ESTADO DO RIO GRANDE DO SUL

PREFEITURA MUNICIPAL DE NOVA ALVORADA

PROJETO DE ENGENHARIA

IMPLANTAÇÃO DE PAVIMENTAÇÃO ASFÁLTICA

RODOVIA ESTADUAL ERS 132

TRECHO: 132 ERS 0040

SUBTRECHO I:

NOVA ALVORADA

kmi 1+200 (final do pavimento executado através do Programa PIAA/RS) –

P/ COMUNIDADE DE LINHA BORELLI

kmf 5+257 (final do pavimento executado através do Programa Pavimenta RS)

EXTENSÃO: 4,06 km

PROJETO EXECUTIVO

MAIO/2025

CARACTERÍSTICAS TÉCNICAS		
CARACTERÍSTICAS GERAIS		
TIPO DA RODOVIA: ESTADUAL	VDM (PARA O ANO DE ABERTURA): 300 - 1.500	
CLASSE DA RODOVIA: III	FAIXA DE ROLAMENTO: 2 x 3,50 m	
FAIXA DE DOMÍNIO: 50 m	ACOSTAMENTO: 2 x 1,00 m	
RAIO MÍNIMO DE CURVATURA HORIZONTAL: 50 m	RAMPA MÁXIMA: 8 %	
REGIÃO: MONTANHOSA	INCLINAÇÃO TRANSVERSAL EM TANGENTE: 2%	
VELOCIDADE DIRETRIZ: 40 km/h	PLATAFORMA DE ATERRO: 5,00 m	PLATAFORMA DE CORTE: 5,50 m
GABARITO MÍNIMO VERTICAL: 5,50 m	PLATAGORMA DE TERRAPLENAGEM: 10 m	
DISTÂNCIAS MÍNIMAS DE VISIBILIDADE:	Parada: 45 m	
	Ultrapassagem: 270 m	
VALOR MÍNIMO DE "K" PARA CURVAS VERTICAIS:	Convexas: 5 m	
	Côncavas: 7 m	
AFASTAMENTO LATERAL MÍNIMO DO BORDO DO ACOSTAMENTO:	Obstáculos Contínuos: 0,30 m	
	Obstáculos Isolados: 0,50 m	

NORMAS DE PROJETOS RODOVIÁRIOS: VOLUME I - DAER/RS 1991.

Fone | WhatsApp: 54 3632.7600 | Passo Fundo - RS
contato@serafiniengenharia.com | www.**serafiniengenharia**.com
CNPJ 23.918.029/0001-52



	MUNICÍPIO DE NOVA ALVORADA - RS	
ESCALAS: Sem escala	Obra : PROJETO DE PAVIMENTAÇÃO ASFÁLTICA Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,26 km	
DATA: OUT/21	PLANTA DE SITUAÇÃO	FOLHA 02/02

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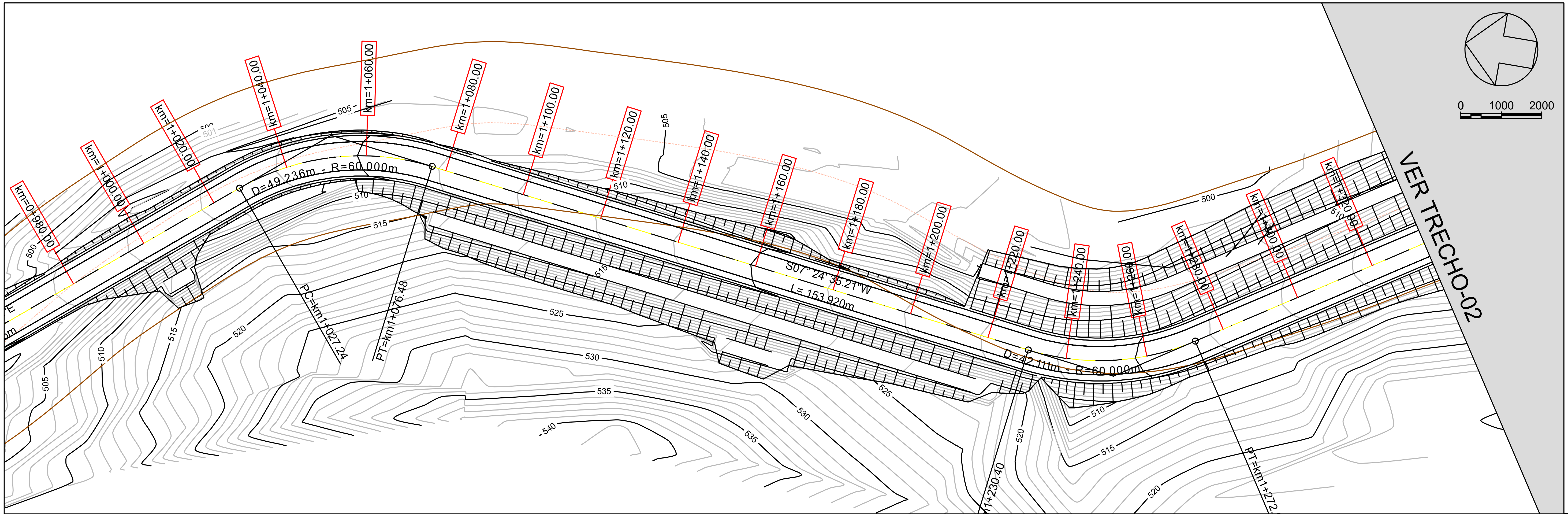
Legenda:

Trecho de projeto

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MUNICÍPIO DE NOVA ALVORADA - RS

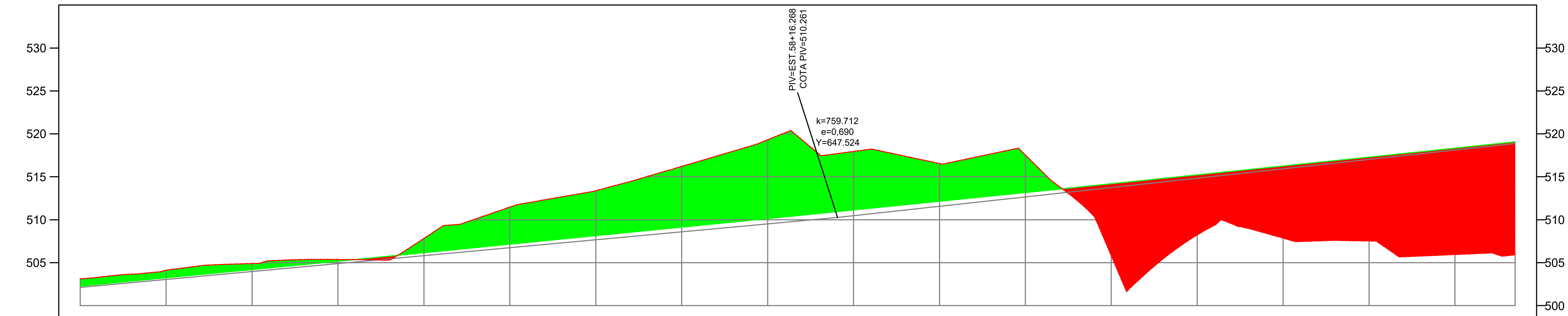
ESCALAS: 1:20000	Obra : PROJETO DE PAVIMENTAÇÃO ASFÁLTICA Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,26 km	
DATA: OUT/21	PLANTA DE LOCALIZAÇÃO	FOLHA 01/02



Sentido Nova Alvorada

Sentido Linha Borelli - Itapuca

PERFIL TRECHO 3 - LINHA BORELLI | NOVA ALVORADA



COTAS TERRENO/PROJETO	503,11 / 502,268	504,12 / 503,232	504,91 / 504,202	505,37 / 505,178	507,82 / 506,158	511,47 / 507,144	513,38 / 508,135	516,21 / 509,131	519,31 / 510,133	517,95 / 511,139	516,54 / 512,152	517,53 / 513,169	505,82 / 514,192	508,24 / 515,219	507,86 / 516,253	507,53 / 517,291	505,95 / 518,335	505,92 / 519,068
ESTAQUEAMENTO	km=1+000.00	km=1+020.00	km=1+040.00	km=1+060.00	km=1+080.00	km=1+100.00	km=1+120.00	km=1+140.00	km=1+160.00	km=1+180.00	km=1+200.00	km=1+220.00	km=1+240.00	km=1+260.00	km=1+280.00	km=1+300.00	km=1+320.00	km=1+334.00

LEGENDA

- TRAÇADO PROPOSTO
- TRAÇADO EXISTENTE
- CORTE
- ATERRO
- CURVAS DE NÍVEL
- TALUDE EM SOLO
- FAIXA DE DOMINIO

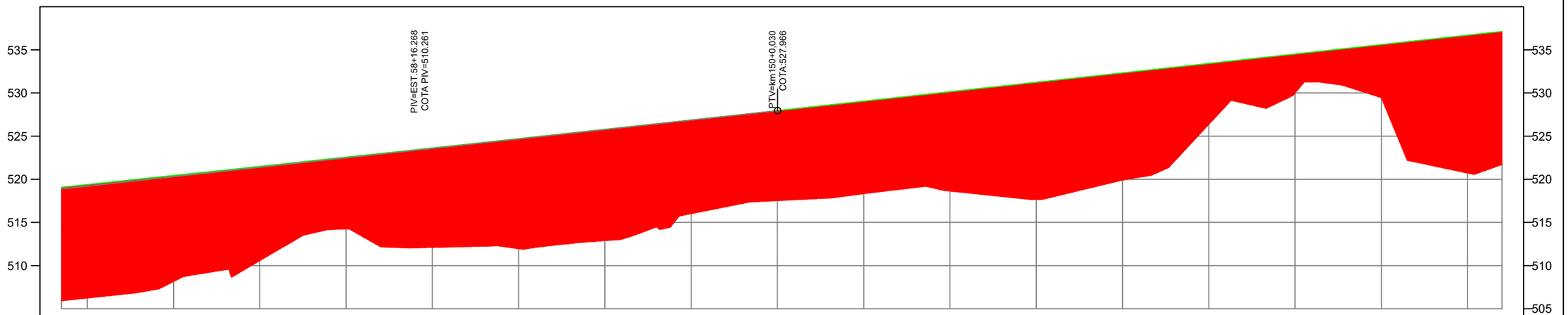
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MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km
DATA: OUT/21	TERRAPLENAGEM — FOLHA 04.04



PERFIL TRECHO 3 - LINHA BORELLI | NOVA ALVORADA



ESTAQUEAMENTO	km=1+334.00	km=1+340.00	km=1+360.00	km=1+380.00	km=1+400.00	km=1+420.00	km=1+440.00	km=1+460.00	km=1+480.00	km=1+500.00	km=1+520.00	km=1+540.00	km=1+560.00	km=1+580.00	km=1+600.00	km=1+620.00	km=1+640.00	km=1+660.00	km=1+668.00	
COTAS TERRENO/PROJETO	505,92 / ~~519,068~~	506,24	519,384	508,16	520,438	510,58	521,497	514,26	522,562	512,11	523,632	511,96	524,707	512,90	525,788	516,02	526,874	517,53	527,965	518,34	529,058	518,64	530,152	517,66	531,246	519,91	532,339	526,37	533,433	530,00	534,527	529,47	535,621	520,73	536,714	521,72	537,152

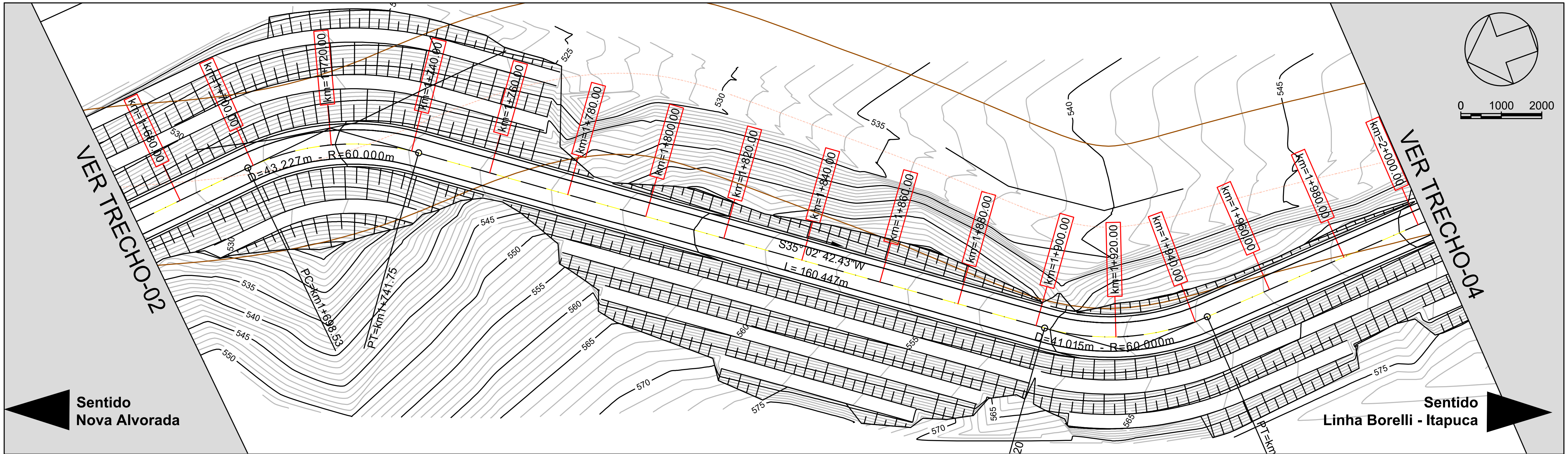
LEGENDA

- TRAÇADO PROPOSTO
- TRAÇADO EXISTENTE
- CORTE
- ATERRO
- CURVAS DE NÍVEL
- TALUDE EM SOLO
- FAIXA DE DOMINIO

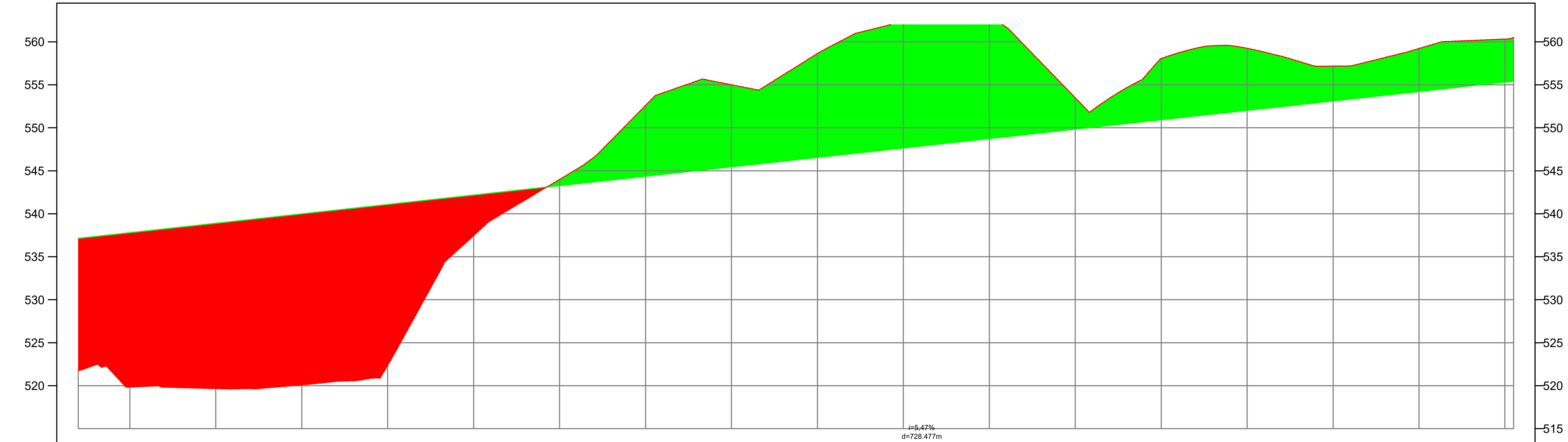
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MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: OUT/21	TERRAPLENAGEM	FOLHA 04.05



PERFIL TRECHO 3 - LINHA BORELLI | NOVA ALVORADA



ESTAQUEAMENTO	COTAS TERRENO	COTAS PROJETO
km=1+668.00	521,72	537,152
km=1+680.00	519,84	537,808
km=1+700.00	519,67	538,902
km=1+720.00	520,10	539,995
km=1+740.00	522,37	541,089
km=1+760.00	537,47	542,183
km=1+780.00	544,00	543,276
km=1+800.00	552,60	544,370
km=1+820.00	555,01	545,464
km=1+840.00	558,65	546,558
km=1+860.00	562,37	547,651
km=1+880.00	562,99	548,745
km=1+900.00	553,50	549,839
km=1+920.00	558,05	550,932
km=1+940.00	559,25	552,026
km=1+960.00	557,17	553,120
km=1+980.00	559,23	554,213
km=2+000.00	560,32	555,307
km=2+002.00	560,51	555,417

LEGENDA

- TRAÇADO PROPOSTO
- TRAÇADO EXISTENTE
- CORTE
- ATERRO
- CURVAS DE NÍVEL
- TALUDE EM SOLO
- FAIXA DE DOMINIO

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MUNICÍPIO DE NOVA ALVORADA - RS

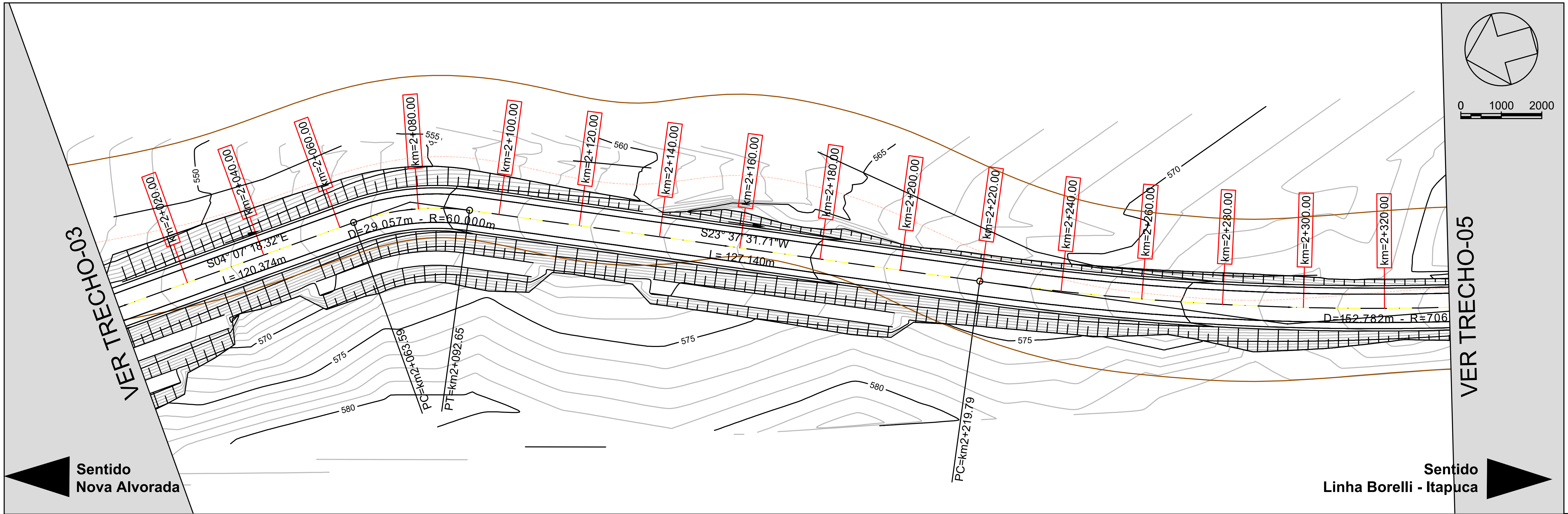
ESCALAS: 1/1.000

Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

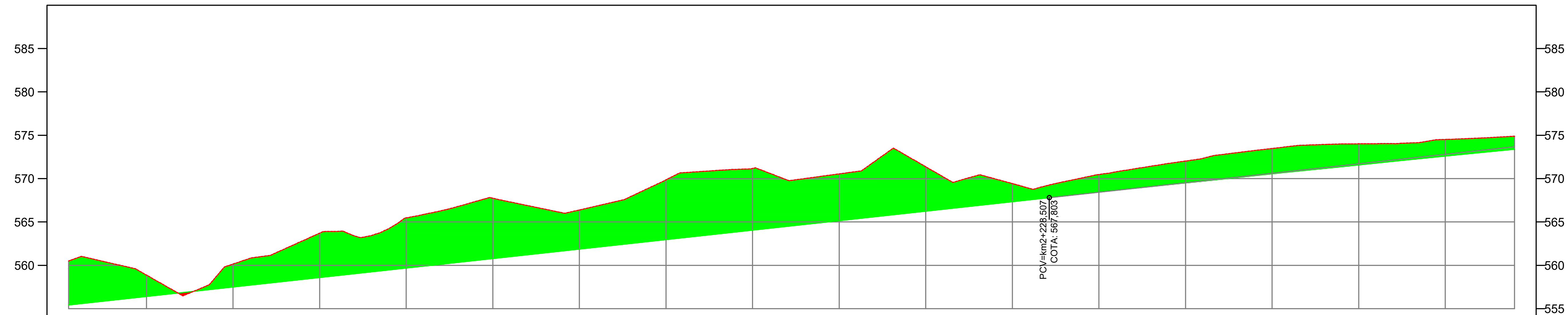
DATA: OUT/21

TERRAPLENAGEM

FOLHA 04.06



PERFIL TRECHO 3 - LINHA BORELLI | NOVA ALVORADA



ESTAQUEAMENTO	COTAS TERRENO/PROJETO	
km=2+002.00	560,51	555,417
km=2+020.00	558,87	556,401
km=2+040.00	560,15	557,495
km=2+060.00	563,71	558,588
km=2+080.00	565,47	559,682
km=2+100.00	567,74	560,776
km=2+120.00	566,39	561,869
km=2+140.00	569,86	562,963
km=2+160.00	571,17	564,057
km=2+180.00	570,54	565,150
km=2+200.00	571,37	566,244
km=2+220.00	569,43	567,338
km=2+240.00	570,48	568,428
km=2+260.00	572,03	569,500
km=2+280.00	573,48	570,552
km=2+300.00	574,01	571,584
km=2+320.00	574,52	572,596
km=2+336.00	574,89	573,391

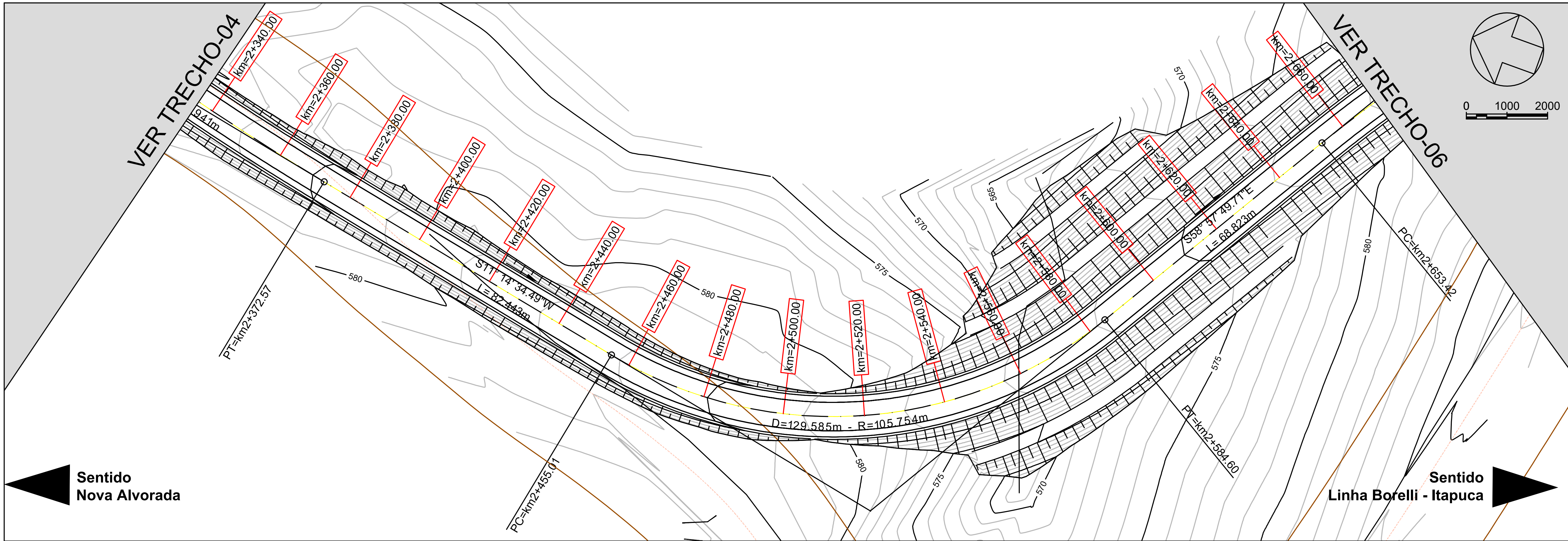
LEGENDA

- TRAÇADO PROPOSTO
- TRAÇADO EXISTENTE
- CORTE
- ATERRO
- CURVAS DE NÍVEL
- TALUDE EM SOLO
- FAIXA DE DOMINIO

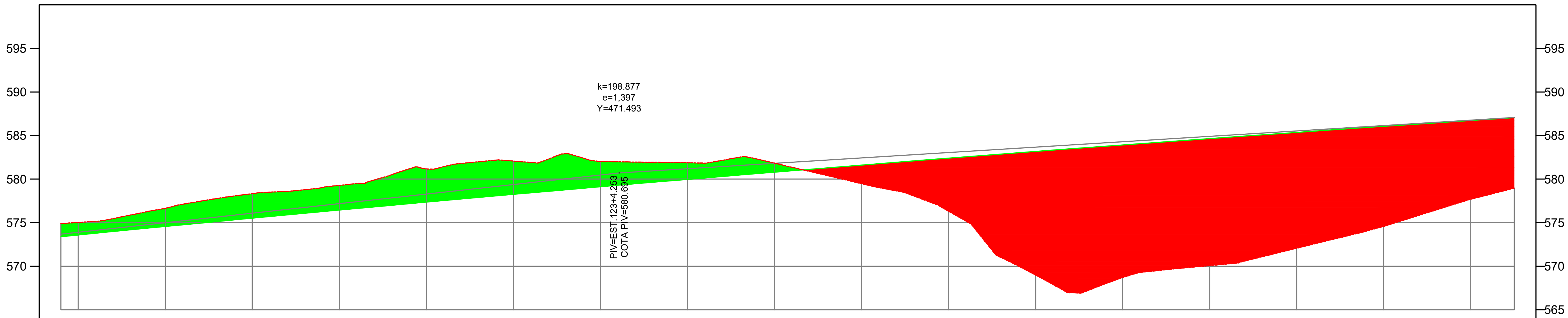
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MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: OUT/21	TERRAPLENAGEM	FOLHA 04.07



PERFIL TRECHO 3 - LINHA BORELLI | NOVA ALVORADA



ESTAQUEAMENTO	COTAS TERRENO	COTAS PROJETO
km=2+336.00	574,89	573,391
km=2+340.00	575,02	573,588
km=2+360.00	576,65	574,559
km=2+380.00	578,33	575,511
km=2+400.00	579,28	576,442
km=2+420.00	581,17	577,353
km=2+440.00	582,07	578,244
km=2+460.00	582,02	579,115
km=2+480.00	581,87	579,966
km=2+500.00	581,83	580,797
km=2+520.00	579,48	581,607
km=2+540.00	576,31	582,398
km=2+560.00	568,98	583,168
km=2+580.00	568,69	583,918
km=2+600.00	570,07	584,649
km=2+620.00	572,06	585,359
km=2+640.00	574,58	586,049
km=2+660.00	577,69	586,718
km=2+670.00	578,97	587,046

LEGENDA

- TRAÇADO PROPOSTO
- TRAÇADO EXISTENTE
- CORTE
- ATERRO
- CURVAS DE NÍVEL
- TALUDE EM SOLO
- FAIXA DE DOMINIO

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MUNICÍPIO DE NOVA ALVORADA - RS

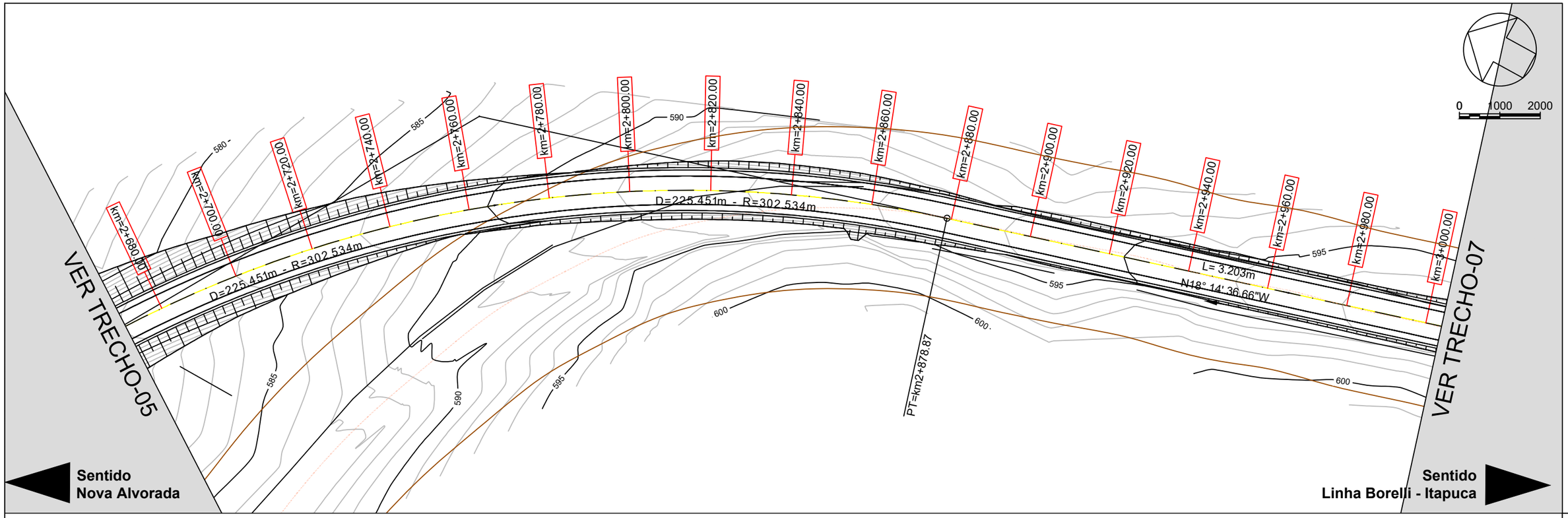
ESCALAS: 1/1.000

Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

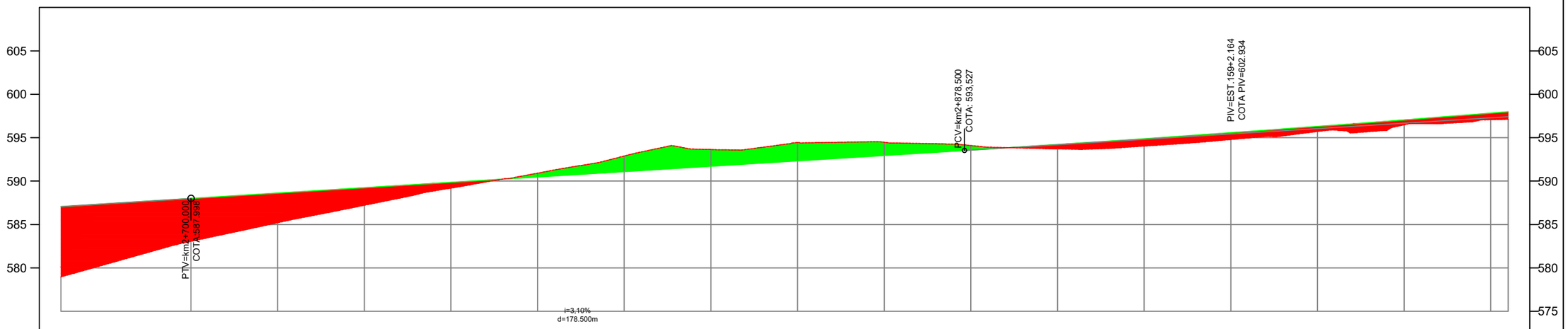
DATA: OUT/21

TERRAPLENAGEM

FOLHA 04.08



PERFIL TRECHO 3 - LINHA BORELLI | NOVA ALVORADA



ESTAQUEAMENTO	COTAS TERRENO/PROJETO
km=2+670.00	578,97
km=2+680.00	587,046
km=2+700.00	580,36
km=2+720.00	587,368
km=2+740.00	583,06
km=2+760.00	587,998
km=2+780.00	585,21
km=2+800.00	588,617
km=2+820.00	587,21
km=2+840.00	589,237
km=2+860.00	589,20
km=2+880.00	589,856
km=2+900.00	590,91
km=2+920.00	590,476
km=2+940.00	592,88
km=2+960.00	591,095
km=2+980.00	593,64
km=3+000.00	591,715
km=3+004.00	594,43
	592,335
	594,47
	592,954
	594,09
	593,574
	593,71
	594,210
	594,03
	594,875
	594,79
	595,569
	595,72
	596,292
	596,48
	597,044
	597,07
	597,825
	597,12
	597,984

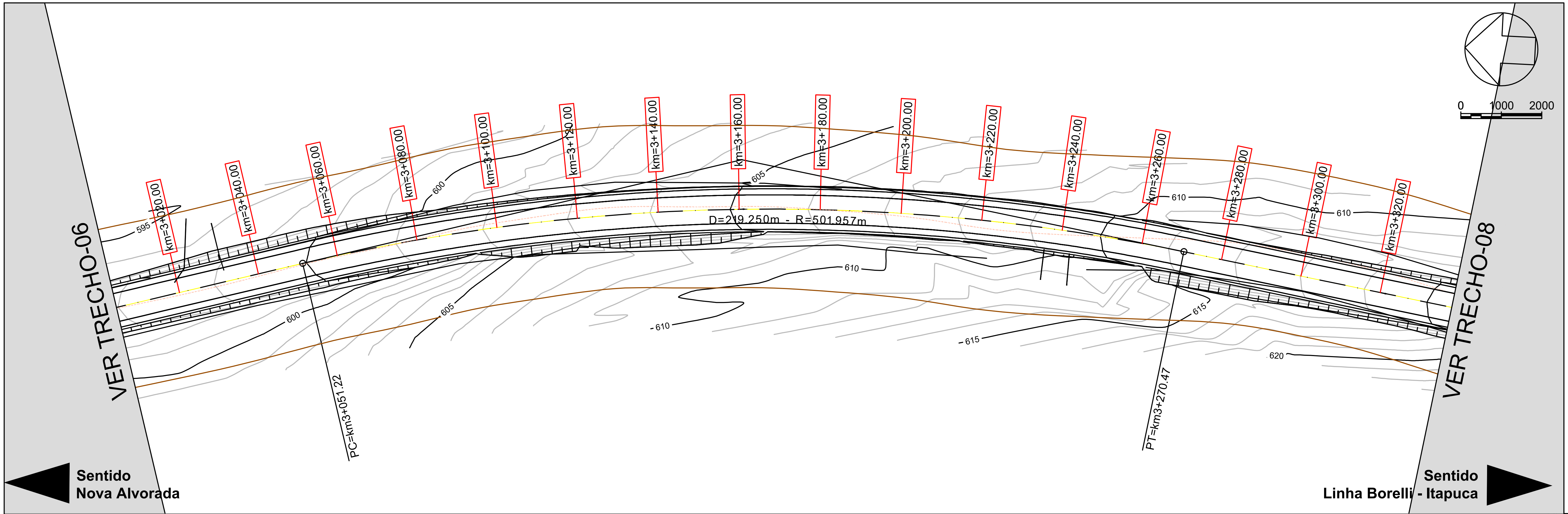
LEGENDA

- TRAÇADO PROPOSTO
- TRAÇADO EXISTENTE
- CORTE
- ATERRO
- CURVAS DE NÍVEL
- TALUDE EM SOLO
- FAIXA DE DOMINIO

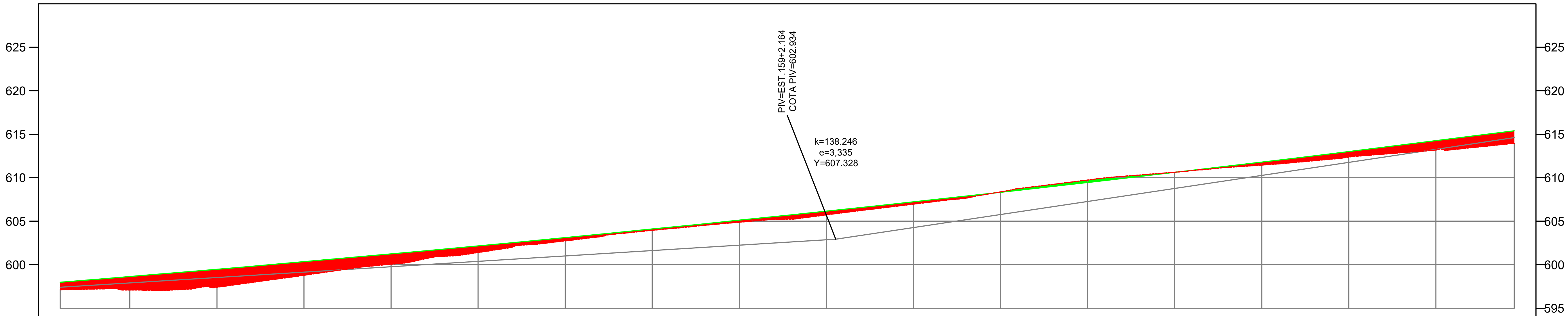
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MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: OUT/21	TERRAPLENAGEM	FOLHA 04.09



PERFIL TRECHO 3 - LINHA BORELLI | NOVA ALVORADA



ESTAQUEAMENTO	COTAS TERRENO/PROJETO
km=3+004.00	597,12 / 597,984
km=3+020.00	597,08 / 598,635
km=3+040.00	597,41 / 599,473
km=3+060.00	598,78 / 600,341
km=3+080.00	600,05 / 601,238
km=3+100.00	601,40 / 602,163
km=3+120.00	602,74 / 603,118
km=3+140.00	603,95 / 604,101
km=3+160.00	604,88 / 605,113
km=3+180.00	605,73 / 606,155
km=3+200.00	606,96 / 607,225
km=3+220.00	608,37 / 608,324
km=3+240.00	609,73 / 609,452
km=3+260.00	610,63 / 610,609
km=3+280.00	611,45 / 611,795
km=3+300.00	612,37 / 613,010
km=3+320.00	613,19 / 614,254
km=3+338.00	613,96 / 615,398

LEGENDA

- TRAÇADO PROPOSTO
- TRAÇADO EXISTENTE
- CORTE
- ATERRO
- CURVAS DE NÍVEL
- TALUDE EM SOLO
- FAIXA DE DOMINIO

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MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000

Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

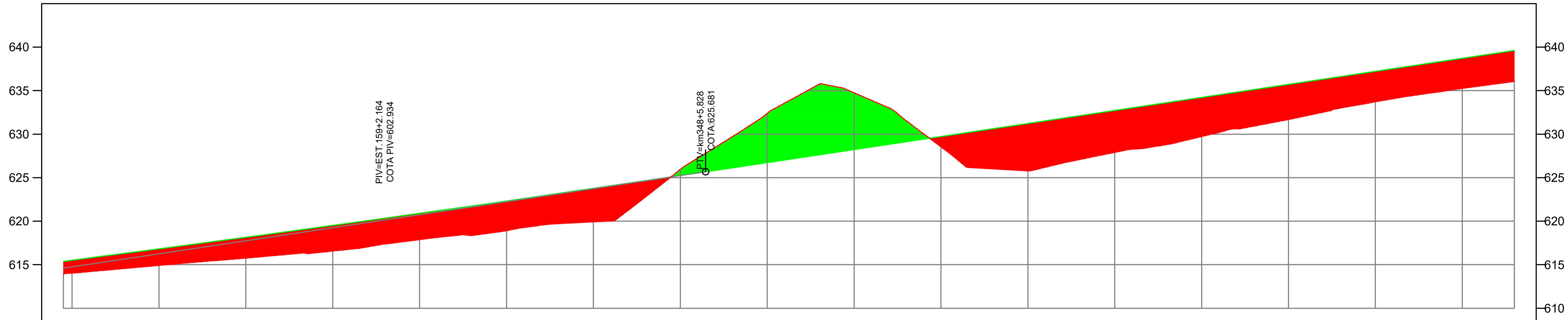
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TERRAPLENAGEM

FOLHA 04.10



PERFIL TRECHO 3 - LINHA BORELLI | NOVA ALVORADA



ESTAQUEAMENTO	COTAS TERRENO	COTAS PROJETO
km=3+338.00	613,36	615,398
km=3+340.00	614,04	615,526
km=3+360.00	614,92	616,828
km=3+380.00	615,76	618,159
km=3+400.00	616,57	619,518
km=3+420.00	617,89	620,907
km=3+440.00	618,90	622,324
km=3+460.00	619,93	623,770
km=3+480.00	625,94	625,246
km=3+500.00	632,38	626,742
km=3+520.00	634,75	628,241
km=3+540.00	628,54	629,739
km=3+560.00	625,78	631,237
km=3+580.00	627,91	632,735
km=3+600.00	629,73	634,233
km=3+620.00	631,68	635,731
km=3+640.00	633,71	637,230
km=3+660.00	635,26	638,728
km=3+672.00	636,06	639,627

LEGENDA
- TRAÇADO PROPOSTO
- TRAÇADO EXISTENTE
- CORTE
- ATERRO
- CURVAS DE NÍVEL
- TALUDE EM SOLO
- FAIXA DE DOMINIO

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MUNICÍPIO DE NOVA ALVORADA - RS

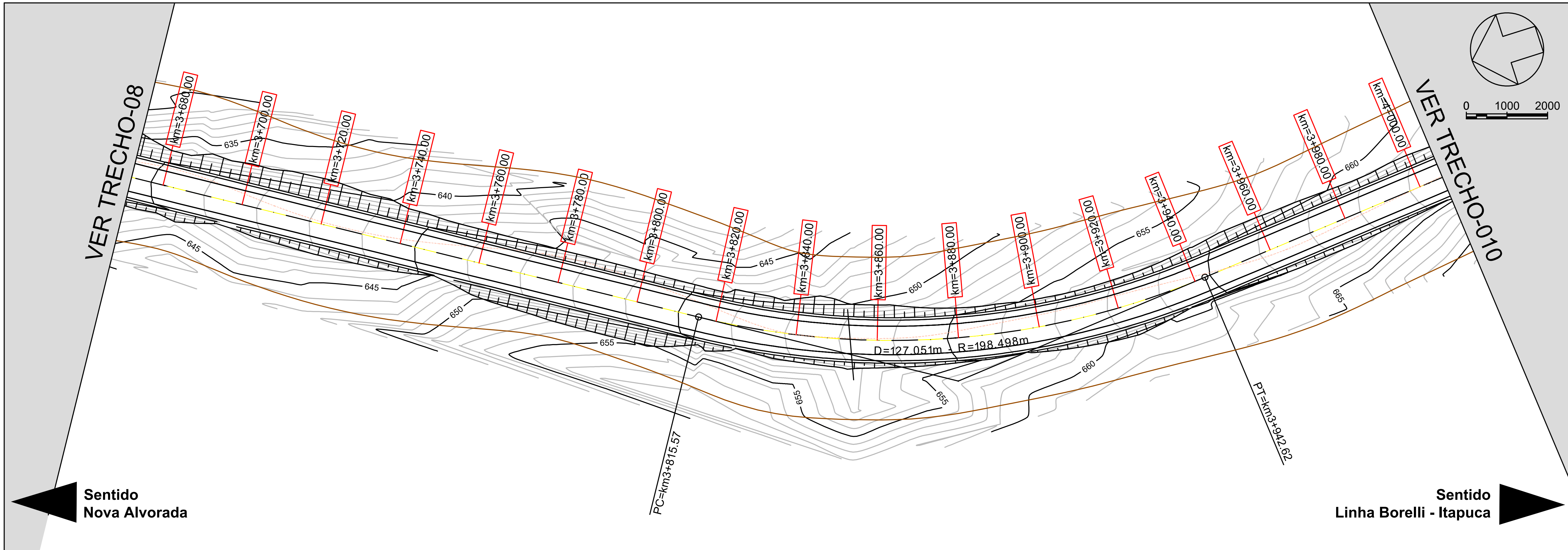
ESCALAS: 1/1.000

Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

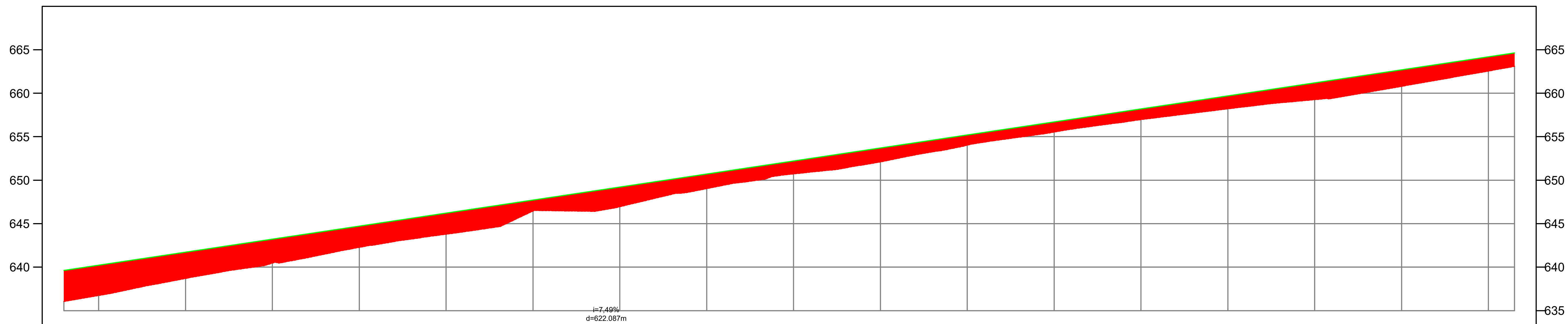
DATA: OUT/21

TERRAPLENAGEM

FOLHA 04.11



PERFIL TRECHO 3 - LINHA BORELLI | NOVA ALVORADA



COTAS TERRENO/PROJETO	636,06	639,627 636,74	640,226 638,69	641,724 640,47	643,222 642,28	644,720 643,79	646,219 646,46	647,717 646,95	649,215 649,03	650,713 650,73	652,211 652,10	653,709 654,03	655,208 655,53	656,706 656,97	658,204 658,21	659,702 659,26	661,200 660,80	662,698 662,56 664,197	663,10	664,646
ESTAQUEAMENTO	km=3+672.00	km=3+680.00	km=3+700.00	km=3+720.00	km=3+740.00	km=3+760.00	km=3+780.00	km=3+800.00	km=3+820.00	km=3+840.00	km=3+860.00	km=3+880.00	km=3+900.00	km=3+920.00	km=3+940.00	km=3+960.00	km=3+980.00	km=4+000.00	km=4+006.00	

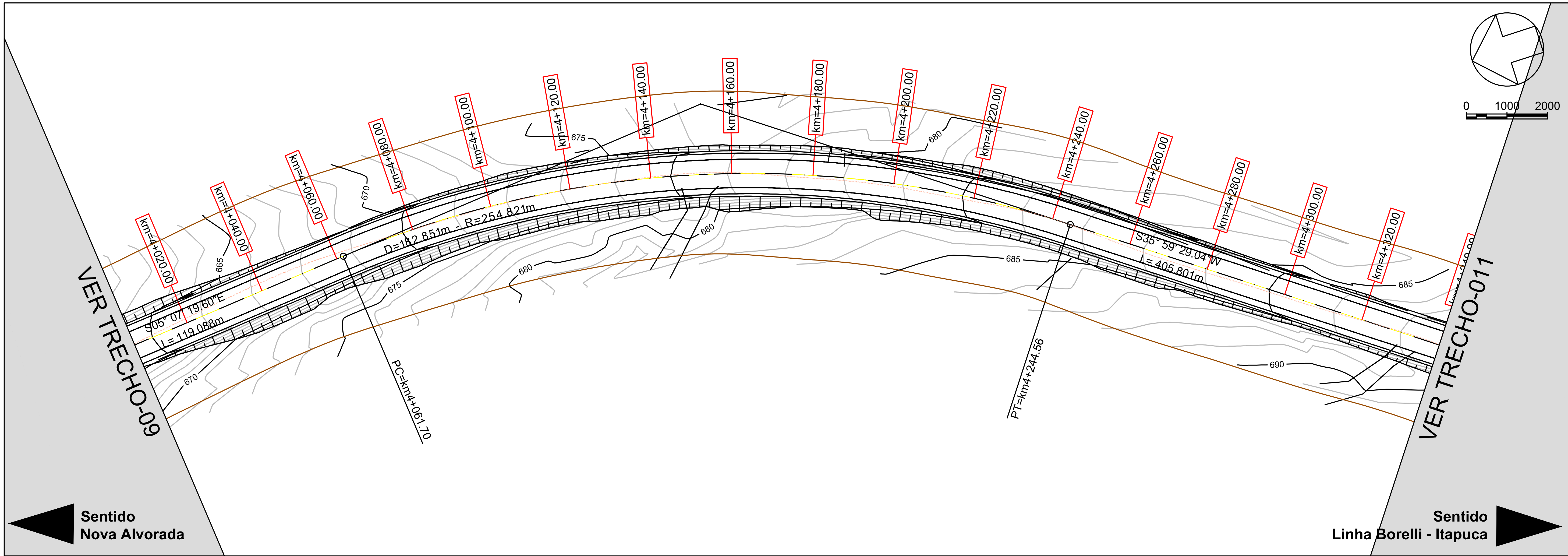
LEGENDA

- TRAÇADO PROPOSTO
- TRAÇADO EXISTENTE
- CORTE
- ATERRO
- CURVAS DE NÍVEL
- TALUDE EM SOLO
- FAIXA DE DOMINIO

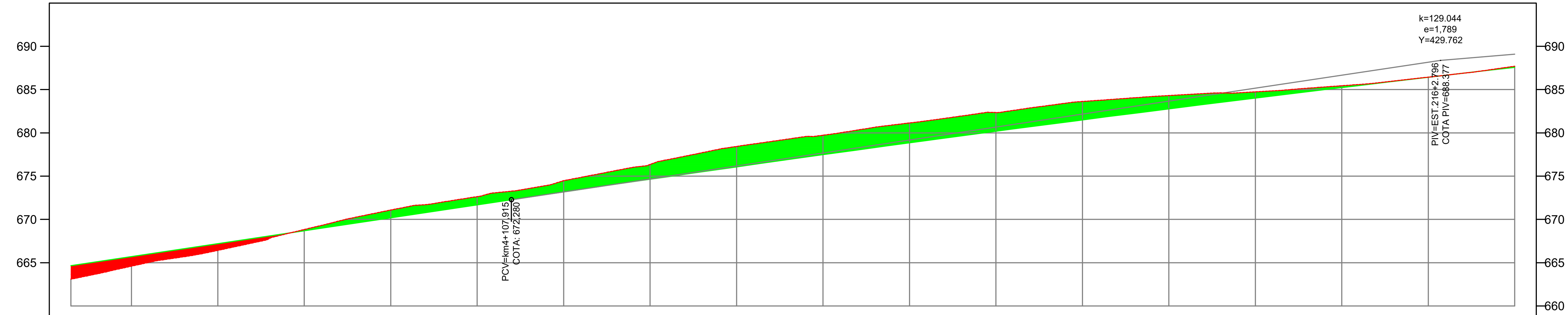
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MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: OUT/21	TERRAPLENAGEM	FOLHA 04.12



PERFIL TRECHO 3 - LINHA BORELLI | NOVA ALVORADA



ESTAQUEAMENTO	COTAS TERRENO/PROJETO	
km=4+006.00	663,10	664,646
km=4+020.00	664,60	665,695
km=4+040.00	666,43	667,193
km=4+060.00	668,83	668,691
km=4+080.00	671,08	670,189
km=4+100.00	672,63	671,687
km=4+120.00	674,47	673,180
km=4+140.00	676,36	674,644
km=4+160.00	678,43	676,077
km=4+180.00	679,72	677,479
km=4+200.00	681,14	678,850
km=4+220.00	682,34	680,190
km=4+240.00	683,62	681,499
km=4+260.00	684,31	682,777
km=4+280.00	684,73	684,024
km=4+300.00	685,44	685,240
km=4+320.00	686,44	686,424
km=4+340.00	687,70	687,578

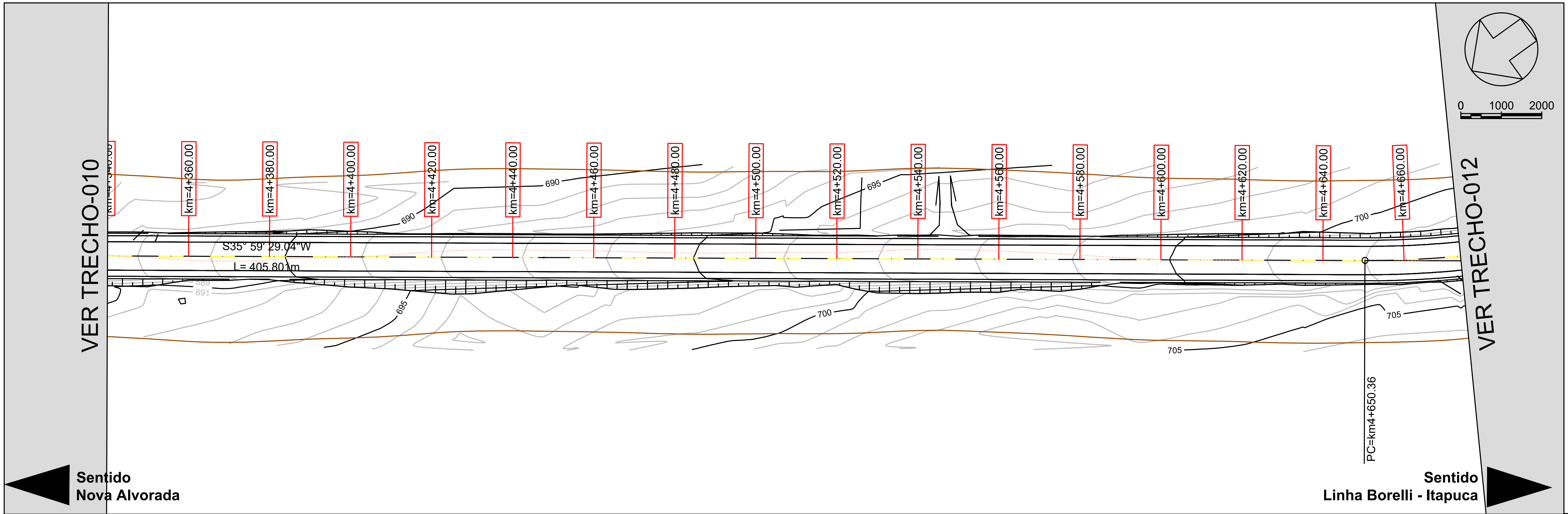
LEGENDA

- TRAÇADO PROPOSTO
- TRAÇADO EXISTENTE
- CORTE
- ATERRO
- CURVAS DE NÍVEL
- TALUDE EM SOLO
- FAIXA DE DOMINIO

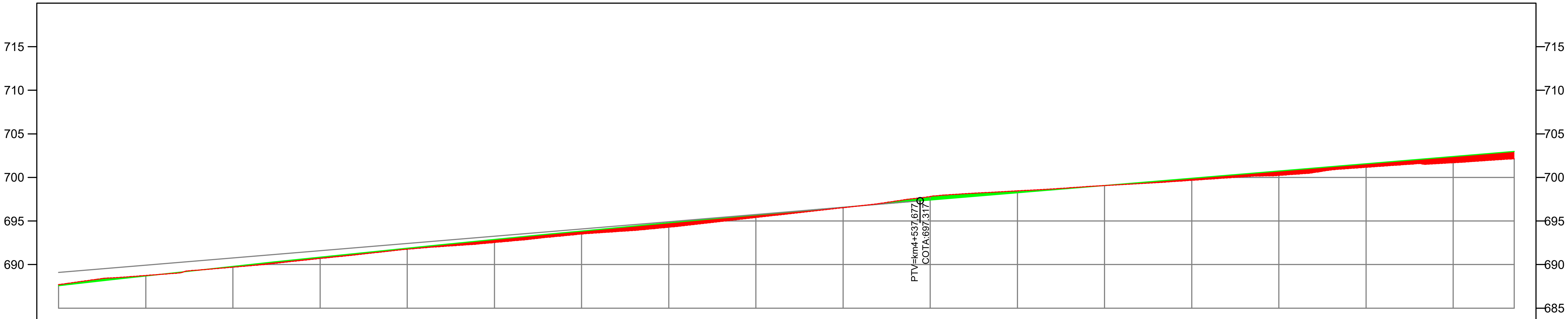
Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: OUT/21	TERRAPLENAGEM	FOLHA 04.13



PERFIL TRECHO 3 - LINHA BORELLI | NOVA ALVORADA



ESTAQUEAMENTO	COTAS TERRENO	COTAS PROJETO
km=4+340.00	687,70	687,578
km=4+360.00	688,75	688,701
km=4+380.00	689,70	689,793
km=4+400.00	690,71	690,854
km=4+420.00	691,76	691,884
km=4+440.00	692,54	692,883
km=4+460.00	693,51	693,851
km=4+480.00	694,29	694,788
km=4+500.00	695,40	695,694
km=4+520.00	696,53	696,569
km=4+540.00	697,81	697,413
km=4+560.00	698,46	698,246
km=4+580.00	699,07	699,078
km=4+600.00	699,67	699,910
km=4+620.00	700,24	700,742
km=4+640.00	701,16	701,574
km=4+660.00	701,69	702,406
km=4+674.00	702,13	702,989

LEGENDA

- TRAÇADO PROPOSTO
- TRAÇADO EXISTENTE
- CORTE
- ATERRO
- CURVAS DE NÍVEL
- TALUDE EM SOLO
- FAIXA DE DOMINIO

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

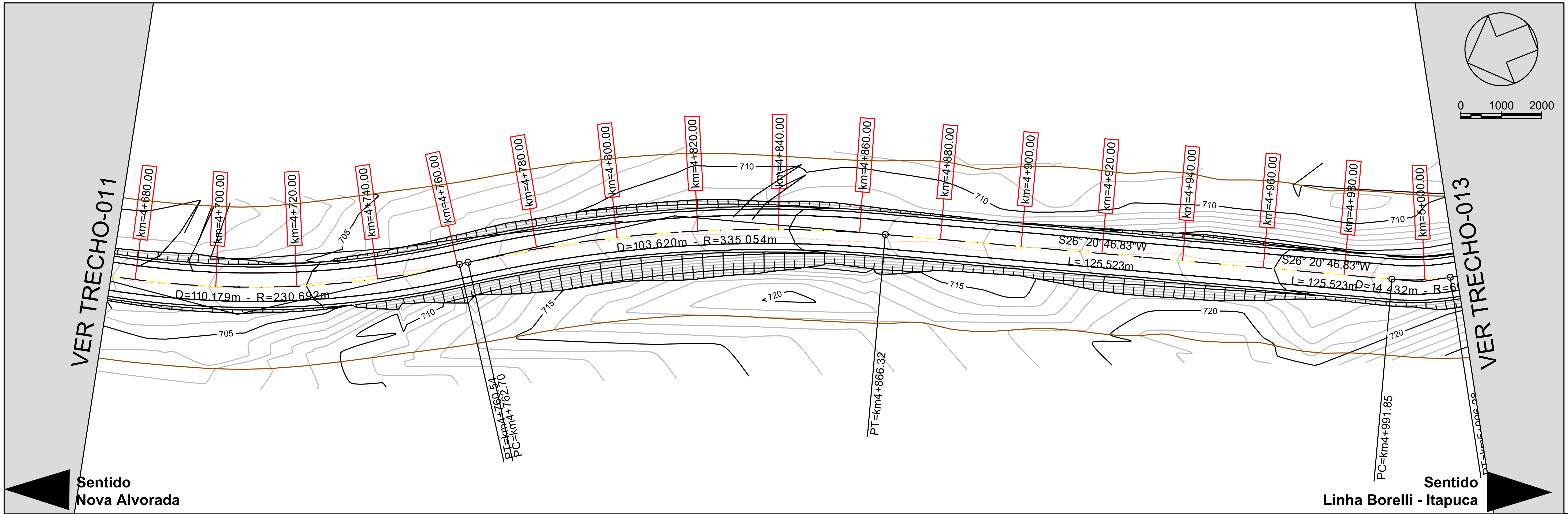
ESCALAS: 1/1.000

Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

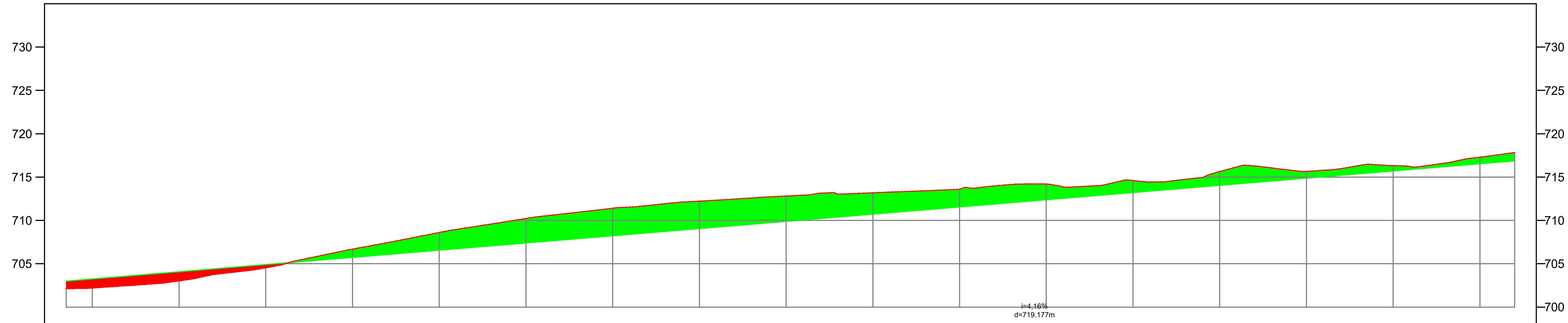
DATA: OUT/21

TERRAPLENAGEM

FOLHA 04.14



PERFIL TRECHO 3 - LINHA BORELLI | NOVA ALVORADA



ESTAQUEAMENTO	COTAS TERRENO	COTAS PROJETO
km=4+674.00	702,13	702,989
km=4+680.00	702,20	703,238
km=4+700.00	703,02	704,070
km=4+720.00	704,53	704,902
km=4+740.00	706,69	705,734
km=4+760.00	708,61	706,567
km=4+780.00	710,22	707,399
km=4+800.00	711,41	708,231
km=4+820.00	712,23	709,063
km=4+840.00	712,82	709,895
km=4+860.00	713,19	710,727
km=4+880.00	713,59	711,559
km=4+900.00	714,20	712,391
km=4+920.00	714,60	713,223
km=4+940.00	715,65	714,055
km=4+960.00	715,65	714,888
km=4+980.00	716,32	715,720
km=5+000.00	717,30	716,552
km=5+008.00	717,84	716,885

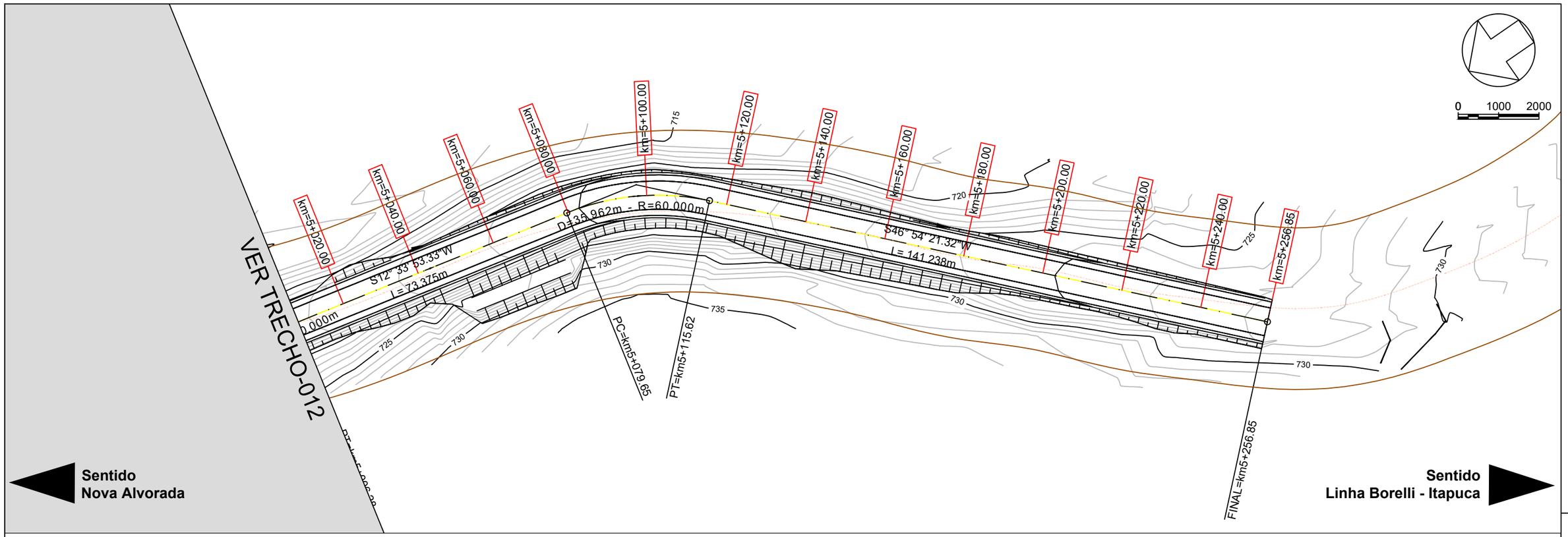
LEGENDA

- TRAÇADO PROPOSTO
- TRAÇADO EXISTENTE
- CORTE
- ATERRO
- CURVAS DE NÍVEL
- TALUDE EM SOLO
- FAIXA DE DOMINIO

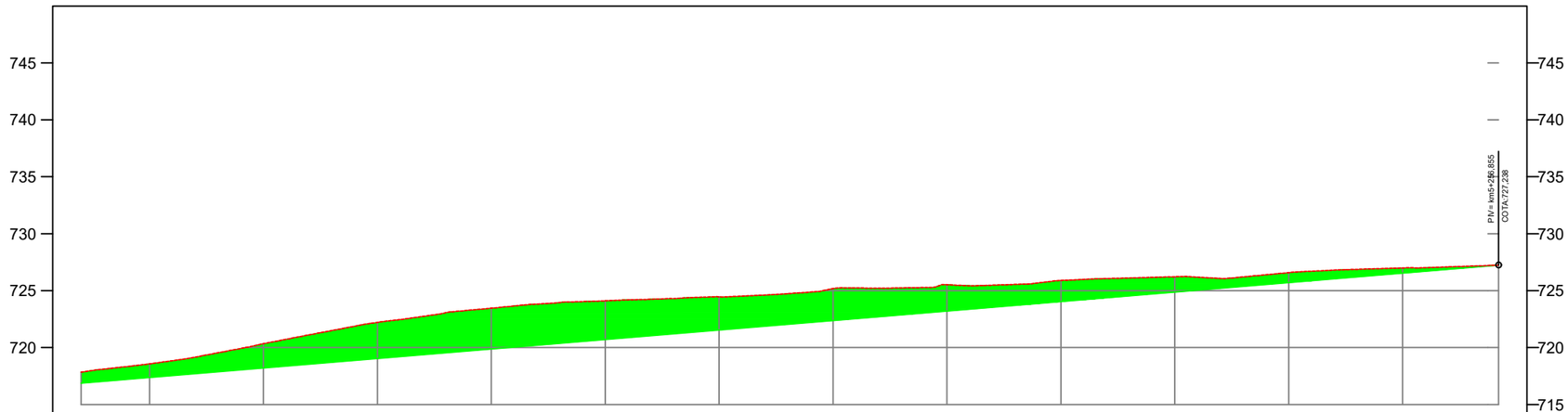
Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: OUT/21	TERRAPLENAGEM	FOLHA 04.15



PERFIL TRECHO 3 - LINHA BORELLI | NOVA ALVORADA



COTAS TERRENO/PROJETO	717,84	716,885	718,57	717,384	720,34	718,216	722,22	719,048	723,46	719,880	724,10	720,712	724,46	721,544	725,18	722,376	725,52	723,208	725,89	724,041	726,22	724,873	726,58	725,705	726,99	726,537	727,24	727,238			
ESTAQUEAMENTO	km=5+008.00		km=5+020.00		km=5+040.00		km=5+060.00		km=5+080.00		km=5+100.00		km=5+120.00		km=5+140.00		km=5+160.00		km=5+180.00		km=5+200.00		km=5+220.00		km=5+240.00		km=5+256.85					

LEGENDA

- TRAÇADO PROPOSTO
- TRAÇADO EXISTENTE
- CORTE
- ATERRO
- CURVAS DE NÍVEL
- TALUDE EM SOLO
- FAIXA DE DOMINIO

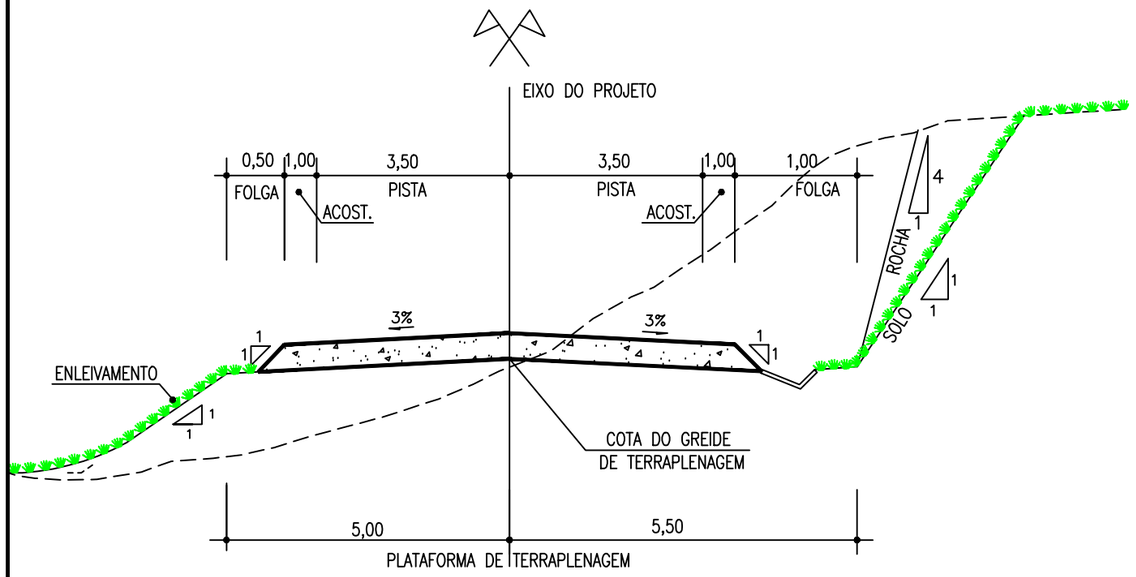
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MUNICÍPIO DE NOVA ALVORADA - RS

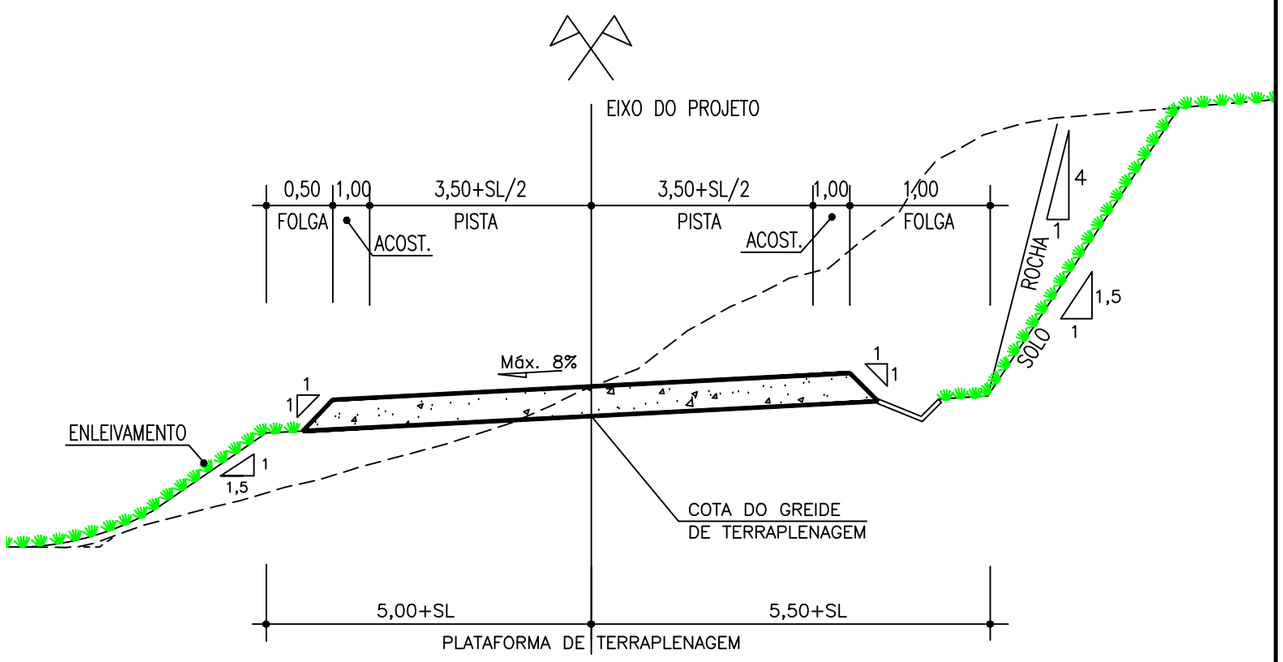
ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: OUT/21	TERRAPLENAGEM	FOLHA 04.16

SEÇÃO TRANSVERSAL TIPO

SEÇÃO EM RETA

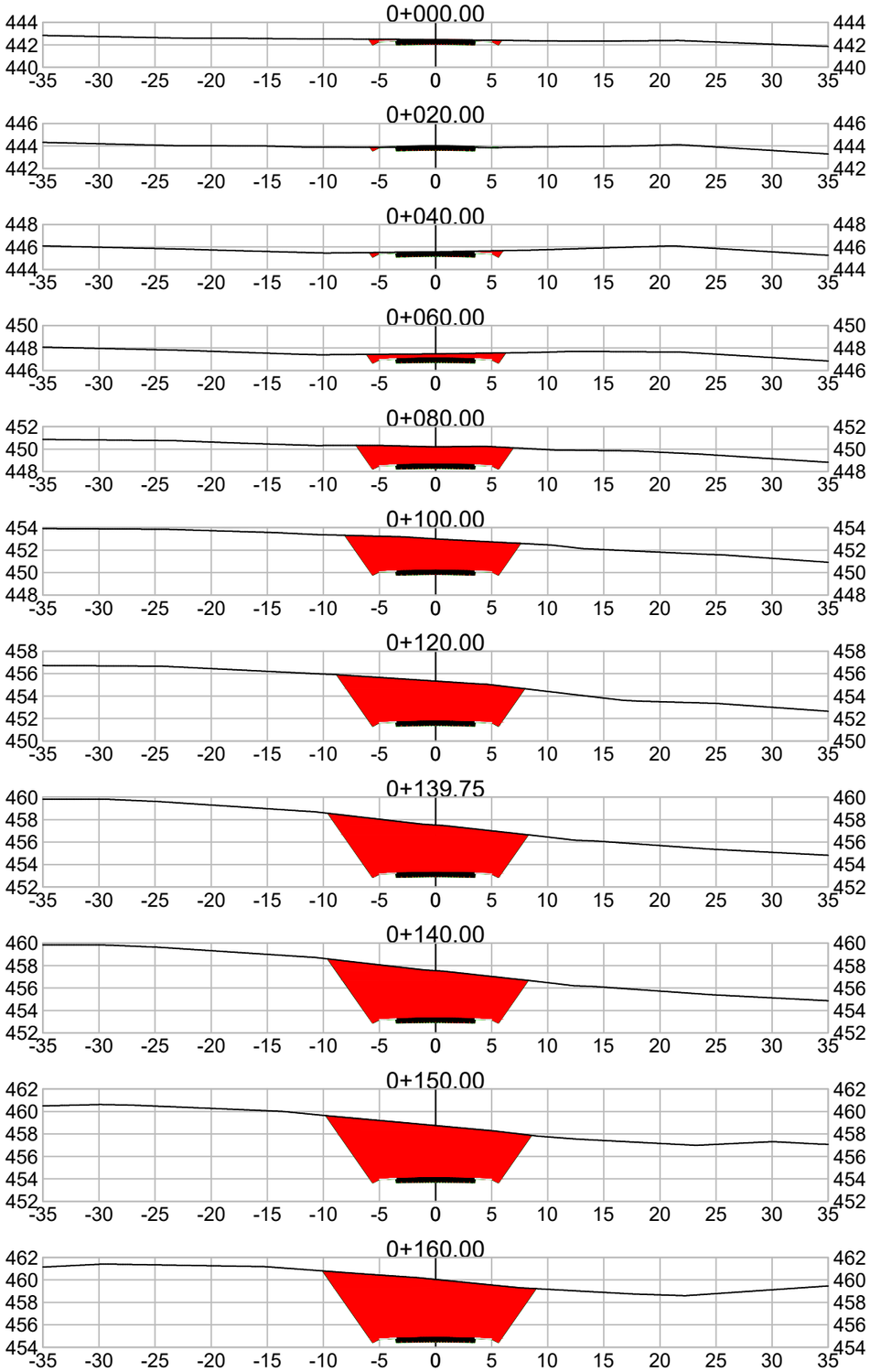


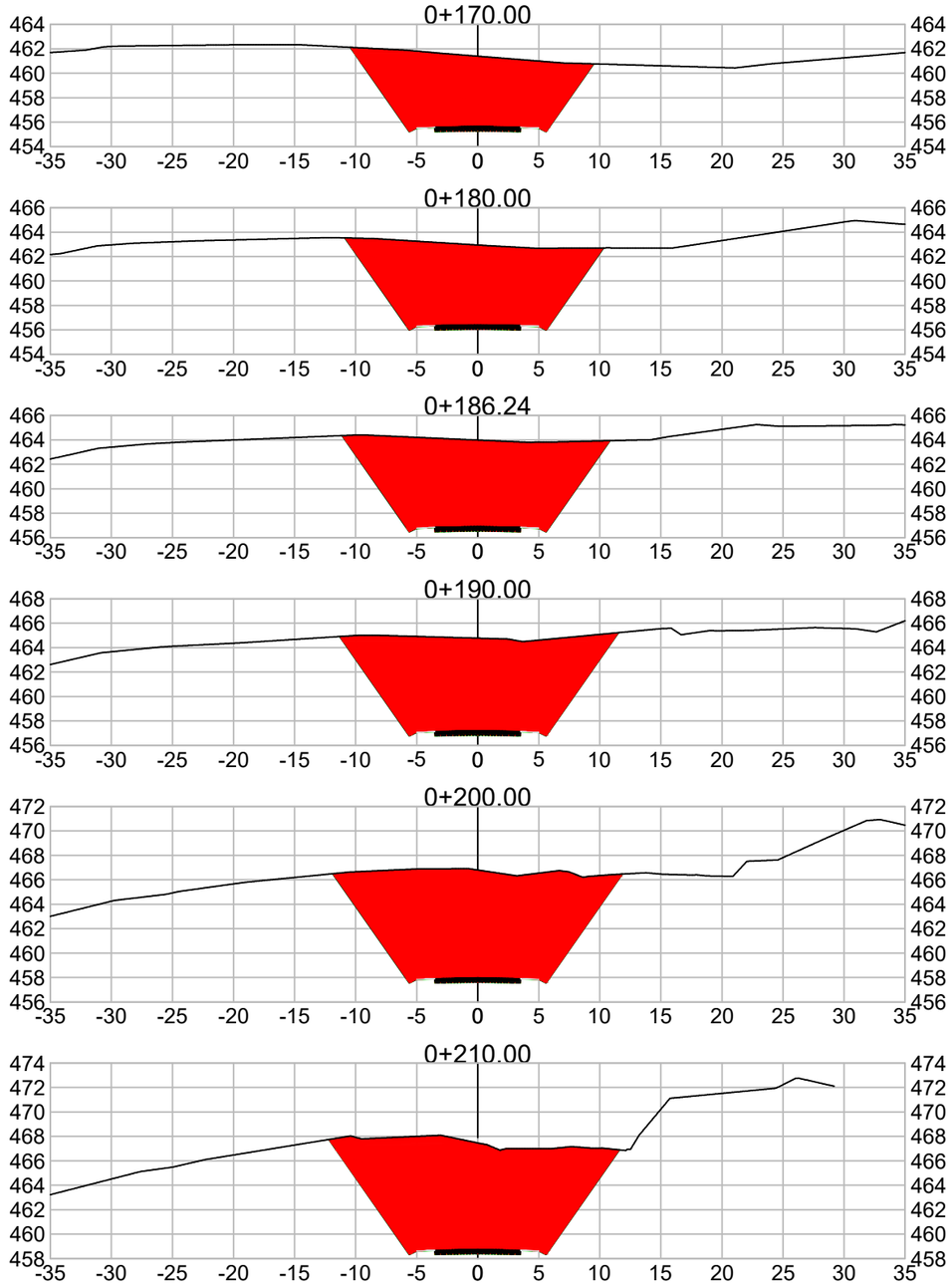
SEÇÃO EM CURVA



Obs. unidade de medida estão em metros.

	MUNICÍPIO DE NOVA ALVORADA - RS	
ESCALAS: –	Obra : PROJETO DE PAVIMENTAÇÃO ASFÁLTICA | ERS 132 Trecho : MUNICÍPIO DE NOVA ALVORADA – P/ COMUNIDADE LINHA BORELLI Extensão : –	
DATA: MAIO/25	SEÇÃO TIPO DE TERRAPLENAGEM	FOLHA 01/01





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MUNICÍPIO DE NOVA ALVORADA - RS

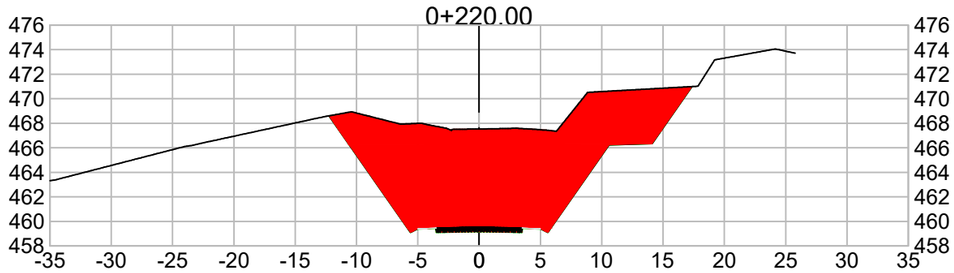
ESCALAS: 1/500

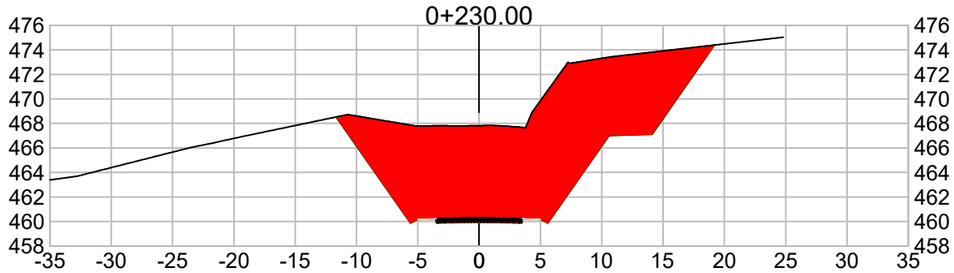
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

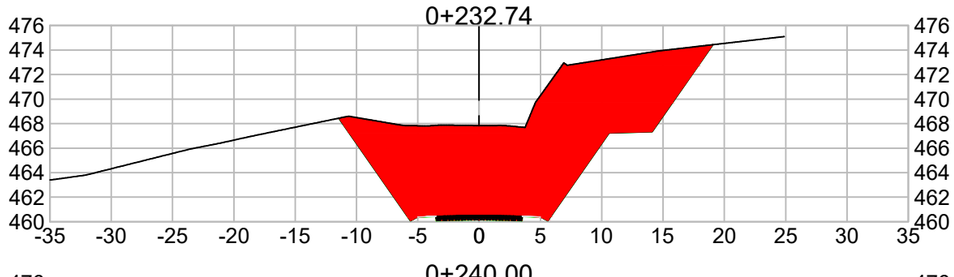
DATA: NOV/21

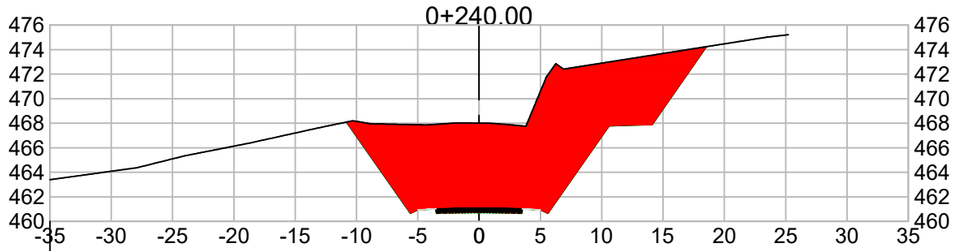
SEÇÕES TRANSVERSAIS

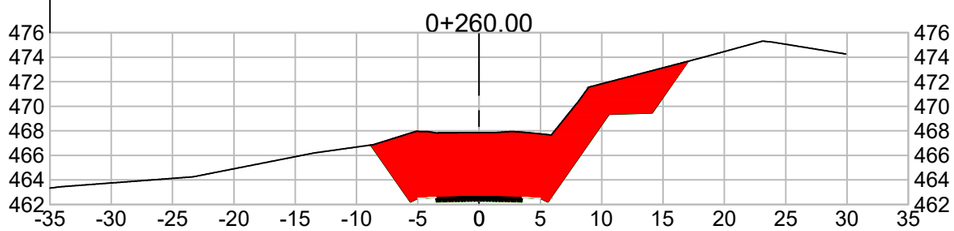
FOLHA 05.01

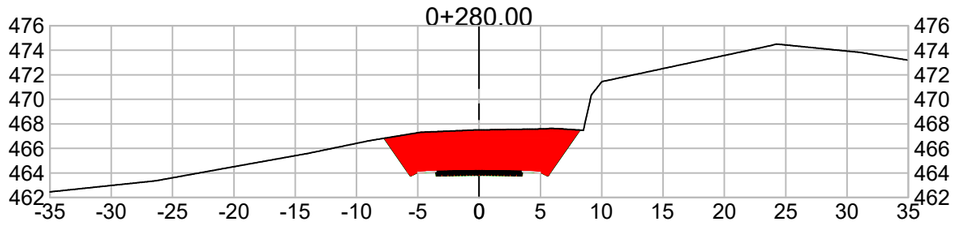


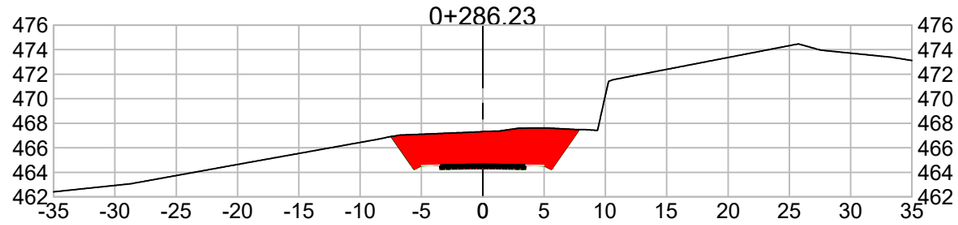


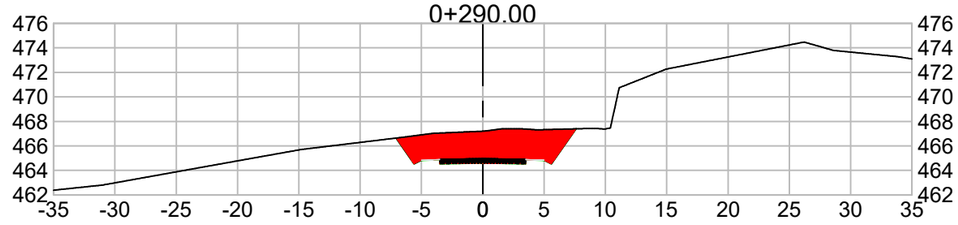


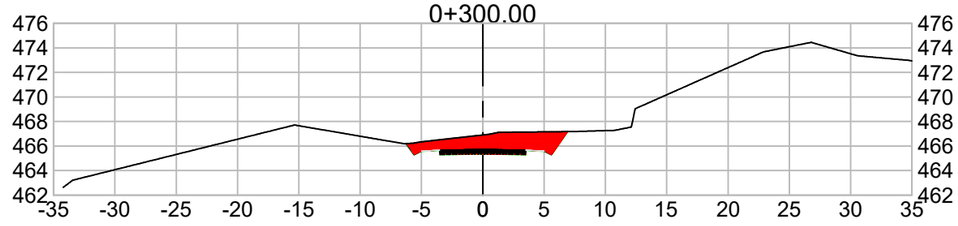


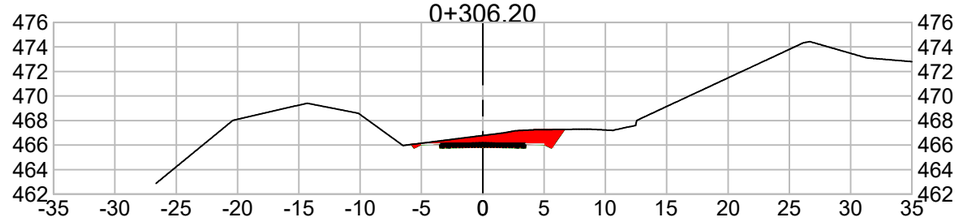


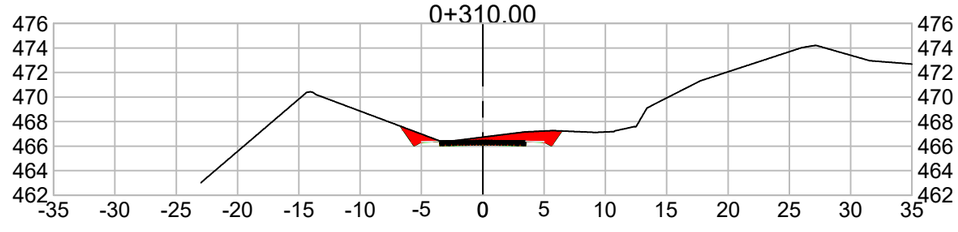


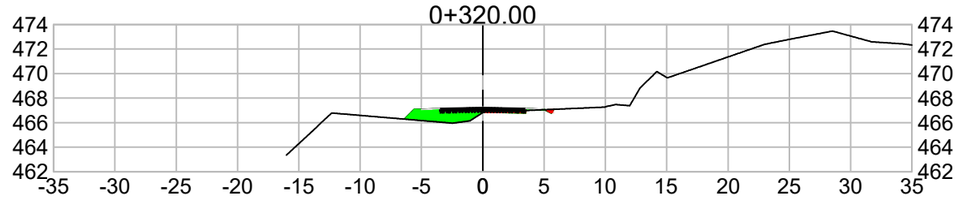












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MUNICÍPIO DE NOVA ALVORADA - RS

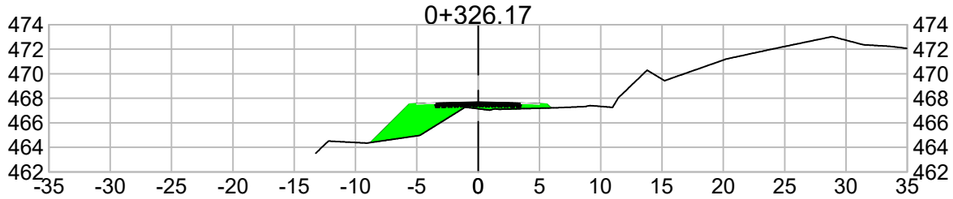
ESCALAS: 1/500

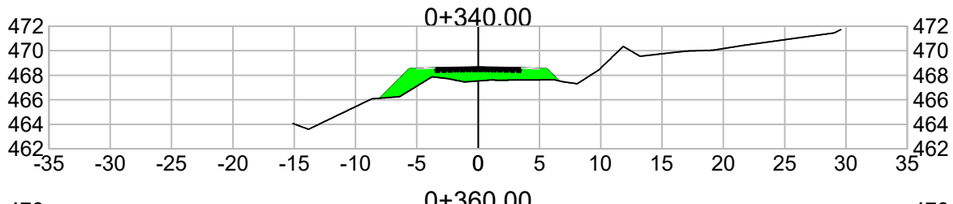
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

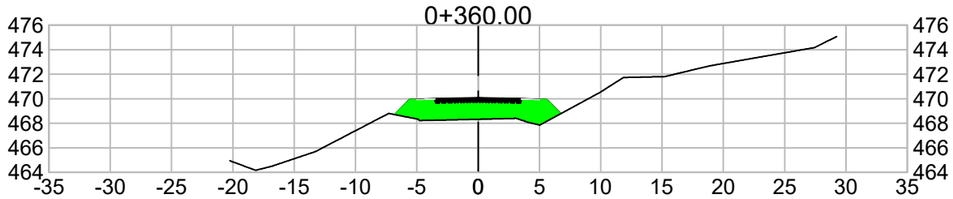
DATA: NOV/21

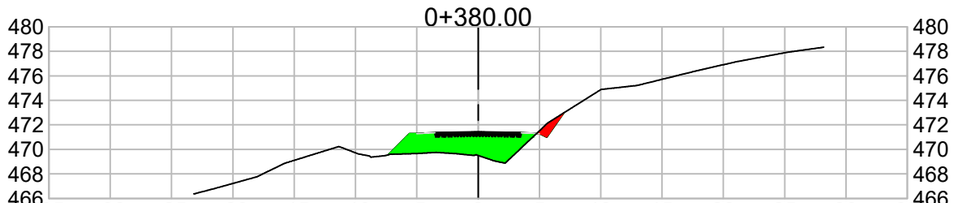
SEÇÕES TRANSVERSAIS

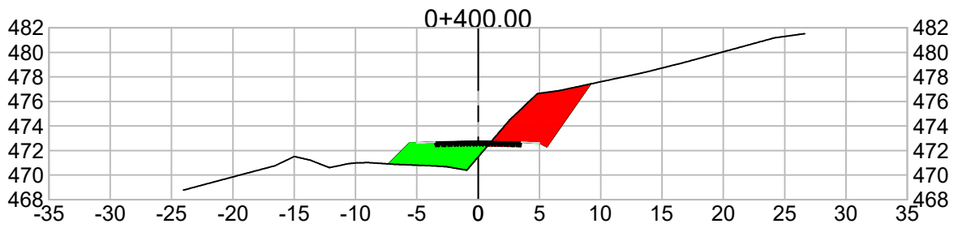
FOLHA 05.02

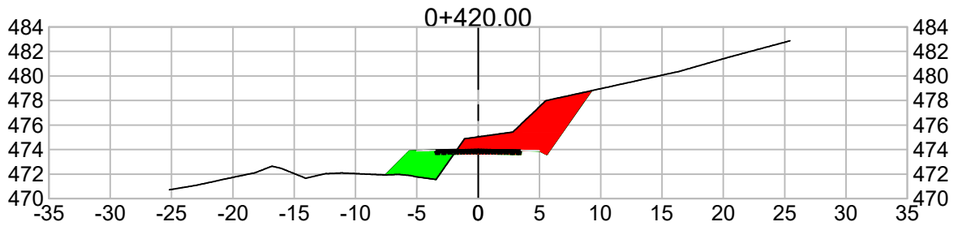


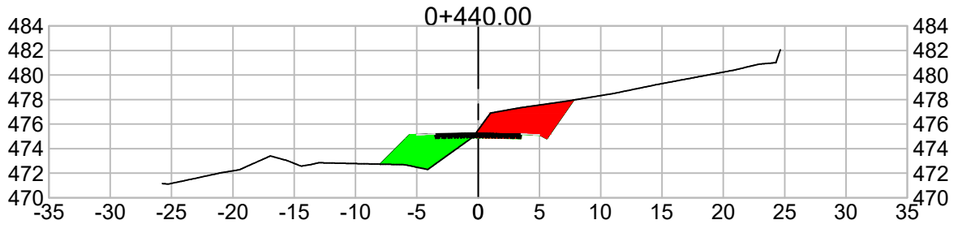


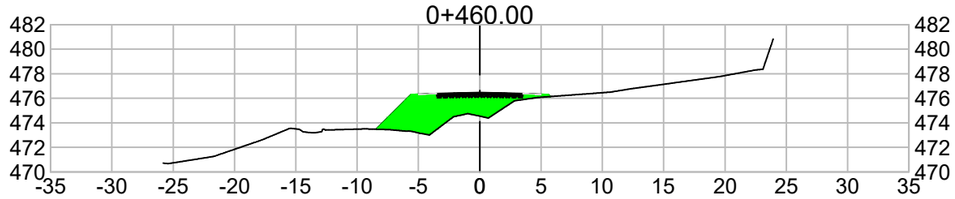


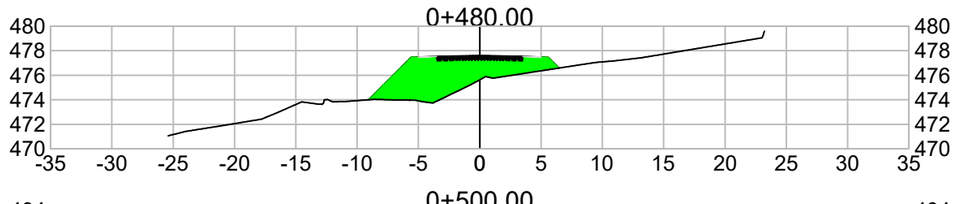


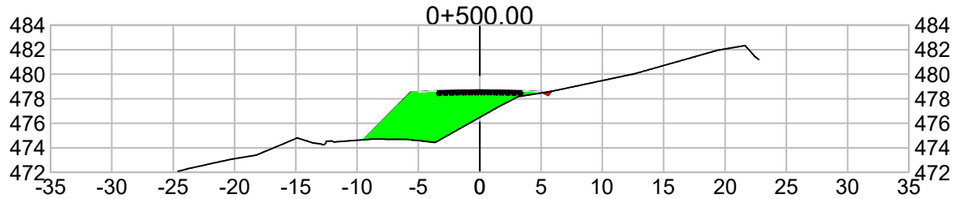


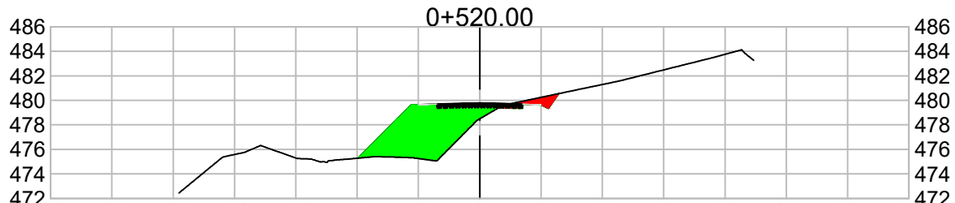


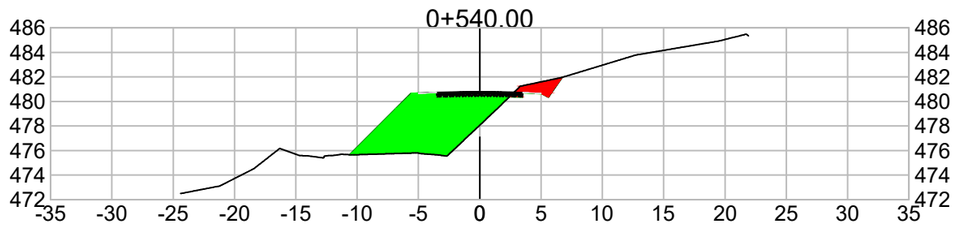


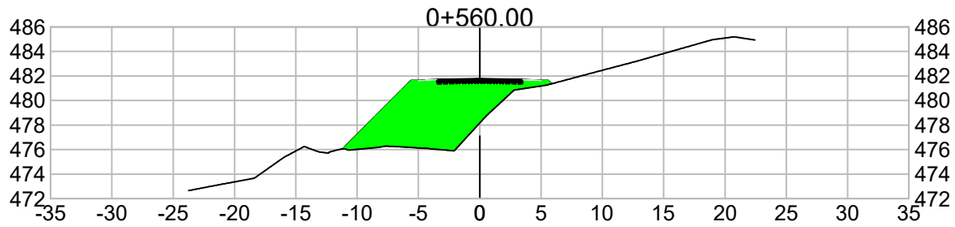


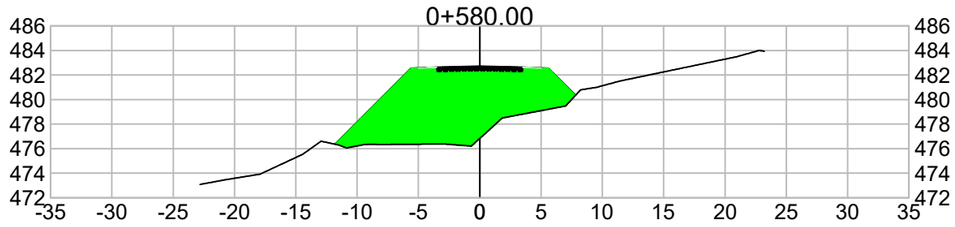












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MUNICÍPIO DE NOVA ALVORADA - RS

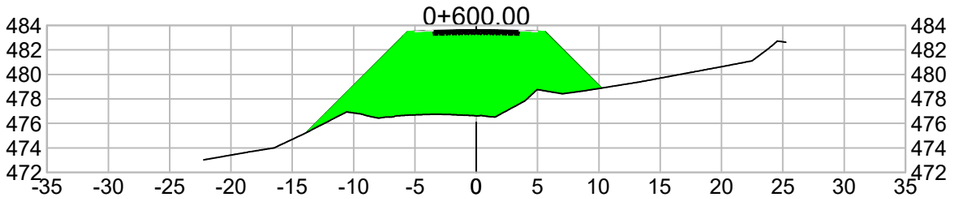
ESCALAS: 1/500

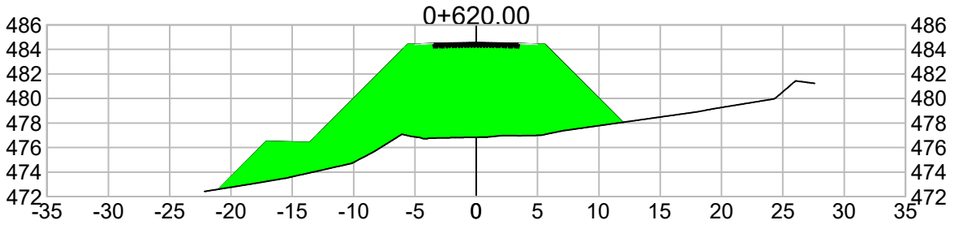
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

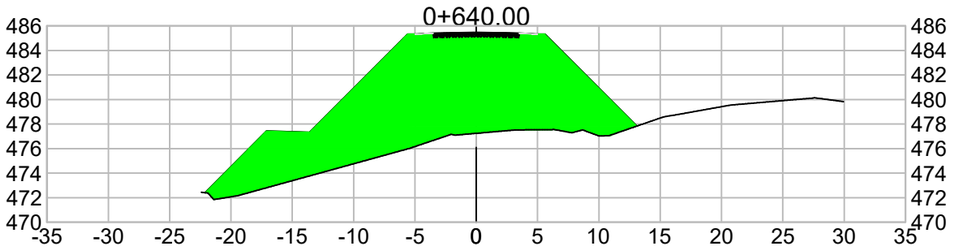
DATA: NOV/21

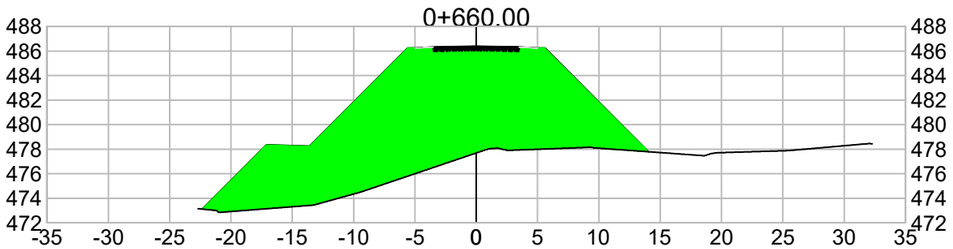
SEÇÕES TRANSVERSAIS

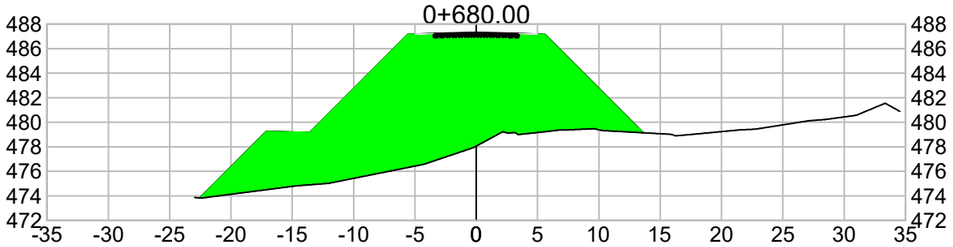
FOLHA 05.03

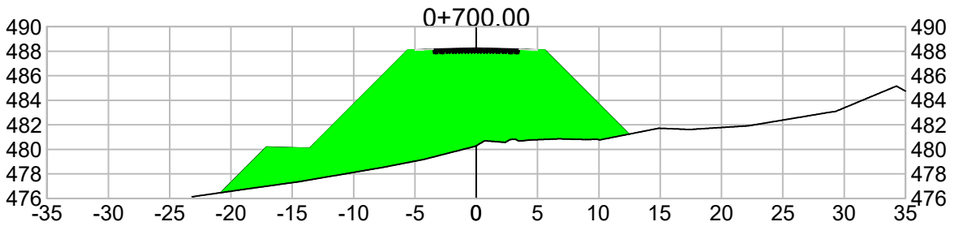


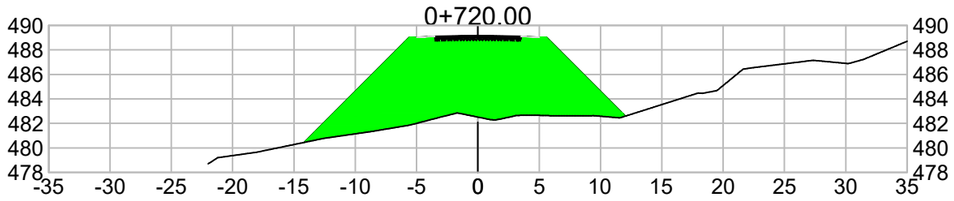


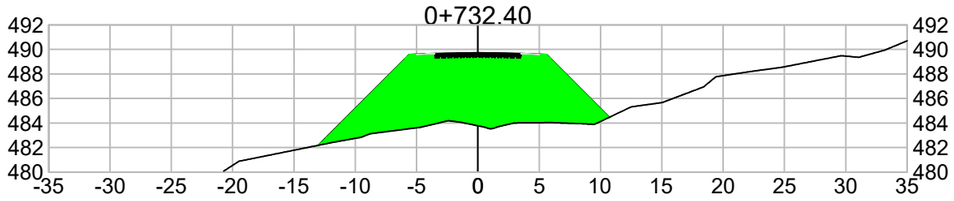


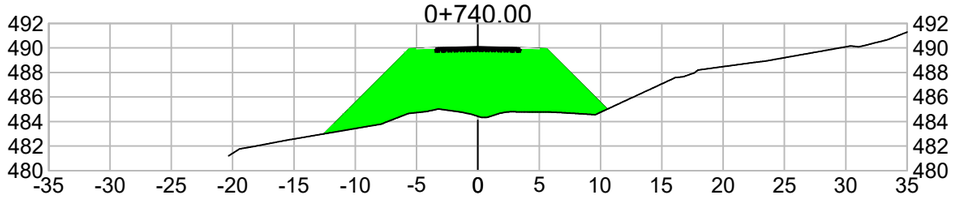


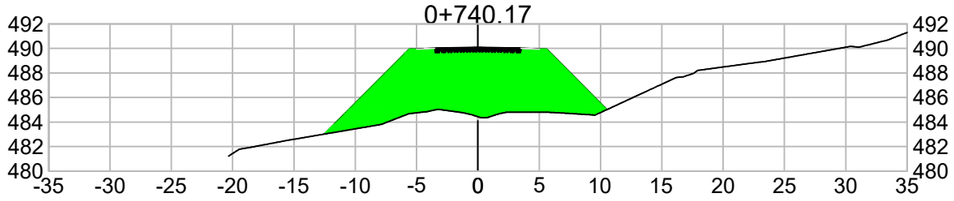


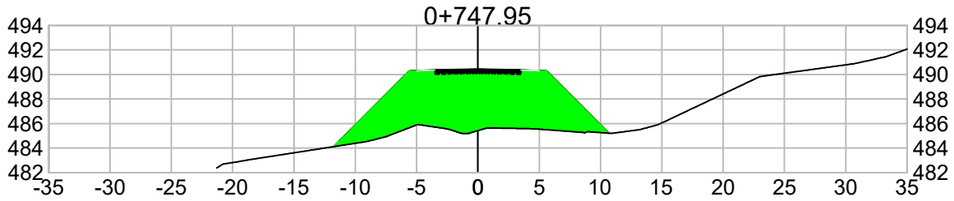


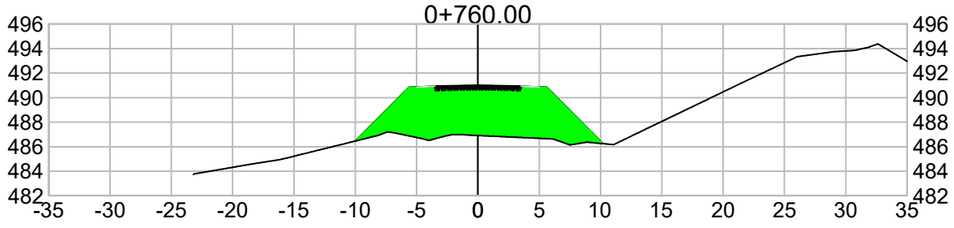


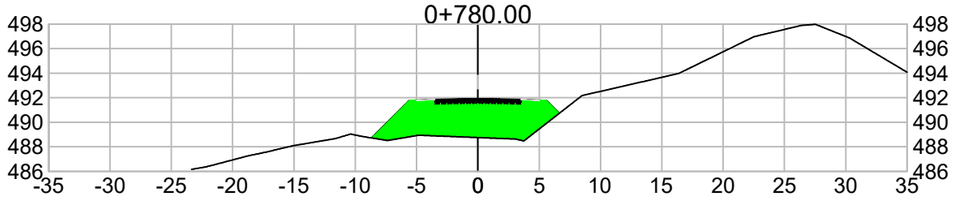










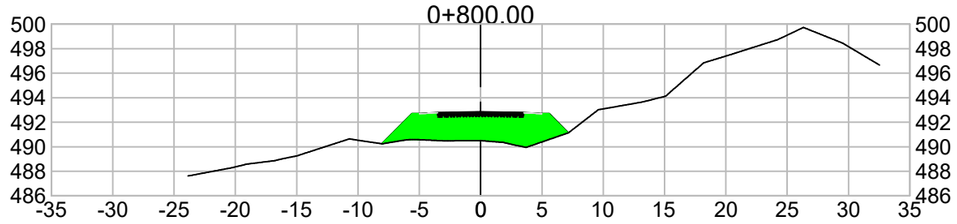


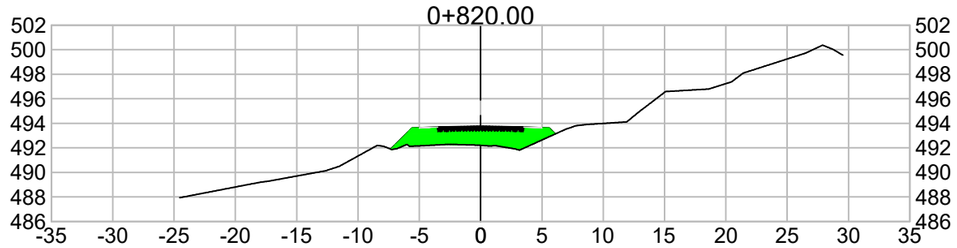
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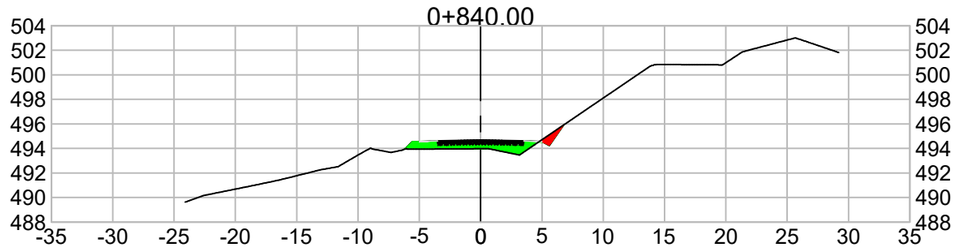
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ENGENHARIA

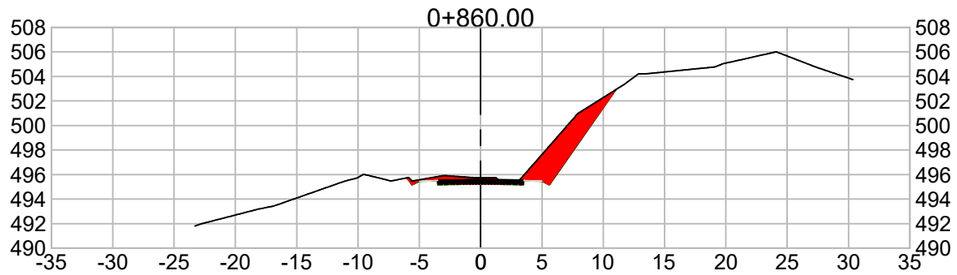
MUNICÍPIO DE NOVA ALVORADA - RS

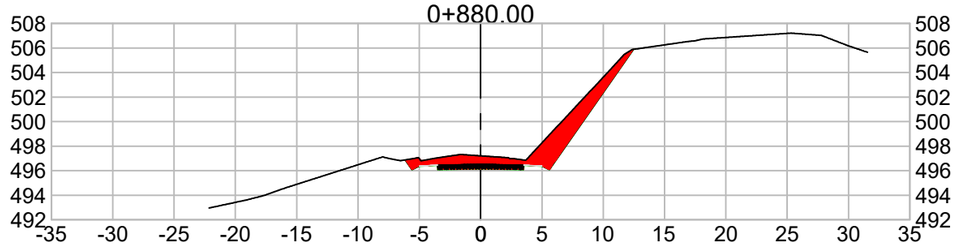
ESCALAS: 1/500	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: NOV/21	SEÇÕES TRANSVERSAIS	FOLHA 05.04

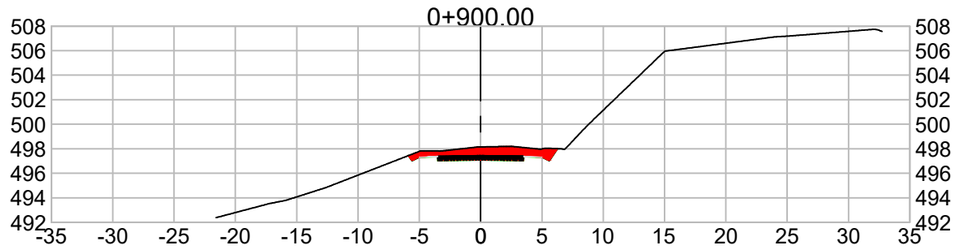


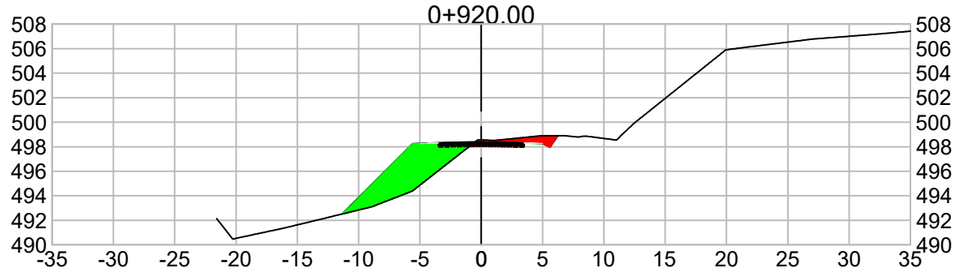


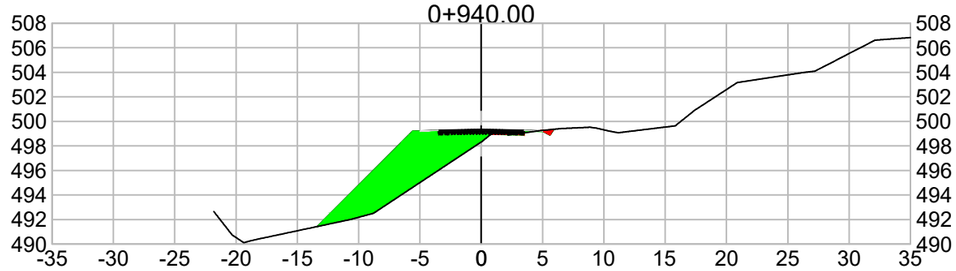


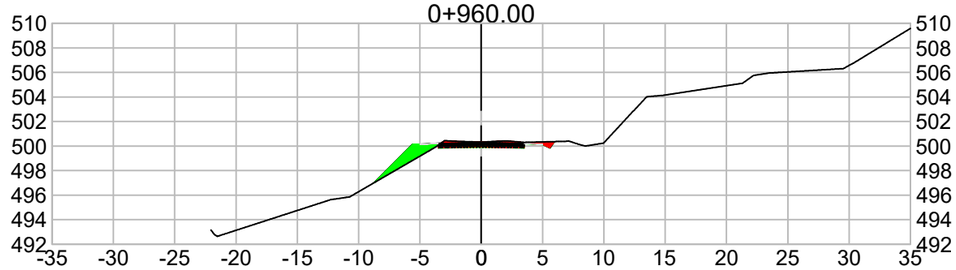


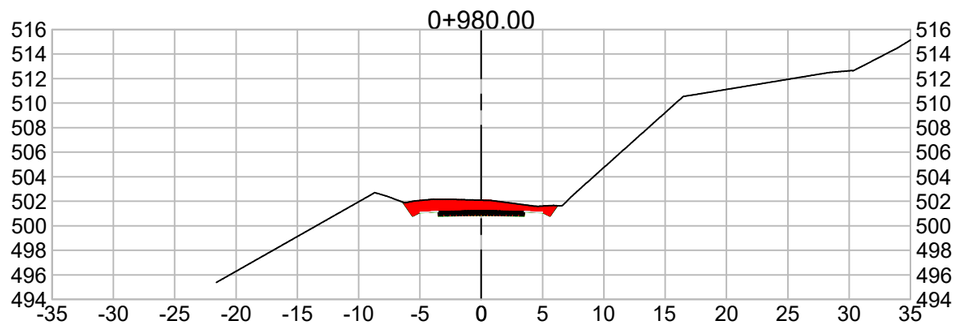


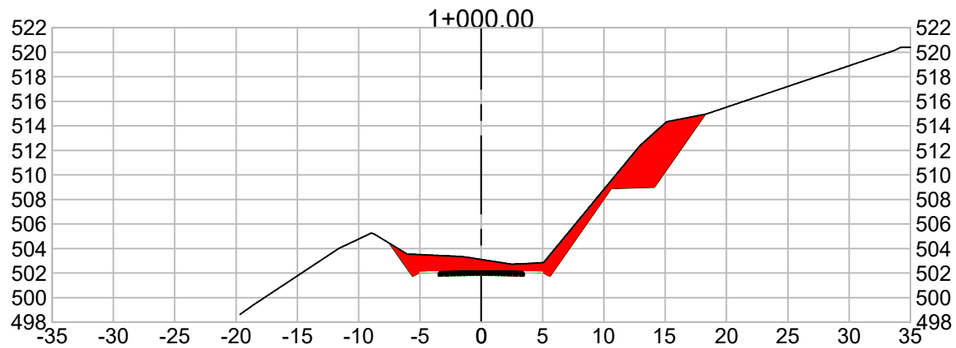










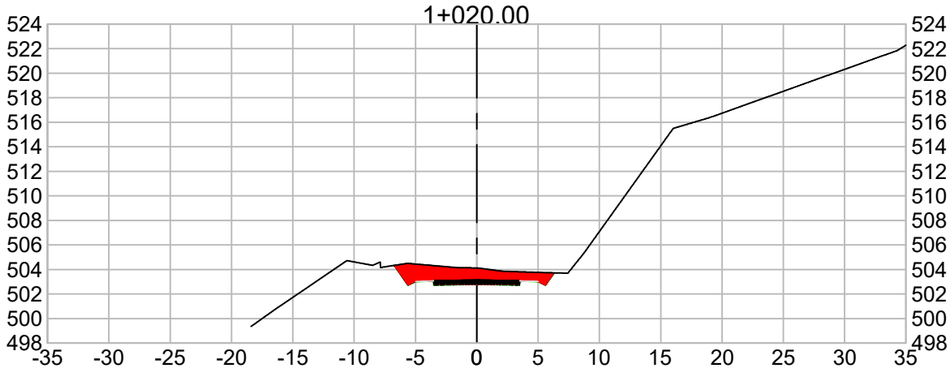


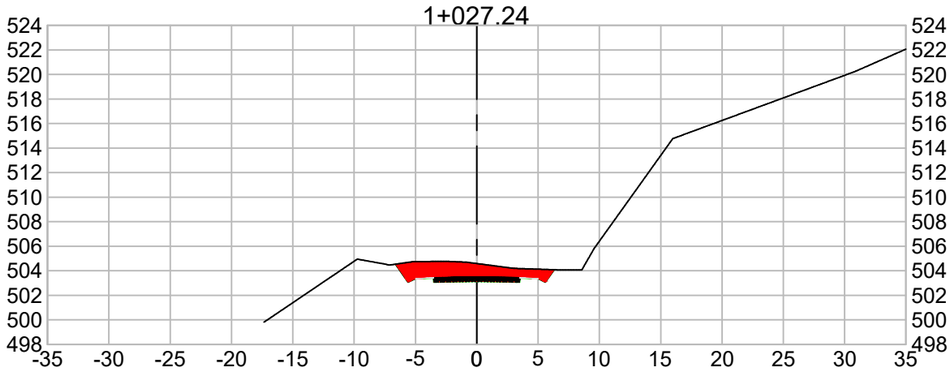
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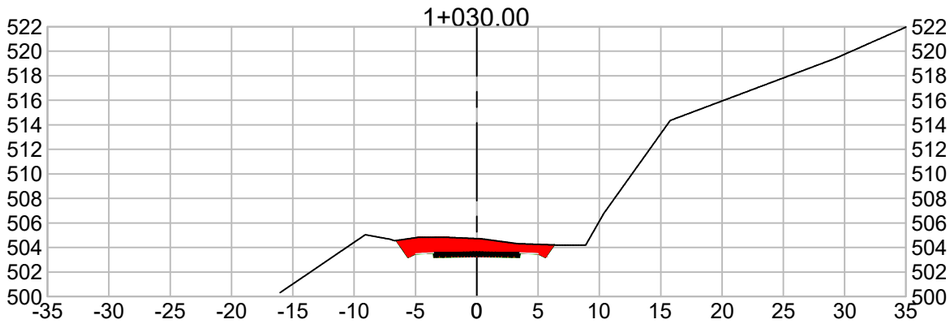
Serafini
ENGENHARIA

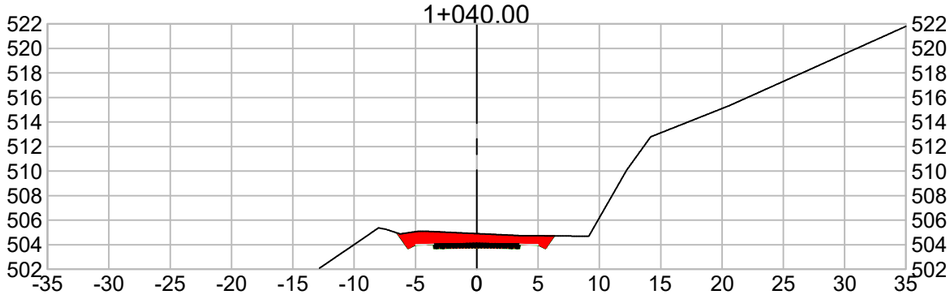
MUNICÍPIO DE NOVA ALVORADA - RS

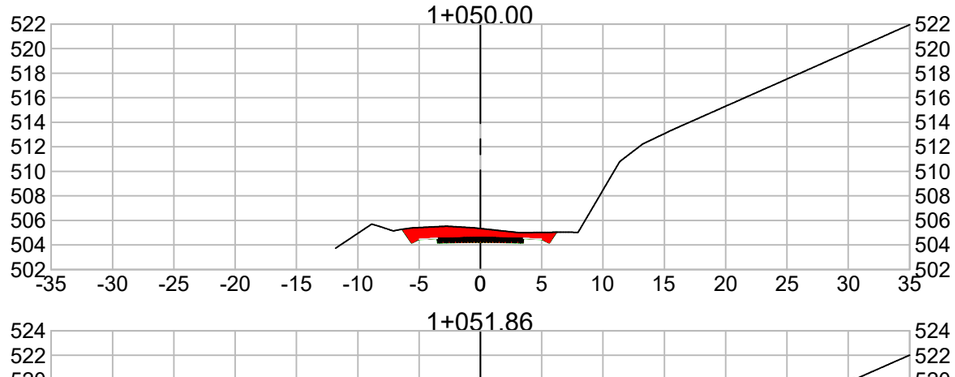
ESCALAS: 1/500	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: NOV/21	SEÇÕES TRANSVERSAIS	FOLHA 05.05

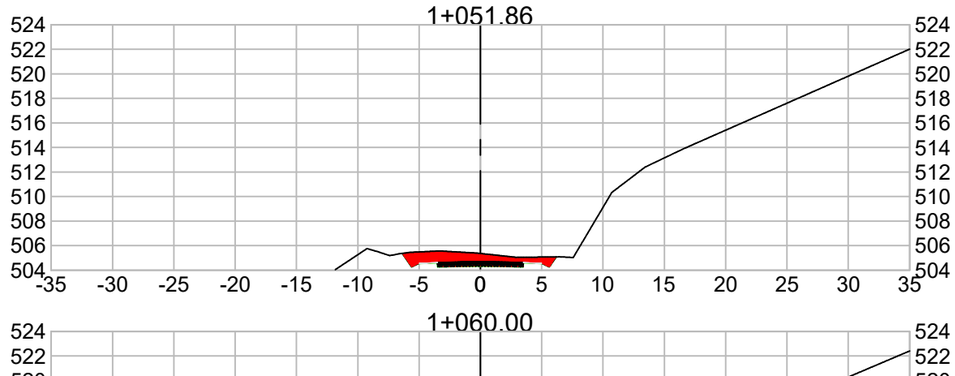


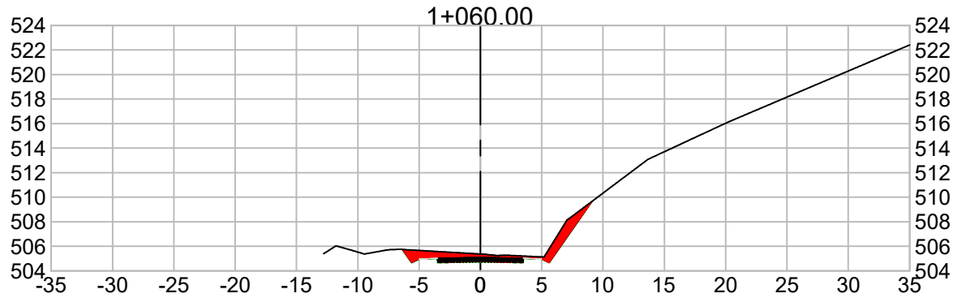


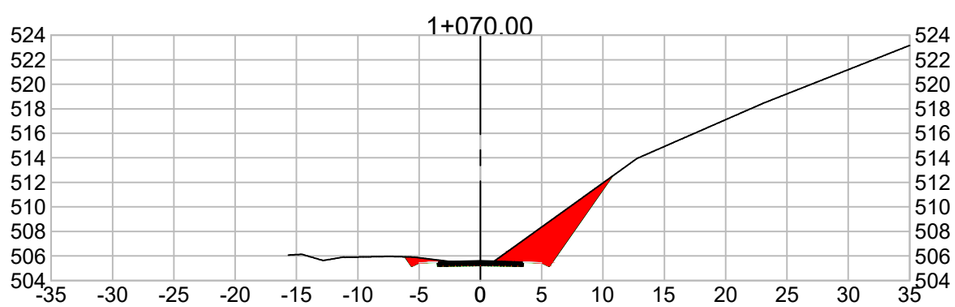


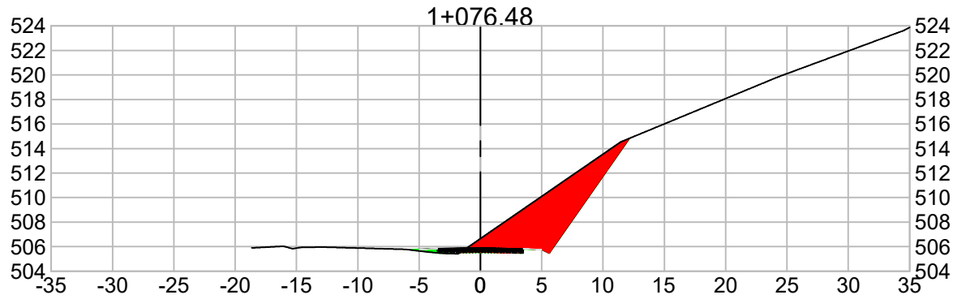












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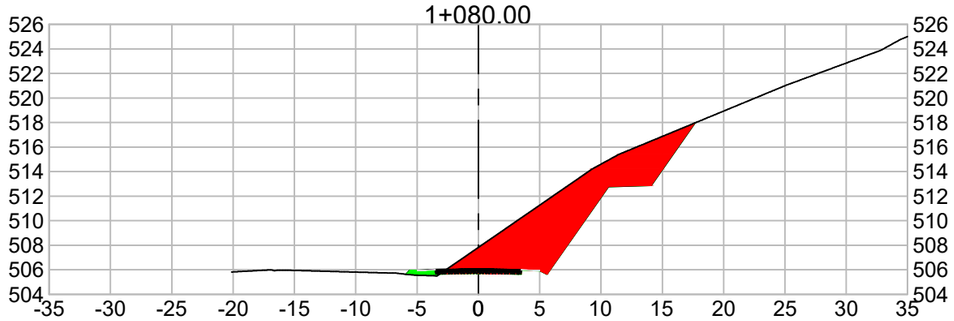
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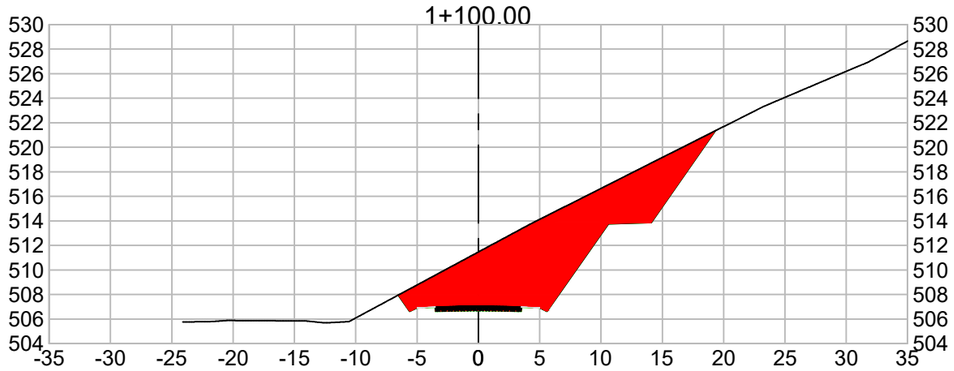
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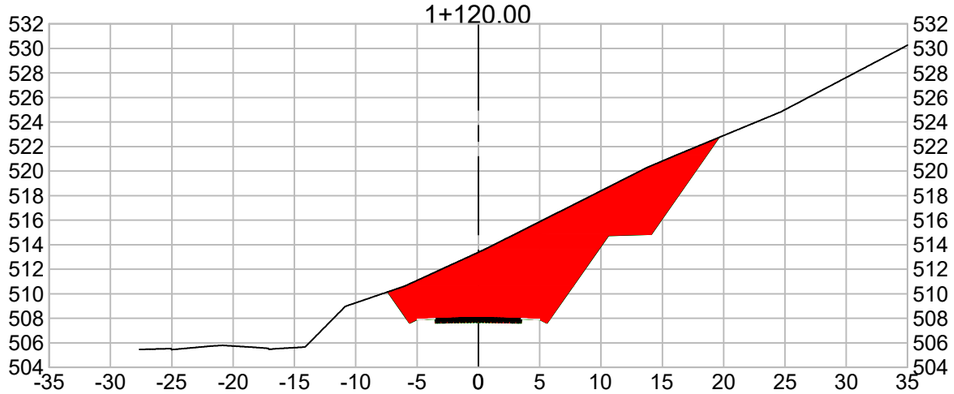
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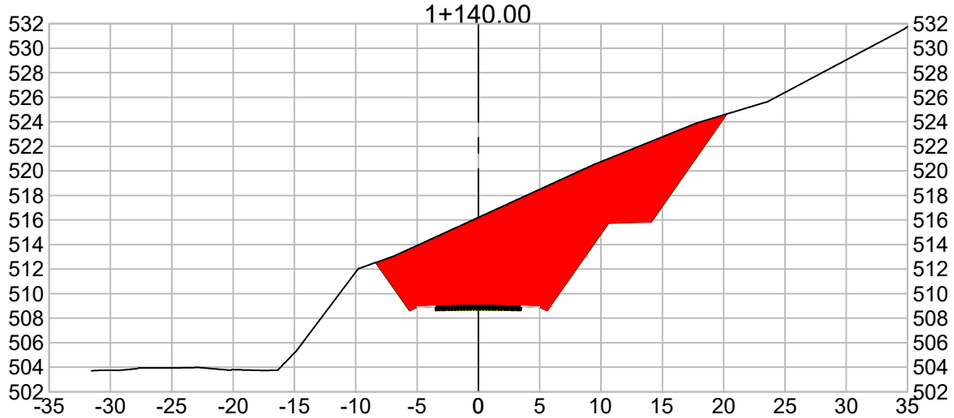
MUNICÍPIO DE NOVA ALVORADA - RS

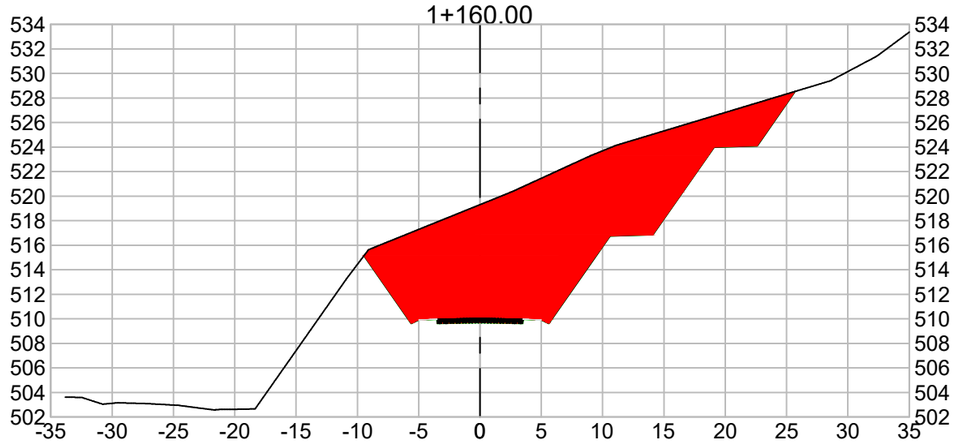
ESCALAS: 1/500	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: NOV/21	SEÇÕES TRANSVERSAIS	FOLHA 05.06

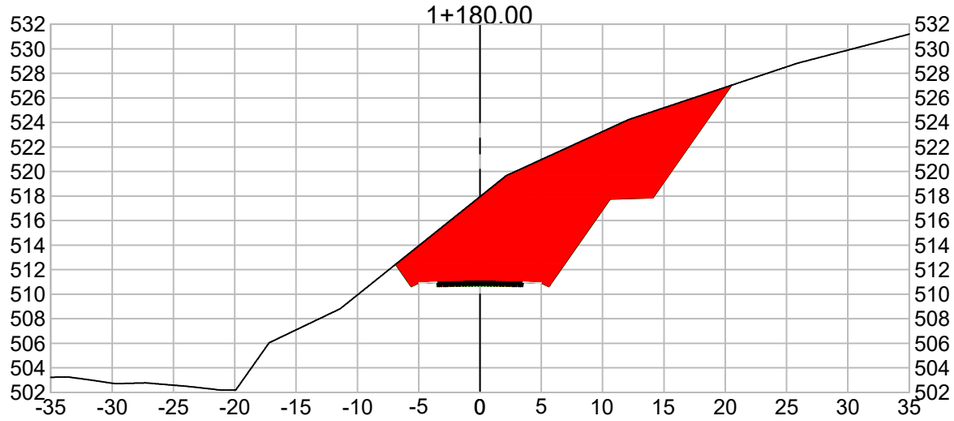


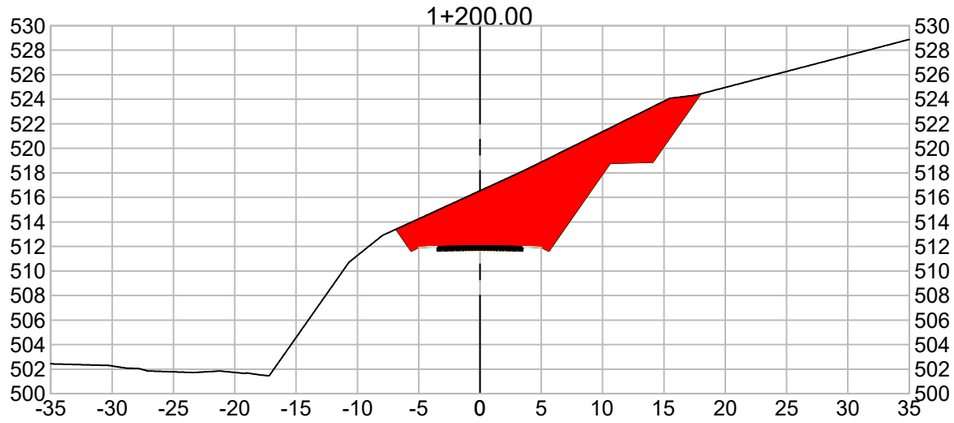












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MUNICÍPIO DE NOVA ALVORADA - RS

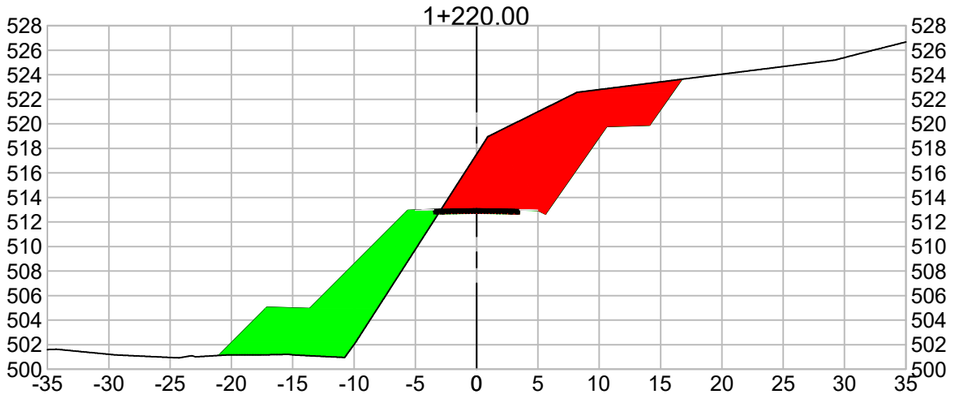
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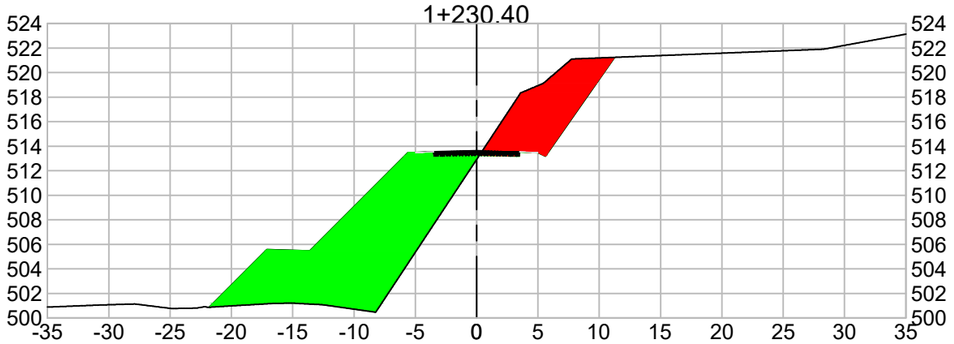
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

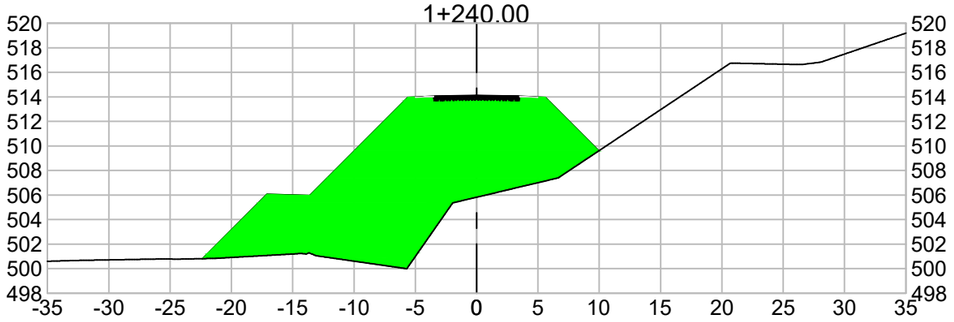
DATA: NOV/21

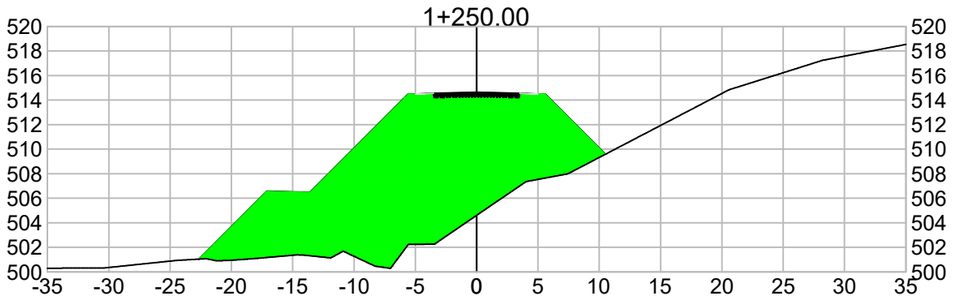
SEÇÕES TRANSVERSAIS

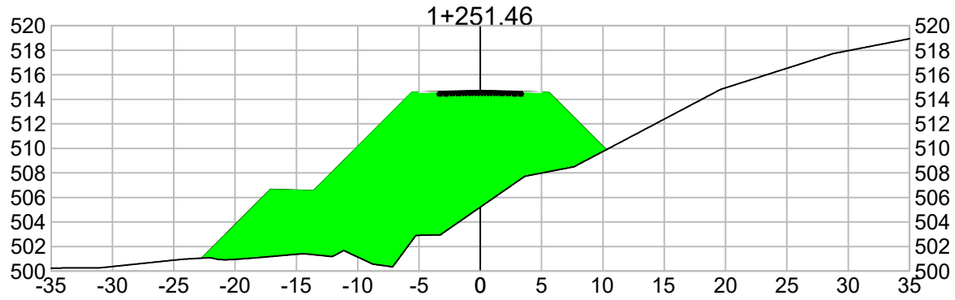
FOLHA 05.07

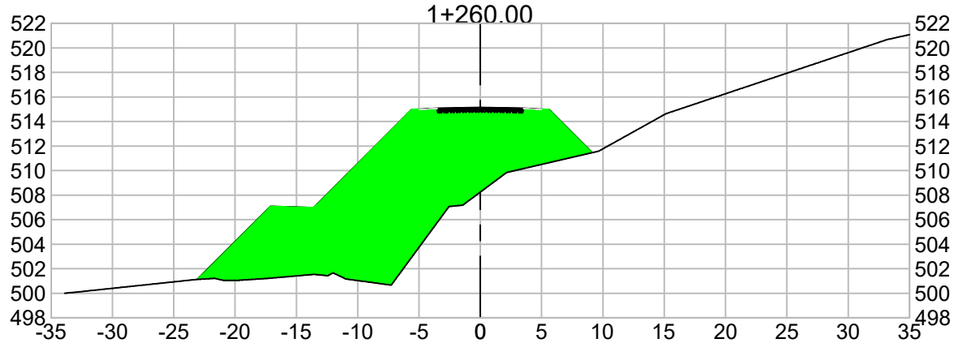


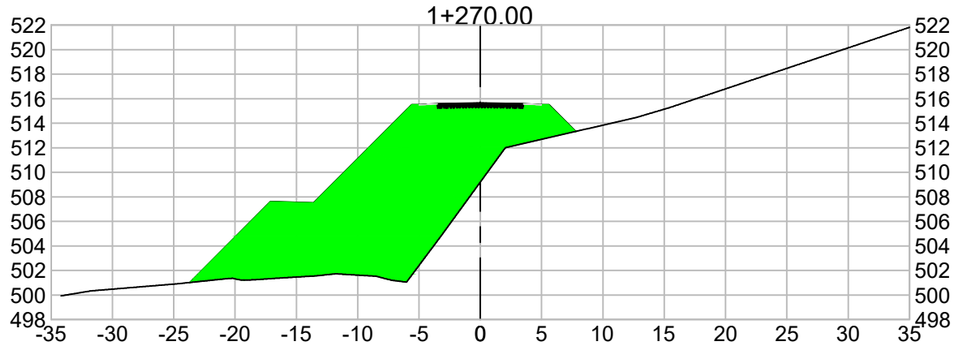


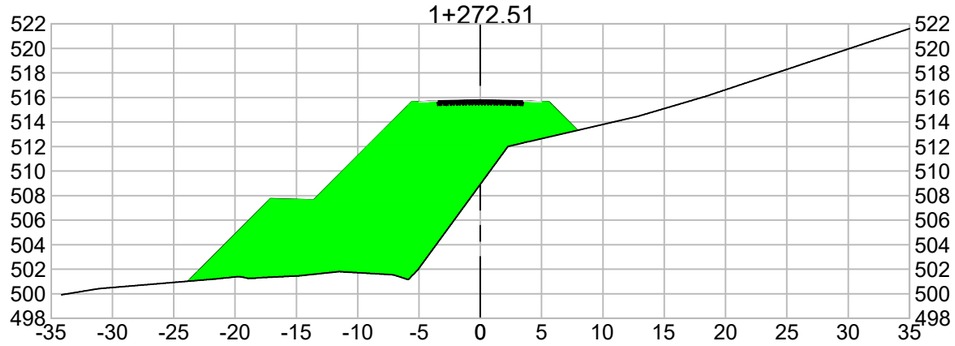










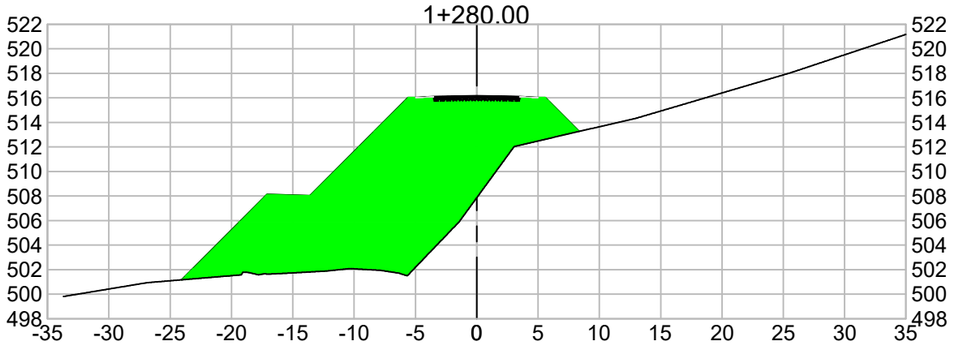


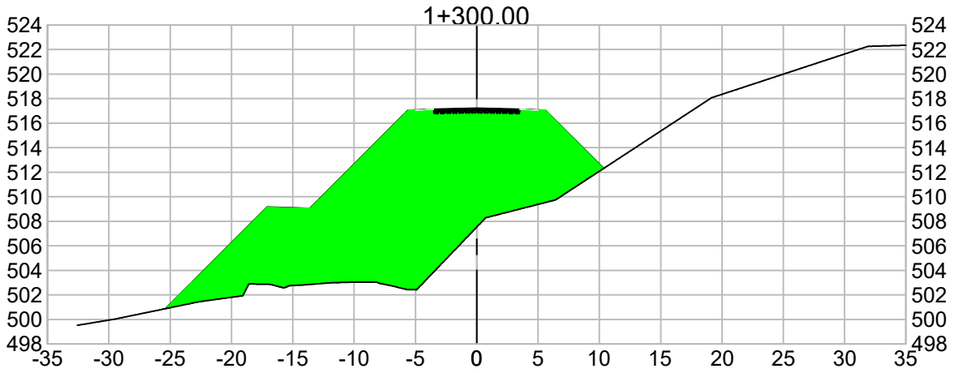
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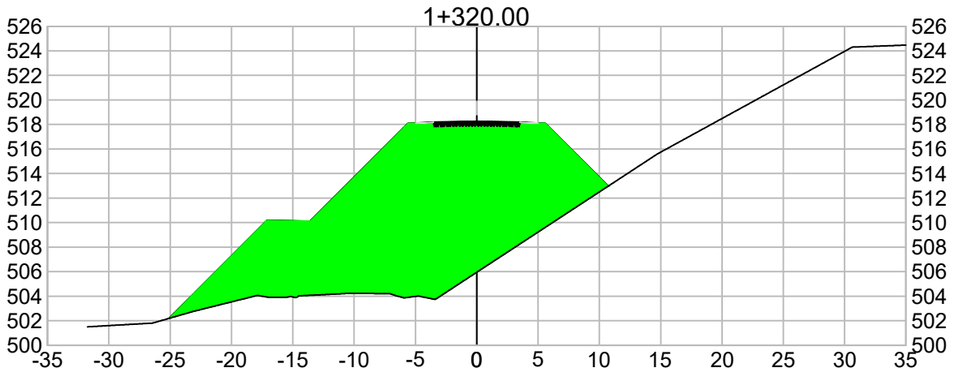
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ENGENHARIA

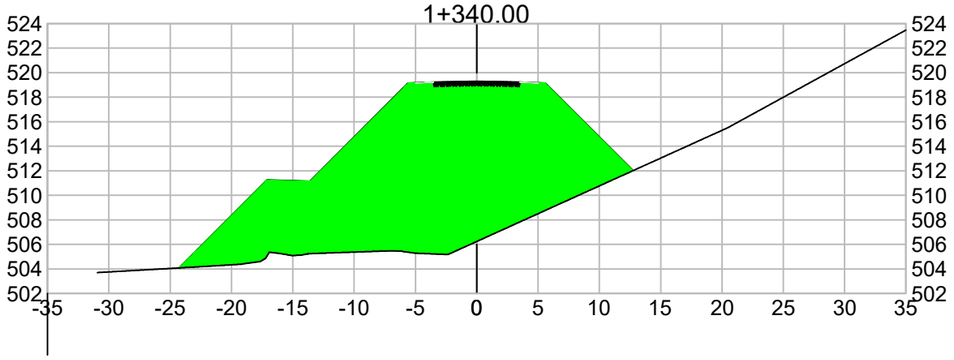
MUNICÍPIO DE NOVA ALVORADA - RS

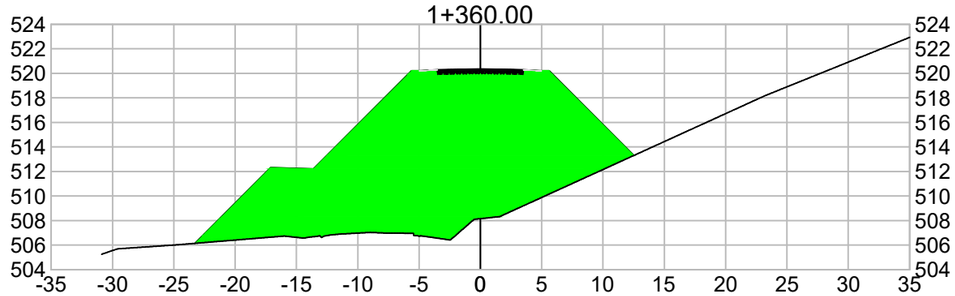
ESCALAS: 1/500	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: NOV/21	SEÇÕES TRANSVERSAIS	FOLHA 05.08

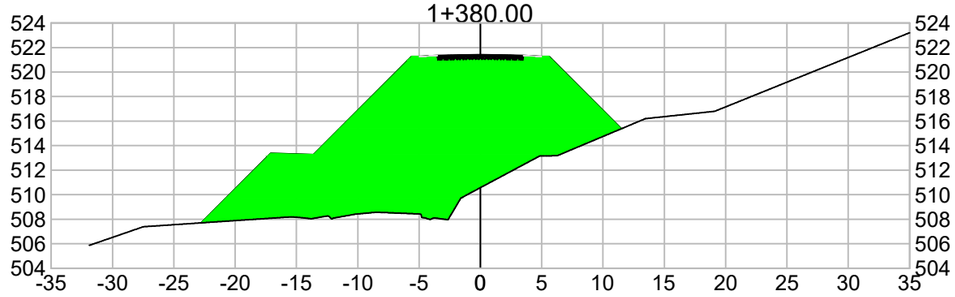


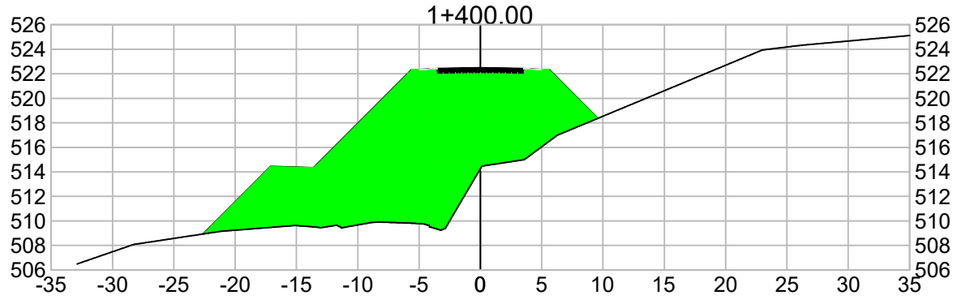


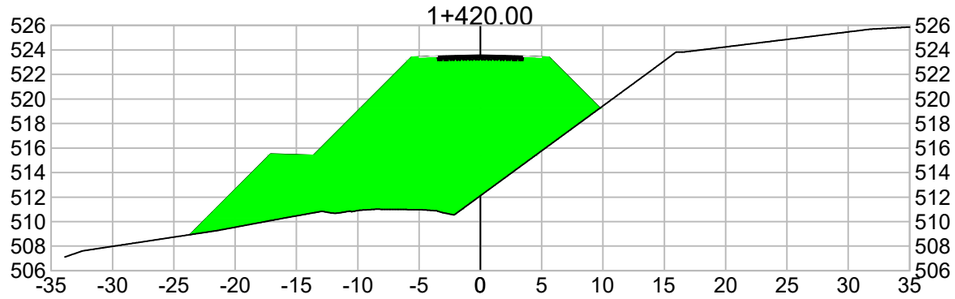


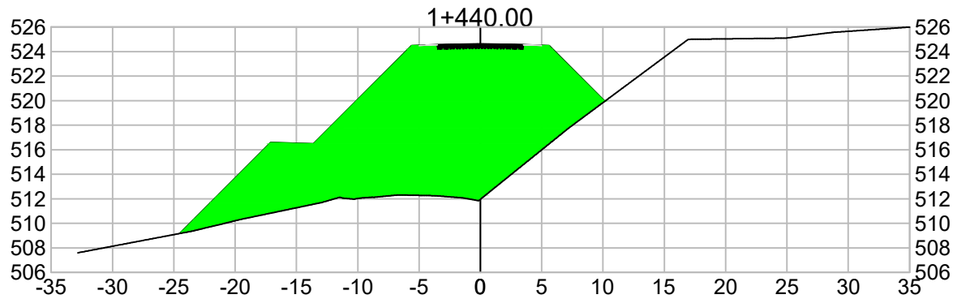












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MUNICÍPIO DE NOVA ALVORADA - RS

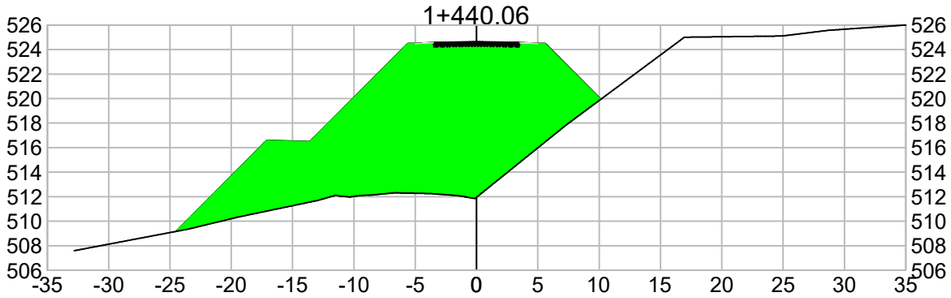
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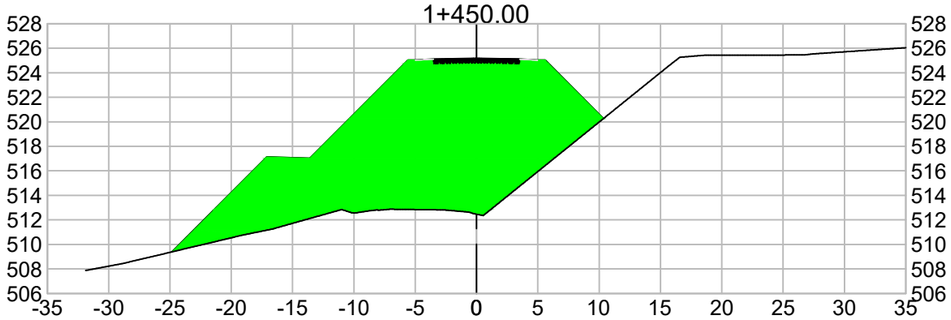
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

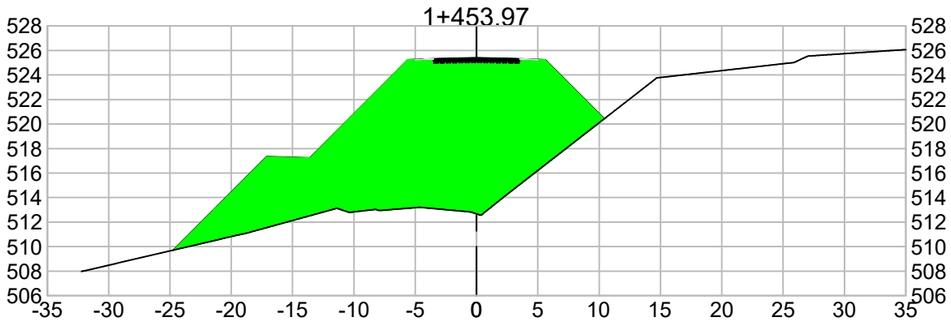
DATA: NOV/21

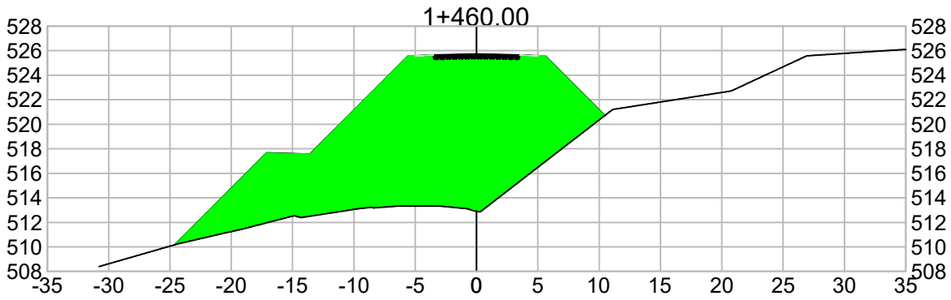
SEÇÕES TRANSVERSAIS

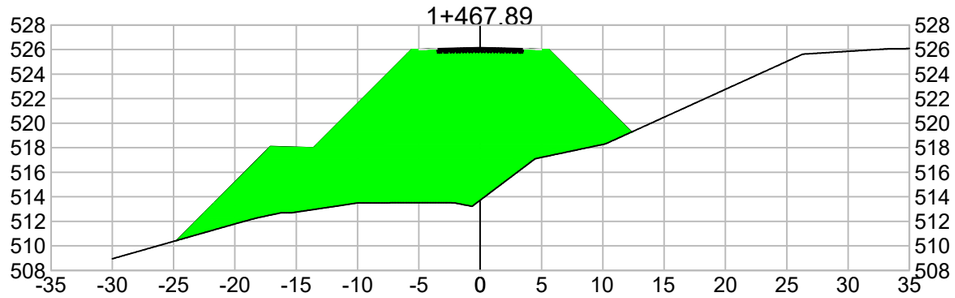
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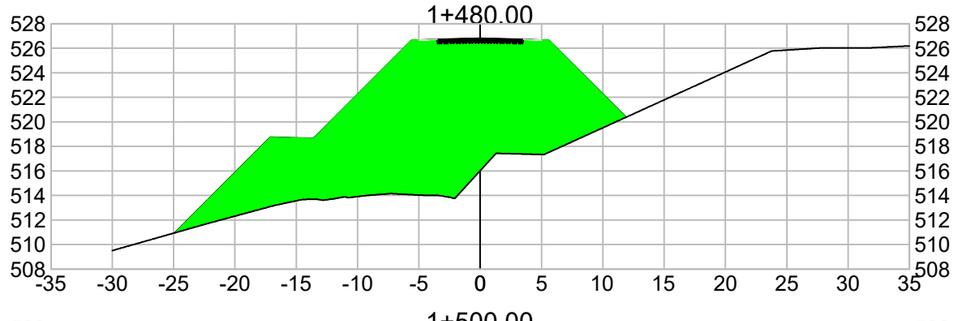


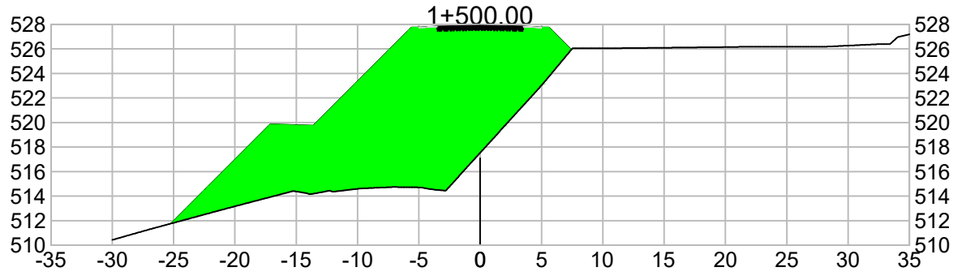


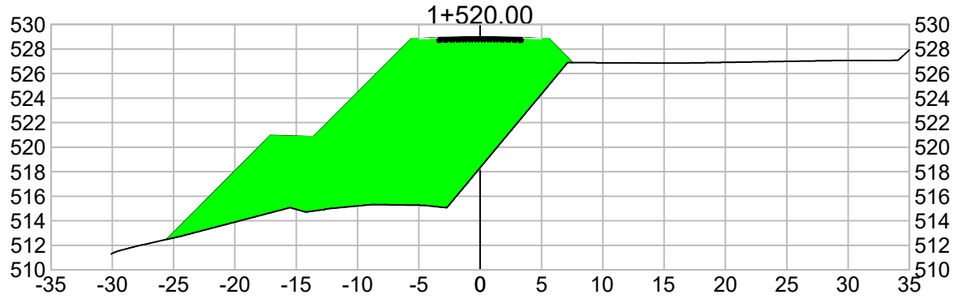












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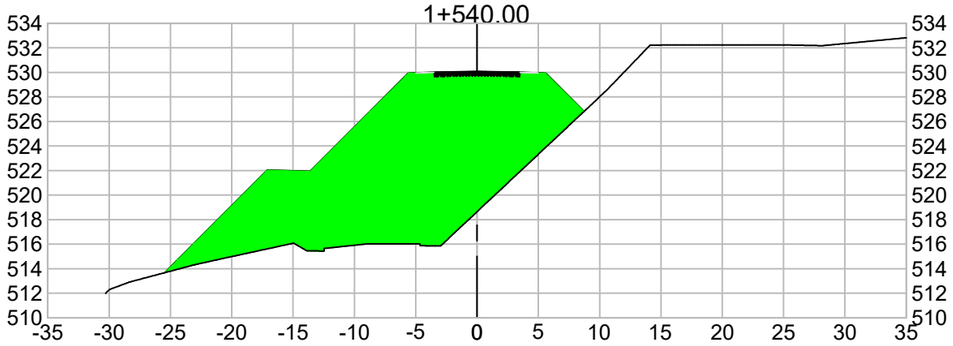
ESCALAS: 1/500

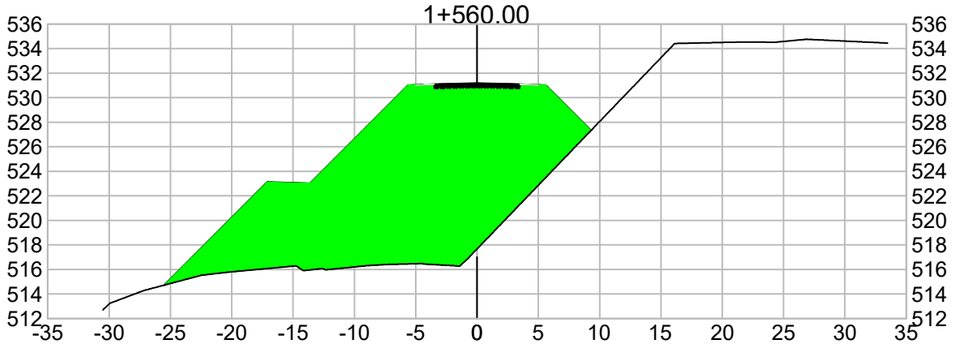
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

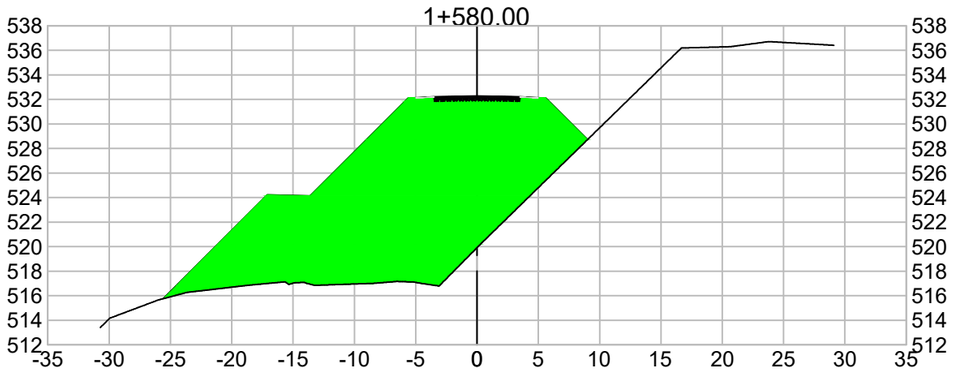
DATA: NOV/21

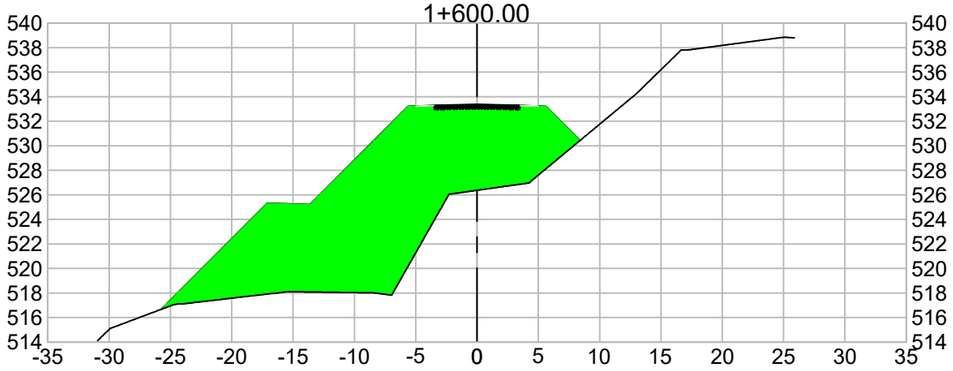
SEÇÕES TRANSVERSAIS

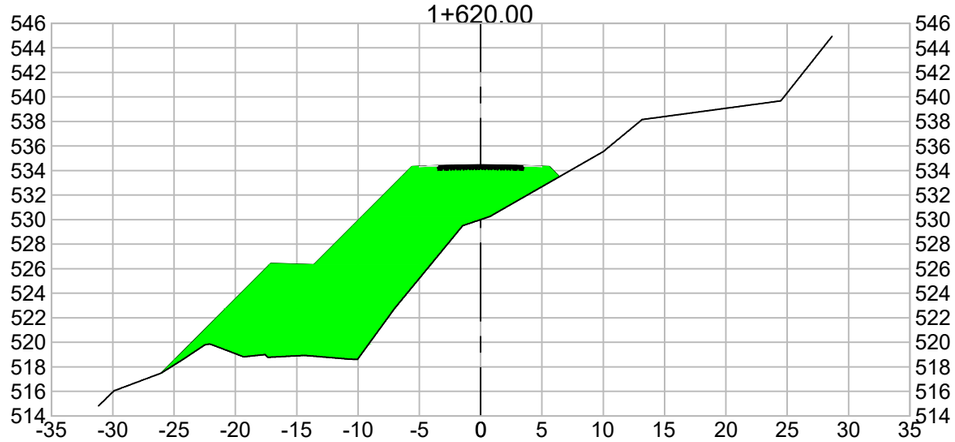
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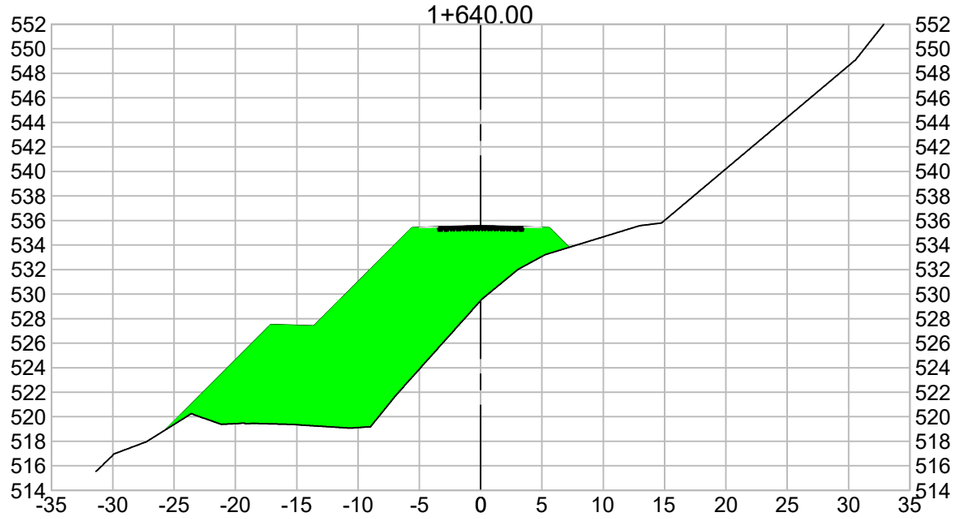


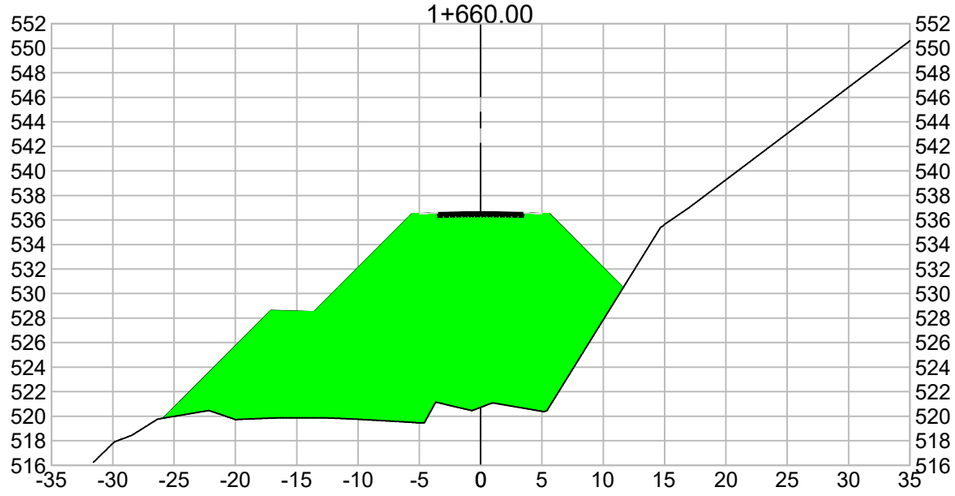












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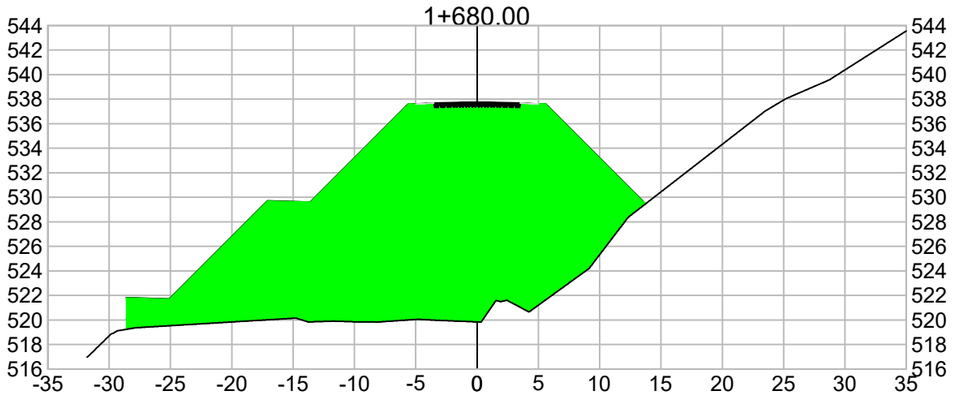
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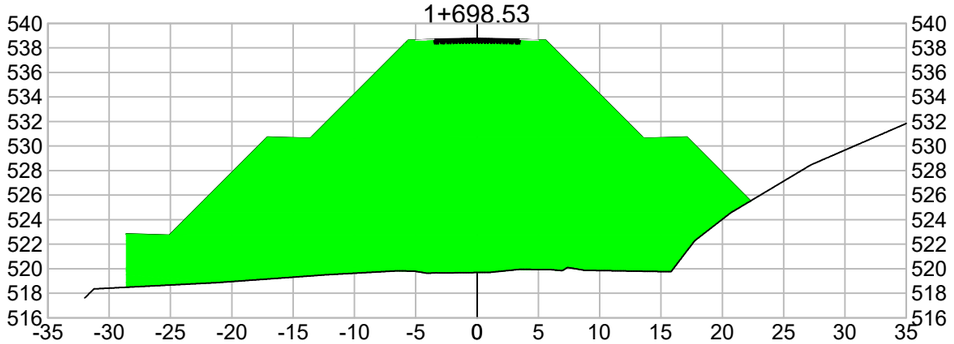
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

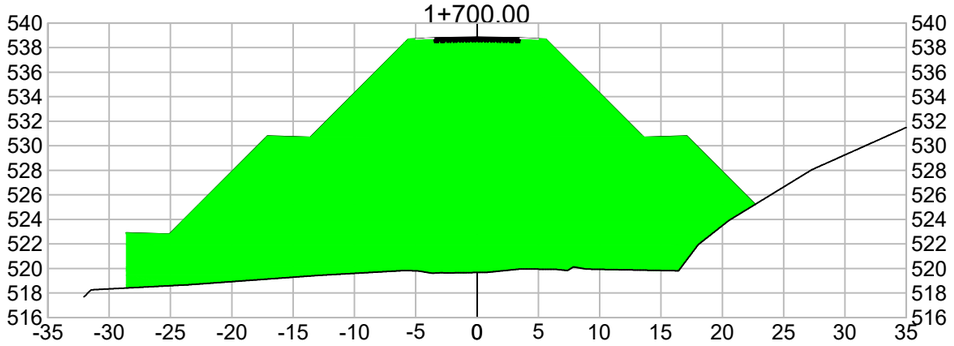
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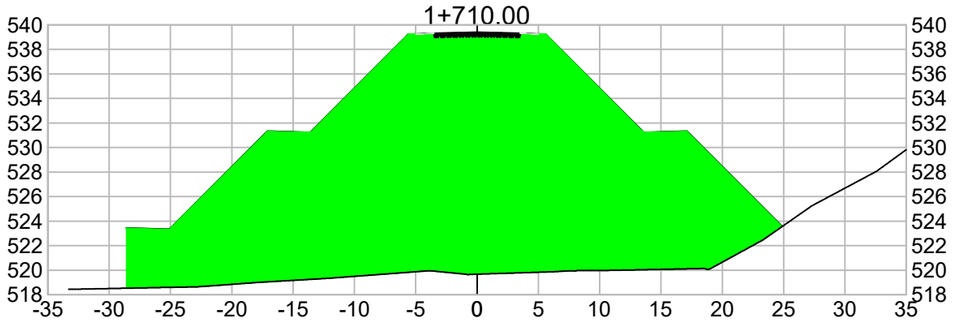
SEÇÕES TRANSVERSAIS

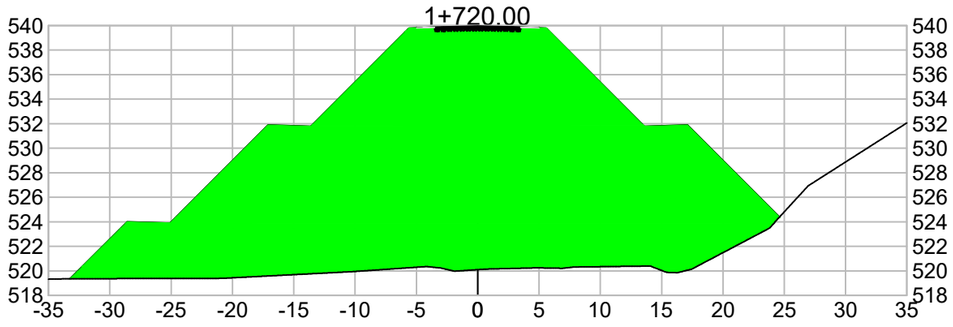
FOLHA 05.11

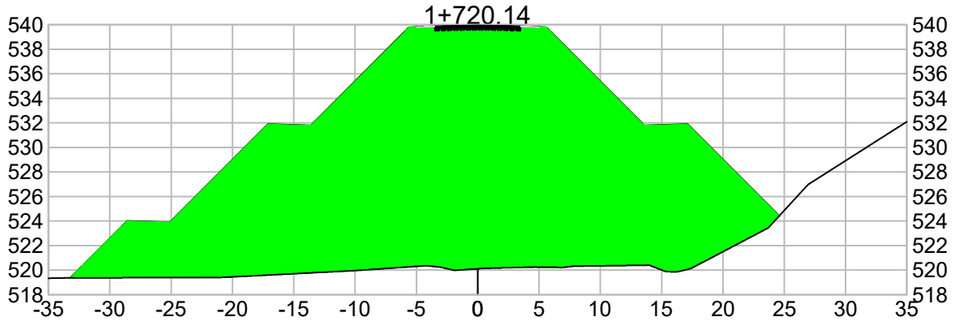


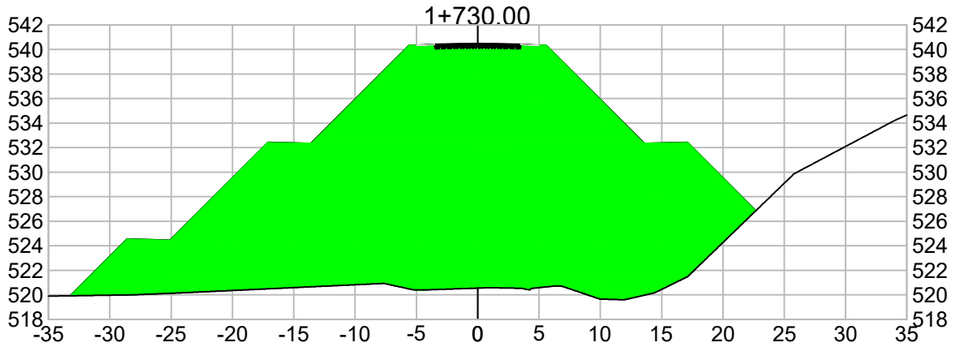


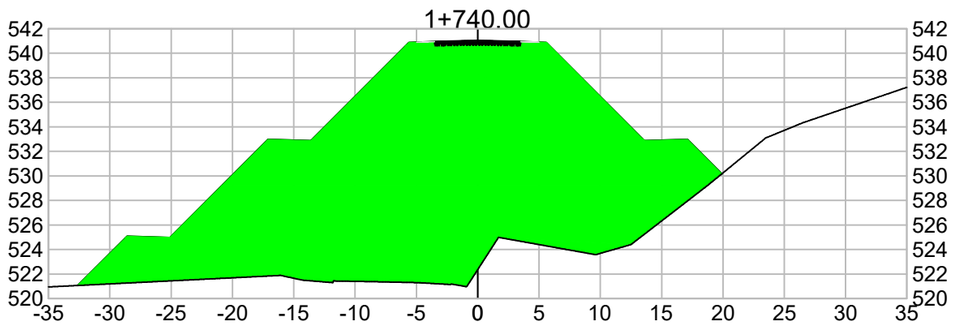












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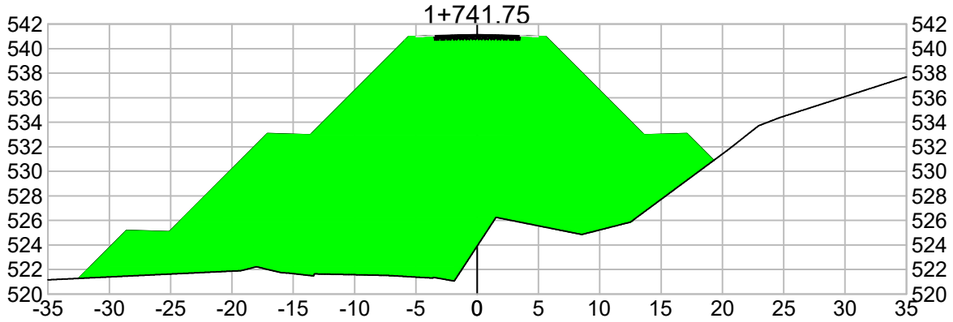
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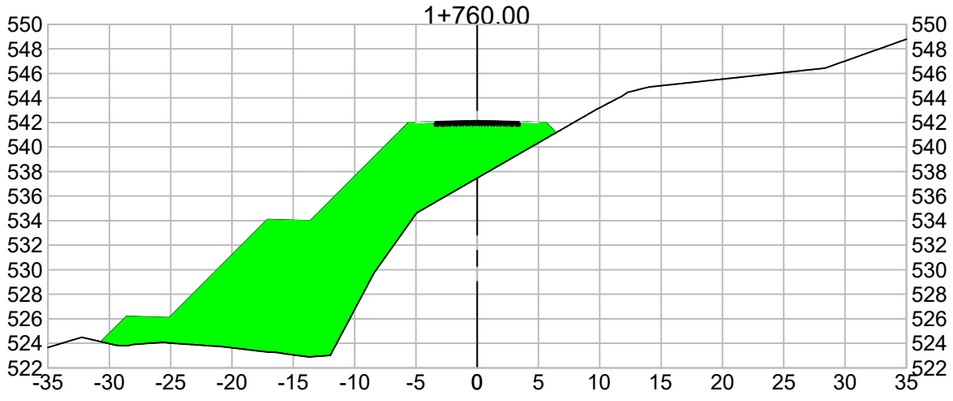
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

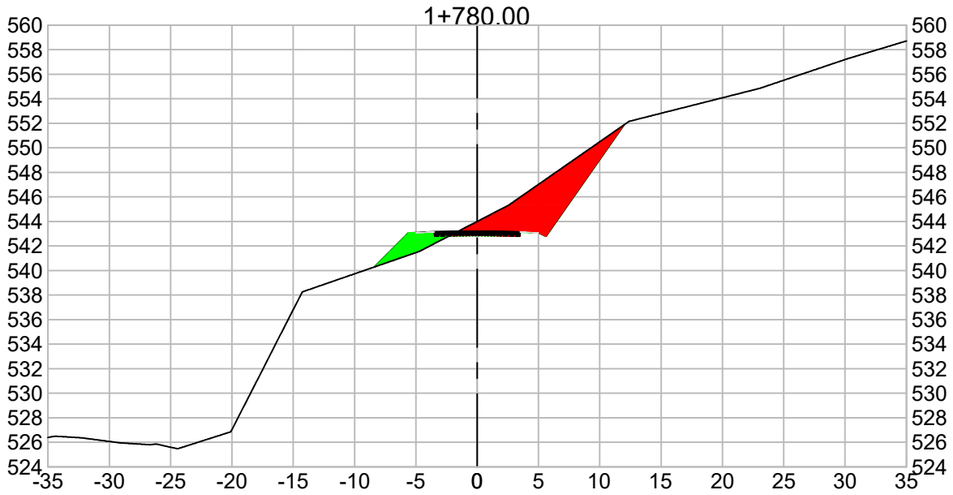
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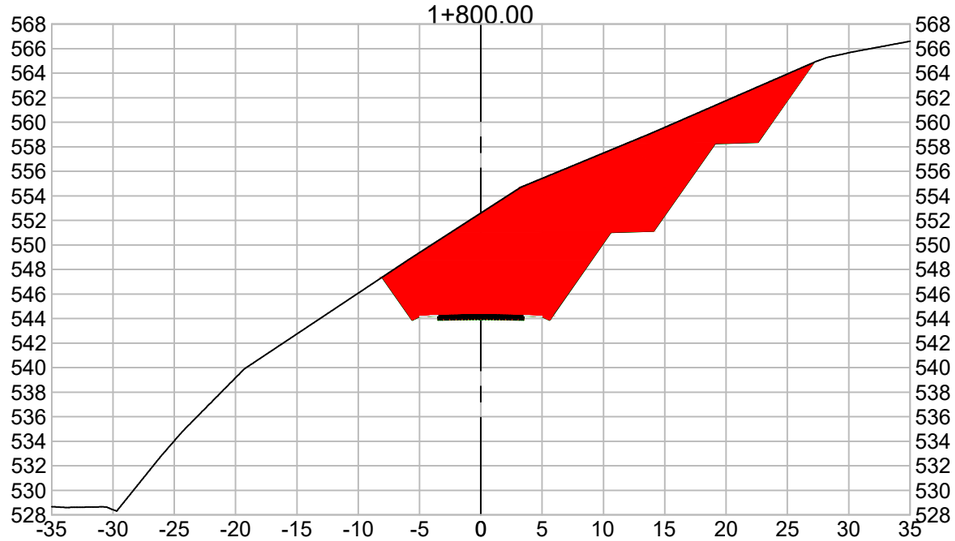
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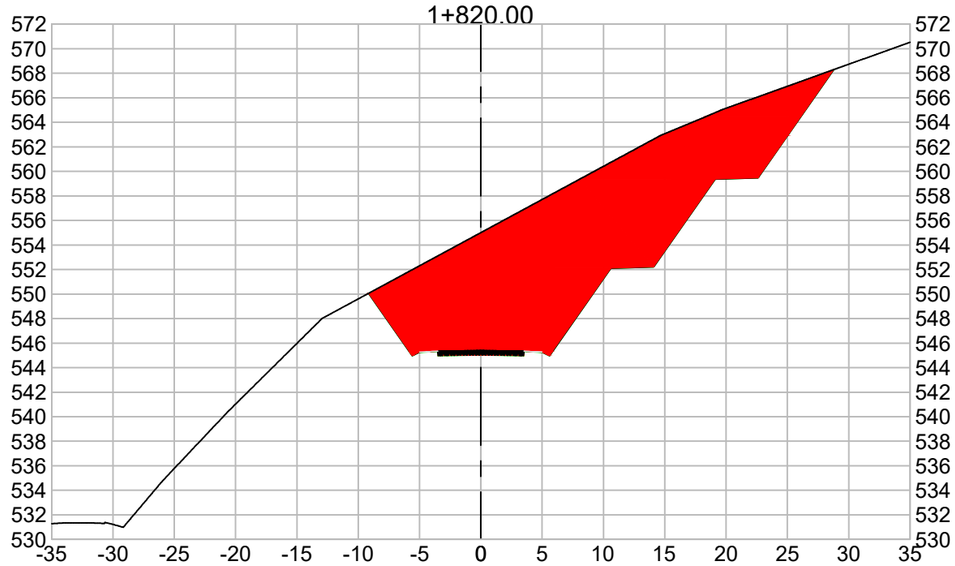
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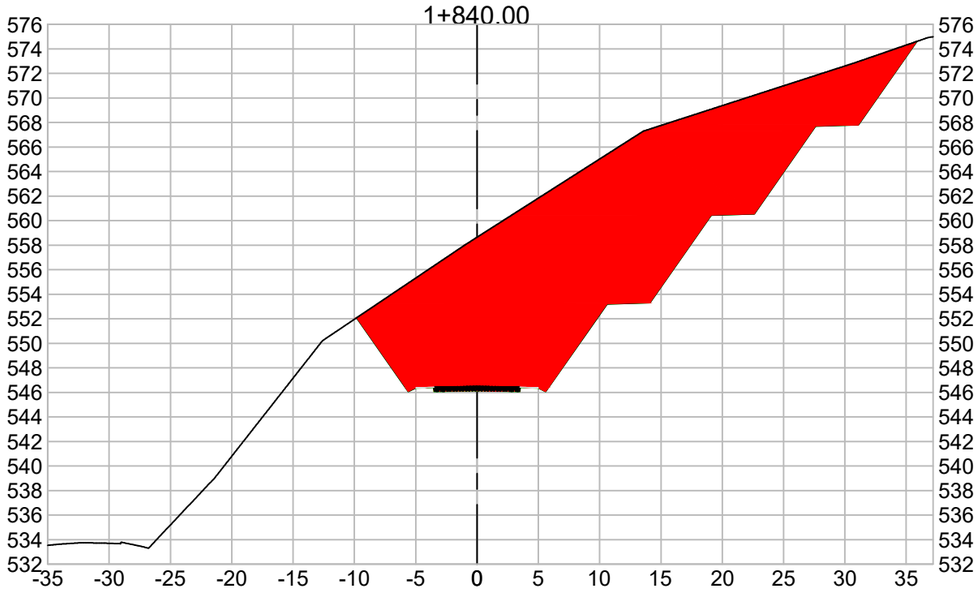
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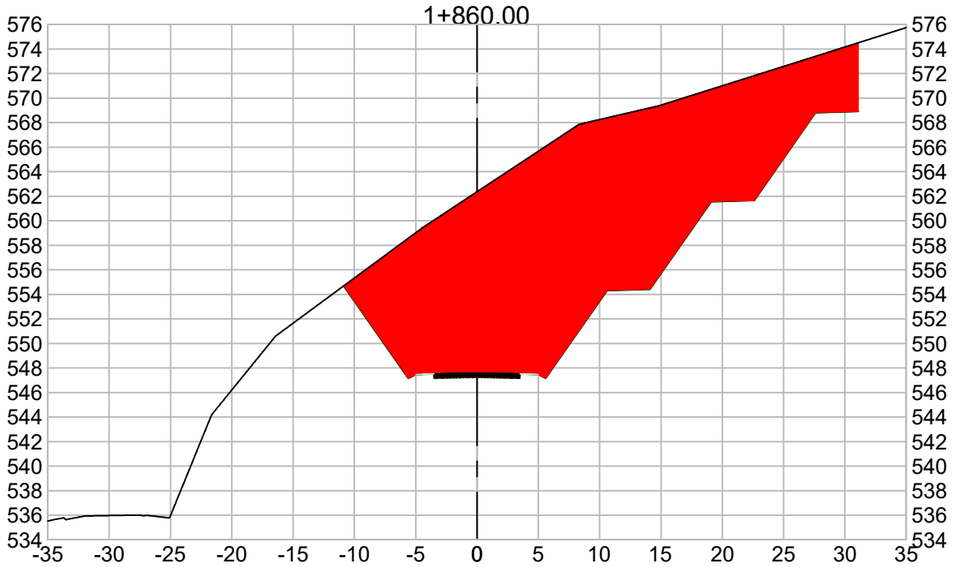
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Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

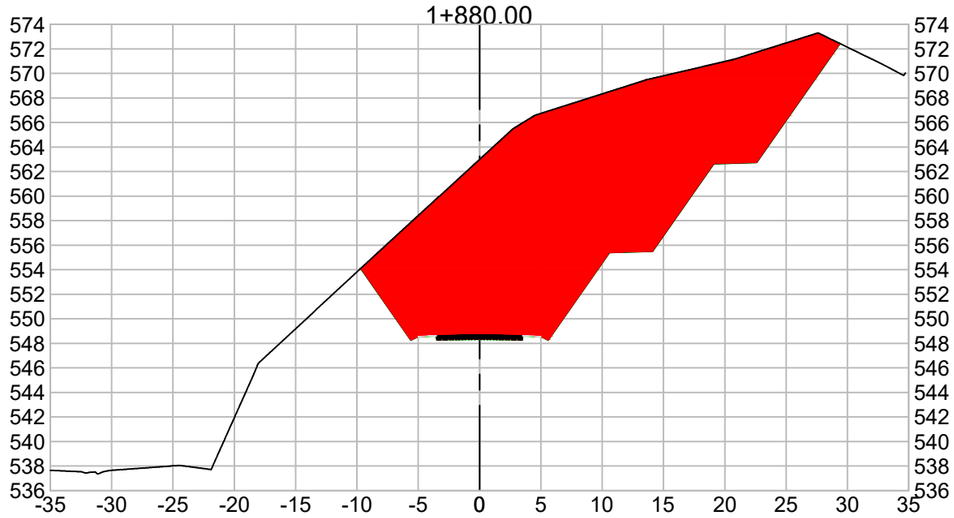
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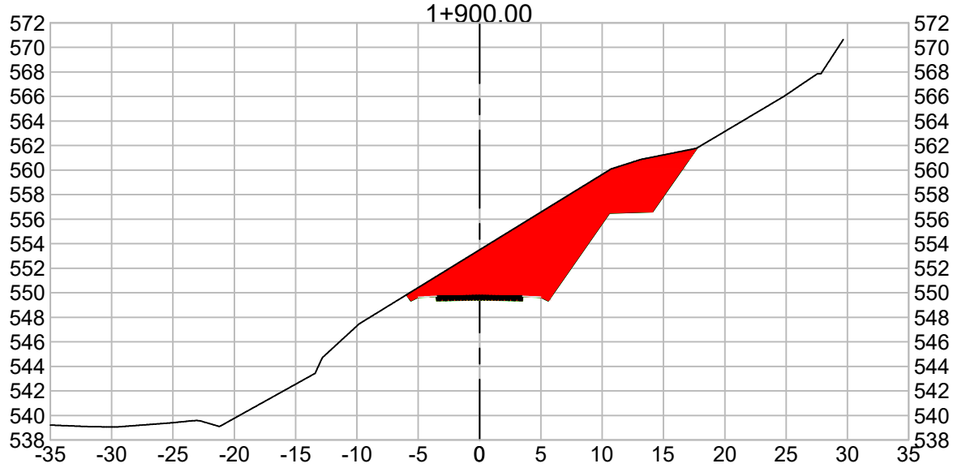
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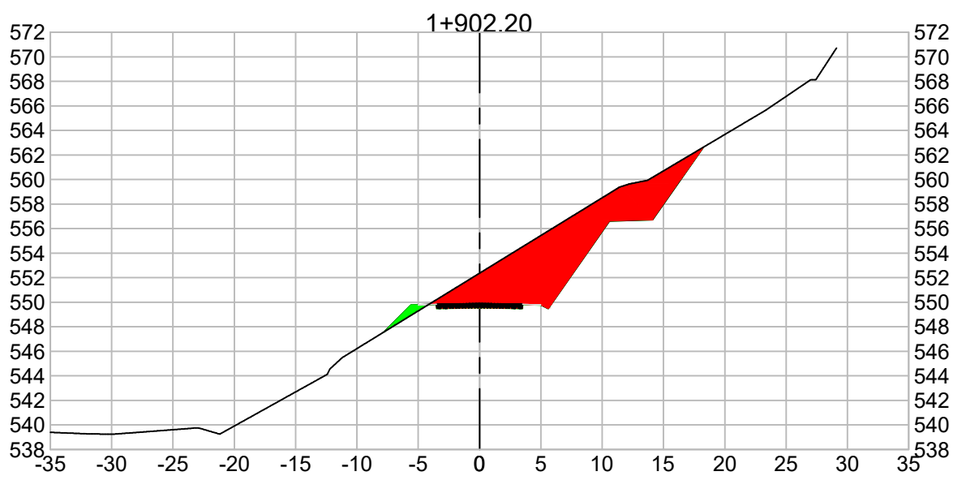
FOLHA 05.13











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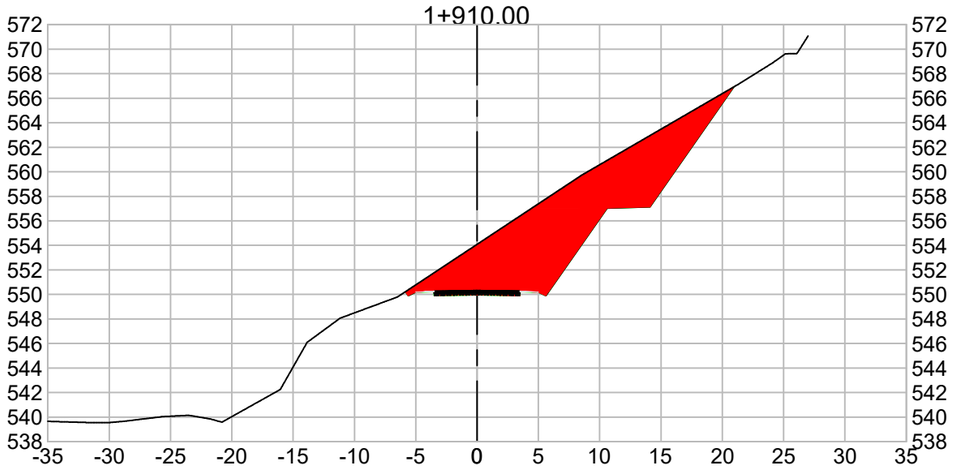
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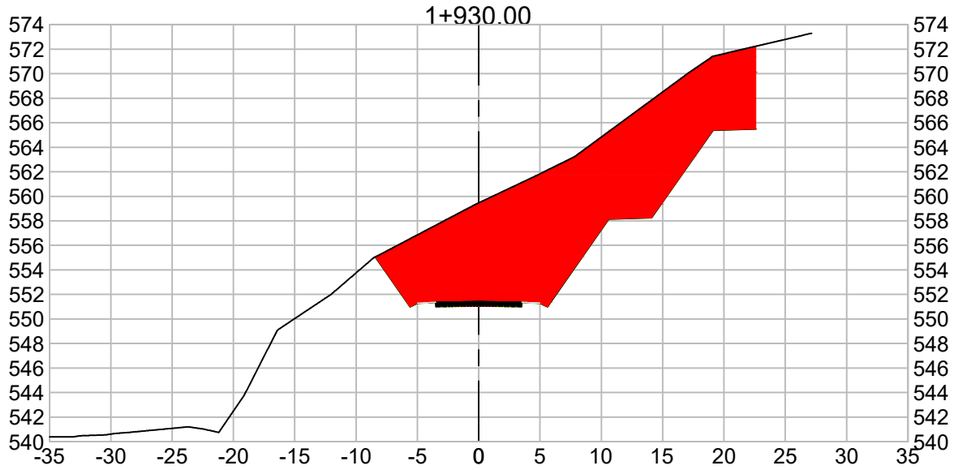
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Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

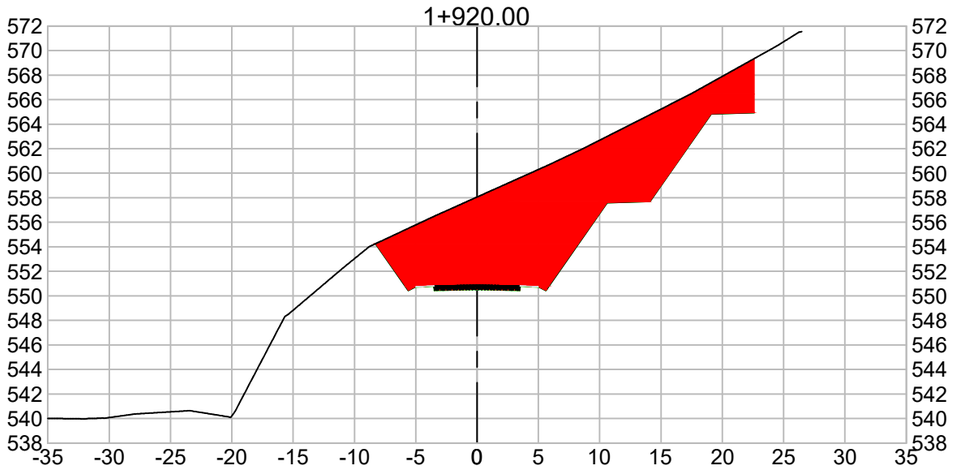
DATA: NOV/21

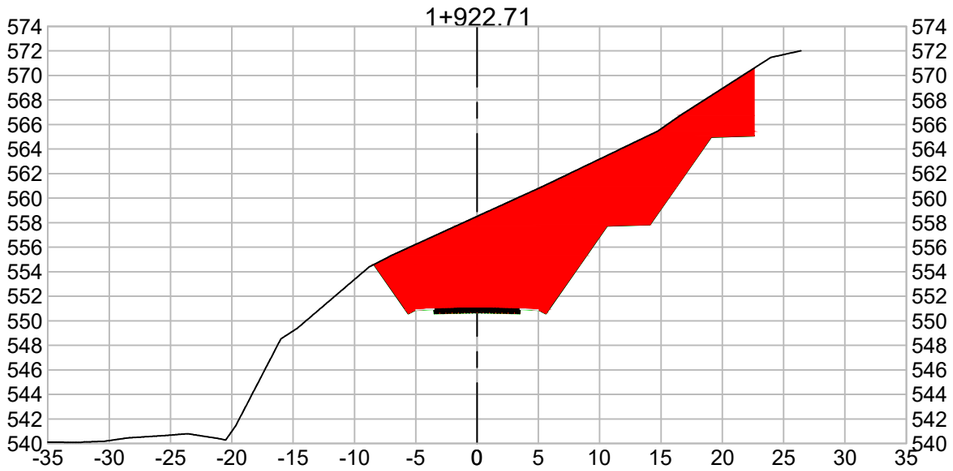
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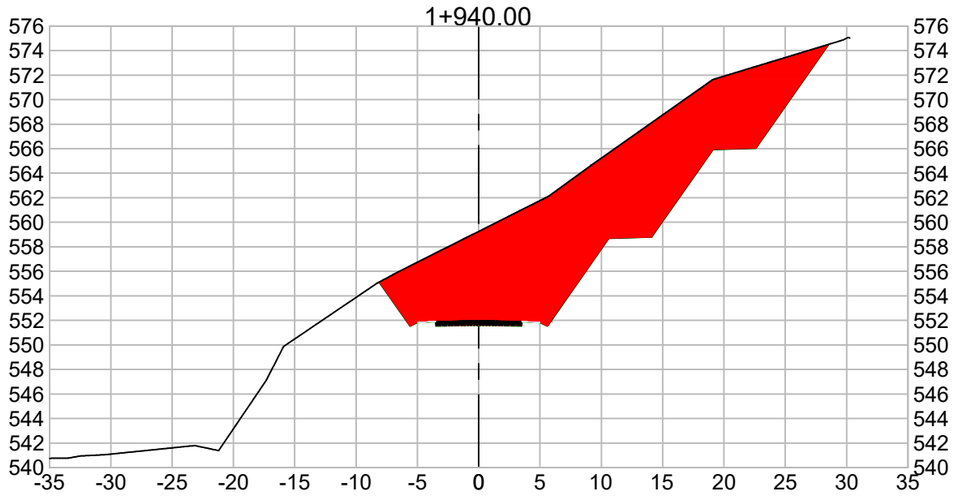
FOLHA 05.14

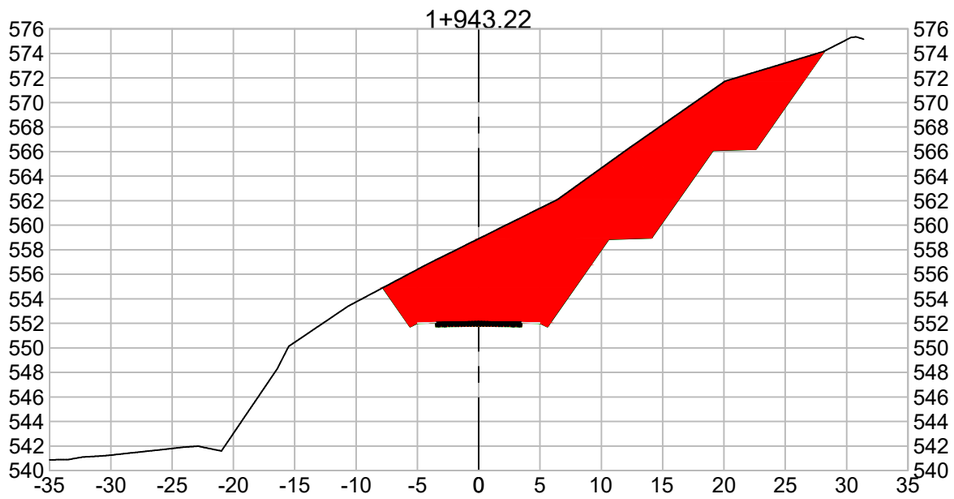












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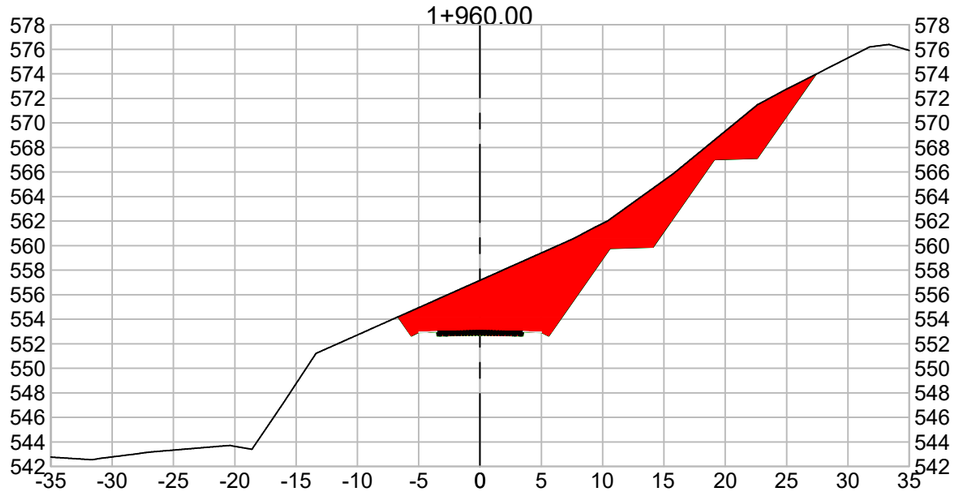
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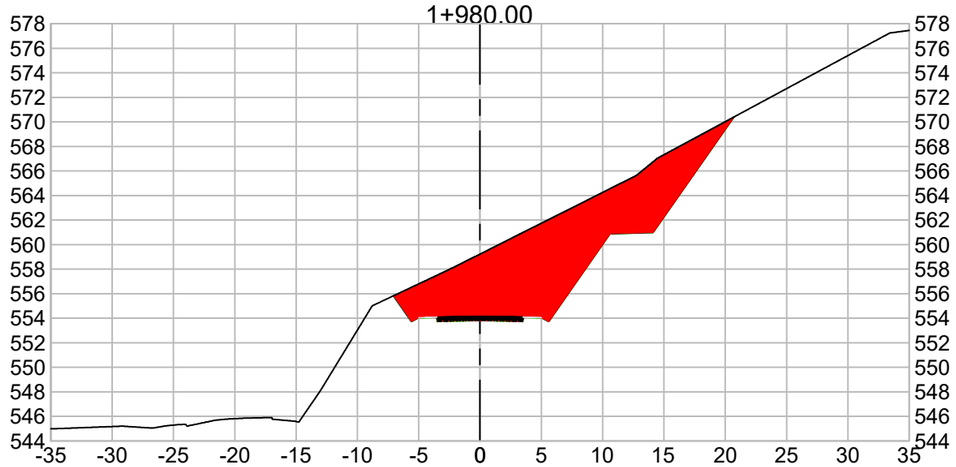
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

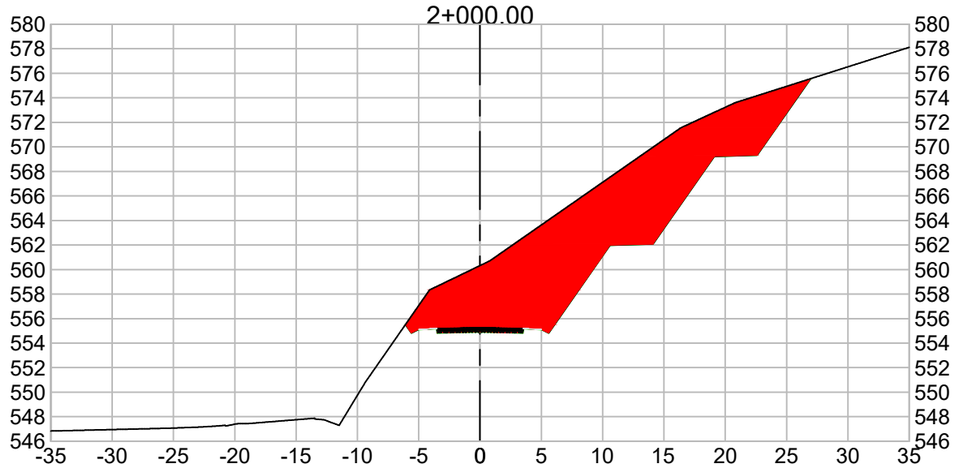
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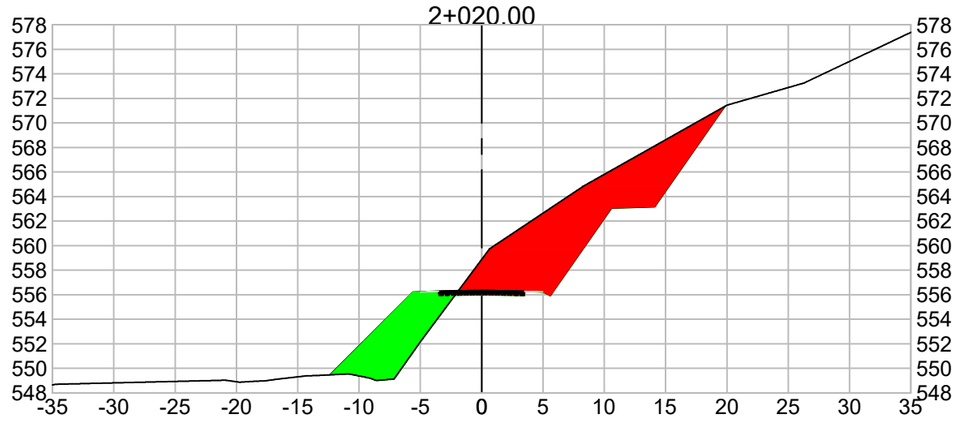
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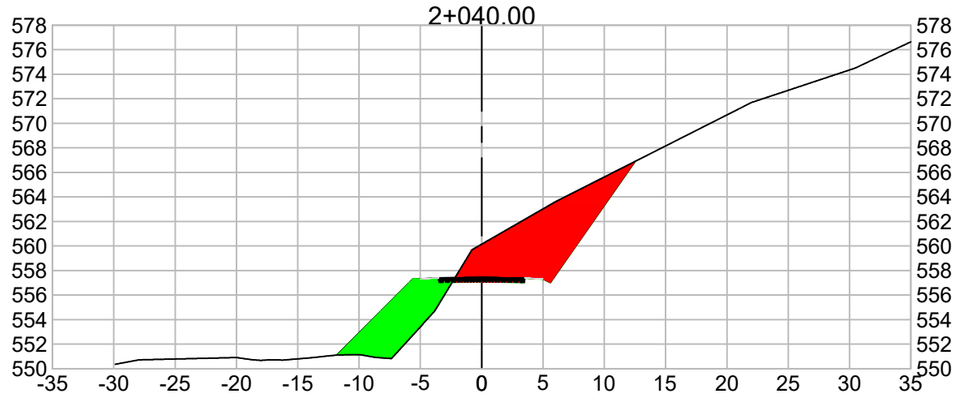
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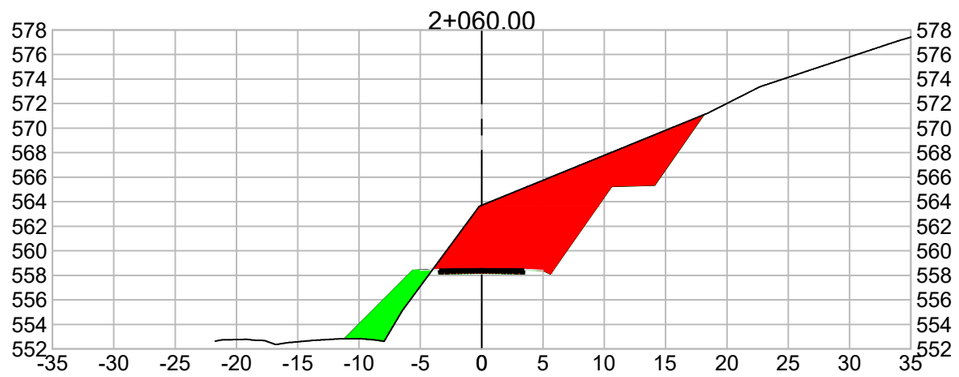












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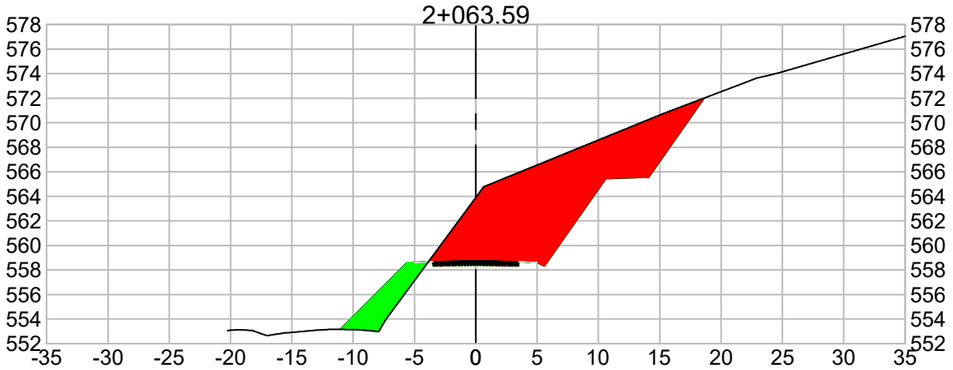
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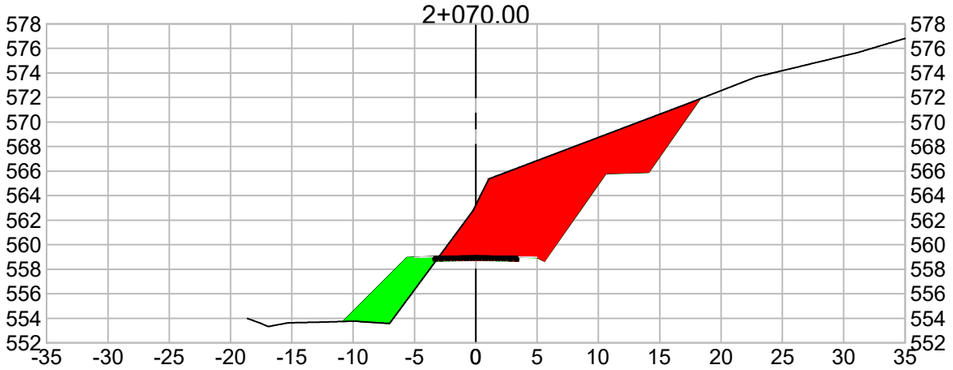
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

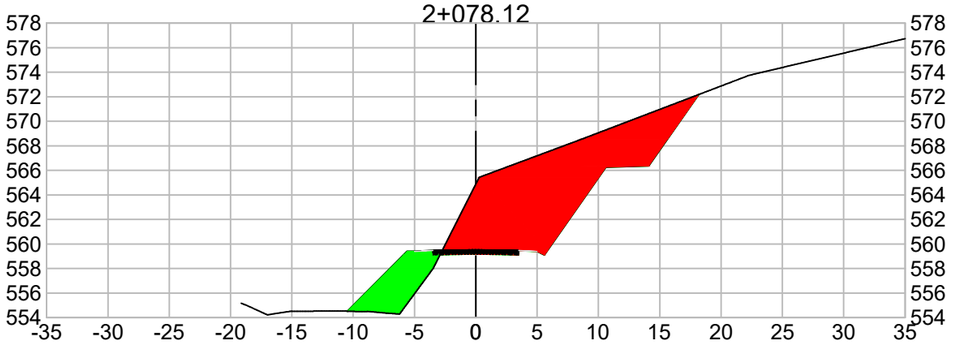
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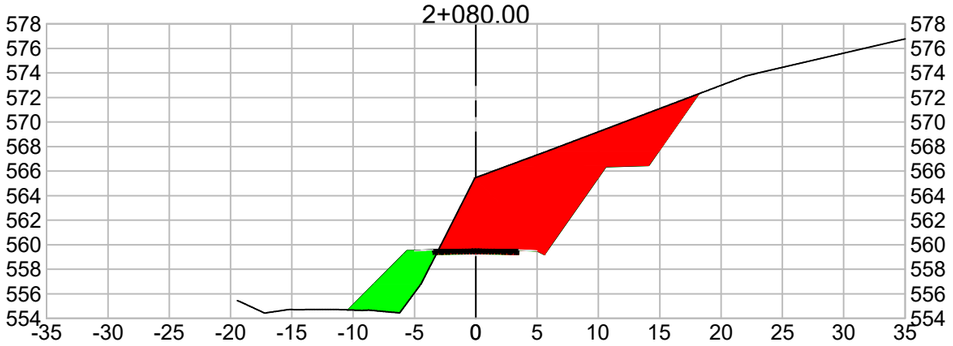
SEÇÕES TRANSVERSAIS

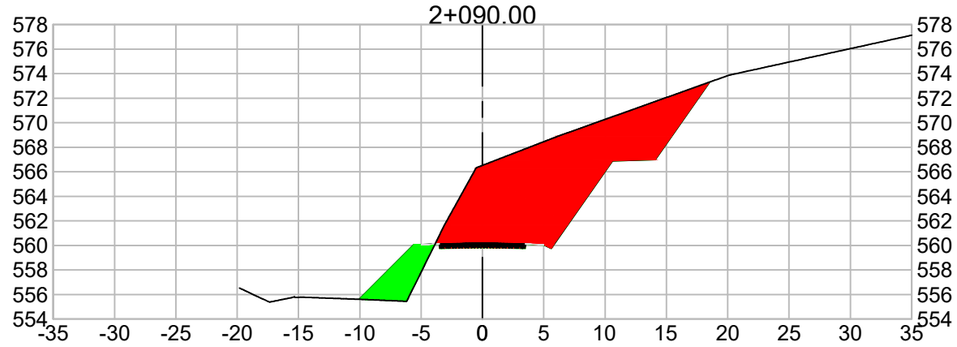
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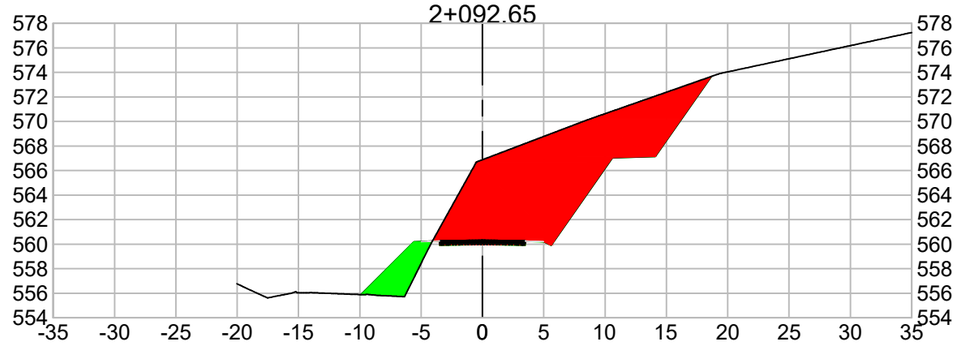


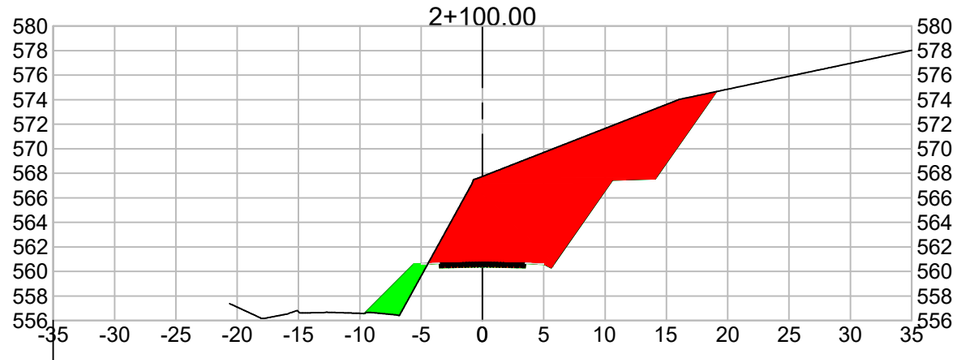


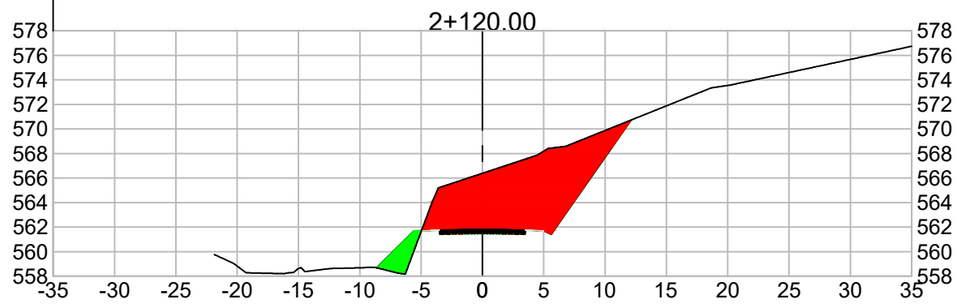












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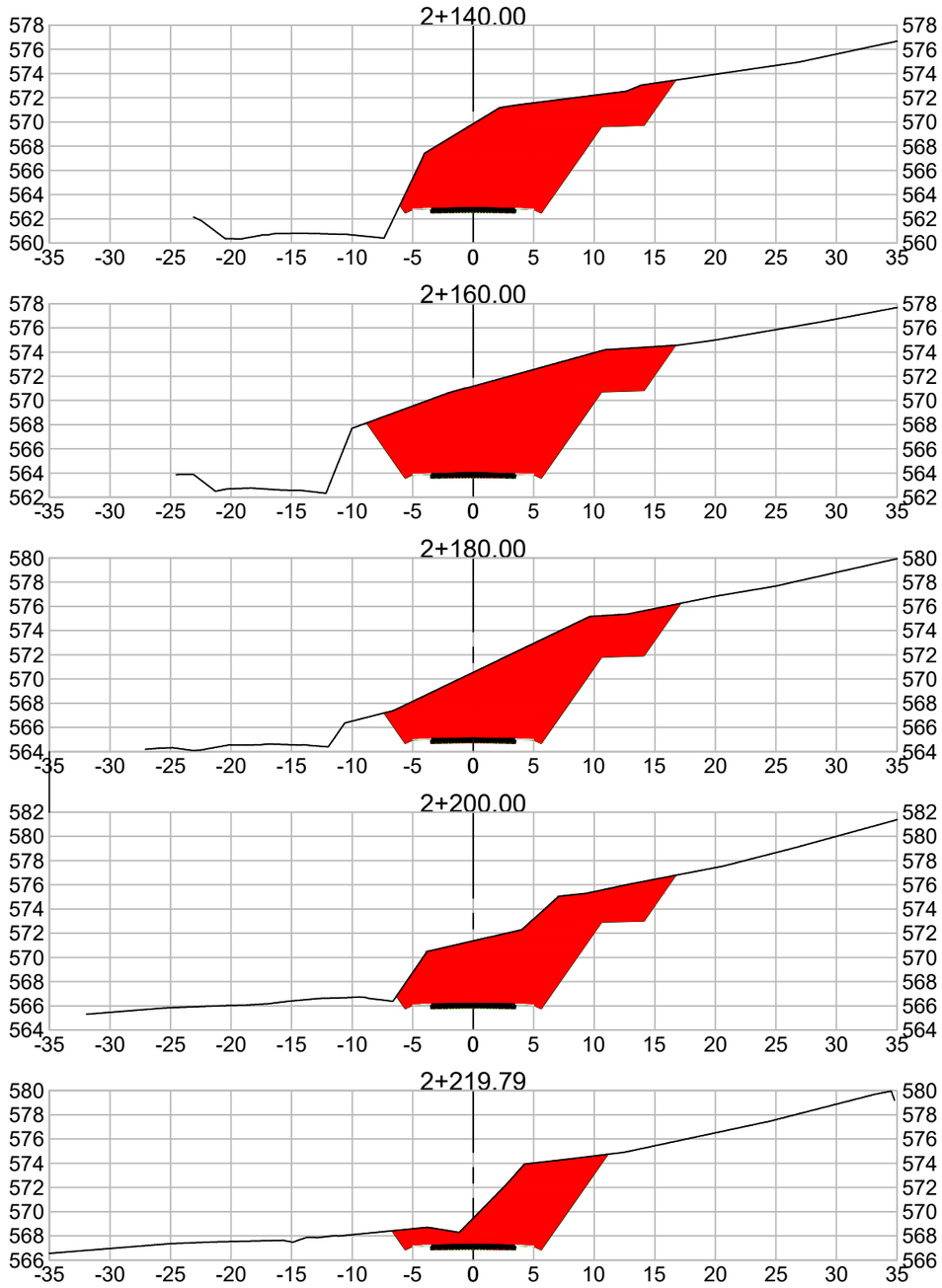
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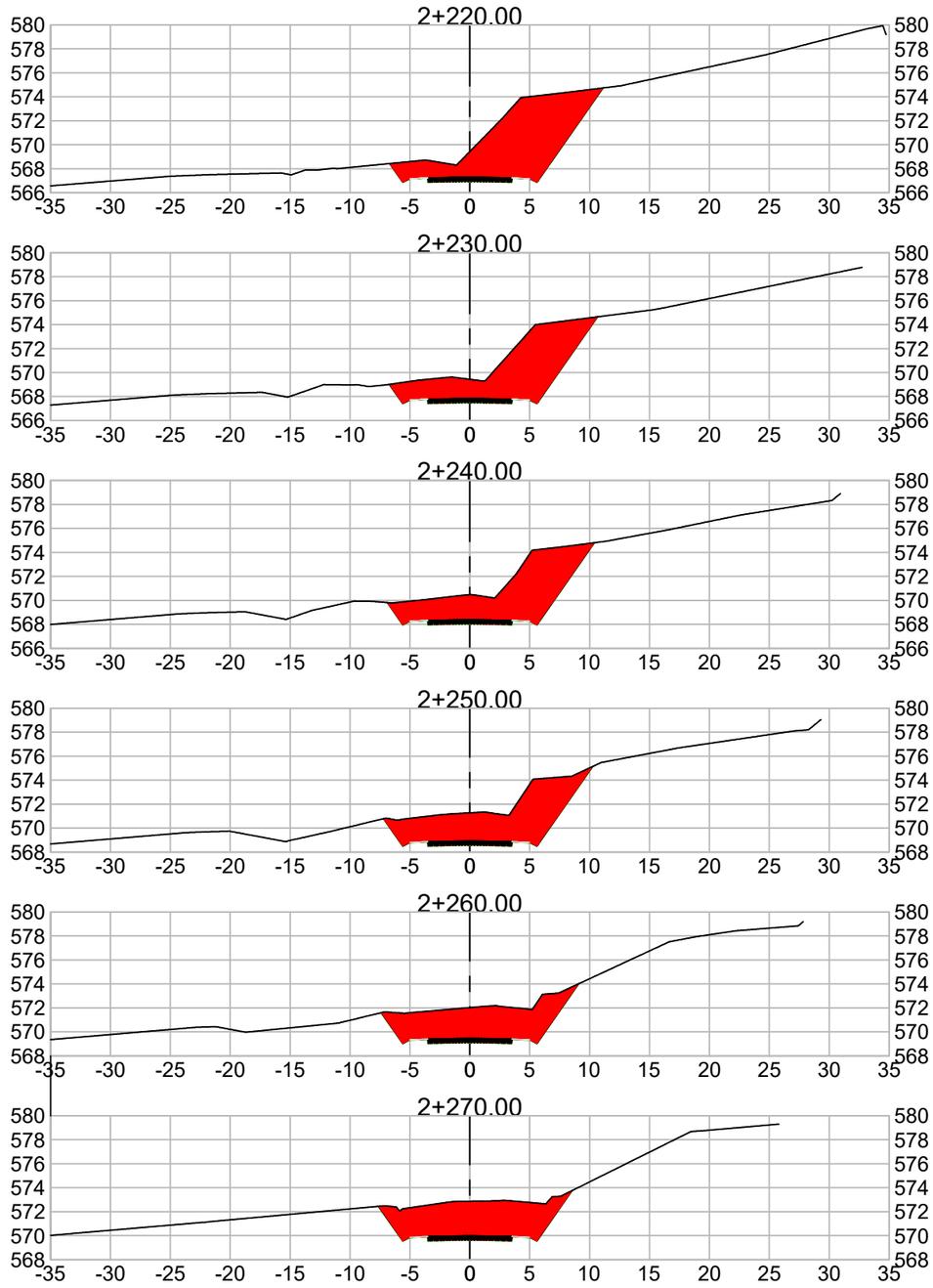
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

DATA: NOV/21

SEÇÕES TRANSVERSAIS

FOLHA 05.17



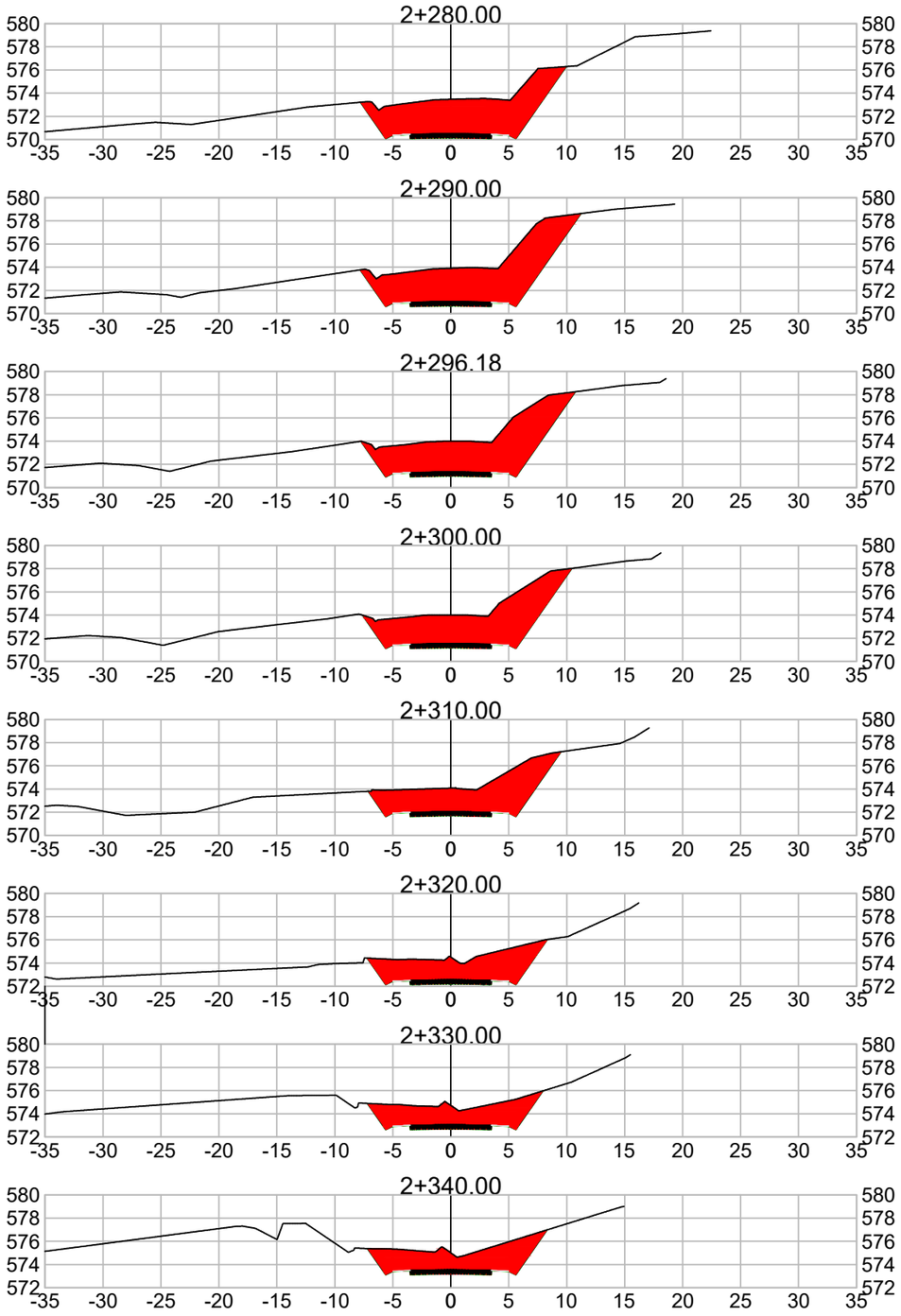


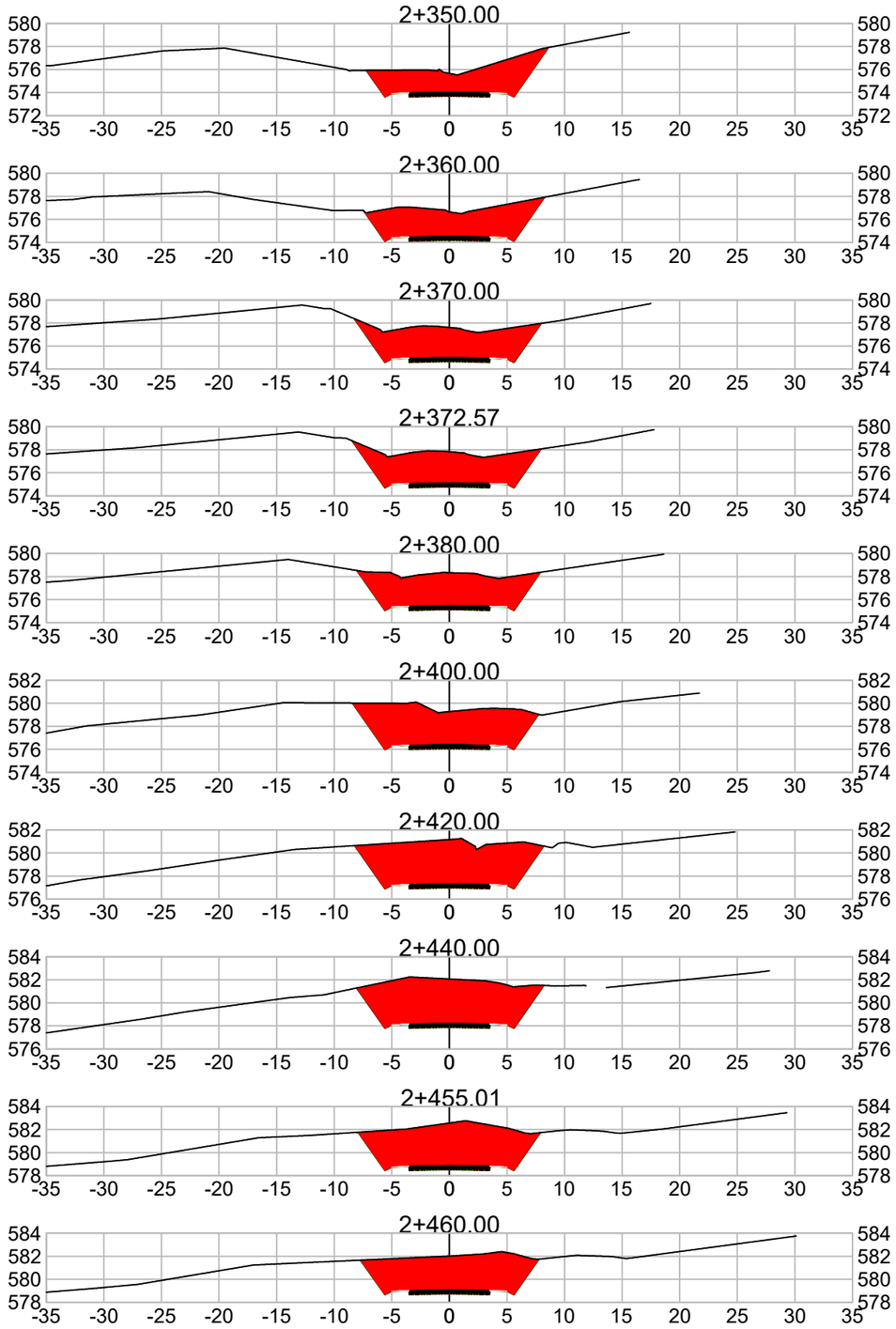
LEGENDA
- CORTE
- ATERRO

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/500	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: NOV/21	SEÇÕES TRANSVERSAIS	FOLHA 05.18





LEGENDA
CORTE
ATERRO

Serafini
ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

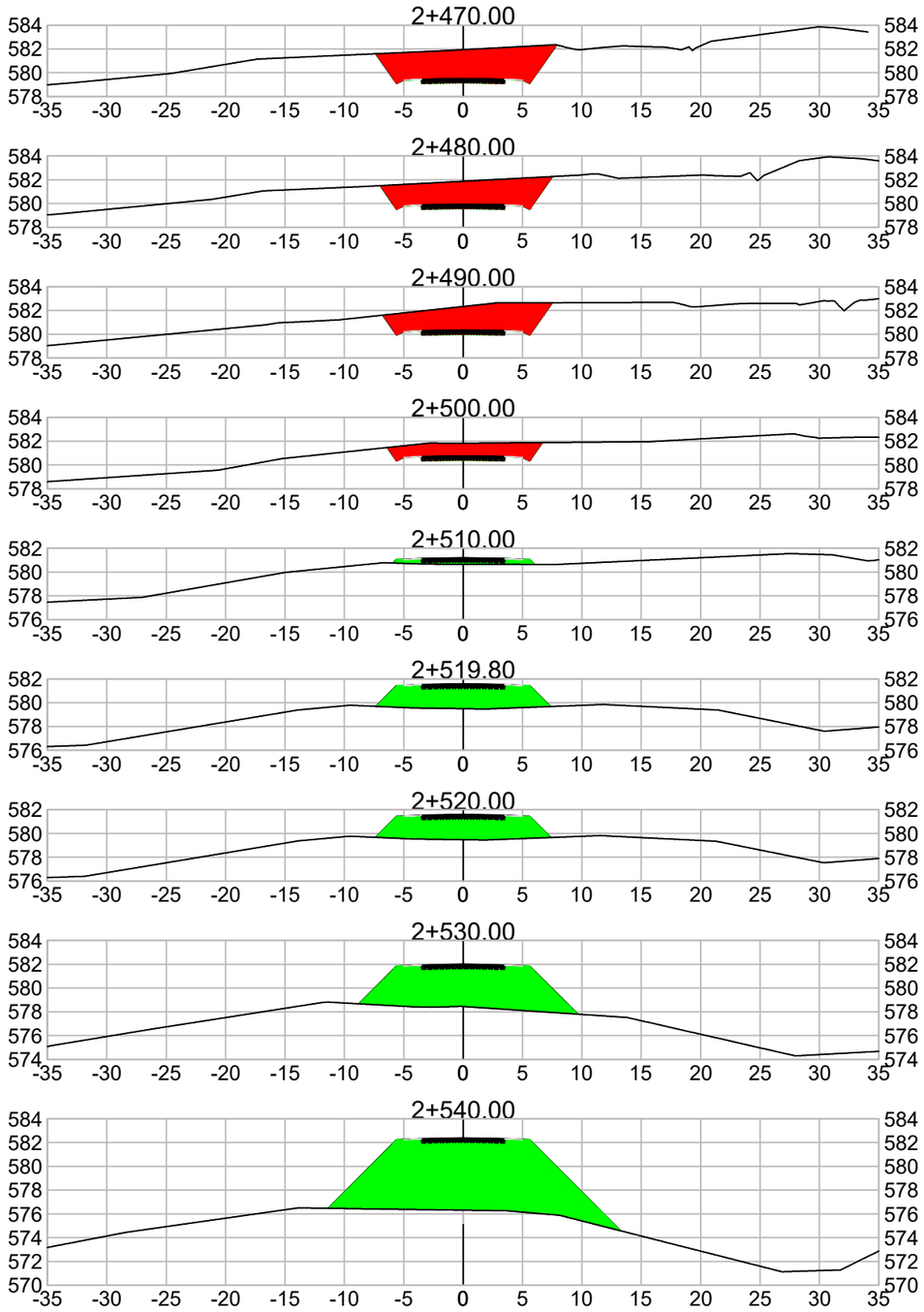
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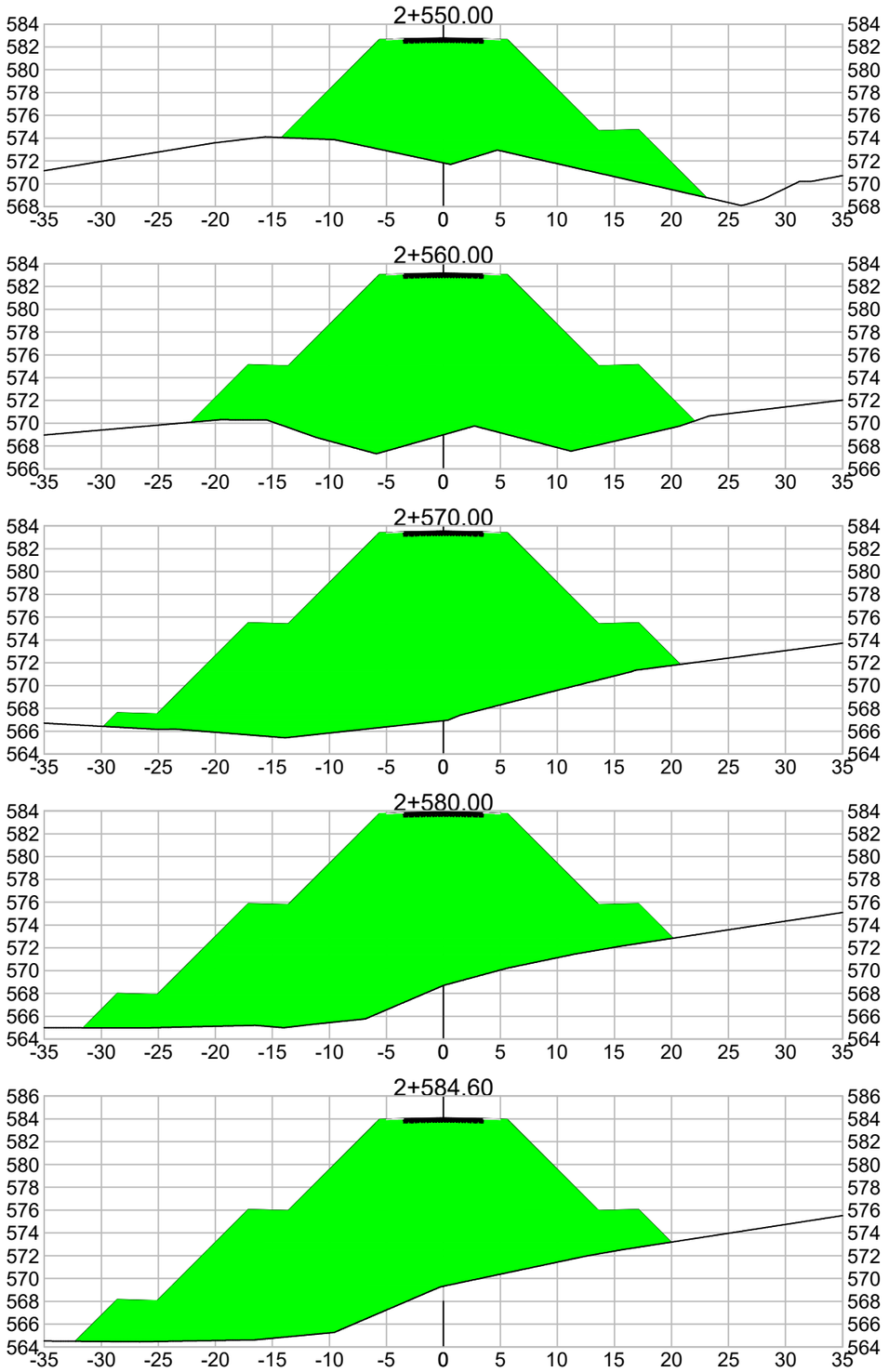
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

DATA: NOV/21

SEÇÕES TRANSVERSAIS

FOLHA 05.19





LEGENDA
CORTE
ATERRO

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ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

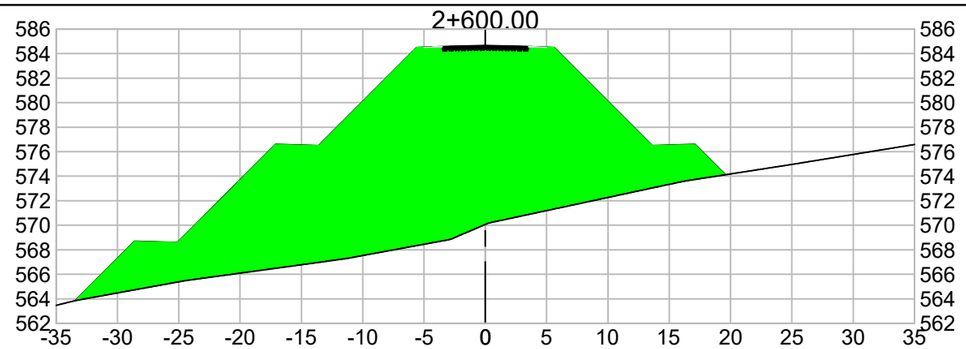
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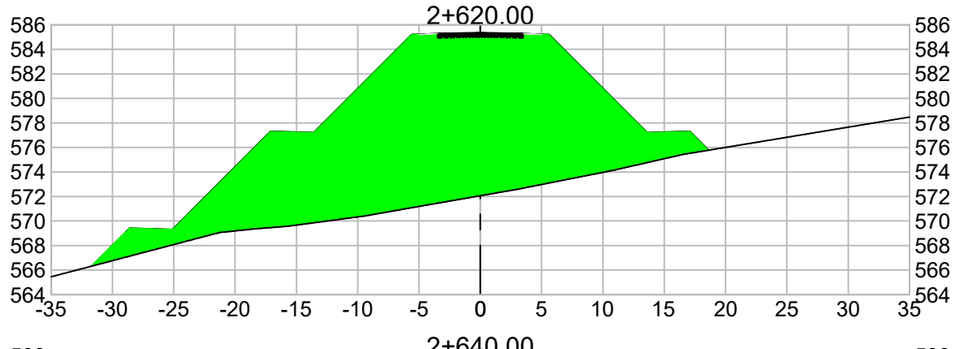
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

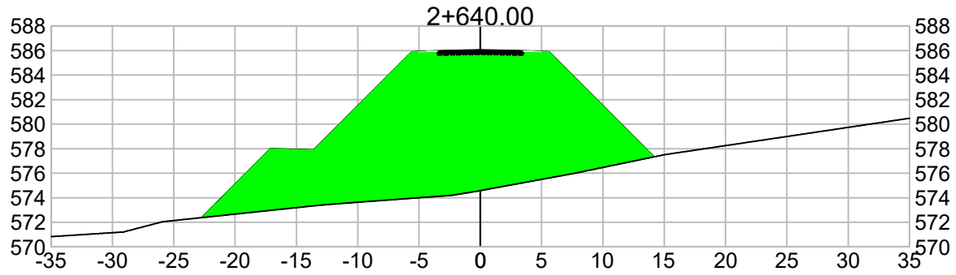
DATA: NOV/21

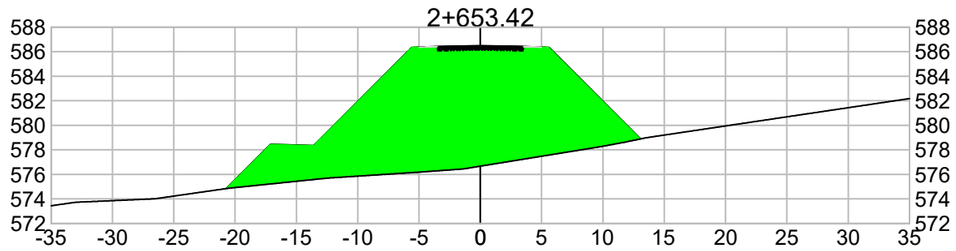
SEÇÕES TRANSVERSAIS

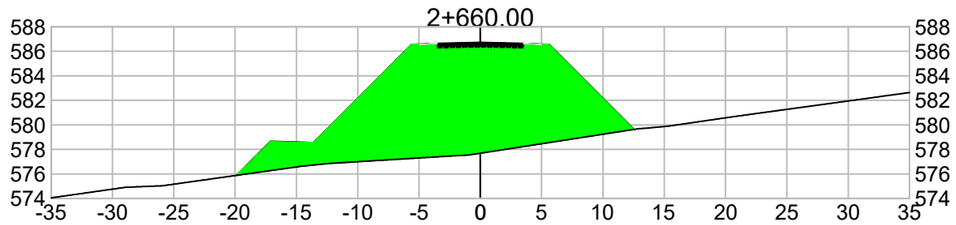
FOLHA 05.20

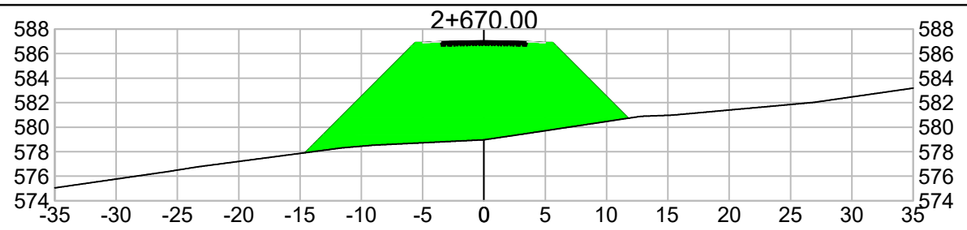


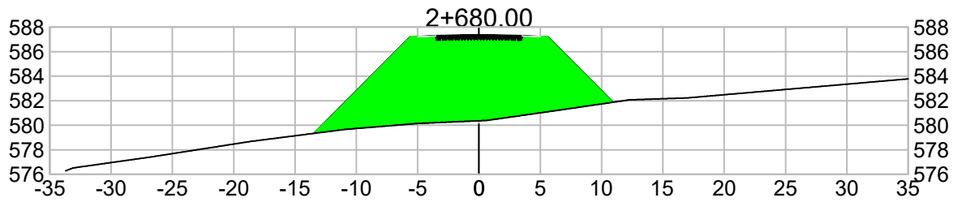


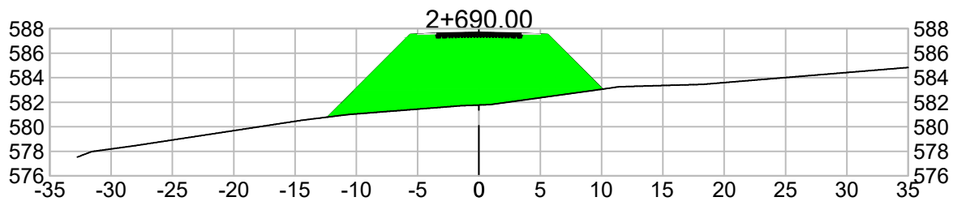


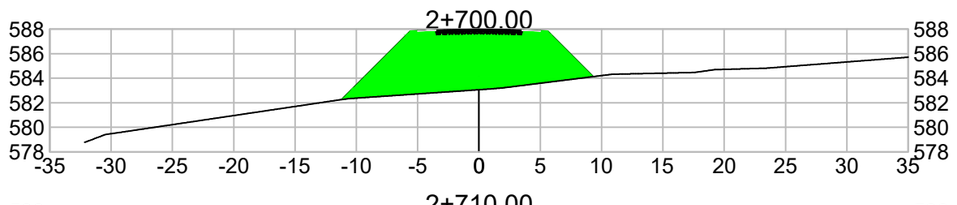


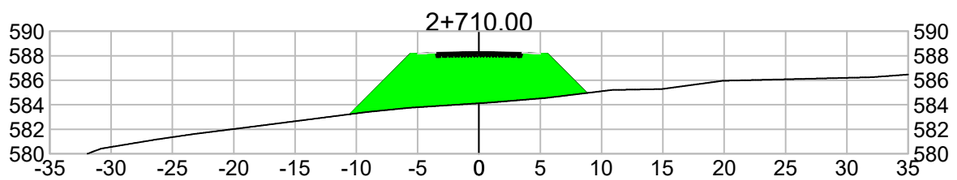


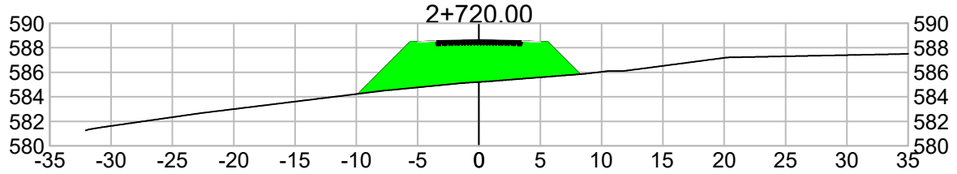


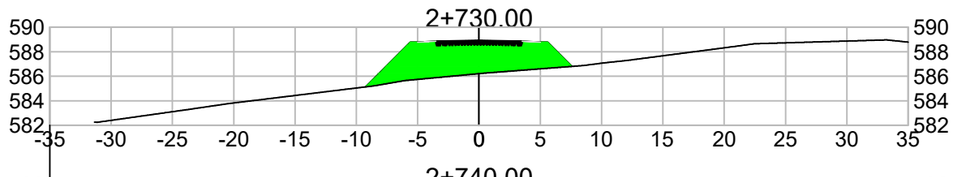


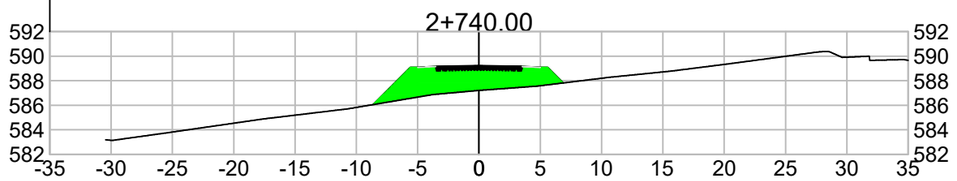












LEGENDA
CORTE
ATERRO

Serafini
ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

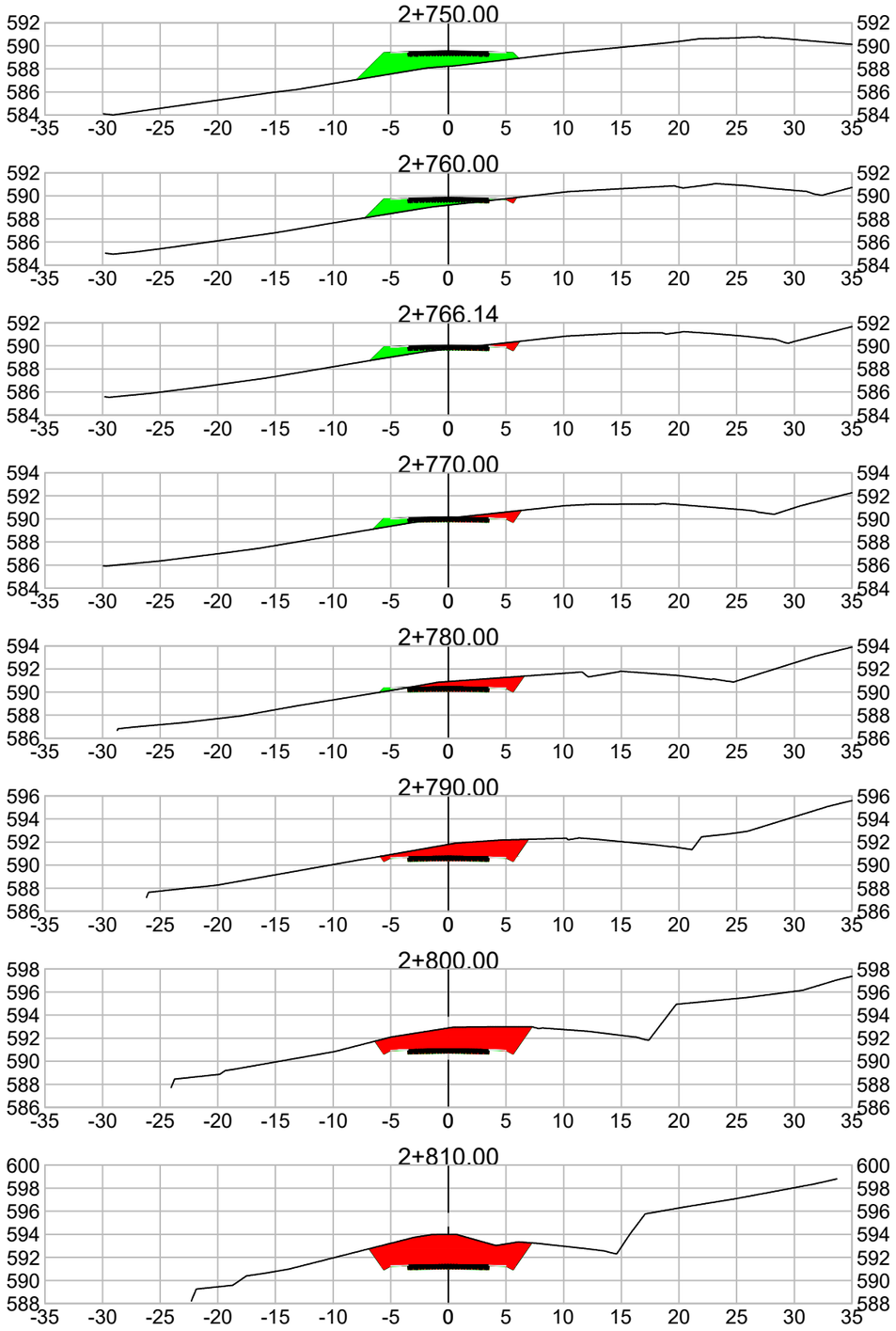
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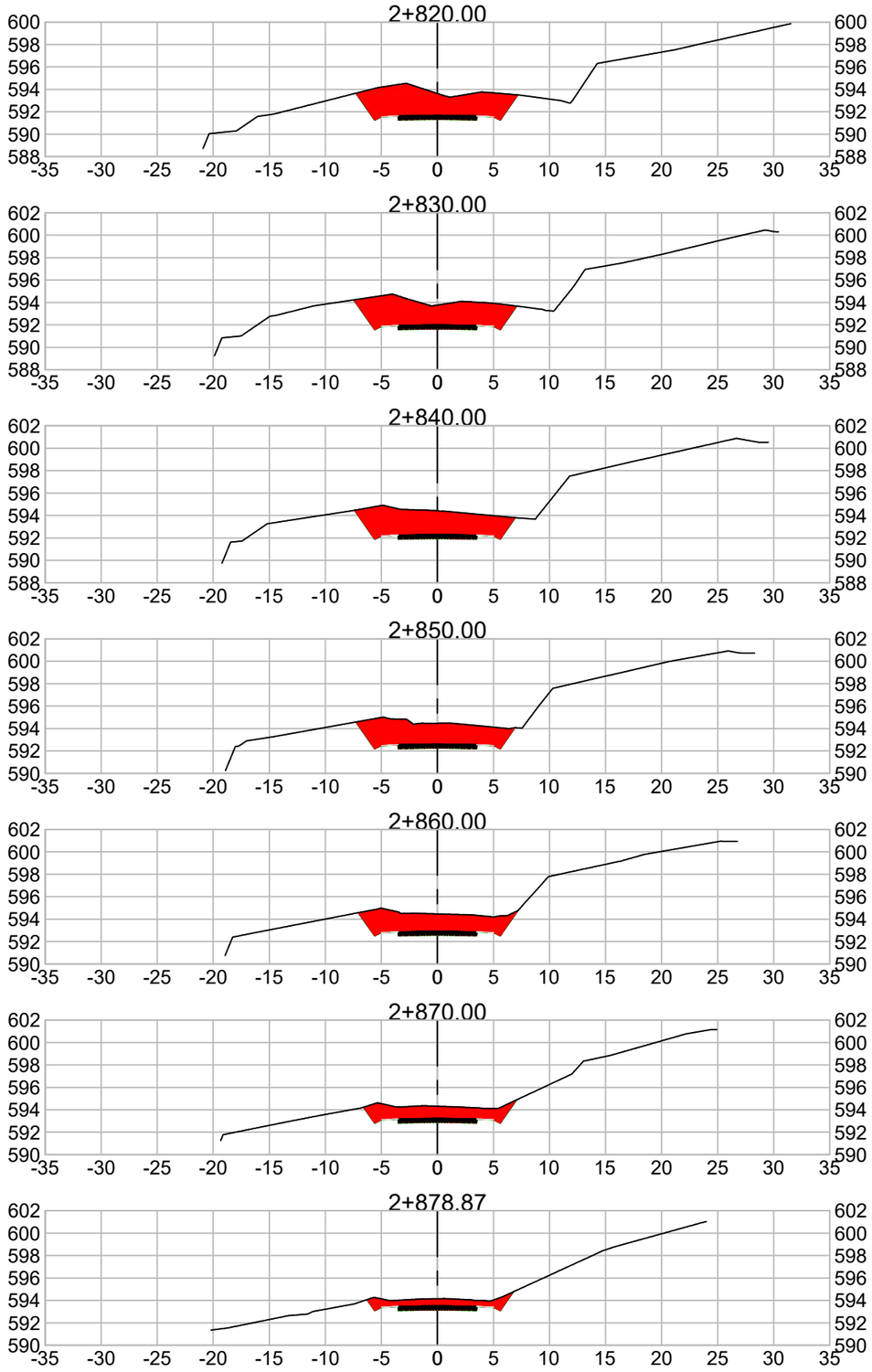
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

DATA: NOV/21

SEÇÕES TRANSVERSAIS

FOLHA 05.21





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ATERRO

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

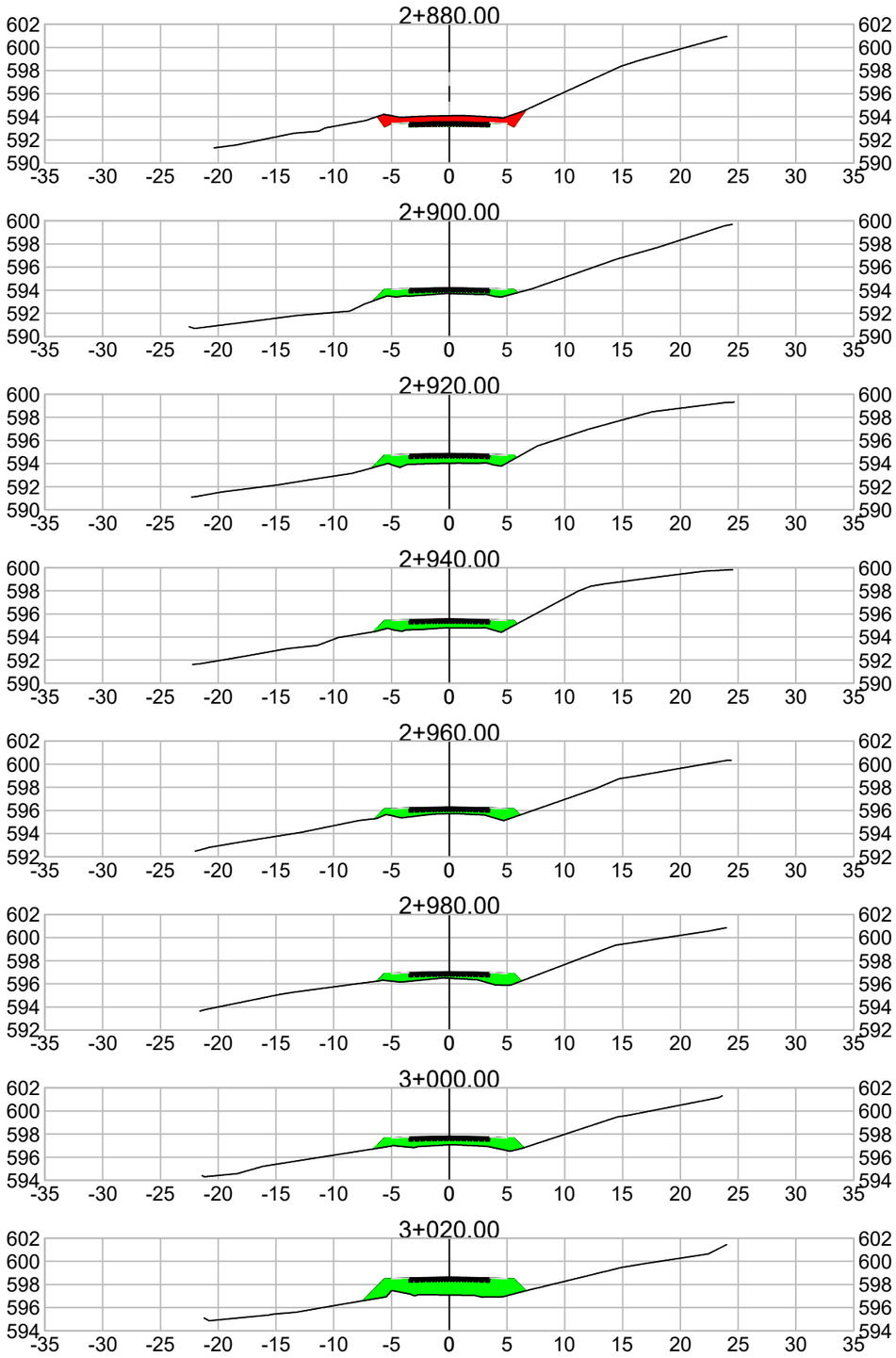
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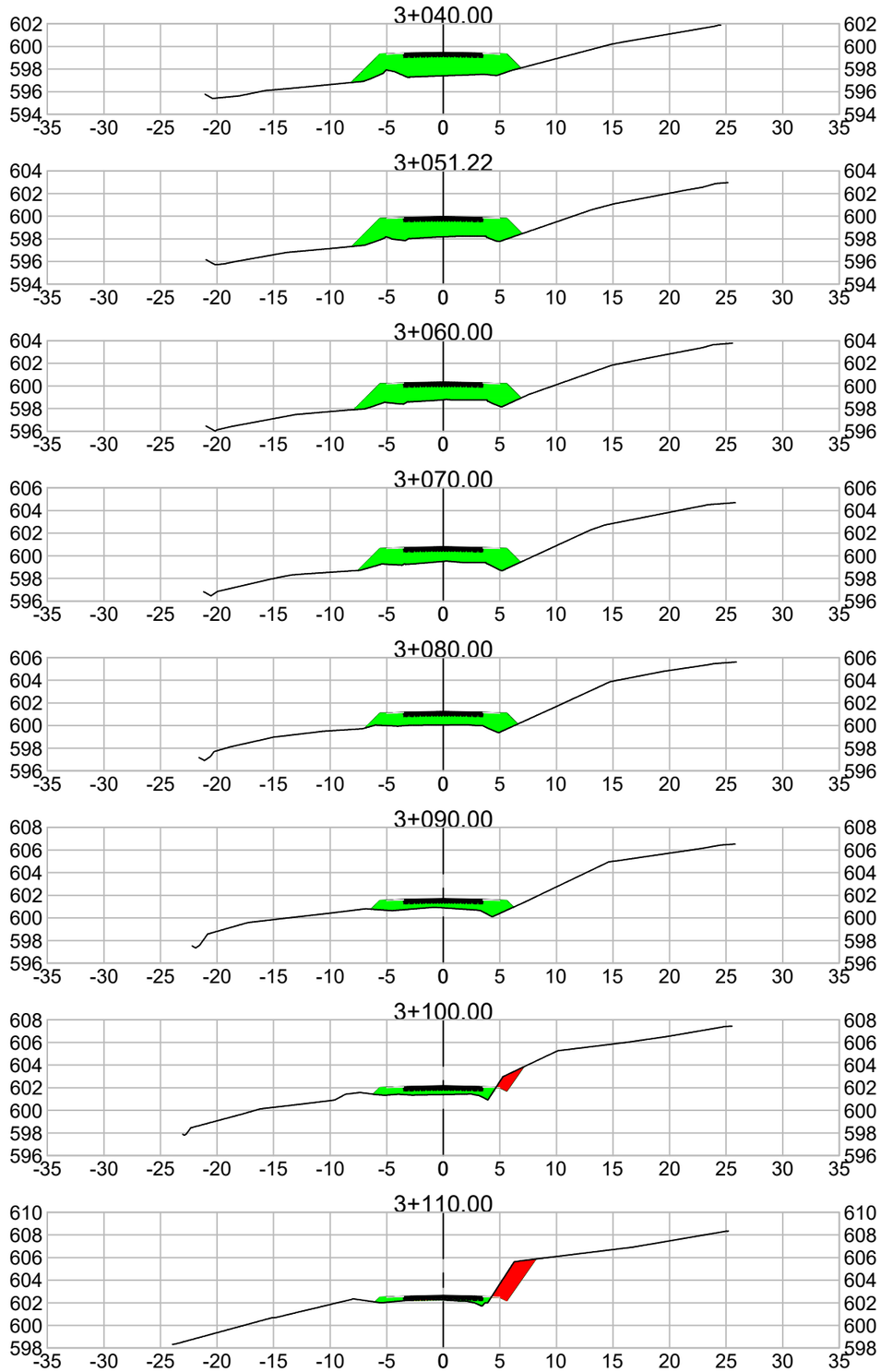
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

DATA: NOV/21

SEÇÕES TRANSVERSAIS

FOLHA 05.22



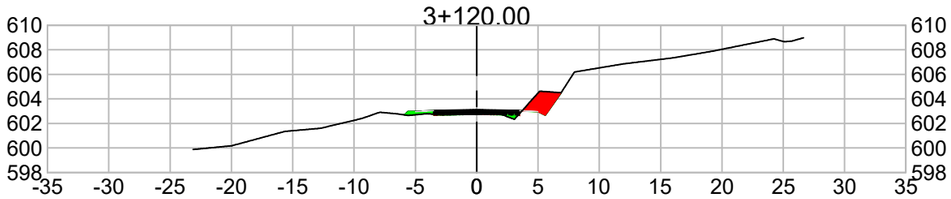


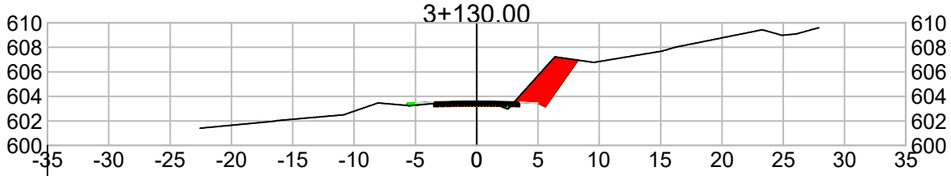
LEGENDA
CORTE
ATERRO

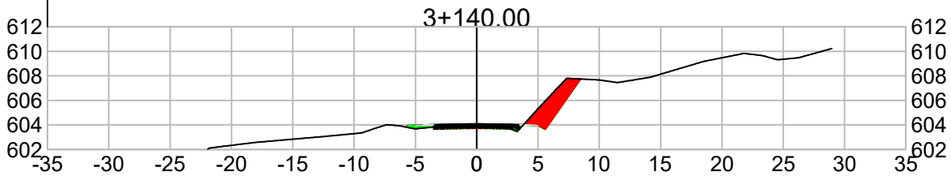
Serafini
ENGENHARIA

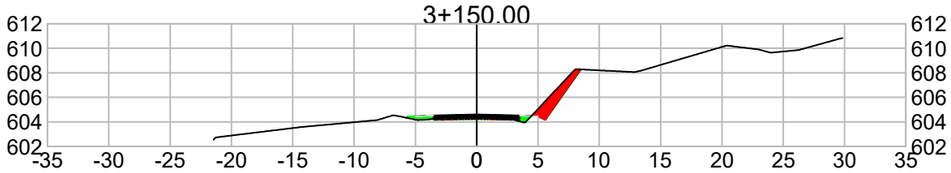
MUNICÍPIO DE NOVA ALVORADA - RS

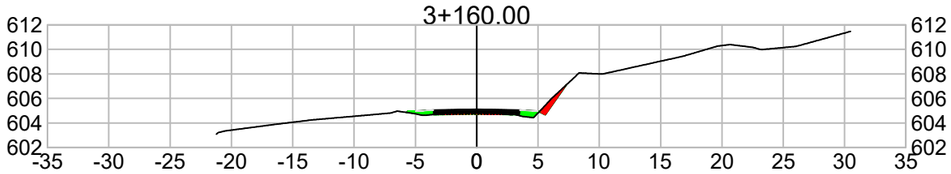
ESCALAS: 1/500	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: NOV/21	SEÇÕES TRANSVERSAIS	FOLHA 05.23

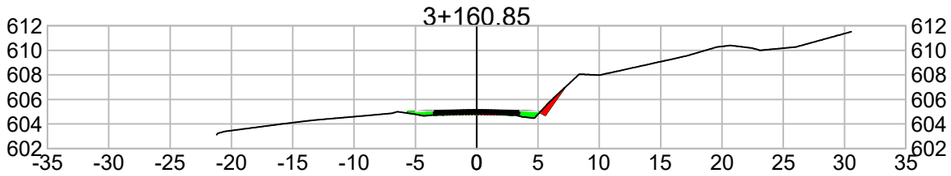


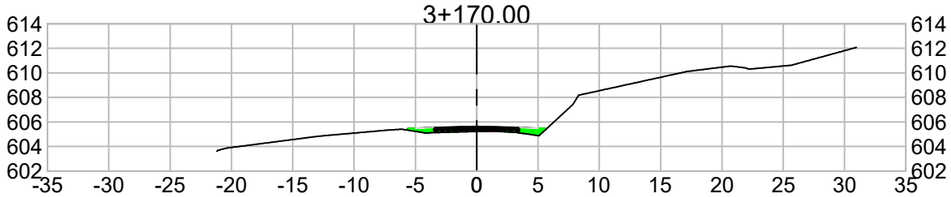


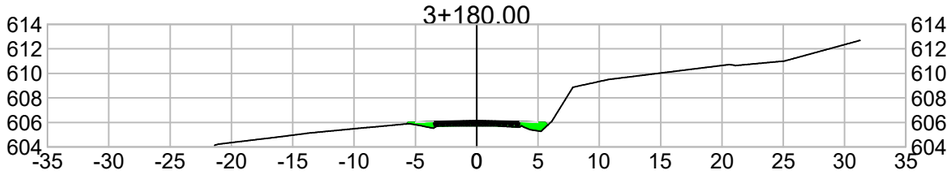


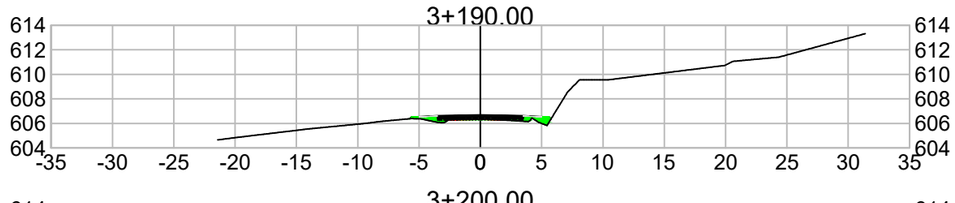


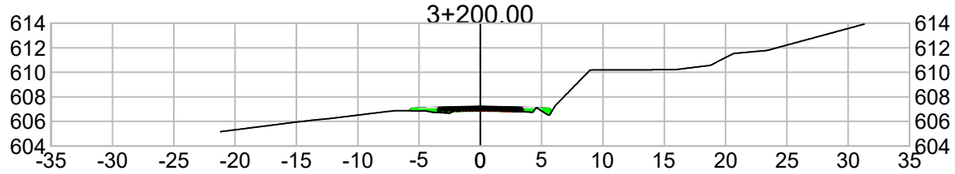


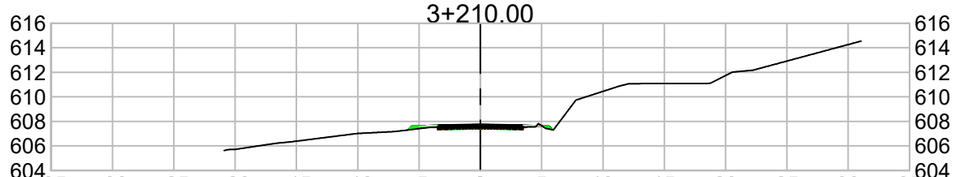


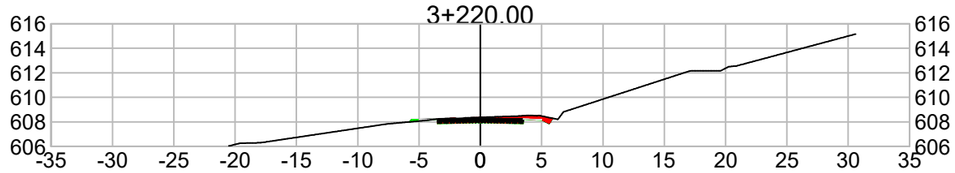


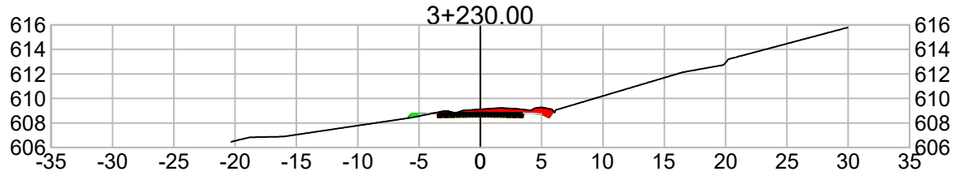


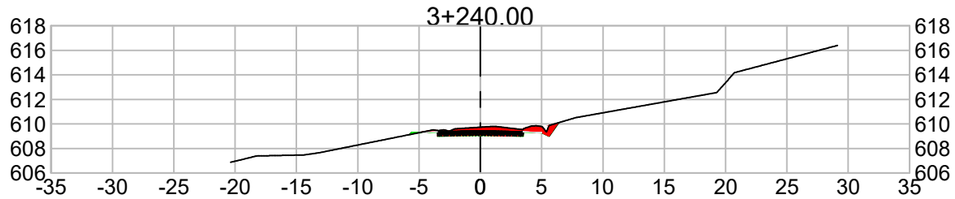


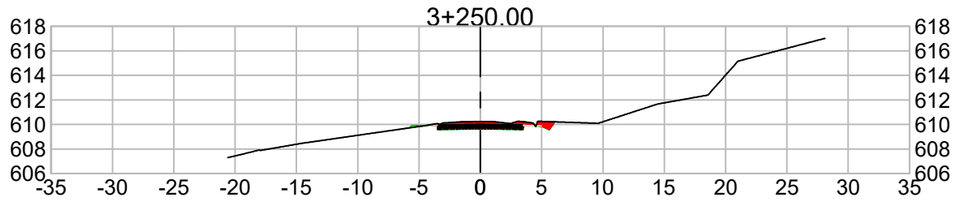










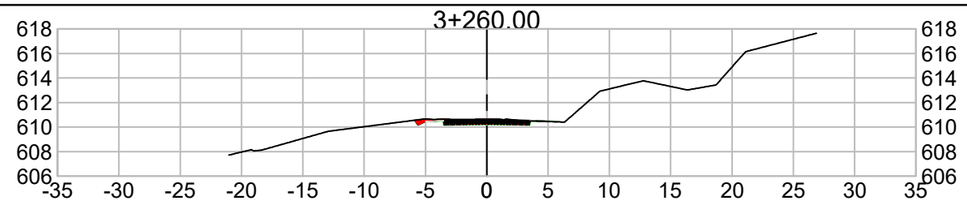


LEGENDA
CORTE
ATERRO

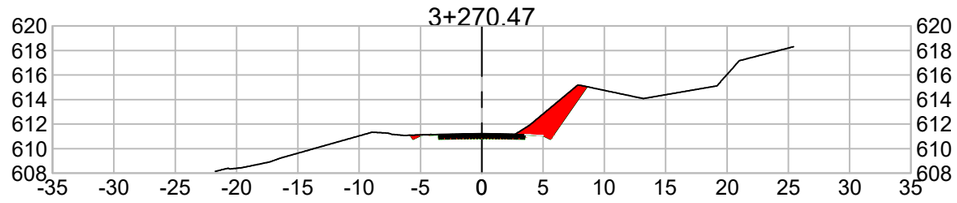
Serafini
ENGENHARIA

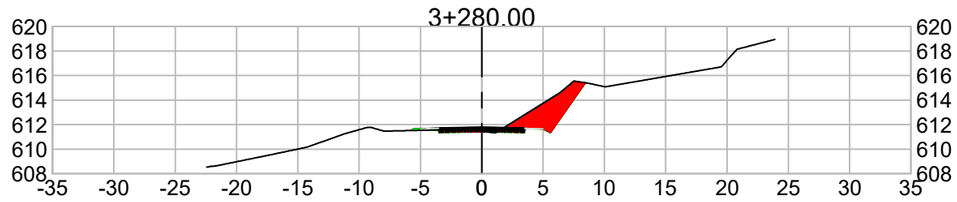
MUNICÍPIO DE NOVA ALVORADA - RS

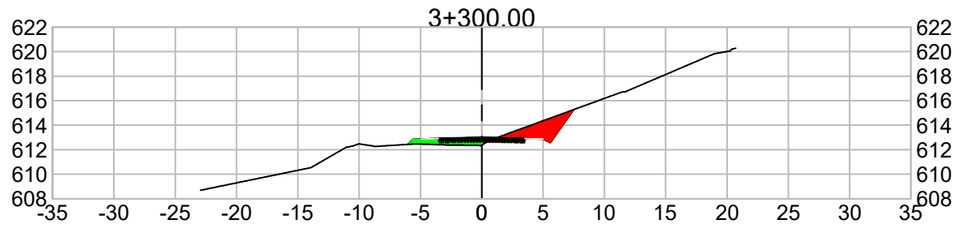
ESCALAS: 1/500	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: NOV/21	SEÇÕES TRANSVERSAIS	FOLHA 05.24

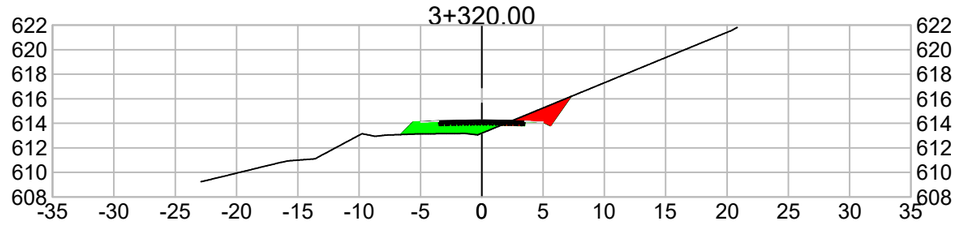


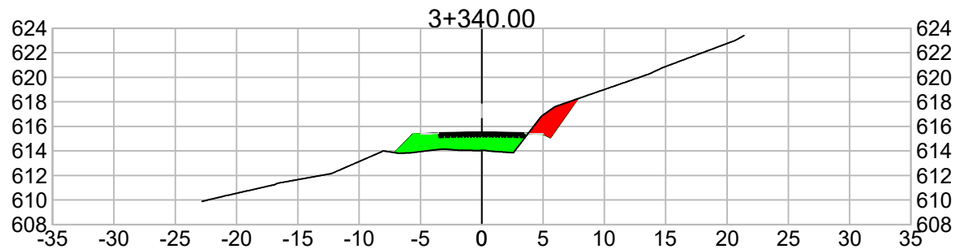


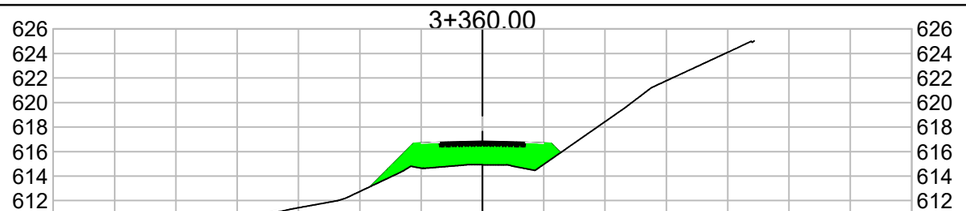


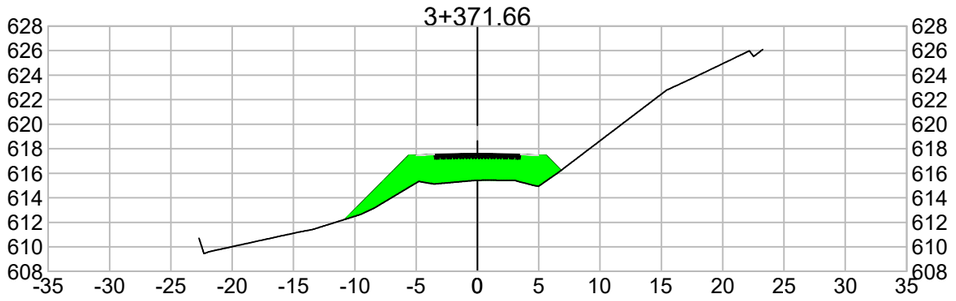


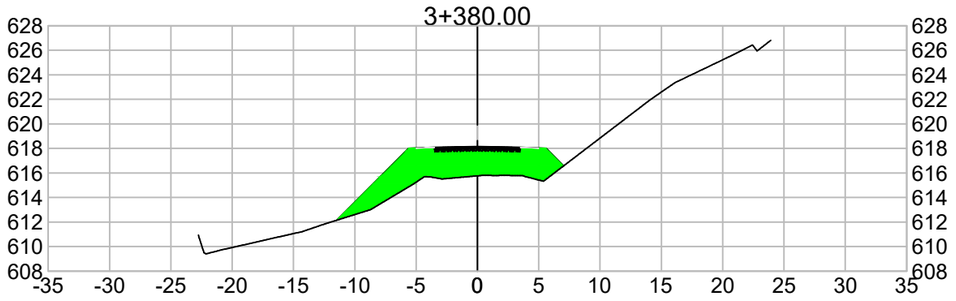


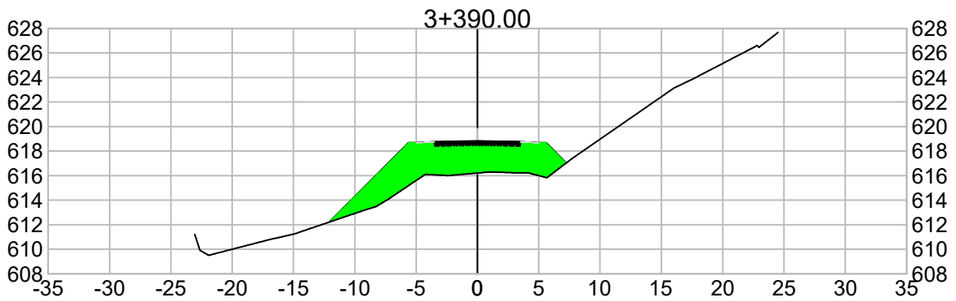


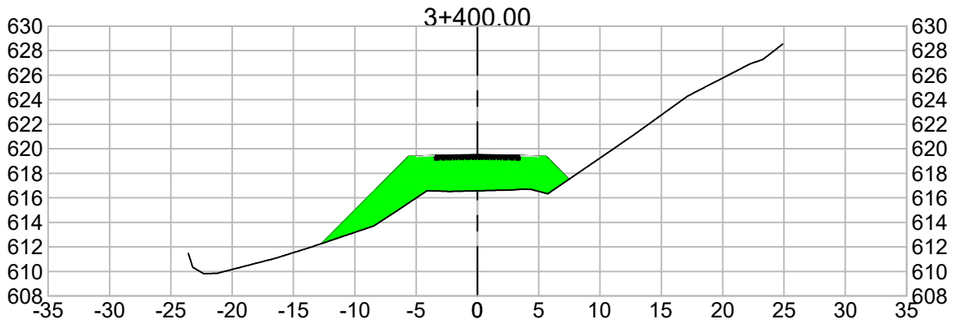












LEGENDA
CORTE
ATERRO

Serafini
ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

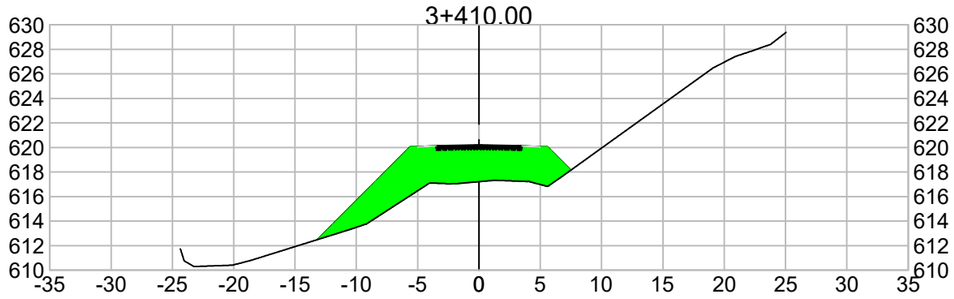
ESCALAS: 1/500

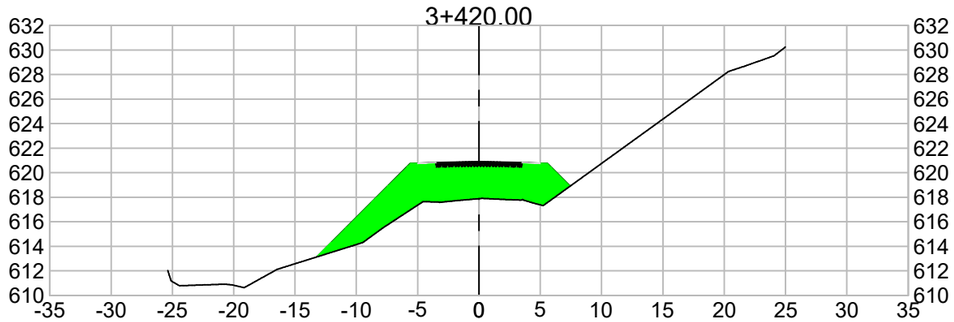
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

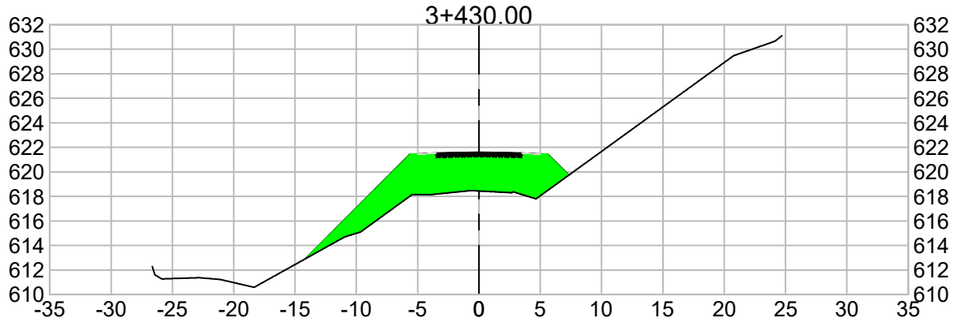
DATA: NOV/21

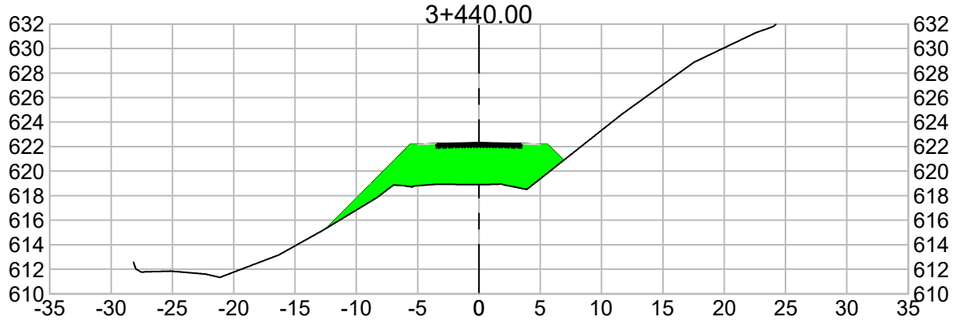
SEÇÕES TRANSVERSAIS

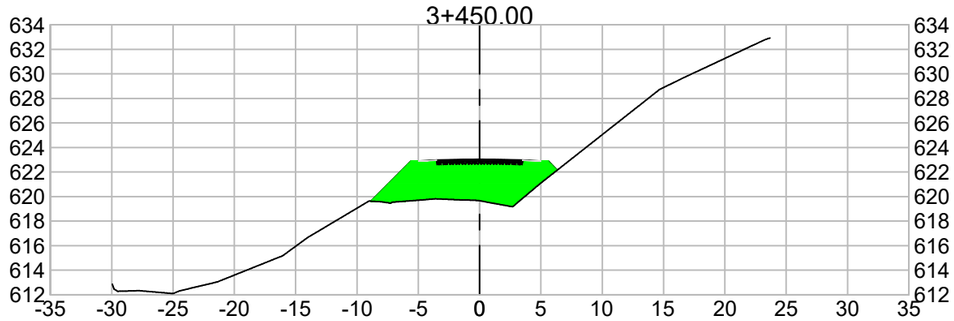
FOLHA 05.25

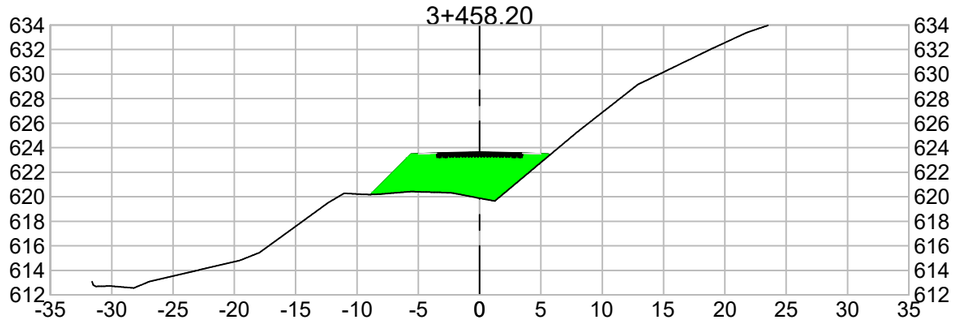


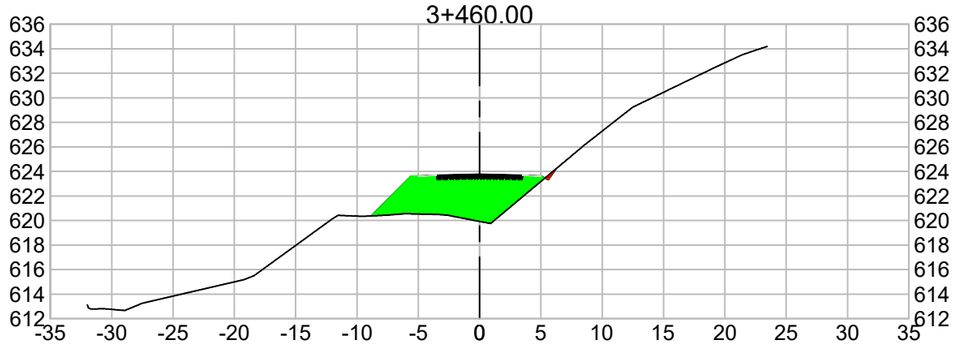


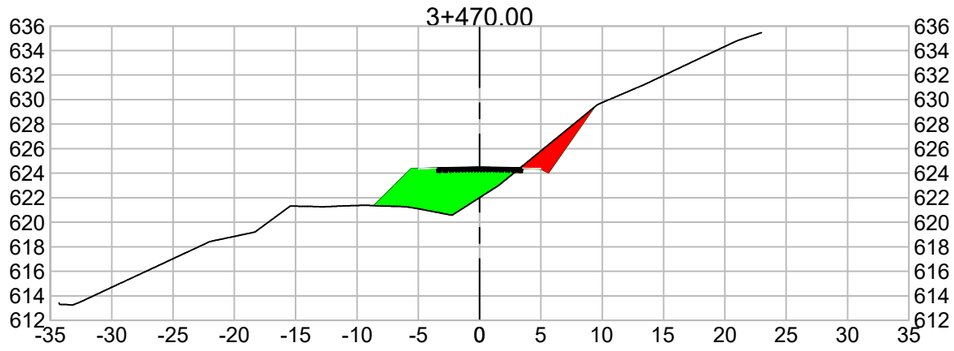












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MUNICÍPIO DE NOVA ALVORADA - RS

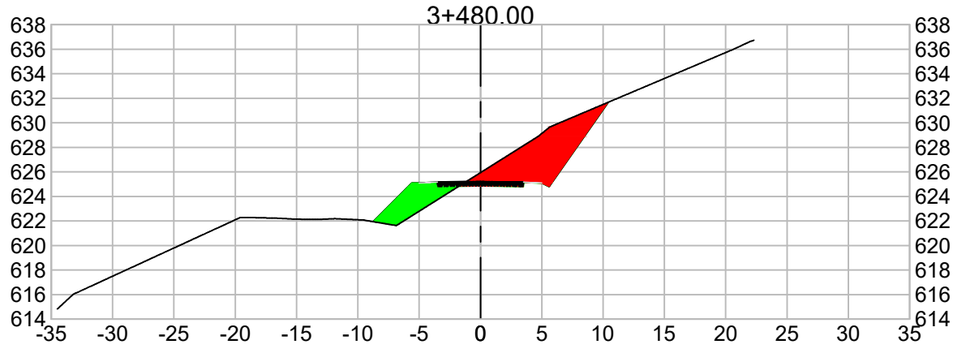
ESCALAS: 1/500

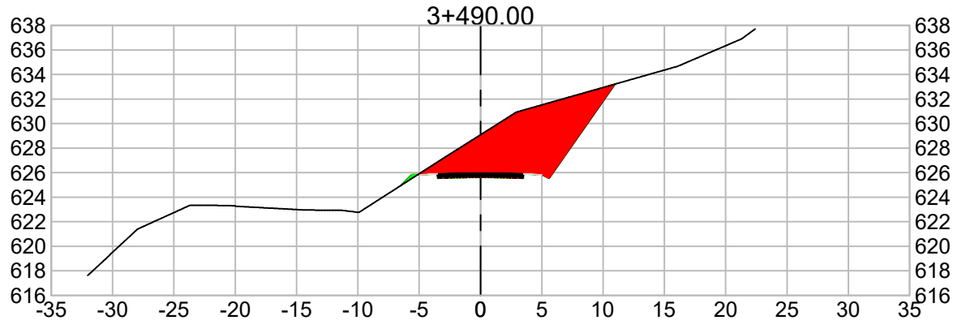
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

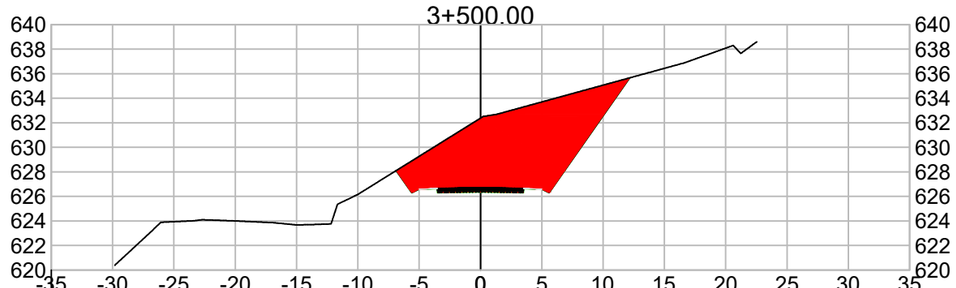
DATA: NOV/21

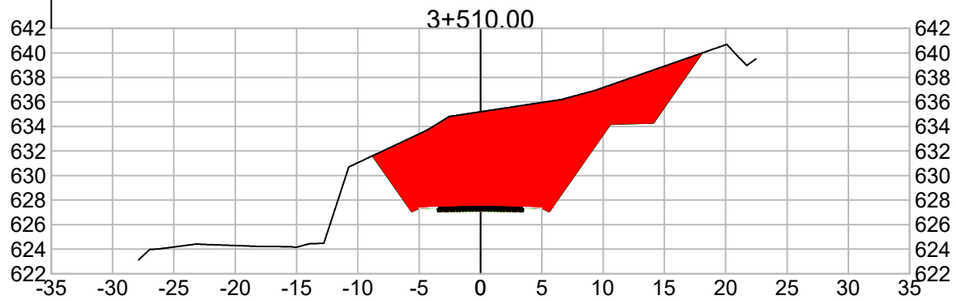
SEÇÕES TRANSVERSAIS

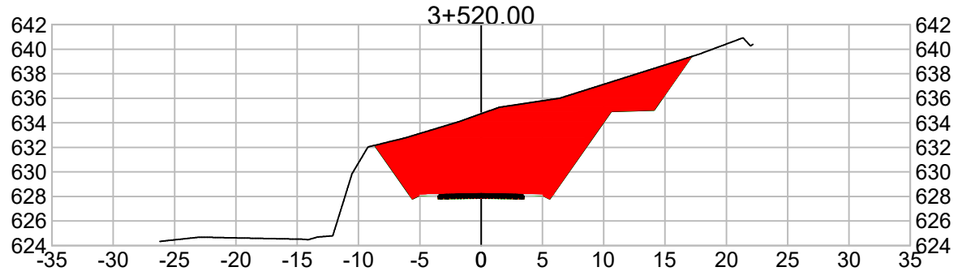
FOLHA 05.26

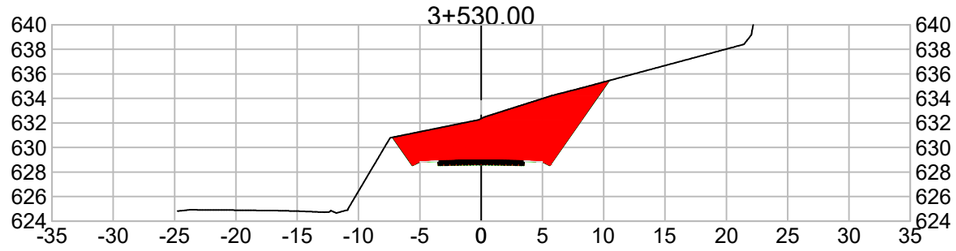


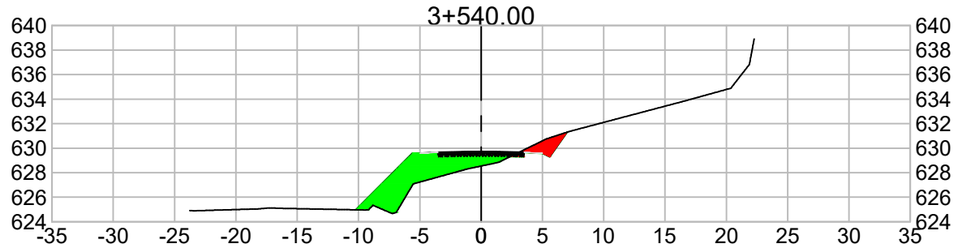


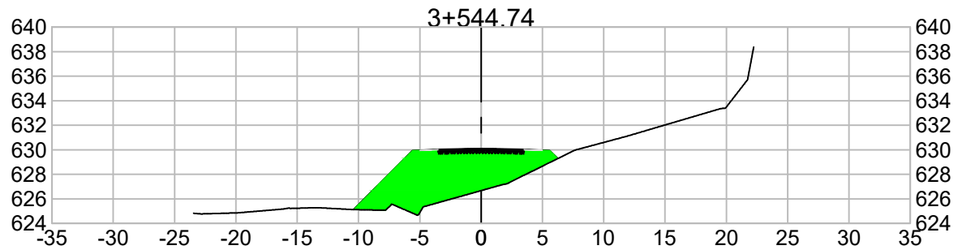


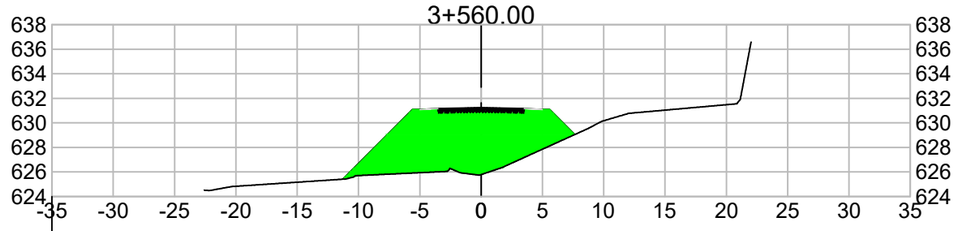


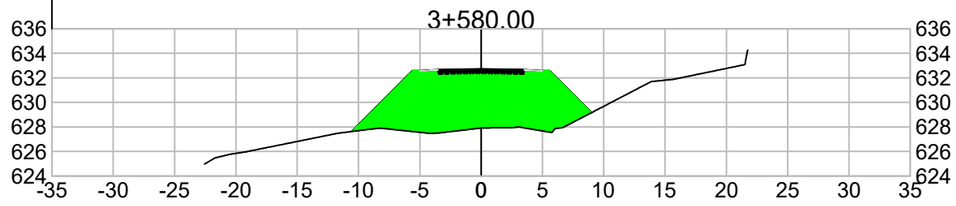












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MUNICÍPIO DE NOVA ALVORADA - RS

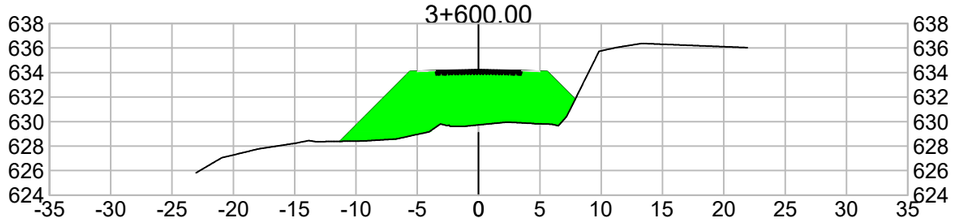
ESCALAS: 1/500

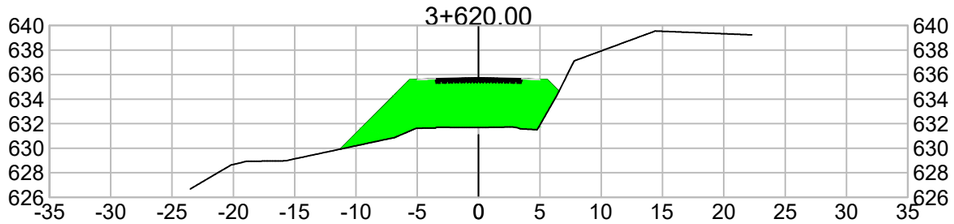
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

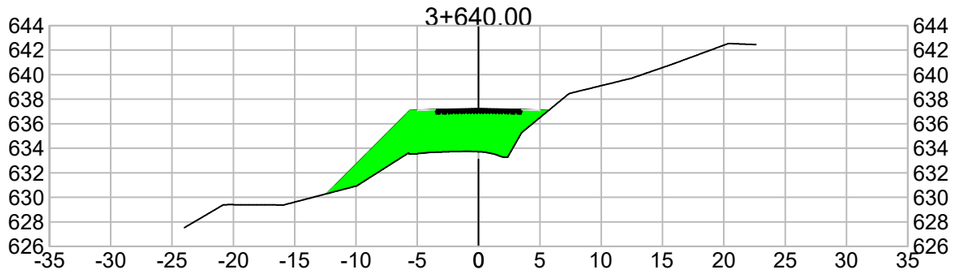
DATA: NOV/21

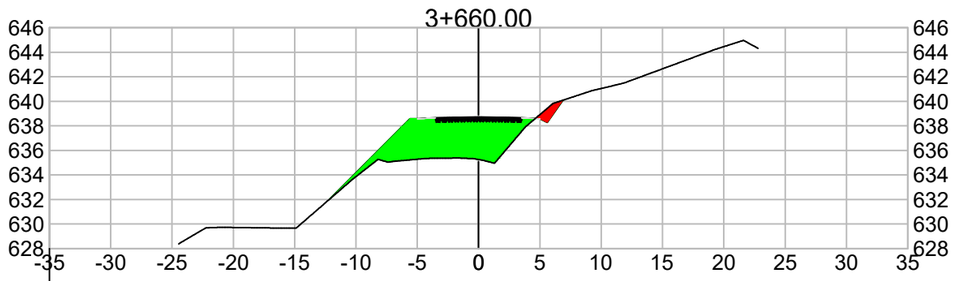
SEÇÕES TRANSVERSAIS

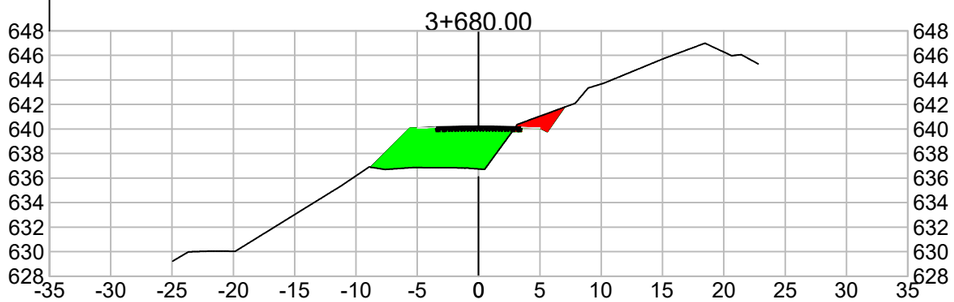
FOLHA 05.27

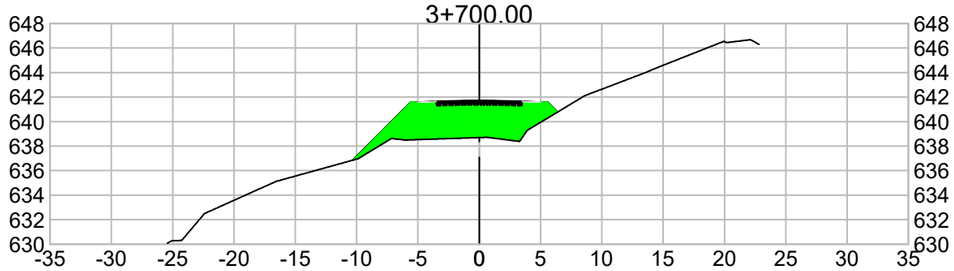


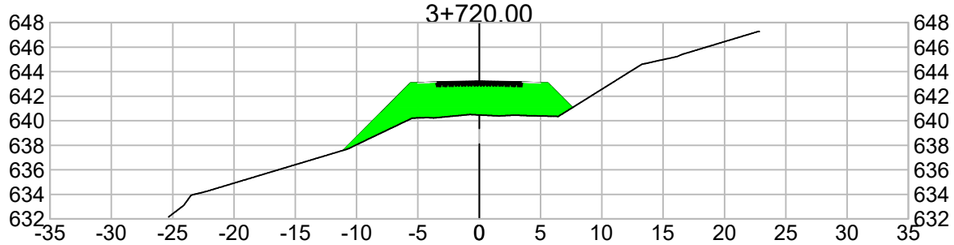


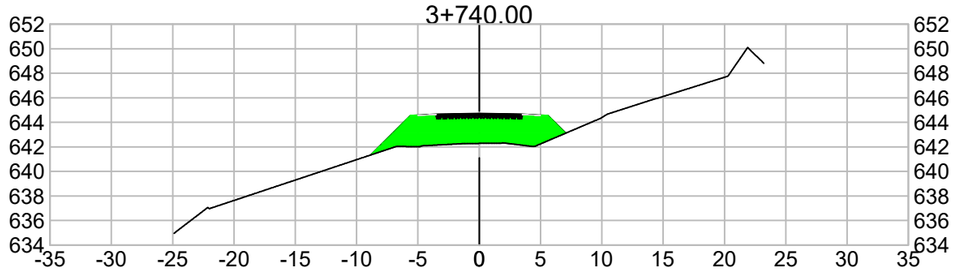


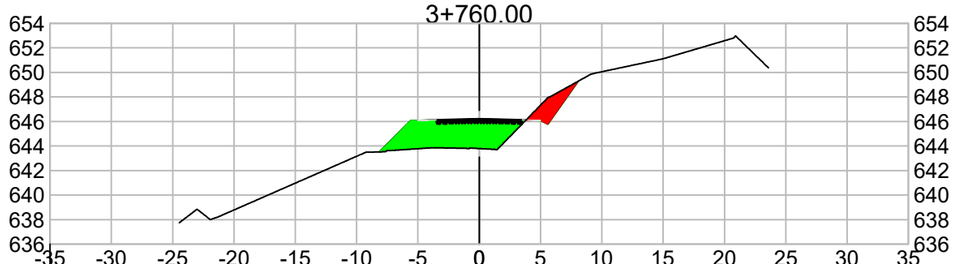


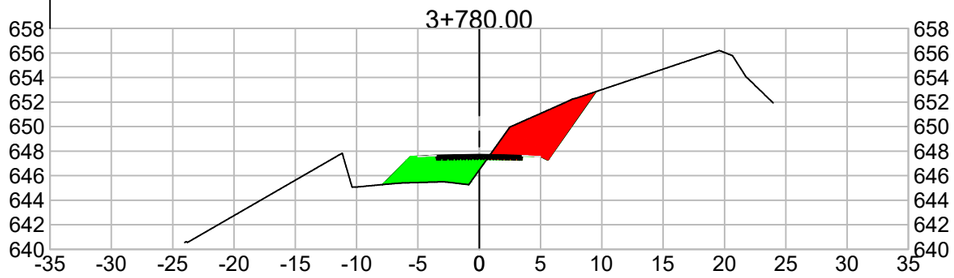












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ATERRO

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MUNICÍPIO DE NOVA ALVORADA - RS

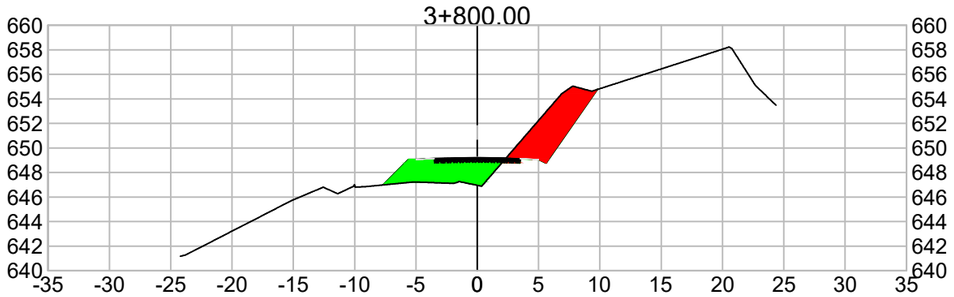
ESCALAS: 1/500

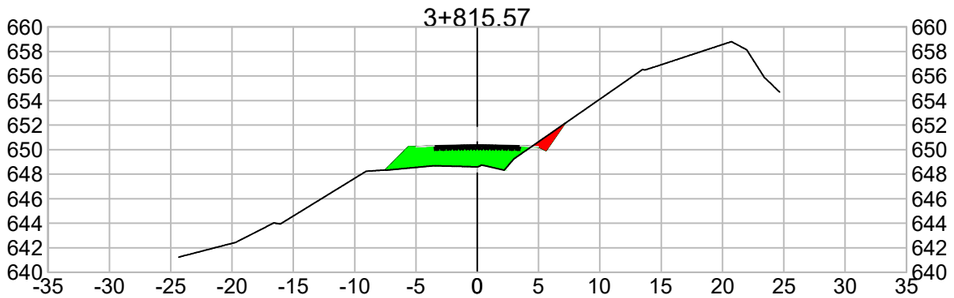
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

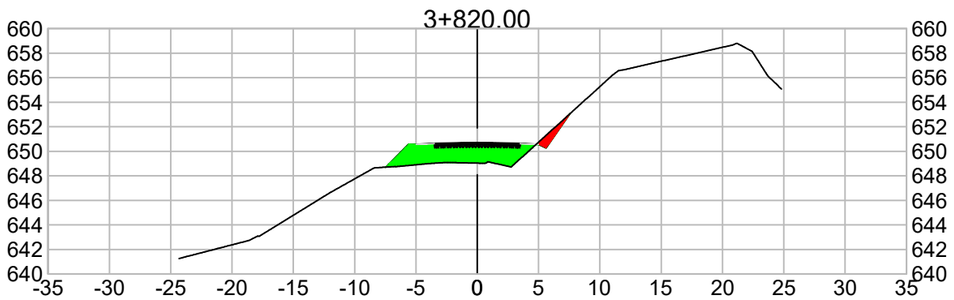
DATA: NOV/21

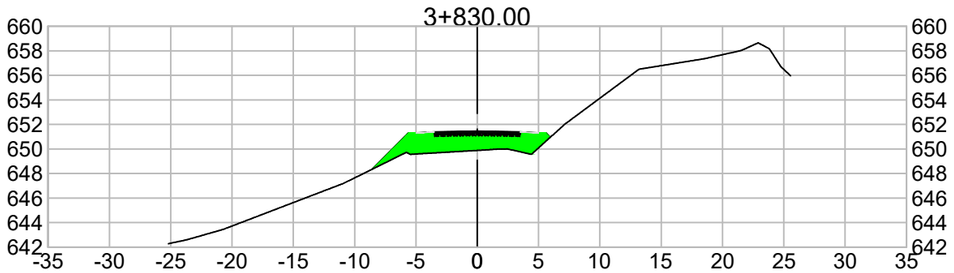
SEÇÕES TRANSVERSAIS

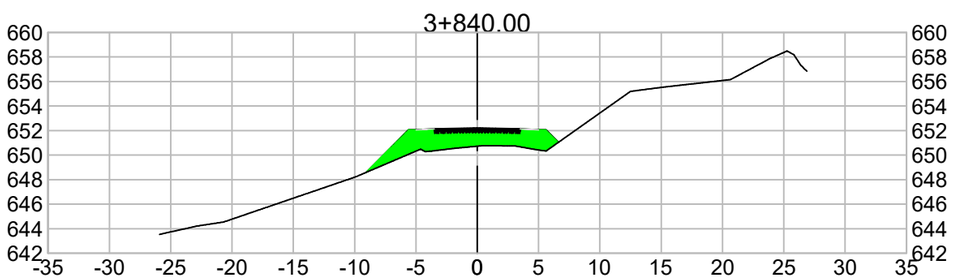
FOLHA 05.28

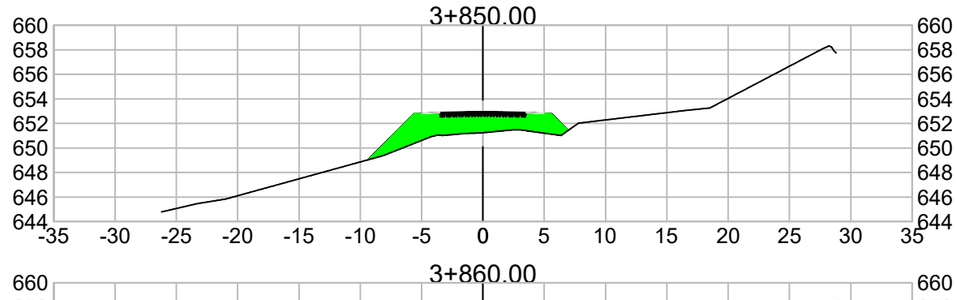


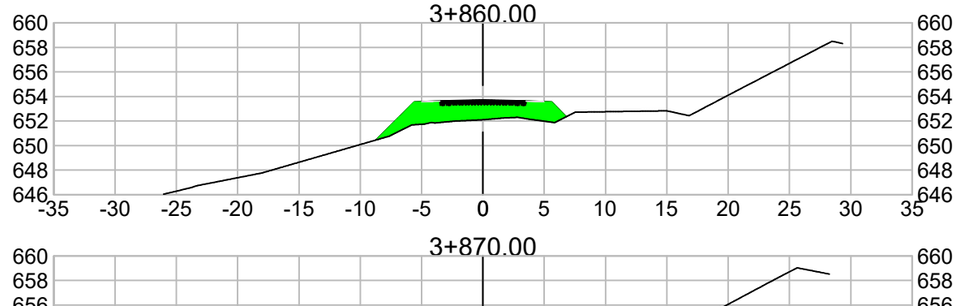


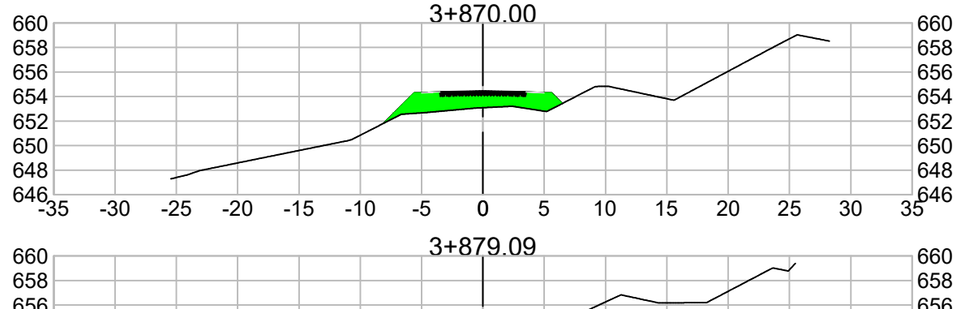


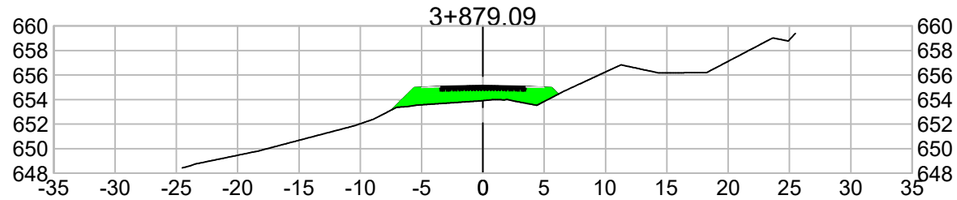


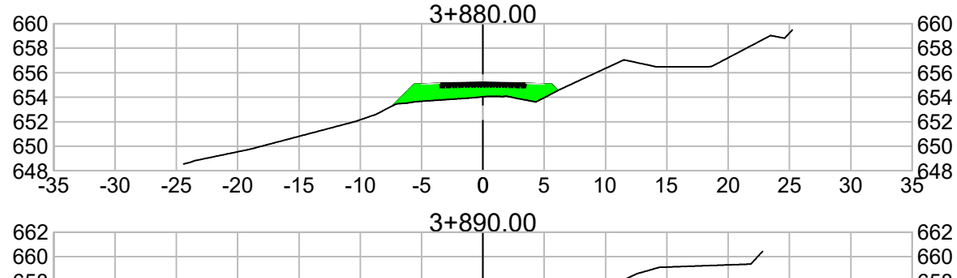


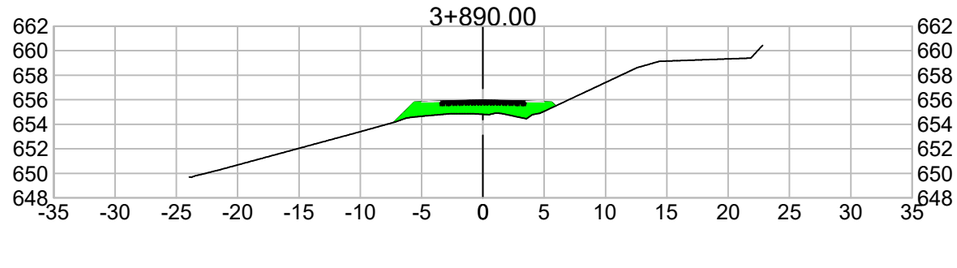










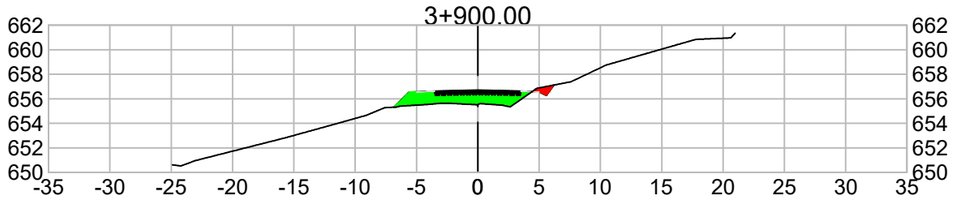


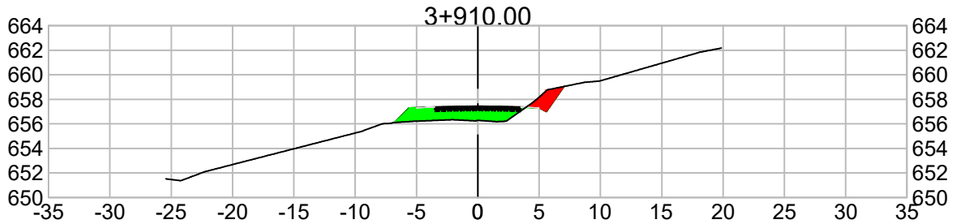
LEGENDA
CORTE
ATERRO

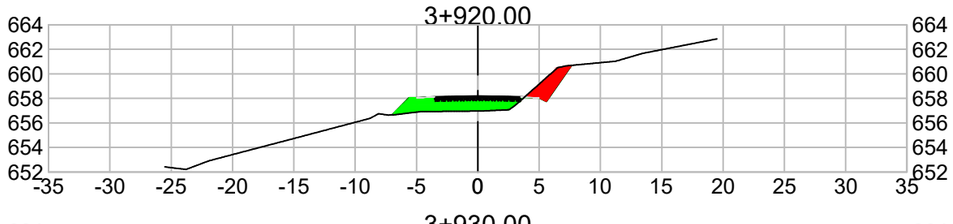
Serafini ENGENHARIA

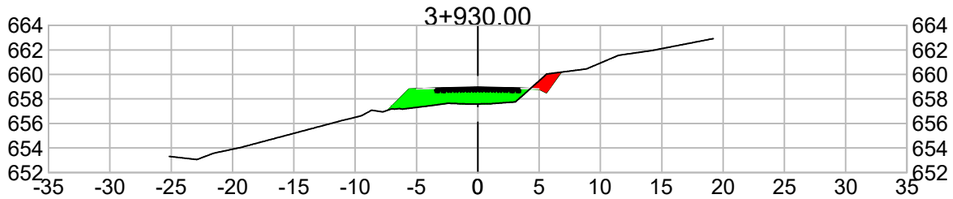
MUNICÍPIO DE NOVA ALVORADA - RS

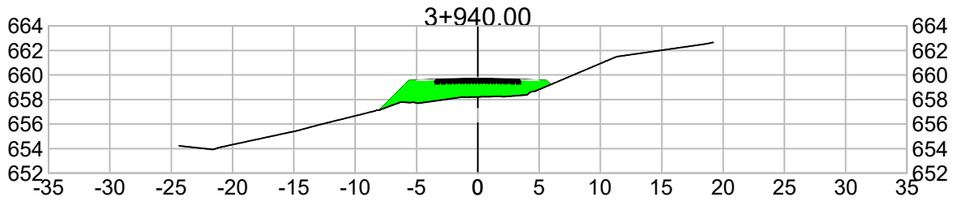
ESCALAS: 1/500	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: NOV/21	SEÇÕES TRANSVERSAIS	FOLHA 05.29

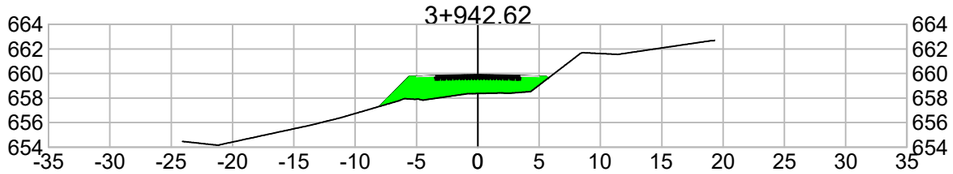


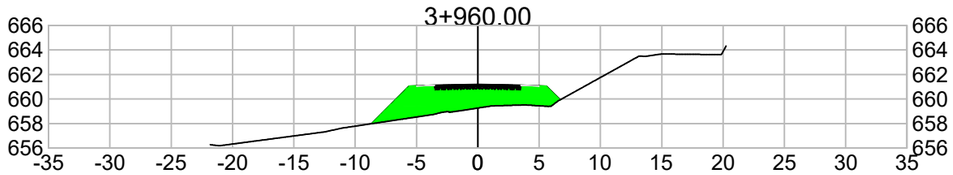


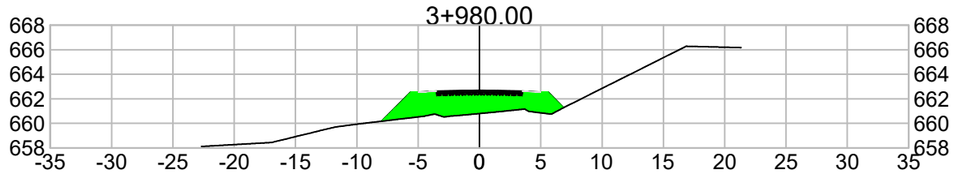


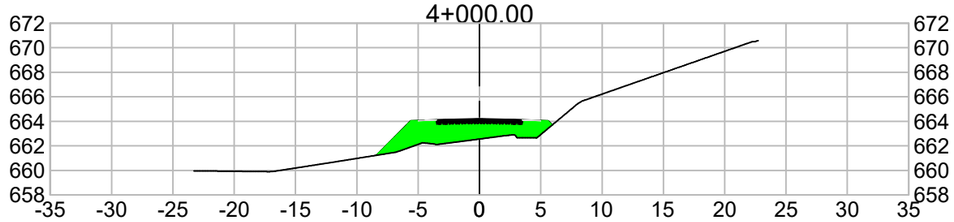


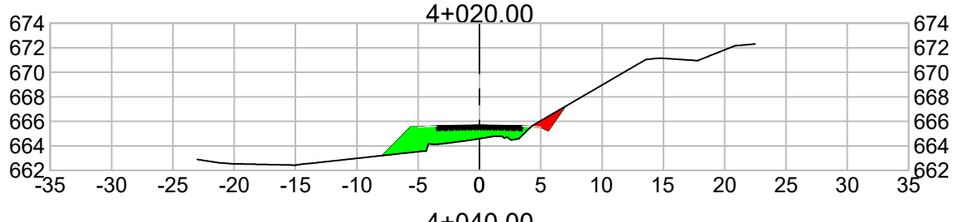


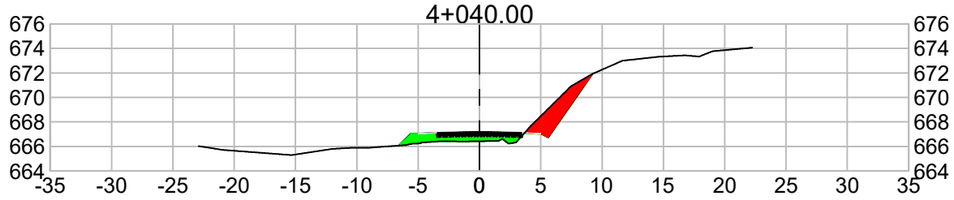


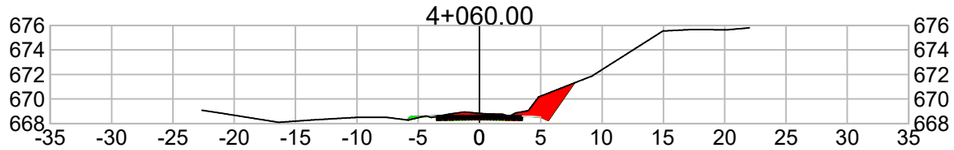


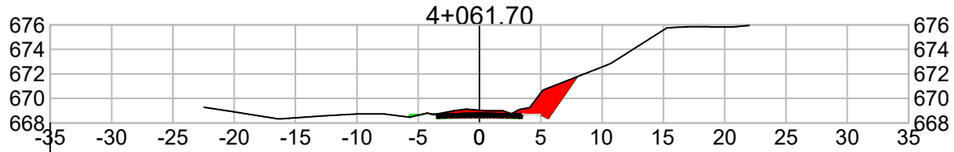


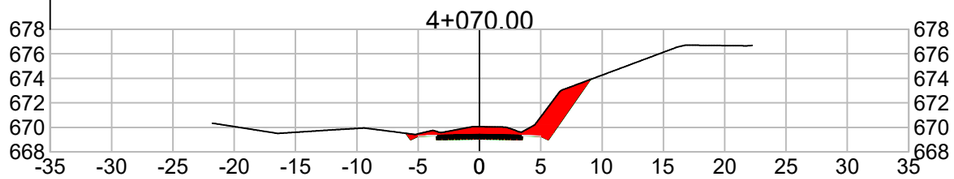










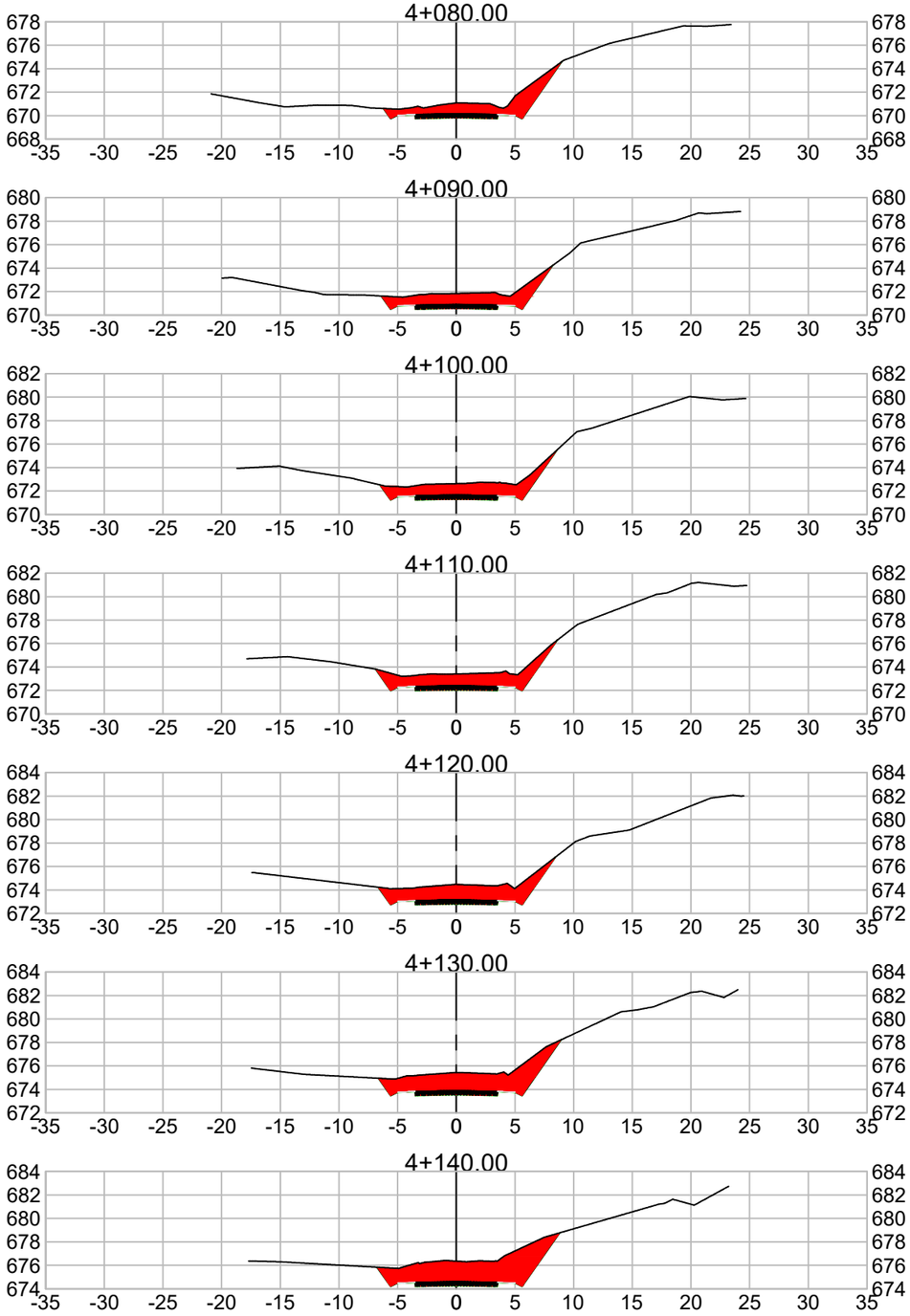


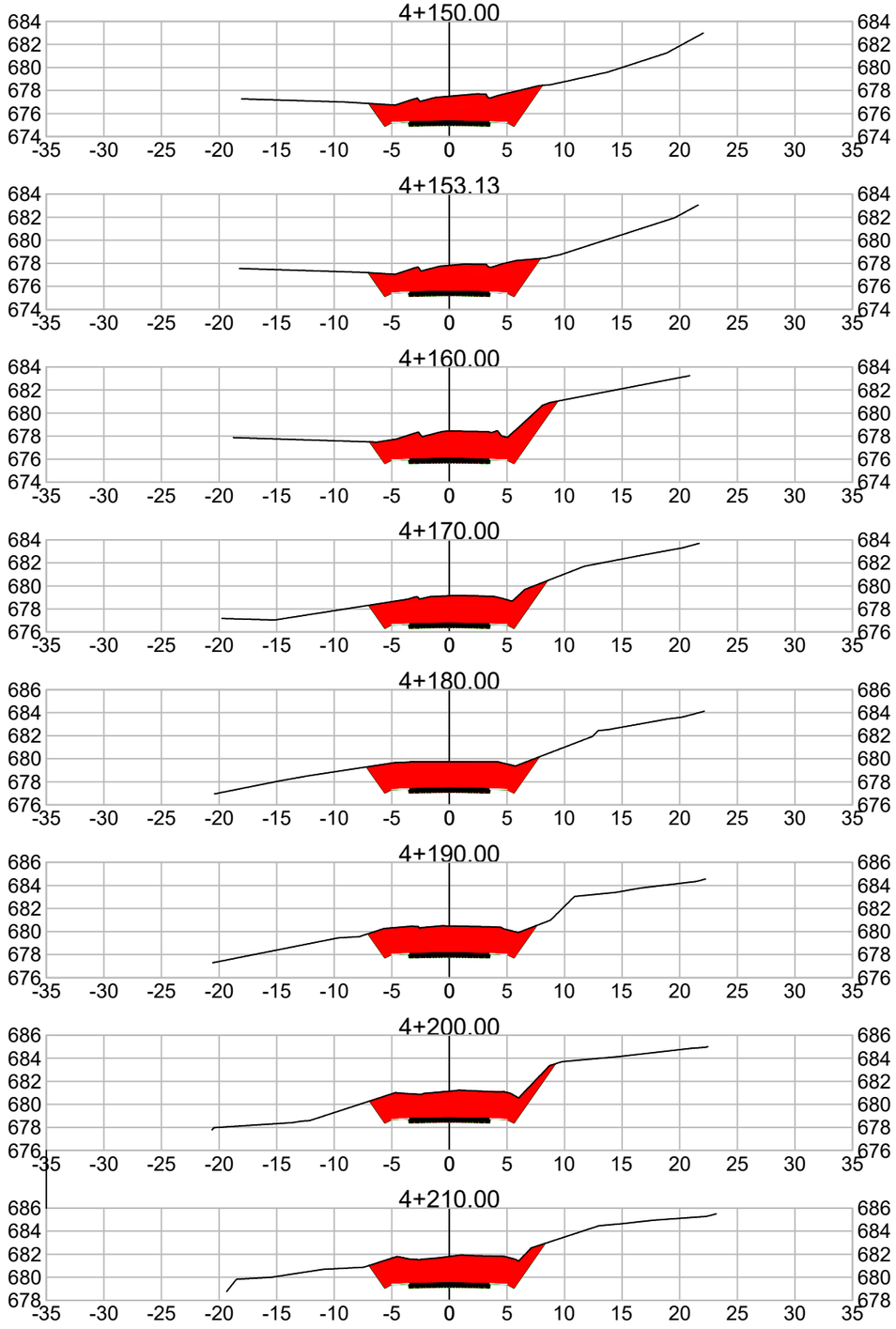
LEGENDA
CORTE
ATERRO

Serafini
ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/500	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: NOV/21	SEÇÕES TRANSVERSAIS	FOLHA 05.30





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MUNICÍPIO DE NOVA ALVORADA - RS

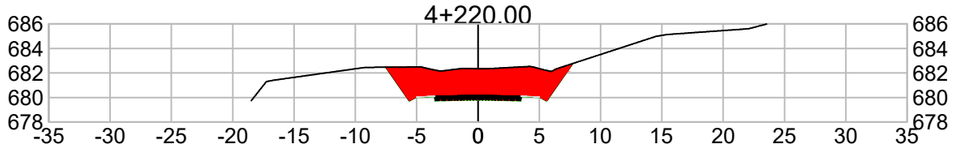
ESCALAS: 1/500

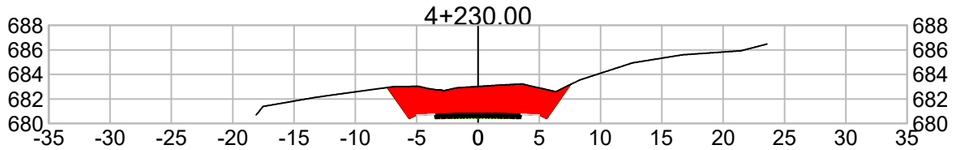
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

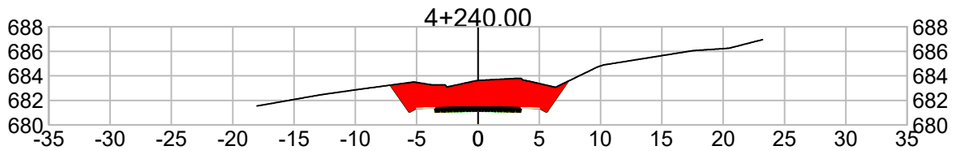
DATA: NOV/21

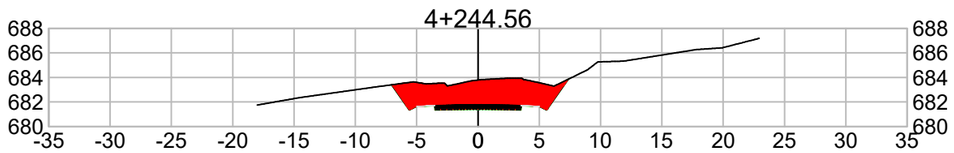
SEÇÕES TRANSVERSAIS

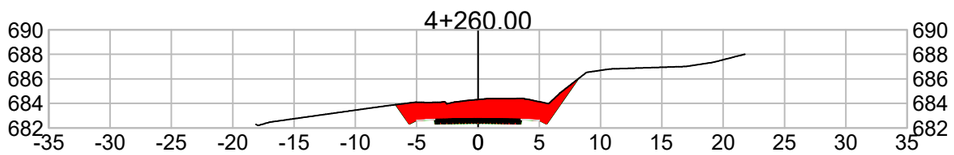
FOLHA 05.31

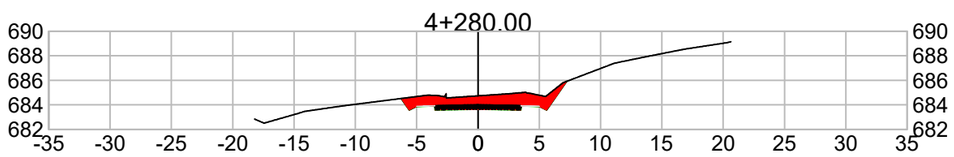


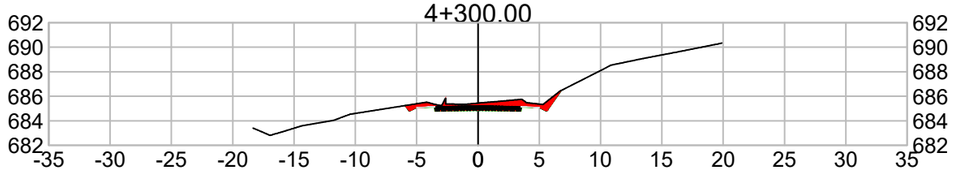


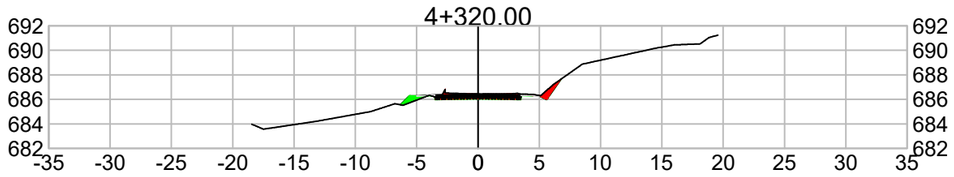


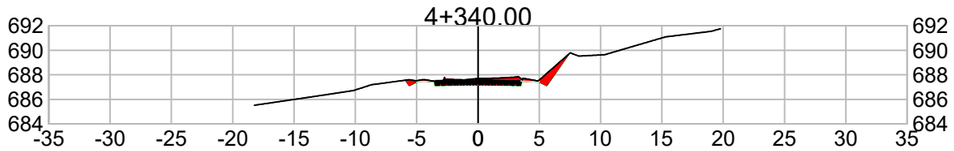


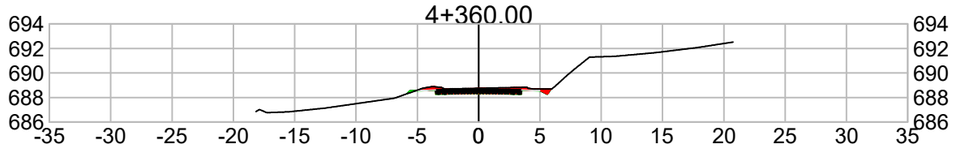


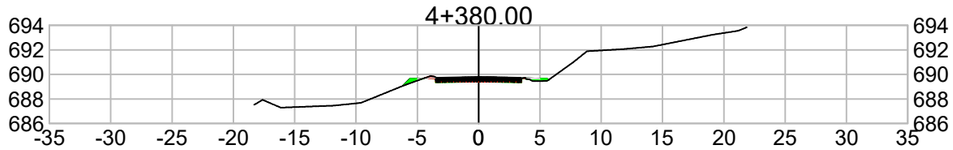




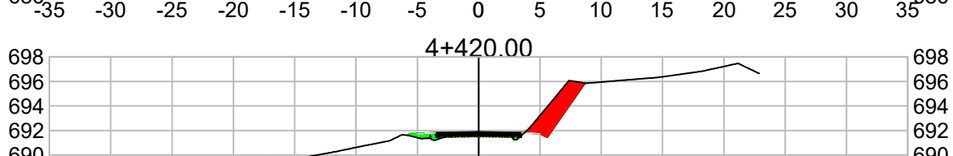


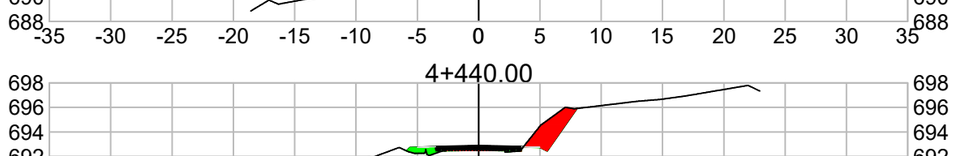


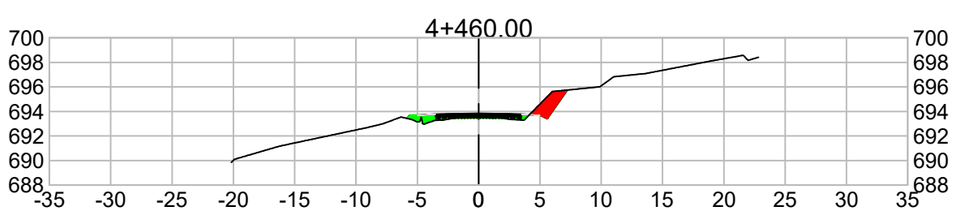


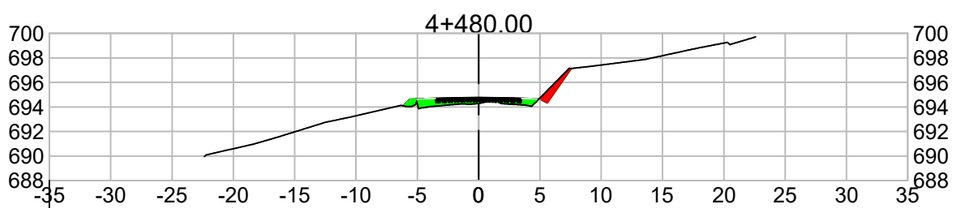


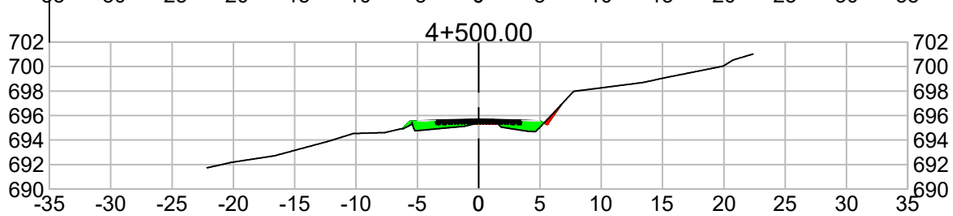












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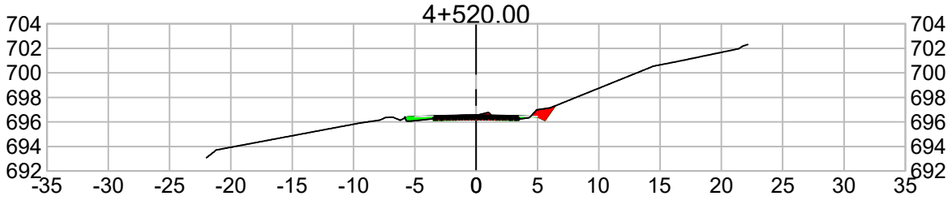
ESCALAS: 1/500

Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

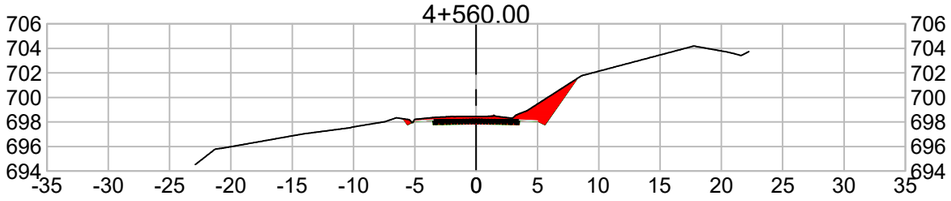
DATA: NOV/21

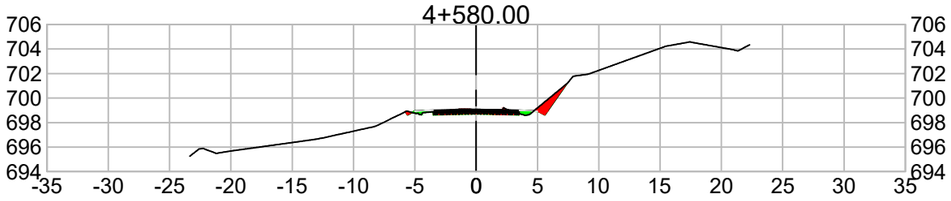
SEÇÕES TRANSVERSAIS

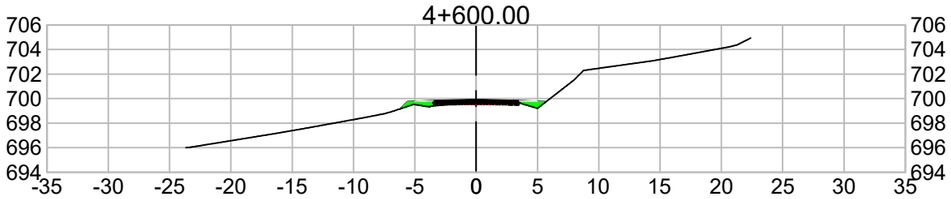
FOLHA 05.32

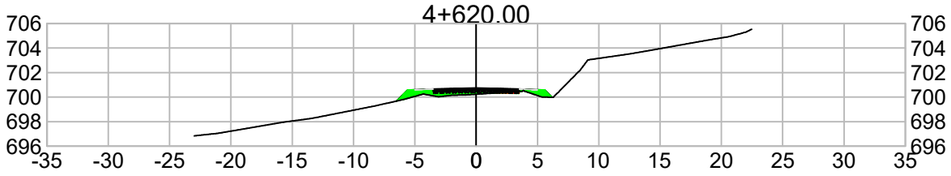


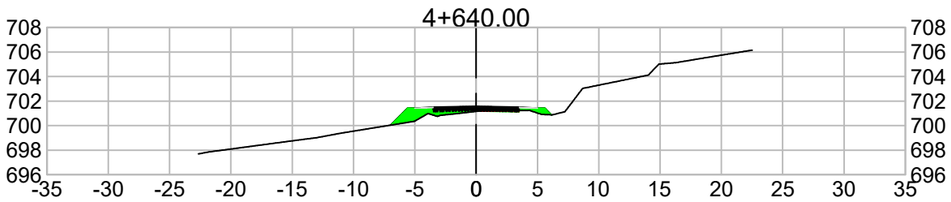


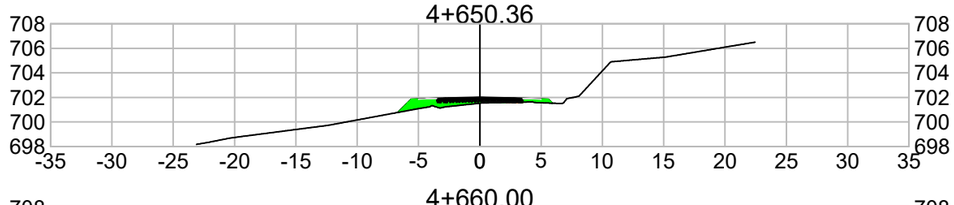


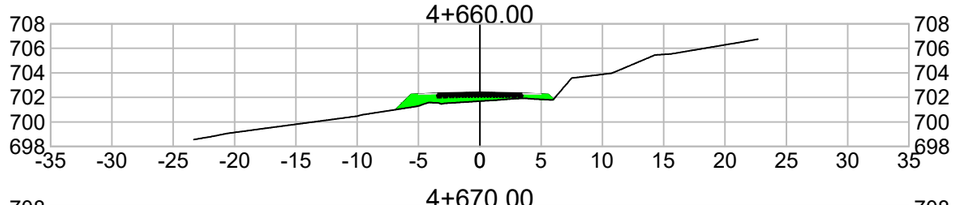


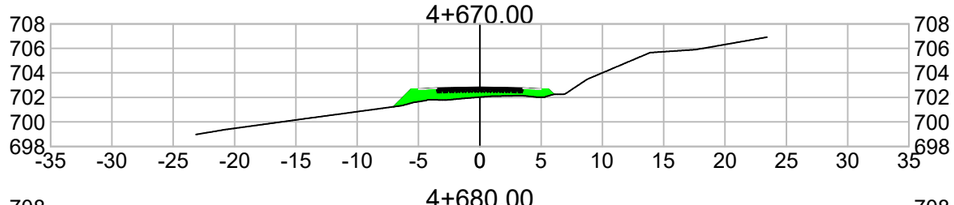


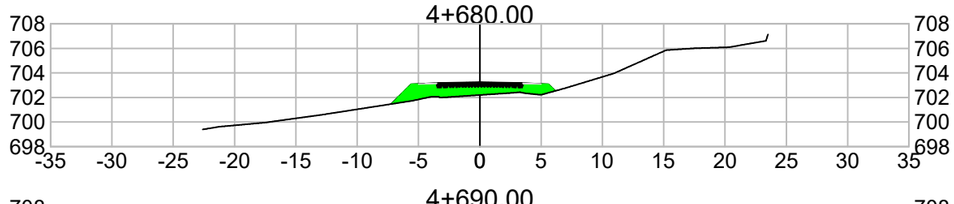


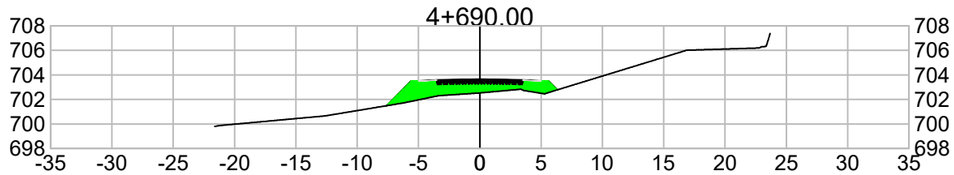


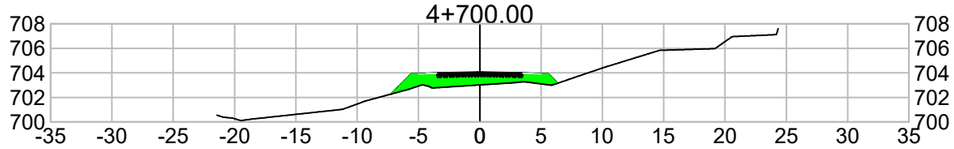


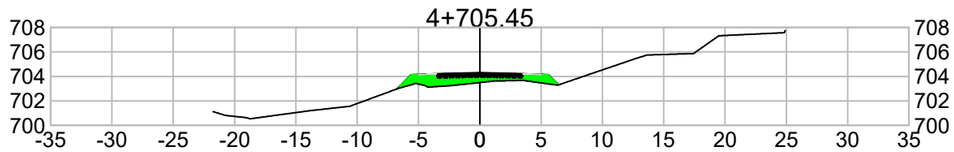


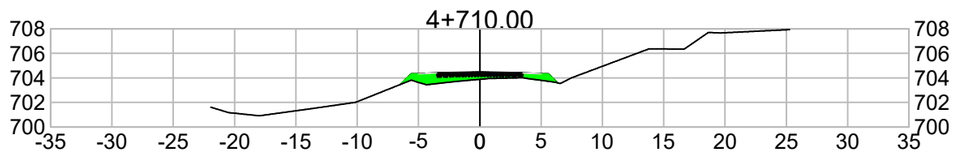










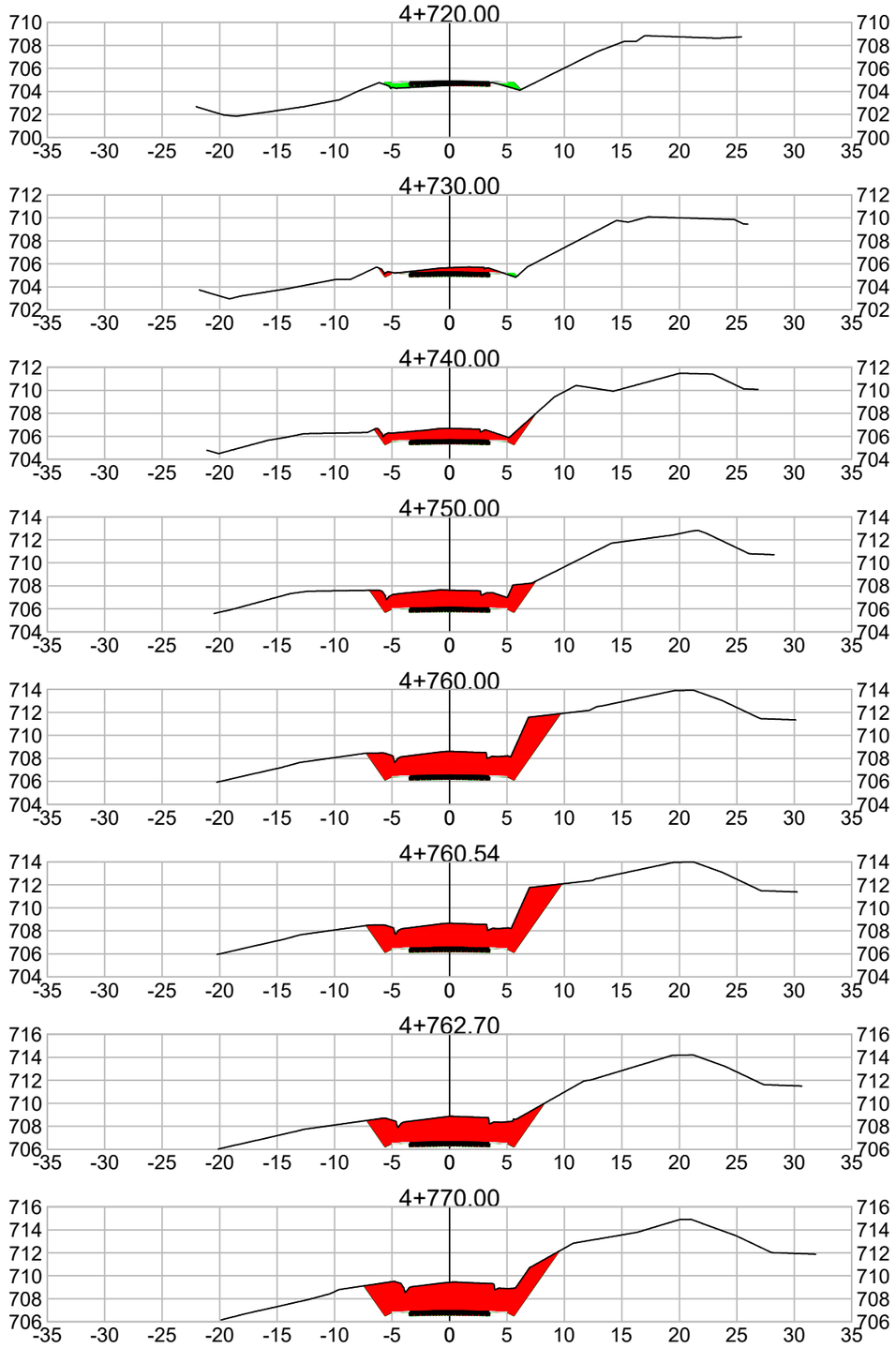


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MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/500	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: NOV/21	SEÇÕES TRANSVERSAIS	FOLHA 05.33



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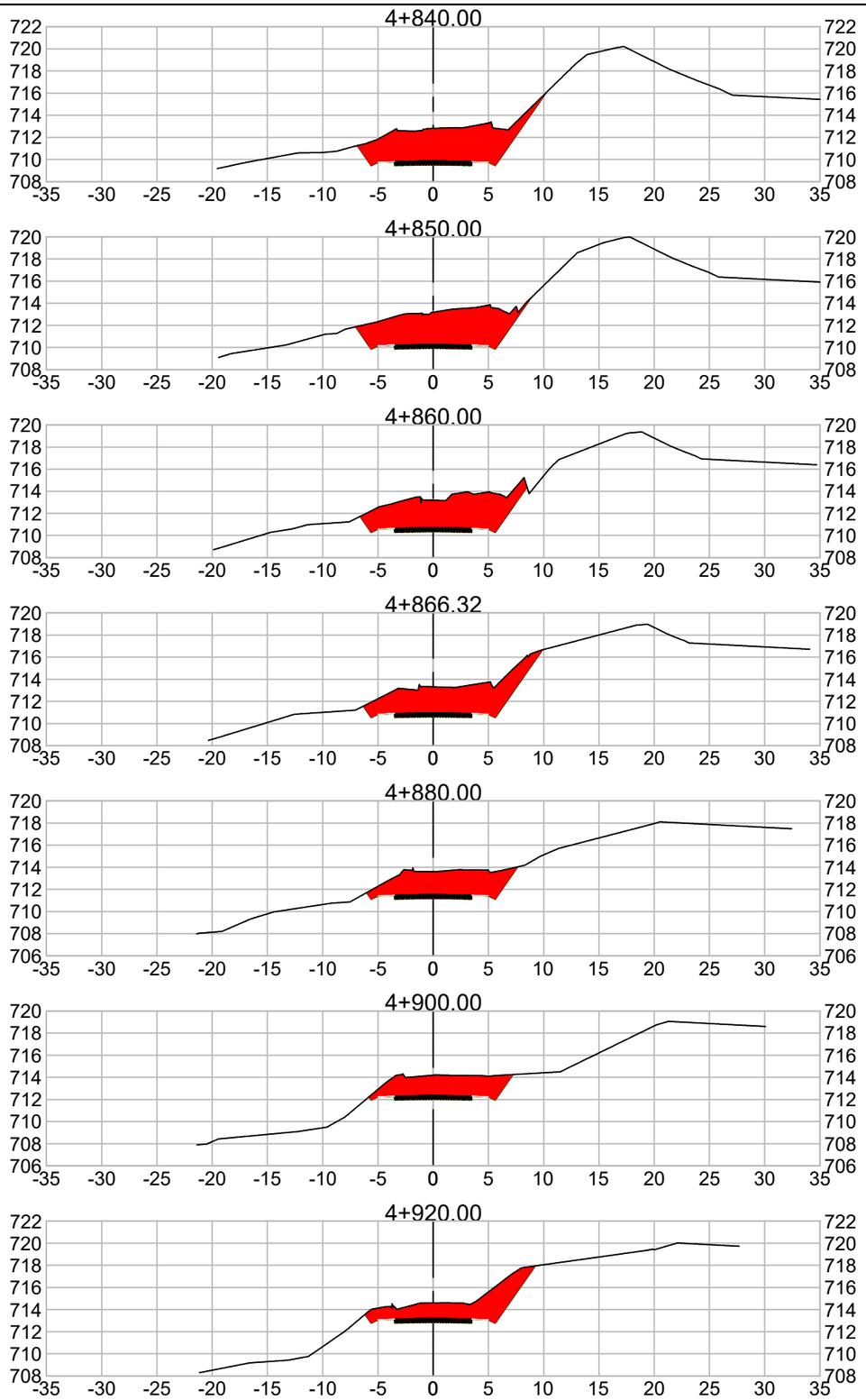
ESCALAS: 1/500

Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

DATA: NOV/21

SEÇÕES TRANSVERSAIS

FOLHA 05.34



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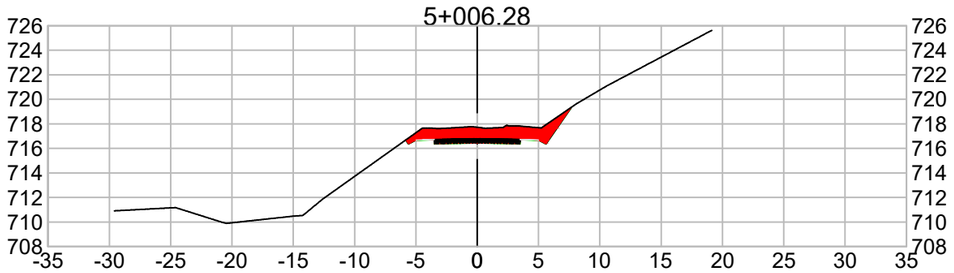
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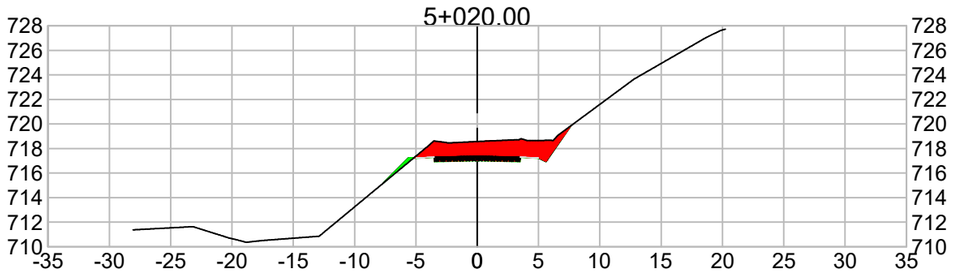
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

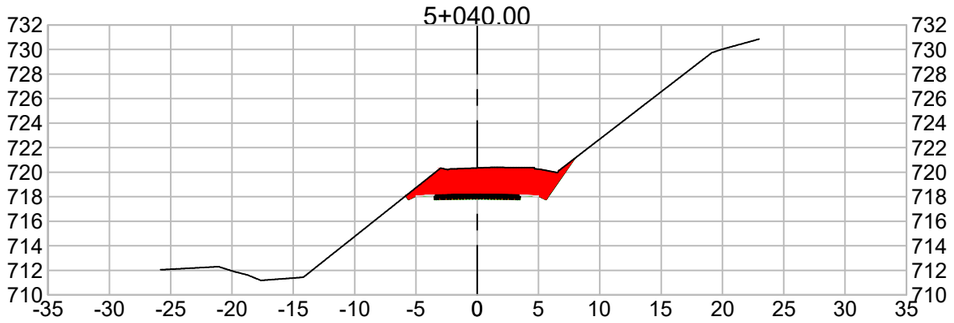
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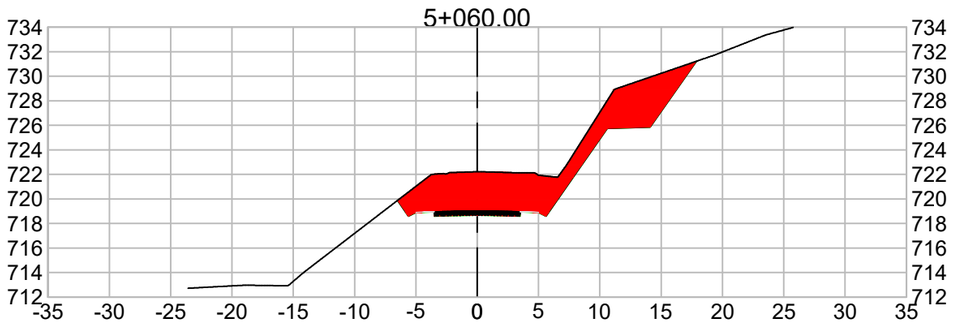
SEÇÕES TRANSVERSAIS

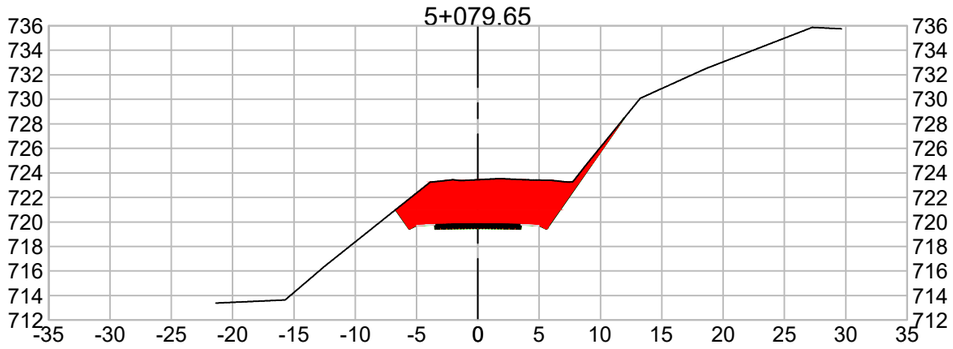
FOLHA 05.35

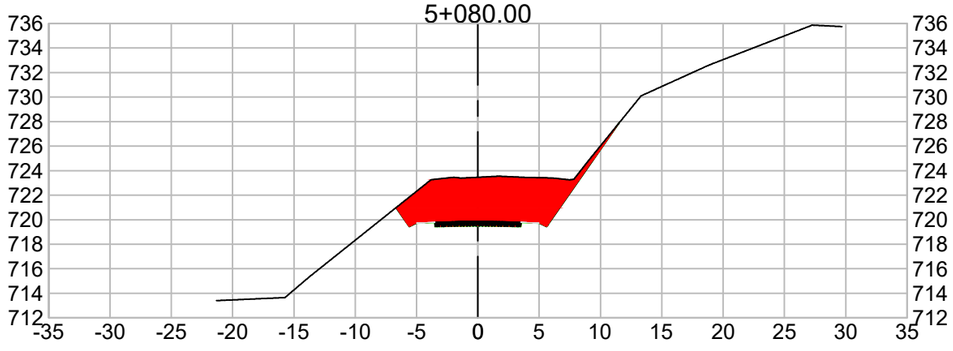


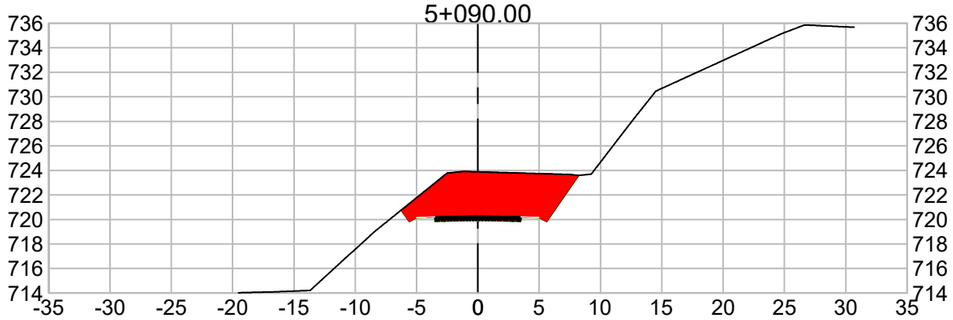


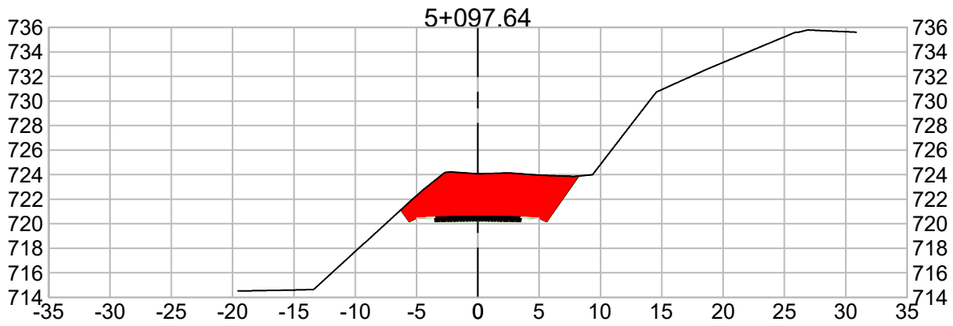












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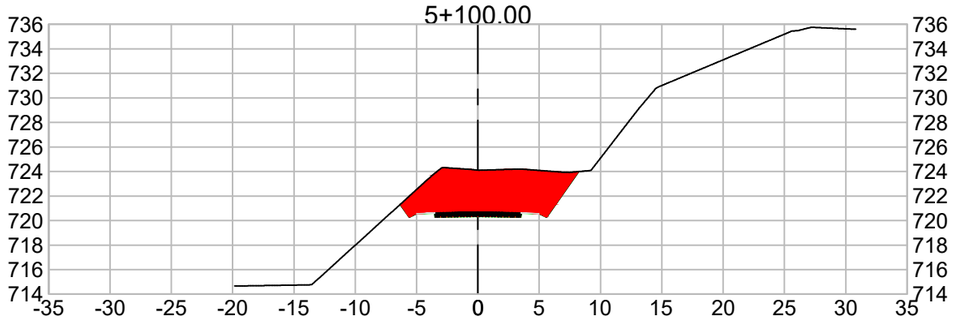
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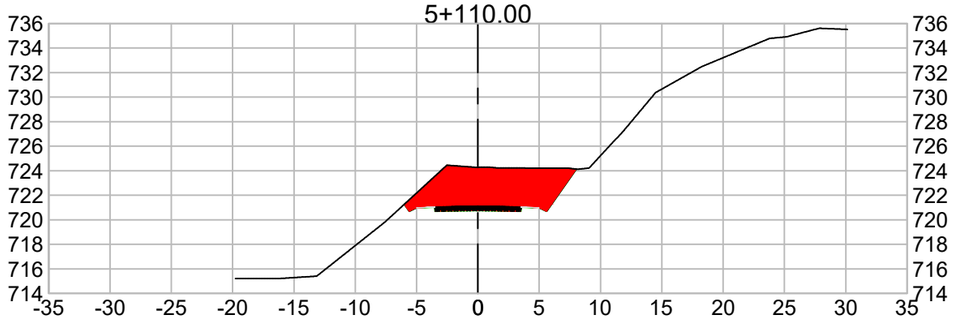
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

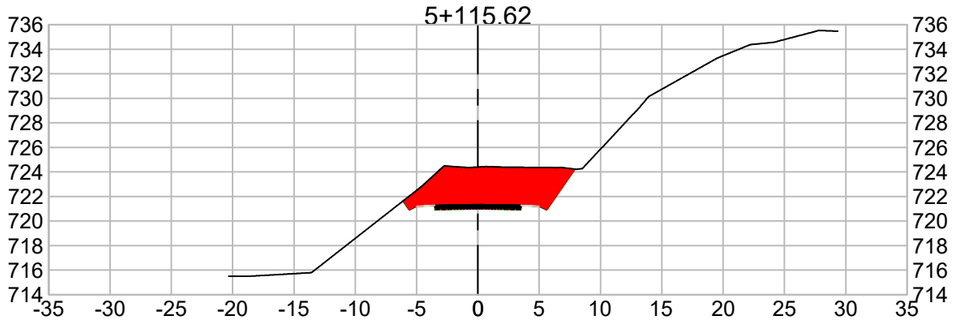
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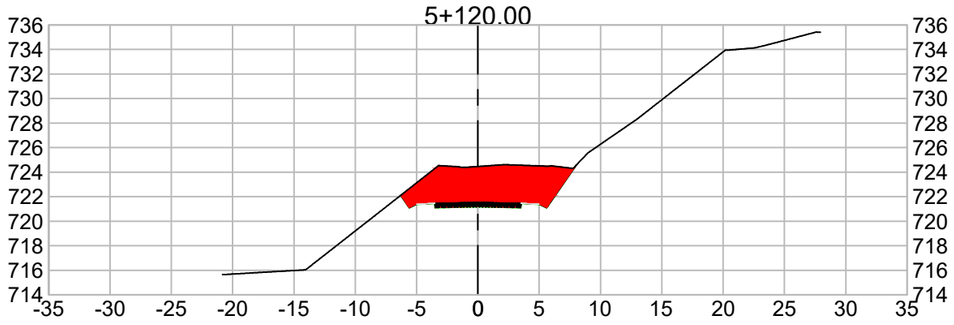
SEÇÕES TRANSVERSAIS

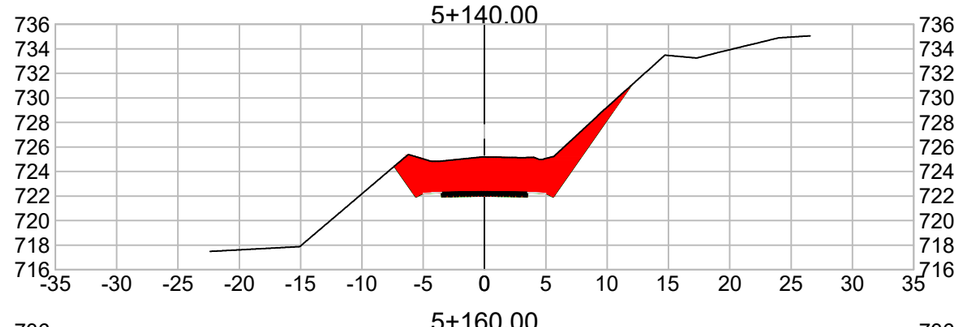
FOLHA 05.36

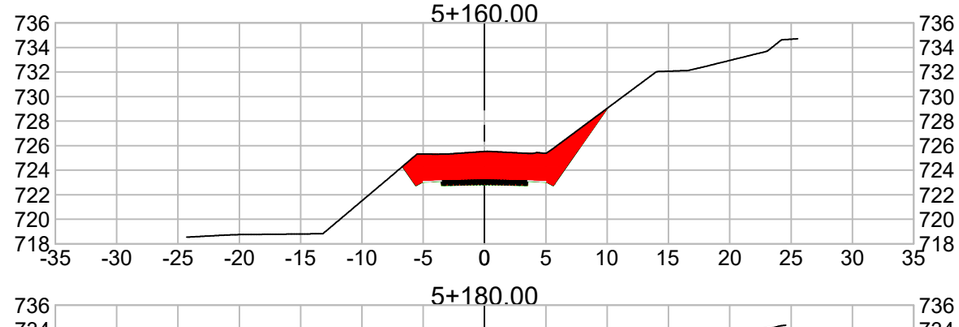


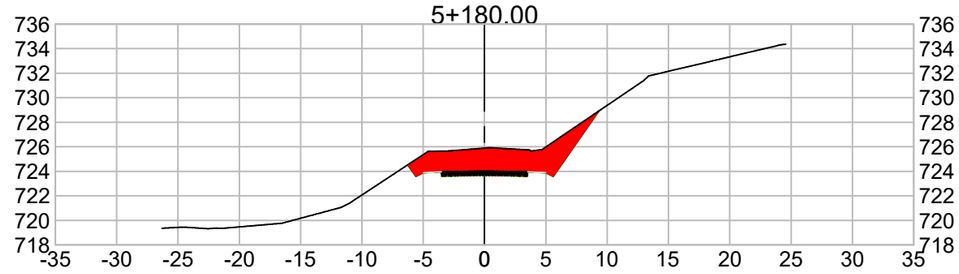


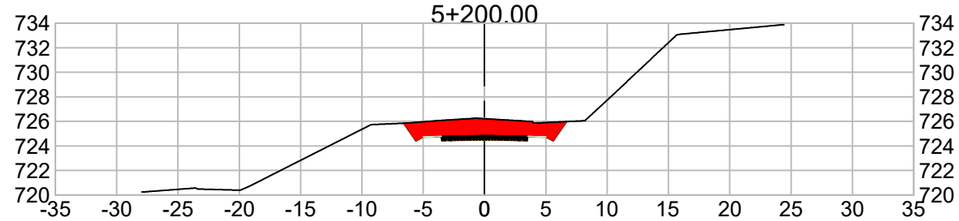


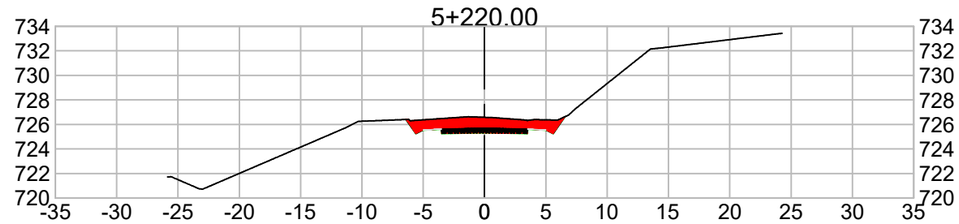












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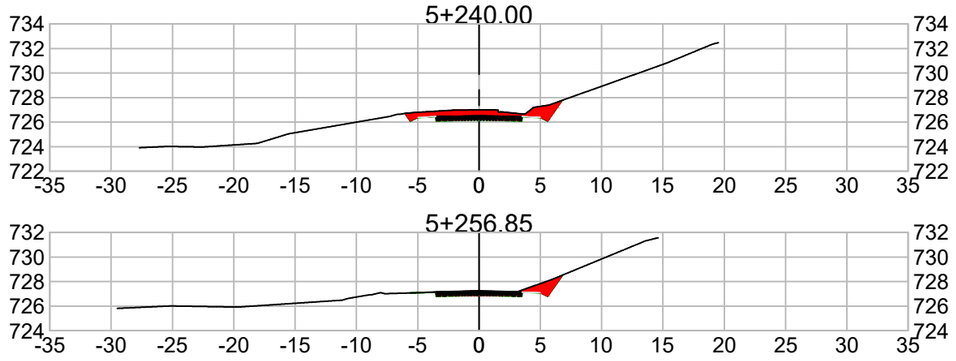
ESCALAS: 1/500

Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

DATA: NOV/21

SEÇÕES TRANSVERSAIS

FOLHA 05.37



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MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/500	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: NOV/21	SEÇÕES TRANSVERSAIS	FOLHA 05.38

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
0+000,00	3,75	0,00	0.00	0,00	0,00	0,00	0,00
0+020,00	2,16	0,07	59.13	0,73	59,13	0,73	58,40
0+040,00	3,85	0,00	60.12	0,73	119,25	1,45	117,79
0+060,00	8,19	0,00	120.41	0,00	239,66	1,45	238,21
0+080,00	24,01	0,00	321.95	0,00	561,62	1,45	560,16
0+100,00	41,83	0,00	658.42	0,00	1220,04	1,45	1218,59
0+120,00	54,58	0,00	964.18	0,00	2184,22	1,45	2182,77
0+139,75	66,44	0,00	1194.87	0,00	3379,09	1,45	3377,64
0+140,00	66,61	0,00	16.86	0,00	3395,95	1,45	3394,50
0+150,00	73,94	0,00	694.62	0,00	4090,57	1,45	4089,12
0+160,00	82,94	0,00	776.28	0,00	4866,85	1,45	4865,40
0+170,00	95,00	0,00	881.51	0,00	5748,36	1,45	5746,91
0+180,00	111,61	0,00	1025.92	0,00	6774,28	1,45	6772,82
0+186,24	123,40	0,00	730.49	0,00	7504,77	1,45	7503,31
0+190,00	134,90	0,00	484.11	0,00	7988,88	1,45	7987,43
0+200,00	158,38	0,00	1464.43	0,00	9453,32	1,45	9451,86
0+210,00	159,78	0,00	1583.95	0,00	11037,27	1,45	11035,81
0+220,00	180,45	0,00	1722.19	0,00	12759,46	1,45	12758,01
0+230,00	201,43	0,00	1997.15	0,00	14756,61	1,45	14755,16
0+232,74	195,30	0,00	577.26	0,00	15333,88	1,45	15332,42

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
0+240,00	175,98	0,00	1347.39	0,00	16681,27	1,45	16679,81
0+260,00	108,74	0,00	2847.17	0,00	19528,44	1,45	19526,99
0+280,00	48,90	0,00	1576.35	0,00	21104,79	1,45	21103,34
0+286,23	39,97	0,00	276.99	0,00	21381,78	1,45	21380,33
0+290,00	32,99	0,00	136.55	0,00	21518,34	1,45	21516,88
0+300,00	17,49	0,00	250.01	0,00	21768,34	1,45	21766,89
0+306,20	10,67	0,00	85.53	0,00	21853,87	1,45	21852,42
0+310,00	8,65	0,00	35.91	0,00	21889,78	1,45	21888,33
0+320,00	0,54	4,74	45.34	24,97	21935,12	26,42	21908,70
0+326,17	0,00	12,48	1.60	56,53	21936,72	82,95	21853,77
0+340,00	0,00	11,87	0.00	168,41	21936,72	251,36	21685,36
0+360,00	0,00	18,75	0.00	306,21	21936,72	557,57	21379,16
0+380,00	1,18	16,58	11.81	353,35	21948,54	910,92	21037,62
0+400,00	19,86	11,60	210.38	281,83	22158,92	1192,75	20966,17
0+420,00	22,65	8,10	425.12	196,94	22584,04	1389,69	21194,34
0+440,00	15,21	11,67	378.63	197,68	22962,66	1587,37	21375,29
0+460,00	0,00	20,76	152.08	324,35	23114,75	1911,73	21203,02
0+480,00	0,00	29,77	0.00	505,31	23114,75	2417,03	20697,71
0+500,00	0,00	29,33	0.00	591,00	23114,75	3008,03	20106,71
0+520,00	2,22	28,16	22.23	574,91	23136,98	3582,94	19554,04

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
0+540,00	3,10	39,15	53.25	673,12	23190,23	4256,06	18934,17
0+560,00	0,00	50,28	31.02	894,36	23221,25	5150,43	18070,83
0+580,00	0,00	80,20	0.00	1304,77	23221,25	6455,19	16766,06
0+600,00	0,00	106,94	0.00	1871,35	23221,25	8326,54	14894,71
0+620,00	0,00	164,19	0.00	2711,27	23221,25	11037,82	12183,44
0+640,00	0,00	202,00	0.00	3661,89	23221,25	14699,71	8521,54
0+660,00	0,00	226,42	0.00	4284,23	23221,25	18983,94	4237,31
0+680,00	0,00	222,55	0.00	4489,69	23221,25	23473,64	-252,38
0+700,00	0,00	177,42	0.00	3999,67	23221,25	27473,30	-4252,05
0+720,00	0,00	123,23	0.00	3006,50	23221,25	30479,81	-7258,55
0+732,40	0,00	100,31	0.00	1385,64	23221,25	31865,45	-8644,19
0+740,00	0,00	90,39	0.00	732,53	23221,25	32597,98	-9376,73
0+740,17	0,00	90,16	0.00	15,62	23221,25	32613,59	-9392,34
0+747,95	0,00	79,55	0.00	665,07	23221,25	33278,67	-10057,41
0+760,00	0,00	62,26	0.00	854,45	23221,25	34133,12	-10911,86
0+780,00	0,00	37,59	0.00	998,53	23221,25	35131,65	-11910,39
0+800,00	0,00	28,84	0.00	664,36	23221,25	35796,01	-12574,75
0+820,00	0,00	16,00	0.00	448,37	23221,25	36244,38	-13023,13
0+840,00	0,74	5,49	7.44	214,87	23228,69	36459,25	-13230,56
0+860,00	17,07	0,00	178.17	54,96	23406,86	36514,21	-13107,34

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
0+880,00	21,51	0,00	385.81	0,05	23792,68	36514,25	-12721,58
0+900,00	9,47	0,00	309.74	0,00	24102,41	36514,25	-12411,84
0+920,00	3,68	21,00	131.49	210,02	24233,91	36724,28	-12490,37
0+940,00	0,23	36,71	39.15	577,08	24273,06	37301,36	-13028,30
0+960,00	3,30	3,86	35.32	405,68	24308,38	37707,03	-13398,65
0+980,00	11,60	0,00	148.99	38,61	24457,37	37745,65	-13288,28
1+000,00	39,35	0,00	509.47	0,00	24966,85	37745,65	-12778,80
1+020,00	14,27	0,00	536.19	0,00	25503,03	37745,65	-12242,62
1+027,24	15,04	0,00	106.16	0,00	25609,19	37745,65	-12136,46
1+030,00	14,65	0,00	41.37	0,00	25650,56	37745,65	-12095,09
1+040,00	12,28	0,00	135.83	0,00	25786,39	37745,65	-11959,26
1+050,00	10,82	0,00	116.57	0,00	25902,96	37745,65	-11842,69
1+051,86	10,18	0,00	19.79	0,00	25922,76	37745,65	-11822,89
1+060,00	9,39	0,00	79.24	0,00	26002,00	37745,65	-11743,65
1+070,00	18,84	0,00	132.35	0,02	26134,35	37745,67	-11611,32
1+076,48	33,87	0,73	155.81	2,52	26290,16	37748,19	-11458,03
1+080,00	61,63	1,14	168.07	3,29	26458,22	37751,47	-11293,25
1+100,00	105,96	0,00	1675.93	11,40	28134,15	37762,88	-9628,72
1+120,00	127,98	0,00	2339.41	0,00	30473,56	37762,88	-7289,31
1+140,00	168,30	0,00	2962.84	0,00	33436,41	37762,88	-4326,47

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
1+160,00	238,04	0,00	4063.43	0,00	37499,84	37762,88	-263,03
1+180,00	164,56	0,00	4026.05	0,00	41525,89	37762,88	3763,01
1+200,00	101,65	0,00	2662.11	0,00	44188,00	37762,88	6425,12
1+220,00	91,76	71,31	1934.11	713,12	46122,10	38475,99	7646,11
1+230,40	38,81	118,05	679.00	984,75	46801,11	39460,74	7340,37
1+240,00	0,00	220,86	203.85	1444,10	47004,96	40904,83	6100,12
1+250,00	0,00	237,06	0.00	2093,05	47004,96	42997,88	4007,08
1+251,46	0,00	230,43	0.00	310,70	47004,96	43308,58	3696,37
1+260,00	0,00	202,45	0.00	1662,42	47004,96	44971,00	2033,96
1+270,00	0,00	203,06	0.00	1780,81	47004,96	46751,81	253,15
1+272,51	0,00	208,50	0.00	450,52	47004,96	47202,33	-197,37
1+280,00	0,00	222,87	0.00	1615,14	47004,96	48817,47	-1812,51
1+300,00	0,00	265,61	0.00	4884,88	47004,96	53702,35	-6697,40
1+320,00	0,00	281,90	0.00	5475,17	47004,96	59177,52	-12172,57
1+340,00	0,00	303,21	0.00	5851,11	47004,96	65028,64	-18023,68
1+360,00	0,00	283,92	0.00	5871,33	47004,96	70899,97	-23895,02
1+380,00	0,00	250,75	0.00	5346,78	47004,96	76246,75	-29241,80
1+400,00	0,00	216,75	0.00	4675,01	47004,96	80921,76	-33916,80
1+420,00	0,00	240,45	0.00	4571,98	47004,96	85493,74	-38488,78
1+440,00	0,00	252,65	0.00	4931,04	47004,96	90424,78	-43419,82

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
1+440,06	0,00	252,75	0.00	15,81	47004,96	90440,58	-43435,63
1+450,00	0,00	259,13	0.00	2749,91	47004,96	93190,49	-46185,54
1+453,97	0,00	256,88	0.00	1107,16	47004,96	94297,65	-47292,70
1+460,00	0,00	259,20	0.00	1677,45	47004,96	95975,10	-48970,15
1+467,89	0,00	266,98	0.00	2230,39	47004,96	98205,50	-51200,54
1+480,00	0,00	261,34	0.00	3199,91	47004,96	101405,41	-54400,45
1+500,00	0,00	230,39	0.00	4917,29	47004,96	106322,69	-59317,74
1+520,00	0,00	241,12	0.00	4715,09	47004,96	111037,79	-64032,83
1+540,00	0,00	261,72	0.00	5028,40	47004,96	116066,19	-69061,23
1+560,00	0,00	293,17	0.00	5548,91	47004,96	121615,09	-74610,14
1+580,00	0,00	289,01	0.00	5821,77	47004,96	127436,86	-80431,91
1+600,00	0,00	237,05	0.00	5260,58	47004,96	132697,44	-85692,49
1+620,00	0,00	190,90	0.00	4279,51	47004,96	136976,95	-89971,99
1+640,00	0,00	224,20	0.00	4151,02	47004,96	141127,97	-94123,01
1+660,00	0,00	395,33	0.00	6195,29	47004,96	147323,26	-100318,30
1+680,00	0,00	458,35	0.00	8536,77	47004,96	155860,03	-108855,07
1+698,53	0,00	626,69	0.00	10051,17	47004,96	165911,20	-118906,25
1+700,00	0,00	634,98	0.00	961,32	47004,96	166872,52	-119867,57
1+710,00	0,00	681,49	0.00	6773,77	47004,96	173646,30	-126641,34
1+720,00	0,00	695,52	0.00	7076,72	47004,96	180723,02	-133718,06

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000

Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

DATA: OUT/21

QUANTITATIVOS – TERRAPLENAGEM

FOLHA 04.17

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
1+720,14	0,00	695,48	0.00	97,54	47004,96	180820,56	-133815,60
1+730,00	0,00	682,30	0.00	7016,98	47004,96	187837,54	-140832,58
1+740,00	0,00	577,77	0.00	6603,61	47004,96	194441,15	-147436,19
1+741,75	0,00	550,09	0.00	1055,88	47004,96	195497,03	-148492,08
1+760,00	0,00	234,00	0.00	7153,37	47004,96	202650,41	-155645,45
1+780,00	30,49	6,16	304.89	2401,64	47309,85	205052,05	-157742,20
1+800,00	224,02	0,00	2545.10	61,60	49854,95	205113,65	-155258,70
1+820,00	290,43	0,00	5144.50	0,00	54999,44	205113,65	-150114,20
1+840,00	424,97	0,00	7153.98	0,00	62153,42	205113,65	-142960,23
1+860,00	479,84	0,00	9048.08	0,00	71201,50	205113,65	-133912,14
1+880,00	426,82	0,00	9066.61	0,00	80268,11	205113,65	-124845,54
1+900,00	94,22	0,00	5210.45	0,00	85478,56	205113,65	-119635,09
1+902,20	69,44	1,65	180.09	1,82	85658,65	205115,47	-119456,82
1+910,00	110,93	0,00	788.10	5,81	86446,74	205121,28	-118674,53
1+920,00	185,99	0,00	1655.91	0,00	88102,65	205121,28	-117018,62
1+922,71	199,24	0,00	579.83	0,00	88682,48	205121,28	-116438,80
1+930,00	235,27	0,00	1777.75	0,00	90460,23	205121,28	-114661,05
1+940,00	240,97	0,00	2721.89	0,00	93182,12	205121,28	-111939,16
1+943,22	220,18	0,00	857.28	0,00	94039,41	205121,28	-111081,87
1+960,00	121,45	0,00	2866.89	0,00	96906,29	205121,28	-108214,98

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
1+980,00	126,72	0,00	2481.73	0,00	99388,02	205121,28	-105733,25
2+000,00	176,28	0,00	3030.09	0,00	102418,11	205121,28	-102703,17
2+020,00	85,06	31,25	2613.43	312,53	105031,54	205433,81	-100402,27
2+040,00	51,81	26,83	1368.70	580,85	106400,24	206014,65	-99614,42
2+060,00	95,18	13,50	1469.86	403,27	107870,10	206417,93	-98547,83
2+063,59	105,32	13,56	359.95	48,57	108230,05	206466,50	-98236,45
2+070,00	97,44	17,16	580.01	109,99	108810,05	206576,49	-97766,43
2+078,12	97,51	18,72	706.68	161,58	109516,73	206738,07	-97221,34
2+080,00	100,01	17,78	166.40	37,98	109683,14	206776,05	-97092,92
2+090,00	113,91	13,05	960.80	170,86	110643,94	206946,92	-96302,98
2+092,65	118,44	11,45	276.56	36,03	110920,50	206982,95	-96062,45
2+100,00	132,78	8,36	923.56	72,84	111844,06	207055,79	-95211,73
2+120,00	72,40	5,50	2051.79	138,67	113895,85	207194,46	-93298,61
2+140,00	120,31	0,00	1927.09	55,04	115822,94	207249,49	-91426,55
2+160,00	139,84	0,00	2601.58	0,00	118424,52	207249,49	-88824,97
2+180,00	114,90	0,00	2547.40	0,00	120971,92	207249,49	-86277,57
2+200,00	103,29	0,00	2181.82	0,00	123153,74	207249,49	-84095,75
2+219,79	58,92	0,00	1604.82	0,00	124758,56	207249,49	-82490,93
2+220,00	58,66	0,00	12.52	0,00	124771,08	207249,49	-82478,41
2+230,00	48,37	0,00	535.15	0,00	125306,23	207249,49	-81943,26

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
2+240,00	46,96	0,00	476.61	0,00	125782,85	207249,49	-81466,65
2+250,00	45,23	0,00	460.92	0,00	126243,77	207249,49	-81005,72
2+260,00	39,34	0,00	422.87	0,00	126666,63	207249,49	-80582,86
2+270,00	41,12	0,00	402.32	0,00	127068,95	207249,49	-80180,54
2+280,00	48,90	0,00	450.09	0,00	127519,04	207249,49	-79730,46
2+290,00	56,12	0,00	525.08	0,00	128044,12	207249,49	-79205,38
2+296,18	51,50	0,00	332.42	0,00	128376,53	207249,49	-78872,96
2+300,00	47,70	0,00	189.57	0,00	128566,11	207249,49	-78683,39
2+310,00	38,76	0,00	432.28	0,00	128998,38	207249,49	-78251,11
2+320,00	31,03	0,00	348.95	0,00	129347,33	207249,49	-77902,16
2+330,00	26,67	0,00	288.53	0,00	129635,86	207249,49	-77613,63
2+340,00	28,36	0,00	275.17	0,00	129911,04	207249,49	-77338,46
2+350,00	32,95	0,00	306.57	0,00	130217,61	207249,49	-77031,89
2+360,00	36,91	0,00	349.29	0,00	130566,90	207249,49	-76682,59
2+370,00	38,31	0,00	376.06	0,00	130942,96	207249,49	-76306,53
2+372,57	39,22	0,00	99.57	0,00	131042,53	207249,49	-76206,96
2+380,00	40,45	0,00	296.03	0,00	131338,56	207249,49	-75910,93
2+400,00	48,57	0,00	890.18	0,00	132228,74	207249,49	-75020,75
2+420,00	54,13	0,00	1027.00	0,00	133255,74	207249,49	-73993,76
2+440,00	55,06	0,00	1091.93	0,00	134347,66	207249,49	-72901,83

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
2+455,01	49,83	0,00	787.24	0,00	135134,91	207249,49	-72114,58
2+460,00	43,43	0,00	232.88	0,00	135367,79	207249,49	-71881,71
2+470,00	36,39	0,00	400.21	0,00	135768,00	207249,49	-71481,50
2+480,00	28,93	0,00	327.91	0,00	136095,90	207249,49	-71153,59
2+490,00	28,66	0,00	289.52	0,00	136385,43	207249,49	-70864,07
2+500,00	16,26	0,00	225.72	0,00	136611,15	207249,49	-70638,35
2+510,00	0,00	2,78	81.48	13,94	136692,62	207263,43	-70570,81
2+519,80	0,00	22,88	0.00	125,84	136692,62	207389,28	-70696,65
2+520,00	0,00	23,31	0.00	4,53	136692,62	207393,81	-70701,19
2+530,00	0,00	50,57	0.00	370,40	136692,62	207764,21	-71071,59
2+540,00	0,00	104,21	0.00	777,65	136692,62	208541,86	-71849,23
2+550,00	0,00	234,88	0.00	1728,37	136692,62	210270,22	-73577,60
2+560,00	0,00	397,30	0.00	3199,06	136692,62	213469,28	-76776,66
2+570,00	0,00	474,76	0.00	4297,49	136692,62	217766,77	-81074,15
2+580,00	0,00	478,05	0.00	4585,87	136692,62	222352,64	-85660,02
2+584,60	0,00	484,25	0.00	2105,63	136692,62	224458,27	-87765,65
2+600,00	0,00	455,63	0.00	7238,90	136692,62	231697,17	-95004,54
2+620,00	0,00	370,02	0.00	8256,46	136692,62	239953,62	-103261,00
2+640,00	0,00	265,20	0.00	6352,15	136692,62	246305,78	-109613,15
2+653,42	0,00	206,95	0.00	3167,87	136692,62	249473,65	-112781,02

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
2+660,00	0,00	179,45	0.00	1280,43	136692,62	250754,08	-114061,46
2+670,00	0,00	143,29	0.00	1622,08	136692,62	252376,16	-115683,53
2+680,00	0,00	117,86	0.00	1310,18	136692,62	253686,34	-116993,71
2+690,00	0,00	93,87	0.00	1062,06	136692,62	254748,39	-118055,77
2+700,00	0,00	73,40	0.00	838,92	136692,62	255587,31	-118894,69
2+710,00	0,00	59,66	0.00	667,15	136692,62	256254,46	-119561,84
2+720,00	0,00	46,44	0.00	531,94	136692,62	256786,40	-120093,77
2+730,00	0,00	34,85	0.00	407,67	136692,62	257194,07	-120501,45
2+740,00	0,00	24,31	0.00	296,84	136692,62	257490,92	-120798,29
2+750,00	0,00	13,83	0.00	191,61	136692,62	257682,52	-120989,90
2+760,00	0,32	5,63	1.58	98,06	136694,20	257780,58	-121086,38
2+766,14	1,91	2,71	6.78	25,95	136700,99	257806,53	-121105,54
2+770,00	3,67	1,58	10.76	8,27	136711,74	257814,80	-121103,05
2+780,00	8,12	0,33	58.50	9,71	136770,24	257824,51	-121054,27
2+790,00	14,85	0,00	114.23	1,67	136884,48	257826,18	-120941,70
2+800,00	24,07	0,00	193.92	0,00	137078,40	257826,18	-120747,78
2+810,00	31,20	0,00	276.04	0,00	137354,44	257826,18	-120471,74
2+820,00	32,19	0,00	317.16	0,00	137671,59	257826,18	-120154,59
2+830,00	31,50	0,00	318.91	0,00	137990,50	257826,18	-119835,68
2+840,00	30,64	0,00	311.24	0,00	138301,74	257826,18	-119524,44

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
2+850,00	27,87	0,00	293.10	0,00	138594,84	257826,18	-119231,34
2+860,00	23,85	0,00	259.01	0,00	138853,86	257826,18	-118972,32
2+870,00	16,86	0,00	203.75	0,00	139057,61	257826,18	-118768,57
2+878,87	10,77	0,00	122.56	0,00	139180,17	257826,18	-118646,01
2+880,00	9,78	0,00	11.60	0,00	139191,77	257826,18	-118634,41
2+900,00	0,00	3,97	97.75	39,74	139289,52	257865,92	-118576,40
2+920,00	0,00	7,07	0.00	110,42	139289,52	257976,35	-118686,82
2+940,00	0,00	6,72	0.00	137,92	139289,52	258114,27	-118824,74
2+960,00	0,00	5,41	0.00	121,38	139289,52	258235,65	-118946,12
2+980,00	0,00	5,89	0.00	113,05	139289,52	258348,70	-119059,17
3+000,00	0,00	7,47	0.00	133,65	139289,52	258482,35	-119192,82
3+020,00	0,00	16,09	0.00	235,63	139289,52	258717,98	-119428,45
3+040,00	0,00	22,29	0.00	383,76	139289,52	259101,74	-119812,22
3+051,22	0,00	21,29	0.00	244,51	139289,52	259346,25	-120056,73
3+060,00	0,00	19,18	0.00	177,79	139289,52	259524,05	-120234,52
3+070,00	0,00	15,76	0.00	174,74	139289,52	259698,79	-120409,27
3+080,00	0,00	12,27	0.00	140,10	139289,52	259838,89	-120549,37
3+090,00	0,00	8,23	0.00	102,44	139289,52	259941,33	-120651,81
3+100,00	1,77	4,98	8.77	66,05	139298,29	260007,38	-120709,09
3+110,00	5,73	1,77	37.10	33,78	139335,39	260041,16	-120705,77

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000

Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

DATA: OUT/21

QUANTITATIVOS – TERRAPLENAGEM

FOLHA 04.18

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
3+120,00	3,40	0,81	45.17	12,93	139380,56	260054,09	-120673,53
3+130,00	10,58	0,42	69.26	6,19	139449,82	260060,28	-120610,46
3+140,00	7,61	0,59	90.09	5,05	139539,91	260065,33	-120525,42
3+150,00	4,63	0,94	60.60	7,65	139600,52	260072,98	-120472,47
3+160,00	1,57	1,29	30.69	11,17	139631,21	260084,15	-120452,94
3+160,85	1,39	1,32	1.25	1,11	139632,46	260085,26	-120452,80
3+170,00	0,02	1,89	6.38	14,68	139638,84	260099,94	-120461,10
3+180,00	0,00	2,10	0.09	19,90	139638,93	260119,84	-120480,92
3+190,00	0,20	1,70	1.00	18,98	139639,93	260138,83	-120498,89
3+200,00	0,55	1,37	3.76	15,36	139643,69	260154,19	-120510,50
3+210,00	1,11	0,66	8.30	10,17	139651,99	260164,35	-120512,37
3+220,00	3,93	0,15	25.16	4,08	139677,15	260168,43	-120491,28
3+230,00	5,27	0,28	45.91	2,17	139723,06	260170,60	-120447,54
3+240,00	5,67	0,06	54.59	1,68	139777,65	260172,28	-120394,63
3+250,00	4,90	0,06	52.77	0,59	139830,42	260172,87	-120342,45
3+260,00	3,30	0,02	40.98	0,40	139871,40	260173,26	-120301,86
3+270,00	9,84	0,00	65.26	0,09	139936,66	260173,36	-120236,70
3+270,47	9,81	0,00	4.63	0,00	139941,29	260173,36	-120232,07
3+280,00	10,86	0,27	98.46	1,30	140039,75	260174,65	-120134,90
3+300,00	6,78	1,83	176.41	21,05	140216,16	260195,70	-119979,54

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
3+320,00	4,25	5,57	110.31	73,99	140326,46	260269,69	-119943,22
3+340,00	4,77	11,48	90.19	170,42	140416,66	260440,11	-120023,45
3+360,00	0,00	22,87	47.70	343,48	140464,36	260783,59	-120319,23
3+371,66	0,00	31,48	0.00	316,96	140464,36	261100,55	-120636,19
3+380,00	0,00	37,12	0.00	287,11	140464,36	261387,66	-120923,30
3+390,00	0,00	42,59	0.00	400,38	140464,36	261788,04	-121323,68
3+400,00	0,00	48,40	0.00	457,22	140464,36	262245,26	-121780,91
3+410,00	0,00	52,00	0.00	504,74	140464,36	262750,00	-122285,64
3+420,00	0,00	52,60	0.00	525,91	140464,36	263275,91	-122811,55
3+430,00	0,00	52,78	0.00	529,71	140464,36	263805,62	-123341,27
3+440,00	0,00	45,59	0.00	493,99	140464,36	264299,61	-123835,26
3+450,00	0,00	38,49	0.00	421,62	140464,36	264721,23	-124256,88
3+458,20	0,00	34,75	0.00	301,17	140464,36	265022,40	-124558,04
3+460,00	0,16	33,72	0.15	61,63	140464,50	265084,03	-124619,53
3+470,00	6,68	25,45	33.72	297,43	140498,22	265381,46	-124883,24
3+480,00	28,22	10,33	172.47	180,45	140670,68	265561,91	-124891,23
3+490,00	53,50	0,21	404.84	53,38	141075,52	265615,29	-124539,77
3+500,00	87,58	0,00	700.51	1,07	141776,04	265616,36	-123840,33
3+510,00	149,44	0,00	1176.79	0,00	142952,83	265616,36	-122663,54
3+520,00	124,19	0,00	1358.11	0,00	144310,94	265616,36	-121305,42

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
3+530,00	58,80	0,00	909.17	0,00	145220,11	265616,36	-120396,25
3+540,00	3,11	19,52	308.02	98,72	145528,13	265715,09	-120186,96
3+544,74	0,00	45,74	7.37	154,55	145535,50	265869,64	-120334,14
3+560,00	0,00	67,68	0.00	865,60	145535,50	266735,23	-121199,73
3+580,00	0,00	72,66	0.00	1403,34	145535,50	268138,58	-122603,07
3+600,00	0,00	69,50	0.00	1421,55	145535,50	269560,13	-124024,63
3+620,00	0,00	55,36	0.00	1248,54	145535,50	270808,67	-125273,17
3+640,00	0,00	44,39	0.00	997,46	145535,50	271806,13	-126270,63
3+660,00	1,33	33,28	13.32	776,73	145548,82	272582,86	-127034,04
3+680,00	3,12	27,75	44.56	610,32	145593,38	273193,18	-127599,79
3+700,00	0,00	35,85	31.24	635,94	145624,62	273829,11	-128204,49
3+720,00	0,00	39,60	0.00	754,42	145624,62	274583,53	-128958,91
3+740,00	0,00	29,96	0.00	695,55	145624,62	275279,09	-129654,46
3+760,00	4,40	19,85	44.04	498,08	145668,66	275777,17	-130108,51
3+780,00	20,58	13,39	249.81	332,39	145918,47	276109,56	-130191,09
3+800,00	18,13	14,06	387.10	274,51	146305,58	276384,07	-130078,49
3+815,57	1,44	14,42	152.37	221,69	146457,94	276605,76	-130147,81
3+820,00	1,37	14,78	6.43	64,20	146464,37	276669,96	-130205,58
3+830,00	0,00	17,25	7.07	159,15	146471,44	276829,11	-130357,67
3+840,00	0,00	19,37	0.00	182,12	146471,44	277011,23	-130539,79

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
3+850,00	0,00	22,73	0.00	209,15	146471,44	277220,38	-130748,94
3+860,00	0,00	19,28	0.00	208,79	146471,44	277429,16	-130957,72
3+870,00	0,00	15,68	0.00	174,08	146471,44	277603,24	-131131,80
3+879,09	0,00	13,09	0.00	130,35	146471,44	277733,59	-131262,15
3+880,00	0,00	12,83	0.00	11,78	146471,44	277745,37	-131273,93
3+890,00	0,00	10,55	0.00	116,55	146471,44	277861,92	-131390,48
3+900,00	0,67	8,30	3.42	93,76	146474,86	277955,67	-131480,82
3+910,00	2,48	8,01	16.14	80,85	146491,00	278036,53	-131545,53
3+920,00	3,98	8,65	33.21	82,48	146524,21	278119,01	-131594,80
3+930,00	1,80	10,90	29.74	96,72	146553,95	278215,73	-131661,78
3+940,00	0,00	15,49	9.25	130,86	146563,20	278346,59	-131783,39
3+942,62	0,00	16,28	0.00	41,58	146563,20	278388,17	-131824,97
3+960,00	0,00	24,39	0.00	353,50	146563,20	278741,67	-132178,47
3+980,00	0,00	21,59	0.00	459,76	146563,20	279201,42	-132638,23
4+000,00	0,00	18,70	0.00	402,82	146563,20	279604,25	-133041,05
4+020,00	1,50	11,87	15.01	305,67	146578,21	279909,92	-133331,71
4+040,00	7,00	4,49	85.02	163,59	146663,23	280073,51	-133410,28
4+060,00	8,50	0,16	154.97	46,45	146818,21	280119,96	-133301,75
4+061,70	9,62	0,09	15.44	0,21	146833,64	280120,17	-133286,52
4+070,00	15,03	0,00	100.91	0,38	146934,55	280120,55	-133186,00

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
4+080,00	16,15	0,00	154.29	0,00	147088,83	280120,55	-133031,72
4+090,00	15,95	0,00	159.52	0,00	147248,35	280120,55	-132872,19
4+100,00	16,55	0,00	161.86	0,00	147410,21	280120,55	-132710,34
4+110,00	18,02	0,00	172.26	0,00	147582,47	280120,55	-132538,08
4+120,00	19,86	0,00	188.82	0,00	147771,29	280120,55	-132349,26
4+130,00	24,87	0,00	222.71	0,00	147994,00	280120,55	-132126,55
4+140,00	29,43	0,00	270.00	0,00	148263,99	280120,55	-131856,56
4+150,00	31,13	0,00	301.44	0,00	148565,43	280120,55	-131555,12
4+153,13	31,85	0,00	98.58	0,00	148664,01	280120,55	-131456,54
4+160,00	34,89	0,00	228.37	0,00	148892,38	280120,55	-131228,17
4+170,00	33,86	0,00	342.52	0,00	149234,90	280120,55	-130885,65
4+180,00	32,86	0,00	333.14	0,00	149568,04	280120,55	-130552,51
4+190,00	32,47	0,00	326.56	0,00	149894,60	280120,55	-130225,95
4+200,00	33,51	0,00	329.49	0,00	150224,08	280120,55	-129896,47
4+210,00	33,36	0,00	333.65	0,00	150557,73	280120,55	-129562,82
4+220,00	33,10	0,00	332.01	0,00	150889,74	280120,55	-129230,81
4+230,00	31,87	0,00	324.85	0,00	151214,58	280120,55	-128905,96
4+240,00	29,45	0,00	306.55	0,00	151521,14	280120,55	-128599,41
4+244,56	27,82	0,00	130.40	0,00	151651,53	280120,55	-128469,02
4+260,00	22,78	0,00	390.70	0,00	152042,24	280120,55	-128078,31

VOLUME TOTAL

Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
4+280,00	13,39	0,00	361.64	0,00	152403,88	280120,55	-127716,67
4+300,00	6,74	0,00	201.30	0,00	152605,18	280120,55	-127515,37
4+320,00	3,79	0,68	105.37	6,79	152710,55	280127,34	-127416,79
4+340,00	5,33	0,00	91.18	6,79	152801,73	280134,14	-127332,40
4+360,00	4,15	0,06	94.75	0,56	152896,48	280134,70	-127238,21
4+380,00	2,04	0,55	61.89	6,10	152958,37	280140,80	-127182,43
4+400,00	2,80	0,86	48.44	14,14	153006,81	280154,93	-127148,13
4+420,00	8,75	0,97	115.58	18,32	153122,39	280173,26	-127050,87
4+440,00	6,46	1,25	152.11	22,24	153274,50	280195,49	-126921,00
4+460,00	3,08	1,56	95.39	28,11	153369,89	280223,60	-126853,71
4+480,00	1,62	2,98	47.01	45,40	153416,90	280269,01	-126852,11
4+500,00	0,70	4,07	23.22	70,45	153440,12	280339,46	-126899,34
4+520,00	2,90	0,77	36.00	48,38	153476,12	280387,84	-126911,72
4+540,00	16,39	0,00	192.87	7,72	153668,99	280395,56	-126726,57
4+560,00	9,72	0,00	261.07	0,05	153930,06	280395,61	-126465,55
4+580,00	3,90	0,57	136.20	5,79	154066,26	280401,40	-126335,14
4+600,00	0,93	1,60	48.37	21,77	154114,63	280423,17	-126308,54
4+620,00	0,16	3,00	10.89	45,99	154125,53	280469,16	-126343,64
4+640,00	0,16	3,99	3.13	69,83	154128,66	280538,99	-126410,33
4+650,36	0,04	3,58	1.01	39,18	154129,68	280578,17	-126448,49

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: OUT/21	QUANTITATIVOS – TERRAPLENAGEM	FOLHA 04.19

VOLUME TOTAL							
Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
4+660,00	0,00	5,43	0.19	43,04	154129,87	280621,21	-126491,34
4+670,00	0,00	7,20	0.00	62,73	154129,87	280683,94	-126554,08
4+680,00	0,00	9,88	0.00	84,95	154129,87	280768,89	-126639,02
4+690,00	0,00	11,90	0.00	108,31	154129,87	280877,19	-126747,33
4+700,00	0,00	9,64	0.00	107,21	154129,87	280984,41	-126854,54
4+705,45	0,00	6,95	0.00	45,03	154129,87	281029,44	-126899,57
4+710,00	0,00	4,76	0.00	26,58	154129,87	281056,02	-126926,15
4+720,00	0,49	1,74	2.49	32,38	154132,36	281088,40	-126956,05
4+730,00	5,47	0,15	29.86	9,44	154162,21	281097,84	-126935,63
4+740,00	13,06	0,00	92.71	0,78	154254,92	281098,62	-126843,70
4+750,00	21,47	0,00	172.83	0,00	154427,75	281098,62	-126670,88
4+760,00	34,61	0,00	281.70	0,00	154709,45	281098,62	-126389,17
4+760,54	35,34	0,00	18.73	0,00	154728,18	281098,62	-126370,44
4+762,70	30,10	0,00	70.95	0,00	154799,13	281098,62	-126299,49
4+770,00	37,35	0,00	245.69	0,00	155044,82	281098,62	-126053,80
4+780,00	46,72	0,00	419.19	0,00	155464,01	281098,62	-125634,61
4+790,00	48,60	0,00	474.93	0,00	155938,94	281098,62	-125159,69
4+800,00	51,18	0,00	497.17	0,00	156436,11	281098,62	-124662,51
4+810,00	53,13	0,00	519.63	0,00	156955,74	281098,62	-124142,88
4+814,51	53,98	0,00	241.77	0,00	157197,51	281098,62	-123901,11

VOLUME TOTAL							
Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
4+820,00	54,65	0,00	297.96	0,00	157495,47	281098,62	-123603,16
4+830,00	47,26	0,00	507.74	0,00	158003,21	281098,62	-123095,42
4+840,00	42,03	0,00	444.96	0,00	158448,16	281098,62	-122650,46
4+850,00	41,68	0,00	417.39	0,00	158865,55	281098,62	-122233,07
4+860,00	38,99	0,00	402.20	0,00	159267,76	281098,62	-121830,87
4+866,32	35,67	0,00	235.10	0,00	159502,85	281098,62	-121595,77
4+880,00	27,48	0,00	431.76	0,00	159934,62	281098,62	-121164,01
4+900,00	23,32	0,00	507.99	0,00	160442,61	281098,62	-120656,02
4+920,00	26,01	0,00	493.33	0,00	160935,94	281098,62	-120162,69
4+940,00	31,15	0,00	571.64	0,00	161507,58	281098,62	-119591,04
4+960,00	18,39	0,00	495.39	0,00	162002,97	281098,62	-119095,65
4+980,00	9,58	0,01	279.64	0,06	162282,61	281098,68	-118816,07
4+991,85	9,45	0,00	112.70	0,03	162395,31	281098,71	-118703,40
4+999,06	11,90	0,00	77.66	0,00	162472,97	281098,71	-118625,74
5+000,00	12,50	0,00	11.42	0,00	162484,39	281098,71	-118614,32
5+006,28	14,81	0,00	86.90	0,00	162571,30	281098,71	-118527,42
5+020,00	16,94	0,42	217.81	2,91	162789,10	281101,62	-118312,52
5+040,00	26,79	0,00	437.23	4,24	163226,33	281105,87	-117879,53
5+060,00	67,58	0,00	943.60	0,00	164169,93	281105,87	-116935,93
5+079,65	50,21	0,00	1157.48	0,00	165327,42	281105,87	-115778,45

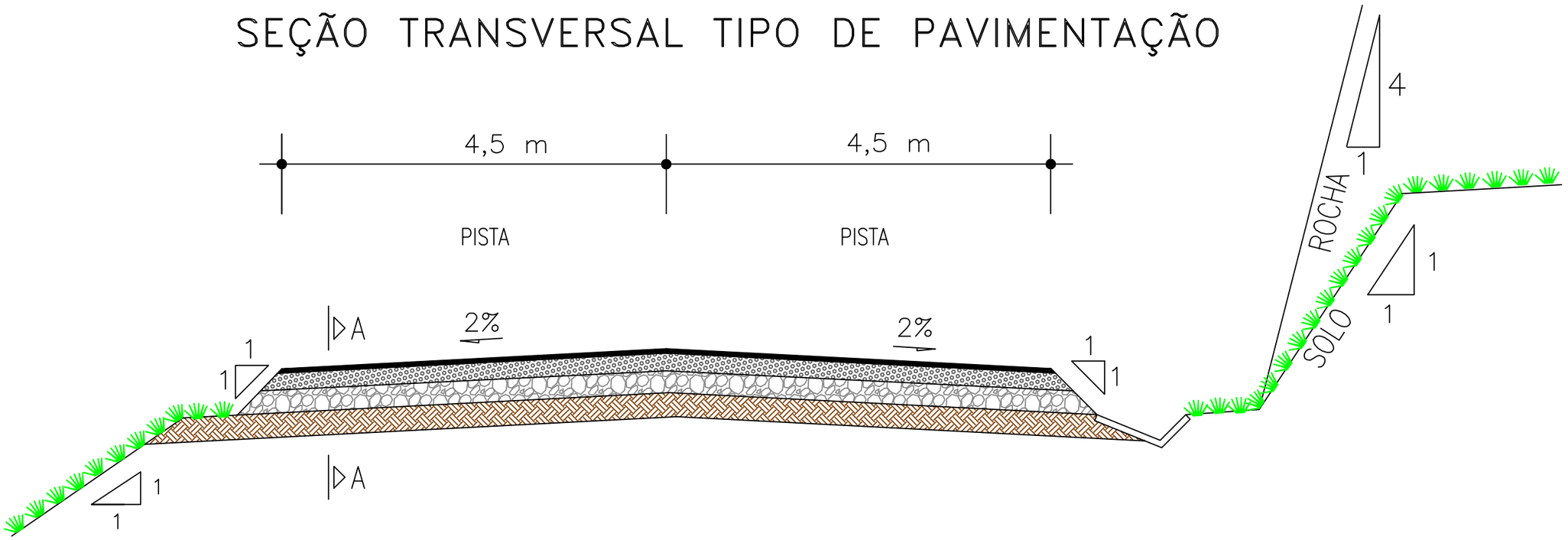
VOLUME TOTAL							
Estaca	Área de Corte (m²)	Área de Aterro (m²)	Volume de Corte (m3)	Volume de Aterro (m3)	Volum. Corte Acum. (m3)	Volum Aterro Acum. (m3)	Volume Líquido (m3)
5+080,00	49,67	0,00	17.25	0,00	165344,67	281105,87	-115761,20
5+090,00	44,69	0,00	463.99	0,00	165808,66	281105,87	-115297,21
5+097,64	44,71	0,00	335.60	0,00	166144,26	281105,87	-114961,60
5+100,00	45,10	0,00	104.58	0,00	166248,85	281105,87	-114857,02
5+110,00	39,51	0,00	416.21	0,00	166665,06	281105,87	-114440,81
5+115,62	38,57	0,00	215.41	0,00	166880,47	281105,87	-114225,40
5+120,00	39,03	0,00	170.08	0,00	167050,55	281105,87	-114055,32
5+140,00	47,36	0,00	863.84	0,00	167914,39	281105,87	-113191,48
5+160,00	36,17	0,00	835.25	0,00	168749,64	281105,87	-112356,23
5+180,00	28,43	0,00	645.93	0,00	169395,57	281105,87	-111710,30
5+200,00	18,65	0,00	470.79	0,00	169866,36	281105,87	-111239,50
5+220,00	13,12	0,00	317.75	0,00	170184,11	281105,87	-110921,76
5+240,00	8,91	0,00	220.29	0,00	170404,40	281105,87	-110701,47
5+256,85	4,40	0,01	112.14	0,06	170516,54	281105,93	-110589,39

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

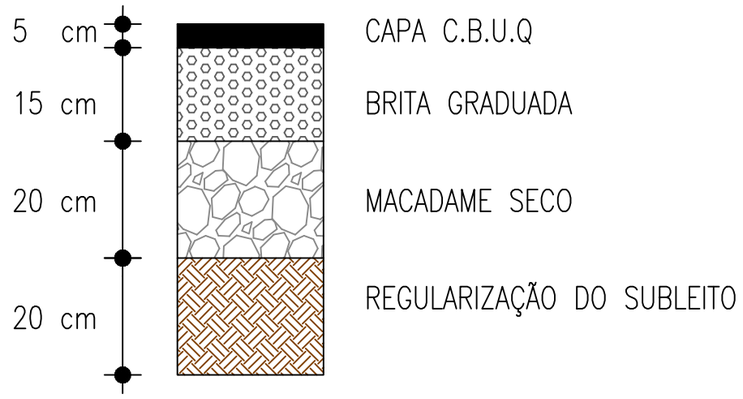
ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: OUT/21	QUANTITATIVOS – TERRAPLENAGEM	FOLHA 04.20

SEÇÃO TRANSVERSAL TIPO DE PAVIMENTAÇÃO

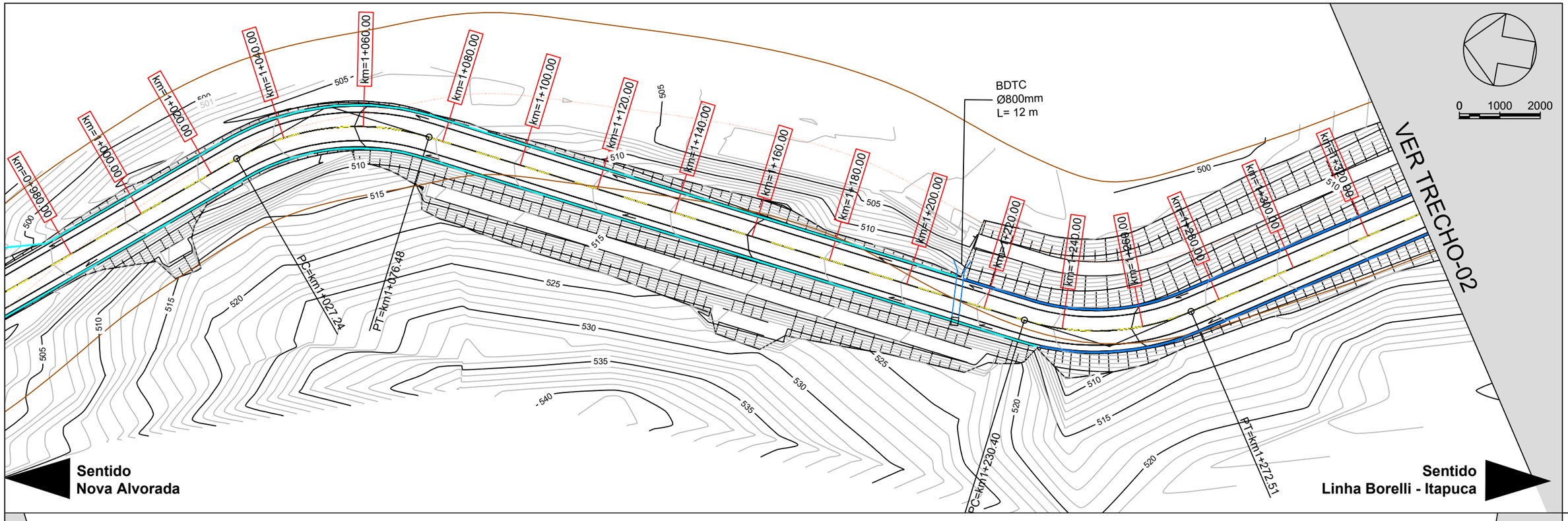


Obs. unidades de medida estão em metros.

CORTE A–A



Serafini ENGENHARIA	MUNICÍPIO DE NOVA ALVORADA - RS	
ESCALAS: –	Obra : PROJETO DE PAVIMENTAÇÃO ASFÁLTICA | ERS 132 Trecho : MUNICÍPIO DE NOVA ALVORADA – P/ COMUNIDADE LINHA BORELLI Extensão : –	
DATA: MAIO/25	SEÇÃO TIPO DE PAVIMENTAÇÃO	FOLHA 01/01



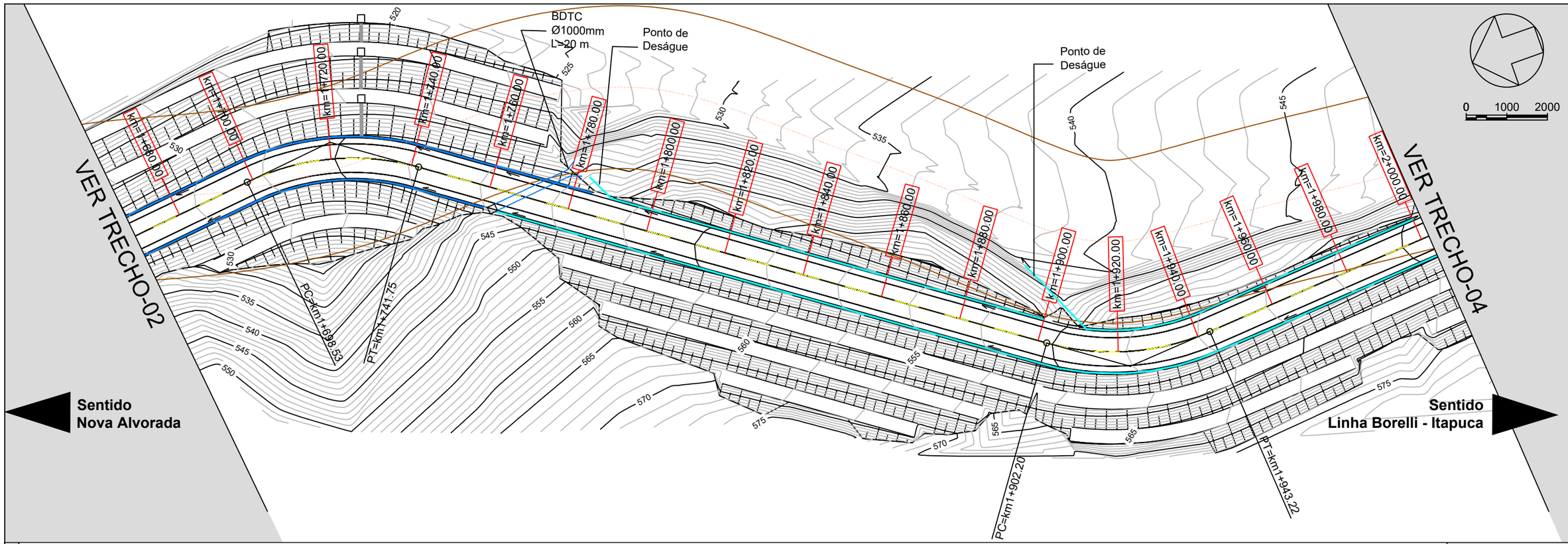
LEGENDA

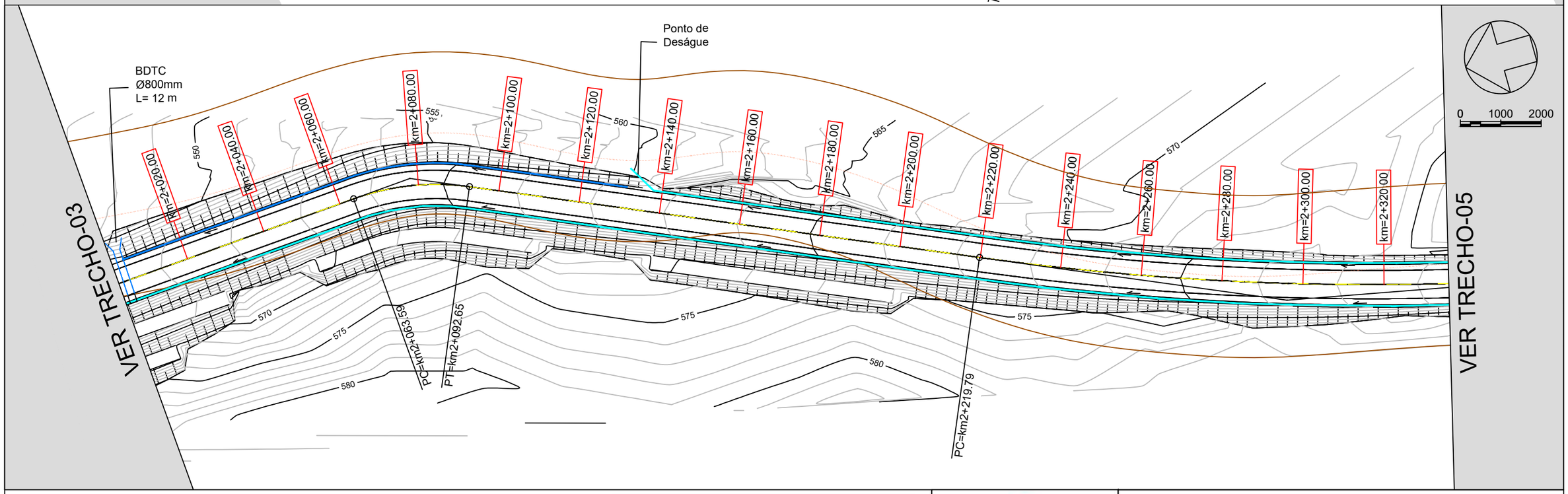
- VALA DE DRENAGEM EM ATERRO
- VALA DE DRENAGEM EM CORTE
- TRAVESSIA
- BUEIRO
- SENTIDO DE ESCOAMENTO
- DESCIDA D'ÁGUA EM DEGRA

Serafini
ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	DRENAGEM	FOLHA 04.01





LEGENDA

- VALA DE DRENAGEM EM ATERRO
- VALA DE DRENAGEM EM CORTE
- TRAVESSIA
- BUEIRO
- SENTIDO DE ESCOAMENTO
- DESCIDA D'ÁGUA EM DEGRAUS

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	DRENAGEM	FOLHA 04.02

VER TRECHO-04

VER TRECHO-06

0 1000 2000

km=2+340.00
km=2+360.00
km=2+380.00
km=2+400.00
km=2+420.00
km=2+440.00
km=2+460.00
km=2+480.00
km=2+500.00
km=2+520.00
km=2+540.00
km=2+560.00
km=2+580.00
km=2+600.00
km=2+620.00
km=2+640.00
km=2+660.00

BSTC
Ø800mm
L= 12 m

Corpo Dágua

Descida em
Degraus

PT=km2+372.57

PC=km2+455.01

PC=km2+653.42

PT=km2+584.60

580
575
570
595
590

Sentido
Nova Alvorada

Sentido
Linha Borelli - Itapuca

BSTC
Ø800mm
L= 12 m

0 1000 2000

km=2+680.00
km=2+700.00
km=2+720.00
km=2+740.00
km=2+760.00
km=2+780.00
km=2+800.00
km=2+820.00
km=2+840.00
km=2+860.00
km=2+880.00
km=2+900.00
km=2+920.00
km=2+940.00
km=2+960.00
km=2+980.00
km=3+000.00

PT=km2+878.87

L= 3.203m
N18° 14' 36.66"W

580
585
590
595
600

VER TRECHO-05

VER TRECHO-07

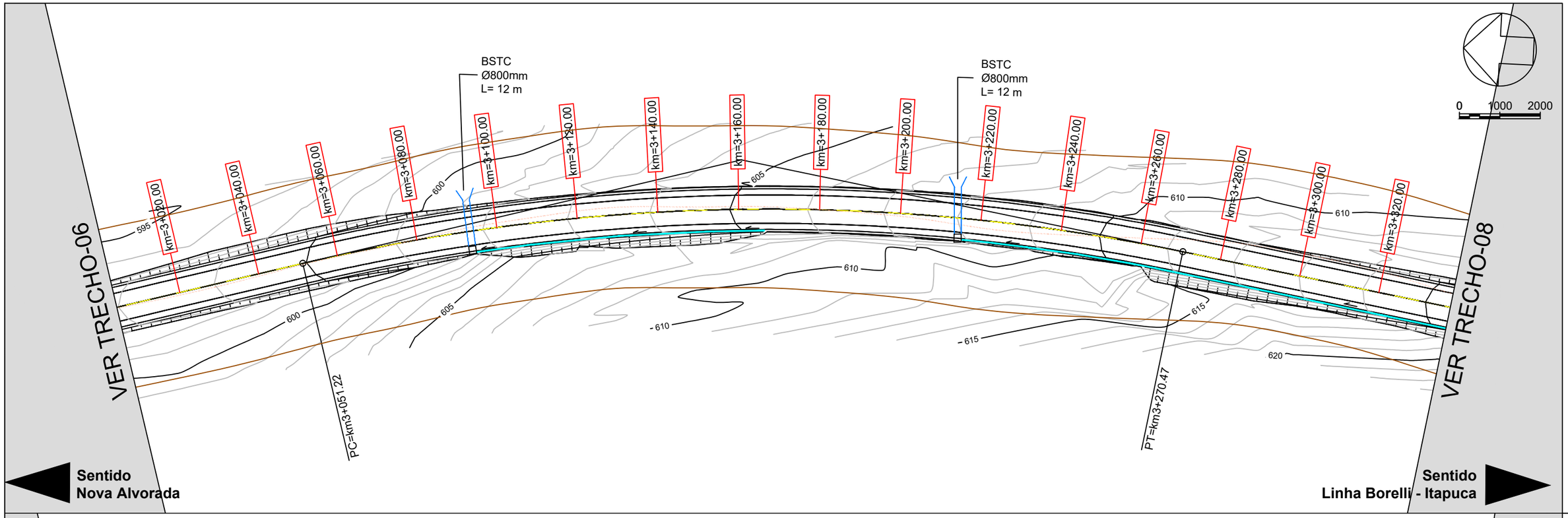
LEGENDA

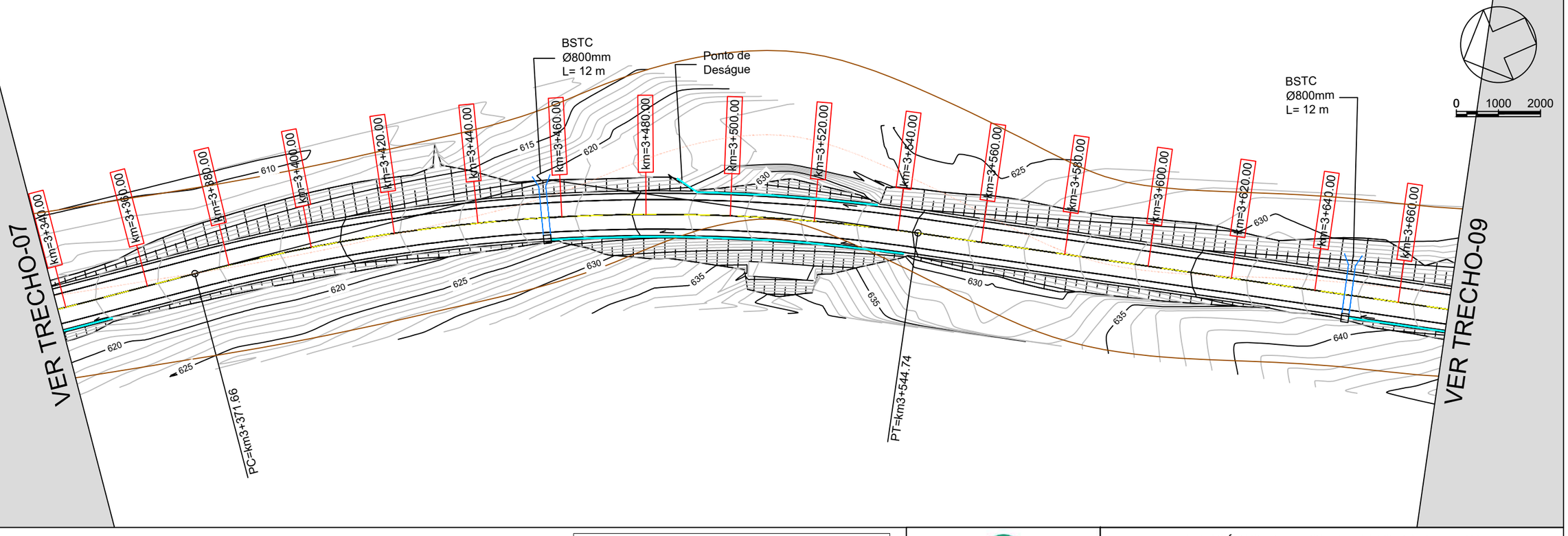
- VALA DE DRENAGEM EM ATERRO
- VALA DE DRENAGEM EM CORTE
- TRAVESSIA
- BUEIRO
- SENTIDO DE ESCOAMENTO
- DESCIDA D'ÁGUA EM DEGRAUS

Serafini
ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	DRENAGEM	FOLHA 04.03





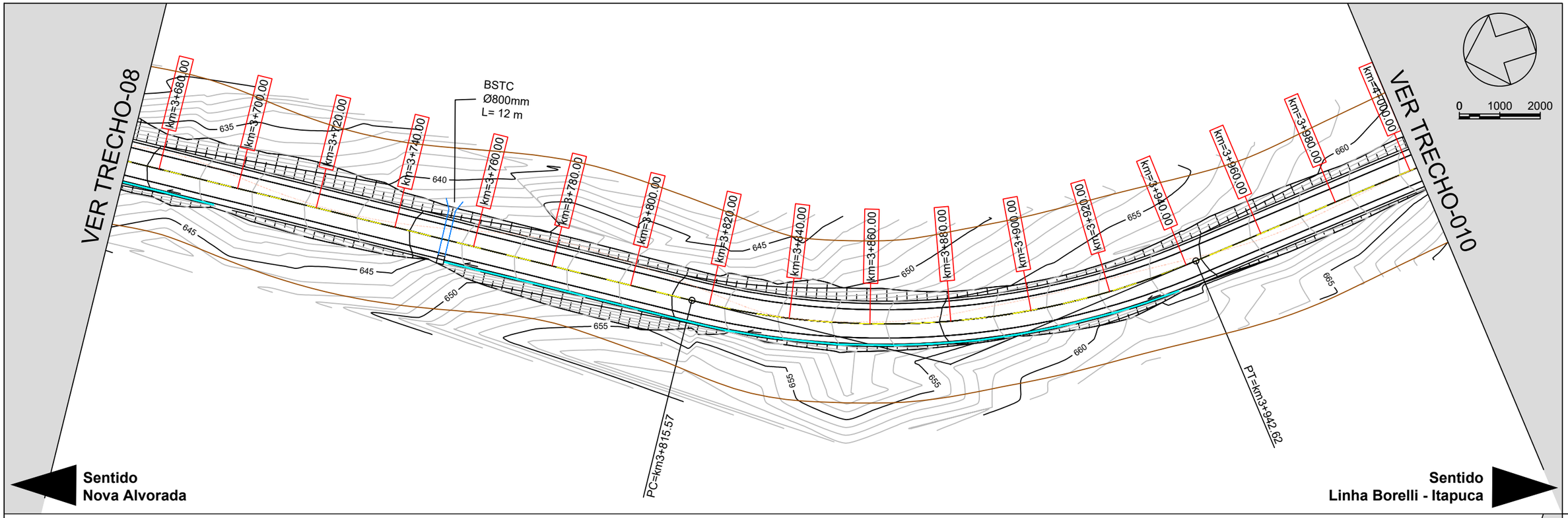
LEGENDA

- VALA DE DRENAGEM EM ATERRO
- VALA DE DRENAGEM EM CORTE
- TRAVESSIA
- BUEIRO
- SENTIDO DE ESCOAMENTO
- DESCIDA D'ÁGUA EM DEGRAUS

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	DRENAGEM	FOLHA 04.04



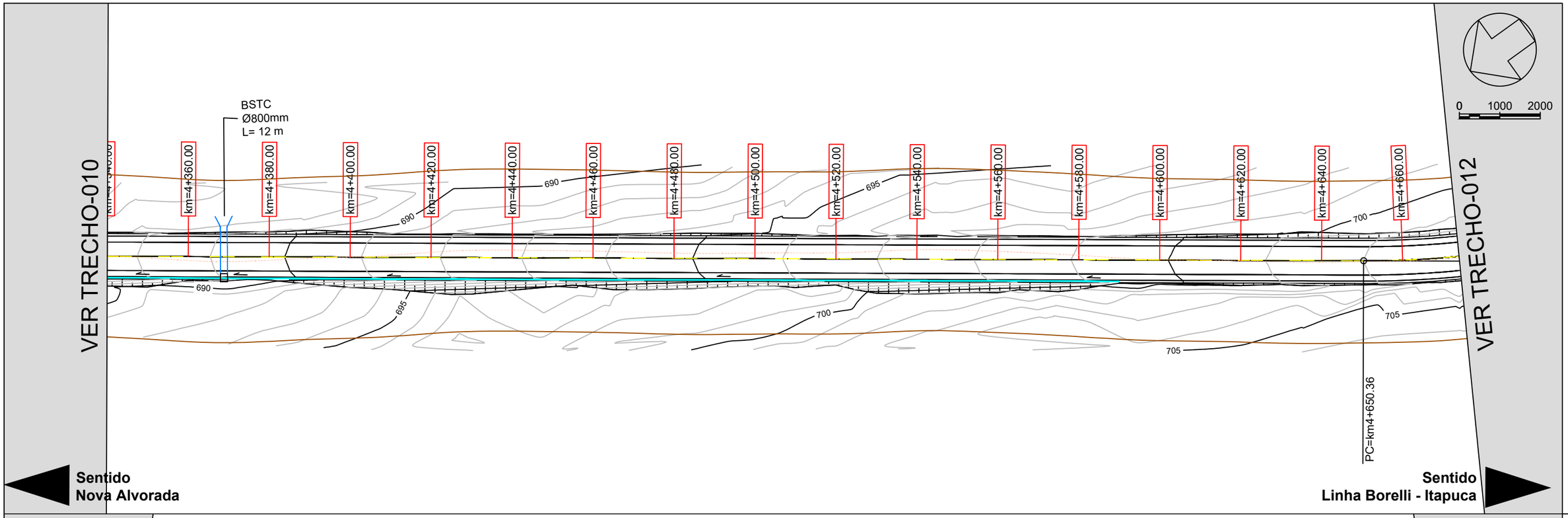
LEGENDA

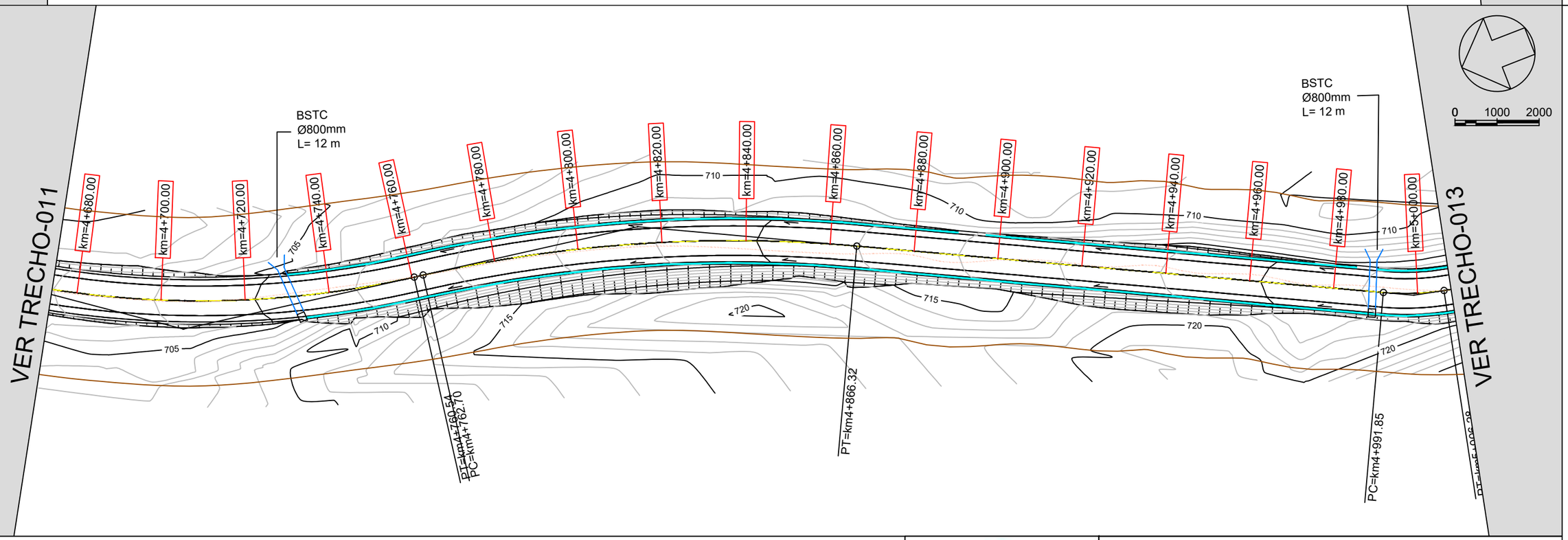
- VALA DE DRENAGEM EM ATERRO
- VALA DE DRENAGEM EM CORTE
- TRAVESSIA
- BUEIRO
- SENTIDO DE ESCOAMENTO
- DESCIDA D'ÁGUA EM DEGRAUS

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	DRENAGEM	FOLHA 04.05





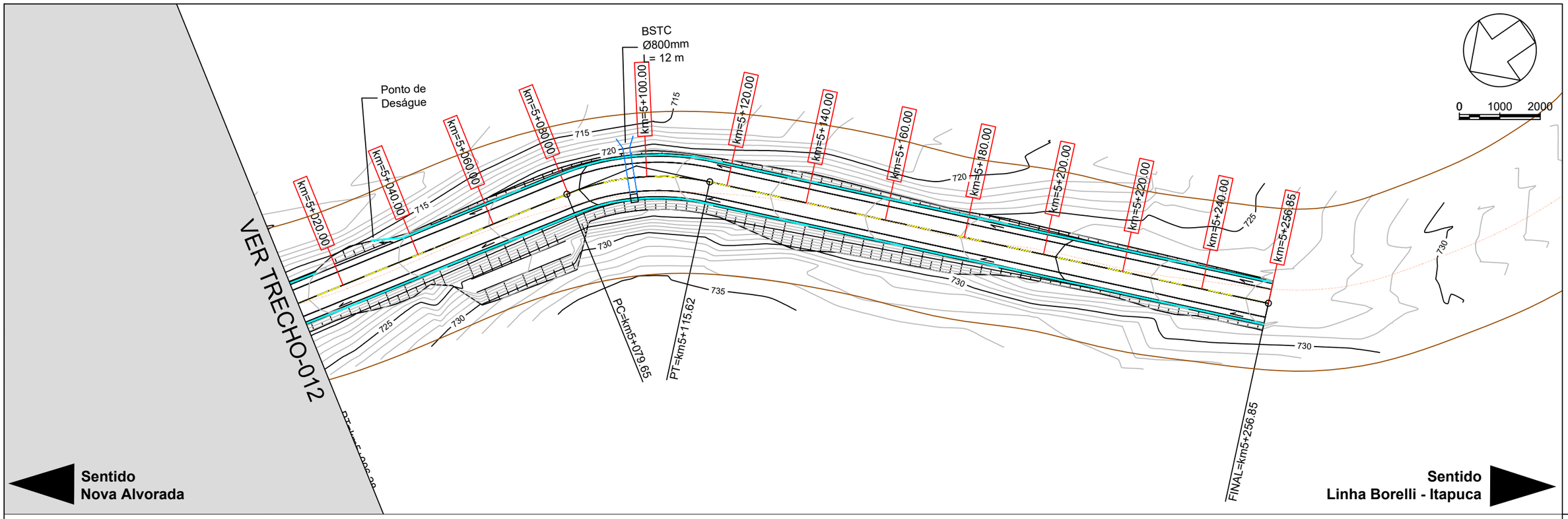
LEGENDA

- VALA DE DRENAGEM EM ATERRO
- VALA DE DRENAGEM EM CORTE
- TRAVESSIA
- BUEIRO
- SENTIDO DE ESCOAMENTO
- DESCIDA D'ÁGUA EM DEGRAUS

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	DRENAGEM	FOLHA 04.06



LEGENDA

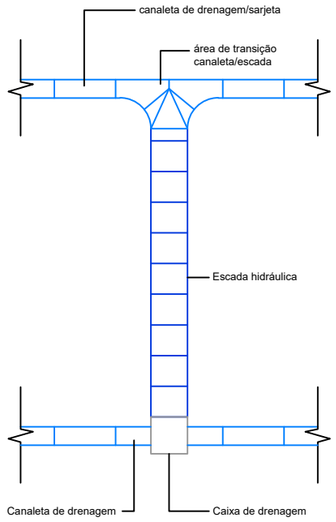
- VALA DE DRENAGEM EM ATERRO
- VALA DE DRENAGEM EM CORTE
- TRAVESSIA
- BUEIRO
- SENTIDO DE ESCOAMENTO
- DESCIDA D'ÁGUA EM DEGRAUS

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

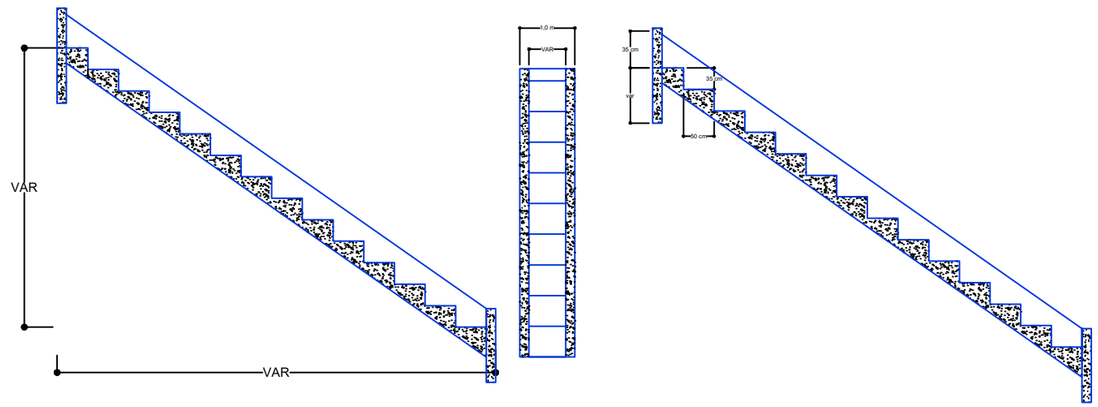
ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	DRENAGEM	FOLHA 04.01

Croqui esquemático
Descida d'água - degraus

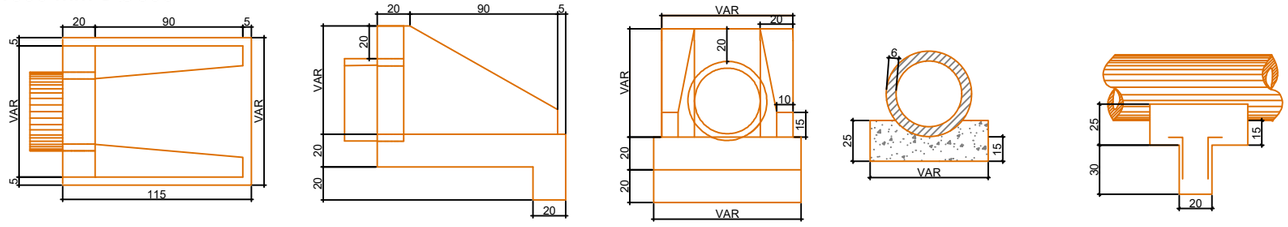


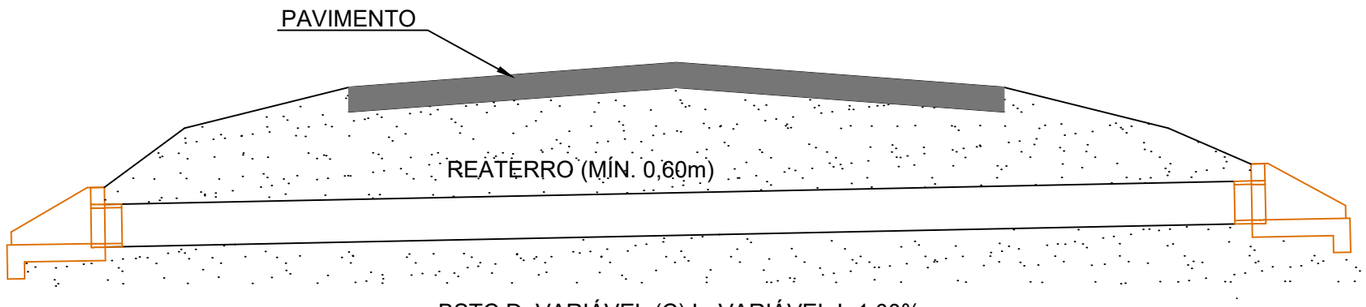
Descida d'água - degraus

proporção 1:1

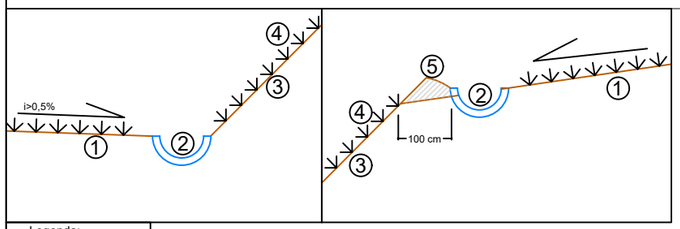


Detalhamento Transversal de Travessia
BSTC & BDTC
Ø 1000 mm e Ø800





BSTC D=VARIÁVEL (C) L=VARIÁVEL I=1,00%



Legenda:
1. Terreno local
2. Drenagem de sopé/berma
3. Talude
4. Revegetação
5. Barreira de drenagem

Vala de Drenagem - Corte

km Inicio	km Final	Lado	Comprimento (m)
1+000,00	1+210,00	E	210,00
1+000,00	1+215,00	D	215,00
1+215,00	1+235,00	D	20,00
1+765,00	2+510,00	D	745,00
1+782,00	1+900,00	E	118,00
1+890,00	2+000,00	E	110,00
2+130,00	2+510,00	E	380,00
2+785,00	2+885,00	E	100,00
2+785,00	2+890,00	D	105,00
3+090,00	3+165,00	D	75,00
3+215,00	3+350,00	D	135,00
3+455,00	3+542,00	D	87,00
3+485,00	3+535,00	E	50,00
3+650,00	3+695,00	D	45,00
3+750,00	3+935,00	D	185,00
4+010,00	4+370,00	D	360,00
4+055,00	4+305,00	E	250,00
4+370,00	4+590,00	D	220,00
4+730,00	4+990,00	E	260,00
4+735,00	4+990,00	D	255,00
5+000,00	5+015,00	E	15,00
5+000,00	5+095,00	D	95,00
5+030,00	5+095,00	E	65,00
5+095,00	5+256,00	E	161,00
5+095,00	5+256,00	D	161,00
		TOTAL	4.422,00

Vala de Drenagem - Aterro

km Inicio	km Final	Lado	Comprimento (m)
1+215,00	1+780,00	E	565,00
1+235,00	1+620,00	D	385,00
1+630,00	1+760,00	D	130,00
2+005,00	2+130,00	E	125,00
2+510,00	2+740,00	E	230,00
2+510,00	2+725,00	D	215,00
		TOTAL	1.650,00

Bieiros e Travessias

Local	Tipo	Diâmetro (mm)	Comprimento (m)
1+215,00	BDTC	800	12,00
1+630,00	BSTC	800	10,00
1+760,00	BDTC	1000	20,00
2+005,00	BDTC	800	12,00
2+510,00	BSTC	800	12,00
2+785,00	BSTC	800	12,00
3+095,00	BSTC	800	12,00
3+215,00	BSTC	800	12,00
3+455,00	BSTC	800	12,00
3+650,00	BSTC	800	12,00
3+755,00	BSTC	800	12,00
4+005,00	BSTC	800	12,00
4+370,00	BSTC	800	12,00
4+735,00	BSTC	800	12,00
4+990,00	BSTC	800	12,00
5+095,00	BSTC	800	12,00
		TOTAL Ø1000	20,00
		TOTAL Ø800	202,00

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

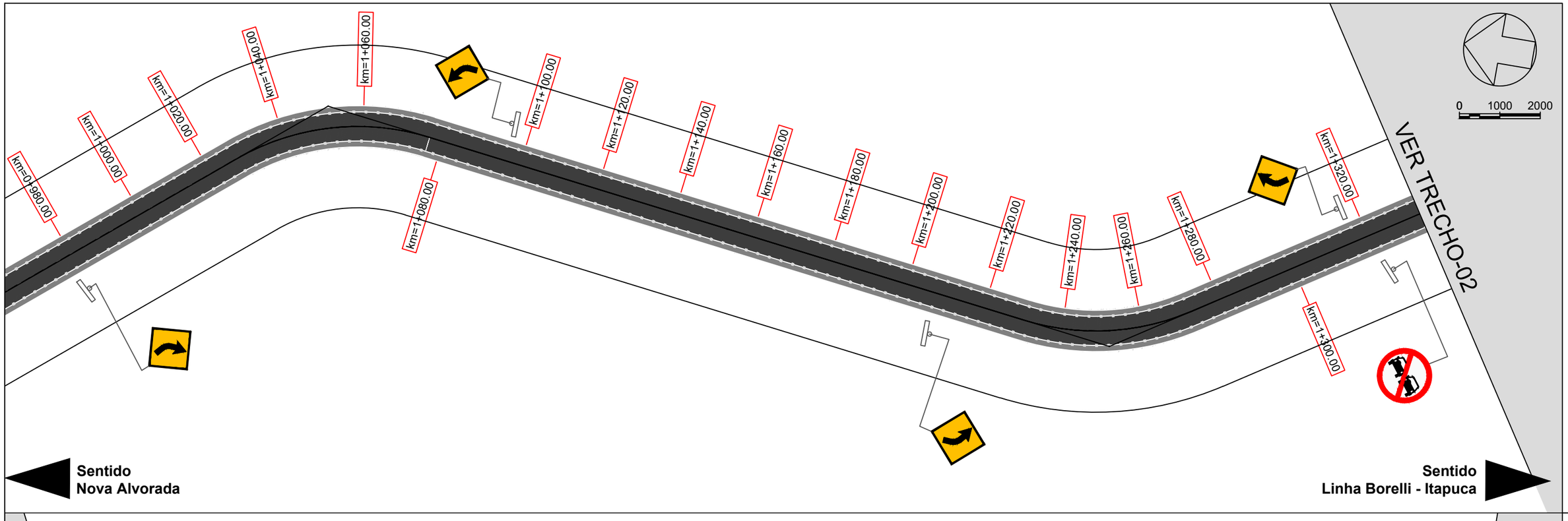
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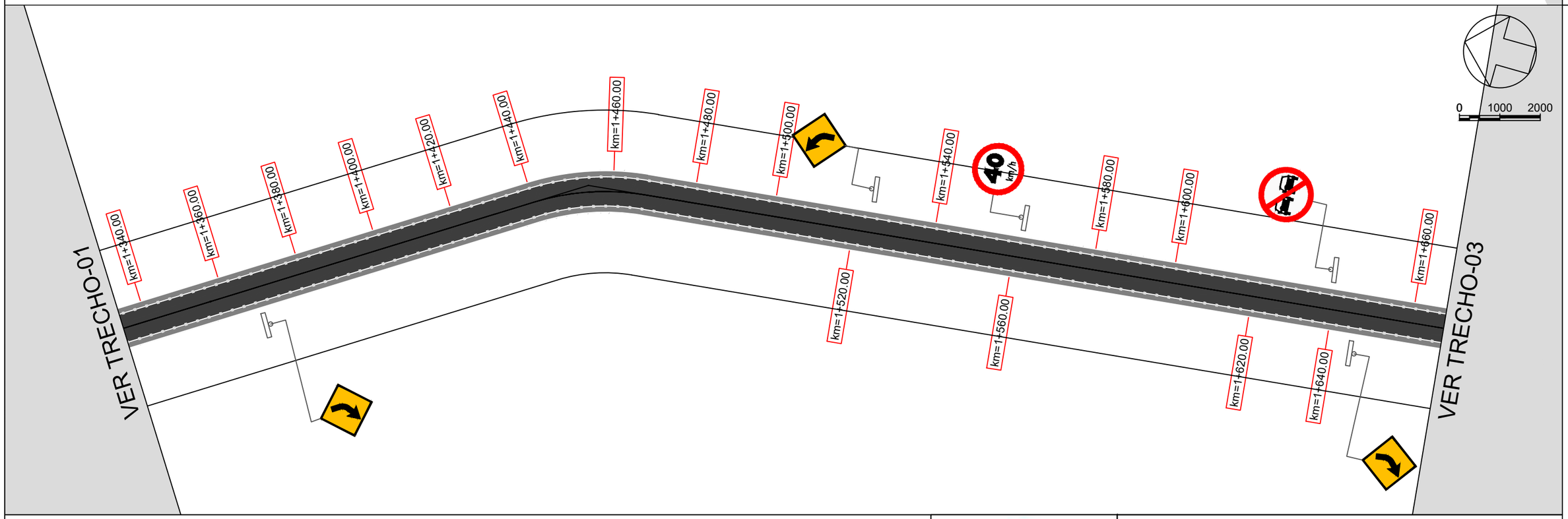
Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132
Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS
Extensão : 5,3 km

DATA: Nov/21

QUANTITATIVOS – DRENAGEM

FOLHA 01





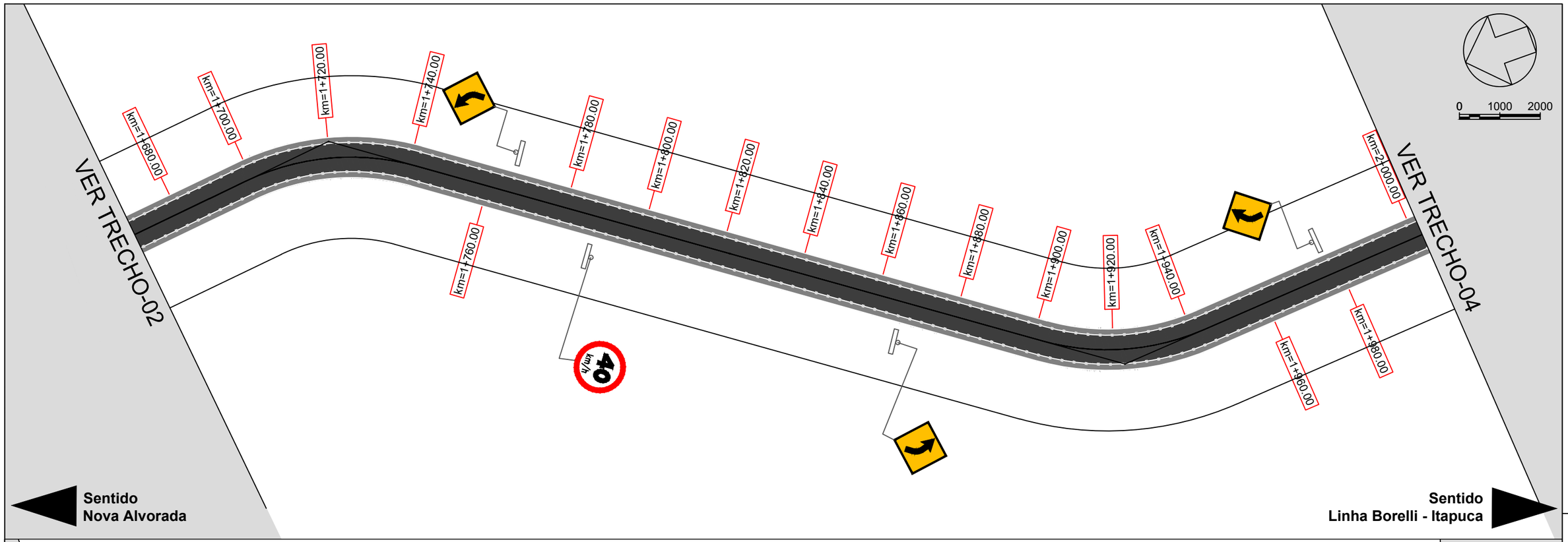
LEGENDA:

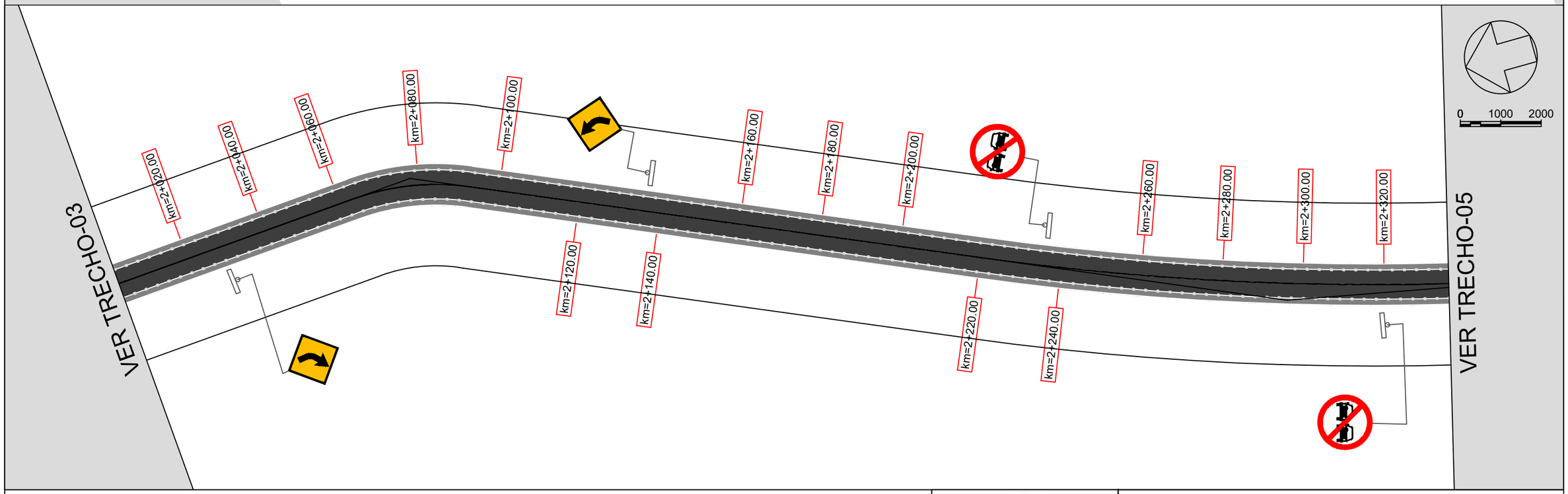
- EIXO CONTÍNUO (PROIBIDO ULTRAPASSAR)
- EIXO TRACEJADO (PERMITIDO ULTRAPASSAR)
- TACHA BIDIMENCIONAL (EIXO E BORDOS CONTÍNUOS)
- PISTA DE ROLAMENTO (TOTAL 10m)
- ACOSTAMENTO (1,5m)
- BORDO CONTÍNUO

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	SINALIZAÇÃO	FOLHA 03





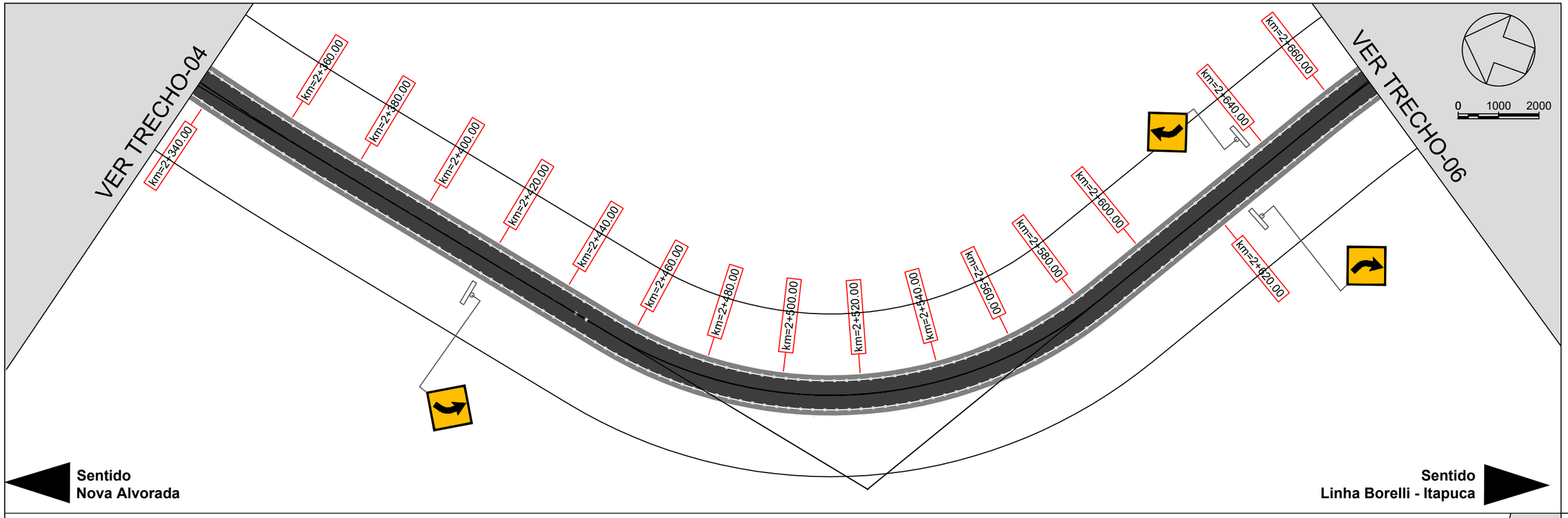
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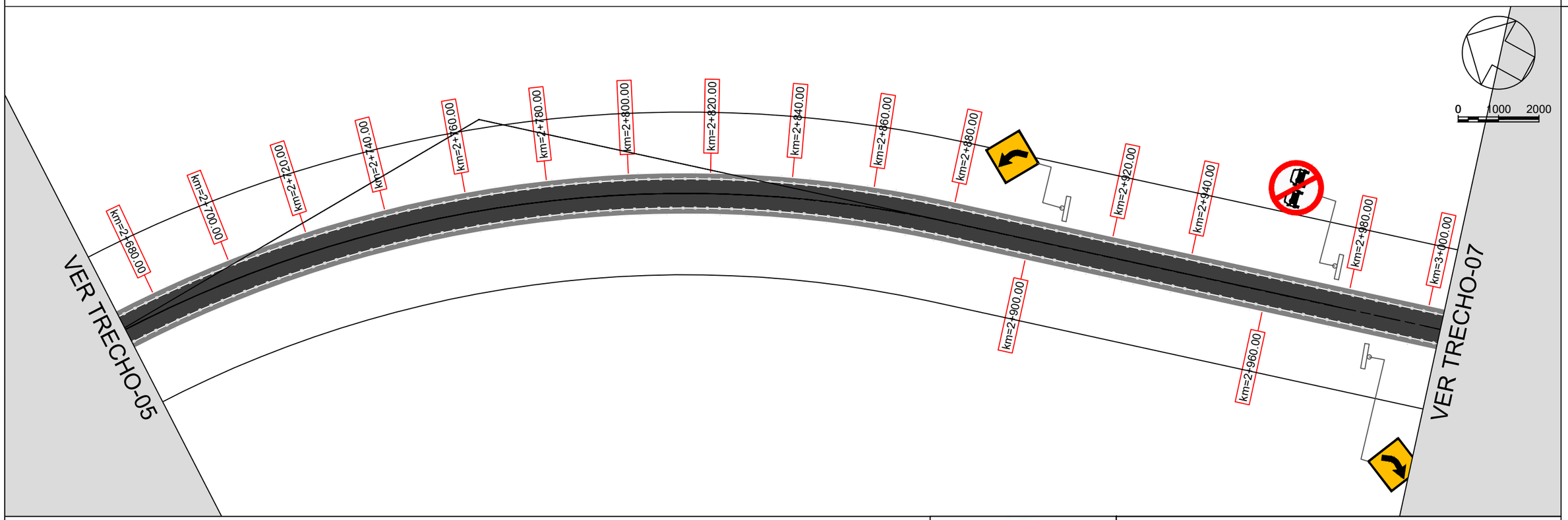
- EIXO CONTÍNUO (PROIBIDO ULTRAPASSAR)
- EIXO TRACEJADO (PERMITIDO ULTRAPASSAR)
- TACHA BIDIMENCIONAL (EIXO E BORDOS CONTÍNUOS)
- PISTA DE ROLAMENTO (TOTAL 10m)
- ACOSTAMENTO (1,5m)
- BORDO CONTÍNUO

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	SINALIZAÇÃO	FOLHA 04





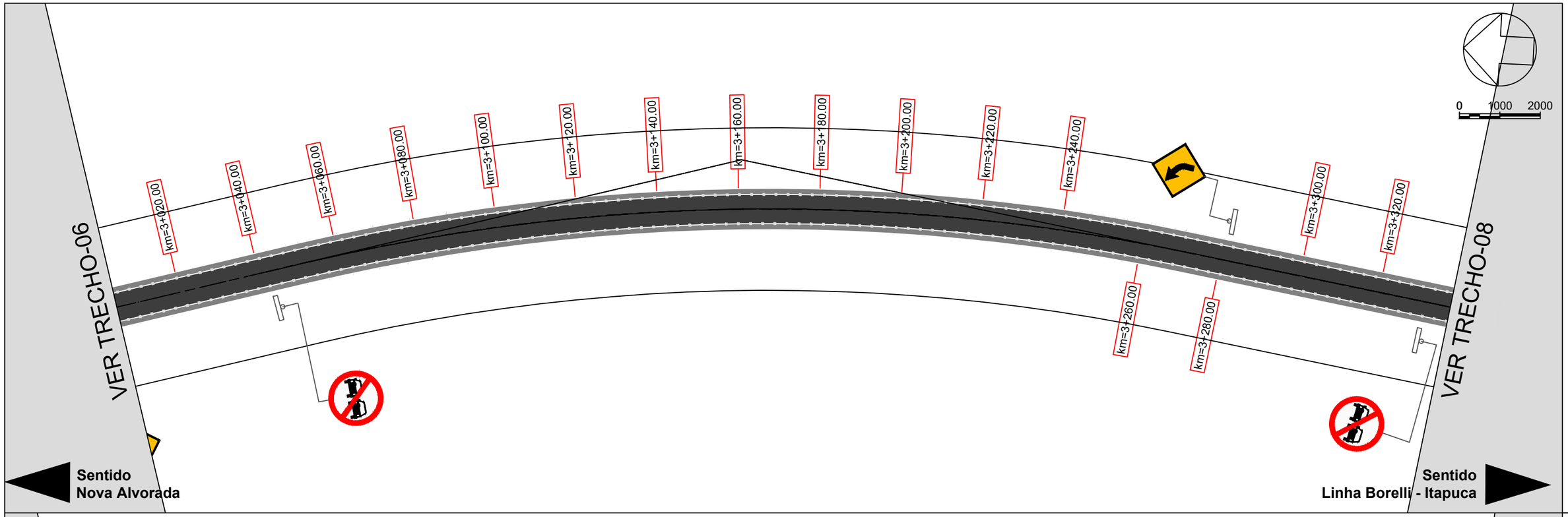
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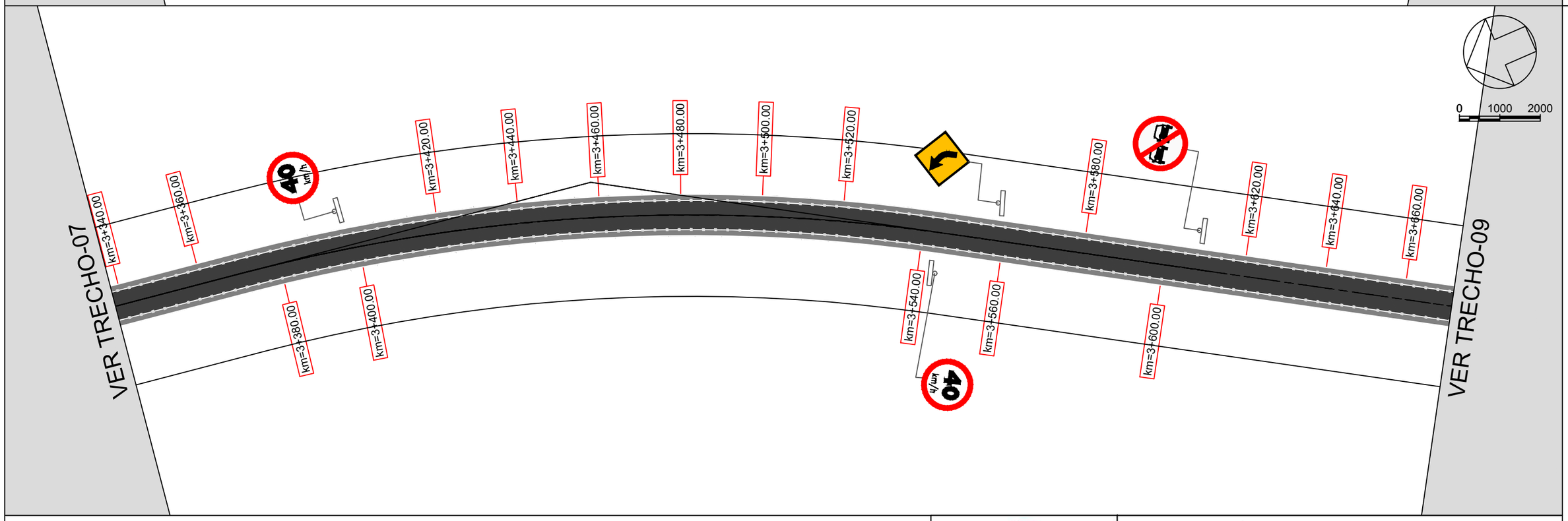
- EIXO CONTÍNUO (PROIBIDO ULTRAPASSAR)
- EIXO TRACEJADO (PERMITIDO ULTRAPASSAR)
- TACHA BIDIMENCIONAL (EIXO E BORDOS CONTÍNUOS)
- PISTA DE ROLAMENTO (TOTAL 10m)
- ACOSTAMENTO (1,5m)
- BORDO CONTÍNUO

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	SINALIZAÇÃO	FOLHA 05





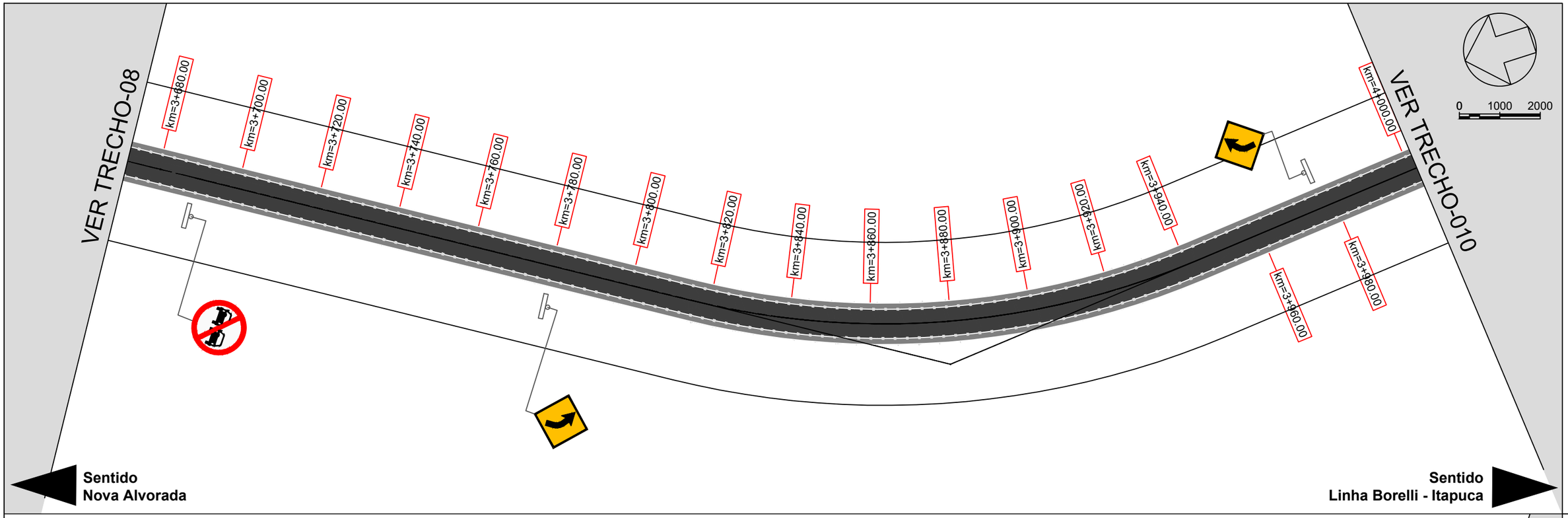
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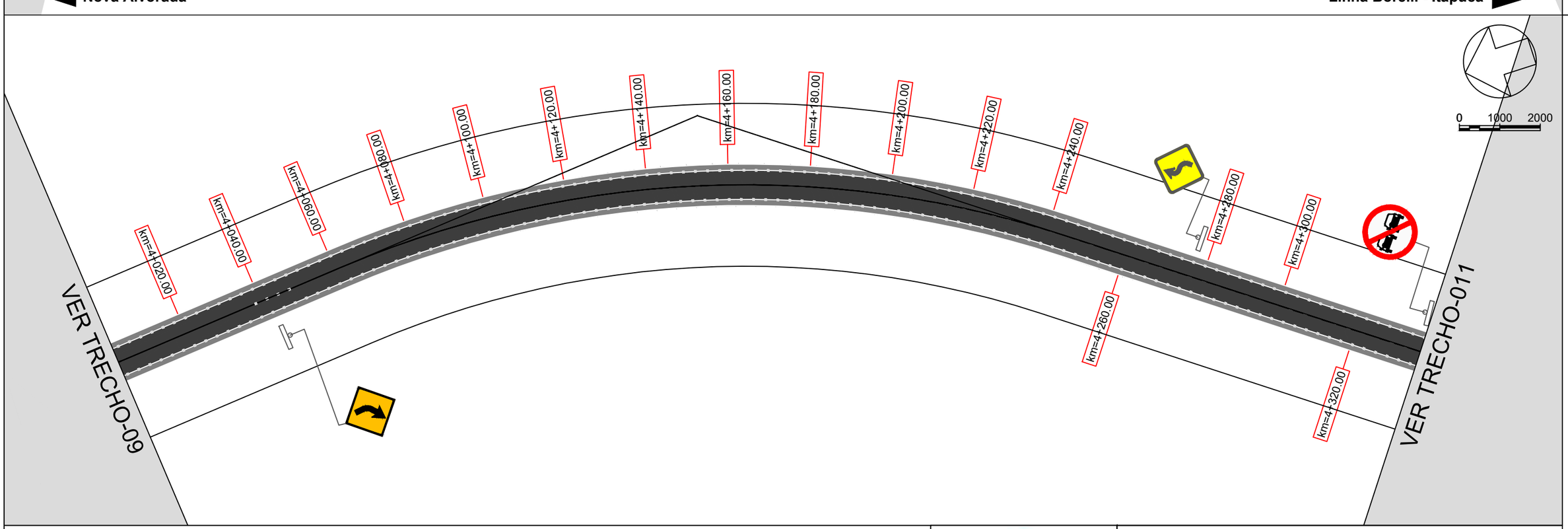
- EIXO CONTÍNUO (PROIBIDO ULTRAPASSAR)
- EIXO TRACEJADO (PERMITIDO ULTRAPASSAR)
- TACHA BIDIMENCIONAL (EIXO E BORDOS CONTÍNUOS)
- PISTA DE ROLAMENTO (TOTAL 10m)
- ACOSTAMENTO (1,5m)
- BORDO CONTÍNUO

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	SINALIZAÇÃO	FOLHA 06





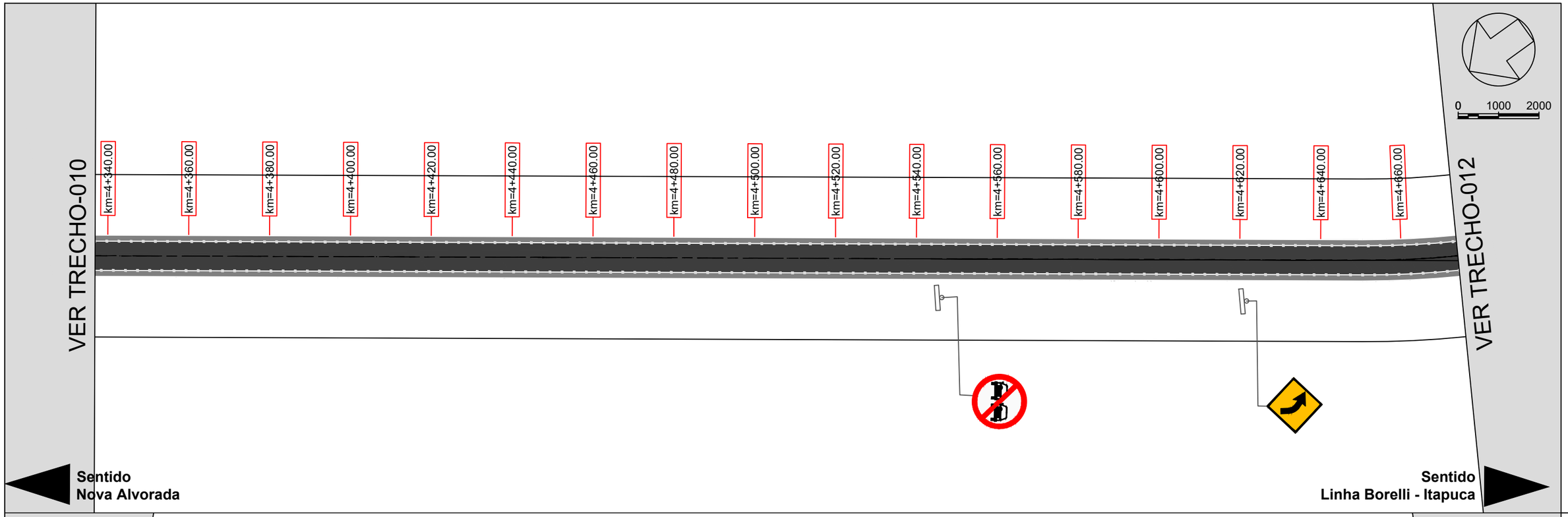
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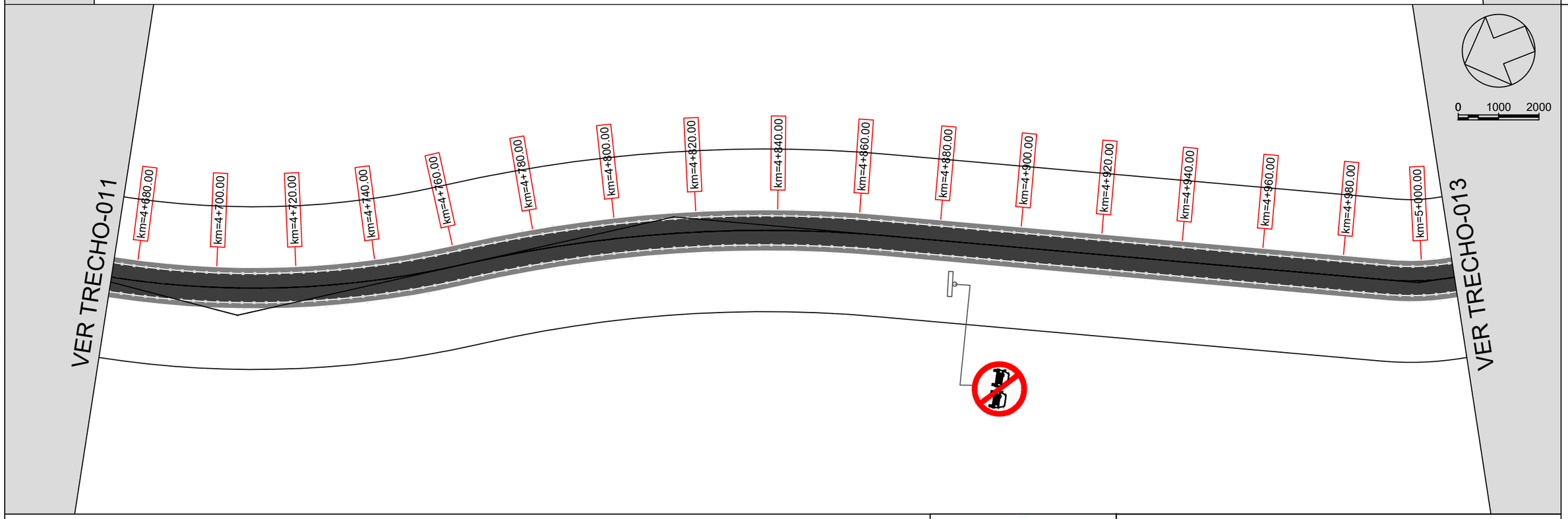
- EIXO CONTÍNUO (PROIBIDO ULTRAPASSAR)
- EIXO TRACEJADO (PERMITIDO ULTRAPASSAR)
- TACHA BIDIMENCIONAL (EIXO E BORDOS CONTÍNUOS)
- PISTA DE ROLAMENTO (TOTAL 10m)
- ACOSTAMENTO (1,5m)
- BORDO CONTÍNUO

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	SINALIZAÇÃO	FOLHA 07





LEGENDA:

- EIXO CONTÍNUO (PROIBIDO ULTRAPASSAR)
- EIXO TRACEJADO (PERMITIDO ULTRAPASSAR)
- TACHA BIDIMENCIONAL (EIXO E BORDOS CONTÍNUOS)
- PISTA DE ROLAMENTO (TOTAL 10m)
- ACOSTAMENTO (1,5m)
- BORDO CONTÍNUO

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	SINALIZAÇÃO	FOLHA 08

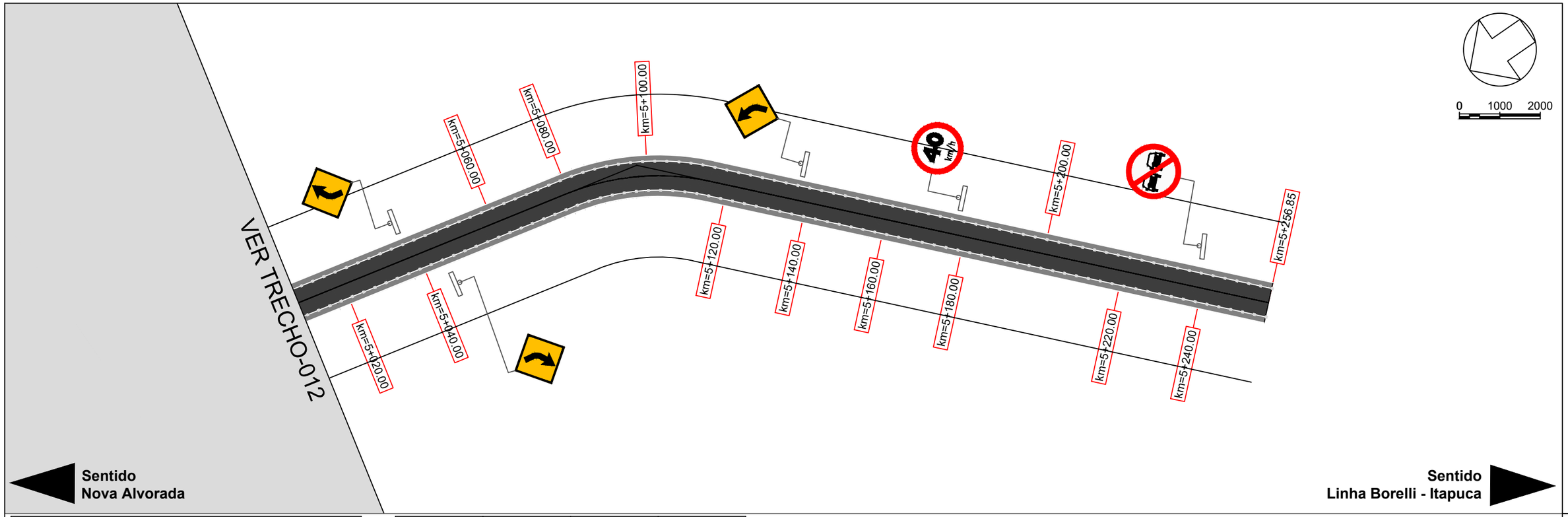


TABELA SINALIZAÇÕES VERTICAIS			
SÍMBOLO	CÓDIGO	QUANTIDADE	ESTACA
	R-19	7	Km=1+560.00 Km=1+780.00 Km=3+400.00 Km=3+540.00 Km=5+180.00
	A-2a	14	Km=1+100.00 Km=1+190.00 Km=1+520.00 Km=1+765.00 Km=1+870.00 Km=2+140.00 Km=2+420.00 Km=2+630.00 Km=2+910.00 Km=3+280.00 Km=3+560.00 Km=3+780.00 Km=4+620.00 Km=5+140.00
	A-2b	11	Km=1+319.00 Km=1+370.00 Km=1+642.00 Km=1+980.00 Km=2+030.00 Km=2+640.00 Km=2+985.00 Km=3+980.00 Km=4+040.00 Km=5+040.00 Km=5+045.00
	A-4a	1	Km=4+280.00
	R-7	13	Km=1+320.00 Km=1+640.00 Km=2+240.00 Km=2+320.00 Km=2+980.00 Km=3+040.00 Km=3+330.00 Km=3+610.00 Km=3+690.00 Km=4+340.00 Km=4+540.00 Km=4+880.00 Km=5+240.00

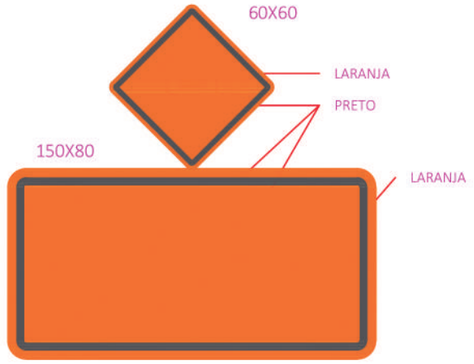
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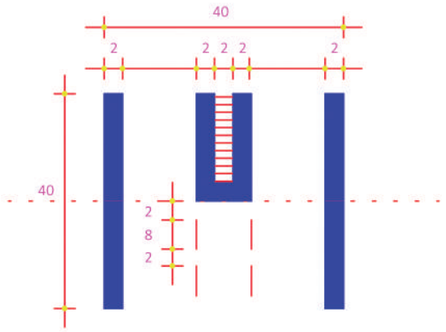
- EIXO CONTÍNUO (PROIBIDO ULTRAPASSAR)
- EIXO TRACEJADO (PERMITIDO ULTRAPASSAR)
- TACHA BIDIMENCIONAL (EIXO E BORDOS CONTÍNUOS)
- PISTA DE ROLAMENTO (TOTAL 10m)
- ACOSTAMENTO (1,5m)
- BORDO CONTÍNUO

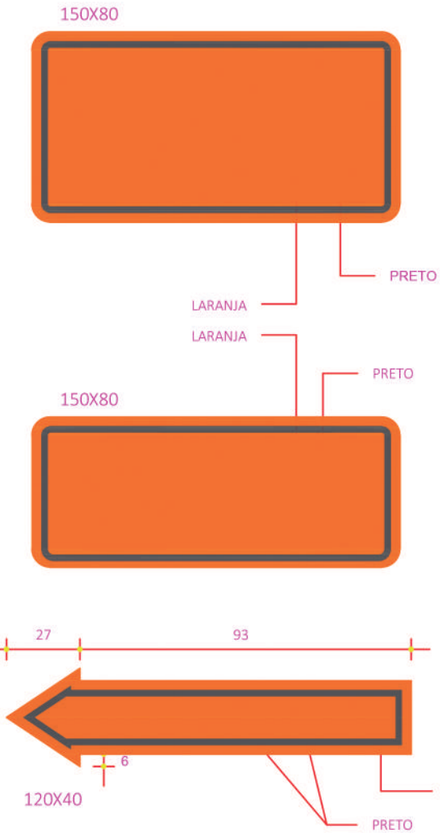
Serafini ENGENHARIA

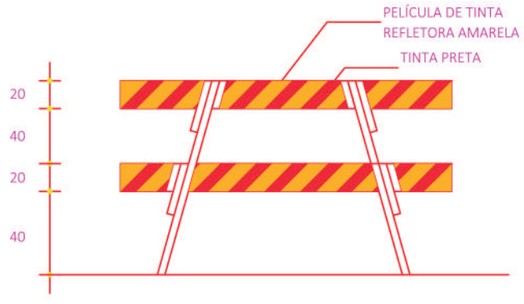
MUNICÍPIO DE NOVA ALVORADA - RS

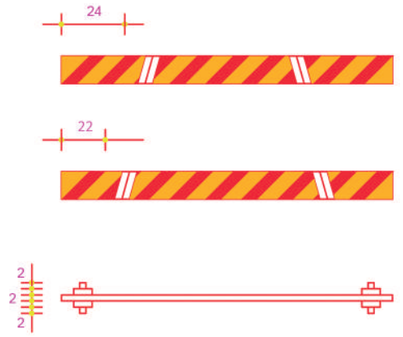
ESCALAS: 1/1.000	Obra : PROJETO GEOMÉTRICO – RODOVIA ESTADUAL ERS 132 Trecho : LINHA BORELLI – MUNICÍPIO DE NOVA ALVORADA – RS Extensão : 5,3 km	
DATA: Nov/21	SINALIZAÇÃO	FOLHA 09







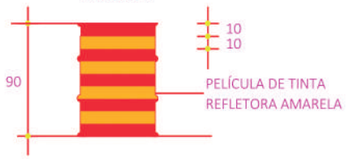




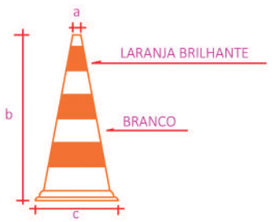
BALIZADOR



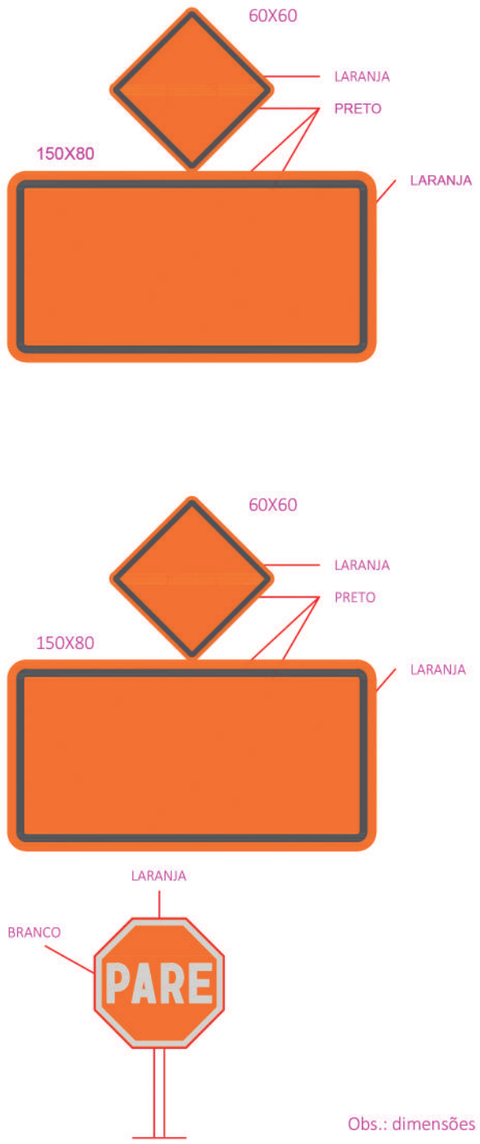
TAMBOR

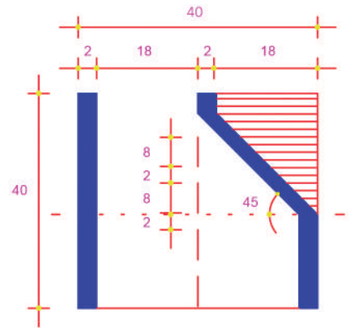


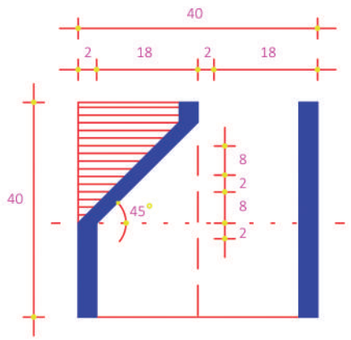
CONE



TIPO	DIMENSÕES (mm)		
	a	b	c
1	30	500	300
2	50	1000	500

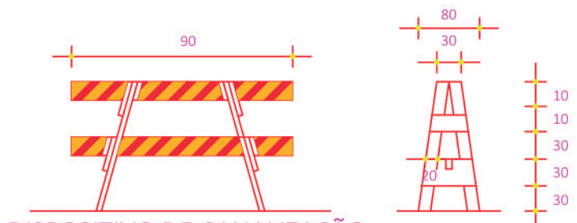












DISPOSITIVO DE CANALIZAÇÃO
OBSTRUÇÃO

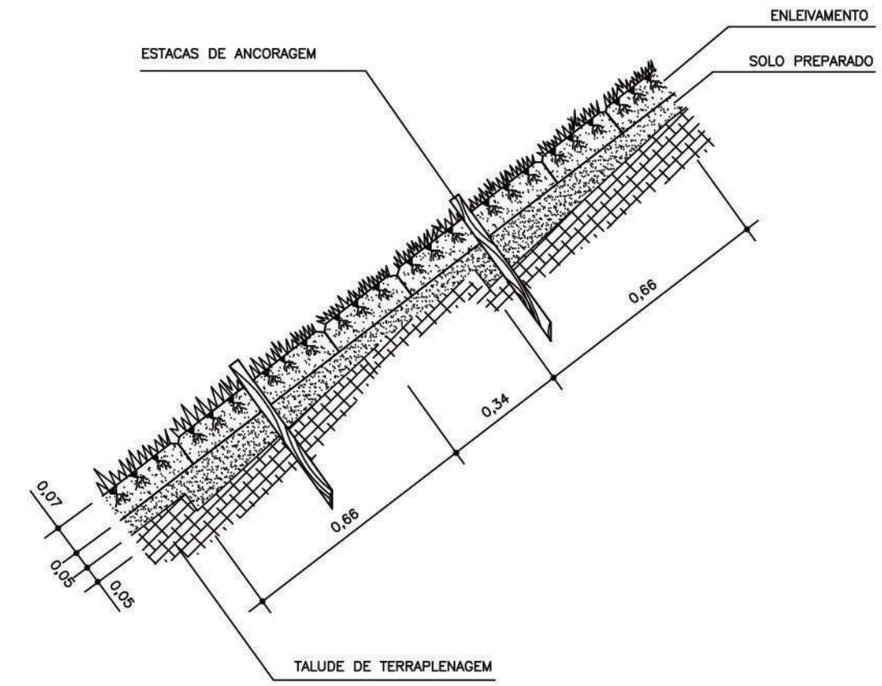
Obs.: dimensões em cm.

Serafini
ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: S/ ESCALAS	Obra : PROJETO DE SINALIZAÇÃO - RODOVIA ESTADUAL ERS 132 Trecho : LIMITE DO MUNICÍPIO (ITAPUCA) - COMUNIDADE DE LINHA BORELI Extensão : 5,0 km	
DATA: NOV / 21	PROJETO DE SINALIZAÇÃO	FOLHA 01 / 01

DETALHE DE FIXAÇÃO DA LEIVA AO TALUDE



ESPECIFICAÇÕES COMPLEMENTARES

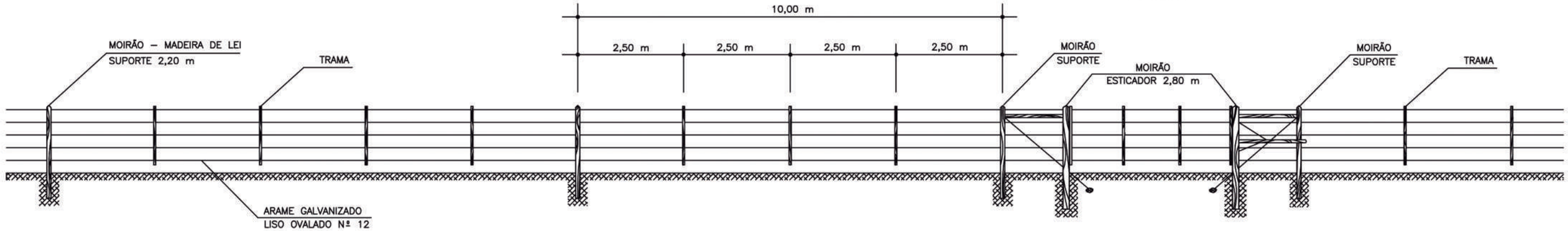
1 – O ENLEIVAMENTO DOS LOCAIS DE EMPRÉSTIMO SERÁ IDÊNTICO AO EMPREGADO PARA OS TALUDES
2 – AS ESTACAS DE ANCORAGEM PODERÃO SER DE SEÇÃO QUADRADA OU CIRCULAR (Ø m = 2cm) SEU COMPRIMENTO MÍNIMO SERÁ DE 20cm
3 – O SOLO PREPARADO CONSISTIRÁ NO MATERIAL DE TERRAPLENAGEM DEVIDAMENTE ADUBADO
4 – A ADUBAÇÃO SERÁ ESPECIFICADA PELA FISCALIZAÇÃO
5 – OS TORRÕES DE GRAMA NÃO PODERÃO SER MAIORES DO QUE 25,0 x 25,0cm COM EXPESSURA MÍNIMA DE 5cm

Serafini ENGENHARIA

MUNICÍPIO DE NOVA ALVORADA - RS

ESCALAS: S/ ESCALAS	Obra : PROJETO DE OBRAS COMPLEMENTARES - RODOVIA ESTADUAL ERS 132 Trecho : LIMITE DO MUNICÍPIO (ITAPUCA) - COMUNIDADE DE LINHA BORELI Extensão : 5,0 km	
DATA: NOV / 21	DETALHE DE ENLEIVAMENTO	FOLHA 01 / 01

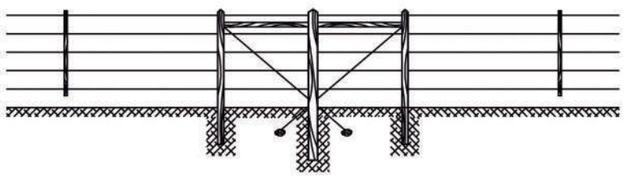
ALINHAMENTO EM RETA



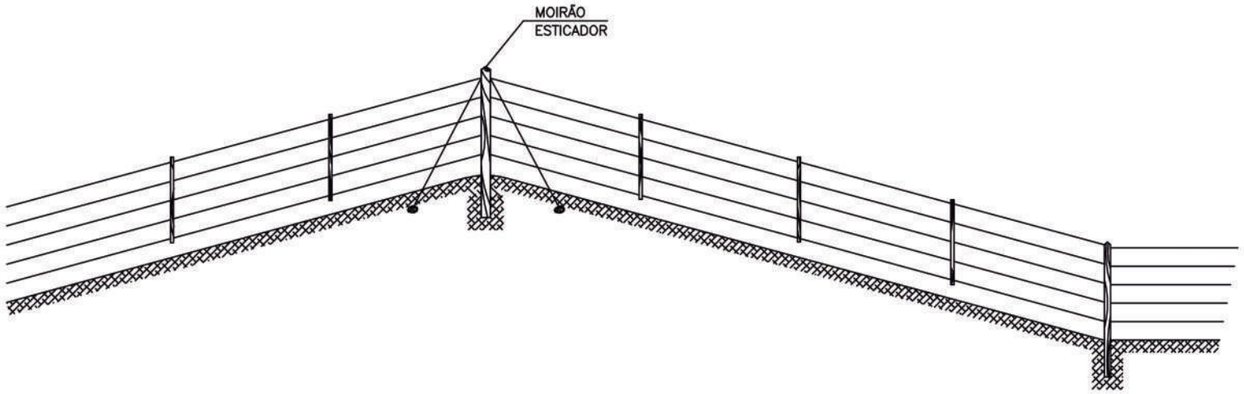
* DISTÂNCIA ENTRE MOIRÕES ESTICADORES = 50,00 m

PORTEIRA

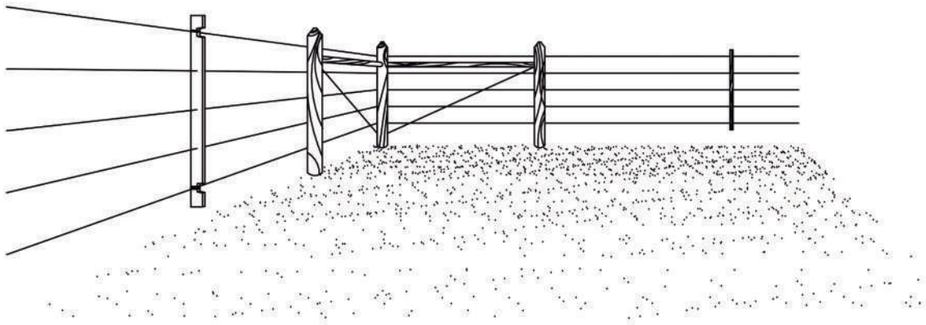
SISTEMA DE AMARRAÇÃO



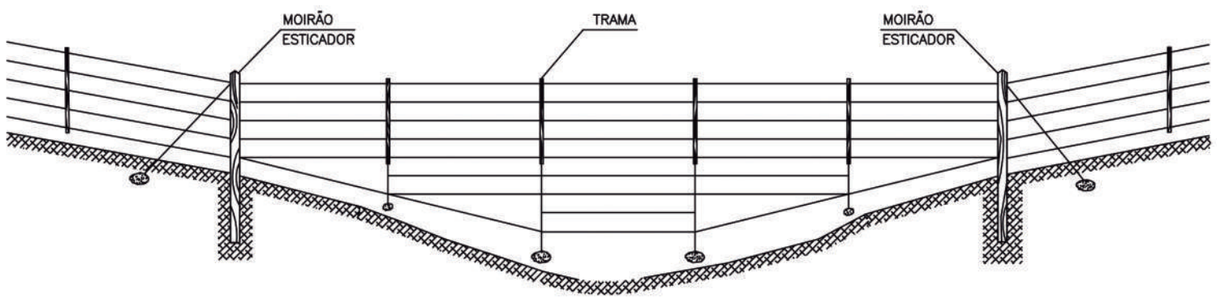
PONTOS ELEVADOS



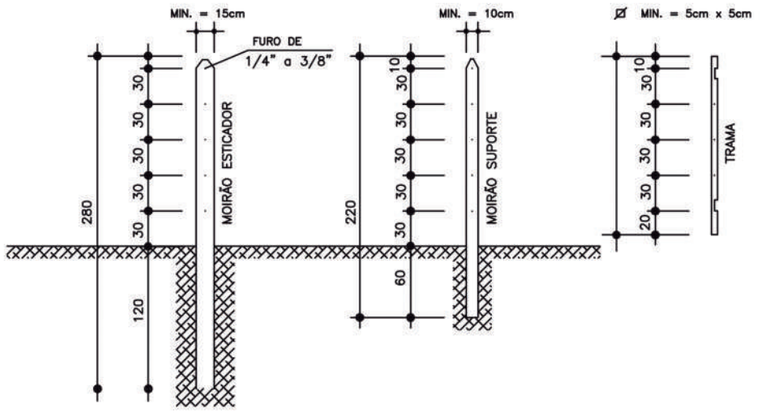
CANTO DE CERCA



FUNDOS DE SANGA



MOIRÕES DE MADEIRA



Serafini ENGENHARIA	MUNICÍPIO DE NOVA ALVORADA - RS	
ESCALAS: S/ ESCALAS	Obra : PROJETO DE OBRAS COMPLEMENTARES - RODOVIA ESTADUAL ERS 132 Trecho : LIMITE DO MUNICÍPIO (ITAPUCA) - COMUNIDADE DE LINHA BORELI Extensão : 5,0 km	
DATA: NOV / 21	DETALHE DE CERCAS	FOLHA 01 / 01