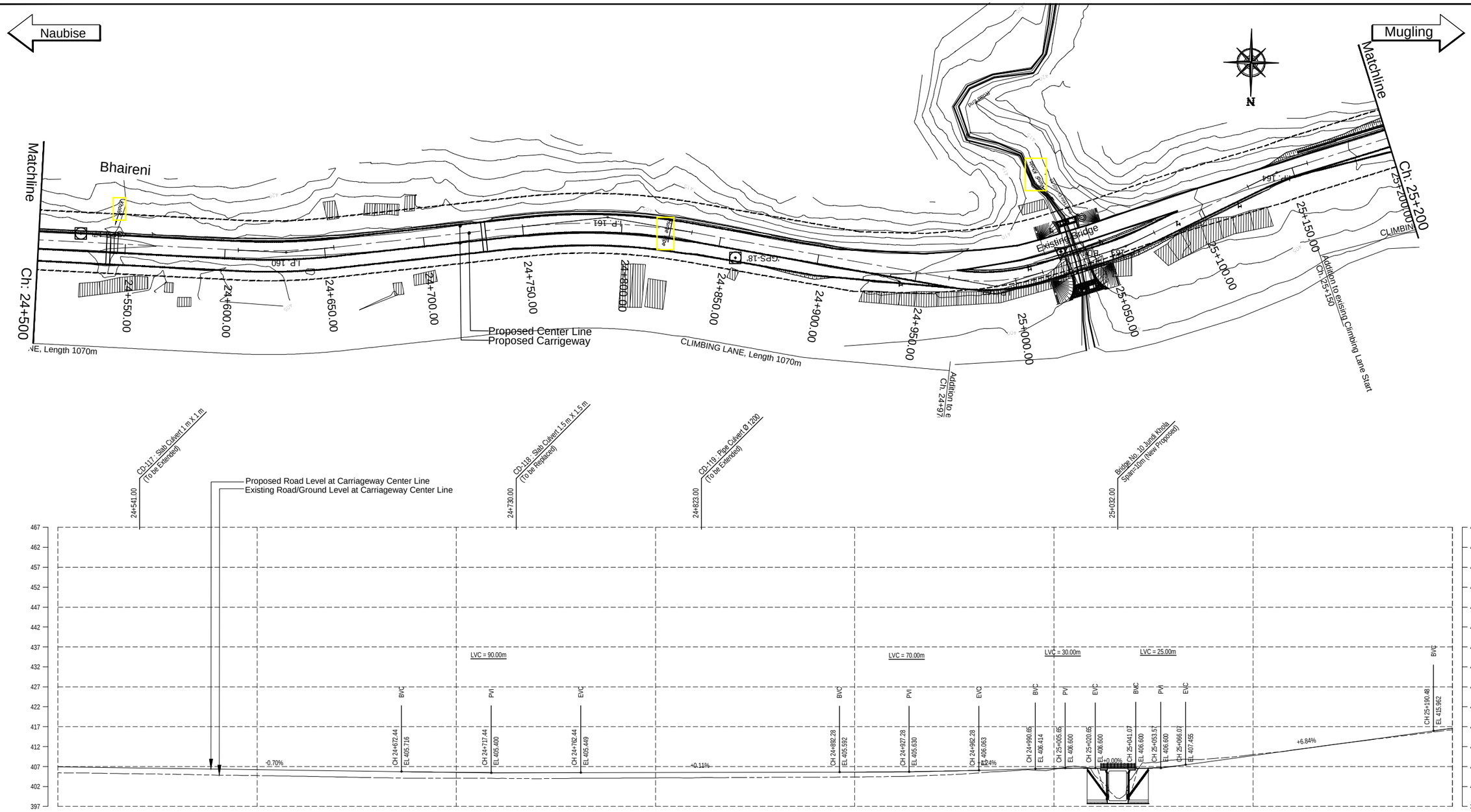
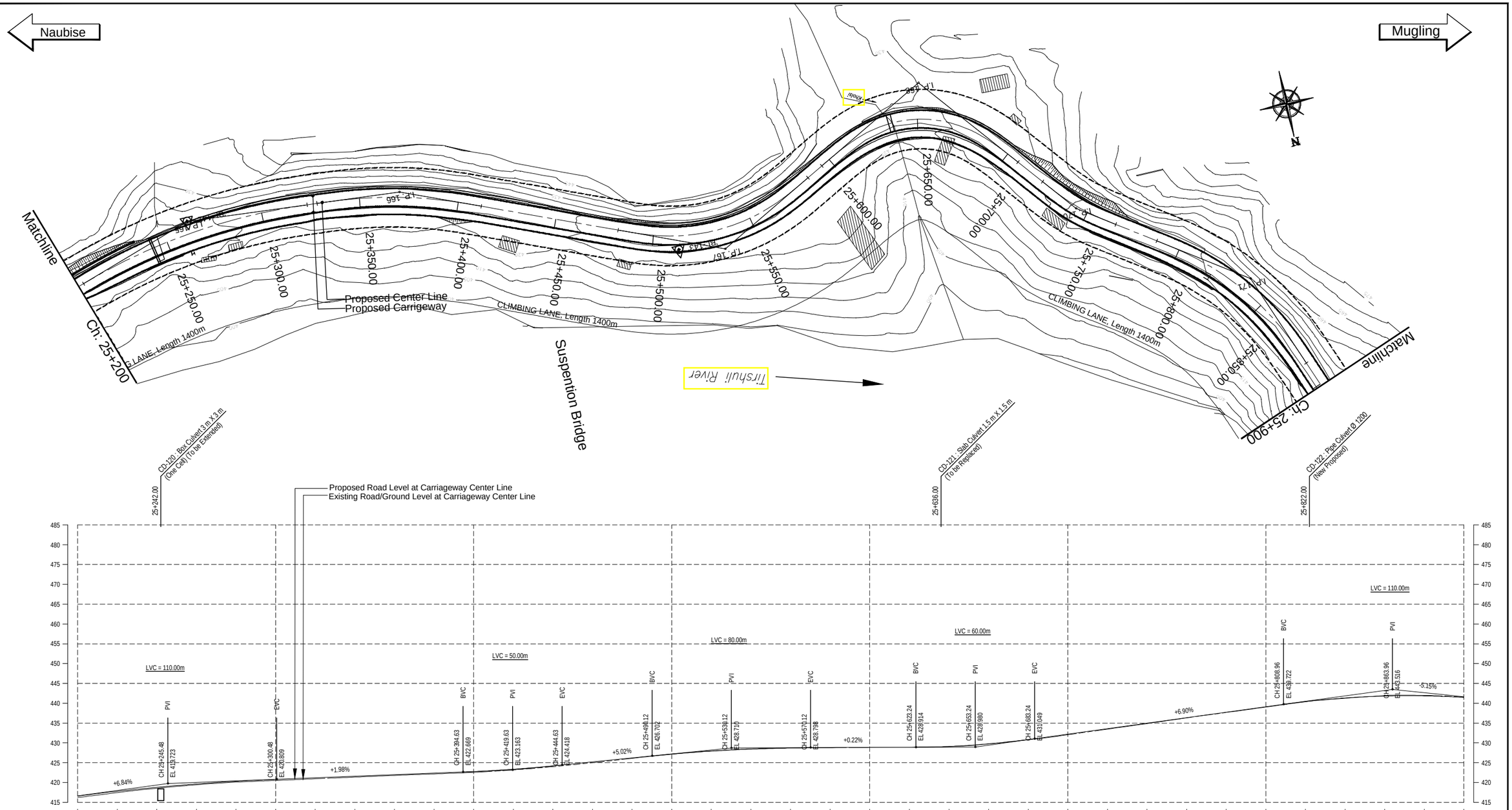


EMPLOYER	PROJECT	DESIGN CONSULTANT			
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 24+500.00 TO 25+200.00

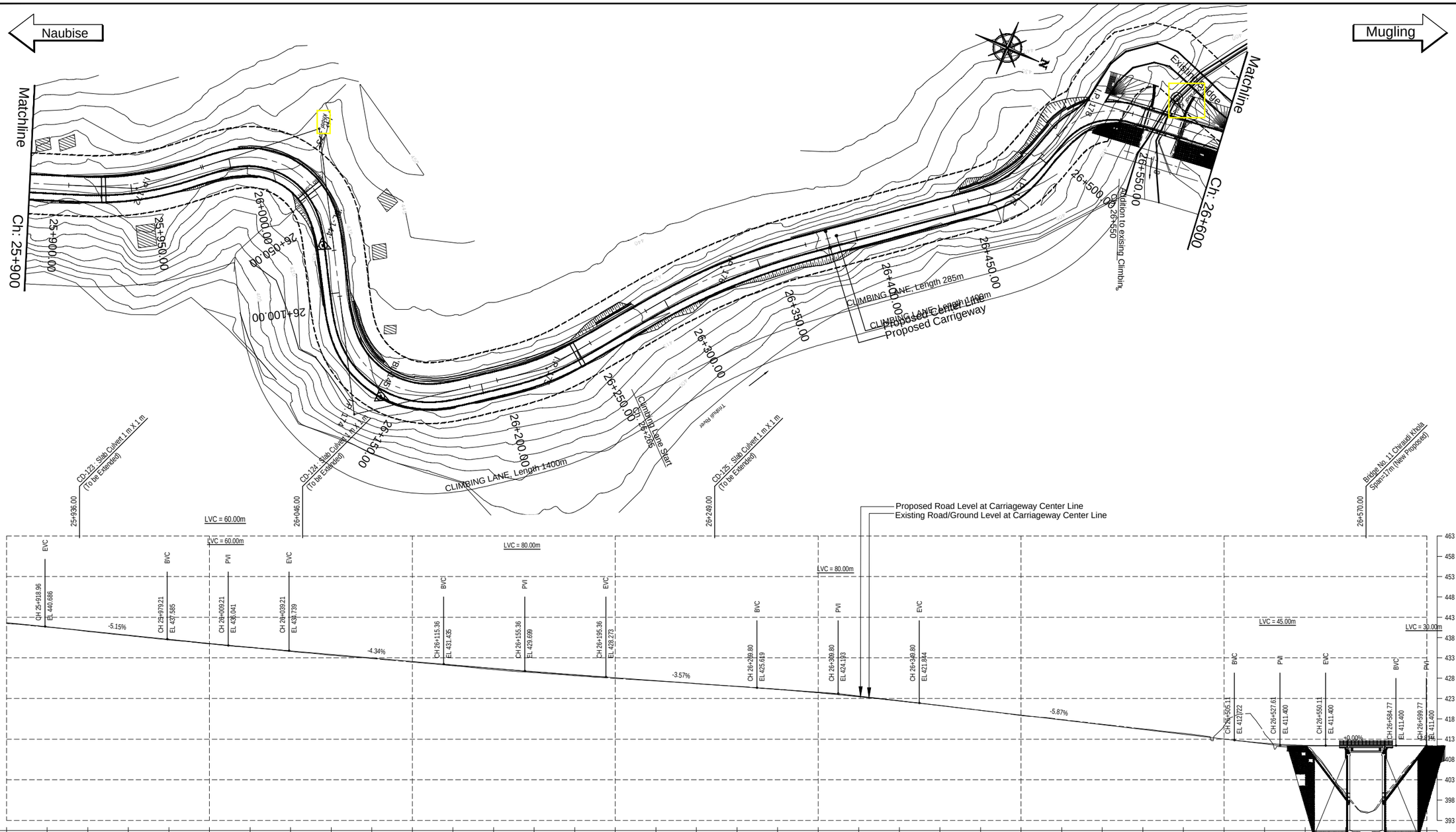
Scale: Horizontal 0 10 20 30 40; Vertical 0 5 10 15 20

Date: August 2019

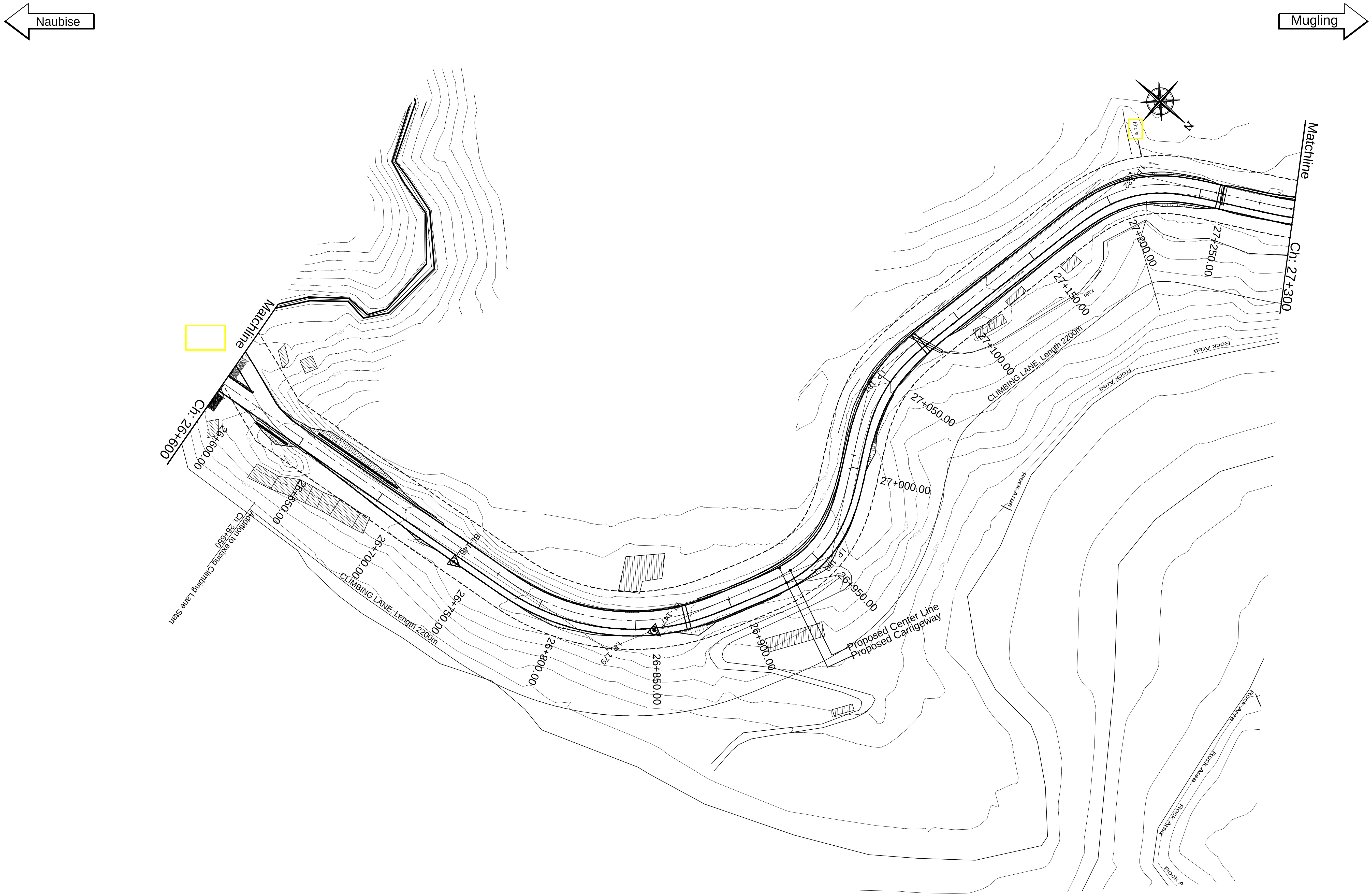
Drawing No.: NMR-PP-037



EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 25+200.00 TO 25+900.00	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20	Date: August 2019 Drawing No.: NMR-PP-038



EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 25+900.00 TO 26+600.00	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20 Date: August 2019 Drawing No.: NMR-PP-039



EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With FBC Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By	SB	
				Checked By	PMS	
				Approved By	BNS	

DRAWING NAME:

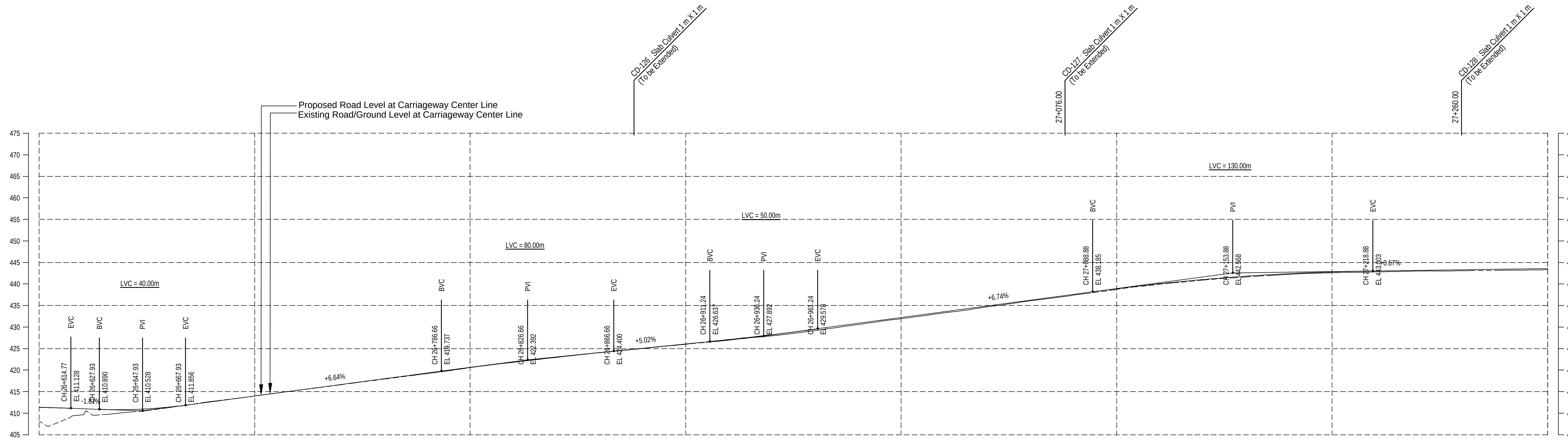
NAUBISE - MUGLING ROAD
PLAN AND PROFILE
CHAINAGE 26+600.00 TO 27+300.00

Scale:
0 10 20 30 40 Horizontal
0 5 10 15 20 Vertical

Date: August 2019

Drawing No.: NMR-PP-040

Naubise ← → Mugling



CHAINAGE (km)	DESIGN LEVEL (m)	EXISTING LEVEL (m)
26+600.00	411.330	408.165
26+620.00	411.034	409.583
26+640.00	410.825	410.150
26+660.00	411.396	411.268
26+680.00	412.657	412.705
26+700.00	413.984	414.004
26+720.00	415.312	415.318
26+740.00	416.640	416.607
26+760.00	417.967	417.897
26+780.00	419.295	419.195
26+800.00	420.604	420.581
26+820.00	421.837	421.821
26+840.00	422.990	422.956
26+860.00	424.061	424.042
26+880.00	425.069	425.012
26+900.00	426.073	426.006
26+920.00	427.090	426.956
26+940.00	428.223	427.947
26+960.00	429.494	429.174
26+980.00	430.843	430.572
27+000.00	432.191	431.943
27+020.00	433.540	433.270
27+040.00	434.889	434.680
27+060.00	436.237	436.087
27+080.00	437.586	437.395
27+100.00	438.906	438.736
27+120.00	440.057	439.924
27+140.00	441.022	440.891
27+160.00	441.799	441.627
27+180.00	442.390	442.232
27+200.00	442.793	442.606
27+220.00	443.010	442.788
27+240.00	443.144	442.997
27+260.00	443.278	443.066
27+280.00	443.412	443.177
27+300.00	443.546	443.298

HORIZONTAL ALIGNMENT (RIGHT / LEFT): R=112.00 IP-179; R=60.00 IP-180; IP-181 R=80.00; IP-182 R=65.00; R=130.00 IP-183

SUPER ELEVATION: +600.00 NC +773.38 T +788.38 +6.50 +885.51 T +900.51 NC +911.58 T +941.58 +7.00 +969.17 T +999.17 NC +006.40 T +031.40 -7.00 +061.30 T +086.30 NC +170.58 T +200.58 -7.00 +228.34 T +258.34 NC +281.40 T +296.40 +6.00 +300.00

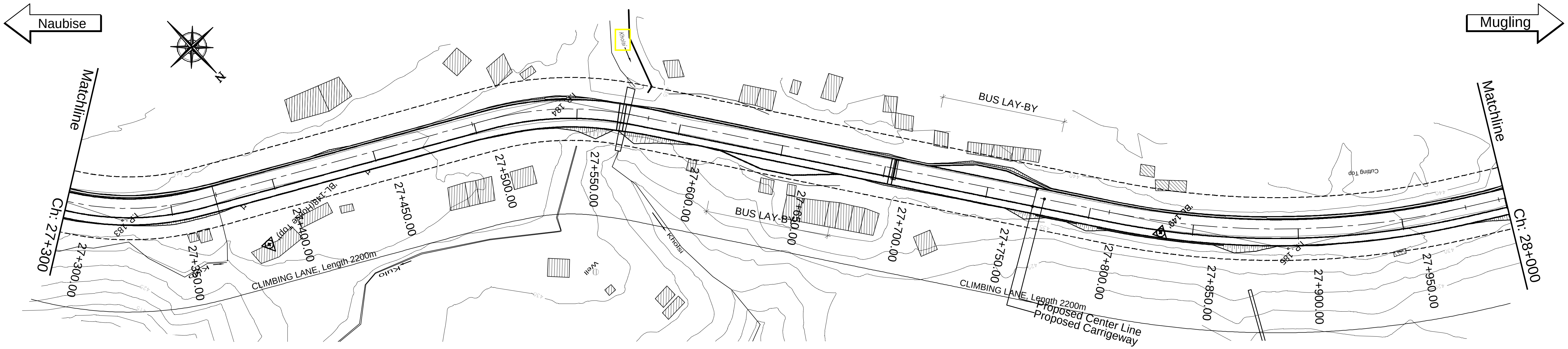
EMPLOYER	PROJECT	DESIGN CONSULTANT		
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With FBC Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS

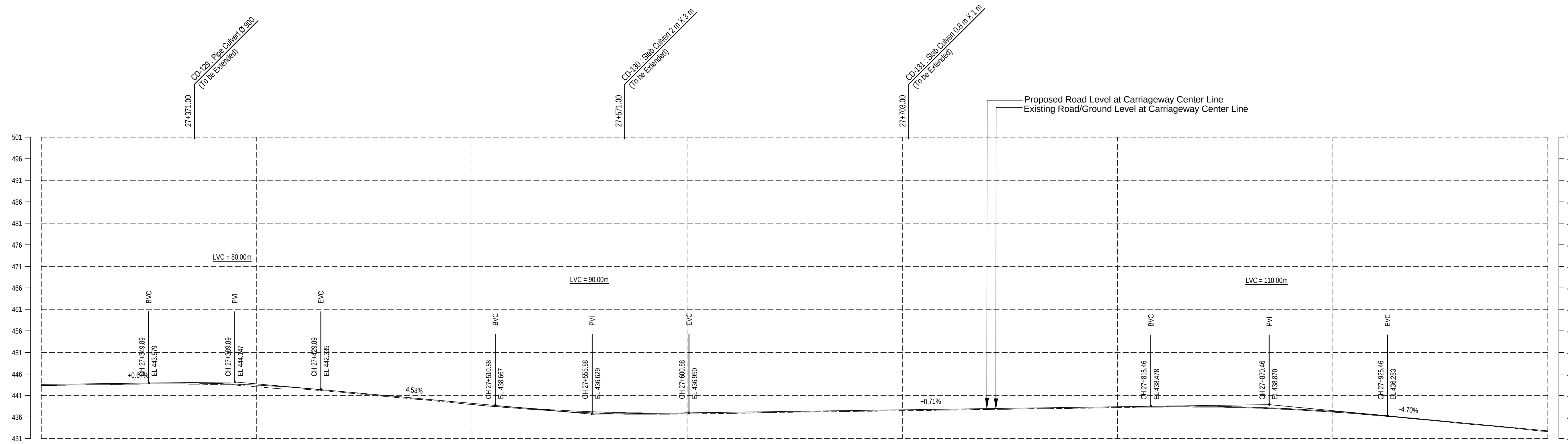
DRAWING NAME:
NAUBISE - MUGLING ROAD
PLAN AND PROFILE
CHAINAGE 26+600.00 TO 27+300.00

Scale: Horizontal 0 10 20 30 40; Vertical 0 5 10 15 20

Date: August 2019

Drawing No.: NMR-PP-040(a)





CHAINAGE (km)	DESIGN LEVEL (m)	EXISTING LEVEL (m)
27+300.00	443.546	443.298
27+320.00	443.679	443.469
27+340.00	443.813	443.617
27+360.00	443.914	443.709
27+380.00	443.786	443.563
27+400.00	443.399	443.015
27+420.00	442.751	442.502
27+440.00	441.877	441.696
27+460.00	440.972	440.784
27+480.00	440.066	439.867
27+500.00	439.160	438.914
27+520.00	438.278	438.054
27+540.00	437.595	437.354
27+560.00	437.145	436.863
27+580.00	436.928	436.649
27+600.00	436.944	436.700
27+620.00	437.086	436.846
27+640.00	437.228	437.046
27+660.00	437.371	437.193
27+680.00	437.513	437.317
27+700.00	437.656	437.454
27+720.00	437.798	437.602
27+740.00	437.941	437.752
27+760.00	438.083	437.886
27+780.00	438.226	438.023
27+800.00	438.368	438.190
27+820.00	438.505	438.322
27+840.00	438.505	438.315
27+860.00	438.307	438.127
27+880.00	437.913	437.737
27+900.00	437.321	437.140
27+920.00	436.533	436.377
27+940.00	435.599	435.471
27+960.00	434.659	434.496
27+980.00	433.718	433.588
28+000.00	432.777	432.587

HORIZONTAL ALIGNMENT (RIGHT / LEFT): R=130.00 IP-183; IP-184 R=150.00; R=400.00 IP-185; R=300.00 IP-186

SUPER ELEVATION: +300.00 +6.00 +357.18 T +372.18 NC +499.15 T +514.15 -5.00 +569.48 T +584.48 NC +806.27 T +810.77 +2.50 +979.33 T +983.83 NC +994.12 +2.50 +998.62 +000.00

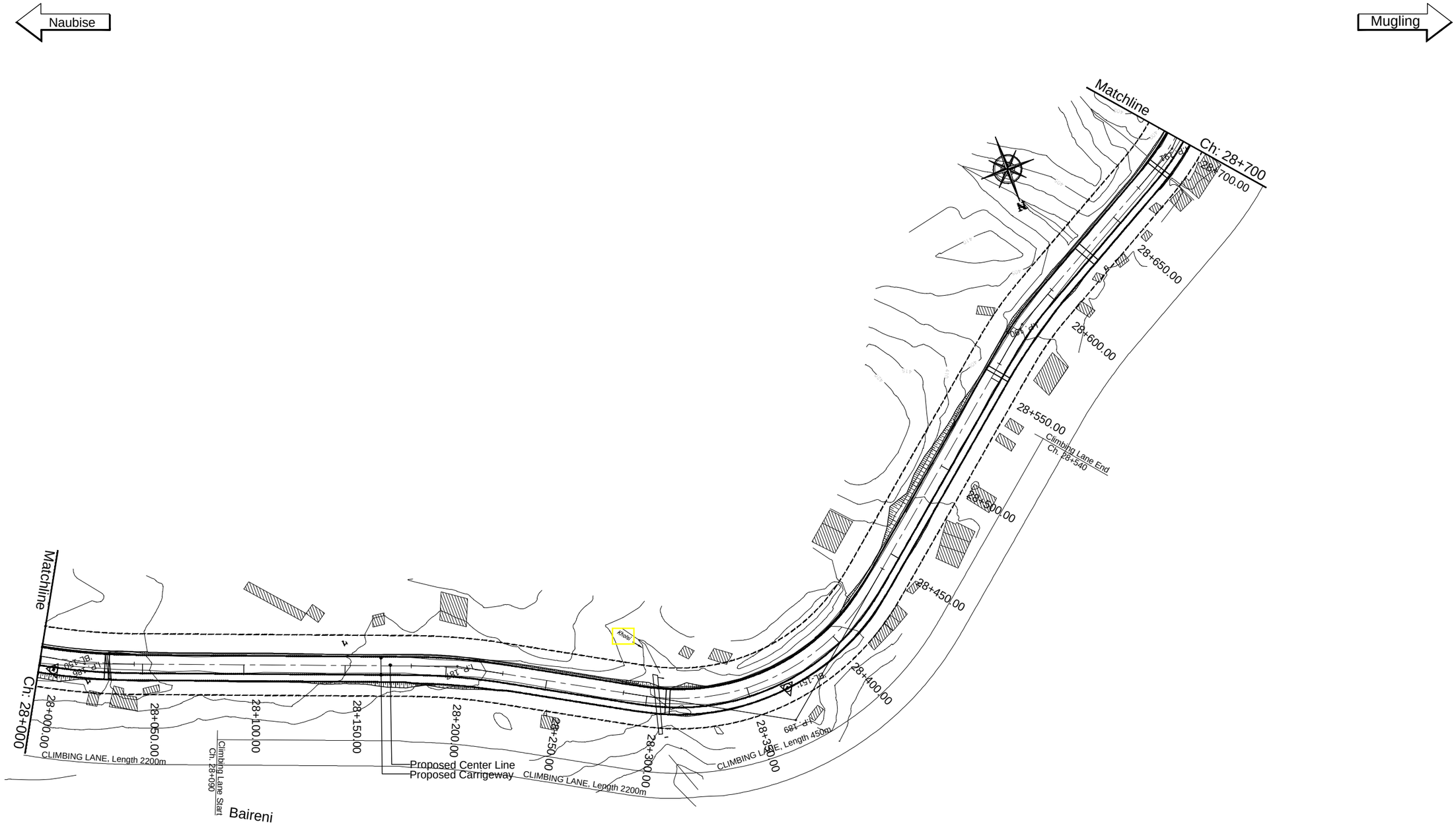
EMPLOYER	PROJECT	DESIGN CONSULTANT		
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With FBC Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS

DRAWING NAME:
NAUBISE - MUGLING ROAD
PLAN AND PROFILE
CHAINAGE 27+300.00 TO 28+000.00

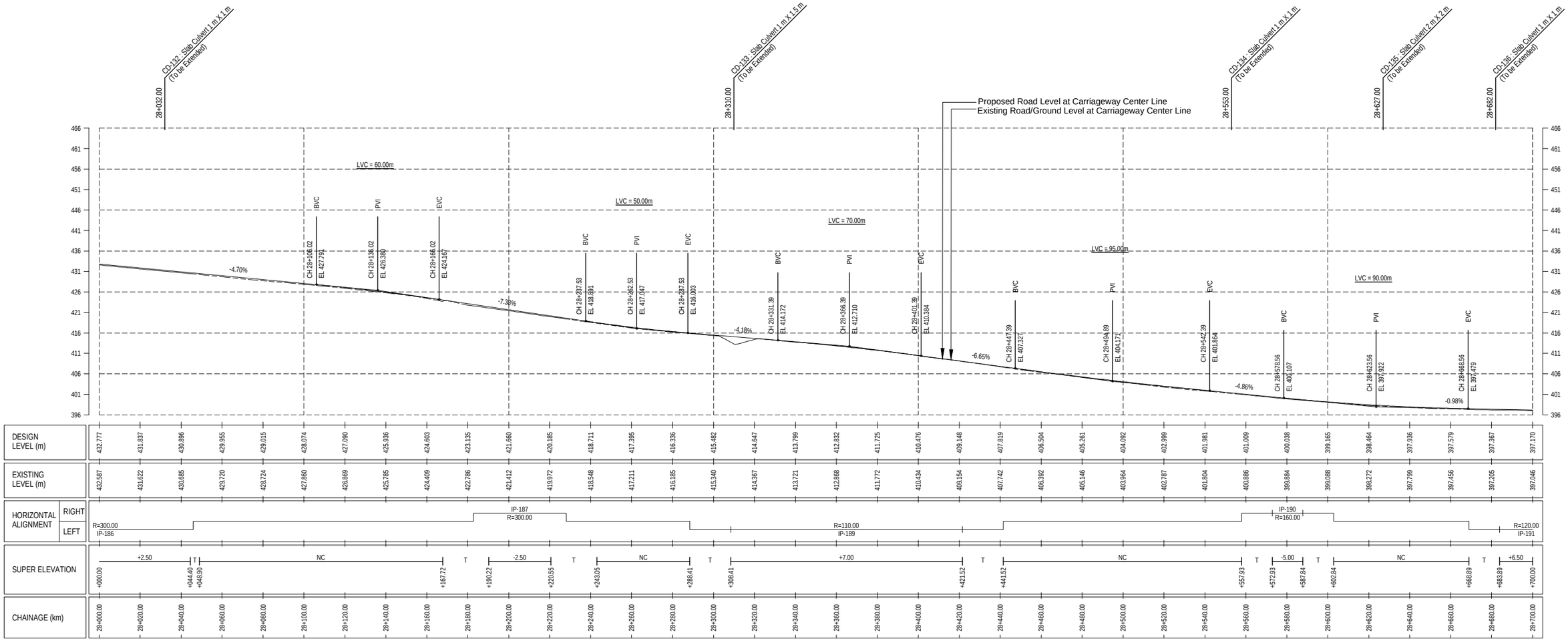
Scale: 0 10 20 30 40 Horizontal; 0 5 10 15 20 Vertical

Date: August 2019

Drawing No.: NMR-PP-041



EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By	SB	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 28+000.00 TO 28+700.00	Scale: Horizontal Vertical
				Checked By	PMS		Date: August 2019
				Approved By	BNS		Drawing No.: NMR-PP-042



EMPLOYER	PROJECT	DESIGN CONSULTANT
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal

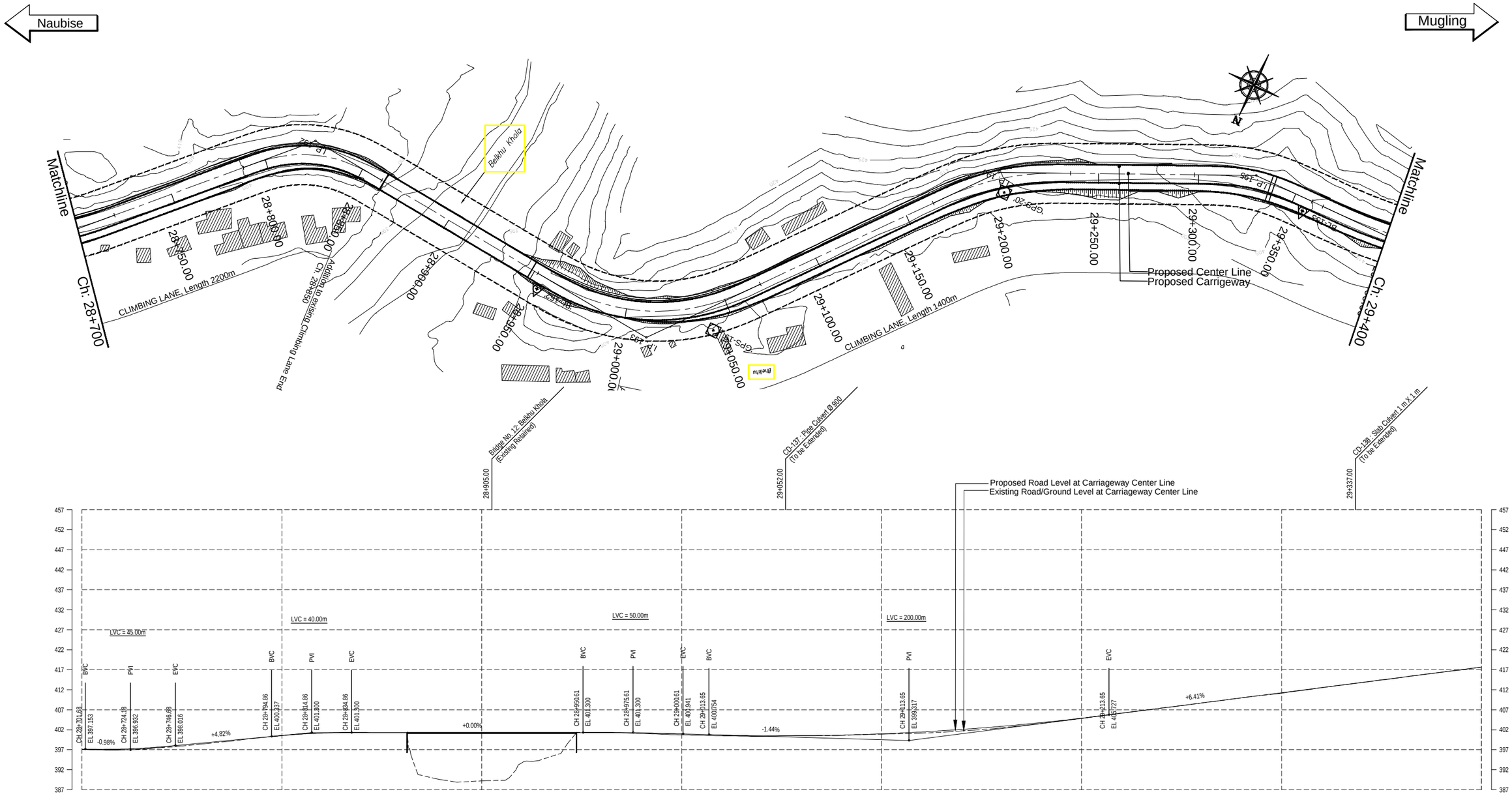
Designed By	SB	
Checked By	PMS	
Approved By	BNS	

DRAWING NAME:
NAUBISE - MUGLING ROAD
PLAN AND PROFILE
CHAINAGE 28+000.00 TO 28+700.00

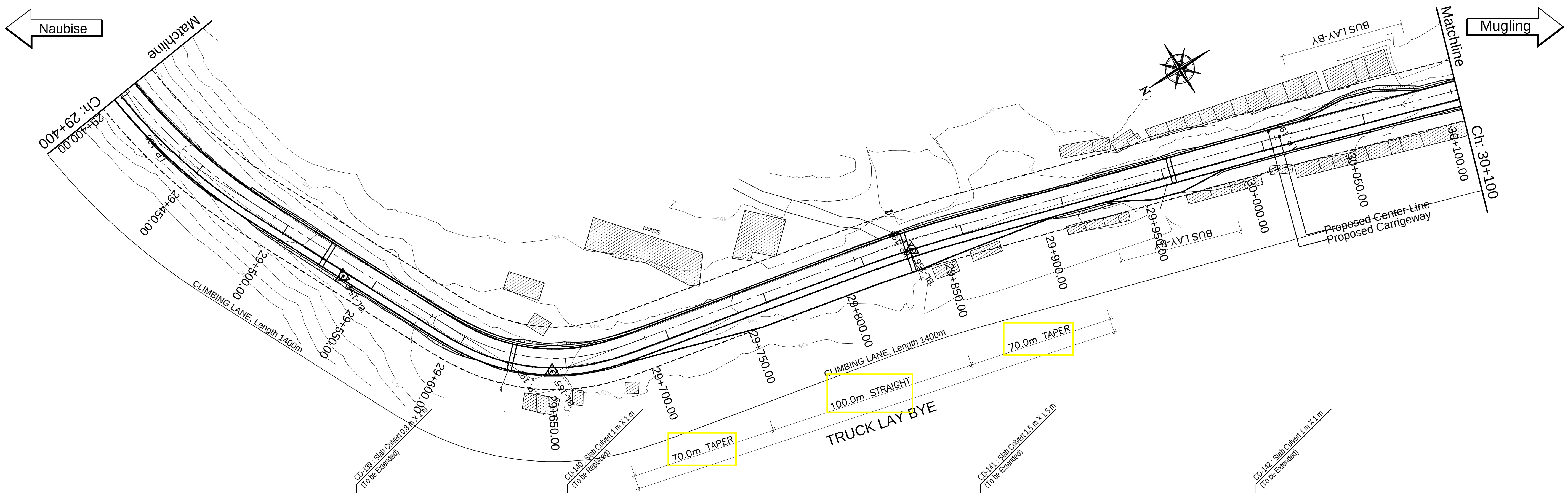
Scale:
Horizontal: 0 10 20 30 40
Vertical: 0 5 10 15 20

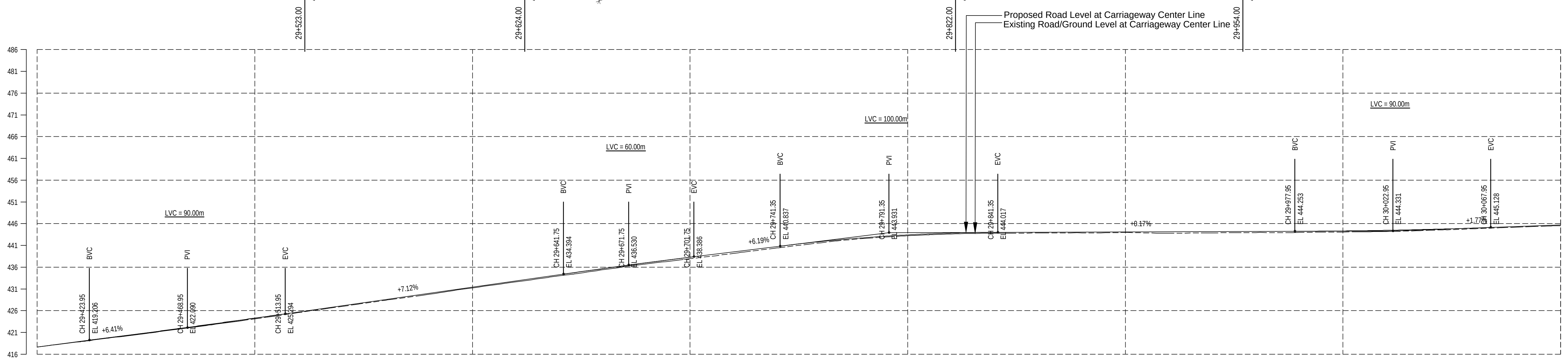
Date:
August 2019

Drawing No.:
NMR-PP-042(a)



EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 28+700.00 TO 29+400.00	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20 Date: August 2019 Drawing No.: NMR-PP-043





CHAINAGE (km)	DESIGN LEVEL (m)	EXISTING LEVEL (m)
29+400.00	417.671	417.651
29+420.00	418.953	418.884
29+440.00	420.245	420.152
29+460.00	421.568	421.443
29+480.00	422.922	422.757
29+500.00	424.309	424.138
29+520.00	425.725	425.556
29+540.00	427.149	426.990
29+560.00	428.573	428.408
29+580.00	429.997	429.760
29+600.00	431.421	431.243
29+620.00	432.845	432.635
29+640.00	434.269	434.008
29+660.00	435.667	435.408
29+680.00	437.004	436.785
29+700.00	438.278	437.964
29+720.00	439.516	439.180
29+740.00	440.753	440.427
29+760.00	441.886	441.607
29+780.00	442.779	442.604
29+800.00	443.432	443.219
29+820.00	443.843	443.619
29+840.00	444.014	443.799
29+860.00	444.050	443.849
29+880.00	444.084	443.900
29+900.00	444.119	443.984
29+920.00	444.153	443.798
29+940.00	444.188	443.888
29+960.00	444.222	443.960
29+980.00	444.257	443.973
30+000.00	444.335	444.077
30+020.00	444.483	444.209
30+040.00	444.702	444.480
30+060.00	444.993	444.828
30+080.00	445.341	445.213
30+100.00	445.695	445.531

HORIZONTAL ALIGNMENT (RIGHT / LEFT): R=260.00 IP-196; R=90.00 IP-197; IP-198 R=600.00; IP-199 R=1000.00; IP-200 R=100.00

SUPER ELEVATION: +400.00 — +2.50 — +477.44; T; +492.44 — NC — +581.45; T; +606.45 — +7.00 — +664.33; T; +689.33 — NC — +781.56; T; +804.06 — -2.50 — +840.54; T; +863.04 — NC — +991.55; T; +014.05 -2.50 +016.25; T; +038.75 — NC — +093.86; T; +100.00

EMPLOYER	PROJECT	DESIGN CONSULTANT		
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	FBC	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal

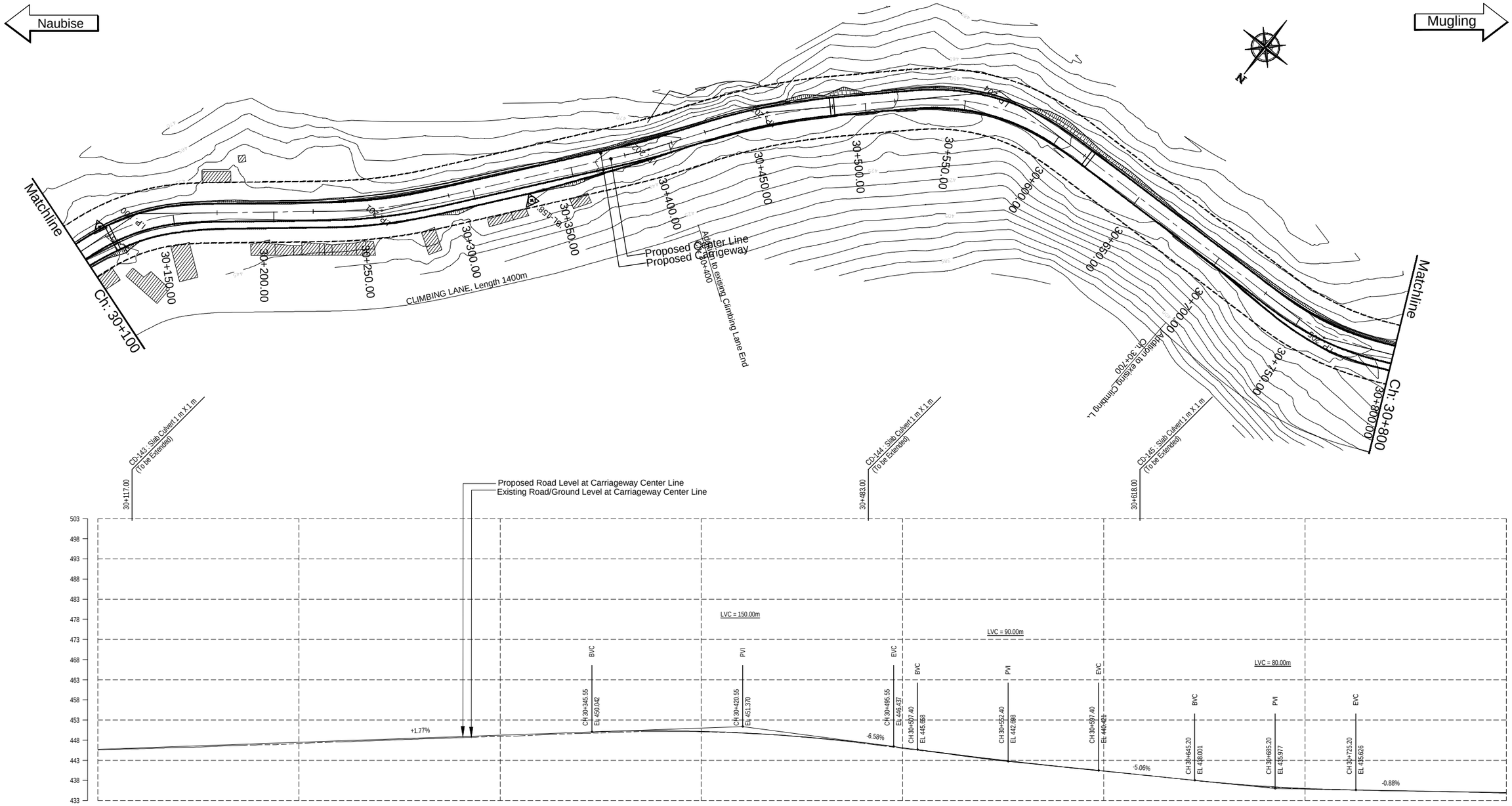
Designed By	SB	
Checked By	PMS	
Approved By	BNS	

DRAWING NAME:
NAUBISE - MUGLING ROAD
PLAN AND PROFILE
CHAINAGE 29+400.00 TO 30+100.00

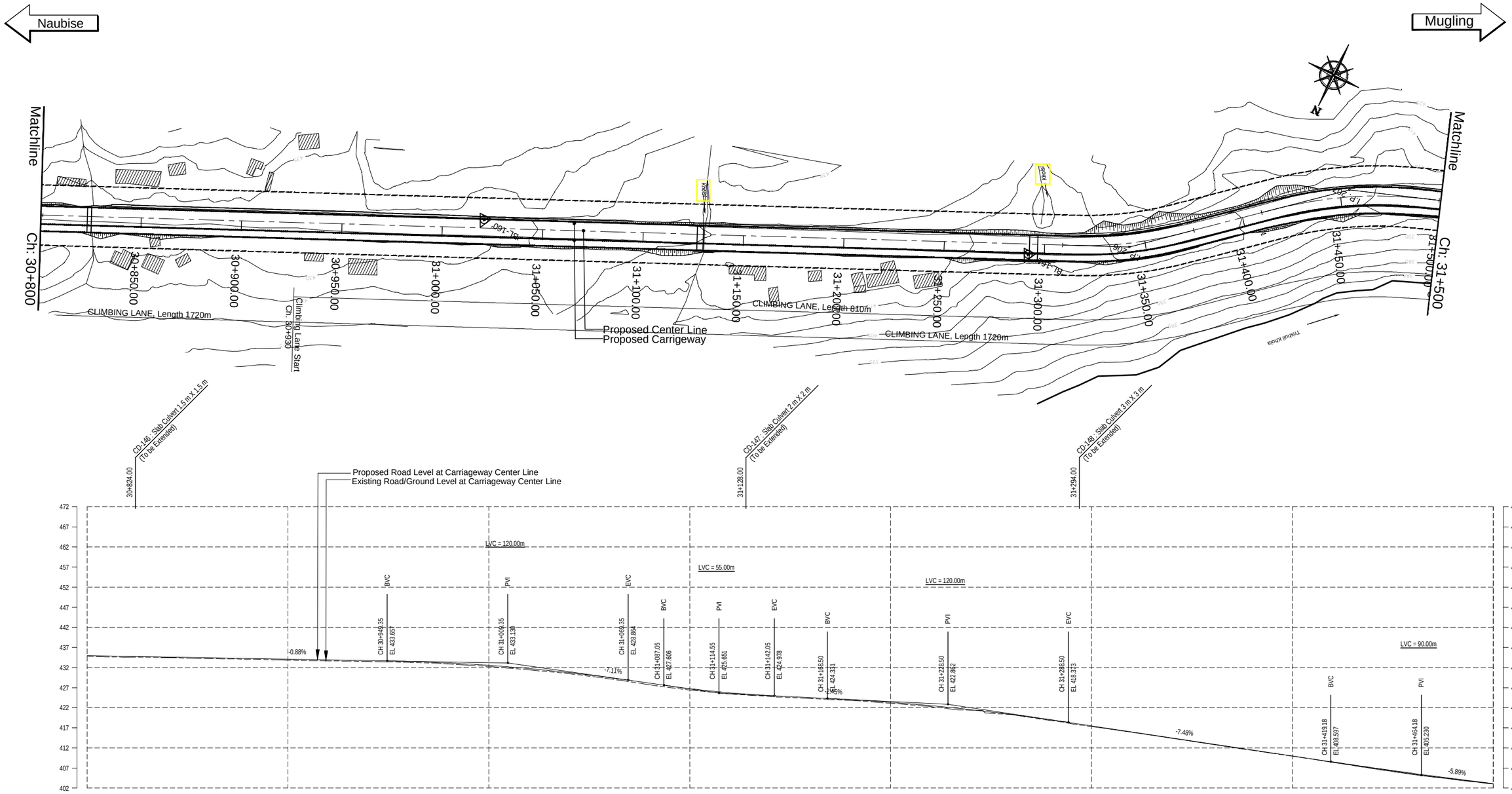
Scale: 0 10 20 30 40 Horizontal; 0 5 10 15 20 Vertical

Date: August 2019

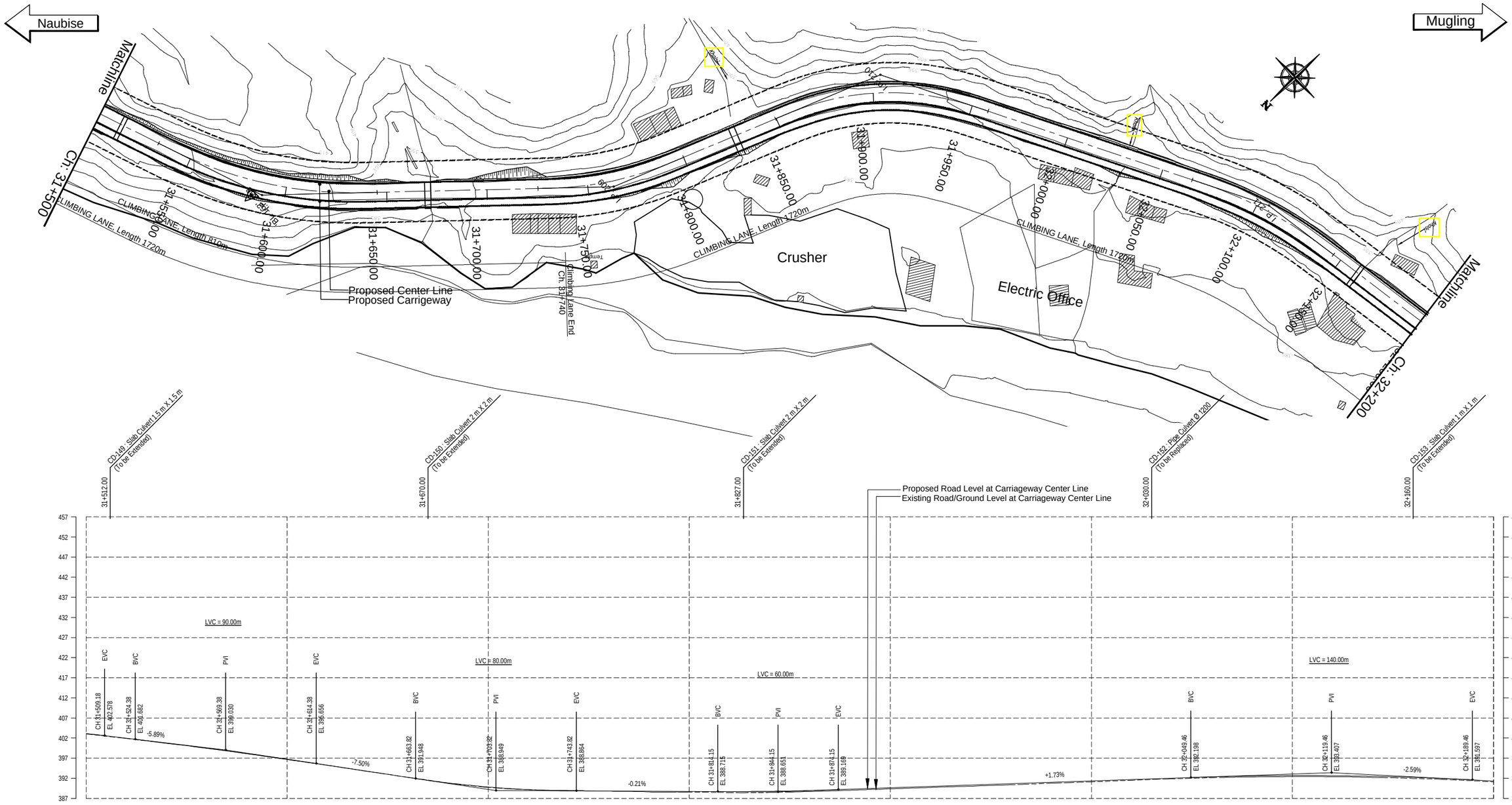
Drawing No.: NMR-PP-044



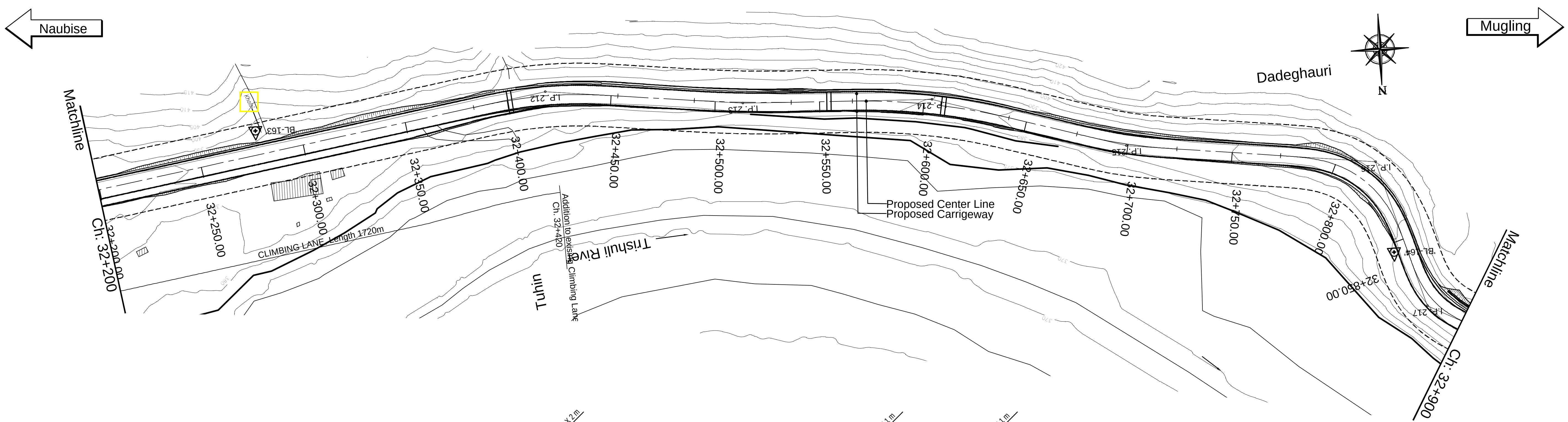
EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 30+100.00 TO 30+800.00	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20 Date: August 2019 Drawing No.: NMR-PP-045

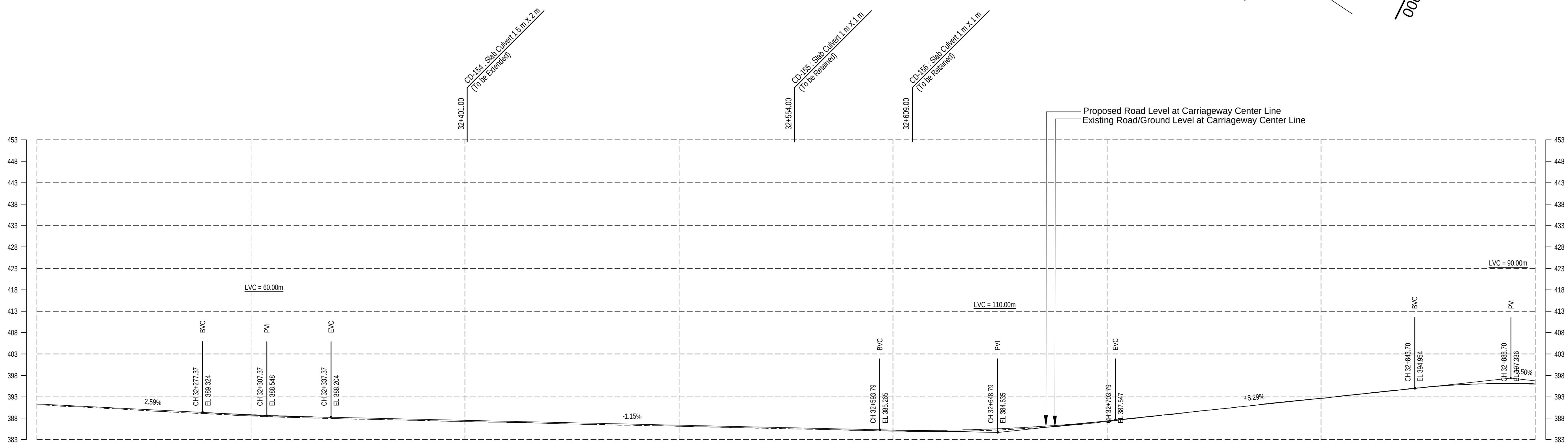


EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By	SB	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 30+800.00 TO 31+500.00	Date: August 2019
				Checked By	PMS	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20	Drawing No.: NMR-PP-046
				Approved By	BNS		



EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By	SB	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 31+500.00 TO 32+200.00	Scale: Horizontal Vertical
				Checked By	PMS		Date: August 2019
				Approved By	BNS		Drawing No.: NMR-PP-047





CHAINAGE (km)	32+200.00	32+220.00	32+240.00	32+260.00	32+280.00	32+300.00	32+320.00	32+340.00	32+360.00	32+380.00	32+400.00	32+420.00
DESIGN LEVEL (m)	391.324	390.807	390.290	389.773	389.257	388.800	388.439	388.174	387.945	387.716	387.486	387.257
EXISTING LEVEL (m)	391.122	390.609	390.083	389.514	389.035	388.509	388.164	387.885	387.683	387.455	387.198	387.033

CHAINAGE (km)	32+440.00	32+460.00	32+480.00	32+500.00	32+520.00	32+540.00	32+560.00	32+580.00	32+600.00	32+620.00	32+640.00	32+660.00
DESIGN LEVEL (m)	387.028	386.799	386.569	386.340	386.111	385.882	385.653	385.423	385.205	385.166	385.361	385.790
EXISTING LEVEL (m)	386.753	386.535	386.335	386.111	385.880	385.648	385.437	385.192	384.968	384.891	385.059	385.531

CHAINAGE (km)	32+680.00	32+700.00	32+720.00	32+740.00	32+760.00	32+780.00	32+800.00	32+820.00	32+840.00	32+860.00	32+880.00	32+900.00
DESIGN LEVEL (m)	386.453	387.350	388.405	389.464	390.523	391.581	392.640	393.699	394.758	395.657	396.085	396.033
EXISTING LEVEL (m)	386.228	387.220	388.359	389.488	390.530	391.674	392.629	393.729	394.806	395.693	396.071	395.931

HORIZONTAL ALIGNMENT (RIGHT / LEFT): IP-212 R=200.00 (Right); R=600.00 IP-213 (Left); IP-214 R=300.00 (Right); R=200.00 IP-215 (Left); IP-216 R=50.00 (Right); R=40.00 IP-217 (Left)

SUPER ELEVATION: +200.00 NC +383.62 T +398.62 -4.00 +438.24 T +453.24 NC +486.94 T +491.44 +2.50 +534.94 T +539.44 NC +562.75 T +567.25 -2.50 +639.97 T +644.47 NC +674.95 T +689.95 +4.00 +708.47 T +723.47 NC +773.32 T +798.32 -7.00 +831.44 T +856.44 NC +857.62 T +875.62 +7.00 +890.26 T +900.00

EMPLOYER	PROJECT	DESIGN CONSULTANT		
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With FBC Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	

Designed By	SB	[signature]
Checked By	PMS	[signature]
Approved By	BNS	[signature]

DRAWING NAME:
NAUBISE - MUGLING ROAD
PLAN AND PROFILE
CHAINAGE 32+200.00 TO 32+900.00

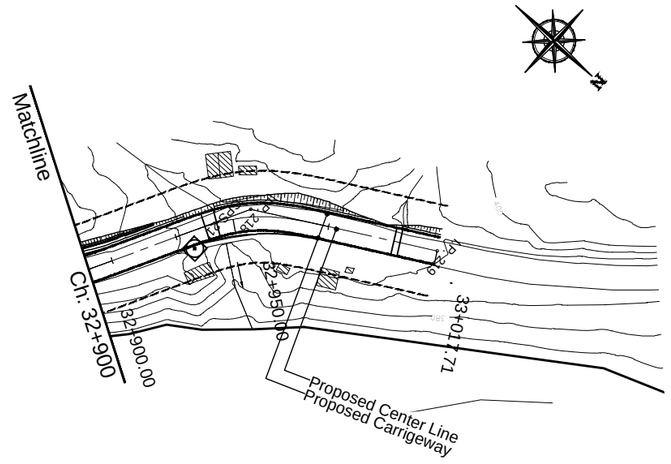
Scale: Horizontal 0 10 20 30 40; Vertical 0 5 10 15 20

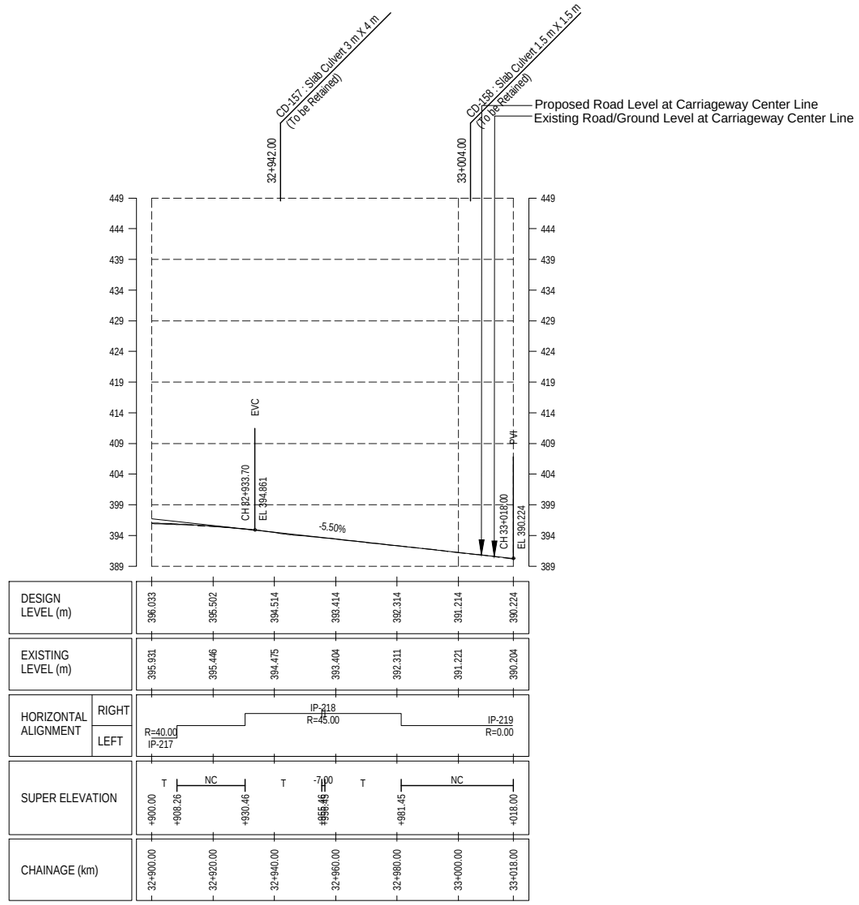
Date: August 2019

Drawing No.: NMR-PP-048

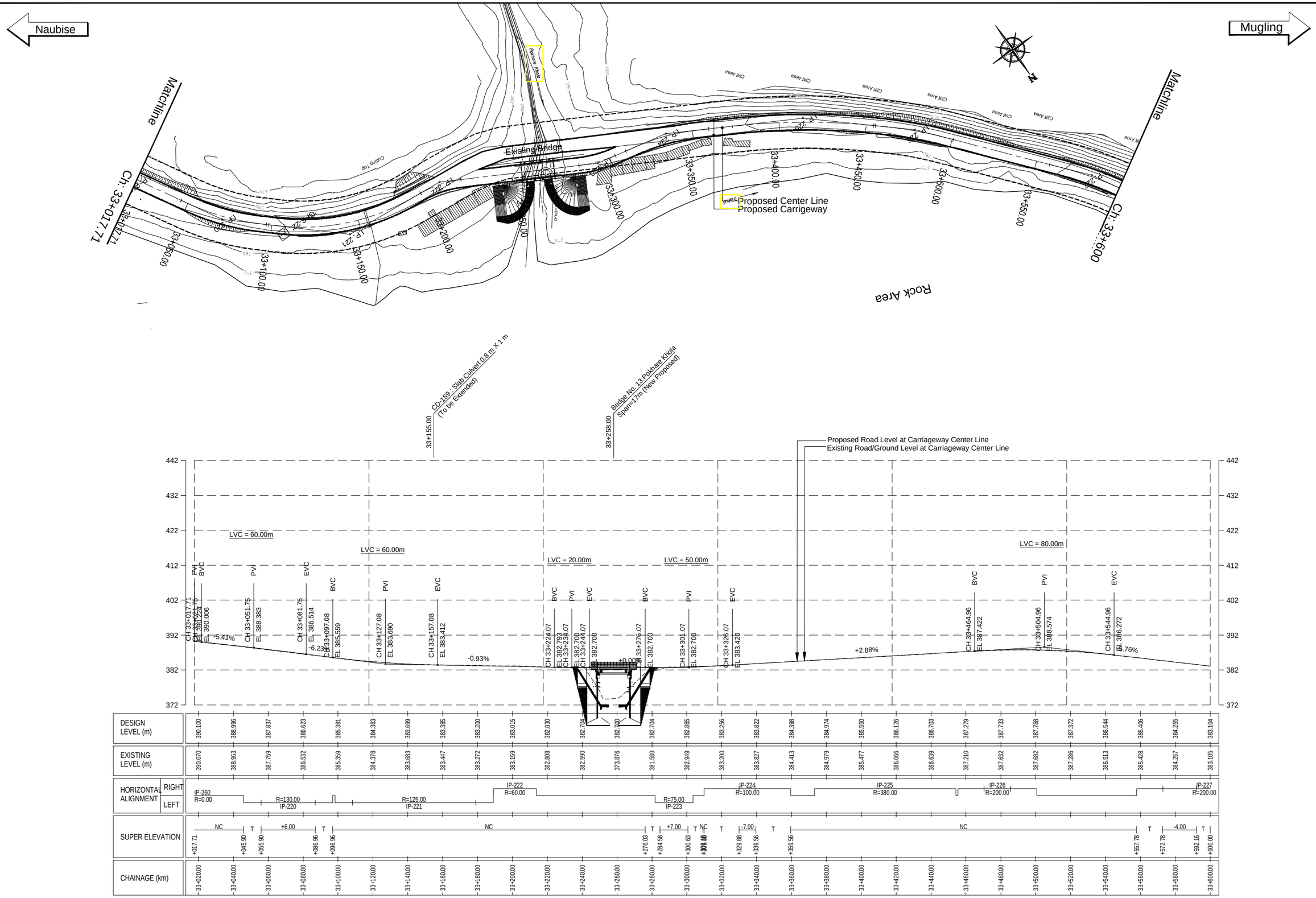
Naubise

Mugling





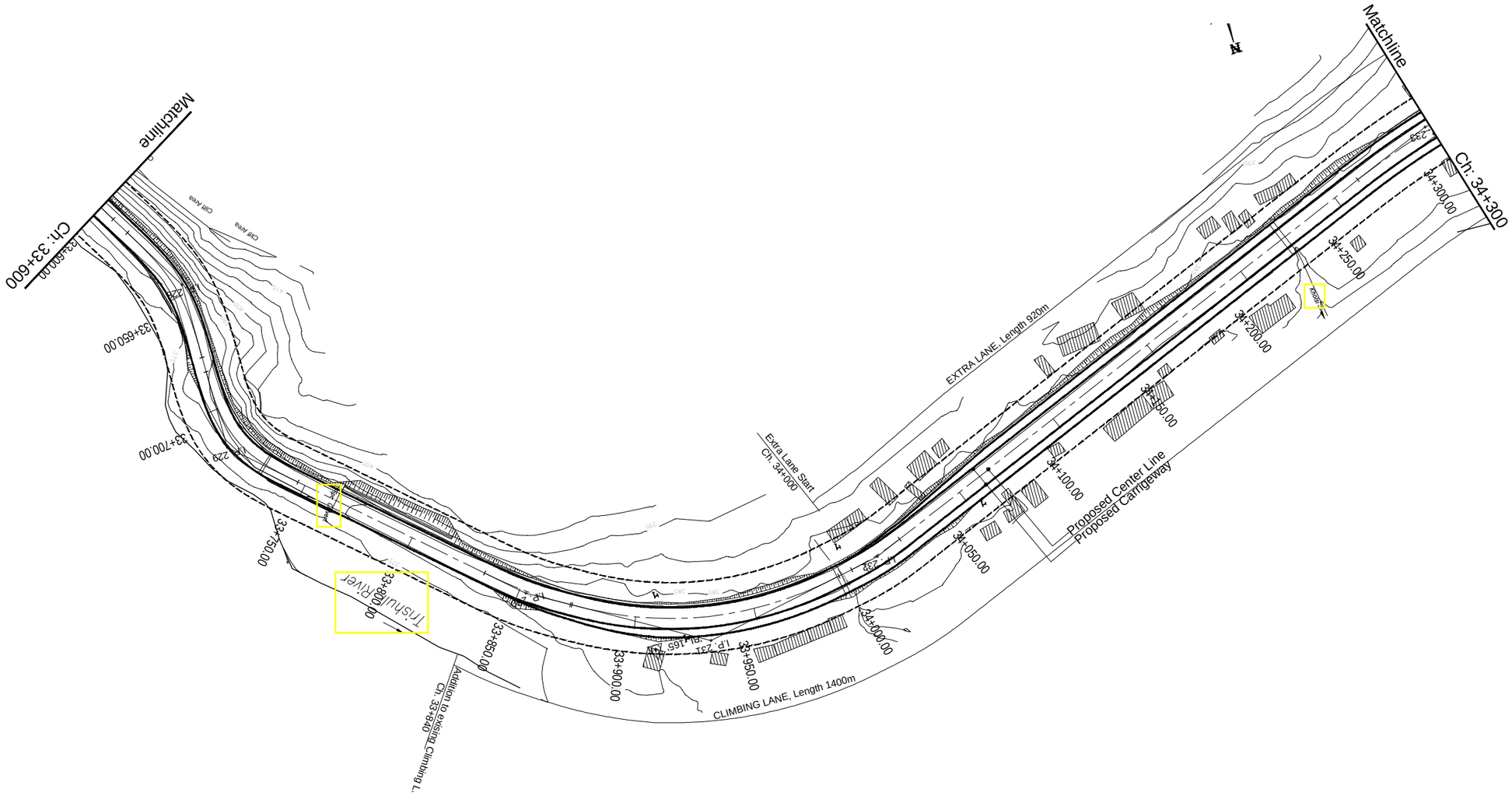
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea FBC In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By	SB	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 32+900.00 TO 33+017.71	Scale: 0 10 20 30 40 Horizontal 0 5 10 15 20 Vertical	Date: August 2019
			Checked By	PMS			Drawing No.: NMR-PP-049
			Approved By	BNS			



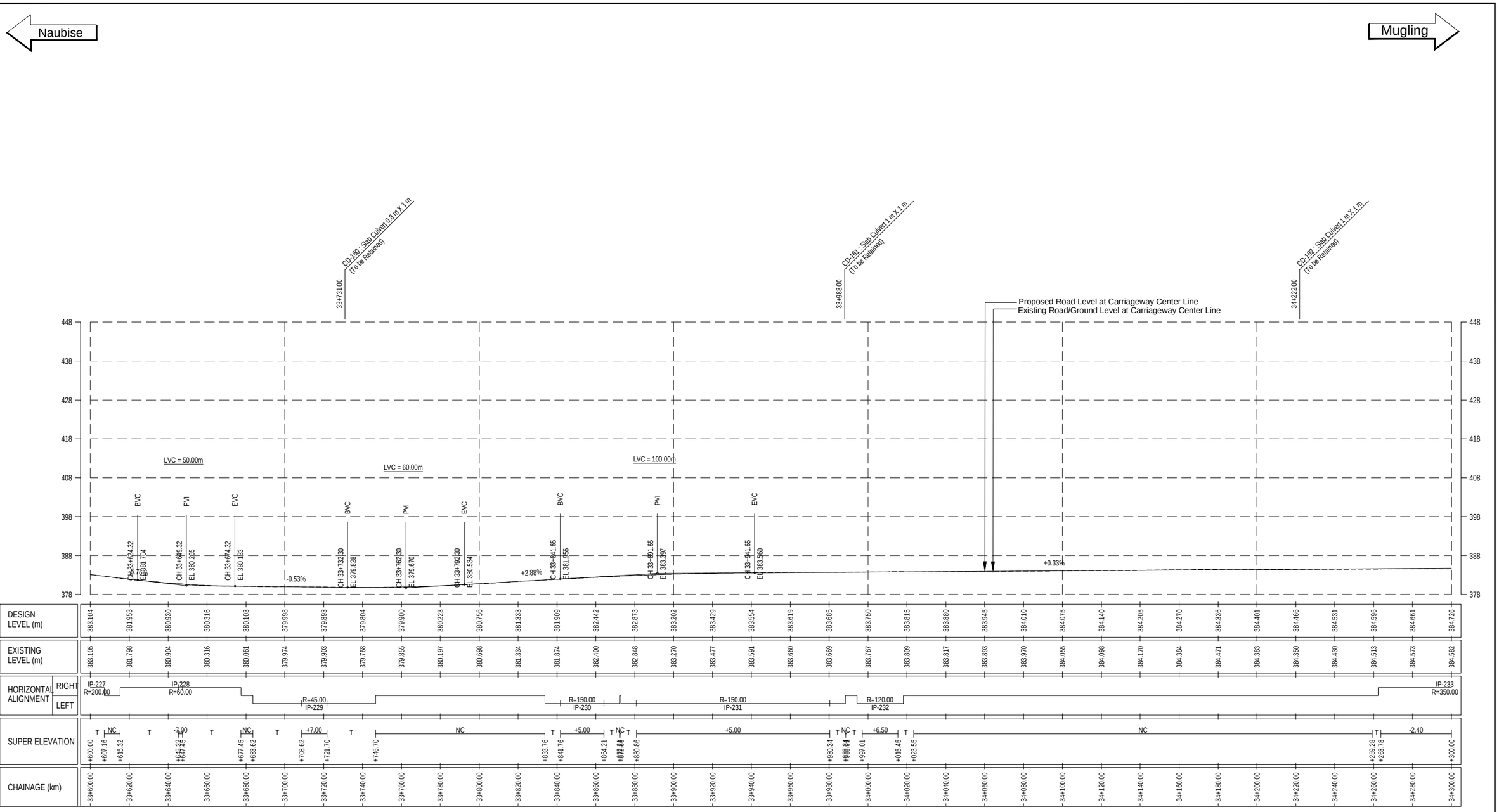
EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 33+017.71 TO 33+600.00	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20 Date: August 2019 Drawing No.: NMR-PP-050

Naubise

Mugling



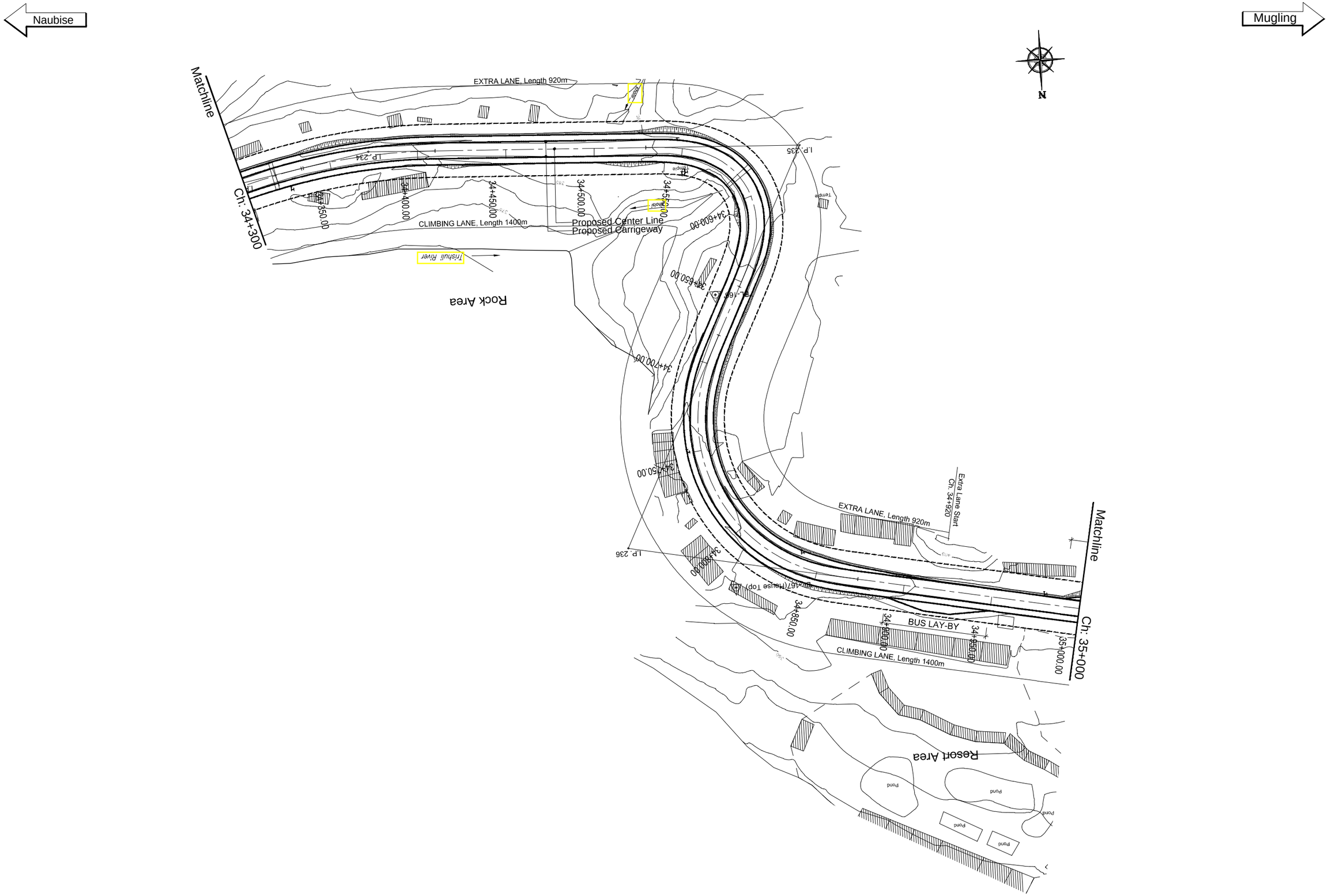
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By	SB	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 33+600.00 TO 34+300.00	Scale: 0 10 20 30 40 Horizontal 0 5 10 15 20 Vertical
				Checked By	PMS		Date: August 2019
				Approved By	BNS		Drawing No.: NMR-PP-051



EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	FBC	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 33+600.00 TO 34+300.00	Scale: Horizontal: 0 10 20 30 40 Vertical: 0 5 10 15 20

Date: August 2019

Drawing No.: NMR-PP-051(a)

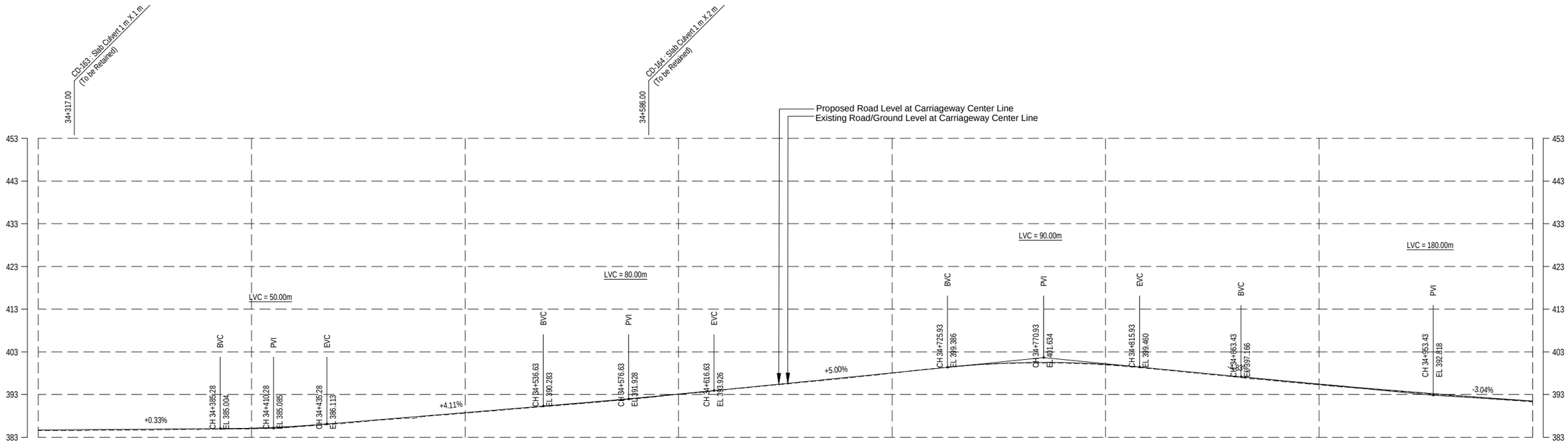


EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	FBC	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By	SB	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 34+300.00 TO 35+000.00
					Checked By	PMS	
					Approved By	BNS	

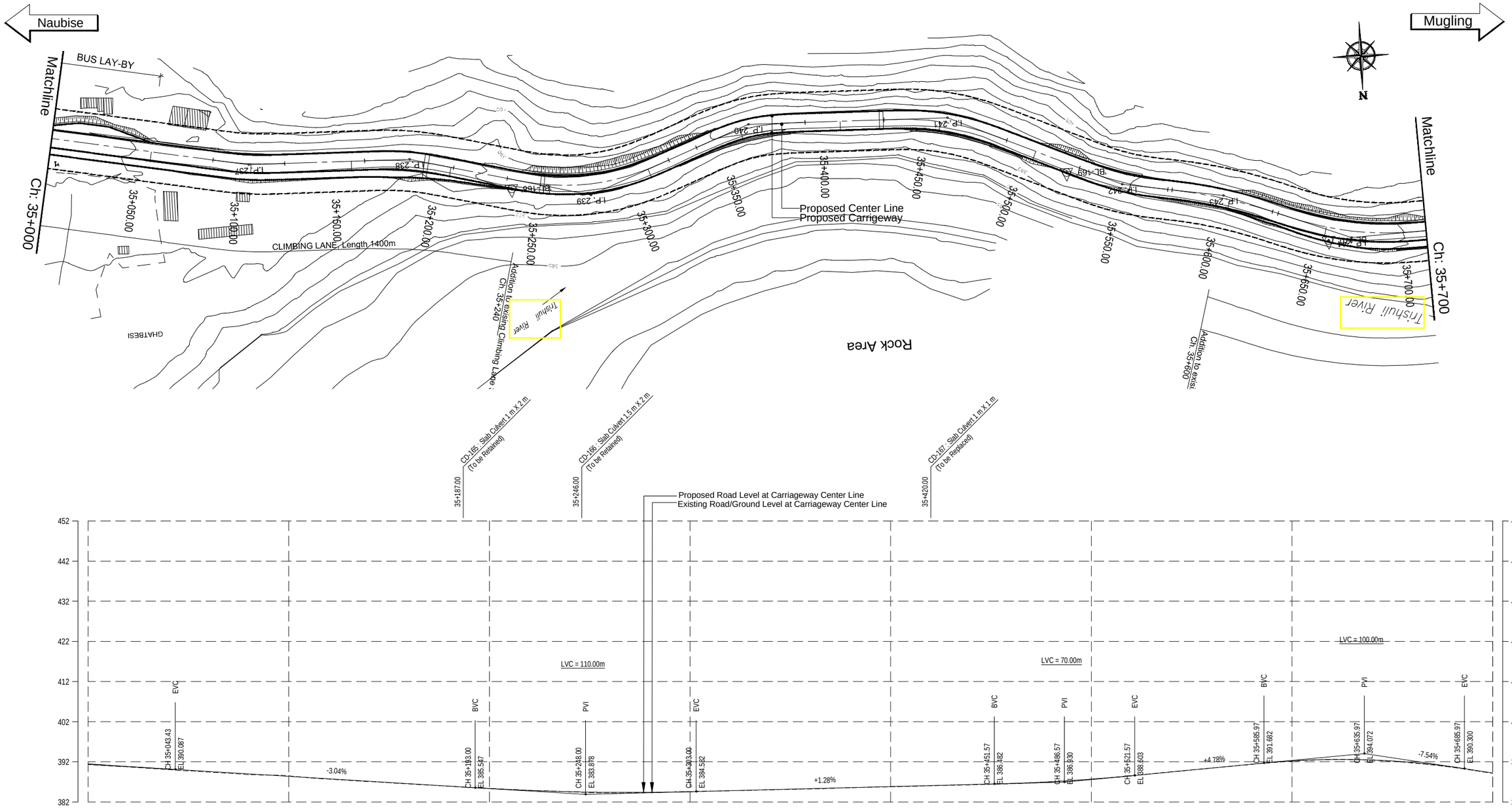
Scale:
0 10 20 30 40 Horizontal
0 5 10 15 20 Vertical

Date: August 2019

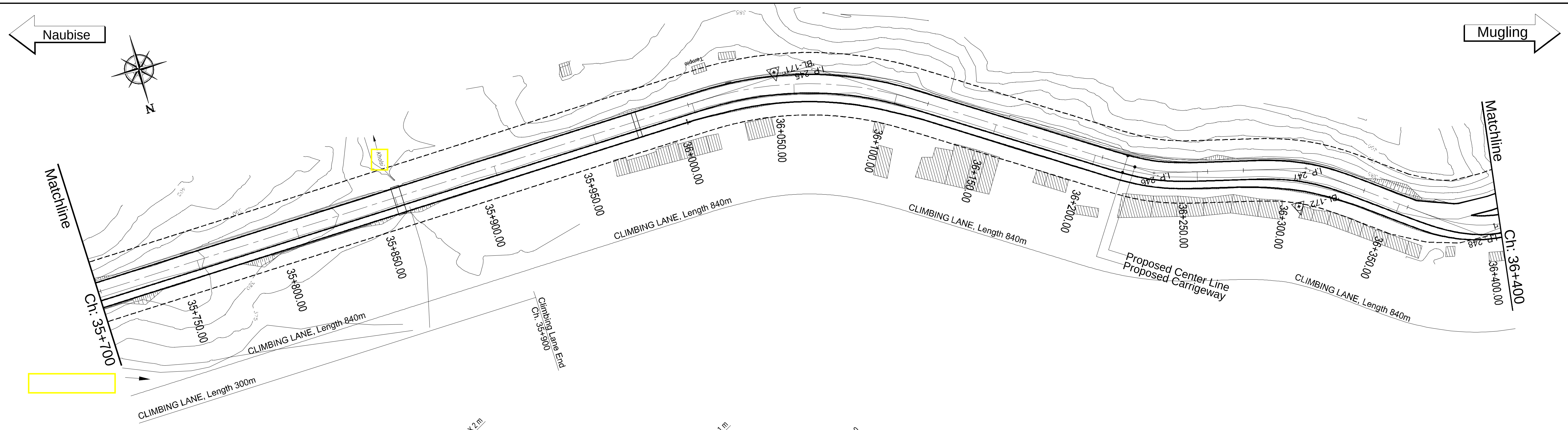
Drawing No.: NMR-PP-052

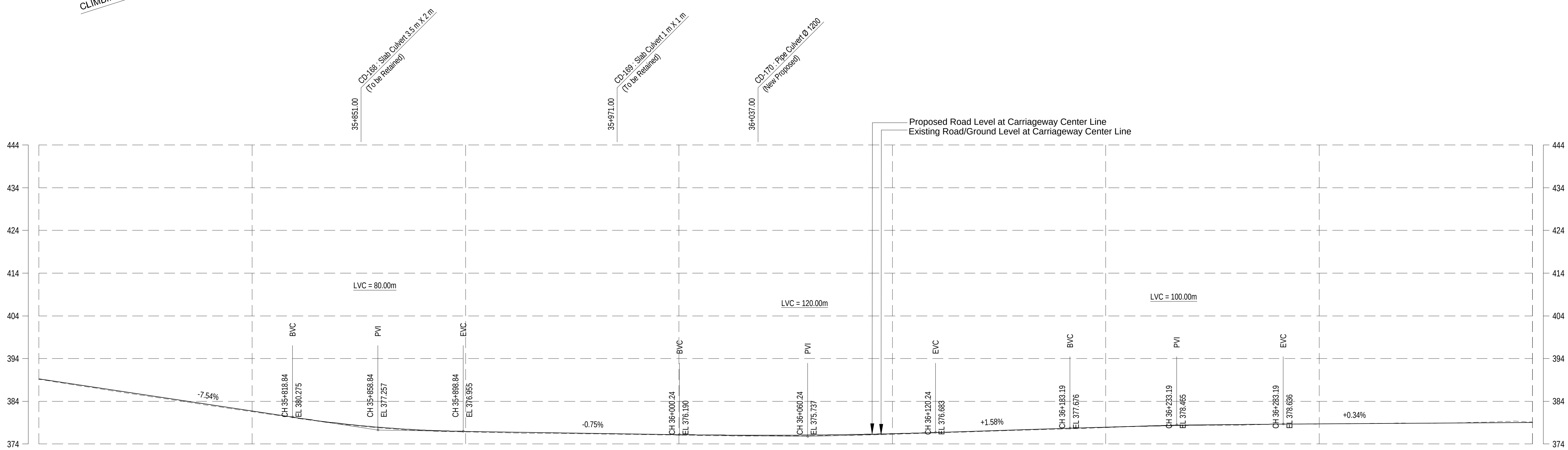


EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	FBC	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 34+300.00 TO 35+000.00	Scale: Horizontal: 0 10 20 30 40 Vertical: 0 5 10 15 20 Date: August 2019 Drawing No.: NMR-PP-052(a)



EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 35+000.00 TO 35+700.00	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20	Date: August 2019 Drawing No.: NMR-PP-053





CHAINAGE (km)	DESIGN LEVEL (m)	EXISTING LEVEL (m)
35+700.00	389.241	389.125
35+720.00	387.732	387.562
35+740.00	386.223	386.016
35+760.00	384.714	384.524
35+780.00	383.205	383.006
35+800.00	381.696	381.551
35+820.00	380.188	380.101
35+840.00	378.868	378.729
35+860.00	377.888	377.739
35+880.00	377.248	377.100
35+900.00	376.946	376.807
35+920.00	376.795	376.588
35+940.00	376.644	376.484
35+960.00	376.494	376.347
35+980.00	376.343	376.208
36+000.00	376.192	376.065
36+020.00	376.079	375.901
36+040.00	376.043	375.878
36+060.00	376.086	375.935
36+080.00	376.206	375.989
36+100.00	376.404	376.245
36+120.00	376.680	376.573
36+140.00	376.995	376.891
36+160.00	377.311	377.205
36+180.00	377.626	377.481
36+200.00	377.924	377.827
36+220.00	378.173	378.238
36+240.00	378.373	378.382
36+260.00	378.523	378.385
36+280.00	378.624	378.628
36+300.00	378.693	378.685
36+320.00	378.762	378.782
36+340.00	378.830	378.867
36+360.00	378.898	378.881
36+380.00	378.967	379.143
36+400.00	379.035	379.174

HORIZONTAL ALIGNMENT (RIGHT / LEFT): R=150.00 IP-244; IP-245 R=170.00; R=80.00 IP-246; IP-247 R=100.00; R=60.00 IP-248

SUPER ELEVATION: +700.00 NC +997.91 T +012.91 -4.50 +100.70 T +115.70 NC +203.59 T +228.59 +7.00 +230.01 T +255.01 NC +272.23 T +292.23 -7.00 +311.84 T +331.84 NC +354.16 T +384.16 +7.00 +397.58 T +400.00

EMPLOYER	PROJECT	DESIGN CONSULTANT		
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	FBC	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal

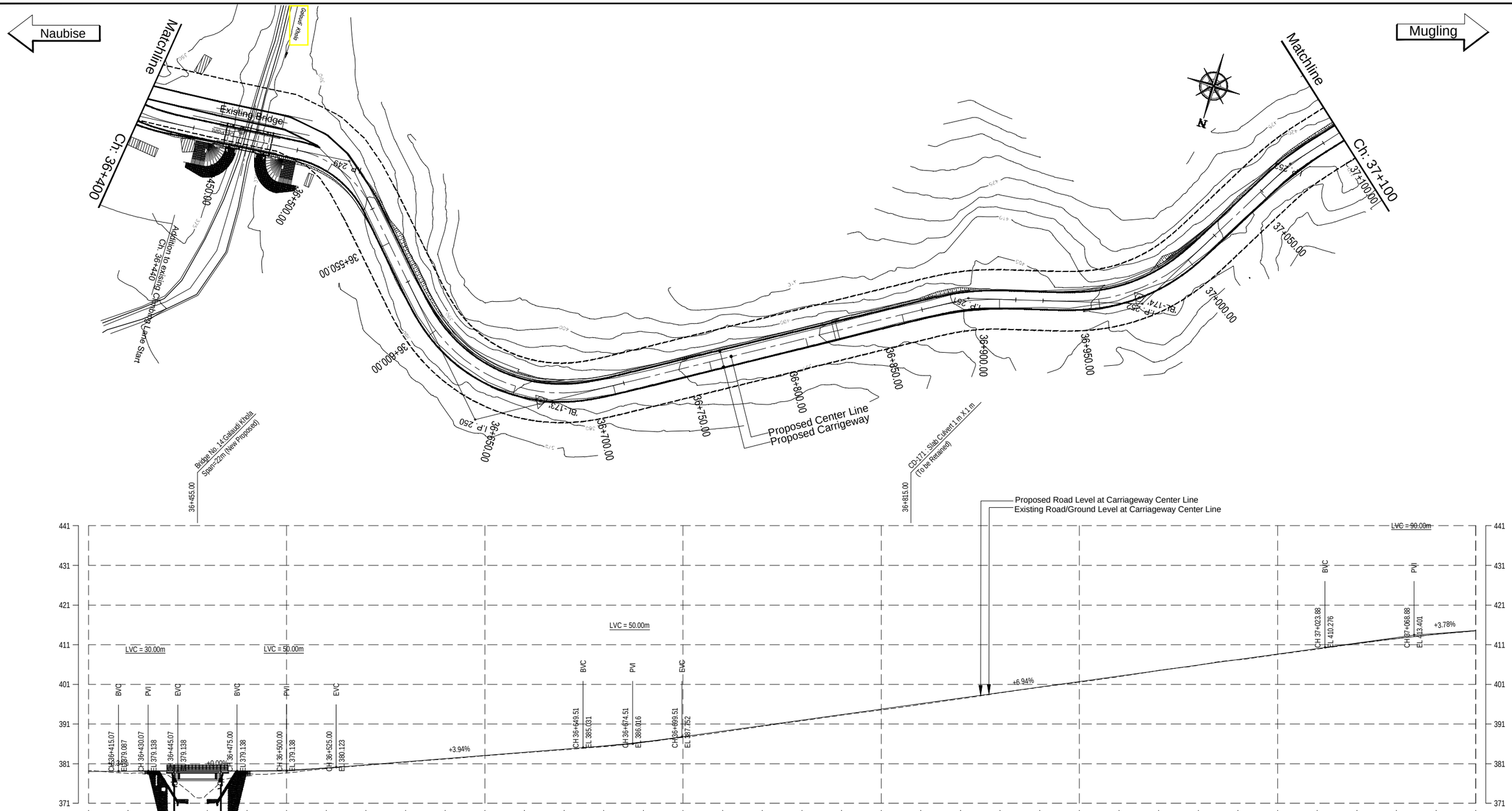
Designed By	SB	[signature]
Checked By	PMS	[signature]
Approved By	BNS	[signature]

DRAWING NAME:
NAUBISE - MUGLING ROAD
PLAN AND PROFILE
CHAINAGE 35+700.00 TO 36+400.00

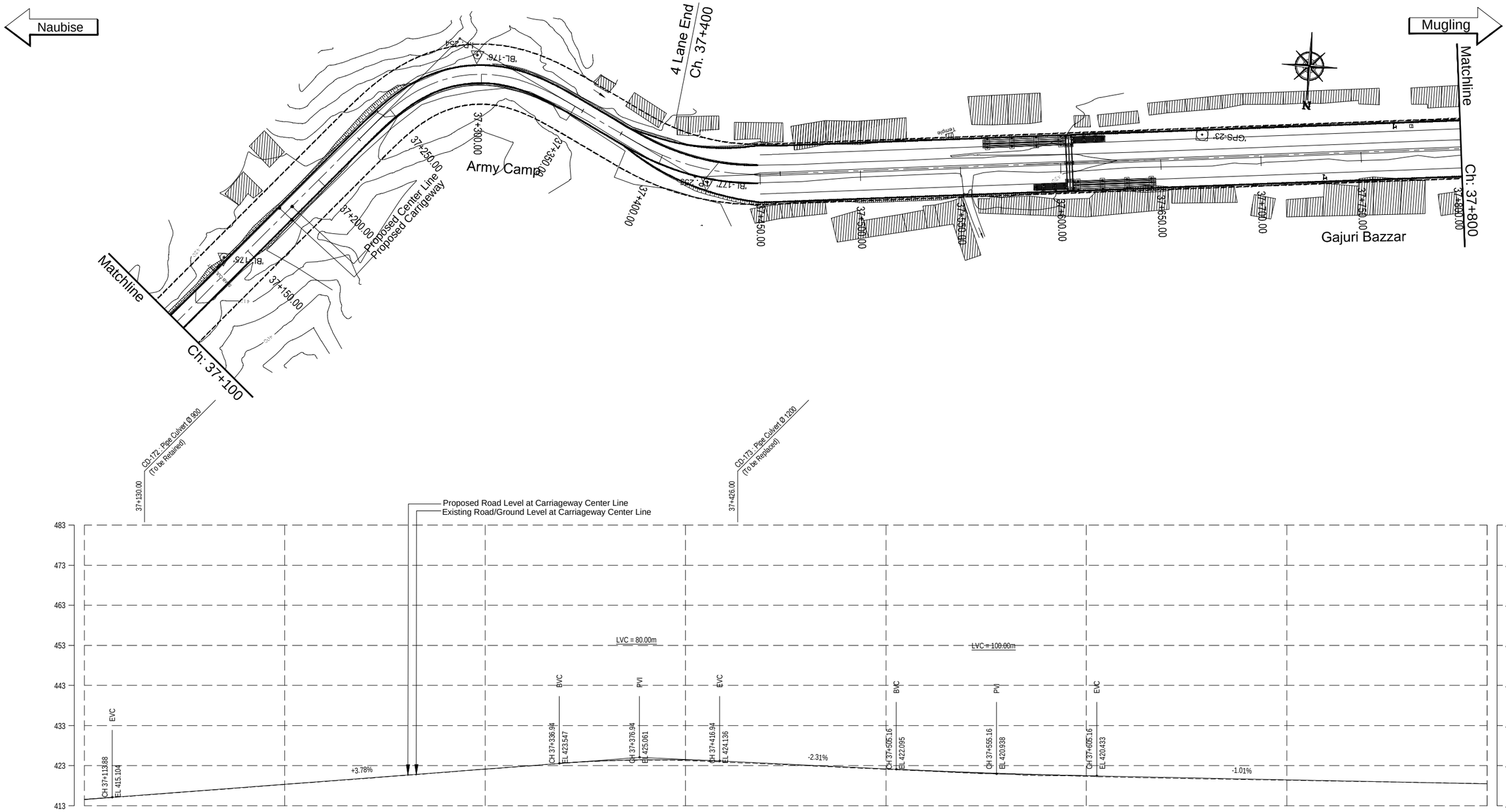
Scale: Horizontal 0 10 20 30 40; Vertical 0 5 10 15 20

Date: August 2019

Drawing No.: NMR-PP-054



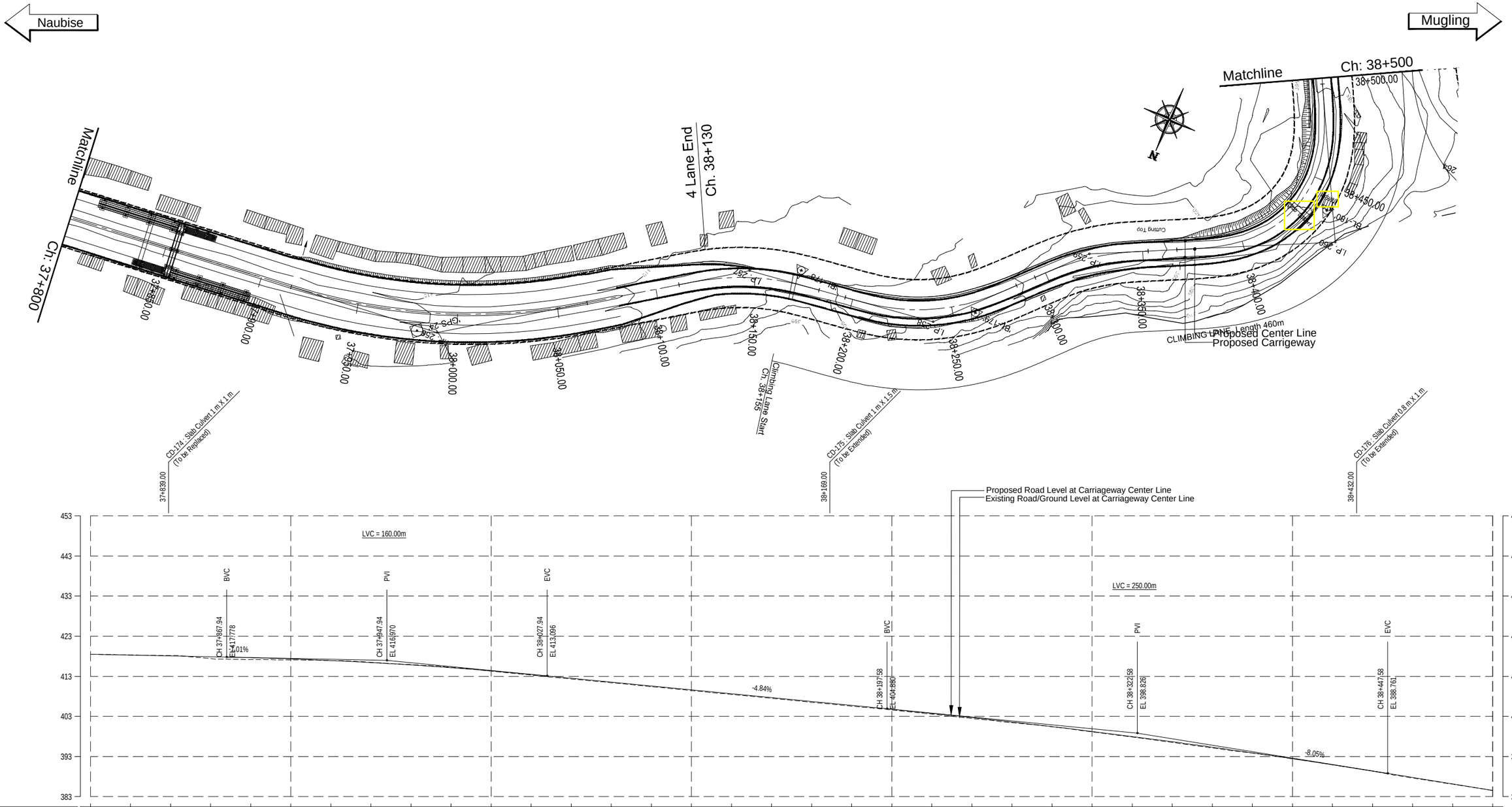
EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 36+400.00 TO 37+100.00	Scale: Horizontal: 0 10 20 30 40 Vertical: 0 5 10 15 20	Date: August 2019 Drawing No.: NMR-PP-055



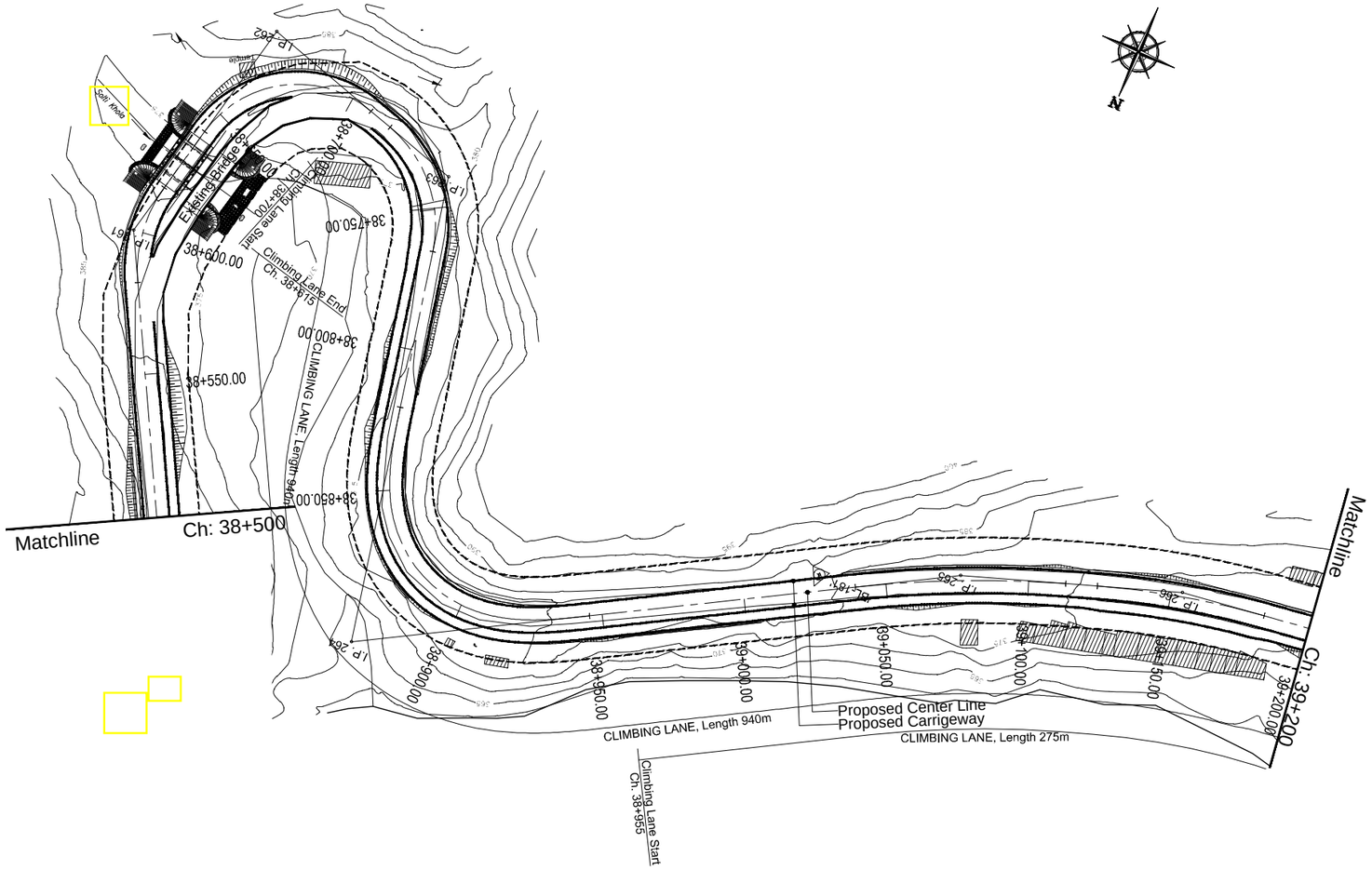
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By	SB	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 37+100.00 TO 37+800.00	Scale: 0 10 20 30 40 Horizontal 0 5 10 15 20 Vertical
				Checked By	PMS		
				Approved By	BNS		

Date: August 2019

Drawing No.: NMR-PP-056



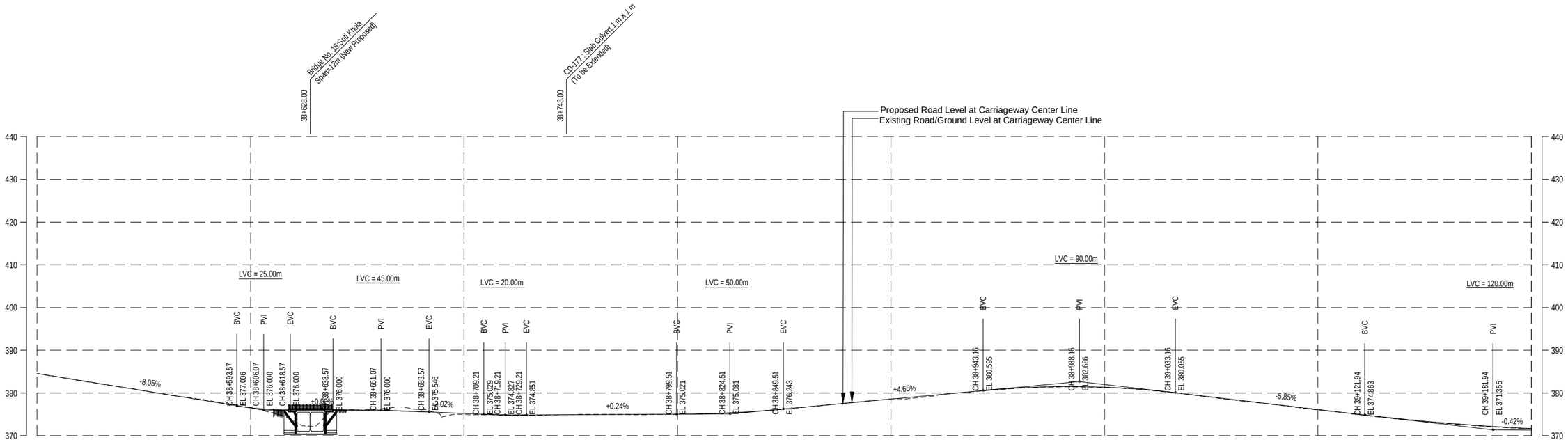
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 37+800.00 TO 38+500.00	Scale: Horizontal 1:1000 Vertical 1:100	Date: August 2019 Drawing No.: NMR-PP-057



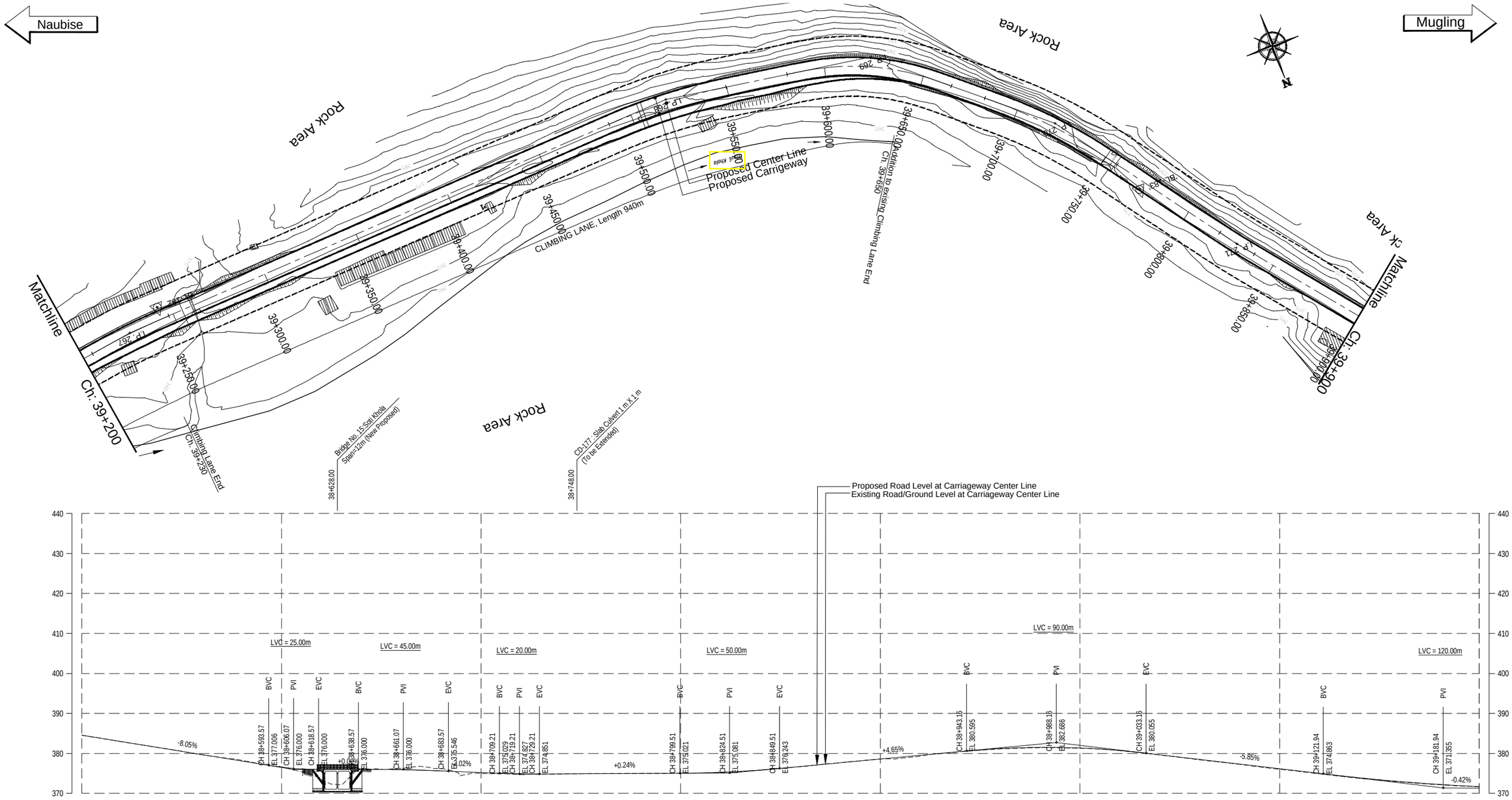
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By	SB	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 38+500.00 TO 39+200.00	Scale: 0 10 20 30 40 Horizontal 0 5 10 15 20 Vertical
				Checked By	PMS		Date: August 2019
				Approved By	BNS		Drawing No.: NMR-PP-058

Naubise

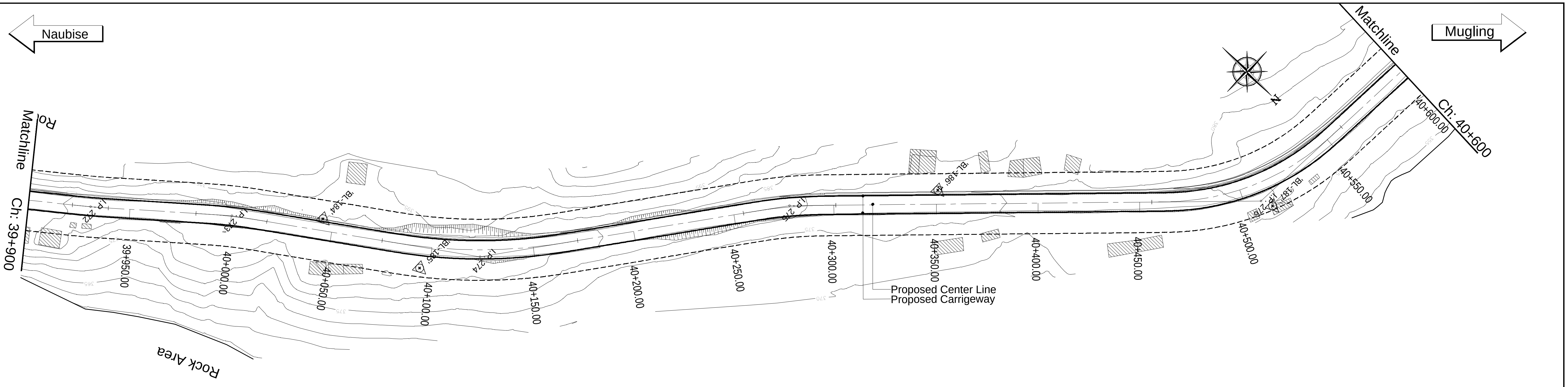
Mugling

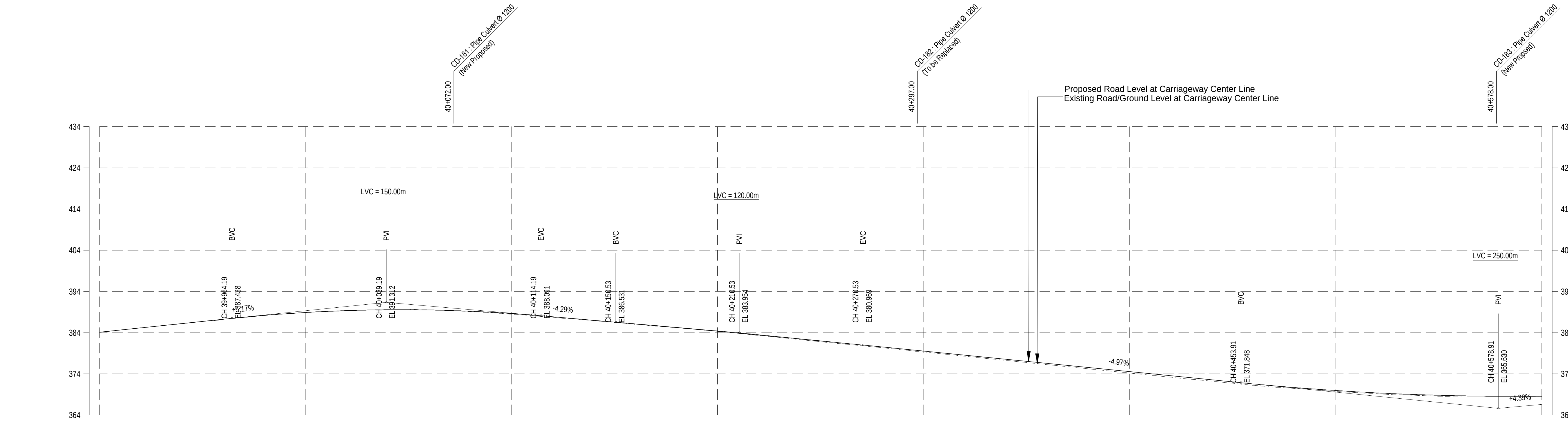


EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By	SB	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 38+500.00 TO 39+200.00	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20
				Checked By	PMS		Date: August 2019
				Approved By	BNS		Drawing No.: NMR-PP-058(a)



EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	FBC	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 39+200.00 TO 39+900.00	Scale: Horizontal: 0 10 20 30 40 Vertical: 0 5 10 15 20 Date: August 2019 Drawing No.: NMR-PP-059





CHAINAGE (km)	DESIGN LEVEL (m)	EXISTING LEVEL (m)
39+900.00	384.122	384.075
39+920.00	385.155	385.157
39+940.00	386.188	386.172
39+960.00	387.221	387.206
39+980.00	388.176	388.163
40+000.00	388.883	388.899
40+020.00	389.339	389.371
40+040.00	389.542	389.571
40+060.00	389.492	389.521
40+080.00	389.191	389.111
40+100.00	388.637	388.474
40+120.00	387.842	387.695
40+140.00	386.983	386.896
40+160.00	386.121	386.008
40+180.00	385.240	385.187
40+200.00	384.337	384.335
40+220.00	383.411	383.307
40+240.00	382.462	382.307
40+260.00	381.490	381.300
40+280.00	380.498	380.306
40+300.00	379.504	379.314
40+320.00	378.509	378.294
40+340.00	377.514	377.271
40+360.00	376.519	376.232
40+380.00	375.524	375.224
40+400.00	374.529	374.202
40+420.00	373.535	373.180
40+440.00	372.540	372.205
40+460.00	371.552	371.218
40+480.00	370.677	370.436
40+500.00	369.953	369.740
40+520.00	369.378	369.181
40+540.00	368.953	368.764
40+560.00	368.678	368.405
40+580.00	368.553	368.368
40+600.00	368.577	368.399

HORIZONTAL ALIGNMENT (RIGHT / LEFT):
- R=400.00 IP-272 (LEFT)
- IP-273 R=200.00 (RIGHT)
- R=250.00 IP-274 (LEFT)
- IP-275 R=200.00 (RIGHT)
- R=120.00 IP-276 (LEFT)

SUPER ELEVATION:
- +900.00 – +906.60: NC
- +906.60 – +929.10: T
- +929.10 – +931.78: +2.50
- +931.78 – +954.28: T
- +954.28 – +982.54: NC
- +982.54 – +997.54: T
- +997.54 – +002.74: -4.00
- +002.74 – +017.74: T
- +017.74 – +075.23: NC
- +075.23 – +090.23: T
- +090.23 – +157.03: +2.50
- +157.03 – +172.03: T
- +172.03 – +254.72: NC
- +254.72 – +269.72: T
- +269.72 – +285.44: -4.00
- +285.44 – +300.44: T
- +300.44 – +456.07: NC
- +456.07 – +471.07: T
- +471.07 – +544.26: +6.50
- +544.26 – +559.26: T
- +559.26 – +600.00: NC

EMPLOYER	PROJECT	DESIGN CONSULTANT
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea FBC In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal

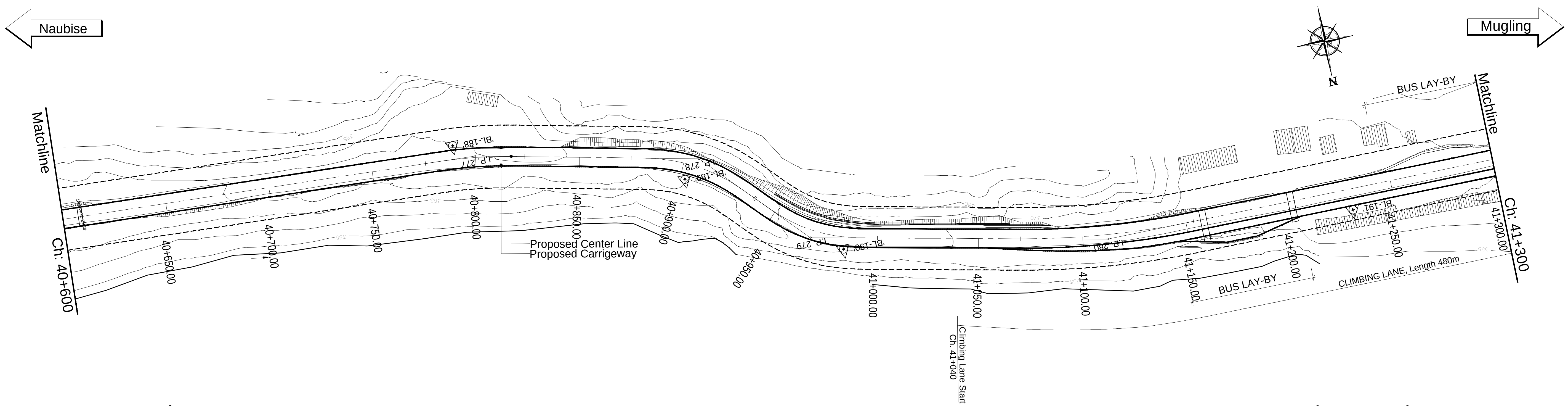
Designed By	SB	[signature]
Checked By	PMS	[signature]
Approved By	BNS	[signature]

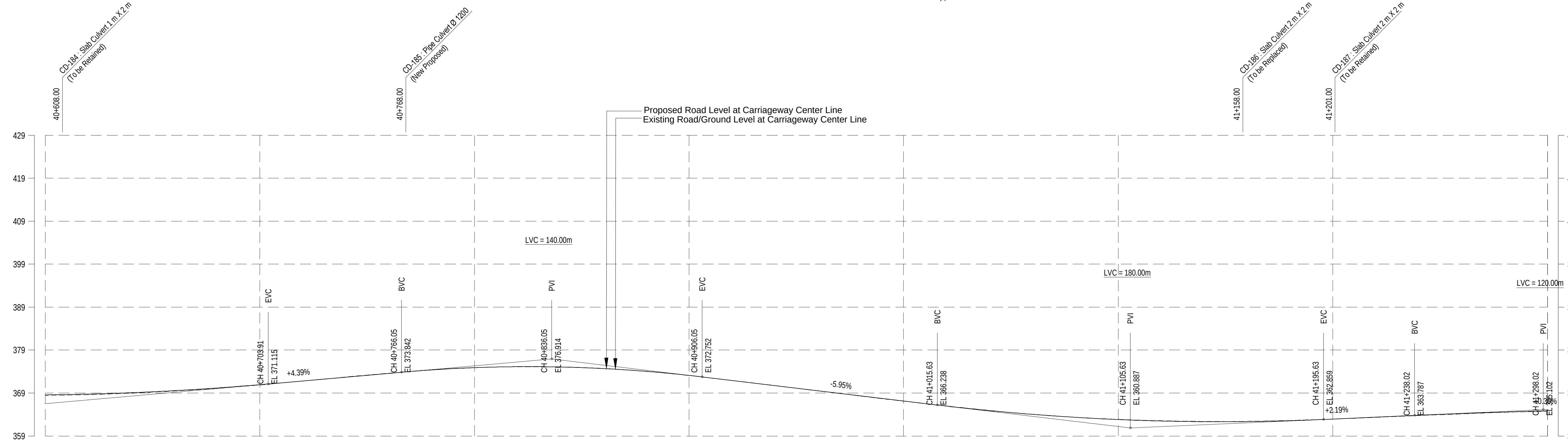
DRAWING NAME:
NAUBISE - MUGLING ROAD
PLAN AND PROFILE
CHAINAGE 39+900.00 TO 40+600.00

Scale: 0 10 20 30 40 Horizontal; 0 5 10 15 20 Vertical

Date: August 2019

Drawing No.: NMR-PP-060





CHAINAGE (km)	DESIGN LEVEL (m)	EXISTING LEVEL (m)
40+600.00	368.577	368.399
40+620.00	368.752	368.601
40+640.00	369.076	368.946
40+660.00	369.549	369.461
40+680.00	370.173	370.054
40+700.00	370.947	370.861
40+720.00	371.821	371.791
40+740.00	372.699	372.738
40+760.00	373.577	373.605
40+780.00	374.383	374.418
40+800.00	374.907	374.925
40+820.00	375.136	375.110
40+840.00	375.069	375.048
40+860.00	374.708	374.680
40+880.00	374.051	374.036
40+900.00	373.099	373.115
40+920.00	371.923	371.933
40+940.00	370.734	370.730
40+960.00	369.545	369.503
40+980.00	368.356	368.269
41+000.00	367.167	367.111
41+020.00	365.982	365.929
41+040.00	364.923	364.890
41+060.00	364.045	364.041
41+080.00	363.347	363.337
41+100.00	362.830	362.885
41+120.00	362.495	362.561
41+140.00	362.339	362.416
41+160.00	362.365	362.420
41+180.00	362.572	362.614
41+200.00	362.955	362.926
41+220.00	363.393	363.328
41+240.00	363.831	363.745
41+260.00	364.231	364.128
41+280.00	364.568	364.514
41+300.00	364.842	364.748

HORIZONTAL ALIGNMENT (RIGHT / LEFT)
- IP-277, R=200.00 (Right)
- IP-278, R=80.00 (Right)
- R=70.00, IP-279 (Left)
- R=400.00, IP-280 (Left)

SUPER ELEVATION
- +600.00 – +775.83: NC
- +775.83 – +790.83: T
- +790.83 – +808.65: -4.00
- +808.65 – +823.65: T
- +823.65 – +874.65: NC
- +874.65 – +889.65: T
- +889.65 – +923.02: -7.00
- +923.02 – [illegible]: T
- NC
- T
- +958.83 – +981.63: +7.00
- +981.63 – +001.63: T
- +001.63 – +055.02: NC
- +055.02 – +077.52: T
- +077.52 – +146.20: +2.50
- +146.20 – +168.70: T
- +168.70 – +300.00: NC

EMPLOYER
Government of Nepal
Ministry of Physical Infrastructure and Transport
Department of Roads
Development Cooperation Implementation Division

PROJECT
Nepal India Regional Trade and Transport Project (NIRTTP)
(IDA CREDIT No. 5273 - NEP)
Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges

DESIGN CONSULTANT
Intercontinental Consultants & Technocrats Pvt. Ltd.
A-8, Green Park, New Delhi - 110016
Ph : 4086-3000, Fax 2685-5252
In Joint Venture With
Soosung Engineering Co. Ltd., South Korea
In Association With
Full Bright Consultancy (Pvt.) Ltd.
316,Baburam Acharya Sadak
Sinamangal, Kathmandu, GPO
Box: 4970, Kathmandu, Nepal

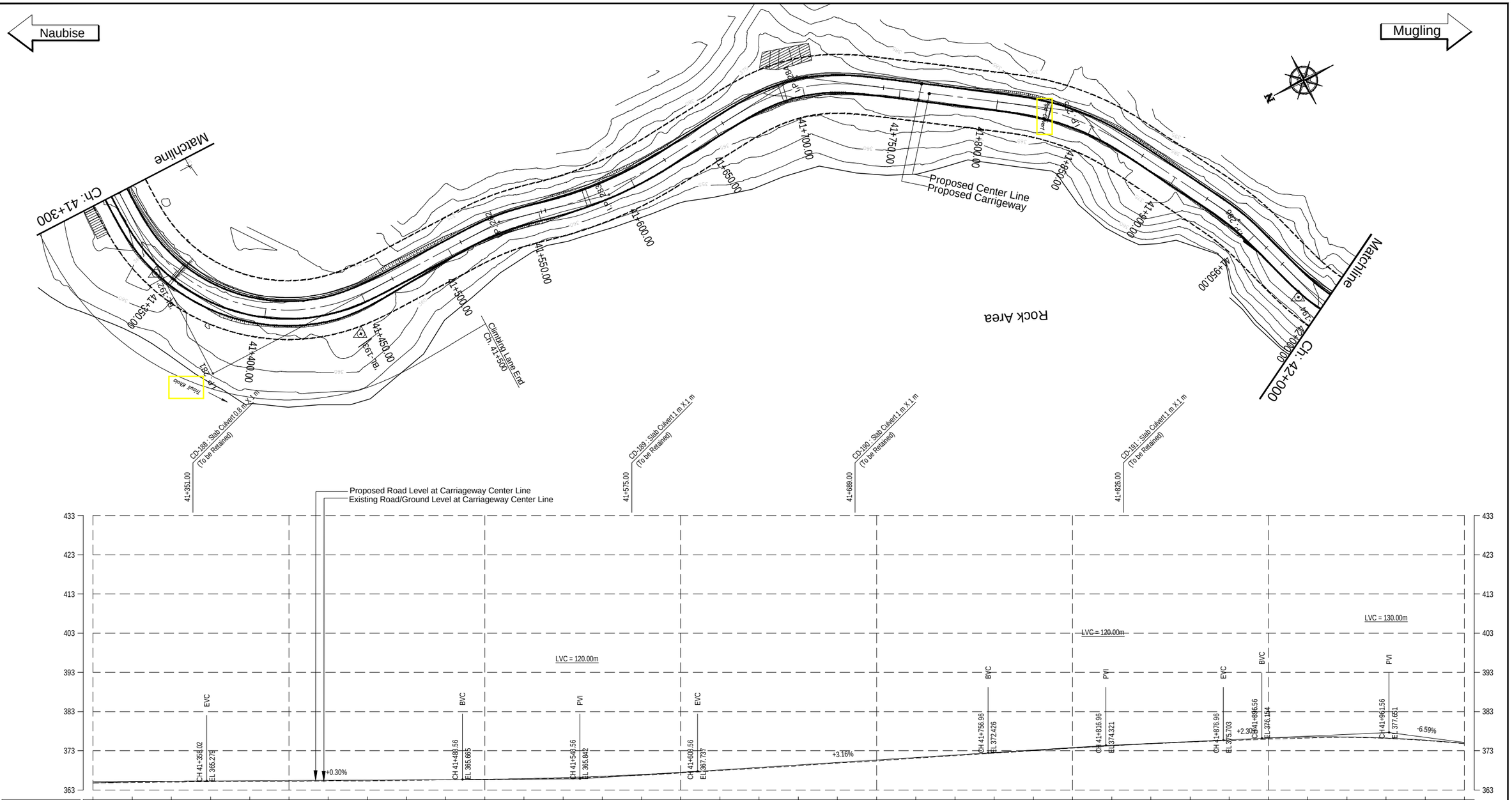
Designed By	SB	
Checked By	PMS	
Approved By	BNS	

DRAWING NAME:
NAUBISE - MUGLING ROAD
PLAN AND PROFILE
CHAINAGE 40+600.00 TO 41+300.00

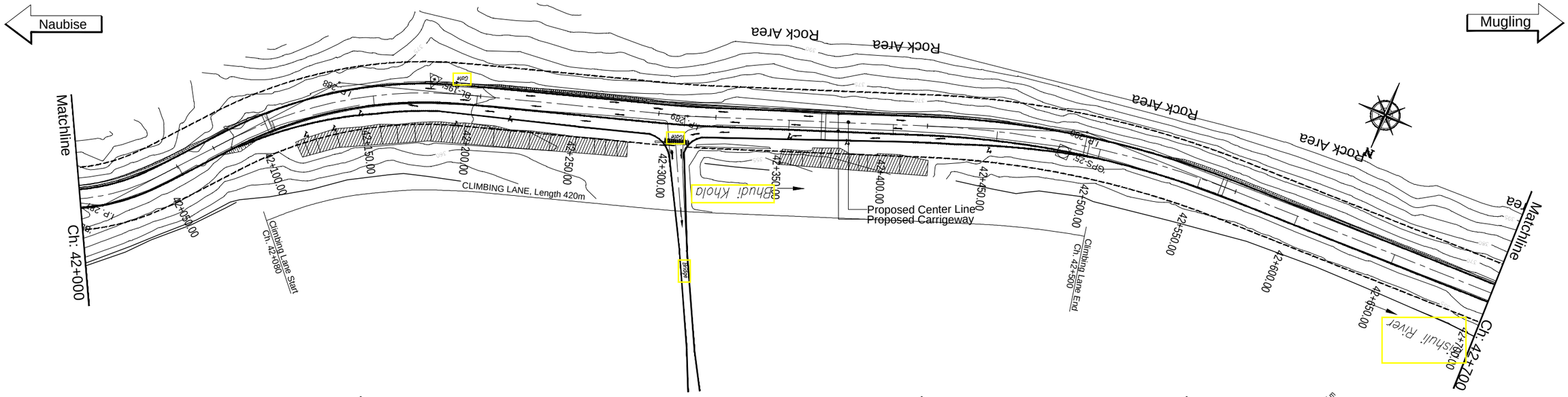
Scale: Horizontal 0 10 20 30 40; Vertical 0 5 10 15 20

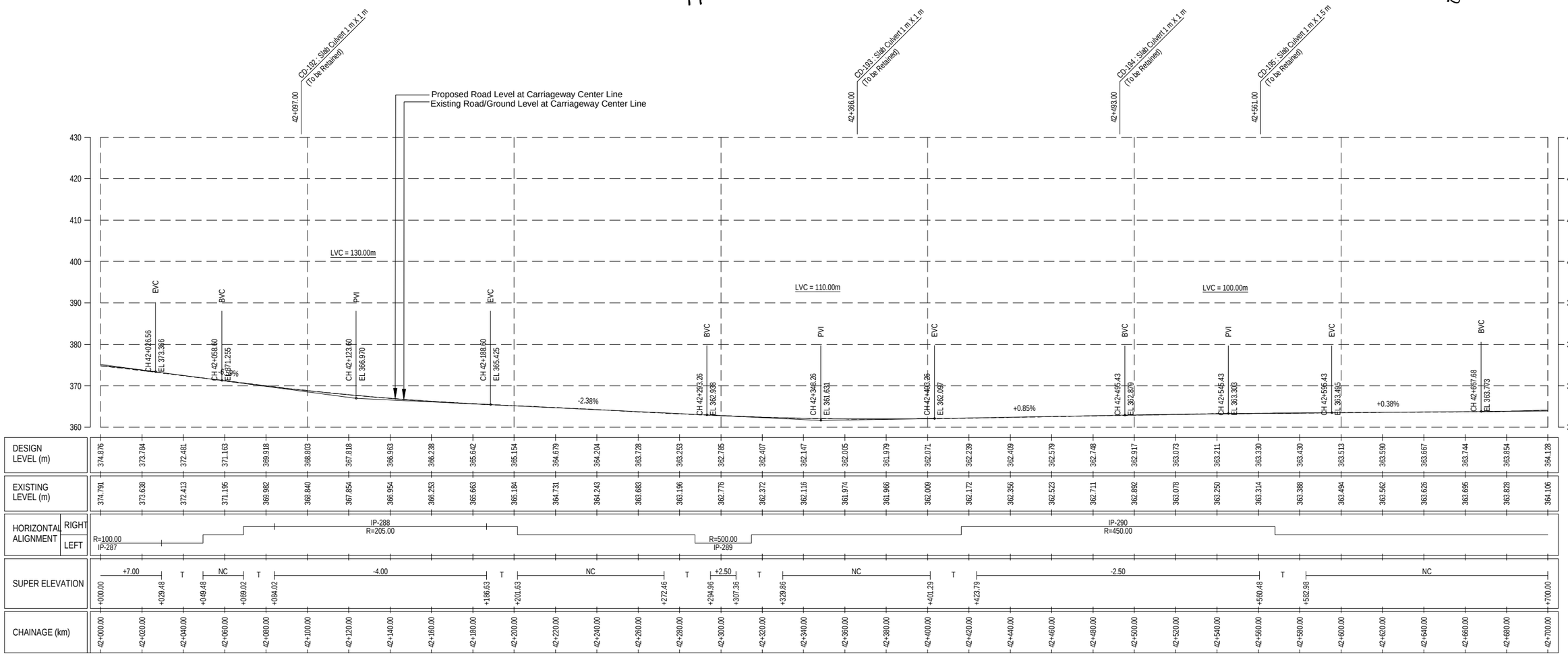
Date: August 2019

Drawing No.: NMR-PP-061

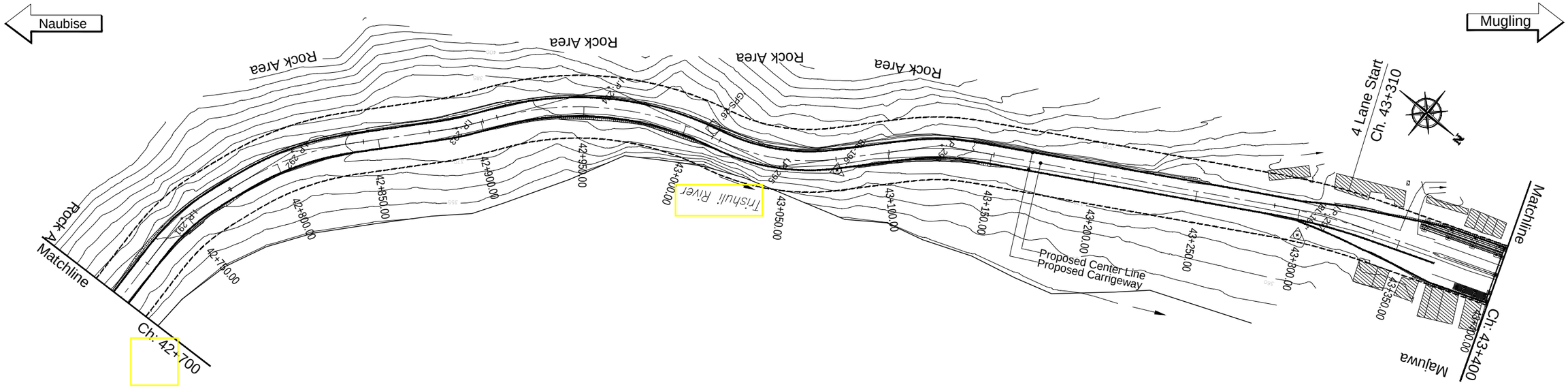


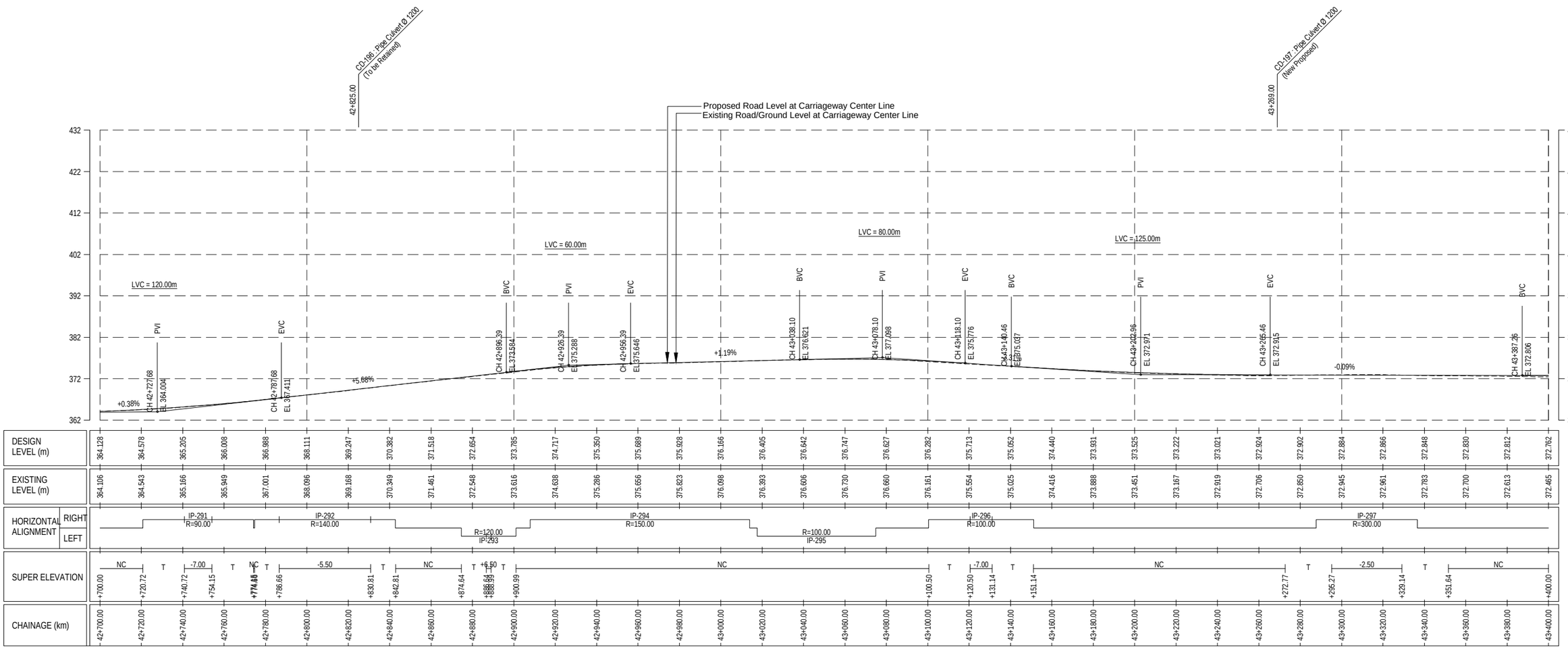
EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 41+300.00 TO 42+000.00	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20 Date: August 2019 Drawing No.: NMR-PP-062





EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 42+000.00 TO 42+700.00	Scale: Horizontal Vertical Date: August 2019 Drawing No.: NMR-PP-063

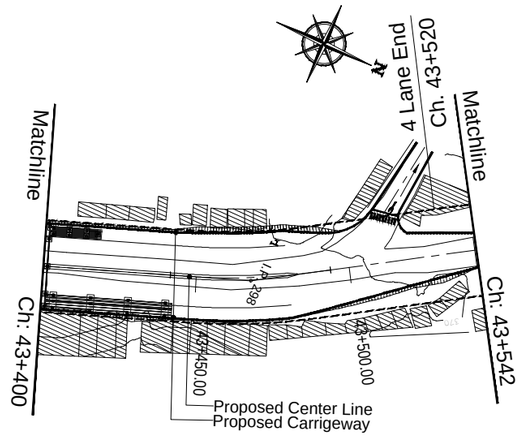


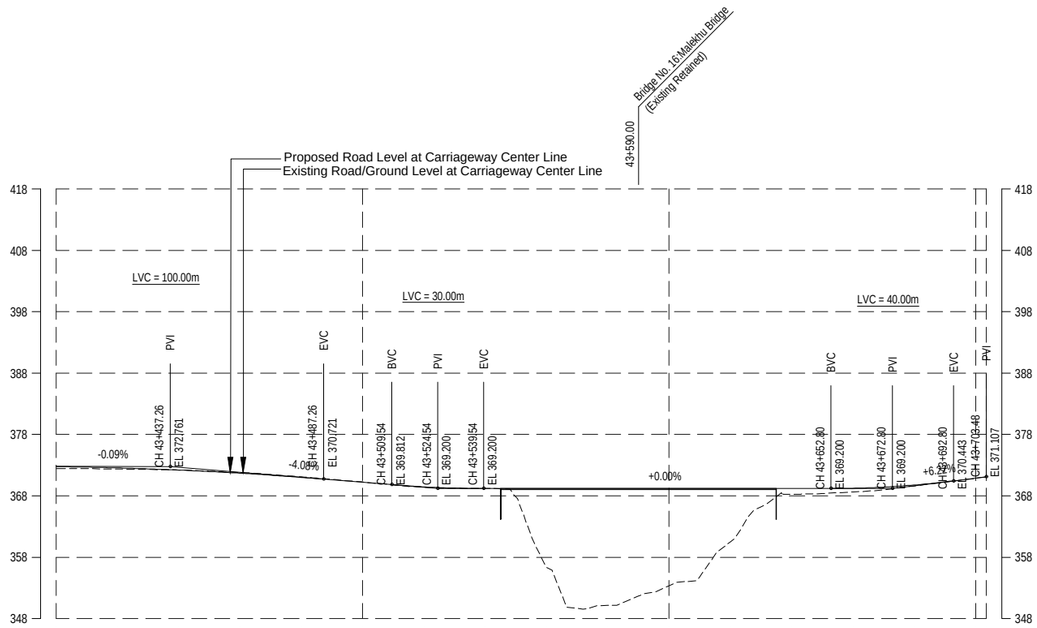


EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 42+700.00 TO 43+400.00	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20	Date: August 2019 Drawing No.: NMR-PP-064

Naubise

Mugling





DESIGN LEVEL (m)	372.762	372.563	372.204	371.685	371.007	370.201	369.460	369.200	369.200	369.200	369.200	369.200	369.200	369.240	369.775	370.891	371.107
EXISTING LEVEL (m)	372.465	372.369	372.205	371.792	371.090	370.257	369.419	369.208	356.371	350.132	353.356	360.540	368.262	368.645	369.617	370.868	371.082
HORIZONTAL ALIGNMENT RIGHT													IP-299 R=100.00				IP-300 R=0.00
HORIZONTAL ALIGNMENT LEFT				R=180.00 IP-298													
SUPER ELEVATION	NC		T	+4.50	T				NC				T	-4.00	T	NC	
	+400.00		+441.55	+456.55	+478.85	+493.85						+623.32		+652.87		+682.06	+703.48
CHAINAGE (km)	43+400.00	43+420.00	43+440.00	43+460.00	43+480.00	43+500.00	43+520.00	43+540.00	43+560.00	43+580.00	43+600.00	43+620.00	43+640.00	43+660.00	43+680.00	43+700.00	43+703.48

EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	FBC	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By: SB Checked By: PMS Approved By: BNS	DRAWING NAME: NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 43+400.00 TO 43+542.00	Scale: Horizontal: 0 10 20 30 40 Vertical: 0 5 10 15 20

Date: August 2019

Drawing No.: NMR-PP-065

LIST OF STRUCTURES

List of Drain

Left				Right			
Chainage		Drain Length	Type	Chainage		Drain Length	Type
From	To			From	To		
0+000	0+050	50	Type 2	0+000	0+050	50	Type 2
0+060	1+720	1660	Type 2	1+730	1+840	110	Type 2
1+730	1+840	110	Type 2	1+890	2+060	170	Type 2
1+850	1+880	30	Type 2	2+570	2+940	370	Type 4
1+890	2+060	170	Type 2	2+950	2+980	30	Type 2
2+070	2+560	490	Type 2	3+450	3+630	180	Type 2
2+570	2+940	370	Type 4	4+770	4+830	60	Type 2
2+950	2+980	30	Type 2	5+070	5+100	30	Type 2
3+020	3+440	420	Type 2	5+110	5+120	10	Type 2
3+450	3+630	180	Type 2	5+220	5+240	20	Type 2
3+640	4+760	1120	Type 2	5+250	5+330	80	Type 2
4+770	4+830	60	Type 2	5+600	5+650	50	Type 2
4+840	5+060	220	Type 2	10+510	10+850	340	Type 4
5+070	5+100	30	Type 2	11+000	11+060	60	Type 2
5+110	5+120	10	Type 2	13+520	13+540	20	Type 2
5+250	5+330	80	Type 2	14+110	14+370	260	Type 4
5+340	5+590	250	Type 2	19+460	19+520	60	Type 2
5+600	5+650	50	Type 2	22+520	22+640	120	Type 2
5+660	10+500	4840	Type 2	23+000	23+060	60	Type 2
10+510	10+850	340	Type 4	27+100	27+260	160	Type 2
11+000	11+060	60	Type 2	29+500	29+600	100	Type 2
11+070	13+510	2440	Type 2	23+540	23+710	170	Type 4
13+520	13+540	20	Type 2	29+960	30+100	140	Type 2
13+550	14+100	550	Type 2	37+160	37+210	50	Type 2
14+110	14+370	260	Type 4	37+400	38+130	730	Type 2
14+420	19440	5020	Type 2	38+200	38+230	30	Type 4
19+460	19+520	60	Type 2	43+310	43+520	210	Type 4

Left				Right			
Chainage		Drain Length	Type	Chainage		Drain Length	Type
From	To			From	To		
19+540	22+320	2780	Type 2				
22+800	22+880	80	Type 2				
23+380	23+530	150	Type 2				
23+540	23+710	170	Type 4				
23+720	25+020	1300	Type 7				
25+040	27+080	2040	Type 2				
27+100	27+260	160	Type 2				
27+280	29+480	2200	Type 2				
29+500	29+600	100	Type 2				
29+620	29+940	320	Type 2				
29+960	30+100	140	Type 2				
30+120	37+150	7030	Type 2				
37+160	37+210	50	Type 2				
37+220	37+390	170	Type 2				
37+400	38+130	730	Type 4				
38+200	38+230	30	Type 2				
38+240	43+330	5090	Type 2				
43+310	43+520	210	Type 4				

EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea FBC In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By Checked By Approved By	SB PMS BNS	DRAWING NAME: LIST OF DRAIN	Scale: NOT TO SCALE	Date: August 2019 Drawing No.: NNMR-LOS 01

Masonary Retaining Wall

S.No.	Chainage	Length	Left		Right	
			Type	Height	Type	Height
1	0+090	10			Masonary	1.5
2	0+100	10			Masonary	2.5
3	0+110	10			Masonary	2.5
4	0+120	10			Masonary	3.0
5	0+130	10			Masonary	2.5
6	0+140	10			Masonary	1.5
7	0+180	10			Masonary	2.0
8	0+190	10			Masonary	3.0
9	0+200	10			Masonary	3.0
10	0+210	10			Masonary	3.5
11	0+220	10			Masonary	2.5
12	0+230	10			Masonary	2.0
13	0+240	10			Masonary	2.5
14	0+250	10			Masonary	3.0
15	0+260	10			Masonary	3.0
16	0+270	10			Masonary	3.0
17	0+280	10			Masonary	2.5
18	0+290	10			Masonary	2.5
19	0+300	10			Masonary	3.0
20	0+310	10			Masonary	3.5
21	0+320	10			Masonary	3.5
22	0+330	10			Masonary	3.0
23	0+360	10			Masonary	2.0
24	0+370	10			Masonary	3.5
25	0+590	10			Masonary	2.5
26	0+600	10			Masonary	2.5
27	0+610	10			Masonary	1.5
28	0+620	10			Masonary	2.5
29	0+670	10			Masonary	4.5
30	0+680	10			Masonary	3.5
31	0+760	10			Masonary	3.0
32	0+900	10			Masonary	4.0
33	1+000	10			Masonary	2.5
34	1+010	10			Masonary	2.5
35	1+020	10			Masonary	3.5
36	1+030	10			Masonary	4.0
37	1+040	10			Masonary	2.5
38	1+050	10			Masonary	2.5
39	1+060	10			Masonary	2.5
40	1+070	10			Masonary	2.5
41	1+080	10			Masonary	2.0
42	1+090	10			Masonary	2.0
43	1+100	10			Masonary	2.0
44	1+110	10			Masonary	2.0
45	1+120	10			Masonary	2.0
46	1+130	10			Masonary	2.5
47	1+140	10			Masonary	3.5
48	1+150	10			Masonary	4.0
49	1+160	10			Masonary	4.0
50	1+170	10			Masonary	4.0

S.No.	Chainage	Length	Left		Right	
			Type	Height	Type	Height
51	1+180	10			Masonary	3.5
52	1+190	10			Masonary	3.5
53	1+200	10			Masonary	3.5
54	1+210	10			Masonary	3.5
55	1+230	10			Masonary	3.5
56	1+240	10			Masonary	4.5
57	1+410	10			Masonary	2.0
58	1+420	10			Masonary	1.5
59	1+450	10			Masonary	1.5
60	1+460	10			Masonary	3.0
61	1+470	10			Masonary	3.2
62	1+480	10			Masonary	2.5
63	1+500	10			Masonary	2.0
64	1+520	10			Masonary	2.0
65	1+530	10			Masonary	2.0
66	1+540	10			Masonary	2.5
67	1+550	10			Masonary	2.5
68	1+560	10			Masonary	2.0
69	1+670	10			Masonary	3.5
70	1+680	10			Masonary	3.0
71	1+690	10			Masonary	2.5
72	1+700	10			Masonary	2.5
73	1+860	10			Masonary	2.5
74	1+900	10	Masonary	4.5		
75	3+080	10			Masonary	4.0
76	3+090	10			Masonary	2.5
77	3+100	10			Masonary	2.5
78	3+110	10			Masonary	1.5
79	3+120	10			Masonary	2.0
80	3+130	10			Masonary	3.0
81	3+140	10			Masonary	3.5
82	3+150	10			Masonary	4.0
83	3+160	10			Masonary	4.0
84	3+170	10			Masonary	3.5
85	3+180	10			Masonary	2.0
86	3+190	10			Masonary	2.0
87	4+890	10			Masonary	3.0
88	4+900	10			Masonary	4.5
89	4+910	10			Masonary	4.5
90	4+920	10			Masonary	5.0
91	4+930	10			Masonary	4.0
92	4+940	10			Masonary	4.0
93	4+950	10			Masonary	3.5
94	5+200	10			Masonary	3.0
95	5+450	10			Masonary	2.0
96	5+460	10			Masonary	2.0
97	5+470	10			Masonary	2.0
98	5+480	10			Masonary	2.5
99	5+490	10			Masonary	2.0
100	5+670	10			Masonary	4.0

S.No.	Chainage	Length	Left		Right	
			Type	Height	Type	Height
101	5+680	10			Masonary	2.0
102	5+860	10			Masonary	2.5
103	5+870	10			Masonary	2.5
104	6+000	10			Masonary	3.0
105	6+010	10			Masonary	2.5
106	6+260	10			Masonary	2.0
107	6+270	10			Masonary	2.5
108	6+280	10			Masonary	2.5
109	6+290	10			Masonary	3.0
110	6+450	10			Masonary	3.0
111	6+460	10			Masonary	3.0
112	6+470	10			Masonary	3.0
113	6+480	10			Masonary	2.0
114	7+150	10			Masonary	2.0
115	7+200	10			Masonary	2.5
116	7+280	10	Masonary	2.5		
117	7+360	10			Masonary	2.0
118	7+430	10			Masonary	4.0
119	7+440	10			Masonary	2.5
120	7+450	10			Masonary	3.0
121	7+460	10			Masonary	3.0
122	7+570	10			Masonary	2.0
123	7+590	10			Masonary	1.5
124	7+830	10			Masonary	2.5
125	7+840	10			Masonary	3.0
126	7+850	10			Masonary	3.0
127	7+860	10			Masonary	2.5
128	7+870	10			Masonary	3.5
129	7+910	10			Masonary	3.0
130	8+300	10			Masonary	5.0
131	8+540	10			Masonary	3.5
132	8+550	10			Masonary	3.0
133	8+560	10			Masonary	4.0
134	8+600	10			Masonary	1.5
135	9+230	10			Masonary	3.0
136	9+250	10			Masonary	1.5
137	9+260	10			Masonary	2.5
138	9+280	10			Masonary	2.0
139	9+360	10			Masonary	4.5
140	9+370	10			Masonary	4.0
141	9+380	10			Masonary	4.0
142	9+390	10			Masonary	4.5
143	9+400	10			Masonary	2.0
144	9+410	10			Masonary	3.5
145	9+420	10			Masonary	2.0
146	9+430	10			Masonary	2.0
147	9+440	10			Masonary	1.5
148	10+120	10			Masonary	3.5
149	10+130	10			Masonary	4.5
150	10+140	10			Masonary	3.5

S.No.	Chainage	Length	Left		Right	
			Type	Height	Type	Height
151	10+150	10			Masonary	2.0
152	10+160	10			Masonary	2.0
153	10+270	10			Masonary	4.0
154	10+850	10	Masonary	1.5	Masonary	
155	11+240	10			Masonary	3.0
156	11+250	10			Masonary	3.0
157	11+260	10			Masonary	3.5
158	11+270	10			Masonary	4.5
159	11+280	10			Masonary	4.0
160	11+290	10			Masonary	3.5
161	11+360	10			Masonary	3.5
162	11+370	10			Masonary	4.0
163	11+380	10			Masonary	3.5
164	11+390	10			Masonary	3.5
165	11+400	10			Masonary	4.5
166	11+420	10			Masonary	5.0
167	11+430	10			Masonary	4.5
168	11+440	10			Masonary	4.5
169	11+450	10			Masonary	4.5
170	11+460	10			Masonary	2.0
171	11+520	10			Masonary	4.0
172	11+530	10			Masonary	4.5
173	11+540	10			Masonary	4.0
174	11+550	10			Masonary	3.0
175	11+560	10			Masonary	3.0
176	11+570	10			Masonary	3.0
177	11+580	10			Masonary	2.5
178	11+590	10			Masonary	2.5
179	11+760	10			Masonary	2.0
180	12+210	10			Masonary	3.0
181	12+390	10			Masonary	4.5
182	12+400	10			Masonary	5.0
183	12+410	10			Masonary	4.0
184	13+100	10			Masonary	2.5
185	13+110	10			Masonary	4.0
186	13+130	10			Masonary	4.5
187	13+150	10			Masonary	5.0
188	13+180	10			Masonary	3.5
189	13+190	10			Masonary	3.5
190	13+240	10			Masonary	5.0
191	13+250	10			Masonary	5.0
192	13+260	10			Masonary	5.0
193	13+270	10			Masonary	5.0
194	13+280	10			Masonary	5.0
195	13+290	10			Masonary	5.0
196	13+300	10			Masonary	3.5
197	13+570	10			Masonary	2.5
198	13+890	10			Masonary	3.5
199	13+900	10			Masonary	2.5
200	13+910	10			Masonary	2.0

EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	FBC	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By Checked By Approved By	SB PMS BNS	DRAWING NAME: LIST OF MASONRY RETAINING WALL

Scale:	Date:
NOT TO SCALE	August 2019
	Drawing No.: NNMR-LOS 02

Masonary Retaining Wall

S.No.	Chainage	Length	Left		Right	
			Type	Height	Type	Height
201	13+920	10			Masonary	2.5
202	13+930	10			Masonary	3.0
203	13+950	10			Masonary	2.5
204	13+960	10			Masonary	3.0
205	13+970	10			Masonary	2.0
206	13+990	10			Masonary	3.5
207	14+000	10			Masonary	2.5
208	14+650	10			Masonary	3.0
209	14+770	10			Masonary	3.5
210	14+780	10			Masonary	3.0
211	16+170	10			Masonary	4.5
212	16+210	10			Masonary	5.0
213	16+420	10			Masonary	4.0
214	16+430	10			Masonary	5.0
215	16+470	10			Masonary	5.0
216	16+480	10			Masonary	3.5
217	16+510	10			Masonary	2.5
218	16+520	10			Masonary	3.5
219	16+530	10			Masonary	5.0
220	16+540	10			Masonary	3.5
221	16+550	10			Masonary	3.5
222	16+560	10			Masonary	4.0
223	16+620	10			Masonary	5.0
224	16+990	10			Masonary	3.0
225	17+360	10			Masonary	2.0
226	17+390	10			Masonary	2.0
227	17+450	10			Masonary	2.5
228	17+460	10			Masonary	4.0
229	17+470	10			Masonary	3.0
230	17+480	10			Masonary	3.5
231	17+490	10			Masonary	2.5
232	17+520	10			Masonary	2.0
233	17+600	10			Masonary	3.5
234	17+610	10			Masonary	2.0
235	17+770	10			Masonary	2.5
236	18+520	10			Masonary	2.5
237	18+530	10			Masonary	3.0
238	18+590	10			Masonary	2.0
239	18+600	10			Masonary	2.5
240	18+610	10			Masonary	2.5
241	18+620	10			Masonary	2.5
242	18+630	10			Masonary	2.5
243	18+740	10			Masonary	3.5
244	18+750	10			Masonary	4.0
245	18+760	10			Masonary	4.0
246	19+160	20			Masonary	3.5
247	19+280	20			Masonary	1.5
248	19+300	20			Masonary	2.5
249	19+320	20			Masonary	1.5
250	19+920	20			Masonary	3.0

S.No.	Chainage	Length	Left		Right	
			Type	Height	Type	Height
251	19+940	20			Masonary	2.0
252	19+960	20			Masonary	2.0
253	19+980	20			Masonary	4.5
254	20+120	20			Masonary	2.5
255	20+300	20			Masonary	3.0
256	20+560	20			Masonary	3.5
257	20+580	20			Masonary	4.0
258	20+700	20			Masonary	2.5
259	20+920	20			Masonary	3.5
260	20+940	20			Masonary	3.0
261	21+040	20			Masonary	1.5
262	21+060	20			Masonary	1.5
263	21+220	20			Masonary	2.0
264	21+340	20			Masonary	2.0
265	21+360	20			Masonary	3.0
266	21+540	20			Masonary	3.0
267	21+800	20			Masonary	4.0
268	21+820	20			Masonary	3.5
269	21+860	20			Masonary	2.5
270	21+880	20			Masonary	4.5
271	21+900	20			Masonary	3.5
272	22+040	20			Masonary	2.0
273	22+100	20			Masonary	4.5
274	22+160	20			Masonary	4.5
275	22+180	20			Masonary	4.0
276	22+200	20			Masonary	3.5
277	22+220	20			Masonary	2.0
278	22+260	20			Masonary	2.0
279	22+280	20			Masonary	2.0
280	22+300	20			Masonary	2.5
281	22+320	20			Masonary	2.0
282	22+760	20			Masonary	2.0
283	23+080	20	Masonary	3.5	Masonary	2.5
284	23+100	20	Masonary	4	Masonary	3.0
285	23+120	20	Masonary	4	Masonary	4.0
286	23+140	20	Masonary	5	Masonary	4.0
287	23+160	20	Masonary	5	Masonary	4.0
288	23+180	20	Masonary	5	Masonary	4.0
289	23+200	20	Masonary	5	Masonary	4.0
290	23+220	20	Masonary	5.5	Masonary	5.0
291	23+240	20	Masonary	5	Masonary	4.5
292	23+260	20	Masonary	4.5	Masonary	4.0
293	23+280	20	Masonary	4	Masonary	3.5
294	23+300	20	Masonary	3	Masonary	3.0
295	23+320	20	Masonary	2.5		
296	24+900	20			Masonary	2.5
297	25+000	20			Masonary	2.5
298	25+020	20			Masonary	4.0
299	25+040	20			Masonary	5.0
300	25+240	20			Masonary	2.0

S.No.	Chainage	Length	Left		Right	
			Type	Height	Type	Height
301	25+640	20			Masonary	3.5
302	25+760	20			Masonary	3.0
303	25+780	20			Masonary	2.5
304	25+800	20			Masonary	4.5
305	25+820	20			Masonary	3.0
306	25+920	20			Masonary	3.0
307	26+000	20			Masonary	3.5
308	26+080	20			Masonary	3.0
309	26+100	20			Masonary	2.0
310	26+160	20			Masonary	2.0
311	26+180	20			Masonary	1.5
312	26+200	20			Masonary	2.0
313	26+220	20			Masonary	2.0
314	26+280	20			Masonary	1.5
315	26+320	20			Masonary	2.5
316	26+400	20			Masonary	2.5
317	26+420	20			Masonary	3.0
318	26+440	20			Masonary	5.0
319	26+600	20	Masonary	3		
320	26+620	20	Masonary	2.5		
321	26+900	20			Masonary	2.5
322	26+920	20			Masonary	1.5
323	27+020	20			Masonary	3.5
324	27+040	20			Masonary	2.0
325	27+780	20			Masonary	2.0
326	27+820	20			Masonary	2.5
327	27+840	20			Masonary	2.0
328	27+860	20			Masonary	2.0
329	28+680	20			Masonary	2.0
330	29+280	20			Masonary	2.5
331	29+340	20			Masonary	4.0
332	29+440	20			Masonary	3.5
333	29+460	20			Masonary	2.0
334	30+360	20			Masonary	2.0
335	30+500	20			Masonary	4.0
336	30+520	20			Masonary	3.5
337	31+280	20			Masonary	3.0
338	31+300	20			Masonary	2.0
339	31+340	20			Masonary	1.5
340	31+360	20			Masonary	2.5
341	31+440	20			Masonary	1.5
342	31+480	20			Masonary	1.5
343	31+500	20			Masonary	2.5
344	31+560	20			Masonary	2.0
345	31+620	20			Masonary	2.0
346	31+640	20			Masonary	5.0
347	31+660	20			Masonary	2.5
348	31+680	20			Masonary	1.5
349	31+780	20			Masonary	2.0
350	31+820	20			Masonary	3.5

S.No.	Chainage	Length	Left		Right	
			Type	Height	Type	Height
351	32+640	20			Masonary	2.5
352	38+430	10			Masonary	3.0
353	38+810	10			Masonary	2.0
354	38+820	10			Masonary	2.5
355	38+880	10			Masonary	3.5
356	38+960	10			Masonary	2.0
357	38+970	10			Masonary	2.5
358	38+980	10			Masonary	3.0
359	38+990	10			Masonary	4.0
360	39+000	10			Masonary	3.0
361	39+670	10			Masonary	1.5
362	39+690	10			Masonary	2.0
363	39+700	10			Masonary	4.5
364	39+710	10			Masonary	4.5
365	39+730	10			Masonary	2.0
366	39+740	10			Masonary	4.0
367	39+970	10			Masonary	2.5
368	40+740	10			Masonary	2.5
369	40+760	10			Masonary	2.5
370	41+150	10			Masonary	2.5
371	41+160	10			Masonary	2.0
372	41+170	10			Masonary	2.0
373	41+180	10			Masonary	2.0
374	41+350	10			Masonary	4.5
375	41+370	10			Masonary	4.0
376	41+520	10			Masonary	1.5
377	41+530	10			Masonary	2.0
378	41+930	10			Masonary	2.5
379	42+750	10			Masonary	3.0
380	43+090	10			Masonary	4.5
381	43+100	10			Masonary	3.5
382	43+110	10			Masonary	2.5
383	43+120	10			Masonary	2.5
384	43+130	10			Masonary	2.5
385	43+140	10			Masonary	2.0

Masonary Breast Wall

S.No.	Chainage	Length	Left		Right	
			Type	Height	Type	Height
1	7+870	10	Masonary	4.0		
2	7+890	10	Masonary	5.0		
3	7+900	10	Masonary	4.0		
4	11+150	10	Masonary	4.0		
5	11+650	10	Masonary	6.0		
6	11+670	10	Masonary	6.0		
7	13+320	10	Masonary	5.0		
8	16+590	10	Masonary	5.0		
9	16+600	10	Masonary	5.0		
10	16+610	10	Masonary	5.0		
11	18+030	10	Masonary	4.0		
12	18+040	10	Masonary	4.0		
13	18+050	10	Masonary	4.0		
14	18+060	10	Masonary	5.0		
15	18+070	10	Masonary	5.0		
16	18+080	10	Masonary	5.0		
17	18+090	10	Masonary	5.0		
18	18+100	10	Masonary	5.0		
19	18+160	10	Masonary	6.0		
20	18+170	10	Masonary	8.0		
21	18+180	10	Masonary	8.0		
22	18+190	10	Masonary	8.0		
23	18+200	10	Masonary	8.0		
24	18+210	10	Masonary	8.0		
25	18+220	10	Masonary	8.0		
26	18+230	10	Masonary	8.0		
27	18+240	10	Masonary	8.0		
28	18+250	10	Masonary	8.0		
29	18+260	10	Masonary	8.0		
30	18+270	10	Masonary	6.0		
31	18+280	10	Masonary	6.0		
32	18+290	10	Masonary	5.0		
33	18+300	10	Masonary	4.0		
34	18+310	10	Masonary	2.5		
35	18+320	10	Masonary	2.5		
36	18+330	10	Masonary	2.5		
37	18+340	10	Masonary	2.5		
38	18+350	10	Masonary	2.0		
39	19+100	20	Masonary	4.0		
40	19+120	20	Masonary	5.0		
41	19+240	20	Masonary	5.0		
42	19+260	20	Masonary	5.0		
43	21+000	20	Masonary	4.0		
44	21+020	20	Masonary	3.0		
45	21+080	20	Masonary	3.0		
46	21+100	20	Masonary	3.0		
47	21+260	20	Masonary	4.0		
48	22+580	20			Masonary	3.0
49	22+600	20			Masonary	3.0
50	22+620	20			Masonary	3.0

S.No.	Chainage	Length	Left		Right	
			Type	Height	Type	Height
51	23+720	20	Masonary	2.0		
52	23+740	20	Masonary	1.5		
53	23+760	20	Masonary	4.0		
54	23+780	20	Masonary	4.0		
55	23+800	20	Masonary	4.0		
56	23+820	20	Masonary	2.5		
57	23+840	20	Masonary	2.0		
58	23+880	20	Masonary	2.0		
59	23+900	20	Masonary	2.0		
60	23+920	20	Masonary	2.0		
61	23+940	20	Masonary	2.0		
62	23+960	20	Masonary	1.5		
63	23+980	20	Masonary	2.0		
64	24+000	20	Masonary	2.0		
65	24+020	20	Masonary	2.0		
66	24+040	20	Masonary	2.0		
67	24+060	20	Masonary	2.0		
68	24+080	20	Masonary	1.2		
69	24+100	20	Masonary	1.5		
70	24+120	20	Masonary	2.0		
71	24+140	20	Masonary	2.0		
72	24+160	20	Masonary	2.0		
73	24+180	20	Masonary	2.0		
74	24+200	20	Masonary	2.0		
75	24+220	20	Masonary	2.0		
76	24+240	20	Masonary	2.0		
77	24+260	20	Masonary	2.0		
78	24+280	20	Masonary	2.0		
79	24+300	20	Masonary	2.0		
80	24+320	20	Masonary	2.0		
81	24+340	20	Masonary	2.0		
82	24+360	20	Masonary	2.0		
83	24+380	20	Masonary	2.0		
84	24+400	20	Masonary	2.0		
85	24+420	20	Masonary	2.0		
86	24+440	20	Masonary	1.5		
87	24+460	20	Masonary	1.5		
88	24+480	20	Masonary	1.5		
89	24+500	20	Masonary	1.5		
90	24+520	20	Masonary	1.5		
91	24+540	20	Masonary	1.5		
92	24+560	20	Masonary	1.5		
93	24+580	20	Masonary	1.5		
94	24+600	20	Masonary	1.5		
95	24+620	20	Masonary	1.5		
96	24+640	20	Masonary	1.5		
97	24+660	20	Masonary	1.5		
98	24+680	20	Masonary	1.5		
99	24+700	20	Masonary	1.5		
100	24+720	20	Masonary	1.5		

S.No.	Chainage	Length	Left		Right	
			Type	Height	Type	Height
101	24+740	20	Masonary	1.5		
102	24+760	20	Masonary	1.5		
103	24+780	20	Masonary	1.5		
104	24+800	20	Masonary	1.5		
105	24+820	20	Masonary	1.5		
106	24+840	20	Masonary	1.5		
107	24+860	20	Masonary	2.5		
108	24+880	20	Masonary	4.0		
109	24+900	20	Masonary	4.0		
110	24+920	20	Masonary	2.0		
111	24+940	20	Masonary	2.0		
112	24+960	20	Masonary	1.5		
113	24+980	20	Masonary	1.5		
114	25+000	20	Masonary	1.5		
115	25+020	20	Masonary	1.5		
116	25+160	20	Masonary	3.0		
117	25+180	20	Masonary	4.0		
118	25+200	20	Masonary	4.0		
119	25+220	20	Masonary	4.0		
120	26+120	20	Masonary	2.5		
121	26+140	20	Masonary	2.0		
122	26+280	20	Masonary	4.0		
123	26+460	20	Masonary	4.0		
124	26+480	20	Masonary	3.0		
125	26+500	20	Masonary	6.0		
126	26+520	20	Masonary	8.0		
127	26+640	20			Masonary	5.0
128	26+660	20	Masonary	4.0		
129	26+680	20	Masonary	4.0		
130	26+700	20	Masonary	4.0		
131	32+900	20	Masonary	4.0		
132	32+920	20	Masonary	3.0		
133	33+180	10	Masonary	5.0		
134	33+190	10	Masonary	5.0		
135	33+770	10	Masonary	5.0		
136	33+790	10	Masonary	5.0		
137	33+810	10	Masonary	5.0		
138	38+480	10	Masonary	4.0		
139	38+490	10	Masonary	5.0		
140	38+500	10	Masonary	5.0		
141	38+510	10	Masonary	5.0		
142	38+520	10	Masonary	5.0		
143	40+950	10	Masonary	5.0		
144	41+010	10	Masonary	4.0		
145	41+020	10	Masonary	4.0		
146	41+030	10	Masonary	4.0		
147	41+040	10	Masonary	4.0		
148	41+050	10	Masonary	4.0		
149	41+060	10	Masonary	4.0		
150	41+070	10	Masonary	3.0		
151	41+080	10	Masonary	3.0		

Slope Protection using Semi-Flexible 3D Galvanised Steel Mat

S, No.	Chainage	Length (m)	Ht. of #D Galvanised Steel Mat
1	7+860.00	20	6.60
2	7+880.00	20	7.56
3	7+900.00	20	4.74
4	11+640.00	20	5.06
5	11+660.00	20	5.70
6	11+680.00	20	4.82
7	19+360.00	20	5.52
8	19+380.00	20	12.28
9	19+400.00	20	8.86
10	19+420.00	20	13.26
11	19+440.00	20	14.00
12	19+460.00	20	3.24
13	19+480.00	20	13.92
14	19+560.00	20	6.94
15	19+580.00	20	19.14
16	19+600.00	20	6.74
17	19+620.00	20	7.00
18	19+640.00	20	8.66
19	33+780.00	20	9.04
20	33+800.00	20	9.48
21	40+960.00	20	9.46
22	40+980.00	20	4.24
23	41+000.00	20	3.82

Rcc Wall (QUANTITY)

S.No.	Chainage	Length	Left		Right	
			RCC	Height	RCC	Height
1	1+220	10				6
2	3+020	10				6
3	3+030	10				6
4	3+040	10				7
5	3+050	10				6
6	3+060	10				6
7	3+070	10				6
8	4+340	10				6
9	4+350	10				6
10	5+160	10				7
11	5+170	10				6
12	5+180	10				6
13	5+190	10				5
14	11+410	10				5
15	12+330	10		5		5
16	12+340	10		7		8
17	12+370	10				10
18	12+380	10				8
19	13+120	10				5
20	13+140	10				5
21	14+400	10		6		
22	14+650	10				5
23	14+660	10				5
24	14+670	10				8
25	14+700	10				8
26	14+710	10				8
27	14+720	10				8
28	14+730	10				7
29	14+740	10				6
30	14+750	10				6
31	14+760	10				5
32	16+440	10				5
33	16+450	10				5
34	16+460	10				5
35	16+640	10				6
36	16+650	10				6
37	16+660	10				6
38	16+670	10				6
39	16+680	10				6
40	16+690	10				6
41	16+700	10				6
42	16+710	10				6
43	16+720	10				6
44	16+730	10				6
45	16+740	10				6

S.No.	Chainage	Length	Left		Right	
			RCC	Height	RCC	Height
46	16+750	10				6
47	16+760	10				6
48	16+770	10				6
49	16+780	10				6
50	16+790	10				6
51	16+800	10				6
52	16+810	10				6
53	16+820	10				6
54	16+830	10				6
55	16+840	10				6
56	16+850	10				6
57	16+860	10				6
58	16+870	10				6
59	16+880	10				6
60	16+890	10				6
61	16+900	10				7
62	16+910	10				7
63	16+920	10				7
64	17+000	10				6
65	17+010	10				6
66	17+020	10				6
67	19+170	10				6
68	19+180	10				7
69	19+970	10				5
70	19+990	10				5
71	20+270	10				9
72	20+280	10				5
73	22+130	10				6
74	22+140	10				6
75	22+150	10				6
76	26+170	10				6
77	26+550	10		9		5
78	26+590	10		6		9
79	26+600	10				5
80	26+610	10				5
81	33+270	10		5		5
82	33+660	10				6
83	34+580	10				5
84	34+590	10				5
85	38+370	10				6
86	38+380	10				5
87	38+390	10				5
88	38+400	10				5
89	38+420	10				5
90	41+360	10				5

EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	FBC	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By Checked By Approved By	SB PMS BNS	DRAWING NAME: LIST OF RCC RETAINING WALL

Scale:	Date:
NOT TO SCALE	August 2019
	Drawing No.: NNMR-LOS 06

Naubise - Malekhu Section

List of Culvert and Bridges

Location (Km+m)	Catchment area, km^2	Design discharge, m^3/s	Details of Existing Culverts		Details on Proposed Culverts				
			Type of Culvert	No.× Span/ Diameter × Height (m)	Type of Culvert	No.× Span/ Diameter × Height (m)	Improvement Proposal	Extension, m	
0+108	0.917	9.155	Slab Culvert	1x4x2	Slab Culvert	1x4x2	To be Extended	Extended	4
0+363	0.133	1.328	Slab Culvert	1x2x2	Slab Culvert	1x2x2	To be Extended	Extended	4
0+666	0.2	1.997	Slab culvert	1x3x4	Slab culvert	1x3x4	To be Extended	Extended	4
0+893	0.332	3.315	Slab culvert	1x3x3	Slab culvert	1x3x3	To be Extended	Extended	4
1+236	0.17	1.697	Slab culvert	1x2.5x1.5	Slab culvert	1x2.5x1.5	To be Extended	Extended	4
1+455	0.096	0.958	Slab culvert	1x4x3	Slab culvert	1x4x3	To be Extended	Extended	4
1+896	0.562	5.612	-	-	New Slab Culvert	1x2x2	New Slab Culvert		
2+032	0.037	0.364	Slab culvert	1x1x1	-	-	To be Retained		
2+145	0.192	1.92	Slab culvert	1x2.5x1	-	-	To be Retained		
2+362	0.035	0.349	Slab culvert	1x2x1.5	-	-	To be Retained		
2+889	0.115	1.148	Slab culvert	1x0.8x1	Slab Culvert	1x1x1	To be Replaced		
3+002	**Ganesh Bridge**								
3+398	0.102	1.018	Slab culvert	1x2x1	-	-	To be Extended		4
3+671	0.031	0.31	Slab culvert	1x3x2.5	-	-	To be Retained		
3+759	0.744	7.428	Slab culvert	1x2x2.5	-	-	To be Retained		
3+857	0.696	6.949	Pipe Culvert	1x1.2	Slab Culvert	1x2x2	To be Replaced		
4+059	0.053	0.529	Slab culvert	1x1x1	-	-	To be Retained		
4+203	0.05	0.499	Slab culvert	1x1.2x1.2	-	-	To be Retained		
4+490	0.054	0.539	Slab culvert	1x0.7x1	Slab Culvert	1x1x1	To be Replaced		
4+580	0.034	0.339	-	-	New Pipe Culvert	1x1.2	New Pipe Culvert		
4+749	0.03	0.3	Slab culvert	1x0.7x1	-	-	To be Extended		4
4+849	0.031	0.314	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	To be Replaced		
5+145	**Sopyang Bridge**								
5+217	0.008	0.08	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	To be Replaced		
5+522	0.057	0.569	Slab culvert	1x2x3	Slab culvert	1x2x3	To be Extended	Extended	4
5+682	0.441	4.403	Slab culvert	1x3x3	Slab culvert	1x3x3	To be Extended	Extended	4
5+771	1.423	14.207	Slab culvert	4x2.5x1.5	Slab culvert	4x2.5x1.5	To be Extended	Extended	4
6+007	0.144	1.441	Slab culvert	1x0.8x1	Slab Culvert	1x1x1	To be Replaced		
6+069	0.007	0.07	Slab culvert	1x4x4	Slab culvert	1x4x4	To be Extended	Extended	4
6+151	0.423	4.223	Slab culvert	1x1x2	-	-	To be Extended		4
6+289	0.037	0.369	Slab culvert	1x1x1	-	-	To be Extended		4
6+521	0.82	8.187	Slab culvert	1x5.5x4	-	-	To be Extended		4
6+799	0.021	0.21	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	To be Replaced		
6+844	0.462	4.613	Slab culvert	1x4x3	-	-	To be Retained		
6+966	0.016	0.16	Slab culvert	1x1x1	-	-	To be Retained		
7+104	0.059	0.589	Slab culvert	1x1.5x1.5	-	-	To be Retained		
7+279	0.141	1.408	Slab culvert	1x1.5x1.5	-	-	To be Retained		
7+486	0.084	0.839	Slab culvert	1x1x1	-	-	To be Retained		
7+760	0.059	0.589	Pipe Culvert	1x0.9	-	-	To be Retained		
7+997	0.033	0.329	Pipe Culvert	1x1.2	-	-	To be Extended	Extended	4
8+110	0.02	0.02	-	-	New Pipe Culvert	1x1.2	New Pipe Culvert		
8+325	0.826	8.247	Slab culvert	1x4x5	-	-	To be Retained		
8+410	0.233	2.326	Slab culvert	1x2x2	-	-	To be Retained		

Location (Km+m)	Catchment area, km^2	Design discharge, m^3/s	Details of Existing Culverts		Details on Proposed Culverts				
			Type of Culvert	No.× Span/ Diameter × Height (m)	Type of Culvert	No.× Span/ Diameter × Height (m)	Improvement Proposal	Extension, m	
8+471	0.093	0.929	Slab culvert	1x1.5x1.5	-	-	To be Retained		
8+547	0.033	0.329	Slab culvert	1x1x1	-	-	To be Retained		
8+752	0.04	0.399	Slab culvert	1x0.8x1	Slab Culvert	1x1x1	To be Replaced		
9+026	0.053	0.529	Slab culvert	1x3x4	Slab culvert	1x3x4	To be Extended	Extended	4
9+122	0.04	0.399	Slab culvert	1x1.5x2	-	-	To be Retained		
9+233	0.128	1.278	Pipe Culvert	1x0.9	Pipe Culvert	1x1.2	To be Replaced		
9+349	0.065	0.649	Slab culvert	1x1x1.5	-	-	To be Retained		
9+425	0.028	0.28	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	To be Replaced		
9+517	0.01	0.1	Slab culvert	1x1x1	-	-	To be Retained		
9+676	0.034	0.339	Slab culvert	1x2x2	-	-	To be Retained		
9+825	0.157	1.567	Slab culvert	1x2x3	-	-	To be Retained		
9+910	0.126	1.258	Slab culvert	1x0.7x1	Slab Culvert	1x1x1	To be Replaced		
10+038	0.03	0.296	Slab culvert	1x1x1	-	-	To be Retained		
10+165	0.015	0.15	Pipe Culvert	1x0.9	Pipe Culvert	1x1.2	To be Replaced		
10+268	0.011	0.11	-	-	Slab Culvert	1x1x1	To be Replaced		
10+573	0.051	0.509	-	-	New Pipe Culvert	1x1.2	New Pipe Culvert		
10+930	**Agra Bridge**								
11+334	0.018	0.175	Slab culvert	1x1x1	-	-	To be Retained		
11+493	0.024	0.24	Slab culvert	1x1x1	-	-	To be Retained		
11+705	0.036	0.359	Slab culvert	1x1.5x1.5	-	-	To be Retained		
11+929	0.079	0.789	Slab culvert	1x1.5x1.5	-	-	To be Extended		4
12+075	0.038	0.379	Slab culvert	1x3x3.5	-	-	To be Extended		4
12+202	0.525	5.242	Pipe Culvert	1x0.9	Slab Culvert	1x2x2	To be Extended		4
12+355	**Khahare Bridge**								
12+624	0.018	0.18	Slab culvert	1x1x1	-	-	To be Retained		
12+754	0.029	0.292	Slab culvert	1x0.7x1	Slab Culvert	1x1x1	To be Replaced		
13+146	0.013	0.127	Slab culvert	1x1x1	-	-	To be Retained		
13+302	0.057	0.569	Slab culvert	1x1x1	-	-	To be Retained		
13+470	0.041	0.409	Slab culvert	1x4x4	-	-	To be Retained		
13+571	0.274	2.736	Slab culvert	1x1x1	Slab Culvert	1x1.5x1.5	To be Extended		4
13+696	0.029	0.29	Slab culvert	1x1x1	-	-	To be Extended		4
13+770	0.039	0.44	Pipe Culvert	1x0.9	-	-	To be Extended		4
13+874	0.043	0.485	-	-	Pipe Culvert	1x1.2	To be Extended		4
14+407	**Phedi Bridge**								
14+688	**Dangdunge Bridge**								
14+968	0.025	0.282	Slab culvert	1x2x1.5	-	-	To be Retained		
15+176	0.112	1.262	-	-	Pipe Culvert	1x1.2	To be Replaced		
15+469	0.027	0.299	-	-	Pipe Culvert	1x1.2	To be Replaced		
15+593	0.034	0.383	Slab culvert	1x2x2	-	-	To be Extended		7
15+831	0.202	2.277	Slab culvert	1x2x1.5	-	-	To be Extended		7
16+009	0.163	1.843	Slab culvert	1x4x4.5	-	-	To be Extended		4
16+360	0.606	6.825	Slab culvert	1x1x2	Slab Culvert	1x2x2	To be Replaced		
16+425	0.031	0.349	-	-	New Pipe Culvert	1x1.2	New Pipe Culvert		

EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea FBC In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By Checked By Approved By	SB PMS BNS	DRAWING NAME: LIST OF CROSS DRAINAGE	Scale: NOT TO SCALE	Date: August 2019 Drawing No.: NNMR-LOS 07

Naubise - Malekhu Section

List of Culvert and Bridges

Location (Km+m)	Catchment area, km^2	Design discharge, m^3/s	Details of Existing Culverts		Details on Proposed Culverts				
			Type of Culvert	No.× Span/ Diameter × Height (m)	Type of Culvert	No.× Span/ Diameter × Height (m)	Improvement Proposal	Extension, m	
16+723	0.035	0.395	Slab culvert	1x1x1	-	-	To be Retained		
17+230	0.048	0.541	Pipe Culvert	1x0.3	Pipe Culvert	1x1.2	To be Replaced		
17+354	0.089	1.003	Slab culvert	1x1x1	-	-	To be Extended		4
17+448	0.083	0.932	Slab culvert	1x1x1	Slab Culvert	1x1x1	To be Replaced		
17+606	0.056	0.634	Pipe Culvert	1x0.9	Pipe Culvert	1x1.2	To be Replaced		
17+768	0.066	0.744	Slab culvert	1x1x1	-	-	To be Retained		
18+129	Kheste Bridge								
18+380	0.038	0.428	Pipe Culvert	1x0.9	-	-	To be Retained		
18+484	0.016	0.18	Slab culvert	1x1.5x1.5	-	-	To be Extended		4
18+543	0.025	0.282	Slab culvert	1x1x1	-	-	To be Extended		4
18+704	0.013	0.147	Slab culvert	1x1.5x1.5	-	-	To be Extended		4
18+869	0.058	0.654	Slab culvert	1x2x2	-	-	To be Retained		
19+055	0.126	1.42	Slab culvert	1x2x1.5	-	-	To be Retained		
19+183	0.045	0.507	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	To be Replaced		
19+466	0.042	0.473	Slab culvert	1x1x1	Slab culvert	1x1x1	To be Extended	Extended	9
19+525	Machedi Bridge								
19+659	0.015	0.169	Slab culvert	1x1x1	Slab culvert	1x1x1	To be Extended	Extended	3
19+771	0.032	0.361	Slab culvert	1x1.5x1.5	Slab culvert	1x1.5x1.5	To be Extended	Extended	4
19+907	0.073	0.823	Slab culvert	1x1x1	Slab culvert	1x1x1	To be Extended	Extended	4
19+984	0.06	0.676	Slab culvert	1x1x1	-	-	To be Extended		4
20+125	0.051	0.575	Slab culvert	1x3.5x4	-	-	To be Extended		4
20+279	0.385	4.339	Slab culvert	1x1x1	Slab Culvert	1x1.5x1.5	To be Replaced		
20+429	0.034	0.383	Slab culvert	1x2x3	Slab culvert	1x2x3	To be Extended	Extended	4
20+568	0.173	1.95	Slab culvert	1x1x1	-	-	To be Extended		4
20+701	0.032	0.361	Slab culvert	1x1x1	-	-	To be Extended		4
20+914	0.041	0.467	Slab culvert	1x1x1	-	-	To be Retained		
21+130	0.029	0.322	Pipe Culvert	1x0.9	-	-	To be Retained		
21+332	0.034	0.383	Slab culvert	1x2x3	Slab culvert	1x2x3	To be Extended	Extended	4
21+541	0.139	1.57	Slab culvert	1x1x1	Slab culvert	1x1x1	To be Extended	Extended	4
21+694	0.037	0.417	Pipe Culvert	1x0.9	Pipe Culvert	1x0.9	To be Extended	Extended	4
21+870	0.028	0.316	Pipe Culvert	1x0.9	Pipe Culvert	1x0.9	To be Extended	Extended	4
22+064	0.017	0.192	Pipe Culvert	1x0.9	Pipe Culvert	1x0.9	To be Extended	Extended	4
22+254	0.023	0.259	-	-	New Pipe Culvert	1x1.2	New Pipe Culvert		
23+080	0.101	1.138	-	-	New Pipe Culvert	1x1.2	New Pipe Culvert		
23+185	Gardo Bridge								
23+394	0.017	0.192	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	To be Replaced		
23+558	0.015	0.169	Slab culvert	1x1x1	Slab culvert	1x1x1	To be Extended	Extended	20
23+750	0.059	0.665	Slab culvert	1x1x1	Slab culvert	1x1x1	To be Extended	Extended	20
23+971	0.1	1.127	Slab culvert	1x1x1	-	-	To be Extended		6
24+189	0.11	1.24	Slab culvert	1x2x1.5	-	-	To be Extended		6
24+541	0.037	0.417	Slab culvert	1x1x1	-	-	To be Extended		6
24+730	0.339	3.821	Slab culvert	1x1x1	Slab Culvert	1x1.5x1.5	To be Extended		6
24+823	0.016	0.18	Pipe Culvert	1x1.2	-	-	To be Extended	Extended	4
25+032	Jundi Bridge								

Location (Km+m)	Catchment area, km^2	Design discharge, m^3/s	Details of Existing Culverts		Details on Proposed Culverts				
			Type of Culvert	No.× Span/ Diameter × Height (m)	Type of Culvert	No.× Span/ Diameter × Height (m)	Improvement Proposal	Extension, m	
25+242	0.19	2.142	Box Culvert	1x3x3	-	-	To be Retained		
25+636	0.276	3.111	Slab culvert	1x1x1	Slab Culvert	1x1.5x1.5	To be Extended		4
25+822	0.062	0.7	-	-	New Pipe Culvert	1x1.2	New Pipe Culvert		
25+936	0.055	0.619	Slab culvert	1x1x1	-	-	To be Extended		4
26+046	0.076	0.857	Slab culvert	1x1x1	-	-	To be Extended		
26+249	0.031	0.349	Slab culvert	1x1x1	-	-	To be Extended		
26+570	Chiraudi Bridge								
26+876	0.015	0.169	Slab culvert	1x1x1	-	-	To be Extended		4
27+076	0.011	0.124	Slab culvert	1x1x1	-	-	To be Extended		4
27+260	0.022	0.248	Slab culvert	1x1x1	-	-	To be Extended		4
27+371	0.037	0.418	Pipe Culvert	1x0.9	-	-	To be Extended		4
27+571	0.427	4.813	Slab culvert	1x2x3	-	-	To be Extended		4
27+703	0.015	0.169	Slab culvert	1x0.8x1	-	-	To be Extended		4
28+032	0.099	1.119	Slab culvert	1x1x1	-	-	To be Extended		4
28+310	0.042	0.473	Slab culvert	1x1x1.5	Slab culvert	1x1x1.5	To be Extended		4
28+553	0.084	0.947	Slab culvert	1x1x1	-	-	To be Extended		4
28+627	0.102	1.15	Slab culvert	1x2x2	-	-	To be Extended		4
28+682	0.037	0.417	Slab culvert	1x1x1	-	-	To be Extended		4
28+903	Belku Bridge								
29+052	0.016	0.18	Pipe Culvert	1x0.9	-	-	To be Extended		4
29+337	0.028	0.316	Slab culvert	1x1x1	-	-	To be Extended		4
29+523	0.023	0.259	Slab culvert	1x0.8x1	-	-	To be Extended		4
29+624	0.043	0.485	Slab culvert	1x0.8x1	Slab Culvert	1x1x1	To be Extended		4
29+822	0.04	0.451	Slab culvert	1x1.5x1.5	-	-	To be Extended		4
29+954	0.037	0.417	Slab culvert	1x1x1	Slab culvert	1x1x1	To be Extended	Extended	6
30+117	0.06	0.676	Slab culvert	1x1x1	-	-	To be Extended		4
30+483	0.061	0.684	Slab Culvert	1x1x1	Slab Culvert	1x1x1	To be Extended	Extended	4
30+618	0.073	0.823	Slab Culvert	1x1x1	Slab Culvert	1x1x1	To be Extended	Extended	4
30+824	0.036	0.406	Slab Culvert	1x1.5x1.5	-	-	To be Extended		4
31+128	0.095	1.071	Slab Culvert	1x2x2	Slab Culvert	1x2x2	To be Extended	Extended	4
31+294	0.138	1.555	Slab Culvert	1x3x3	Slab Culvert	1x3x3	To be Extended	Extended	4
31+512	0.033	0.372	Slab Culvert	1x1.5x1.5	Slab Culvert	1x1.5x1.5	To be Extended	Extended	4
31+670	0.064	0.721	Slab Culvert	1x2x2	Slab Culvert	1x2x2	To be Extended	Extended	4
31+827	0.091	1.026	Slab Culvert	1x2x2	-	-	To be Extended		4
32+030	0.079	0.892	Pipe Culvert	1x0.3	Pipe Culvert	1x1.2	To be Replaced		
32+160	0.054	0.607	Slab Culvert	1x1x1	-	-	To be Extended		4
32+401	0.14	1.578	Slab Culvert	1x1.5x2	-	-	To be Extended		4
32+554	0.053	0.597	Slab Culvert	1x1x1	-	-	To be Retained		
32+609	0.022	0.248	Slab Culvert	1x1x1	-	-	To be Retained		
32+942	0.335	3.776	Slab Culvert	1x3x4	-	-	To be Retained		
33+004	0.342	3.855	Slab Culvert	1x1.5x1.5	-	-	To be Retained		
33+155	0.01	0.113	Slab Culvert	1x0.8x1	Slab Culvert	1x0.8x1	To be Extended	Extended	3
33+258	Pokhare Bridge								
33+731	0.045	0.503	Slab Culvert	1x0.8x1	-	-	To be Retained		

EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - Mugling Road and Bridges	Intercontinental Consultants & Technocrats Pvt. Ltd. A-8, Green Park, New Delhi - 110016 Ph : 4086-3000, Fax 2685-5252 In Joint Venture With Soosung Engineering Co. Ltd., South Korea	In Association With Full Bright Consultancy (Pvt.) Ltd. 316,Baburam Acharya Sadak Sinamangal, Kathmandu, GPO Box: 4970, Kathmandu, Nepal	Designed By Checked By Approved By	SB PMS BNS	DRAWING NAME: LIST OF CROSS DRAINAGE	Scale: NOT TO SCALE Date: August 2019 Drawing No.: NNMR-LOS 08

Naubise - Malekhu Section

List of Culvert and Bridges

Location (Km+m)	Catchment area, km^2	Design discharge, m^3/s	Details of Existing Culverts		Details on Proposed Culverts				
			Type of Culvert	No.× Span/ Diameter × Height (m)	Type of Culvert	No.× Span/ Diameter × Height (m)	Improvement Proposal	Extension, m	
33+988	0.041	0.462	Slab Culvert	1x1x1	-	-	To be Retained		
34+222	0.042	0.473	Slab Culvert	1x1x1	-	-	To be Extended		7
34+317	0.04	0.451	Slab Culvert	1x1x1	-	-	To be Extended		7
34+586	0.172	1.941	Slab culvert	1x1x2	-	-	To be Extended		7
35+187	0.138	1.553	Slab culvert	1x1x2	-	-	To be Extended		4
35+246	0.064	0.721	Slab culvert	1x1.5x2	-	-	To be Extended		4
35+420	0.017	0.194	Slab culvert	1x0.8x1	Slab Culvert	1x1x1	To be Extended		4
35+851	0.713	8.034	Slab culvert	1x3.5x2	-	-	To be Extended		4
35+971	0.023	0.259	Slab culvert	1x1x1	-	-	To be Extended		4
36+037	0.044	0.496	-	-	New Pipe Culvert	1x1.2	New Pipe Culvert		
36+455	**Galaudi Bridge**								
36+815	0.044	0.496	Slab culvert	1x1x1	-	-	To be Extended		4
37+130	0.039	0.437	Pipe Culvert	1x0.9	-	-	To be Retained		
37+426	0.022	0.248	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	To be Replaced		
37+839	0.058	0.654	Slab culvert	1x0.7x1	Slab Culvert	1x1x1	To be Replaced		
38+169	0.056	0.631	Slab culvert	1x1x1.5	Slab culvert	1x1x1.5	To be Extended	Extended	4
38+432	0.043	0.485	Slab culvert	1x0.8x1	Slab culvert	1x0.8x1	To be Extended	Extended	4
38+628	**Soti Bridge**								
38+748	0.069	0.778	Slab culvert	1x1x1	Slab culvert	1x1x1	To be Extended	Extended	3
39+257	2.065	23.275	Slab culvert	1x4x4.5	-	-	To be Extended		4
39+505	0.076	0.857	Slab culvert	1x1x1.5	-	-	To be Extended		4
39+753	1.861	20.972	Slab culvert	1x5x3	-	-	To be Retained		
40+072	0.077	0.871	-	-	New Pipe Culvert	1x1.2	New Pipe Culvert		
40+297	0.083	0.936	Pipe Culvert	1x0.9	Pipe Culvert	1x1.2	To be Replaced		
40+578	0.037	0.417	-	-	New Pipe Culvert	1x1.2	New Pipe Culvert		
40+608	0.286	3.224	Slab culvert	1x1x2	-	-	To be Retained		
40+768	0.078	0.883	-	-	New Pipe Culvert	1x1.2	New Pipe Culvert		
41+158	0.577	6.5	-	-	Slab Culvert	1x2x2	To be Extended		4
41+201	0.006	0.068	Slab culvert	1x2x2	-	-	To be Extended		4
41+351	0.02	0.225	Slab culvert	1x0.8x1	-	-	To be Extended		4
41+575	0.016	0.18	Slab culvert	1x1x1	-	-	To be Retained		
41+689	0.032	0.361	Slab culvert	1x1x1	-	-	To be Retained		
41+826	0.052	0.588	Slab culvert	1x1x1	-	-	To be Retained		
42+097	0.112	1.261	Slab culvert	1x1x1	-	-	To be Extended		4
42+366	0.104	1.172	Slab culvert	1x1x1	-	-	To be Extended		4
42+493	0.022	0.248	Slab culvert	1x1x1	-	-	To be Extended		4
42+561	0.021	0.237	Slab culvert	1x1x1.5	-	-	To be Retained		
42+825	0.063	0.705	Pipe Culvert	1x1.2	-	-	To be Retained		
43+269	0.062	0.699	-	-	New Pipe Culvert	1x1.2	New Pipe Culvert		
43+588	**Malekhu Bridge**								

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Geogrid Wall (QUANTITY)

Chainage	Length	Left		Right	
		Geogrid	Height	Geogrid	Height
16+180	10				7
16+190	10				7
16+200	10				7
16+630	10				6
30+670	10				6
30+680	10				6
39+750	10				5
39+760	10				5