

CLIENT:-



NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
(Ministry of Road Transport & Highways)

Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenock in the State of West Bengal and From Rhencok-Rorathang-Pakyong along with Spur From Aritar-Relop-Menla in the State of Sikkim.

FINAL FEASIBILITY REPORT

PACKAGE- IV b, Part of BAGRAKOT TO KAFER
(Km 13+000 To Km 25+600)

DRAWING VOLUME:-HIGHWAY (PLAN & PROFILE)



FEBRUARY- 2020

CONSULTANT :-



SA INFRASTRUCTURE CONSULTANTS PVT. LTD.

In Association with
Specialized Engineering Service Pvt. Ltd.
1101A, 11th Floor, Tower A-II, Corporate Park,
Plot No. 7A/1, Sector-142, Noida 201301, Uttar Pradesh.

DRAWING LIST

01 GENERAL DRAWINGS

DRAWING No.

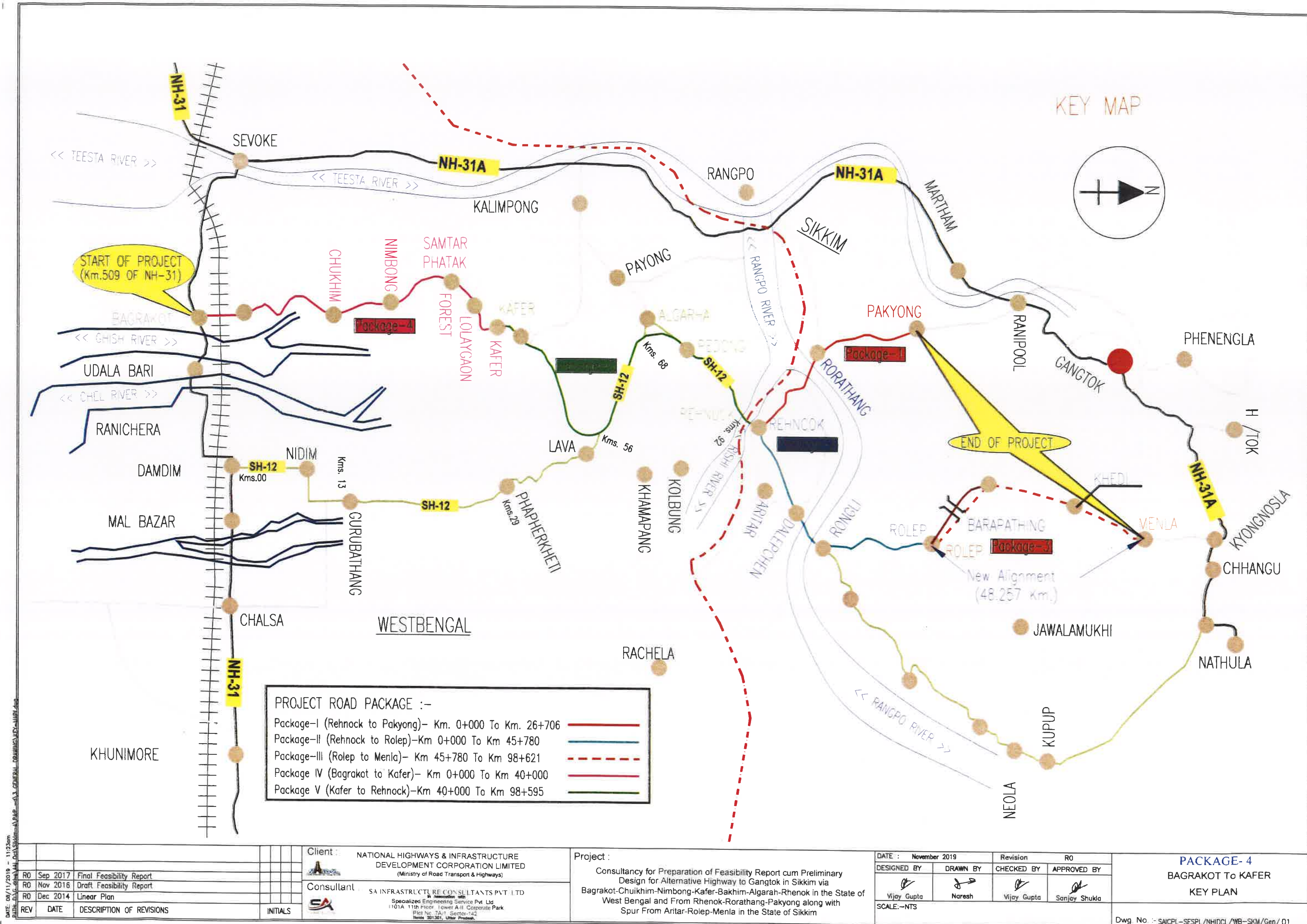
i	COVER PAGE	
ii	LIST OF DRAWING	SAICPL-SESPL/NHIDC/WB-SKM/LD/Gen/01
iii	KEY PLAN	SAICPL-SESPL/NHIDC/WB-SKM/LD/Gen/
iv	LOCATION MAP	SAICPL-SESPL/NHIDC/WB-SKM/LD/Gen/
v	TBM LIST	SAICPL-SESPL/NHIDC/WB-SKM/LD/Gen/
vi	HORIZONTAL/VERTICAL CURVE DETAILS	SAICPL-SESPL/NHIDC/WB-SKM/LD/Gen/(02 Sheet)
02	TYPICAL CROSS SECTION	SAICPL-SESPL/NHIDC/WB-SKM/LD/TCS/1(09 Sheet)
03	PLAN & PROFILE	SAICPL-SESPL/NHIDC/WB-SKM/LD/P&P/01(25 Sheet)
04	MISCELLANEOUS DRAWING:-	
a	TYPICAL DRAWING ROAD SIGNS (SHEET 1 OF 3)	SAICPL-SESPL/NHIDC/WB-SKM/LD/Misc/01
b	TYPICAL DRAWING ROAD SIGNS (SHEET 2 OF 3)	SAICPL-SESPL/NHIDC/WB-SKM/LD/Misc/02
c	TYPICAL DRAWING ROAD SIGNS (SHEET 3 OF 3)	SAICPL-SESPL/NHIDC/WB-SKM/LD/Misc/03
d	TYPICAL DRAWING ROAD MARKING	SAICPL-SESPL/NHIDC/WB-SKM/LD/Misc/04
e	TYPICAL DRAWING FOR DISTANCE & BOUNDARY STONE	SAICPL-SESPL/NHIDC/WB-SKM/LD/Misc/05
f	TYPICAL DRAWING FOR OVERHEAD GANTRY SIGNS	SAICPL-SESPL/NHIDC/WB-SKM/LD/Misc/06
g	TYPICAL DRAWING FOR BUS BAY	SAICPL-SESPL/NHIDC/WB-SKM/LD/Misc/07
h	TYPICAL DRAWING OF SIDE DRAIN INLET CHAMBER & MEDIAN CUT	SAICPL-SESPL/NHIDC/WB-SKM/LD/Misc/08
i	TYPICAL DRAWING FOR BEAST WALL	SAICPL-SESPL/NHIDC/WB-SKM/LD/Misc/09
j	TYPICAL DRAWING FOR RETAINING WALL	SAICPL-SESPL/NHIDC/WB-SKM/LD/Misc/10
j	TYPICAL DRAWING FOR SLAB CULVERT	SAICPL-SESPL/NHIDC/WB-SKM/LD/Misc/11

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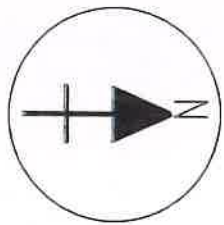
DRAWING NO. SAICPL-SESPL/NHIDC/WB-SKM/LD/Gen/01

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS	Client :  NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)	Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim	DATE : November 2019 DESIGNED BY :  Vijay Gupta DRAWN BY :  Naresh CHECKED BY :  Vijay Gupta APPROVED BY :  Sanjay Shukla SCALE:- NTS	Revision R0 PACKAGE- 4b BAGRAKOT To KAFER LIST OF DRAWINGS	Dwg. No. :- SAICPL-SESPL/NHIDC/WB-SKM/Gen/ 01
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GENERAL DRAWING



KEY MAP



PROJECT ROAD PACKAGE :-

Package-I (Rehnock to Pakyong)- Km. 0+000 To Km. 26+706	—————
Package-II (Rehnock to Rolep)-Km 0+000 To Km 45+780	—————
Package-III (Rolep to Menla)- Km 45+780 To Km 98+621	- - - - -
Package IV (Bagrakot to Kafer)- Km 0+000 To Km 40+000	—————
Package V (Kafer to Rehnock)-Km 40+000 To Km 98+595	—————

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REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
RO	Sep 2017	Final Feasibility Report	
RO	Nov 2016	Draft Feasibility Report	
RO	Dec 2014	Linear Plan	

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
(Ministry of Road Transport & Highways)

Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD.
Specialized Engineering Service Pvt. Ltd.
1101A 11th Floor, Tower A III Corporate Park
Plot No. 7A/1, Sector-142
Noida-201301, Uttar Pradesh

Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim

DATE : November 2019	Revision	RO
DESIGNED BY	DRAWN BY	CHECKED BY
Vijay Gupta	Naresh	Vijay Gupta
APPROVED BY		Sanjay Shukla
SCALE:-NTS		

PACKAGE-4
BAGRAKOT To KAFER
KEY PLAN

Dwg. No. :- SAICPL-SESPL/NHIDCL/WB-SKM/Gen/ 01

HORIZONTAL & VERTICAL CURVE DETAILS

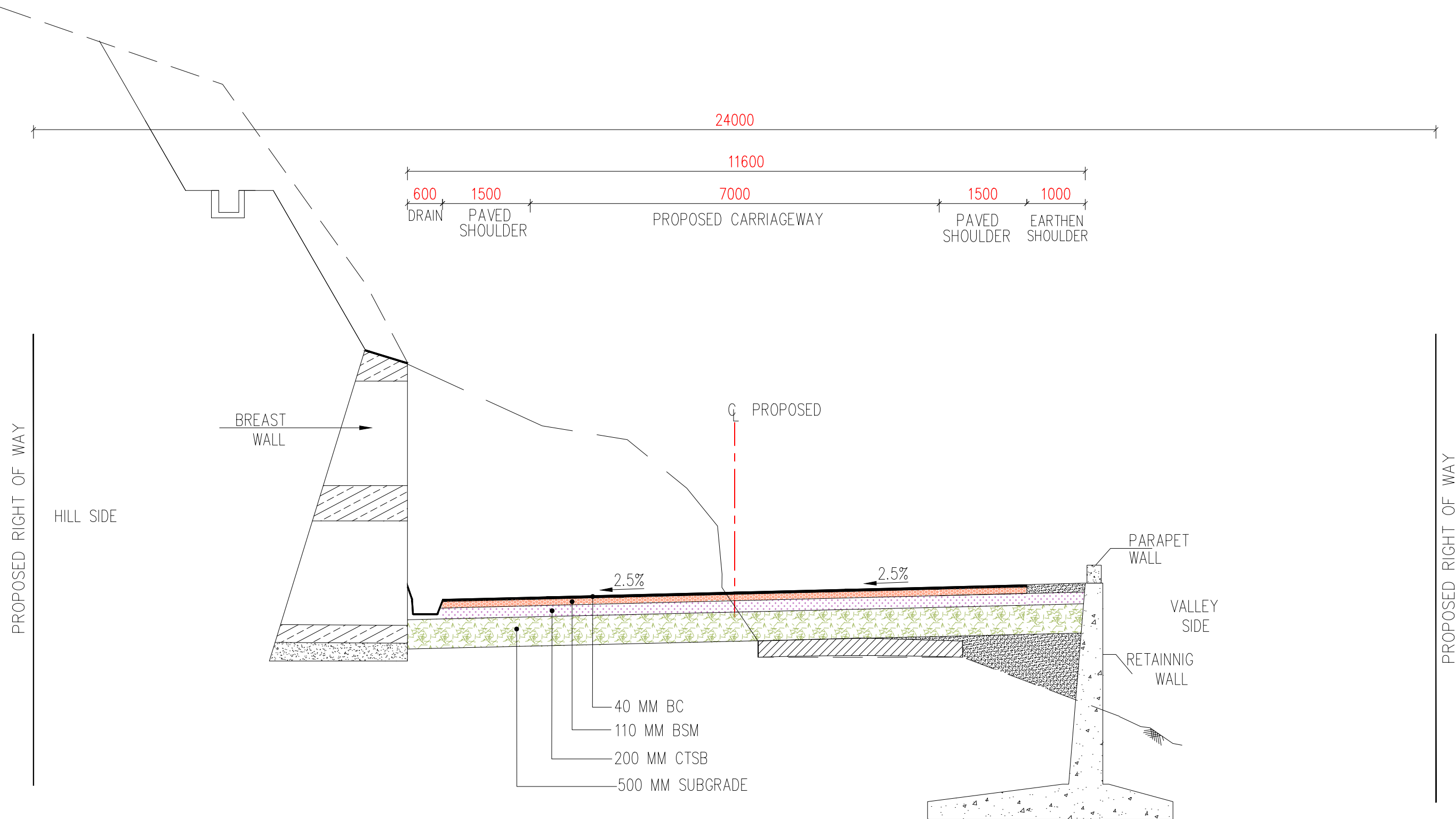
VERTICAL CURVE DETAILS

IP		Type of Curve		Curve Length	K Value	Start		Chainage End	Gradient	
Chainage	Level					Chainage	Level		In	Out
13537.5000	633.8310	Hog	100	177.8440	13487.5000	631.2610	13587.5000	636.1190	5.1390	4.5770
14000	655	Hog	100	21.8480	13950	652.7110	14050	655	4.5770	0
14351.6670	655	Sag	100	17.2530	14301.6670	655	14401.6670	657.8980	0	5.7960
14610	669.9730	Hog	100	132.3790	14560	667.0750	14660	672.4930	5.7960	5.0410
14940	686.6070	Hog	100	264.6790	14890	684.0870	14990	688.9380	5.0410	4.6630
15120	695	Hog	40	8.5790	15100	694.0670	15140	695	4.6630	0
15191.7470	695	Sag	40	8.4070	15171.7470	695	15211.7470	695.9520	0	4.7580
15399.1110	704.8660	Sag	100	41.7060	15349.1110	702.4870	15449.1110	708.4440	4.7580	7.1560
15577.5000	717.6310	Hog	100	335.2220	15527.5000	714.0540	15627.5000	721.0600	7.1560	6.8570
15785.5910	731.9010	Hog	100	63.6520	15735.5910	728.4720	15835.5910	734.5440	6.8570	5.2860
16099.9610	748.5200	Hog	100	759.5460	16049.9610	745.8770	16149.9610	751.0970	5.2860	5.1550
16285	758.0580	Hog	60	32.2880	16255	756.5120	16315	759.0470	5.1550	3.2960
16462.8500	763.9210	Sag	100	40.3630	16412.8500	762.2730	16512.8500	766.8080	3.2960	5.7740
16660	775.3040	Sag	100	55.5500	16610	772.4170	16710	779.0910	5.7740	7.5740
16827.5150	787.9920	Hog	100	91.0040	16777.5150	784.2050	16877.5150	791.2300	7.5740	6.4750
17202.4440	812.2700	Sag	200	311.6470	17102.4440	805.7950	17302.4440	819.3870	6.4750	7.1170
17880	860.4920	Sag	200	618.5400	17780	853.3750	17980	867.9320	7.1170	7.4400
18283.4300	890.5090	Hog	100	502.2270	18233.4300	886.7890	18333.4300	894.1290	7.4400	7.2410
18640.5430	916.3680	Hog	100	206.5310	18590.5430	912.7480	18690.5430	919.7470	7.2410	6.7570
19218.1190	955.3960	Sag	100	933.2930	19168.1190	952.0170	19268.1190	958.8280	6.7570	6.8640
19477.6140	973.2080	Hog	100	637.0550	19427.6140	969.7760	19527.6140	976.5620	6.8640	6.7070
19740.2310	990.8200	Hog	40	21.2210	19720.2310	989.4810	19760.2310	991.7820	6.6960	4.8110
19860.9030	996.6260	Hog	100	132.6380	19810.9030	994.2200	19910.9030	998.6550	4.8110	4.0570
20077.5000	1005.4140	Sag	200	57.1690	19977.5000	1001.3570	20177.5000	1012.9700	4.0570	7.5560
20591.3010	1044.2370	Hog	200	27.7440	20491.3010	1036.6810	20691.3010	1044.5840	7.5560	0.3470
21002.7010	1045.6650	Sag	400	59.2410	20802.7010	1044.9710	21202.7010	1059.8640	0.3470	7.0990
21422.5000	1075.4680	Hog	100	439.3490	21372.5000	1071.9180	21472.5000	1078.9040	7.0990	6.8720
22083.5420	1120.8930	Hog	400	29.8400	21883.5420	1107.1500	22283.5420	1107.8270	6.8720	-6.5330
22624.3150	1085.5640	Hog	100	282.7610	22574.3150	1088.8310	22674.3150	1082.1210	-6.5330	-6.8870
22875	1068.3000	Sag	100	14.5210	22825	1071.7430	22925	1068.3000	-6.8870	0
23052.4130	1068.3000	Sag	100	13.5520	23002.4130	1068.3000	23102.4130	1071.9900	0	7.3790
23695	1115.7170	Hog	100	75.0100	23645	1112.0280	23745	1118.7400	7.3790	6.0460
24385	1157.4340	Hog	100	93.1480	24335	1154.4110	24435	1159.9200	6.0460	4.9720
24860	1181.0530	Hog	100	31.4610	24810	1178.5670	24910	1181.9500	4.9720	1.7940

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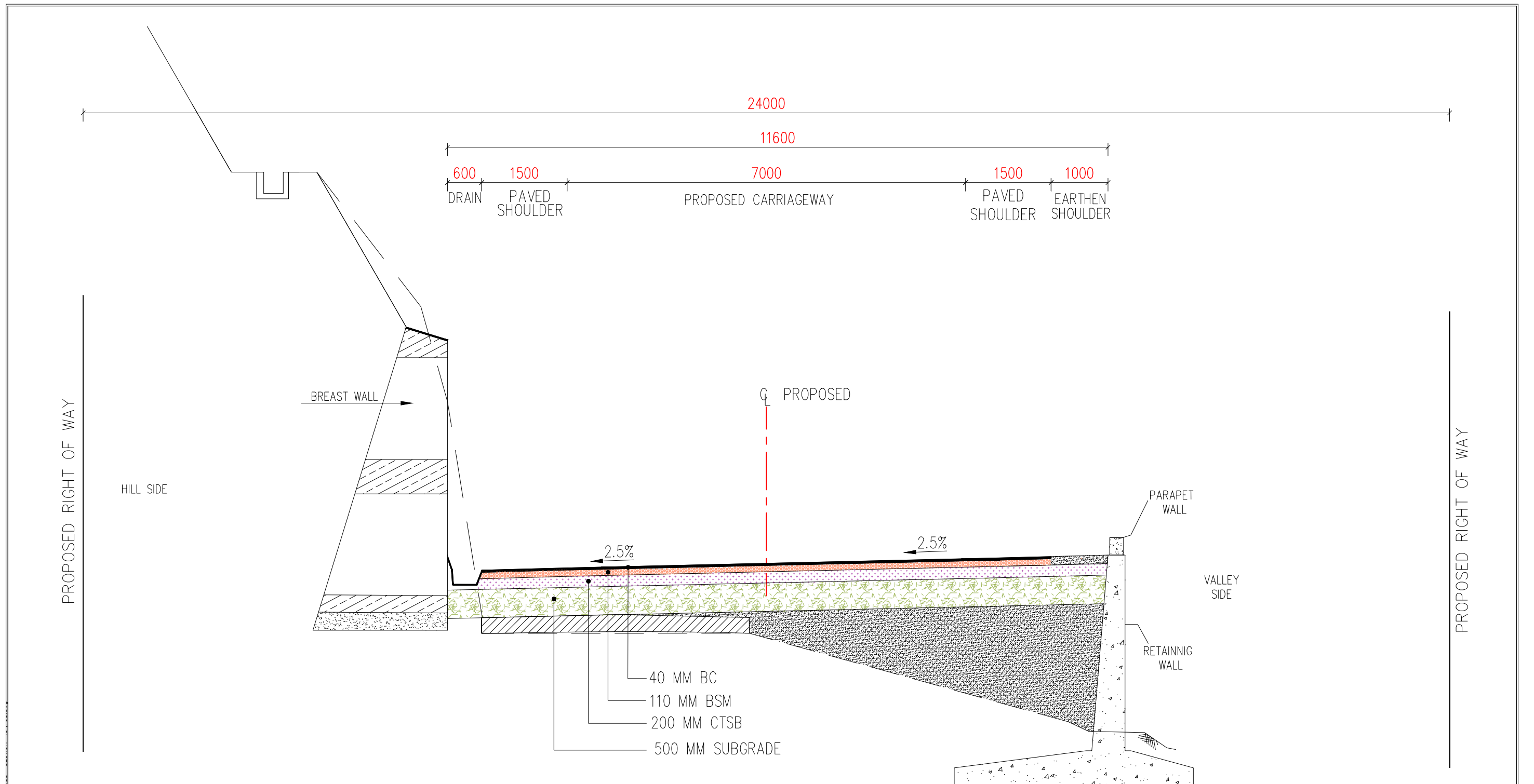
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TYPICAL CROSS SECTION



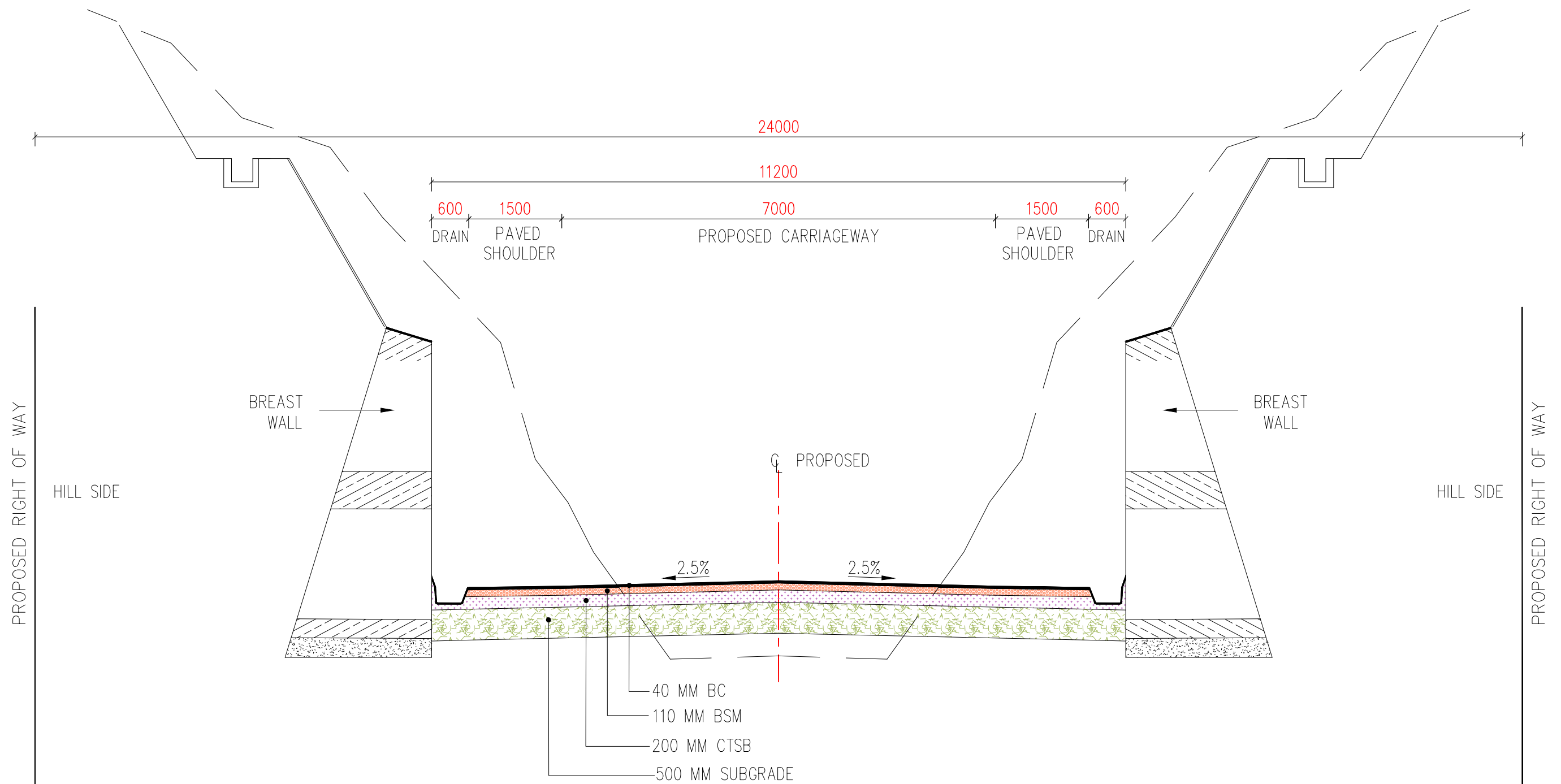
TCS-II
Two Lane With Paved Shoulder Eccentric Left Side Widening (One Side Hill One Side Valley Section)

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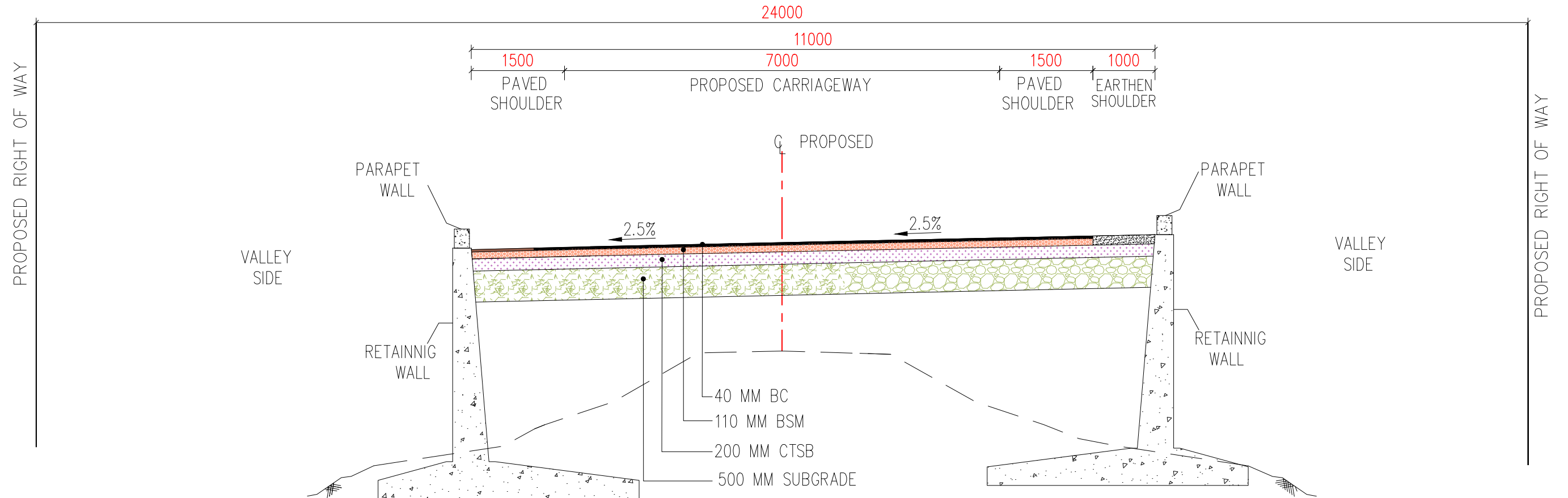
TCS-III
Two Lane With Paved Should Eccentric Right Widening (One Side Hill One Side Valley Section)

					Client :  NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)	Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim	DATE : November 2019		Revision R0		PACKAGE- 4b BAGRAKOT To KAFER TYPICAL CROSS SECTION	
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R0	Nov 2016	Draft Feasibility Report					Vijay Gupta	Naresh	Vijay Gupta	Sanjay Shukla		
R0	Dec 2014	Linear Plan					SCALE: -NTS				Dwg. No. :- SAICPL-SESPL/NHIDCL/WB-SKM/TCS/ 3	
REV	DATE	DESCRIPTION OF REVISIONS	INITIALS									



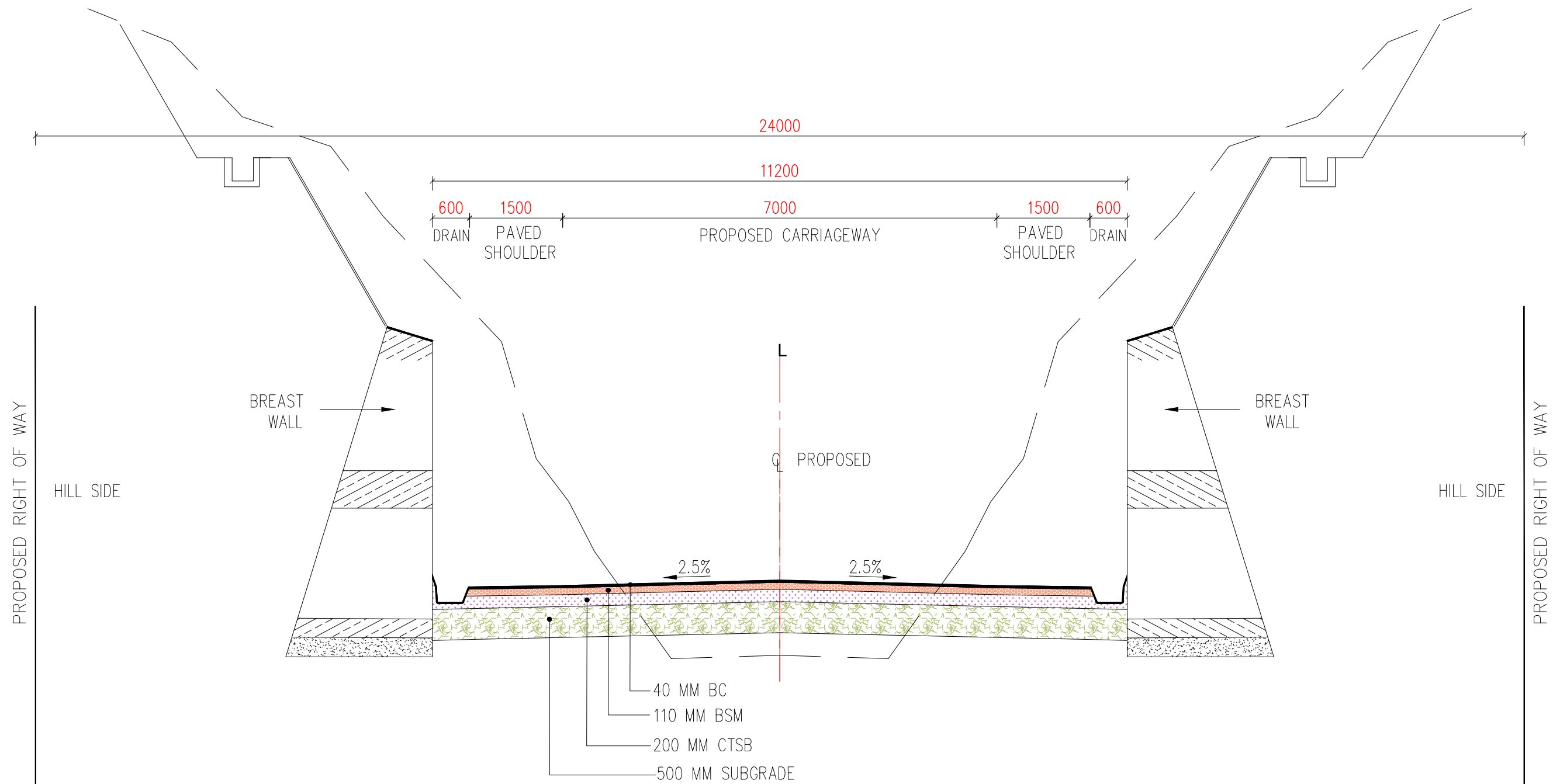
TCS-V
Two Lane With Paved Shoulder Raised Portion(Both Side Hill Section)

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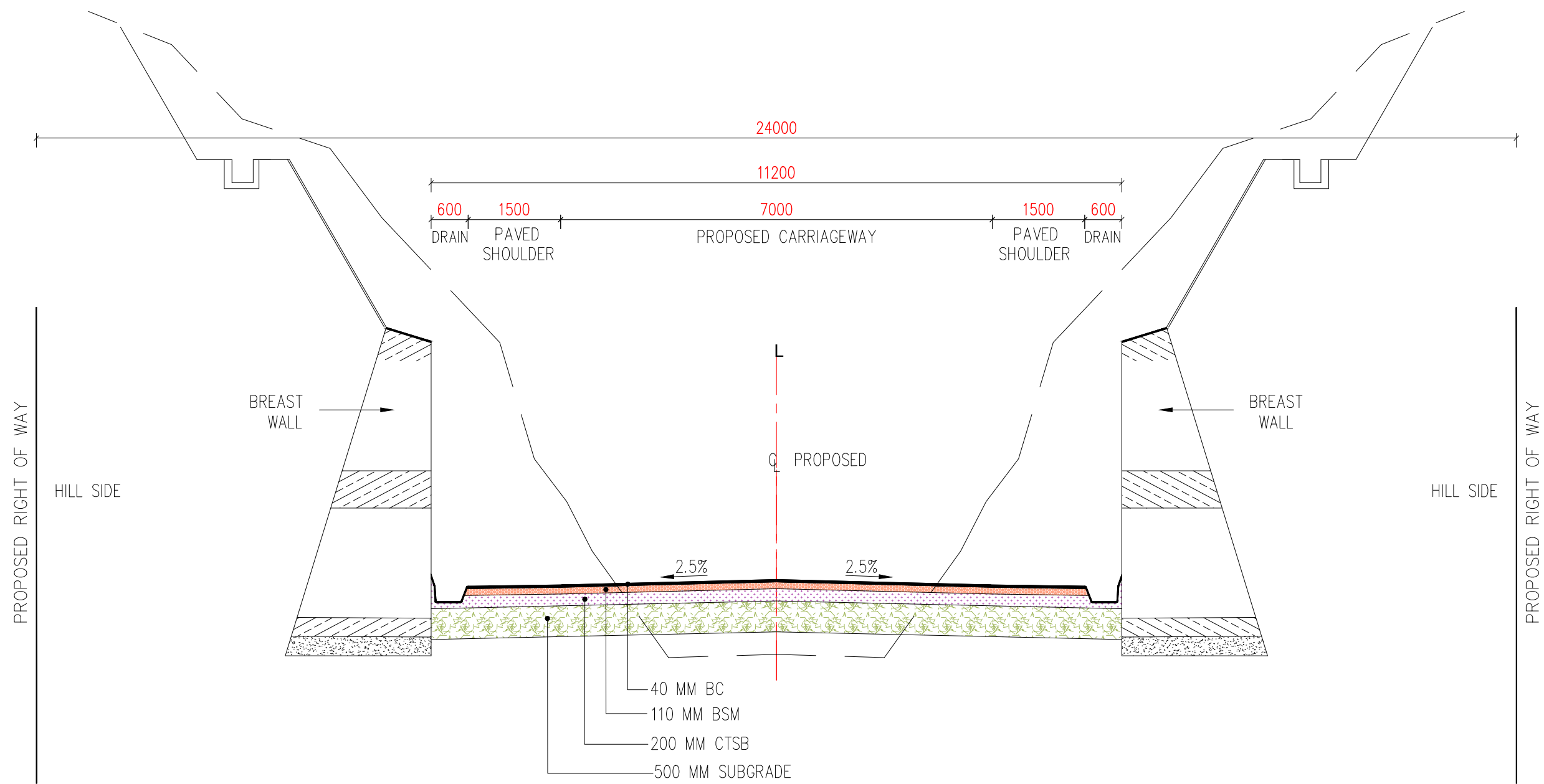
TCS-VI
Two Lane With Paved Shoulder (Both Side Valley Section)

						Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)	Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim	DATE : November 2019 DESIGNED BY DRAWN BY CHECKED BY APPROVED BY SCALE: -NTS	Revision R0 PACKAGE- 4b BAGRAKOT To KAfer TYPICAL CROSS SECTION
R0	Sep 2017	Final Feasibility Report				Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. In Association with Specialized Engineering Service Pvt. Ltd. 1101A, 11th Floor, Tower A-II, Corporate Park, Plot No. 7A/1, Sector-142, Noida 201301, Uttar Pradesh.			
R0	Nov 2016	Draft Feasibility Report							
R0	Dec 2014	Linear Plan							
REV	DATE	DESCRIPTION OF REVISIONS			INITIALS				Dwg. No. :- SAICPL-SESPL/NHIDCL/WB-SKM/TCS/ 6



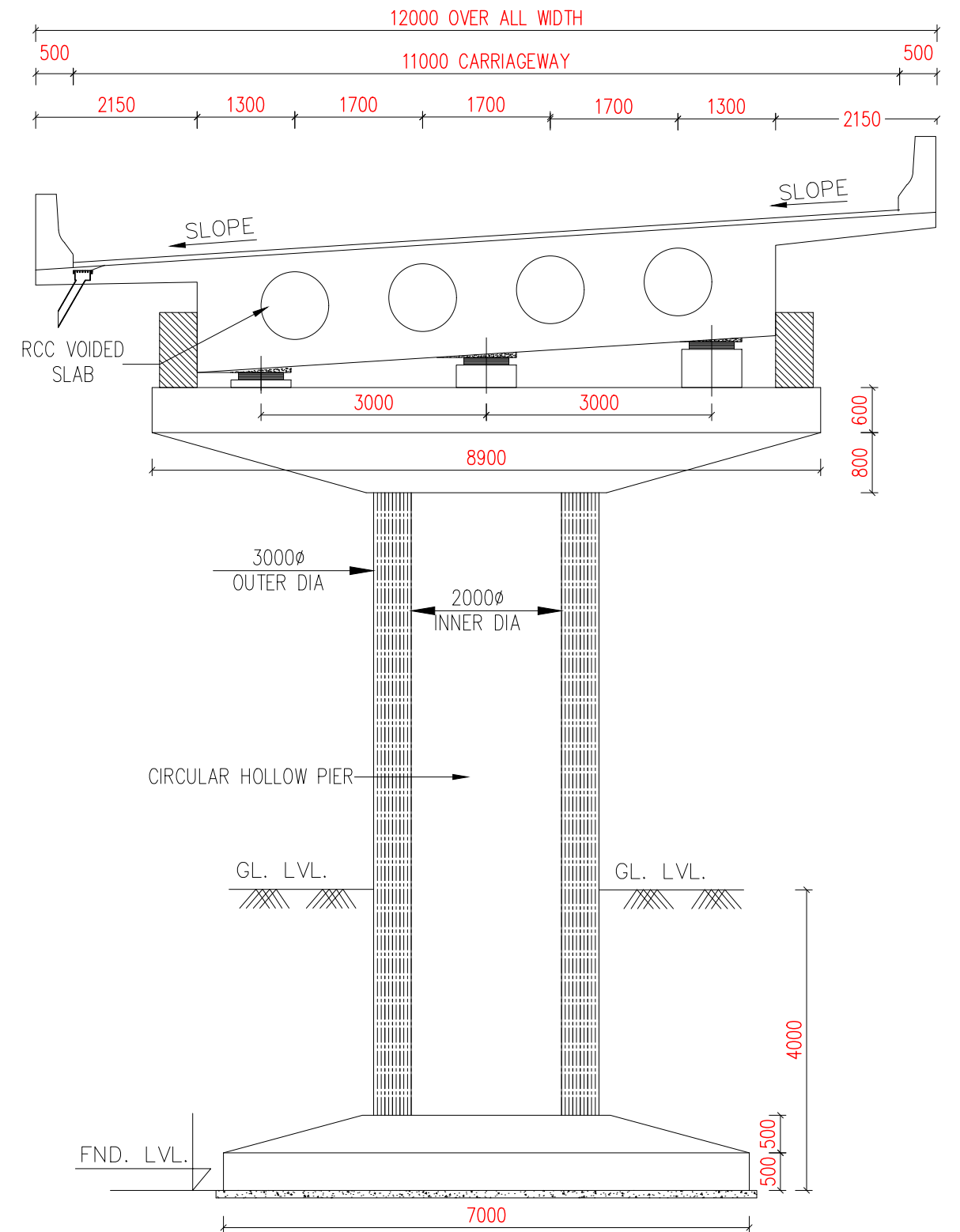
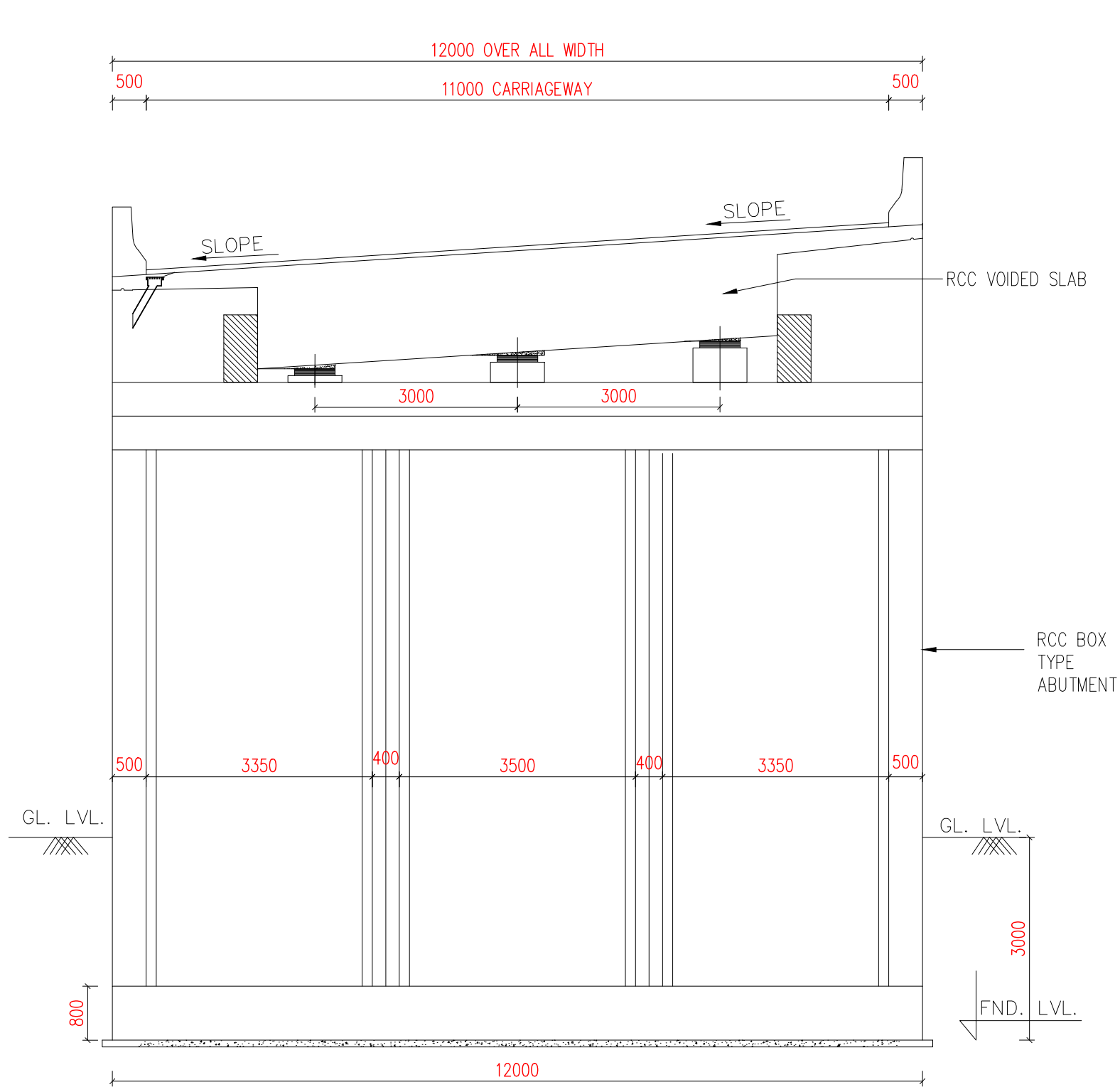
TCS-VII
Two Lane With Paved Shoulder Realignment (Both Side Hill Section)

						Client :  NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)	Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim	DATE : November 2019		Revision R0		PACKAGE- 4b BAGRAKOT To KAFER TYPICAL CROSS SECTION
						DESIGNED BY		DRAWN BY	CHECKED BY	APPROVED BY		
R0	Sep 2017	Final Feasibility Report										
R0	Nov 2016	Draft Feasibility Report				Vijay Gupta		Naresh	Vijay Gupta	Sanjay Shukla		
R0	Dec 2014	Linear Plan				SCALE: -NTS						
REV	DATE	DESCRIPTION OF REVISIONS			INITIALS	 Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. In Association with Specialized Engineering Service Pvt. Ltd. 1101A, 11th Floor, Tower A-II, Corporate Park, Plot No. 7A/1, Sector-142, Noida 201301, Uttar Pradesh.	Dwg. No. :- SAICPL-SESPL/NHIDCL/WB-SKM/TCS/ 7					



TCS-VIII
Two Lane With Paved Shoulder Concentric Widening(Both Side Hill Section)

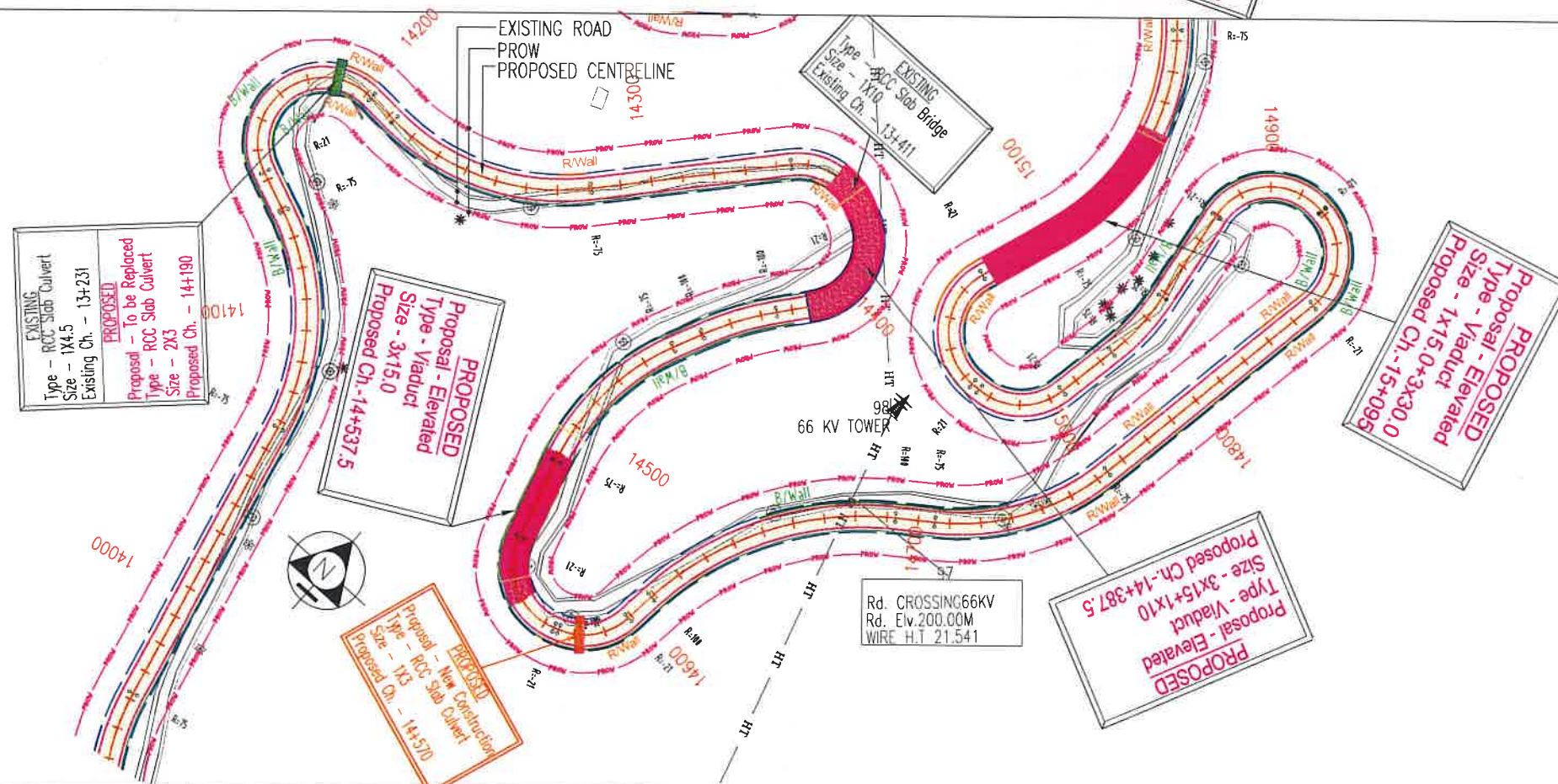
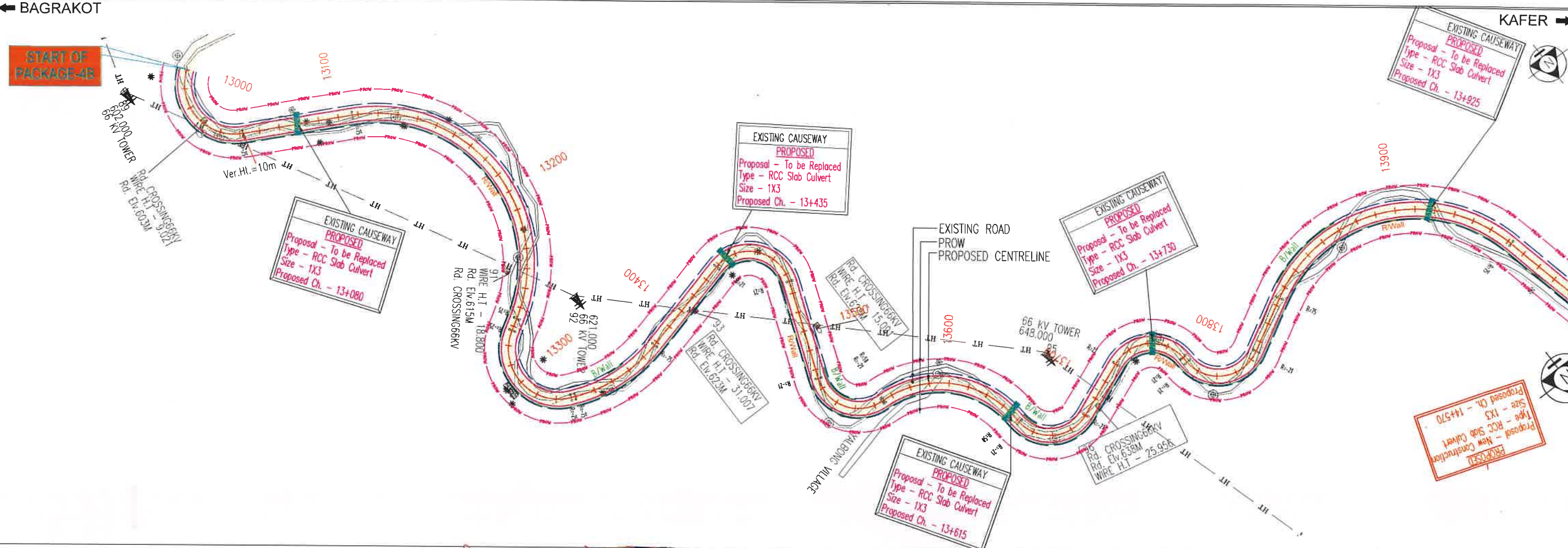
					Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)	Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim	DATE : November 2019		Revision R0		PACKAGE- 4b BAGRAKOT To KAFER TYPICAL CROSS SECTION
R0	Sep 2017	Final Feasibility Report			Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. In Association with Specialized Engineering Service Pvt. Ltd. 1101A, 11th Floor, Tower A-II, Corporate Park, Plot No. 7A/1, Sector-142, Noida 201301, Uttar Pradesh.		DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	
R0	Nov 2016	Draft Feasibility Report									
R0	Dec 2014	Linear Plan					Vijay Gupta	Naresh	Vijay Gupta	Sanjay Shukla	
REV	DATE	DESCRIPTION OF REVISIONS		INITIALS		SCALE: -NTS				Dwg. No. :- SAICPL-SESPL/NHIDCL/WB-SKM/TCS/8	



TCS-IX
TYPICAL CROSS SECTION FOR ELEVATED STRUCTURE

			Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)	Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aitar-Rolep-Menla in the State of Sikkim	DATE : November 2019 Revision : R0	PACKAGE- 4b BAGRAKOT To KAFER TYPICAL CROSS SECTION
R0	Sep 2017		Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. In Association with Specialized Engineering Service Pvt. Ltd. 1101A, 11th Floor, Tower A-II, Corporate Park, Plot No. 7A/1, Sector-142, Noida 201301, Uttar Pradesh.		DESIGNED BY : DRAWN BY : CHECKED BY : APPROVED BY :	
R0	Nov 2016				Vijay Gupta Naresh Vijay Gupta Sanjay Shukla	
R0	Dec 2014				SCALE : -NTS	
REV	DATE	DESCRIPTION OF REVISIONS	INITIALS			Dwg. No. :- SAICPL-SESPL/NHIDCL/WB-SKM/TCS/9

PLAN & PROFILE

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Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
(Ministry of Road Transport & Highways)

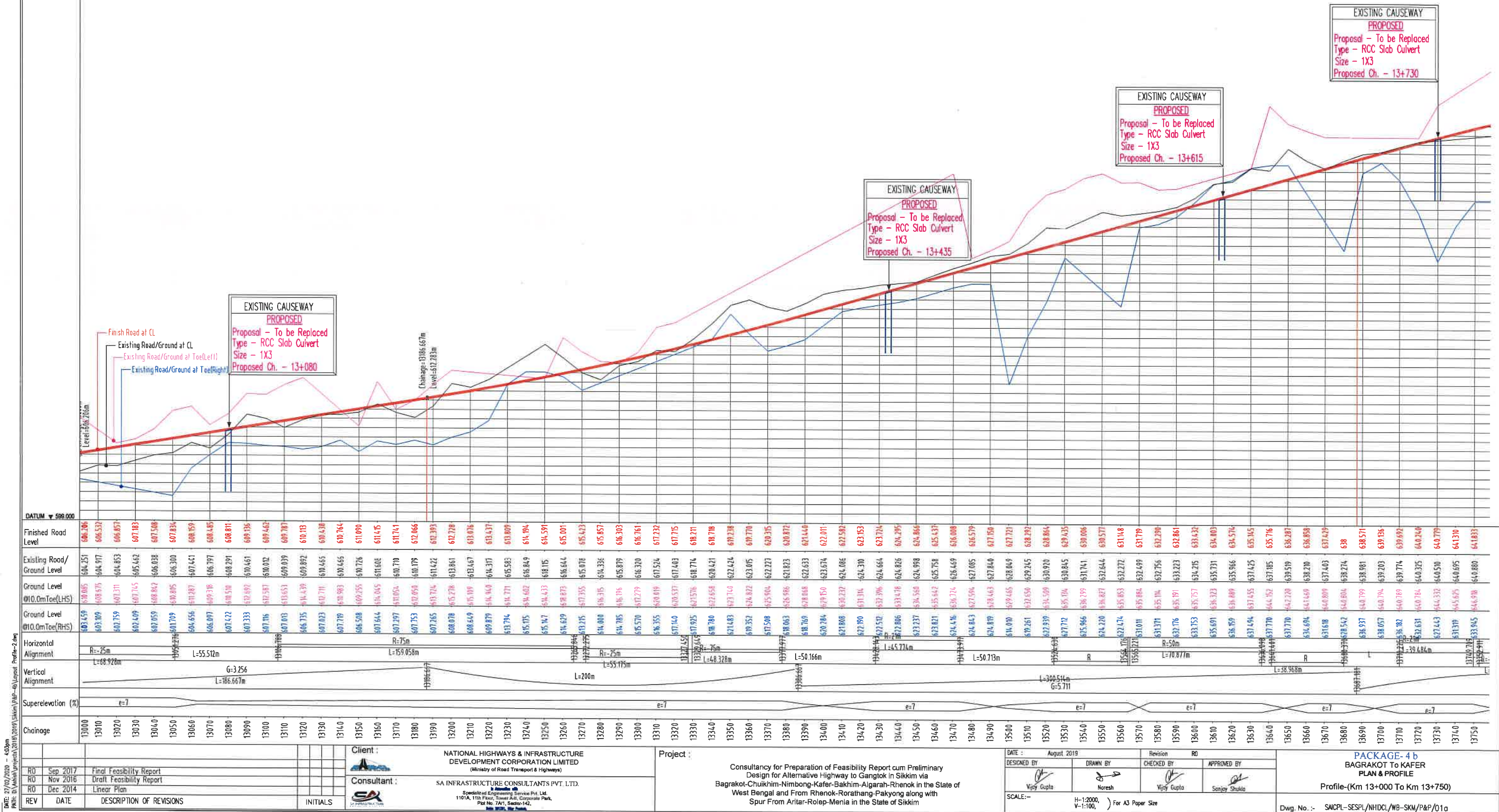
Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD.
In Association with
Specialized Engineering Service Pvt. Ltd.
1101A, 11th Floor, Tower A-11, Corporate Park,
Plot No. 7A/1, Sector-142,
Noida 201301, Uttar Pradesh.

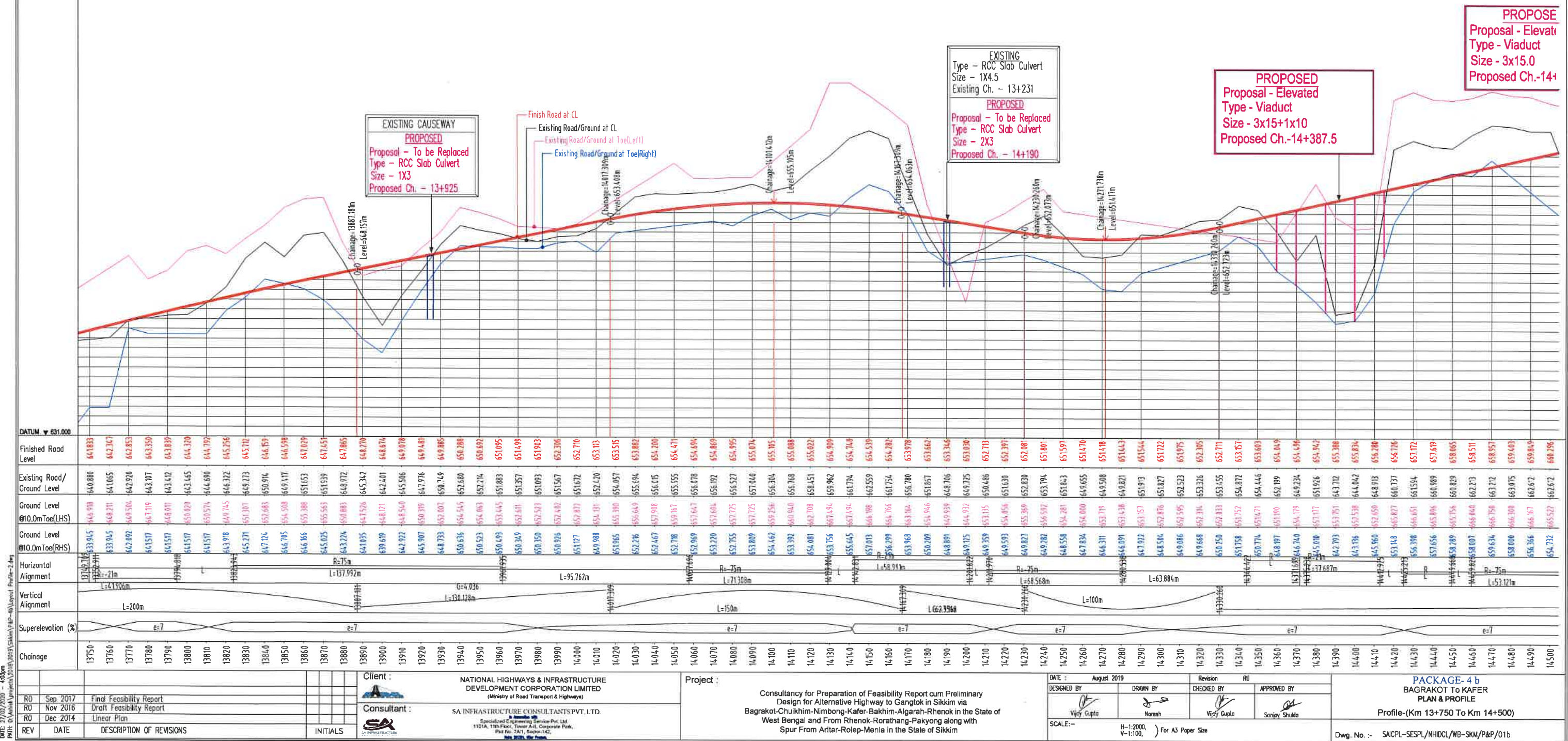
Project :	Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim
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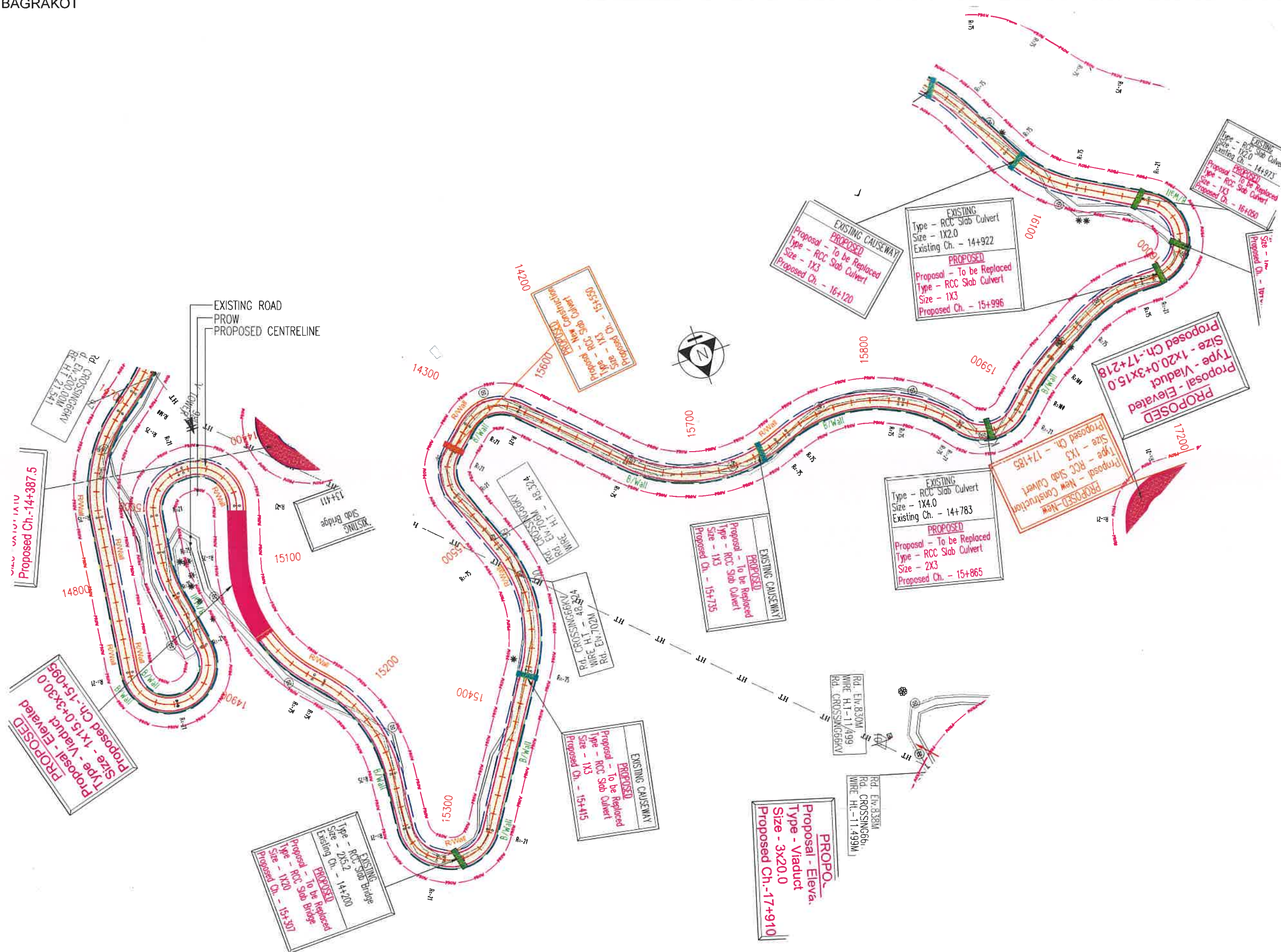
DATE : November 2019		Revision RO	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
 Vijay Gupta	 Naresh	 Vijay Gupta	 Sanjay Shukla
SCALE:-- H-1:2000, V-1:100.)		For A3 Paper Size	

PACKAGE- 4 b
BAGRAKOT To KAHER
PLAN & PROFILE
(PLAN - Km 13+000 To 14+500)

Dwg. No. :- SAICPL-SESPL/NHIDCL/WB-SKM/P&P/01







R0	Sep 2017	Final Feasibility Report			
R0	Nov 2016	Draft Feasibility Report			
R0	Dec 2014	Linear Plan			
REV	DATE	DESCRIPTION OF REVISIONS			INITIALS

	Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)
	Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. In Association with Specialized Engineering Service Pvt. Ltd. 1101A, 11th Floor, Tower A-II, Corporate Park, Plot No. 7A/1, Sector-142, Gurgaon - 122001 Haryana

Project :	Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Antar-Rolep-Menla in the State of Sikkim
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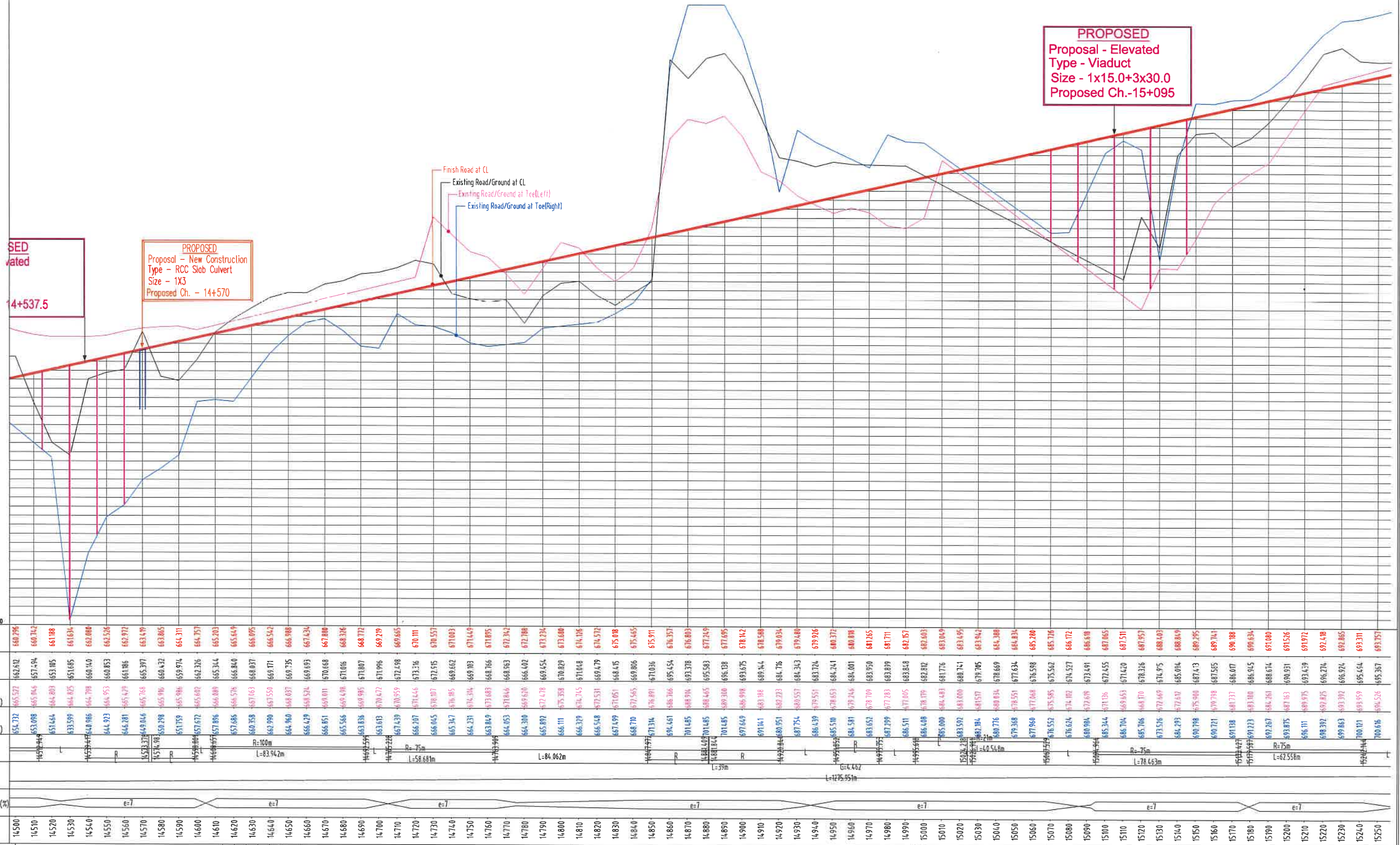
DATE : November 2019		Revision RO	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
 Vijay Gupta	 Naresh	 Vijay Gupta	 Sanjay Shukla
SCALE:-- H-1:2000, V-1:100.		For A3 Paper Size	

PACKAGE- 4 b
BAGRAKOT To KAHER
PLAN & PROFILE
(PLAN - Km 14+750 To 16+000)

Dwg. No. :- SAICPL-SESPL/NHIDCL/WB-SKM/P&P/02

← BAGRAKOT

KAFER →

DATE: 27/07/2020 - 4:33pm
PATH: D:\Main\Projects\2019\2019\SSM\Plan-4b\Layout_Profile-2.dwg

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	



Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LIMITED
(Ministry of Road Transport & Highways)

Consultant :
SA INFRASTRUCTURE CONSULTANTS PVT. LTD.
Specialized Engineering Service Pvt. Ltd.
1101A, 11th Floor, Tower A, Corporate Park,
Plot No. 7A/1, Sector-142,
Gurgaon, Haryana

Project :
Consultancy for Preparation of Feasibility Report cum Preliminary
Design for Alternative Highway to Gangtok in Sikkim via
Bagrakot-Chukhim-Nimbong-Kafer-Bakim-Algarah-Rhenok in the State of
West Bengal and From Rhenok-Rorathang-Pakyong along with
Spur From Aritar-Rolep-Menla in the State of Sikkim

DATE : August 2019	Revision R0
DESIGNED BY Vijay Gupta	DRAWN BY Noreish
CHECKED BY Vijay Gupta	APPROVED BY Sanjay Shukla

SCALE:-
H=1:2000,
V=1:100,
For A3 Paper Size

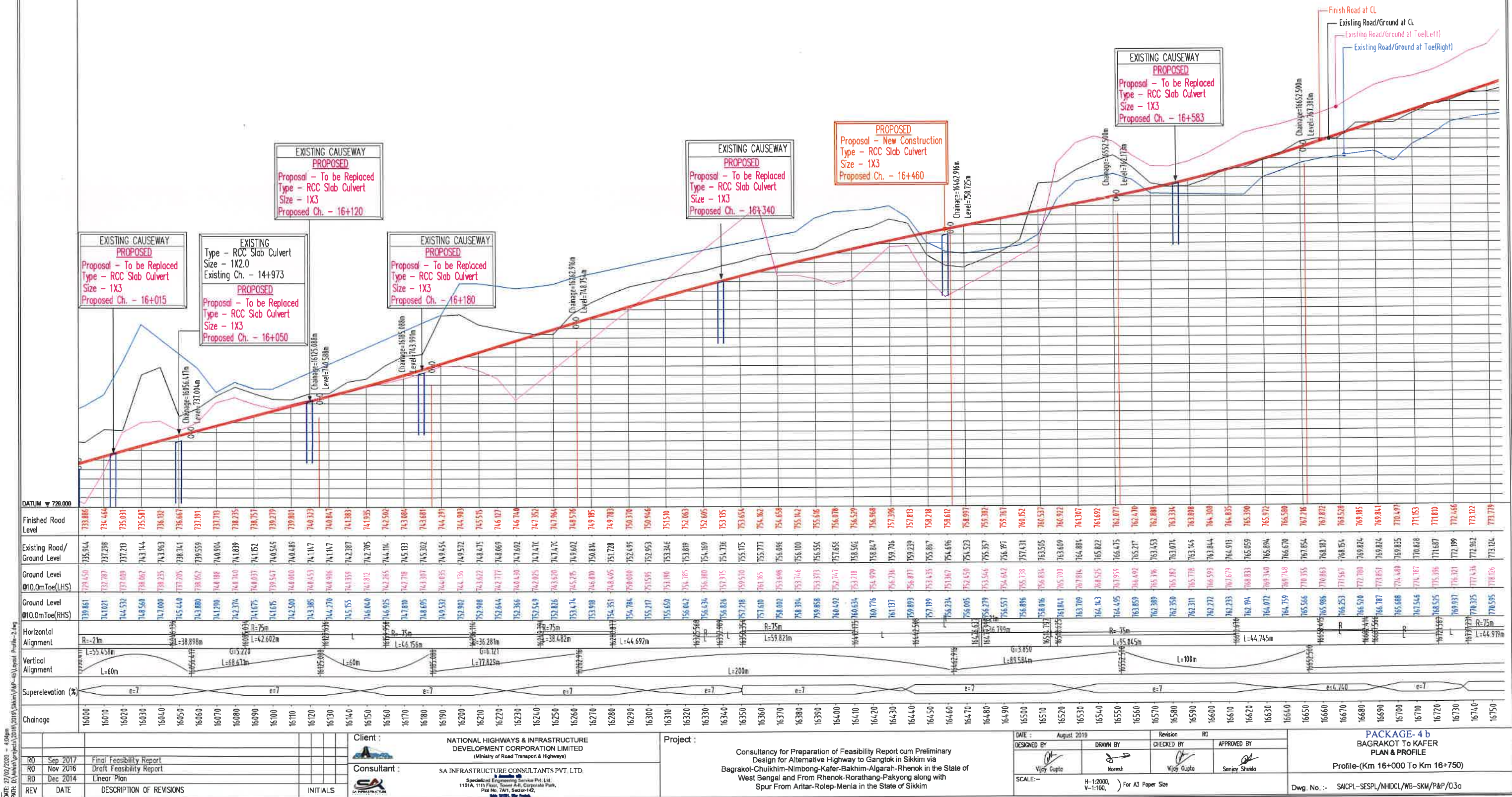
PACKAGE-4b
BAGRAKOT To KAFER
PLAN & PROFILE
Profile-(Km 14+500 To Km 15+250)

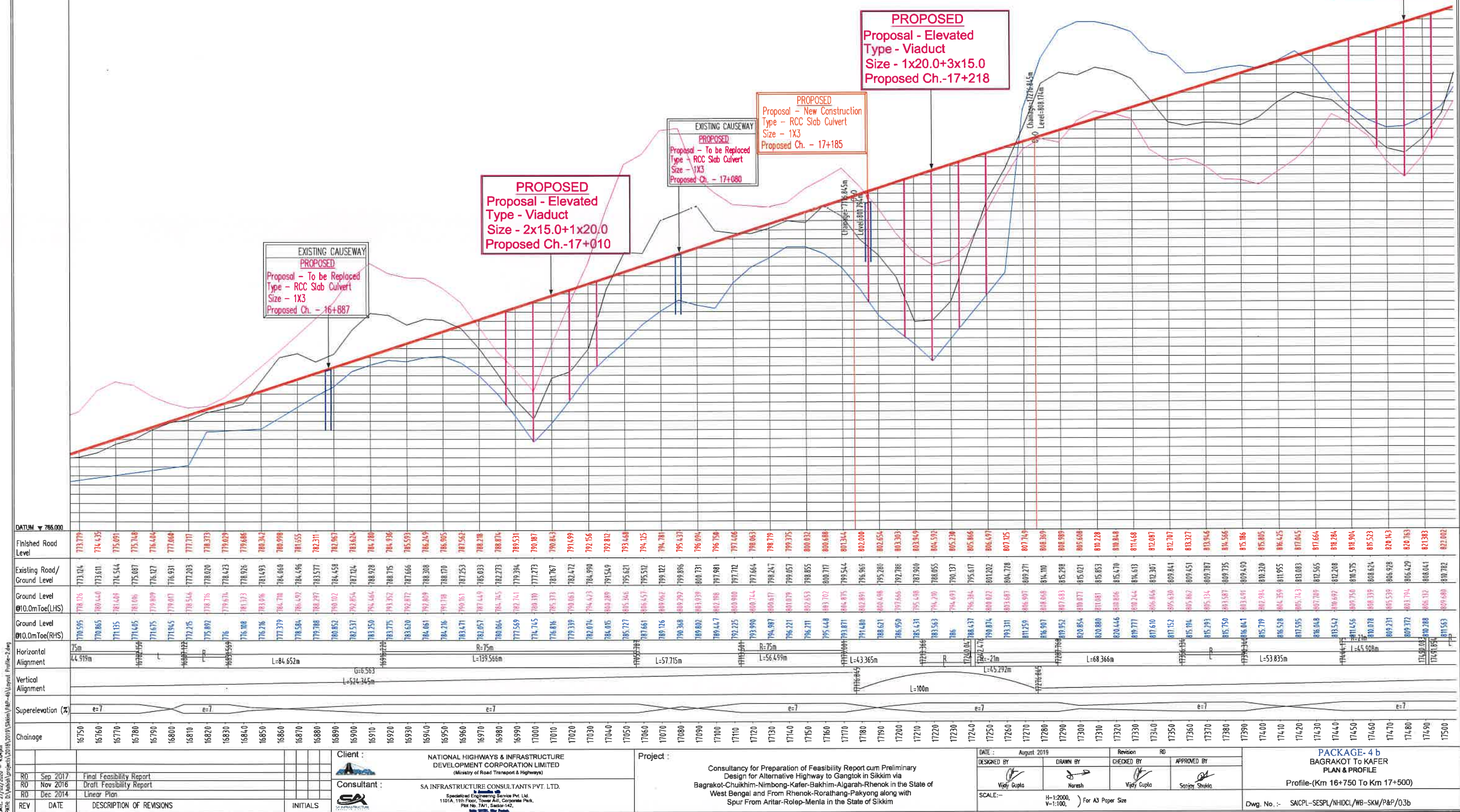
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PACKAGE- 4 b
BAGRAKOT To KAHER
PLAN & PROFILE
(PLAN - Km 16+000 To 17+500)

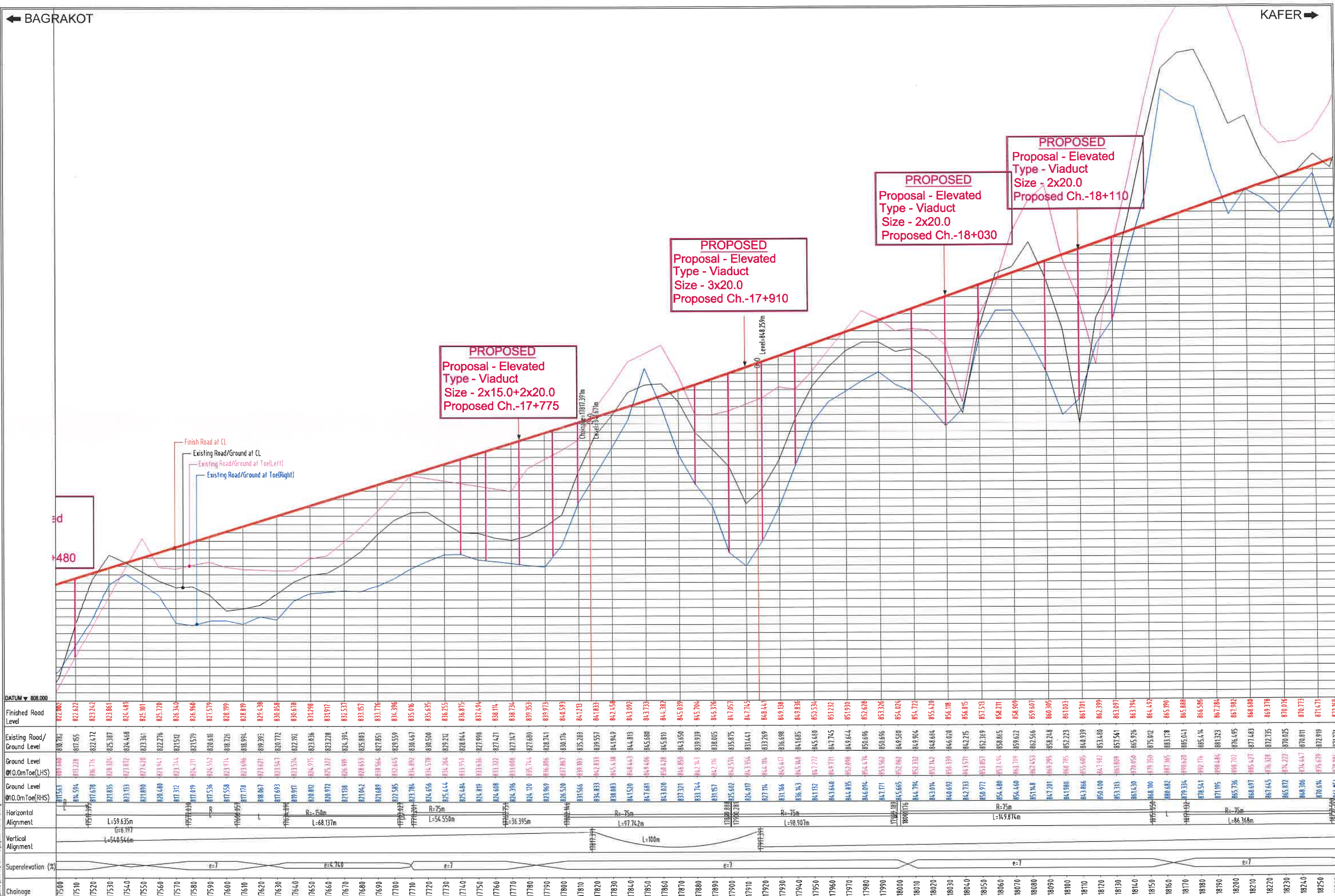




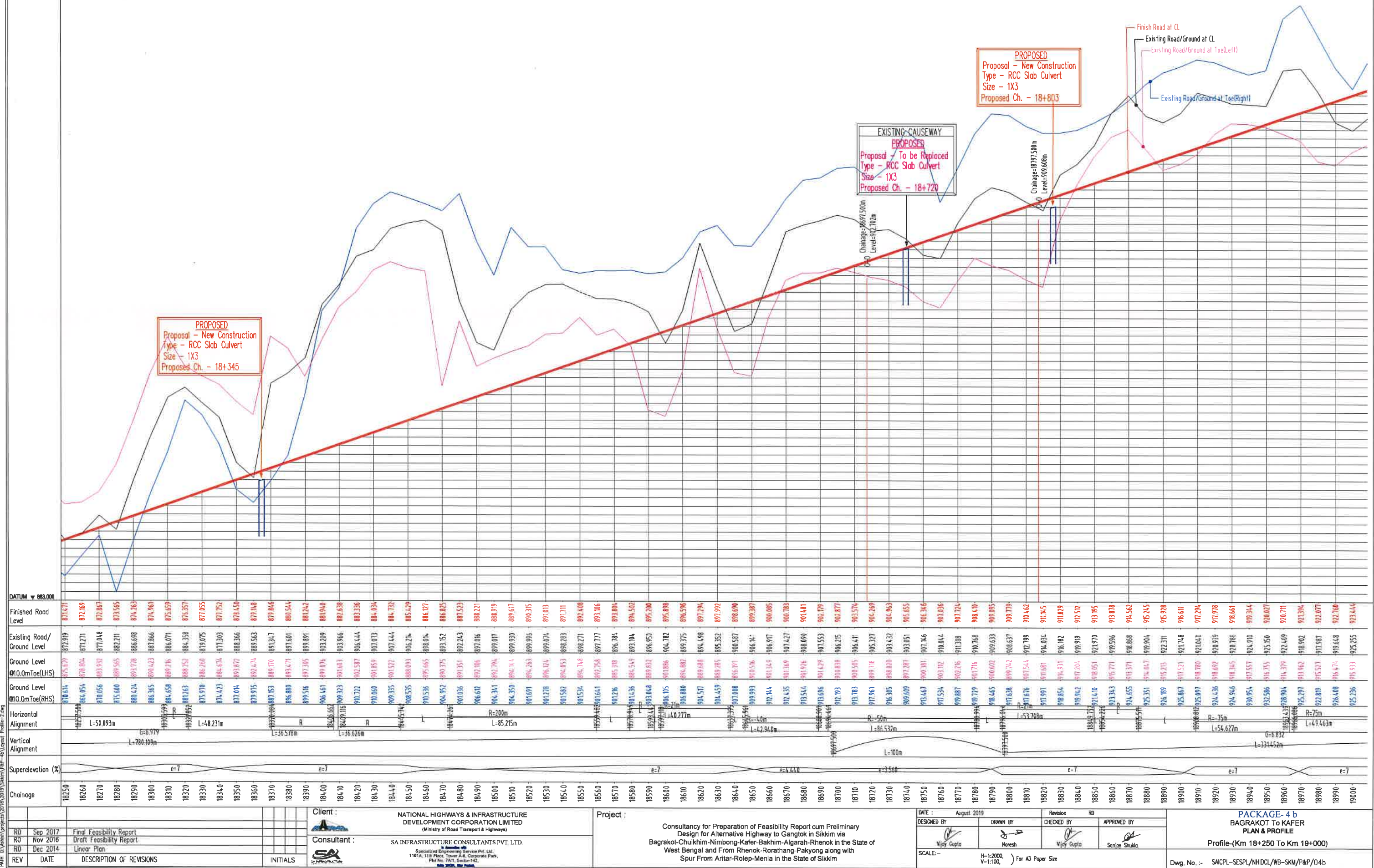
PACKAGE- 4 b
BAGRAKOT To KAFER
PLAN & PROFILE
(PLAN - Km 17+500 To 19+000)

← BAGRAKOT

KAFER →

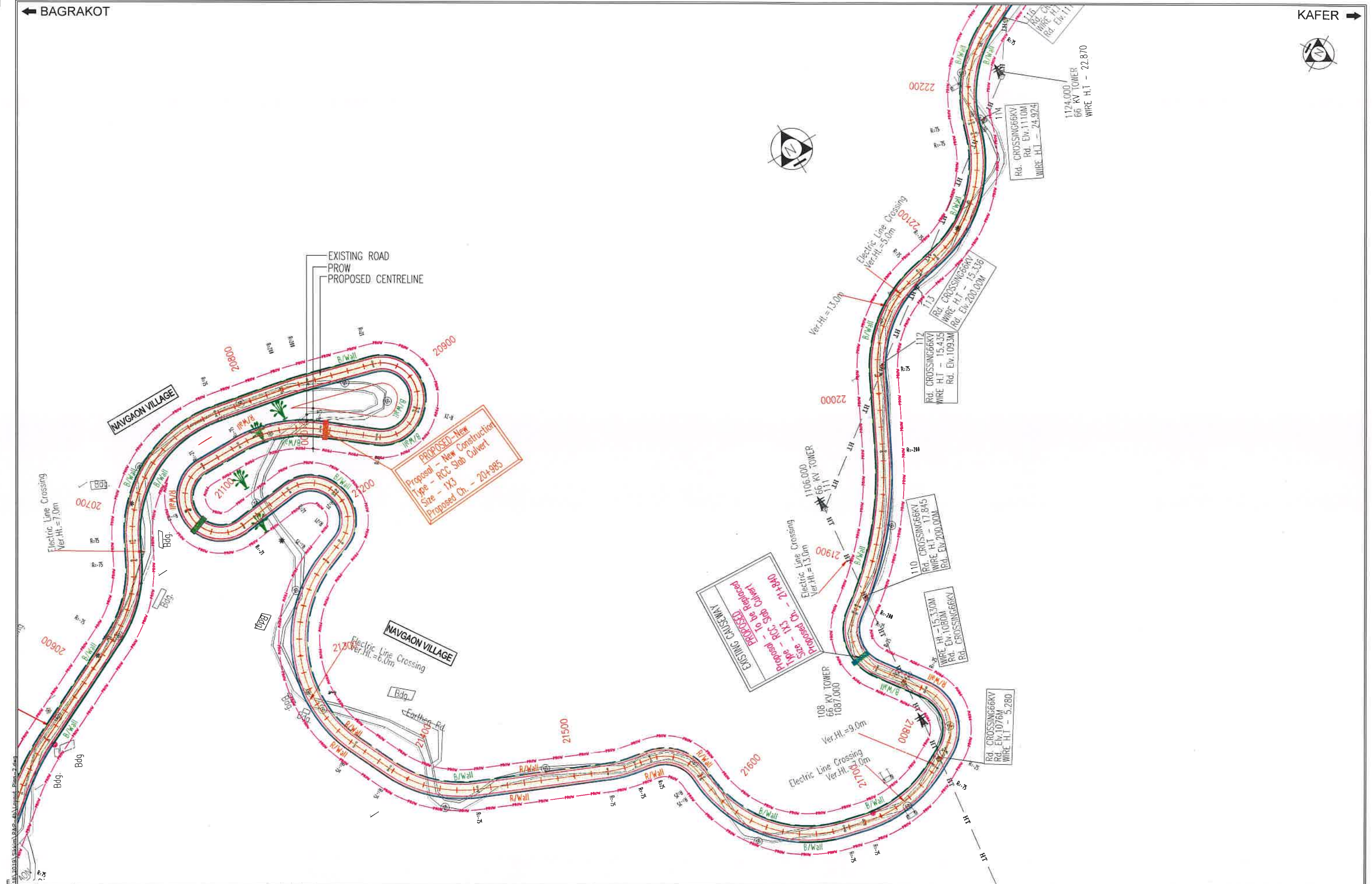


Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)		Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Artar-Rolep-Manla in the State of Sikkim		DATE : August 2018		Revision : RD		PACKAGE-4 b BAGRAKOT TO KAFER PLAN & PROFILE Profile-(Km 17+500 To Km 18+250)	
Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. Specialized Engineering Services Pvt. Ltd. 1101A, 11th Floor, Tower A-II, Corporate Park, Plot No. 7A/1, Sector-142, Gurgaon, Haryana		DESIGNED BY : Vijay Gupta		DRAWN BY : Noresh		CHECKED BY : Vijay Gupta		APPROVED BY : Sanjay Shukla	
REV : 1		DATE : Sep 2017		DESCRIPTION OF REVISIONS : Final Feasibility Report		INITIALS :		Dwg. No. : SAICPL-SESP/L/NHIDCL-WB-SKM/P&P/04a	
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REV : 3		DATE : Dec 2014		DESCRIPTION OF REVISIONS : Linear Plan		INITIALS :			

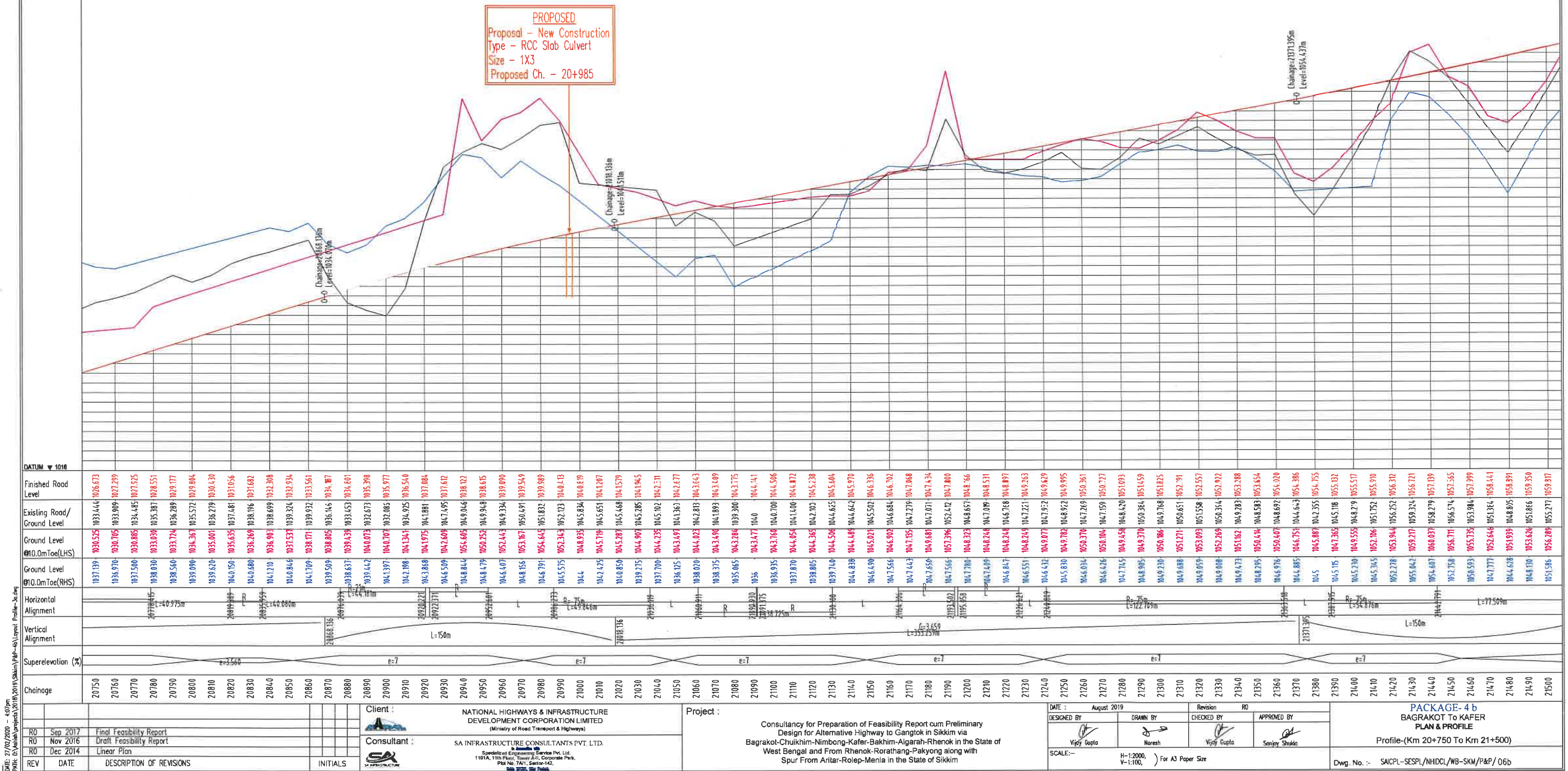




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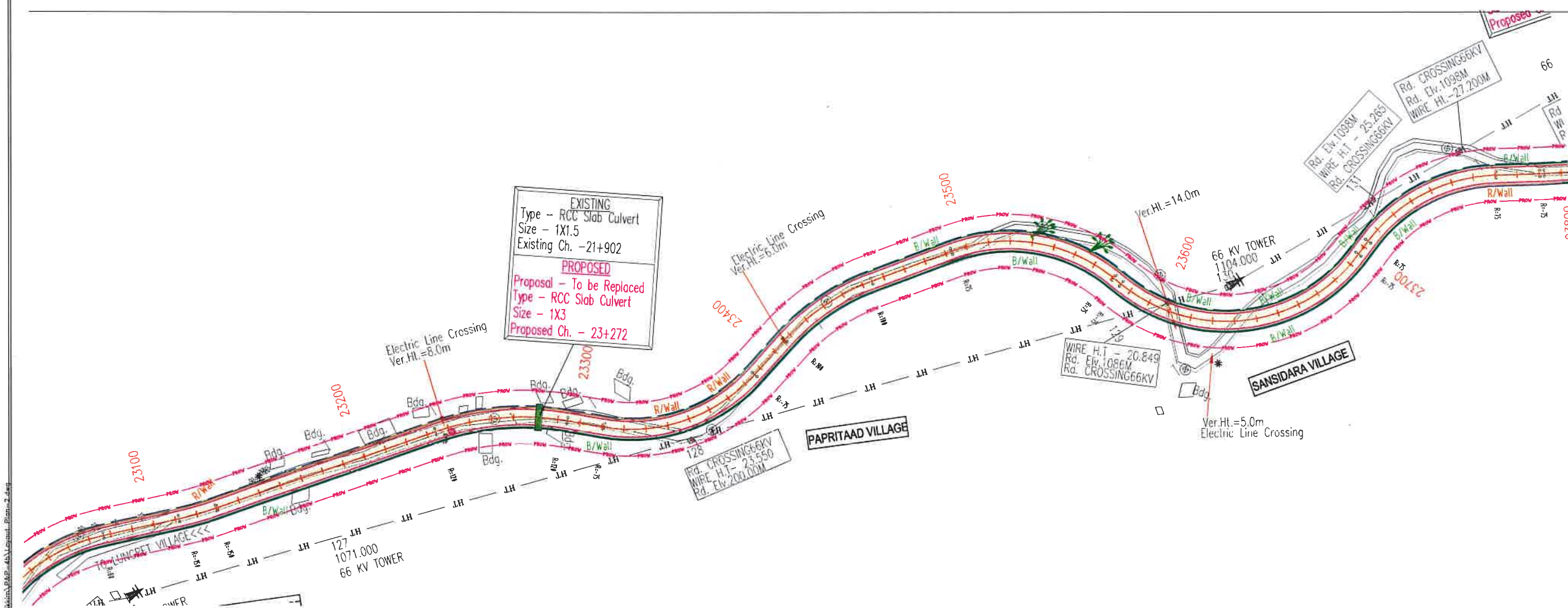
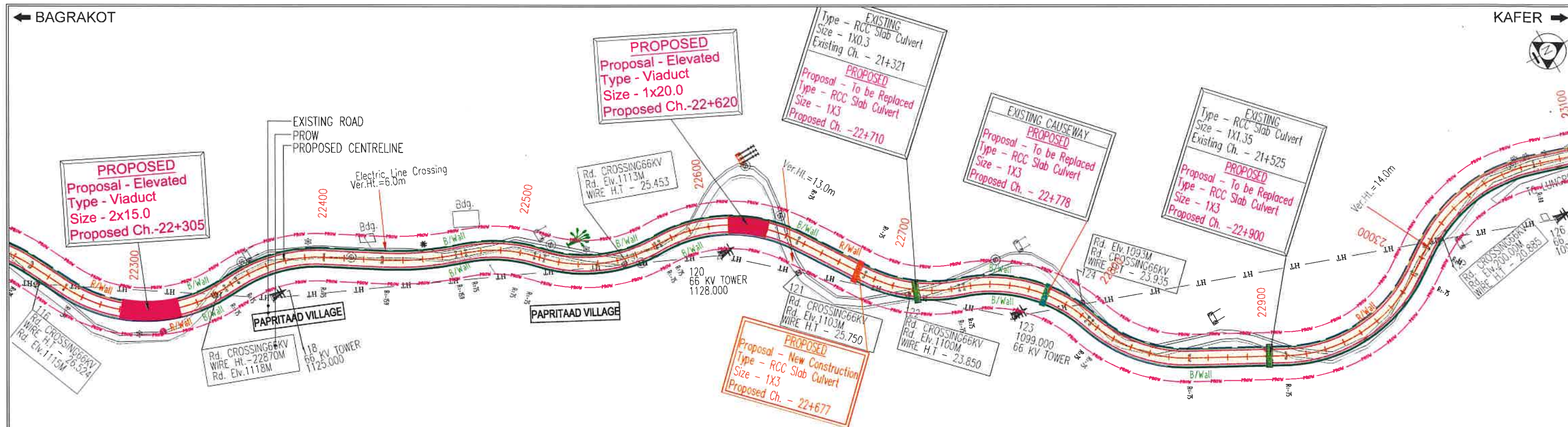
DATE : 31/03/2020 - 23/7/2020 PATH : D:\Study\Project\A3\2019						Client :  NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)		Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim		DATE : November 2019 Revision RO		PACKAGE- 4 b BAGRAKOT To KAFER PLAN & PROFILE (PLAN - Km 20+750 To 22+250)	
RO	Sep 2017	Final Feasibility Report				Consultant :  SA INFRASTRUCTURE CONSULTANTS PVT. LTD. in Association with Specialized Engineering Service Pvt. Ltd. 1101A, 11th Floor, Tower A-II, Corporate Park, Plot No. 7A/1, Sector-142, Noida 201301, Uttar Pradesh.		DESIGNED BY :  DRAWN BY :  CHECKED BY :  APPROVED BY : 					
RO	Nov 2016	Draft Feasibility Report						Vijay GuptaNareshVijay GuptaSanjay Shukla					
RO	Dec 2014	Linear Plan								SCALE:-- H=1:2000, V=1:100,) For A3 Paper Size		Dwg. No. :- SAICPL--SESPL/NHIDCL/WB--SKM/P&P/06	
REV	DATE	DESCRIPTION OF REVISIONS	INITIALS										





BAGRAKOT

KAHER



DATE: 27/02/2020 - 2:37pm

PATH: D:\Mahesh\projects\2016\2016_Sikkim\BAGRAKOT\BAGRAKOT_P&P\BAGRAKOT_P&P.dwg

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
RO	Sep 2017	Final Feasibility Report	
RO	Nov 2016	Draft Feasibility Report	
RO	Dec 2014	Linear Plan	

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
(Ministry of Road Transport & Highways)

Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD.
In Association with
Specialized Engineering Service Pvt. Ltd.
1101A, 11th Floor, Tower A-II, Corporate Park,
Plot No. 7A/1, Sector-142,
Noida 201301, Uttar Pradesh.

Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aitar-Rolep-Menla in the State of Sikkim

DATE : November 2019	Revision	RO
DESIGNED BY	DRAWN BY	CHECKED BY
Vijay Gupta	Naresh	Vijay Gupta
		Sanjay Shukla
SCALE:-	H-1:2000, V-1:100,	For A3 Paper Size

PACKAGE- 4 b
BAGRAKOT To KAHER
PLAN & PROFILE
(PLAN - Km 22+250 To 23+750)

Dwg. No. :- SAICPL-SSEPL/NHIDCL/WB-SKM/P&P/07

PROPOSED
Proposal - Elevated
Type - Viaduct
Size - 2x15.0
Proposed Ch.-22+305

PROPOSED
Proposal - Elevated
Type - Viaduct
Size - 1x20.0
Proposed Ch.-22+620

PROPOSED
Proposal - New Construction
Type - RCC Slab Culvert
Size - 1X3
Proposed Ch. - 22+677

EXISTING
Type - RCC Slab Culvert
Size - 1X0.3
Existing Ch. - 21+321

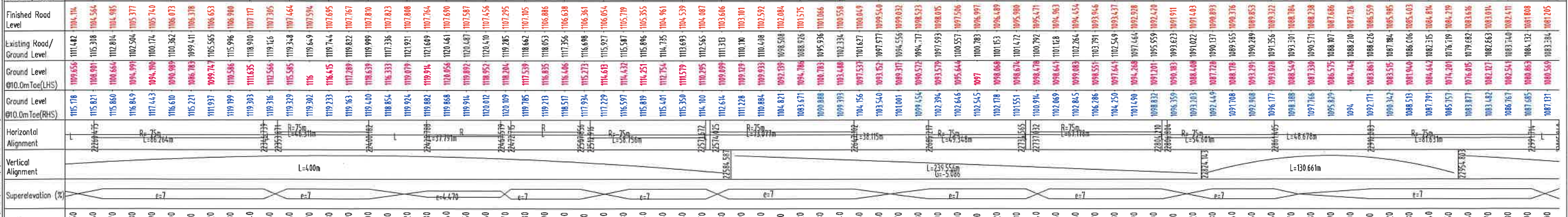
PROPOSED
Proposal - To be Replaced
Type - RCC Slab Culvert
Size - 1X3
Proposed Ch. - 22+710

EXISTING CAUSEWAY
PROPOSED
Proposal - To be Replaced
Type - RCC Slab Culvert
Size - 1X3
Proposed Ch. - 22+778

EXISTING
Type - RCC Slab Culvert
Size - 1X1.35
Existing Ch. - 21+525

PROPOSED
Proposal - To be Replaced
Type - RCC Slab Culvert
Size - 1X3
Proposed Ch. - 22+900

DATUM 1000.0



REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)

Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. Specialized Engineering Services Pvt. Ltd. 1101A, 11th Floor, Tower A-2, Corporate Park, Plot No. 7A/1, Sector-14D, Gurgaon, Haryana

Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim

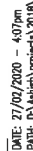
DATE : August 2019

DESIGNED BY : Vicky Gupta	DRAWN BY : Noreah	CHECKED BY : Vicky Gupta	APPROVED BY : Sanjay Shukla
---------------------------	-------------------	--------------------------	-----------------------------

SCALE: - H-1:2000, V-1:100, For A3 Paper Size

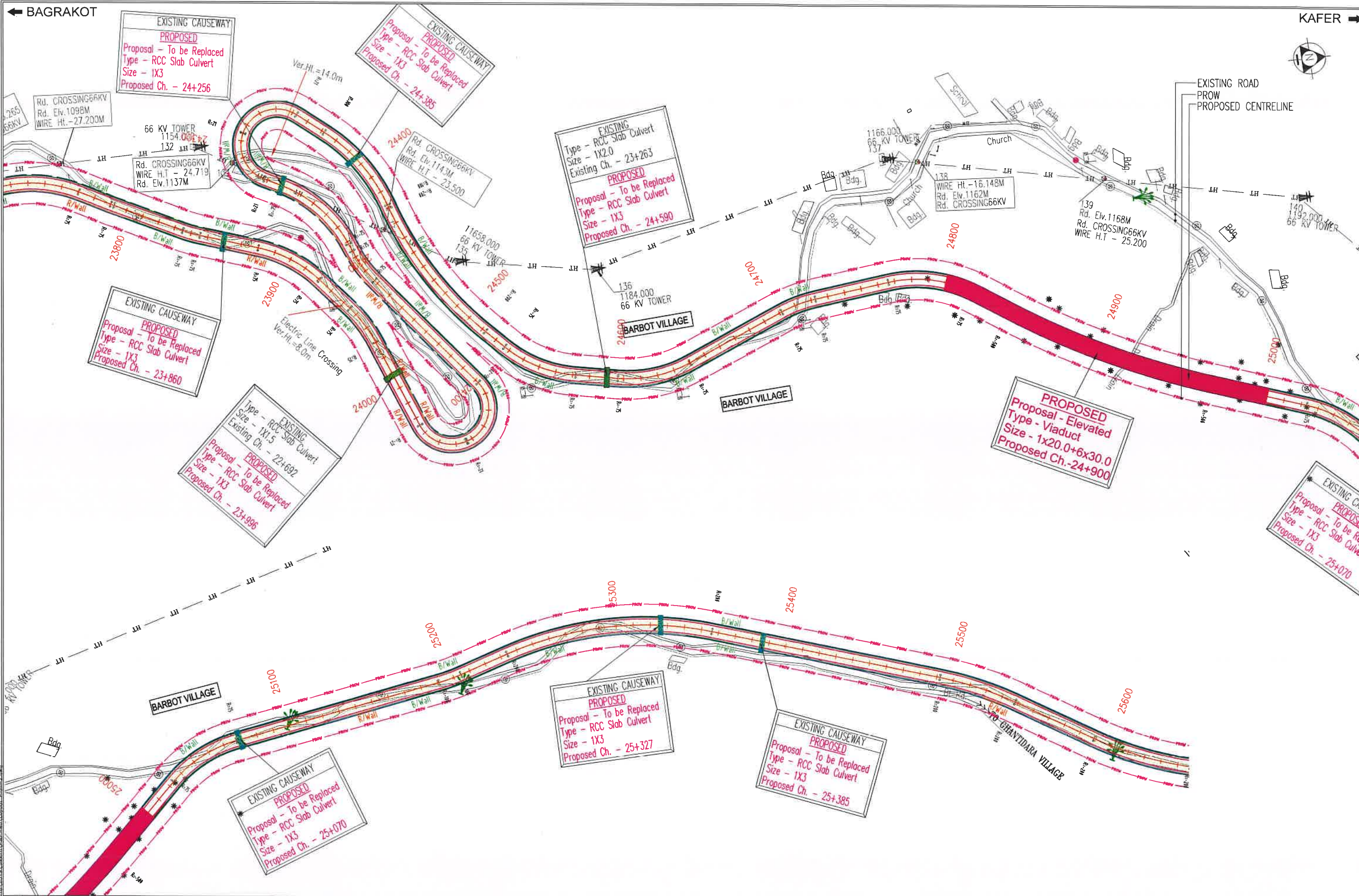
PACKAGE-4b
BAGRAKOT To KAHER
PLAN & PROFILE
Profile-(Km 22+250 To Km 23+000)

Dwg. No. : SAICPL-SESPL/NHIDCL/WB-SKM/P&P/ 07b



BAGRAKOT

KAFER



DATE: 27/02/2020 - 2143pm

PATH: D:\Mahesh\project\11\11.01.2019\SIKIM\F&E-Alt Layout_Bagrakot.dwg

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
 (Ministry of Road Transport & Highways)

Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD.
 In Association with
 Specialized Engineering Service Pvt. Ltd.
 1101A, 11th Floor, Tower A-II, Corporate Park,
 Plot No. 7A/1, Sector-142,
 Noida 201301, Uttar Pradesh

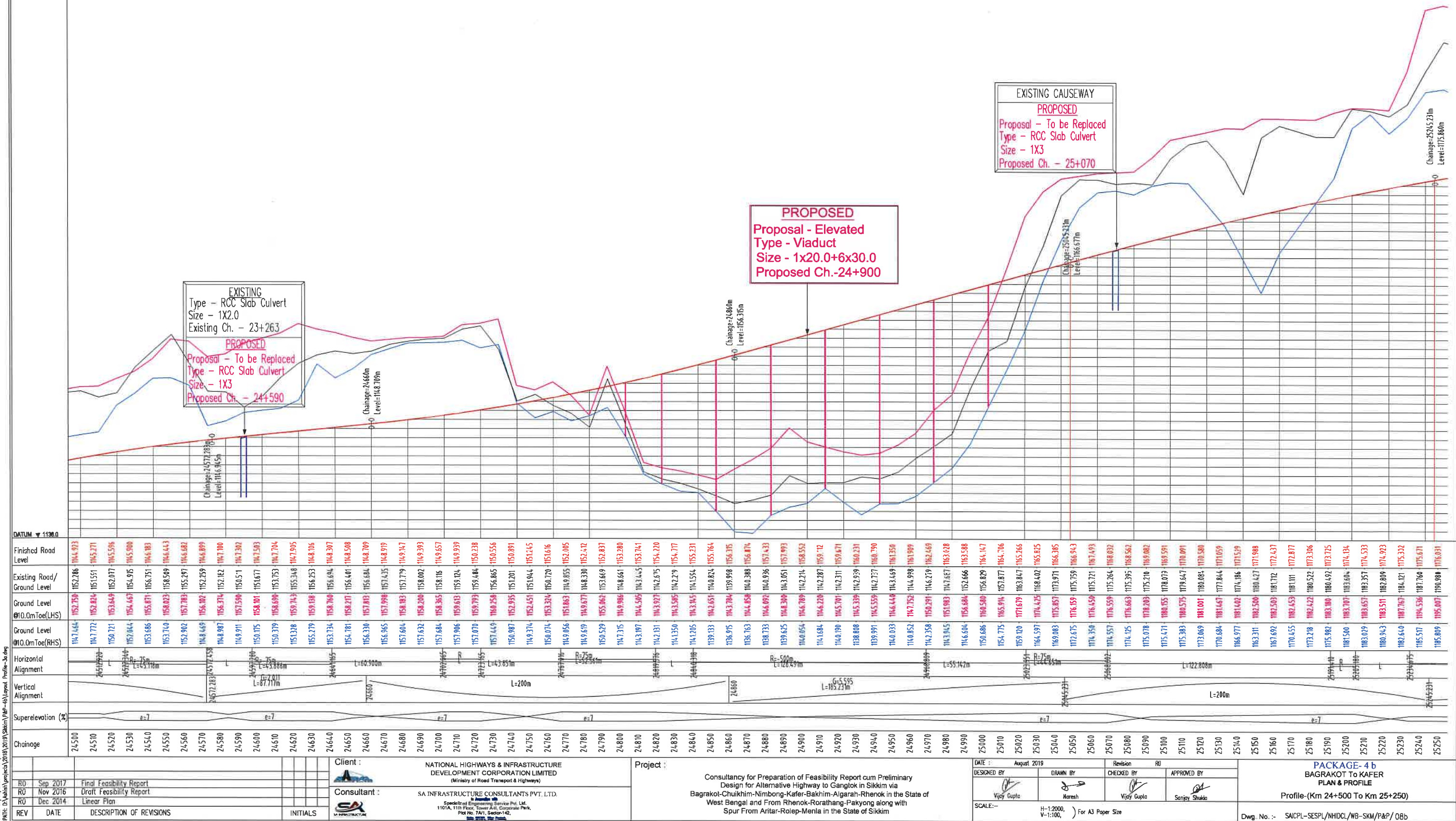
Project :
 Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Antar-Rolep-Menla in the State of Sikkim

DATE : November 2019	Revision	RO
DESIGNED BY	DRAWN BY	CHECKED BY
Vijay Gupta	Noresh	Vijay Gupta
		Sanjay Shukla
SCALE:-	H-1:2000, V-1:100,	For A3 Paper Size

PACKAGE- 4 b
 BAGRAKOT To KAFER
 PLAN & PROFILE
 (PLAN - Km 23+750 To 25+600)

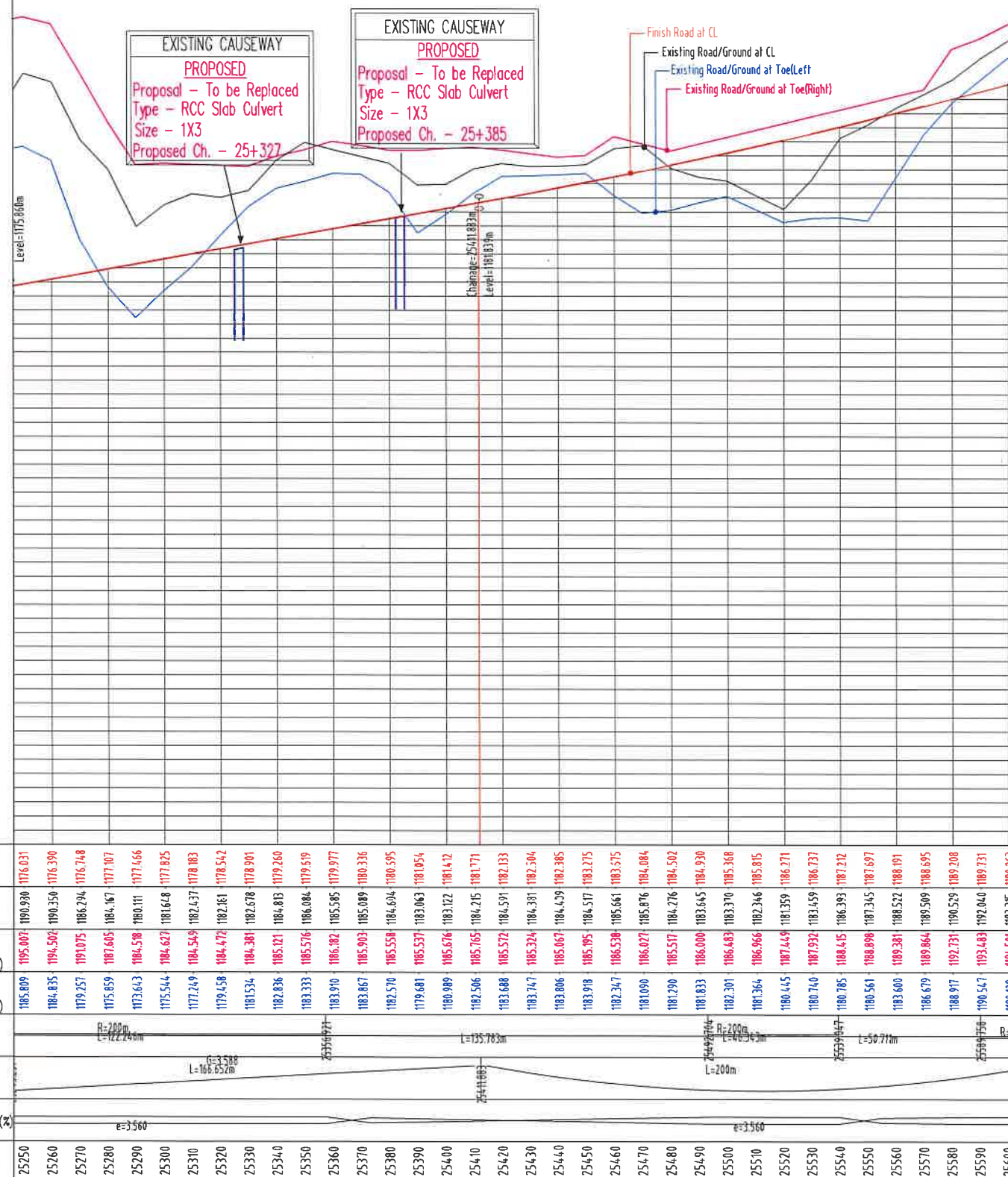
Dwg. No. :- SAICPL-SESPL/NHIDCL/WB-SKM/P&P/08





← BAGRAKOT

KAFER →



REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	

Client :	NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)
Consultant :	SA INFRASTRUCTURE CONSULTANTS PVT. LTD. Specialized Engineering Services Pvt. Ltd. 1101A, 11th Floor, Tower A, Corporate Park, Plot No. 7A/1, Sector-142, Gurgaon, Haryana

Project :	Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim
-----------	--

DATE :	August 2018	Revision :	R0
DESIGNED BY :	Vijay Gupta	DRAWN BY :	Naresh
CHECKED BY :	Vijay Gupta	APPROVED BY :	Sanjay Shukla

SCALE:--	H=1:2000, V=1:100,) For A3 Paper Size
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Dwg. No.:-	SAICPL-SESPL/NHIDCL/WB-SKM/P&P/08b
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STANDRED DRAWING

CAUTIONARY/WARNING SIGNS



DATE: 10/09/2019 - 10:03am
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REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE
 DEVELOPMENT CORPORATION LIMITED
 (Ministry of Road Transport & Highways)

Consultant : SA INFRASTRUCTURE CONSULTANTS PVT LTD
 Specialized Engineering Service Pvt. Ltd.
 1101A, 11th Floor, Tower A-II, Corporate Park
 Plot No. 7A/1, Sector-142
 Noida-201301, Uttar Pradesh

Project : Consultancy for Preparation of Feasibility Report cum Preliminary
 Design for Alternative Highway to Gangtok in Sikkim via
 Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of
 West Bengal and From Rhenok-Rorathang-Pakyong along with
 Spur From Aritar-Rolep-Menla in the State of Sikkim

DATE : August 2019	Revision	RO
DESIGNED BY	DRAWN BY	CHECKED BY
Vijay Gupta	Noresh	R.Nayak
SCALE:-NTS		Sanjay Shukla

PACKAGE- 4
 BAGRAKOT To KAFER
 ROAD SIGN
 (Sheet 1 of 3)

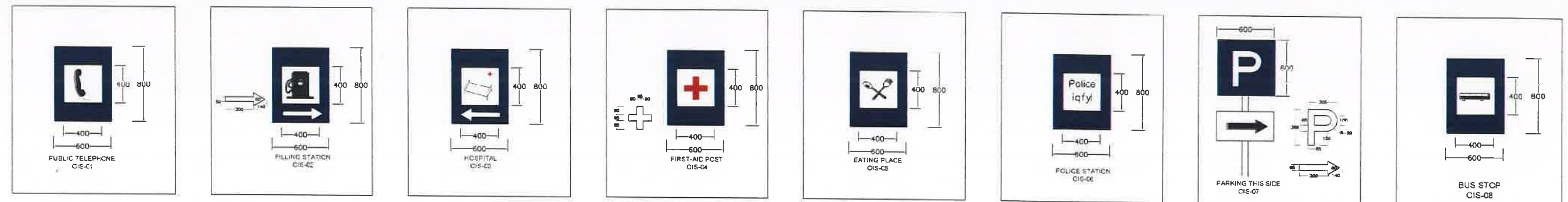
Dwg No :- SACPL-SESPL/NHIDCL/WB-SKM/Misc/01

MANDATORY/REGULATORY SIGNS



INFORMATORY SIGN BOARD:-

(A) FACILITY INFORMATION SIGNS



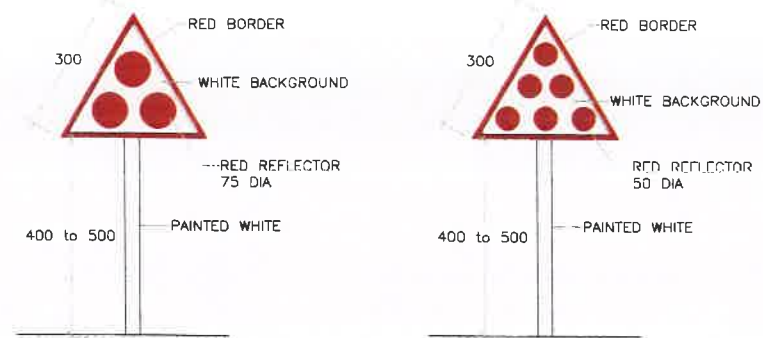
(B) DIRECTION AND PLACE IDENTIFICATION SIGNS



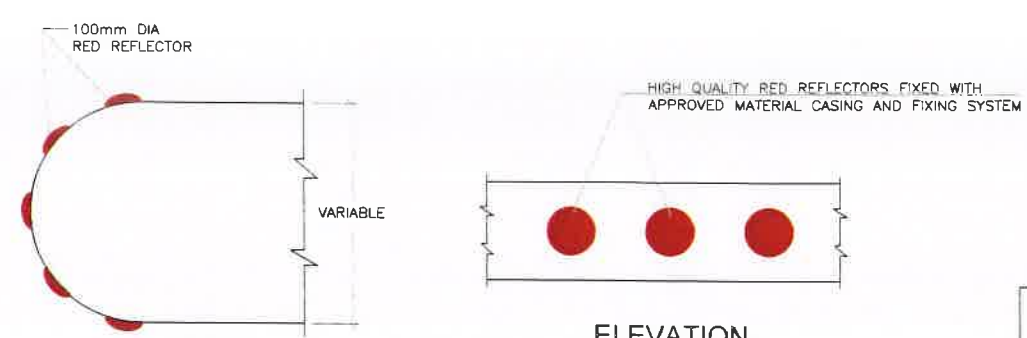
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REV	DATE	DESCRIPTION OF REVISIONS	INITIALS	Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)	Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim	DATE : August 2019	Revision	RO	PACKAGE-4 BAGRAKOT To KAFER ROAD SIGN (Sheet 2 of 3)
R0	Sep 2017	Final Feasibility Report		Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. Specialized Engineering Service Pvt. Ltd. 1101A, 11th Floor, Tower A-11, Corporate Park Plot No. 7A/1, Sector-142 Roode 201301, Uttar Pradesh		DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
R0	Nov 2016	Draft Feasibility Report				Vijay Gupta	Noresh	R.Nayak	Sanjay Shukla
R0	Dec 2014	Linear Plan				SCALE: -NTS			

Dwg. No. : SAICPL-SESPL/NHIDCL/WB-SKM/Misc/01



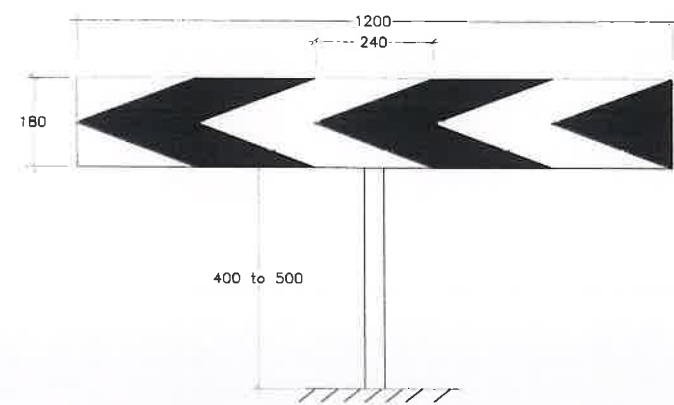
CLUSTER OF RED REFLECTORS
TA-1



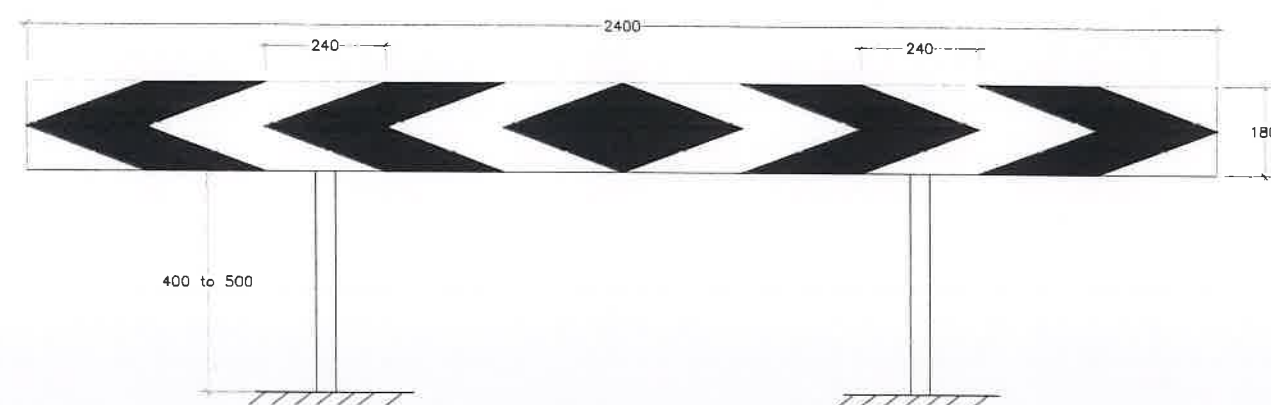
MEDIAN TIP REFLECTORS
TA-2

HIGH QUALITY RED REFLECTORS OF APPROVED SIZE AND SHAPE (TO FIXED IN THE SHAPE OF W-BEAM), FIXED WITH APPROVED MATERIAL, CASING AND FIXUP SYSTEM

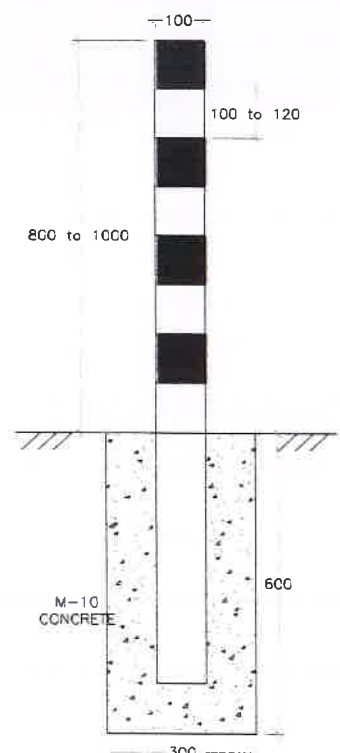
ON W-BEAM OF
METAL BEAM
CRASH BARRIER
TA-3



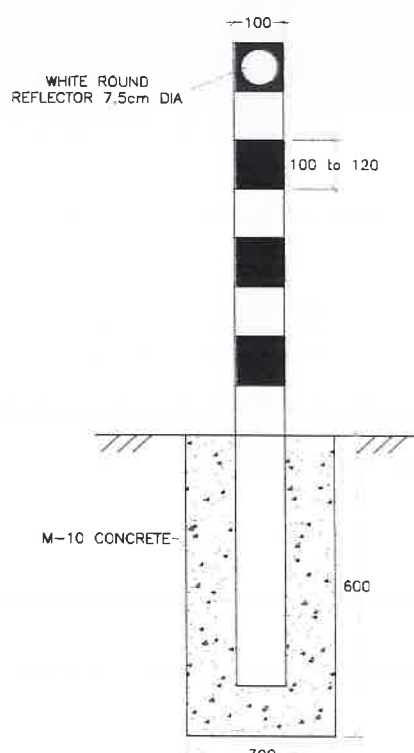
ONE-WAY HAZARD MARKER



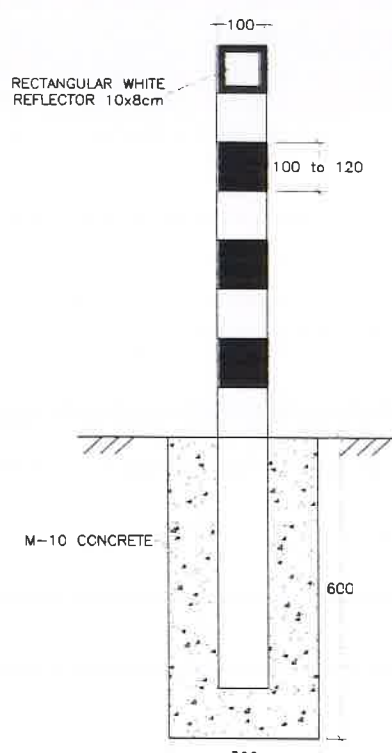
TWO-WAY HAZARD MARKER



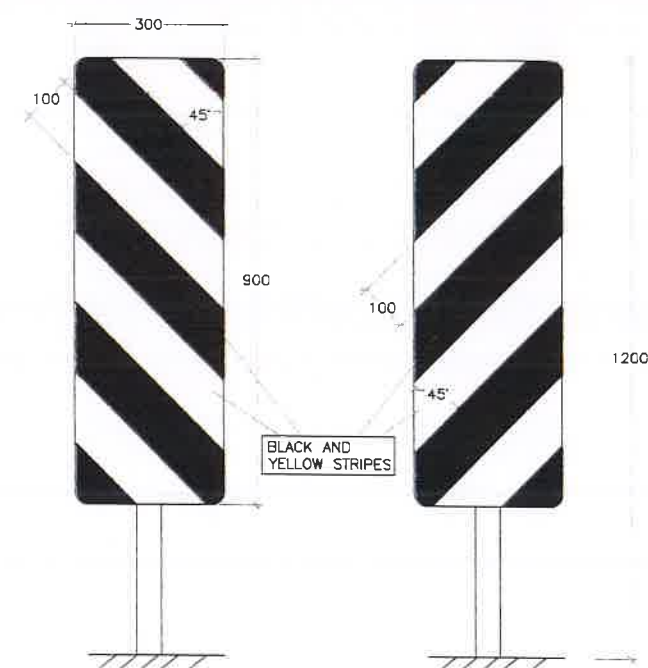
DELINEATOR
WITHOUT
REFLECTOR



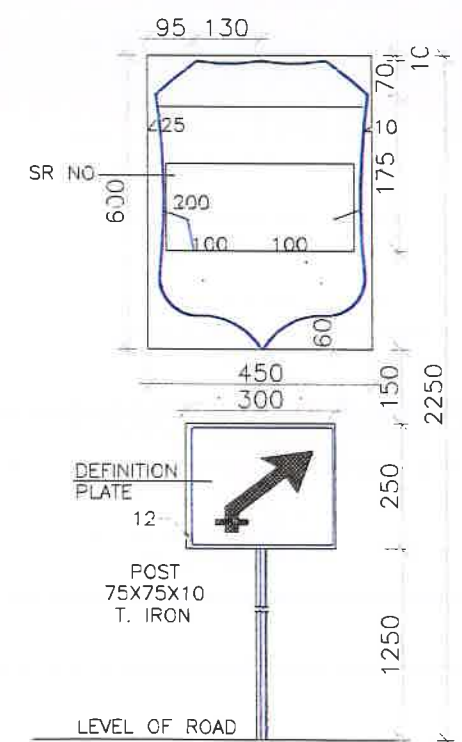
DELINEATOR
WITH CIRCULAR
REFLECTOR
ROADWAY DELINEATORS



DELINEATOR
WITH RECTANGULAR
REFLECTOR



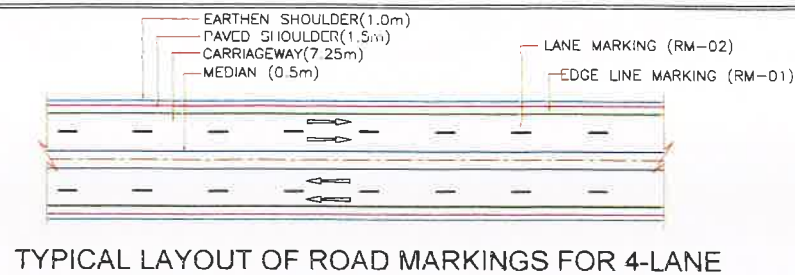
LEFT
RIGHT
OBJECT HAZARD MARKERS



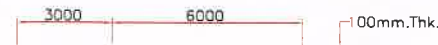
ASSEMBLY OF ROUTE MARK SIGN
ARRANGEMENT FOR ERECTION OF
STATE ROUTE MARKER SIGN

DATE: 10/09/2019 - 10:05am
PATH: D:\09-2019\09-2019\STANDARD DRAWING\MS-3-ROAD SIGNS-III (Sheet 3 of 3).dwg

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)			Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim			DATE : August 2019		Revision R0		PACKAGE-4 BAGRAKOT To KAFER ROAD SIGN (Sheet 03 of 03)	
Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. Specialized Engineering Service Pvt. Ltd. 1101A 11th Floor, Tower A-4, Corporate Park Plot No. 7A/1, Sector 142 Huda 20/201, Uttar Pradesh			DESIGNED BY Vijay Gupta DRAWN BY Naresh CHECKED BY R.Nayak APPROVED BY Sanjay Shukla SCALE: -NTS			DATE : August 2019		Revision R0		PACKAGE-4 BAGRAKOT To KAFER ROAD SIGN (Sheet 03 of 03)	
REV DATE DESCRIPTION OF REVISIONS INITIALS			Dwg. No. :- SAICPL-SESPL/NHIDCL/WB-SKM/Misc/03								



TYPICAL LAYOUT OF ROAD MARKINGS FOR 4-LANE



LANE MARKING AT STRAIGHT REACHES IN RURAL AREA(RM-02A)



LANE MARKING AT CURVES IN RURAL AREA(RM-02B)



LANE MARKING AT APPROACHES TO INTERSECTION IN RURAL AREA(RM-02C)



LANE MARKING ON STRAIGHT REACHES IN URBAN AREA (RM-03A)



LANE MARKING AT CURVES AND APPROACHES TO INTERSECTION IN URBAN AREAS (RM-03B)



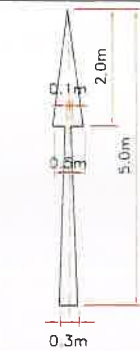
EXTENSION OF EDGE AT BUS BAY AREA (RM-04)



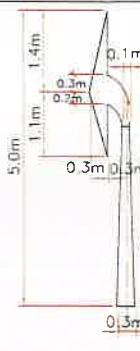
LANE MARKING FOR 2-LANE ROAD ON STRAIGHT REACHES IN URBAN AREA(RM-05A)



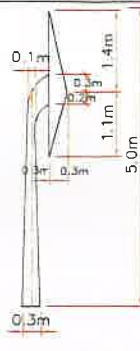
LANE MARKING FOR 2-LANE ROAD ON CURVES AND APPROACHES TO INTERSECTION IN URBAN AREA(RM-05B)



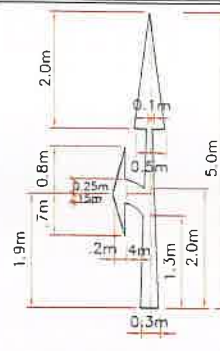
STRAIGHT RM-12



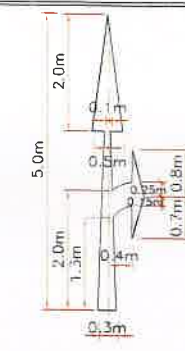
LEFT RM-13



RIGHT RM-14

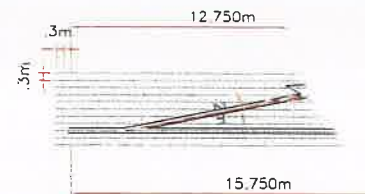


STRAIGHT & LEFT RM-15

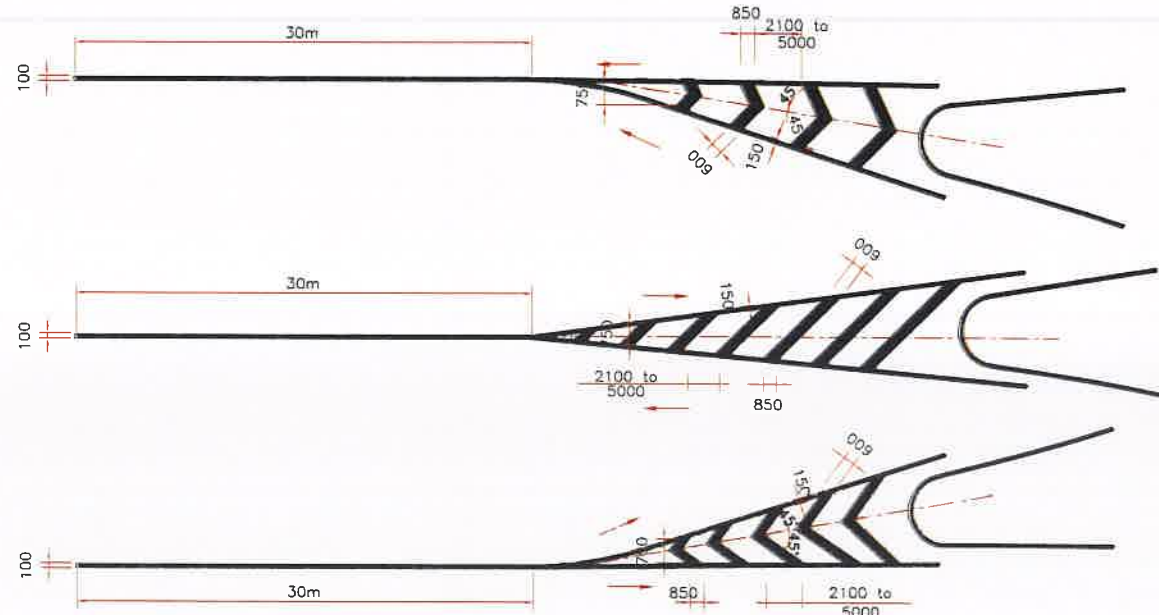


STRAIGHT & RIGHT RM-16

ROUTE DIRECTIONAL ARROWS FOR PROJECT ROAD
(ALL THE ARROWS ARE IN WHITE COLOUR)



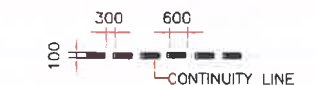
ARROWS FOR DECELERATION RM-17



TOTAL LENGTH OF MARKING (m)	CLEAR SPACING BETWEEN DIAGONALS OR CHEVRONS(mm)	
	SPEED(<75km/h)	SPEED(>75km/h)
<6	2100	—
6 TO 22	3500	—
>22	5000	—
<10	—	4000
>10	—	6000

1. ALL LENGTHS AND SPACINGS IN THE TABLE ARE MEASURED PARALLEL TO ROAD CENTRE LANE.
2. FIRST DIAGONAL OR CHEVRON IS TO BE SO LOCATED THAT ITS LENGTH IS AT LEAST EQUAL TO ITS WIDTH.
3. WIDTH OF ALL DIAGONALS/CHEVRONS MEASURED AT RIGHT ANGLES TO THE DIAGONALS OR CHEVRONS IS 600mm.

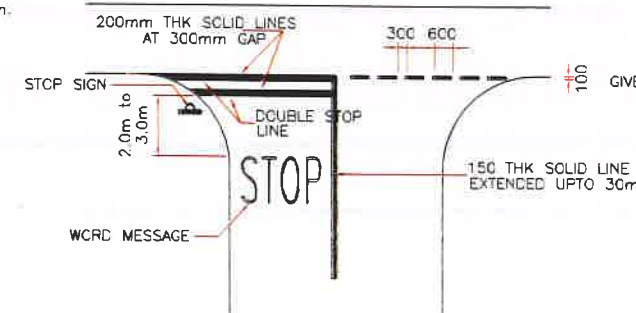
DETAILS OF DIAGONAL AND CHEVRON MARKINGS (RM-09)



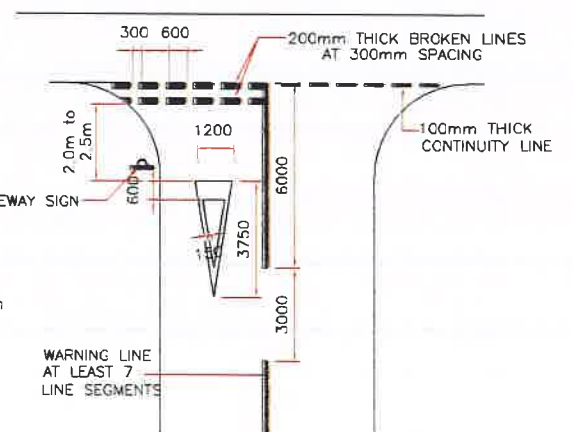
WARNING LINES (RM-10)



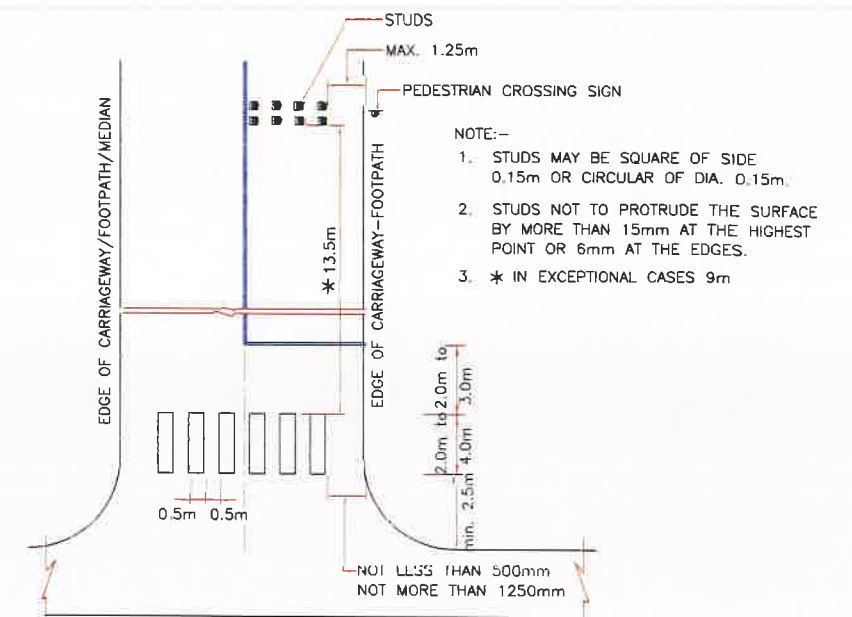
KERB MARKINGS (RM-11)



STOP LINE MARKINGS FOR USE WITH STOP SIGN (RM-06)



MARKINGS FOR GIVE WAY LINES (RM-07)



PEDESTRIAN CROSSING AT AN UNSIGNALISED INTERSECTION (RM-08)

- NOTE:-
1. STUDS MAY BE SQUARE OF SIDE 0.15m OR CIRCULAR OF DIA. 0.15m.
 2. STUDS NOT TO PROTRUDE THE SURFACE BY MORE THAN 15mm AT THE HIGHEST POINT OR 6mm AT THE EDGES.
 3. * IN EXCEPTIONAL CASES 9m

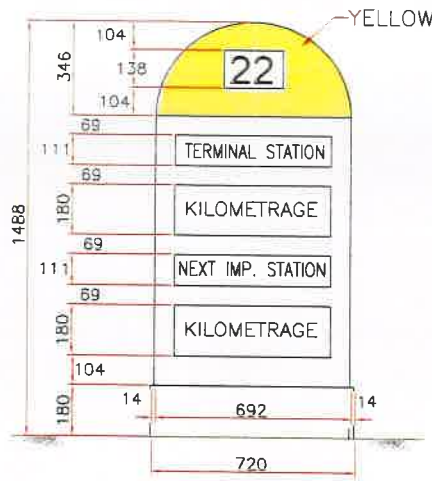
REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
RO	Sep 2017	Final Feasibility Report	
RO	Nov 2016	Draft Feasibility Report	
RO	Dec 2014	Linear Plan	

Client :	NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)
Consultant :	SA INFRASTRUCTURE CONSULTANTS PVT LTD Specialized Engineering Service Pvt. Ltd. 1101A, 11th Floor, Tower A-II, Corporate Park Plot No. 7A/1, Sector-142, Road No. 20/30, Uttam Pradesh

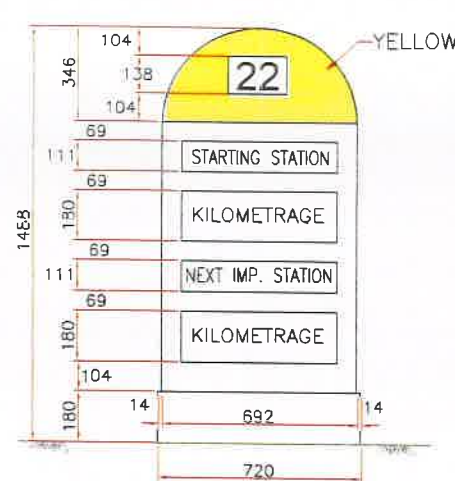
Project :
Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim

DATE :	August 2019	Revision :	RO
DESIGNED BY :	Vijay Gupta	CHECKED BY :	R.Nayak
DRAWN BY :	Naresh	APPROVED BY :	Sanjay Shukla
SCALE :	NTS		

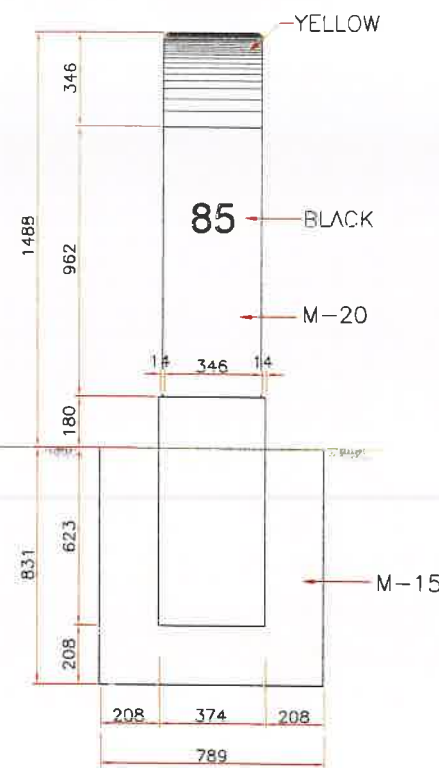
PACKAGE-4
BAGRAKOT To KAFER
DETAIL OF ROAD MARKING



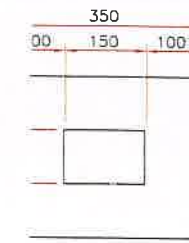
ELEVATION
FACE-I



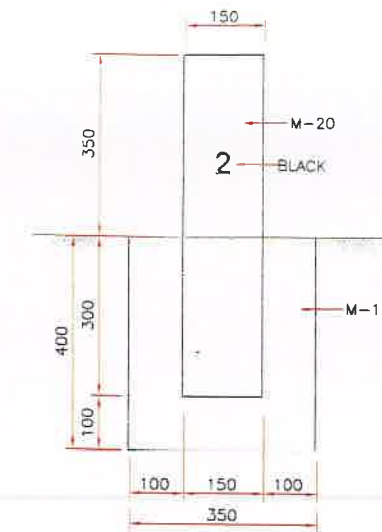
ELEVATION
FACE-II



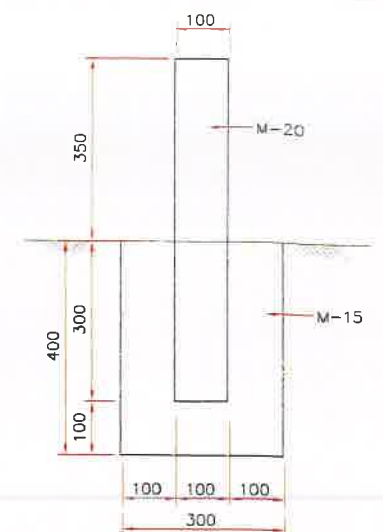
SIDE ELEVATION



SECTIONAL PLAN

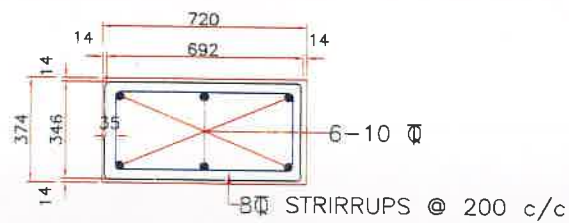


FRONT ELEVATION



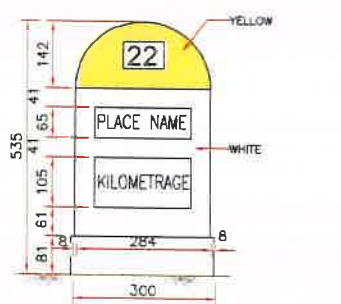
SIDE ELEVATION

DETAIL OF 200 METRE STONE
(SCALE 1:10)

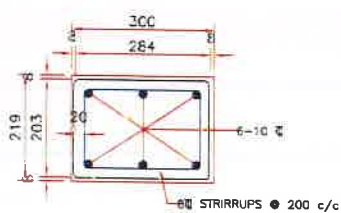


SECTIONAL PLAN

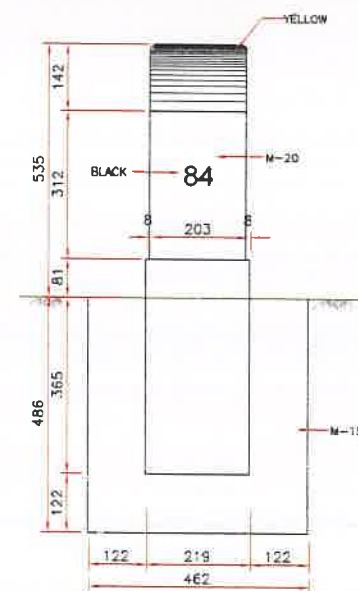
DETAIL OF FIFTH KILOMETRE STONE
(SCALE 1:20)



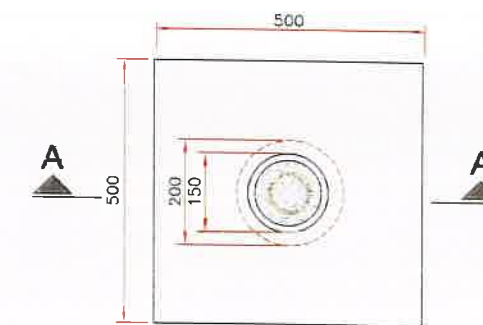
ELEVATION



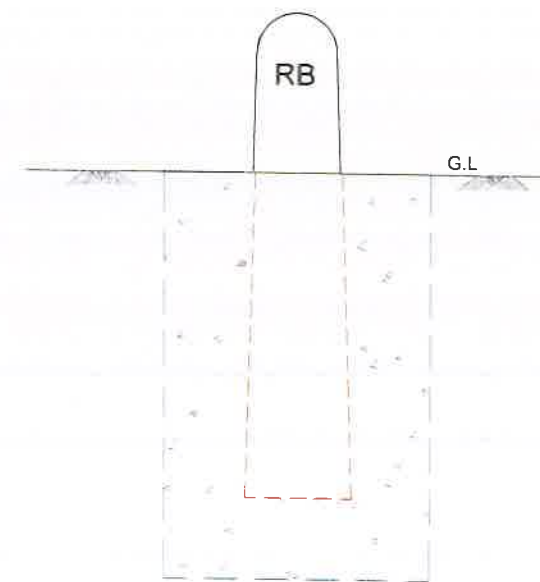
SECTIONAL PLAN



SIDE ELEVATION



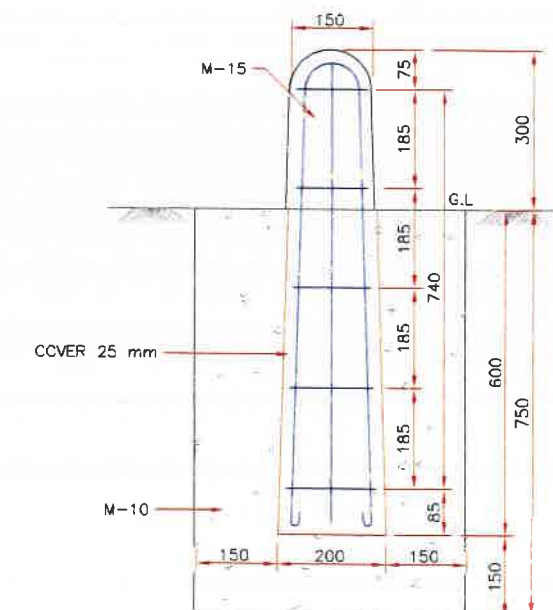
PLAN



ELEVATION

BAR BENDING SCHEDULE FOR BOUNDARY STONE

S NO.	TYPE OF M.S. BAR	NO OF BARS	SHAPE OF BARS	DIA IN mm	LENGTH OF ONE BAR INCLUDING HOOKS
1.	MAIN BARS	2		6 mm	1.48 m
2.	TOPMOST STIRRUP	1		6 mm	370 mm
3.	STIRRUP (FIRST FROM TOP)	1		6 mm	405 mm
4.	STIRRUP (SECOND FROM TOP)	1		6 mm	440mm
5.	STIRRUP (THIRD FROM TOP)	1		6 mm	475 mm
6.	BOTTOMMOST STIRRUP	1		6 mm	810 mm



SECTION A-A

DETAIL OF KILOMETRE STONE
(SCALE 1:10)

DETAIL OF BOUNDARY STONE
(SCALE 1:10)

DATE: 10/09/2019 - 11:45am
PATH: D:\G-Drive\Aug 2019\Sikkim\A\STANDARD DRAWING\MIS-5\DETAIL OF DISTANCE & BOUNDARY STONE.dwg

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	

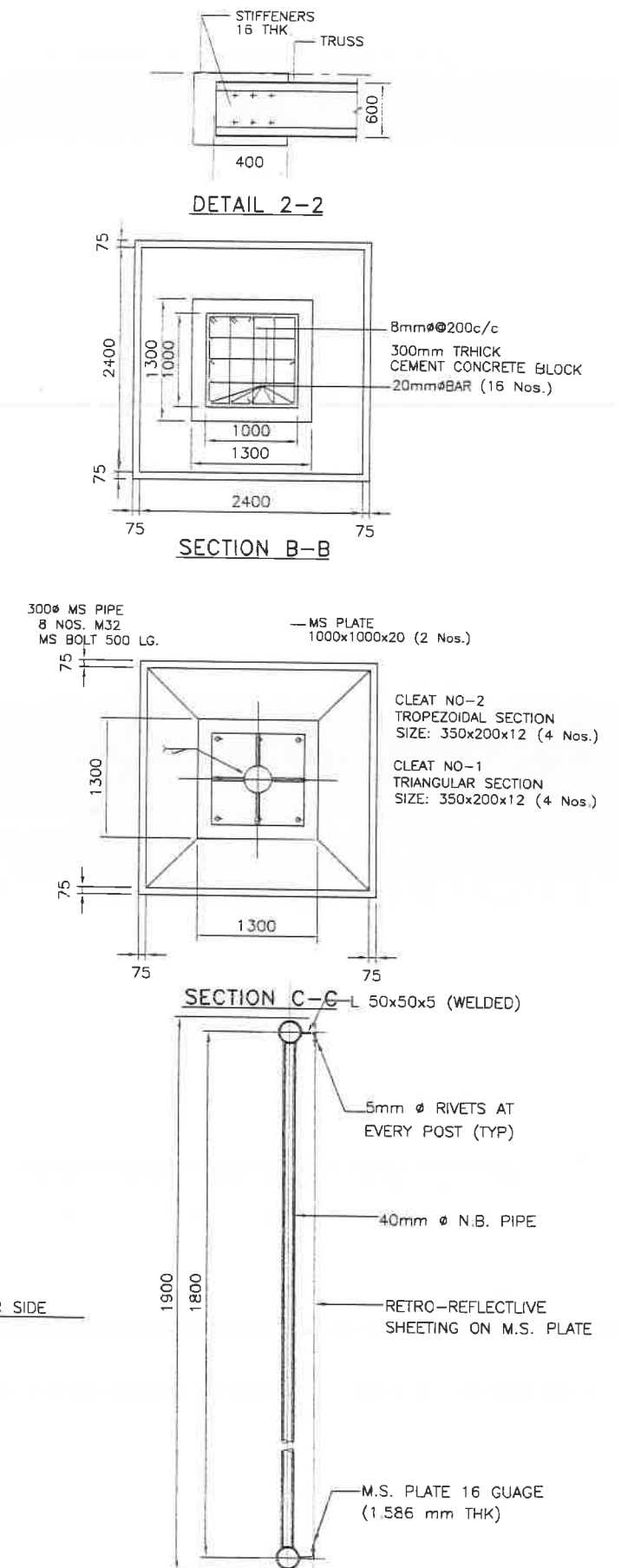
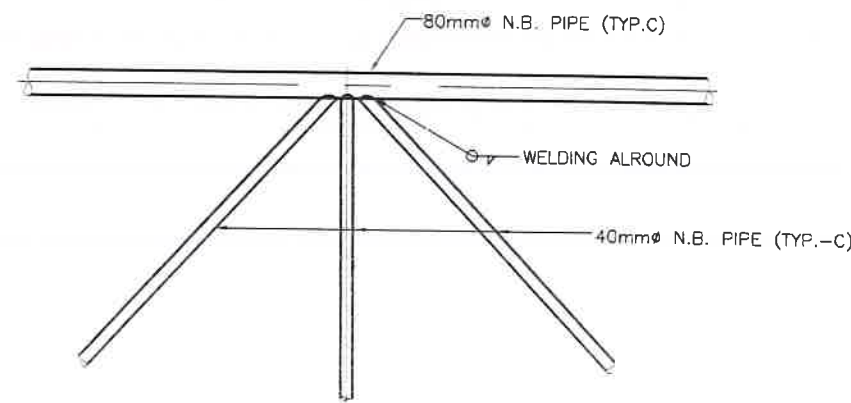
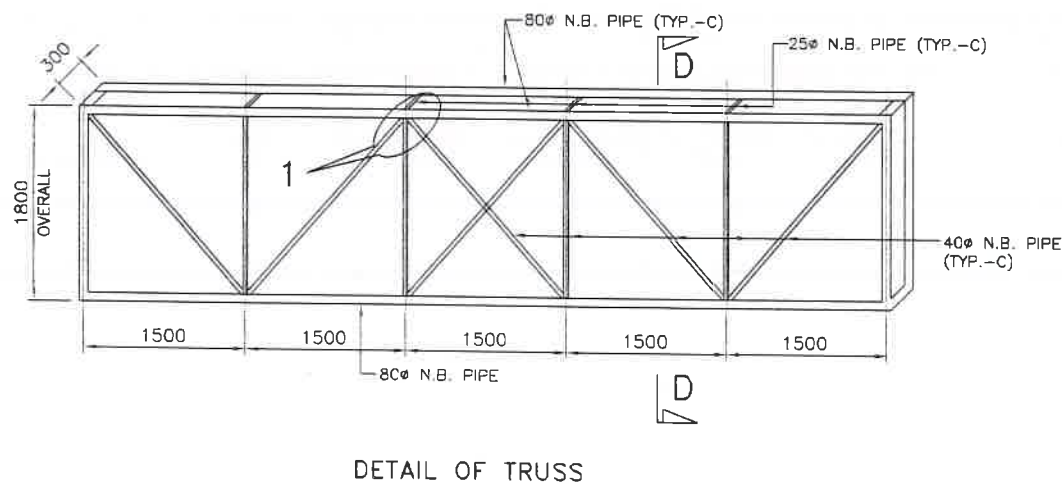
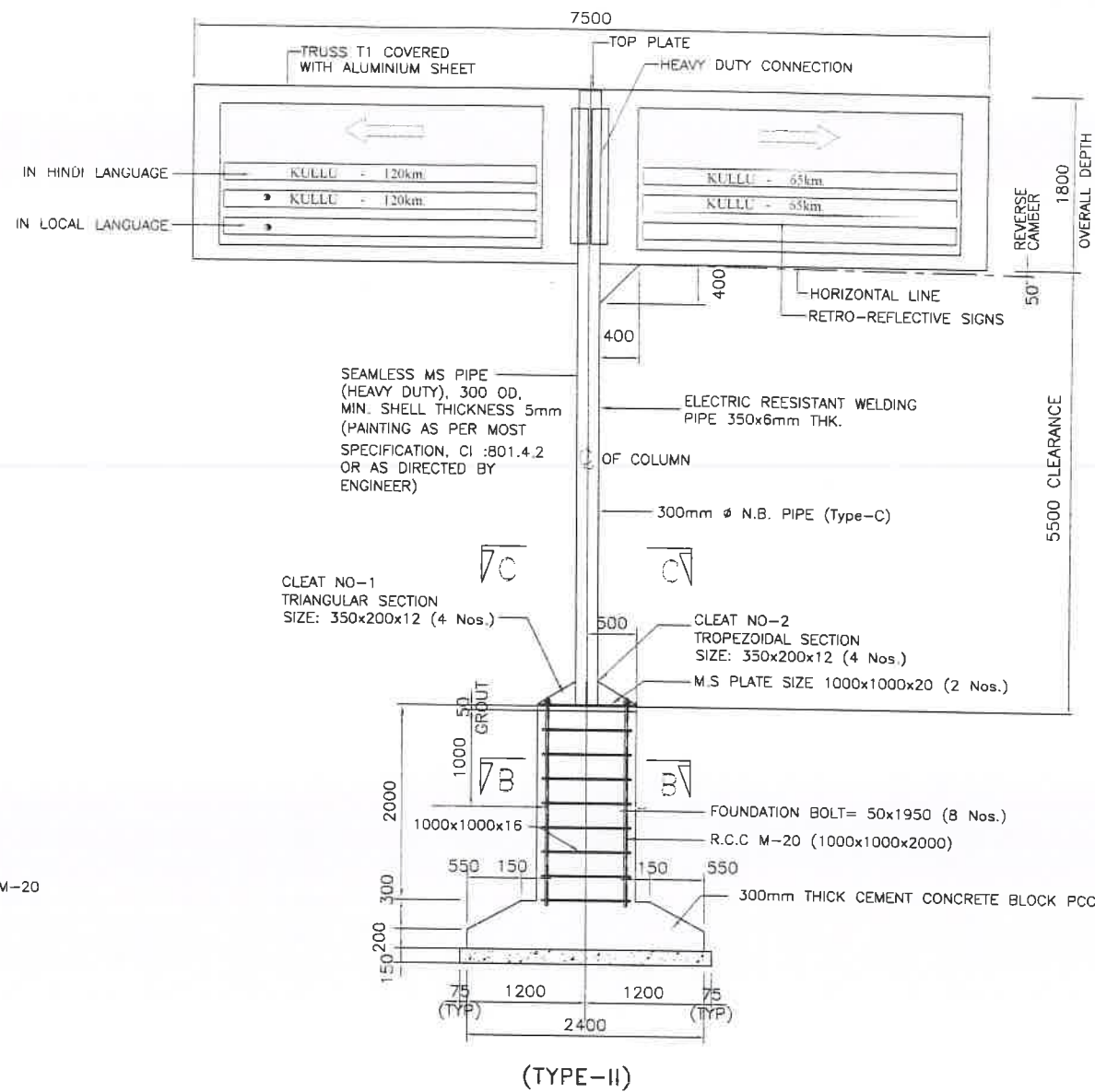
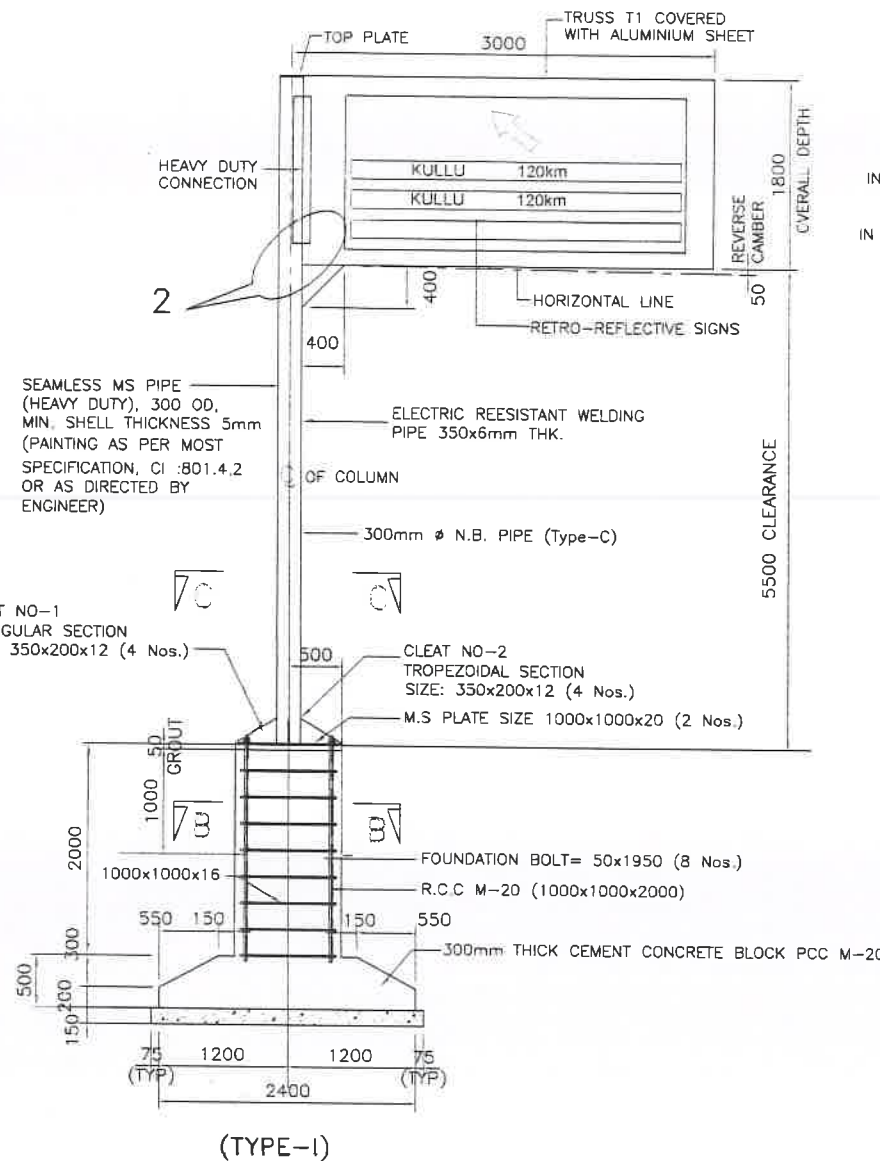
Client :	NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)
Consultant :	SA INFRASTRUCTURE CONSULTANTS PVT LTD Specialized Engineering Service Pvt. Ltd 1101A, 11th Floor, Tower A-II, Corporate Park, Plot No. 7A/1, Sector-142, Noida-201301, Uttar Pradesh.

Project :
Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Antar-Rolep-Menla in the State of Sikkim

DATE :	August 2019	Revision	R0
DESIGNED BY	DRWN BY	CHECKED BY	APPROVED BY
Vijay Gupta	Naresh	R.Nayak	Sanjay Shukla
SCALE:-NTS			

PACKAGE- 4
BAGRAKOT To KAFER
DETAIL OF DISTANCE STONE
& BOUNDARY STONE

Dwg No. - SAICPL-SESPL/NHIDCL/WB-SKM/Misc/ 03



DATE: 09/09/2019 - 5:56pm
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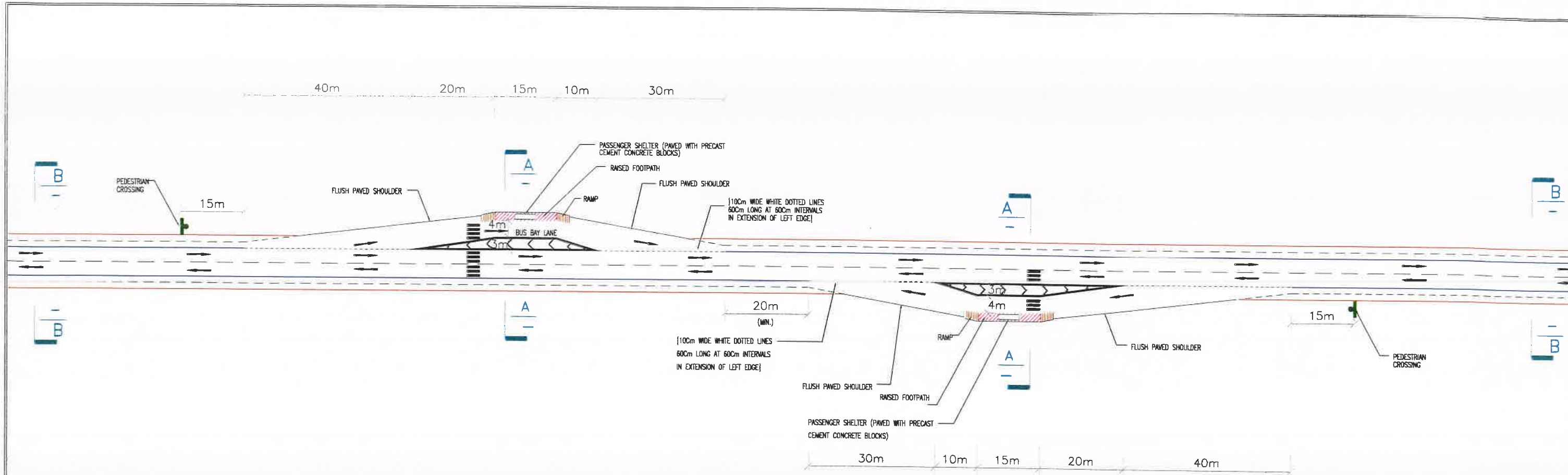
REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
RC	Sep 2017	Final Feasibility Report	
RC	Nov 2016	Draft Feasibility Report	
RC	Dec 2014	Linear Plan	

Client :	NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)
Consultant :	SAI INFRASTRUCTURE CONSULTANTS PVT. LTD. Specialized Engineering Service Pvt. Ltd. 1101A, 11th Floor, Tower A-II, Corporate Park, Plot No. 79A/1, Sector-142, Noida-201301, Uttar Pradesh

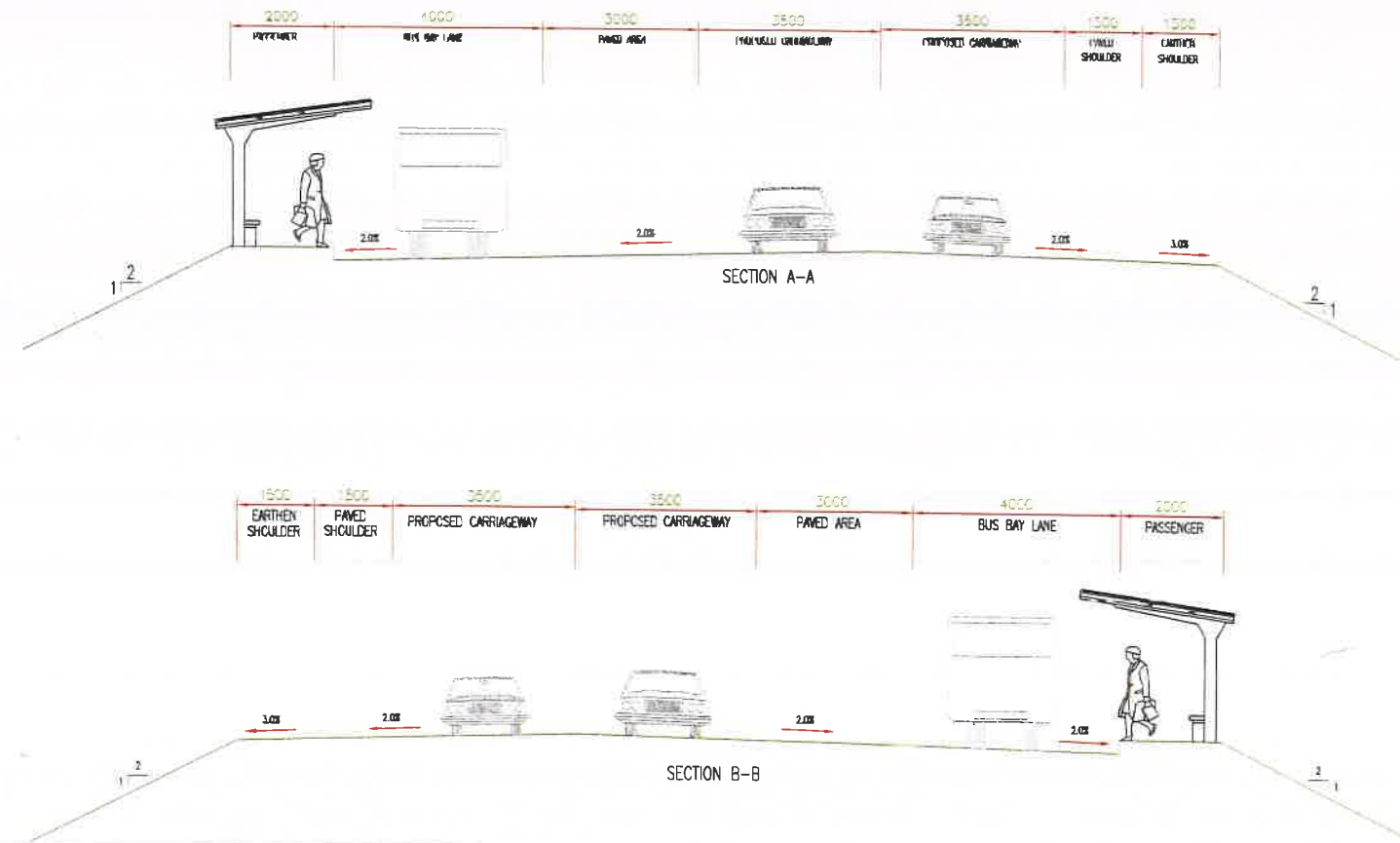
Project :	Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menia in the State of Sikkim
-----------	---

DATE :	August 2019	Revision :	RC
DESIGNED BY :	Vijay Gupta	DRAWN BY :	Nresh
CHECKED BY :	R.Nayak	APPROVED BY :	Sanjay Shukla
SCALE :	NTS		

PACKAGE-4	BAGRAKOT TO KAFER
DETAILS OF OVERHEAD GANTRY SIGN	
Dwg No. :-	SAICPL-SESPL/NHIDCL/WB-SKM/Misc/06



TYPICAL LAYOUT OF BUS BAY (STAGGERED)



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE
2. KEEP FOR BUS BAY IS PROPOSED AS PER IRC:SP 43-2004 AND THE COMPOSITION OF THE PAVEMENT FOR THE SAME IS FURNISHED IN TABLE BELOW

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	

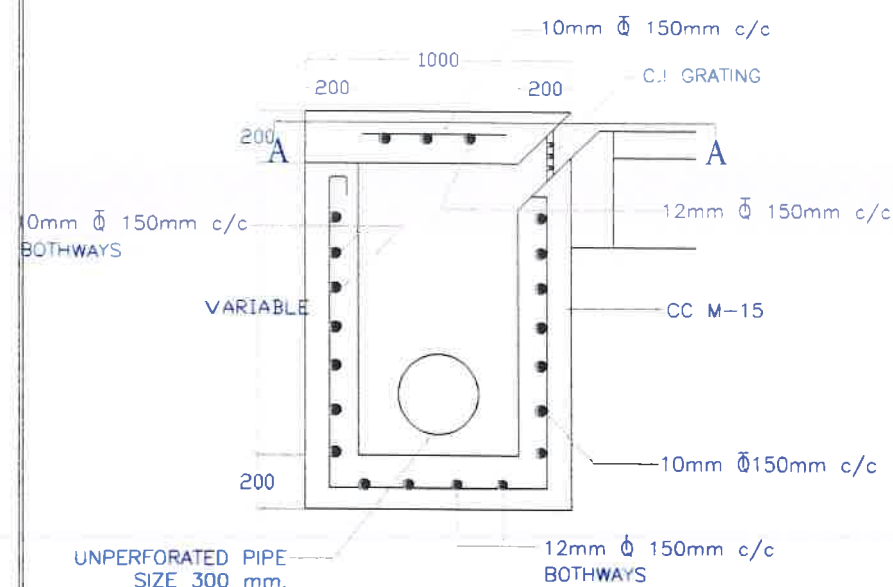
Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
(Ministry of Road Transport & Highways)

Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD.
Specialized Engineering Service Pvt. Ltd.
1101A, 11th Floor, Tower A-II, Corporate Park
Plot No. 7A/1, Sector-142,
Noida-201301, Uttar Pradesh.

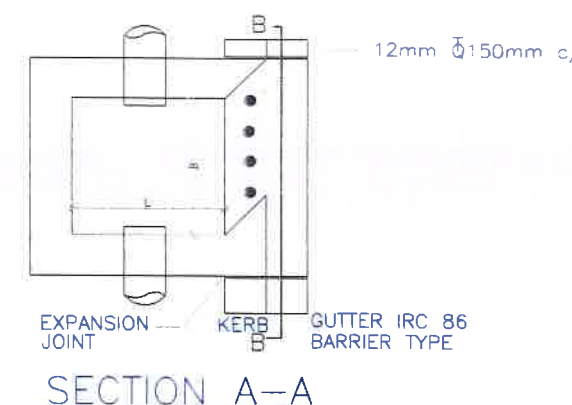
Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim

DATE : August 2019	Revision	R0
DESIGNED BY	DRAWN BY	CHECKED BY
Vijay Gupta	Noresh	R. Nayak
SCALE: -NTS		APPROVED BY
		Sanjay Shukla

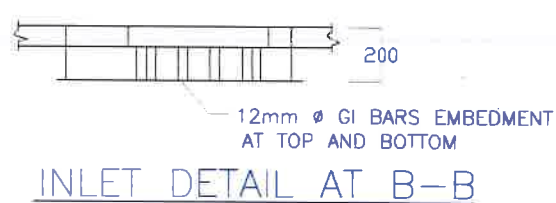
PACKAGE-4
BAGRAKOT TO KAFER
TYPICAL DETAIL OF BUS LAY BAY



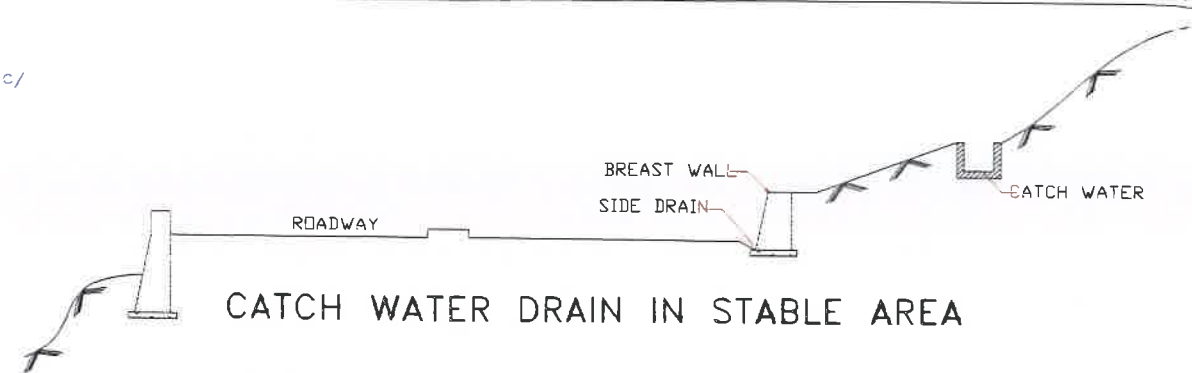
CATCH BASIN INLET CHAMBER



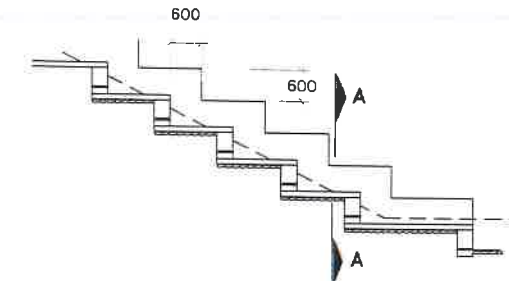
SECTION A-A



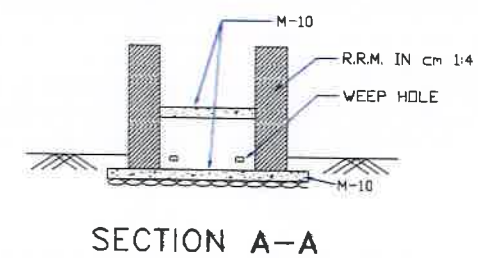
INLET DETAIL AT B-B



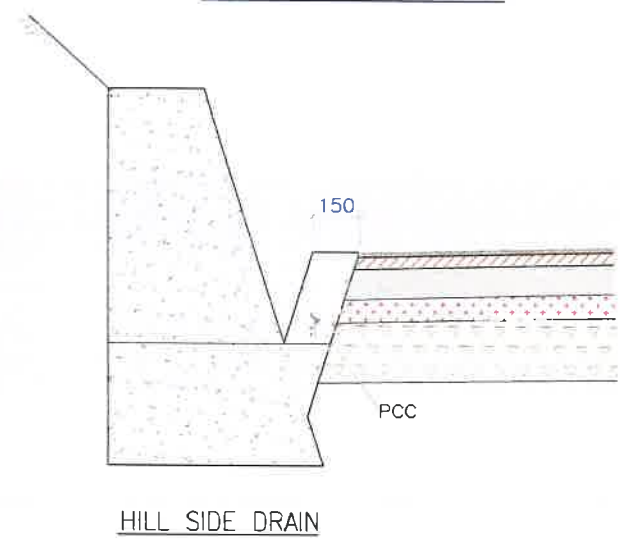
CATCH WATER DRAIN IN STABLE AREA



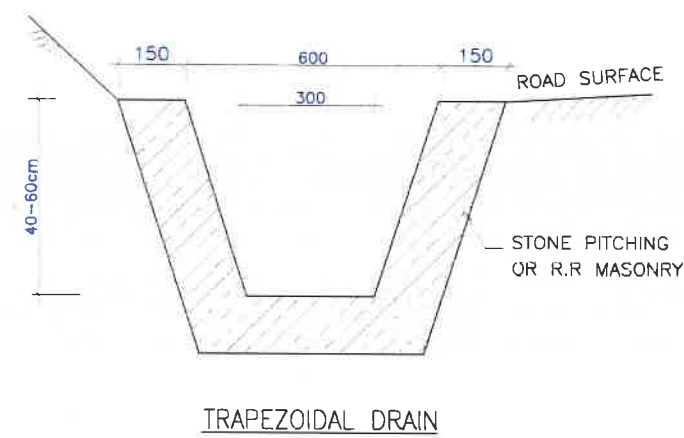
LONGITUDINAL SECTION OF CHUTE



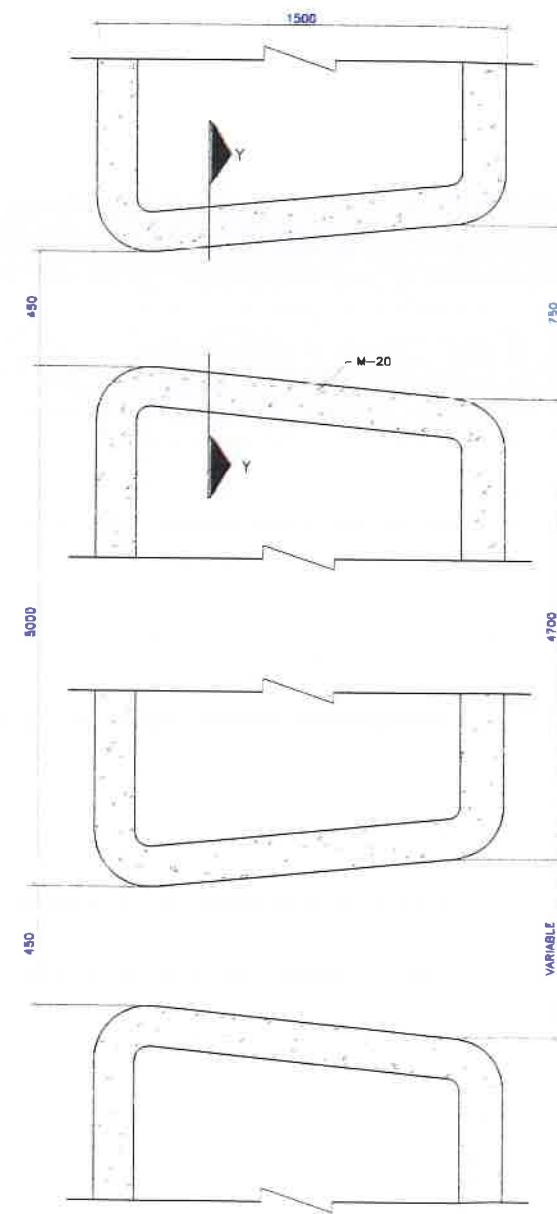
SECTION A-A



HILL SIDE DRAIN



TRAPEZOIDAL DRAIN



PACKAGE-4
BAGRAKOT To KAHER
DETAIL OF SIDE DRAIN INLET CHAMBER & MEDIAN CUT DRAIN

2. CATCH WATER DRAIN ARE PROVIDED AS PER SITE REQUIREMENT

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
RQ	Sep. 2017	Final Feasibility Report	
RQ	Nov. 2016	Draft Feasibility Report	
RQ	Dec. 2014	Linear Plan	

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
(Ministry of Road Transport & Highways)

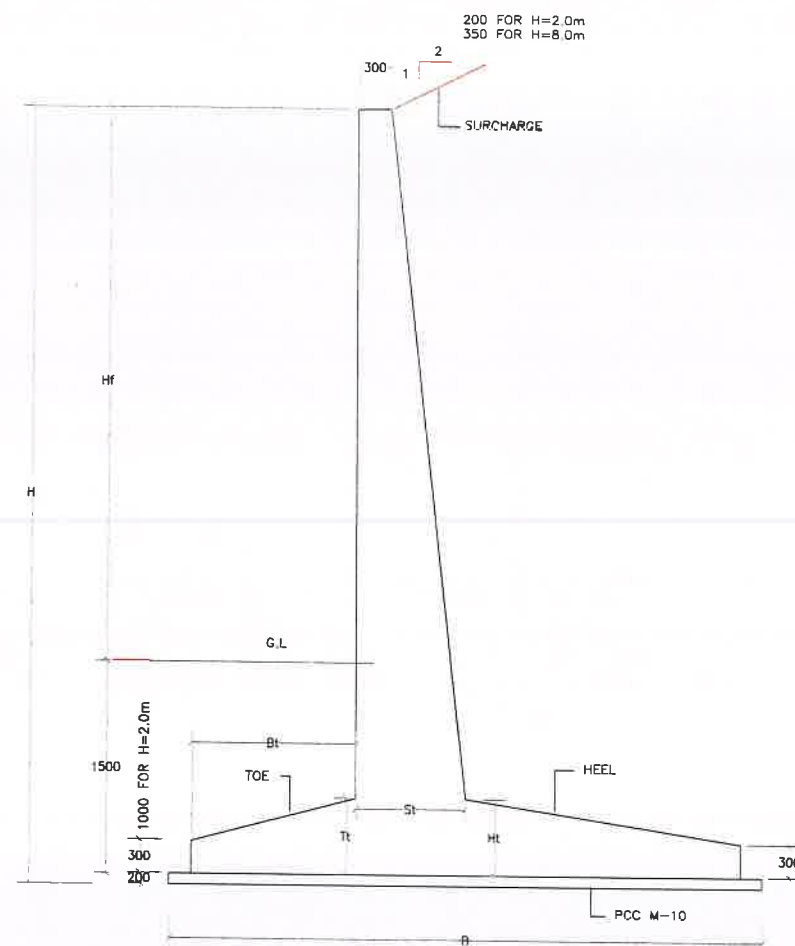
Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD.
Specialized Engineering Service Pvt. Ltd.
1103A, 11th Floor, Tower A-III, Corporate Park
Plot No. 7A/1, Sector-142
Noida-201301, Uttar Pradesh.

Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim

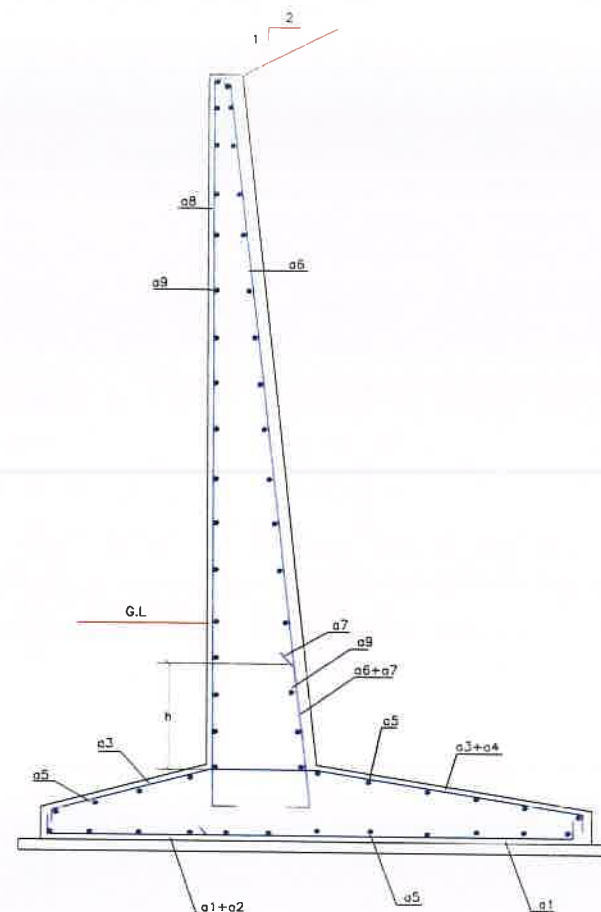
DATE :	August 2019	Revision	RO
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
Vijay Gupta	Noresh	R.Nayak	Sanjay Shukla
SCALE: -NTS			

Dwg. No. :- SAICPL-SESPL/NHIDCL/WB-SKM/Misc/08

[illegible]



TYPICAL CROSS SECTION FOR RETAINING WALL



REINFORCEMENT DETAILS OF RETAINING WALL

HEIGHT OF RET. WALL	h(mm)	a1	a2	a3	a4	a5	a6	a7	a8	a9
2.0m	NIL	10%150C/C	NIL	10%150C/C	NIL	10%200C/C	10%150C/C	NIL	10%150C/C	10%200C/C
3.0m	NIL	10%140C/C	NIL	10%140C/C	NIL	10%200C/C	12%140C/C	NIL	10%140C/C	10%200C/C
3.5	1450	10%140C/C	NIL	12%140C/C	NIL	10%200C/C	12%140C/C	10%140C/C	10%140C/C	10%200C/C
4.0m	1850	10%140C/C	NIL	10%140C/C	10%140C/C	10%200C/C	12%140C/C	12%140C/C	10%140C/C	10%200C/C
4.5m	3000	10%150C/C	NIL	10%150C/C	12%150C/C	10%200C/C	12%150C/C	16%150C/C	10%150C/C	10%200C/C
5.0m	2350	10%150C/C	10%150C/C	12%150C/C	12%150C/C	10%200C/C	16%150C/C	16%150C/C	10%150C/C	10%200C/C
5.5m	2700	10%140C/C	10%140C/C	10%140C/C	12%140C/C	10%200C/C	16%140C/C	16%140C/C	10%140C/C	10%200C/C
6.0m	3300	10%140C/C	12%140C/C	10%140C/C	12%140C/C	10%200C/C	16%140C/C	20%140C/C	10%140C/C	10%200C/C
6.5m	3750	12%140C/C	12%140C/C	10%140C/C	12%140C/C	10%200C/C	16%140C/C	20%140C/C	10%140C/C	10%200C/C
7.0m	5000	12%150C/C	16%150C/C	10%150C/C	10%150C/C	10%200C/C	16%150C/C	20%150C/C	10%150C/C	10%150C/C
7.5m	4100	12%140C/C	16%140C/C	10%140C/C	12%140C/C	10%150C/C	20%140C/C	25%140C/C	10%150C/C	10%150C/C
8.0m	3900	16%150C/C	20%150C/C	12%150C/C	16%150C/C	10%150C/C	25%150C/C	25%150C/C	10%150C/C	10%150C/C

DIMENSIONAL DETAILS OF RETAINING WALL

HEIGHT OF RET. WALL	Hf	B	Bt	St	Sb	Ht	Tt	CONC. GRADE
2.0m	1000	1200	100	200	200	200	200	M25
3.0m	1500	1800	150	300	300	300	300	M25
3.5m	2000	2100	250	300	300	300	300	M25
4.0m	2500	2800	400	300	350	300	300	M25
4.5m	3000	3000	600	300	450	300	300	M25
5.0m	3500	3500	800	300	500	300	300	M25
5.5m	4000	3900	1000	300	550	400	400	M25
6.0m	4500	4400	1200	300	650	400	400	M25
6.5m	5000	4900	1400	300	700	450	450	M25
7.0m	5500	5400	1600	300	1000	500	500	M25
7.5m	6000	5850	1850	300	800	550	550	M30
8.0m	6500	6200	2000	350	800	500	500	M30

SR N	FROM	TO	LENGTH	
01	20100	20140	40	Both Side Retaining Wall Avg Ht c3m
02	20140	20500	360	Left Side Retaining Wall Avg Ht c3m
03	20500	20640	140	Left Side Retaining Wall Avg Ht c4m
04	21240	21540	300	Left Side Retaining Wall

DATE: 19/09/2019 - 9:25am

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)

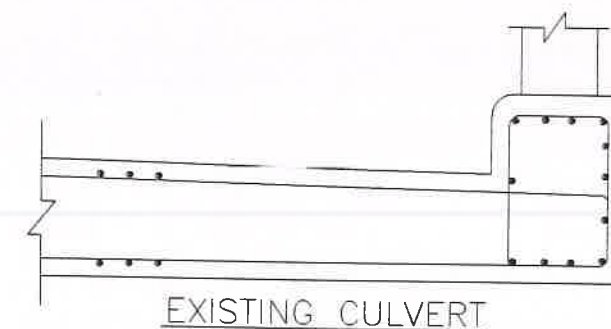
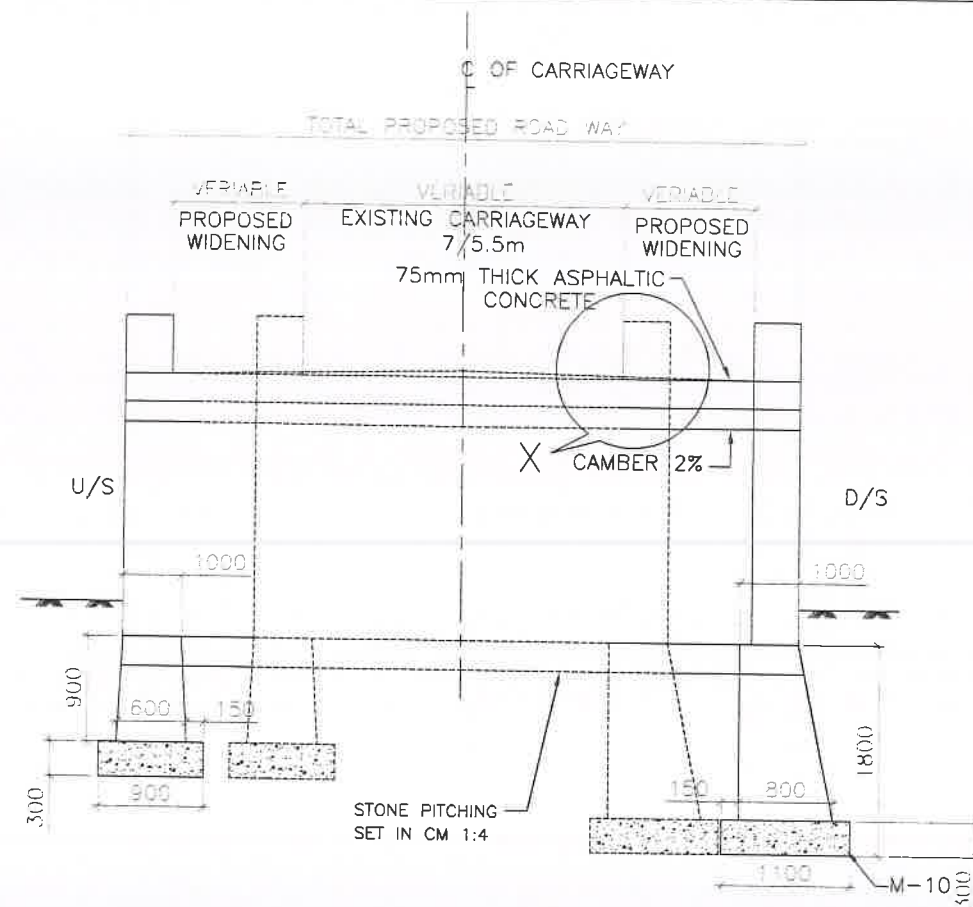
Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. Specialized Engineering Service Pvt. Ltd. 1101A 11th Floor Tower A-II Corporate Park Plot No. 7A/1 Sector-142 Node 201361, Uttar Pradesh

Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Artar-Rolep-Menla in the State of Sikkim

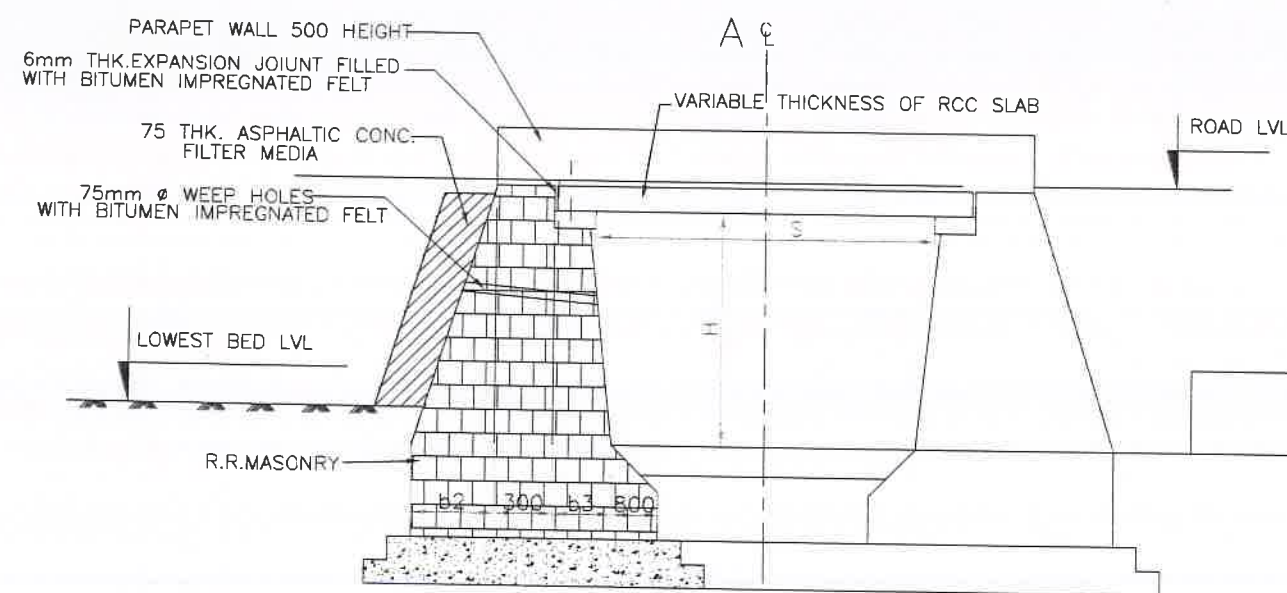
DATE : August 2019	Revision	R0
DESIGNED BY	DRAWN BY	CHECKED BY
Vijay Gupta	Naresh	R.Nayak
SCALE: - NTS		Sanjay Shukla

PACKAGE- 4
BAGRAKOT To KAFER
TYPICAL DETAILS OF RCC RETAINING WALL

Dwg No :- SAICPL-SESPL/NHIDCL/WB-SKM/Misc/16b

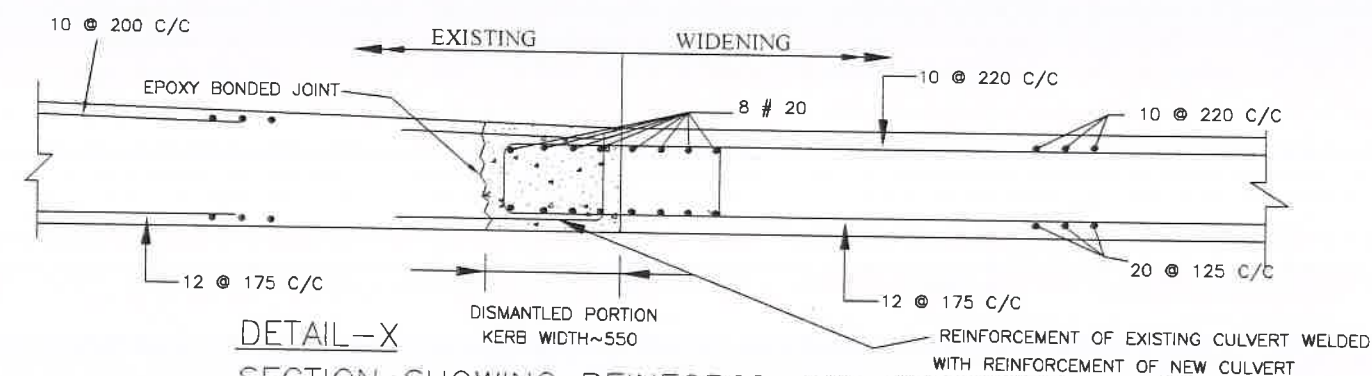


EXISTING CULVERT



HALF SECTIONAL ELEVATION
SHOWING ABUTMENT

H = HEIGHT
S = CLEAR SPAN



DETAIL-X
SECTION SHOWING REINFORCEMENT ARRANGEMENT OF
EXISTING AND NEW CULVERT SLAB

DATE: 10/09/2019 - 9:54am
FILE: D:\G. drive\Aug 2019\Sikkim\SA\STANDARD DRAWING\MS-12- Extension Arrangement For Slab Culvert.dwg

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	

Client: NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
(Ministry of Road Transport & Highways)

Consultant: SA INFRASTRUCTURE CONSULTANTS PVT LTD
Specialized Engineering Services Pvt. Ltd.
1101A, 11th Floor, Tower A-II, Corporate Park
Plot No. 7A/1, Sector-142
Noida-201301, Uttar Pradesh

Project: Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim

DATE: August 2019	Revision	RO
DESIGNED BY	DRAWN BY	CHECKED BY
Vijay Gupta	Naresh	R.Nayak
SCALE:-NTS		Sanjay Shukla

PACKAGE- 4
BAGRAKOT To KAFER
TYPICAL EXTENSION ARRANGEMENT
FOR SLAB CULVERT

Dwg No - SAICPL-SESPL/NHIDCL/WB-SKM/Misc/tj