

Rail Baltica: Preparation of the Operational Plan of the railway

Final Study Report

Annexes

Version 02

15th November 2018

Table of Contents

ANNEX 1: Track maps.....	3
ANNEX 2: List of freight and passenger locomotives.....	24
ANNEX 3: List of passenger and freight wagons.....	30
ANNEX 4: List of Multiple-Unit Sets.....	45
ANNEX 5: List of EMU – technical data	55
ANNEX 6: Long distance passenger train sets – EMU hauled service	57
ANNEX 7: Graphical Timetables.....	59
ANNEX 8: Speed Profiles High Speed Train (preliminary design).....	130
ANNEX 9: Maximum permitted speed maps as per preliminary design	134
ANNEX 10: Track plan Palemonas station (RB Rail solution)	137
ANNEX 11: Speed Profiles High Speed Train (after CPTD)	138

ANNEX 1: Track maps

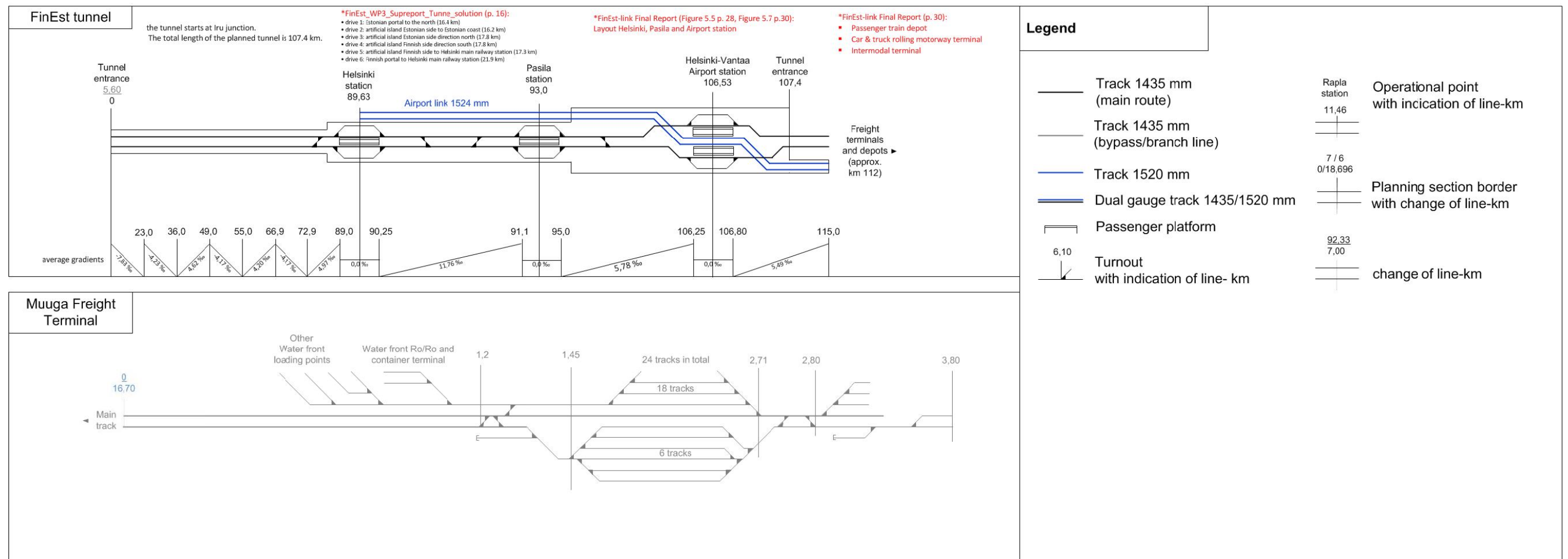
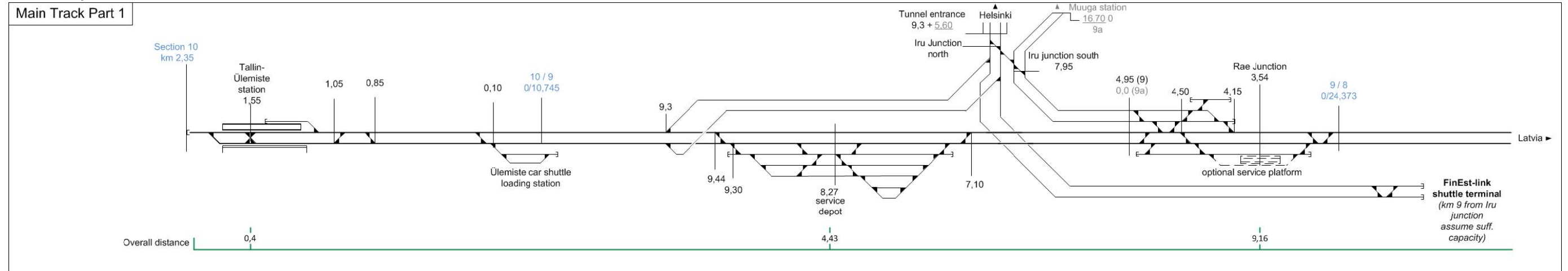
Base Version

Recommended Infrastructure - time horizon 2026

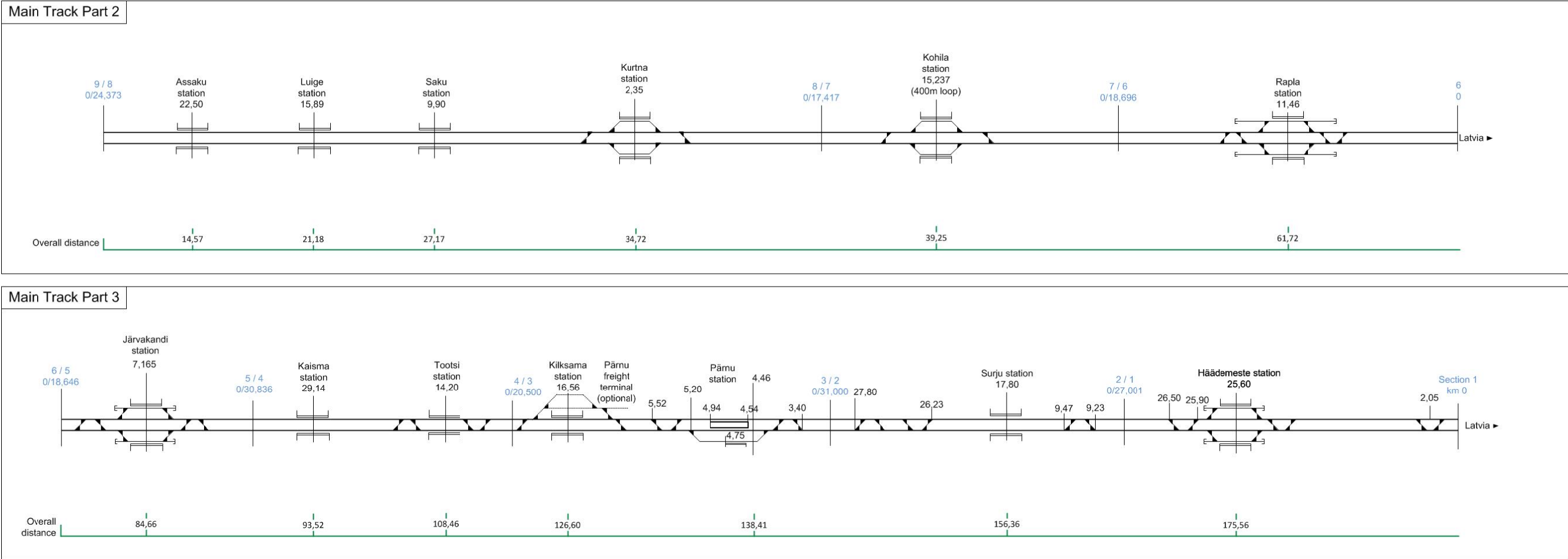
Recommended Infrastructure - time horizon 2036/46

Recommended Infrastructure - time horizon 2056

Track Map Base Version

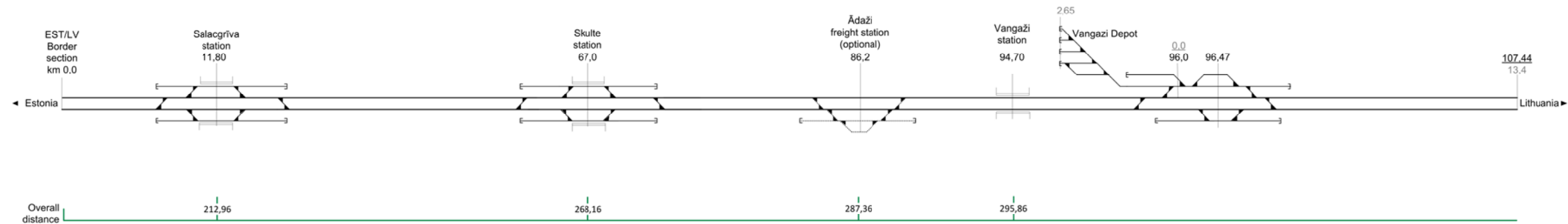


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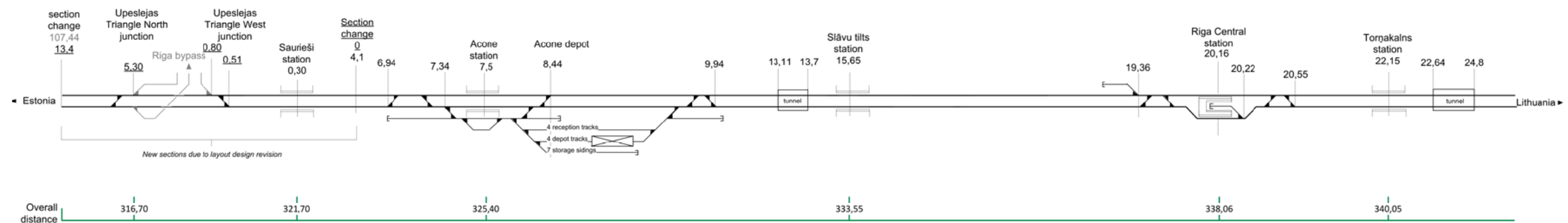


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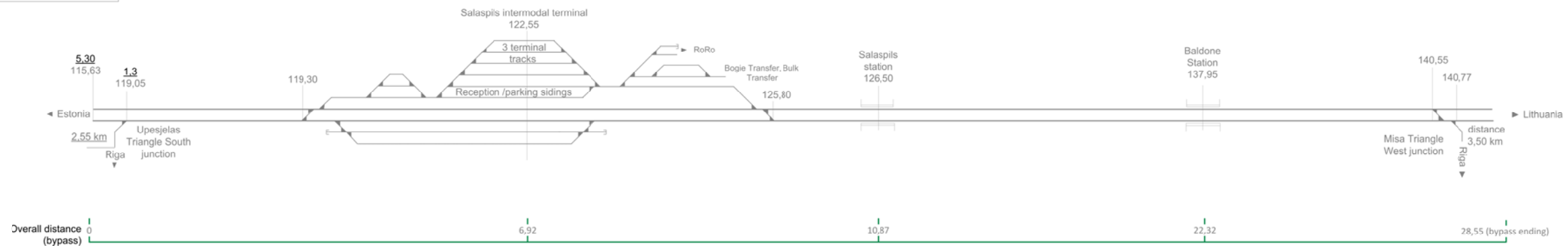
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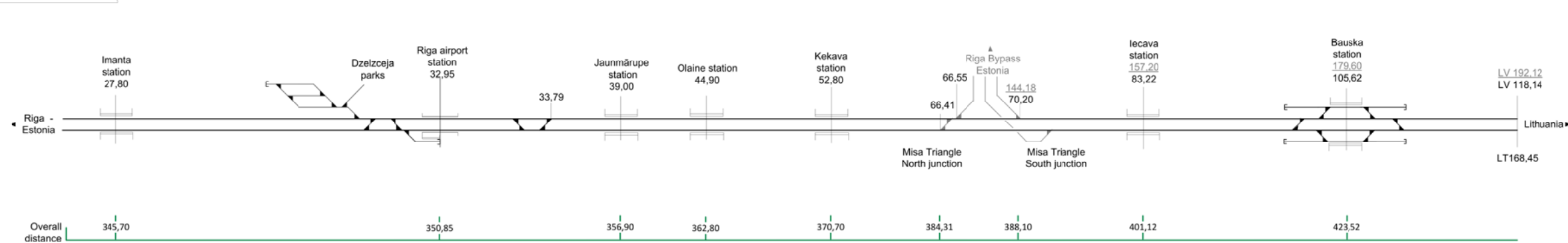
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Riga Bypass

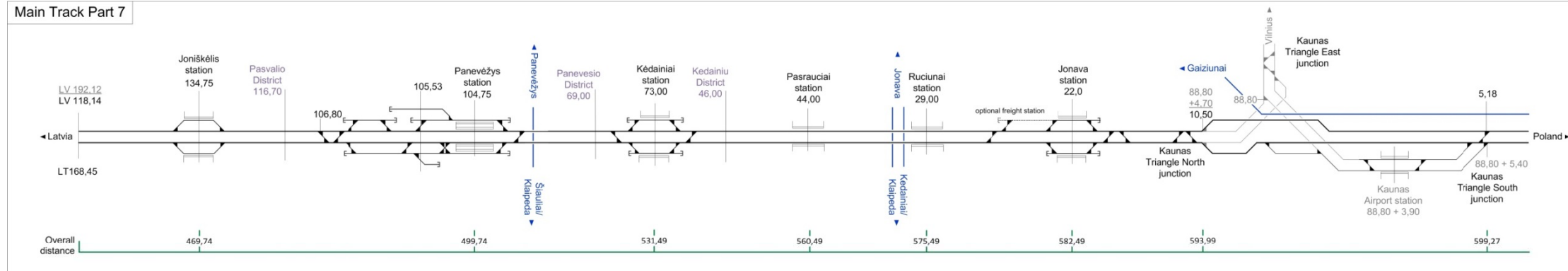


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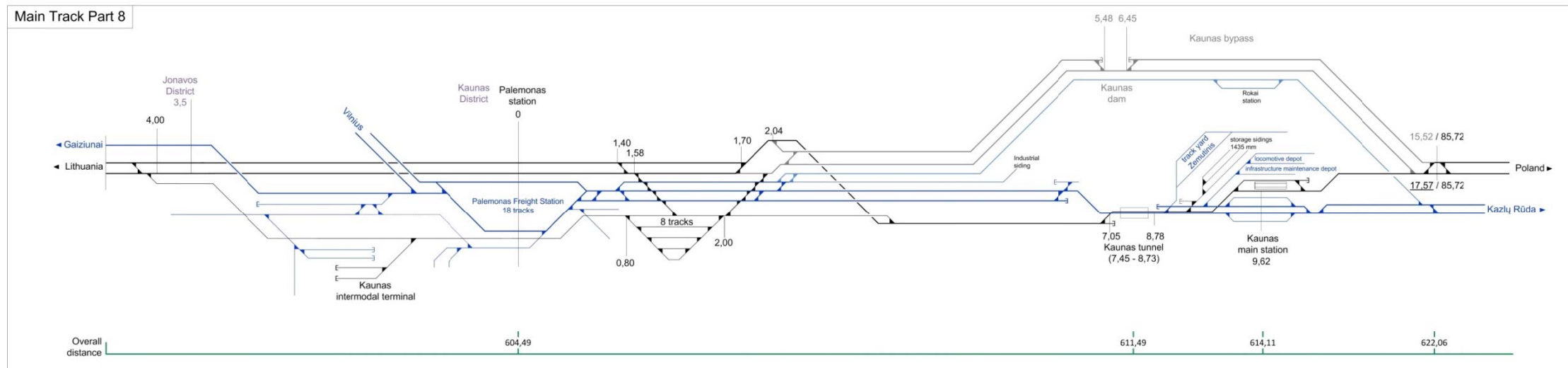


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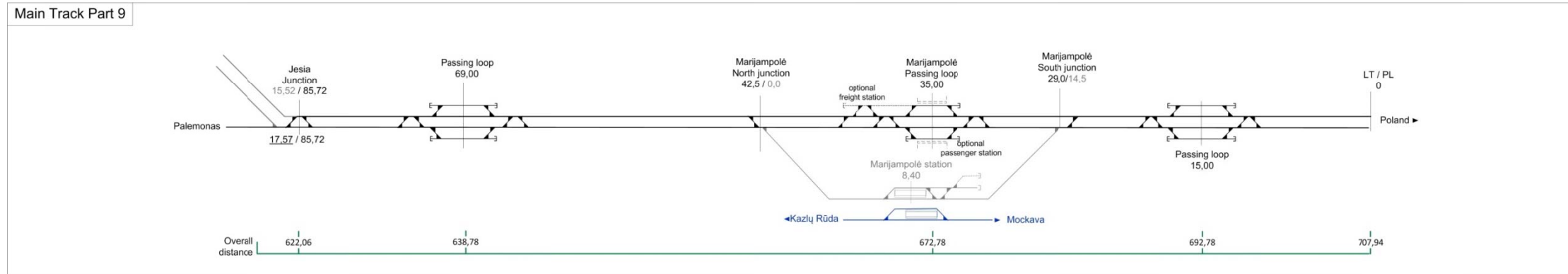
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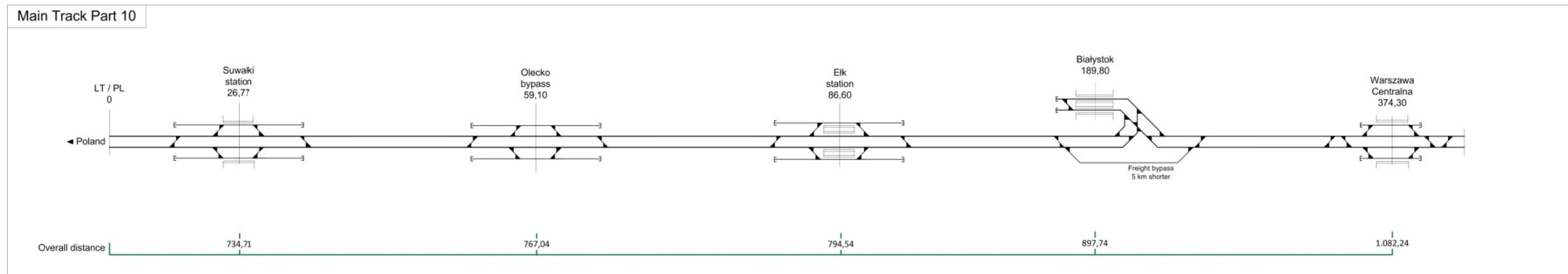
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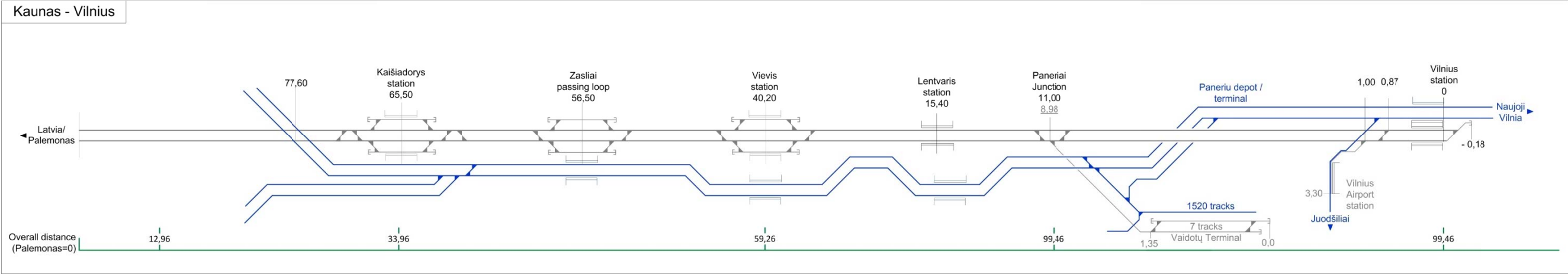
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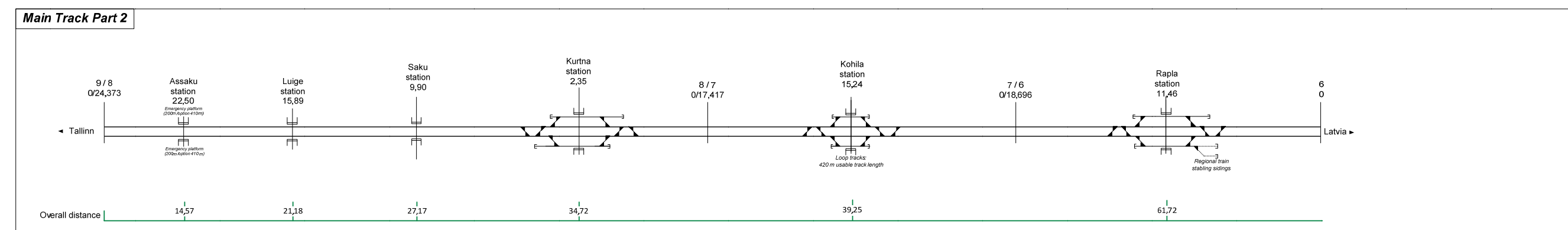
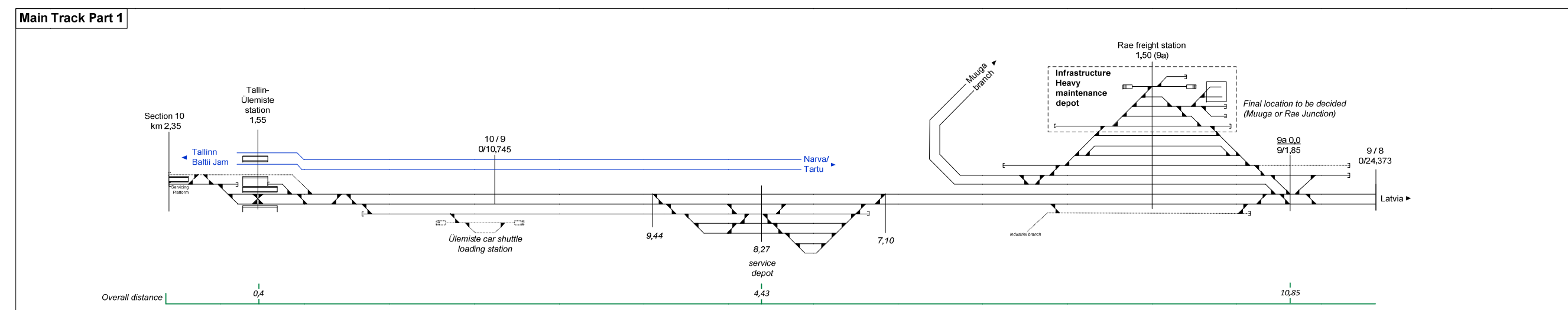
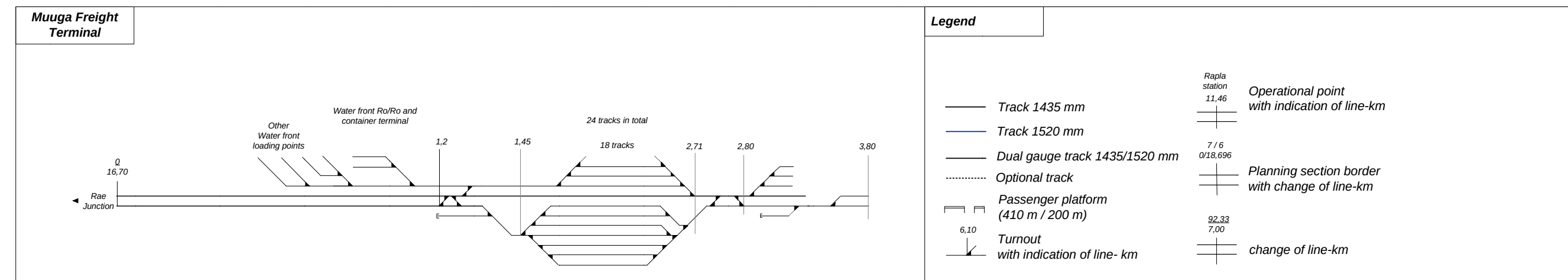
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Track Map Base Version

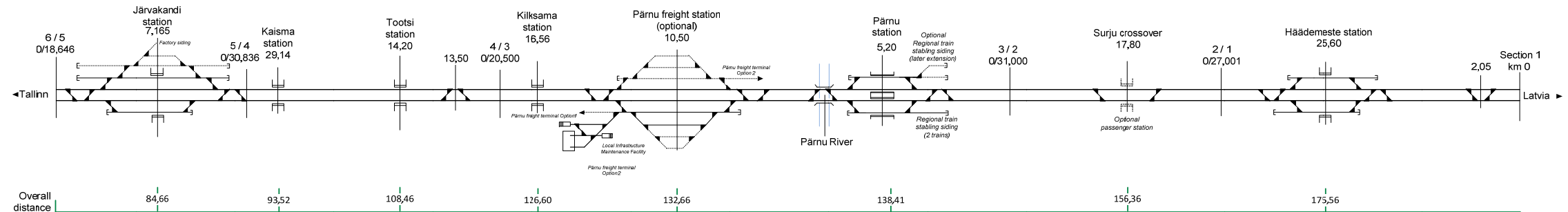


Track Map – Recommended Infrastructure for time horizon 2026

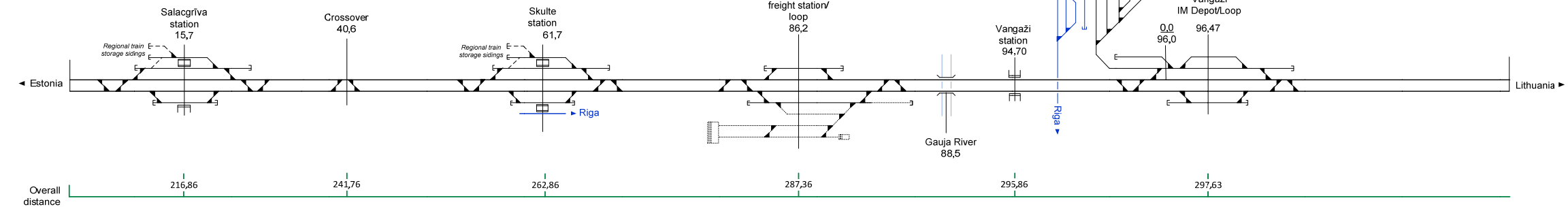


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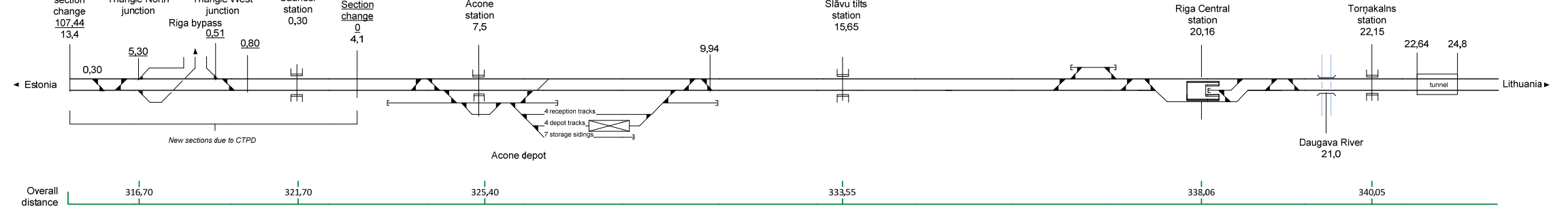
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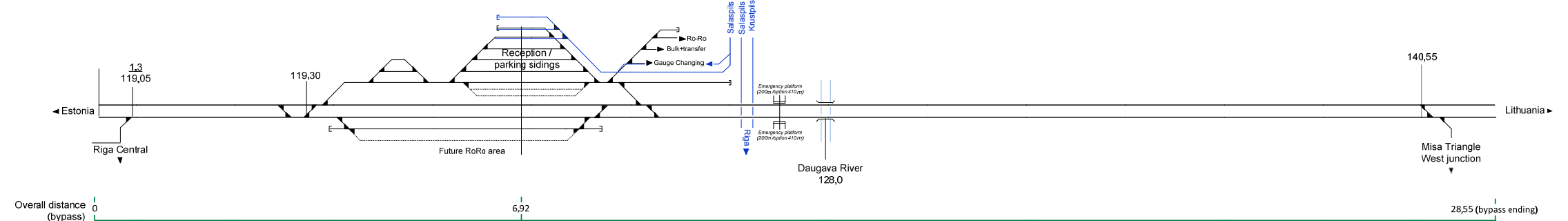
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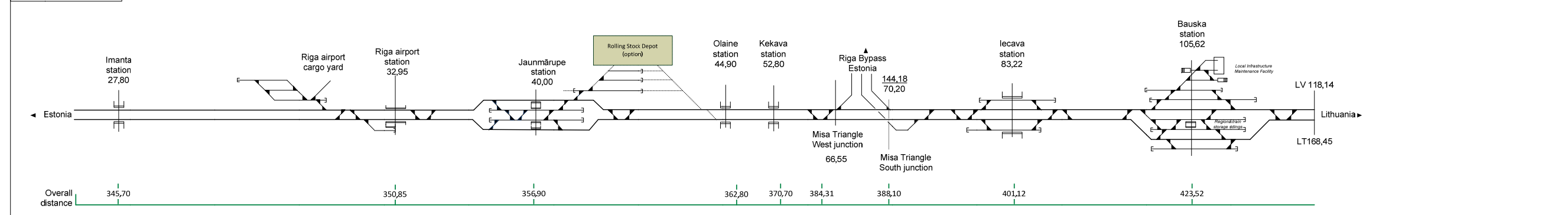


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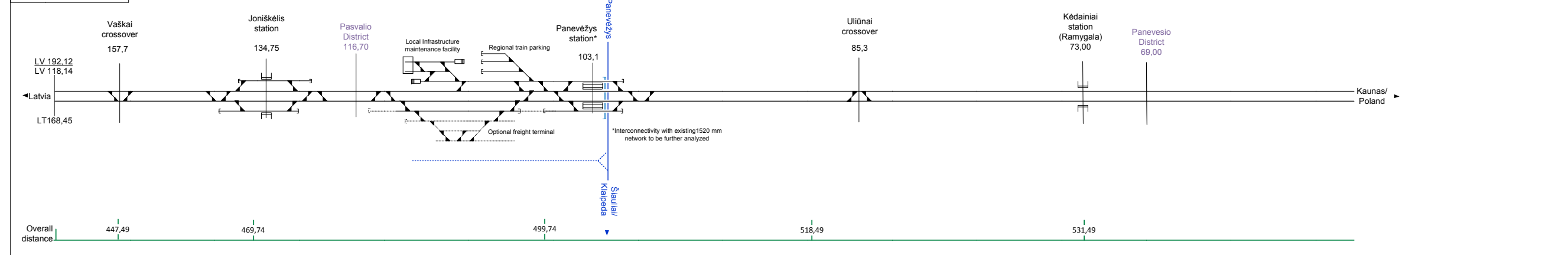


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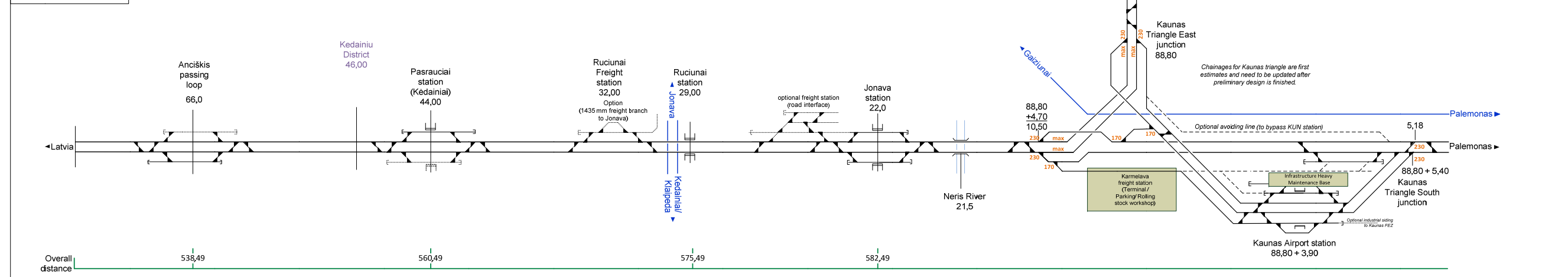
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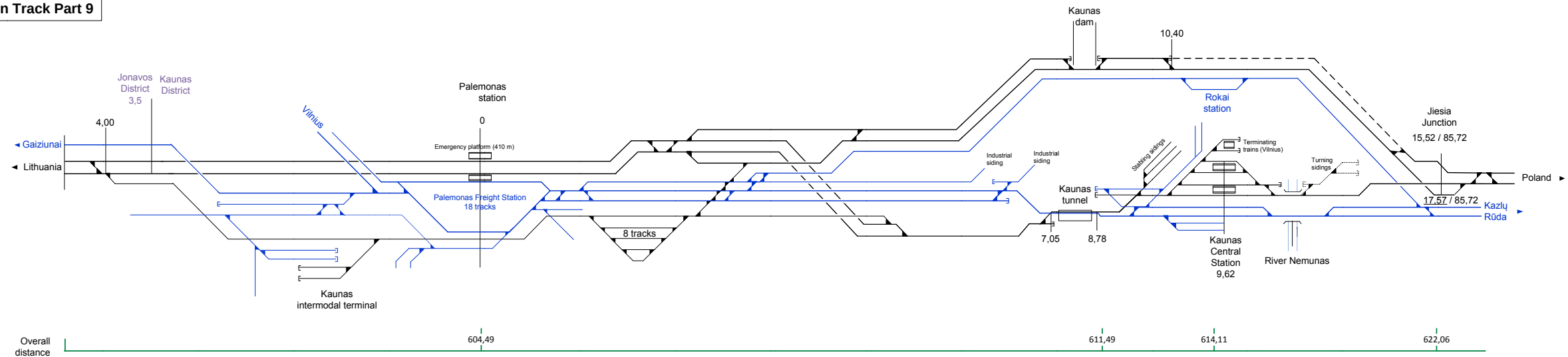


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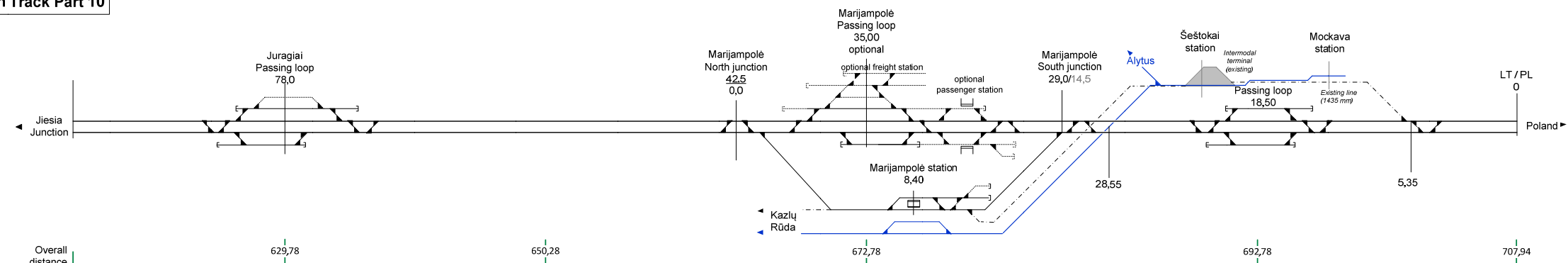


Track Map – Recommended Infrastructure for time horizon 2026

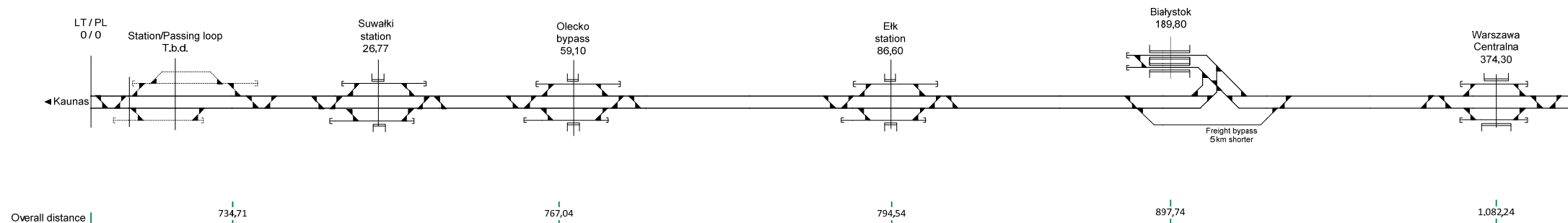
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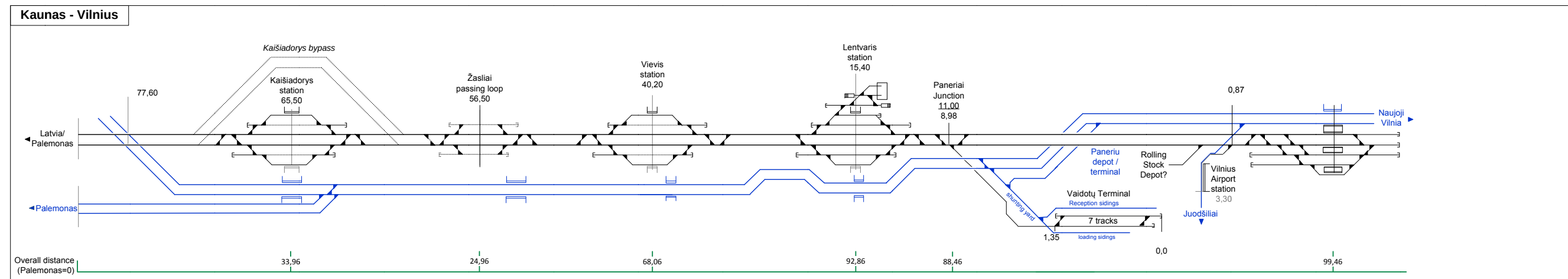
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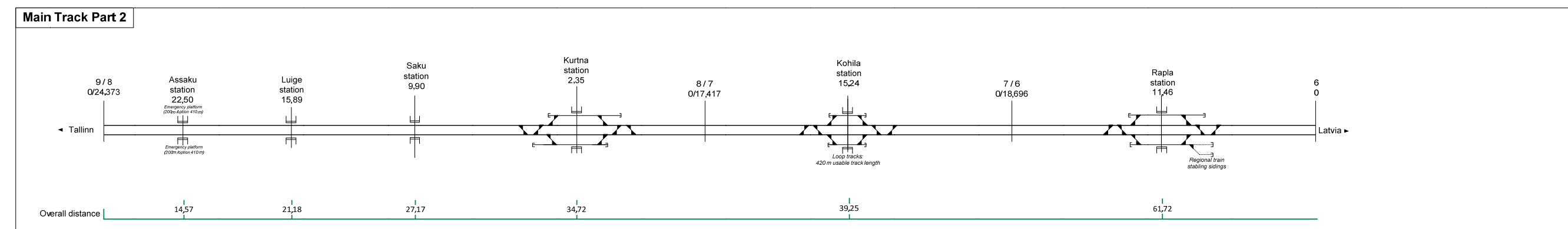
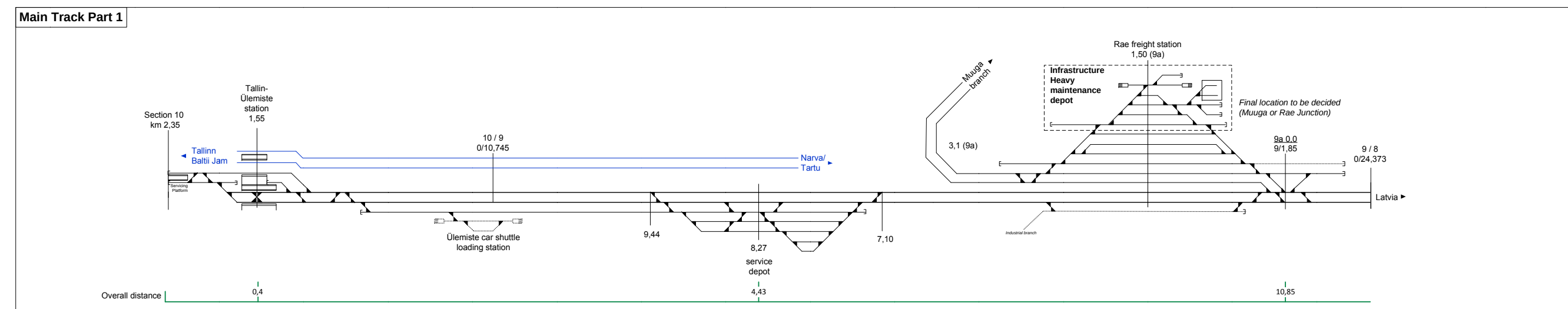
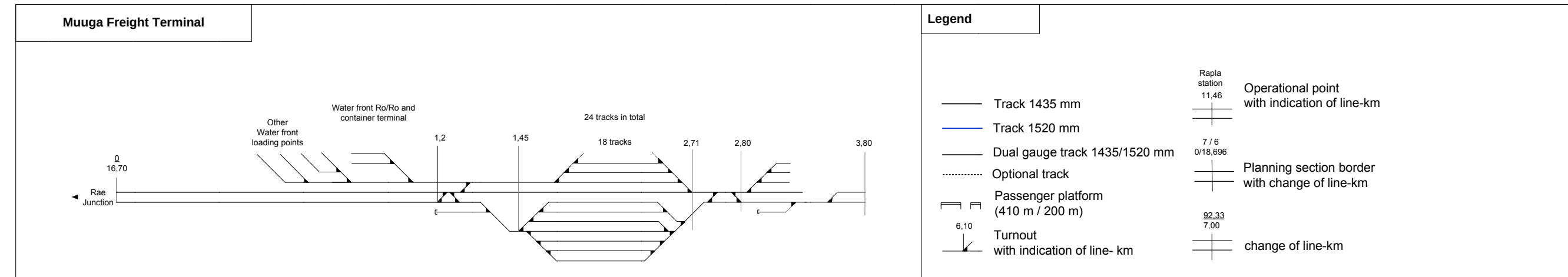
Poland



Track Map – Recommended Infrastructure for time horizon 2026

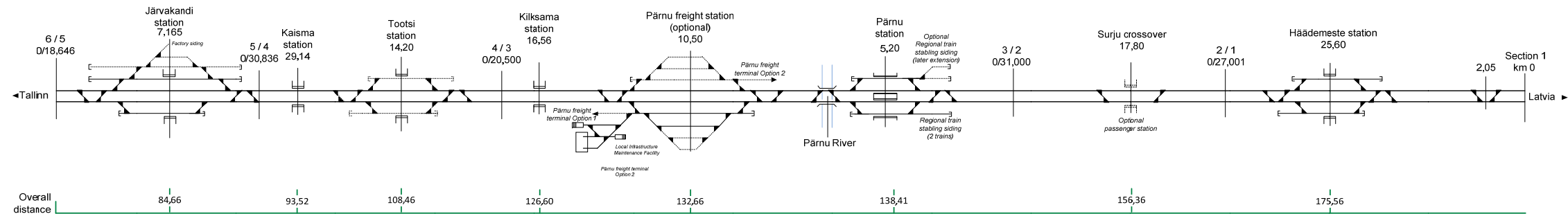


Track Map – Recommended Infrastructure for time horizon 2036/46

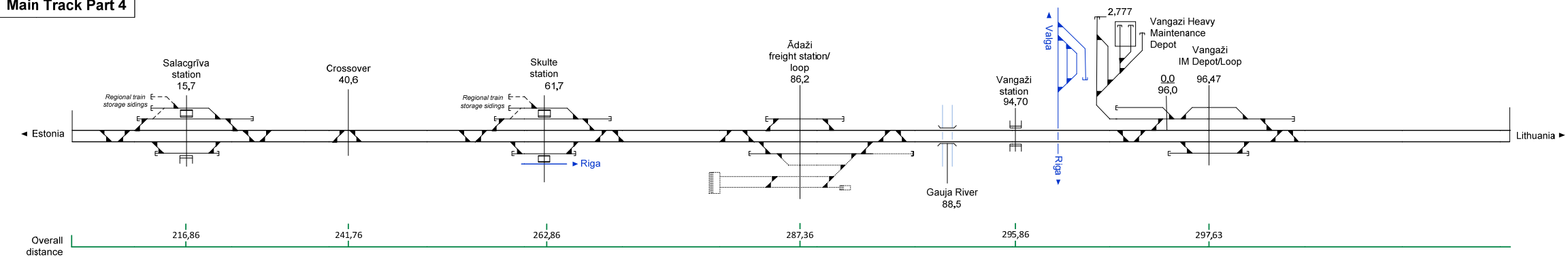


Track Map – Recommended Infrastructure for time horizon 2036/46

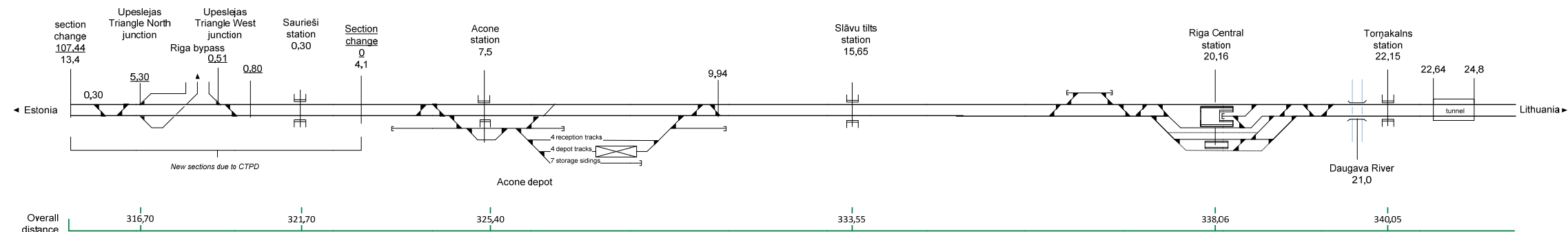
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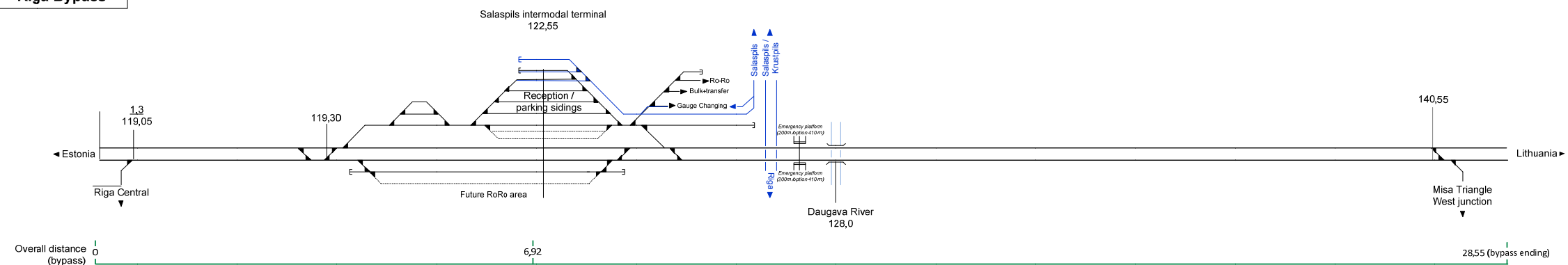
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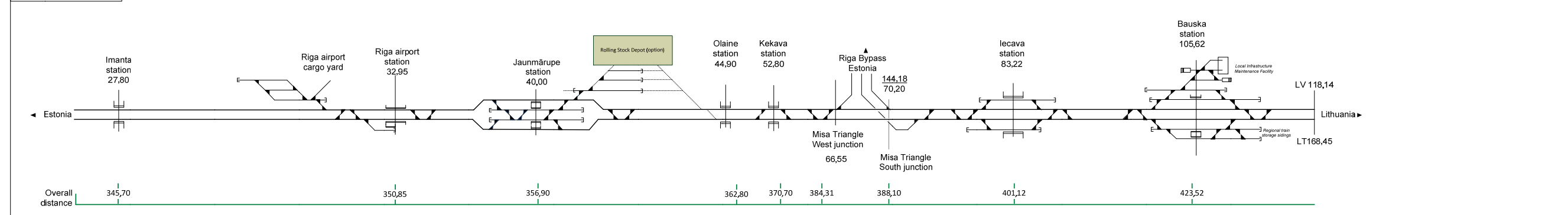


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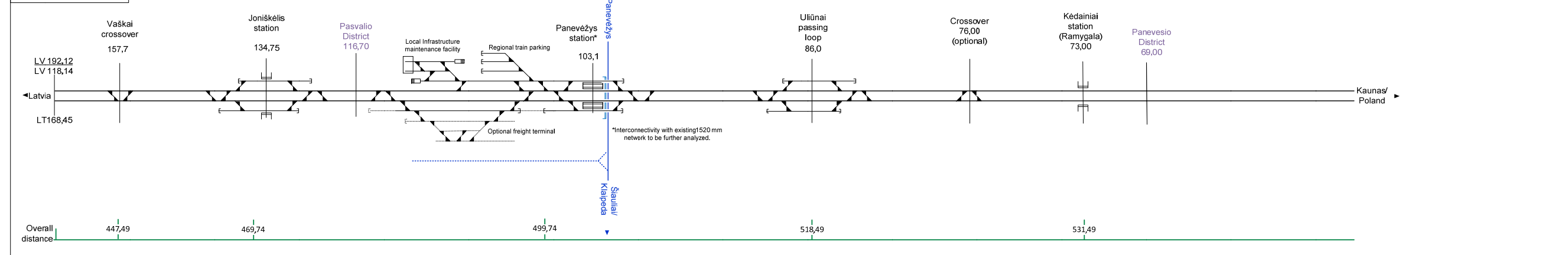


Track Map – Recommended Infrastructure for time horizon 2036/46

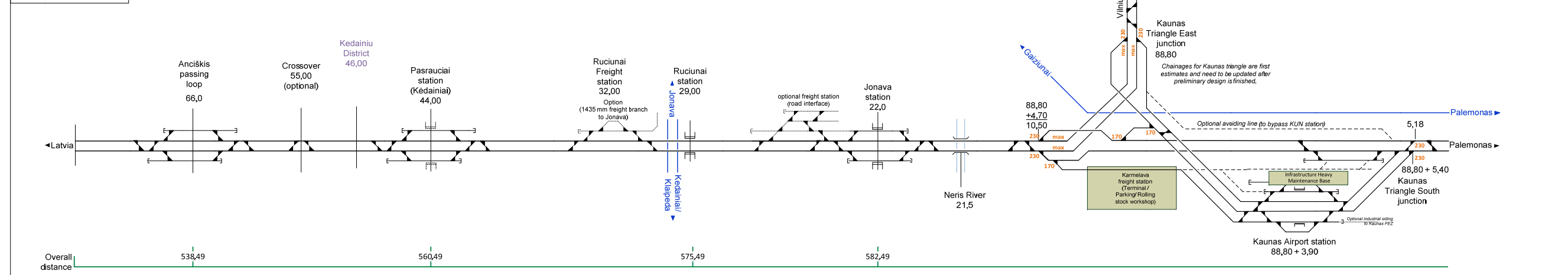
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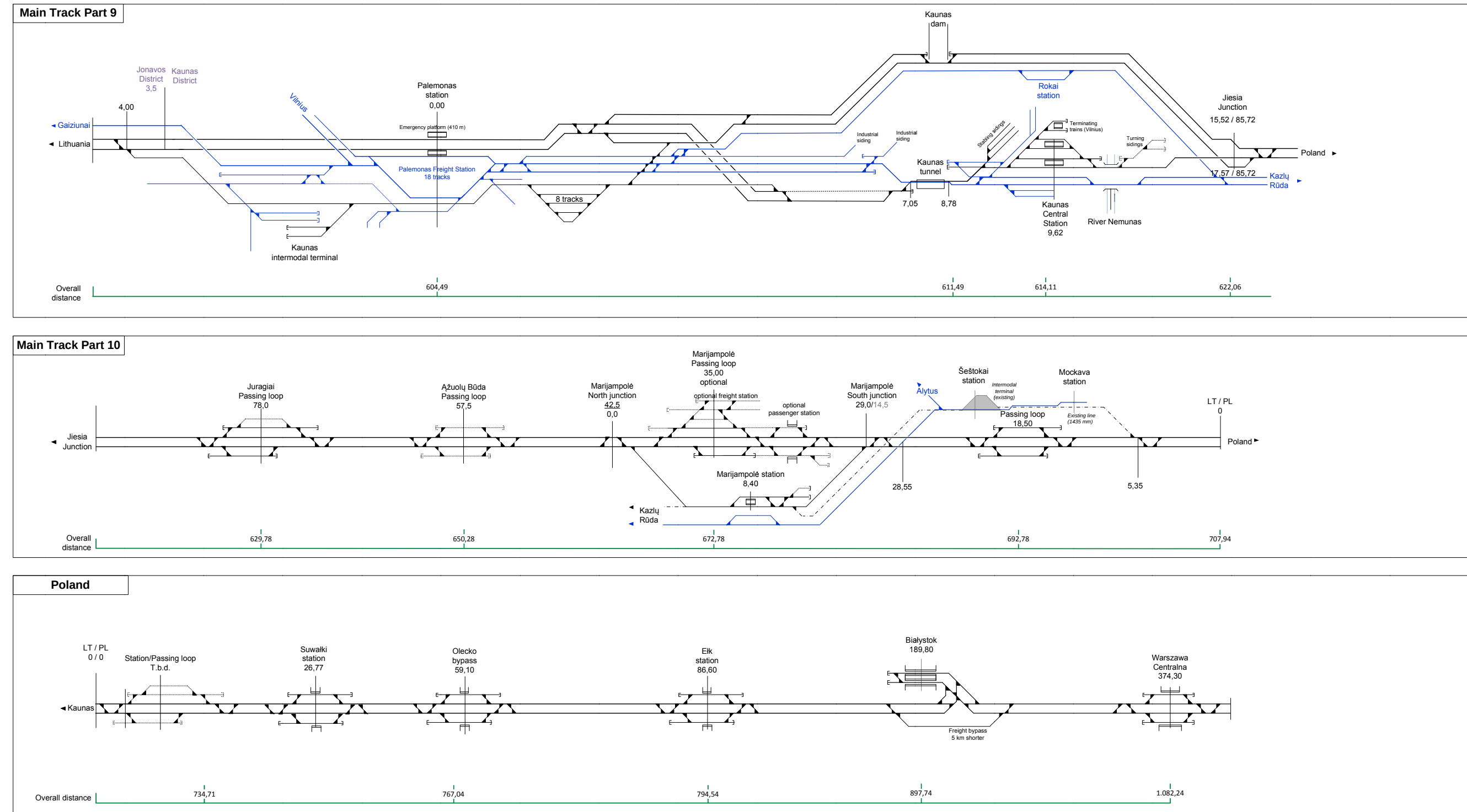
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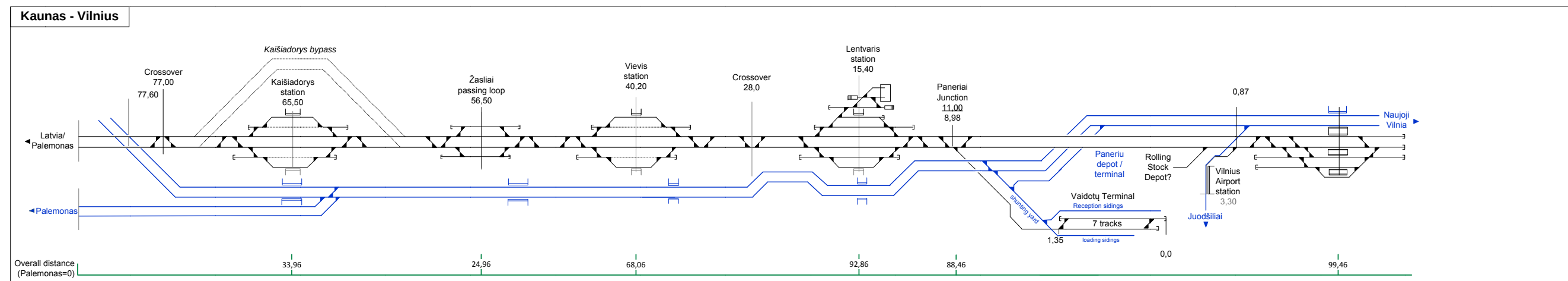
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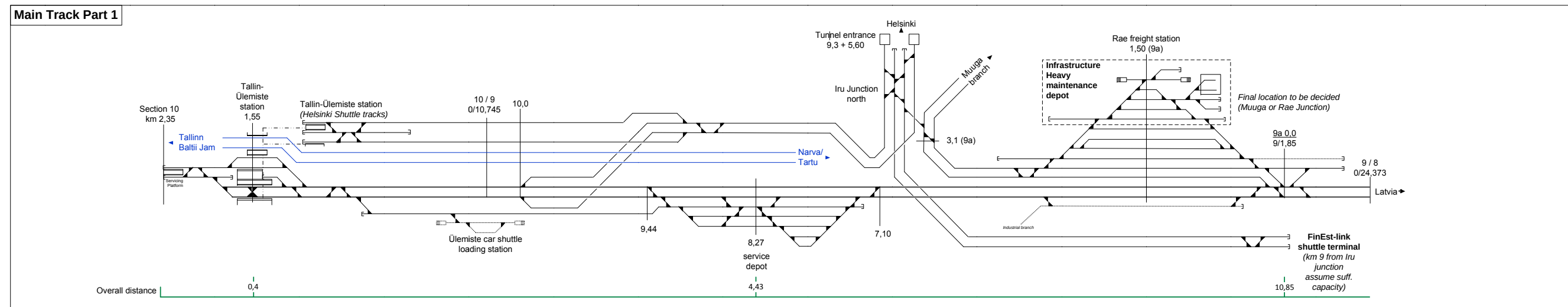
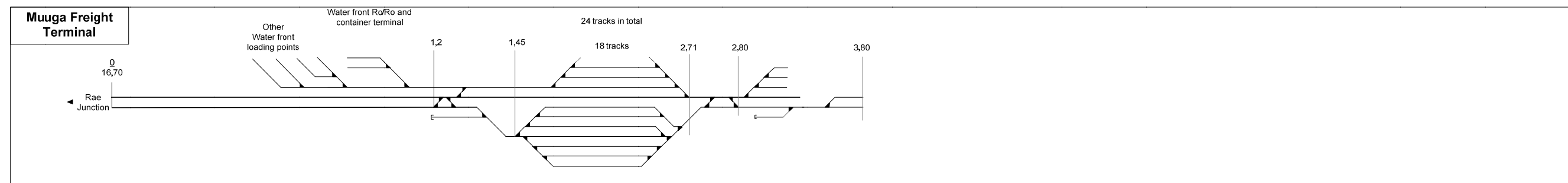
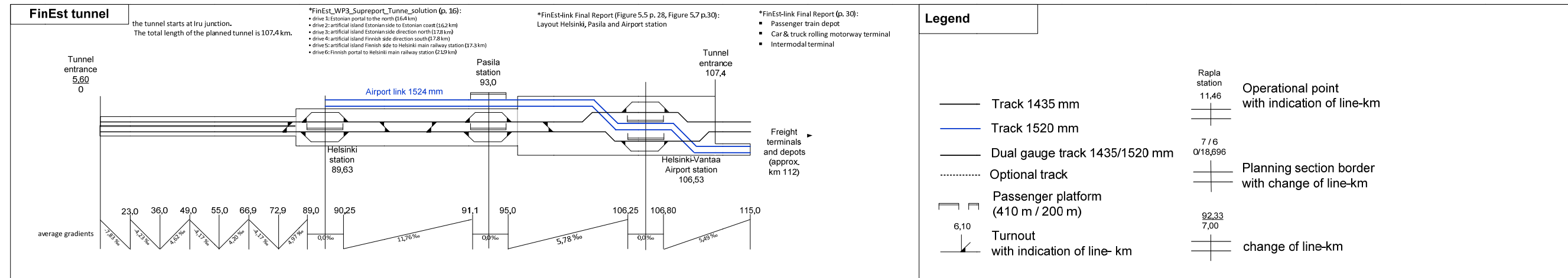
Track Map – Recommended Infrastructure for time horizon 2036/46



Track Map – Recommended Infrastructure for time horizon 2036/46

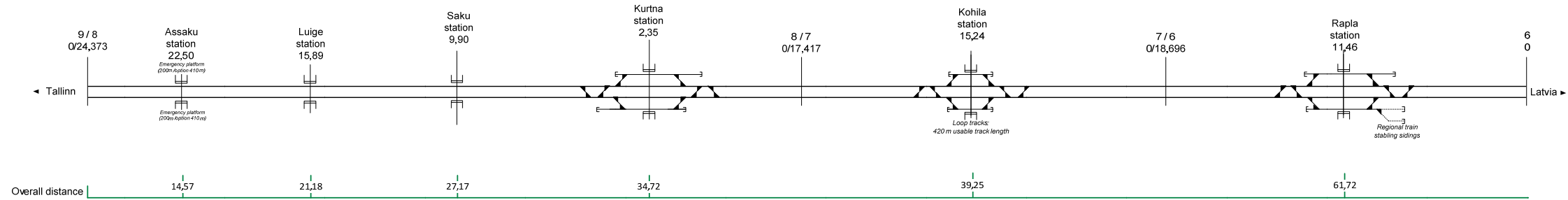


Track Map – Recommended Infrastructure for time horizon 2056

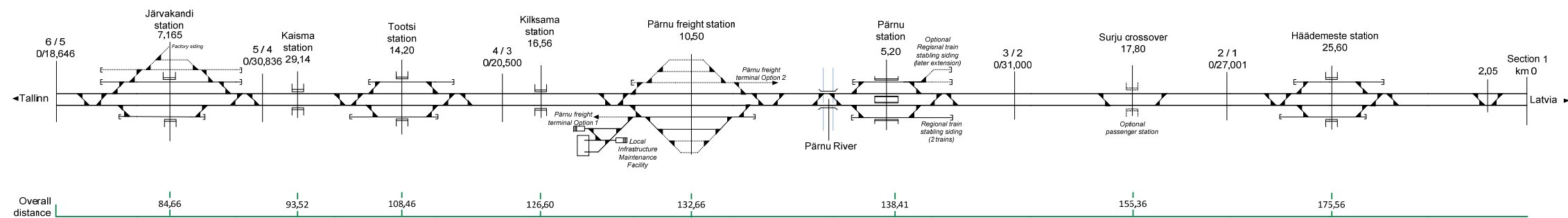


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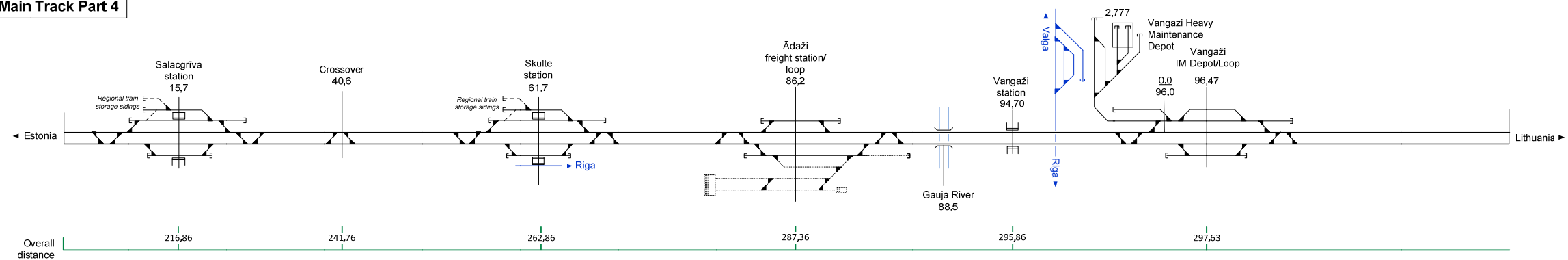
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Main Track Part 3

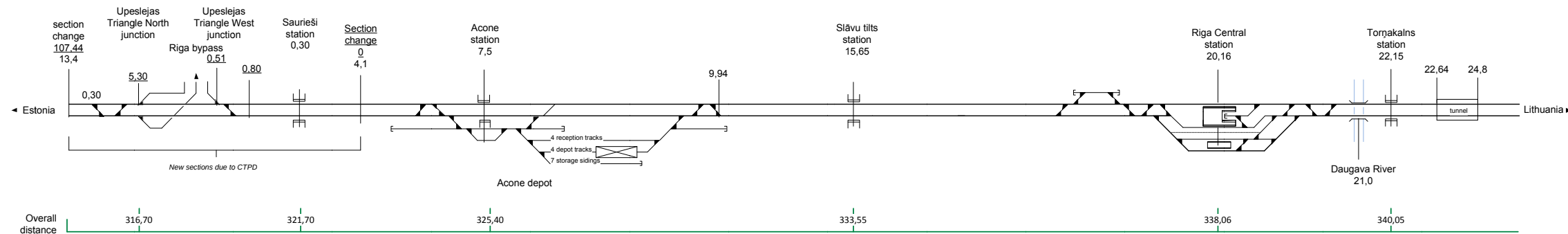


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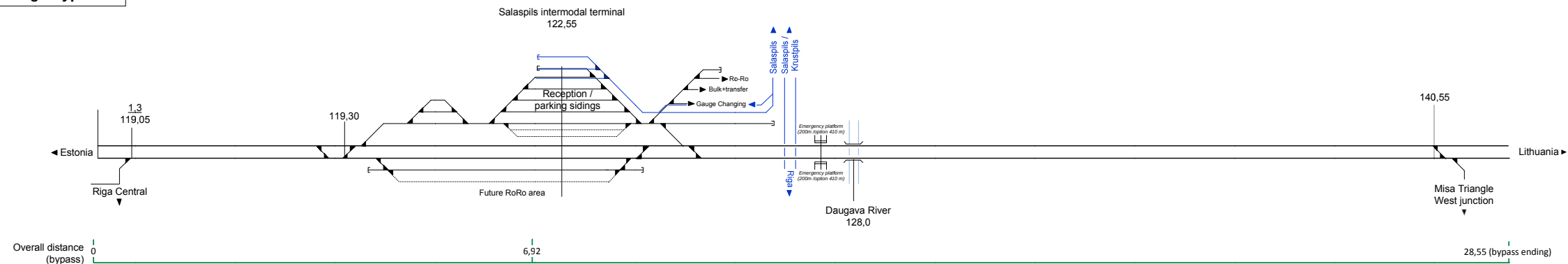


Track Map – Recommended Infrastructure for time horizon 2056

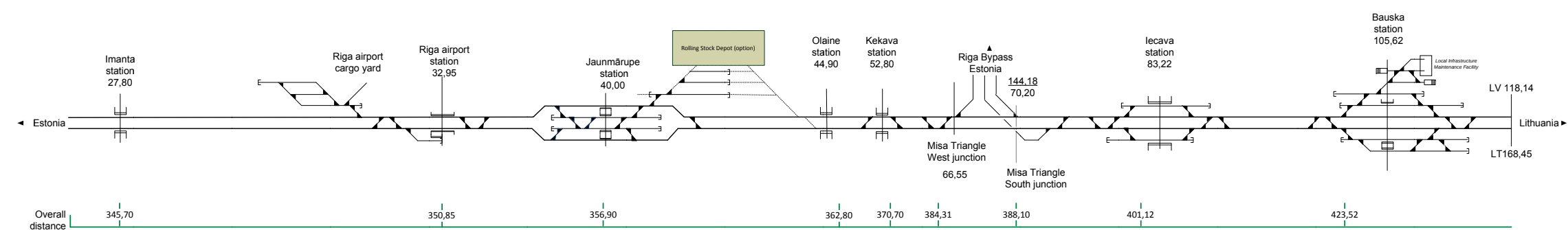
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Rīga Bypass

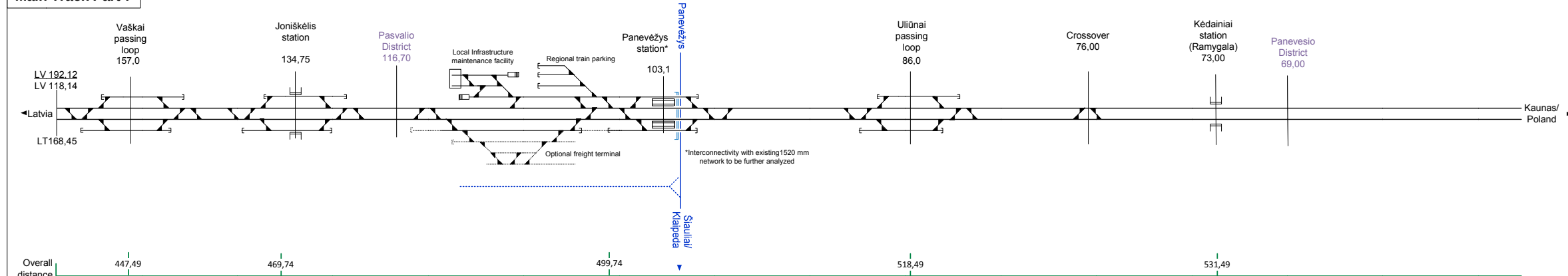


Main Track Part 6

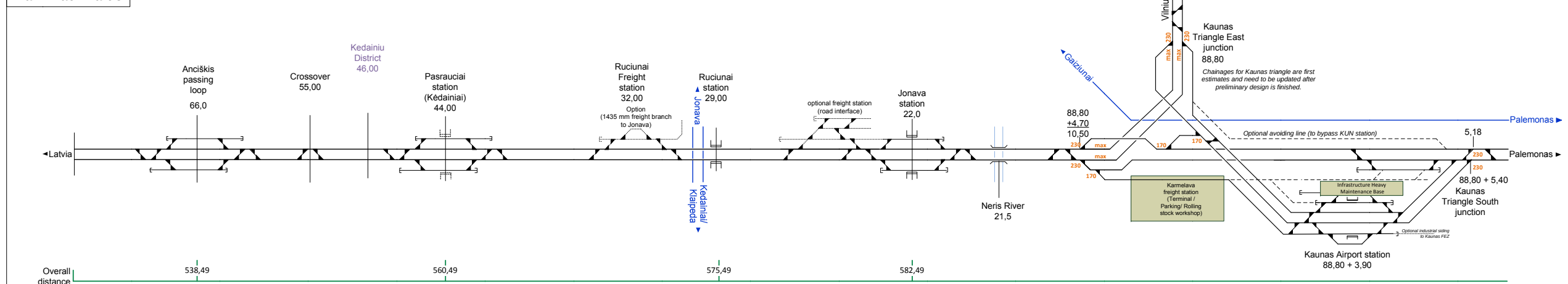


Track Map – Recommended Infrastructure for time horizon 2056

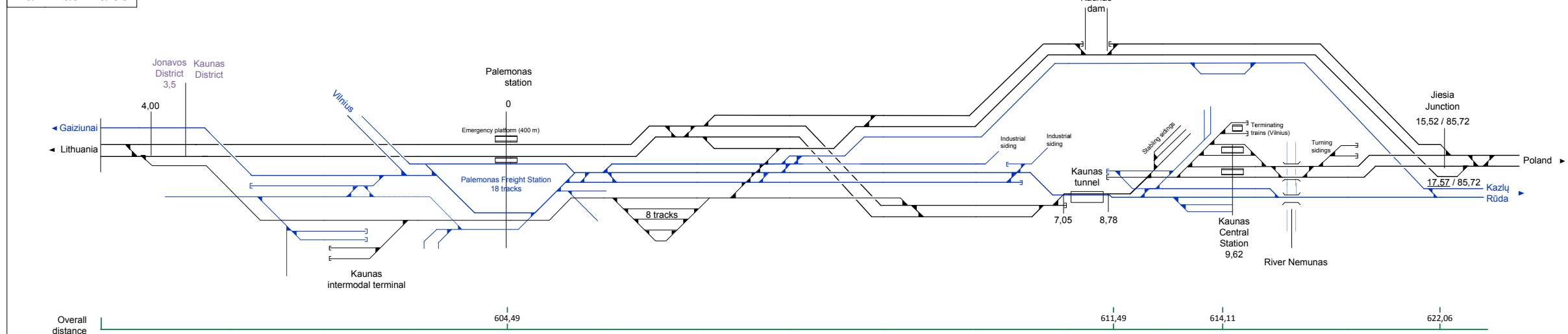
Main Track Part 7



Main Track Part 8

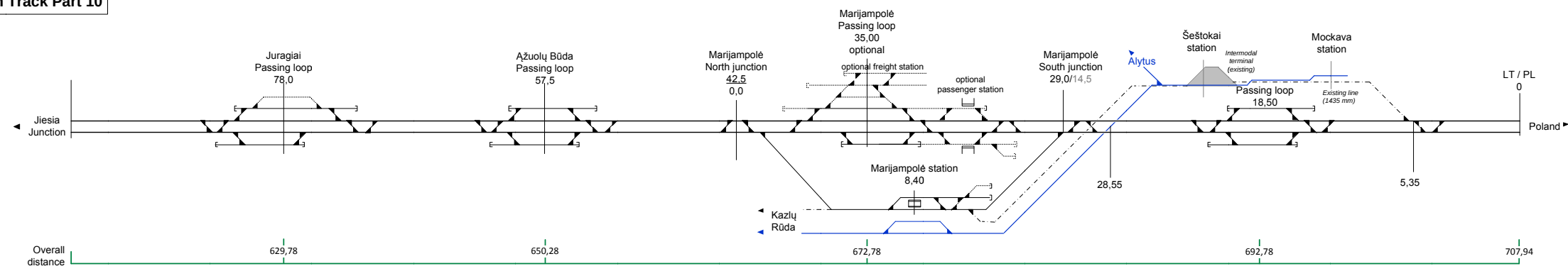


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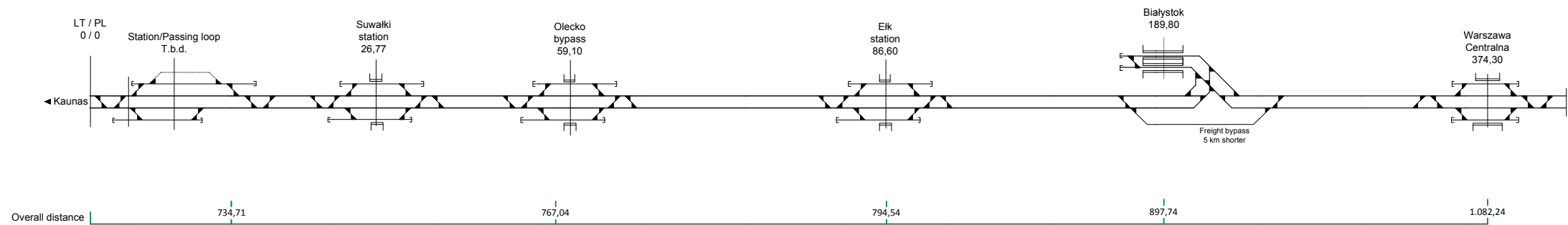


Track Map – Recommended Infrastructure for time horizon 2056

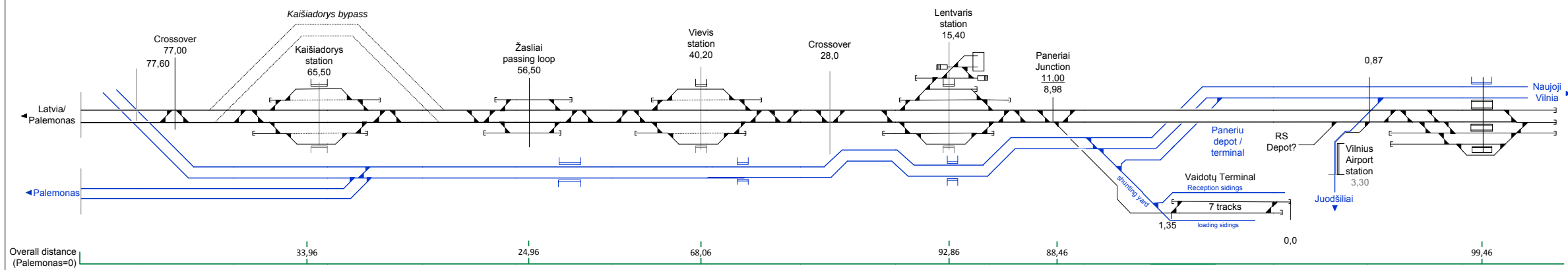
Main Track Part 10



Poland



Kaunas - Vilnius



ANNEX 2: List of freight and passenger locomotives

Model/Class	Supplier	Transport type (passenger, freight)	Train Control System	Motive power type	Type		Track gauge	track/ structure clearance	UIC classifi- cation	Number of axles	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting tractive effort (kN)	Indicative Price	Standards	
					Electric current (electric locomotiv es	diesel type											TSI	EU emission standard
Vectron MS	Siemens Mobility	Passenger, Freight	ERTMS (ETCS L2 + GSM- R), +1 addition al	electric	25 kV AC 50 Hz 15 kV AC 16.7 Hz 3 kV DC 1,5 kV DC		1435	GB	Bo'Bo'	4	18980	6400	160/200	87	300	3-5 Mill. EUR	1, 3, 5, 6, 7, 8	
Vectron AC high Power	Siemens Mobility	Passenger, Freight	ERTMS (ETCS L2 + GSM- R), +1 addition al	electric	25 kV AC 50 Hz 15 kV AC 16.7 Hz		1435	GB	Bo'Bo'	4	18980	6400	160/200	85	300	3-5 Mill. EUR	1, 3, 5, 6, 7, 8	
Vectron AC medium Power	Siemens Mobility	Passenger, Freight	ERTMS (ETCS L2 + GSM- R), +1 addition al	electric	25 kV AC 50 Hz 15 kV AC 16.7 Hz		1435	GB	Bo'Bo'	4	18980	5600	160	82	300	3-5 Mill. EUR	1, 3, 5, 6, 7, 8	
Vectron DC	Siemens Mobility	Passenger, Freight	ERTMS (ETCS L2 + GSM- R), +1 addition al	electric	3 kV DC		1435	GB	Bo'Bo'	4	18980	5200	160/200	80	300	3-5 Mill. EUR	1, 3, 5, 6, 7, 8	
Vectron DE	Siemens Mobility	Passenger, Freight	ERTMS (ETCS L2 + GSM- R), +1 addition al	diesel- electric		diesel MTU 16V 4000 R84	1435	GB	Bo'Bo'	4	18980	2400	160	82	275	3-5 Mill. EUR	1, 3, 5, 6, 7, 8	Stage IIIB
Smartron	Siemens Mobility	Freight (only Germany)	PZB,LZB	electric	15 kV 16.7 Hz		1435	GB	Bo'Bo'	4	18980	5600	140	83	300	estimated 3 Mill. EURO	1, 3, 5, 6, 7, 8	
EURO 3000/4000	Stadler AG	Freight/Passen ger	unknow n	diesel- electric		EMD 12- 710G3C-U2 (3000)	1435, 1668	unknown	Bo'Bo' (3000)	4	21500	2460	120 freight 200 passenger	85	280 kN (freight) 178 (passenger) 305 (AC passenger))	unknown	1	

Model/Class	Supplier	Transport type (passenger, freight)	Train Control System	Motive power type	Type		Track gauge	track/ structure clearance	UIC classifi- cation	Number of axles	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting tractive effort (kN)	Indicative Price	Standards	
					Electric current (electric locomotiv es	diesel type											TSI	EU emission standard
EURO 4000	Stadler AG	Freight/Passenger	unknown	diesel-electric		EMD 16-710G3C-U2 (4000)	1435, 1668	unknown	Co'Co' (4000)	6	23020	3178	120 freight 200 passenger	126	400 (freight) 325 (passenger)	~ 3.3 Mio EUR	1	
Eurodual (4-axle)	Stadler AG	Freight/Passenger	UK-System	electric/diesel-electric	25 kV AC 50 Hz	unknown	1435	unknown	Bo'Bo'	4	unknown	708 (diesel), 4000 (electric)	160	86	317	~ 3.68 Mio EUR	common Info TSI compliance is existing	Stage IIIB
Eurodual (6-axle)	Stadler AG	Freight	ERTMS (ETCS L2 + GSM-R), +1 additional	electric/diesel-electric	25 kV AC 50 Hz 15 kV AC 16.7 Hz	unknown	1435	G1	Co'Co'	4	23020	2800 (diesel), 6150 (electric)	120	126	500	5.5 Mio EUR	common Info TSI compliance is existing	Stage IIIB
Bitrac	CAF	Freight??	ERTMS, ASFA	electric/diesel-electric	3 kV DC other maybe possible	2x1800 kW MTU 12V 4000 R43L	1435 1668	GB	Co'Co'/Bo'Bo'	6/4	22410	2900 (diesel) 4450 (electric, Co'Co') 4000 (electric, Bo'Bo')	120 (Co'Co') 180 (Bo'Bo')	130 (Co'Co') 90 (Bo'Bo')	440 (Co'Co') 300 (Bo'Bo')	unknown	No official information	
Traxx 3 (Traxx F160 AC3, MS3, DC3, Traxx P160 AC3)	Bombardier Transportation	Passenger (Regional), Freight	ERTMS, + additional	electric	25 kV AC 50 Hz 15 kV AC 16.7 Hz 3 kV DC 1,5 kV DC	Last mile diesel,	1435	GB	Bo'Bo'	4	18900	5600 (cont.) 180 (Last Mile)	160 (Passenger), 189 optional 140 (Freight) 60 (Last Mile)	86	300	3.2 - 4.2 Mill. EUR	1, 3, 5, 6, 7, 8	Stage IIIB
Traxx Diesel	Bombardier Transportation	Passenger (Regional)	ERTMS, + additional	Diesel		Diesel-electric 4x Caterpillar C18	1435	GB	Bo'Bo'	4	18900	2252	160	83	300	3 Mill. EUR	1, 3, 5, 6, 7, 8	Stage IIIB
Prima II	ALSTOM Transport	Passenger and Freight	ETCS + additional	electric	25 kV AC 50 Hz 15 kV AC 16.7 Hz 3 kV DC 1,5 kV DC		1435	unknown	Bo'Bo'	4	19500	6400 (max)	140 - 200	90	320	3.75 Mio EUR	No official information	
RZD 2ES5	ALSTOM Transport Transmashholding	Freight	Russia System	electric	25 kV 50 Hz AC		1520	unknown	Bo'Bo'+Bo'Bo'	8	35000	8400 (cont)	120	200	833	unknown	Not for European Market	
RZD EP20	ALSTOM Transport Transmashholding	Passenger	Russia System	electric	3 kV DC 25 kV 50 Hz AC		1520	unknown	Bo'Bo'Bo'	6	22550	7200 (max) 6600 (cont)	200	129	350	5 Mill. EUR	Not for European Market	

Model/Class	Supplier	Transport type (passenger, freight)	Train Control System	Motive power type	Type		Track gauge	track/structure clearance	UIC classification	Number of axles	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting tractive effort (kN)	Indicative Price	Standards	
					Electric current (electric locomotives)	diesel type											TSI	EU emission standard
Schnellzuglokomotive (109E, 109E2, 109E3)	Skoda Transportation	Passenger	ERTMS (ETCS L2 + GSM-R), +1 additional	electric	25 kV 50 Hz 15 kV 16.7 Hz 3 kV DC		1435	unknown	Bo'Bo'	4	unknown	7.200 (max.) 6400 (cont.)	160-200	88	275	ca. 120 Mill. CZK, 4,7 Mill. Euro	Complete TSI in 2013	
Universallokomotive	Skoda Transportation	Passenger, Freight	ERTMS (ETCS L2 + GSM-R), +1 additional	electric	25 kV AC 50 Hz 15 kV AC 16.7 Hz 3 kV DC 1,5 kV DC		1435-1520	unknown	Bo'Bo'	4	unknown	5000-6400	160	85-100	300-350	ca. 120 Mill. CZK, 4,7 Mill. Euro	No official information	
Dragon DC	Newag	Freight	ERTMS (ETCS L2 + GSM-R), +1 additional	electric	3 kV DC	Last mile diesel, diesel-electric possible	1435	unknown	Co'Co'	6	20330	5000	120	119	374, 450 with max. load option	15 Mill. PLN, ca. 3.51 Mio EUR	common Info TSI compliance is existing	Stage IIIB
Dragon AC	Newag	Freight	ERTMS (ETCS L2 + GSM-R), +1 additional	electric	25 kV AC 50 Hz 15 kV AC 16.7 Hz	Last mile diesel, diesel-electric possible	1435	unknown	Co'Co'	6	20330	7200	120	119	374, 450 with max. load option	+ 3% to DC	common Info TSI compliance is existing	Stage IIIB
Dragon MS	Newag	Freight	ERTMS (ETCS L2 + GSM-R), +1 additional	electric	25 kV 50 Hz 15 kV 16.7 Hz 3 kV DC	Last mile diesel, diesel-electric possible	1435	unknown	Co'Co'	6	20330	7200	120	119	374, 450 with max. load option	+ 15% to DC	common Info TSI compliance is existing	Stage IIIB
Dragon diesel	Newag	Freight	ERTMS (ETCS L2 + GSM-R), +1 additional	diesel		diesel	1435	unknown	Co'Co'	6	20330	2300	120	119	370	ca. 15 Mill. PLN, ca. 3.51 Mio EUR	common Info TSI compliance is existing	

Model/Class	Supplier	Transport type (passenger, freight)	Train Control System	Motive power type	Type		Track gauge	track/structure clearance	UIC classification	Number of axles	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting tractive effort (kN)	Indicative Price	Standards	
					Electric current (electric locomotives)	diesel type											TSI	EU emission standard
Dragon 2	Newag	Freight	ERTMS (ETCS L2 + GSM-R), +1 additional	electric	25 kV 50 Hz 15 kV 16.7 Hz 3 kV DC	Last mile diesel, diesel-electric possible		unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	common Info full TSI 2014 compliance is existing	
Griffin E4DCU/E4DCP	Newag	Passenger, Freight	ERTMS (ETCS L2 + GSM-R), +1 additional	electric	3 kV DC		1435	unknown	Bo'Bo'	4	19900	5600	160 - E4DCU 200 - E4DCP	79	310	18.35 PLN 4.29 Mill. EUR	common Info TSI compliance is existing	
Griffin E4ACU/E4ACP	Newag	Passenger, Freight	ERTMS (ETCS L2 + GSM-R), +1 additional	electric	25 kV AC 50 Hz 15 kV AC 16.7 Hz		1435	unknown	Bo'Bo'	4	19900	5600	160 - E4ACU 200 - E4ACP	84	310	+ 3% to DC	common Info TSI compliance is existing	
Griffin E4MSU/E4MSP	Newag	Passenger, Freight	ERTMS (ETCS L2 + GSM-R), +1 additional	electric	25 kV 50 Hz 15 kV 16.7 Hz 3 kV DC		1435	unknown	Bo'Bo'	4	19900	5600	160 - E4MSU 200 - E4MSP	88	310	+ 15% to DC	common Info TSI compliance is existing	
Griffin D4MSU	Newag	Passenger, Freight	ERTMS (ETCS L2 + GSM-R), +1 additional	diesel		diesel	1435	unknown	Bo'Bo'	4	19900	2300	160	79	248	unknown	common Info TSI compliance is existing	
6Dg, 6Dg/A, 6Dg/B	Newag	Shunting	ERTMS (ETCS L2 + GSM-R), +1 additional	diesel-electric		V12 diesel	1435	GC	Bo'Bo'	4	14240	708	90	70	219	unknown	No official information	Stage IIIB
15D/16D	Newag	Shunting	ERTMS (ETCS L2 + GSM-R), +1 additional	diesel-electric		V12 diesel	1435, 1520	unknown	Co'Co'	6	16970/17029	1550	100	116	372,8	1.83 Mill. EUR	No official information	Stage IIIA
311D	Newag		ERTMS (ETCS L2 + GSM-R), +1	diesel-electric		V12 diesel	1435, 1520	unknown	CoCo	6	17550	2133	100	118	392	unknown	No official information	

Model/Class	Supplier	Transport type (passenger, freight)	Train Control System	Motive power type	Type		Track gauge	track/structure clearance	UIC classification	Number of axles	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting tractive effort (kN)	Indicative Price	Standards	
					Electric current (electric locomotives)	diesel type											TSI	EU emission standard
			additional															
6DI	Newag	Shunting	ERTMS (ETCS L2 + GSM-R), +1 additional	diesel-electric		C18 diesel	1435	unknown	Bo'Bo'	4	14240	563	90	70	219	3.85 Mill. PLN	No official information	Stage IIIB
18D	Newag	Shunting	ERTMS (ETCS L2 + GSM-R), +1 additional	diesel-electric		C18 diesel	1435	unknown	Bo'Bo'	4	14240	563	90	70	219	unknown	No official information	Stage IIIB
Travca L-9202 (Prototyp)	Patentes Talgo	Passenger	??	electric			1435/1668	unknown	Bo'Bo'	4	19400	3200 (cont) 3600 (max)	260	72	160	unknown	No official information	
Class 111Eb Gama	Pesa	Passenger, Freight	ERTMS (ETCS L2 + GSM-R), +1 additional	electric	3 kV DC/15 kV AC 16.7 Hz/25 kV AC 50 Hz		1435	unknown	Bo'Bo'	4	19800	5600	160 (freight), 190 (passenger)	84		unknown	full TSI compliance on work since 2017	
Class SU160 (111Dd Gama)	Pesa	Passenger	ERTMS (ETCS L2 + GSM-R), +1 additional	diesel-electric		V16 diesel, electric transmission	1435	unknown	Bo'Bo'	4	19800	2400	160	84		13.12 Mill. PLN 3.07 Mill. EUR	full TSI compliance on work since 2017	
G 6	Vossloh	Shunting	unknown	diesel-hydraulic		Cummins, MTU, Caterpillar, diesel-hydraulic	1435	GB	C	3	10790	650 (cont.)	80	67,5	219	1.4 Mio EUR	No official information	
G 12 / DE 12	Vossloh	Shunting, Freight	unknown	diesel-hydraulic and diesel-electric		MTU 8V 4000 R43(L) G 12 dieselhydraulic DE 12 dieselelectric	1435	GB	B'B' - G 12 Bo'Bo' - DE 12	4	17000	1200 (max)	100 - 120	90	291	unknown	full TSI compliance since 2013/2014	
G 18 / DE 18	Vossloh	Shunting, Freight	unknown	diesel-hydraulic and diesel-electric		MTU 12V 4000 R43(L) G 12 dieselhydraulic DE 12	1435	GB	B'B' - G 12 Bo'Bo' - DE 12	4	17000	1800 (max)	100 - 120	90	291	3.2 Mio EUR	full TSI compliance since 2013/2014	

Model/Class	Supplier	Transport type (passenger, freight)	Train Control System	Motive power type	Type		Track gauge	track/ structure clearance	UIC classifi- cation	Number of axles	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting tractive effort (kN)	Indicative Price	Standards	
					Electric current (electric locomotiv es	diesel type											TSI	EU emission standard
						dieselectric												
Butler	Stadler AG	Shunting	ETCS L2 possible	2-Power	25 kV AC 50 Hz 15 kV AC 16.7 Hz	diesel- electric	1435	GB	Bo	2	9132	1500 (electric) 290 (diesel)	120	45	150	2.55 Mio EUR	No official informatio n	
D25 B	Gmeinder Lokomotiven	Shunting	unknown	diesel		MB OM424, Deutz BF12L513	1435	GB	B	2	8240	380	15	45	145	unknown	No official informatio n	
D60 C	Gmeinder Lokomotiven	Shunting	unknown	diesel- hydraulic		MTU 12V 1600 R50	1435	GB	C	3	10760	690	40	67,5	218	unknown	No official informatio n	
D75 BB	Gmeinder Lokomotiven	Shunting	unknown	diesel		CAT 3412 E DI-TTA	1435	GB	B'B'	4	12400	571	25	80	240	unknown	No official informatio n	
D75 BB Hybrid	Gmeinder Lokomotiven	Shunting	unknown	diesel		unknown	1435	GB	Bo'Bo'	4	13000	600	60	80	260	unknown	No official informatio n	
MMT-S-400-BDE (2-axle)	Schalkers Eisenhütte	Shunting	unknown	diesel- electric		unknown	1000 - 1600	GB	Bo	2	8000	390	50	45	150	unknown	No official informatio n	
MMT-S-400-BDE (4-axle)	Schalkers Eisenhütte	Shunting	unknown	diesel- electric		unknown	1000 - 1600	GB	Bo'Bo'	4	17000	1800	60	90	290	unknown	No official informatio n	

Table 1: List of freight and passenger locomotives

ANNEX 3: List of passenger and freight wagons

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/structure clearance	Number of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passengers	Seats			
Sleeper	Stadler AG	Sleeper	1520/1435	unknown	4	26.400	160?	160?	unknown	-	unknown	unknown	unknown	unknown	unknown	unknown	unknown	1.4 - 2.0 Mio EUR	
Sundeck driving Coach 316B	Pesa	Passenger	1435	G2	4	26270	160	160	Disc brake and em-rail brake, KE-PR-Mg	-	74			229	85		1060 (entrance from 300 to 1060 mm platform height possible with step tread),	1.4 – 2.0 mill. EUR	
Sundeck 416B	Pesa	Passenger	1435	G2	4	25800	160	160	Disc brake and em-rail brake, KE-PR-Mg	-	71			260	130		1060 (entrance from 300 to 1060 mm platform height possible with step tread)	1.4 – 2.0 mill. EUR	
Viaggio Classic Sleeper	Siemens Mobility	Sleeper	1435/1520	GB	4	26.400	160/200	160/200	disc, magnetic track brake	-	47	52			40-80	40-80	1250	1.4 – 2.0 mill. EUR	TSI LOC&PAS, TSI-Noise, TSI PRM
Viaggio Light	Stadler AG	Passenger	1435	GB	4	26.400	160	160	disc, magnetic track brake	-	47	52			48-90	48-90	600/650/800/1030	1.5 Mio EUR	TSI LOC&PAS, TSI-Noise, TSI PRM

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/ structure clearance	Number of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passeng ers	Seats			
Viaggio Comfort	Siemens Mobility	Passenger	1435	GB	4	26.850 (Steuer wagen), 26.500 (First/Bi stro/Eco nomy Wagen 1 (3 Stck.)), 26.450 (Econo my Wagen 2)	230	230	disc, magnetic track brake	-	46	61			48-90	48-90	1250	2.1 - 2.3 Mio EUR	TSI LOC&PAS, TSI-Noise, TSI PRM
Viaggio Twin	Siemens Mobility	Passenger	1435	G2	4	26.800	189	189	disc, magnetic track brake	-	49	69			unknow n	60- 140	600/760	1.4 – 2.0 mill. EUR	TSI LOC&PAS, TSI-Noise, TSI PRM
Twindexx Vario (middle wagon, cab car)	Bombardier Transportati on	Passenger	1435	GC	4	26800 - middle wagon 27270 - cab car	160 (optional 189)			-	50 - middle wagon 58 - cab car				281 - middle wagon 213 - cab car	121 - middl e wago n 73 - cab car	380 - 760	1.93 mill. EUR	TSI LOC&PAS, TSI-Noise, TSI PRM

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/structure clearance	Number of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passengers	Seats			
single deck coaches	Bombardier Transportation	Passenger	1435	GB	4	27300 (cab car, middle wagon) 27270 (auxiliary power unit)	160			-					186 - cab car 200/218 - middle wagon 173 - auxiliary power unit	78 - cab car 86/95 - middle wagon 69 - auxiliary power unit	760	unknown	TSI LOC&PAS, TSI-Noise, TSI PRM
168A modernisation	Newag	Passenger	1435	GB	4	24500	160	160	block brake	-	43		-	-	56	56		1.0 - 1.6 mill. EUR	
155A modernisation	Newag	Mixed Passenger and Buffet	1435	GB	4	26400	160	160	ep disk brake and em rail brake		47				30	30		1.0 - 1.6 mill. EUR	
134Ac modernisation	Newag	Courette	1435	GB	4	26400	200	200	disk brake		40,5				60	60		1.3 - 1.7 mill. EUR	TSI LOC&PAS, TSI-Noise, TSI PRM
WR89 modernisation	Newag	Dining	1435	GB	4	26400	160	160	ep disk brake and em rail brake		45				39	39		1.8 - 2.2 Mio EUR	TSI LOC&PAS, TSI-Noise, TSI PRM
Closed Car Transport	Tatravagónka	Car	1435	G1, G2	4	27400	120	100	KE-GP-A	16	35	60			-	-		unknown	TSI WAG, TSI-Noise

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/ structure clearance	Number of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passengers	Seats			
Open Car Transport	Tatravagónka	Car	1435	GB	3	27000	120	120 (running) 100 (braking)	??	18 (ending axle) 16 (middle axle)	28,5	48,5			-	-		unknown	TSI WAG, TSI-Noise
One-Level Open Car Transport	Greenbrier	Car	1435	G1	4	33000	120		GP-A-K	22,5	30,7	90			-	-	1165	unknown	TSI WAG, TSI-Noise
Two-Level Open Car Transport	Greenbrier	Car	1435	G1	4	31000	120		GP-A-K	18	34	68			-	-		unknown	TSI WAG, TSI-Noise
Flat Wagon	Tatravagónka	Freight	1435	G1	6	13200	120	120 (running) 100 (braking)	??	22,5	28,5	135	36		-	-		50,000-75,000 EUR	TSI WAG, TSI-Noise
Flat Wagon	Tatravagónka	Freight	1435	G1	4	19900		120 (axle load 20t) 100 (axle load 22,5t)	??	20 22,5	25	80 (axle load 20t) 90 (axle load 22,5t)	49		-	-		50,000-75,000 EUR	TSI WAG, TSI-Noise
Flat Wagon	Tatravagónka	Freight	1435	GB	4	20150		120 (axle load 20t) 100 (axle load 22,5t)	??	22,5	25,5	90	51,5		-	-		50,000-75,000 EUR	TSI WAG, TSI-Noise
Covered 4-axle flat wagon	Greenbrier	Freight	1435	GB	4	20000	120	100	GP-A (K)	22,5	30	90			-	-	1200	100,000 - 140,000 EUR	TSI WAG, TSI-Noise

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/structure clearance	Number of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passengers	Seats			
Flat Wagon	Tatravagónka	Freight	1435	G1	6	16400	120	100	??	22,5	43,8	135			-	-	1400	50,000-75,000 EUR	TSI WAG, TSI-Noise
Flat Wagon	Tatravagónka	Freight	1435	G1	4	13900	120	100	GP-A	25	20,8	100	35,85/37,2		-	-		50,000-75,000 EUR	TSI WAG, TSI-Noise
Flat Wagon	Tatravagónka	Freight	1435	G1	4	13900	120	100	GP-A	25	23,4	100	19,2		-	-		50,000-75,000 EUR	TSI WAG, TSI-Noise
Flat Wagon	Tatravagónka	Freight	1435	G1	6	16400	120	120 100 (braking)	??	22,5	29,4	135	46		-	-		50,000-75,000 EUR	TSI WAG, TSI-Noise
Flat Wagon Modular Carrier	Tatravagónka	Freight	1435	G0	4	18240	120	100	compact brake CFCB	18	23,5	72			-	-		unknown	TSI WAG, TSI-Noise
Flat Wagon Modular Carrier	Tatravagónka	Freight	1435	G1	4	25740	100	100	compact brake CFCB	20	28,5	80			-	-		unknown	TSI WAG, TSI-Noise
Flat Wagon Timber Transport	Tatravagónka	Freight	1435	G1	2x2	29570	120	100	??	25	28	100			-	-		unknown	TSI WAG, TSI-Noise
Flat Wagon Timber Transport	Tatravagónka	Freight	1435	G2	4	20770			??		22				-	-	1270	unknown	TSI WAG, TSI-Noise
4-axle Steel Product Wagon	Greenbrier	Freight	1435	G1	4	12825		120 (58t) 100 (90t)	GP-A	22,5	21,5	90			-	-		70,000 - 100,000 EUR	TSI WAG, TSI-Noise

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/structure clearance	Number of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passengers	Seats			
4-axle Steel Product Wagon	Greenbrier	Freight	1435	G1	4	13740		120 (80t) 100 (100t)	GP-A (K)	22,5	22	100			-	-	1600, 1700	70,000 - 100,000 EUR	TSI WAG, TSI-Noise
Transportation of Steel Coils	Tatravagónka	Freight	1435	GB	4	12040		120 (axle load 20t) 100 (axle load 25t)	??	22,5	24	90			-	-		70,000 - 100,000 EUR	TSI WAG, TSI-Noise
Transportation of Steel Coils	Tatravagónka & Greenbrier	Freight	1435	G1	4	12040	120	100 - T, G 120 - G at 58t	GP-A (K)	22,5	G: 21,83 T: 23, 22 (with hand brake), 21,83 (without hand brake)	G: 90 T: 90, 100			-	-		70,000 - 100,000 EUR	TSI WAG, TSI-Noise
Covered 4-axle Steel Product Wagon	Greenbrier	Freight	1435	G1	4	12040		120 (58t) 100 (90t)	GP-A (K)	22,5	22,7	90			-	-		100,000 - 140,000 EUR	TSI WAG, TSI-Noise
4-axle Steel Product Wagon	Greenbrier	Freight	1435	G1	4	13900	120	100	Integrated Clasp Brake System ICB	25	20,7				-	-	1620, 1700	unknown	TSI WAG, TSI-Noise
Covered Wagon	Tatravagónka	Freight	1435	G1	6	13200	120	120 (running) 100 (braking)	??	22,5	34	135			-	-		unknown	TSI WAG, TSI-Noise

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/ structure clearance	Number of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passeng ers	Seats			
Covered Wagon	Tatravagónk a	Freight	1435	G1	4	23270	120	100	KE-GP-A	22,5	25,9	90	62,5	168	-	-	1200	100,000 - 140,000 EUR	TSI WAG, TSI-Noise
Covered Wagon	Tatravagónk a	Freight	1435	G1	4	23270	120	100	KE-GP-A	22,5	27,2	90	61,1	164,2	-	-	1200	100,000 - 140,000 EUR	TSI WAG, TSI-Noise
Covered Wagon	Tatravagónk a	Freight	1520		4	18900		120	??	25	28	100	53,6	162	-	-	1265	100,000 - 140,000 EUR	TSI WAG, TSI-Noise
Covered Wagon	Tatravagónk a	Freight	1435		4	23350	120	100	GP-A	25	27,5	100	62,5	167,8	-	-	1200	100,000 - 140,000 EUR	TSI WAG, TSI-Noise
4-axle sliding wall wagon	Greenbrier	Freight	1435	G1	4	23900	120	100	GP-A (K)	22,4	23,7/ 27,4 28,8 (II)	100/ 90	63,3 62,05 (II)	170 168,7 (II)	-	-	1200	100,000 - 140,000 EUR	TSI WAG, TSI-Noise
Hopper Wagon 85 m ³	Greenbrier	Freight	1435	G1	4	13500	120	100	GP-A (K)	22,5	25,6	90		85	-	-		60,000 - 90,000 EUR	TSI WAG, TSI-Noise
Hopper Wagon 87 m ³	Greenbrier	Freight	1435	G1	4	13500	120	100	KE-GP-A (K)	22,5	24,9	90	63,3 (62,05)	87	-	-		60,000 - 90,000 EUR	TSI WAG, TSI-Noise
Hopper Wagon 86.6 m ³	Greenbrier	Freight	1435	G2	4	12540	120	100	GP-A (K)	22,5	24	90			-	-		60,000 - 90,000 EUR	TSI WAG, TSI-Noise
Hopper Wagon 77 m ³	Greenbrier	Freight	1435	G1	4	12540	120	100	GP-A (K)	22,5	23,7	66,3		77	-	-		60,000 - 90,000 EUR	TSI WAG, TSI-Noise

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/ structure clearance	Number of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passengers	Seats			
Open High Sided Wagon	Tatravagónka	Freight	1435		4	15740	120	100	GP-A	22,5	28,5	90	38,5	80,5	-	-		50,000 - 75,000 EUR	TSI WAG, TSI-Noise
Open High Sided Wagon	Greenbrier	Freight	1435	G1	4	15740	120	100	GP (K)	22,5	24	90	39,4		-	-		50,000 - 75,000 EUR	TSI WAG, TSI-Noise
Open High Sided Wagon	Tatravagónka	Freight	1435	G1	4	15740		120 (axle load 20t) 100 (axle load 22,5t)	??	22,5	24,6	90	39,4	82,7	-	-	1235	50,000 - 75,000 EUR	TSI WAG, TSI-Noise
Hopper Wagon 95 m ³	Tatravagónka & Greenbrier	Freight	1435	G1	4	T: 16000 G: 17170	120	100	GP-A-K	22,5	T: 20,6 G: 23,5	90		95	-	-		60,000 - 90,000 EUR	TSI WAG, TSI-Noise
Hopper Wagon 101 m ³	Tatravagónka	Freight	1435	G1	4	16000	120	100	Compact brake IBB 10	22,5	21	90		101	-	-		60,000 - 90,000 EUR	TSI WAG, TSI-Noise
Hopper Wagon 102 m ³	Tatravagónka & Greenbrier	Freight	1435	G1	4	T: 16000 G: 15400	120	100	KE-GP-A (K)	22,5	T: 21,9 G: 20,7	90		102	-	-		60,000 - 90,000 EUR	TSI WAG, TSI-Noise
Hopper Wagon 103 m ³	Tatravagónka	Freight	1435	G1	4	16000	120	100	compact brake CFCB	22,5	21,2	90		103	-	-		60,000 - 90,000 EUR	TSI WAG, TSI-Noise
Hopper Wagon 130 m ³	Tatravagónka & Greenbrier	Freight	1435	G1	4	T: 16000 G: 20000	120	100	KE-GP-A (K)	22,5	T: 25 G: 22	90		130	-	-		60,000 - 90,000 EUR	TSI WAG, TSI-Noise

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/ structure clearance	Num- ber of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passeng ers	Seats			
4-axle Hopper Wagon 90 m ³	Greenbrier	Freight	1435	G1	4	17180	120	100	KE-GP-A (K)	22,5	24	90		90	-	-		60,000 - 90,000 EUR	
4-axle Hopper Wagon 82 m ³	Greenbrier	Freight	1435	G1	4	19040	120	100	KE-GP-A (K)	22,5	24,1	90		82,5	-	-	700 (ground level)	60,000 - 90,000 EUR	
Hopper Wagon	Tatravagónk a	Freight	1435	G1	4	15740			??	22,5	24,5	90		82,5	-	-	1235	60,000 - 90,000 EUR	TSI WAG, TSI-Noise
4-axle self- unloading Hopper Wagon	Greenbrier	Freight	1435	GB	4	15800	120	100	KE-GP-A(k) - 2x10"	22,5	23	90			-	-		60,000 - 90,000 EUR	
Hopper wagon	Tatravagónk a (92t), Greenbrier (105t)	Freight	1435	GB	4	T92: 16800 G105: 16900	120	100	G: GP-K	22,5	T92: 22,5 G105: 24,5	90		92	-	-		60,000 - 90,000 EUR	TSI WAG, TSI-Noise
Hopper Wagon	Tatravagónk a	Freight	1435	GB	2x6	2x15085	120	100	brake blocks of Bgu- configuratio n, hand brake	25	2x35	2x150		2x70	-	-		60,000 - 90,000 EUR	

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/ structure clearance	Number of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passengers	Seats			
Hopper Wagon 80 m ³	Tatravagónka	Freight	1435		4		120	100	??	22,5	25,5	90		80	-	-		60,000 - 90,000 EUR	
Hopper Wagon 85 m ³	Tatravagónka	Freight	1435	GC	4	14040	120	100	brake blocks of Bg-configuration, hand brake	25	28,2	100		85	-	-		60,000 - 90,000 EUR	
Container - Intermodal Wagon	Tatravagónka	Freight	1435		4	40': 13540 45': 15145			disc brake	22,5	40': 16,2 45': 16,5	90			-	-	40': 1155 45': 1105	50,000 - 75,000 EUR	TSI WAG, TSI-Noise
Container - Intermodal Wagon	Tatravagónka	Freight	1435		4	17350			compact brake CFCB	22,5	16,5	90			-	-	1105	50,000 - 75,000 EUR	
Container - Intermodal Wagon	Tatravagónka	Freight	1435		4	29590		120 (axle load 20t) 100 (axle load 22,5t)	KE-GP-A	22,5	29	135			-	-	1155	90,000 - 110,000 EUR	
Container - Intermodal Wagon	Tatravagónka & Greenbrier	Freight	T: 1435/1520 /1668 G: 1435	G1	6	29.590		100 (135t) 120 (120t)	G: GP-A(K)	T: 22,5, 23,5 G: 22,5	T: 29, 35 G: 27,3	T: 135, 141 G: 135			-	-	1155	90,000 - 110,000 EUR	TSI WAG, TSI-Noise

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/ structure clearance	Number of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passeng ers	Seats			
Container - Intermodal Wagon	Tatravagónk a	Freight	1435		6	33.480		120 (axle load 20t) 100 (axle load 22,5t)	??	22,5	30	135			-	-	1155	90,000 - 110,000 EUR	
Pocket Wagon	Tatravagónk a	Freight	1435		6	34.030	120	120 (axle load 20t) 100 (axle load 22,5t)	??	22,5 - S 20 - SS	35	135 - S 120 - SS			-	-		90,000 - 110,000 EUR	
Pocket Wagon	Tatravagónk a	Freight	1435		6	34.200	120	120 (axle load 20t) 100 (axle load 22,5t)	??	22,5 - S 20 - SS	35	136 - S 120 - SS			-	-		90,000 - 110,000 EUR	
Pocket Wagon	Tatravagónk a	Freight	1435		6	34.200	120	120 (axle load 20t) 100 (axle load 22,5t)	??	22,5 - S 20 - SS	36,2	137 - S 120 - SS			-	-		90,000 - 110,000 EUR	
Container - Intermodal Wagon	Tatravagónk a & Greenbrier	Freight	1435		4	T: 19830 G: 19640		120 (axle load 20t)	G: GP-A(K)	22,5	19	90			-	-	1155	50,000 - 75,000 EUR	
Container - Intermodal Wagon	Tatravagónk a	Freight	1435		4	25.940		120 (axle load 20t) 100 (axle load 22,5t)	??	22,5	21,5	90			-	-	1155	90,000 - 110,000 EUR	TSI WAG

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/structure clearance	Number of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passengers	Seats			
Container - Intermodal Wagon	Tatravagónka	Freight	1435		4	26.390		120 (axle load 20t) 100 (axle load 22,5t)	??	22,5	27,5	135			-	-	1155	90,000 - 110,000 EUR	
Container - Intermodal Wagon	Tatravagónka Poprad & Greenbrier	Freight	1435	GB	6	26390		120 (axle load 20t) 100 (axle load 22,5t)	T: ?? G: GP-A(K)	T: 20 G: 22,5	T: 25,3 (with hand brake), 25,15 (without hand brake) G: 26,2	T: 115,3 (with hand brake), 115,15 (without hand brake) G: 135			-	-	1170	90,000 - 110,000 EUR	
Container Wagon	Tatravagónka	Freight	1435		4	21780		120 (axle load 20t) 100 (axle load 22,5t)	??	22,5	25,5	90			-	-		unknown	
Tank Wagon	Tatravagónka	Freight	1435	GC	4	11940	120	100	KE-GP-A - 1x16"	22,5	21/20 (with/without isolation)	90		40	-	-		40,000 - 132,500 EUR	TSI WAG
Tank Wagon	Greenbrier	Freight	1435	G1	4	14960	120	100		22,5	21,6	90		85	-	-		40,000 - 132,500 EUR	
Tank Wagon	Tatravagónka	Freight	1435	G1	4	15140	120	100	??	22,5	21,4	90		88	-	-		40,000 - 132,500 EUR	
Tank Wagon	Tatravagónka	Freight	1435	G1	4	16880	120	100	KE-GP (k) - 1x12"	22,5	25	90		95	-	-		40,000 - 132,500 EUR	

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/ structure clearance	Num- ber of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passeng- ers	Seats			
Tank Wagon	Tatravagónka	Freight	1435	G1	4	12260	120	100	DK-GP-A(K) - 1x12"	22,5	19	90		44	-	-		40,000 - 132,500 EUR	TSI WAG
Tank Wagon	Tatravagónka	Freight	1435	G1	4	13455	120	100	KE-GP (k) - 1x12"	22,5	24	90		54	-	-		40,000 - 132,500 EUR	
Tank Wagon	Tatravagónka	Freight	1435	G1	4	15110	120	100	KE-GP(K)	22,5	22,3	90		62	-	-		40,000 - 132,500 EUR	
Tank Wagon	Tatravagónka	Freight	1435	G1	4	16640	120	100	KE-GP(K)	22,5	24	90		88	-	-		40,000 - 132,500 EUR	
Tank Wagon	Greenbrier	Freight	1435	G1		17000	120	100	GP (K)	22,5	24,3	90		95	-	-		40,000 - 132,500 EUR	
Tank Wagon	Greenbrier	Freight	1435	G1	4	15130	120	100	MH-GP (K)	22,5	21,4	90		87	-	-		40,000 - 132,500 EUR	
Tank Wagon	Tatravagónka	Freight	1435	G1	4	15000	120	100	Compact Brake IBB 10 (WABTEC)	22,5	20,7	90		89	-	-		40,000 - 132,500 EUR	
Tank Wagon	Greenbrier	Freight	1435	G1	4	16690	120	100	KE-GP (K), MH-GP-(K)	22,5	22,6	90		97	-	-		40,000 - 132,500 EUR	
Tank Wagon	Tatravagónka	Freight	1435	G1	4	16400	120	100	Compact Brake IBB 10 (WABTEC)	22,5	21,8	90		98	-	-		40,000 - 132,500 EUR	TSI WAG
Tank Wagon	Tatravagónka	Freight	1435/1520	G1	4	15908	120	100	KE-GP(K)	22,5	28,9	90		64	-	-		40,000 - 132,500 EUR	

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/structure clearance	Number of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passengers	Seats			
Tank Wagon	Tatravagónka & Greenbrier	Freight	1435	G1	4	15040	120	100	KE-GP-K	22,5	24,1 - T 25,4 - G	90		73	-	-		40,000 - 132,500 EUR	
Tank Wagon	Greenbrier	Freight	1435	G1	4	15860	120	100	KE-GP (K), MH-GP-(K)	22,5	24	90		79	-	-		40,000 - 132,500 EUR	
Tank Wagon	Tatravagónka	Freight	1435	G1	4	16700, 16240	120	100	KE-GP (k) - 1x12"	22,5	26,1	90		80	-	-		40,000 - 132,500 EUR	
Tank Wagon	Greenbrier	Freight	1435	G1	4	16960	120	100	KE-GP	22,5	35,7	90		103	-	-		40,000 - 132,500 EUR	
Tank Wagon	Greenbrier	Freight	1435	G1	4	18000	120	100	KE-GP (K), MH-GP-(K)	22,5	32	90		112	-	-		40,000 - 132,500 EUR	
Tank Wagon	Greenbrier	Freight	1435	G1	4	18000	120	100	KE-GP	22,5	32,25	90		113	-	-		40,000 - 132,500 EUR	
Tank Wagon	Tatravagónka	Freight	1435	G1	4	18000	120	100	KE-GP(K) - 1x12"	22,5	33	90		117	-	-		40,000 - 132,500 EUR	TSI WAG
Tank Wagon	Greenbrier	Freight	1435	G1	4	19720	120	100	KE-GP (K), MH-GP-(K)	22,5	33,4	90		122	-	-		40,000 - 132,500 EUR	
Tank Wagon	Tatravagónka	Freight	1435	G1	4	13455	120	100	??	22,5	25	90		54	-	-		40,000 - 132,500 EUR	
Intermodal Wagon	Greenbrier	Freight	1435	TEN GE	2x4	36440	120	120 (89t) 100 (128t)	GP-A (K)	16	39	128			-	-		unknown	
Intermodal Wagon	Greenbrier	Freight	1435	W6-A/SB1c	2x4	37720	120		GP-A (K)	16 (17)	48	128			-	-	820	unknown	

Model	Supplier	Transport Type (passenger, freight)	Track gauge	track/structure clearance	Number of axles	Length over buffers (mm)	Maximum Speed (km/h)		Braking System	Max. axle loads	Weight (tonnes)		Exploitable capacity		Passenger capacity		Entrance height above the ToR	Indicative Price	TSI
							Tare	Laden			Tare	Laden	Floor area (m ²)	Volumetric capacity (m ³)	Total Number of passengers	Seats			
Flat Wagon with Tarpaulin Top	Greenbrier	Freight	1435	G1	4	16500	120	100	GP-A	22,5	27,6	90	39		-	-	1230	50,000-75,000 EUR	
Flat Wagon	Greenbrier	Freight	1435	G1	4	22350	120	100	GP-A (K)	22,5	25	90	55,2		-	-	1260	50,000-75,000 EUR	
Flat Wagon	Greenbrier	Freight	1435	G1	4	19900	120	100	GP-A (K)	22,5	24,6	90	51		-	-	1260	50,000-75,000 EUR	
Flat Wagon	Greenbrier	Freight	1435	G1	4	19640	120	100	GP-A (K)	22,5	23,1	90	51		-	-	1155	50,000-75,000 EUR	
Timber Wagon	Greenbrier	Freight	1435	Swedish	4	19640	120	100	GP-A	22,5	22,5	90			-	-		unknown	
Special Hopper Wagon	Greenbrier	Freight	1435	G1	4x4 - 4U 6x4 - 6U	51120 - 4U 74640 - 6U	120	100	GP (K)	22,5	116,5 - 4U 167,7 - 6U	360 - 4U 540 - 6U		193,5 - 4U 298,7 - 6U	-	-		unknown	
Special Hopper Wagon	Greenbrier	Freight	1435	G1	4	15000	120	100	GP-A	22,5	26,2	90		40	-	-		unknown	

Table 2: List of passenger and freight wagons

ANNEX 4: List of Multiple-Unit Sets

Type	Supplier	Train Control System	Power Motive Type	Type		Track gauge	Number of axles	No. of axles for traction	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting acceleration (m/s²)	Starting tractive effort - short term (kN)	Passenger capacity		Doors		Entrance height	Indicative Price per Unit	Standards	
				Electric current (electric locomotives)	Diesel type										Total Number of passengers	Seats	Number	wide			TSI	EU emission standard
Desiro HC	Siemens Mobility		electric	15 kV AC 16 2/3 Hz		DE2	16	8	105,252	4,000	160	200	1.1	unknown	400	400	unknown	unknown	800 (EW), 730 (MW)	13.18 mill. EUR	TSI HS RST, TSI LOC&PAS, TSI Noise, TSI PRM, TSO CCS, TSI SRT	
Desiro ML	Siemens Mobility		electric	15 kV AC 16 2/3 Hz		unknown	12	8	unknown	2,600	160	unknown	1.1	120	513	252	4 per wagon	1300	600 / 800	5,5 mill. EUR	unknown	Stage IIIb
Mireo	Siemens Mobility		electric	15 kV AC 16.7 Hz, 25 kV AC 50 Hz	-	GB	unknown	unknown	52.000 - 140.000	2,600	160	112 (3 Parts)	1.2	unknown	unknown	unknown	unknown	unknown	550 / 760 / 960	unknown	unknown	
ICE 4 (7-cars/12-cars)	Siemens Mobility	ETCS, LZB, PZB	electric	15 kV AC 16 2/3 Hz, 25 kV AC 50 Hz, 3 kV DC - 1,5 kV DC - 7 cars, 15 kV AC 16 2/3 Hz - 12 cars		GB	28 - 7 cars 48 - 12 cars	12 - 7 cars 24 - 12 cars	200000 - 7 cars 345731 - 12 cars	4950 - 7 cars 9900 - 12 cars	230 - 7 cars 250 - 12 cars	670	0,55 - 7 cars 0,53 - 12 cars	unknown	456 - 7 cars 830 - 12 cars	456 - 7 cars 830 - 12 cars	unknown	unknown	unknown	~ 44 mill. EUR (estimated for 7 cars and 12 cars)	TSI HS RST, TSI LOC&PAS, TSI Noise, TSI PRM, TSO CCS, TSI SRT	
Velaro D (8-cars)	Siemens Mobility	ETCS, LZB, PZB, TBL1/2, TVM, ATB, KVB	electric	15 kV AC 16 2/3 Hz, 25 kV AC 50 Hz, 3 kV DC, 1,5 kV DC		G2	32	16	200720	8000 (AC), 4200 (DC)	320 (AC), 220 (DC)	454	0.53	300	462	460	unknown	unknown	unknown	34 mill. EUR	unknown	
SMILE EC 250	Stadler AG		electric	15 kV AC 16 2/3 Hz, 25 kV AC 50 Hz, 3 kV DC		GB	24	8	202000	5400 or 4800 (cont)/ 6000 (max)	250	380	unknown	300	848	422	13 per side	900	567 - 1200	33.8 mill. CHF 29.66 mill.	TSI HS RST, TSI LOC&PAS, TSI	

Type	Supplier	Train Control System	Power Motive Type	Type		Track gauge	Number of axles	No. of axles for traction	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting acceleration (m/s ²)	Starting tractive effort - short term (kN)	Passenger capacity		Doors		Entrance height	Indicative Price per Unit	Standards	
				Electric current (electric locomotives)	Diesel type										Total Number of passengers	Seats	Number	wide			TSI	EU emission standard
																				EUR	Noise, TSI PRM, TSO CCS, TSI SRT	
Flirt3 160/200 (2 cars - 8 cars)	Stadler AG	ETCS level 2 + 1 national	electric	Multiple Possibilities	-	GB	6 - 2 cars 8 - 3 cars 10 - 4 cars 14 - 5 cars 14 - 6 cars 18 - 7 cars 20 - 8 cars	4 - 2 cars 4 - 3 cars 4 - 4 cars 6 - 5 cars 4 - 6 cars 6 - 7 cars 4 - 8 cars	45700 - 2 cars 58600 - 3 cars 75200 - 4 cars 90378 - 5 cars 10690 - 6 cars 13450 - 7 cars 15290 - 8 cars	1400 (cont)/ 1800 (max) - 2 cars 2000 (cont)/ 2600 (max) - 3 cars 3000 (cont)/ 3900 (max) - 7 cars 2000 (cont)/ 3000 (max) - 5 cars 3000 (cont)/ 4500 (max) - 5 cars (for NSB) 4000 (cont)/ 5200 (max) - 8 cars (for SOB)	160 - 200	90 - 2 cars 100 - 3 cars 131 - 4 cars 145 - 5 cars 170 - 6 cars 270 - 7 cars (old flirt) 257 - 8 cars	1.1 - 2 cars 1.2 - 3 cars, 4 cars 0.87 - 5 cars 0.8 - 6 cars 0.9 - 7 cars 0.6 - 8 cars for PKP 1.1 - 8 cars for PKP	125 - 2 cars 200 - most other cars 240 - MTR & NSB 300 - BZD 400 - SOB 8 cars	120 - 2 cars 181 - 3 cars 219 - 4 cars 300 - 5 cars 333 - 6 cars 382 - 7 cars 354 - 8 cars	120 - 2 cars 181 - 3 cars 219 - 4 cars 300 - 5 cars 333 - 6 cars 382 - 7 cars 354 - 8 cars	variable 3 - 10 per side	1300 - 5 cars 1000 - 7 cars 940 - 8 cars	570 - 1285	7.5 mill. EUR (3-Car) 8.2 mill. EUR (4-Car) 14.75 mill. EUR (8-Car IC)	TSI Noise, TSI Loc&Pas, TSI PRM, TSI SRT, TSI CCS	
GTW	Stadler AG	GE UCII	diesel		diesel, asynchronous motor	unknown	6	2	40890	600	120	unknown	1 (empty) 0.8 (full)	80	200-201	104	unknown	1300	unknown	7.25 mill. Dollar 6.29 mill. EUR	unknown	class Euro IIIB

Type	Supplier	Train Control System	Power Motive Type	Type		Track gauge	Number of axles	No. of axles for traction	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting acceleration (m/s ²)	Starting tractive effort - short term (kN)	Passenger capacity		Doors		Entrance height	Indicative Price per Unit	Standards	
				Electric current (electric locomotives)	Diesel type										Total Number of passengers	Seats	Number	wide			TSI	EU emission standard
KISS (3 cars, 4 cars, 6 cars)	Stadler AG	ETCS level 2 + 1 national	electric	15 kV AC 16.7 Hz, 3 kV DC	-	G2	12 - 3 cars 16 - 4 cars 24 - 6 cars	4 - 3 cars 8 - 4 & 6 cars	79840 - 3 cars 102240 - 4 cars 150000 - 6 cars	2000-4000 - cont. 3000-6000 - max.	160/200	216 - 4 cars 297 - 6 cars	0,63 - 1,3	200 - 3 cars 400 - 4,6 cars	901 - 4 cars 1373 - 6 cars	335 - 4 cars 535 - 6 cars	6 per side - 3 cars 8 per side - 4 cars 8/12 per side - 6 cars	1300 to 1400	570 - 1285	106 mill. SEK - 10.04 mill. EUR (4-Cars) 34,44 mill. Dollar - 29.84 Mio EUR (6-Cars)	TSI Noise, TSI Loc&P as, TSI PRM, TSI SRT, TSI CCS	
WINK	Stadler AG		diesel + batteries			GB	unknown	unknown	55500	1000	160	unknown	unknown	unknown	275	150	unknown	unknown	unknown	7.25 mill. Dollar 6.29 mill. EUR	unknown	
Class 490	Bombardier Transportation	Sifa, PZB	electric	15 kV AC 16.7 Hz, 1.2 kV DC	-	GB	unknown	unknown	66000		140	unknown	unknown	unknown	469	190	unknown	unknown	unknown	5.49 mill. EUR	unknown	
Impuls 37WE (2-car)	Newag	SHP	electric	3 kV DC	-	GB	6	4	42400	1600	160	81	1	max 200	256		4 per side	1400	550 - 960	unknown	unknown	
Impuls 36WE (3-car)	Newag	SHP	electric	3 kV DC	-	GB	8	4	58400	1600	160	122	1	max 200	330	170	6 per side	1400	550 - 960	unknown	unknown	
Impuls 36WEa (3-car)	Newag	ETC partly, SHP min.	electric	3 kV DC	-	GB	8	4	58400	1600	160	110	1	max 200	330	170	6 per side	1400	550 - 960	unknown	complete TSI	
Impuls 31WE (4-car)	Newag	ETC partly, SHP min.	electric	3 kV DC	-	GB	10	4	74400	2000	160	145	1	max 200	458	202	8 per side	1400	550 - 960	unknown	unknown	
Impuls 45WE (5-car)	Newag	ETC partly, SHP min.	electric	3 kV DC	-	GB	12	4	90400	2000	160	159	1	max 200	500	219	10 per side	1400	550 - 960	unknown	unknown	
Impuls 35WE (6-car)	Newag	SHP	electric	3 kV DC	-	GB	14	8	113600	3200	160	197	1	max 200	922	218	12 per side	1400	550 - 960	unknown	unknown	
19WE	Newag	SHP	electric	3 kV DC	-	GB	16	8	85273	2240 (cont), 2400 (max)	130	190	1.2		702	182	10 per site	1300	870/920	unknown	unknown	

Type	Supplier	Train Control System	Power Motive Type	Type		Track gauge	Number of axles	No. of axles for traction	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting acceleration (m/s ²)	Starting tractive effort - short term (kN)	Passenger capacity		Doors		Entrance height	Indicative Price per Unit	Standards	
				Electric current (electric locomotives)	Diesel type										Total Number of passengers	Seats	Number	wide			TSI	EU emission standard
Impuls 2 (3-Car)	Newag	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	4.4 Mio EUR	common Info full TSI compliance is existing	
Talent 3	Bombardier Transportation	ETCS	electric	15 kV AC 16.7 Hz, 25 kV AC 50 Hz, 3 kV DC, 1.5 kV DC, optional with battery and fuel cell		unknown	unknown	unknown	unknown	1,400	160/200	unknown	unknown	122	unknown	160	unknown	unknown	550 / 760 / 960	7.14 mill. EUR - 7.52 Mio EUR (6-Cars)	unknown	
Pendolino (4 cars - 9 cars)	Alstom	ETCS Level 2, SHP, Mirel, LZB/PZB, GSM-R, Signum	electric	15 kV AC 16.7 Hz, 25 kV AC 50 Hz, 3 kV DC, 1.5 kV DC	-	GB	28 - 7 cars	8 - 7 cars	108800 - 4 cars 135000 - 5 cars 161200 - 6 cars 187400 - 7 cars 213600 - 8 cars 239800 - 9 cars	5500 - 7 cars	250	401-407 - 7 cars	0,49 - 7 cars	225 - 7 cars	292 - 4 cars 318 - 5 cars 406 - 6 cars 494 - 7 cars 582 - 8 cars 638 - 9 cars	292 - 4 cars 318 - 5 cars 406 - 6 cars 494 - 7 cars 582 - 8 cars 638 - 9 cars	10 per site - 7 cars	900	550 / 760 / 1260	21 mill. EUR	full TSI	
Coradia Continental (3 cars - 6 cars)	Alstom	PZB	electric	15 kV AC 16.7 Hz		GB	8 (3-Cars) 10 (4-Cars) 12 (5-Cars)	6/8 (3-Cars) 8 (4-Cars) 8 (5-Cars)	56900 - 3 cars 74200 - 4 cars 89700 - 5 cars - 6 cars	2,800 (max, 4-Cars, 5-Cars) 2,160 (max, 3-Cars) 2,000 (cont., 4-Cars, 5-Cars) 2,000 (cont, 3-Cars)	160	unknown	unknown	unknown	302 (tip-up seats free) - 3 cars - 4 cars 497 (tip-up seats free) - 5 cars - 6 cars	149 (12 tip-up seats) - 3 cars - 4 cars 247 (20 tip-up seats) - 5 cars - 6 cars	4 per side - 3 cars - 4 cars 6 per side - 5 cars - 6 cars	unknown	unknown	5.66 mill. EUR (3-Cars)	TSI PRM, TSI SRT	

Type	Supplier	Train Control System	Power Motive Type	Type		Track gauge	Number of axles	No. of axles for traction	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting acceleration (m/s ²)	Starting tractive effort - short term (kN)	Passenger capacity		Doors		Entrance height	Indicative Price per Unit	Standards	
				Electric current (electric locomotives)	Diesel type										Total Number of passengers	Seats	Number	wide			TSI	EU emission standard
Elf 27WE (6-car)	PESA	SHP min.	electric	3 kV DC (can be modified to 15 or 25 kV AC)	-	GB	14	8	107850	3200	160	190.5	1.2	200	900	354	12 per site	unknown	550	13.6 Mio EUR	TSI Noise, TSI PRM, TSI Loc&P as, TSI SRT	
Elf 27WE b (6-car)	PESA	SHP min.	electric	3 kV DC (can be modified to 15 or 25 kV AC)	-	GB	16	6	107850	3000	160	211	1.2	200	900	354	16 per site	unknown	550	unknown	TSI Noise, TSI PRM, TSI Loc&P as, TSI SRT	
Elf 22WE (4-car)	PESA	SHP min.	electric	3 kV DC (can be modified to 15 or 25 kV AC)	-	GB	10	4	75250	2500	160	135	1.2	200	450	200	8 per site	unknown	550	11.374 Mio EUR	TSI Noise, TSI PRM, TSI Loc&P as, TSI SRT	
Elf 21WE (3-car)	PESA	SHP min.	electric	3 kV DC (can be modified to 15 or 25 kV AC)	-	GB	8	4	58950	1600	160	107.3	1.2	unknown	326	161	3 per site	unknown	550	unknown	TSI Noise, TSI PRM, TSI Loc&P as, TSI SRT	
Elf 34WE (2-car)	PESA	SHP min.	electric	3 kV DC (can be modified to 15 or 25 kV AC)	-	GB	6	4	42650	1000	160	83.2	1.2	unknown	230	unknown	unknown	unknown	550	unknown	TSI Noise, TSI PRM, TSI Loc&P as, TSI SRT	
Elf 2 21WEa	PESA	ETCS Level 2, GSM-R	electric	3 kV DC (can be modified to 15 or 25 kV AC)	-	GB	8	4	58950	1600	160	107.3	1.2	180	310	150	4 per site	unknown	550	6.73 Mio EUR??	TSI Noise, TSI PRM, TSI Loc&P as, TSI SRT, EN 12663-1, EN 15222-7	

Type	Supplier	Train Control System	Power Motive Type	Type		Track gauge	Number of axles	No. of axles for traction	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting acceleration (m/s ²)	Starting tractive effort - short term (kN)	Passenger capacity		Doors		Entrance height	Indicative Price per Unit	Standards	
				Electric current (electric locomotives)	Diesel type										Total Number of passengers	Seats	Number	wide			TSI	EU emission standard
Elf 2 34WEa	PESA	ETCS Level 2, GSM-R	electric	3 kV DC (can be modified to 15 or 25 kV AC)	-	GB	6	4	42650	1000	160	83.2	1.2	unknown	230	unknown	2 per site	unknown	550	unknown	TSI Noise, TSI PRM, TSI Loc&P as, TSI SRT	
Elf 2 EN62A	PESA	ETCS Level 2, GSM-R	electric	3 kV DC (can be modified to 15 or 25 kV AC)	-	GB	8	4	58950	1600	160	107.3	1.2	unknown	326	161	3 per site	unknown	550	unknown	TSI Noise, TSI PRM, TSI Loc&P as, TSI SRT	
Zefiro 300 (8 cars, 16 cars)	Bombardier Transportation	ETCS Level 2 + National Systems	electric	15 kV AC 16.7 Hz, 25 kV AC 50 Hz, 3 kV DC, 1.5 kV DC	-	GB	unknown	unknown	20200 0 - 8 cars 40200 0 - 16 cars	9800 - 8 cars 20000 - 16 cars	360	454	0.7	370	600 - 8 cars 1200 - 16 cars	469 + 2 PRM - 8 cars - 16 cars	13+1 for PRM - 8 cars - 16 cars	900	1240	30.8 Mio EUR (8-Cars)	all new (international standards)	
Twindex Vario/Dosto 2010 (3-Cars, 4-Cars)	Bombardier		electric	15 kV AC 16.7 Hz	-	GC	4	4	79230 (3-cars) 106500 (4-Cars)	2,300	160/189	190 (3-Cars) 248 (4-Cars)	0.6 - 1.2		395 (3-Cars) 608 (4-Cars)	255 (3-Cars) 328 (4-Cars)	6 per side (3-Cars) 8 per side (4-Cars)	1300	unknown	10 Mio EUR (4-Cars)	unknown	
Coradia Polyvalent (3, 4, 6 cars)	Alstom		electric, diesel-electric	15 kV AC 16.7 Hz, 25 kV AC 50 Hz, 1.5 kV DC	diesel	GB	8 - 3 cars 10 - 4 cars 16 - 6 cars	4 - 3 cars 4 - 4 cars 6 - 6 cars	56400 - 3 cars 71800 - 4 cars 110000 - 6 cars	- 3 cars 1700 (electric), 850 (diesel) - 4 cars 2600 (electric), 1300 (diesel) - 6 cars	160 - 200	160 (3-Cars) 200 (4-Cars) 320 (6-Cars)	unknown	unknown	162 (regional) - 3 cars 202 (intercity), 220 (regional), 228 (suburban) - 4 cars 328 (intercity), 354 (regional), 366 (suburban) - 6 cars	162 (regional) - 3 cars 202 (intercity), 220 (regional), 228 (suburban) - 4 cars 328 (intercity), 354 (regional), 366 (suburban) - 6 cars	unknown	unknown	600	10 mill. EUR (4-Cars) 11.76 mill. EUR (6-Cars)	unknown	

Type	Supplier	Train Control System	Power Motive Type	Type		Track gauge	Number of axles	No. of axles for traction	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting acceleration (m/s ²)	Starting tractive effort - short term (kN)	Passenger capacity		Doors		Entrance height	Indicative Price per Unit	Standards	
				Electric current (electric locomotives)	Diesel type										Total Number of passengers	Seats	Number	wide			TSI	EU emission standard
																ban) - 6 cars						
Euroduplex	Alstom	ERTMS, KVB, TVM 430, ASFA, LZB, PZB, ZUB, Integra	electric	15 kV AC 16.7 Hz, 25 kV AC 50 Hz, 3 kVDC, 1.5 kV DC	-	G2, GB	26	unknown	200000	9400	320	442	unknown	unknown	509-556	509-556	unknown	1025	550 / 760	26.67 Mio EUR	unknown	
Dart	PESA	ERTMS Level 2, ETCS, SHP	electric	15 kV AC 16.7 Hz, 25 kV AC 50 Hz, 3 kV DC, 1.5 kV DC	-	GB	18	6	150230	2400	250 (in Poland 160)	395	0.6		352	352	8 per side	unknown	760	9.65 mill. EUR	TSI Noise, TSI PRM, TSI Loc&P as, TSI CCS	
Acatus Plus (2 cars - 6 cars)	PESA		electric		-	GB	6 - 2 cars 8 - 3 cars	4 - 2 cars 4 - 3 cars	42650 - 2 cars 58950 - 3 cars 76500	1440 - 2000	160	unknown	unknown	unknown	unknown	105 - 200	unknown	unknown	760	unknown	TSI Noise, TSI PRM, TSI Loc&P as, TSI CCS	
Double-Deck (3 cars - 8 cars)	PESA		electric		-	unknown	unknown	unknown	71870 - 200870	5600	160-200	unknown	unknown	unknown	unknown	870	unknown	unknown	380 / 550 / 760 / 1000	unknown	TSI Noise, TSI PRM, TSI Loc&P as, TSI CCS	
19WE (4 cars)/20WE (6 cars)	Newag	SHP	electric	3 kV DC	-	GB	16	8	85273 - 4 cars 119820 - 6 cars	2240 (cont), 2400 (max)	160	170	1.2	unknown	653 - 4 cars 1032 - 6 cars	183 - 4 cars 282 - 6 cars	10 per side	1300	1157	unknown	unknown	
EN57 modernised	Newag		electric	3 kV DC	-	unknown	12	4		1000	120		1, max. 1.1	unknown	unknown	185	6 per side	unknown	unknown	unknown	unknown	
Type 222M/222Ma	Newag	SHP	diesel motive	-	MTU Power pack	GB	6	4	43000	2x390 kW	130	88.5	0.45	unknown	270	126	2 per site	1300	600	unknown	TSI PRM, TSI NOISE, EN 12663, EN 15227	Stage IIb

Type	Supplier	Train Control System	Power Motive Type	Type		Track gauge	Number of axles	No. of axles for traction	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting acceleration (m/s ²)	Starting tractive effort - short term (kN)	Passenger capacity		Doors		Entrance height	Indicative Price per Unit	Standards	
				Electric current (electric locomotives)	Diesel type										Total Number of passengers	Seats	Number	wide			TSI	EU emission standard
Class SA137 /SA138 Type 220M/221M	Newag	SHP	diesel motive	-	MTU 6H180 OR84	GB	6 (SA137) 8 (SA138)	4	41800 (SA137) 58360 (SA138)	2x390 kW	120	82 (SA137) 105 (SA138)	0.45	unknown	284 (SA137) 390 (SA138)	140 (SA137) 160 (SA138)	2 per site (SA137) 3 per site (SA138)	1300	600	unknown	unknown	Stage IIIb
Coradia Stream (3 cars - 10 cars)	Alstom	ERTMS	electric	15 kV AC 16.7 Hz, 25 kV AC 50 Hz, 3 kV DC, 1.5 kV DC	unknown	unknown	unknown	unknown	unknown	unknown	160 (regional) 200 (intercity)	unknown	unknown	unknown	unknown	227 - 3 cars 305 - 4 cars 256 - 5 cars - 6 cars - 7 cars 417 - 8 cars - 9 cars - 10 cars	1/2 per car & side	1300	620 , 800	6.11 mill. EUR (4-Cars)	TSI Loc&Pass	
AGV (7, 8, 11, 14 cars)	Alstom	ETCS Level 1&2, SCMT	electric	15 kV AC 16.7 Hz, 25 kV AC 50 Hz, 3 kV DC, 1.5 kV DC	unknown	unknown	24	10	13500 0 - 7 cars - 8 cars 20000 0 - 11 cars 25000 0 - 14 cars	7600	360	380	unknown	unknown	250 - 7 cars - 8 cars 449 - 11 cars 650 - 14 cars	250 - 7 cars - 8 cars 449 - 11 cars 650 - 14 cars	unknown	unknown	550 , 1155	unknown	unknown	
Coradia iLint	Alstom		hydrogen	fuel cell	unknown	unknown	unknown	unknown	unknown	544	140	unknown	unknown	unknown	unknown	unknown	unknown	unknown	580 , 630 , 780 , 810	unknown	unknown	
Atribo ATR220	Pesa SA		diesel-hydraulic	-	diesel V6	GB	8	4	55570	780	130	99-114	unknown	unknown	unknown	152 + 7	unknown	unknown	300 - 760	3.36 mill. EUR (3-Cars)	unknown	Stage IIIb
Link (1 car - 4 cars)	Pesa SA		diesel	-	MTU 6H 1800 R85L and ZF gearin	GB	4 - 1 car 6 - 2 cars 8 - 3 cars	2 - 1 car 4 - 2 cars 4 - 3 cars	28650 - 1 car 43730 - 2 cars 57130	565 - 1 cars 780 - 2 cars 1130 - 3 cars	120-160	?? - 1 cars 84.4 - 2 cars ?? - 3 cars ?? - 4 cars	0.74	unknown	150 - 1 car 250 - 2 cars 350 - 3 cars	70 - 1 car 124 - 2 cars 180 - 3 cars	2 per side - 1 car 2 per side - 2 cars	1300	140 - 960	- 1 car 2,6 mill. € - 2 cars - 3 cars	TSI PRM, TSI NOI	Stage IIIb

Type	Supplier	Train Control System	Power Motive Type	Type		Track gauge	Number of axles	No. of axles for traction	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting acceleration (m/s ²)	Starting tractive effort - short term (kN)	Passenger capacity		Doors		Entrance height	Indicative Price per Unit	Standards	
				Electric current (electric locomotives)	Diesel type										Total Number of passengers	Seats	Number	wide			TSI	EU emission standard
					g MAN and Voith gearin g		10 - 4 cars	4 - 4 cars	- 3 cars 70530 - 4 cars	1130 - 4 cars					450 - 4 cars	220 - 4 cars	3 per side - 3 cars 4 per side - 4 cars					
611M (maint enanc e vehicle)	Pesa SA		diesel	-	diesel	1-GOST 9238-83	4	4	27350	unknown	180	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	
730M	Pesa SA		diesel-mechanic	-	diesel	1-T GOST 9238-83	unknown	unknown	69000	1154	120-140	144	unknown	unknown	unknown	145 + 12	unknown	unknown	600	unknown	unknown	
GTW 2/6	Stadler AG		diesel-electric	-	diesel	unknown	6	2	40890	600	120	37 - 62	1 (empty) 0,8 (loaded)	80	200 - 204	104 - 108	unknown	1300	unknown	unknown	unknown	Stage IIb
Wink	Stadler AG		diesel	-	diesel	unknown	8	4	55500	1000	140	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	
Coradia Lint 27	Alstom		diesel-hydraulic	-	diesel	GB	4	2	27260	315	120	41	0.5	unknown	144 with folding seats 145 without folding seats	60 (13 folding seats)	unknown	unknown	580 , 630 , 780 , 810	unknown	unknown	unknown
Coradia Lint 41	Alstom		diesel-mechanic	-	diesel	G2	6	2	41810	630 - 780	unknown	63,5 - 68	unknown	unknown	249	106 + 23	4	1300	580 , 630 , 780 , 810	unknown	unknown	Stage IIIA with particulate filter
Coradia Lint 54	Alstom		diesel-mechanic	-	diesel	GB	8	6	54270	1170	140	98	unknown	unknown	361 - 384	157 - 180	unknown	unknown	580 , 630 , 780 , 810	unknown	TSI PRM, TSI SRT, TSI NOI	Stage IIb
Coradia Lint 81	Alstom		diesel-mechanic	-	diesel	GB	12	8	80920	1560	140	138	unknown	unknown	570 - 606	264 - 300	6 per side	unknown	580 , 630 , 780 , 810	unknown	TSI PRM, TSI SRT, EN 15227	Stage IIb

Type	Supplier	Train Control System	Power Motive Type	Type		Track gauge	Number of axles	No. of axles for traction	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	Starting acceleration (m/s ²)	Starting tractive effort - short term (kN)	Passenger capacity		Doors		Entrance height	Indicative Price per Unit	Standards	
				Electric current (electric locomotives)	Diesel type										Total Number of passengers	Seats	Number	wide			TSI	EU emission standard
Coradia Meridian	Alstom		electric, diesel		diesel	unknown	unknown	unknown	unknown	unknown	160	unknown	unknown	unknown	unknown	unknown	unknown	unknown	600	6.3 mill. EUR	unknown	
TSR (3 cars, 5 cars, 6 cars)	Hitachi Rail Italy		electric	3 kV DC	-	unknown	4	2	26460	680 per wagon	140	58	0.9	unknown	187	96	unknown	unknown	unknown	unknown	unknown	
Twindex Vario/Dosto 2010	Bombardier	PZB 90	electric	15 kV AC 16.7 Hz		unknown	4	4	25,980	2,300	160/189	66	unknown	181	unknown	91	4	1300	unknown	unknown	unknown	
Talgo 250 (2+11 car)	Patentes Talgo, Bombardier	ETCS L1, L2, LZB, ASFA	electric	3 kV DC 25 kV AC 50 Hz		GB	20	8	184,158	4800 kW (25 kV) 4000 kW (3 kV)	250	312	0.41	220	299	299	10	unknown	760	unknown	unknown	
Talgo 350 (2+12 car)	Patentes Talgo, Bombardier	ETCS L1, L2, LZB, ASFA	electric	25 kV AC 50 Hz		GB	21	8	200,000	8000 kW	330	332 (empty) 357 (laden)	unknown	240	353	353	11	unknown	760	20 Mio EUR per Unit	unknown	
Talgo Avril	Patentes Talgo	ETCS L1, L2, LZB, ASFA	electric	25 kV AC 50 Hz		??	21	12	200,260	8800 kW	380	287 (empty)	unknown	unknown	580	580	unknown	unknown	760	unknown	unknown	
Talgo XXI	Patentes Talgo	ETCS L1, L2, LZB, ASFA			diesel - electric	??	open	8	180000	3000 kW	220	224	unknown	unknown	unknown	unknown	unknown	900	760	unknown	unknown	
Oaris (8-car)	CAF Alstom		electric	15 kV AC 16.7 Hz, 25 kV AC 50 Hz, 3 kV DC		??	32	16	202,240	10.560 kW	350	447	??	unknown	unknown	unknown	8	unknown	unknown	unknown	unknown	
AT 300 (5 car, 7 car)	Hitachi Rail	ETCS L2, + additional	electric, diesel	25 kV AC 50 Hz	MTU 12V 1600 R80L	GB	unknown	unknown	unknown	unknown	unknown	unknown	1	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	
Javelin (A Train)	Hitachi Rail	ERTMS	electric	25 kV AC 50 Hz 750 V DC		GB	24	16	121,300	3.360 kW	225 (25 kV, 50 Hz) 160 (750 V DC)	265	0.7	unknown	340	340	12	unknown	1235	250 Mio brit. Pound	unknown	

Table 3 List of Multiple-Unit Sets

ANNEX 5: List of EMU – technical data

Model	Builder	Train Control System	Electric current	Track gauge	homologated for track/structure clearance, structure gauge	Height	Axle arrangement (UIC classification)	Number of axles
Pendolino ED250	Alstom	ERTMS, SHP, Mirel, LZB/PZB	3 kV DC, 15 kV 16 2/3 Hz, 25 kV 50 Hz	1435	GB	4100	1A'A1'+1A'A1'+2'2'+2'2'+ 2'2'+1A'A1'+1A'A1'	28
SMILE EC 250	Stadler AG	ERTMS + 1 national	15 kV AC 16 2/3 Hz, 25 kV AC 50 Hz, 3 kV DC	1435	GB	4255	2'Bo'Bo'2'2'2'2'Bo'Bo'2'2'2'	24
Flirt3 (8 cars)	Stadler AG	ERTMS + 1 national	Multiple Possibilities	1435	GB	4185	Bo'2'2'2'2'+2'2'2'2'Bo'	20
Zefiro 300 (8 cars)	Bombardier Transportation	ERTMS + National Systems	15 kV AC 16.7 Hz, 25 kV AC, 50 Hz, 3 kV DC, 1.5 kV DC	1435	GB	4080	Bo'Bo'+2'2'+Bo'Bo'+2'2'+2'2'+Bo'Bo'+2'2'+Bo'Bo'	32
Dart	PESA	ERTMS, ETCS, SHP	15 kV AC, 16.7 Hz, 25 kV AC, 50 Hz, 3 kV DC, 1.5 kV DC	1435	GB	4300	Bo'2'Bo'2'2'2'2'Bo'	18
ICE 4 (7-cars)	Siemens Mobility	ERTMS, LZB, PZB	15 kV AC 16 2/3 Hz, 25 kV AC 50 Hz, 3 kV DC, 1.5 kV DC	1435	GB	4115	2'2'+Bo'Bo'+2'2'+Bo'Bo'+Bo'Bo'+2'2'+2'2'	28
Velaro D (8 cars)	Siemens Mobility	ERTMS + additional	15 kV AC 16 2/3 Hz, 25 kV AC 50 Hz, 3 kV DC, 1.5 kV DC	1435	GC	4343	Bo'Bo'+2'2'+Bo'Bo'+2'2'+2'2'+Bo'Bo'+2'2'+Bo'Bo'	32

Model	Builder	Train Control System	Electric current	Track gauge	homologated for track/structure clearance, structure gauge	Height	Axle arrangement (UIC classification)	Number of axles
Talgo 250	Patentes Talgo / Bombardier	ETCS L1, L2, LZB, ASFA	3 kV DC 25 kV AC 50 Hz	1435/1668	GB	4030	Bo'Bo'+1'1'1'1'1'1'1'1'1'1'+Bo'Bo'	20
Talgo 350	Patentes Talgo / Bombardier	ETCS L1, L2, LZB, ASFA	25 kV AC 50 Hz	1435	GB	4000	Bo'Bo'+1'1'1'1'1'1'1'1'1'1'+ Bo'Bo'	21
Talgo Avril	Patentes Talgo	ETCS L1, L2, LZB, ASFA	25 kV AC 50 Hz	1435/1668	??	??	Bo'Bo'+1'1'1'1'1'1'1'1'1'1'+ Bo'Bo'	21
Oaris (8 cars)	CAF Alstom	ERTMS + additional	15 kV AC 16 2/3 Hz, 25 kV AC 50 Hz, 3 kV DC	1435/1668	??	??	??	32
AT 300 (5 cars, 7 cars)	Hitachi Rail	ETCS L2 + additional	25 kV AC 50 Hz and diesel engine MTU 12V 1600 R80L	1435	GB	??	??	??
Javelin (A Train)	Hitachi Rail	ERTMS	25 kV AC 50 Hz 750 V DV	1435	GB	3820	2'2'-Bo'Bo'-Bo'Bo'-Bo'Bo'-Bo'Bo'-2'2'	24

Table 4 EMU – technical data

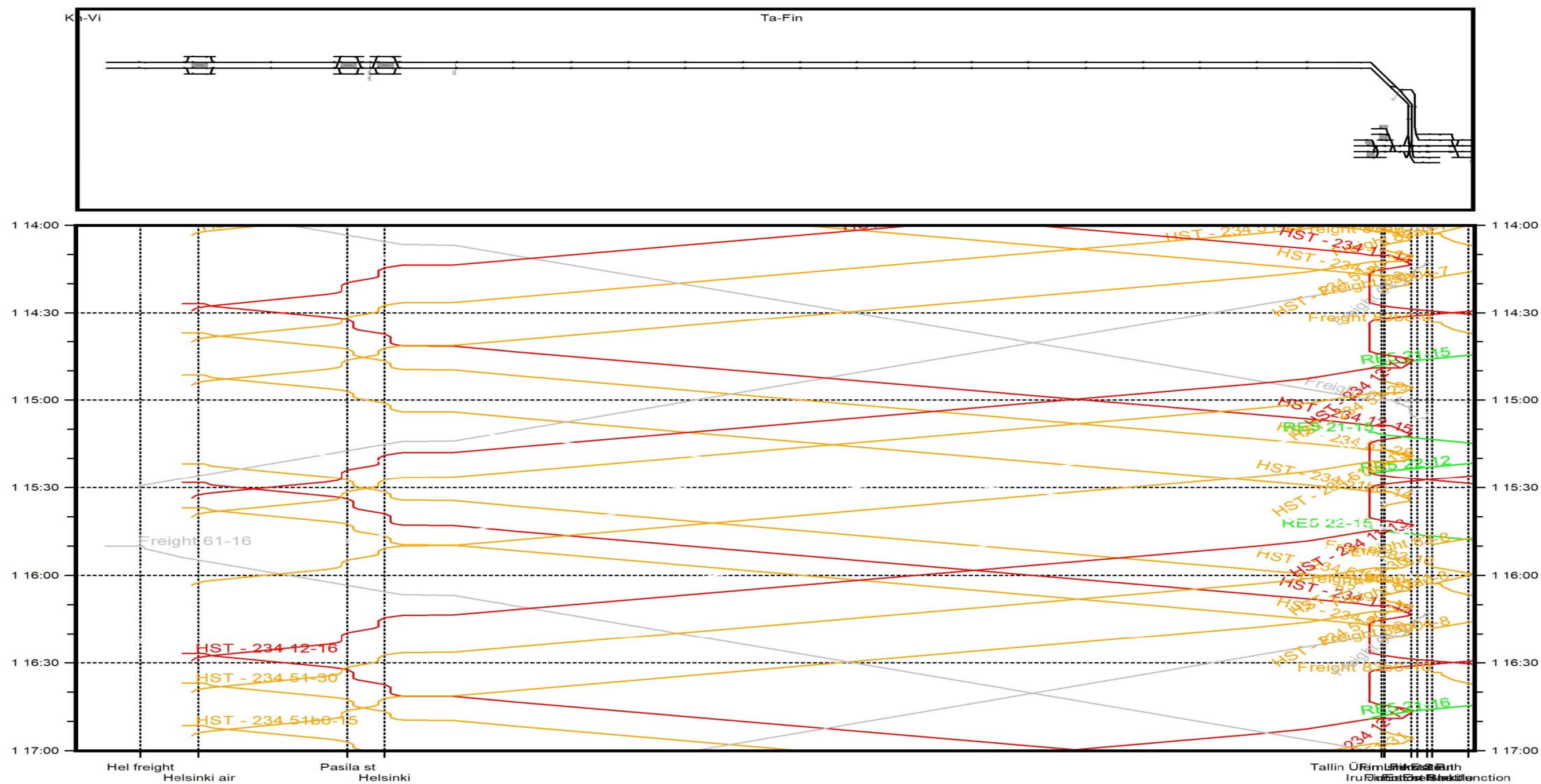
ANNEX 6: Long distance passenger train sets – EMU hauled service

Model	Number of axles for traction	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	adhesion mass (tonnes)	starting acceleration (m/s ²)	Tractive Effort [kN]	Passenger Capacity	Doors
Pendolino ED250	8	187,400	5664	250	395.5	113	0.49		402	10 per side
SMILE EC 250	8	202,000	4,800 or 5,400 (cont.)/ 6,000 (max.)	250	380	126,7		300	422	13 per side
Flirt3 (8 cars)		152,900	4,000 (cont.)/ 5,200 (max)	200	257	51.4	0.6 (PKP) 1.1 (SOB))	400	354	8 per side
Zefiro 300 (8 cars)	16	202,000	9,800 (cont., 25 kV 50 Hz) 6,900 -(cont., 3kV DC)	360 - 25 kV 50 Hz 300 - 3 kV DC	454	227	0.7	370	455 + 2 PRM	13+1 for PRM per side
Dart	6	150,230	2,400 (cont.)	250	395	131.7	0.6		352	8 per side
ICE 4 (7-cars)	12	200,000	4,950 (cont.)	230	670	287.1	0.55		456	
Velaro D (8 cars)	16	200,720	,8000 (cont., AC) 4,200 (cont., DC)	320 (AC) 220 (DC)	454	227	0.53	300	460	8
Talgo 250	8	184,158	4,800 (cont, 25 kV) 4,000 (cont., 3 kV)	250	312	144	0,41	220	299	10
Talgo 350	8	200,000	8,000 (cont)	330	332	136	??	240	353	11
Talgo Avril	12	200,260	8,800 (cont)	380	287	??	??	??	580	??

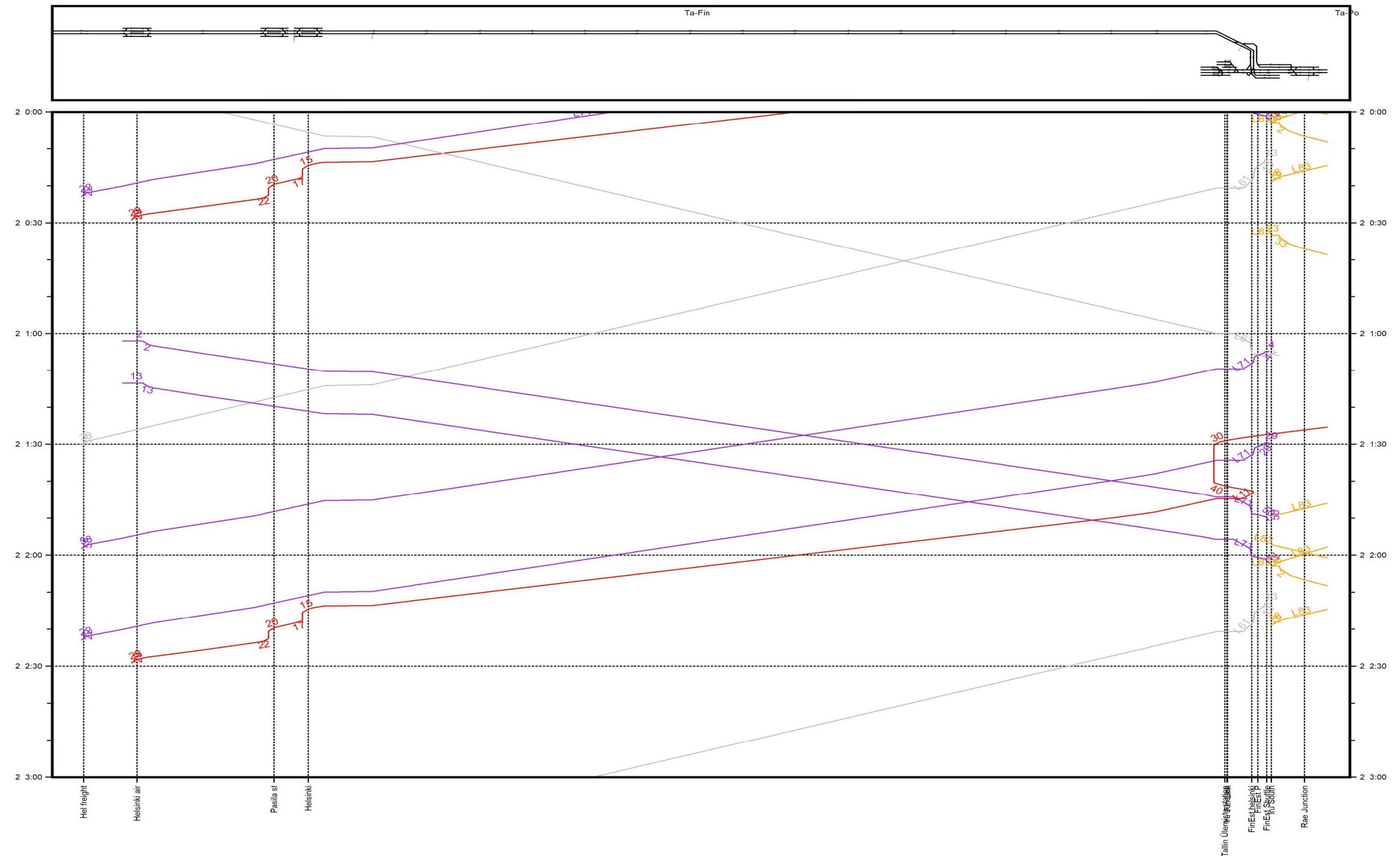
Model	Number of axles for traction	Length over buffers (mm)	Power (kW)	Maximum Speed (km/h)	Weight (tonnes)	adhesion mass (tonnes)	starting acceleration (m/s ²)	Tractive Effort [kN]	Passenger Capacity	Doors
Oaris (8 cars)	16	202,240	10,560 (cont)	350	447	223.5	??	??	??	8
AT 300 (5 cars, 7 cars)	??	??	700 kW per traction axle, numbers unknown	??	??	??	0,75	??	326 (5 cars) ca. 510 (7 cars)	10 (5 cars) 14 (7 cars)
Javelin (A Train)	16	121,300	3360	225 (25 kV) 160 (750 V)	265	176,7	0,7	??	340	12

Table 5 Long distance passenger train sets – EMU hauled service

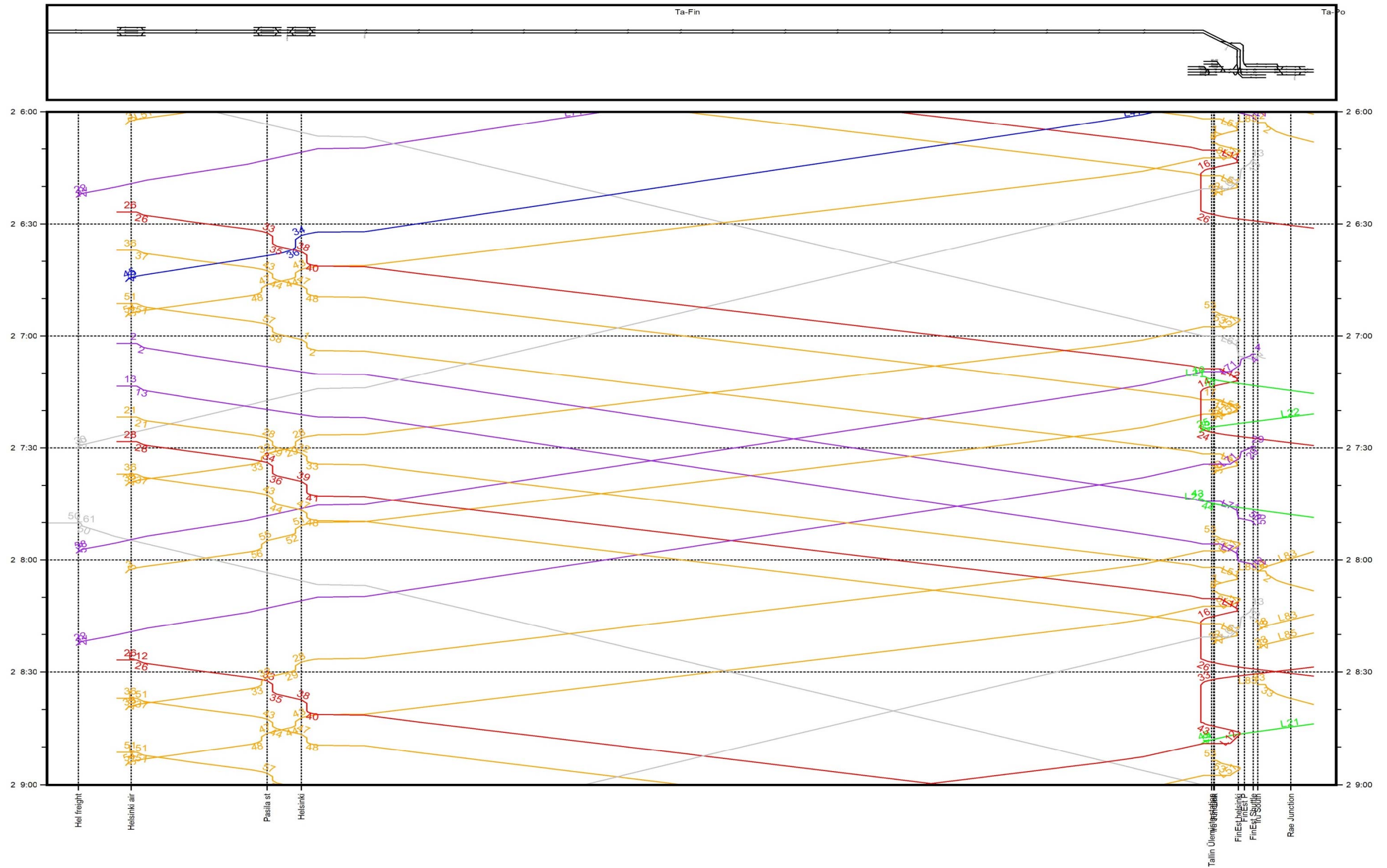
Timetable Helsinki Freight Terminal - Helsinki Airport - Tallinn Ülemiste 2056



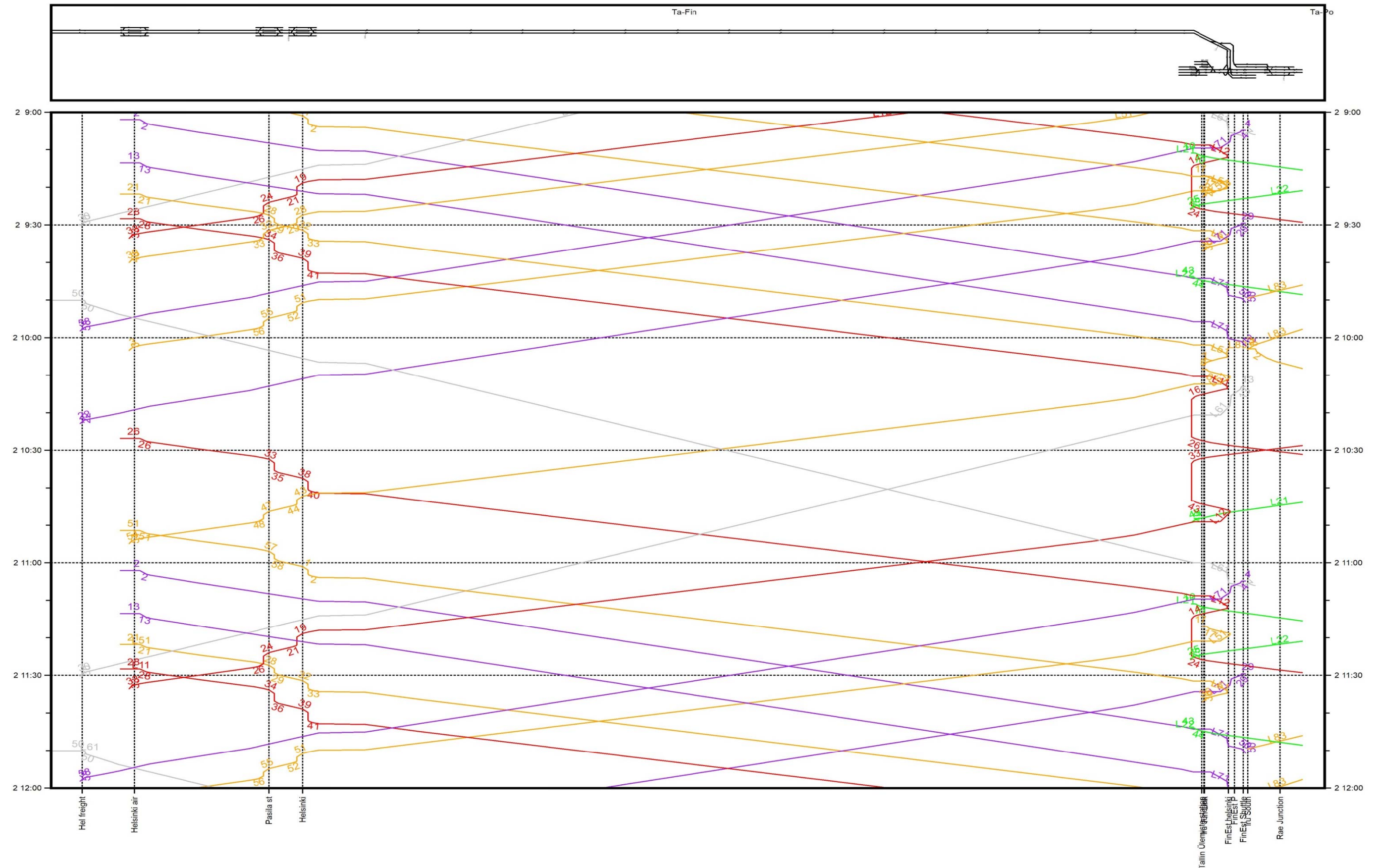
Timetable Helsinki - Tallinn 2056 (1)



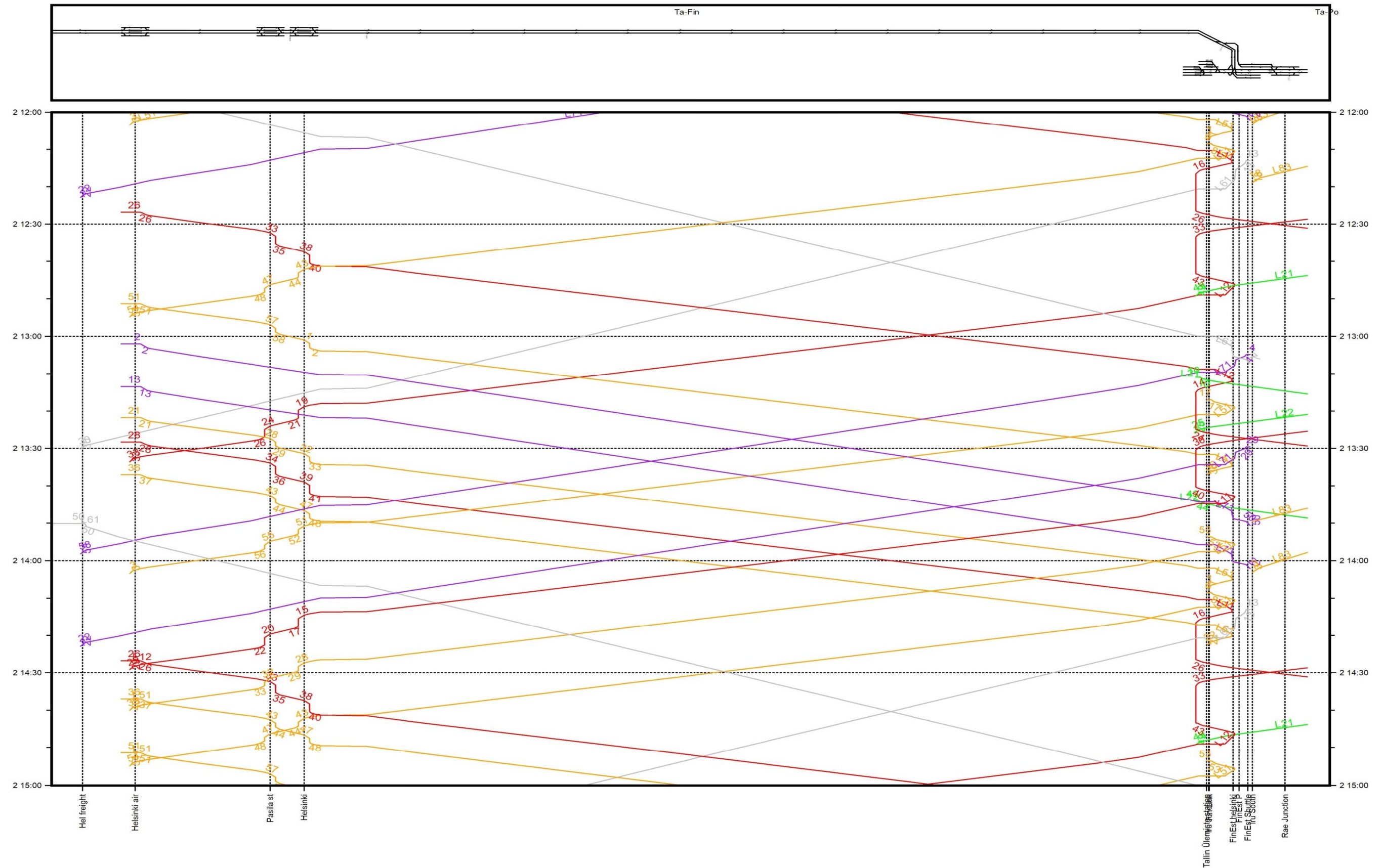
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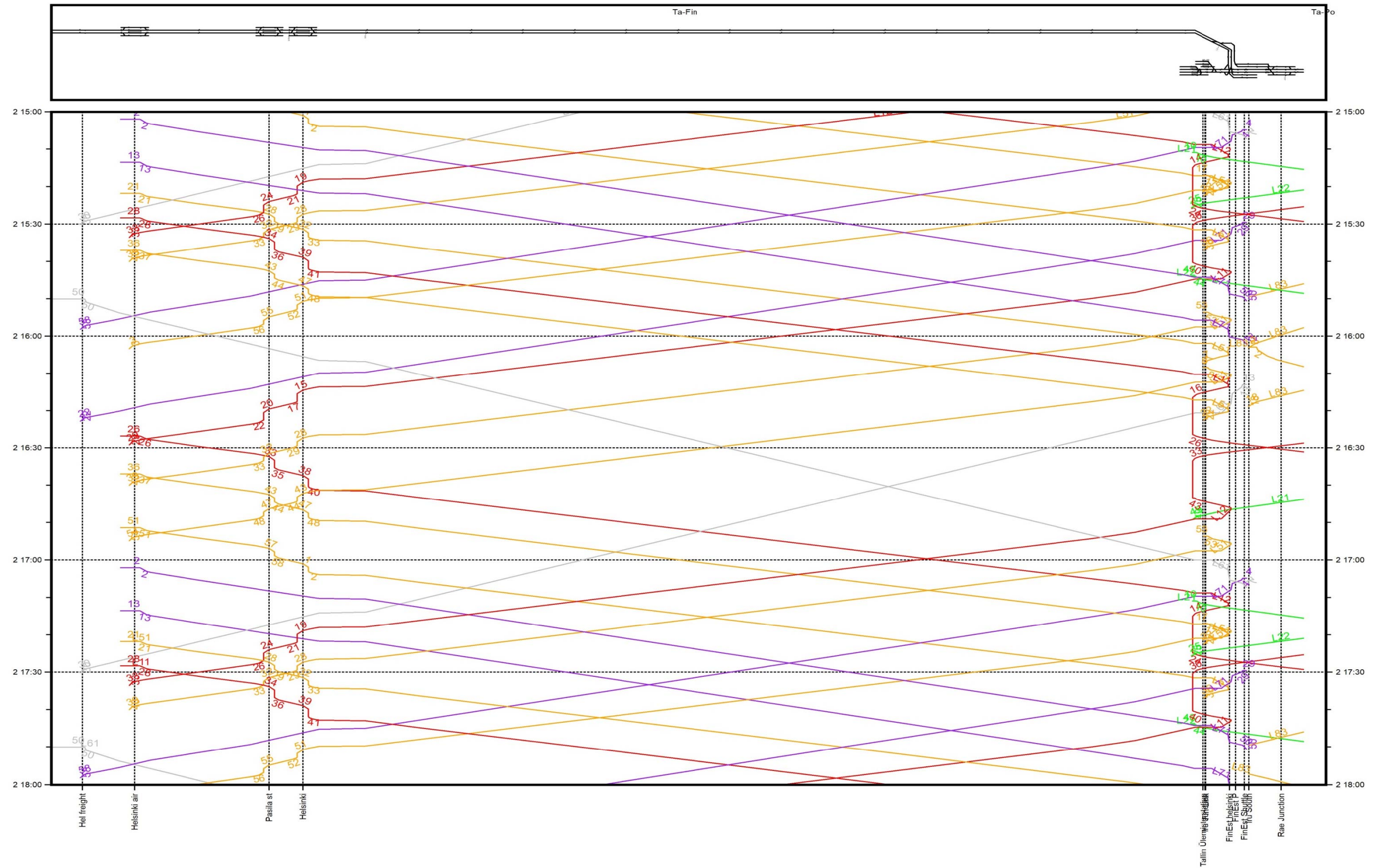
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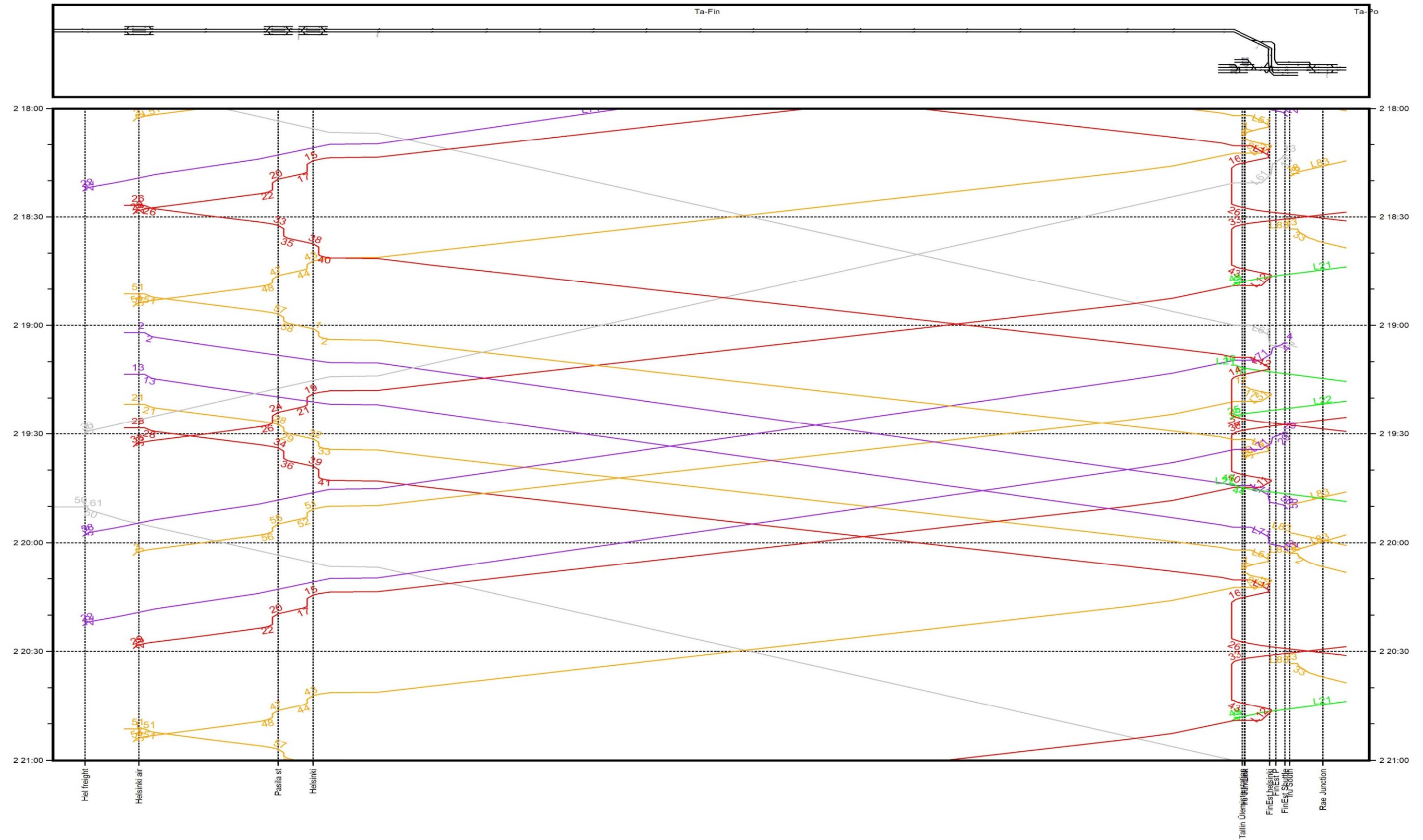
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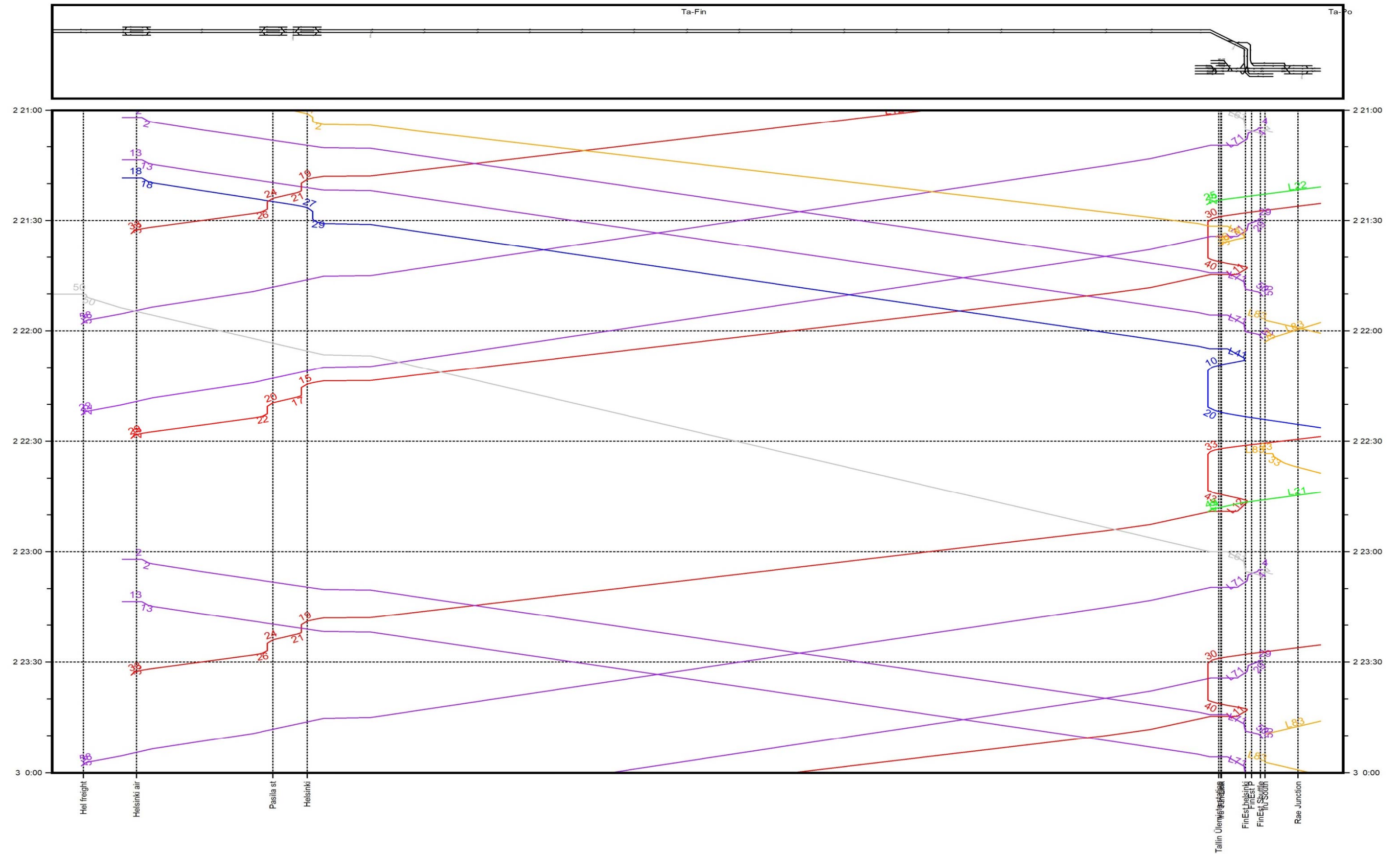
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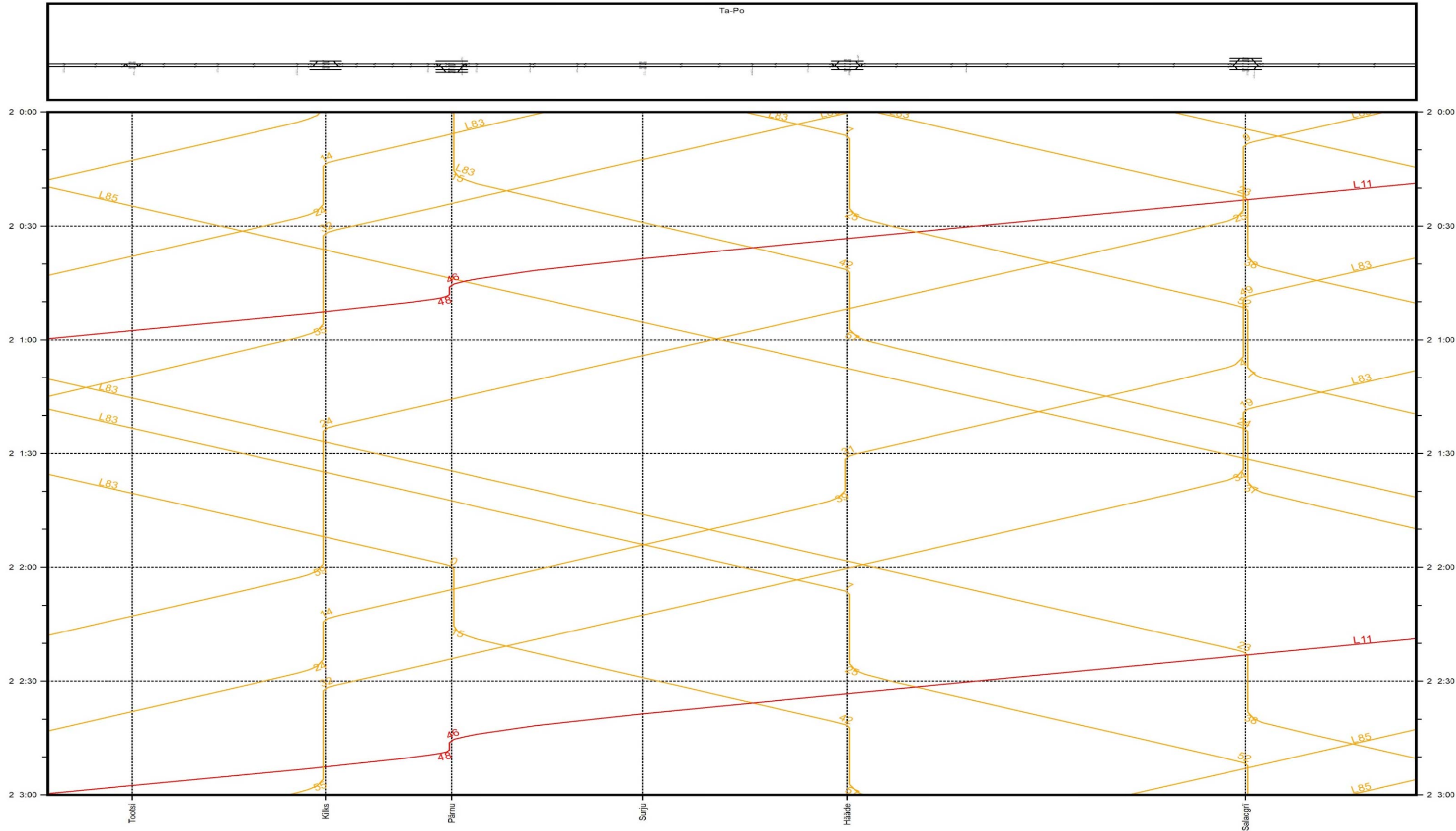
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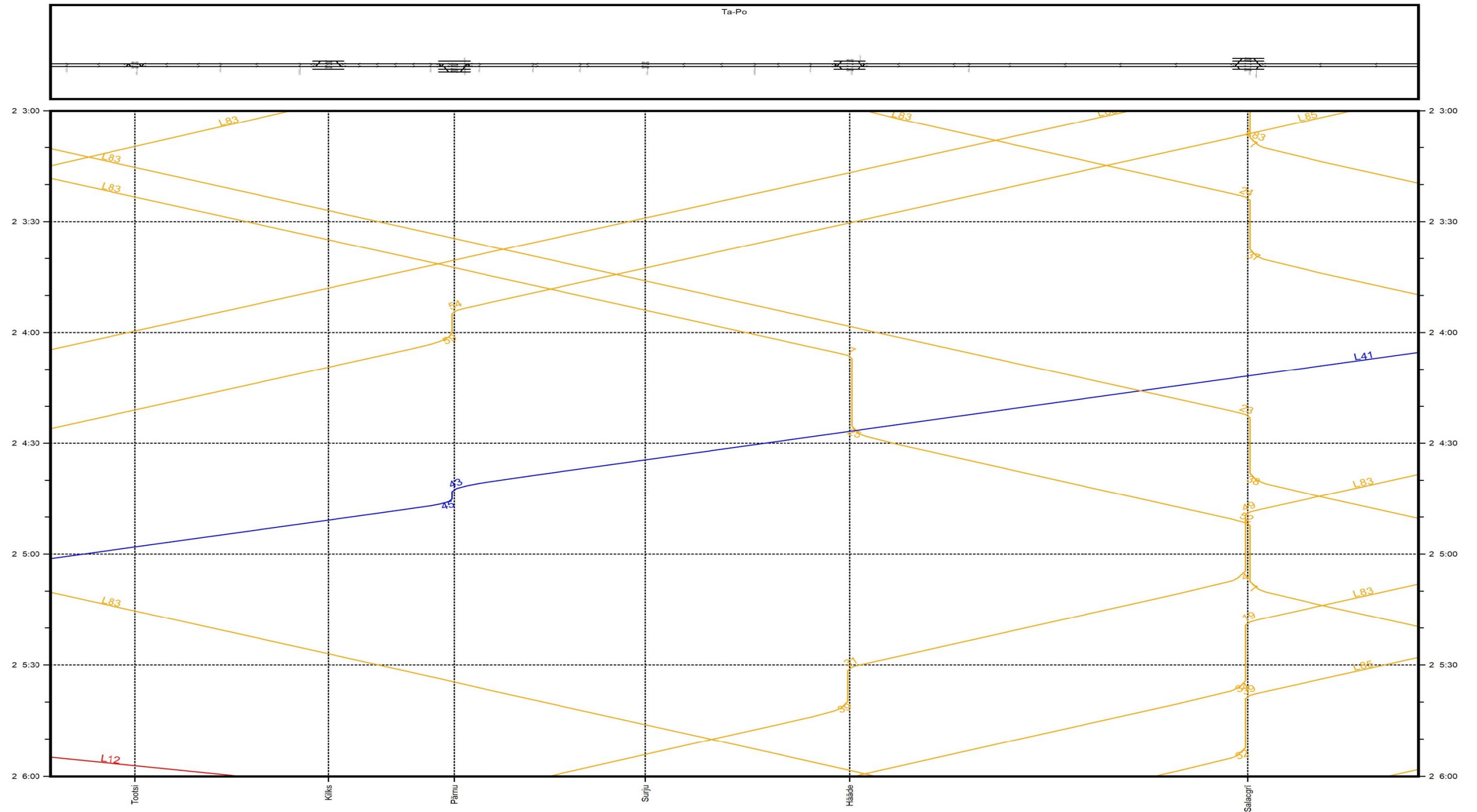
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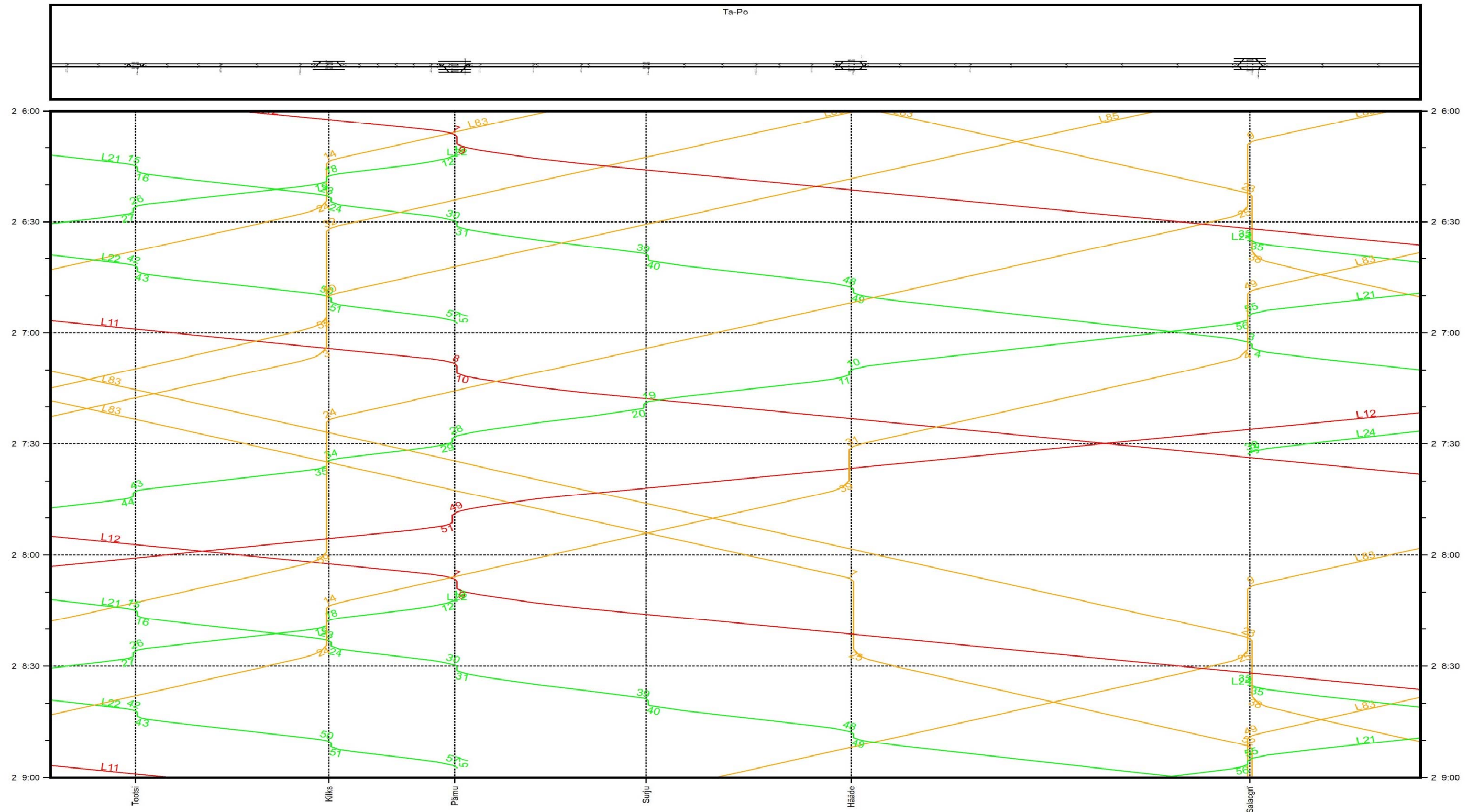
Timetable Tootsi - Salacgrīva 2056 (1)



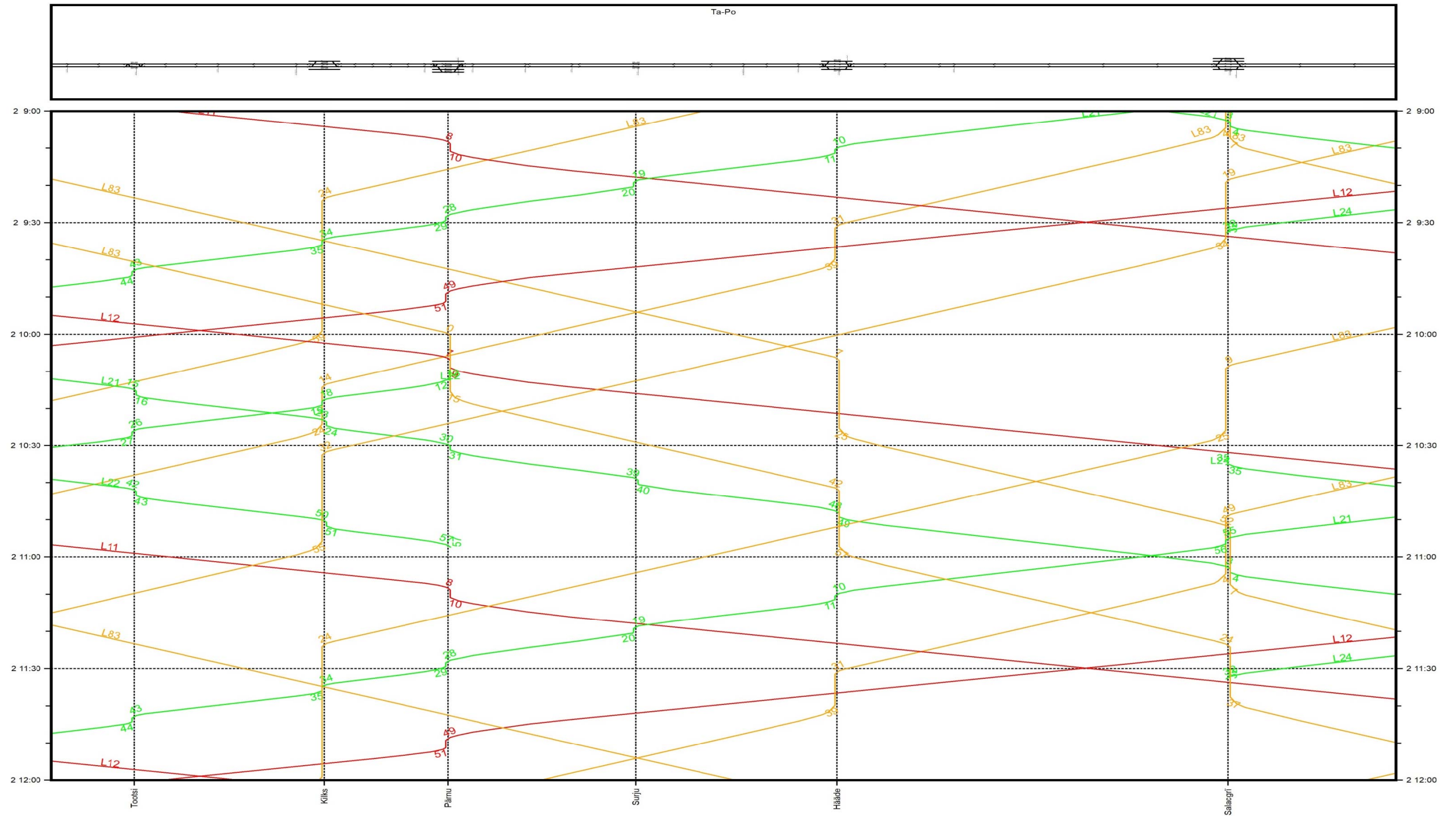
Timetable Tootsi - Salacgrīva 2056 (2)



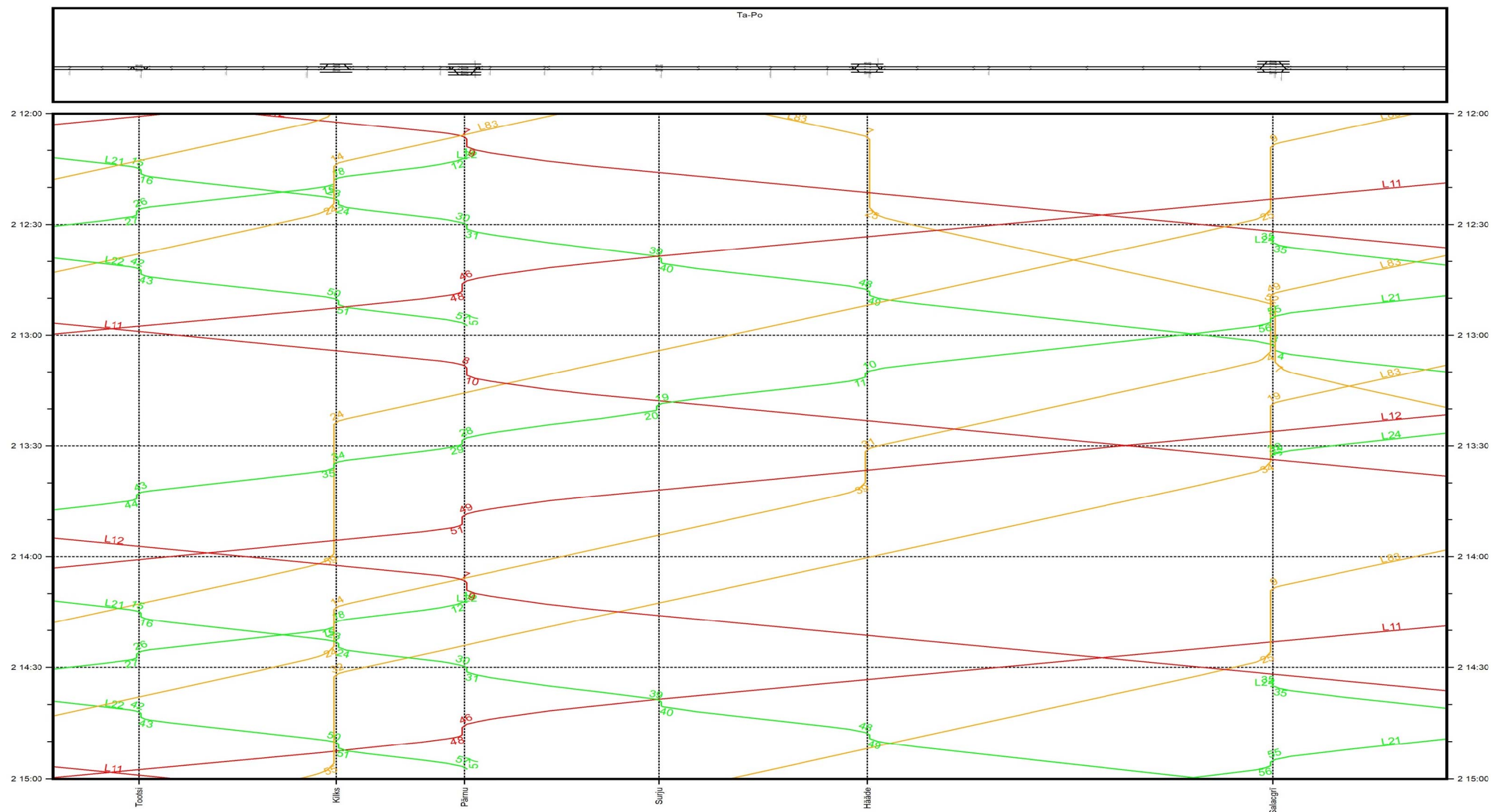
Timetable Tootsi - Salacgrīva 2056 (3)



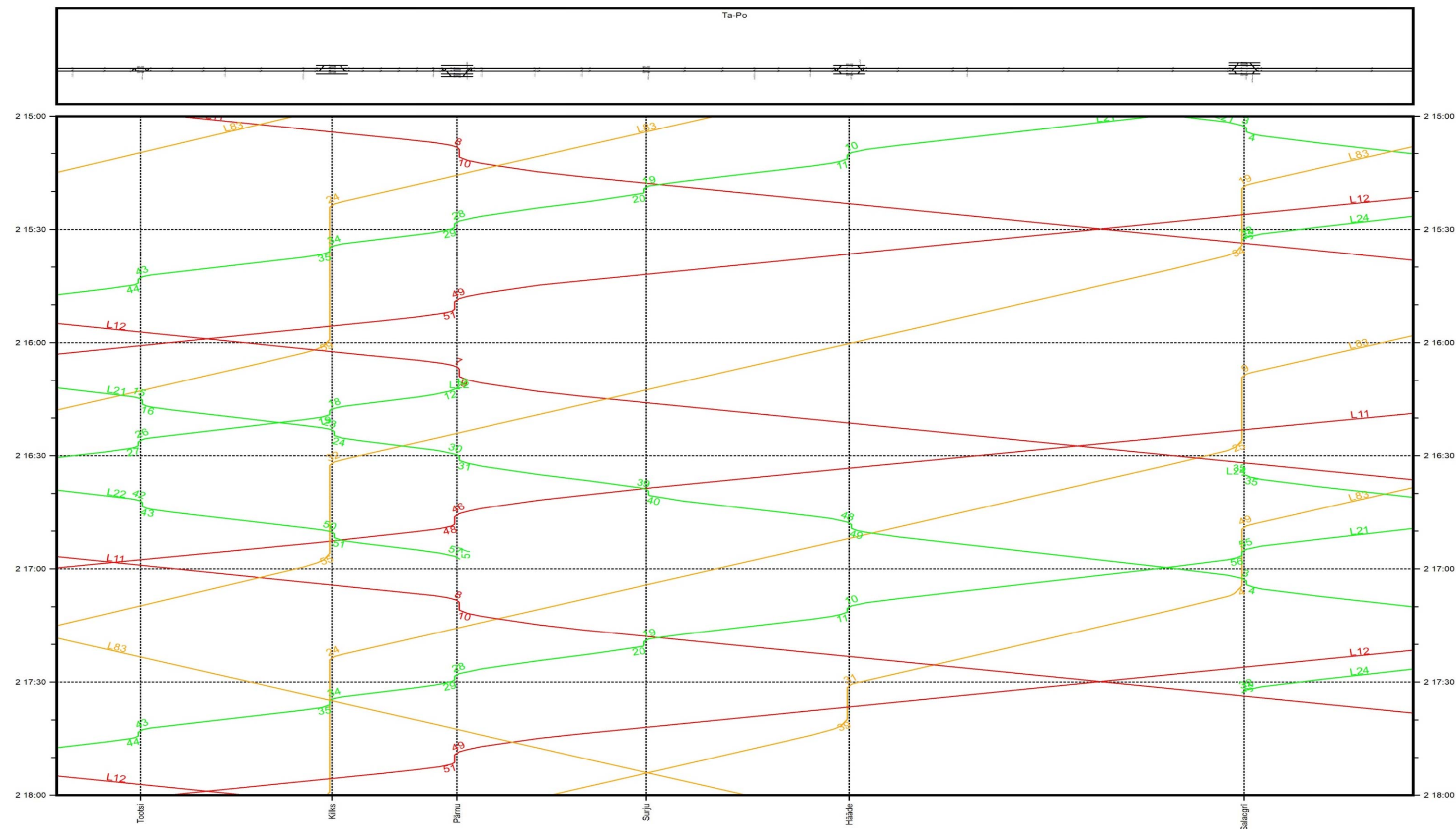
Timetable Tootsi - Salacgrīva 2056 (4)



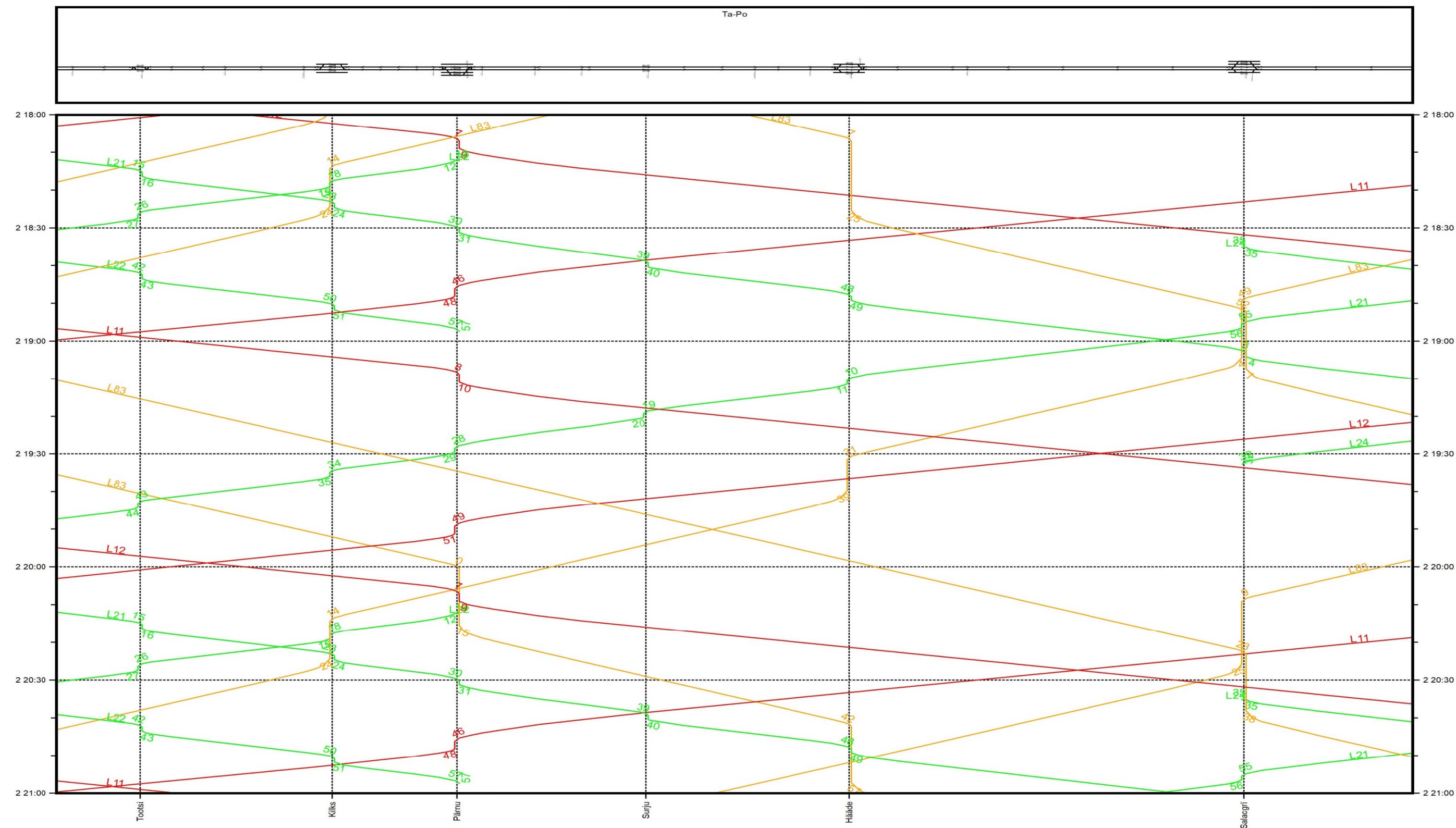
Timetable Tootsi - Salacgrīva 2056 (5)



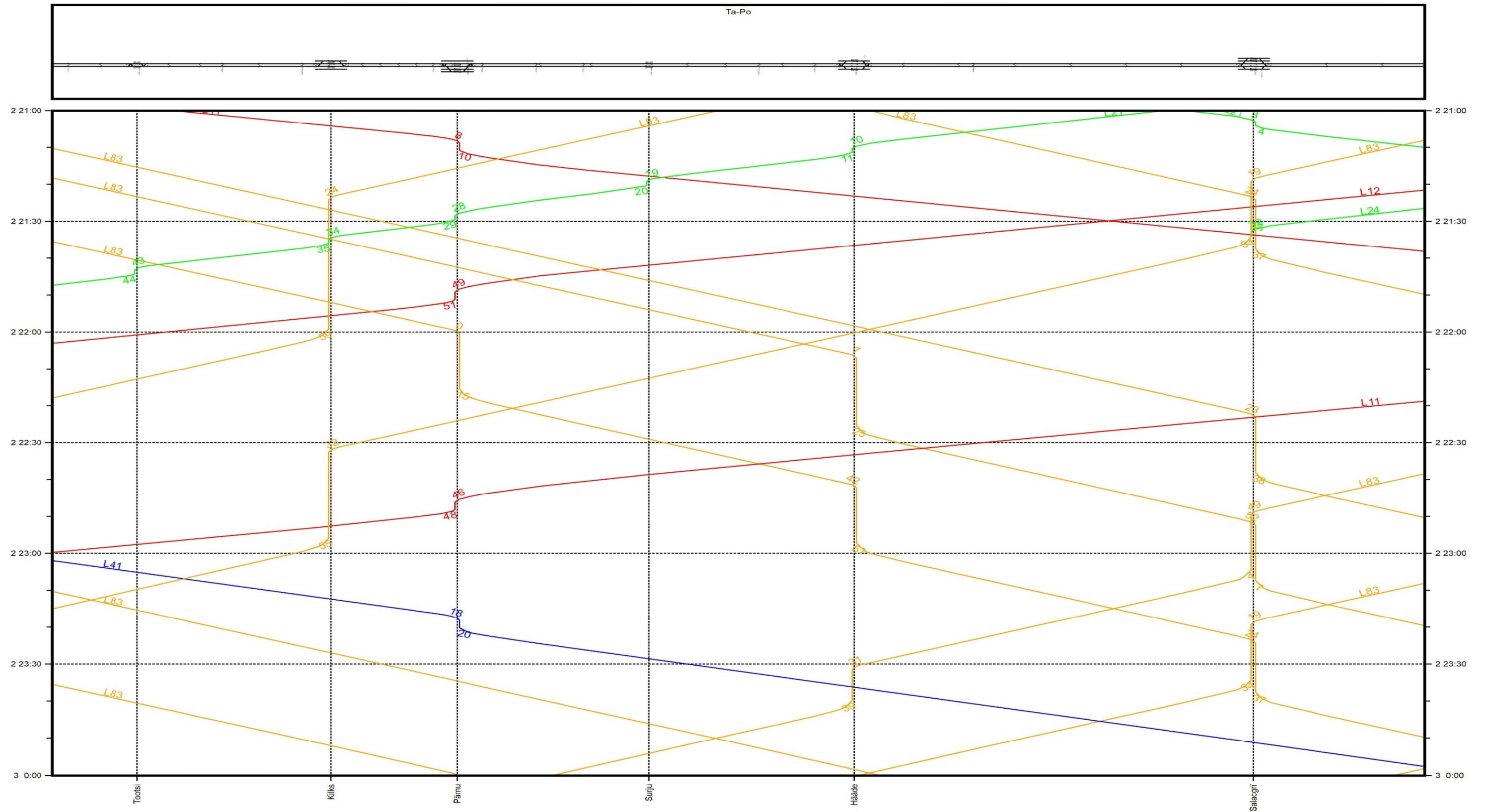
Timetable Tootsi - Salacgrīva 2056 (6)



Timetable Tootsi - Salacgrīva 2056 (7)

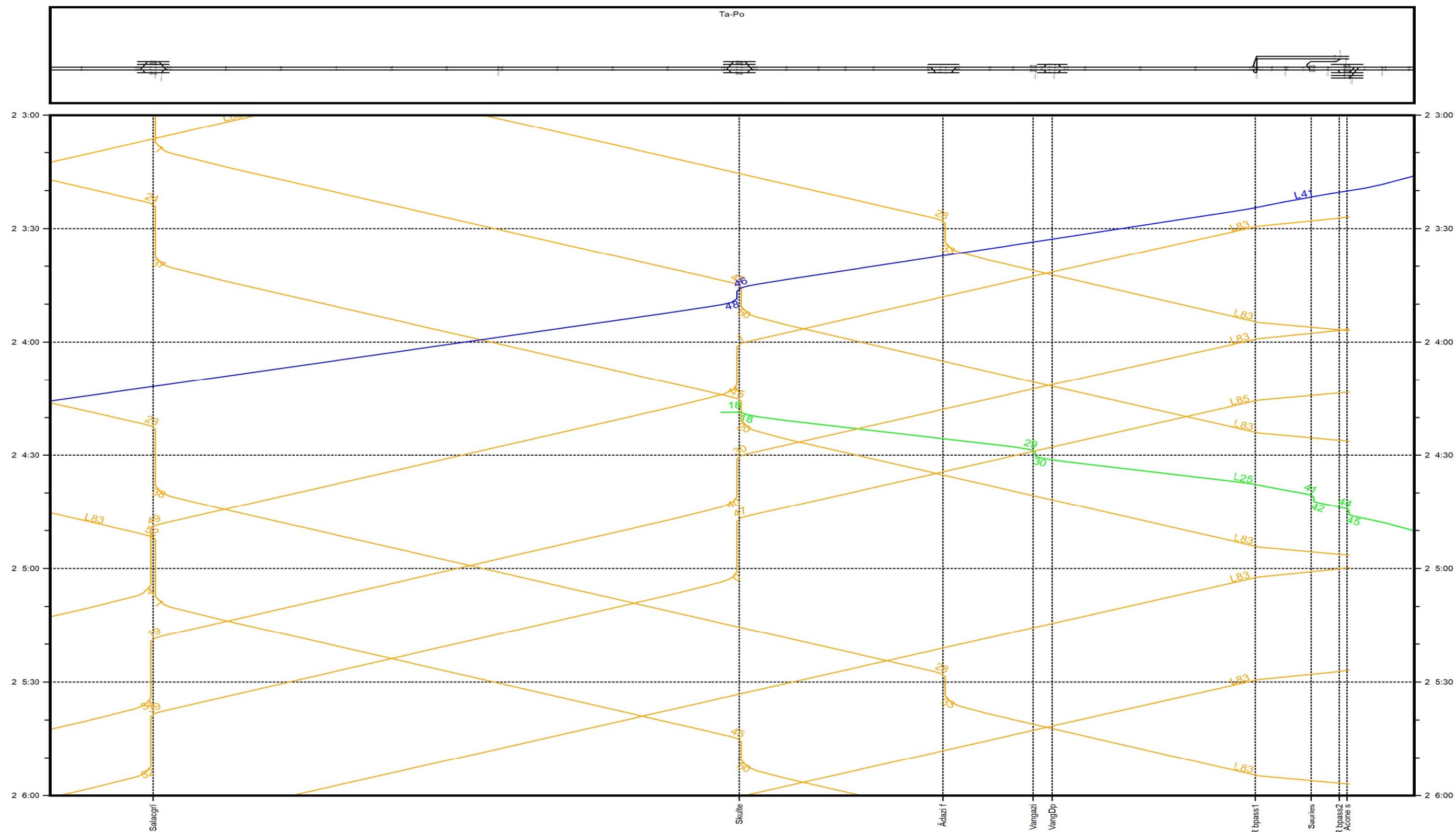


Timetable Tootsi - Salacgrīva 2056 (8)



The diagram illustrates a timeline from 2:00:00 to 2:30:00, divided into sections by vertical dashed lines labeled with names: Salacgi, Skulte, Adazi, Vangazi, VangDp, R bpass1, Sauris, and Adone's. The timeline is marked with horizontal dashed lines at 30-second intervals. Multiple colored lines (yellow, blue, red) represent different paths or events, with labels such as L.83, L.41, and L.11 indicating specific points or segments. A small inset at the top shows a simplified version of the diagram.

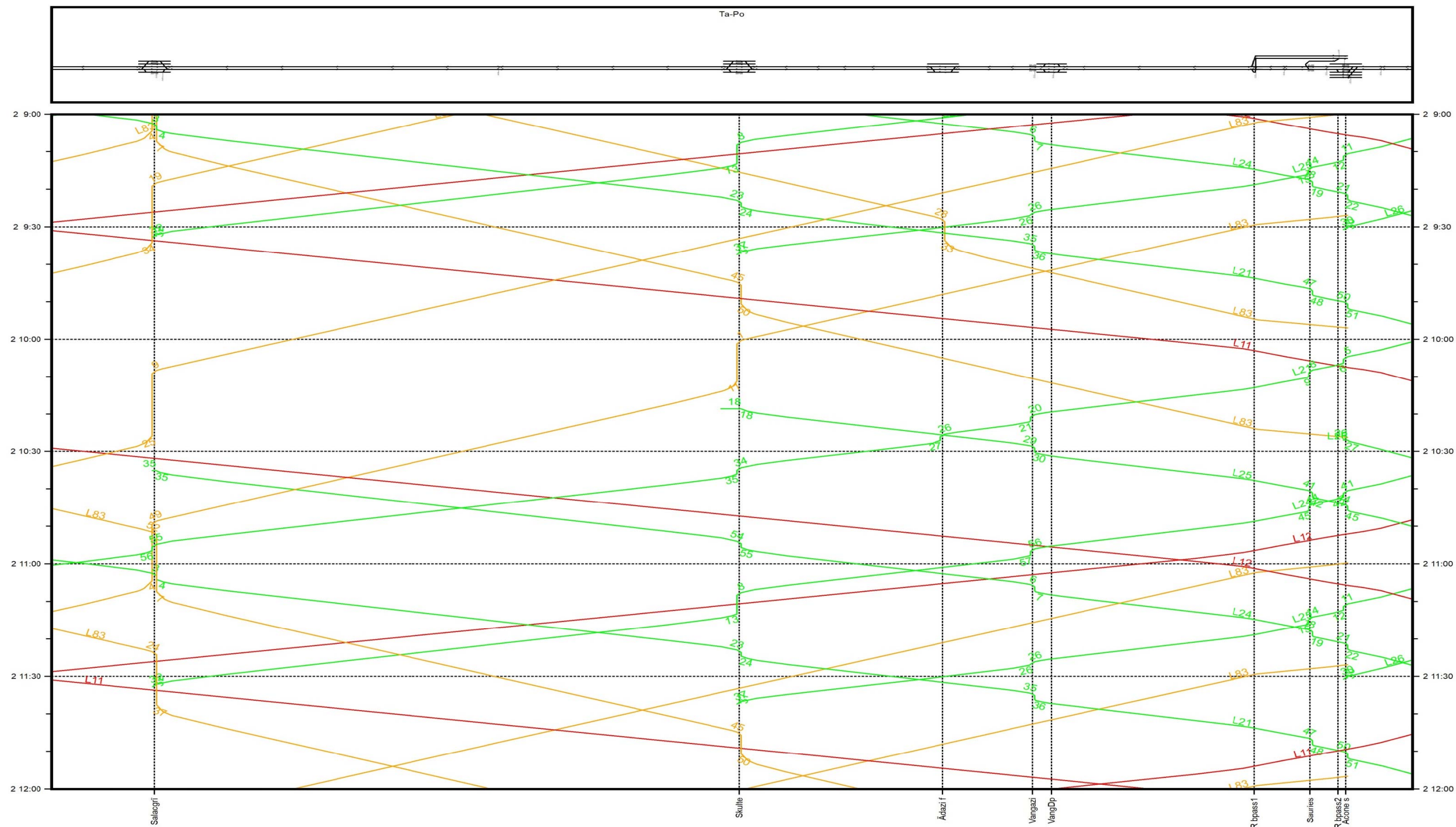
Timetable Salacgrīva – Acone 2056 (2)



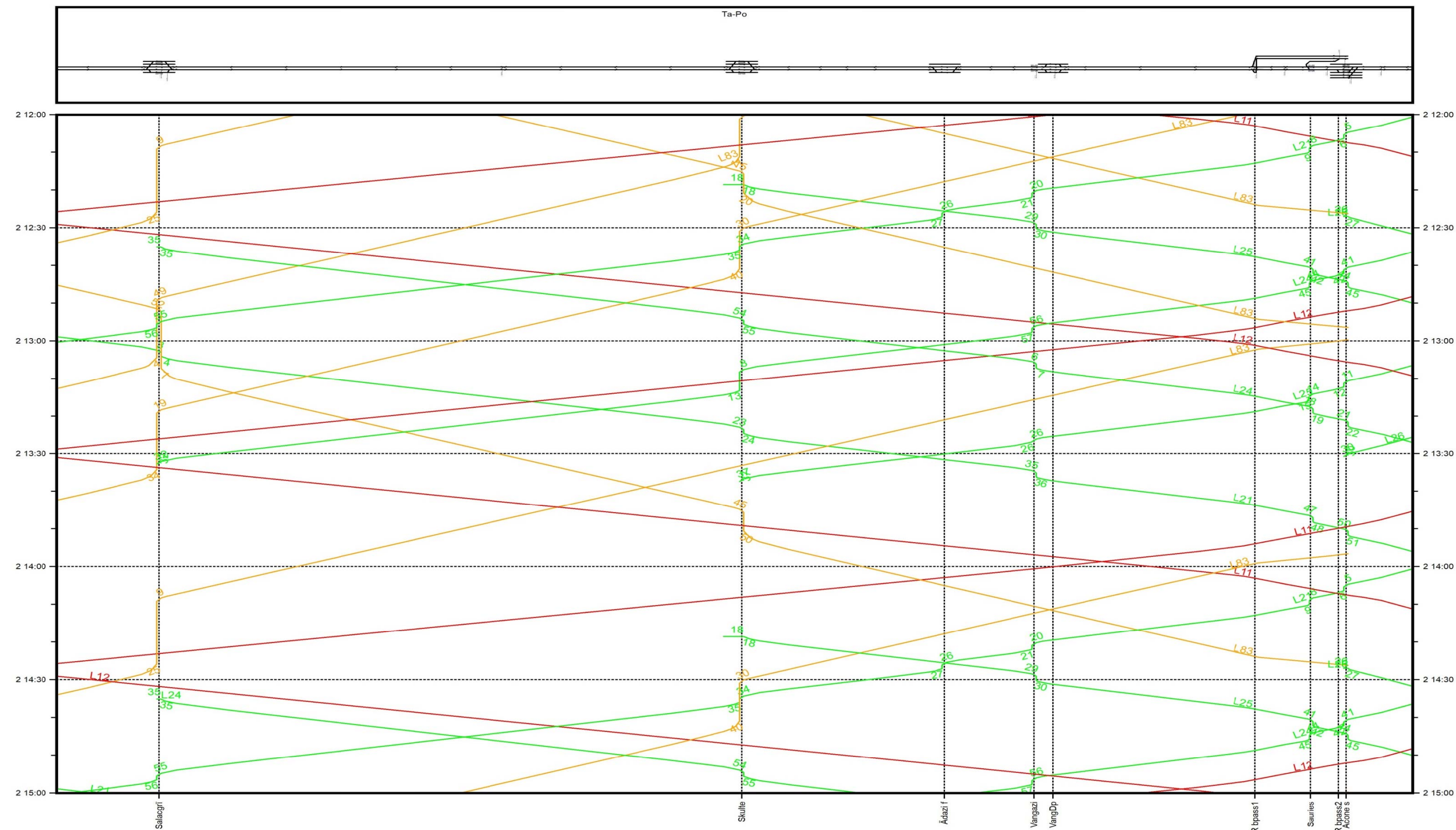
Musical score for 'Ta-Po'. The score is written on a single staff with a key signature of one flat (B-flat) and a common time signature (C). The melody consists of several measures, including a triplet of eighth notes, a quarter note, and a half note. The score ends with a double bar line.



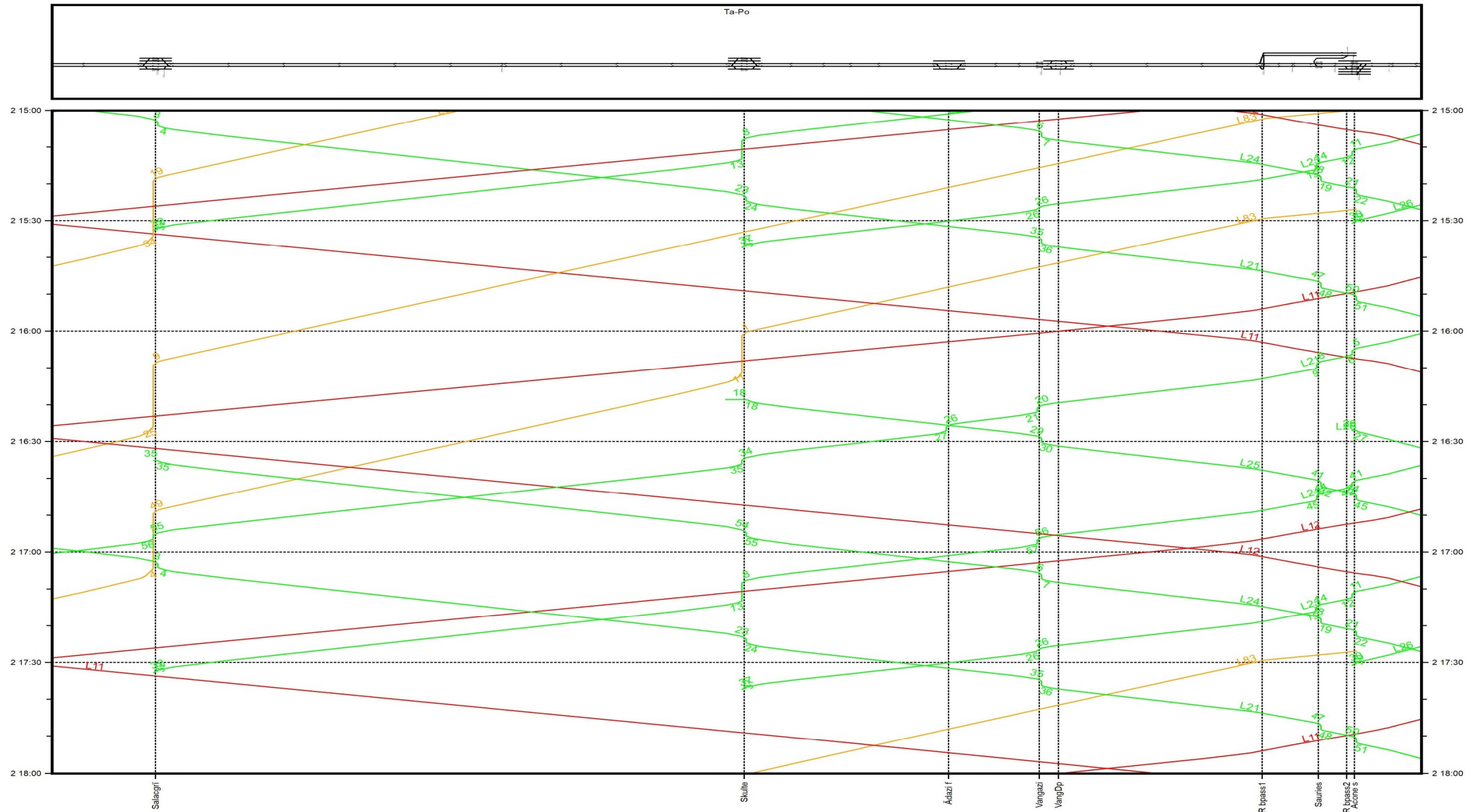
Timetable Salacgrīva – Acone 2056 (4)



Timetable Salacgrīva – Acone 2056 (5)



Timetable Salacgrīva – Acone 2056 (6)

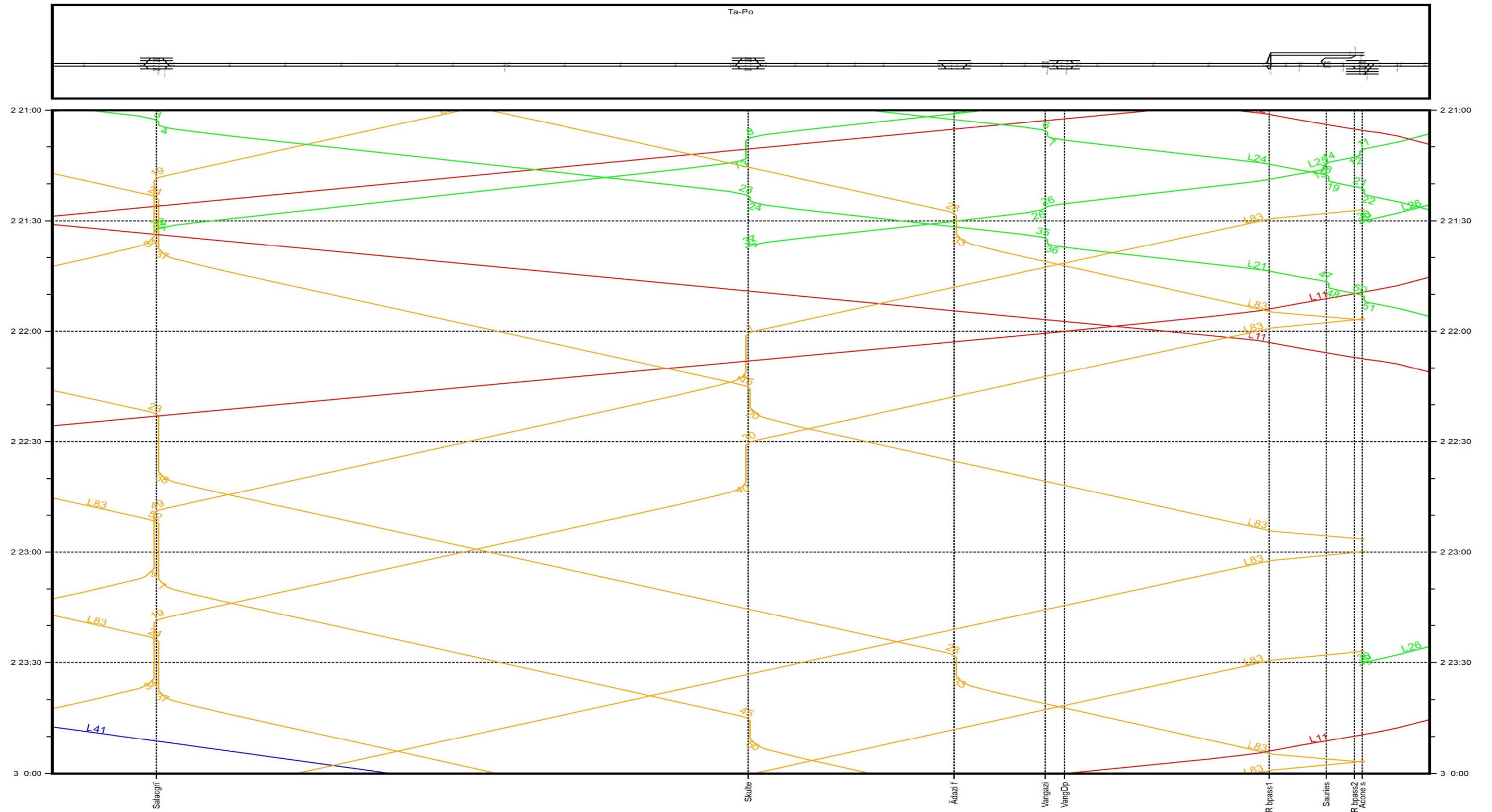


The diagram illustrates a railway track layout and a corresponding train schedule. The top section shows a simplified track plan with various track segments and signals. The bottom section is a detailed Gantt chart showing the movement of trains over time.

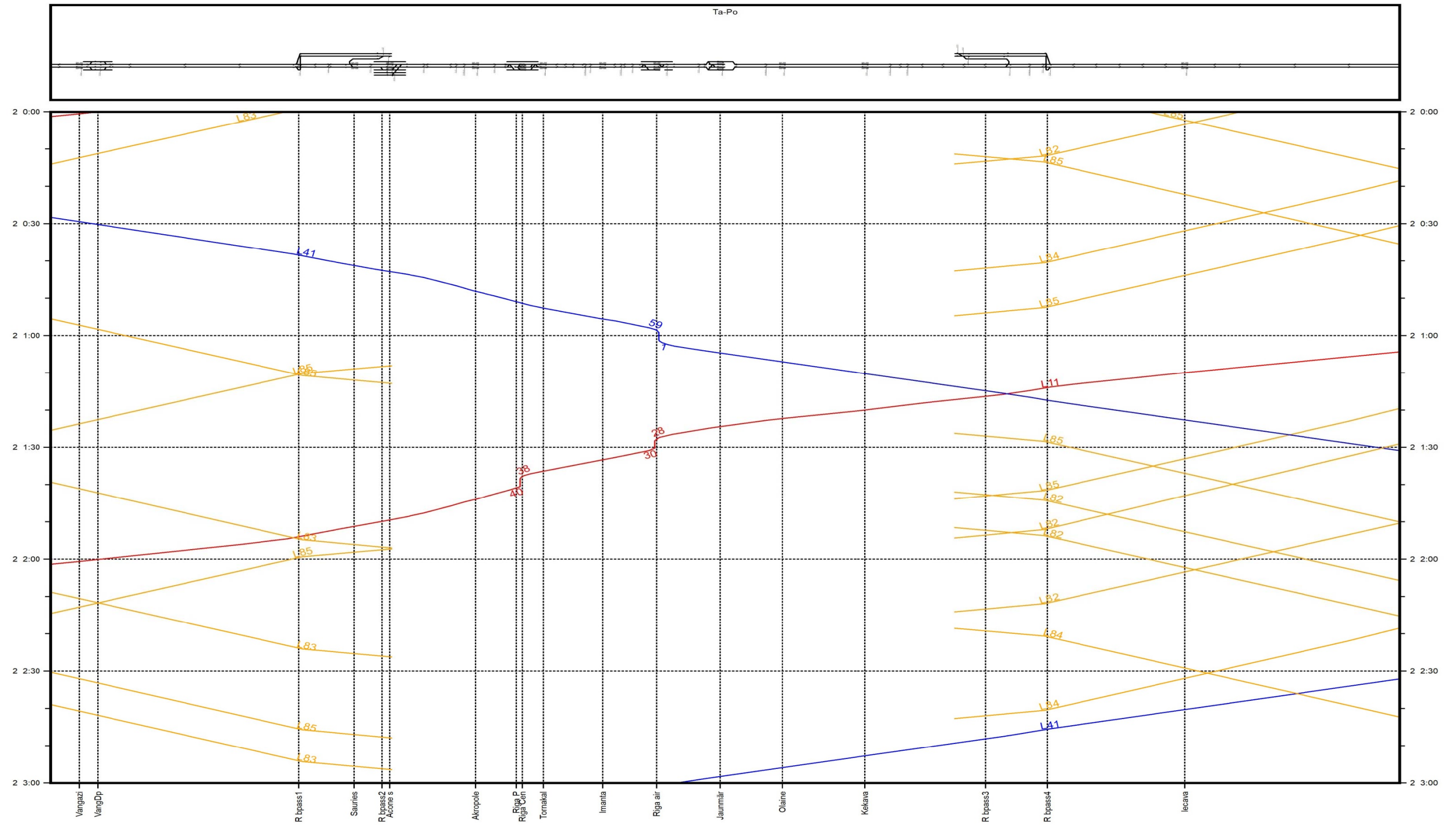
Track Layout (Top): The track layout shows a main line with several sidings and signals. The layout is labeled 'Ta-Po' at the top.

Train Schedule (Bottom): The schedule is a Gantt chart with time on the vertical axis (from 18:00 to 21:00) and stations on the horizontal axis. The stations are Salagrig, Skulte, Adazi, Vangazi, VangDp, t bpass, Saures, t bpass2, and Acorns. The chart shows the arrival and departure of trains at these stations. The trains are represented by colored lines: red, green, and yellow. The lines are labeled with numbers (e.g., 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100) and letters (e.g., L12, L17, L21, L24, L25, L26, L27, L28, L29, L30, L31, L32, L33, L34, L35, L36, L37, L38, L39, L40, L41, L42, L43, L44, L45, L46, L47, L48, L49, L50, L51, L52, L53, L54, L55, L56, L57, L58, L59, L60, L61, L62, L63, L64, L65, L66, L67, L68, L69, L70, L71, L72, L73, L74, L75, L76, L77, L78, L79, L80, L81, L82, L83, L84, L85, L86, L87, L88, L89, L90, L91, L92, L93, L94, L95, L96, L97, L98, L99, L100).

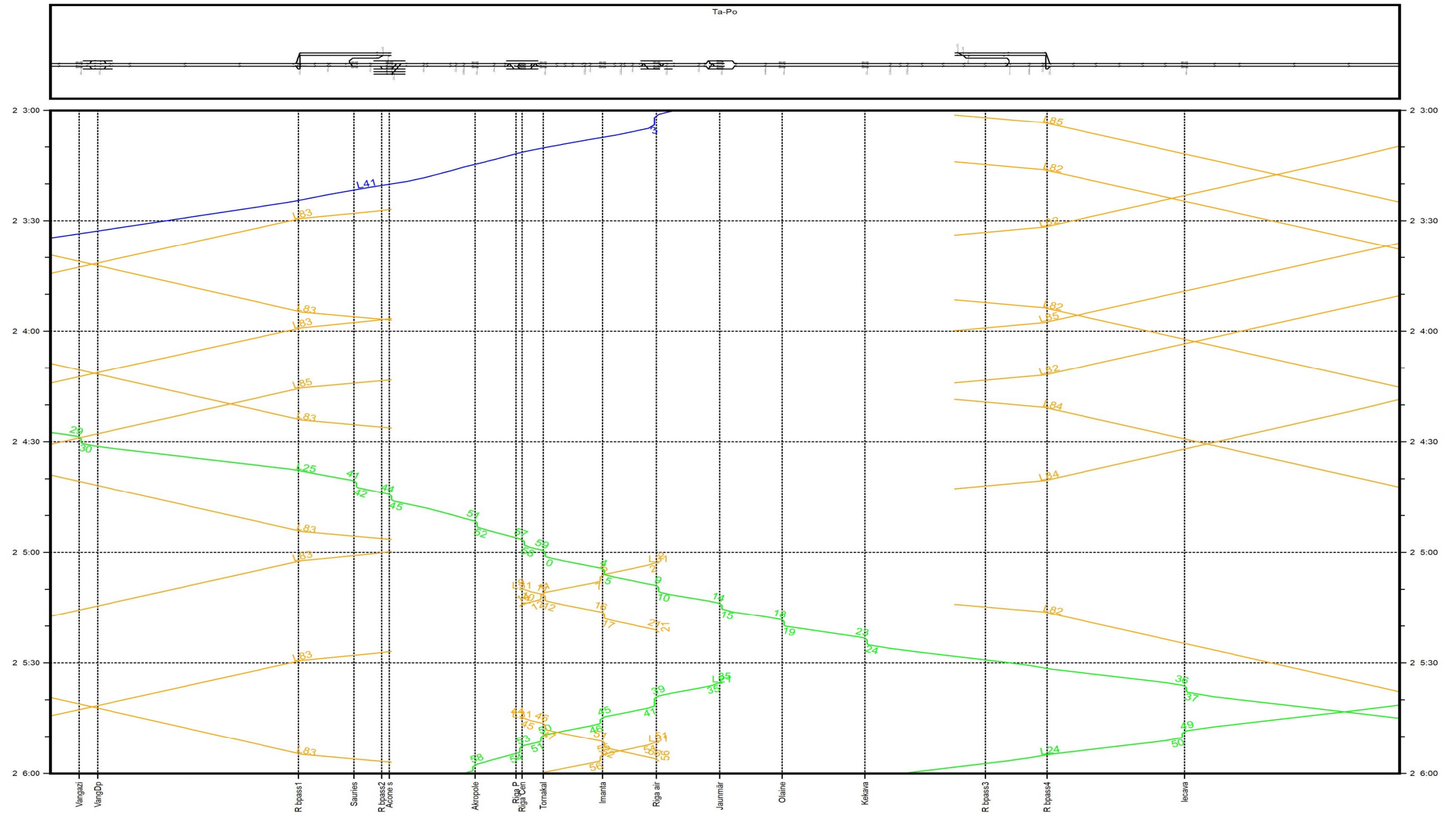
Timetable Salacgrīva – Acone 2056 (8)



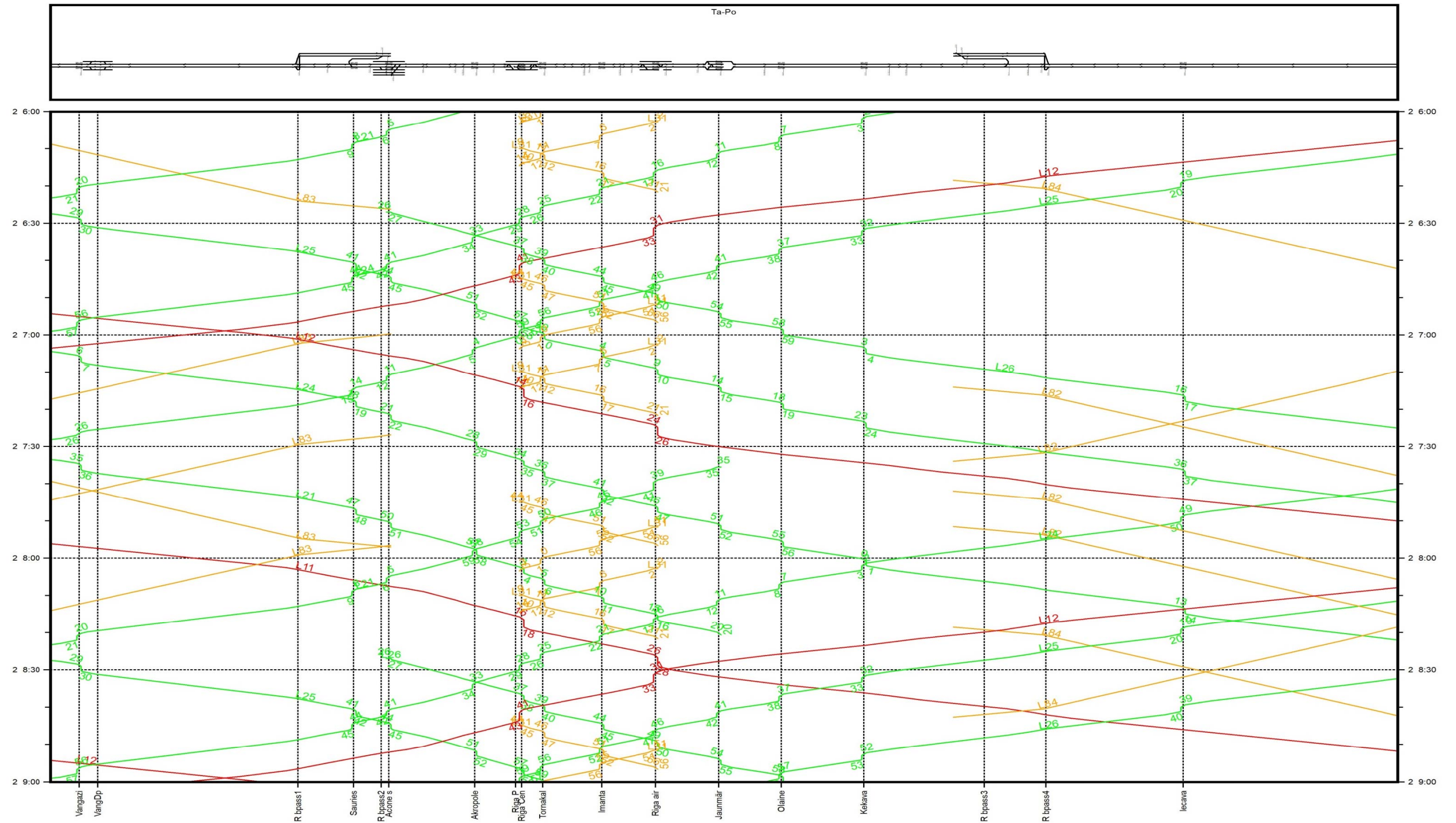
Timetable Vangazi - Iecava 2056 (1)



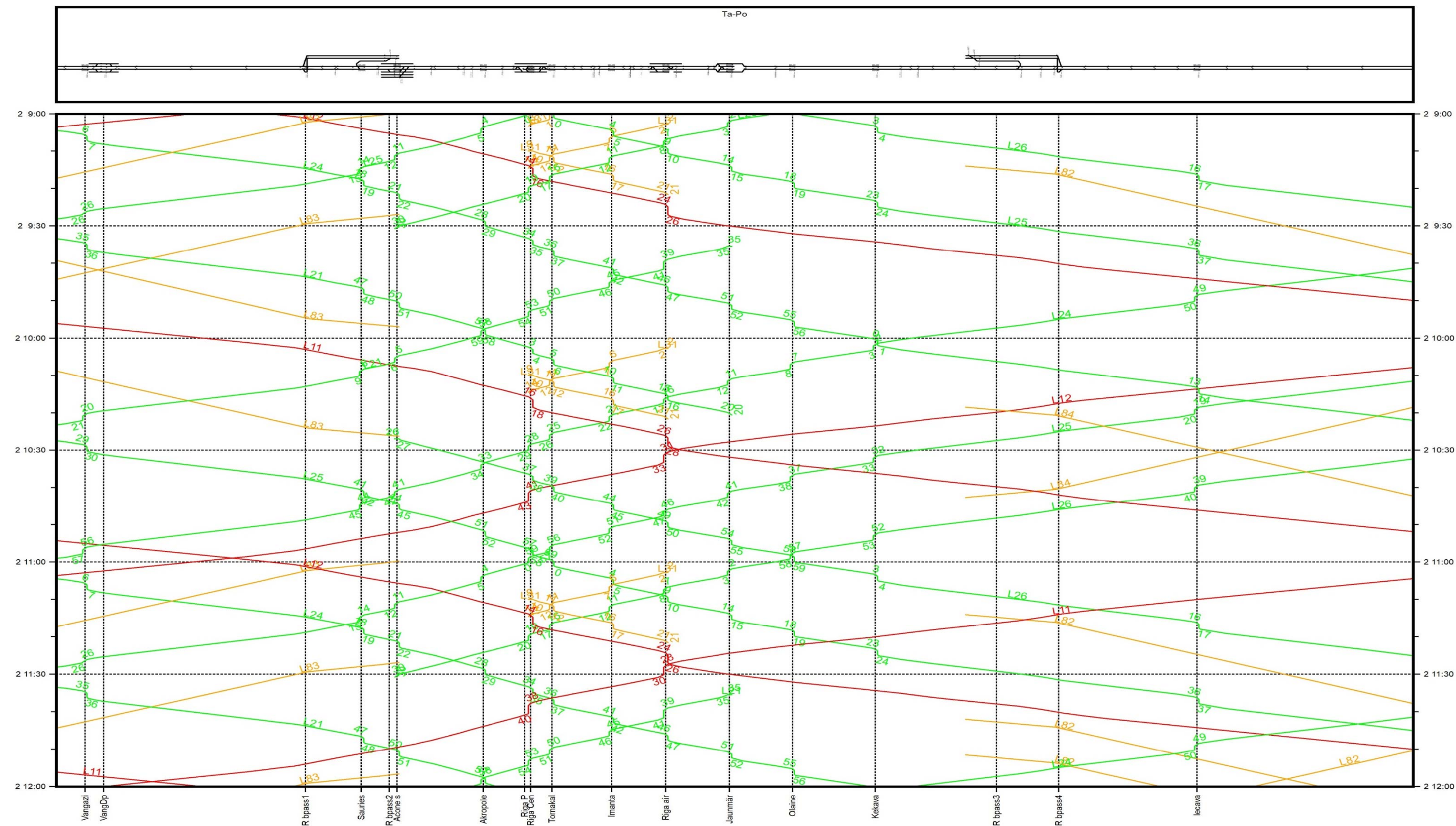
Timetable Vangazi - Iecava 2056 (2)



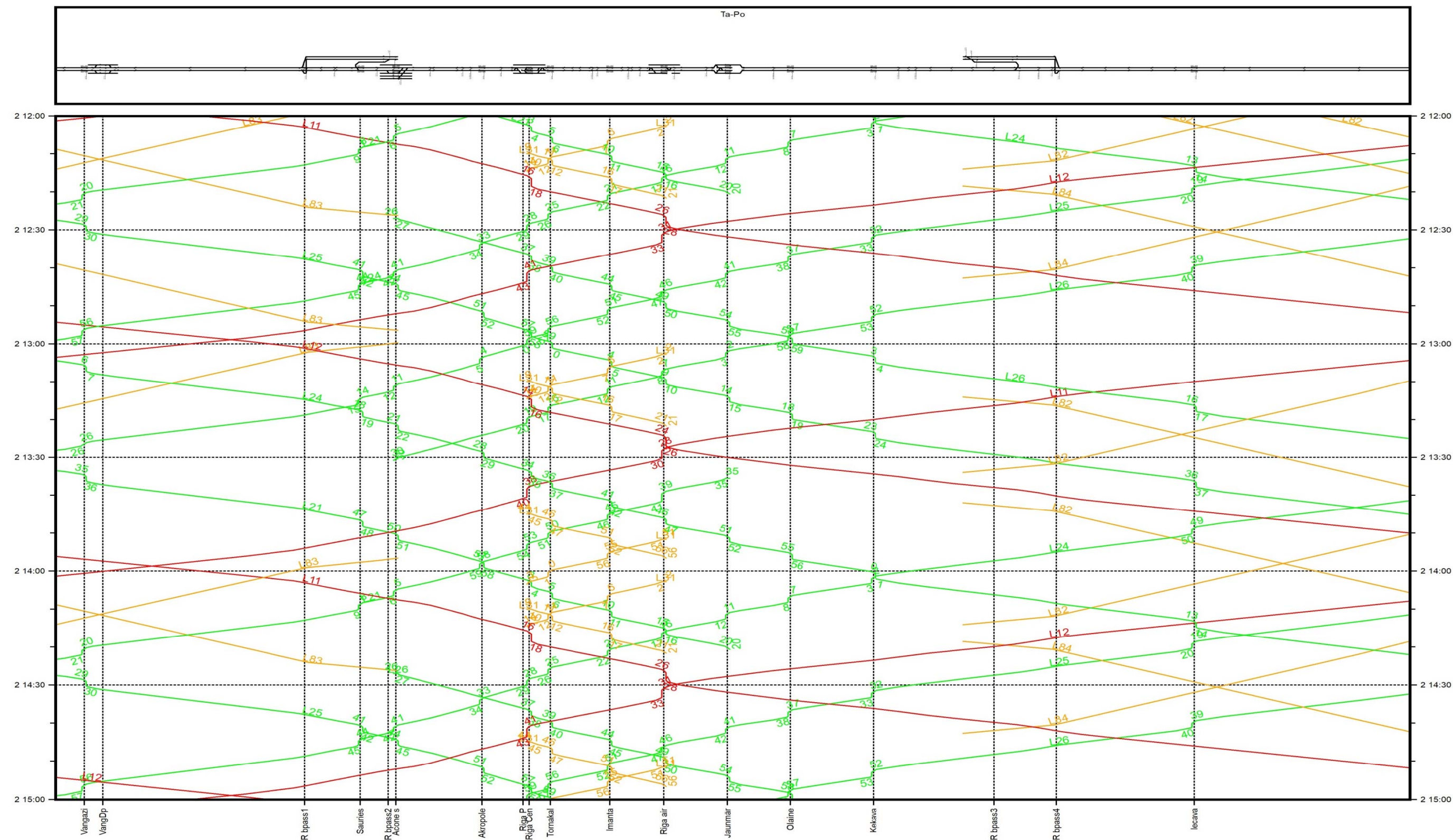
Timetable Vangazi - Iecava 2056 (3)



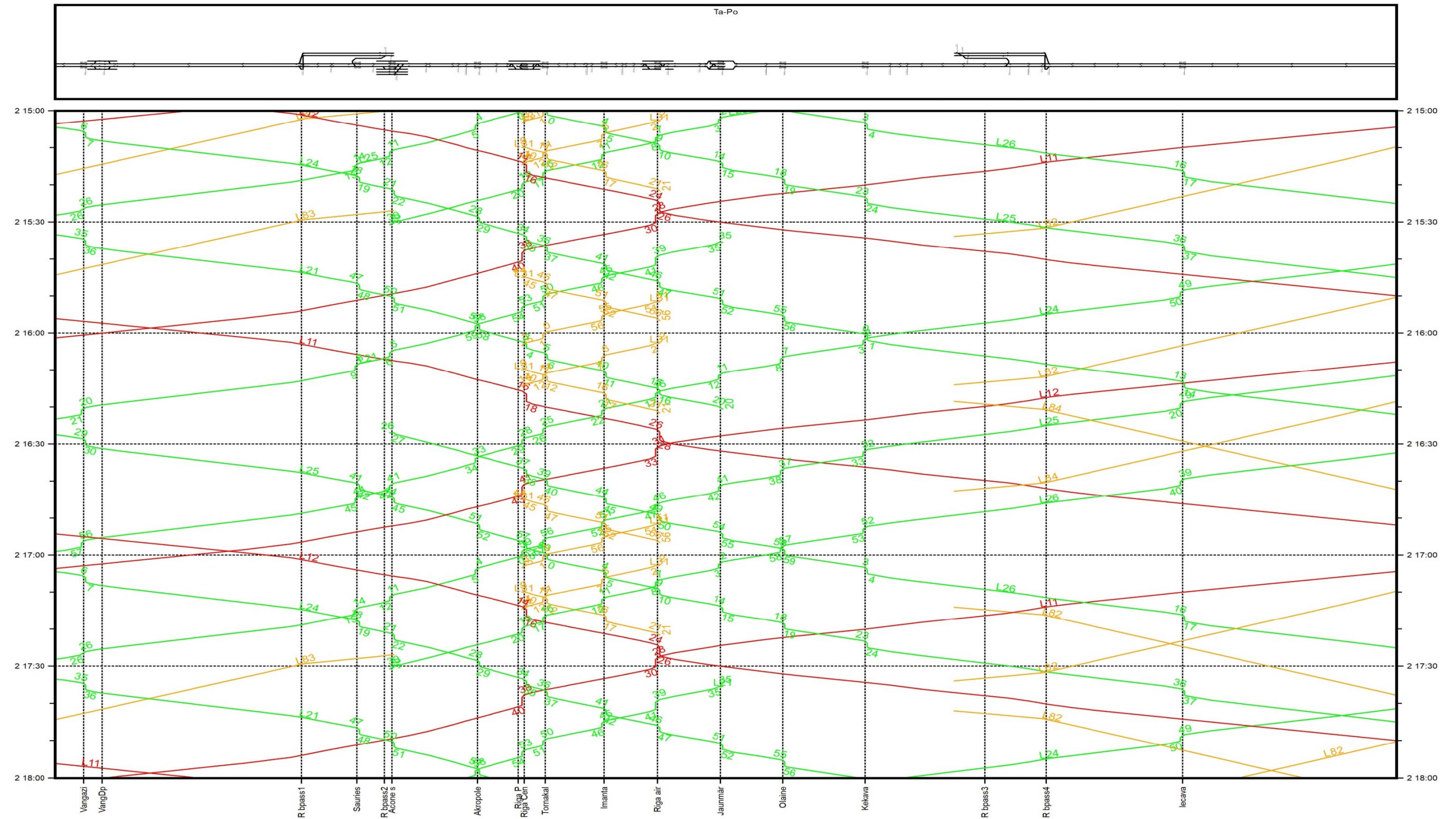
Timetable Vangazi - Iecava 2056 (4)



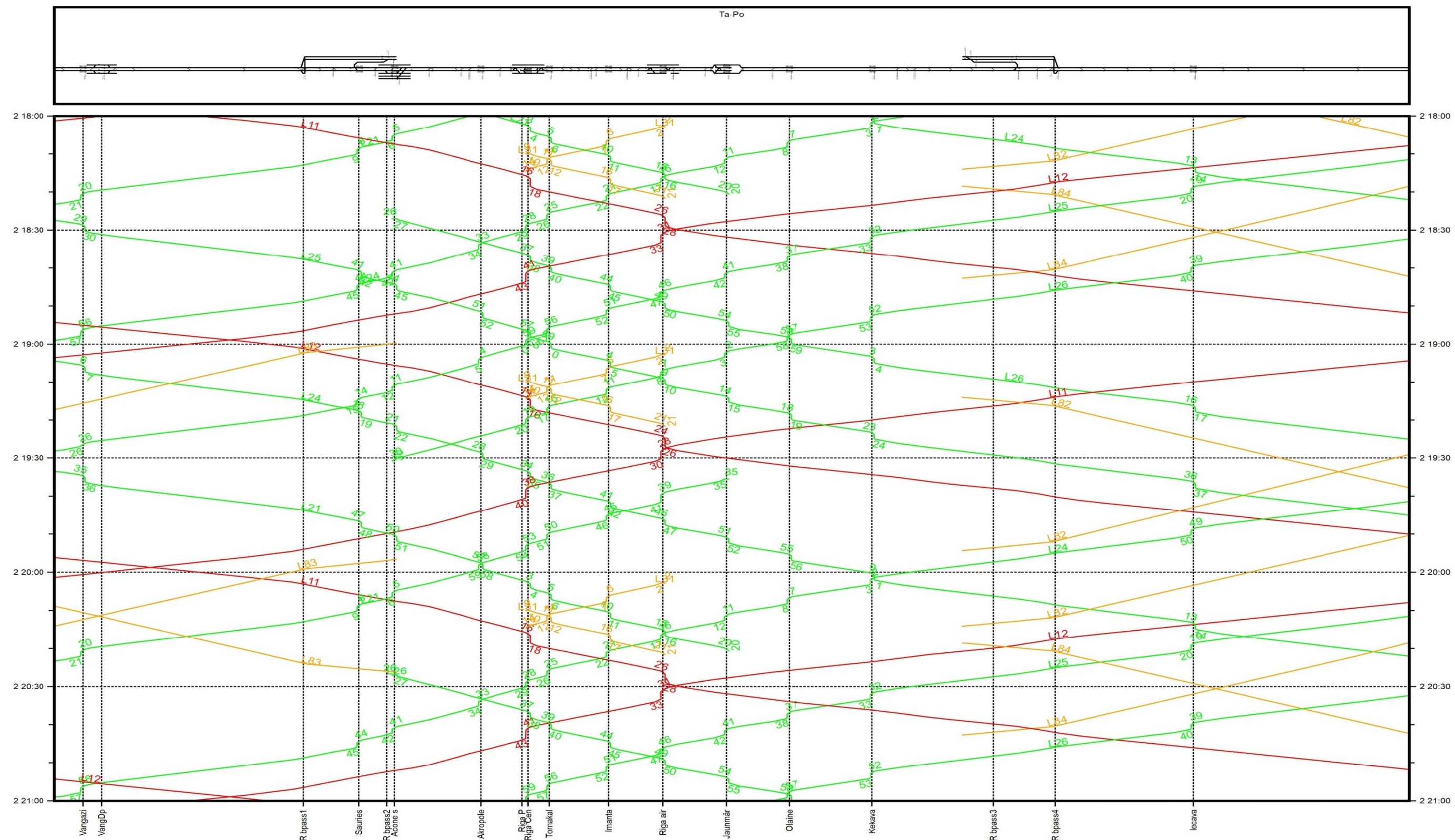
Timetable Vangazi - Iecava 2056 (5)



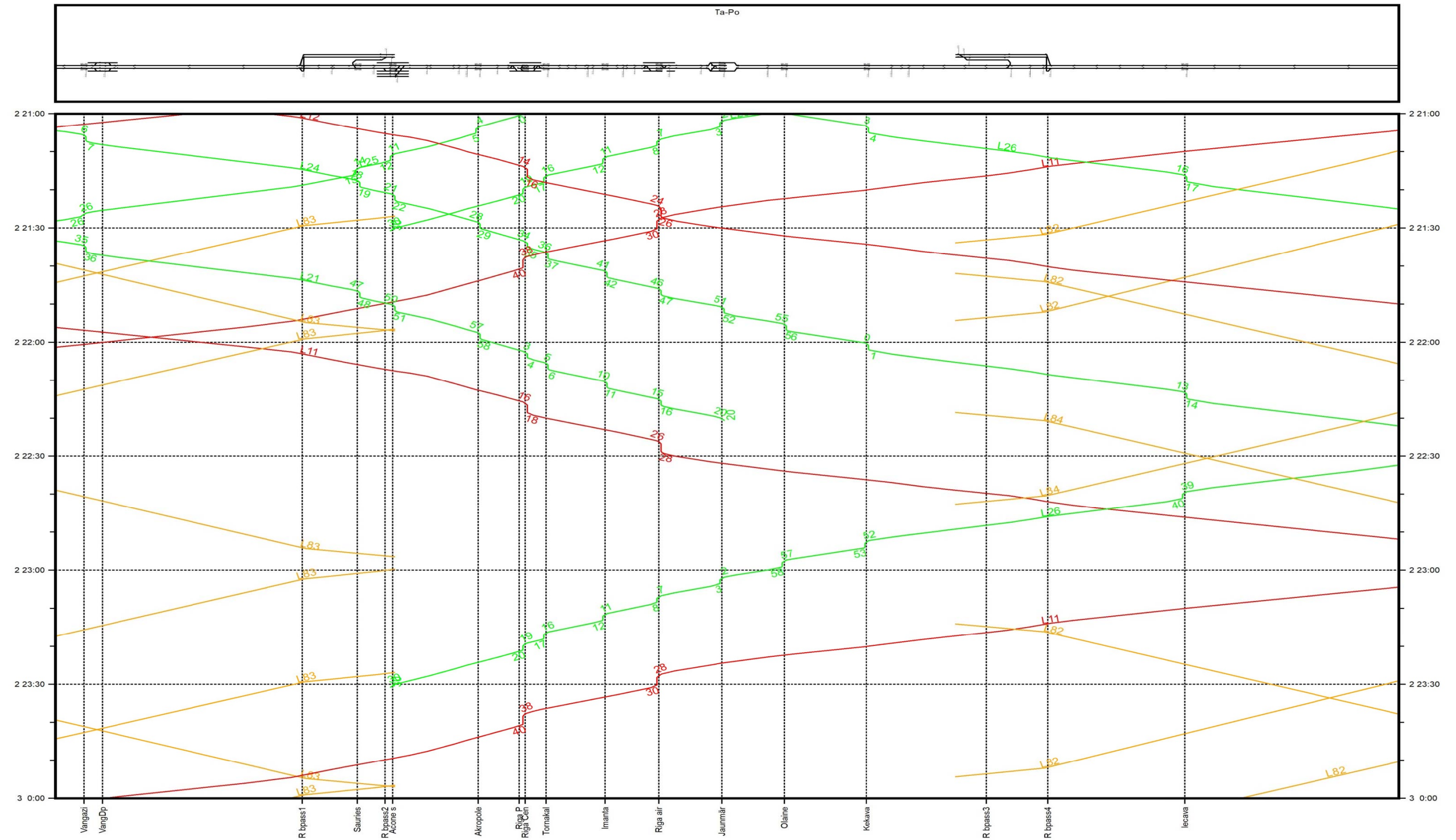
Timetable Vangazi - Iecava 2056 (6)



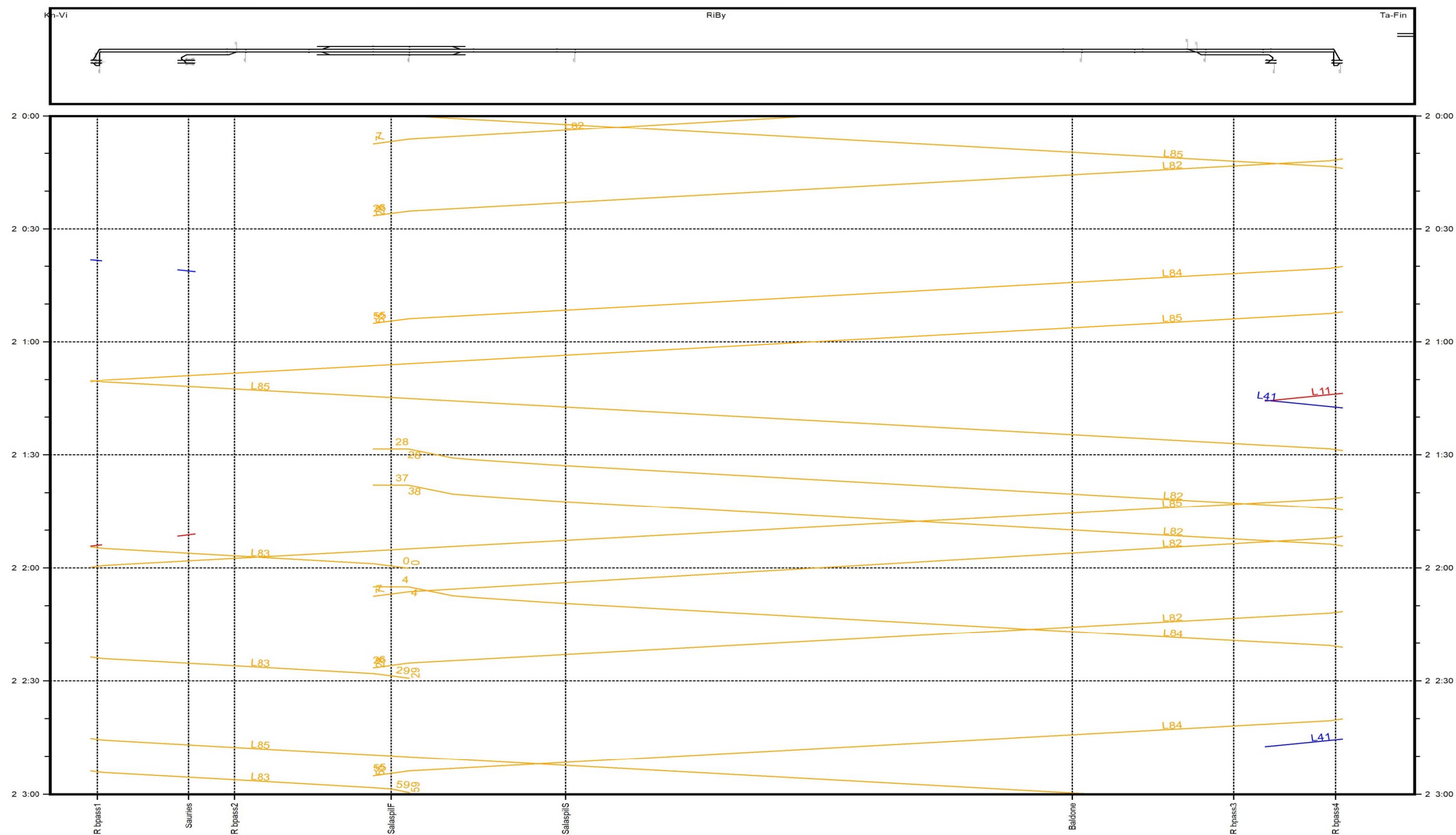
Timetable Vangazi - Iecava 2056 (7)



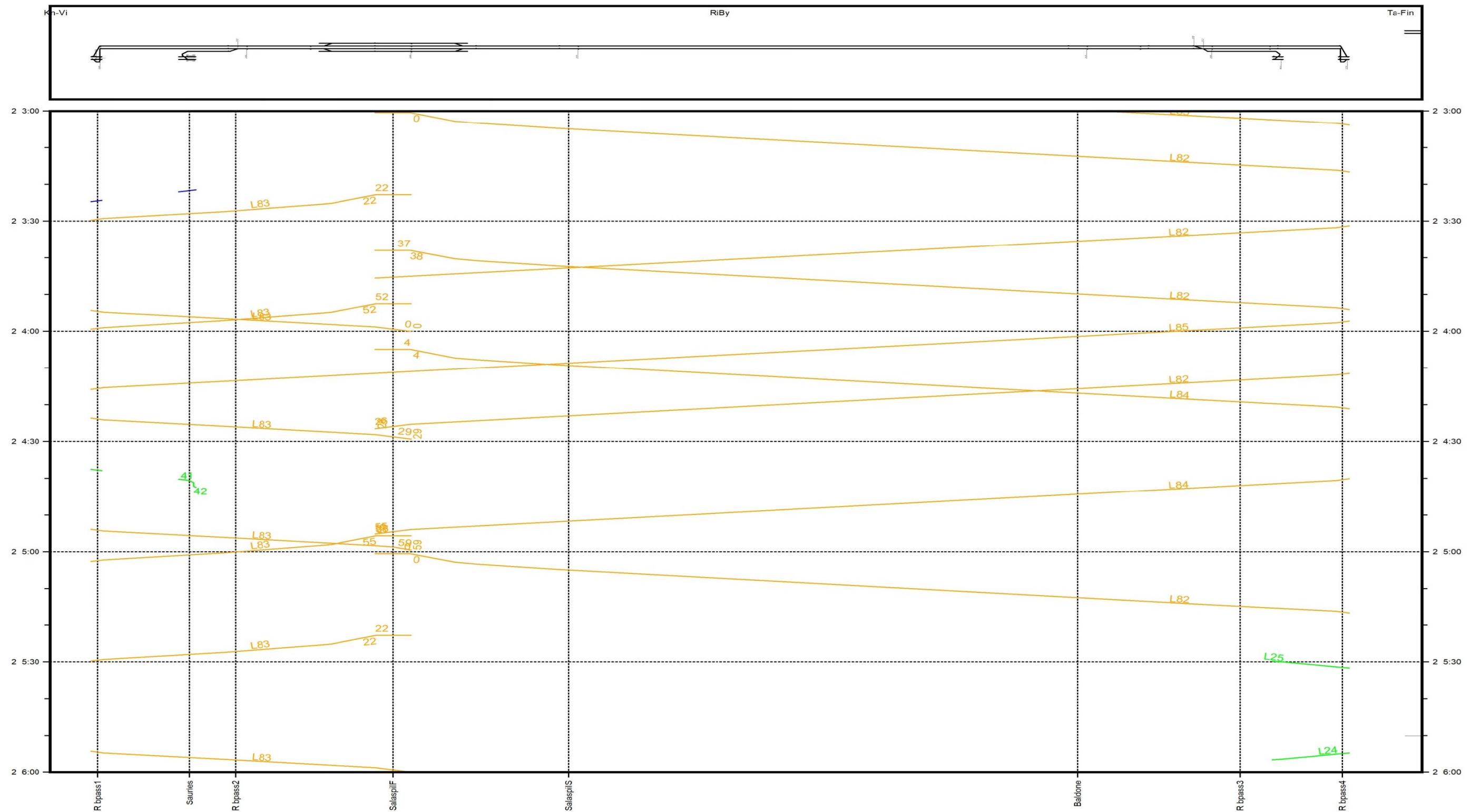
Timetable Vangazi - Iecava 2056 (8)



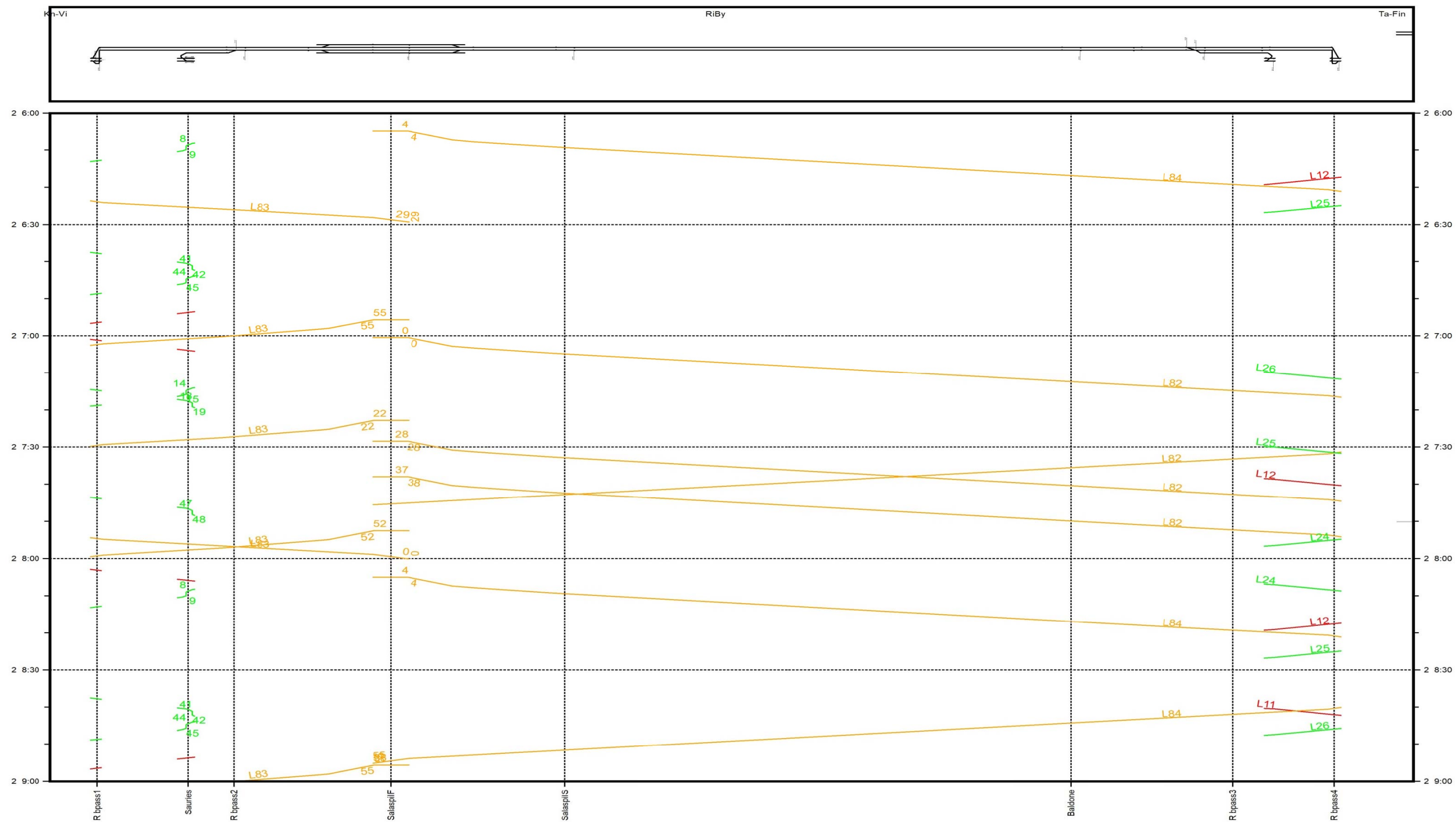
Timetable Riga bypass 2056 (1)



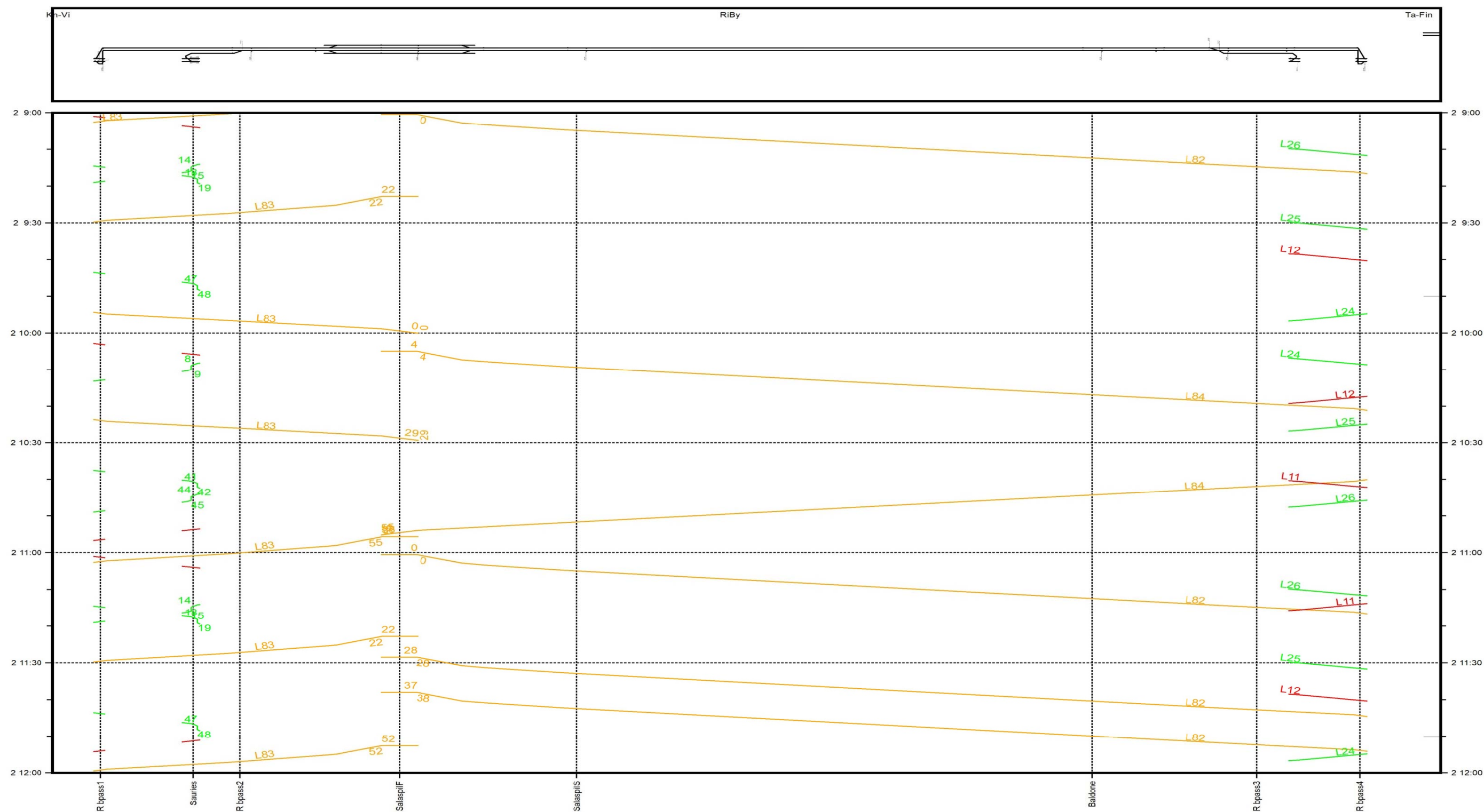
Timetable Riga bypass 2056 (2)



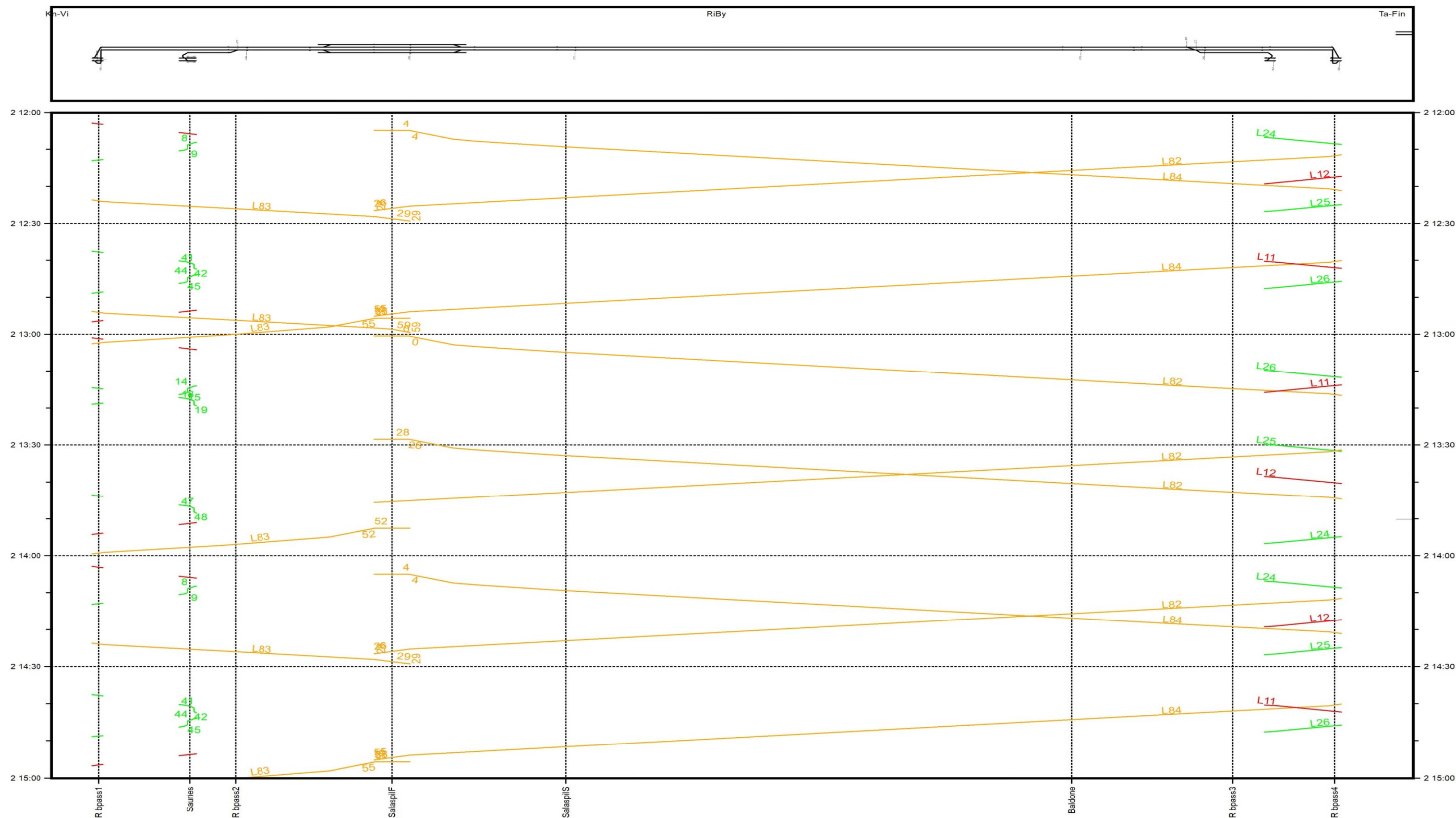
Timetable Riga bypass 2056 (3)



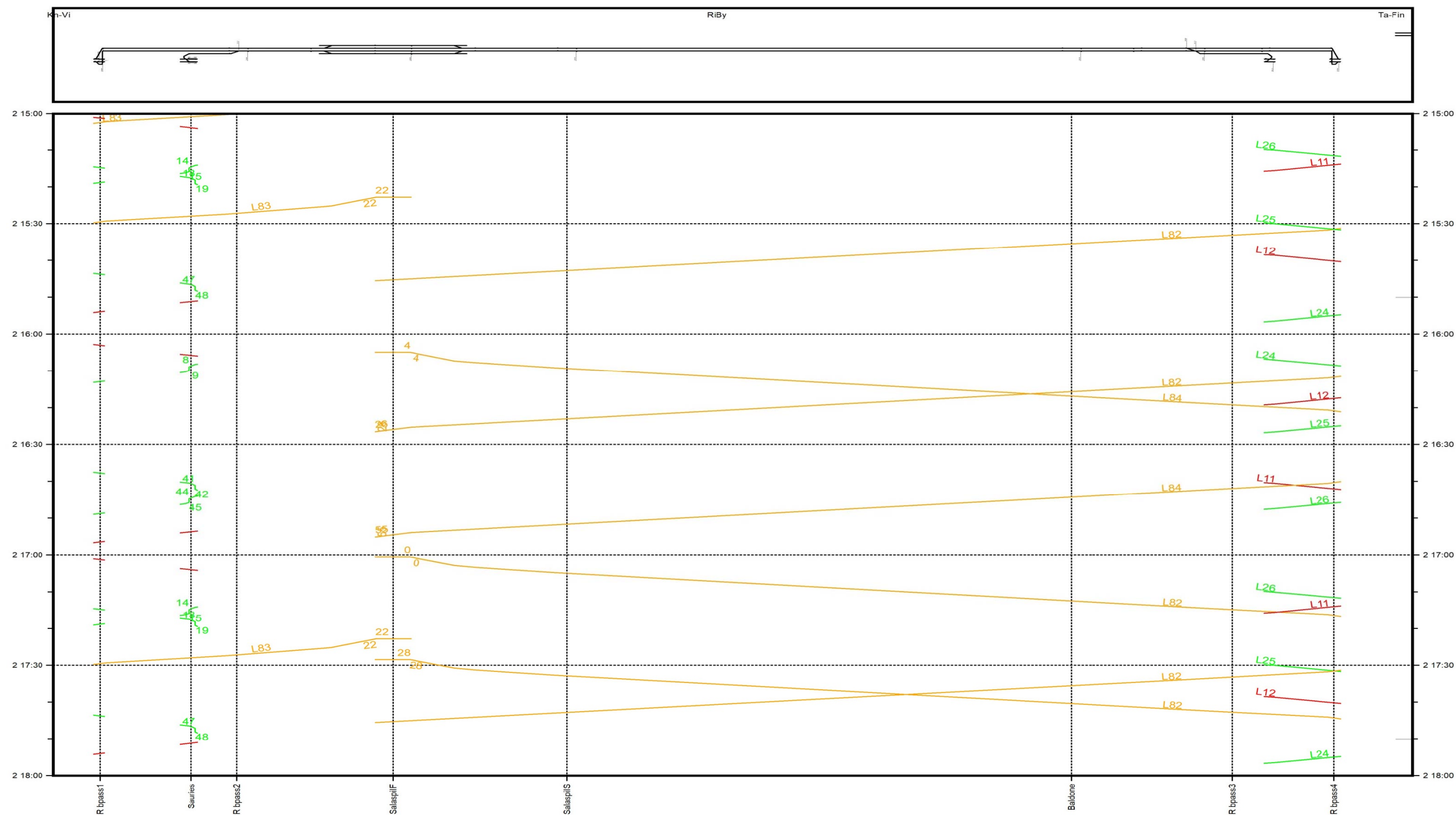
Timetable Riga bypass 2056 (4)



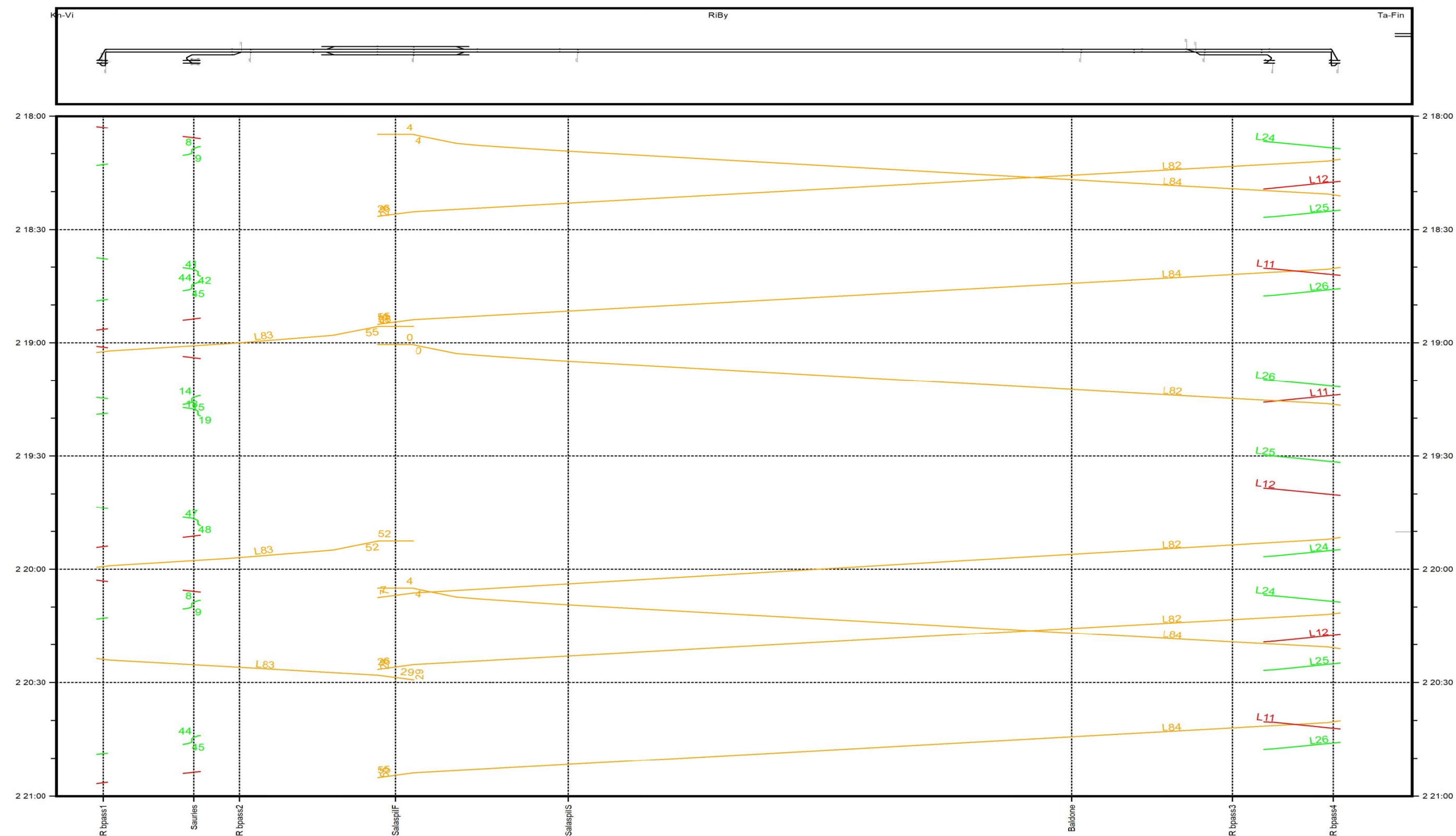
Timetable Riga bypass 2056 (5)



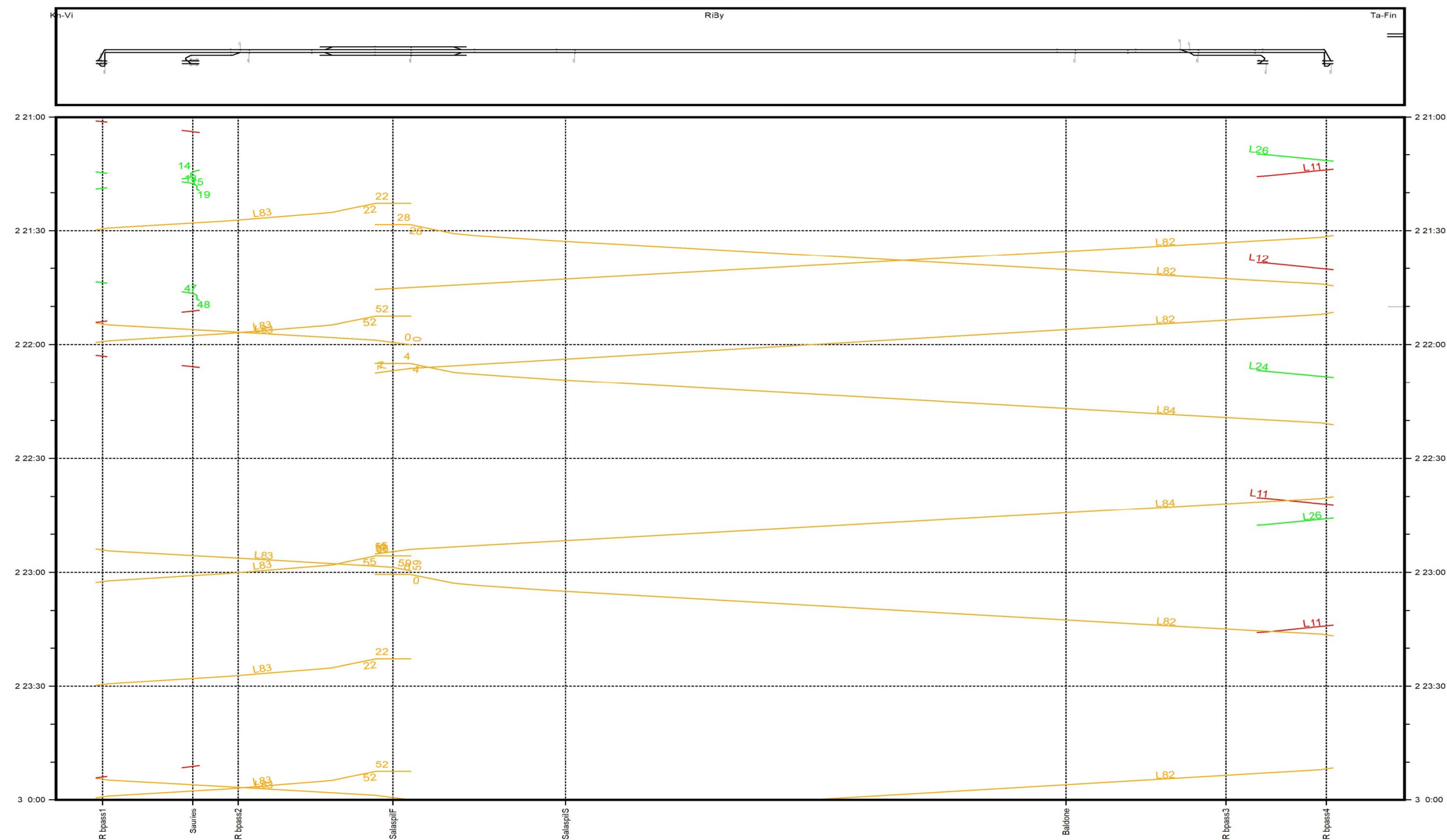
Timetable Riga bypass 2056 (6)



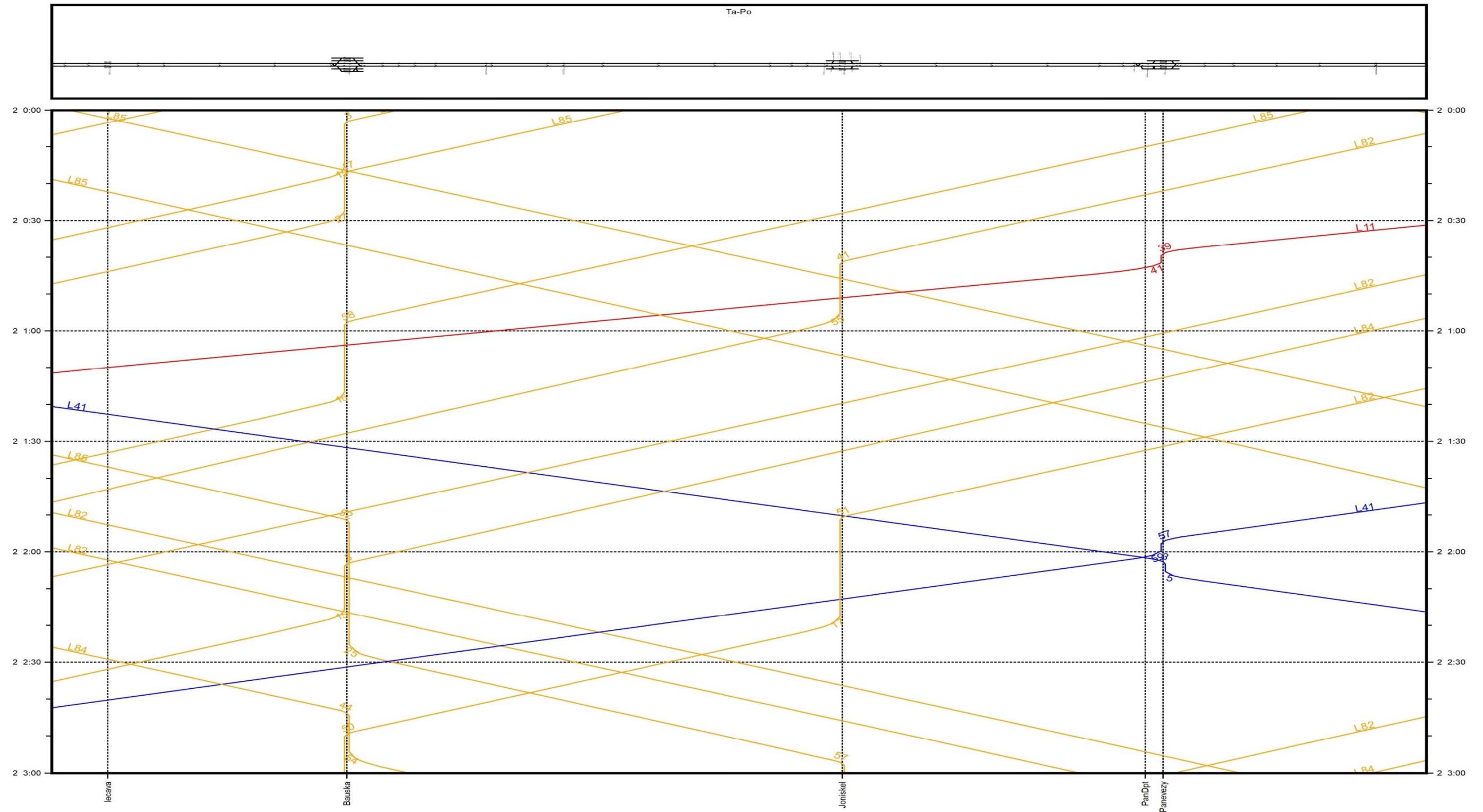
Timetable Riga bypass 2056 (7)



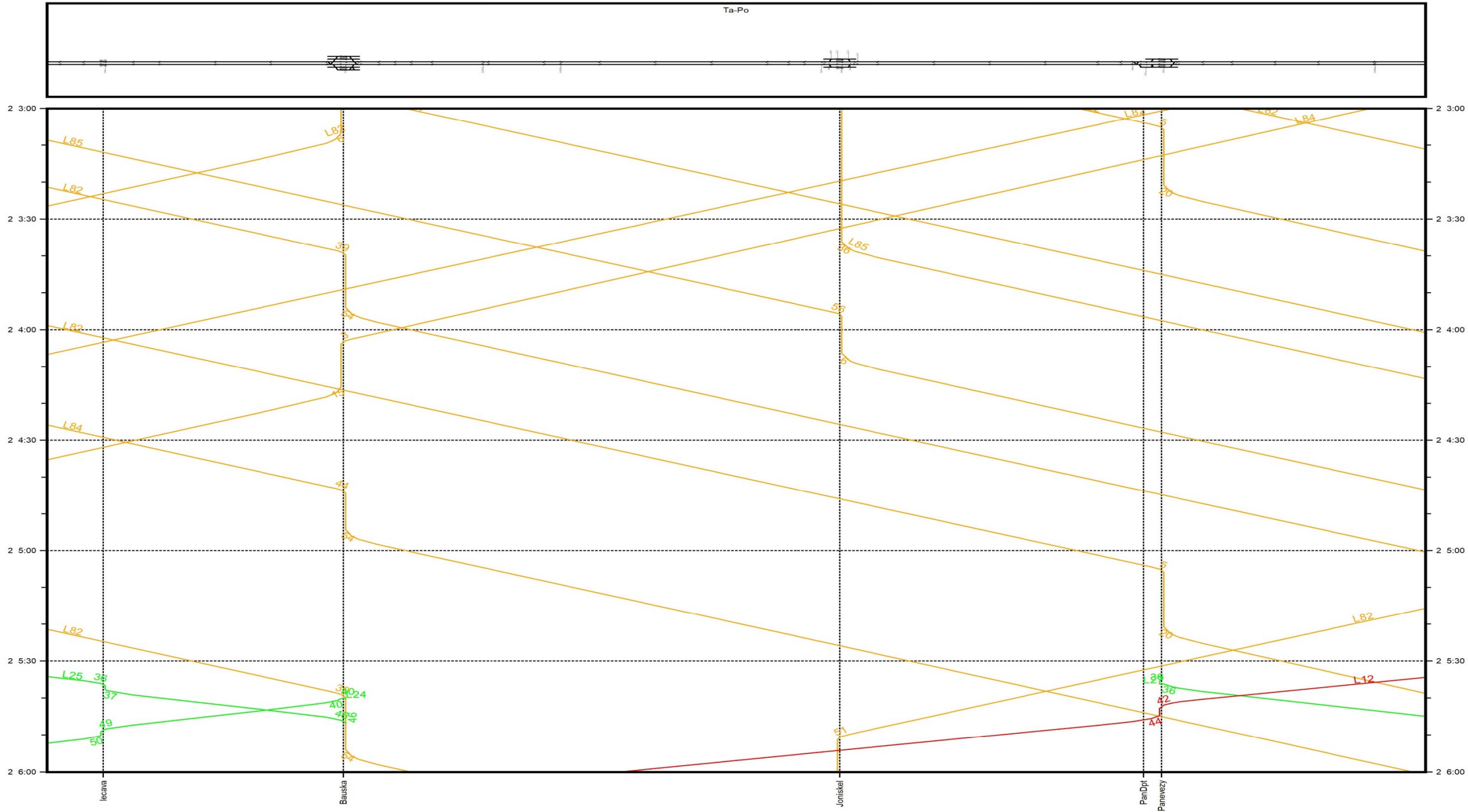
Timetable Riga bypass 2056 (8)



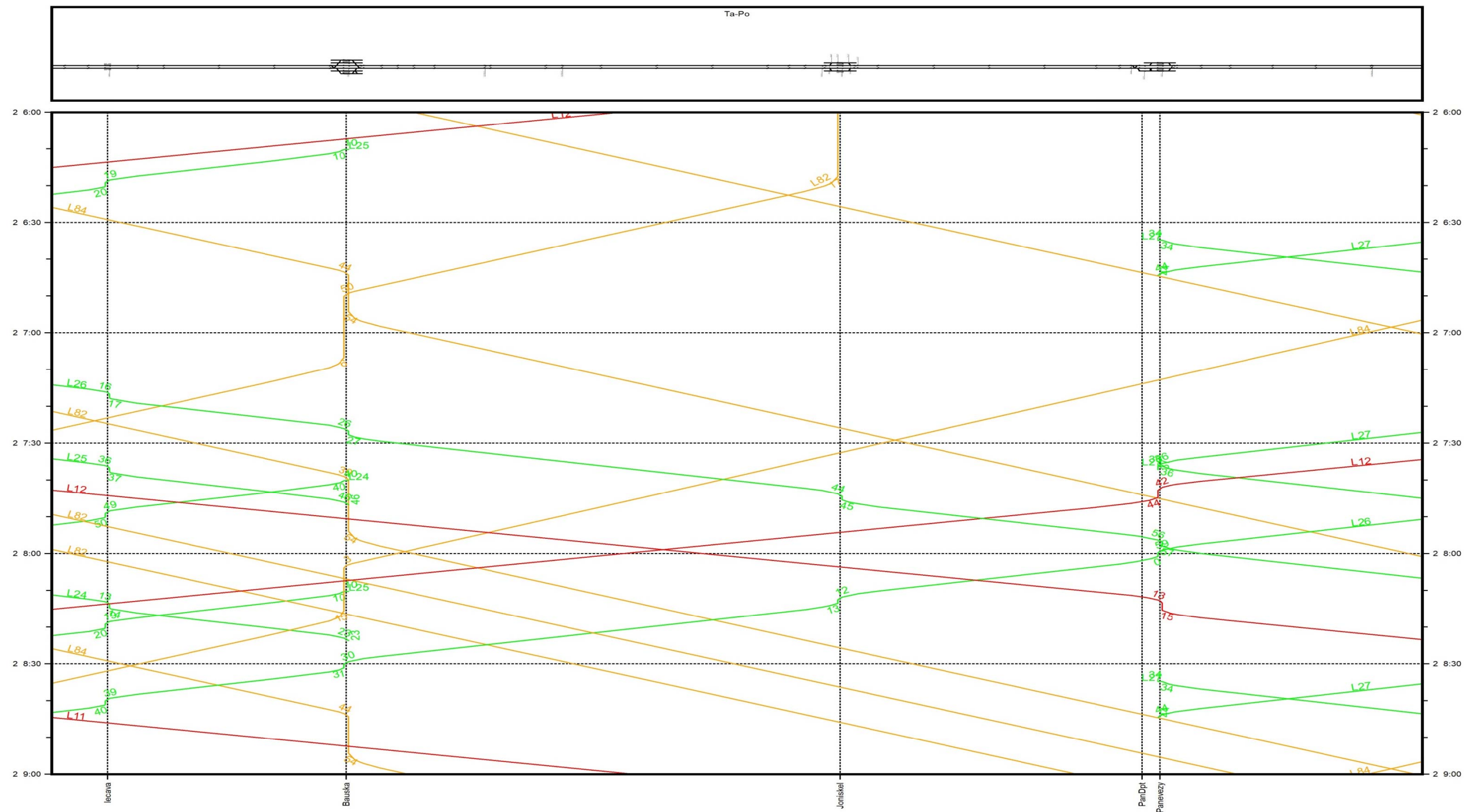
Timetable Iecava – Panevezys 2056 (1)



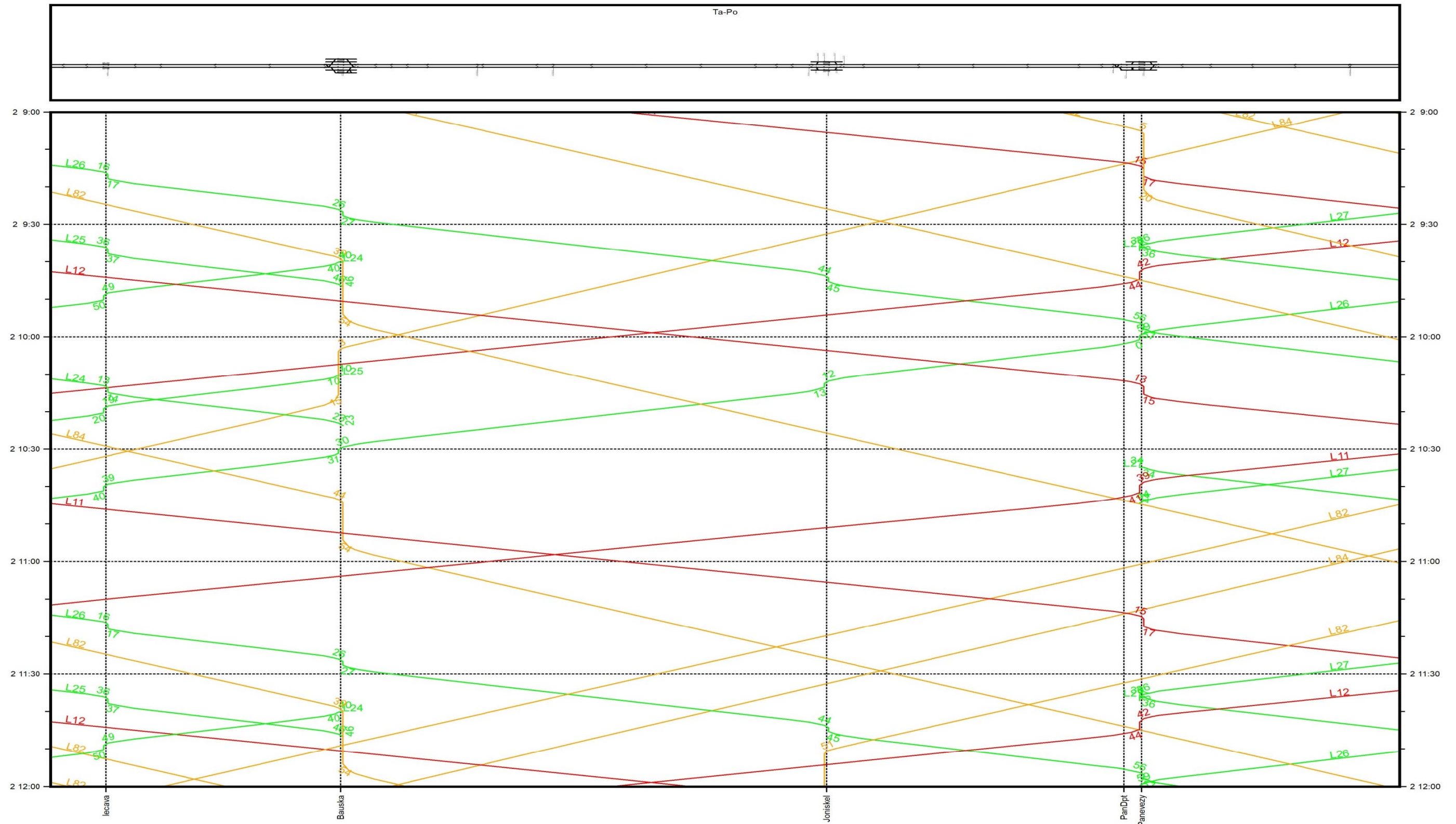
Timetable Iecava – Panevezy 2056 (2)



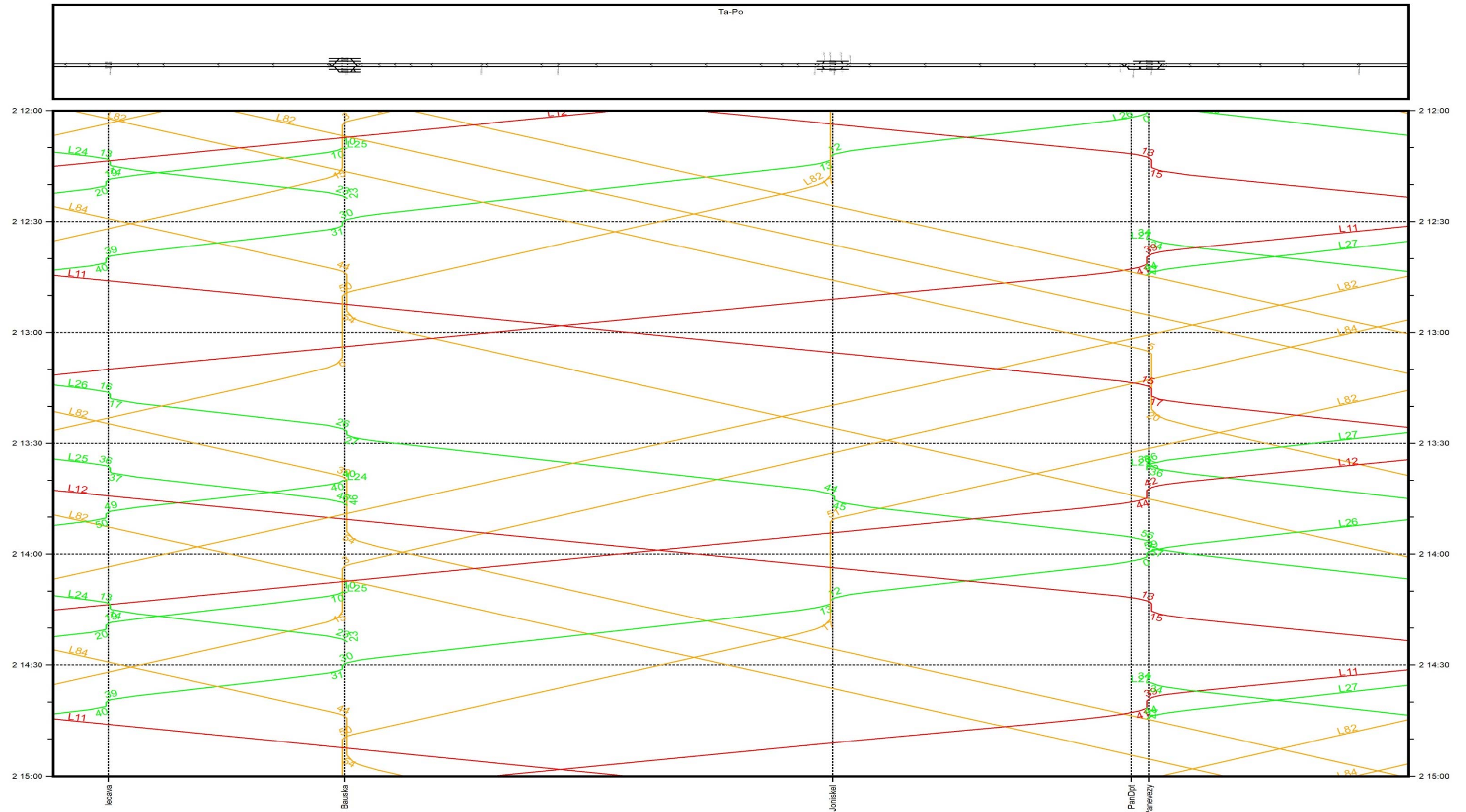
Timetable Iecava – Panevezy 2056 (3)



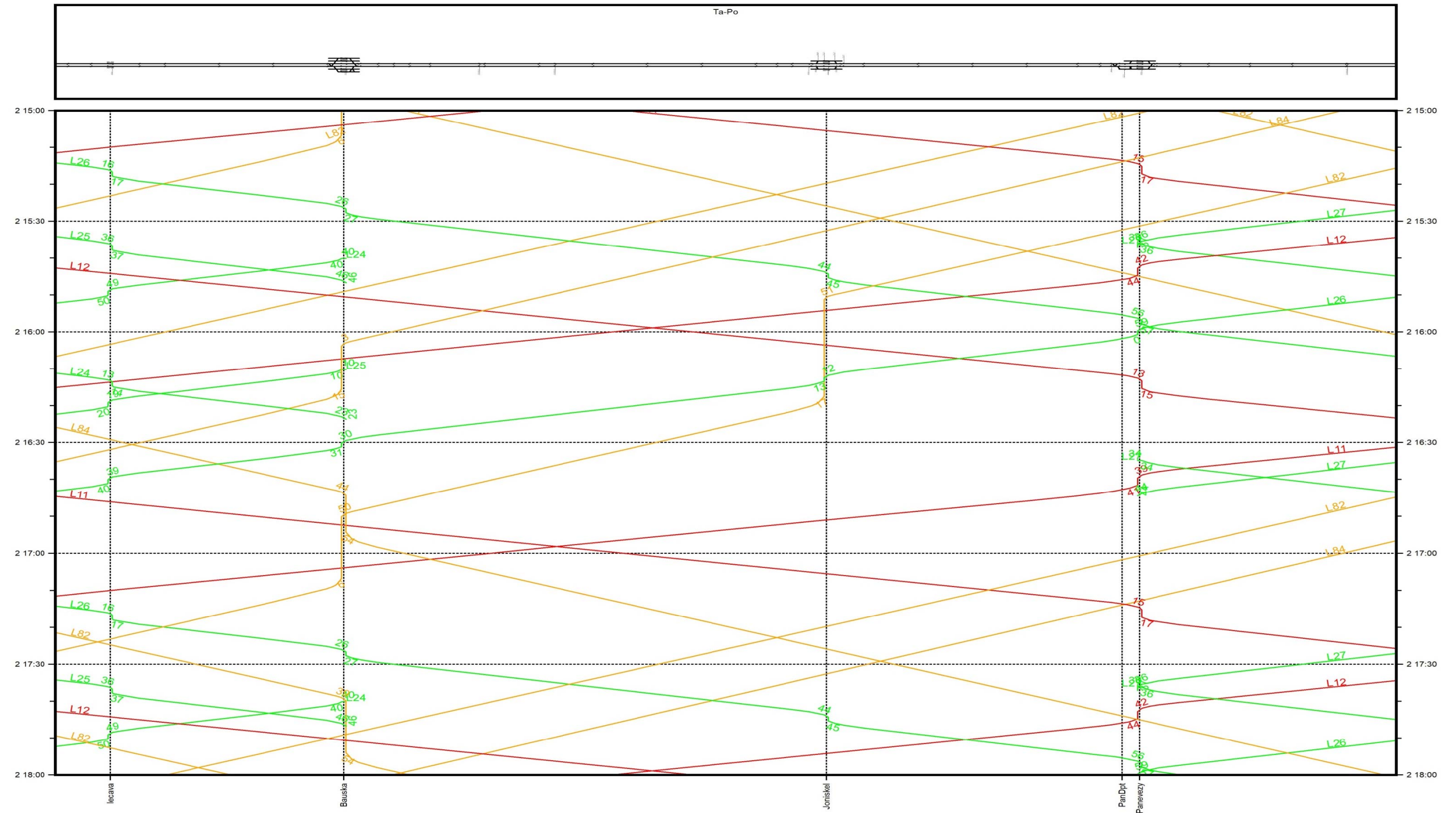
Timetable Iecava – Panevezy 2056 (4)



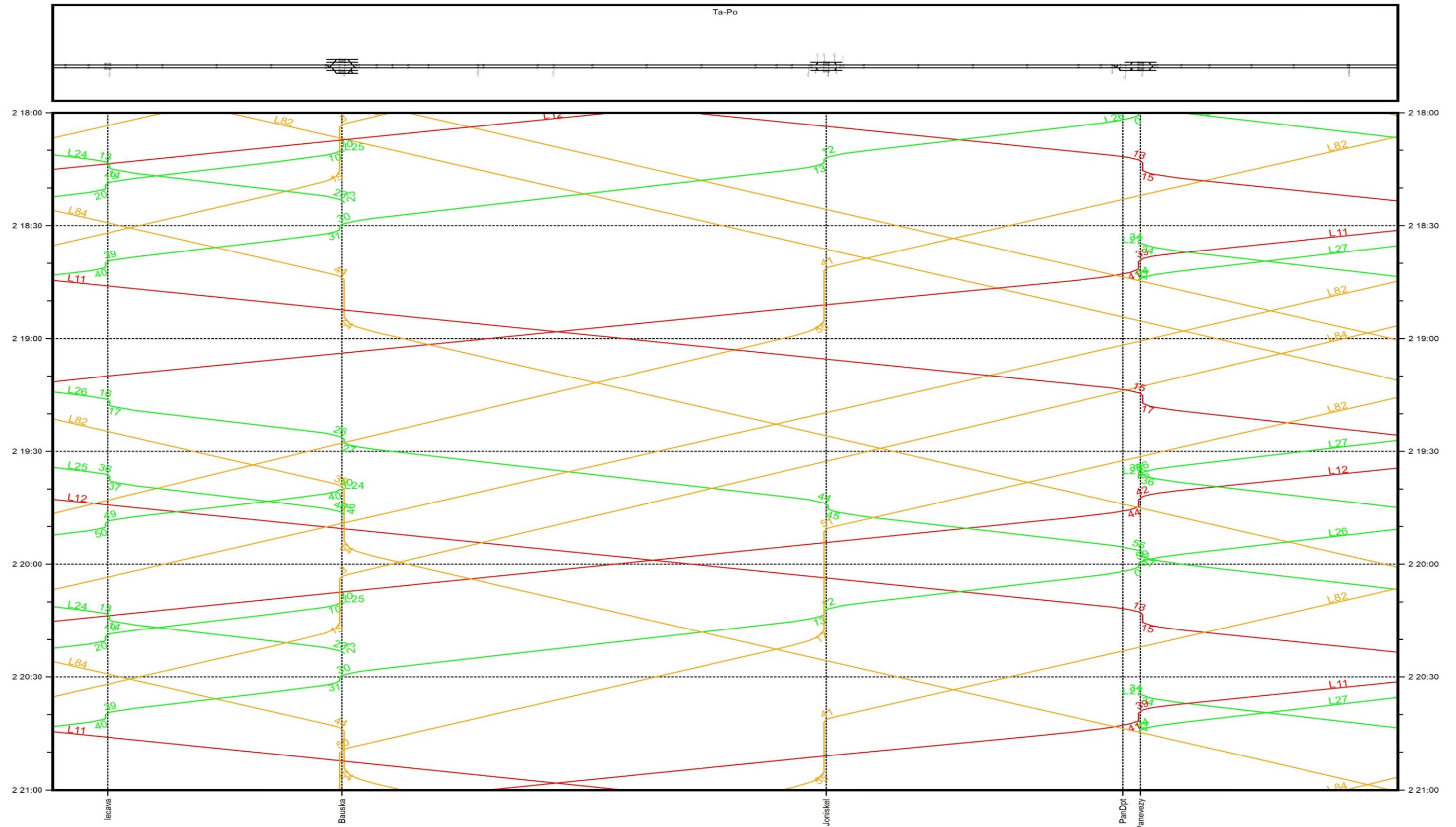
Timetable Iecava – Panevezys 2056 (5)



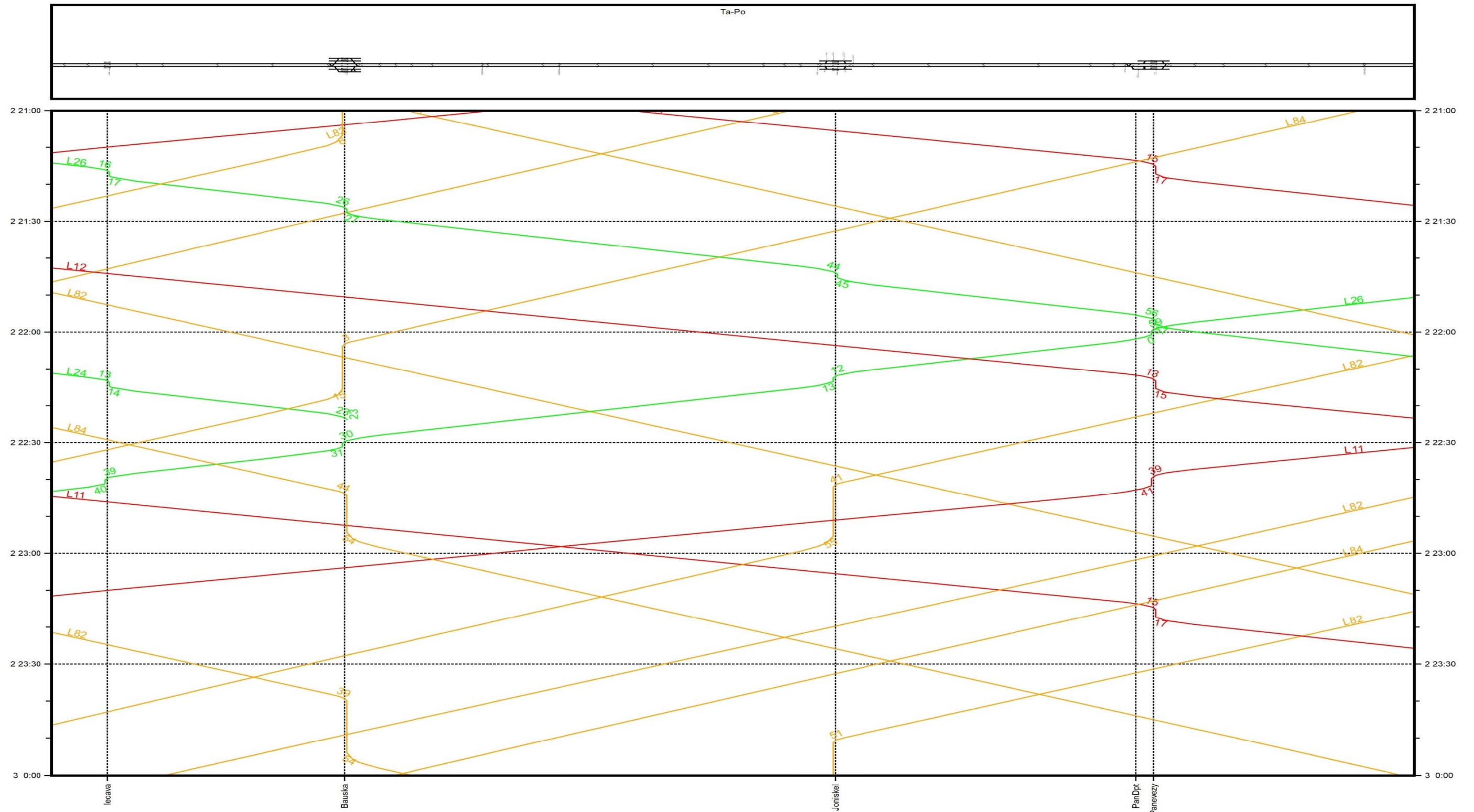
Timetable Iecava – Panevezys 2056 (6)



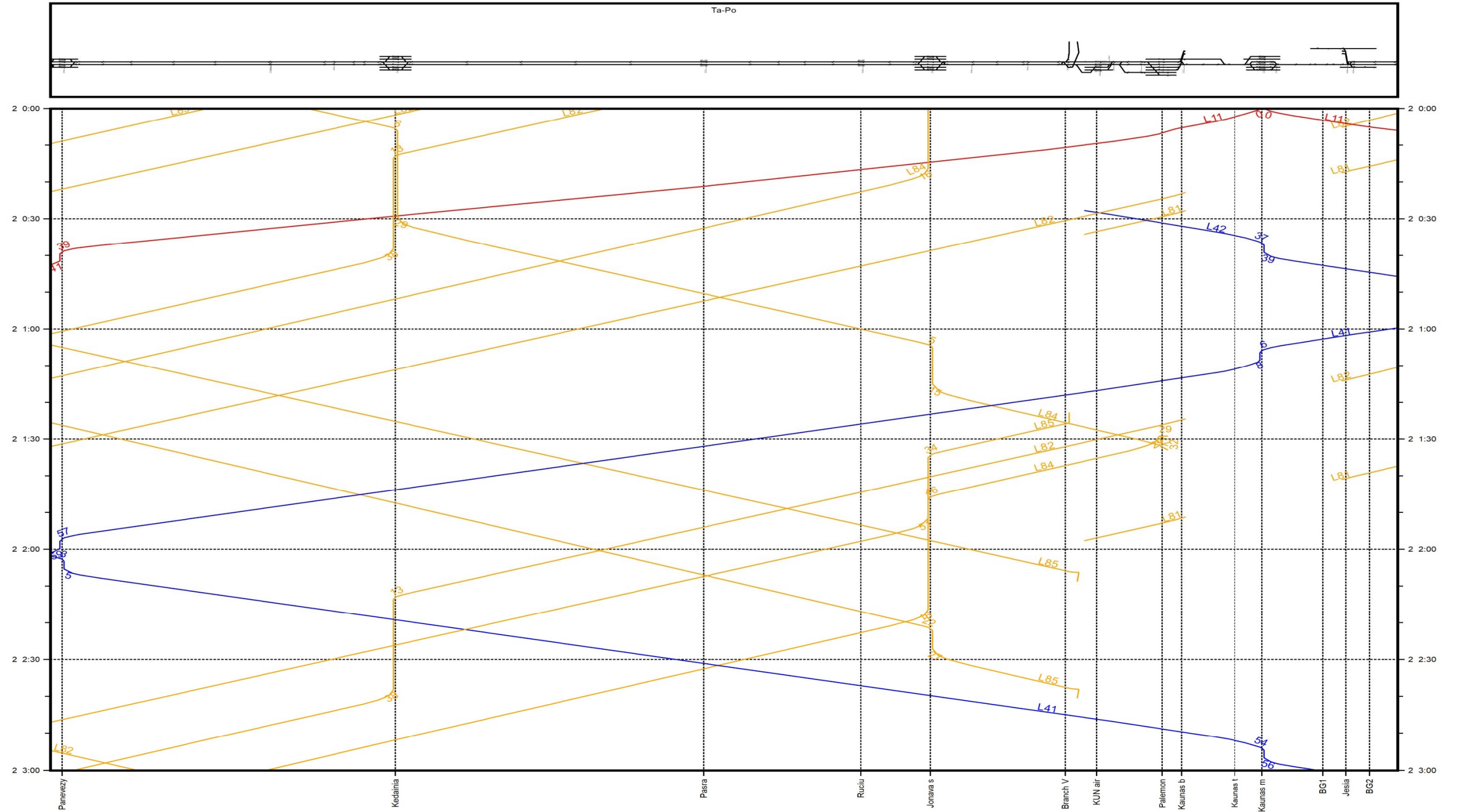
Timetable Iecava – Panevezys 2056 (7)



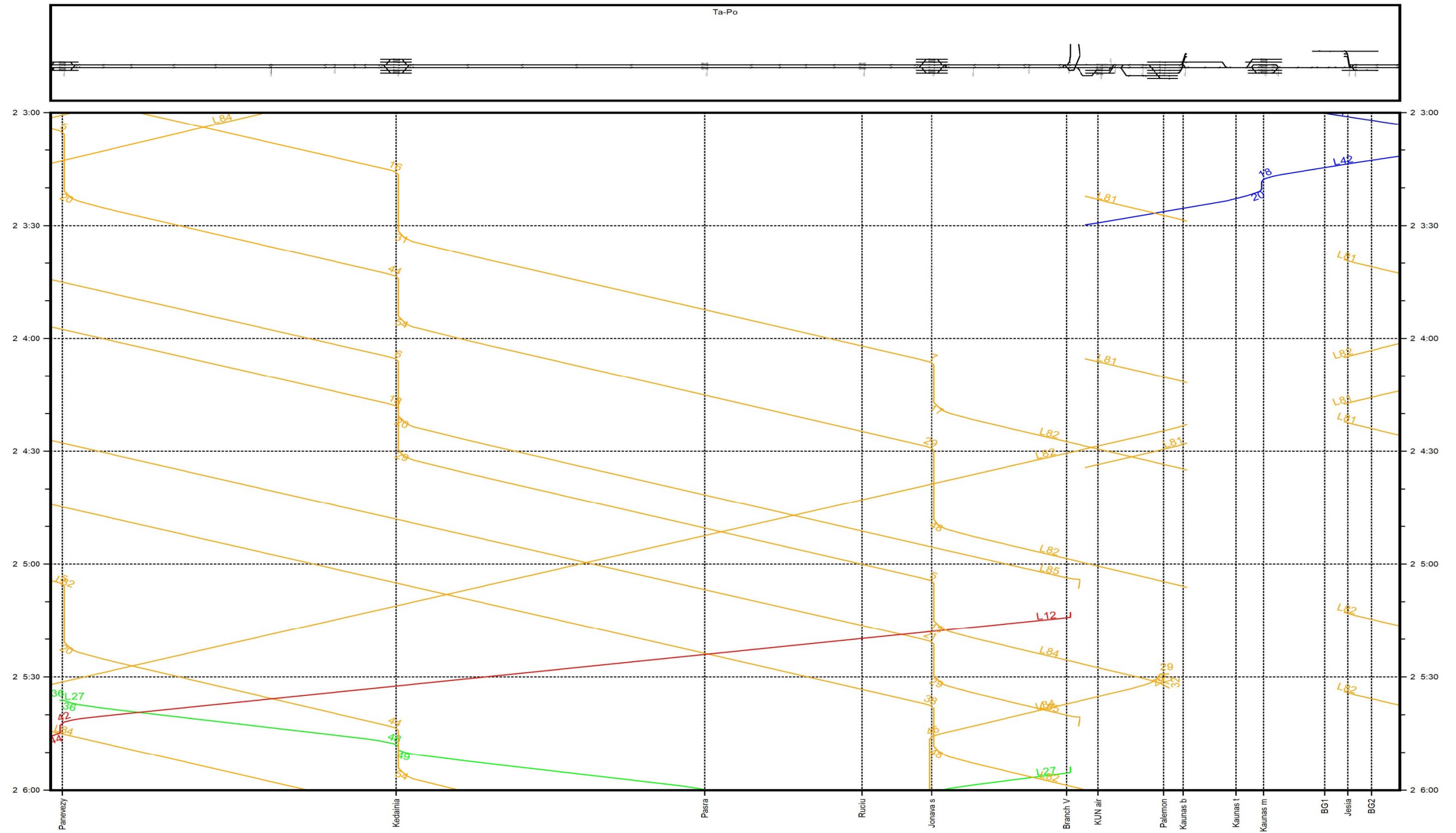
Timetable Iecava – Panevezys 2056 (8)



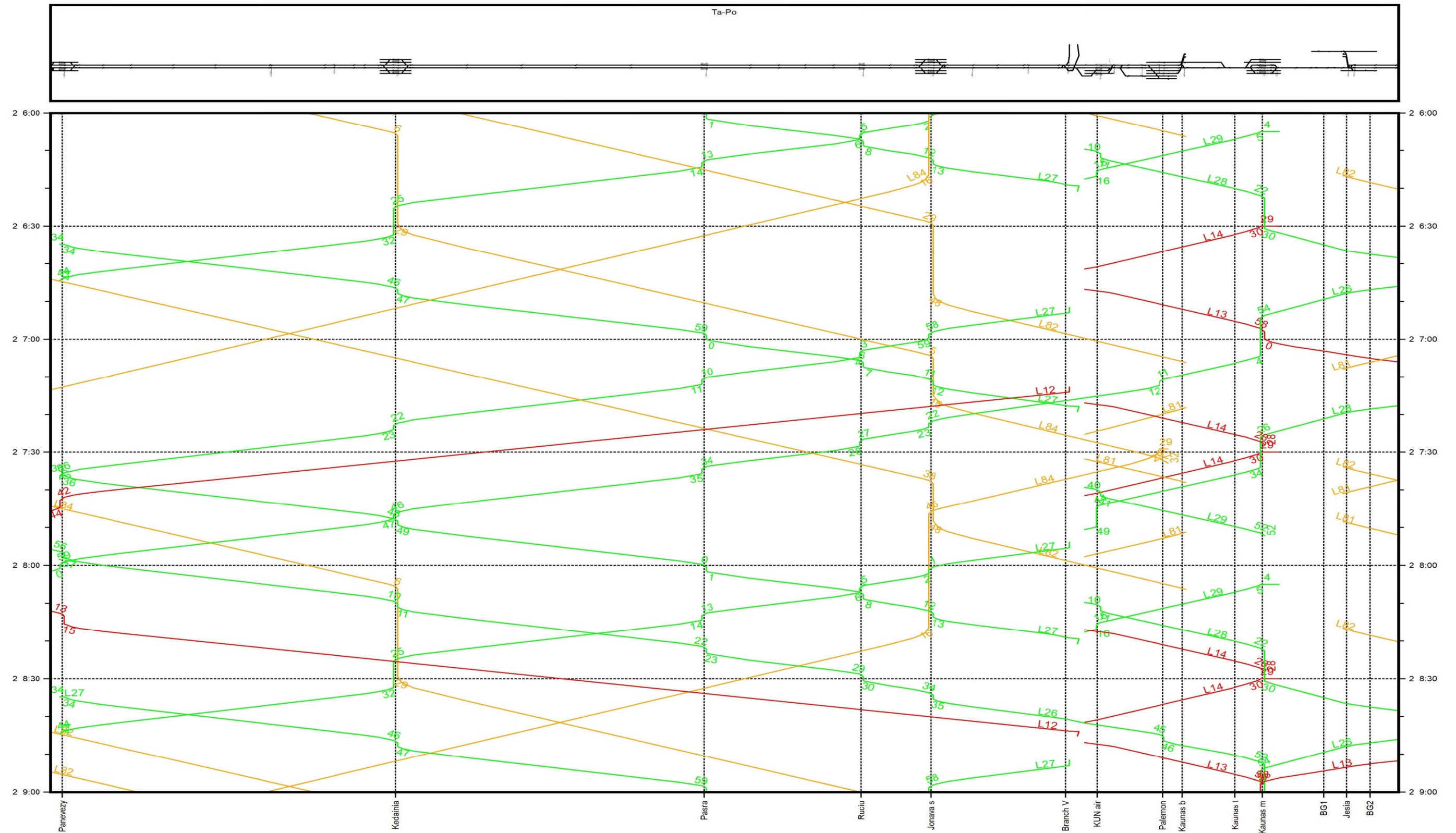
Timetable Panevezy – Kaunas 2056 (1)



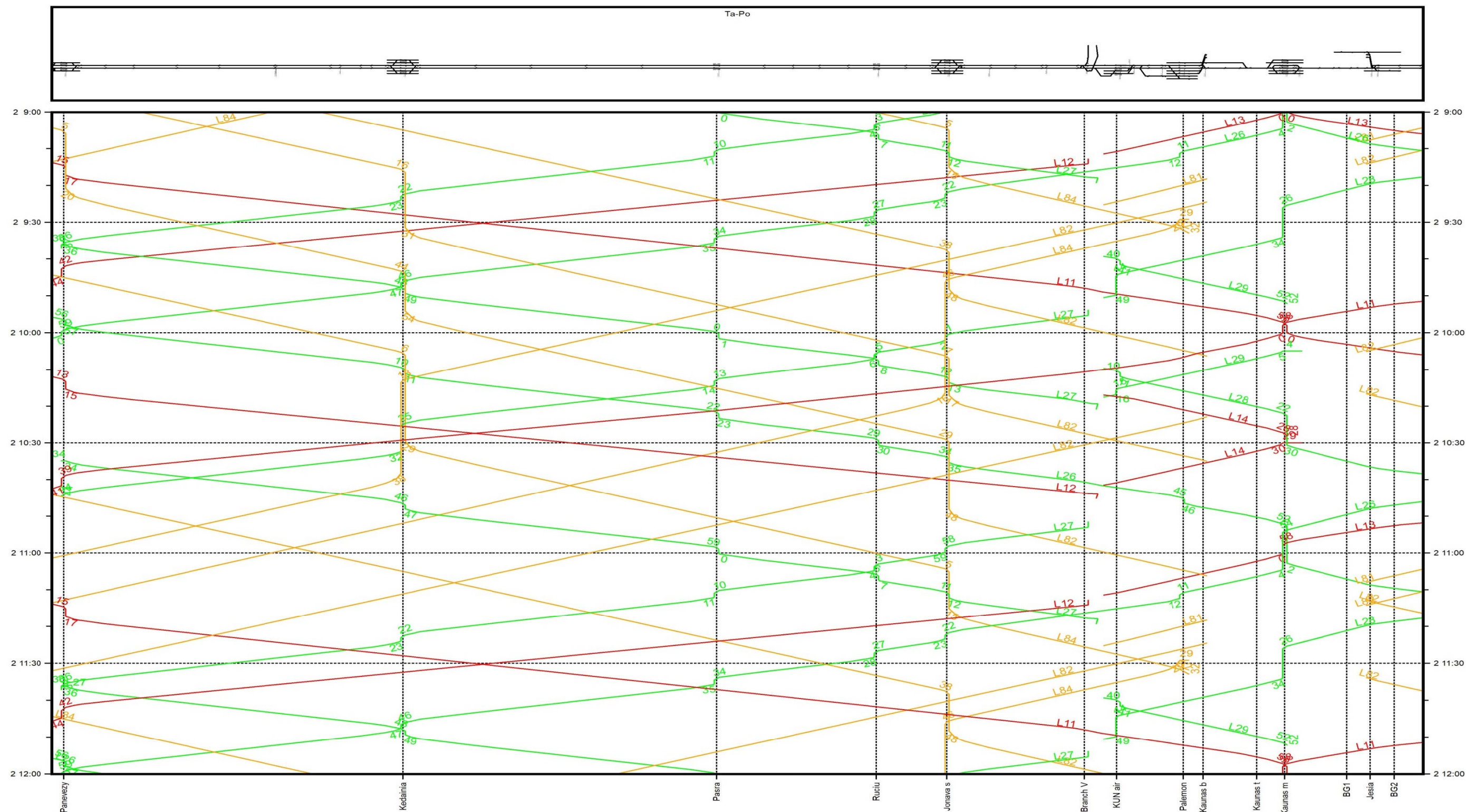
Timetable Panevežy – Kaunas 2056 (2)



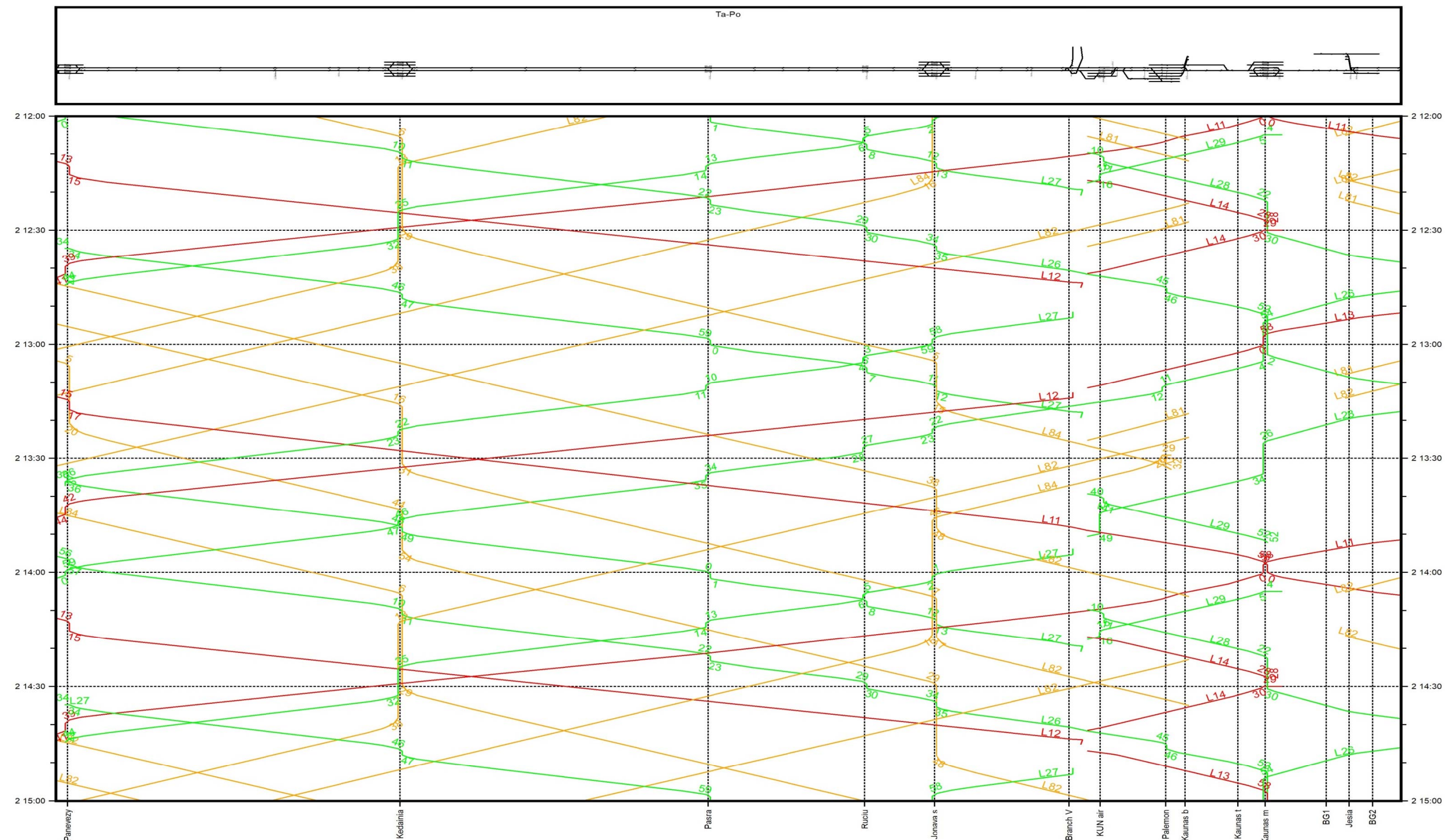
Timetable Panevezy – Kaunas 2056 (3)



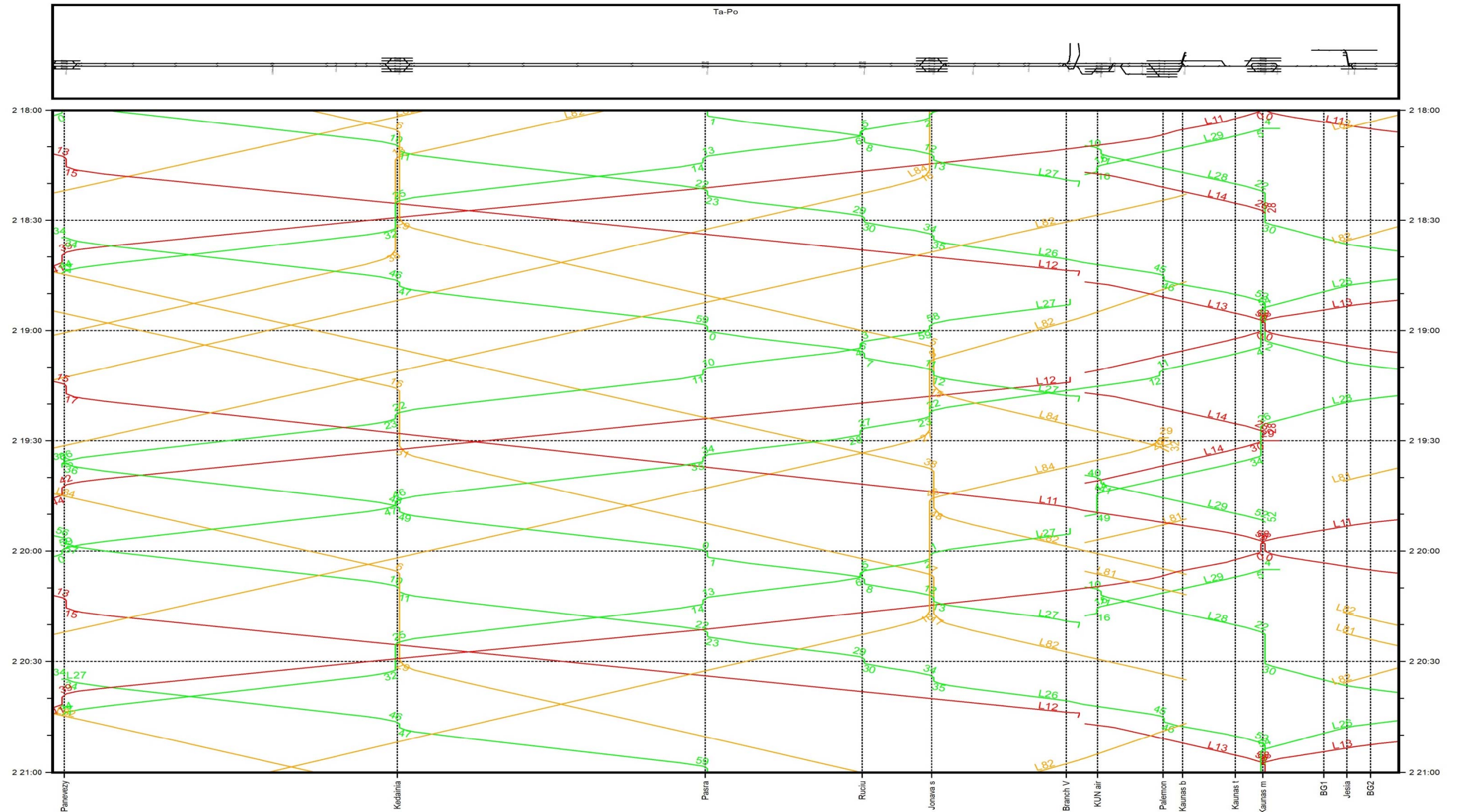
Timetable Panevezy – Kaunas 2056 (4)



Timetable Panevežy – Kaunas 2056 (5)

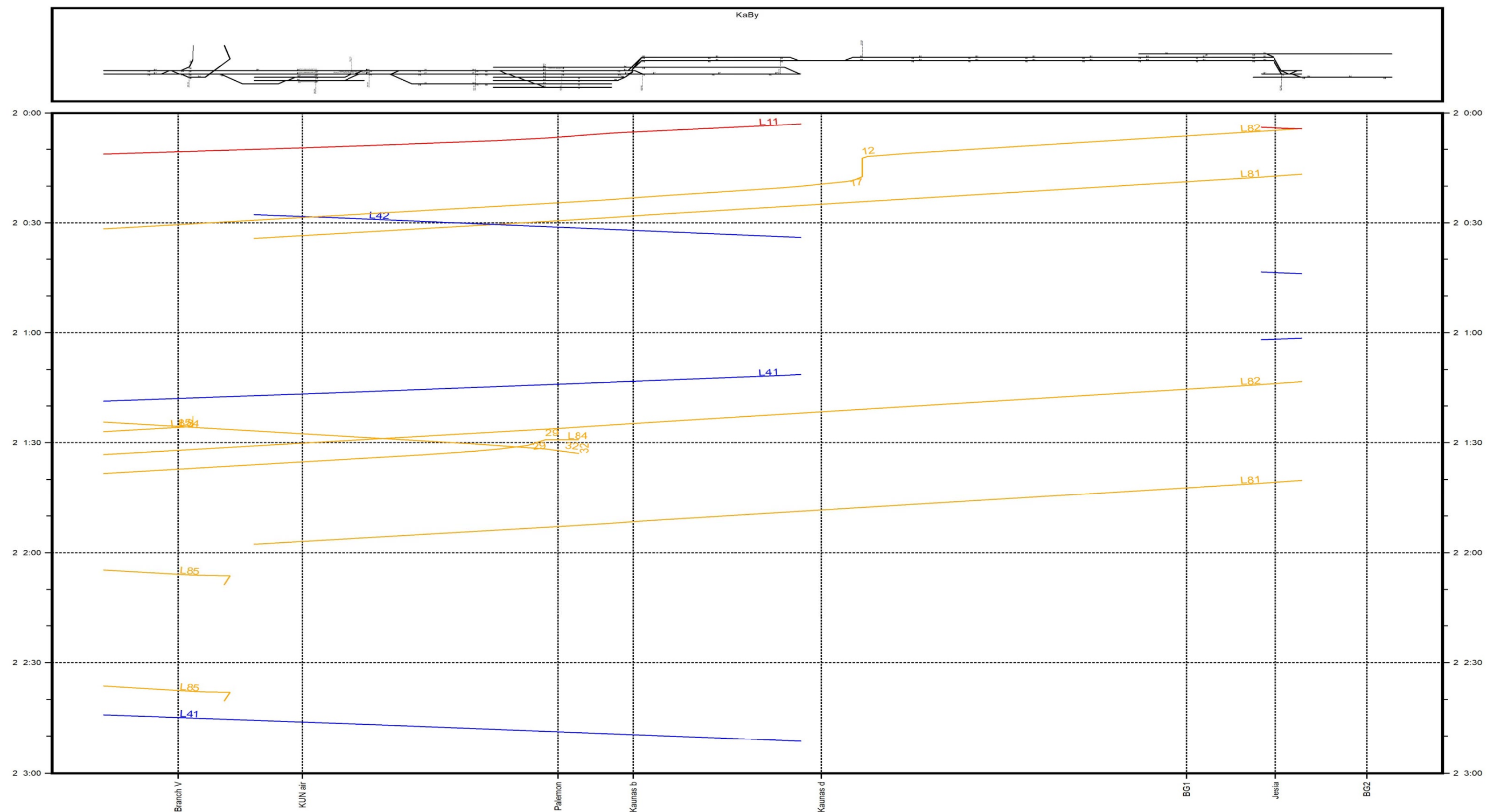


Timetable Panevezy – Kaunas 2056 (7)

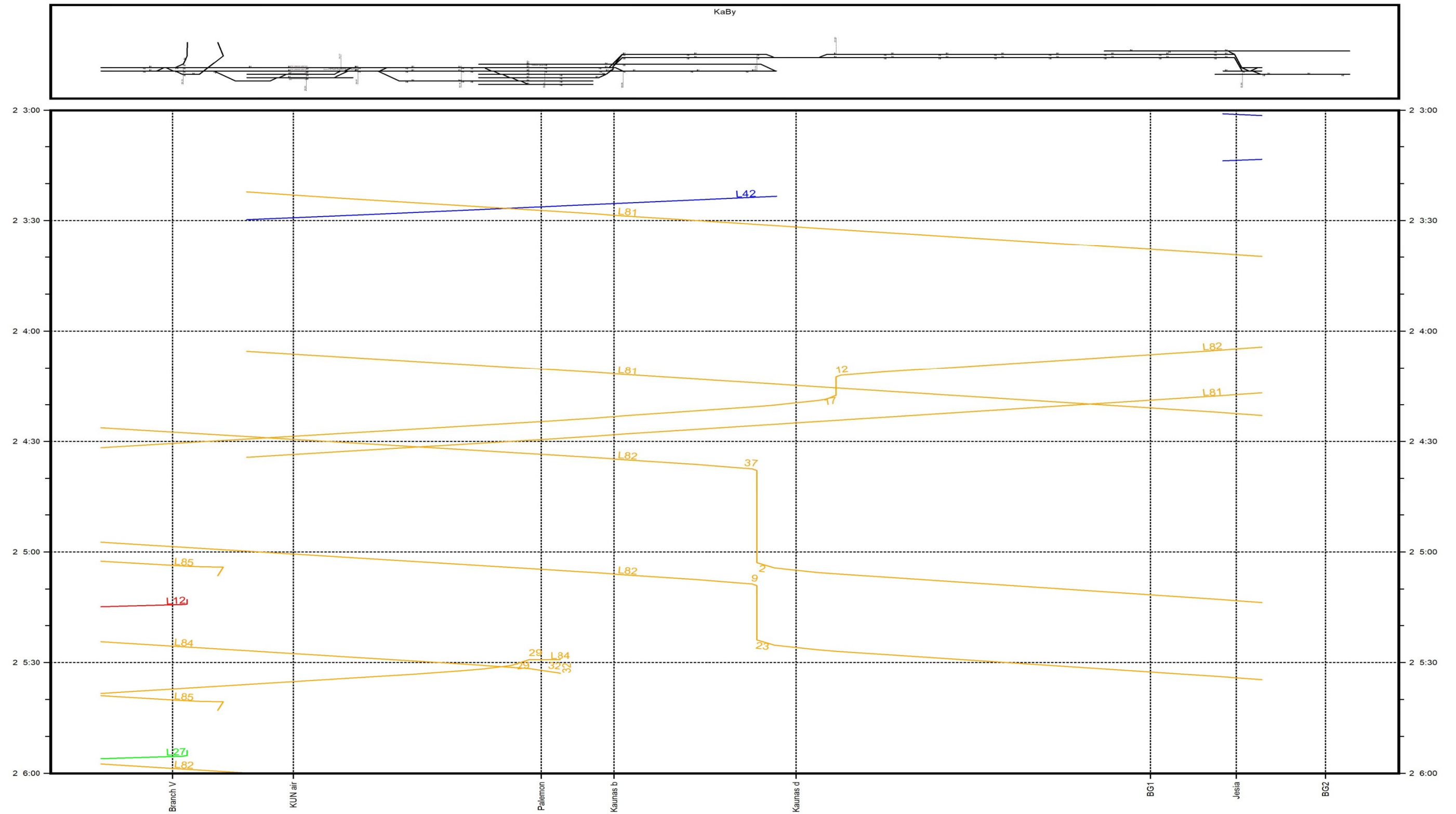




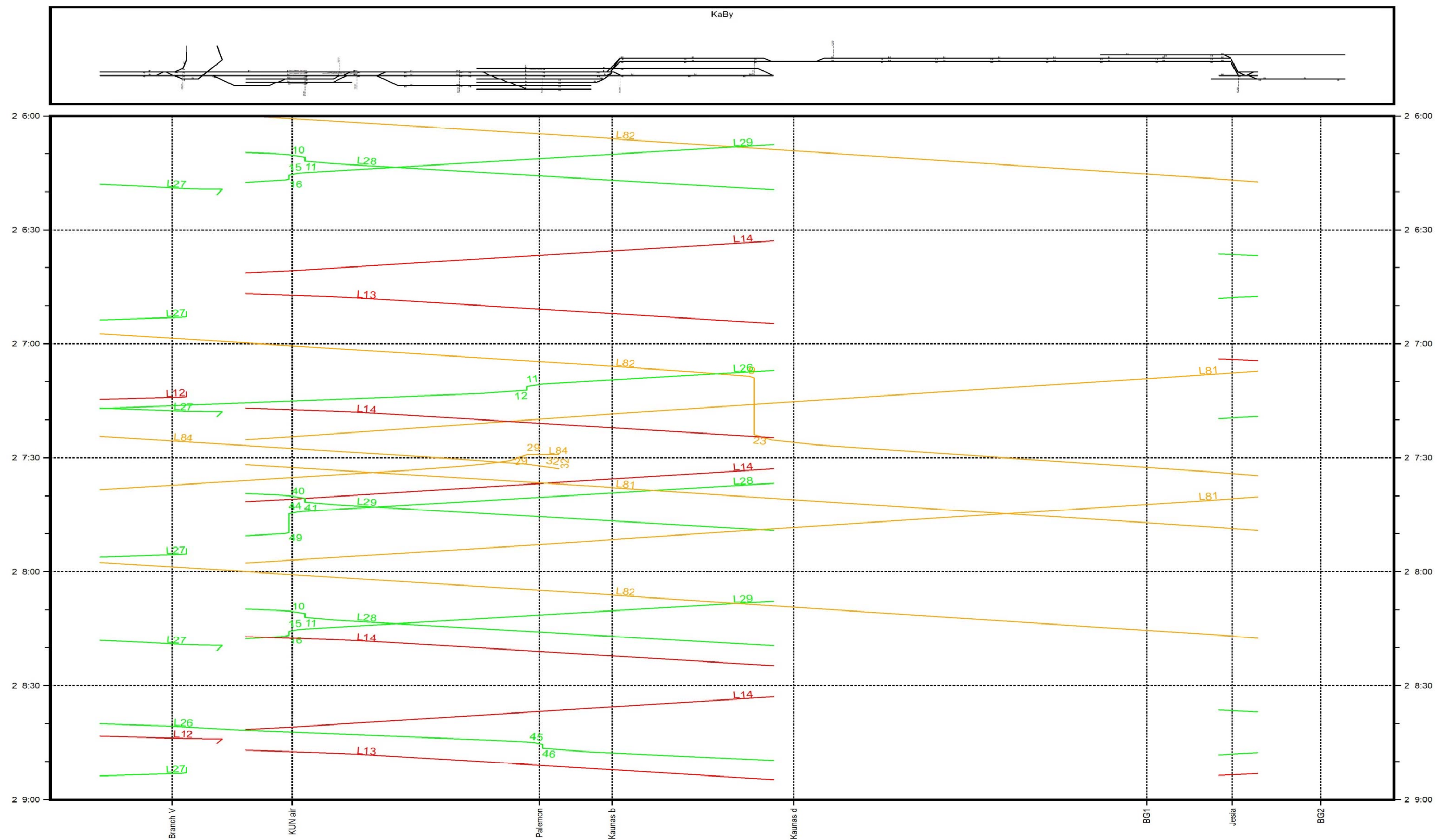
Timetable Kaunas bypass 2056 (1)



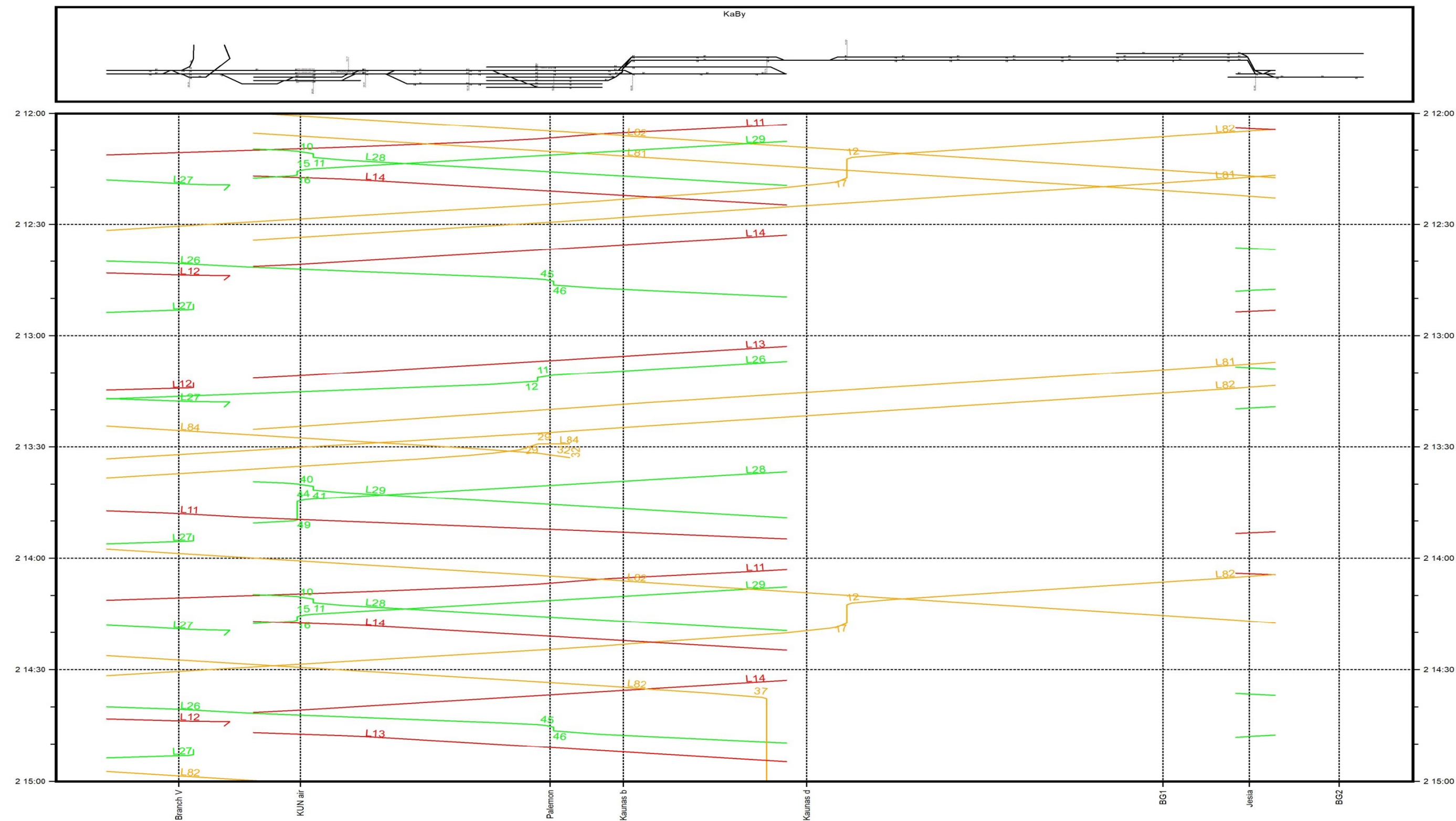
Timetable Kaunas bypass 2056 (2)



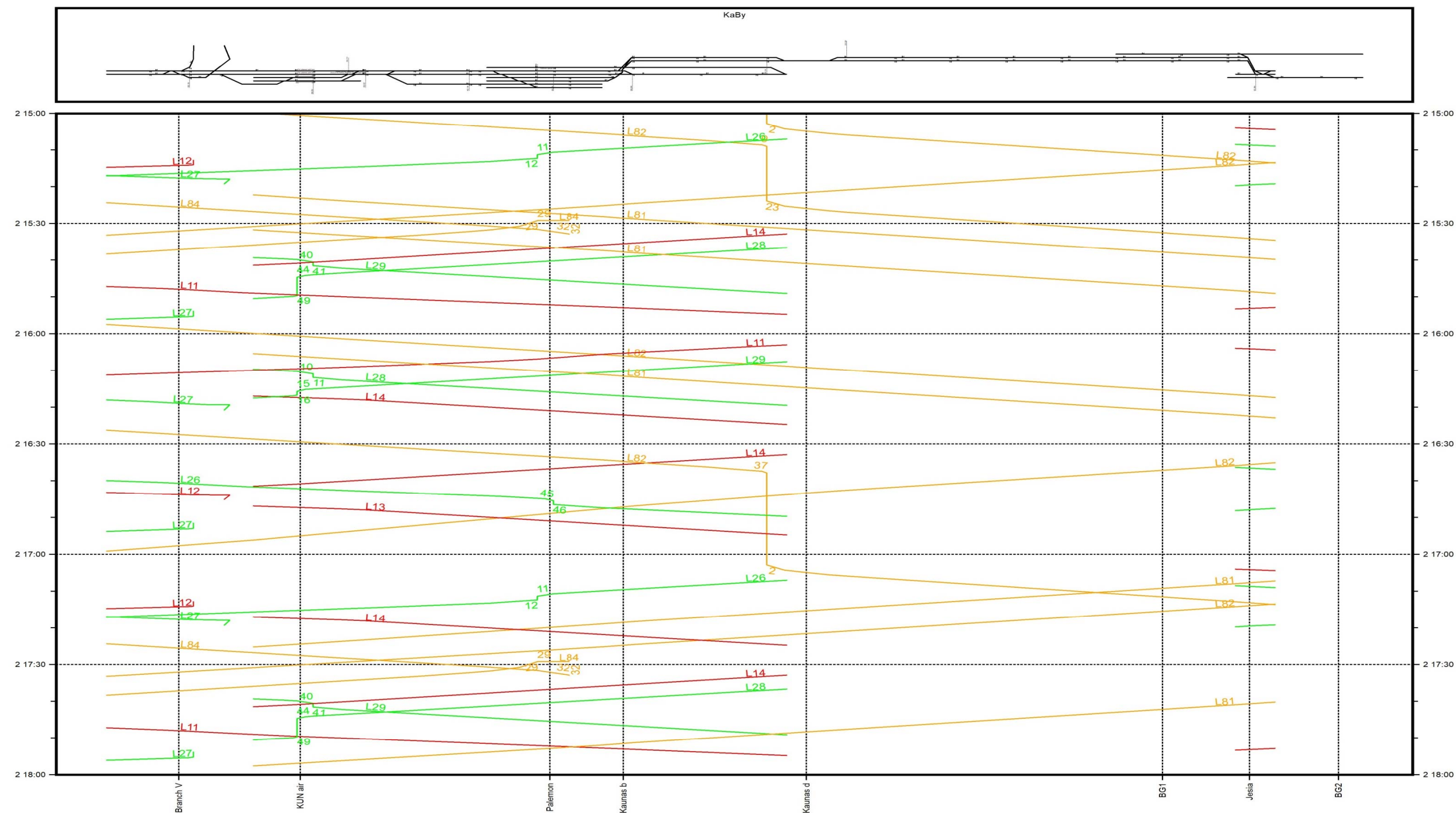
Timetable Kaunas bypass 2056 (3)



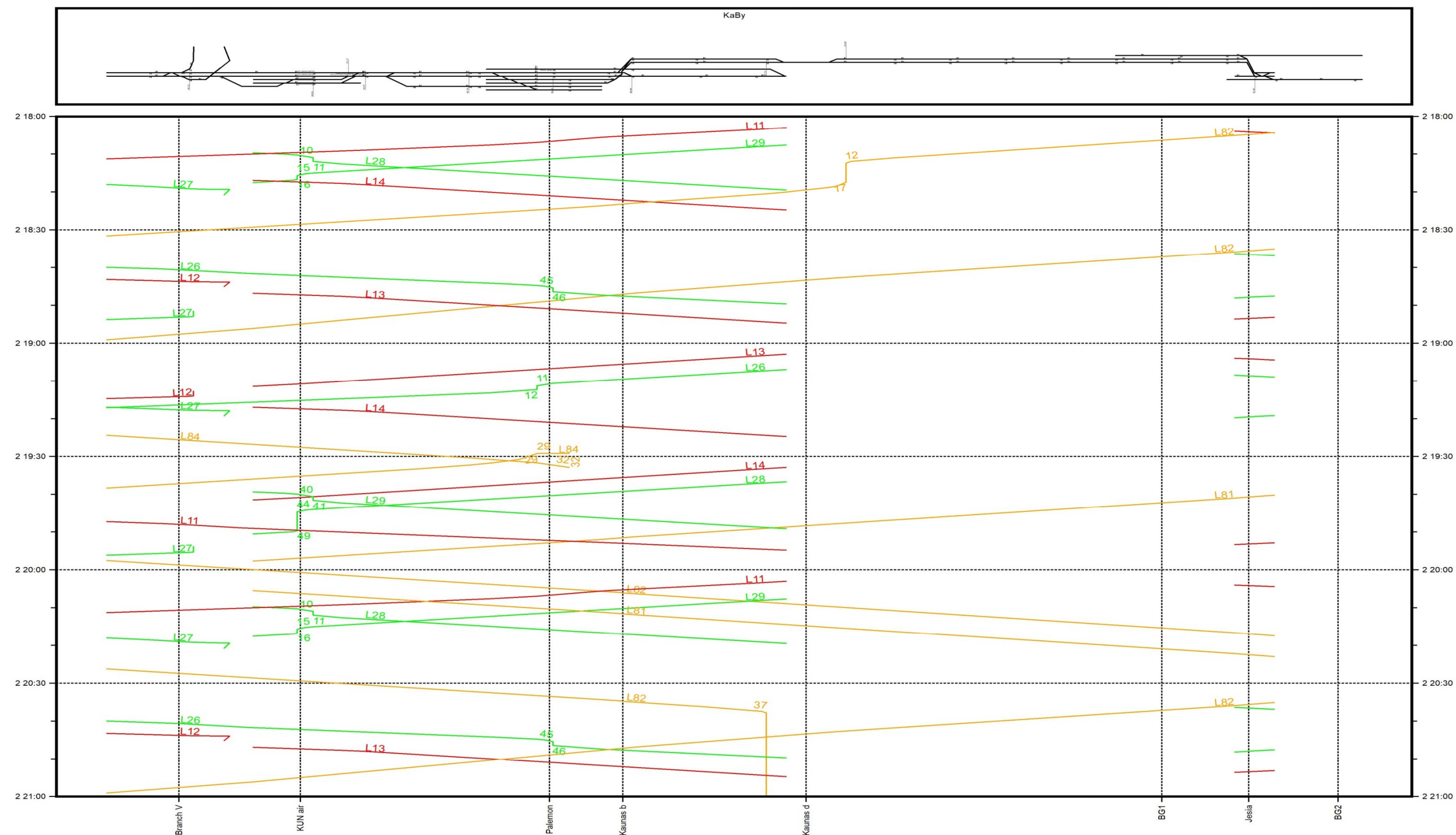
Timetable Kaunas bypass 2056 (4)



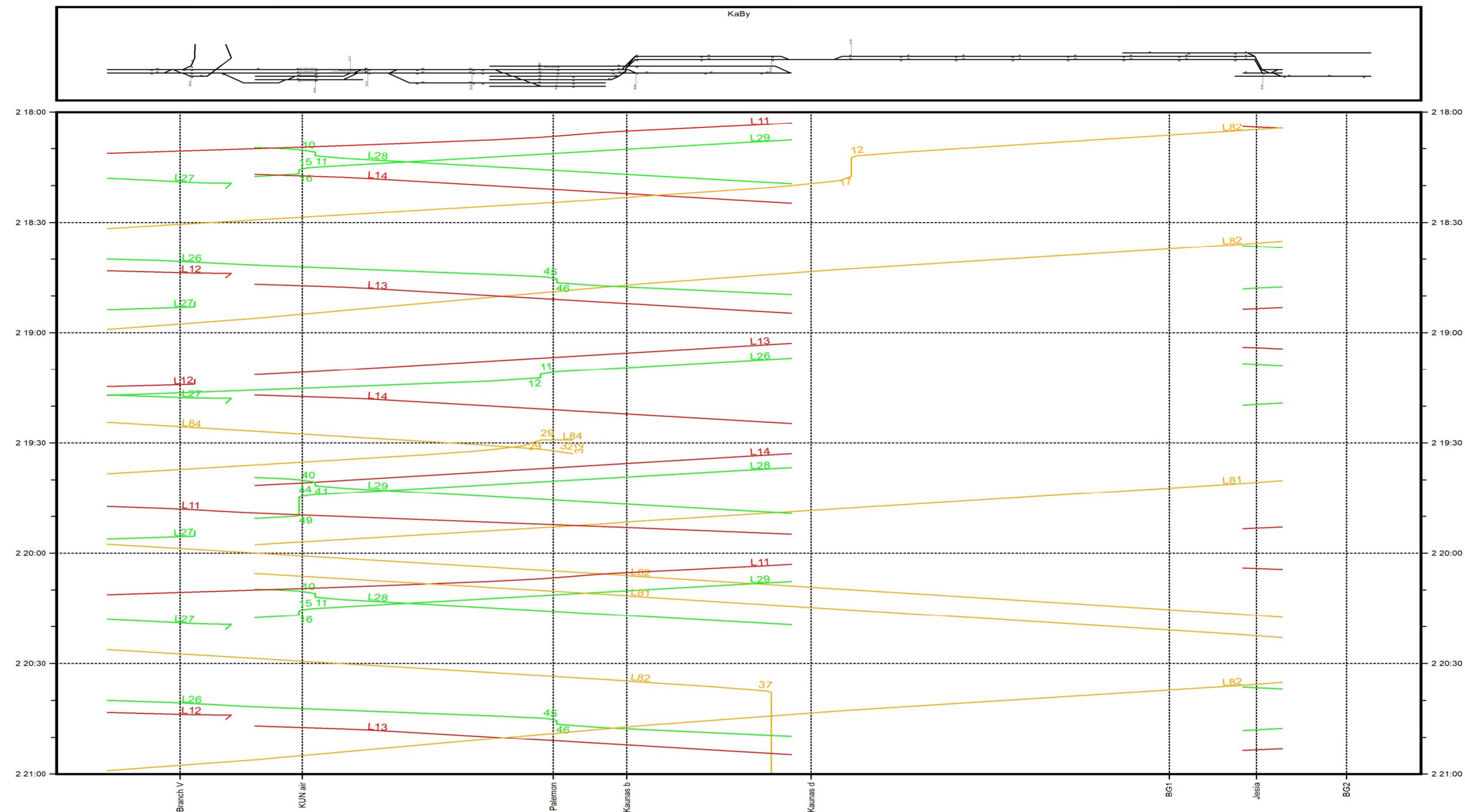
Timetable Kaunas bypass 2056 (5)



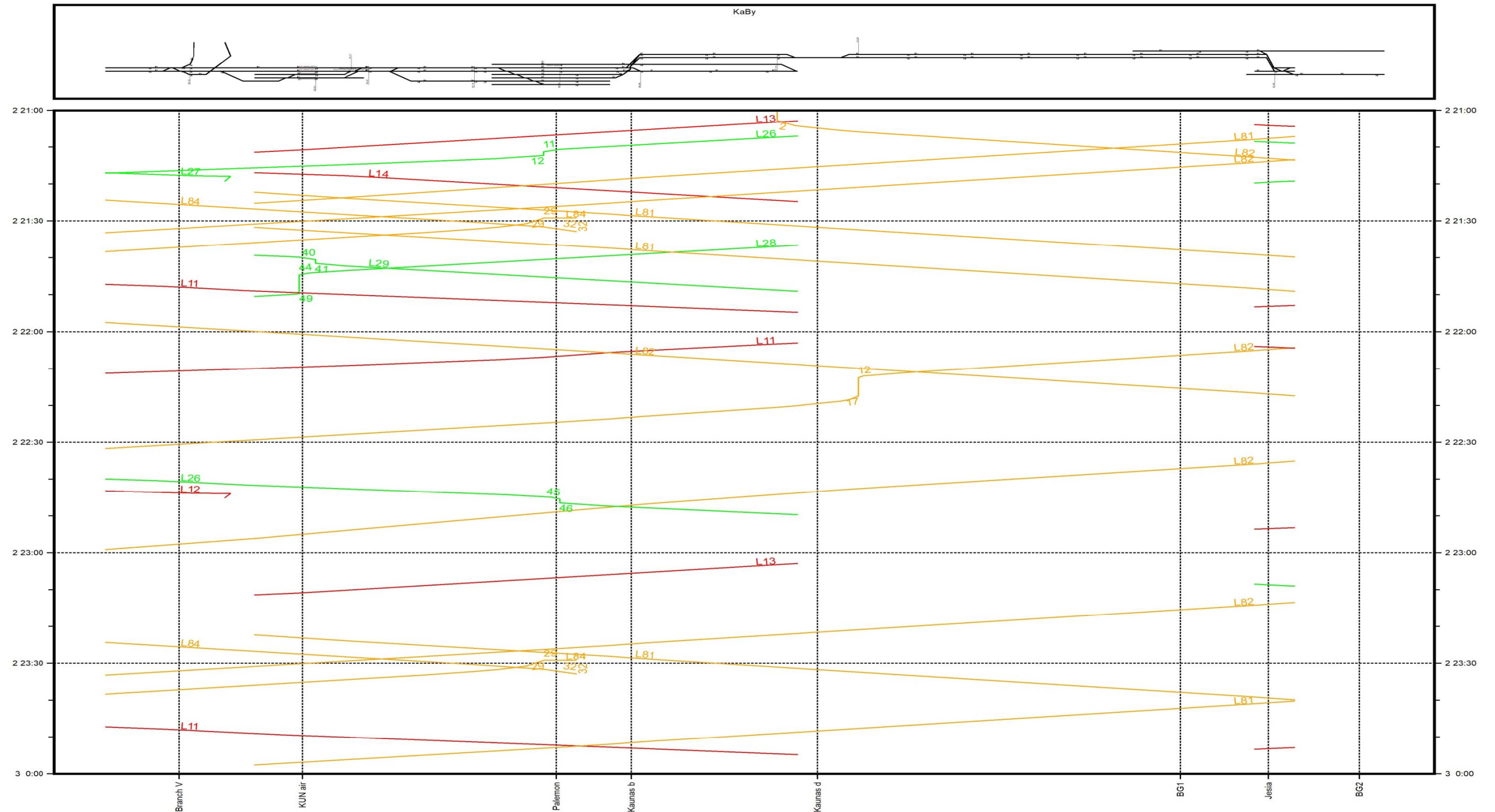
Timetable Kaunas bypass 2056 (6)



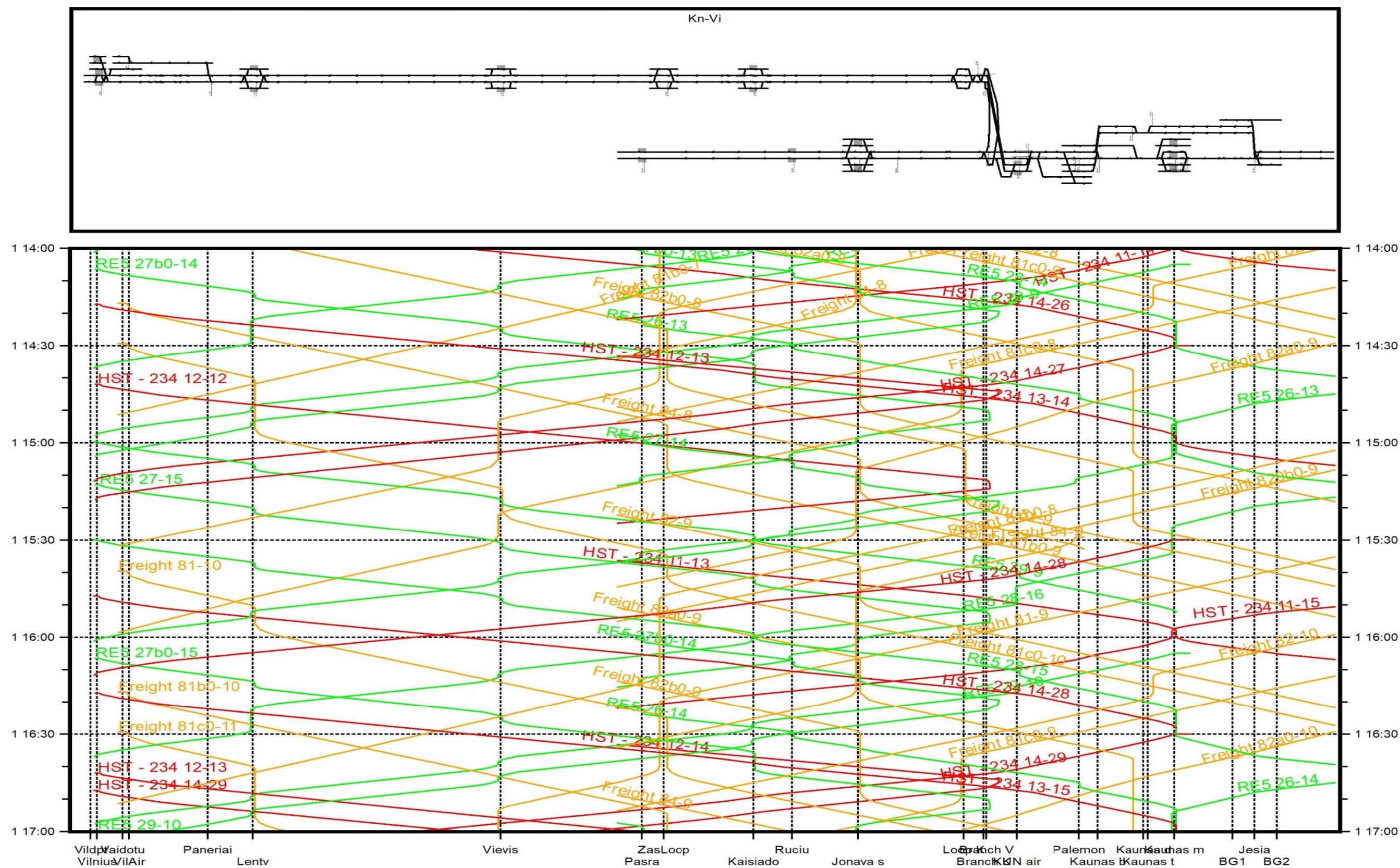
Timetable Kaunas bypass 2056 (7)



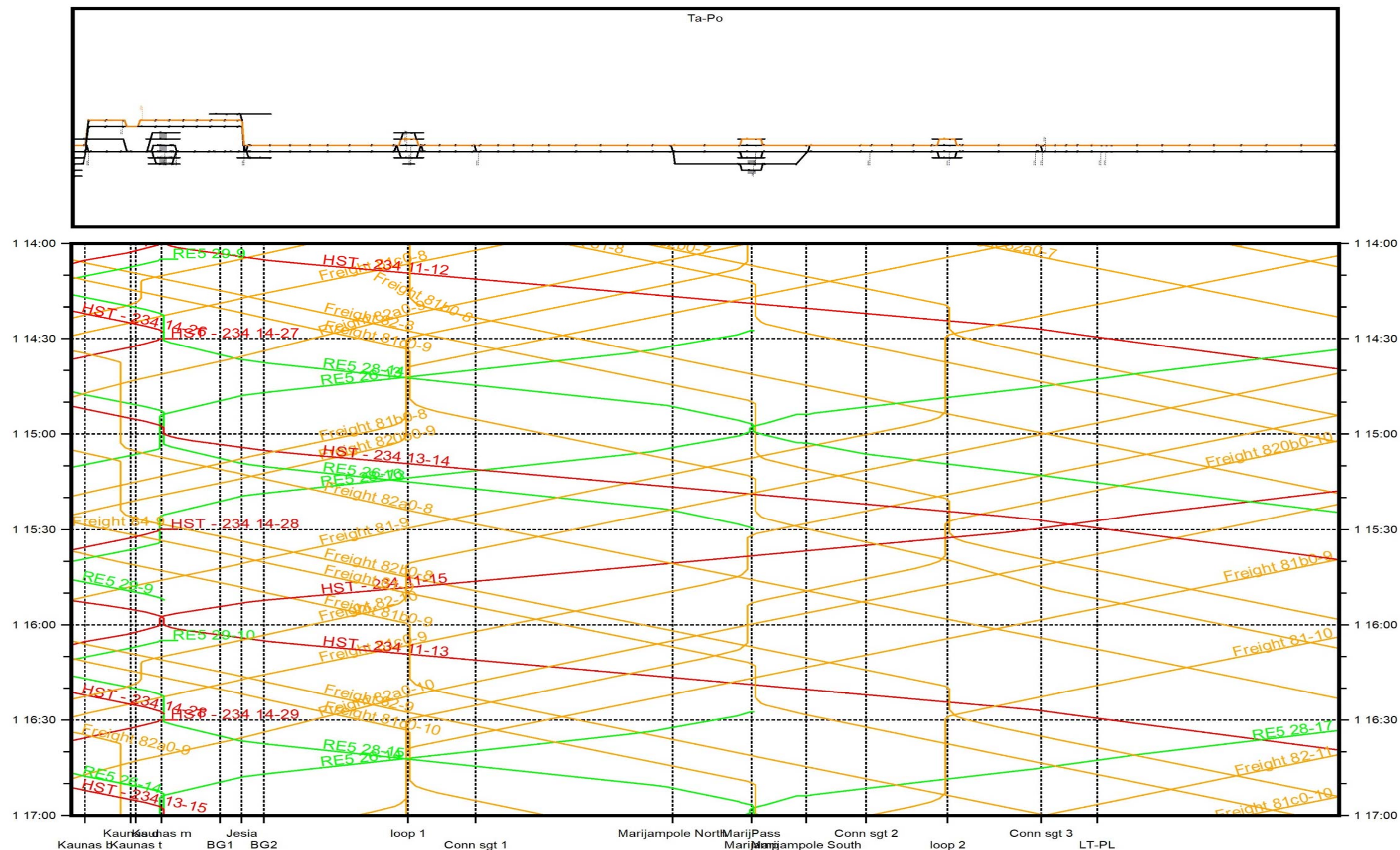
Timetable Kaunas bypass 2056 (8)



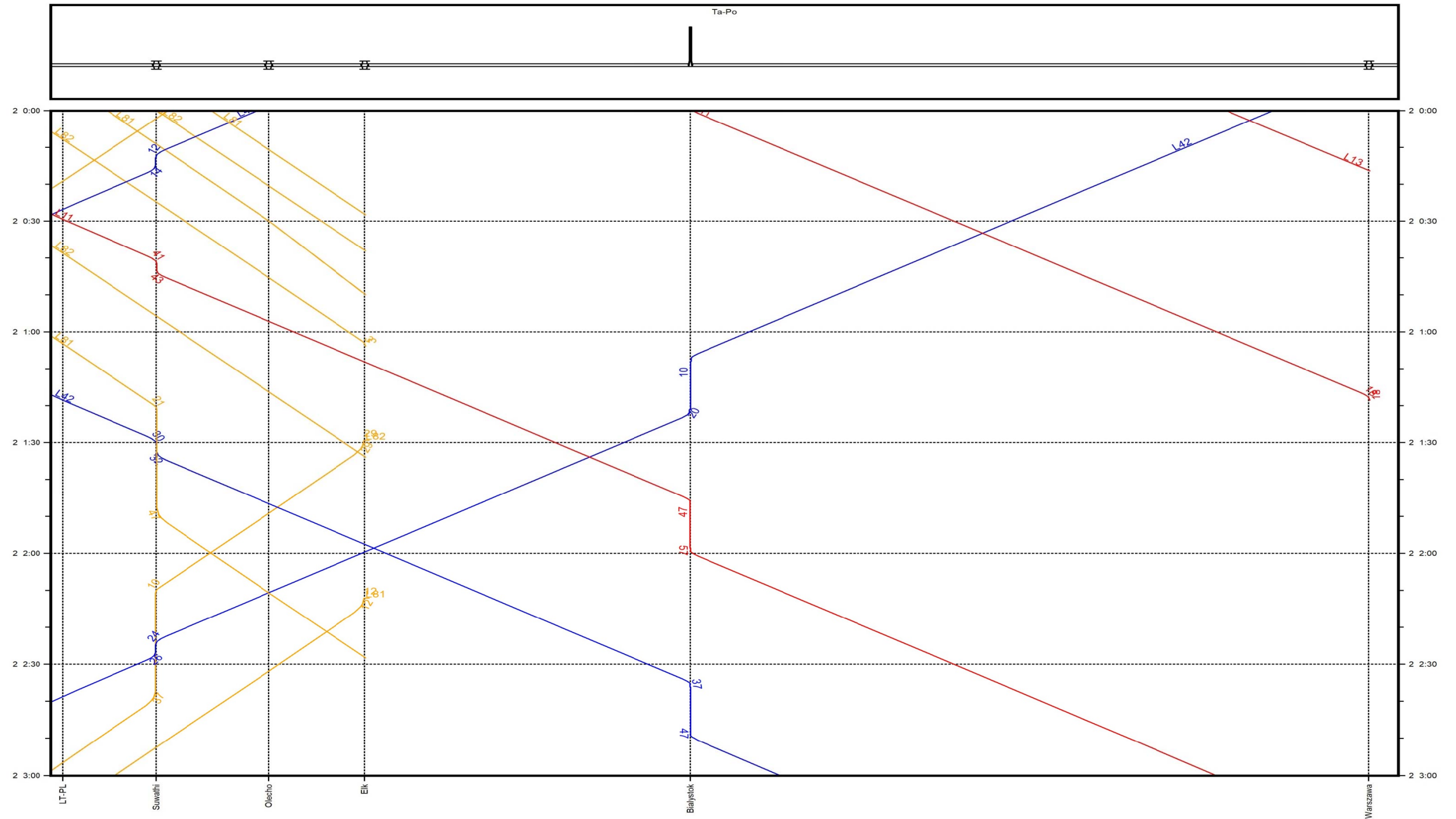
Timetable Kaunas Node – Vilnius / Vaidotai 2056



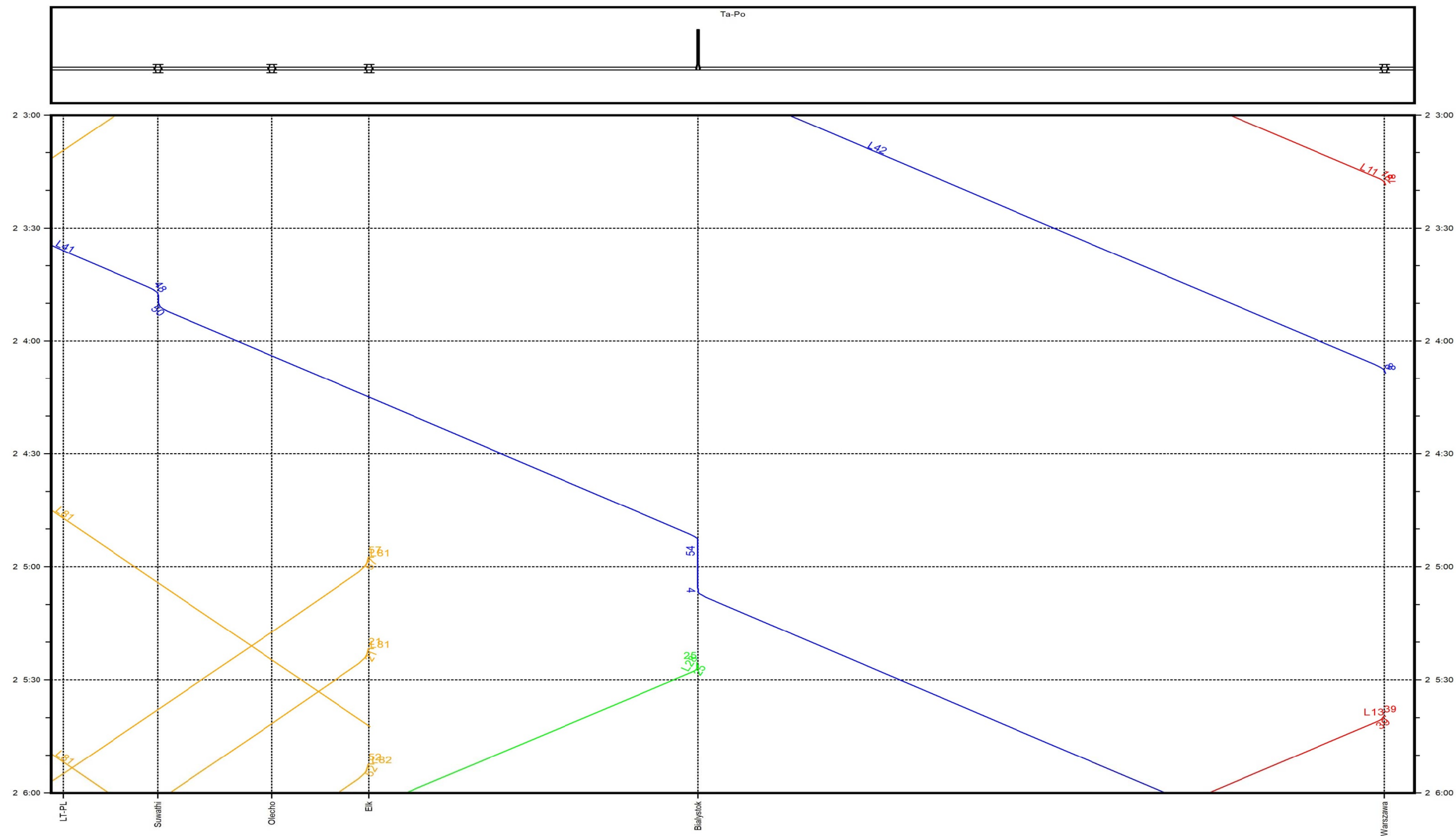
Timetable Kaunas Node -Border Lithuania/Poland 2056



Timetable Border Lithuania/Poland – Warszawa 2056 (1)



Timetable Border Lithuania/Poland – Warszawa 2056 (2)



The diagram illustrates the railway schedule for the route from Łódź to Warszawa. The stations shown are Łódź, Suwałki, Olecho, Elk, Białystok, and Warszawa. The time scale ranges from 6:00 to 9:00. The diagram shows multiple train lines in different colors (yellow, green, red, blue) with their respective departure and arrival times at various stations. A legend at the top indicates the line type: 'Ta-Po'.

Line	Color	Direction	Station	Time
L13	Red	Łódź to Warszawa	Łódź	6:00
L13	Red	Łódź to Warszawa	Suwałki	6:15
L13	Red	Łódź to Warszawa	Olecho	6:30
L13	Red	Łódź to Warszawa	Elk	6:45
L13	Red	Łódź to Warszawa	Białystok	7:00
L13	Red	Łódź to Warszawa	Warszawa	7:30
L11	Red	Łódź to Warszawa	Łódź	6:30
L11	Red	Łódź to Warszawa	Suwałki	6:45
L11	Red	Łódź to Warszawa	Olecho	7:00
L11	Red	Łódź to Warszawa	Elk	7:15
L11	Red	Łódź to Warszawa	Białystok	7:30
L11	Red	Łódź to Warszawa	Warszawa	8:00
L13	Red	Warszawa to Łódź	Warszawa	8:30
L13	Red	Warszawa to Łódź	Białystok	8:45
L13	Red	Warszawa to Łódź	Elk	9:00
L13	Red	Warszawa to Łódź	Olecho	9:15
L13	Red	Warszawa to Łódź	Suwałki	9:30
L13	Red	Warszawa to Łódź	Łódź	9:45
L11	Red	Warszawa to Łódź	Warszawa	9:00
L11	Red	Warszawa to Łódź	Białystok	9:15
L11	Red	Warszawa to Łódź	Elk	9:30
L11	Red	Warszawa to Łódź	Olecho	9:45
L11	Red	Warszawa to Łódź	Suwałki	10:00
L11	Red	Warszawa to Łódź	Łódź	10:15
L13	Red	Łódź to Warszawa	Łódź	7:00
L13	Red	Łódź to Warszawa	Suwałki	7:15
L13	Red	Łódź to Warszawa	Olecho	7:30
L13	Red	Łódź to Warszawa	Elk	7:45
L13	Red	Łódź to Warszawa	Białystok	8:00
L13	Red	Łódź to Warszawa	Warszawa	8:30
L11	Red	Łódź to Warszawa	Łódź	7:30
L11	Red	Łódź to Warszawa	Suwałki	7:45
L11	Red	Łódź to Warszawa	Olecho	8:00
L11	Red	Łódź to Warszawa	Elk	8:15
L11	Red	Łódź to Warszawa	Białystok	8:30
L11	Red	Łódź to Warszawa	Warszawa	9:00
L13	Red	Warszawa to Łódź	Warszawa	8:30
L13	Red	Warszawa to Łódź	Białystok	8:45
L13	Red	Warszawa to Łódź	Elk	9:00
L13	Red	Warszawa to Łódź	Olecho	9:15
L13	Red	Warszawa to Łódź	Suwałki	9:30
L13	Red	Warszawa to Łódź	Łódź	9:45
L11	Red	Warszawa to Łódź	Warszawa	9:00
L11	Red	Warszawa to Łódź	Białystok	9:15
L11	Red	Warszawa to Łódź	Elk	9:30
L11	Red	Warszawa to Łódź	Olecho	9:45
L11	Red	Warszawa to Łódź	Suwałki	10:00
L11	Red	Warszawa to Łódź	Łódź	10:15
L13	Red	Łódź to Warszawa	Łódź	7:00
L13	Red	Łódź to Warszawa	Suwałki	7:15
L13	Red	Łódź to Warszawa	Olecho	7:30
L13	Red	Łódź to Warszawa	Elk	7:45
L13	Red	Łódź to Warszawa	Białystok	8:00
L13	Red	Łódź to Warszawa	Warszawa	8:30
L11	Red	Łódź to Warszawa	Łódź	7:30
L11	Red	Łódź to Warszawa	Suwałki	7:45
L11	Red	Łódź to Warszawa	Olecho	8:00
L11	Red	Łódź to Warszawa	Elk	8:15
L11	Red	Łódź to Warszawa	Białystok	8:30
L11	Red	Łódź to Warszawa	Warszawa	9:00
L13	Red	Warszawa to Łódź	Warszawa	8:30
L13	Red	Warszawa to Łódź	Białystok	8:45
L13	Red	Warszawa to Łódź	Elk	9:00
L13	Red	Warszawa to Łódź	Olecho	9:15
L13	Red	Warszawa to Łódź	Suwałki	9:30
L13	Red	Warszawa to Łódź	Łódź	9:45
L11	Red	Warszawa to Łódź	Warszawa	9:00
L11	Red	Warszawa to Łódź	Białystok	9:15
L11	Red	Warszawa to Łódź	Elk	9:30
L11	Red	Warszawa to Łódź	Olecho	9:45
L11	Red	Warszawa to Łódź	Suwałki	10:00
L11	Red	Warszawa to Łódź	Łódź	10:15
L13	Red	Łódź to Warszawa		

ANNEX 8: Speed Profiles High Speed Train (preliminary design)

Helsinki to Riga

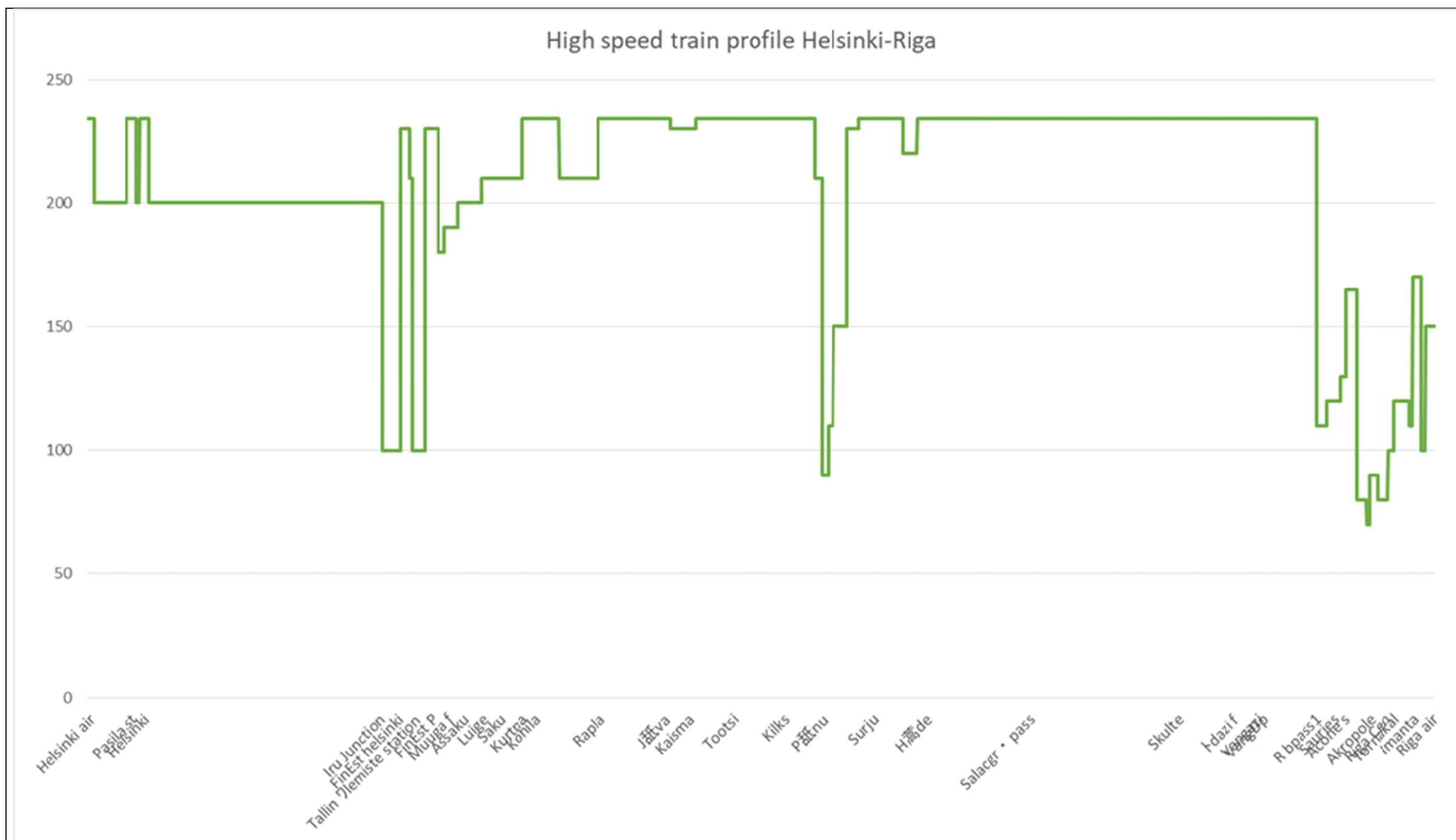


Figure 1: Speed profile high speed train Helsinki-Riga

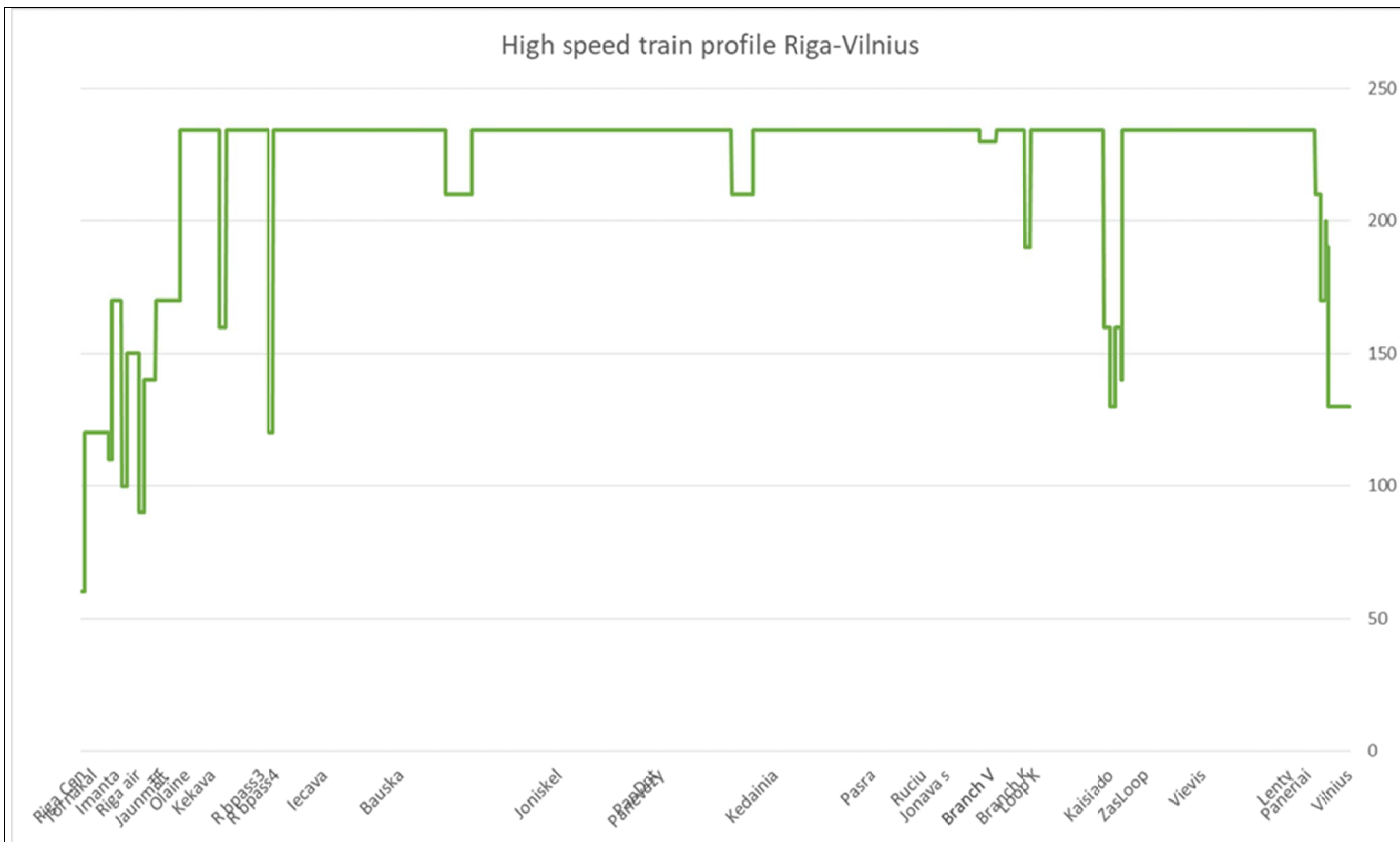


Figure 3: Speed profile high speed train Riga-Vilnius

Vilnius-Kaunas

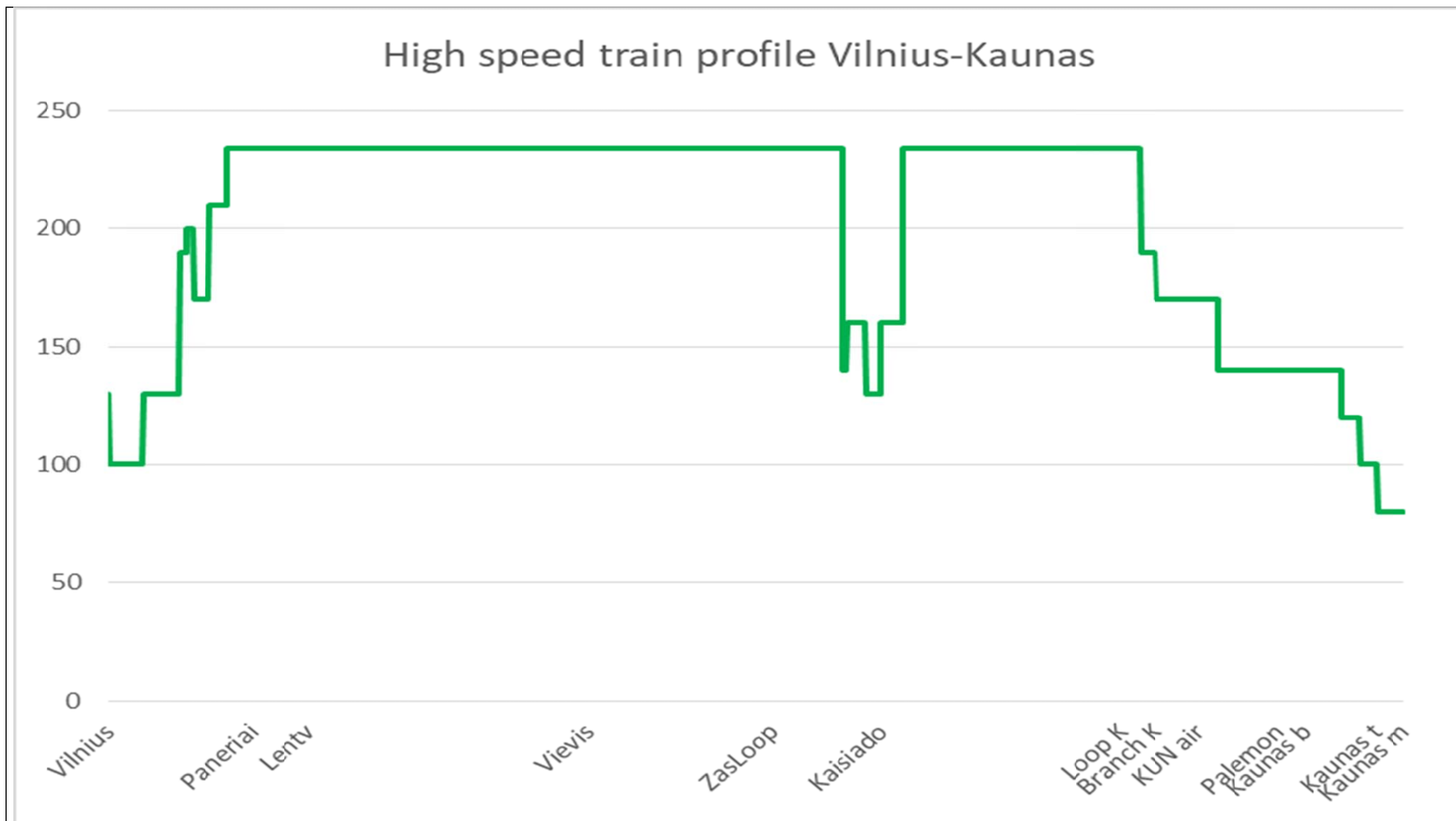


Figure 4: Speed profile high speed train Vilnius-Kaunas

ANNEX 9: Maximum permitted speed maps as per preliminary design

Source: RB Rail AS

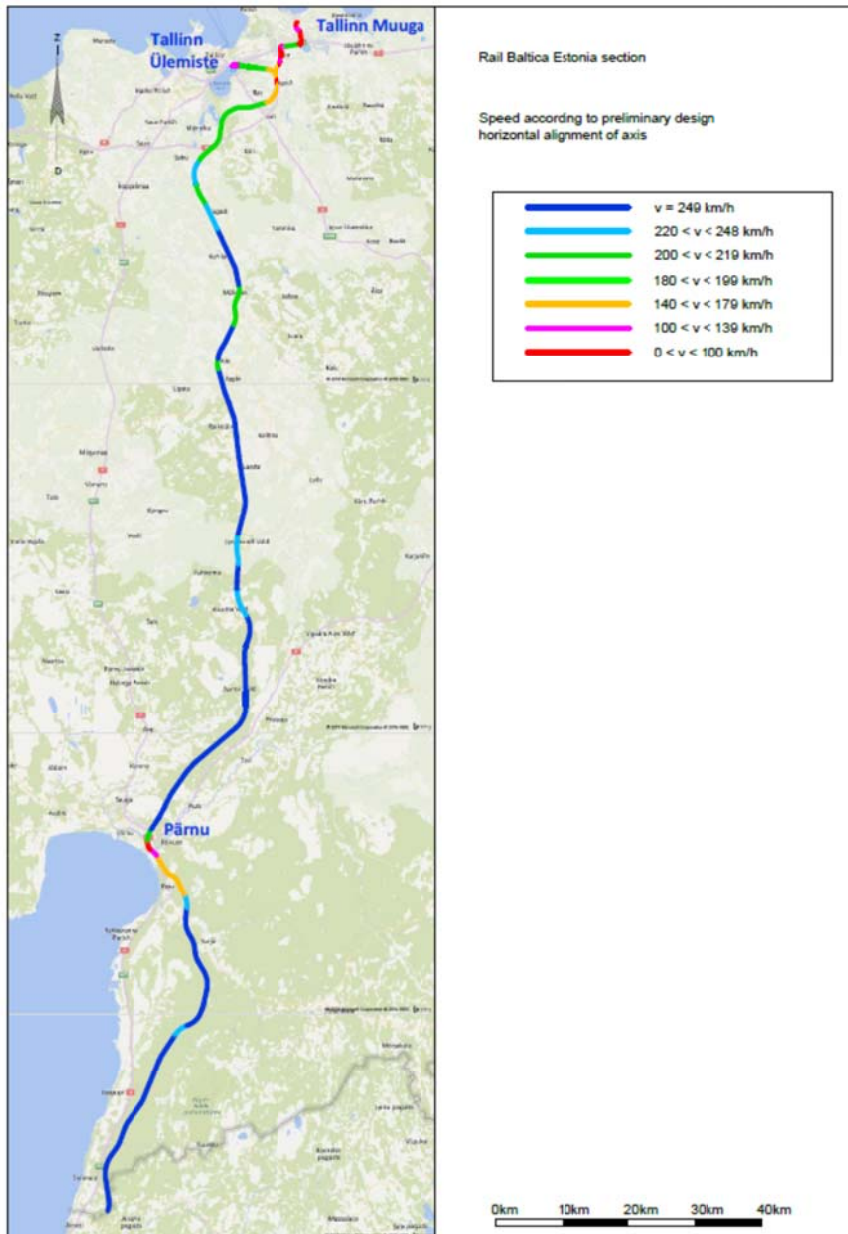


Figure 5: Speed Map 01 – Rail Baltica Estonia section

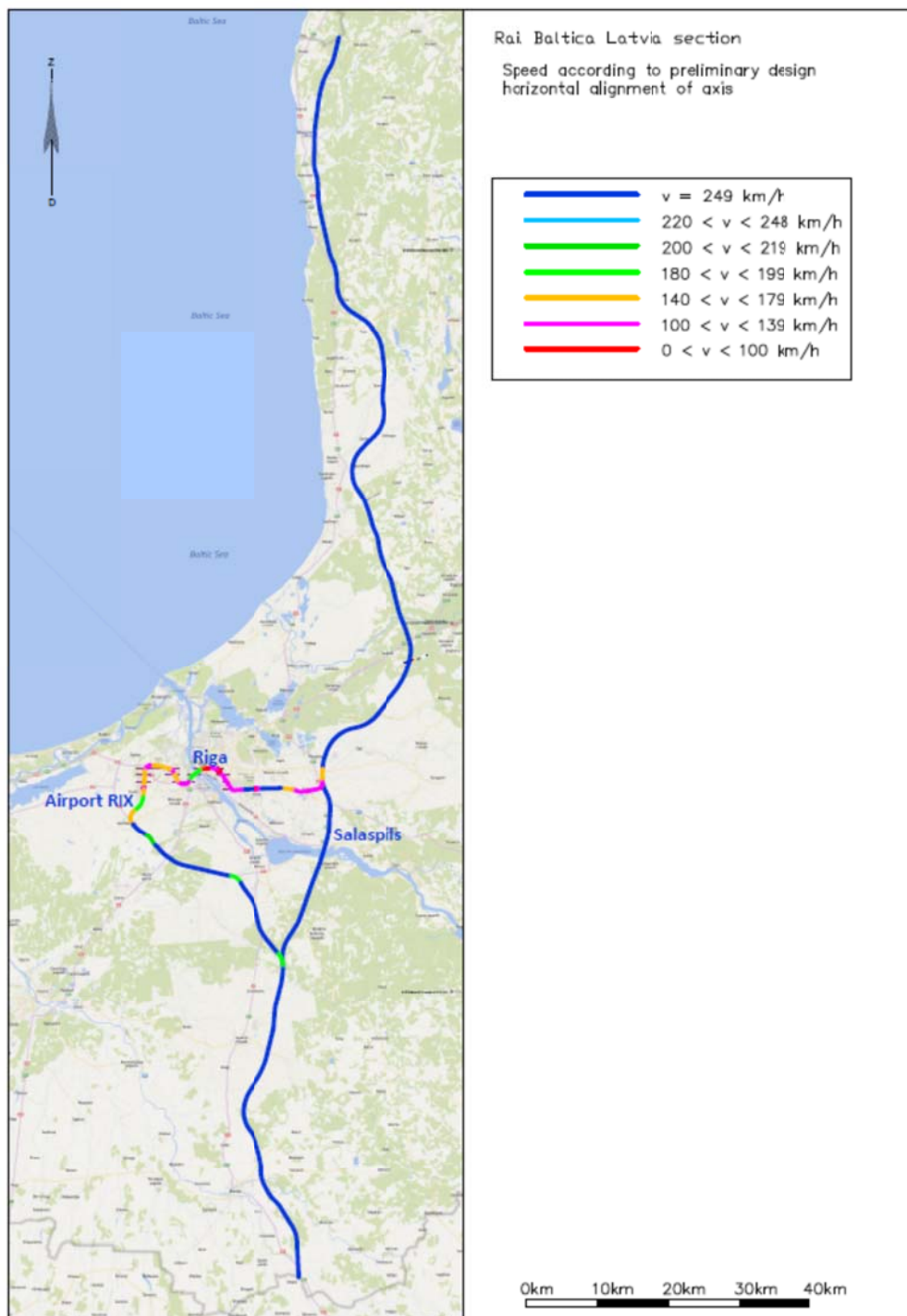


Figure 6: Speed Map 02 – Rail Baltica Latvia section

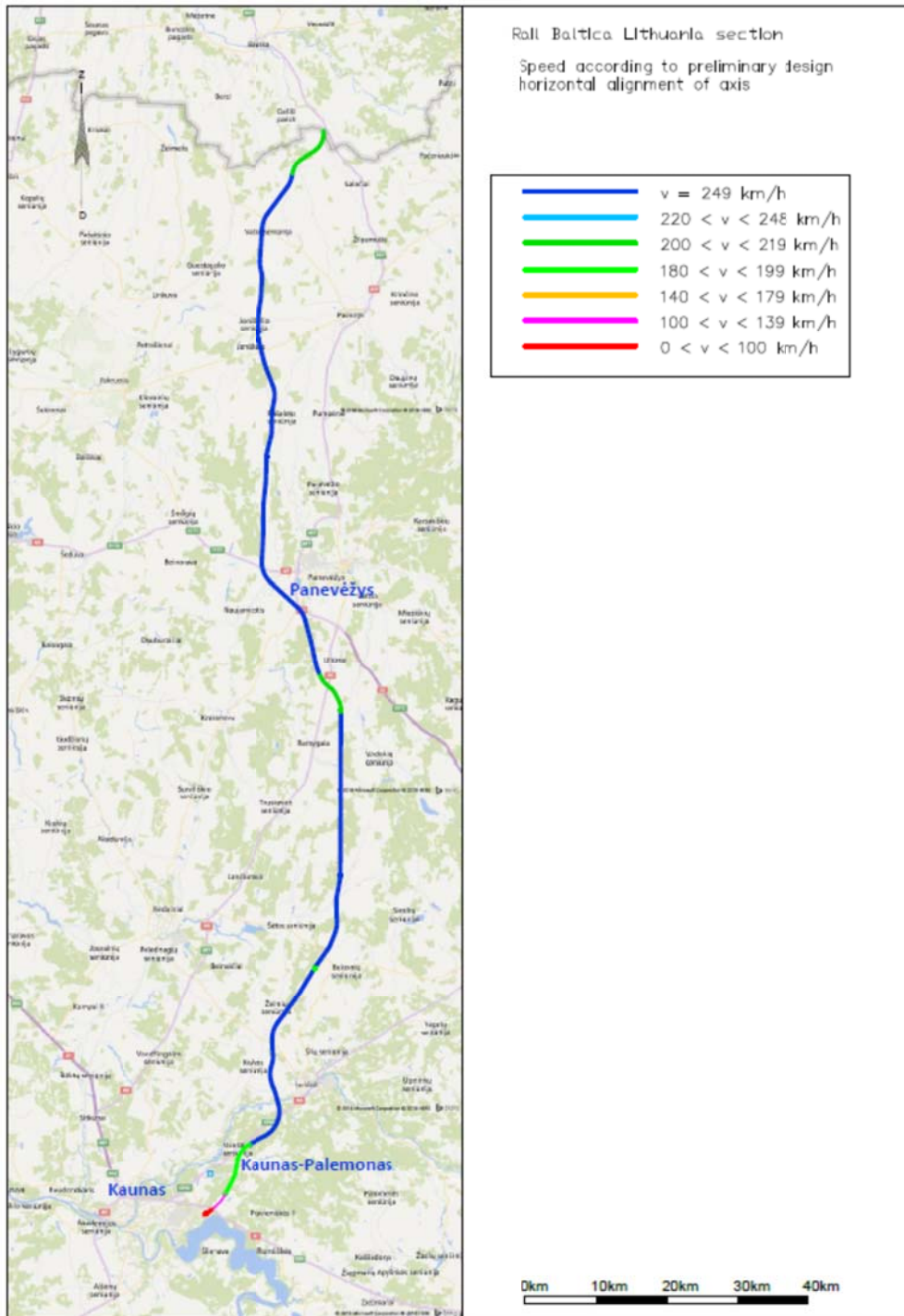
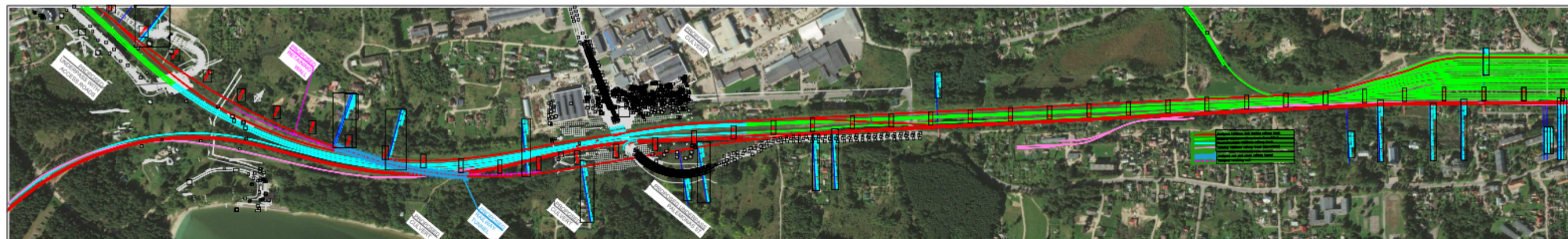


Figure 7: Speed Map 03 – Rail Baltica Lithuania section

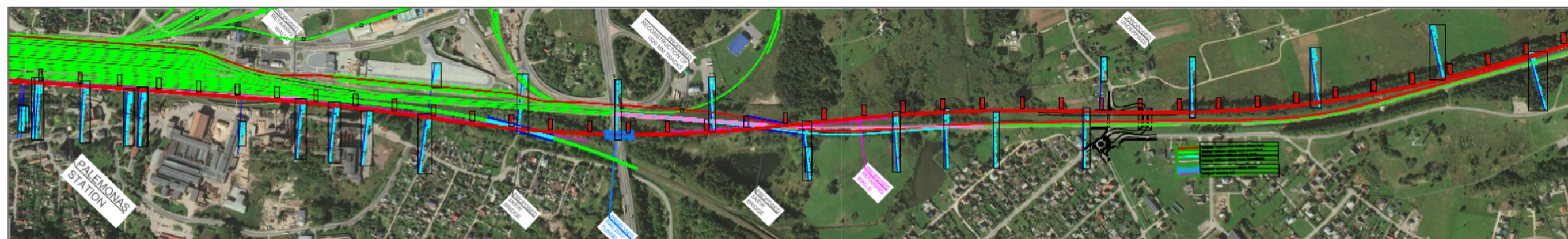
ANNEX 10: Track plan Palemonas station (RB Rail solution)

Source: RB Rail AS

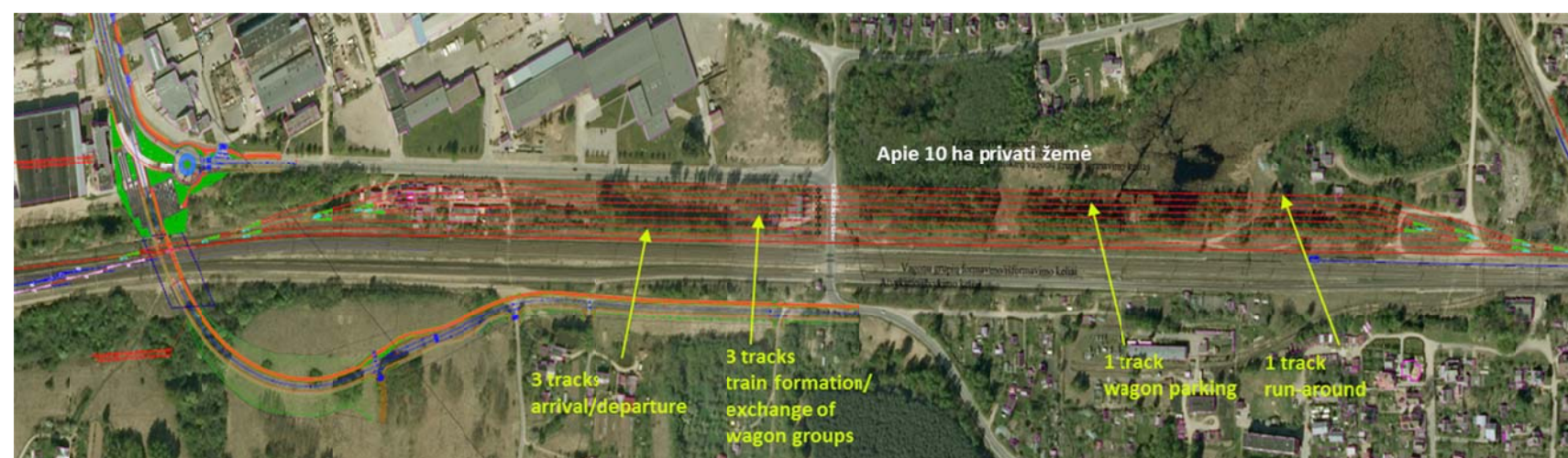
Palemonas station (South side)



Palemonas station (North side)

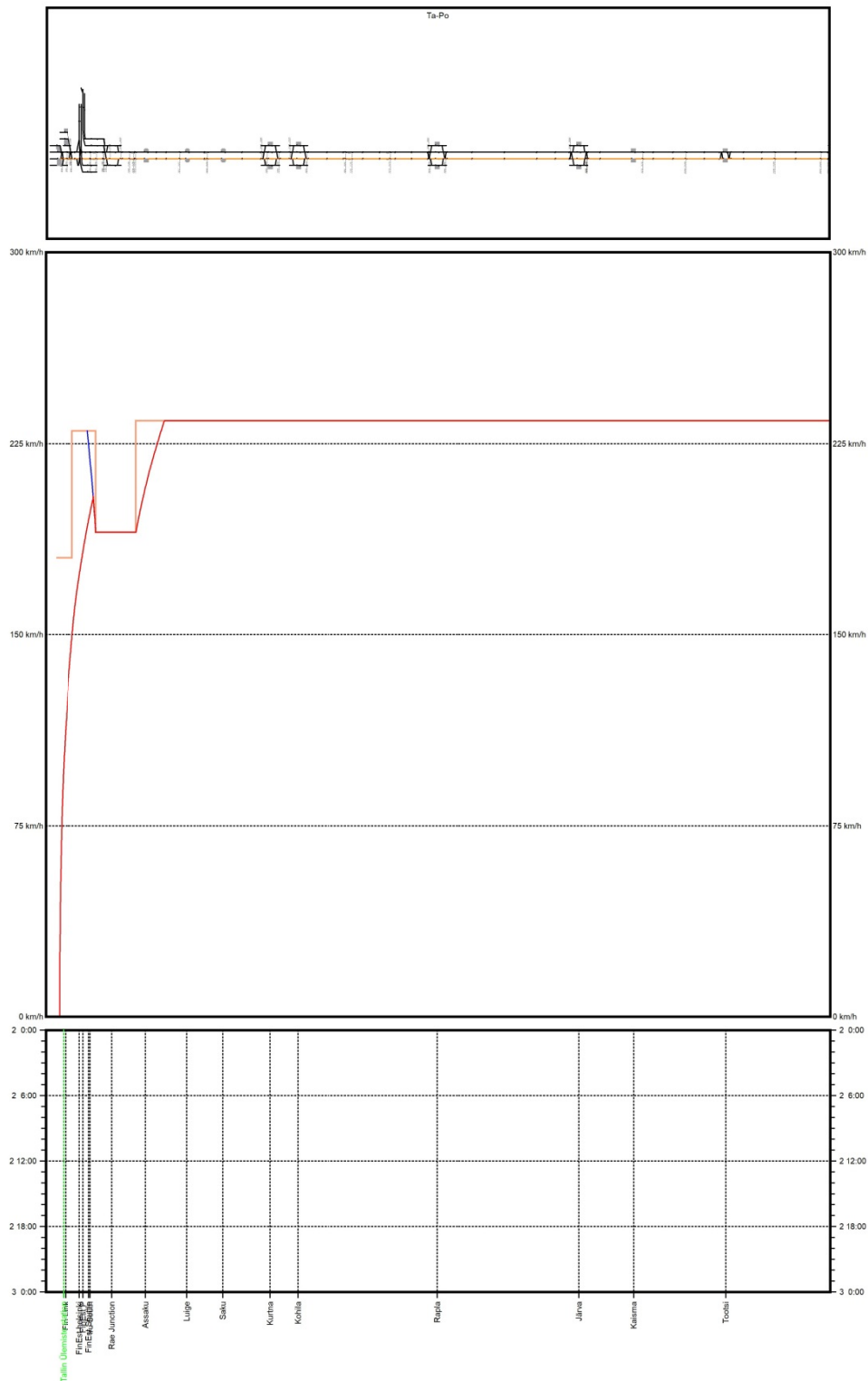


Palemonas station (reception sidings)

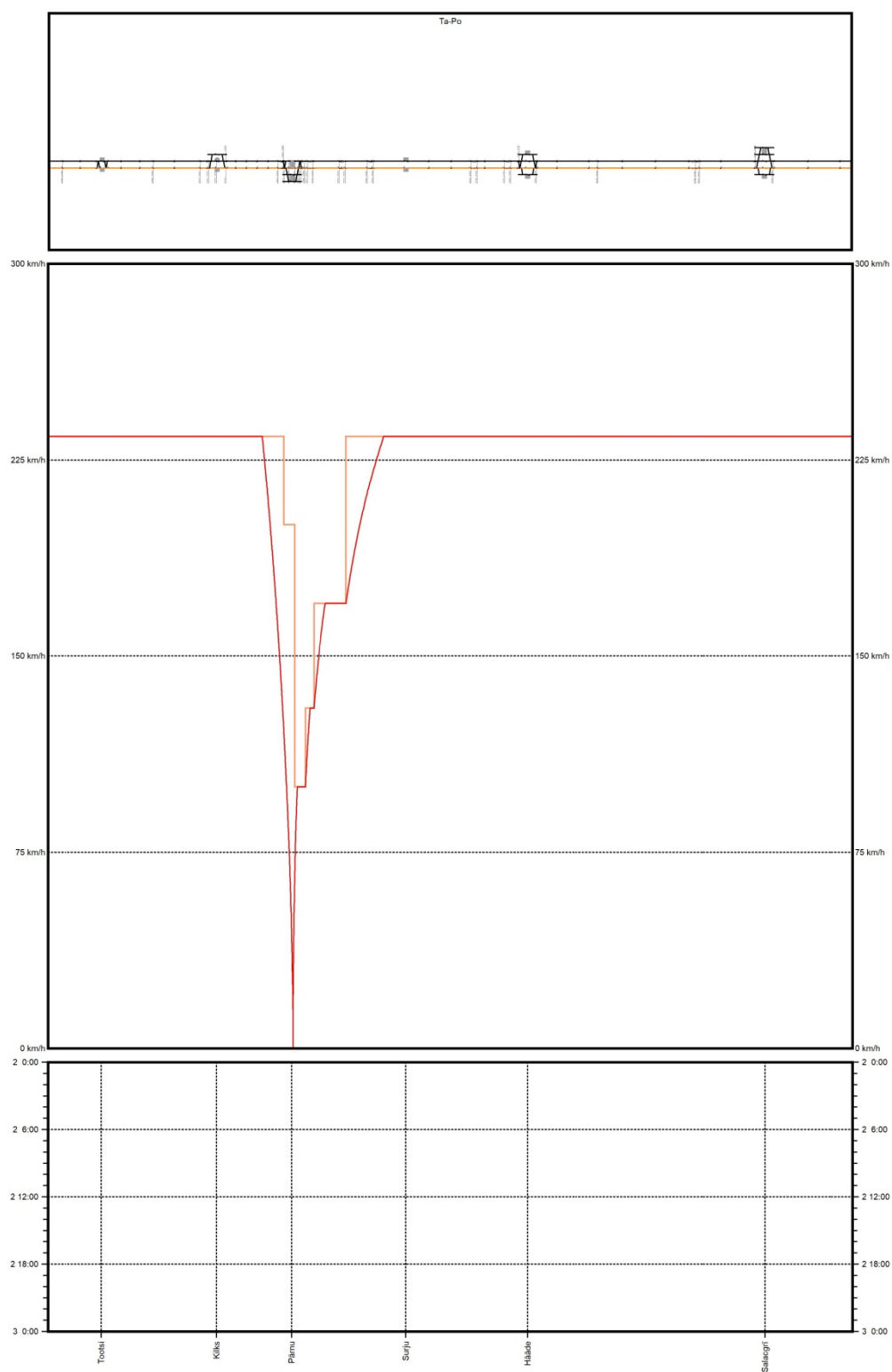


ANNEX 11: Speed Profiles High Speed Train (after CPTD)

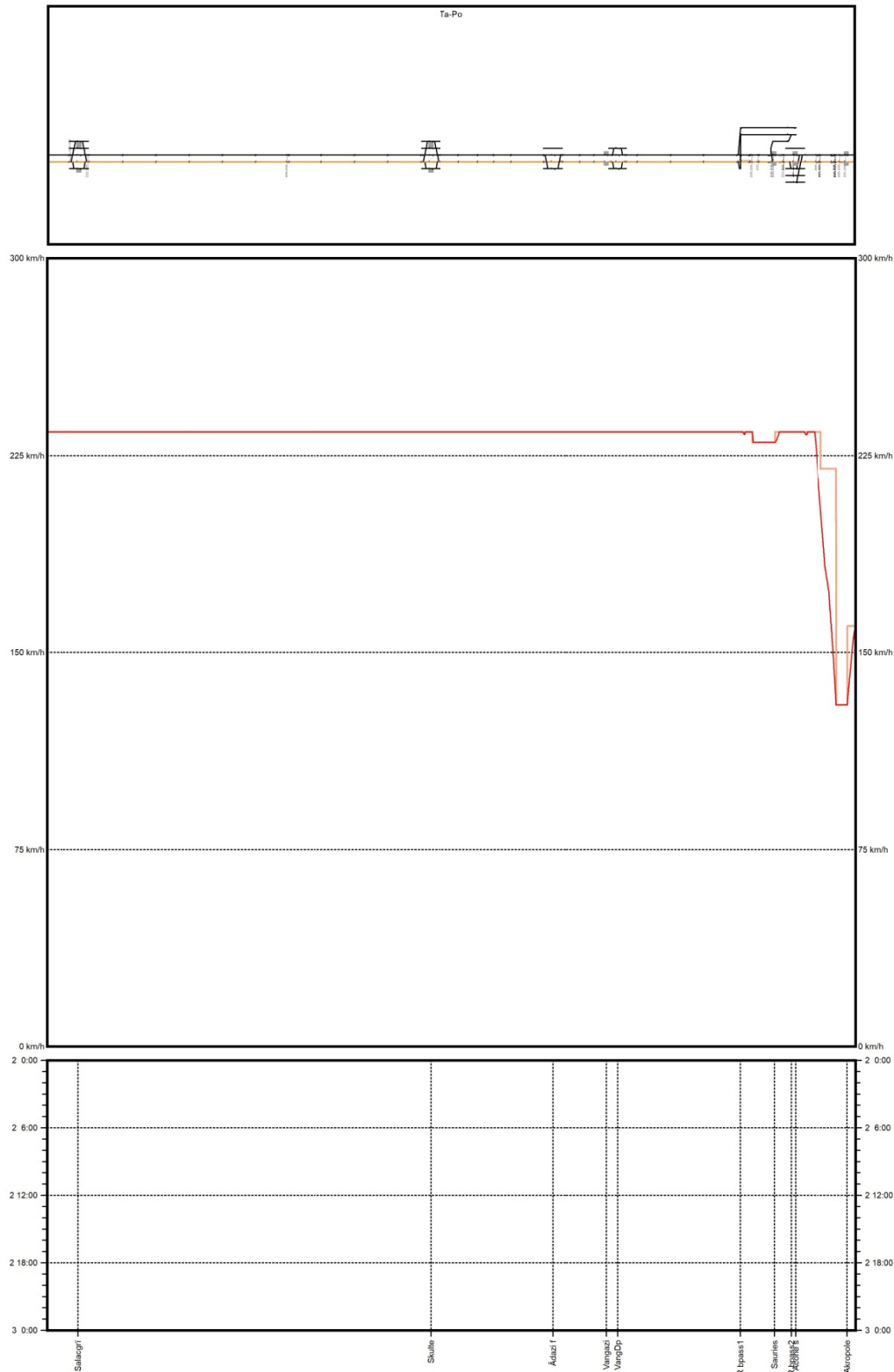
Section Tallinn – Tootsi



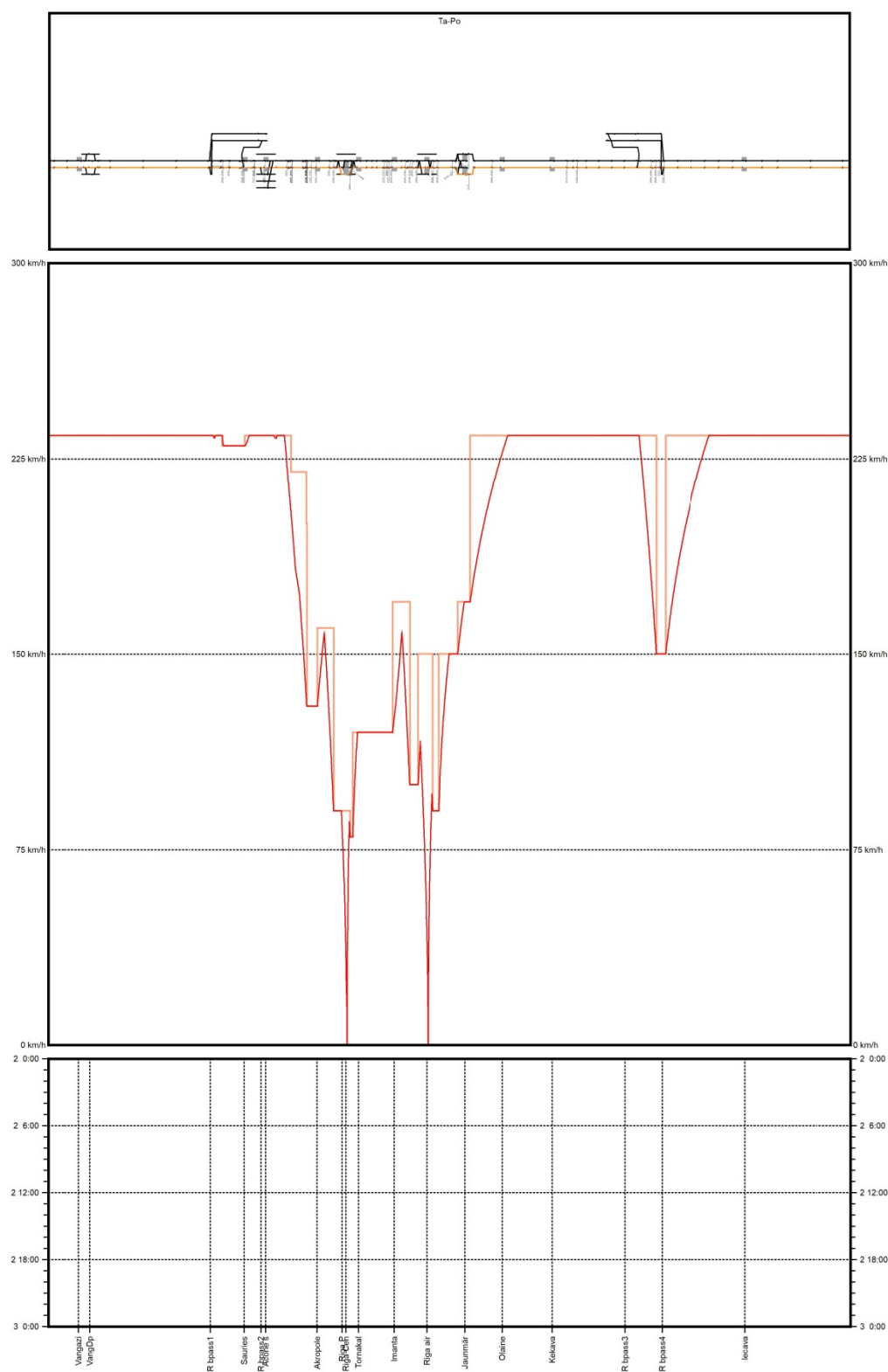
Section Tootsi – Salacgrīva



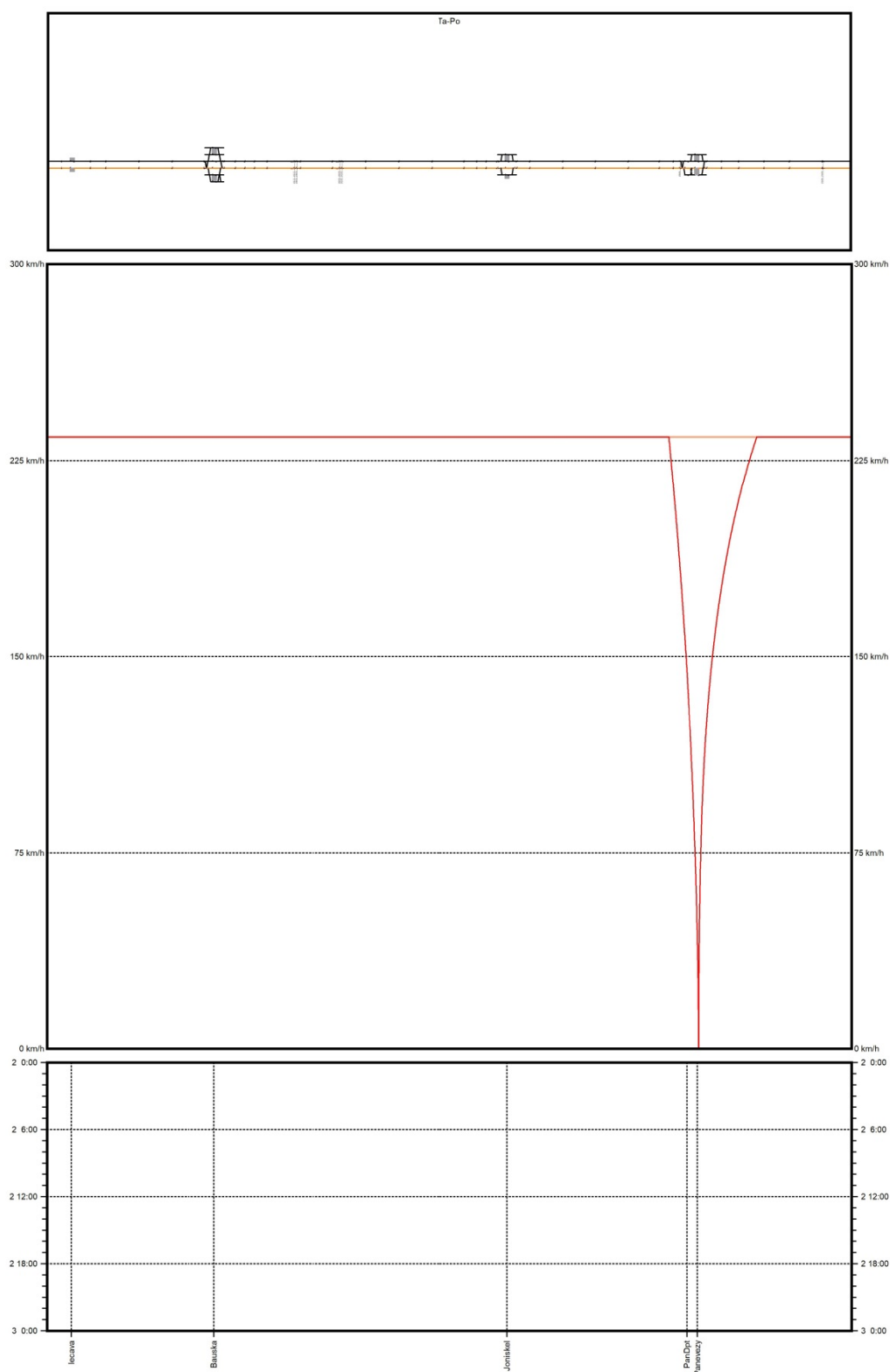
Section Salacgrīva – Acone



Section Vangaži – Iecava



Section Iecava – Panevėžys



Section Panevėžys – Kaunas Central

