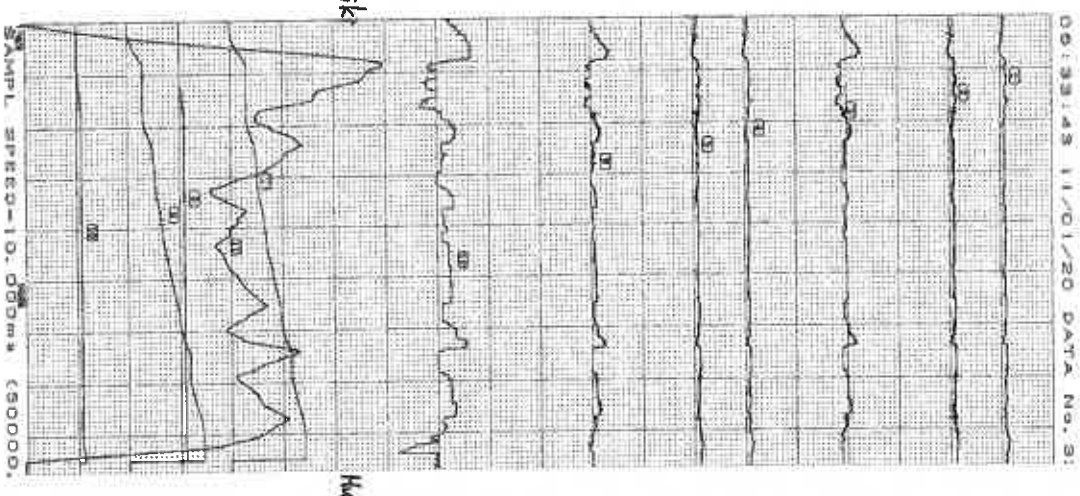
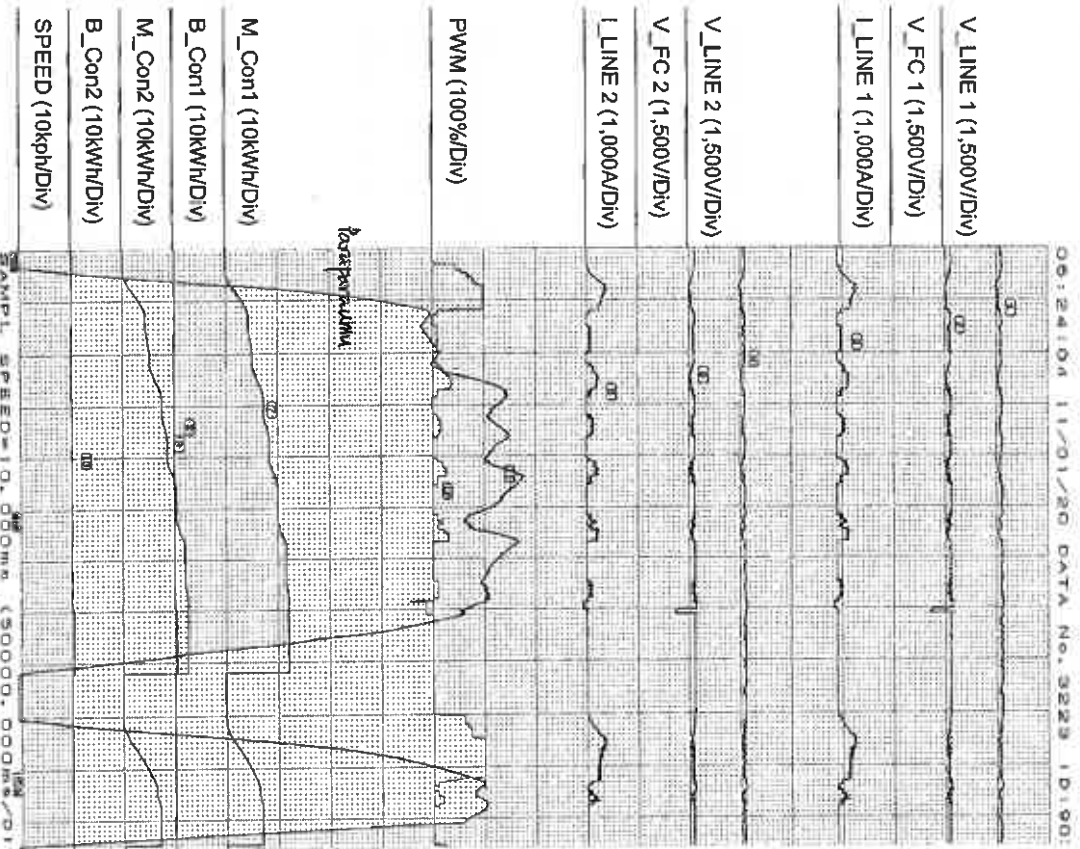
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station → Paraparaumu Station (Wet Track Condition)
CHART NO.	NWMMF - 025 - 3

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		B_con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



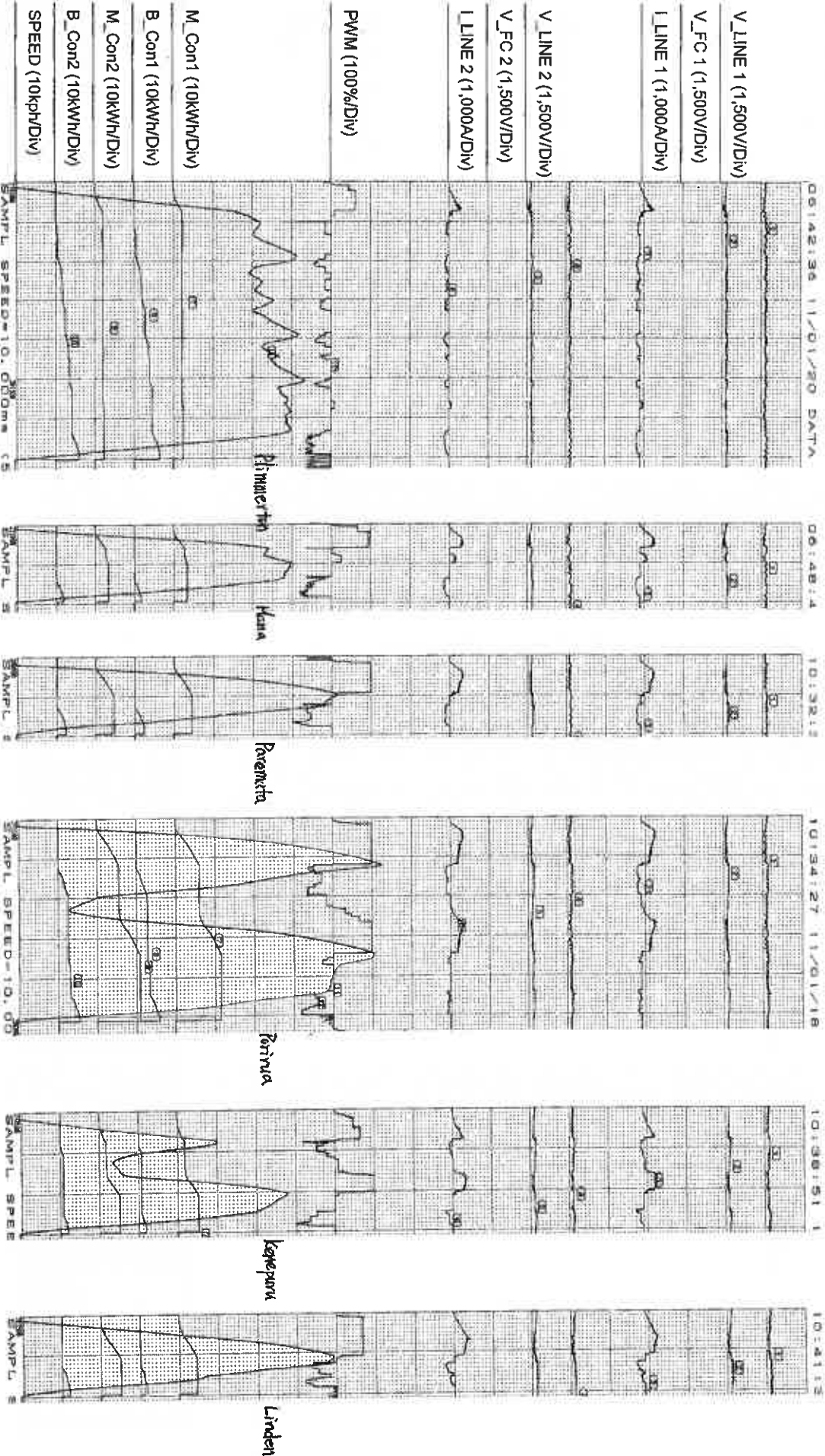
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Paraparaumu Station - Wellington Station (Wet Track Condition)
CHART NO.	NWMMF - 026 - 1

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_Con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_Con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_Con2	Energy consumption for Motoring of TCU2
		B_Con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



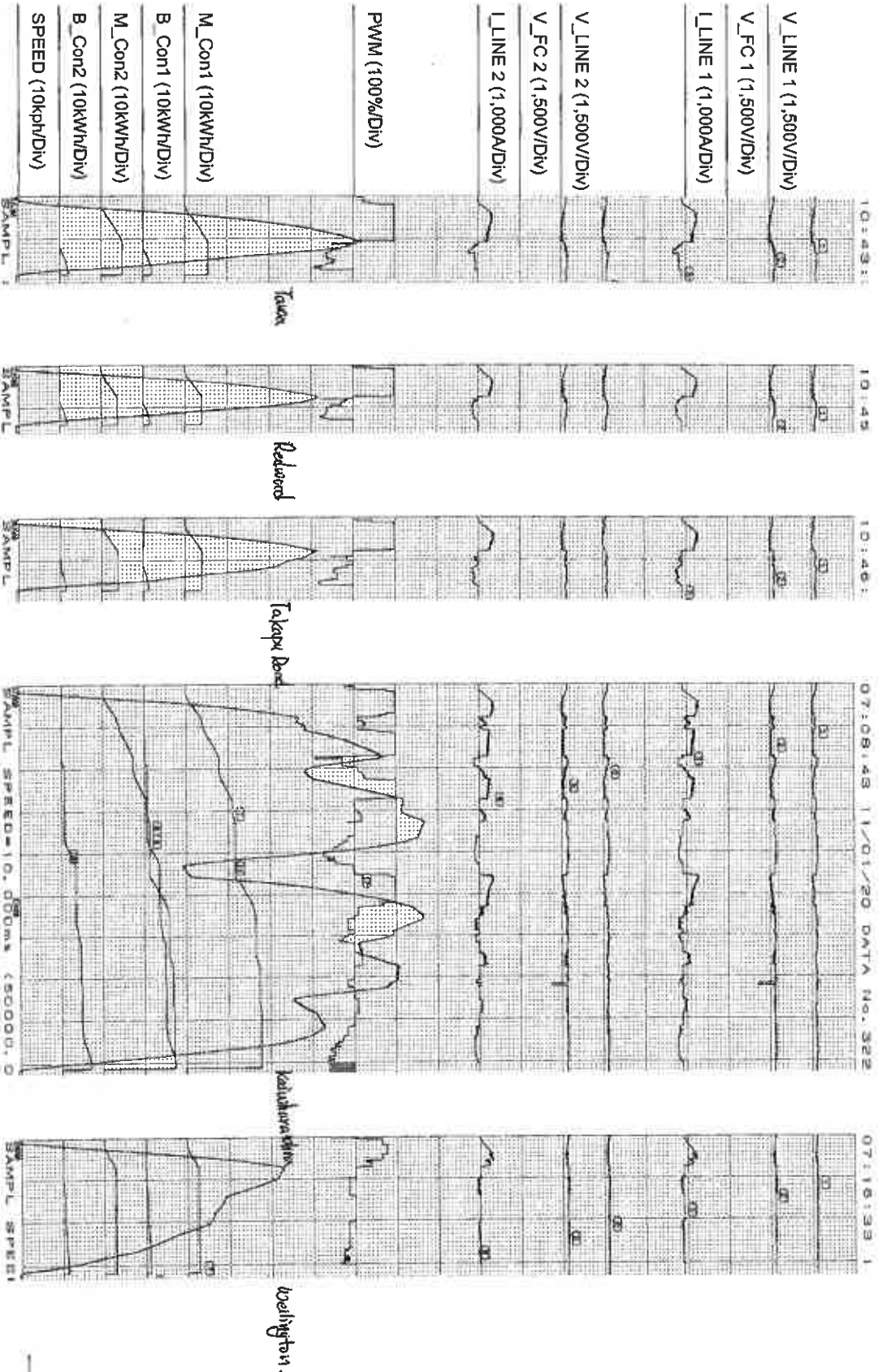
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Paraparumu Station → Wellington Station (Wet Track Condition)
CHART NO.	NWMMF - 026 - 2

Signal Description			
V LINE1	Line Voltage for TCU1	I LINE2	Line Current for TCU2
V FC1	FC Voltage for TCU1	PWM	PWM Command
I LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		B_con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



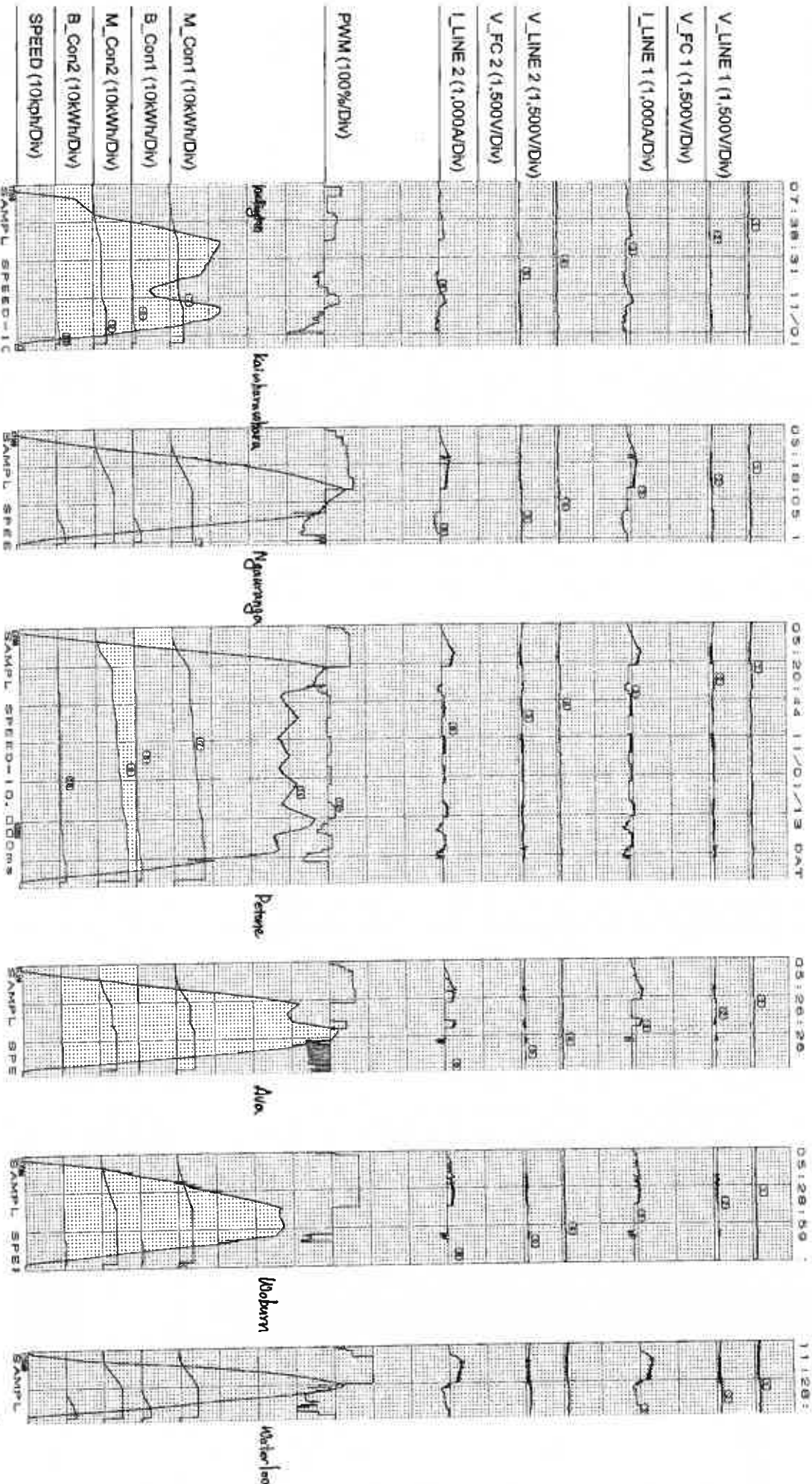
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Paraparaumu Station + Wellington Station (Wet Track Condition)
CHART NO.	NWMMF - 026 - 3

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_Con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_Con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_Con2	Energy consumption for Motoring of TCU2
		B_Con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



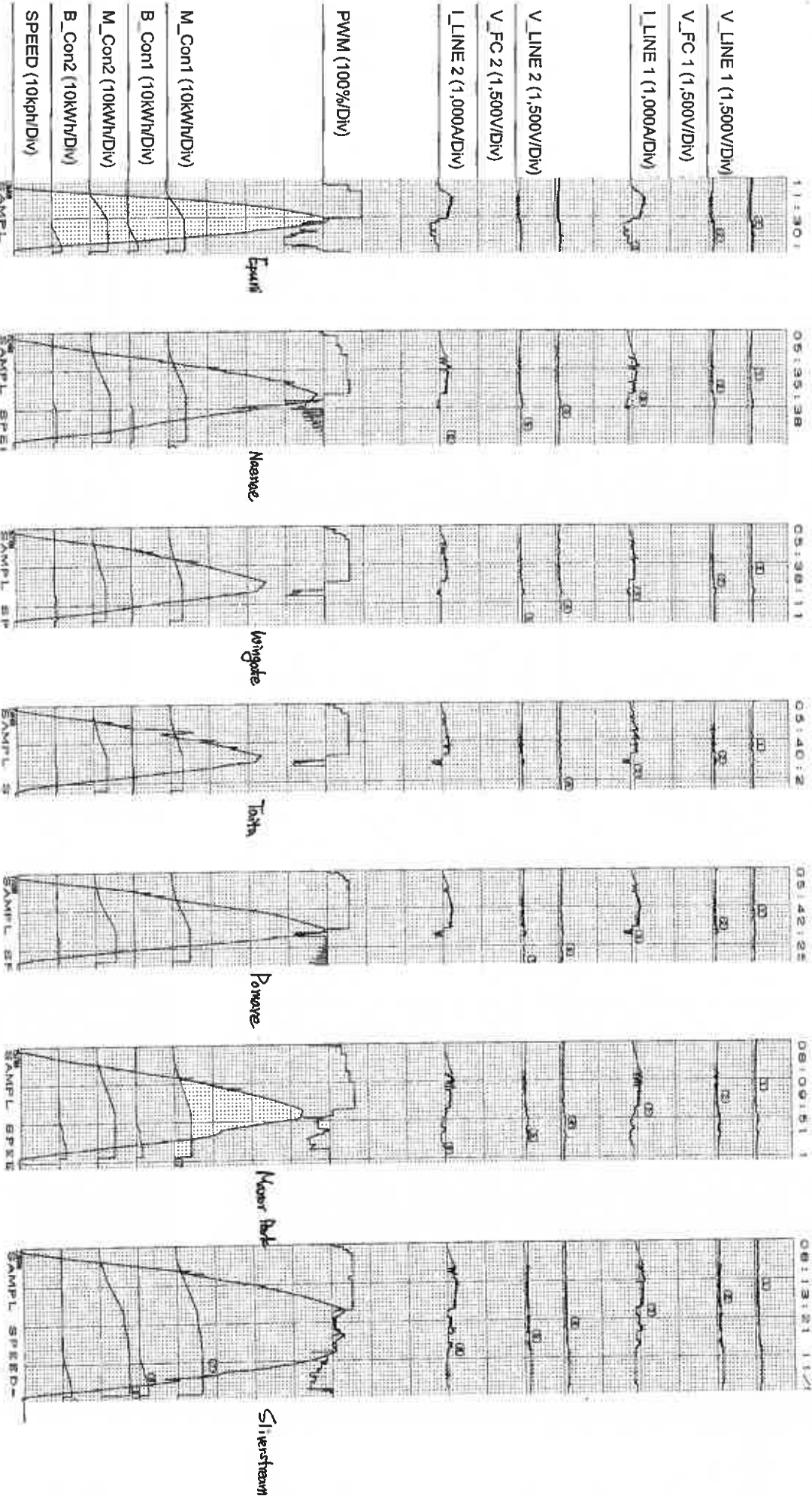
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station -- Upper Hutt Station (Wet Track Condition)
CHART NO.	NWMMF - 027 - 1

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
			Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



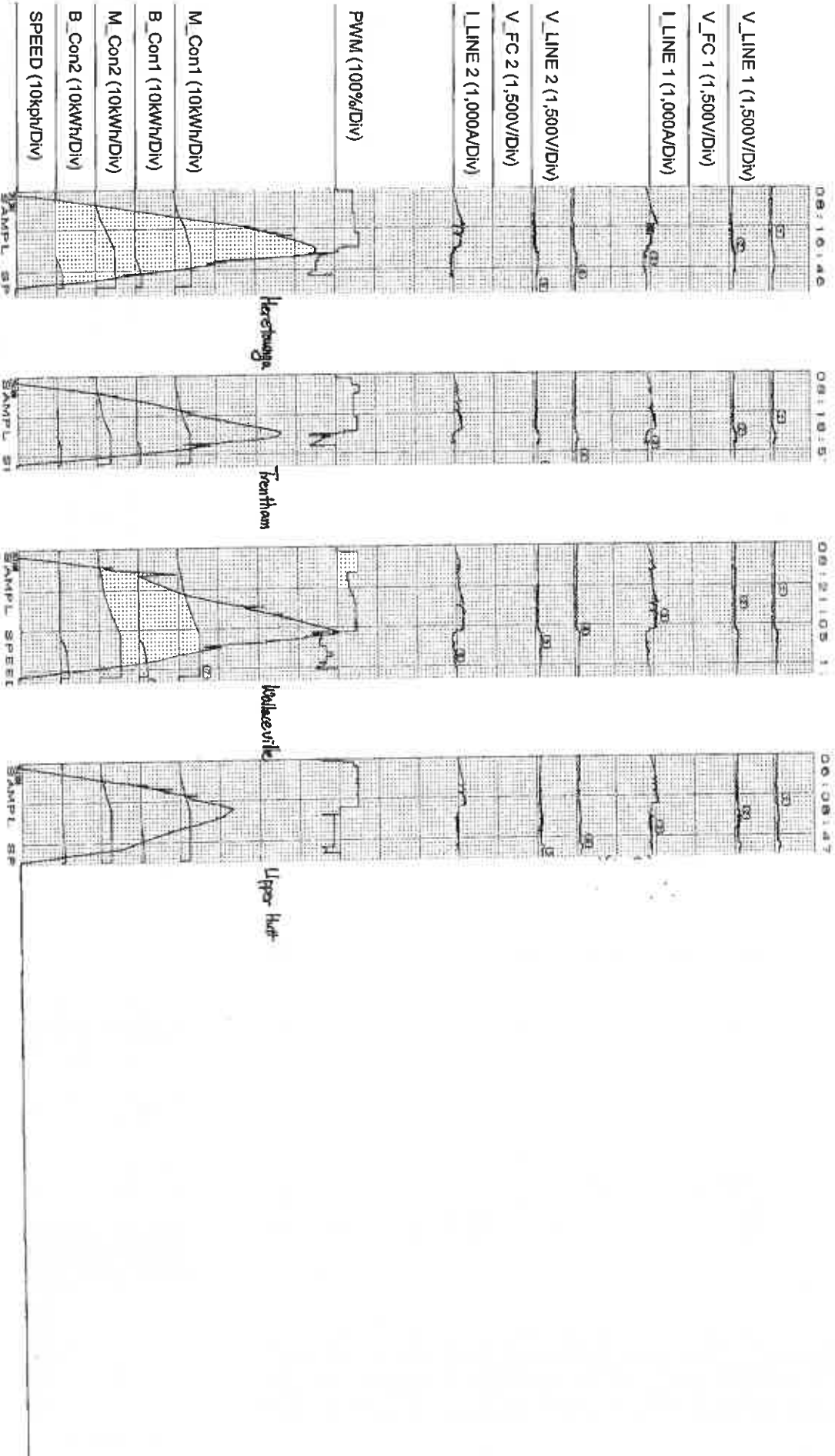
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station -> Upper Hutt Station (Wet Track Condition)
CHART NO.	NWMMF - 027 - 2

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	N_con2	Energy consumption for Motoring of TCU2
			B_con2
			Energy consumption for Braking of TCU2
			SPEED
			Vehicle Velocity



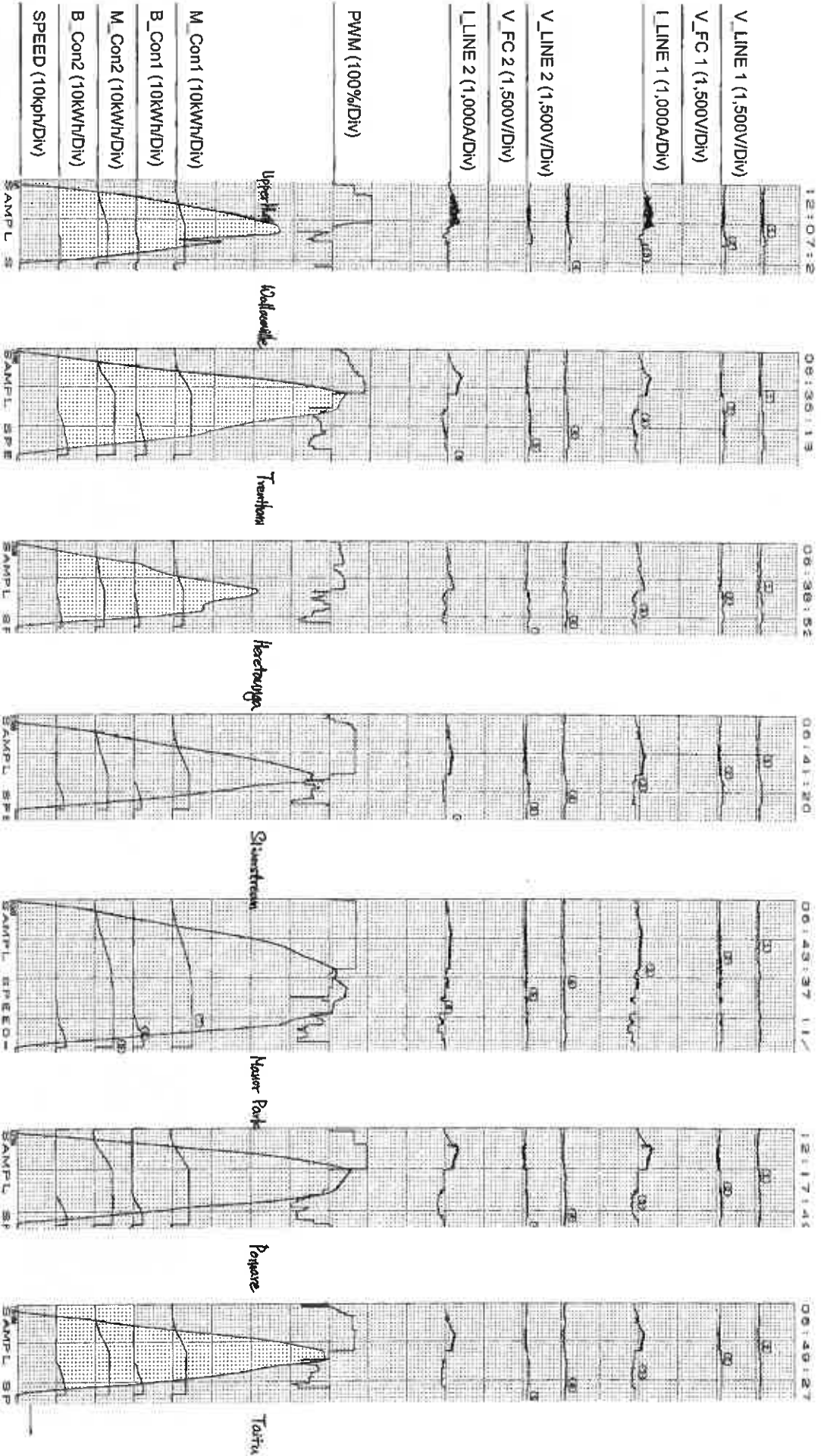
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station - Upper Hutt Station (Wet Track Condition)
CHART NO.	NWMMF - 027 - 3

Signal Description					
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2	B_con2	Energy consumption for Braking of TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command	SPEED	Vehicle Velocity
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1		
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1		
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2		



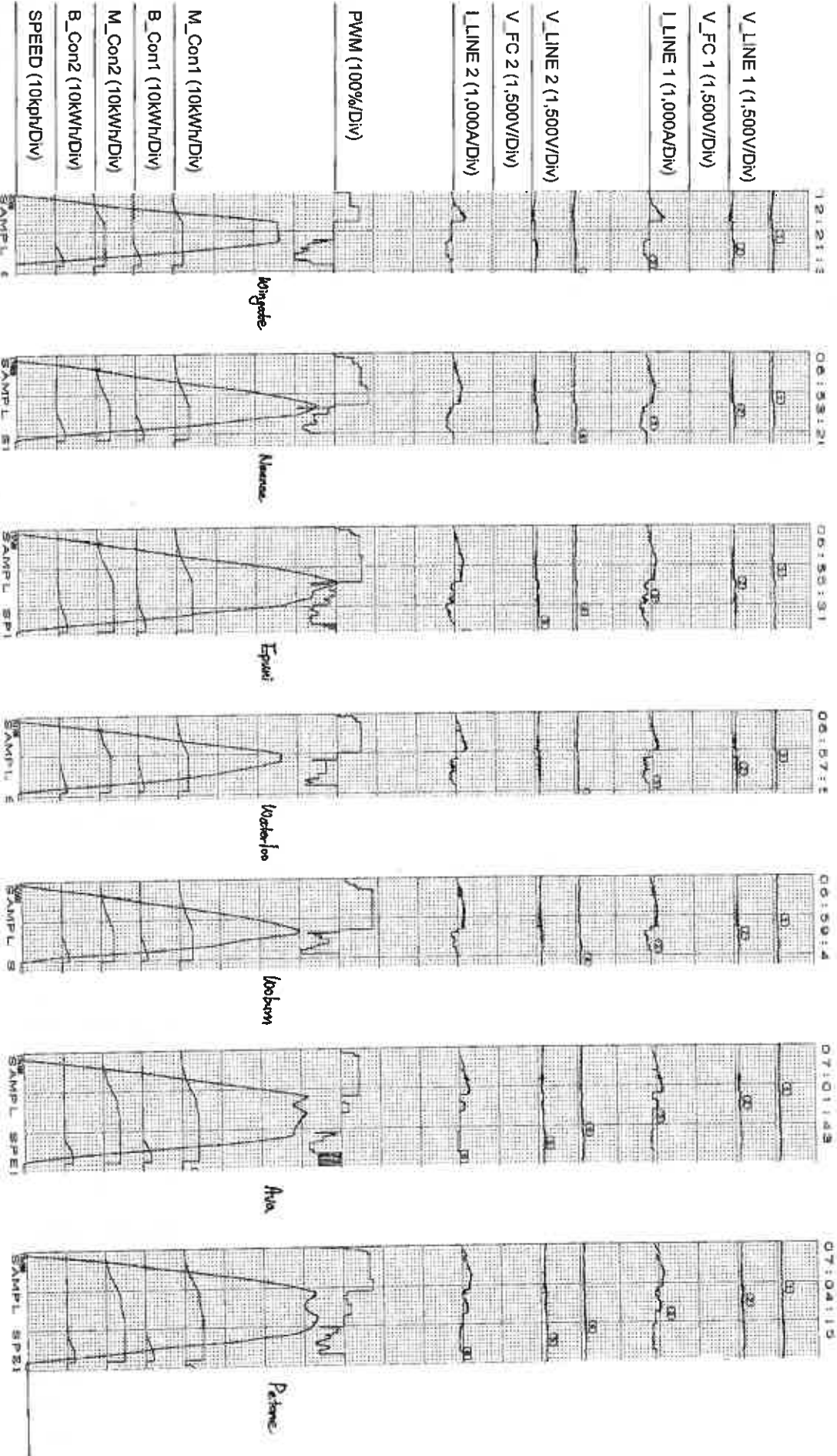
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Upper Hut Station - Wellington Station (Wet Track Condition)
CHART NO.	NWMMF - 028 - 1

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		B_con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



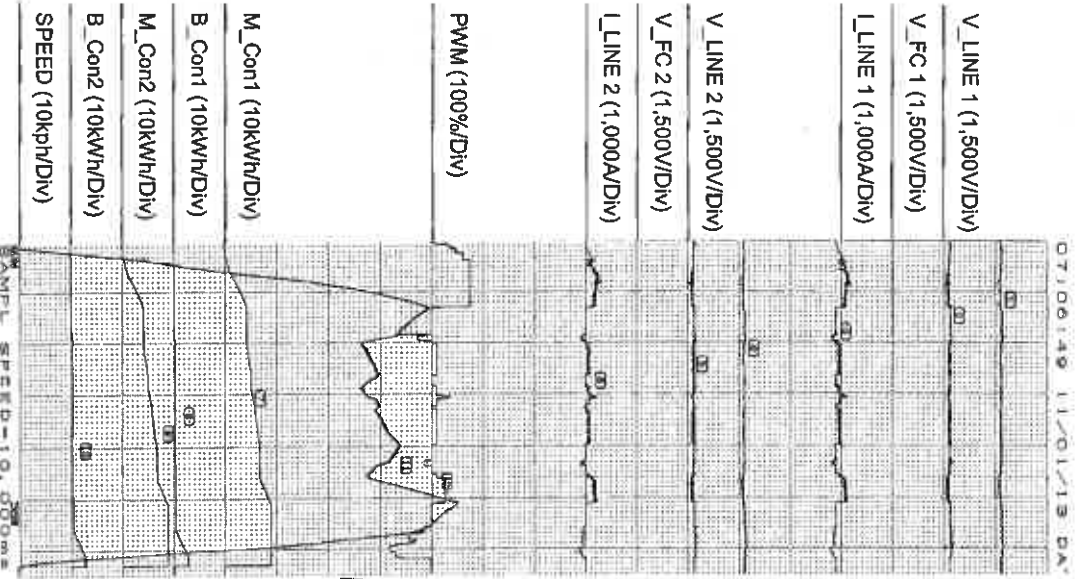
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Upper Hutt Station → Wellington Station (Wet Track Condition)
CHART NO.	NWMMF - 028 - 2

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		B_con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Upper Hutt Station - Wellington Station (Wet Track Condition)
CHART NO.	NWMMF - 028 - 3

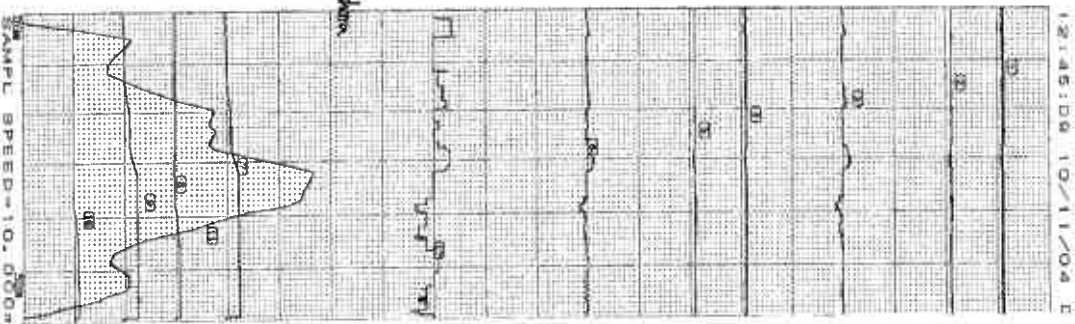
Signal Description	
V_LINE1	Line Voltage for TCU1
V_FC1	FC Voltage for TCU1
I_LINE1	Line Current for TCU1
V_LINE2	Line Voltage for TCU2
V_FC2	FC Voltage for TCU2
I_LINE2	Line Current for TCU2
PWM	PWM Command
M_con1	Energy consumption for Motoring of TCU1
B_con1	Energy consumption for Braking of TCU1
M_con2	Energy consumption for Motoring of TCU2
B_con2	Energy consumption for Braking of TCU2
SPEED	Vehicle Velocity



Ngauranga



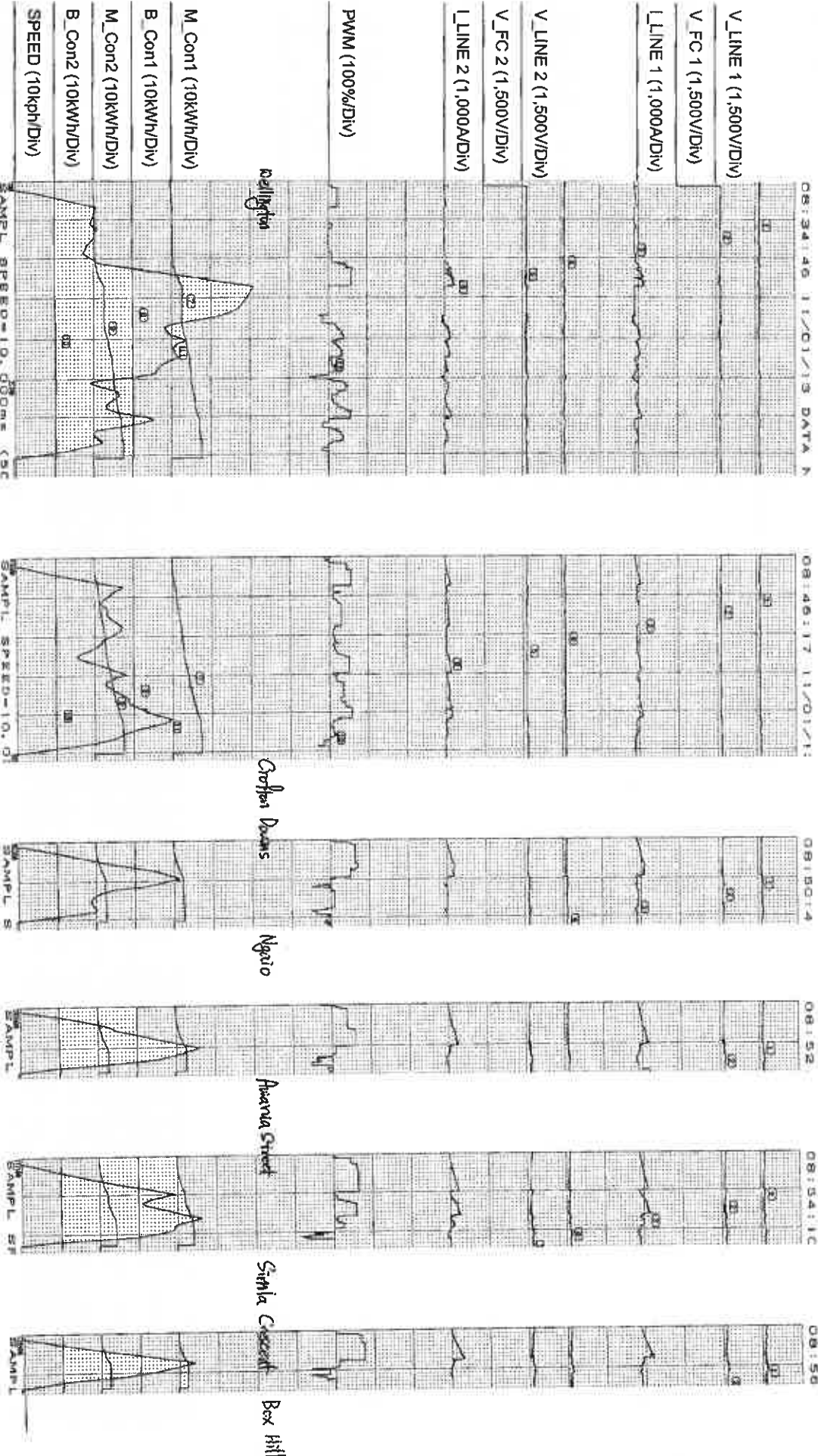
Kaitiaki



Wellington

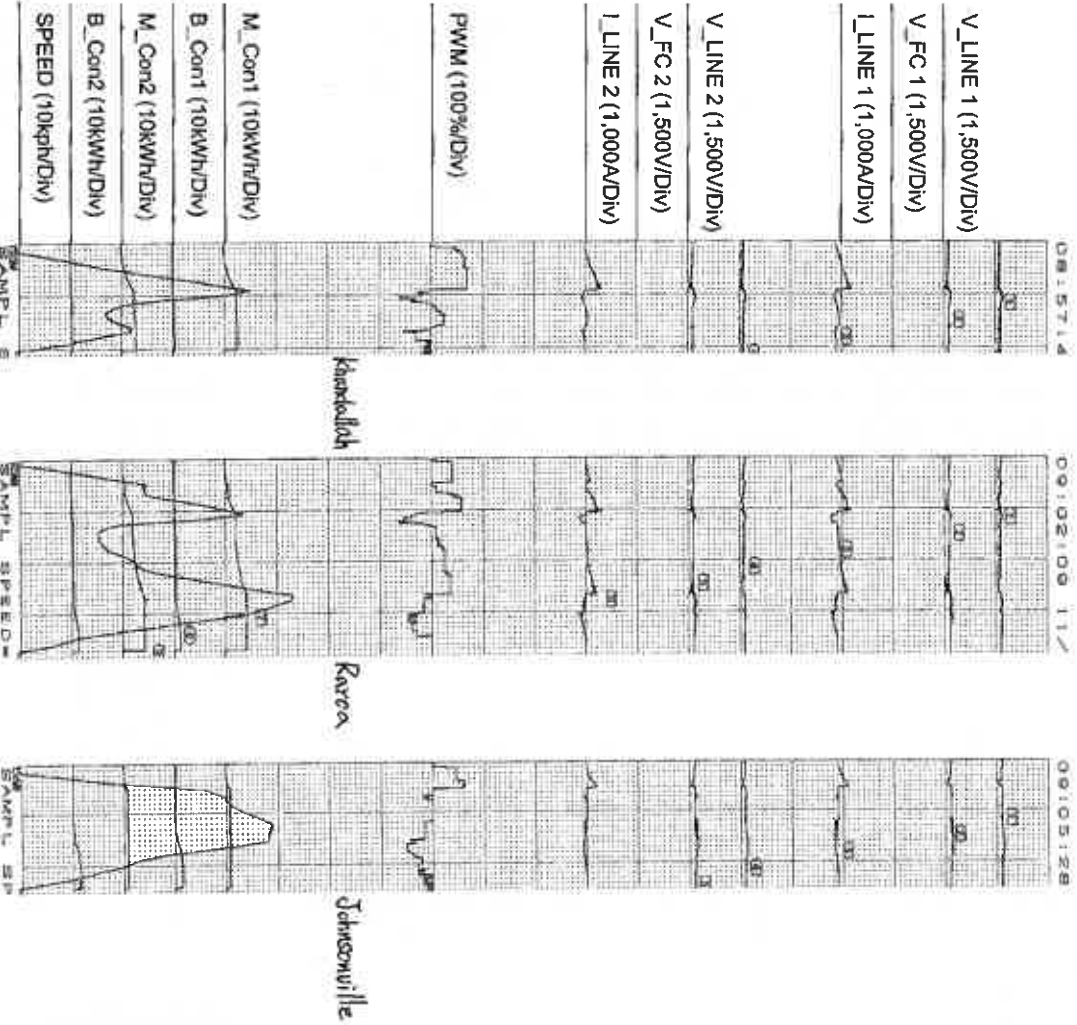
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station - Johnsonville Station (Wet Track Condition)
CHART NO.	NWMMF - 029 - 1

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		B_con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



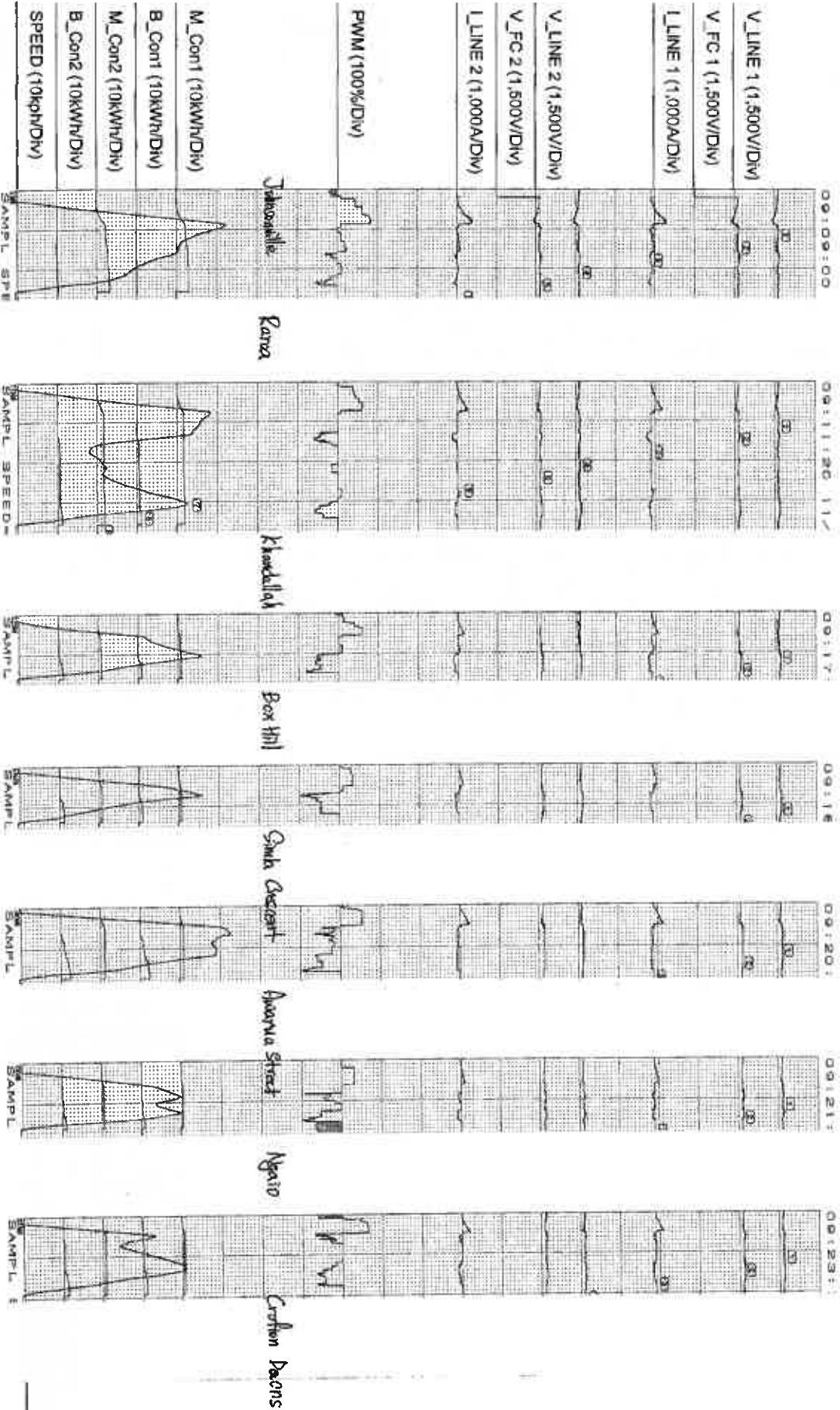
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Wellington Station - Johnsonville Station (Wet Track Condition)
CHART NO.	NWMMMF - 029 - 2

Signal Description					
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2	B_con2	Energy consumption for Braking of TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command	SPEED	Vehicle Velocity
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1		
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1		
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2		



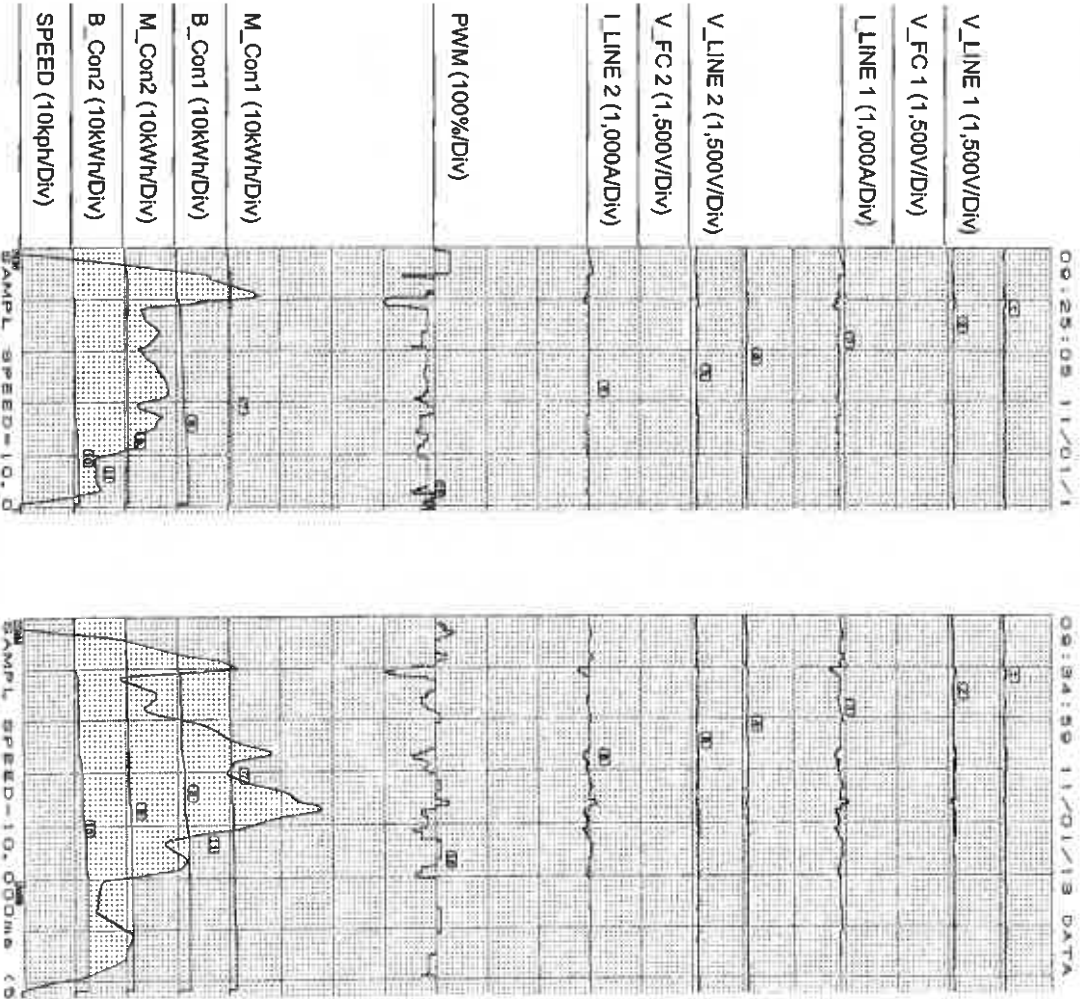
PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Johnsonville Station - Wellington Station (Wet Track Condition)
CHART NO.	NWMMF - 030 - 1

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		B_con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



PROJECT	New Zealand Wellington EMU 96R
CAR NUMBER	1 st Unit
TEST	Mainline Test for Propulsion System (AW3 Load)
TEST ITEM	Journey Time/Energy Consumption Measurement
TEST CONDITION	Johnsonville Station → Wellington Station (Wet Track Condition)
CHART NO.	NWMMMF - 030 - 2

Signal Description			
V_LINE1	Line Voltage for TCU1	I_LINE2	Line Current for TCU2
V_FC1	FC Voltage for TCU1	PWM	PWM Command
I_LINE1	Line Current for TCU1	M_con1	Energy consumption for Motoring of TCU1
V_LINE2	Line Voltage for TCU2	B_con1	Energy consumption for Braking of TCU1
V_FC2	FC Voltage for TCU2	M_con2	Energy consumption for Motoring of TCU2
		B_con2	Energy consumption for Braking of TCU2
		SPEED	Vehicle Velocity



Wellington