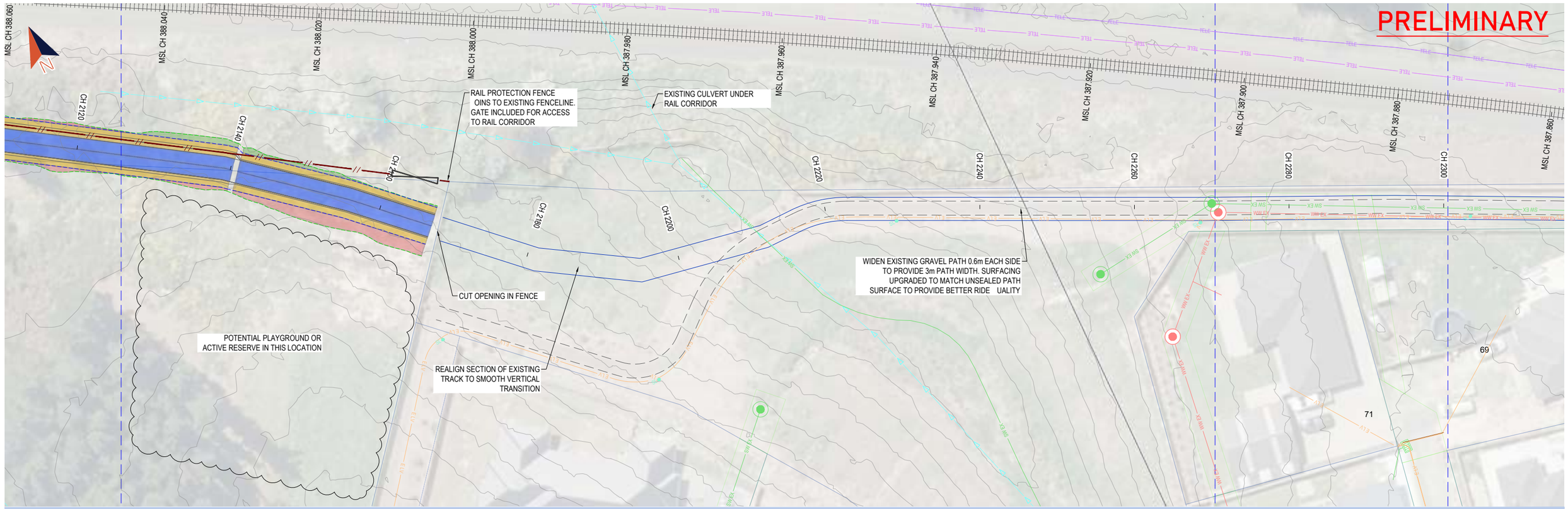

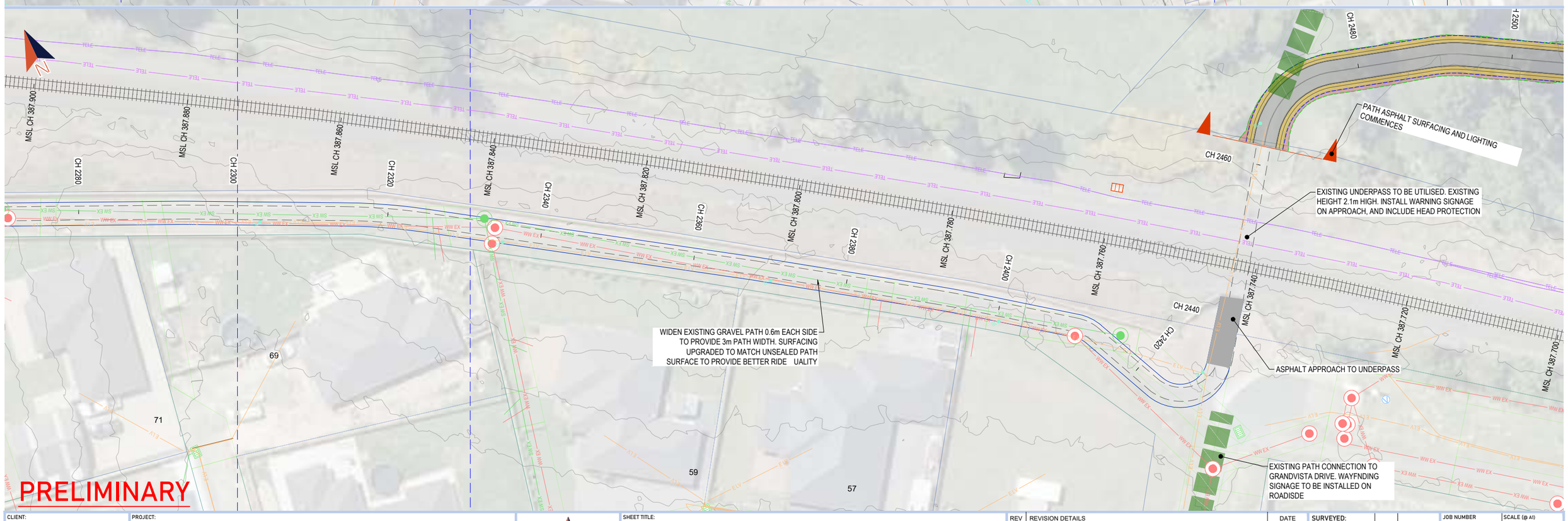

CLIENT:	PROJECT:		SHEET TITLE:
DUNEDIN CITY COUNCIL kaunihera a-rohe o Ōtepoti	DUNEDIN TUNNELS TRAIL (CYT)	bonisch	CHAIN HILLS TO HARAWAY UNDERPASS - PLAN 10

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER	SCALE (@ A1)
7332	1:250
SHEET 26	REV. A

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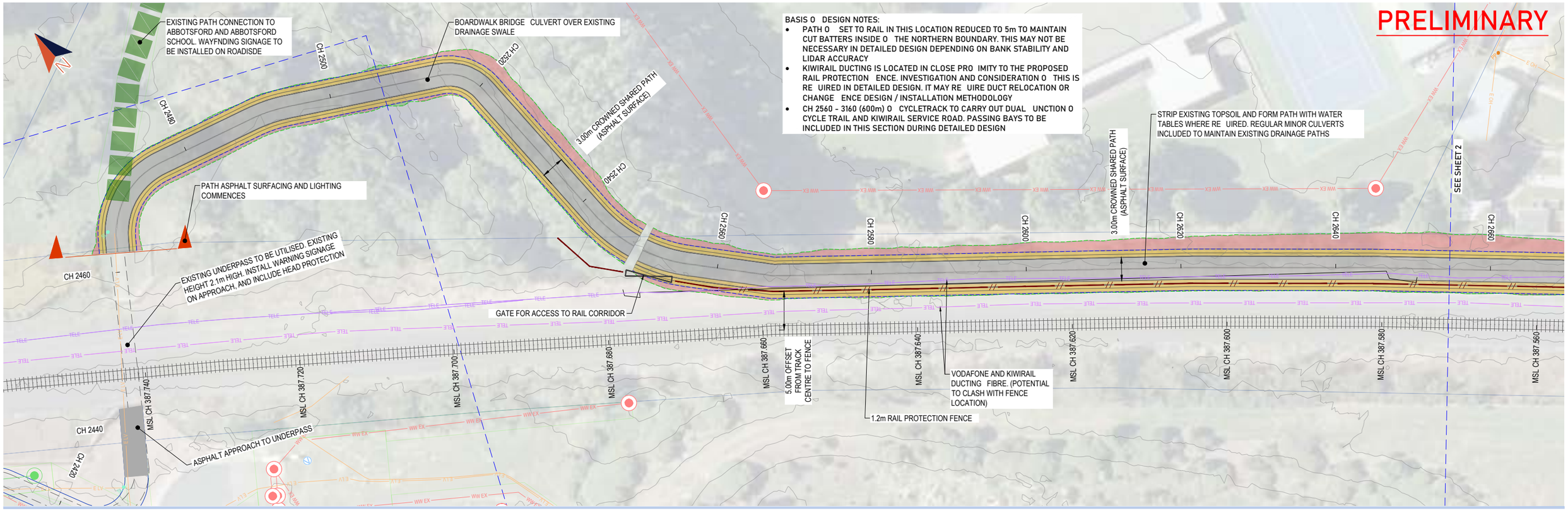

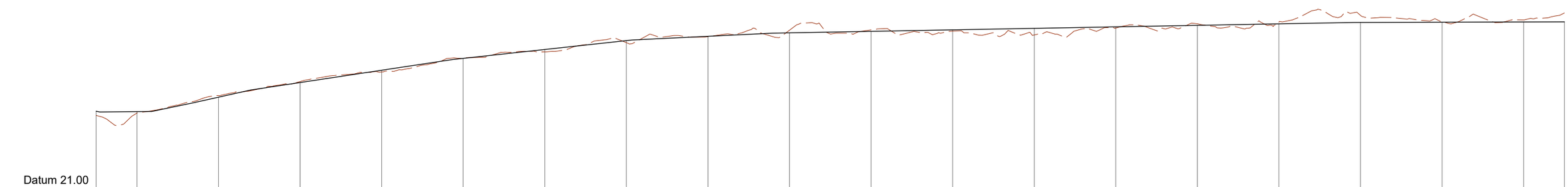

EXISTING GROUND	25.434	25.580	26.652	27.509	28.098	28.930	29.329	29.893	30.262	30.657	30.674	30.600	30.363	30.789	31.052	31.138	31.567	31.164	31.291	31.715
DESIGN LEVEL	25.698	25.674	26.555	27.449	28.203	28.929	29.474	30.019	30.283	30.495	30.587	30.679	30.771	30.863	30.955	31.047	31.132	31.147	31.162	31.169
DEPTH	0.264	0.094	-0.097	-0.060	0.105	0.000	0.145	0.125	0.021	-0.162	-0.088	0.079	0.407	0.074	-0.098	-0.091	-0.434	-0.017	-0.129	-0.546
VERTICAL GEOMETRY	G =-10.5% L =5.8	G=0.5% L=6.4	G=10.4% L=5.2	G=11.1% L=6.9	G=7.5% L=24.8		G=5.4% L=22.0		G=2.4% L=17.2		G=0.9% L=71.3						G=0.1% L=74.7			
CHAINAGE	2505.000	2510.000	2520.000	2530.000	2540.000	2550.000	2560.000	2570.000	2580.000	2590.000	2600.000	2610.000	2620.000	2630.000	2640.000	2650.000	2660.000	2670.000	2680.000	2685.000

PRELIMINARY

CYCLE CL (SECTION 2 & 3) LONGSECTION (25)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: CHAIN HILLS TO HARAWAY UNDERPASS - PLAN 11

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 27
REV.: A

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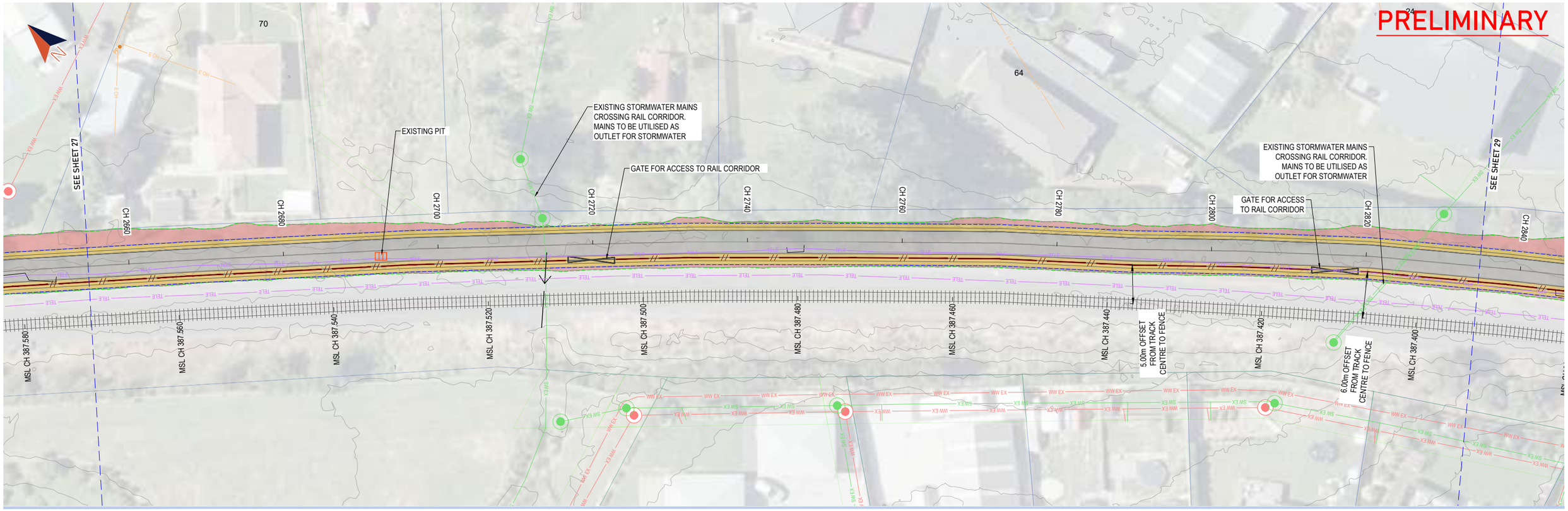

Datum 25.00

CHAINAGE	EXISTING GROUND	DESIGN LEVEL	DEPTH
2685.000	31.715	31.169	-0.546
2690.000	31.462	31.177	-0.286
2700.000	31.812	31.192	-0.620
2710.000	31.683	31.206	-0.476
2720.000	31.016	31.221	0.205
2730.000	31.121	31.236	0.114
2740.000	31.220	31.357	0.137
2750.000	31.175	31.547	0.371
2760.000	31.336	31.737	0.401
2770.000	31.647	31.839	0.192
2780.000	31.832	31.907	0.075
2790.000	31.783	31.975	0.192
2800.000	31.865	32.042	0.178
2810.000	31.931	32.110	0.179
2820.000	32.100	32.178	0.079
2830.000	32.302	32.246	-0.056
2840.000	32.847	32.314	-0.533
2850.000	33.338	32.382	-0.956
2860.000	33.017	32.450	-0.568
2865.000	33.324	32.479	-0.845

VERTICAL GEOMETRY: G=0.1% L=74.7; G=1.9% L=28.9; G=0.7% L=101.3; G=0.1% L=123.0

PRELIMINARY

CYCLE CL (SECTION 2 & 3) LONGSECTION (26)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: CHAIN HILLS TO HARAWAY UNDERPASS - PLAN 12

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 2
REV.: A

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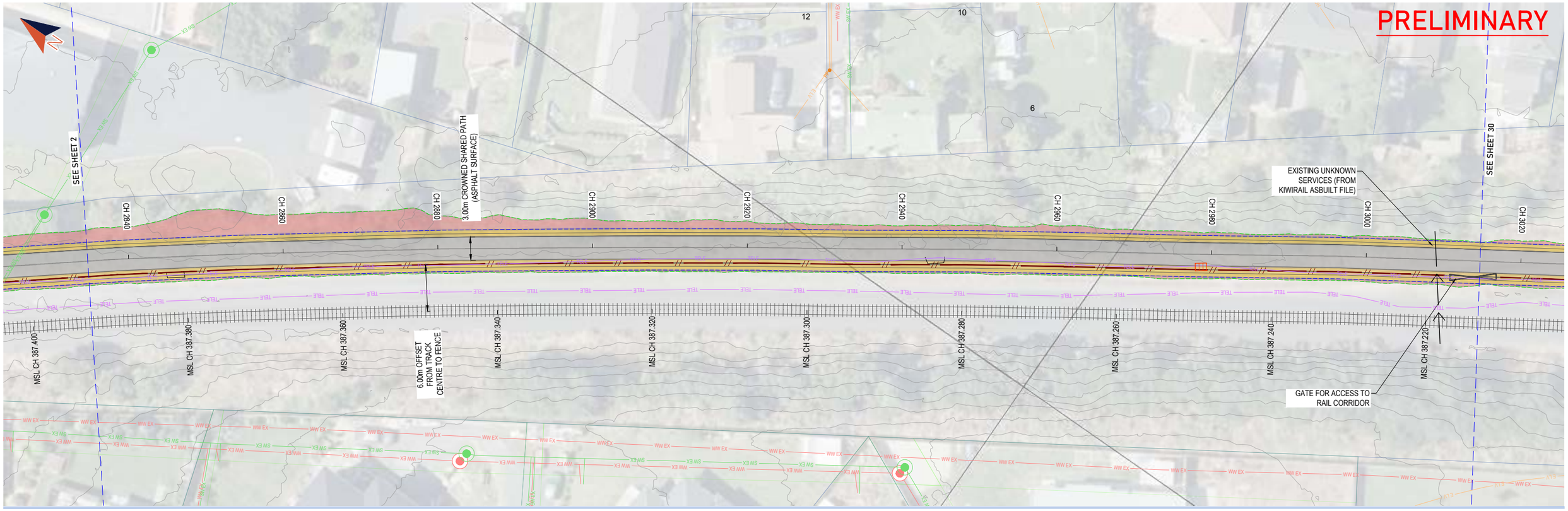

Datum 30.00

EXISTING GROUND	33.324	33.662	33.615	33.407	33.194	33.112	32.972	33.018	32.924	32.932	32.965	32.731	33.512	32.839	32.646	32.419	32.357	32.280	32.336	32.333
DESIGN LEVEL	32.479	32.486	32.500	32.514	32.529	32.543	32.557	32.571	32.585	32.600	32.614	32.628	32.642	32.629	32.544	32.459	32.405	32.452	32.499	32.523
DEPTH	-0.845	-1.176	-1.114	-0.892	-0.665	-0.569	-0.415	-0.446	-0.338	-0.332	-0.351	-0.103	-0.869	-0.210	-0.103	0.040	0.048	0.172	0.163	0.190
VERTICAL GEOMETRY	G=0.1%														G =-0.8%			G=0.5%		
	L=123.0														L =30.4			L=98.8		
CHAINAGE	2865.000	2870.000	2880.000	2890.000	2900.000	2910.000	2920.000	2930.000	2940.000	2950.000	2960.000	2970.000	2980.000	2990.000	3000.000	3010.000	3020.000	3030.000	3040.000	3045.000

PRELIMINARY

CYCLE CL (SECTION 2 & 3) LONGSECTION (27)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: CHAIN HILLS TO HARAWAY UNDERPASS - PLAN 13

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 29
REV.: A

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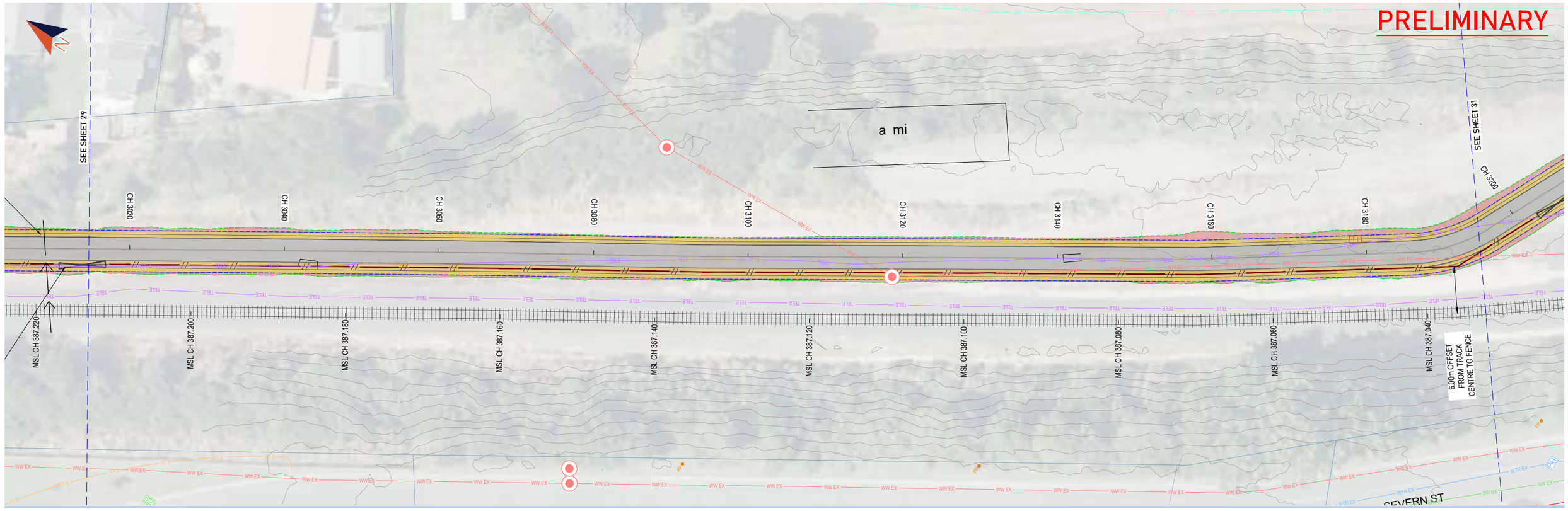

Datum 30.00

EXISTING GROUND	32.333	32.412	32.515	32.581	32.454	32.508	32.498	32.649	32.752	32.751	32.658	32.796	33.027	32.964	32.921	33.025	33.361	33.061	33.354	33.770
DESIGN LEVEL	32.523	32.546	32.593	32.640	32.687	32.734	32.781	32.828	32.861	32.868	32.874	32.881	32.888	32.894	32.901	32.907	32.914	33.007	33.491	33.733
DEPTH	0.190	0.135	0.078	0.059	0.233	0.227	0.284	0.180	0.110	0.116	0.216	0.085	-0.139	-0.070	-0.020	-0.118	-0.447	-0.054	0.137	-0.037
VERTICAL GEOMETRY	G=0.5% L=98.8								G=0.1% L=91.7										G=4.8% L=56.6	
CHAINAGE	3045.000	3050.000	3060.000	3070.000	3080.000	3090.000	3100.000	3110.000	3120.000	3130.000	3140.000	3150.000	3160.000	3170.000	3180.000	3190.000	3200.000	3210.000	3220.000	3225.000

PRELIMINARY

CYCLE CL (SECTION 2 & 3) LONGSECTION (28)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: CHAIN HILLS TO HARAWAY UNDERPASS - PLAN 14

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 30
REV.: A

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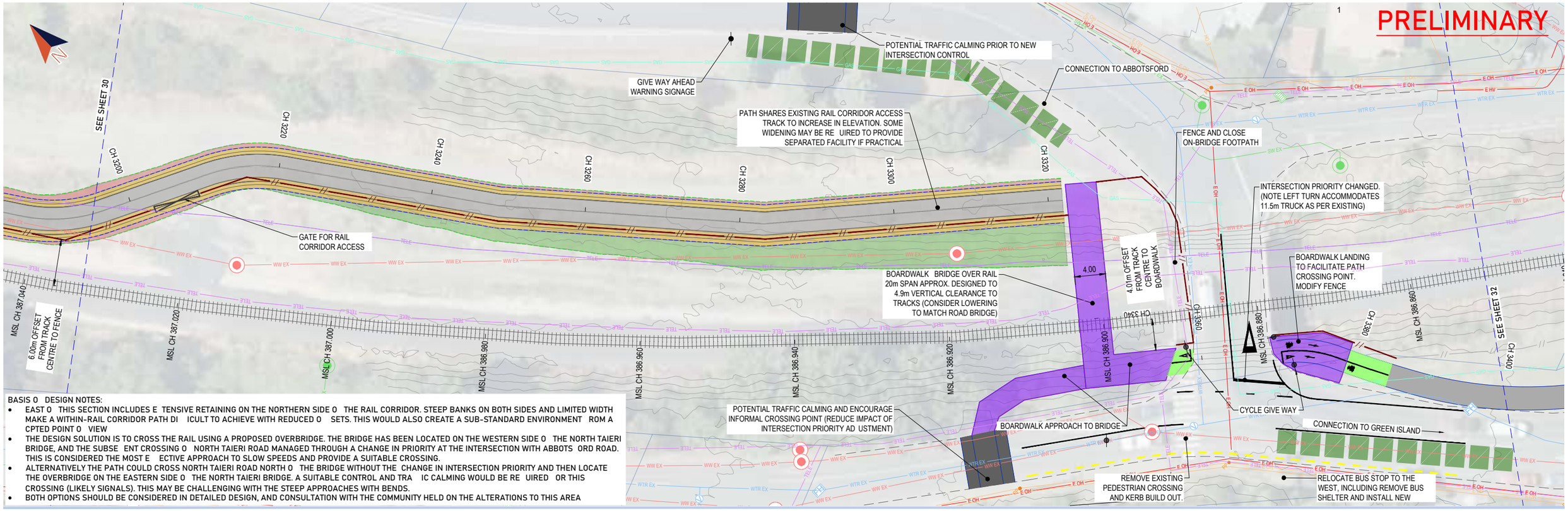
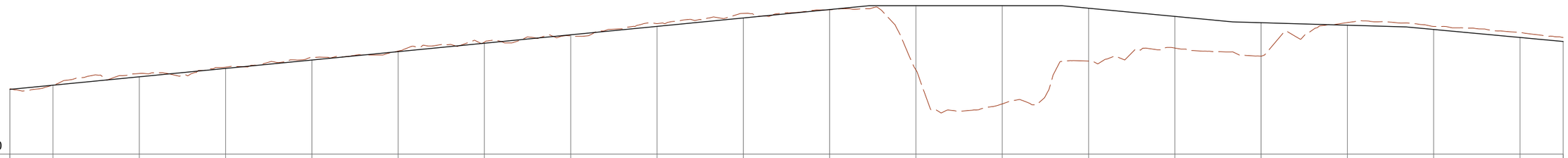


BASIS O DESIGN NOTES:

- EAST O THIS SECTION INCLUDES E TENSIVE RETAINING ON THE NORTHERN SIDE O THE RAIL CORRIDOR. STEEP BANKS ON BOTH SIDES AND LIMITED WIDTH MAKE A WITHIN-RAIL CORRIDOR PATH DI ICULT TO ACHIEVE WITH REDUCED O SETS. THIS WOULD ALSO CREATE A SUB-STANDARD ENVIRONMENT ROM A CPTED POINT O VIEW
- THE DESIGN SOLUTION IS TO CROSS THE RAIL USING A PROPOSED OVERBRIDGE. THE BRIDGE HAS BEEN LOCATED ON THE WESTERN SIDE O THE NORTH TAIERI BRIDGE, AND THE SUBSE ENT CROSSING O NORTH TAIERI ROAD MANAGED THROUGH A CHANGE IN PRIORITY AT THE INTERSECTION WITH ABBOTS ORD ROAD. THIS IS CONSIDERED THE MOST E ECTIVE APPROACH TO SLOW SPEEDS AND PROVIDE A SUITABLE CROSSING.
- ALTERNATIVELY THE PATH COULD CROSS NORTH TAIERI ROAD NORTH O THE BRIDGE WITHOUT THE CHANGE IN INTERSECTION PRIORITY AND THEN LOCATE THE OVERBRIDGE ON THE EASTERN SIDE O THE NORTH TAIERI BRIDGE. A SUITABLE CONTROL AND TRA IC CALMING WOULD BE RE UIRED OR THIS CROSSING (LIKELY SIGNALS). THIS MAY BE CHALLENGING WITH THE STEEP APPROACHES WITH BENDS.
- BOTH OPTIONS SHOULD BE CONSIDERED IN DETAILED DESIGN, AND CONSULTATION WITH THE COMMUNITY HELD ON THE ALTERATIONS TO THIS AREA



Datum 30.00

EXISTING GROUND	33.770	33.981	34.650	35.015	35.595	35.949	36.466	36.824	37.536	38.121	38.331	34.857	32.896	35.369	36.125	35.655	37.594	37.370	37.025	36.727
DESIGN LEVEL	33.733	33.975	34.459	34.944	35.428	35.914	36.401	36.888	37.375	37.862	38.349	38.573	38.573	38.426	37.951	37.586	37.441	37.196	36.733	36.501
DEPTH	-0.037	-0.006	-0.191	-0.072	-0.167	-0.035	-0.065	0.064	-0.161	-0.259	0.018	3.716	5.677	3.057	1.826	1.931	-0.153	-0.174	-0.292	-0.226
VERTICAL GEOMETRY	G=4.8% L=56.6					G=4.9% L=59.8						G =-0.0% L =22.3		G =-4.7% L =19.8		G =-1.4% L =20.1		G =-4.6% L =88.1		
CHAINAGE	3225.000	3230.000	3240.000	3250.000	3260.000	3270.000	3280.000	3290.000	3300.000	3310.000	3320.000	3330.000	3340.000	3350.000	3360.000	3370.000	3380.000	3390.000	3400.000	3405.000

PRELIMINARY

CYCLE CL (SECTION 2 & 3) LONGSECTION (29)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: CHAIN HILLS TO HARAWAY UNDERPASS - PLAN 15

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 31
REV.: A

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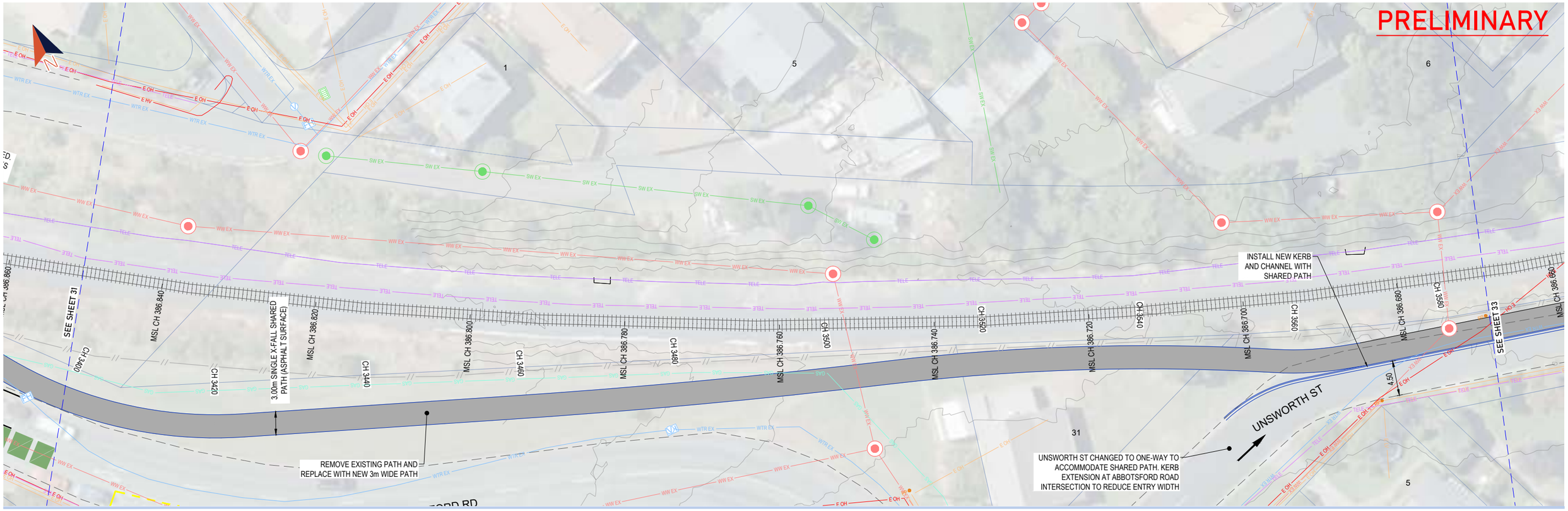
PRELIMINARY



Datum 30.00

EXISTING GROUND	36.727	36.429	35.900	35.364	34.951	34.424	33.929	33.440	33.006	32.329	32.272	31.592	31.341	31.279	31.350	31.320	31.178	31.114	30.937	30.870	30.888	30.927	31.004	31.023
DESIGN LEVEL	36.501	36.270	35.807	35.344	34.881	34.418	33.955	33.492	32.956	32.346	32.299	31.809	31.442	31.273	31.243	31.097	30.992	30.954	30.852	30.808	30.805	30.820	30.890	30.946
DEPTH	-0.226	-0.159	-0.093	-0.020	-0.069	-0.006	0.026	0.052	-0.050	0.017	0.027	0.217	0.102	-0.005	-0.107	-0.223	-0.186	-0.160	-0.084	-0.062	-0.082	-0.107	-0.114	-0.077
VERTICAL GEOMETRY	G =-4.6% L =88.1								G =-6.1% L =15.8		R=585.2 K=5.9 L=27.1				G =-1.5% L =19.3			R=1755.1 K=17.6 L=56.2						
CHAINAGE	3405.000	3410.000	3420.000	3430.000	3440.000	3450.000	3460.000	3470.000	3480.000	3490.000	3490.770	3500.000	3510.000	3517.918	3520.000	3530.000	3537.222	3540.000	3550.000	3560.000	3562.811	3570.000	3580.000	3585.000

PRELIMINARY

CYCLE CL (SECTION 2 & 3) LONGSECTION (30)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: CHAIN HILLS TO HARAWAY UNDERPASS - PLAN 16

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 32
REV.: A

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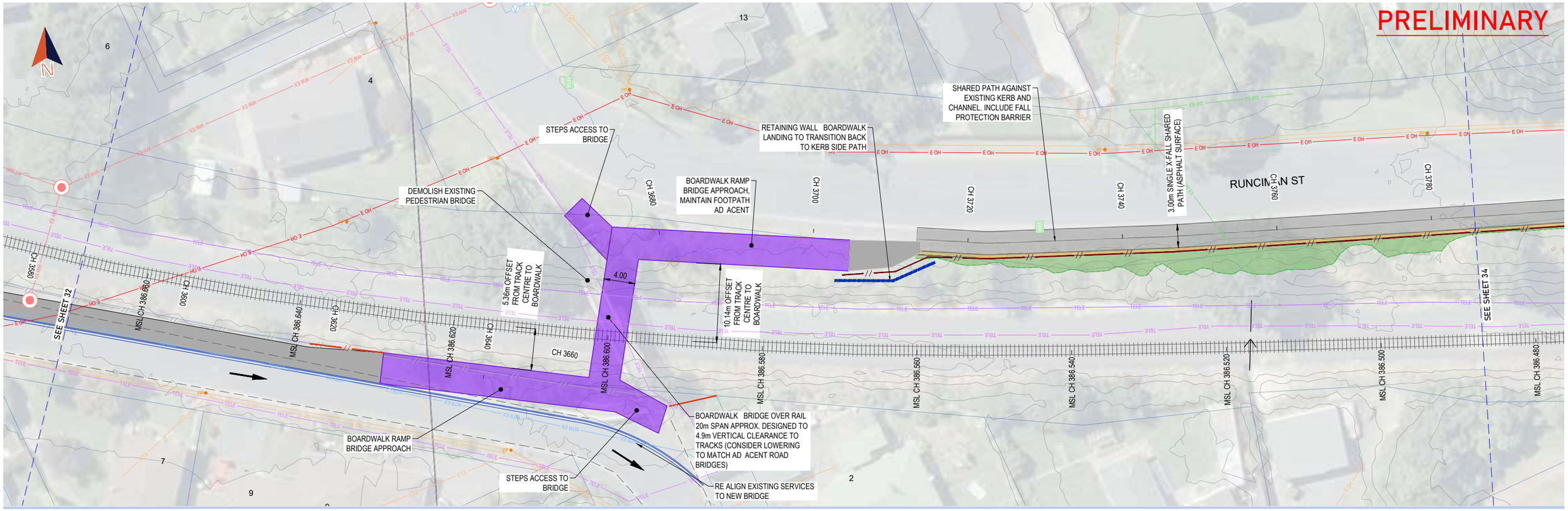

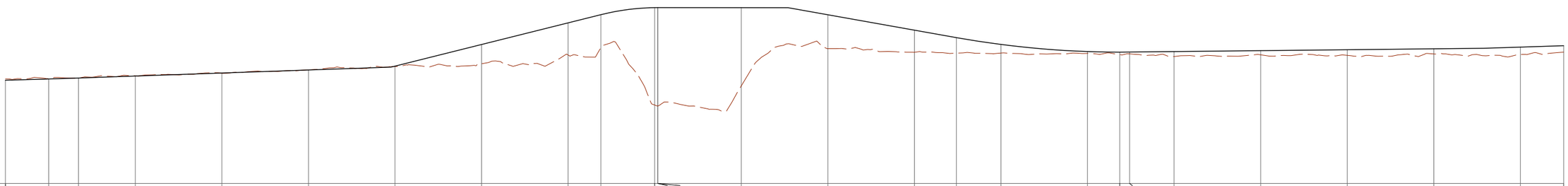

Datum 25.00

EXISTING GROUND	31.023	31.041	31.070	31.193	31.345	31.547	31.733	31.898	32.398	32.831	29.516	29.460	29.459	30.620	32.764	32.555	32.508	32.512	32.489	32.428	32.465	32.311	32.409	32.380	32.458	32.421	32.565
DESIGN LEVEL	30.946	31.016	31.073	31.187	31.362	31.536	31.758	33.004	34.251	34.722	35.130	35.131	35.131	35.129	34.721	33.833	33.402	33.008	32.598	32.566	32.569	32.596	32.650	32.704	32.757	32.855	32.934
DEPTH	-0.077	-0.025	0.002	-0.006	0.016	-0.010	0.025	1.106	1.853	1.892	5.614	5.671	5.672	4.509	1.957	1.278	0.895	0.496	0.109	0.137	0.103	0.285	0.241	0.323	0.299	0.434	0.369
VERTICAL GEOMETRY		R=1755.1 K=17.6 L=56.2		G=1.7% L=36.1				G=12.5% L=24.2			R=52.7 K=0.5 L=6.6			G =-0.0% L =15.1		G =-8.9% L =19.4		R=212.6 K=2.1 L=20.0				G=0.5% L=40.9				G=1.6% L=23.3	
CHAINAGE	3585.000	3590.000	3593.438	3600.000	3610.000	3620.000	3630.000	3640.000	3650.000	3653.786	3660.000	3660.348	3660.362	3670.000	3680.000	3690.000	3694.856	3700.000	3710.000	3713.716	3714.856	3720.000	3730.000	3740.000	3750.000	3760.000	3765.000

PRELIMINARY

CYCLE CL (SECTION 2 & 3) LONGSECTION (31)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: CHAIN HILLS TO HARAWAY UNDERPASS - PLAN 17

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 33
REV.: A

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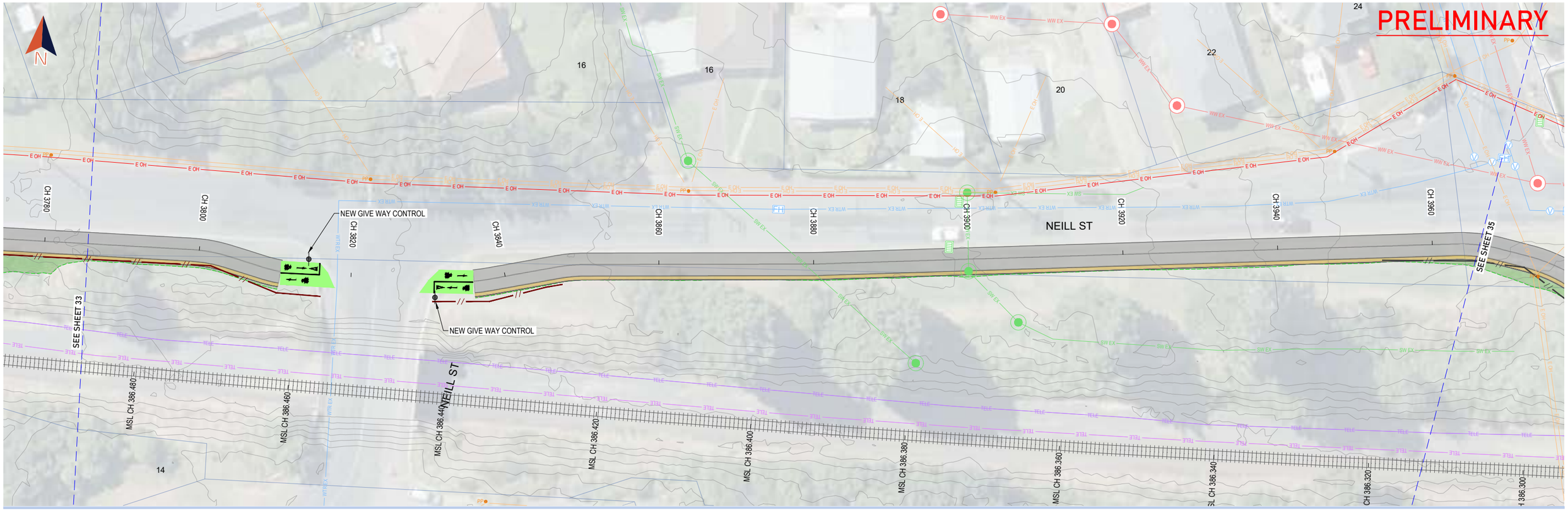

Datum 30.00

EXISTING GROUND	32.565	32.738	32.967	32.949	33.179	33.242	33.281	33.087	33.152	33.155	33.169	32.790	32.681	32.518	32.084	31.748	31.560	31.304	31.222	31.096	31.082	30.976	31.305	31.815	32.416	33.287	33.289	33.808
DESIGN LEVEL	32.934	33.013	33.156	33.170	33.285	33.326	33.327	33.339	33.351	33.351	33.348	32.940	32.865	32.407	32.121	31.835	31.548	31.305	31.264	31.107	31.098	31.147	31.386	31.822	32.457	33.288	33.290	33.755
DEPTH	0.369	0.274	0.189	0.221	0.105	0.084	0.046	0.252	0.199	0.196	0.180	0.150	0.185	-0.111	0.037	0.087	-0.012	0.001	0.042	0.011	0.016	0.172	0.081	0.007	0.041	0.001	0.000	-0.053
VERTICAL GEOMETRY	G=1.6% L=23.3			R=1375.8 K=13.8 L=20.0			G=0.1% L=20.0			R=118.2 K=1.2 L=10.0		G =-8.3% L =4.0	G =-2.9% L =45.4					R=505.0 K=5.0 L=61.5								G=9.3% L=8.3		
CHAINAGE	3765.000	3770.000	3779.069	3780.000	3790.000	3799.069	3800.000	3810.000	3819.108	3819.254	3820.000	3829.108	3830.000	3840.000	3850.000	3860.000	3870.000	3878.494	3880.000	3890.000	3892.953	3900.000	3910.000	3920.000	3930.000	3939.983	3940.000	3945.000

PRELIMINARY

CYCLE CL (SECTION 2 & 3) LONGSECTION (32)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: CHAIN HILLS TO HARAWAY UNDERPASS - PLAN 1

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 34
REV.: A

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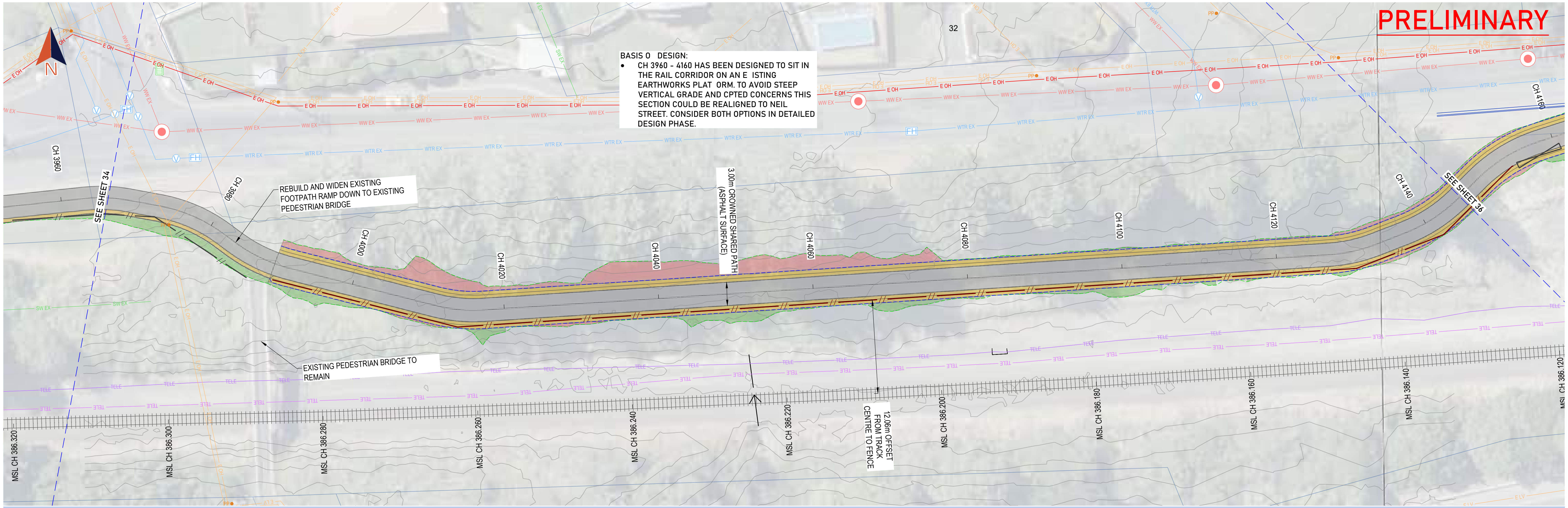

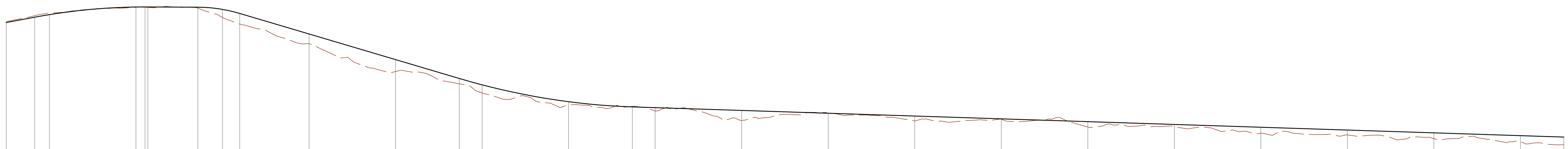

Datum 25.00

CHAINAGE	EXISTING GROUND	DESIGN LEVEL	DEPTH
3945.000	33.808	33.755	-0.053
3948.290	34.149	34.062	-0.088
3950.000	34.292	34.210	-0.082
3960.000	34.637	34.652	0.014
3961.049	34.637	34.656	0.019
3961.377	34.630	34.655	0.025
3967.159	34.587	34.642	0.055
3970.000	34.046	34.513	0.467
3971.988	33.670	34.279	0.609
3980.000	32.525	33.095	0.570
3990.000	30.929	31.616	0.687
3997.359	30.222	30.528	0.306
4000.000	29.697	30.161	0.464
4010.000	28.992	29.186	0.194
4017.359	28.918	28.889	-0.029
4020.000	28.649	28.846	0.197
4030.000	28.114	28.684	0.570
4040.000	28.542	28.522	-0.020
4050.000	28.084	28.361	0.277
4060.000	28.175	28.199	0.024
4070.000	27.727	28.037	0.311
4080.000	27.750	27.876	0.126
4090.000	27.360	27.714	0.354
4100.000	27.272	27.552	0.280
4110.000	27.059	27.391	0.331
4120.000	26.876	27.229	0.353
4125.000	26.701	27.148	0.447

VERTICAL GEOMETRY

From	To	Geometry
3945.000	3948.290	G=9.3%, L=8.3
3948.290	3961.377	R=137.0, K=1.4, L=13.1
3961.377	3967.159	G =-0.2%, L =5.8
3967.159	3971.988	R=33.2, K=0.3, L=4.8
3971.988	3997.359	G =-14.8%, L =25.4
3997.359	4017.359	R=151.9, K=1.5, L=20.0
4017.359	4125.000	G =-1.6%, L =131.8

CYCLE CL (SECTION 2 & 3) LONGSECTION (33)
SCALE: H 1:250, V 1:125

PRELIMINARY

CLIENT:	PROJECT:		SHEET TITLE:
DUNEDIN CITY COUNCIL kaunihera a-rohe o Ōtepoti	DUNEDIN TUNNELS TRAIL (CYT)	bonisch	CHAIN HILLS TO HARAWAY UNDERPASS - PLAN 19

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER	SCALE (@ A1)
7332	1:250
SHEET	REV.
35	A

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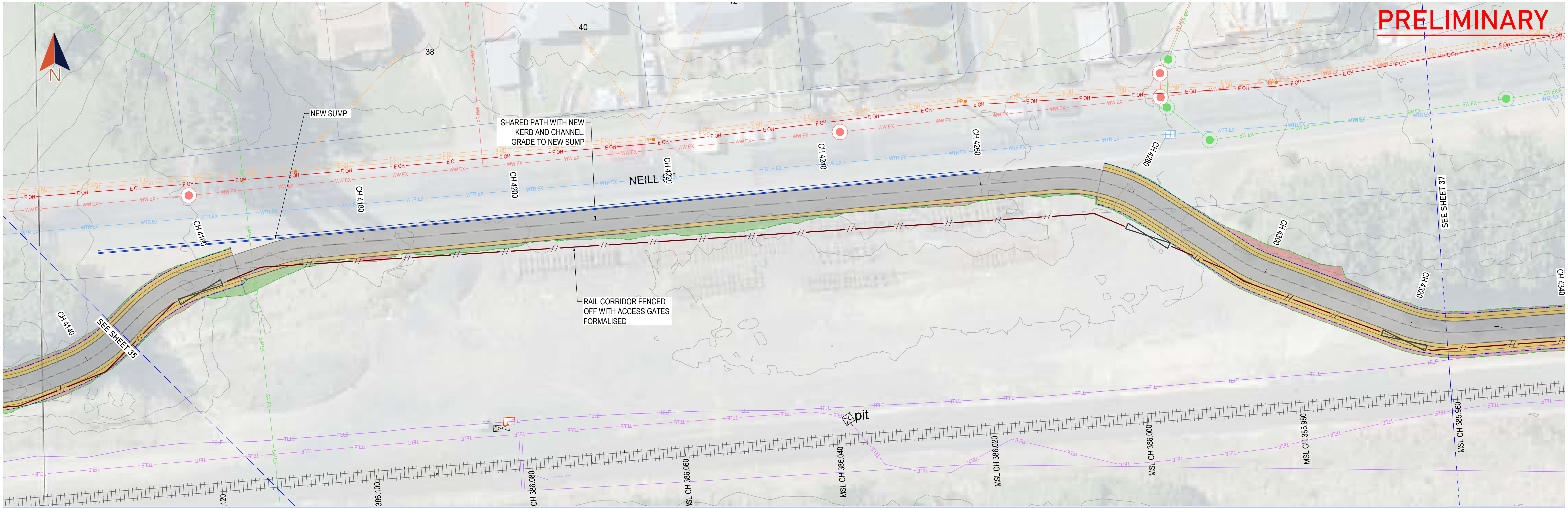

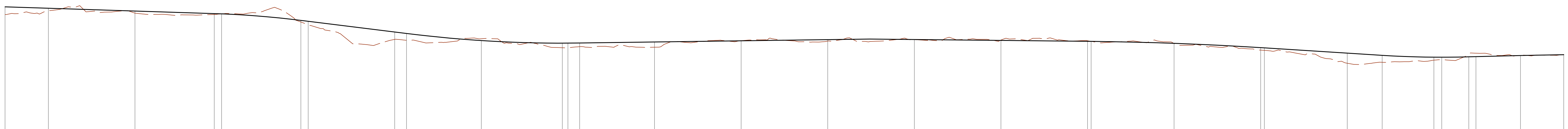

Datum 20.00

CHAINAGE	4125.000	4130.000	4140.000	4149.153	4150.000	4159.153	4160.000	4170.000	4171.357	4180.000	4189.357	4190.000	4191.357	4200.000	4210.000	4220.000
EXISTING GROUND	26.701	26.924	26.781	26.705	26.741	26.269	26.113	25.266	25.216	25.305	24.784	24.781	24.845	24.815	25.192	25.167
DESIGN LEVEL	27.148	27.067	26.905	26.757	26.742	26.366	26.313	25.692	25.607	25.199	25.048	25.049	25.055	25.115	25.184	25.253
DEPTH	0.447	0.143	0.125	0.052	0.001	0.096	0.200	0.425	0.391	-0.106	0.264	0.268	0.210	0.300	-0.008	0.086

CHAINAGE	4230.000	4240.000	4250.000	4250.421	4260.000	4270.000	4270.421	4280.000	4284.028	4290.000	4290.906	4294.028	4294.853	4300.000	4305.000
EXISTING GROUND	25.245	25.225	25.187	25.152	25.029	24.647	24.634	23.889	23.941	24.063	24.090	24.400	24.466	24.351	24.396
DESIGN LEVEL	25.259	25.205	25.152	25.150	25.038	24.791	24.777	24.472	24.343	24.235	24.233	24.256	24.268	24.333	24.379
DEPTH	0.014	-0.020	-0.035	-0.002	0.009	0.144	0.143	0.583	0.402	0.172	0.143	-0.144	-0.198	-0.018	-0.017

VERTICAL GEOMETRY:

- G =-1.6% L =131.8
- R=217.5 K=2.2 L=10.0
- G =-6.2% L =12.2
- R=289.6 K=2.9 L=20.0
- G=0.7% L=33.5
- G =-0.5% L =25.6
- R=753.0 K=7.5 L=20.0
- G =-3.2% L =13.6
- R=215.6 K=2.2 L=10.0
- G=1.4% L=0.8
- R=1421.7 K=14.2 L=20.0

PRELIMINARY

CYCLE CL (SECTION 2 & 3) LONGSECTION (34)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: CHAIN HILLS TO HARAWAY UNDERPASS - PLAN 20

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 36
REV.: A

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Datum 20.00

EXISTING GROUND	24.396	24.431	24.427	24.441	24.412	24.388	24.397	24.335	24.456	24.372	24.431	24.310	24.348	24.404	24.335	24.475	24.534	24.488	24.472	24.457	24.426
DESIGN LEVEL	24.379	24.407	24.417	24.419	24.423	24.427	24.431	24.435	24.439	24.443	24.448	24.452	24.456	24.460	24.464	24.468	24.472	24.476	24.480	24.484	24.487
DEPTH	-0.017	-0.024	-0.010	-0.022	0.011	0.039	0.034	0.100	-0.017	0.071	0.016	0.141	0.108	0.056	0.129	-0.007	-0.062	-0.012	0.009	0.028	0.061
VERTICAL GEOMETRY		R=1421.7 K=14.2 L=20.0										G=0.0% L=178.6									
CHAINAGE	4305.000	4310.000	4314.853	4320.000	4330.000	4340.000	4350.000	4360.000	4370.000	4380.000	4390.000	4400.000	4410.000	4420.000	4430.000	4440.000	4450.000	4460.000	4470.000	4480.000	4485.000

PRELIMINARY

CYCLE CL (SECTION 2 & 3) LONGSECTION (35)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: CHAIN HILLS TO HARAWAY UNDERPASS - PLAN 21

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 37
REV.: A

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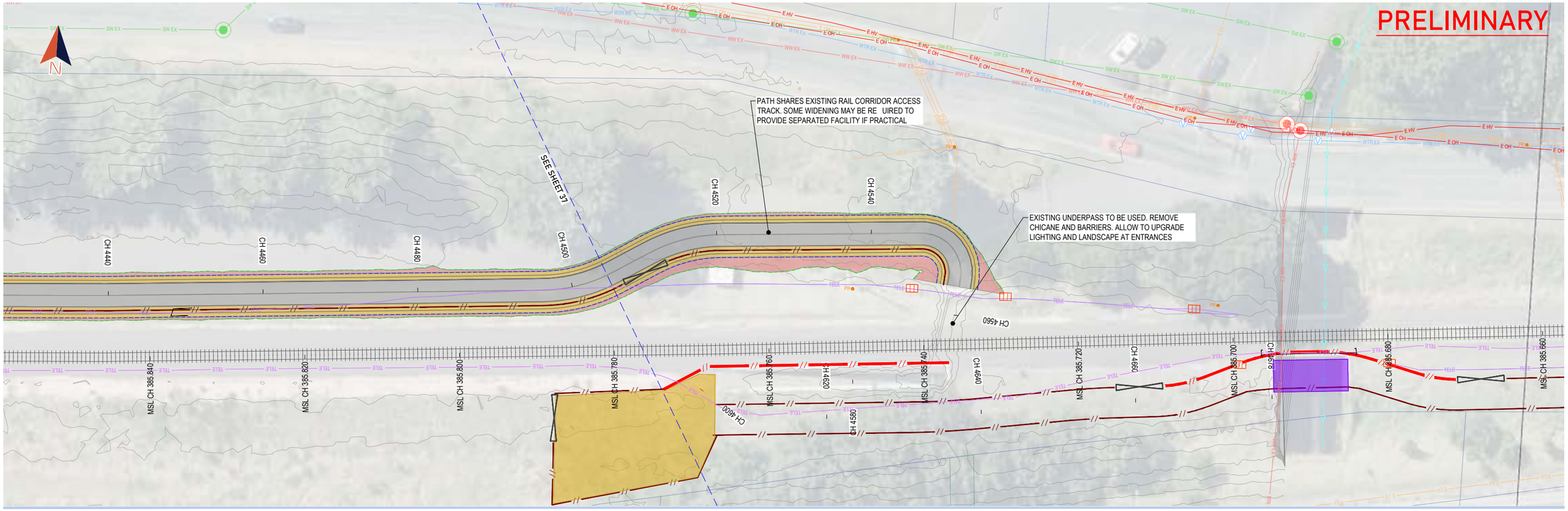
PRELIMINARY



Datum 20.00

EXISTING GROUND	24.426	24.395	24.425	24.407	24.386	23.977	23.578	23.053	22.446	22.144
DESIGN LEVEL	24.487	24.489	24.490	24.490	24.404	23.935	23.681	23.145	22.447	22.223
DEPTH	0.061	0.094	0.065	0.083	0.018	-0.043	0.103	0.092	0.001	0.079
VERTICAL GEOMETRY	G=0.0% L=178.6			R=244.7 K=2.4 L=20.0				G =-8.1% L =13.4	G =-4.5% L =30.2	
CHAINAGE	4485.000	4490.000	4493.412	4493.513	4500.000	4510.000	4513.412	4520.000	4530.000	4535.000

CYCLE CL (SECTION 2 & 3) LONGSECTION (36)
SCALE: H 1:250, V 1:125

PRELIMINARY

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: CHAIN HILLS TO HARAWAY UNDERPASS - PLAN 22

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 38
REV.: A

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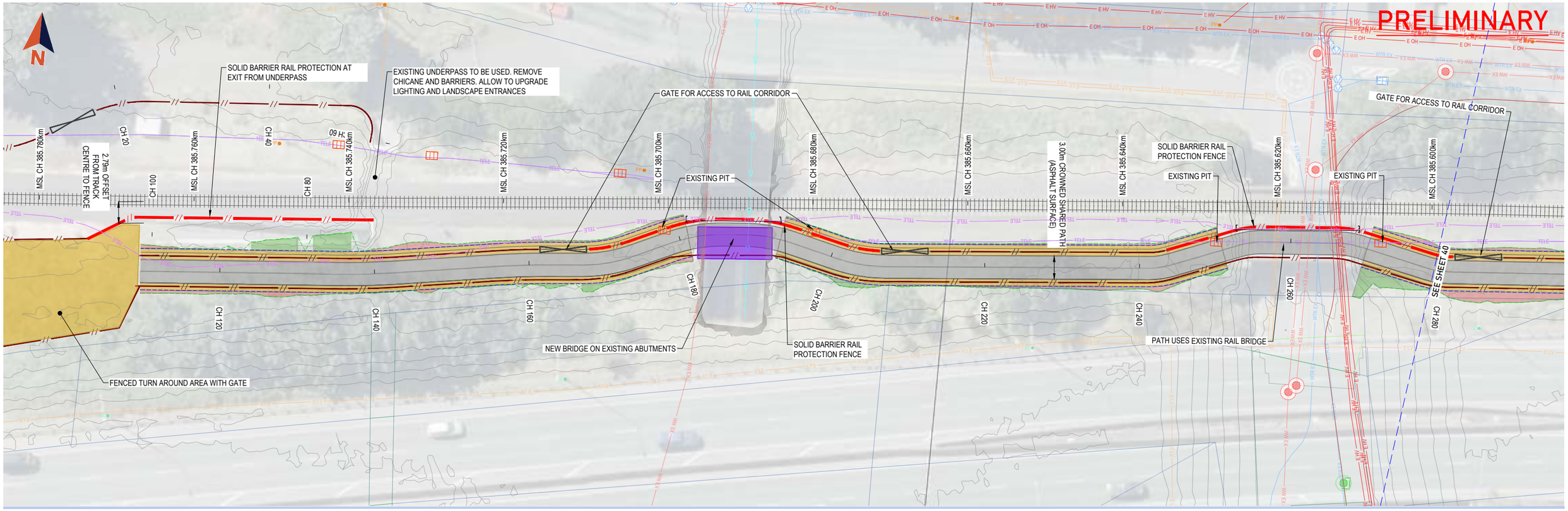

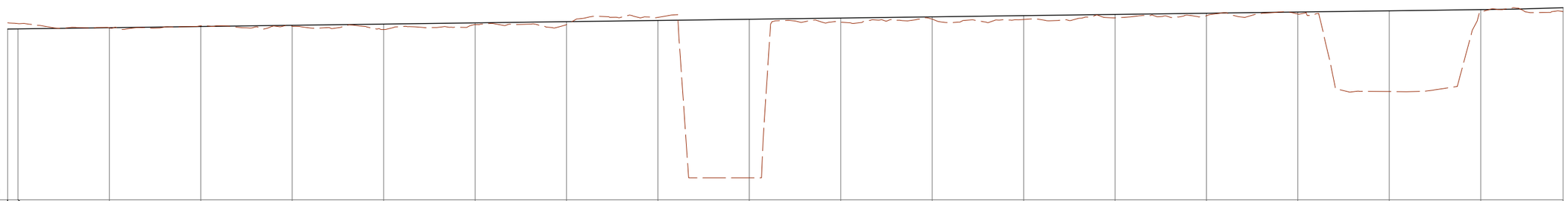

EXISTING GROUND	24.648	24.610	24.378	24.486	24.465	24.283	24.551	24.554	24.946	16.200	24.686	24.853	24.831	24.923	25.038	25.129	20.904	25.246	25.260
DESIGN LEVEL	24.312	24.319	24.385	24.451	24.517	24.582	24.648	24.714	24.780	24.845	24.911	24.977	25.043	25.109	25.174	25.240	25.306	25.372	25.473
DEPTH	-0.336	-0.290	0.007	-0.035	0.051	0.299	0.098	0.160	-0.166	8.645	0.225	0.124	0.212	0.186	0.137	0.112	4.402	0.125	0.213
VERTICAL GEOMETRY										G=0.7%									G=1.5%
										L=165.3									L=22.4
CHAINAGE	108.881	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	279.000

PRELIMINARY

CYCLE CL SECTION 4 AND 5 LONGSECTION
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: HARAWAY UNDERPASS TO BARNES DRIVE - PLAN 01

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 39
REV.: A

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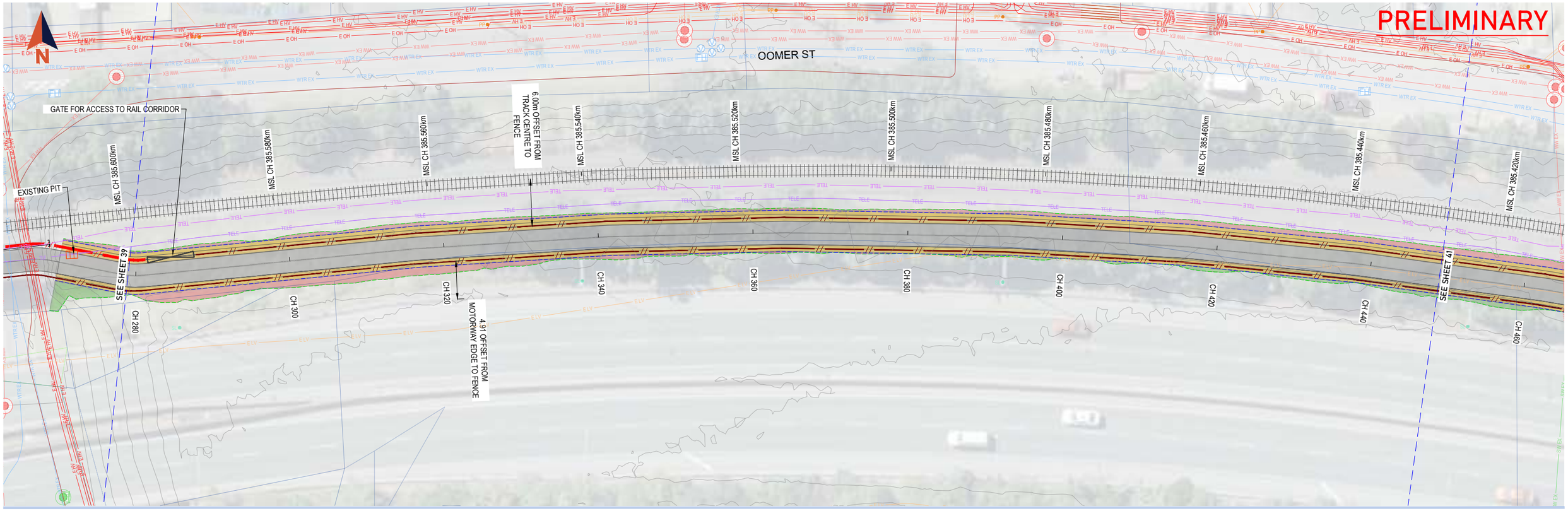

Datum 20.00

EXISTING GROUND	25.260	25.220	25.525	25.455	25.515	25.329	26.027	25.732	26.141	25.827	25.819	26.048	25.760	26.234	26.287	26.099	26.315	26.449	26.179
DESIGN LEVEL	25.473	25.487	25.633	25.734	25.769	25.804	25.865	25.947	26.030	26.112	26.195	26.267	26.307	26.347	26.386	26.426	26.465	26.505	26.540
DEPTH	0.213	0.267	0.108	0.280	0.254	0.476	-0.162	0.215	-0.111	0.286	0.376	0.220	0.547	0.113	0.099	0.327	0.150	0.055	0.361
VERTICAL GEOMETRY		G=1.5%		G=0.3%				G=0.8%							G=0.4%				
		L=22.4		L=28.5				L=53.1							L=84.0				
CHAINAGE	279.000	280.000	290.000	300.000	310.000	320.000	330.000	340.000	350.000	360.000	370.000	380.000	390.000	400.000	410.000	420.000	430.000	440.000	449.000

PRELIMINARY

CYCLE CL SECTION 4 AND 5 LONGSECTION (37)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: HARAWAY UNDERPASS TO BARNES DRIVE - PLAN 02

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 40
REV.: A

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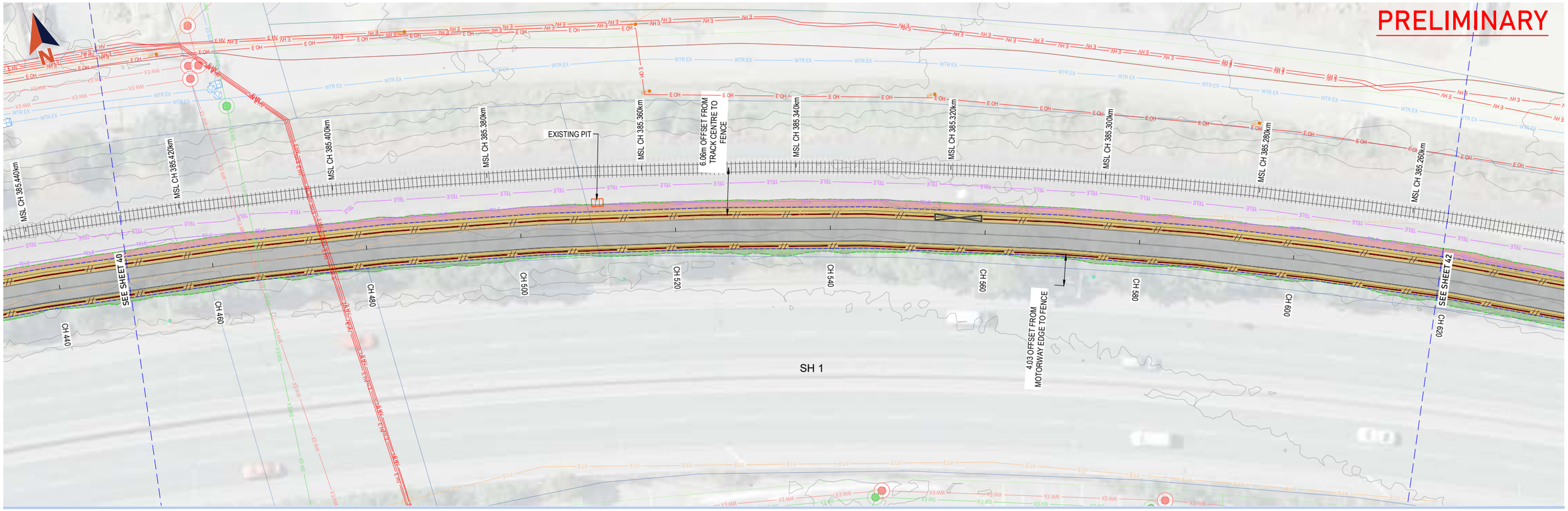
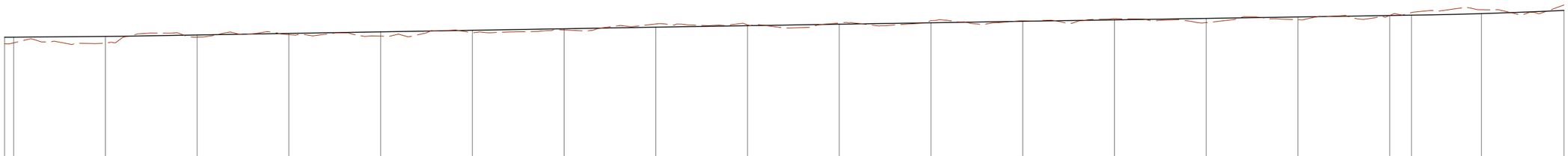
PRELIMINARY





Datum 20.00																				
EXISTING GROUND	26.179	26.235	26.216	26.543	26.680	26.600	26.784	26.938	27.260	27.214	27.316	27.443	27.439	27.555	27.340	27.495	27.731	27.888	28.044	28.301
DESIGN LEVEL	26.540	26.544	26.584	26.662	26.747	26.833	26.919	27.004	27.090	27.171	27.250	27.329	27.408	27.487	27.566	27.645	27.724	27.742	27.829	28.002
DEPTH	0.361	0.310	0.368	0.119	0.067	0.233	0.135	0.066	-0.171	-0.043	-0.066	-0.114	-0.031	-0.068	0.226	0.150	-0.008	-0.146	-0.215	-0.299
VERTICAL GEOMETRY		G=0.4% L=84.0		G=0.9% L=62.7						G=0.8% L=78.0								R=1073.9 K=10.7 L=20.0		
CHAINAGE	449.000	450.000	460.000	470.000	480.000	490.000	500.000	510.000	520.000	530.000	540.000	550.000	560.000	570.000	580.000	590.000	600.000	602.377	610.000	619.000

PRELIMINARY

CYCLE CL SECTION 4 AND 5 LONGSECTION (38)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: HARAWAY UNDERPASS TO BARNES DRIVE - PLAN 03

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 41
REV.: A

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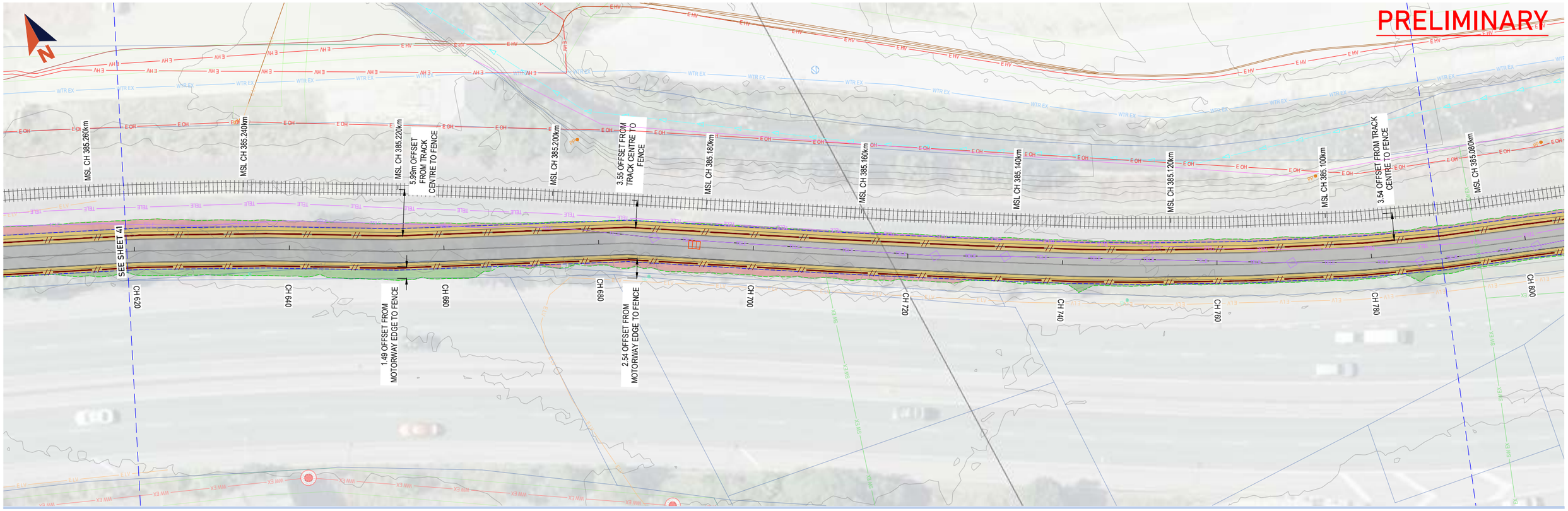
PRELIMINARY



Datum 25.00

EXISTING GROUND	28.301	28.218	28.046	28.366	28.508	28.929	29.028	29.477	29.425	29.591	29.582	29.576	29.522	29.448	29.450	29.499	29.525	29.645	29.685	29.734	29.938	29.988	30.109	30.412	30.383	30.419	30.448
DESIGN LEVEL	28.002	28.026	28.086	28.288	28.553	28.819	29.084	29.349	29.479	29.574	29.592	29.589	29.566	29.561	29.555	29.585	29.599	29.704	29.825	29.946	30.067	30.188	30.309	30.430	30.551	30.608	30.657
DEPTH	-0.299	-0.192	0.040	-0.078	0.045	-0.111	0.056	-0.128	0.053	-0.017	0.011	0.013	0.045	0.113	0.105	0.086	0.074	0.060	0.141	0.212	0.129	0.200	0.200	0.018	0.168	0.189	0.209
VERTICAL GEOMETRY	R=1073.9 K=10.7 L=20.0		G=2.7% L=52.5							R=323.0 K=3.2 L=10.0			G =-0.4% L =6.4		R=604.5 K=6.0 L=10.0			G=1.2% L=83.5									R=4164.9 K=41.6 L=20.0
CHAINAGE	619.000	620.000	622.377	630.000	640.000	650.000	660.000	670.000	674.907	680.000	683.468	684.907	690.000	691.280	693.973	700.000	701.280	710.000	720.000	730.000	740.000	750.000	760.000	770.000	780.000	784.758	789.000

PRELIMINARY

CYCLE CL SECTION 4 AND 5 LONGSECTION (39)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: HARAWAY UNDERPASS TO BARNES DRIVE - PLAN 04

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER 7332 | SCALE (@ A1) 1:250 | SHEET 42 | REV. A

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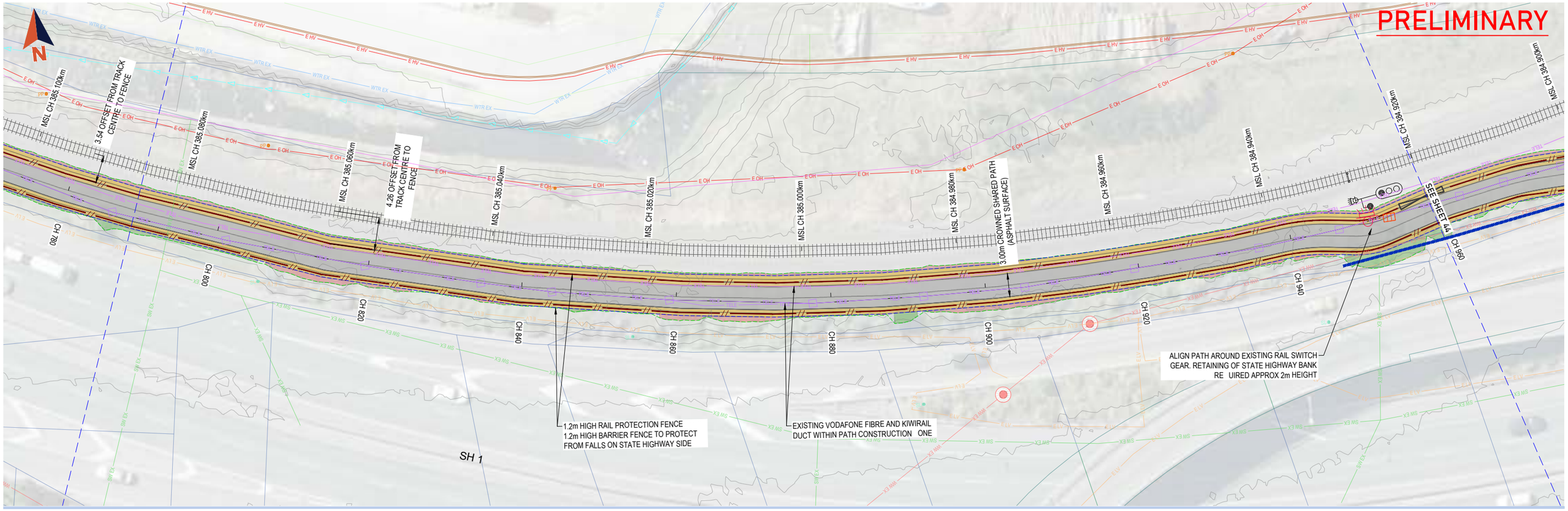

Datum 30.00

CHAINAGE	EXISTING GROUND	DESIGN LEVEL	DEPTH
789.000	30.448	30.657	0.209
790.000	30.531	30.668	0.137
800.000	30.544	30.764	0.220
804.758	30.642	30.802	0.160
810.000	30.787	30.840	0.053
820.000	30.780	30.913	0.133
830.000	30.882	30.986	0.104
840.000	30.863	31.059	0.196
850.000	30.998	31.131	0.133
860.000	31.051	31.204	0.153
870.000	31.263	31.277	0.014
880.000	31.252	31.350	0.098
890.000	31.460	31.423	-0.037
894.404	31.511	31.455	-0.056
899.404	31.526	31.592	0.067
900.000	31.585	31.621	0.035
901.547	31.607	31.695	0.087
910.000	31.815	31.947	0.132
911.547	31.744	31.961	0.216
920.000	31.717	32.007	0.291
930.000	31.879	32.063	0.184
940.000	31.948	32.119	0.171
950.000	32.436	32.174	-0.262
959.000	32.366	32.224	-0.142

VERTICAL GEOMETRY:
- R=4164.9 K=41.6 L=20.0
- G=0.7% L=89.6
- R=123.9 K=1.2 L=5.0
- G=-4.8% L=2.1
- R=237.5 K=2.4 L=10.0
- G=0.6% L=62.7

PRELIMINARY

CYCLE CL SECTION 4 AND 5 LONGSECTION (40)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: HARAWAY UNDERPASS TO BARNES DRIVE - PLAN 05

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 43
REV.: A

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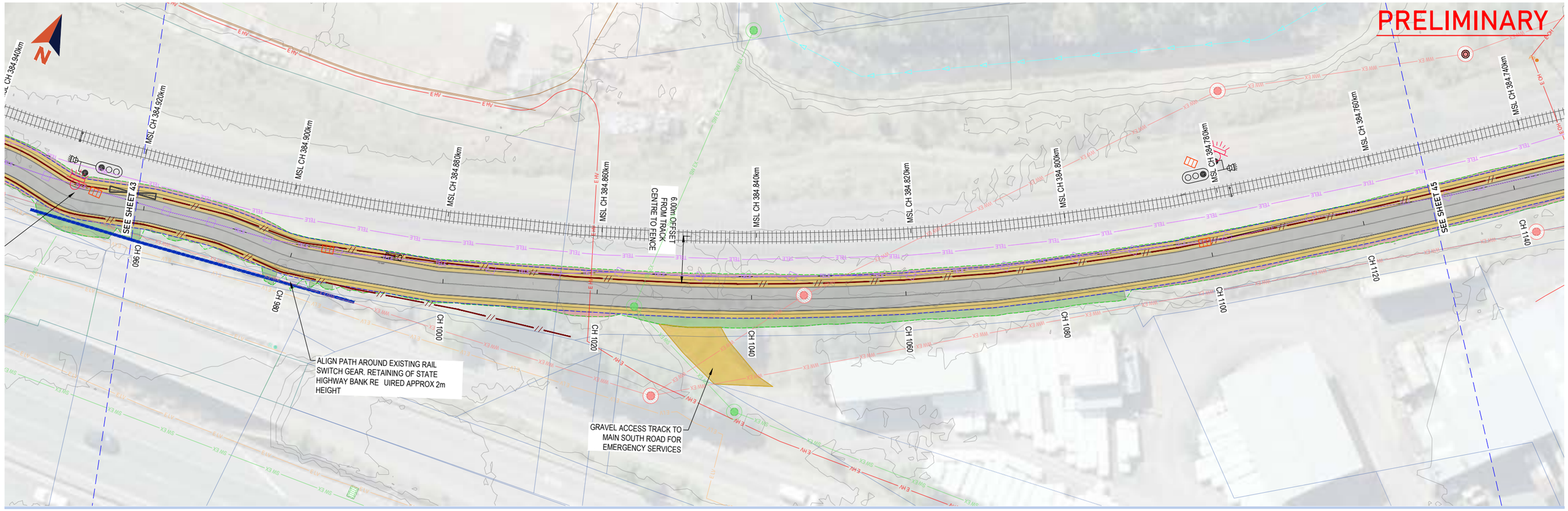
PRELIMINARY



Datum 30.00

EXISTING GROUND	32.366	32.282	32.419	32.860	32.733	32.767	32.929	33.155	32.906	32.840	32.780	32.811	32.418	32.813	32.947	32.647	32.977	32.974	33.496	33.617	33.763	33.715	33.889	33.937	33.837	33.662
DESIGN LEVEL	32.224	32.230	32.285	32.710	32.757	32.805	32.852	32.900	32.948	32.952	32.997	33.002	33.051	33.104	33.157	33.178	33.237	33.304	33.424	33.621	33.654	33.776	33.813	33.810	33.804	33.768
DEPTH	-0.142	-0.053	-0.134	-0.150	0.024	0.038	-0.077	-0.255	0.042	0.112	0.218	0.191	0.633	0.291	0.210	0.531	0.260	0.329	-0.073	0.004	-0.109	0.061	-0.076	-0.126	-0.033	0.106
VERTICAL GEOMETRY		G=0.6% L=62.7		G=8.3% L=4.8	G=0.5% L=52.0					R=17393.4 K=173.9 L=10.0		G=0.5% L=33.0				R=692.6 K=6.9 L=10.0			G=2.0% L=17.7			R=813.8 K=8.1 L=20.0				G =-0.5% L =56.9
CHAINAGE	959.000	960.000	970.000	980.000	990.000	1000.000	1010.000	1020.000	1030.000	1030.955	1040.000	1040.955	1050.000	1060.000	1070.000	1073.925	1080.000	1083.925	1090.000	1100.000	1101.665	1110.000	1117.751	1120.000	1121.665	1129.000

PRELIMINARY

CYCLE CL SECTION 4 AND 5 LONGSECTION (41)
SCALE: H 1:250, V 1:125

CLIENT:	PROJECT:		SHEET TITLE:	REV	REVISION DETAILS	DATE				JOB NUMBER	SCALE (@ A1)
DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti	DUNEDIN TUNNELS TRAIL (CYT)	bonisch	HARAWAY UNDERPASS TO BARNES DRIVE - PLAN 06	A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021	SURVEYED:			7332	1:250
							DESIGNED:	SJC	OCT 2021		
							DRAWN:	BMS	NOV 2021	SHEET	REV.
							DRAWING CHECK:	PGO	DEC 2021	44	A
							DESIGN CHECK:	PGO	DEC 2021		
							APPROVED:	PGO	DEC 2021		

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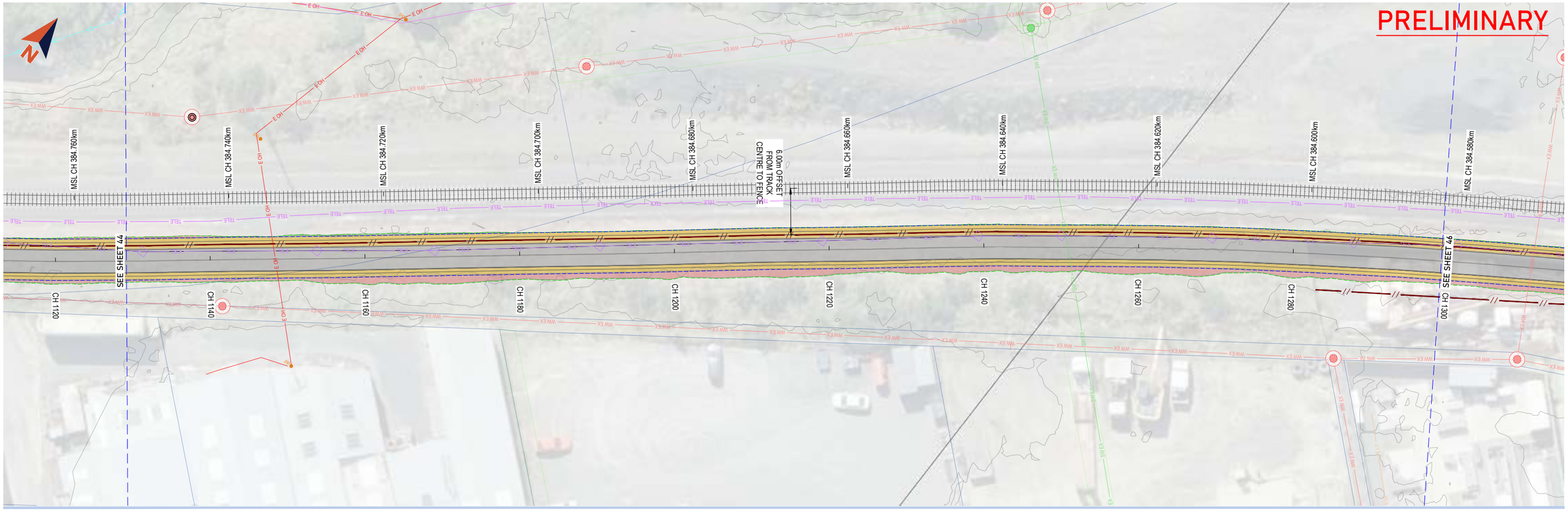

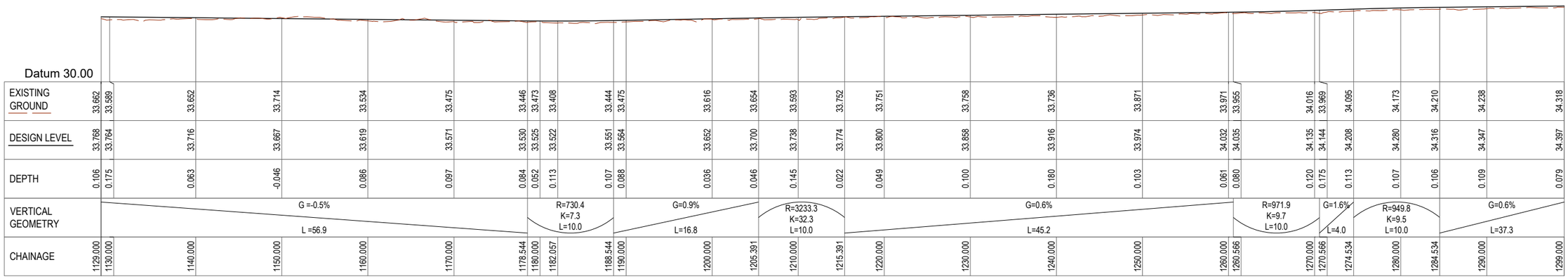

EXISTING GROUND	33.662	33.589	33.652	33.714	33.534	33.475	33.446	33.473	33.408	33.444	33.475	33.616	33.654	33.593	33.752	33.751	33.758	33.736	33.871	33.971	33.955	34.016	33.969	34.095	34.173	34.210	34.238	34.318
DESIGN LEVEL	33.768	33.764	33.716	33.667	33.619	33.571	33.530	33.525	33.522	33.551	33.564	33.652	33.700	33.738	33.774	33.800	33.858	33.916	33.974	34.032	34.035	34.135	34.144	34.208	34.280	34.316	34.347	34.397
DEPTH	0.106	0.175	0.063	-0.046	0.086	0.097	0.084	0.052	0.113	0.107	0.088	0.036	0.046	0.145	0.022	0.049	0.100	0.180	0.103	0.061	0.080	0.120	0.175	0.113	0.107	0.106	0.109	0.079
CHAINAGE	1129.000	1130.000	1140.000	1150.000	1160.000	1170.000	1178.544	1180.000	1182.057	1188.544	1190.000	1200.000	1205.391	1210.000	1215.391	1220.000	1230.000	1240.000	1250.000	1260.000	1260.566	1270.000	1270.566	1274.534	1280.000	1284.534	1290.000	1299.000

PRELIMINARY

CYCLE CL SECTION 4 AND 5 LONGSECTION (42)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: HARAWAY UNDERPASS TO BARNES DRIVE - PLAN 07

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 45
REV.: A

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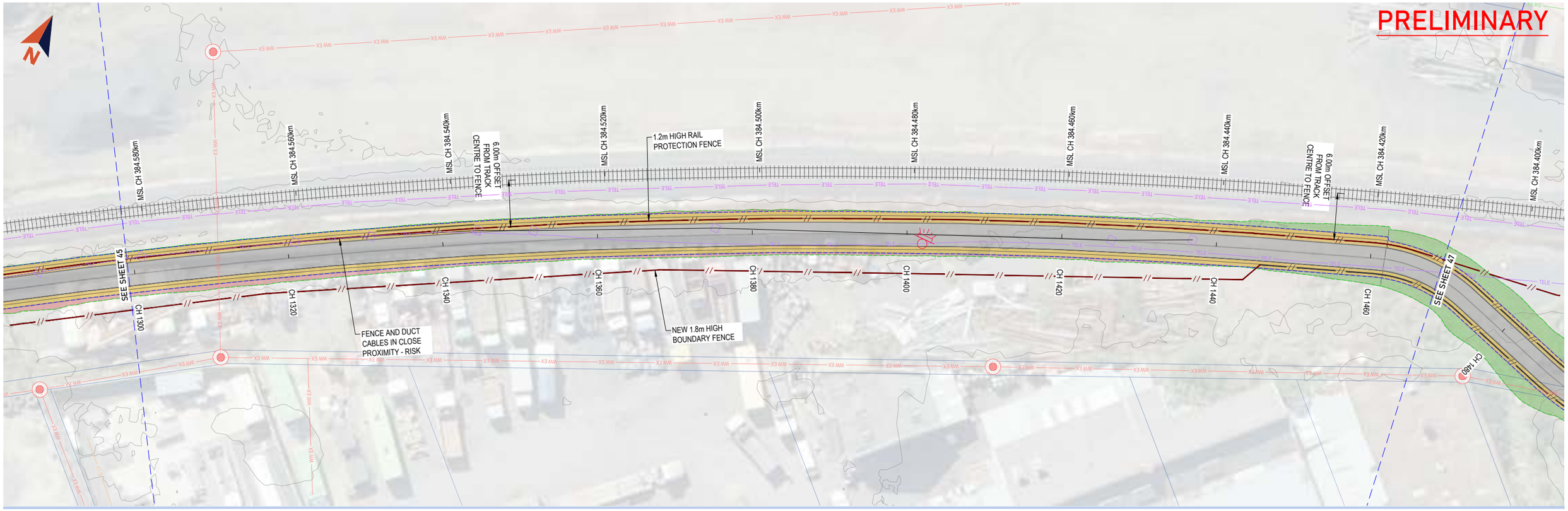

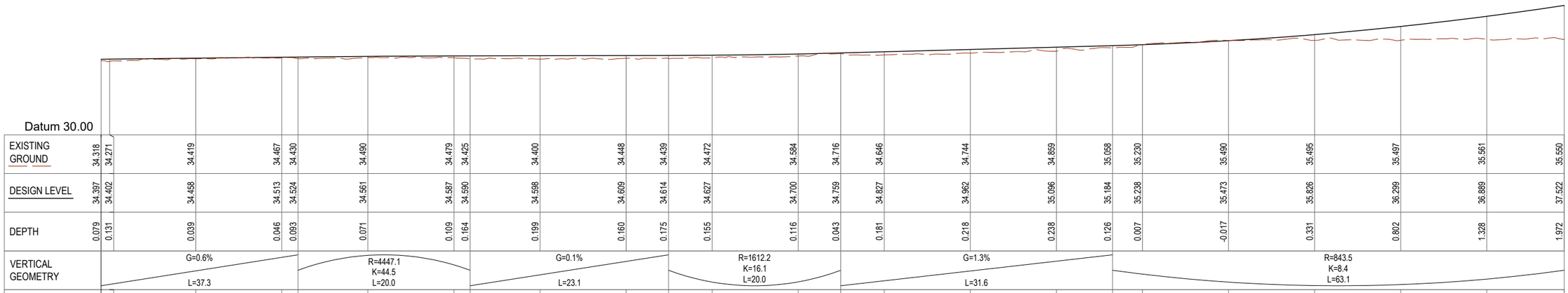

Datum 30.00

EXISTING GROUND	34.318	34.271	34.419	34.467	34.430	34.490	34.479	34.425	34.400	34.448	34.439	34.472	34.584	34.716	34.646	34.744	34.859	35.058	35.230	35.490	35.495	35.497	35.561	35.550
DESIGN LEVEL	34.397	34.402	34.458	34.513	34.524	34.561	34.587	34.590	34.598	34.609	34.614	34.627	34.700	34.759	34.827	34.962	35.096	35.184	35.238	35.473	35.826	36.299	36.889	37.522
DEPTH	0.079	0.131	0.039	0.046	0.093	0.071	0.109	0.164	0.199	0.160	0.175	0.155	0.116	0.043	0.181	0.218	0.238	0.126	0.007	-0.017	0.331	0.802	1.328	1.972
VERTICAL GEOMETRY	G=0.6% L=37.3				R=4447.1 K=44.5 L=20.0				G=0.1% L=23.1			R=1612.2 K=16.1 L=20.0			G=1.3% L=31.6				R=843.5 K=8.4 L=63.1					
CHAINAGE	1299.000	1300.000	1310.000	1320.000	1321.876	1330.000	1340.000	1341.876	1350.000	1360.000	1364.938	1370.000	1380.000	1384.938	1390.000	1400.000	1410.000	1416.525	1420.000	1430.000	1440.000	1450.000	1460.000	1469.000

PRELIMINARY

CYCLE CL SECTION 4 AND 5 LONGSECTION (43)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: HARAWAY UNDERPASS TO BARNES DRIVE - PLAN 08

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 46
REV.: A

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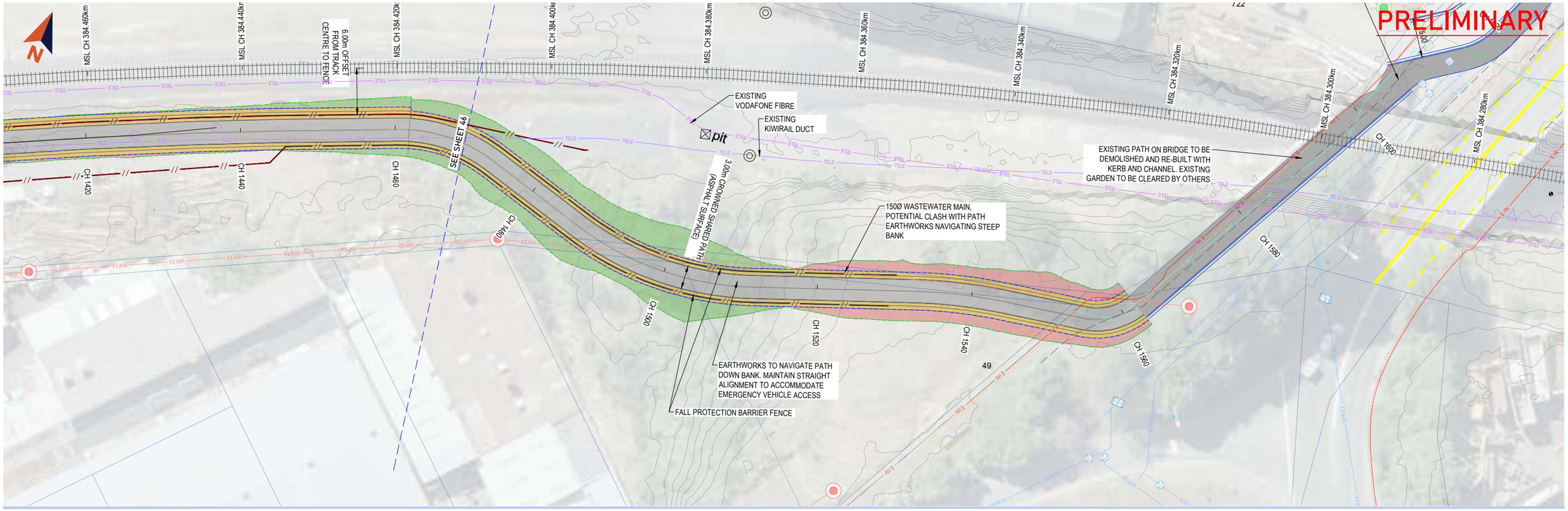

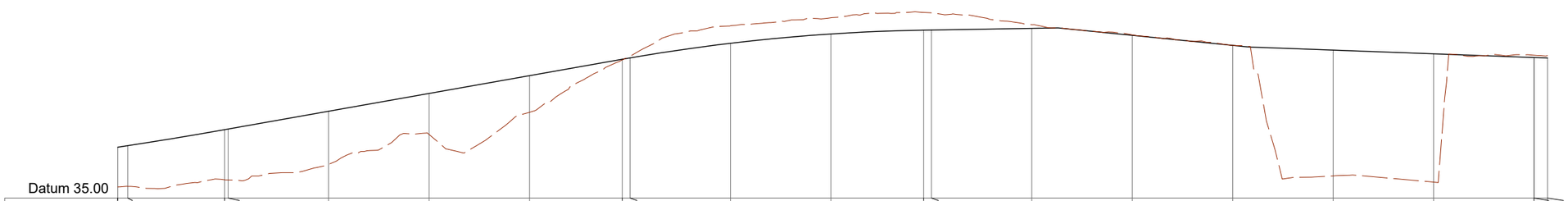

EXISTING GROUND	35.550	35.577	35.903	35.896	36.673	38.157	39.258	41.860	42.043	43.555	43.954	44.218	44.198	43.609	43.103	42.581	36.099	35.788	42.090	42.090	42.071
DESIGN LEVEL	37.522	37.599	38.395	38.426	39.309	40.192	41.075	41.890	41.957	42.686	43.149	43.339	43.345	43.428	43.081	42.581	42.346	42.162	41.977	41.977	41.956
DEPTH	1.972	2.022	2.492	2.531	2.637	2.036	1.817	0.030	-0.085	-0.869	-0.806	-0.879	-0.853	-0.181	-0.022	0.000	6.247	6.373	-0.113	-0.113	-0.115
VERTICAL GEOMETRY		R=843.5 K=8.4 L=63.1		G=8.8% L=39.6						R=375.0 K=3.8 L=30.0			G=0.8% L=13.4		G =-5.0% L =19.0		G =-1.8% L =28.4			R=287.6 K=2.9 L=20.0	
CHAINAGE	1469.000	1470.000	1479.647	1480.000	1490.000	1500.000	1510.000	1519.234	1520.000	1530.000	1540.000	1549.234	1550.000	1560.000	1570.000	1580.000	1590.000	1600.000	1609.993	1610.000	1611.336

PRELIMINARY

CYCLE CL SECTION 4 AND 5 LONGSECTION (44)
SCALE: H 1:250, V 1:125

CLIENT: DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

PROJECT: DUNEDIN TUNNELS TRAIL (CYT)

bonisch

SHEET TITLE: HARAWAY UNDERPASS TO BARNES DRIVE - PLAN 09

REV	REVISION DETAILS	DATE
A	PRELIMINARY DESIGN - FOR REVIEW	10/12/2021

SURVEYED:		
DESIGNED:	SJC	OCT 2021
DRAWN:	BMS	NOV 2021
DRAWING CHECK:	PGO	DEC 2021
DESIGN CHECK:	PGO	DEC 2021
APPROVED:	PGO	DEC 2021

JOB NUMBER: 7332
SCALE (@ A1): 1:250
SHEET: 47
REV.: A

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Last Edited by: Sheree on 14/12/2021 11:44:48 am C:\BONISCH\Bonisch Consultants\Bonisch Consultants Team Site - JOB\7300 - 7399\7332 DCC CYT, Tunnels, Dunedin\04 AutoCAD\2. Printing\7332 - PLAN - LONGSECT - SECT_ 4-5.dwg (SHEET 47)