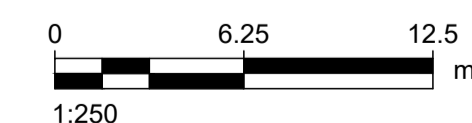


OLE FOUNDATIONS AND DUCTING LAYOUT SHEET 2 OF 2

Scale 1:250

NOTES:

- REFER TO DRG. DR-NAL-CV-GN-01574-01 FOR GENERAL NOTES.
- REFER TO CV-SD-SRA-00009 FOR SAFETY IN DESIGN REGISTER.
- DUCTING DESIGN SHOWN IS AS PER "RNGIM DUCTING V0.3.PDF", RECEIVED ON 12/11/2024 AND COMPLETED BY OTHERS.
- SUB-DUCTS NOT SHOWN FOR CLARITY.
- ALL PROPOSED DUCTS TO BE DRAW TAPED.
- REFER TO THE FOLLOWING DRAWINGS FOR LOC CASE MASS BLOCK RETAINING WALL DETAILS:
 - DR-NAL-CV-GA-01635-01 RETAINING WALL LAYOUT
 - DR-NAL-CV-PL-01638-01 PLAN VIEW
 - DR-NAL-CV-LS-01636-01 CROSS SECTIONS
 - DR-NAL-CV-DT-01641-01 DETAIL DRAWING



Digital Data in Terms ofNZGD2K.MOUNT EDEN..... Coordinate system.

LEGEND	
GENERAL	
	TRACK CENTRELINE - PROPOSED
	SURVEYED RAIL
	SURVEYED FEATURES
	LIMIT OF FORMATION WORKS
SERVICES - EXISTING	
	STORMWATER PIPE/CULVERT
	WATERMAIN
	WASTEWATER
	POWER
	FIBRE OPTIC
	GAS / FUEL MAIN
DRAINAGE - EXISTING	
	CESS DRAIN
OLE FOUNDATIONS - EXISTING	
	OLE FOUNDATIONS
	ANCHOR FOUNDATIONS
RAIL INFRASTRUCTURE - EXISTING	
	MUSHROOM
	BALISE
DUCTING PIT - EXISTING	
	DUCTING PIT
SERVICES - PROPOSED	
	CABLE DUCTING
	DUCTING PIT
OLE FOUNDATIONS - PROPOSED	
	OLE FOUNDATIONS
	ANCHOR FOUNDATIONS

FOR CONSTRUCTION

REV	REVISION PARTICULARS	DRAWN	DATE	DESIGNED	INITIALS	DATE
0.1	100% DESIGN FOR CLIENT REVIEW	LF	19/11/2024	DESIGNED	LF	19/11/2024
1.0	ISSUE FOR CONSTRUCTION	NY	16/12/2024	DRAWN	AO	19/11/2024
				CHECKED	VA	19/11/2024
				APPROVED	TR	19/11/2024
				LINE: NAL Km: 21+700 TO 21+925		
				SCALE: 1:250		

RNR
 WO - 601101-55
 GLEN EDEN CROSSOVER
 NAL 21+700 TO 21+925
 DUCTING LAYOUT SHEET 2

CONSULTANT/CONTRACTOR: ARUP			
APPROVED BY : DATE :			
DRAWING No.	Original A1 Std	Rev No.	1.0
DR-NAL-CV-GA-01582-01		Sht No.	1

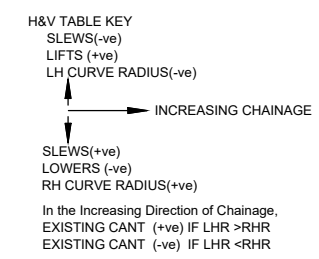
C:\projects\enr\enr_projects\global_jamies.smd\0168570\DR-NAL-CV-GA-01582-01.dwg 16-12-24 08:11 PM Jamies.Sim

Signed by Keith Ashington on: 27/08/2024 10:22:55 AM Issued for Construction

C:\UC\WorkSpace\BVC_MDN_PFD\MDM\Paauama\01-vm\KiwiRail\Project\Major\Project\01-101 - RND\M001101-01\BIS-001 - New Lynn (Glen Eden) Crossover\Track\DR-NAL-TR-LS-01439-01.dwg 27/08/24 10:23 PM snc_rml_jpod

NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED
2. COORDINATES ARE IN TERMS OF THE NEW ZEALAND GEODETIC 2000 DATUM BASED ON MOUNT EDEN 2000. VERTICAL DATUM ARE IN TERMS OF NZVD2016.
3. SURVEY DATA HAS BEEN PROVIDED BY EXTERNAL SURVEY COMPANY.
4. ANY SERVICES ARE SHOWN AS INDICATIVE AND ARE TO BE ACCURATELY LOCATED IN THE GROUND BY SERVICE OWNER/PROVIDER BEFORE ANY WORK IS CARRIED OUT IN THE AREA SHOWN IN THIS DRAWING.
5. CONTRACTOR IS TO ENSURE ALL RELEVANT KIWI RAIL PERMITS ARE OBTAINED AND THE REQUIRED LEVEL OF RAIL PROTECTION IS ON SITE PRIOR TO ACCESSING THE RAIL CORRIDOR.
6. CONTRACTOR TO CARRY OUT SERVICE LOCATE ACCURATELY IDENTIFY ANY SERVICES PRIOR TO CONSTRUCTION SITE PLAN.
7. REFER TO MR-04885 FOR THE STANDARD MARTINUS 1 IN 18 3.8m RH CROSSOVER, V2.0 AND MR-04886 FOR THE STANDARD MARTINUS 1 IN 18 3.8m LH CROSSOVER, V2.0.
8. DESIGN COMPLIES WITH T-ST-DE-5200 UNLESS STATED OTHERWISE.
9. NO HORIZONTAL CLEARANCE ISSUES TO OLE.
10. ALL CENTERLINE- CENTERLINE DIMENSIONS GREATER THAN 3.67m INCLUDING CANT CENTER THROW AND END THROW.
11. REFER DR-NAL-TR-LY-01438-01.dwg FOR LAYOUT PLAN.
12. REFER DR-NAL-TR-PL-01440-01.dwg FOR SETTING OUT.

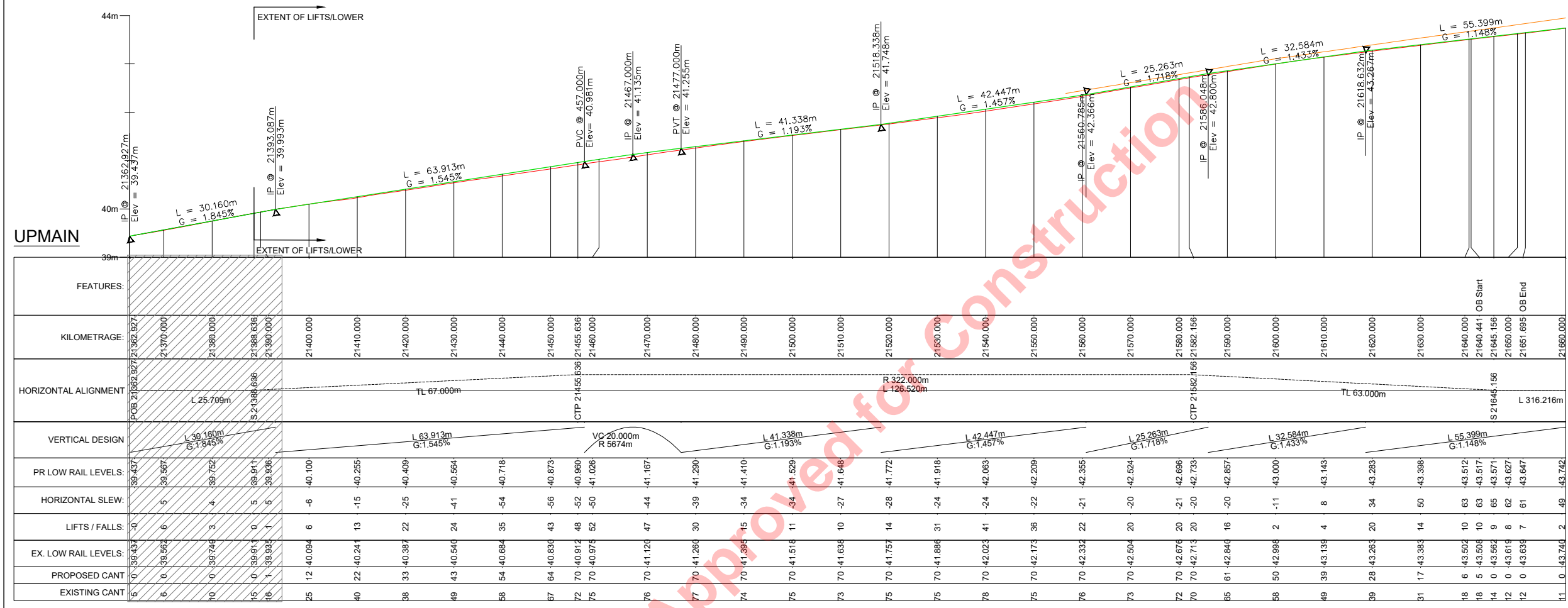


LEGEND

- EXISTING TRACK
- PROPOSED TRACK CENTERLINE
- ADJACENT PROPOSED TRACK
- TIE INS WITH EXISTING

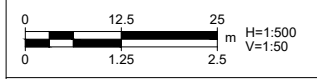
GEOMETRY CODING

- PVI = POINT OF VERTICAL INTERSECTION
- PVC = POINT OF VERTICAL CURVATURE
- PVT = POINT OF VERTICAL TANGENCY
- G = GRADIENT
- GL = GRADIENT LENGTH
- RV = RADIUS OF VERTICAL CURVE
- T/O = TURNOUT
- POS = POINT OF SWITCH
- TOTP = TURNOUT TANGENTIAL POINT
- TNC = THEORETICAL NOSE OF CROSSING
- IP = INTERSECTION POINT OF TURNOUT
- POF = POINT OF FROG
- ETC = EXISTING TRACK CENTRE
- PTC = PROPOSED TRACK CENTRE
- PRL = PROPOSED RAIL LEVEL
- ERL = EXISTING RAIL LEVEL
- EL = ELEVATION
- KM/ STA = KILOMETRAGE
- CT = CENTRE THROW
- LLB = LAST LONG BEARER



PR LOW RAIL LEVELS:	HORIZONTAL SLEW:	LIFTS / FALLS:	EX. LOW RAIL LEVELS:	PROPOSED CANT:	EXISTING CANT:
39.437	0	0	39.437	0	0
39.567	6	6	39.567	6	6
39.752	4	3	39.748	0	10
39.911	0	0	39.911	0	16
39.936	5	1	39.936	1	16
40.100	-6	6	40.094	12	25
40.255	-15	13	40.241	22	40
40.409	-25	22	40.387	33	38
40.564	-41	24	40.540	43	49
40.718	-54	35	40.684	54	58
40.873	-56	43	40.830	64	67
40.980	-52	48	40.912	70	72
41.028	-50	52	40.975	70	75
41.167	-44	47	41.120	70	76
41.280	-39	30	41.260	70	77
41.410	-34	15	41.395	70	74
41.529	-34	11	41.518	70	75
41.648	-27	10	41.638	70	73
41.772	-28	14	41.757	70	75
41.918	-24	31	41.886	70	75
42.063	-24	41	42.023	70	78
42.209	-22	36	42.173	70	75
42.355	-21	22	42.332	70	76
42.524	-20	20	42.504	70	73
42.696	-21	20	42.676	70	72
42.733	-20	20	42.713	70	70
42.857	-20	16	42.840	61	65
43.000	-11	2	42.988	50	58
43.143	8	4	43.138	39	49
43.283	34	20	43.263	28	39
43.398	50	14	43.383	17	31
43.512	63	10	43.502	6	18
43.517	63	10	43.508	5	18
43.571	65	9	43.562	0	14
43.627	62	8	43.618	0	12
43.647	61	7	43.638	0	12
43.742	49	2	43.740	0	11

REFERENCE DRAWINGS:
DR-NAL-TR-LY-01438-01.dwg (LAYOUT PLAN)



KEYPLAN

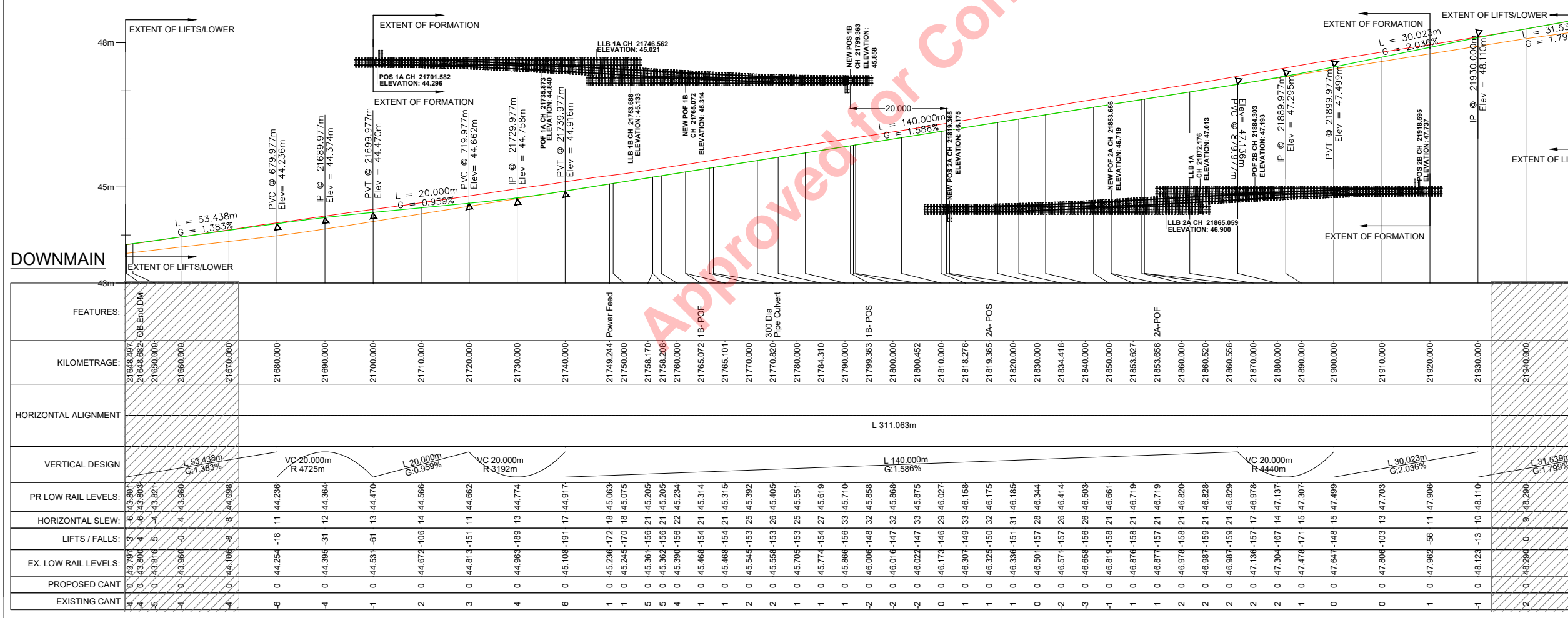
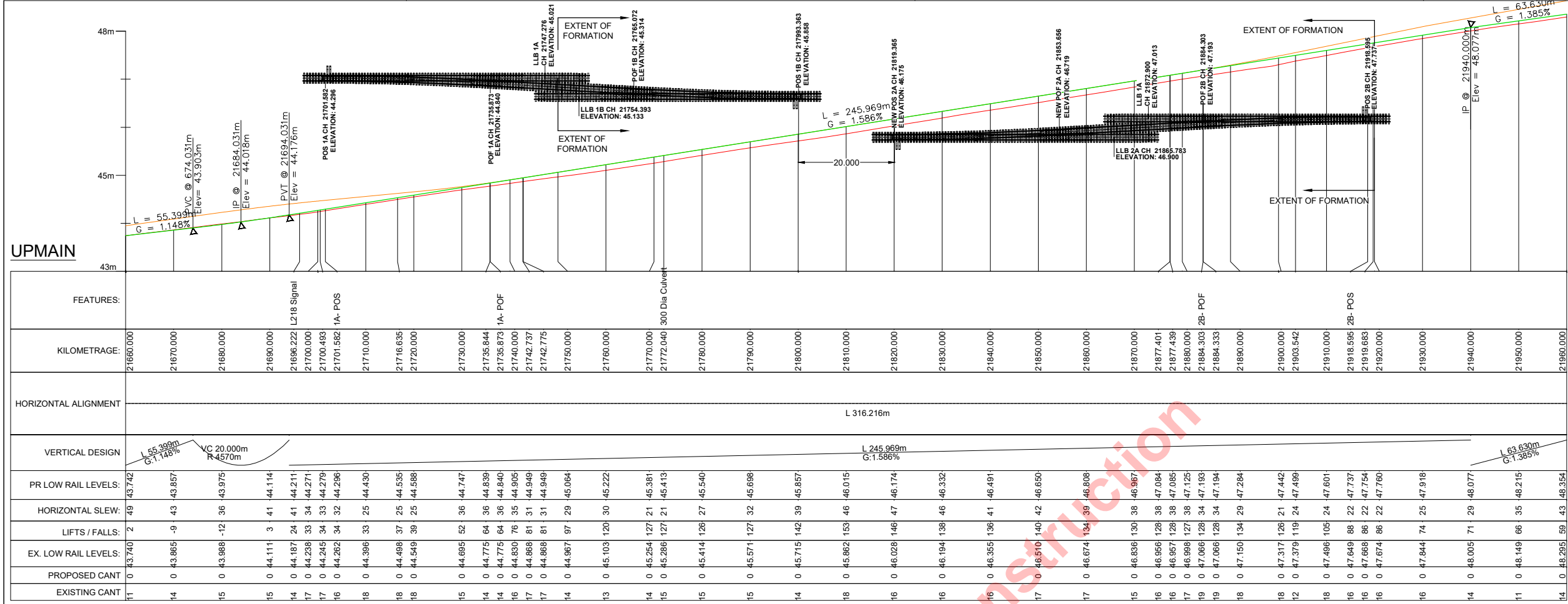
Digital data in terms of [Coordinate System] MOUNT EDEN and [Vertical Datum] NZVD2016

REV	REVISION PARTICULARS	DRAWN	DATE	INITIALS	DATE
1	ISSUED FOR CONSTRUCTION	SR	23/08/2024	DESIGNED RA	22/08/2024
-	-	-	-	DRAWN SR	22/08/2024
-	-	-	-	CHECKED ND	22/08/2024
-	-	-	-	REVIEWED KA	22/08/2024
-	-	-	-	LINE NAL	Km: 21.360-22.660
-	-	-	-	SCALE: H= 1:500, V= 1:50	

GLEN EDEN
WO - 601101
NAL 21.360 - 22.660
CROSS OVER 1 & 2
LONG SECTION

CONSULTANT/CONTRACTOR:-			
APPROVED BY :- kas6849			
DATE :- 23/08/2024			
DRAWING No.	Original	A1 Std	Rev No
DR-NAL-TR-LS-01439-01			1
			Shit No
			1

Signed by Keith Ashington on: 27/08/2024 10:22:55 AM Issued for Construction



- ### NOTES
- ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED
 - COORDINATES ARE IN TERMS OF THE NEW ZEALAND GEODETIC 2000 DATUM BASED ON MOUNT EDEN 2000. VERTICAL DATUM ARE IN TERMS OF NZVD2016.
 - SURVEY DATA HAS BEEN PROVIDED BY EXTERNAL SURVEY COMPANY.
 - ANY SERVICES ARE SHOWN AS INDICATIVE AND ARE TO BE ACCURATELY LOCATED IN THE GROUND BY SERVICE OWNER/PROVIDER BEFORE ANY WORK IS CARRIED OUT IN THE AREA SHOWN IN THIS DRAWING.
 - CONTRACTOR IS TO ENSURE ALL RELEVANT KIWI RAIL PERMITS ARE OBTAINED AND THE REQUIRED LEVEL OF RAIL PROTECTION IS ON SITE PRIOR TO ACCESSING THE RAIL CORRIDOR.
 - CONTRACTOR TO CARRY OUT SERVICE LOCATE ACCURATELY IDENTIFY ANY SERVICES PRIOR TO CONSTRUCTION SITE PLAN.
 - REFER TO MR-04885 FOR THE STANDARD MARTINUS 1 IN 18 3.8m RH CROSSOVER, V2.0 AND MR-04886 FOR THE STANDARD MARTINUS 1 IN 18 3.8m LH CROSSOVER, V2.0.
 - DESIGN COMPLIES WITH T-ST-DE-5200 UNLESS STATED OTHERWISE.
 - NO HORIZONTAL CLEARANCE ISSUES TO OLE.
 - ALL CENTERLINE- CENTERLINE DIMENSIONS GREATER THAN 3.67m INCLUDING CANT CENTER THROW AND END THROW.
 - REFER DR-NAL-TR-LY-01438-01.dwg FOR LAYOUT PLAN.
 - REFER DR-NAL-TR-PL-01440-01.dwg FOR SETTING OUT.

H&V TABLE KEY
 SLEWS(+ve)
 SLEWS(-ve)
 LIFTS (+ve)
 LH CURVE RADIUS(-ve)

→ INCREASING CHAINAGE

In the Increasing Direction of Chainage,
 EXISTING CANT (+ve) IF LHR >RHR
 EXISTING CANT (-ve) IF LHR <RHR

LEGEND

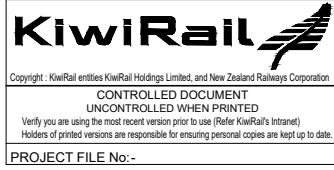
- EXISTING TRACK
- PROPOSED TRACK CENTERLINE
- ADJACENT PROPOSED TRACK
- TIE INS WITH EXISTING

GEOMETRY CODING

- PVI = POINT OF VERTICAL INTERSECTION
- PVC = POINT OF VERTICAL CURVATURE
- PVT = POINT OF VERTICAL TANGENCY
- G = GRADIENT
- GL = GRADIENT LENGTH
- RV = RADIUS OF VERTICAL CURVE
- T/O = TURNOUT
- POS = POINT OF SWITCH
- TOTP = TURNOUT TANGENTIAL POINT
- TNC = THEORETICAL NOSE OF CROSSING
- IP = INTERSECTION POINT OF TURNOUT
- POF = POINT OF FROG
- ETC = EXISTING TRACK CENTRE
- PTC = PROPOSED TRACK CENTRE
- PRL = PROPOSED RAIL LEVEL
- ERL = EXISTING RAIL LEVEL
- EL = ELEVATION
- KM/STA = KILOMETERAGE
- CT = CENTRE THROW
- LLB = LAST LONG BEARER

0 12.5 25
 0 1.25 2.5
 H=1:500
 V=1:50

REFERENCE DRAWINGS:
 DR-NAL-TR-LY-01438-01.dwg (LAYOUT PLAN)



KEYPLAN

Digital data in terms of [Coordinate System] MOUNT EDEN and [Vertical Datum] NZVD2016

REV	REVISION PARTICULARS	DRAWN	DATE	INITIALS	DATE
1	ISSUED FOR CONSTRUCTION	SR	23/08/2024	RA	22/08/2024
-	-	-	-	SR	22/08/2024
-	-	-	-	ND	22/08/2024
-	-	-	-	KA	22/08/2024
-	-	-	-	LINE	NAL Km: 21.360-22.660
-	-	-	-	SCALE:	H= 1:500, V= 1:50

GLEN EDEN
 WO - 601101
 NAL 21.360 - 22.660
 CROSS OVER 1 & 2
 LONG SECTION

CONSULTANT/CONTRACTOR:-

APPROVED BY: - kas6849
 DATE: - 23/08/2024

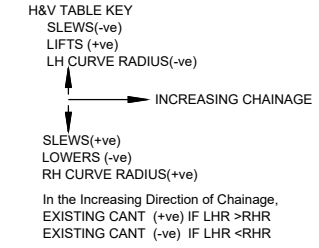
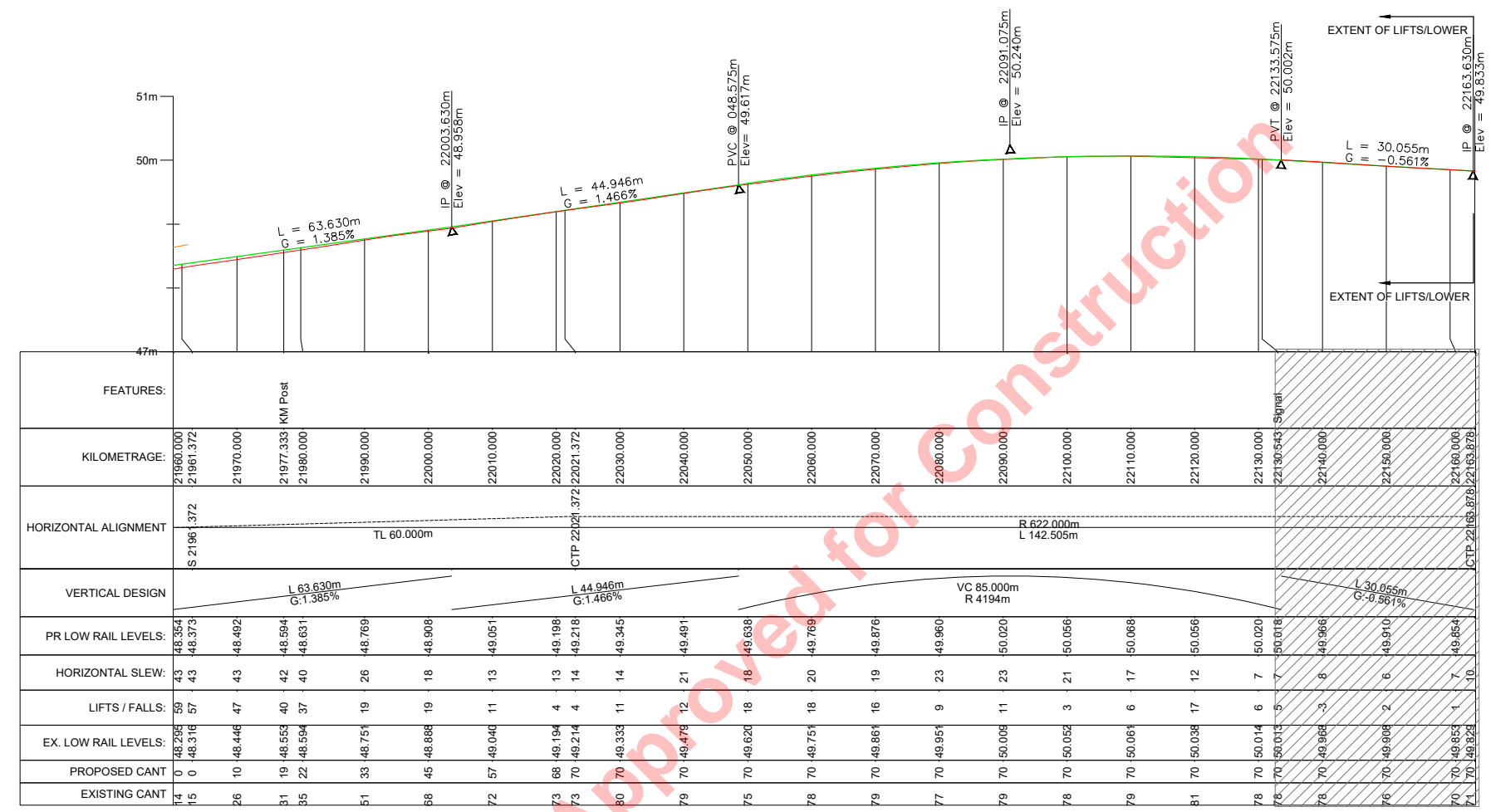
DRAWING No.	Original	A1 Std	Rev No	1
DR-NAL-TR-LS-01439-01			Shit No	2

Signed by Keith Ashington on: 27/08/2024 10:22:55 AM Issued for Construction

C:\WorkSpace\BIC_MDN_PROD\MDN_Plan\main\01-vm\0-kwiRail\Project\Major Projects\01-101 - RND\M01101-540181-001 - New Lynn (Glen Eden) Crossover\Track\DR-NAL-TR-LS-01439-01.dwg 27/08/24 02:03 PM snc_mna_jnd

NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED
2. COORDINATES ARE IN TERMS OF THE NEW ZEALAND GEODETIC 2000 DATUM BASED ON MOUNT EDEN 2000. VERTICAL DATUM ARE IN TERMS OF NZVD2016.
3. SURVEY DATA HAS BEEN PROVIDED BY EXTERNAL SURVEY COMPANY.
4. ANY SERVICES ARE SHOWN AS INDICATIVE AND ARE TO BE ACCURATELY LOCATED IN THE GROUND BY SERVICE OWNER/PROVIDER BEFORE ANY WORK IS CARRIED OUT IN THE AREA SHOWN IN THIS DRAWING.
5. CONTRACTOR IS TO ENSURE ALL RELEVANT KIWI RAIL PERMITS ARE OBTAINED AND THE REQUIRED LEVEL OF RAIL PROTECTION IS ON SITE PRIOR TO ACCESSING THE RAIL CORRIDOR.
6. CONTRACTOR TO CARRY OUT SERVICE LOCATE ACCURATELY IDENTIFY ANY SERVICES PRIOR TO CONSTRUCTION SITE PLAN.
7. REFER TO MR-04885 FOR THE STANDARD MARTINUS 1 IN 18 3.8m RH CROSSOVER, V2.0 AND MR-04886 FOR THE STANDARD MARTINUS 1 IN 18 3.8m LH CROSSOVER, V2.0.
8. DESIGN COMPLIES WITH T-ST-DE-5200 UNLESS STATED OTHERWISE.
9. NO HORIZONTAL CLEARANCE ISSUES TO OLE.
10. ALL CENTERLINE-CENTERLINE DIMENSIONS GREATER THAN 3.67m INCLUDING CANT CENTER THROW AND END THROW.
11. REFER DR-NAL-TR-LY-01438-01.dwg FOR LAYOUT PLAN.
12. REFER DR-NAL-TR-PL-01440-01.dwg FOR SETTING OUT.



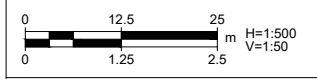
LEGEND

- EXISTING TRACK
- PROPOSED TRACK CENTERLINE
- ADJACENT PROPOSED TRACK
- TIE INS WITH EXISTING

GEOMETRY CODING

- PVI = POINT OF VERTICAL INTERSECTION
- PVC = POINT OF VERTICAL CURVATURE
- PVT = POINT OF VERTICAL TANGENCY
- G = GRADIENT
- GL = GRADIENT LENGTH
- RV = RADIUS OF VERTICAL CURVE
- T/O = TURNOUT
- POS = POINT OF SWITCH
- TOTP = TURNOUT TANGENTIAL POINT
- TNC = THEORETICAL NOSE OF CROSSING
- IP = INTERSECTION POINT OF TURNOUT
- POF = POINT OF FROG
- ETC = EXISTING TRACK CENTRE
- PTC = PROPOSED TRACK CENTRE
- PRL = PROPOSED RAIL LEVEL
- ERL = EXISTING RAIL LEVEL
- EL = ELEVATION
- KM/ STA = KILOMETERAGE
- CT = CENTRE THROW
- LLB = LAST LONG BEARER

REFERENCE DRAWINGS:
 DR-NAL-TR-LY-01438-01.dwg (LAYOUT PLAN)



KiwiRail
 Copyright: KiwiRail entitles KiwiRail Holdings Limited, and New Zealand Railways Corporation
 CONTROLLED DOCUMENT
 UNCONTROLLED WHEN PRINTED
 Verify you are using the most recent version prior to use (Refer KiwiRail's Intranet)
 Holders of printed versions are responsible for ensuring personal copies are kept up to date.
 PROJECT FILE No:-

REV	REVISION PARTICULARS	DRAWN	DATE	INITIALS	DATE
1	ISSUED FOR CONSTRUCTION	SR	23/08/2024	DESIGNED RA	22/08/2024
-	-	-	-	DRAWN SR	22/08/2024
-	-	-	-	CHECKED ND	22/08/2024
-	-	-	-	REVIEWED KA	22/08/2024
-	-	-	-	LINE: NAL Km: 21.360-22.660	
-	-	-	-	SCALE: H= 1:500, V= 1:50	

Digital data in terms of [Coordinate System] MOUNT EDEN and [Vertical Datum] NZVD2016

GLEN EDEN
 WO - 601101
 NAL 21.360 - 22.660
 CROSS OVER 1 & 2
 LONG SECTION

CONSULTANT/CONTRACTOR:-			
APPROVED BY :- kas6849			
DATE :- 23/08/2024			
DRAWING No.	Original	A1 Std	Rev No
DR-NAL-TR-LS-01439-01			1
			Sh No
			3