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 of Improvement of Kathmandu (Nagdhunga)-Naubise-Mugling Road and Bridges

Final Design Report

Modified Volume-V(A) : ROAD DRAWINGS (PLAN & PROFILE)

Package-II (Naubise - Malekhu)

Ch. 0+000.00 to Ch. 43+542.00

AUGUST 2019

DESIGN CONSULTANT:

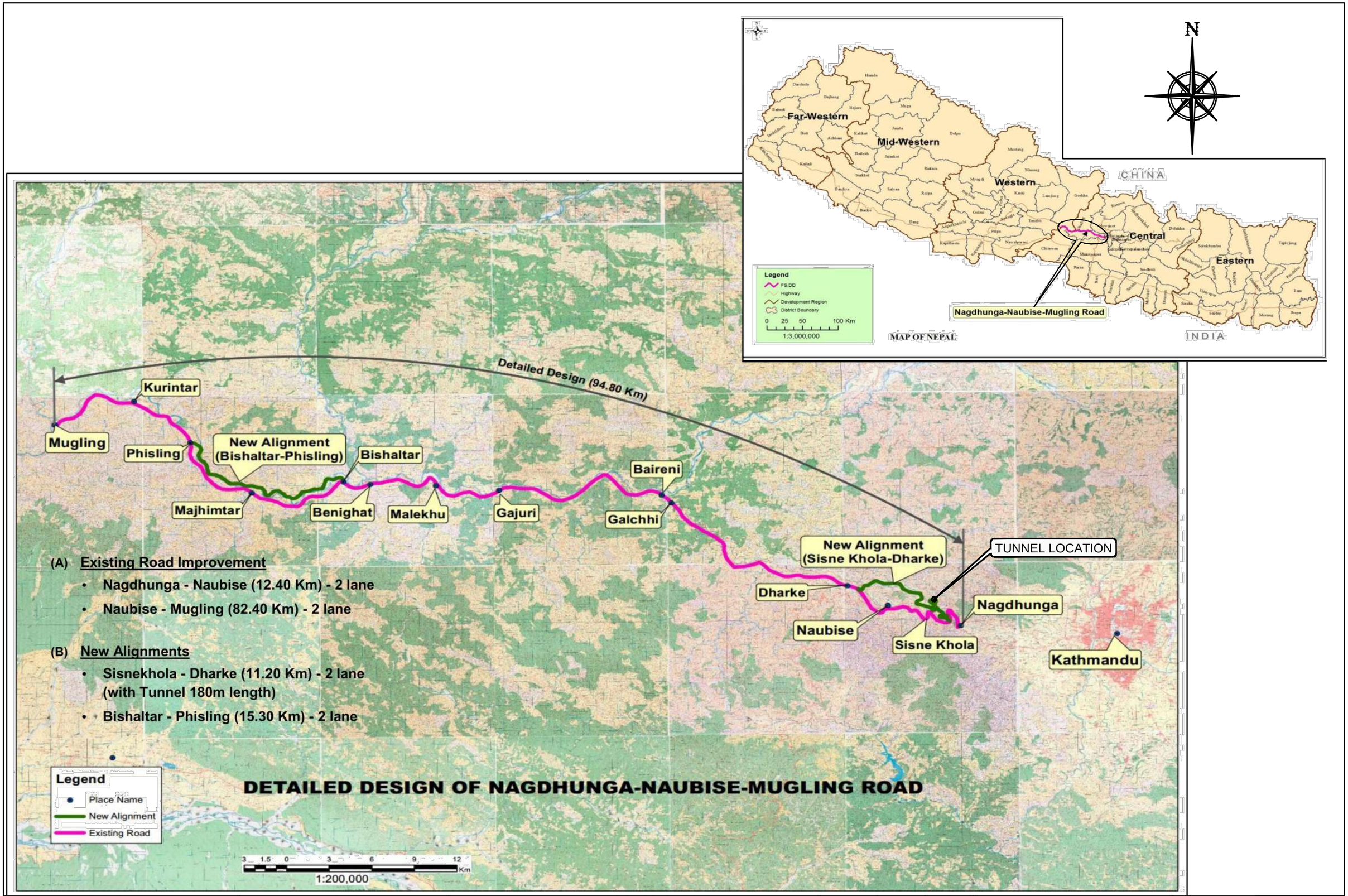
Intercontinental Consultants and Technocrats Pvt. Ltd.
A-8, Green Park, New Delhi - 110016, INDIA

in Joint Venture with

Soosung Engineering Co. Ltd., South Korea

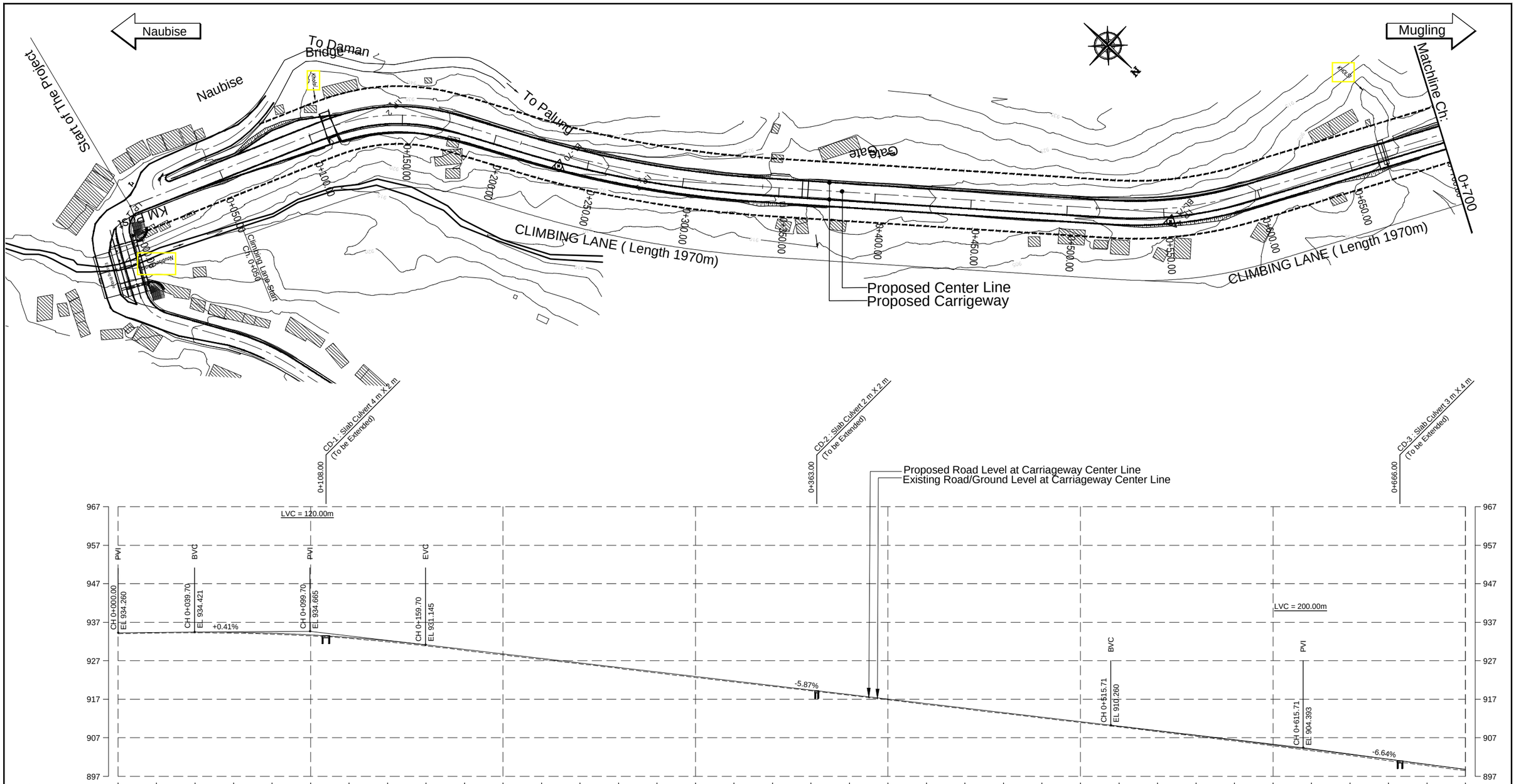
in association with

Full Bright Consultancy (Pvt.) Ltd., Kathmandu, Nepal



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 Narayanghat - Mugling Road	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:	Scale: (m)
				Checked By	PMS	PROJECT LOCATION	Date: August 2019
				Approved By	BNS		Drawing No.: NNMR-TYP 09-01

PLAN AND PROFILE


Naubise
Mugling
Start of The Project
Naubise
To Daman
Bridge
To Pallung
Gate
Matchline Ch: 0+700
CLIMBING LANE (Length 1970m)
CLIMBING LANE (Length 1970m)
Climbing Lane Start
CH: 0+050
Proposed Center Line
Proposed Carrigeway
CD-1 : Slab Culvert 4 m X 2 m (To be Extended)
CD-2 : Slab Culvert 2 m X 2 m (To be Extended)
CD-3 : Slab Culvert 3 m X 4 m (To be Extended)
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line
LVC = 120.00m
LVC = 200.00m
PVI
BVC
EVC
CH 0+000.00 EL 934.260
CH 0+039.70 EL 934.421
CH 0+099.70 EL 934.665
CH 0+159.70 EL 931.145
CH 0+515.71 EL 910.260
CH 0+615.71 EL 904.393
+0.41%
-5.87%
-6.64%
0+108.00
0+363.00
0+666.00
967
957
947
937
927
917
907
897

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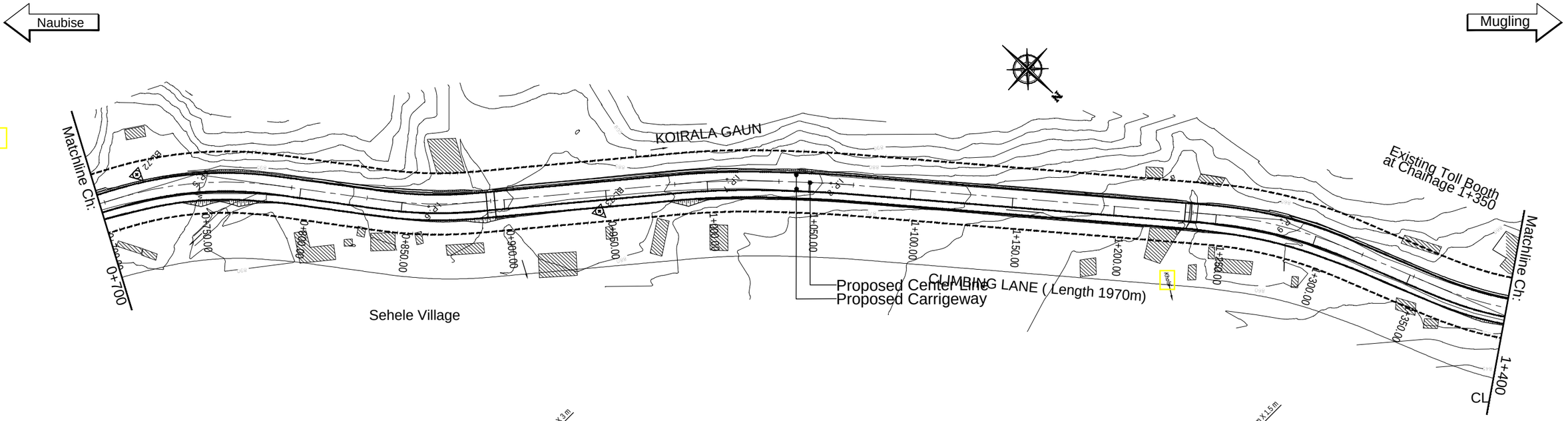
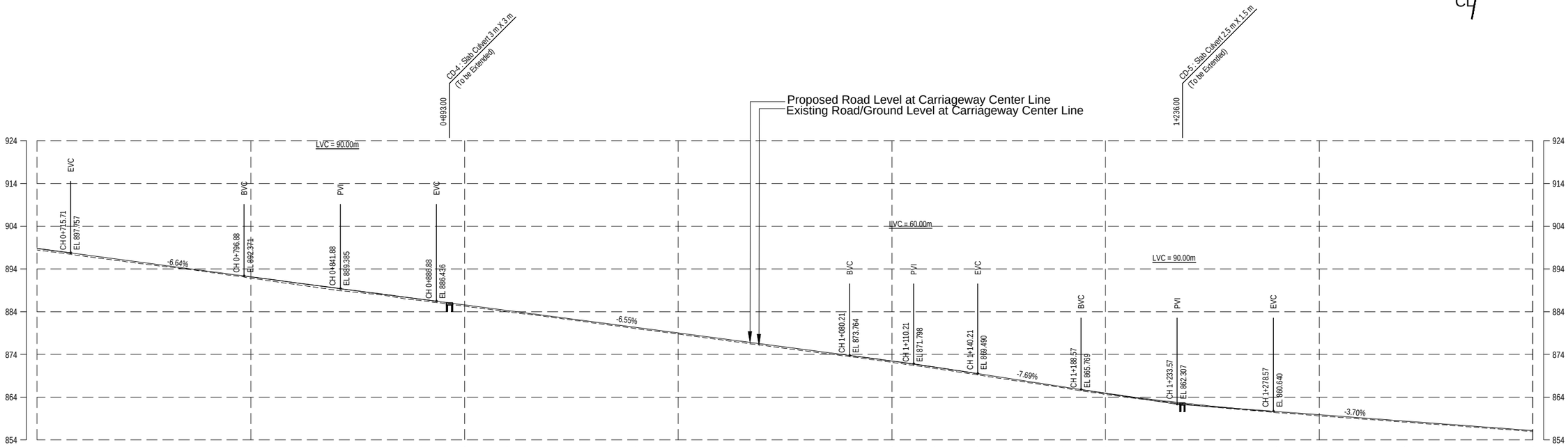
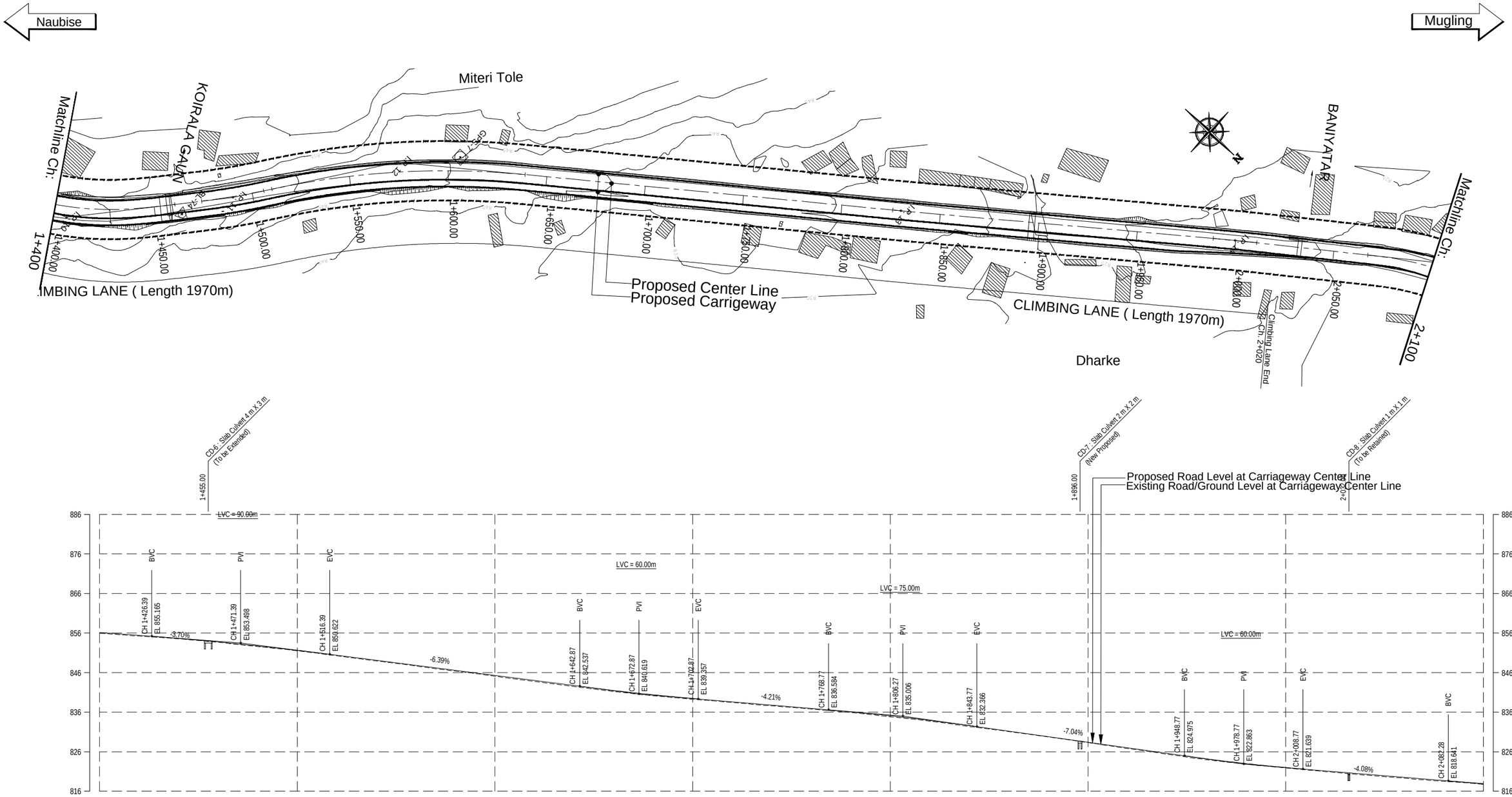




EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement 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 0+700.00 TO 1+400.00	Scale: Horizontal: 0 10 20 30 40 Vertical: 0 5 10 15 20	Date: August 2019 Drawing No.: NMR-PP-002



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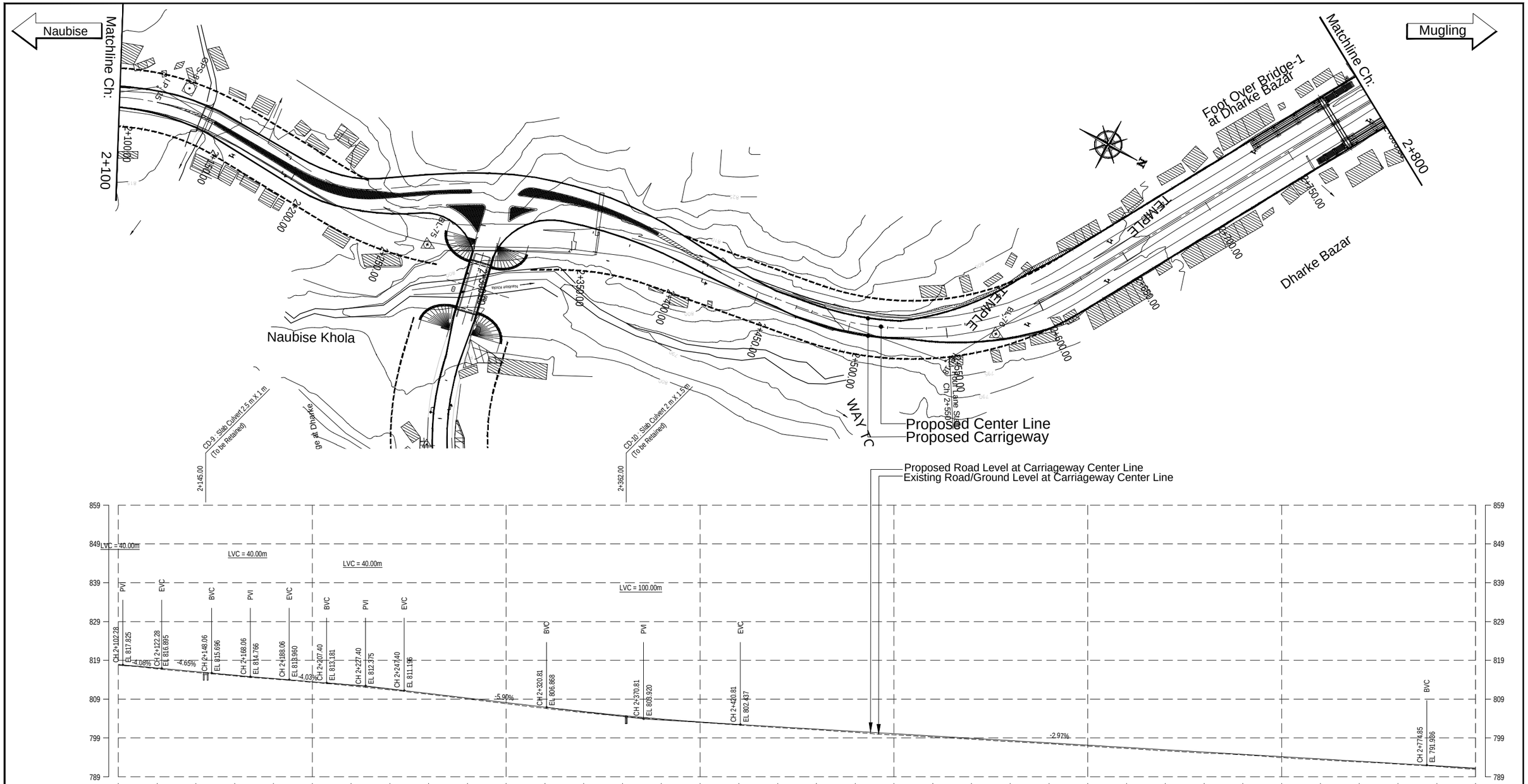
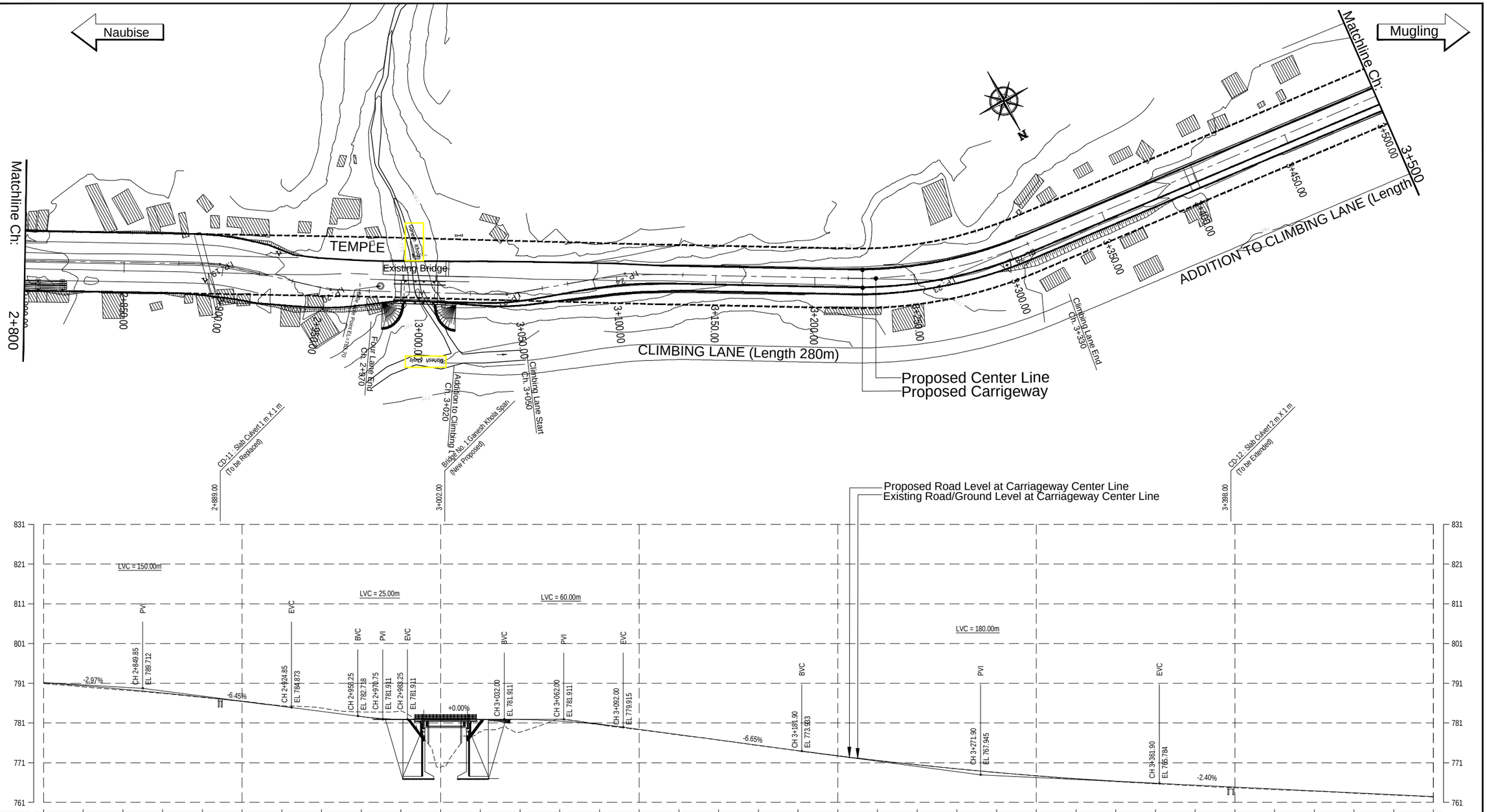
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of Kathmandu (Nagdhunga) - Naubise - 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 1+400.00 TO 2+100.00	Scale: Horizontal: 0 10 20 30 40 Vertical: 0 5 10 15 20 Date: August 2019 Drawing No.: NMR-PP-003



EMPLOYER	PROJECT	DESIGN CONSULTANT				DRAWING NAME:	Scale:	Date:
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		NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 2+100.00 TO 2+800.00	Horizontal: 0 10 20 30 40 Vertical: 0 5 10 15 20	August 2019 Drawing No.: NMR-PP-004



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

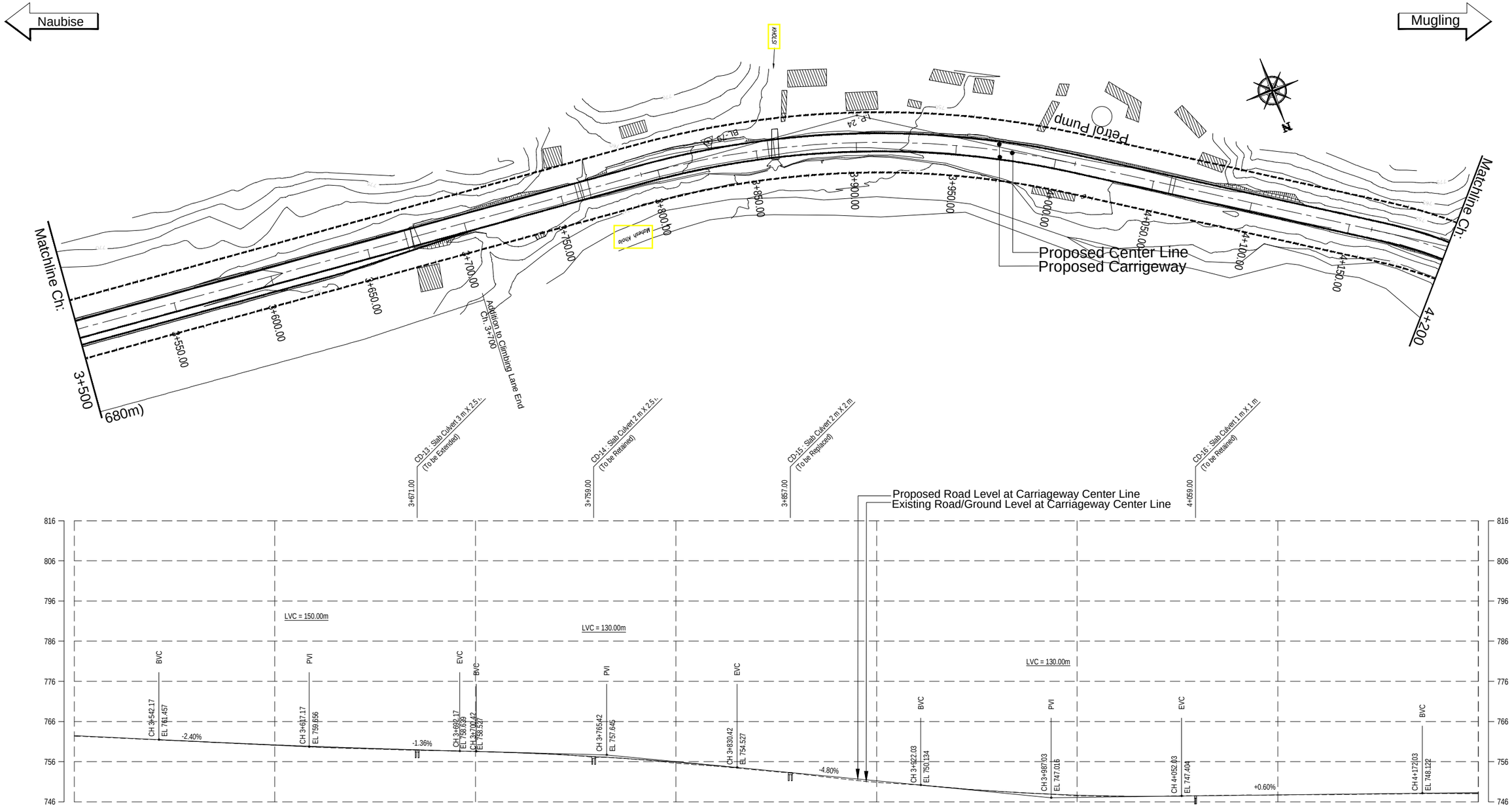
Designed By	SB	
Checked By	PMS	
Approved By	BNS	

DRAWING NAME:
NAUBISE - MUGLING ROAD
PLAN AND PROFILE
CHAINAGE 2+800.00 TO 3+500.00

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

Date: August 2019

Drawing No.: NMR-PP-005



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

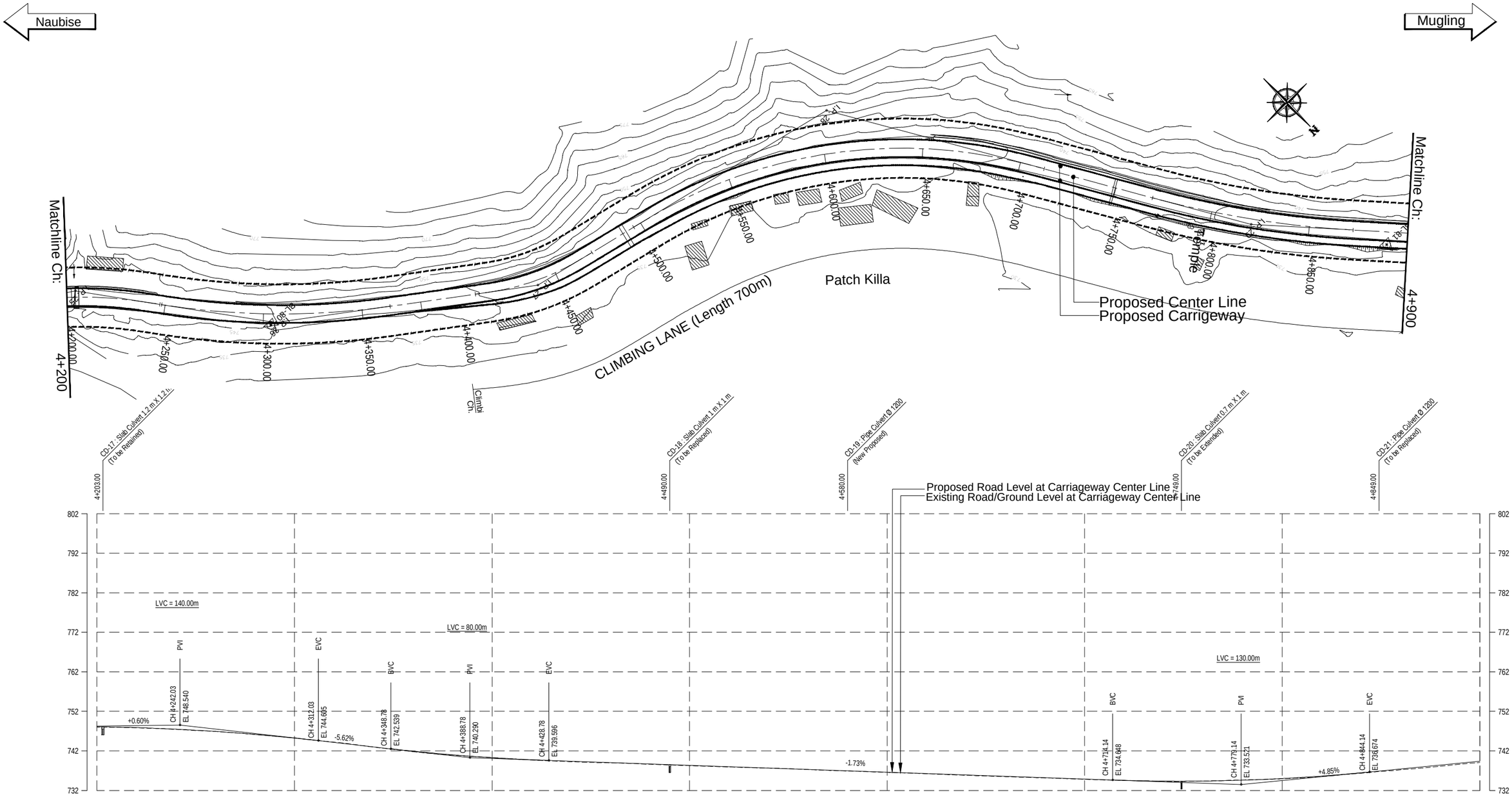
Designed By	SB	
Checked By	PMS	
Approved By	BNS	

DRAWING NAME:
NAUBISE - MUGLING ROAD
PLAN AND PROFILE
CHAINAGE 3+500.00 TO 4+200.00

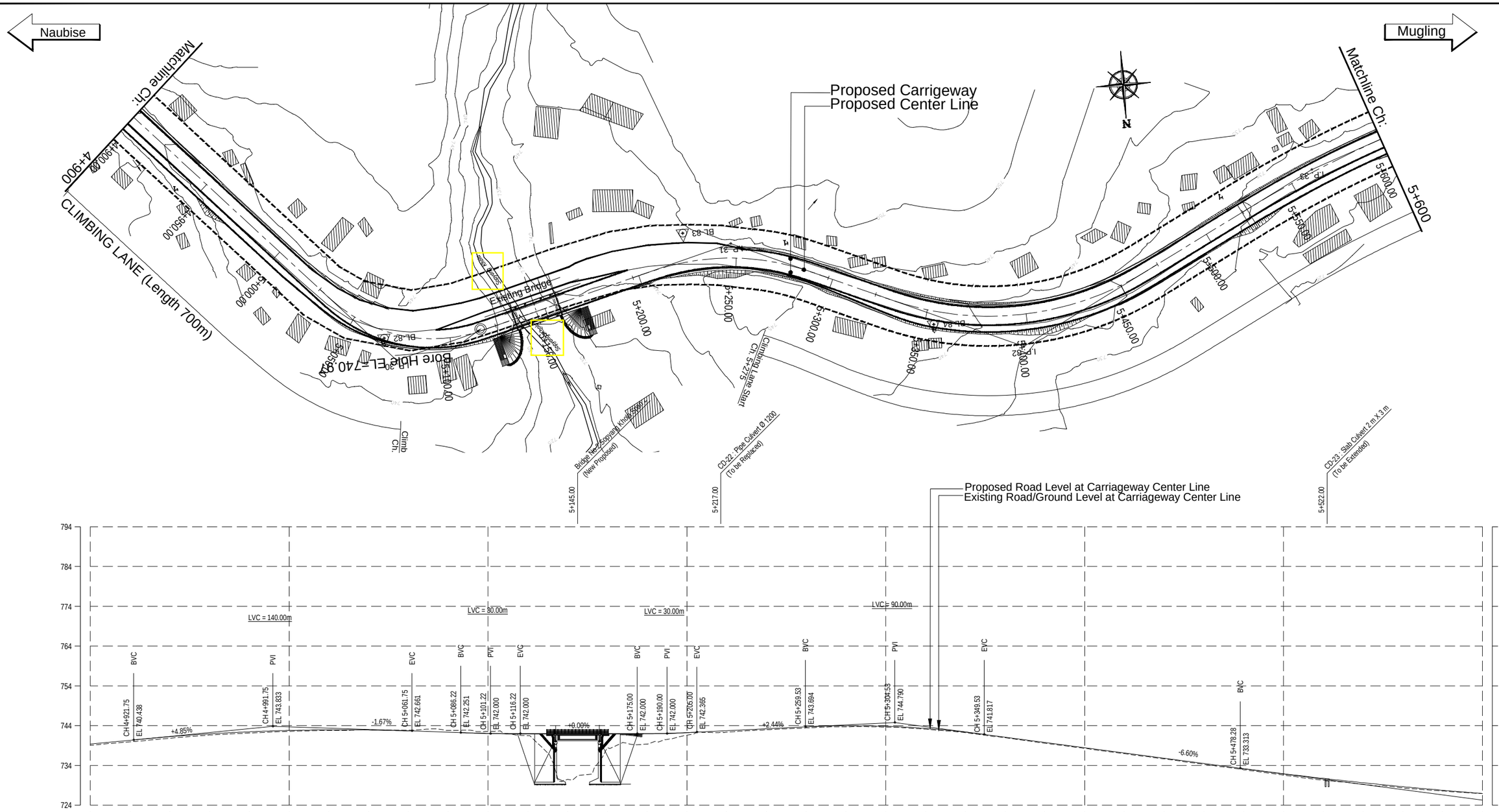
Scale: 0 10 20 30 40 Horizontal; 0 5 10 15 20 Vertical

Date: August 2019

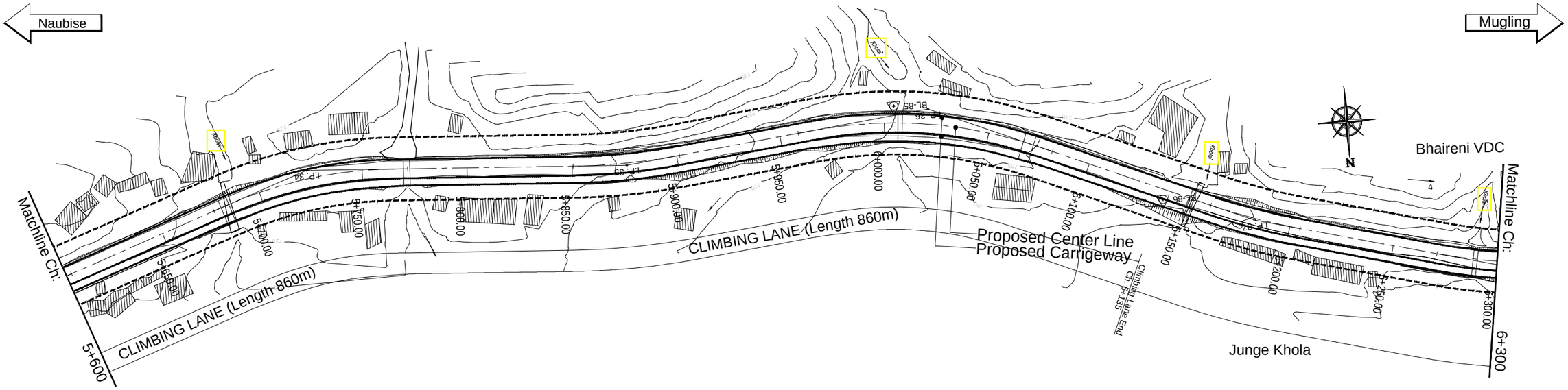
Drawing No.: NMR-PP-006

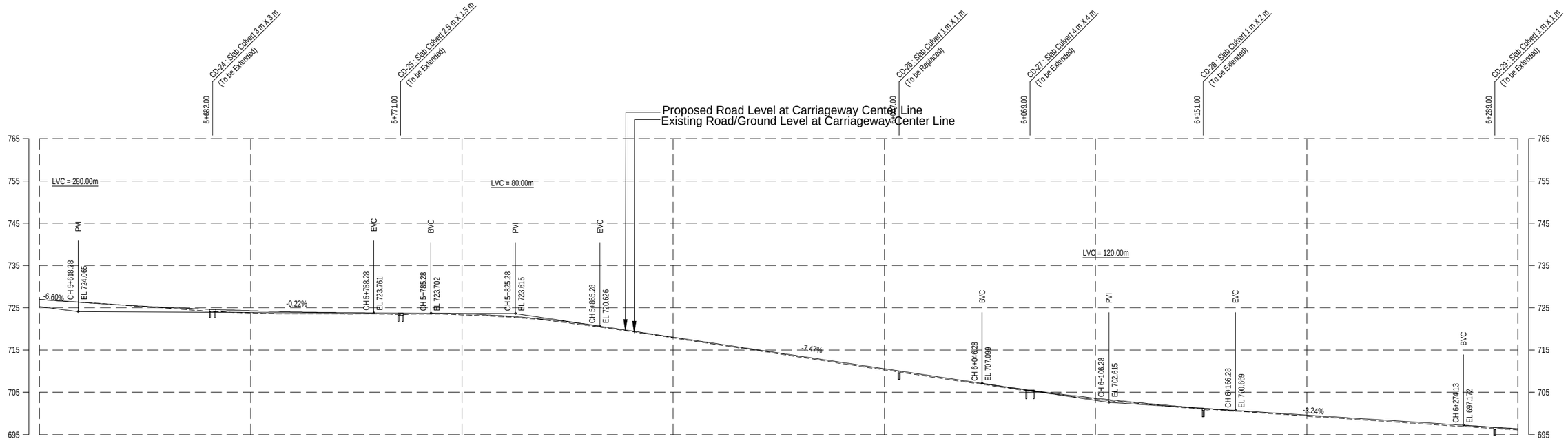

Naubise
Mugling
Matchline Ch: 4+200
Matchline Ch: 4+900
CLIMBING LANE (Length 700m)
Patch Killa
Proposed Center Line
Proposed Carrigeway
CD-17 : Slab Culvert 1.2 m X 1.2 m (To be Retained)
CD-18 : Slab Culvert 1 m X 1 m (To be Replaced)
CD-19 : Pipe Culvert Ø 1200 (New Proposed)
CD-20 : Slab Culvert 0.7 m X 1 m (To be Extended)
CD-21 : Pipe Culvert Ø 1200 (To be Replaced)
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line
LVC = 140.00m
LVC = 80.00m
LVC = 130.00m
+0.60%
-5.62%
-1.73%
+4.85%

| | | |


Naubise
Mugling
Matchline Ch:
4+900
5+600
CLIMBING LANE (Length 700m)
Proposed Carrigeway
Proposed Center Line
N
Existing Bridge
Bore Hole EL 740.30
Climb Ch:
Bridge No.2 Sopyani Khola (New Proposed)
CD-22 : Pipe Culvert Ø 1200 (To be Replaced)
Climbing Lane Start Ch: 5+275
CD-23 : Slab Culvert 2 m X 3 m (To be Extended)
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line
LVC = 140.00m
LVC = 80.00m
LVC = 30.00m
LVC = 90.00m
+4.85%
-1.67%
+0.00%
+2.44%
-6.60%

| | | |


Naubise
Mugling
Matchline Ch: 5+600
Matchline Ch: 6+300
CLIMBING LANE (Length 860m)
CLIMBING LANE (Length 860m)
Proposed Center Line
Proposed Carrigeway
Climbing Lane End Ch: 6+135
Bhaireni VDC
Junge Khola
N


CD-24 : Slab Culvert 3 m X 3 m (To be Extended)
CD-25 : Slab Culvert 2.5 m X 1.5 m (To be Extended)
CD-26 : Slab Culvert 1 m X 1 m (To be Replaced)
CD-27 : Slab Culvert 4 m X 4 m (To be Extended)
CD-28 : Slab Culvert 1 m X 2 m (To be Extended)
CD-29 : Slab Culvert 1 m X 1 m (To be Extended)
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line
LVC = 280.00m
LVC = 80.00m
LVC = 120.00m
-6.60%
-0.22%
-7.47%
-3.24%
PVI
EVC
BVC
CH 5+618.28 EL 724.065
CH 5+758.28 EL 723.761
CH 5+785.28 EL 723.702
CH 5+825.28 EL 723.615
CH 5+865.28 EL 720.626
CH 6+046.28 EL 707.099
CH 6+106.28 EL 702.615
CH 6+166.28 EL 700.669
CH 6+274.13 EL 697.172

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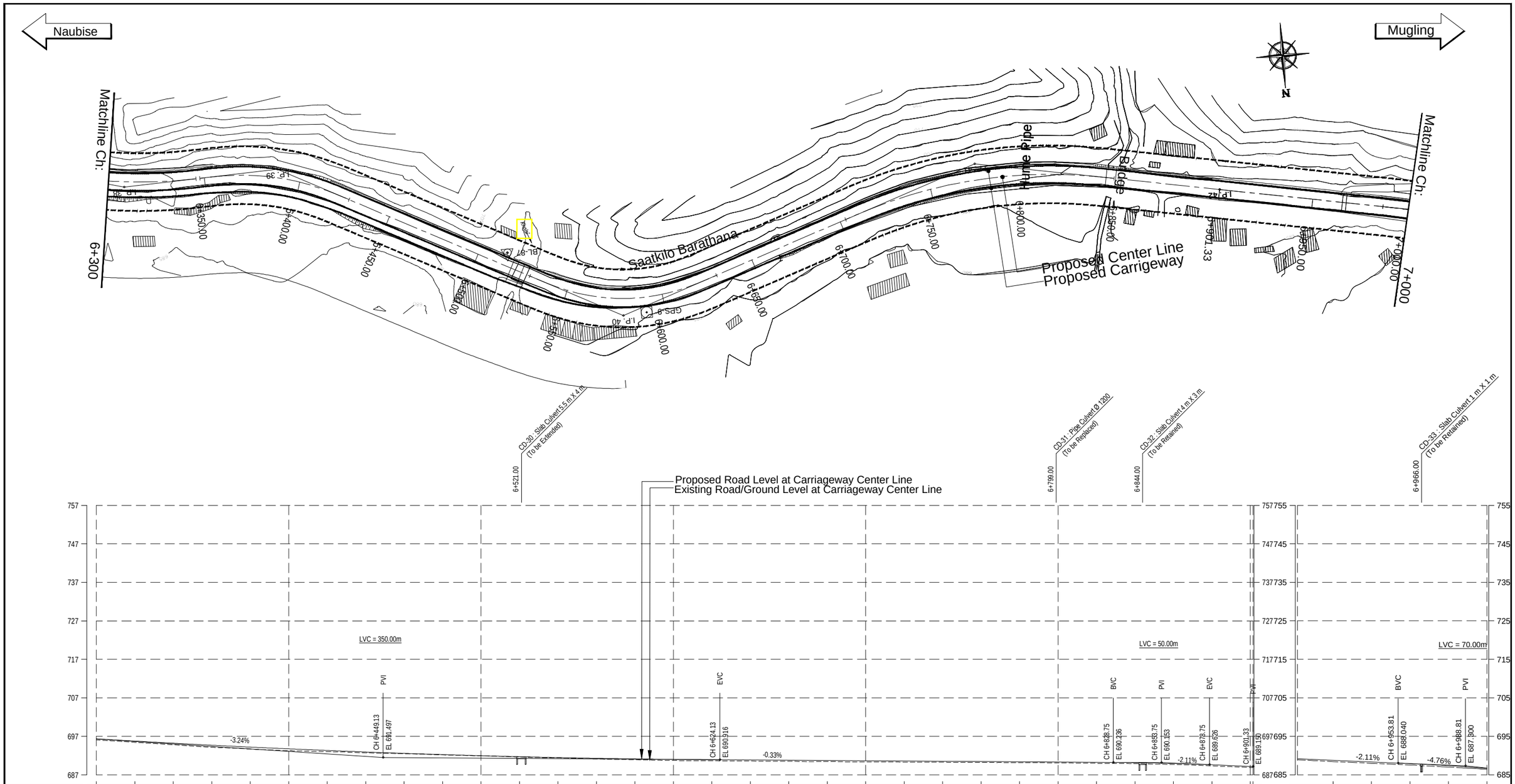


EMPLOYER	PROJECT	DESIGN CONSULTANT
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement of 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

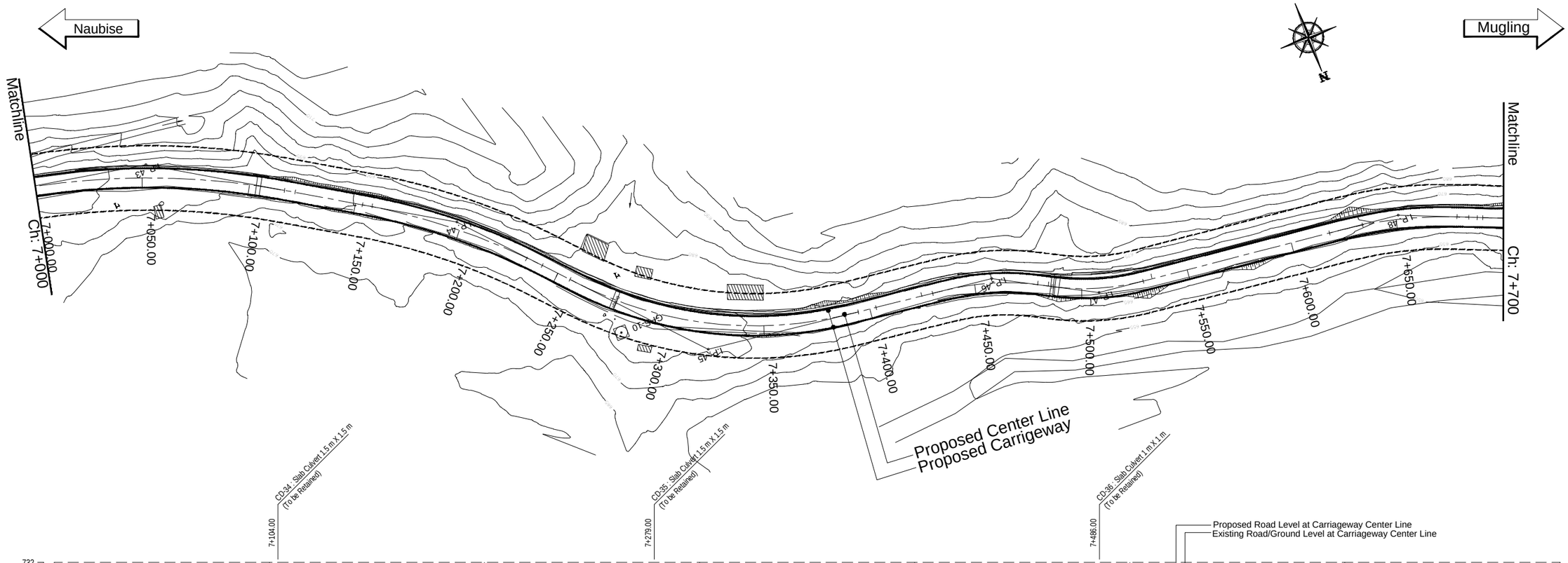
Designed By	SB	
Checked By	PMS	
Approved By	BNS	

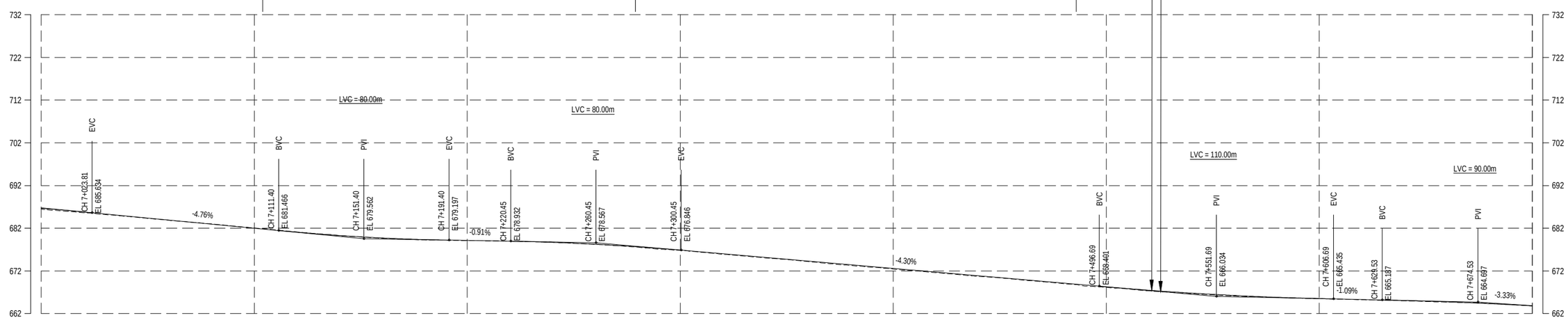
DRAWING NAME:
NAUBISE - MUGLING ROAD
PLAN AND PROFILE
CHAINAGE 6+300.00 TO 7+000.00

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

Date: August 2019

Drawing No.: NMR-PP-010


Naubise
Mugling
Matchline
Ch: 7+000
Matchline
Ch: 7+700
7+000.00
7+050.00
7+100.00
7+150.00
7+200.00
7+250.00
7+300.00
7+350.00
7+400.00
7+450.00
7+500.00
7+550.00
7+600.00
7+650.00
Proposed Center Line
Proposed Carrigeway
CD-34 : Slab Culvert 1.5 m X 1.5 m (To be Retained)
CD-35 : Slab Culvert 1.5 m X 1.5 m (To be Retained)
CD-36 : Slab Culvert 1 m X 1 m (To be Retained)
7+104.00
7+279.00
7+486.00
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line


732
722
712
702
692
682
672
662
LVC = 80.00m
LVC = 80.00m
LVC = 110.00m
LVC = 90.00m
EVC
BVC
PVI
EVC
BVC
PVI
EVC
BVC
PVI
EVC
BVC
PVI
CH 7+023.81
EL 685.634
CH 7+111.40
EL 681.466
CH 7+151.40
EL 679.562
CH 7+191.40
EL 679.197
CH 7+220.45
EL 678.932
CH 7+260.45
EL 678.567
CH 7+300.45
EL 676.846
CH 7+496.69
EL 668.401
CH 7+551.69
EL 666.034
CH 7+606.69
EL 666.435
CH 7+629.53
EL 665.187
CH 7+674.53
EL 664.697
-4.76%
-0.91%
-4.30%
-1.09%
-3.33%

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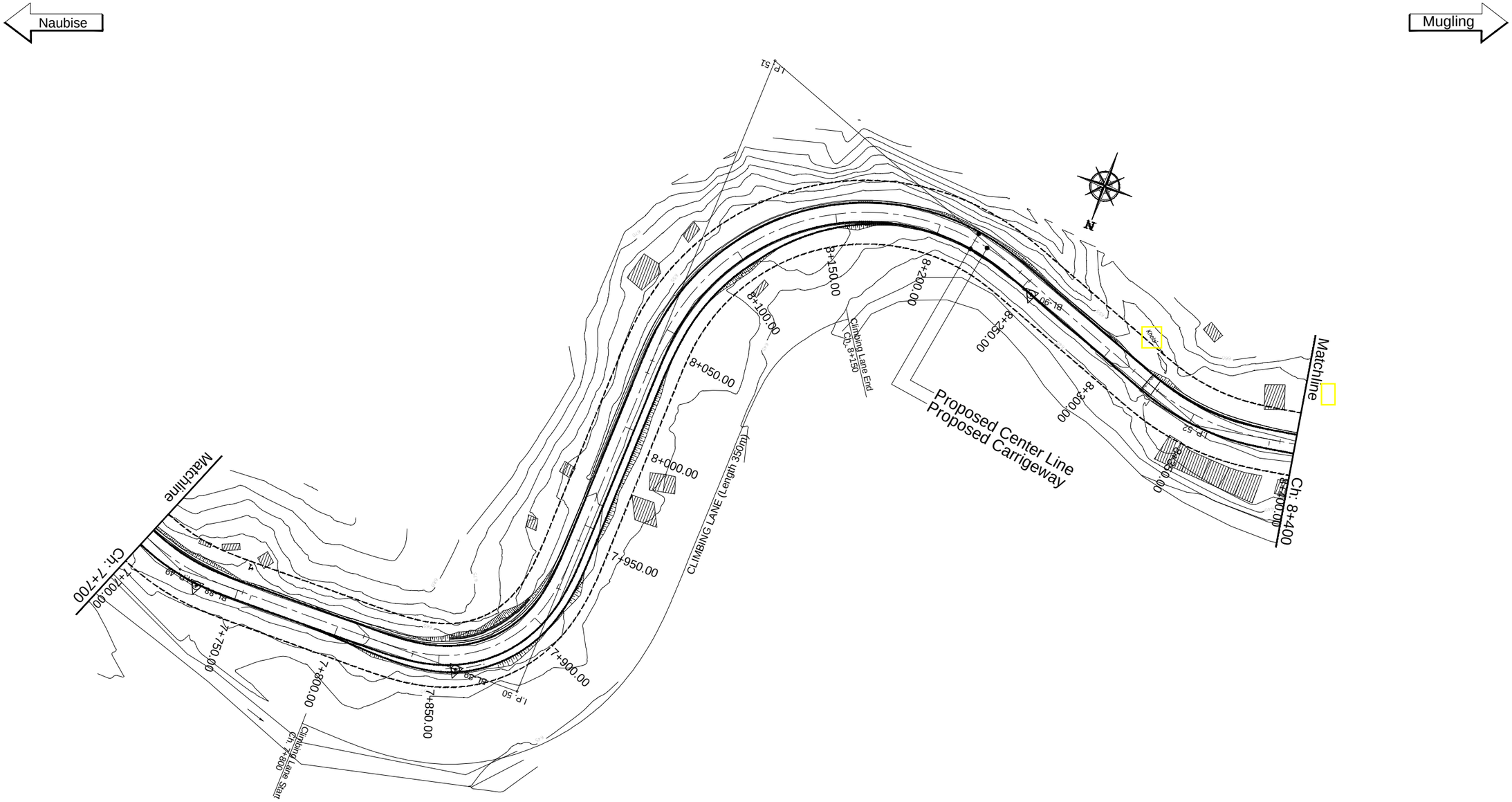

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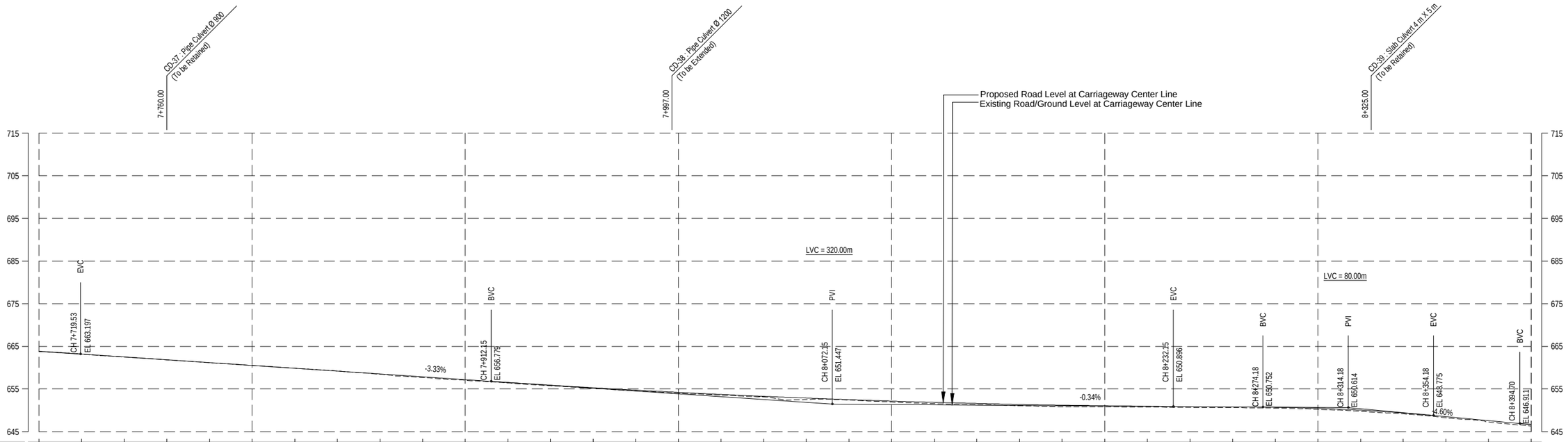
Scale: 0 10 20 30 40 Horizontal; 0 5 10 15 20 Vertical

Date: August 2019

Drawing No.: NMR-PP-012


Naubise
Mugling
CD-37 : Pipe Culvert Ø 900 (To be Retained)
7+760.00
CD-38 : Pipe Culvert Ø 1200 (To be Extended)
7+997.00
CD-39 : Slab Culvert 4 m x 5 m (To be Retained)
8+325.00
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line
LVC = 320.00m
LVC = 80.00m
EVC
CH 7+719.53
EL 663.197
BVC
CH 7+912.15
EL 656.779
PVI
CH 8+072.15
EL 651.447
EVC
CH 8+232.15
EL 650.896
BVC
CH 8+274.18
EL 650.752
PVI
CH 8+314.18
EL 650.614
EVC
CH 8+354.18
EL 648.775
BVC
CH 8+394.70
EL 646.911
-3.33%
-0.34%
-4.60%
715
705
695
685
675
665
655
645

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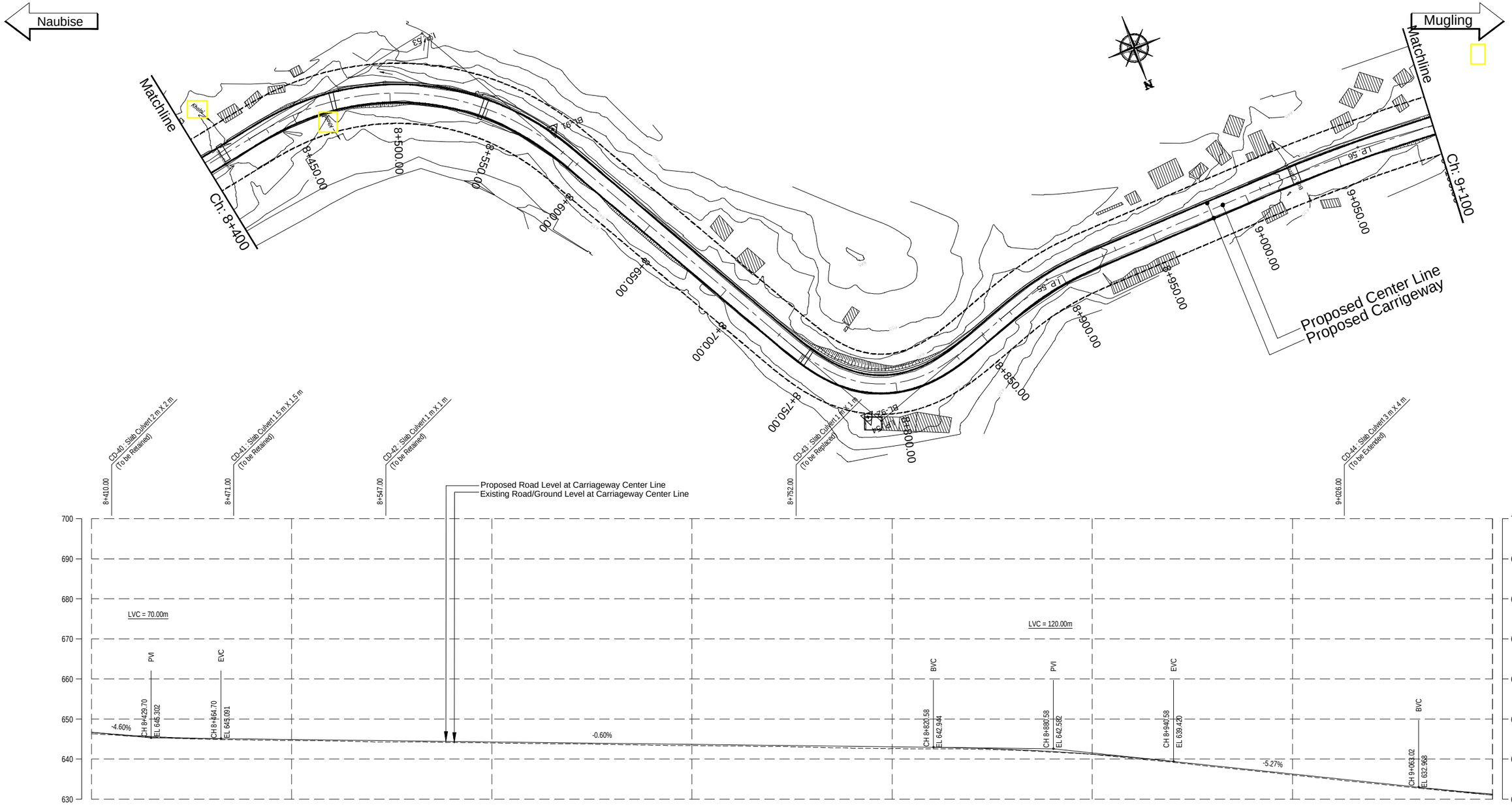

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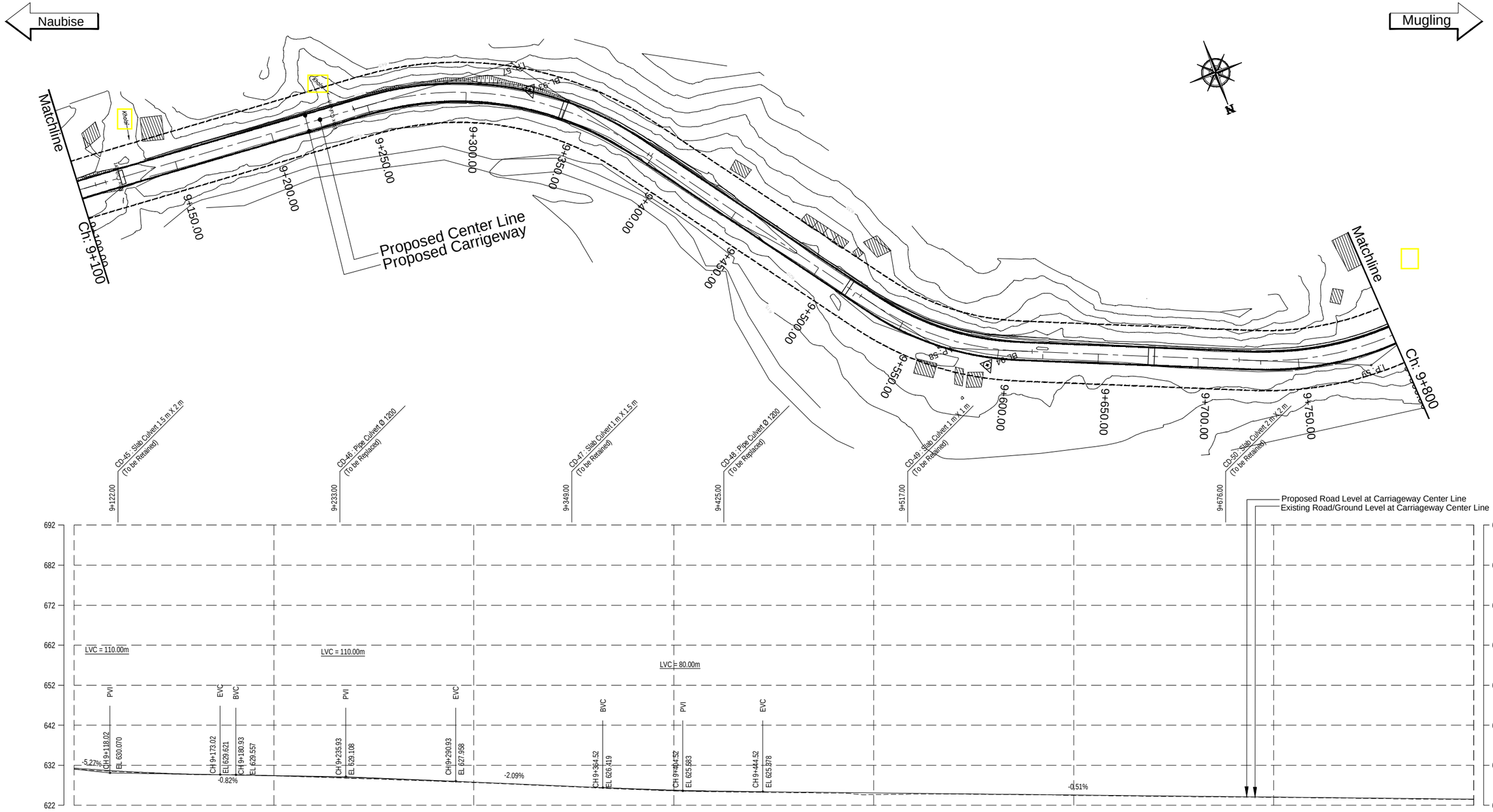

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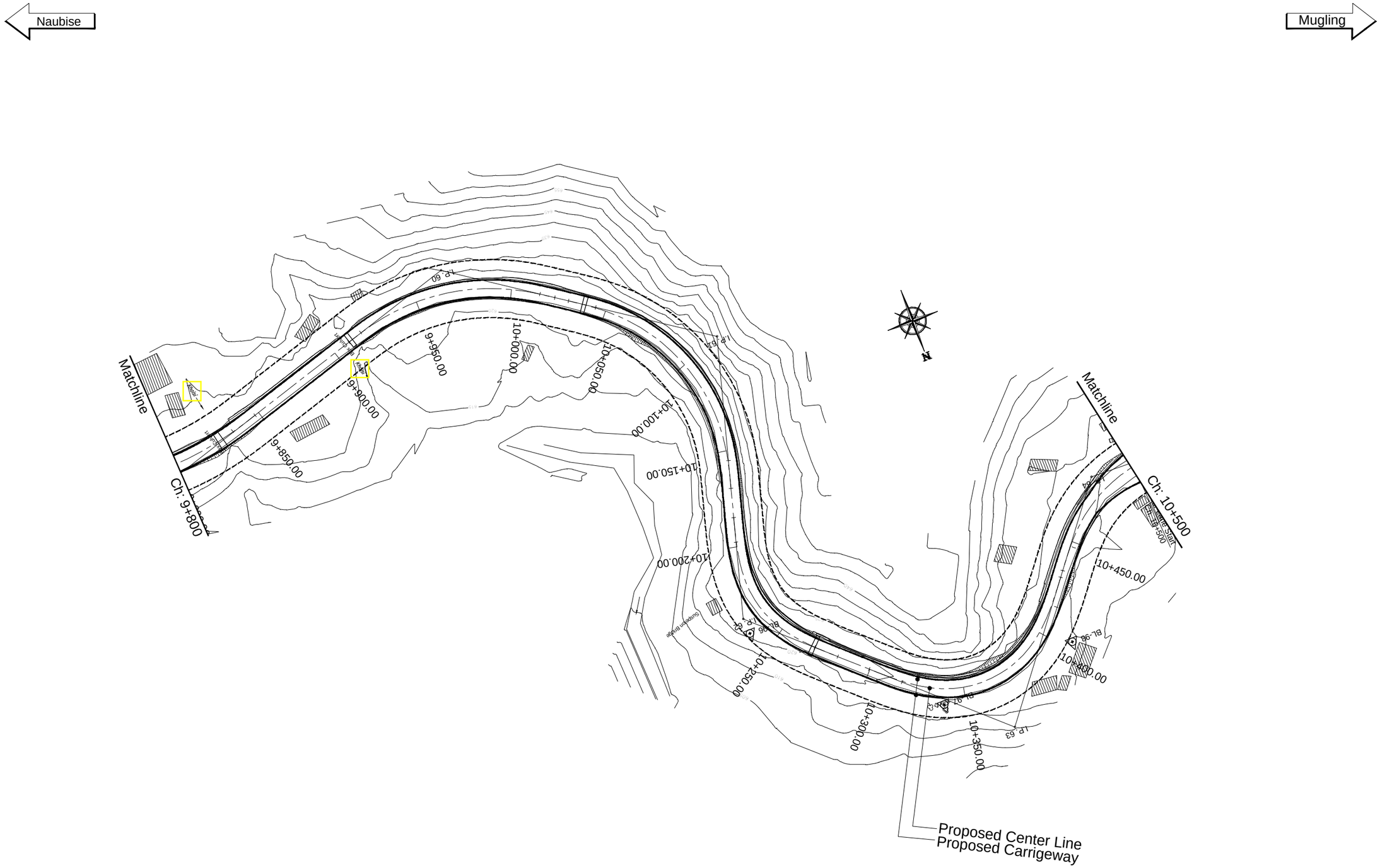
Designed By	SB	
Checked By	PMS	
Approved By	BNS	

DRAWING NAME:
NAUBISE - MUGLING ROAD
PLAN AND PROFILE
CHAINAGE 9+100.00 TO 9+800.00

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

Date: August 2019

Drawing No.: NMR-PP-014



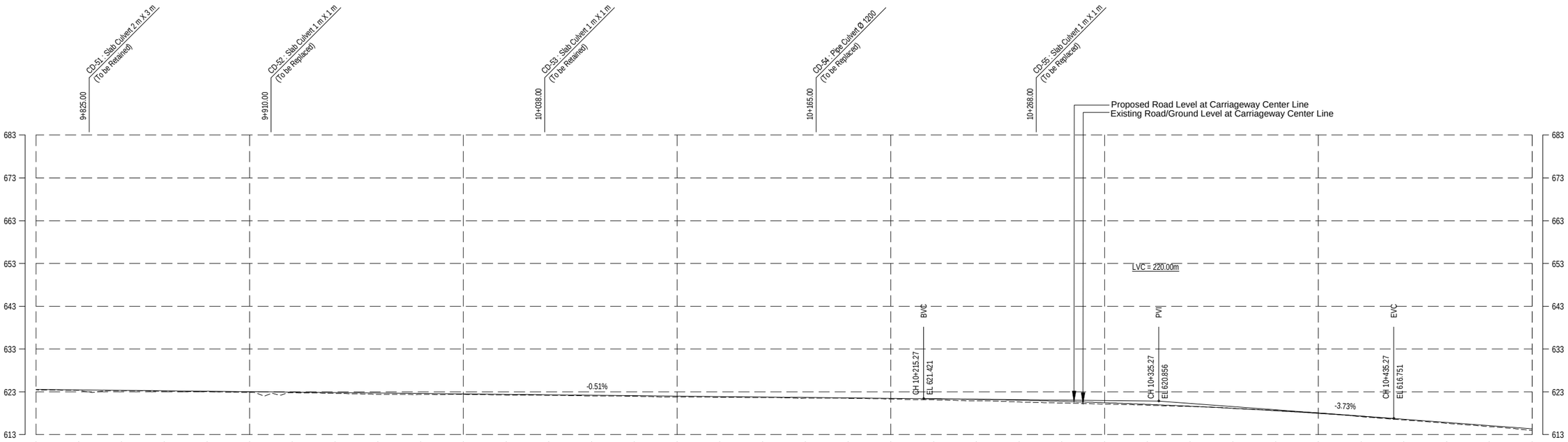
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement 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:	Scale:
				Checked By	PMS	NAUBISE - MUGLING ROAD PLAN	0 10 20 30 40 Horizontal
				Approved By	BNS	CHAINAGE 9+800.00 TO 10+500.00	0 5 10 15 20 Vertical

Date: August 2019

Drawing No.: NMR-PP-015

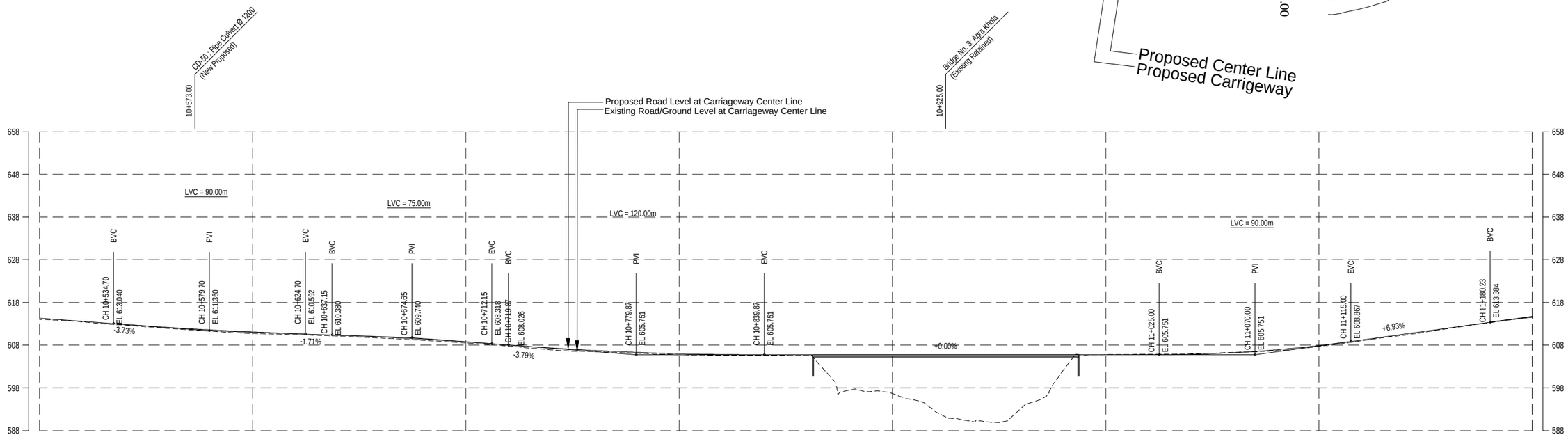
Naubise

Mugling

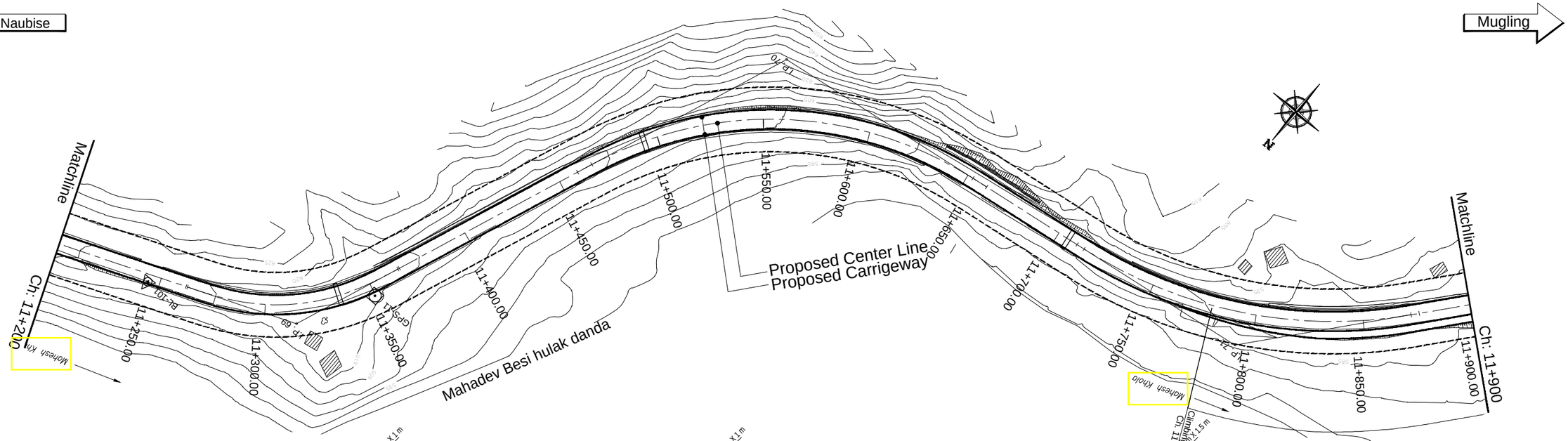


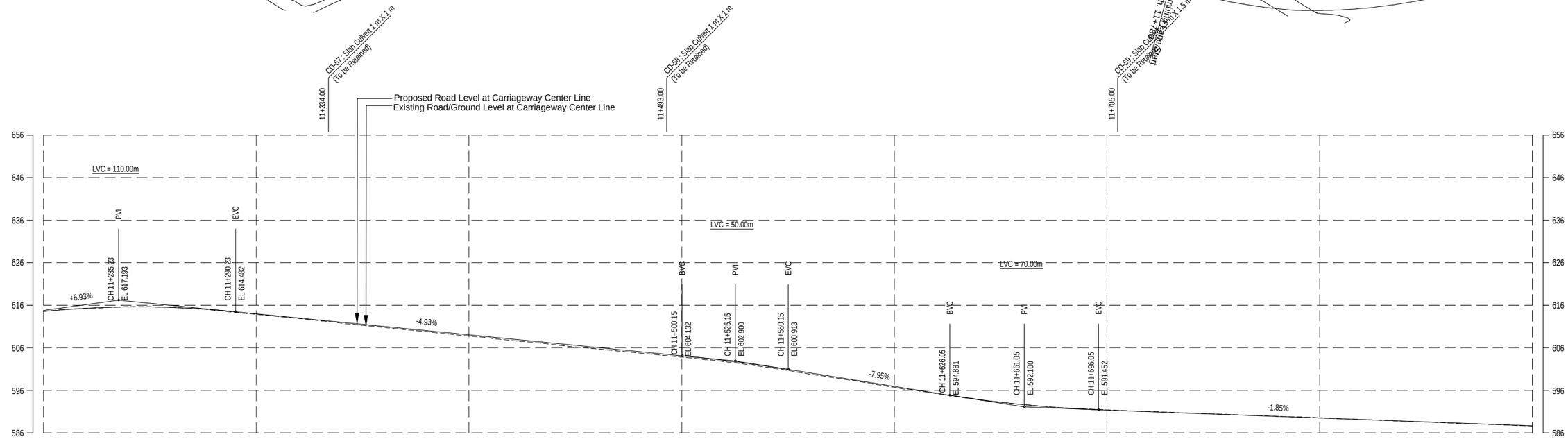
| | | |

Naubise
Mugling
Foot Over Bridge-2
at Mahadevbesi
Matchline
Ch: 10+500
10+550.00
10+600.00
10+650.00
Median
Carriageway/Shoulder
Service Road
Parking Lane
10+700.00
10+750.00
10+800.00
10+850.00
Mahadevbeshi
10+900.00
10+950.00
11+000.00
11+050.00
11+100.00
11+150.00
11+200.00
Ch: 11+200
Matchline
Agra Khola
Proposed Center Line
Proposed Carrigeway
N

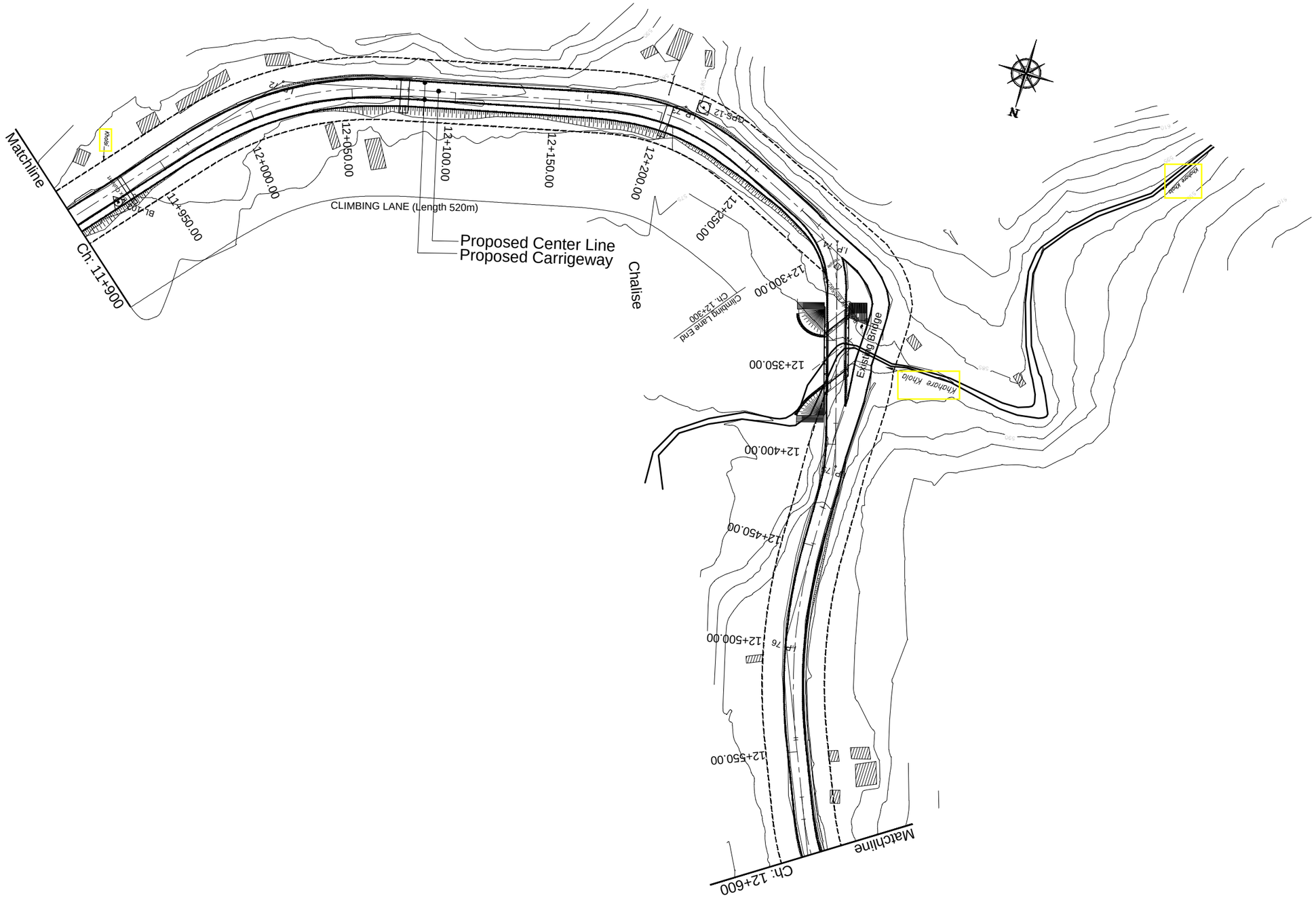

CD-56 : Pipe Culvert Ø 1200
(New Proposed)
10+573.00
Bridge No. 3: Agra Khola
(Existing Retained)
10+925.00
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line
LVC = 90.00m
LVC = 75.00m
LVC = 120.00m
LVC = 90.00m
BVC
PVI
EVC
CH 10+534.70 EL 613.040
CH 10+579.70 EL 611.360
CH 10+624.70 EL 610.592
CH 10+637.15 EL 610.380
CH 10+674.65 EL 609.740
CH 10+712.15 EL 608.318
CH 10+719.87 EL 608.026
CH 10+779.87 EL 605.751
CH 10+839.87 EL 605.751
CH 11+025.00 EL 605.751
CH 11+070.00 EL 605.751
CH 11+115.00 EL 608.867
CH 11+180.23 EL 613.384
-3.73%
-1.71%
-3.79%
+0.00%
+6.93%
658
648
638
628
618
608
598
588

| | | |

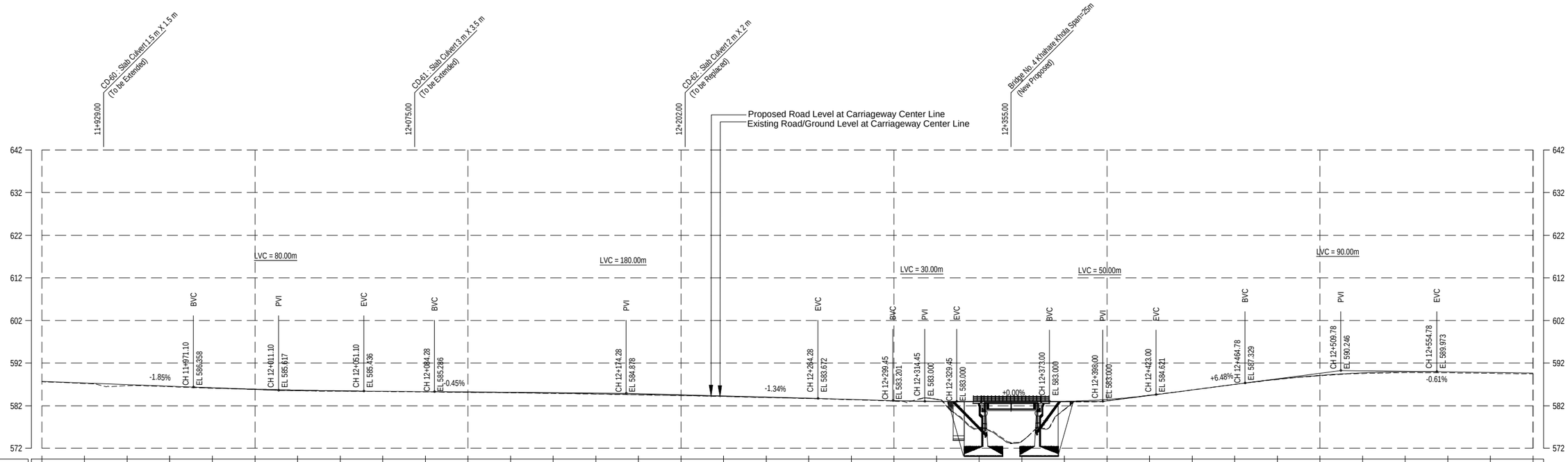

Naubise
Mugling
Matchline
Ch: 11+200
Matchline
Ch: 11+900
Mahadev Besi hulak danda
Proposed Center Line
Proposed Carrigeway
11+250.00
11+300.00
11+350.00
11+400.00
11+450.00
11+500.00
11+550.00
11+600.00
11+650.00
11+700.00
11+750.00
11+800.00
11+850.00
11+900.00
Mohesh Khola


CD-57 - Slab Culvert 1 m X 1 m (To be Retained)
CD-58 - Slab Culvert 1 m X 1 m (To be Retained)
CD-59 - Slab Culvert 1 m X 1.5 m (Existing Culvert To be Retained)
11+334.00
11+493.00
11+705.00
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line
LVC = 110.00m
LVC = 50.00m
LVC = 70.00m
PVI
EVC
BVC
CH 11+235.23
EL 617.193
CH 11+290.23
EL 614.482
CH 11+500.15
EL 604.132
CH 11+525.15
EL 602.900
CH 11+550.15
EL 600.913
CH 11+626.05
EL 594.881
CH 11+661.05
EL 592.100
CH 11+696.05
EL 591.452
+6.93%
-4.93%
-7.95%
-1.85%
656
646
636
626
616
606
596
586

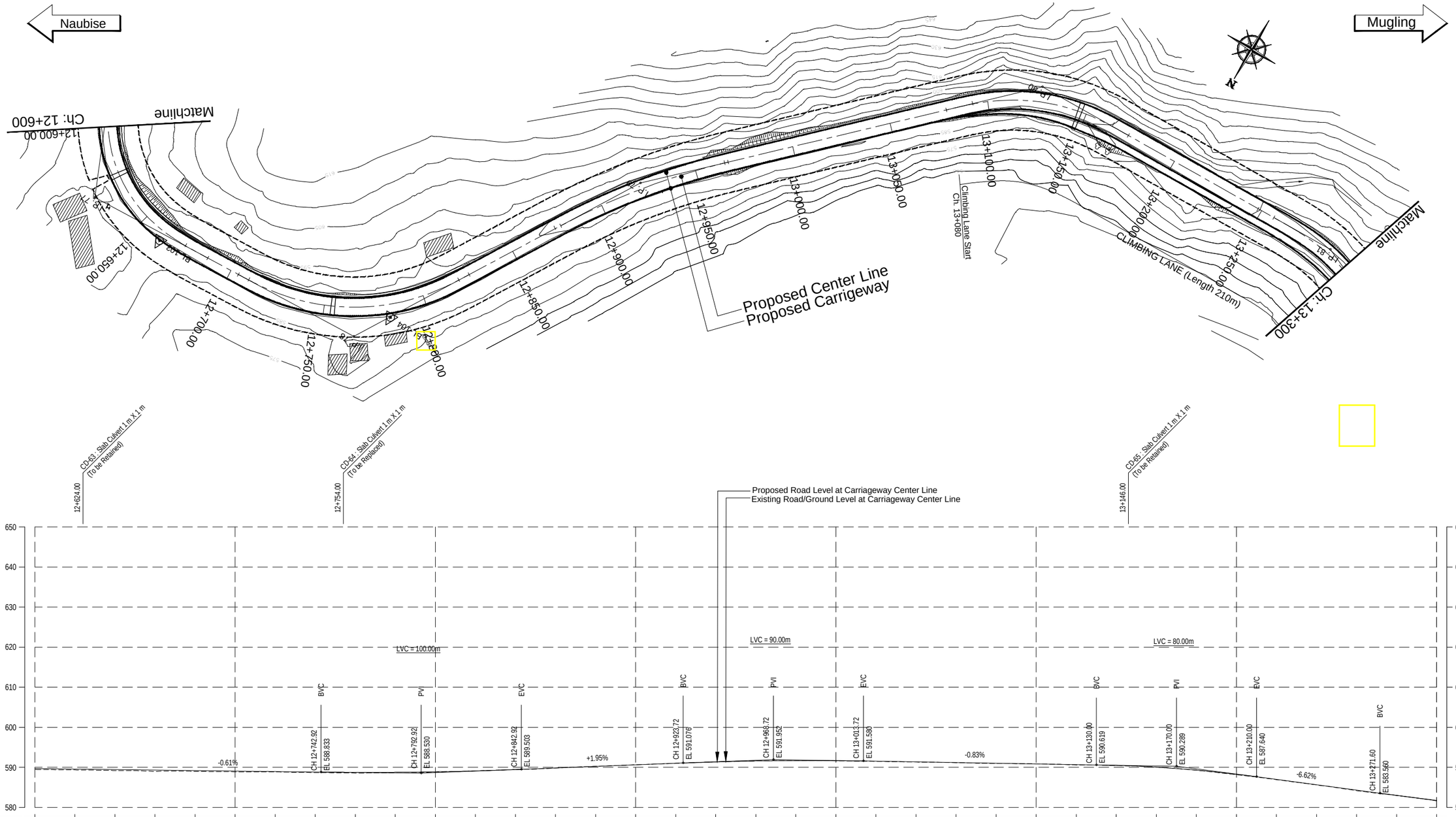
| | | |



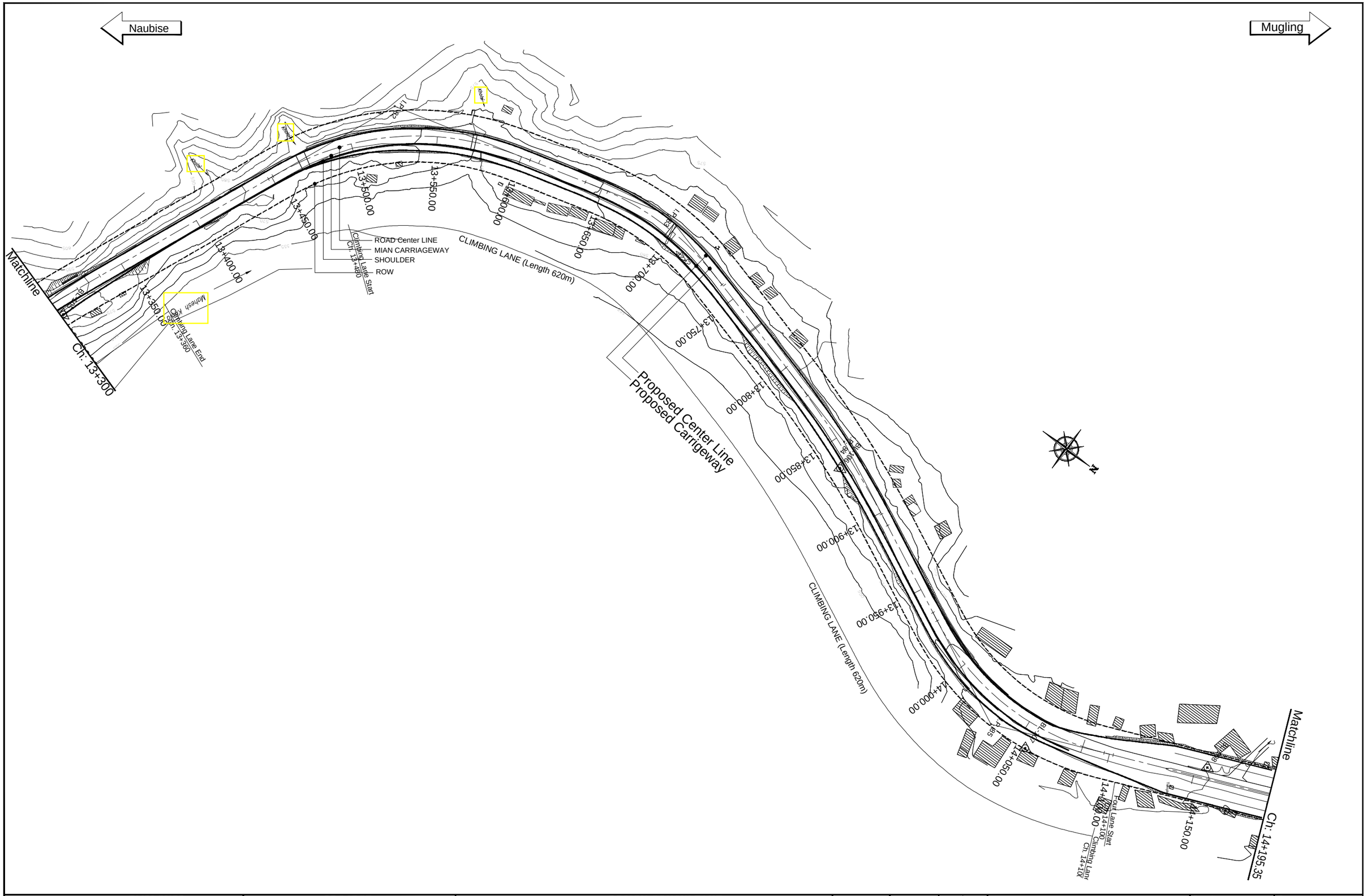
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement 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 CHAINAGE 11+900.0 TO 12+600.0	Scale: 0 10 20 30 40 Horizontal 0 5 10 15 20 Vertical Date: August 2019 Drawing No.: NMR-PP-018



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 PROFILE CHAINAGE 11+900.00 TO 12+600.00	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20 Date: August 2019 Drawing No.: NMR-PP-018(a)


Naubise
Mugling
Matchline
Ch: 12+600
Matchline
Ch: 13+300
Proposed Center Line
Proposed Carrigeway
Climbing Lane Start
Ch. 13+080
CLIMBING LANE (Length 210m)
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line
LVC = 100.00m
LVC = 90.00m
LVC = 80.00m
-0.61%
+1.95%
-0.83%
-6.62%

| | | |



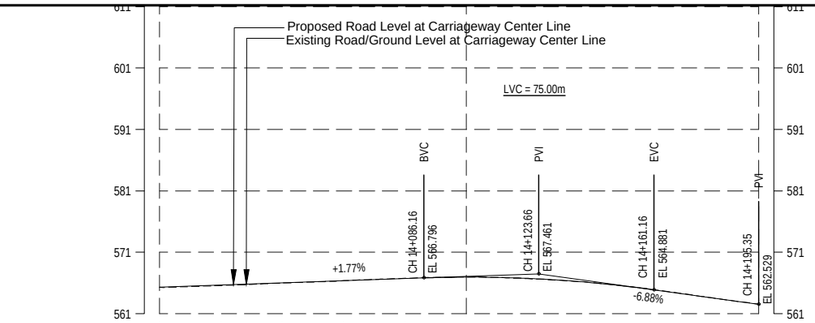
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement 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: NAUBISE - MUGLING ROAD PLAN CHAINAGE 13+300.00 TO 14+195.35	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20

Date:
August 2019

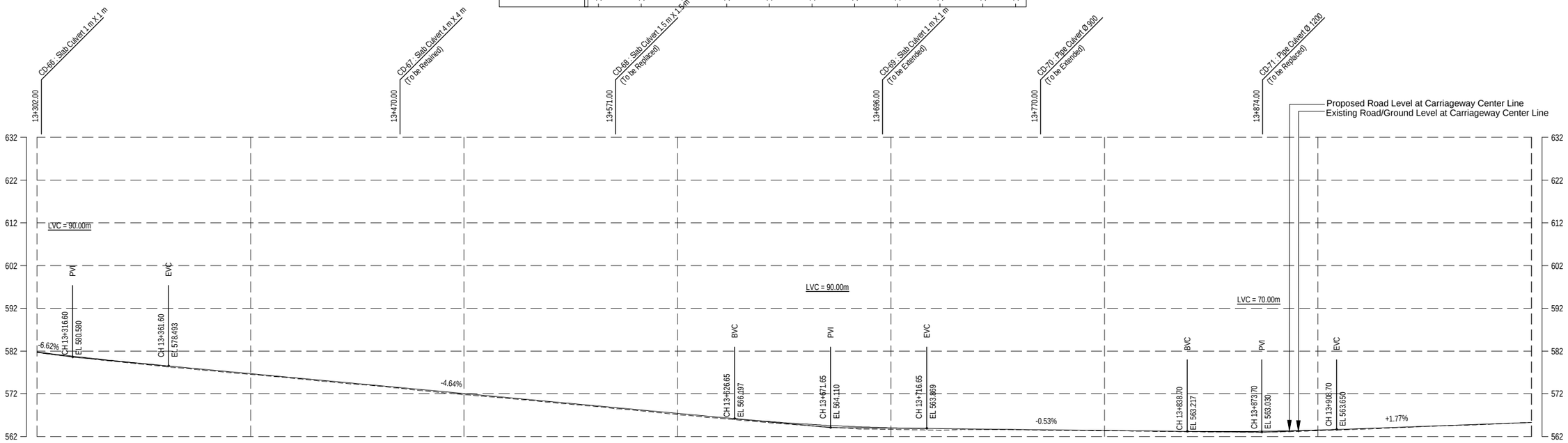
Drawing No.:
NMR-PP-020

Naubise

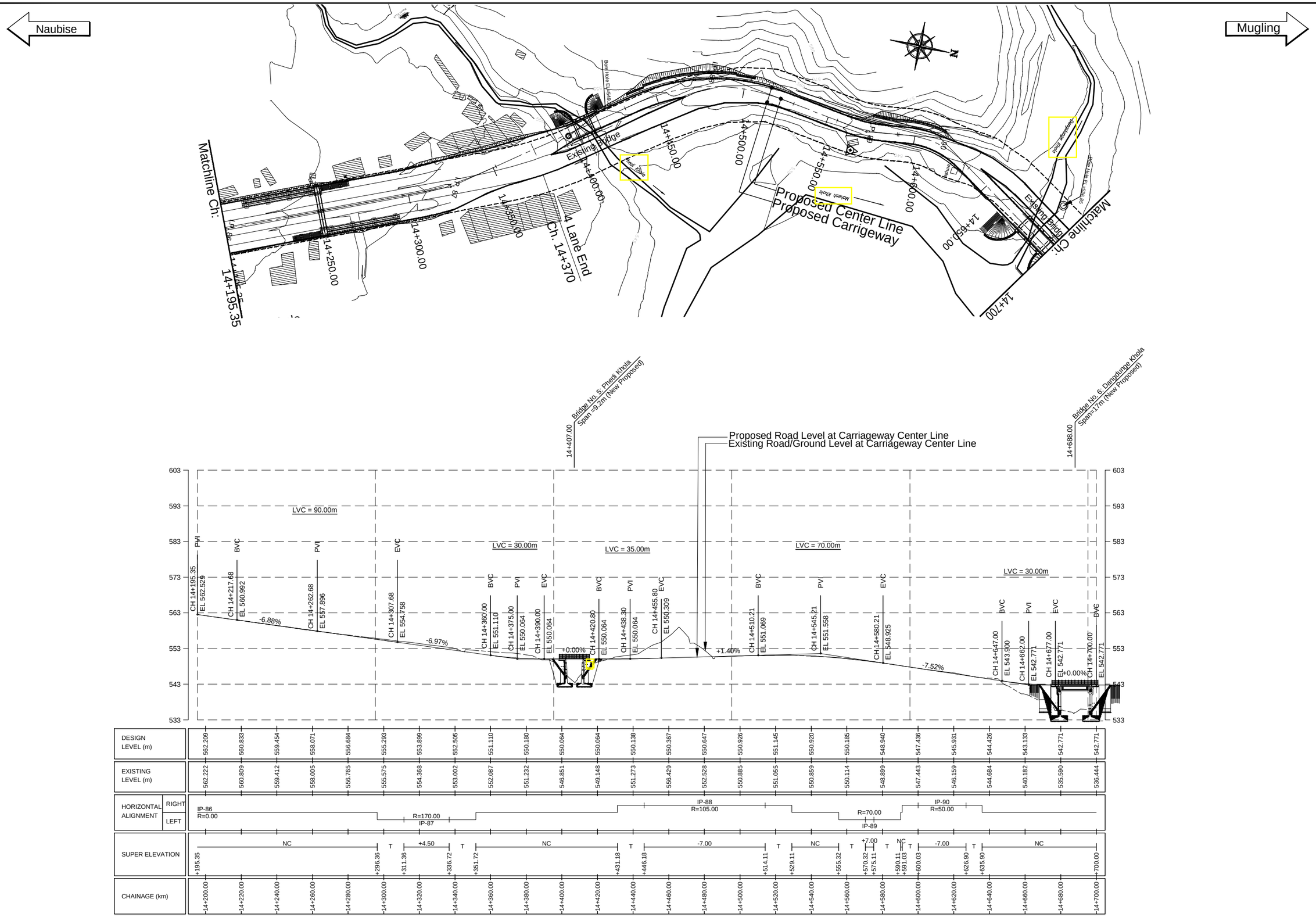
Mugling



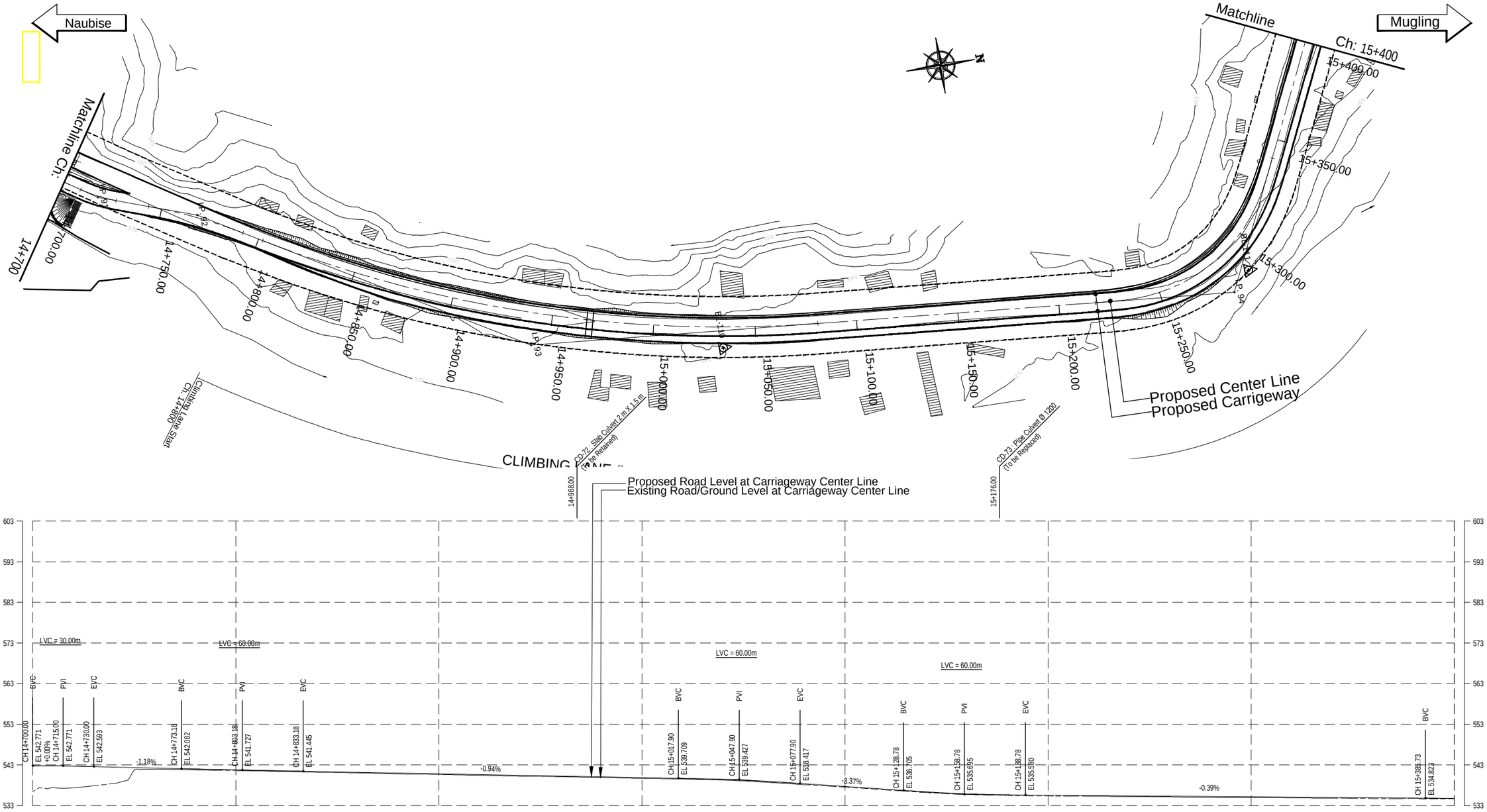
DESIGN LEVEL (m)		565.269	565.623	565.978	566.333	566.687	566.931	566.736	566.079	564.960	563.585	562.529
EXISTING LEVEL (m)		565.270	565.569	565.969	566.351	566.747	566.940	566.693	566.085	564.961	563.571	562.536
HORIZONTAL ALIGNMENT	RIGHT											
	LEFT	R=145.00 IP-85									IP-86 R=0.00	
SUPER ELEVATION		+5.50				T			NC			
		+000.00				+087.19	+102.19				+195.35	
CHAINAGE (km)		14+000.00	14+020.00	14+040.00	14+060.00	14+080.00	14+100.00	14+120.00	14+140.00	14+160.00	14+180.00	14+195.35



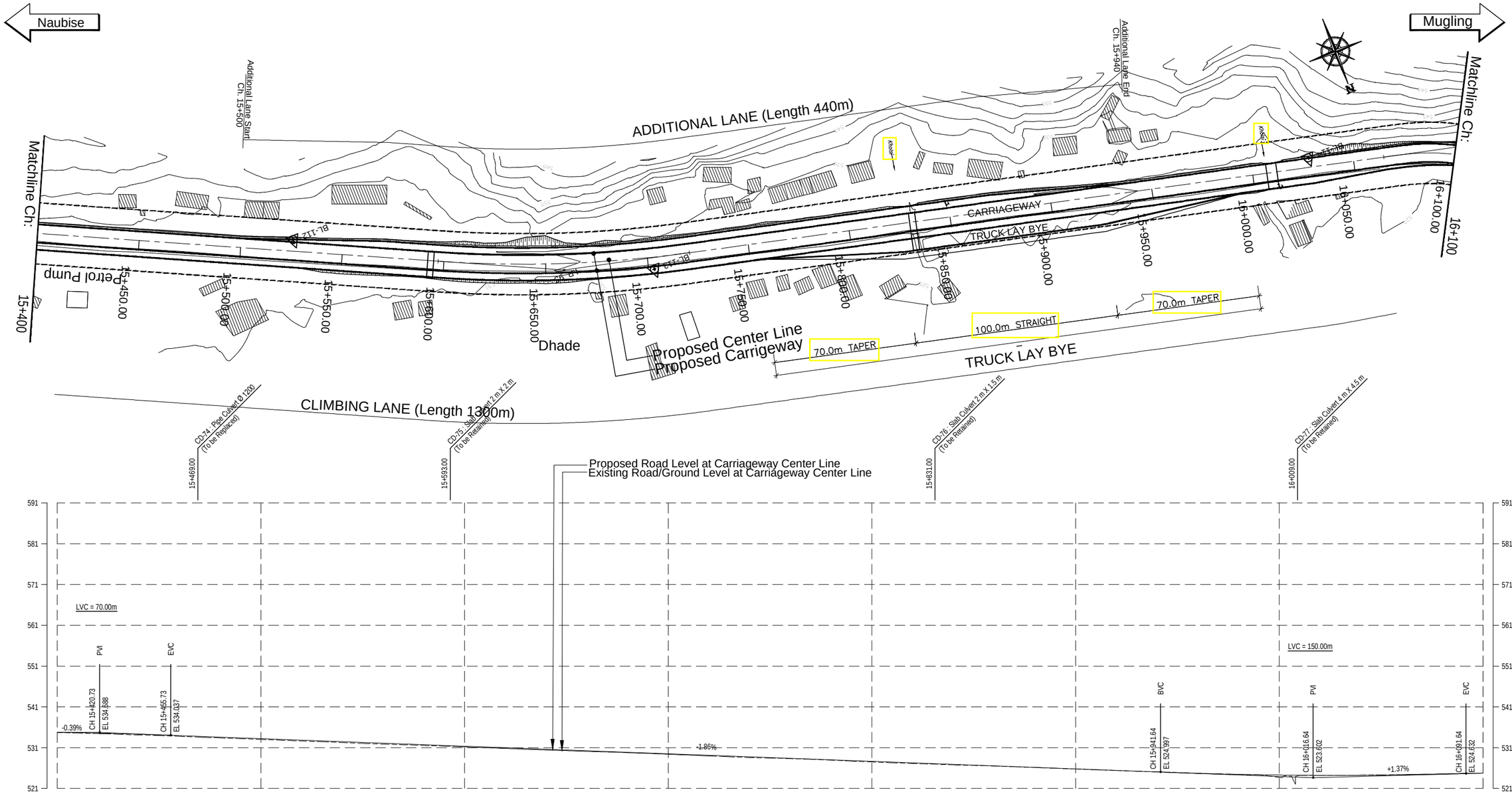
| | | | | | | | | | | | |



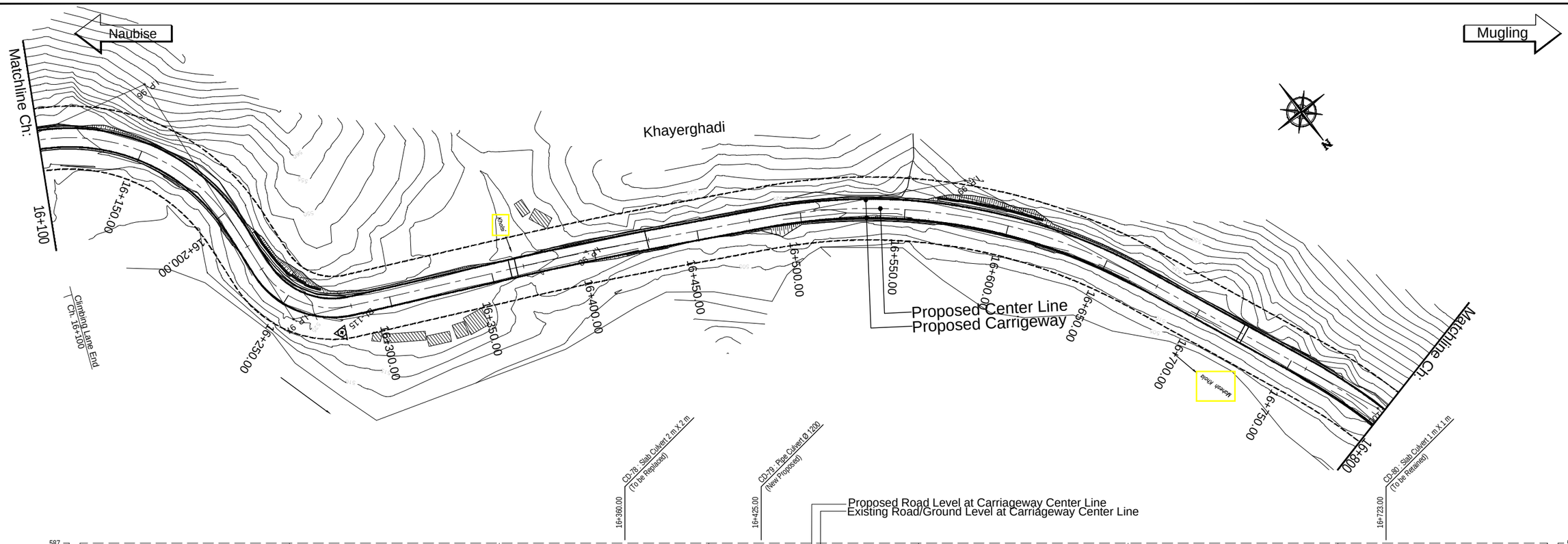
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement 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 14+195.35 TO 14+700.00	Scale: Horizontal Vertical	Date: August 2019 Drawing No.: NMR-PP-021
			Checked By	PMS				
			Approved By	BNS				


Naubise
Mugling
Matchline
Ch: 15+400
Matchline Ch: 14+700.00
Climbing Lane Start Ch. 14+800
CLIMBING LANE
CD-72, Slab Culvert 2 m x 1.5 m (To be Retained)
CD-73, Pipe Culvert Ø 1200 (To be Replaced)
Proposed Center Line
Proposed Carrigeway
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line
LVC = 30.00m
LVC = 60.00m
LVC = 60.00m
LVC = 60.00m
-1.18%
-0.94%
-3.37%
-0.39%

| | | |



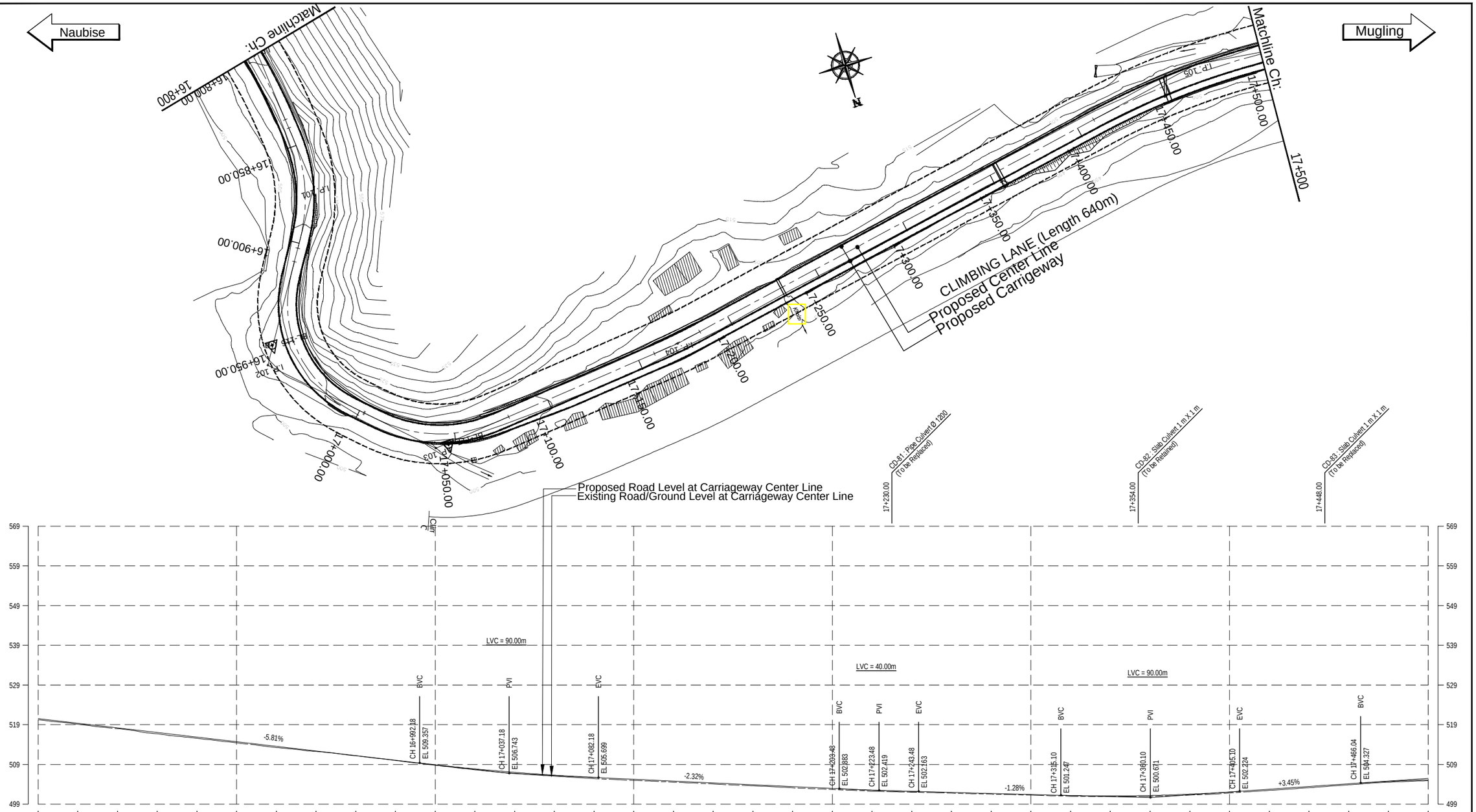
EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement 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 15+400.00 TO 16+100.00	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20 Date: August 2019 Drawing No.: NMR-PP-023



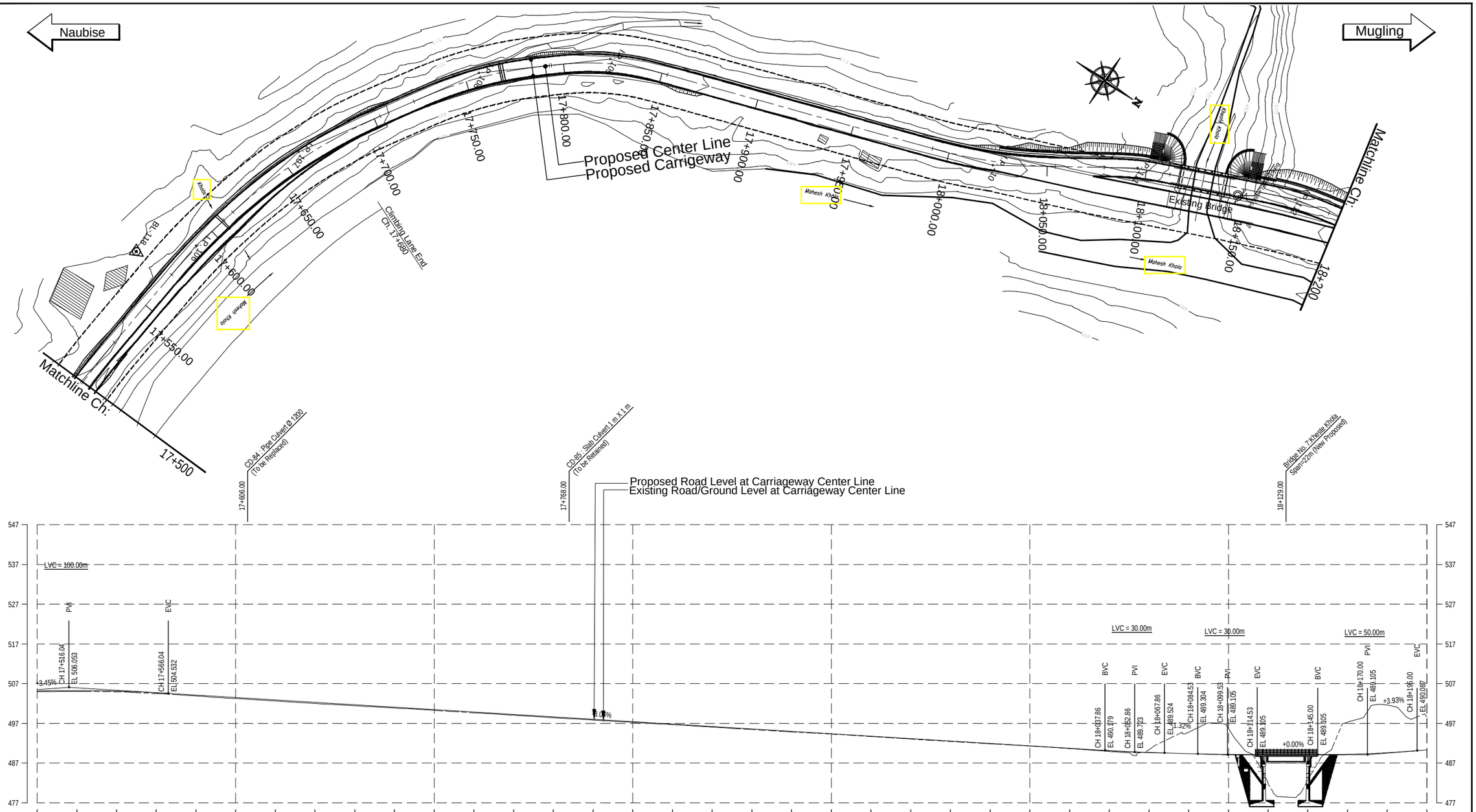
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement 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:	Scale:
				Checked By	PMS	NAUBISE - MUGLING ROAD PLAN AND PROFILE	Horizontal
				Approved By	BNS	CHAINAGE 16+100.00 TO 16+800.00	Vertical

Date: August 2019

Drawing No.: NMR-PP-024



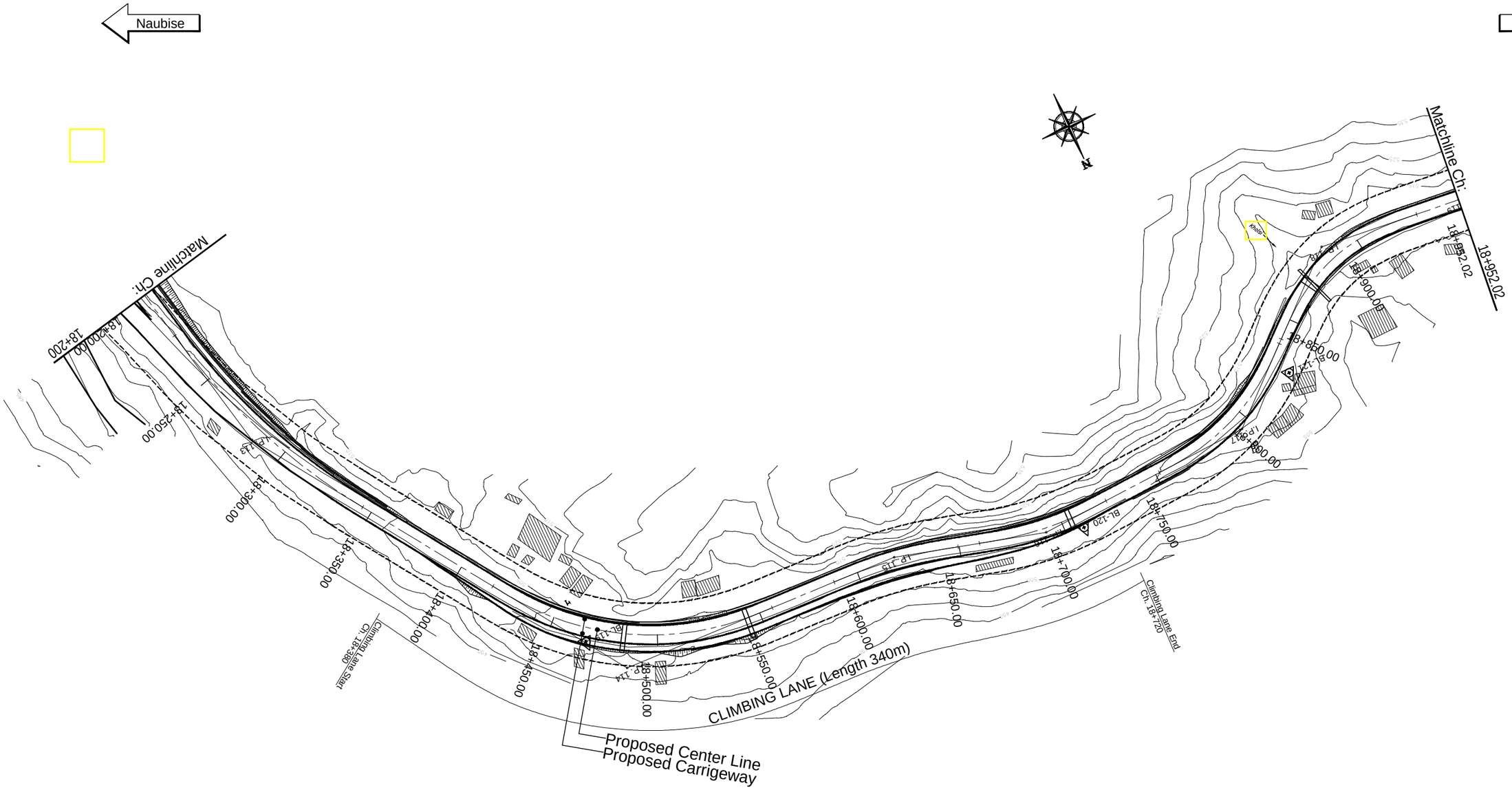
EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement 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 16+800.00 TO 17+500.00	Scale: Horizontal Vertical Date: August 2019 Drawing No.: NMR-PP-025



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:	Scale:
				Checked By	PMS	NAUBISE - MUGLING ROAD PLAN AND PROFILE CHAINAGE 17+500.00 TO 18+200.00	Horizontal: 0 10 20 30 40
				Approved By	BNS		Vertical: 0 5 10 15 20

Date: August 2019

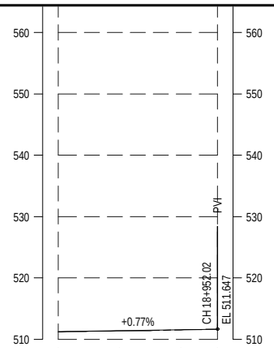
Drawing No.: NMR-PP-026



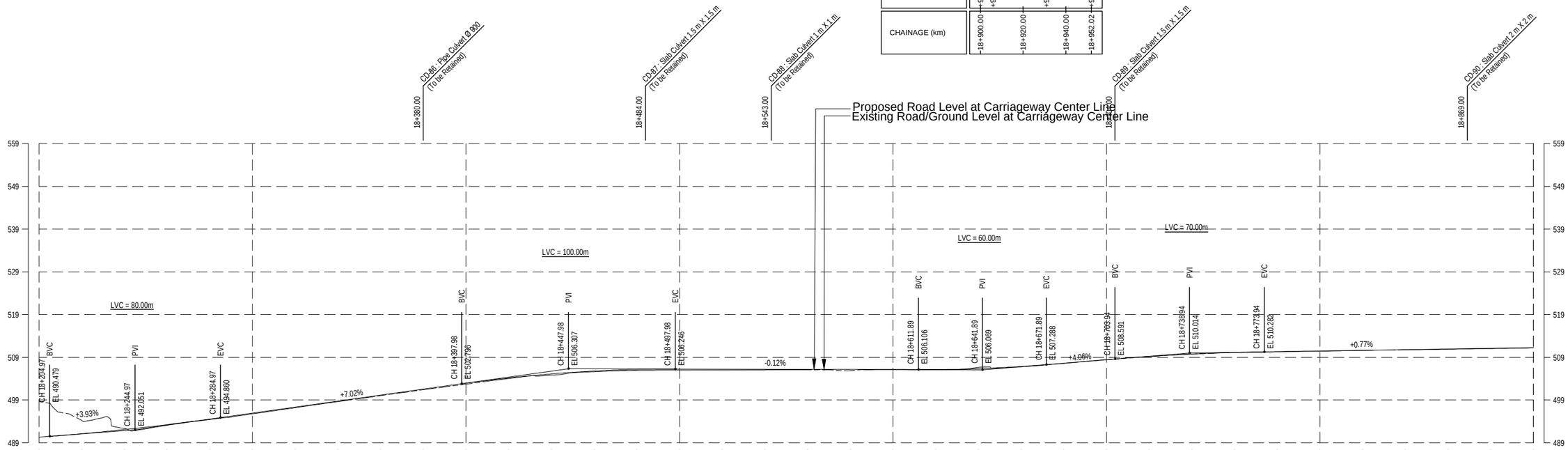
EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement 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 18+200.00 TO 18+952.02	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-027

Naubise

Mugling



DESIGN LEVEL (m)		511.248	511.402	511.555	511.647
EXISTING LEVEL (m)		511.186	511.347	511.515	511.629
HORIZONTAL ALIGNMENT	RIGHT	IP-118 R=80.00		IP-119 R=0.00	
	LEFT				
SUPER ELEVATION		-7.00 T 900.00 +905.95		+930.95 NC 952.02	
CHAINAGE (km)		18+900.00	18+920.00	18+940.00	18+952.02



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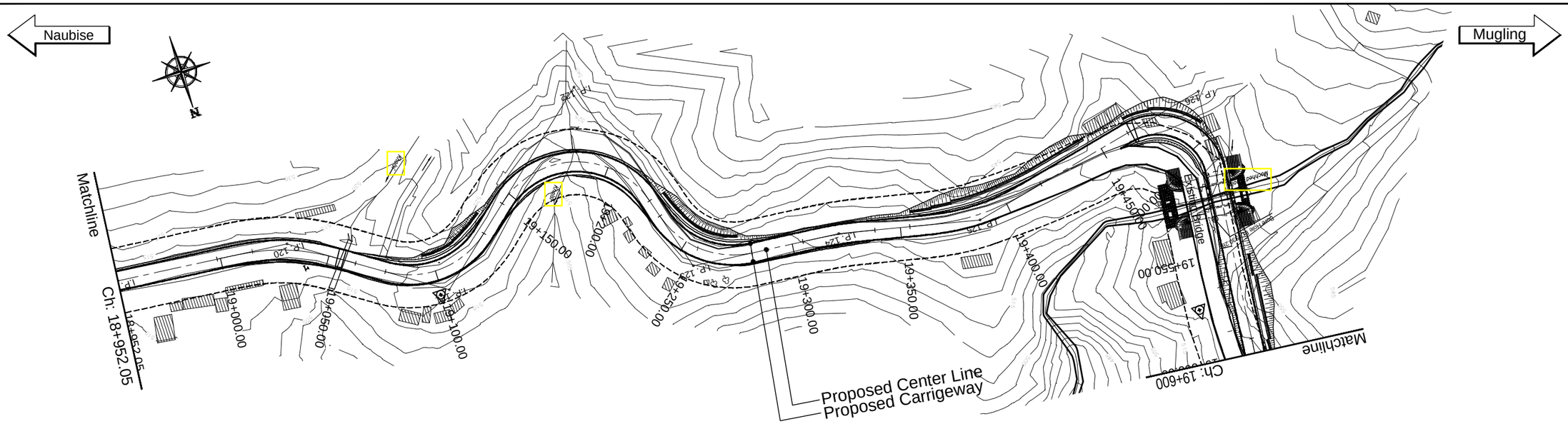
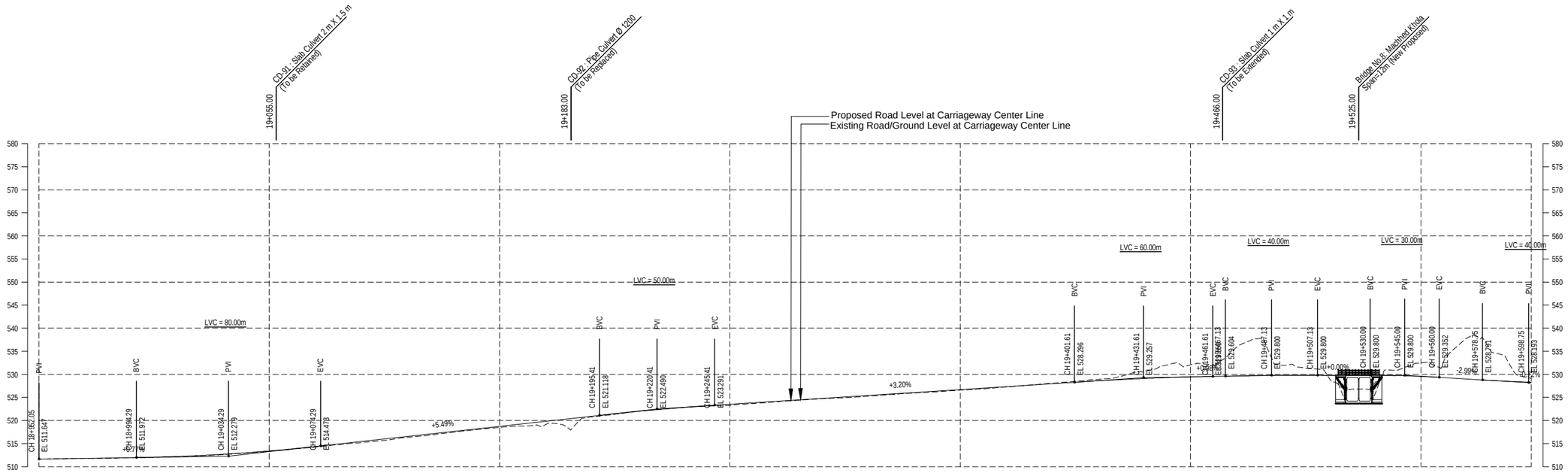
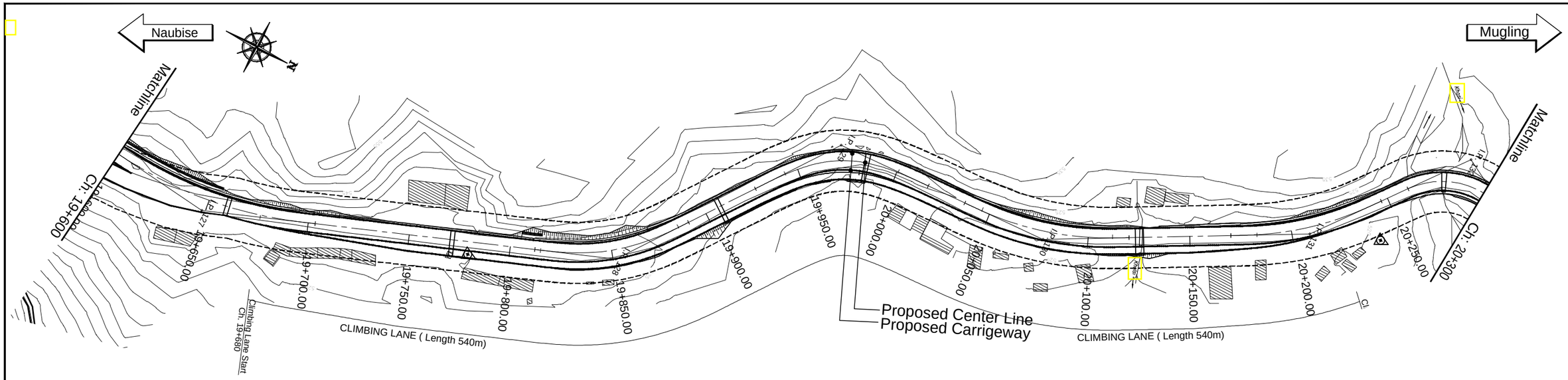
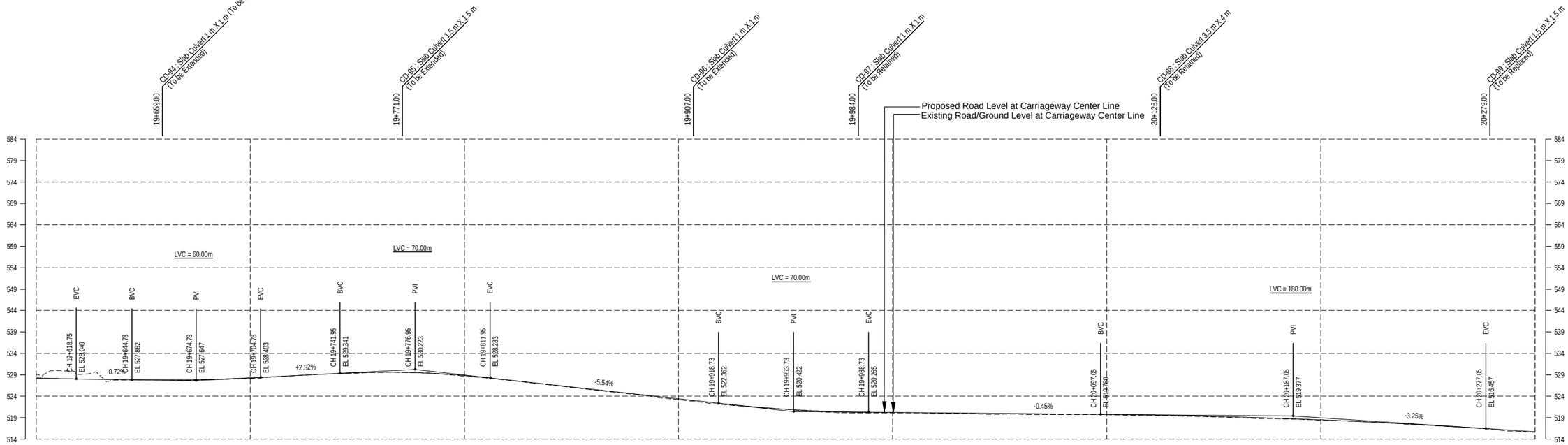

Naubise
Mugling
Matchline
Ch: 18+952.05
Ch: 19+600
Existing Bridge
Proposed Center Line
Proposed Carrigeway

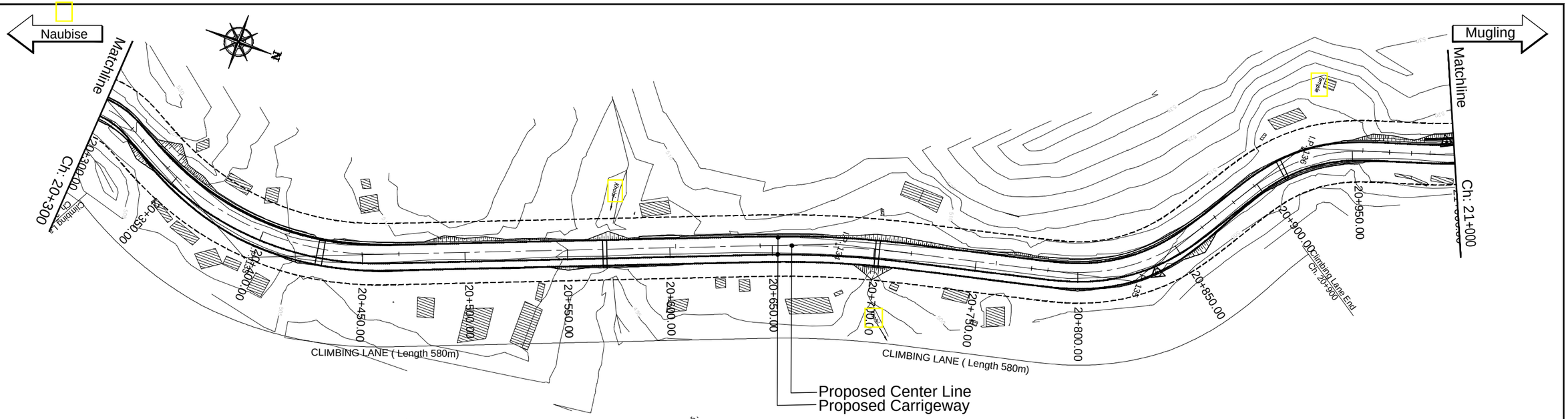

CD-01 - Slab Culvert 2 m X 1.5 m (To Be Retained)
CD-02 - Pipe Culvert Ø 1200 (To Be Replaced)
CD-03 - Slab Culvert 1 m X 1 m (To Be Extended)
Bridge No 6: Machhed Khola Span=12m (New Proposed)
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line
LVC = 80.00m
LVC = 50.00m
LVC = 60.00m
LVC = 40.00m
LVC = 30.00m
LVC = 40.00m
+5.49%
+3.20%
+0.00%
-2.99%

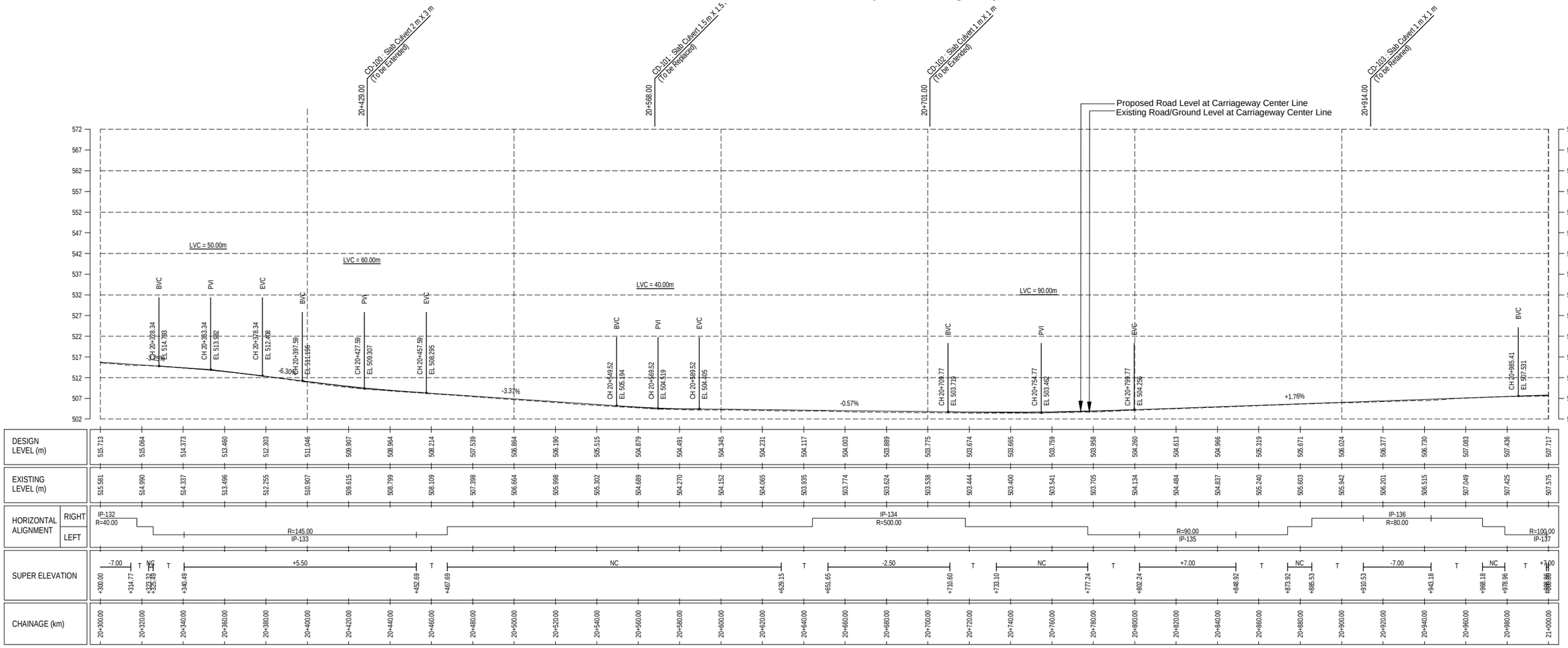
| | | |


Naubise
Mugling
Matchline
Ch: 19+600
Ch: 20+300
Climbing Lane Start
Ch. 19+680
CLIMBING LANE (Length 540m)
Proposed Center Line
Proposed Carrigeway
19+550.00
19+700.00
19+750.00
19+800.00
19+850.00
19+900.00
19+950.00
20+000.00
20+050.00
20+100.00
20+150.00
20+200.00
20+250.00

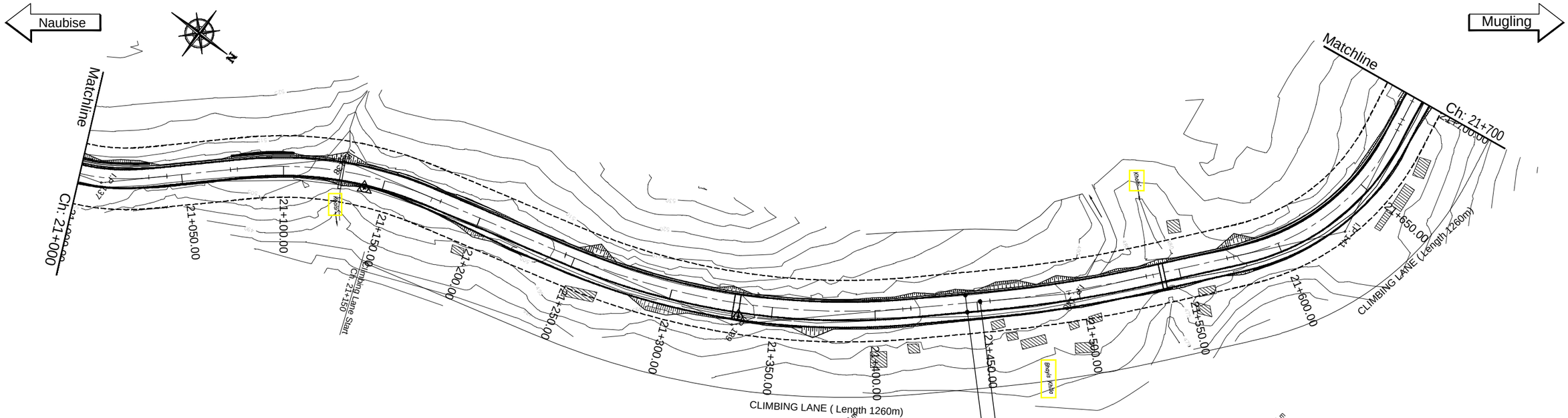

CD-94 : Slab Culvert 1 m X 1 m (To be Extended)
CD-95 : Slab Culvert 1.5 m x 1.5 m (To be Extended)
CD-96 : Slab Culvert 1 m X 1 m (To be Extended)
CD-97 : Slab Culvert 1 m X 1 m (To be Retained)
CD-98 : Slab Culvert 3.5 m X 4 m (To be Retained)
CD-99 : Slab Culvert 1.5 m X 1.5 m (To be Replaced)
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line
LVC = 60.00m
LVC = 70.00m
LVC = 70.00m
LVC = 180.00m
-0.72%
+2.52%
-5.54%
-0.45%
-3.25%

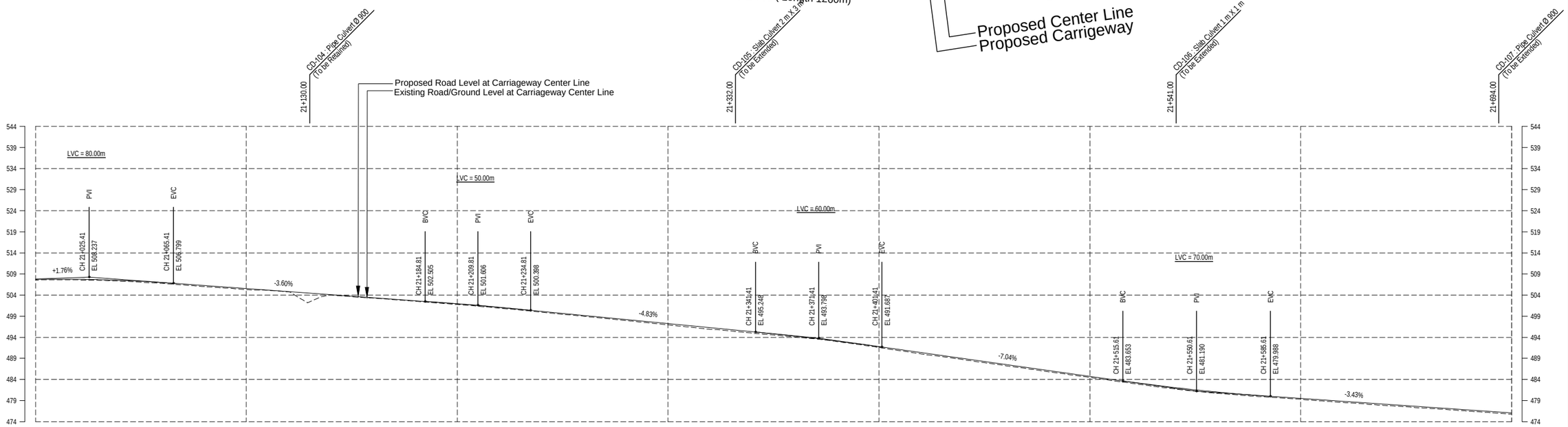
| | | |





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 20+300.00 TO 21+000.00	Scale: Horizontal: 0 10 20 30 40 Vertical: 0 5 10 15 20 Date: August 2019 Drawing No.: NMR-PP-030


Naubise
Mugling
Matchline
Matchline
Ch: 21+000
Ch: 21+700
21+050.00
21+100.00
21+150.00
21+200.00
21+250.00
21+300.00
21+350.00
21+400.00
21+450.00
21+500.00
21+550.00
21+600.00
21+650.00
Climbing Lane Start
Ch: 21+150
CLIMBING LANE (Length 1260m)
CLIMBING LANE (Length 1260m)
Proposed Center Line
Proposed Carrigeway


CD-104 : Pipe Culvert Ø 900 (TO be Retained)
CD-105 : Slab Culvert 2 m X 3 m (TO be Extended)
CD-106 : Slab Culvert 1 m X 1 m (TO be Extended)
CD-107 : Pipe Culvert Ø 900 (TO be Extended)
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line
LVC = 80.00m
LVC = 50.00m
LVC = 60.00m
LVC = 70.00m
+1.76%
-3.60%
-4.83%
-7.04%
-3.43%
PVI
EVC
BVC
CH 21+025.41 EL 508.237
CH 21+065.41 EL 506.799
CH 21+184.81 EL 502.505
CH 21+209.81 EL 501.606
CH 21+234.81 EL 500.398
CH 21+341.41 EL 495.248
CH 21+371.41 EL 493.798
CH 21+401.41 EL 491.687
CH 21+515.61 EL 483.653
CH 21+550.61 EL 481.190
CH 21+585.61 EL 479.988

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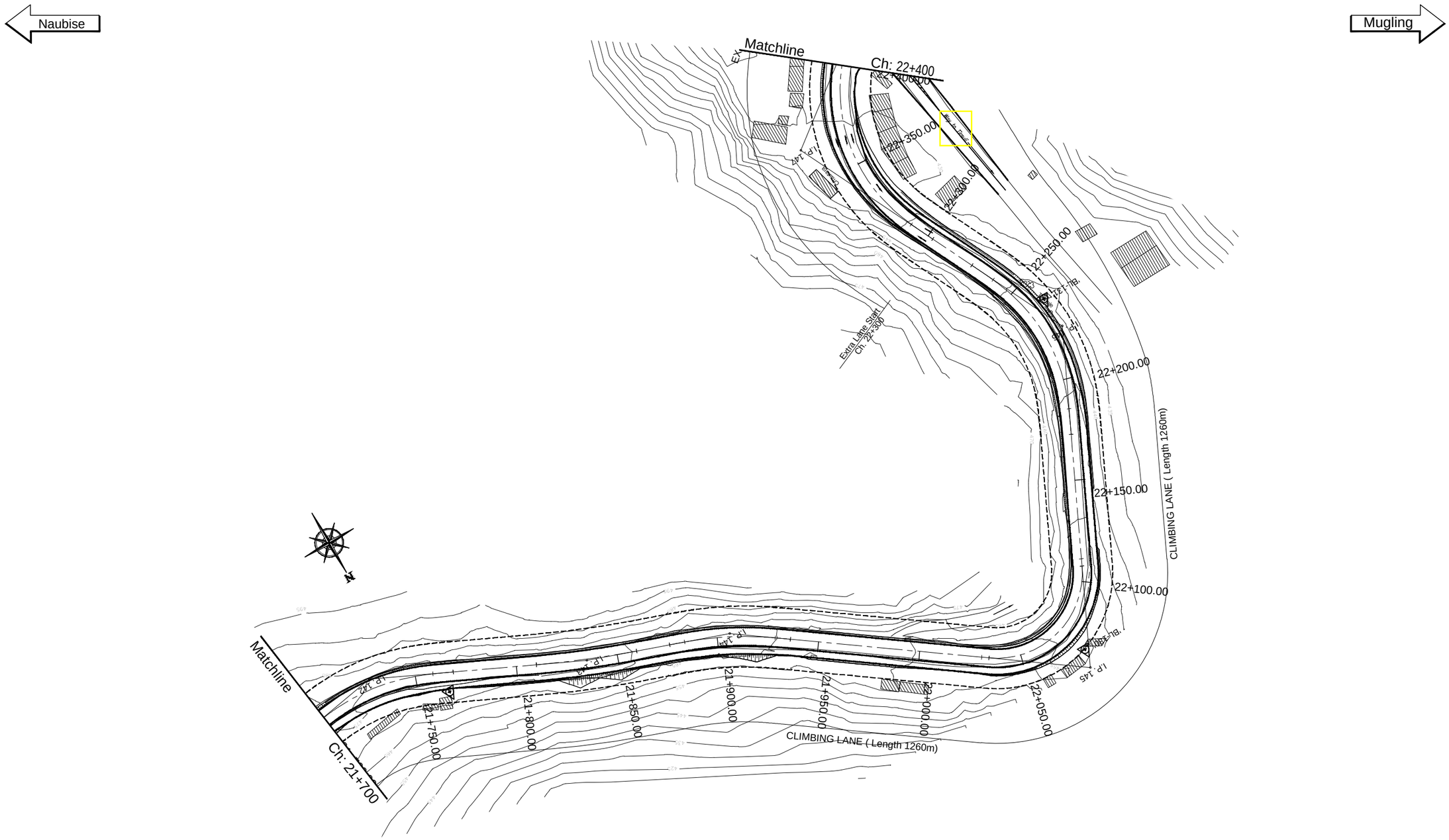
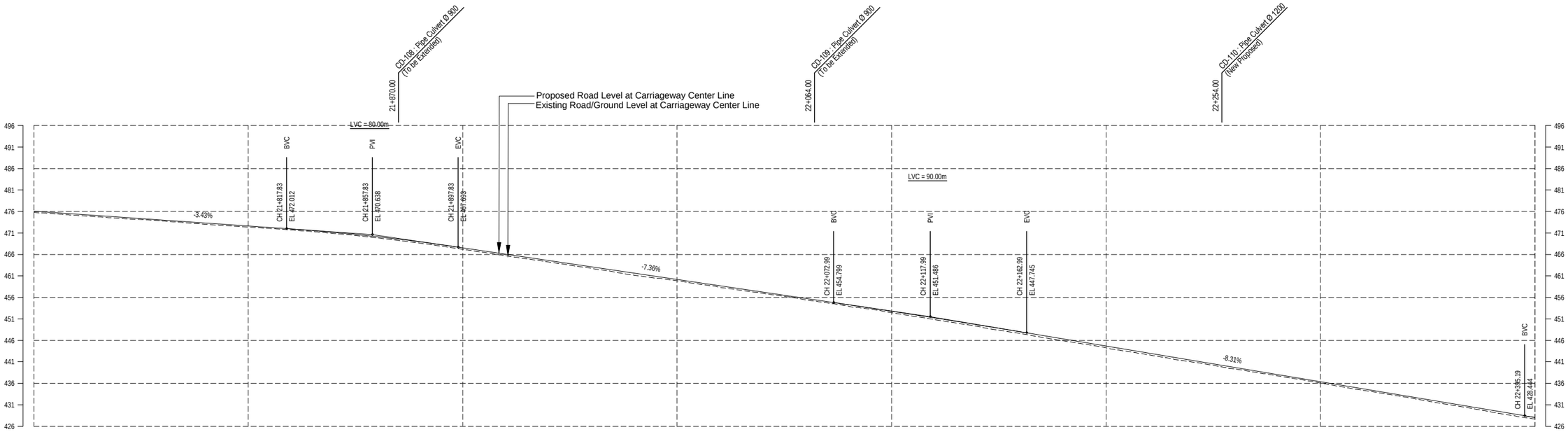


EMPLOYER	PROJECT	DESIGN CONSULTANT					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement 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 CHAINAGE 21+700.00 TO 22+400.00	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-032

Naubise

Mugling



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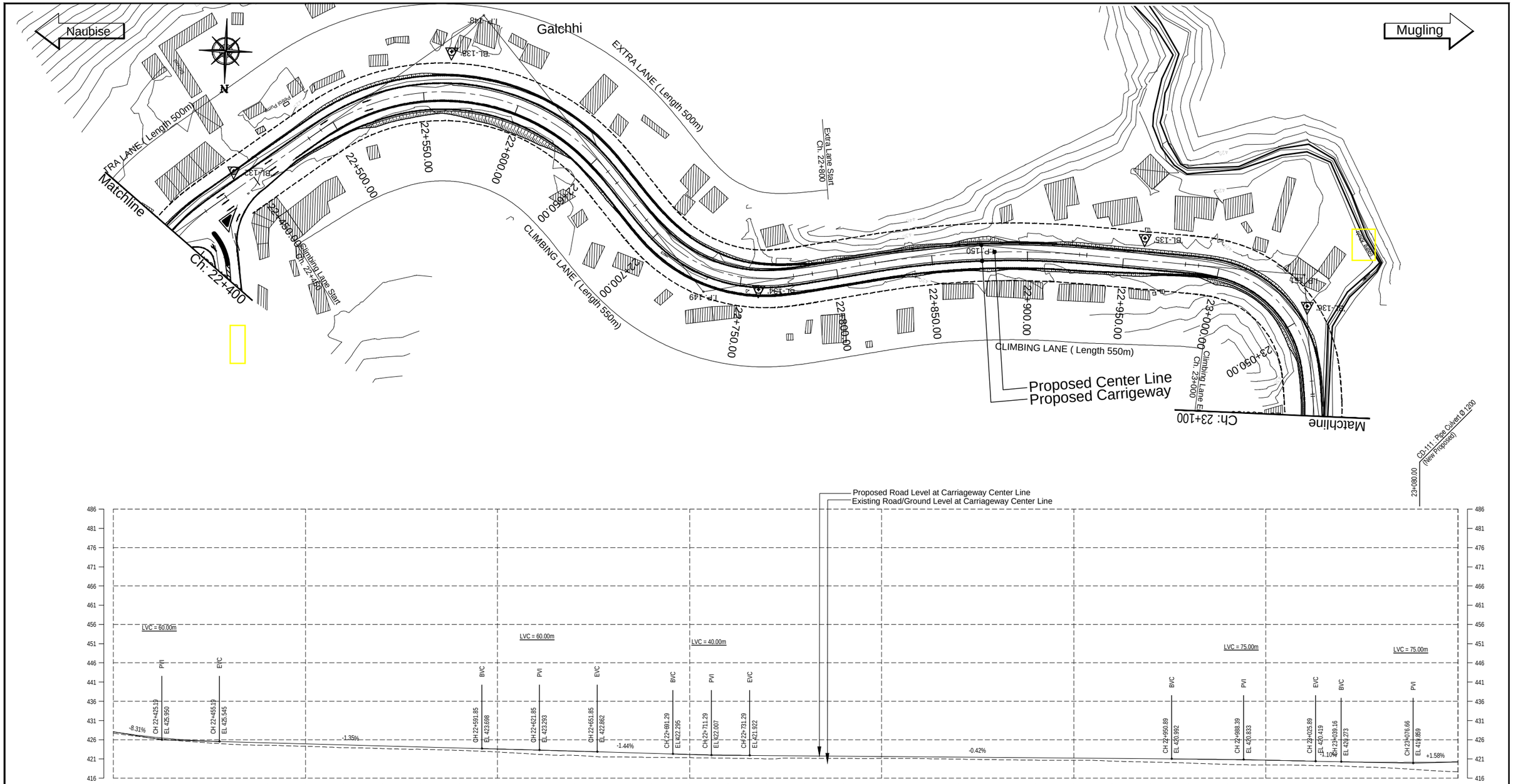
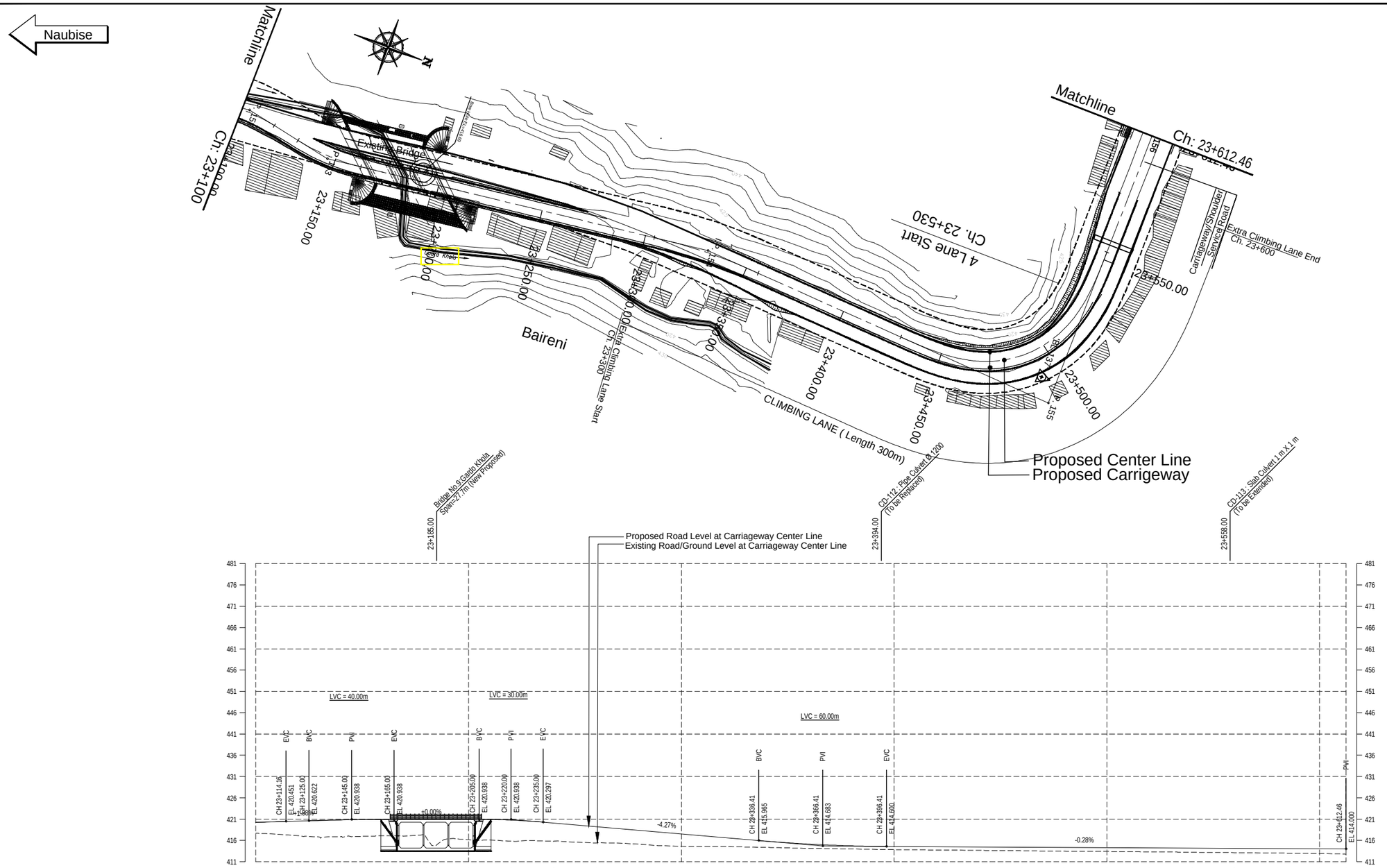


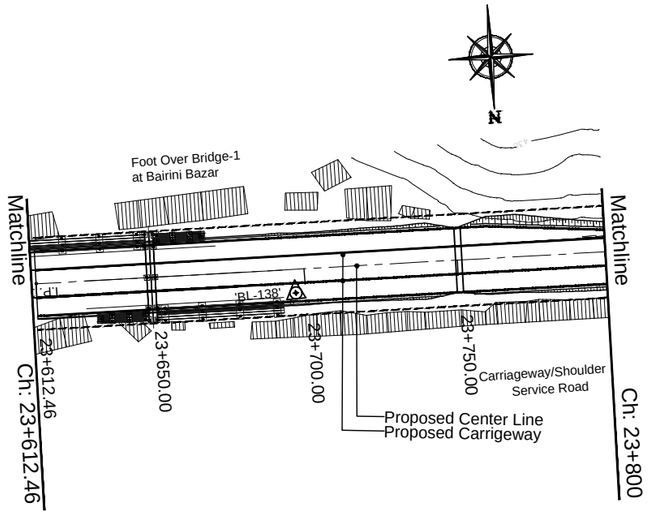
EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement 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 22+400.00 TO 23+100.00	Scale: Horizontal 0 10 20 30 40 Vertical 0 5 10 15 20 Date: August 2019 Drawing No.: NMR-PP-033

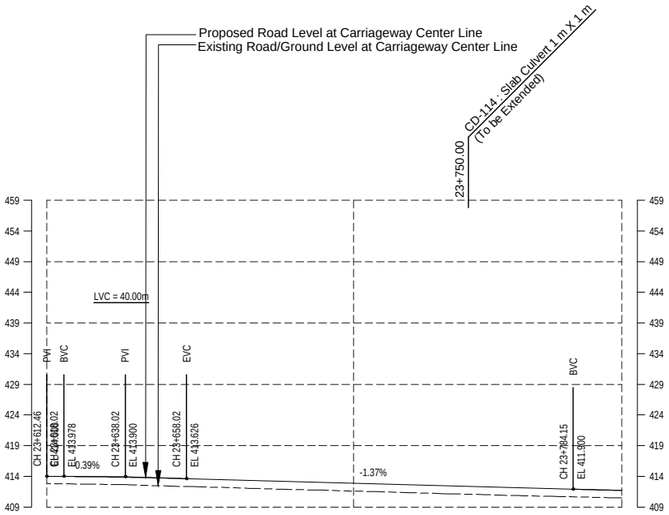


EMPLOYER	PROJECT	DESIGN CONSULTANT				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Nepal India Regional Trade and Transport Project (NIRTTP) (IDA CREDIT No. 5273 - NEP) Detailed Design for Improvement 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 23+100.00 TO 23+612.46	Scale: 0 10 20 30 40 Horizontal; 0 5 10 15 20 Vertical Date: August 2019 Drawing No.: NMR-PP-034

Naubise

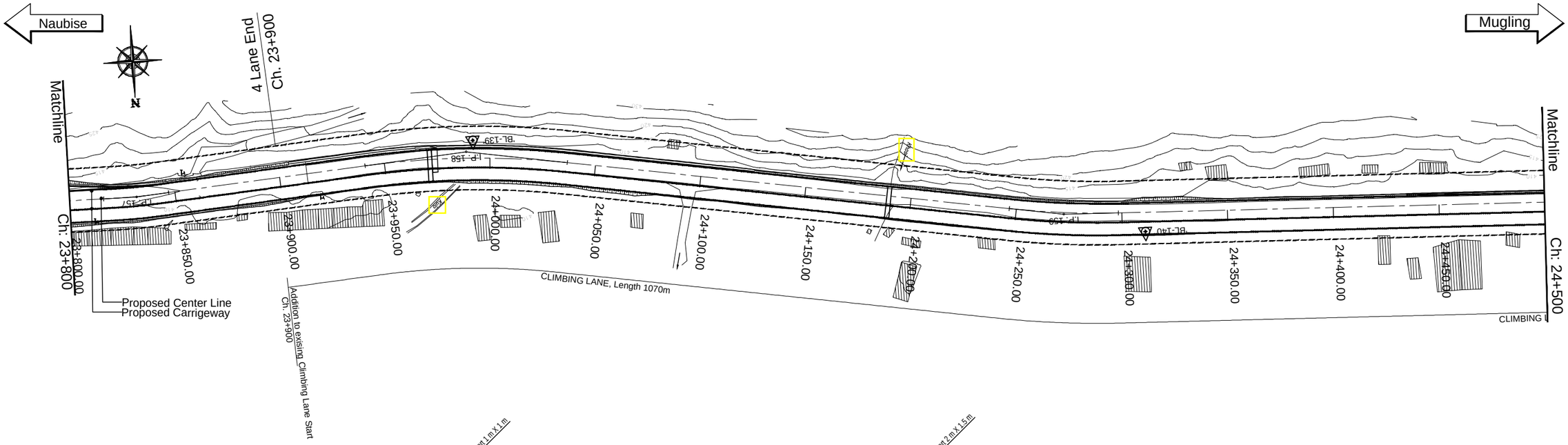
Mugling

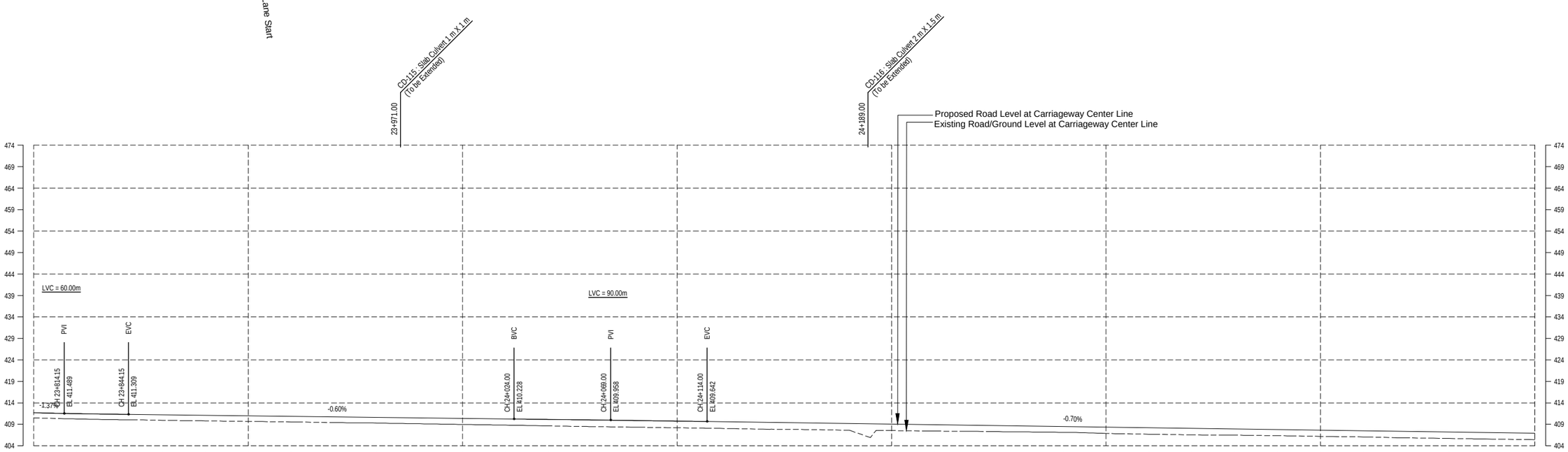




DESIGN LEVEL (m)		413.970	413.833	413.599	413.325	413.052	412.778	412.504	412.230	411.956	411.699
EXISTING LEVEL (m)		412.771	412.603	412.319	412.031	411.774	411.492	411.208	410.946	410.708	410.481
HORIZONTAL ALIGNMENT	RIGHT	IP-156									
	LEFT	R=0.00									
SUPER ELEVATION		+612.46	NC								+800.00
CHAINAGE (km)		23+620.00	23+640.00	23+660.00	23+680.00	23+700.00	23+720.00	23+740.00	23+760.00	23+780.00	23+800.00

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		DRAWING NAME: NAUBISE - MUGLING ROAD PLAN CHAINAGE 23+612.46 TO 23+800.00	Scale: 0 10 20 30 40 Horizontal 0 5 10 15 20 Vertical	Date: August 2019 Drawing No.: NMR-PP-035
			Checked By	PMS				
			Approved By	BNS				


Naubise
Mugling
N
4 Lane End
Ch. 23+900
Matchline
Ch: 23+800
Ch: 24+500
23+800.00
23+850.00
23+900.00
23+950.00
24+000.00
24+050.00
24+100.00
24+150.00
24+200.00
24+250.00
24+300.00
24+350.00
24+400.00
24+450.00
CLIMBING LANE, Length 1070m
Proposed Center Line
Proposed Carrigeway
Addition to exising Climbing Lane Start
Ch: 23+900


CD-115 - Slab Culvert 1 m X 1 m
(To be Extended)
23+971.00
CD-116 - Slab Culvert 2 m X 1.5 m
(To be Extended)
24+189.00
Proposed Road Level at Carriageway Center Line
Existing Road/Ground Level at Carriageway Center Line
LVC = 60.00m
LVC = 90.00m
PVI
EVC
BVC
PVI
EVC
CH 23+814.15
EL 411.489
CH 23+844.15
EL 411.309
CH 24+024.00
EL 410.228
CH 24+069.00
EL 409.958
CH 24+114.00
EL 409.642
-1.37%
-0.60%
-0.70%

| | | |