

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.

REVISED FINAL FEASIBILITY REPORT

STRUCTURE DRAWINGS

PACKAGE-IV(A) (Ch.0+000 To 13+000)
(BAGRAKOT TO KAFER)



JANUARY-2019

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.

INDEX PACKAGE-IV (A)

VIADUCT:

SL. NO.	DESCRIPTION	START CHAINAGE	END CHAINAGE	SPAN ARRANGEMENT	NO. OF SHEETS
1	GENRAL ARRANGEMENT DRAWING	4+120	4+190	1X30+2X20	2
2	GENRAL ARRANGEMENT DRAWING	4+400	4+460	3X20	2
3	GENRAL ARRANGEMENT DRAWING	4+520	4+610	1X20+1X30+2X20	2
4	GENRAL ARRANGEMENT DRAWING	4+750	4+850	5X20	2
5	GENRAL ARRANGEMENT DRAWING	6+710	7+040	2X20+3X30+4X20+2X30+3X20	2
6	GENRAL ARRANGEMENT DRAWING	7+120	7+280	3X20+2X30+2X20	2
7	GENRAL ARRANGEMENT DRAWING	7+450	8+420	5X20+5X30+7X20+7X30+6X20+7X30+2X20	3
8	GENRAL ARRANGEMENT DRAWING	10+030	10+100	1X30+2X20	1
9	GENRAL ARRANGEMENT DRAWING	10+480	10+520	1X40	1
10	GENRAL ARRANGEMENT DRAWING	10+650	10+720	1X30+2X20	1
11	GENRAL ARRANGEMENT DRAWING	12+590	12+620	1X30	1
12	GENRAL ARRANGEMENT DRAWING	12+910	12+940	1X30	1

MNB:

13	GENRAL ARRANGEMENT DRAWING AT CH. 1+382			1X10 (BOX)	1
14	GENRAL ARRANGEMENT DRAWING AT CH. 3+585			1X40	1

ELEVATED LOOP:





15	GENRAL ARRANGEMENT DRAWING AT CH. 0+000			1X25+1X45.4+1X40.5+2X25	2
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ROB:

16	GENRAL ARRANGEMENT DRAWING AT CH. 0+057			1X45.5	1
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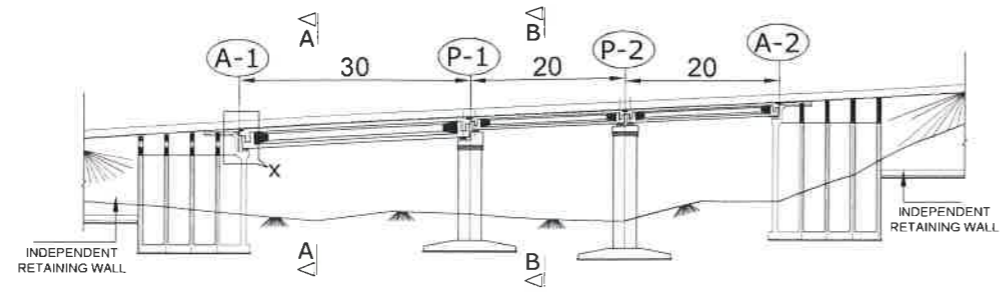
RETAINING WALL:

17	GENRAL ARRANGEMENT DRAWING OF INDEPENDENT RETAINING WALL				1
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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 : JAN-2019		REVISION R0		INDEX OF DRAWING
CONSULTANT: S.A. Infrastructure Consultants Pvt. Ltd. 1101A, 11 Floor Tower A-II, Ansal Corporate Park, Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh) Phone No- 0120-6148000 Fax-0120-6148090 Email: info@sainfra.com				DESIGNED BY  A. REHMAN		DRAWN BY  S. RAWAT		CHECKED BY  S. DE		APPROVED BY  S. Shukla		
REV	DATE	DESCRIPTION OF REVISIONS	INITIALS					DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/INDEX/01				

VIADUCT

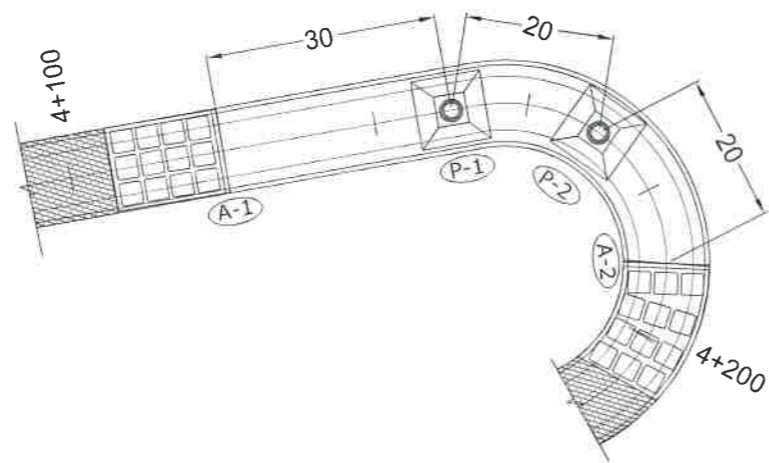
A simple diagram consisting of a horizontal line and a vertical line intersecting at a right angle. The horizontal line is positioned below the word "VIADUCT", and the vertical line is positioned to the right of the word. The two lines cross at a single point.



FORMATION LEVEL	235.241	236.950	237.840	238.830
GROUND LEVEL	224.070	223.890	224.320	225.101
CHAINAGE	4+120	4+150	4+170	4+190

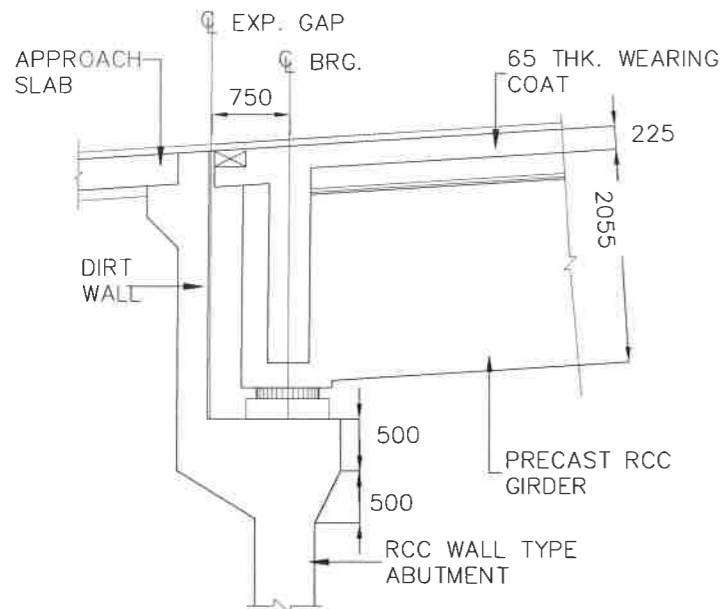
LONGITUDINAL ELEVATION

SCALE-1:100

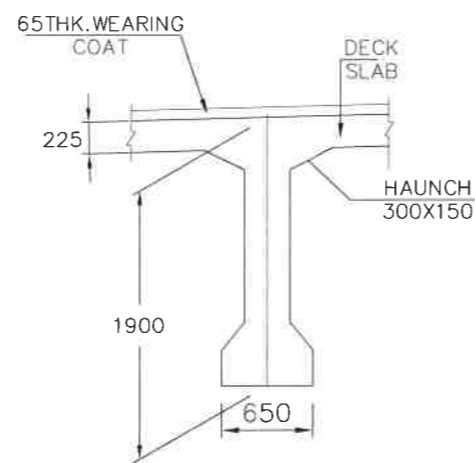


PLAN

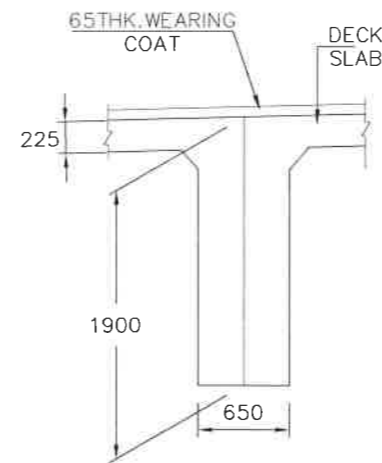
SCALE-1:100



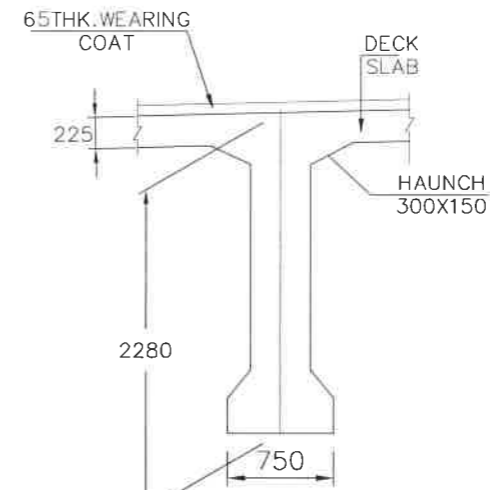
DETAIL-X
(SCALE 1:75)



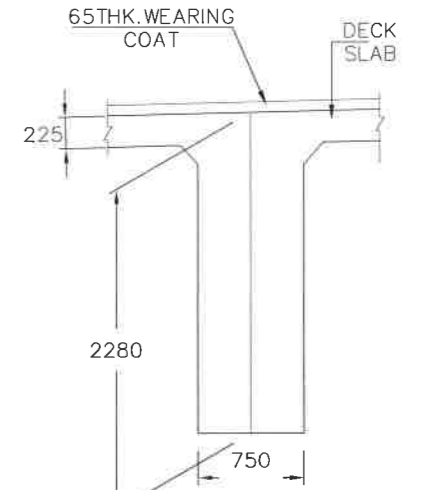
MID SPAN SECTION
20m RCC GIRDER
SCALE 1:50



SUPPORT SECTION
20m RCC GIRDER
SCALE 1:50



MID SPAN SECTION
30m PSC GIRDER
SCALE 1:50



SUPPORT SECTION
30m PSC GIRDER
SCALE 1:50

NOTES

- ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
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- BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R & 1 LANE CLASS A OR 3 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
- GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
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 (ii) RCC SUBSTRUCTURE & FOUNDATION ---- M35
 (iii) RCC RAILING ----- M30
 (iv) RCC CRASH BARRIER ----- M40
 (v) APPROACH SLAB ----- M30
 (vi) PEDESTAL ----- M40
- TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
- SINGLE STRIP SEAL EXPANSION JOINT IS USED.
- GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
- ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
- BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.

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CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
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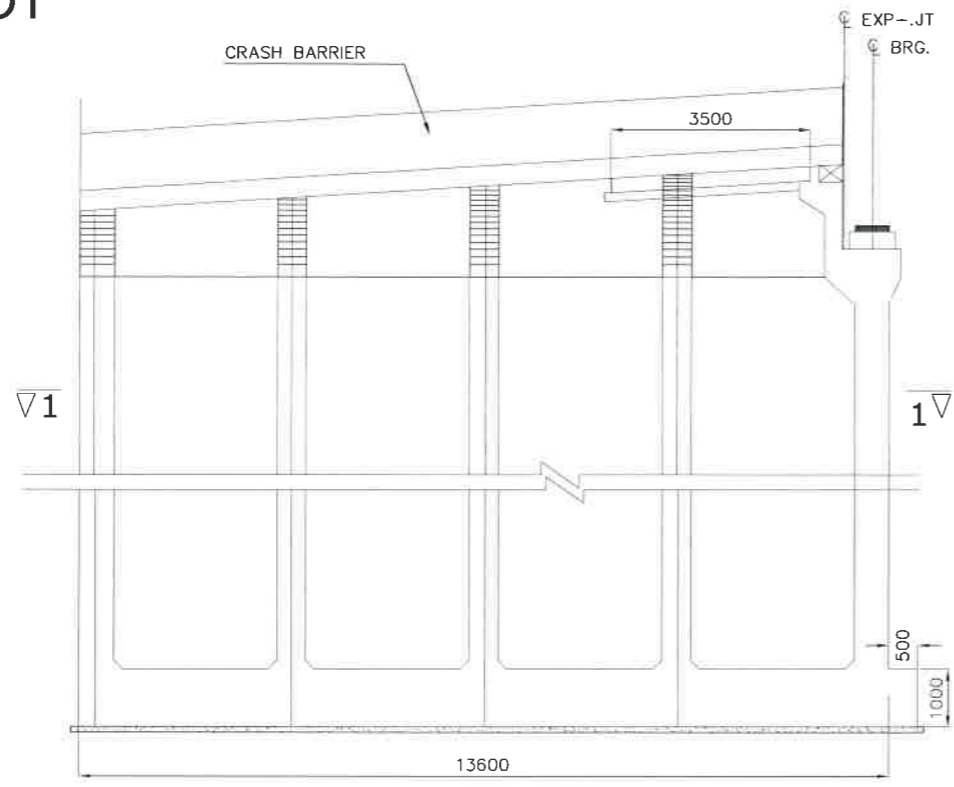
DATE : JAN-2019	REVISION R0
DESIGNED BY A REHMAN	DRAWN BY S RAWAT
CHECKED BY S DE	APPROVED BY S Shukla
SCALE:-	SHEET:- 01 OF 02

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH-4+120 TO 4+190 SPAN = (1X30+2X20)

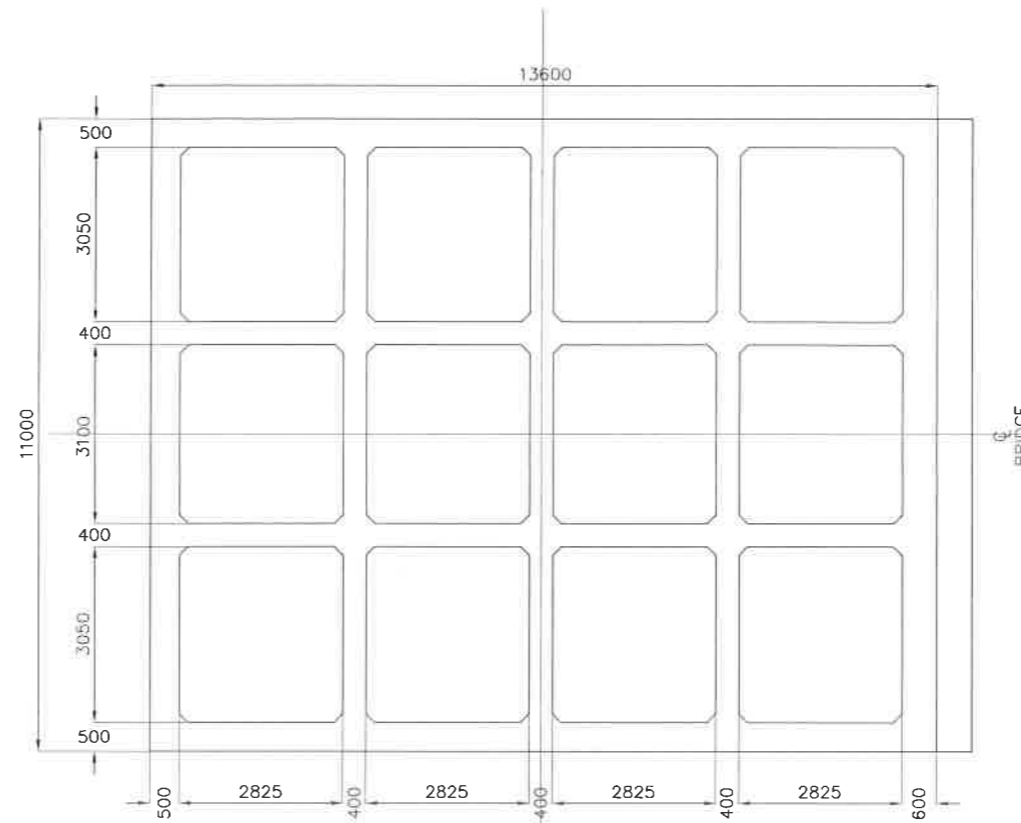
DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/4+120/GAD-01

← BAGRAKOT

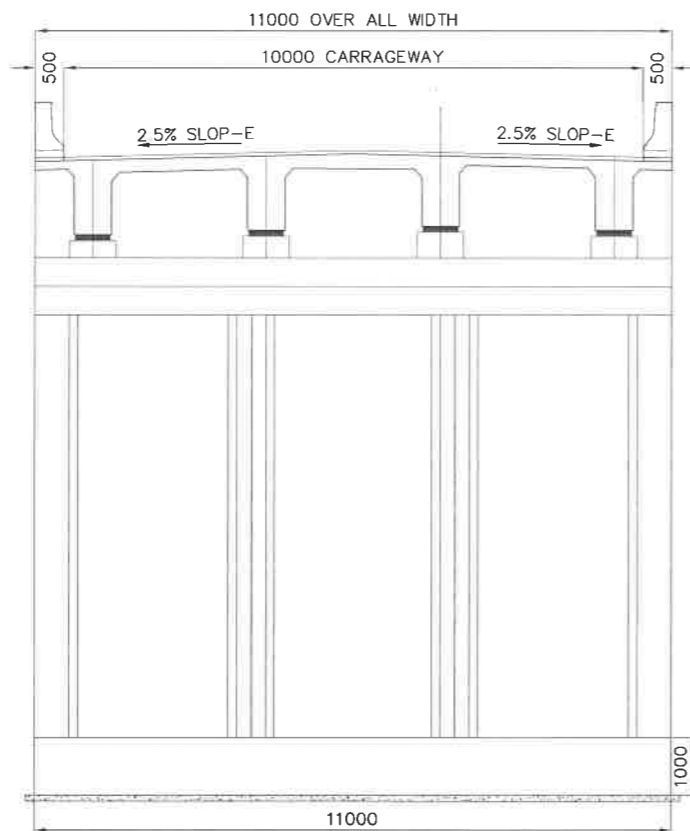
KAFER →



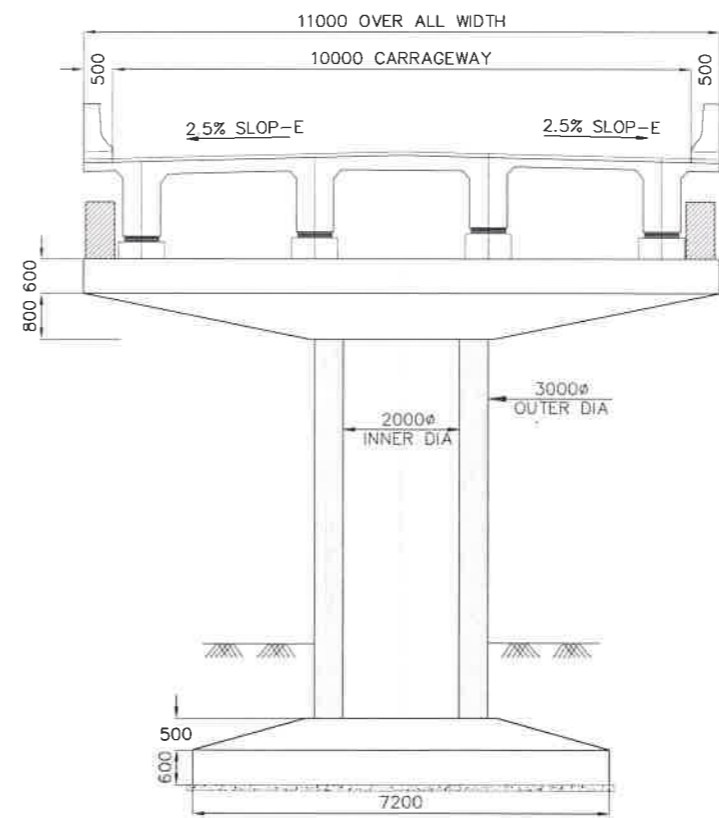
BOX ABUTMENT
SCALE 1:100



SECTION-1-1



SECTION-A-A
SCALE 1:100



SECTION-B-B
SCALE 1:100

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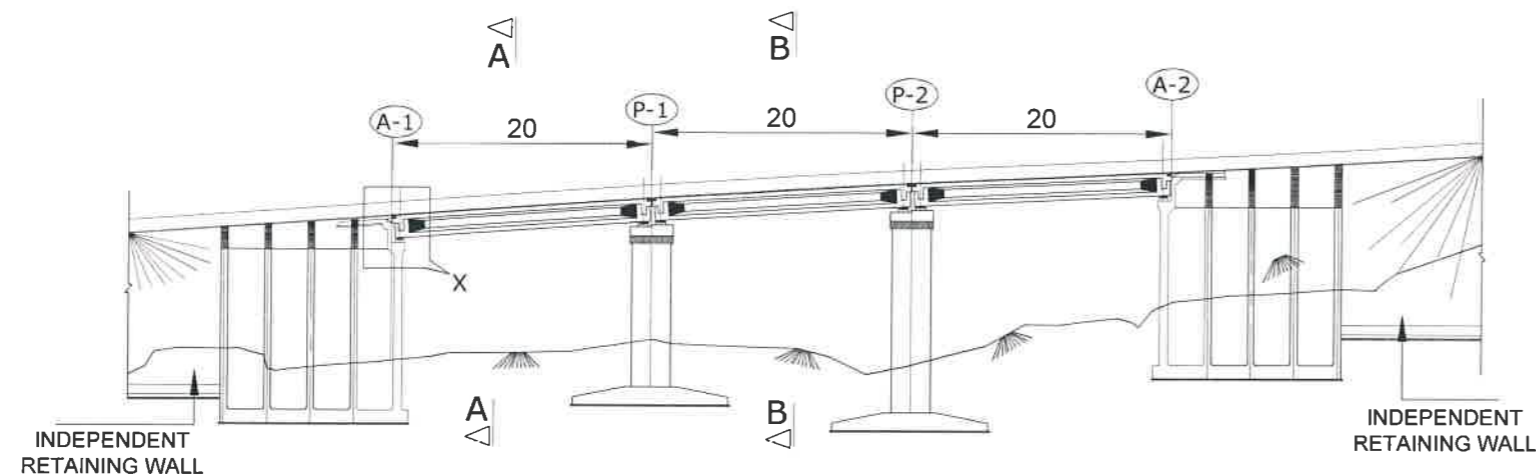
DATE : JAN-2019	REVISION R0
DESIGNED BY A REHMAN	DRAWN BY S RAWAT
CHECKED BY S DE	APPROVED BY S Shukla
SCALE:-	
SHEET:- 02 OF 02	

GENERAL ARRANGEMENT DRAWINGS
OF VIADUCT AT CH-4+120 TO 4+190
SPAN = (1X30+2X20)

DWG. NO. :-
SAICPL-SESPL/NHIDC/WB-SKM/4+120/GAD-01

← BAGRAKOT

KAFER →



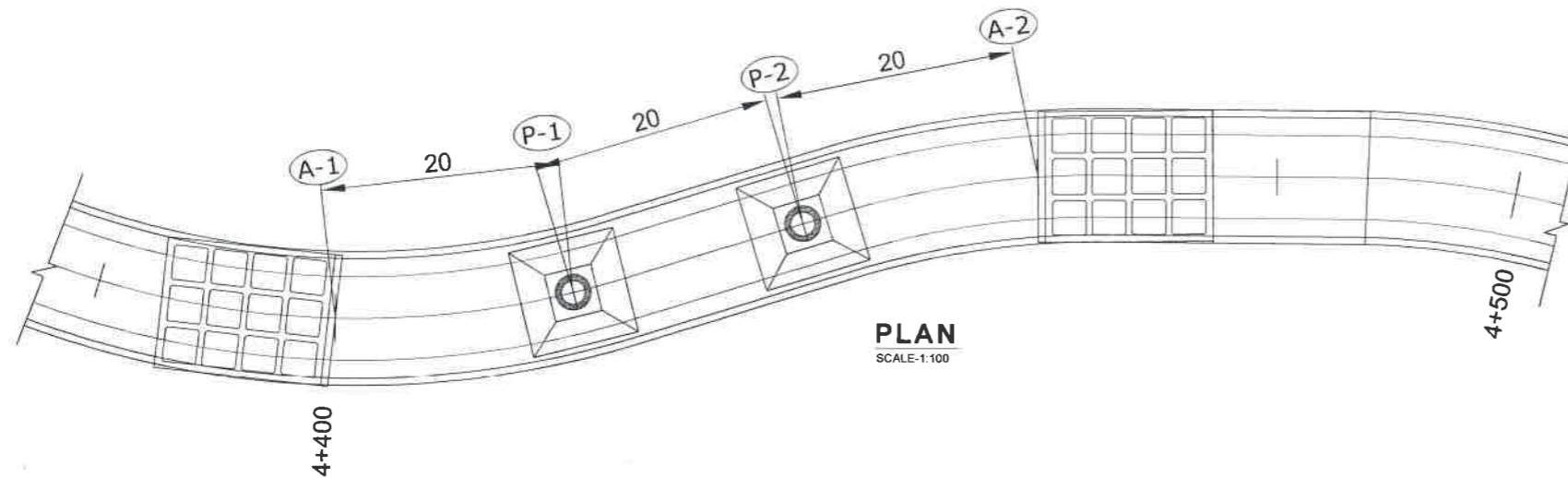
FORMATION LEVEL	252.934	254.331	255.516	256.438
GROUND LEVEL	241.785	243.440	241.505	246.367
CHAINAGE	4+400	4+420	4+440	4+460

LONGITUDINAL ELEVATION

SCALE-1:100

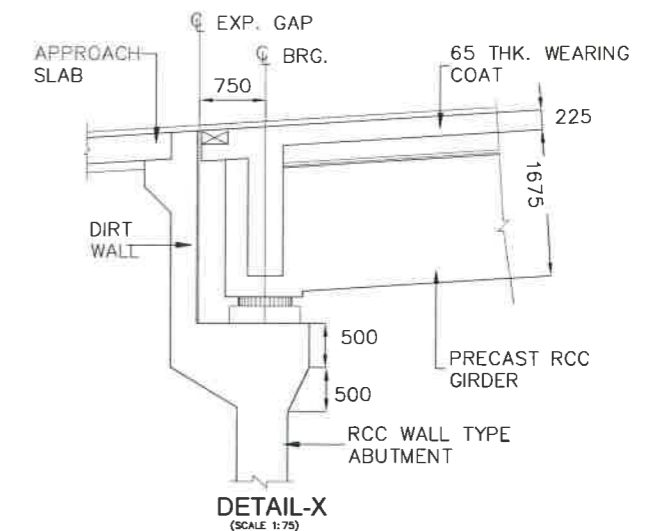
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PLAN

SCALE-1:100



DETAIL-X

(SCALE 1:75)

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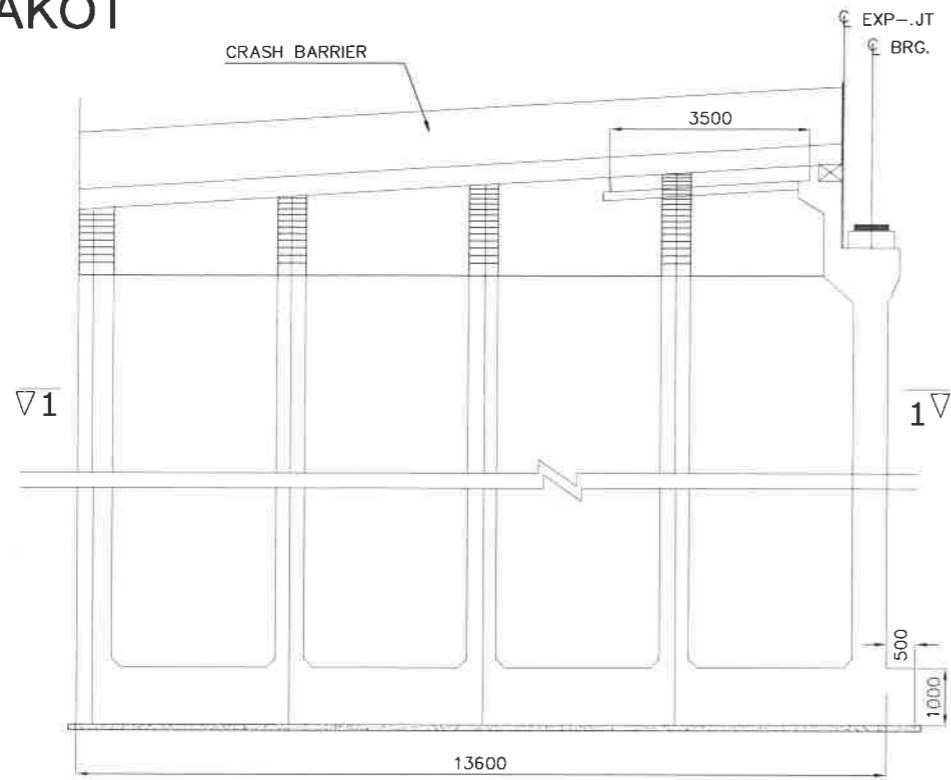
DATE : JAN-2019	REVISION R0
DESIGNED BY A. REHMAN	DRAWN BY S. RAWAT
CHECKED BY S. DE	APPROVED BY S. Shukla
SCALE:-	SHEET:- 01 OF 02

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH-4400 TO 4+460 SPAN = (3X20)

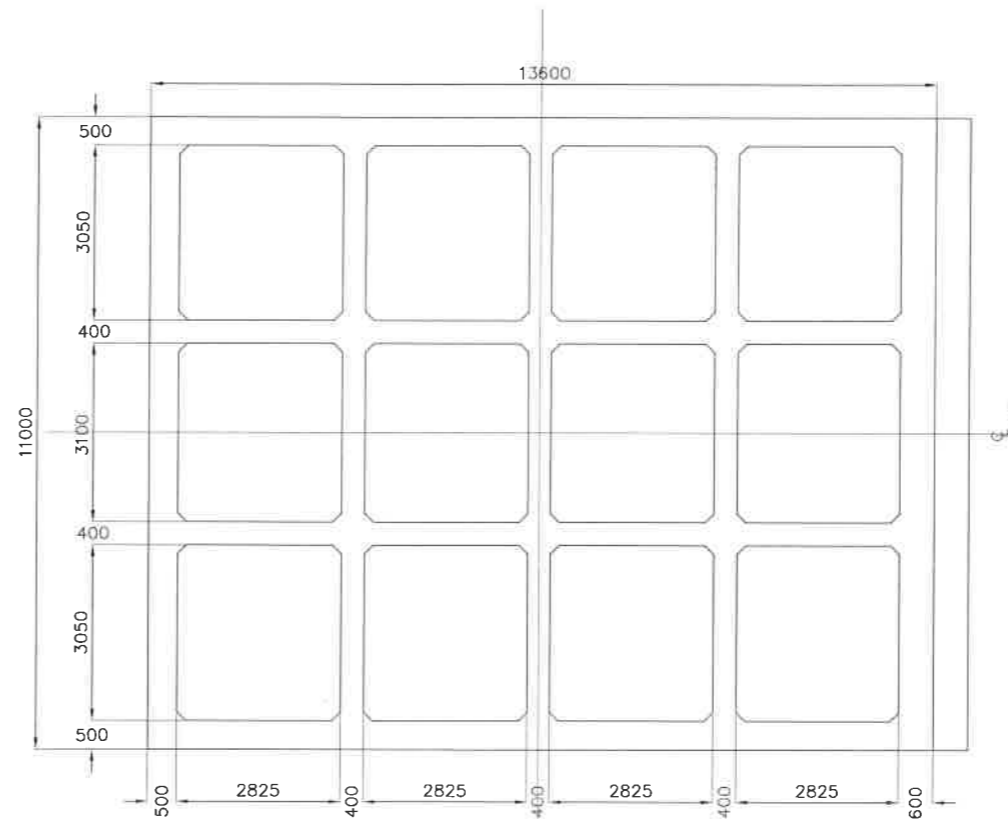
DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/4+000/GAD-01

← BAGRAKOT

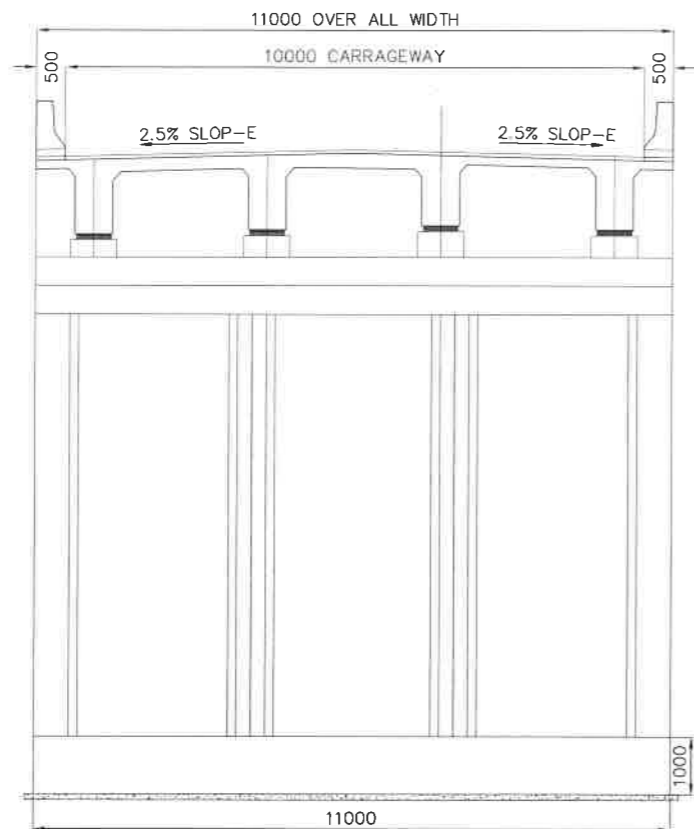
KAFER →



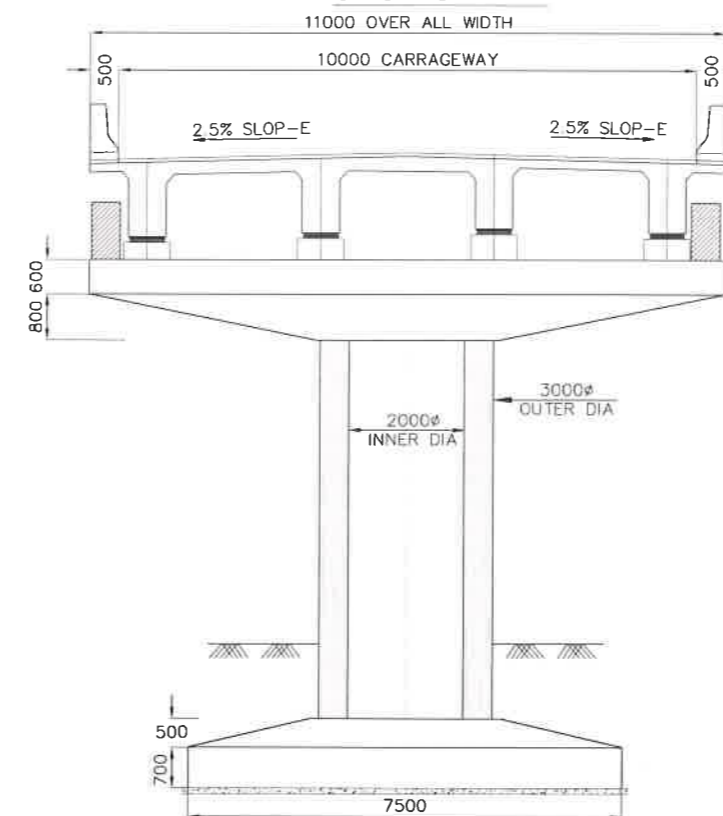
BOX ABUTMENT
SCALE 1:100



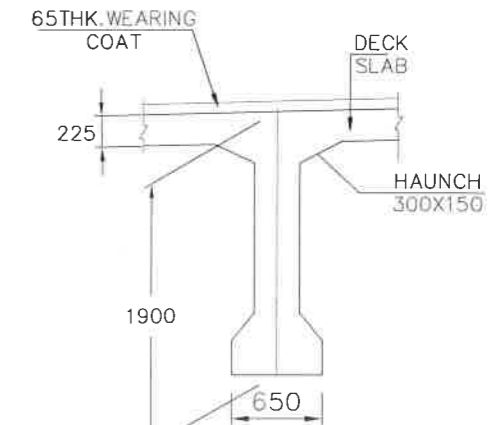
SECTION-1-1



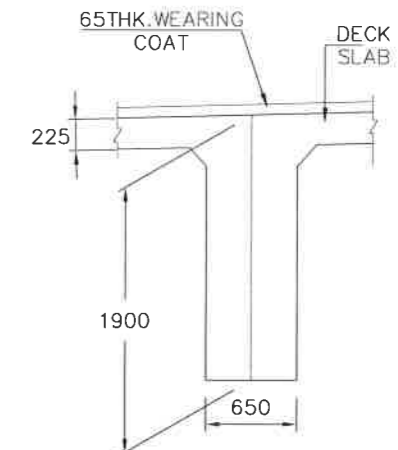
SECTION-A-A
SCALE 1:100



SECTION-B-B
SCALE 1:100



MID SPAN SECTION
20m RCC GIRDER
SCALE 1:50



SUPPORT SECTION
20m RCC GIRDER
SCALE 1:50

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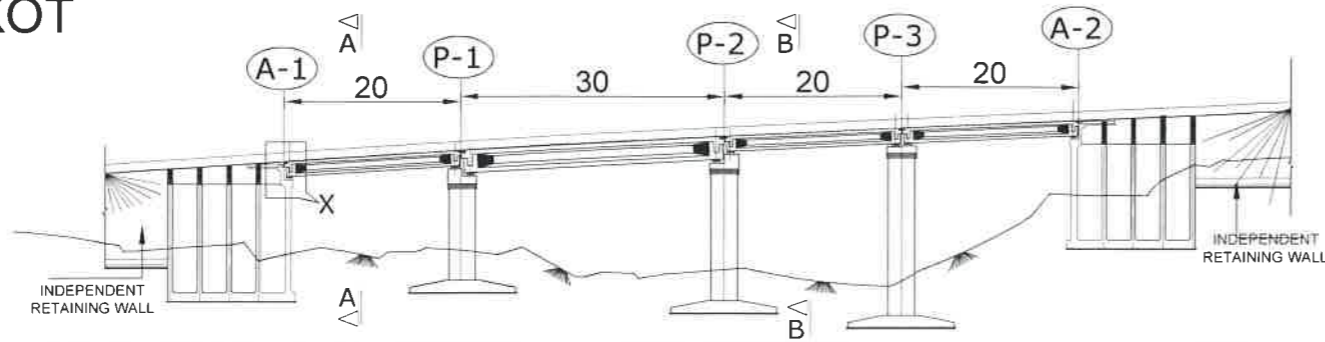
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DATE : JAN-2019	REVISION R0
DESIGNED BY A REHMAN	DRAWN BY SR S RAWAT
CHECKED BY S DE	APPROVED BY S Shukla
SCALE:-	SHEET:- 02 OF 02

GENERAL ARRANGEMENT DRAWINGS
OF VIADUCT AT CH-4+000 TO 4+460
SPAN = (3X20)

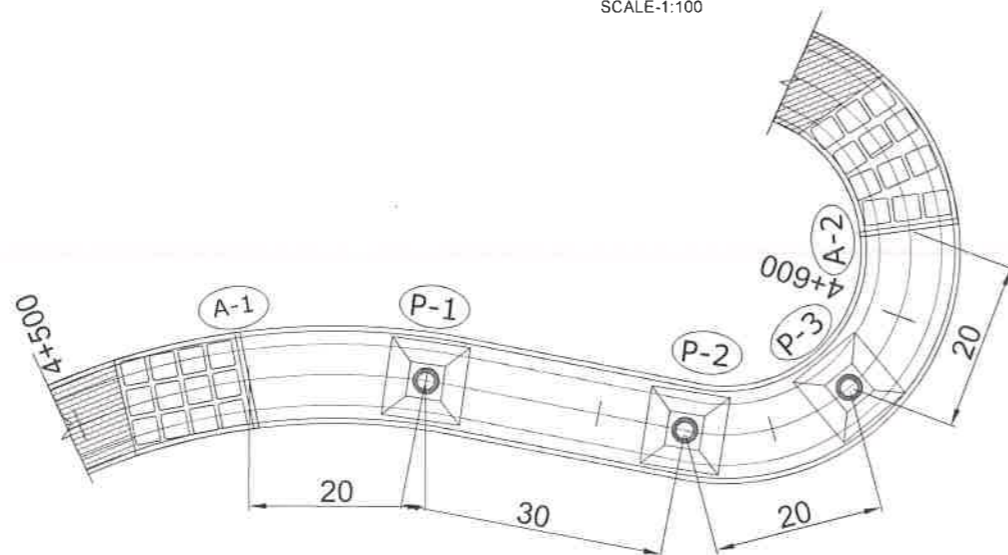
DWG. NO. :-
SAICPL-SESPL/NHIDC/WB-SKM/4+000/GAD-01



FORMATION LEVEL	260.240	261.531	263.020	264.005	265.015
GROUND LEVEL	245.573	250.074	246.920	248.320	255.230
CHAINAGE	4+520	4+540	4+570	4+590	4+610

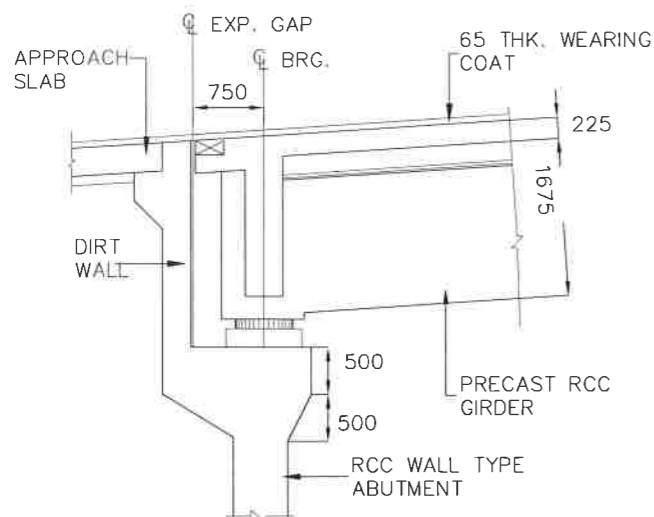
LONGITUDINAL ELEVATION

SCALE-1:100

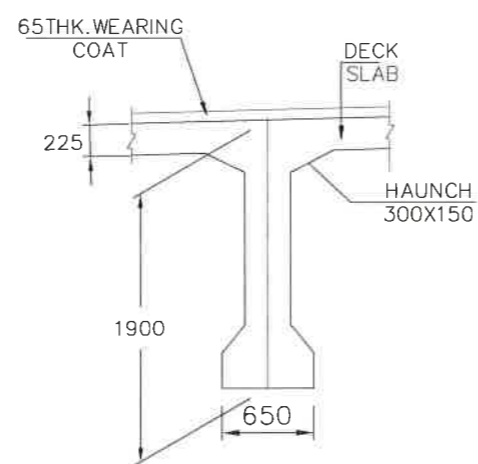


PLAN

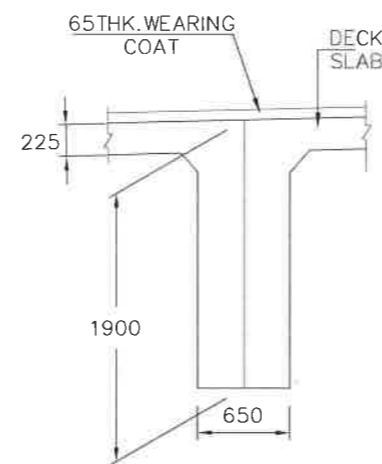
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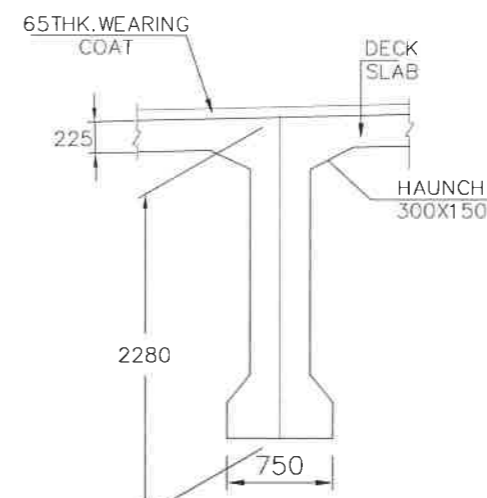
DETAIL-X
(SCALE 1:75)



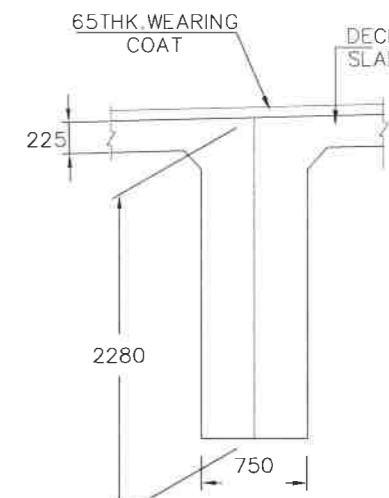
MID SPAN SECTION
20m RCC GIRDER
SCALE 1:50



SUPPORT SECTION
20m RCC GIRDER
SCALE 1:50



MID SPAN SECTION
30m PSC GIRDER
SCALE 1:50



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DATE : JAN-2019

REVISION R0

DESIGNED BY AREHMAN	DRAWN BY S RAWAT	CHECKED BY S DE	APPROVED BY S Shukla
------------------------	---------------------	--------------------	-------------------------

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH-4+520 TO 4+610 SPAN = (1X20+1X30+2X20)

SCALE:-

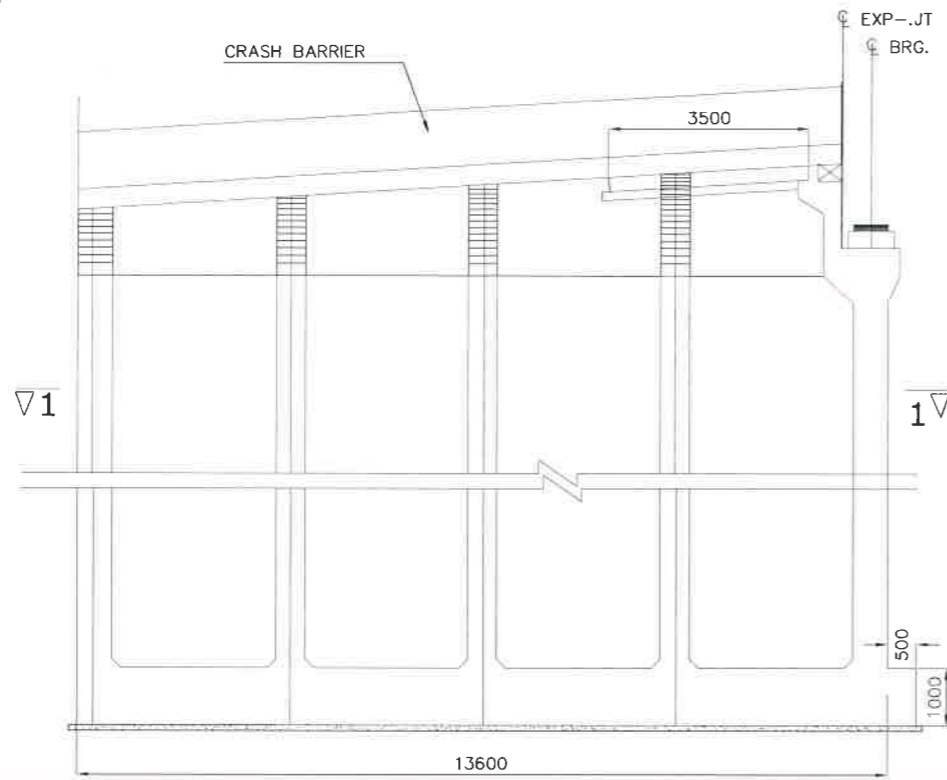
SHEET: 01 OF 02

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/4+520/GAD-01

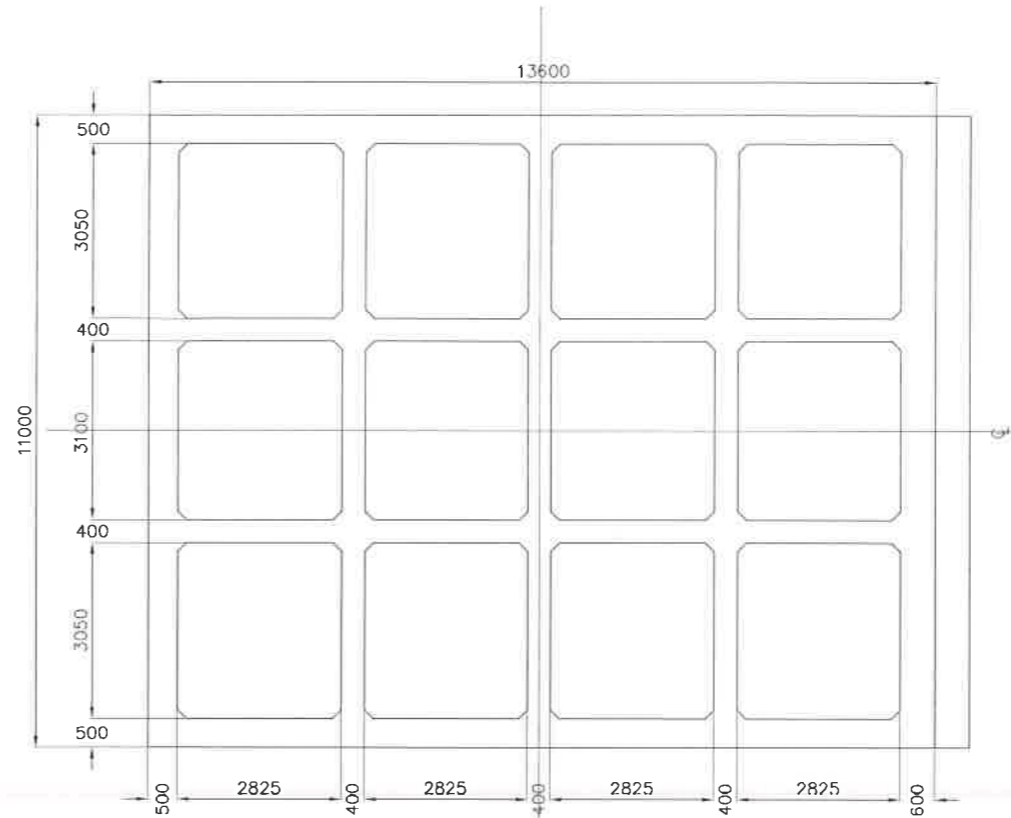
REV	DATE	DESCRIPTION OF REVISIONS	INITIALS

← BAGRAKOT

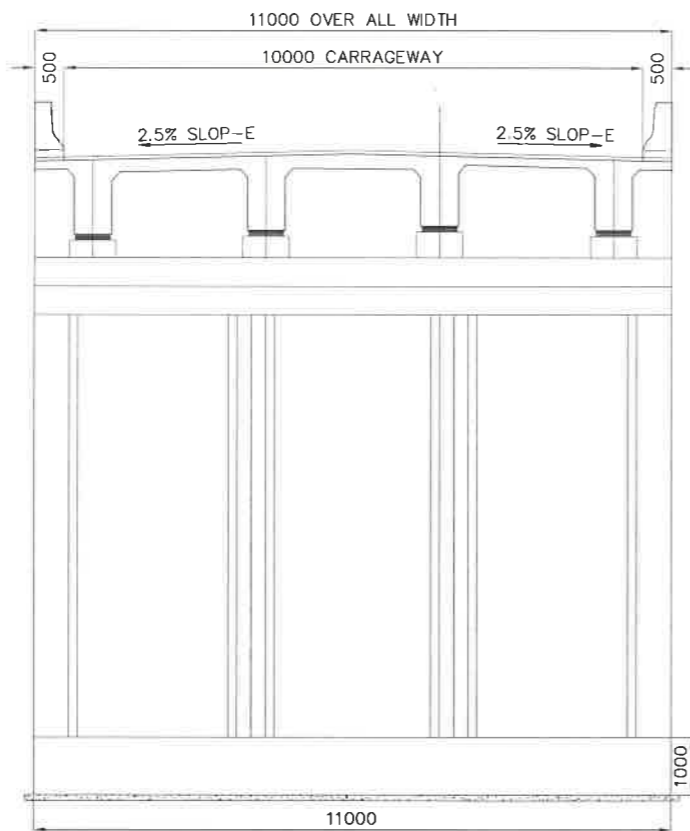
KAFER →



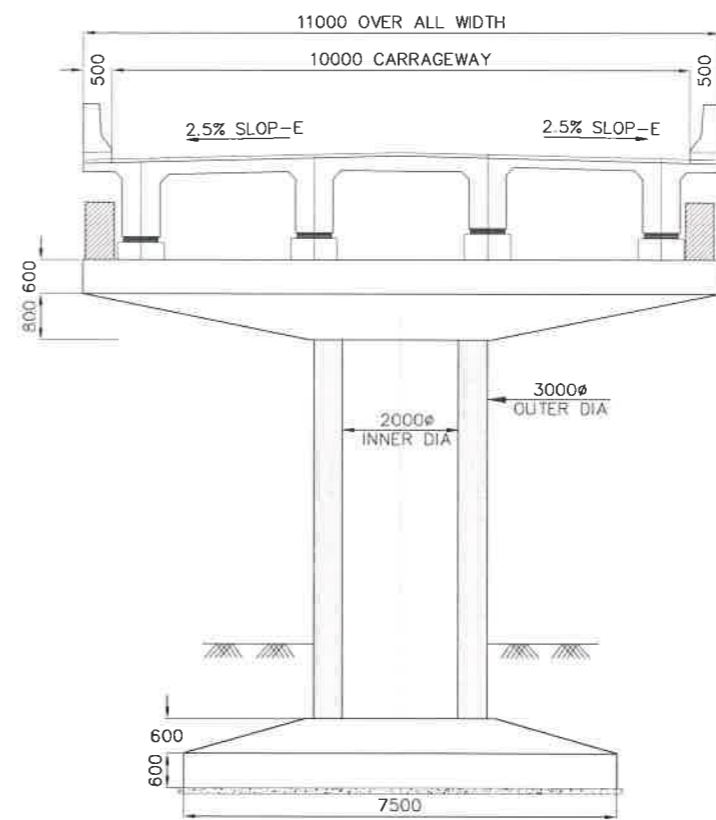
BOX ABUTMENT
SCALE 1:100



SECTION-1-1



SECTION-A-A
SCALE 1:100



SECTION-B-B
SCALE 1:100

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Phone No- 0120-6148000 Fax-0120-6148090
Email: info@sainfra.com

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

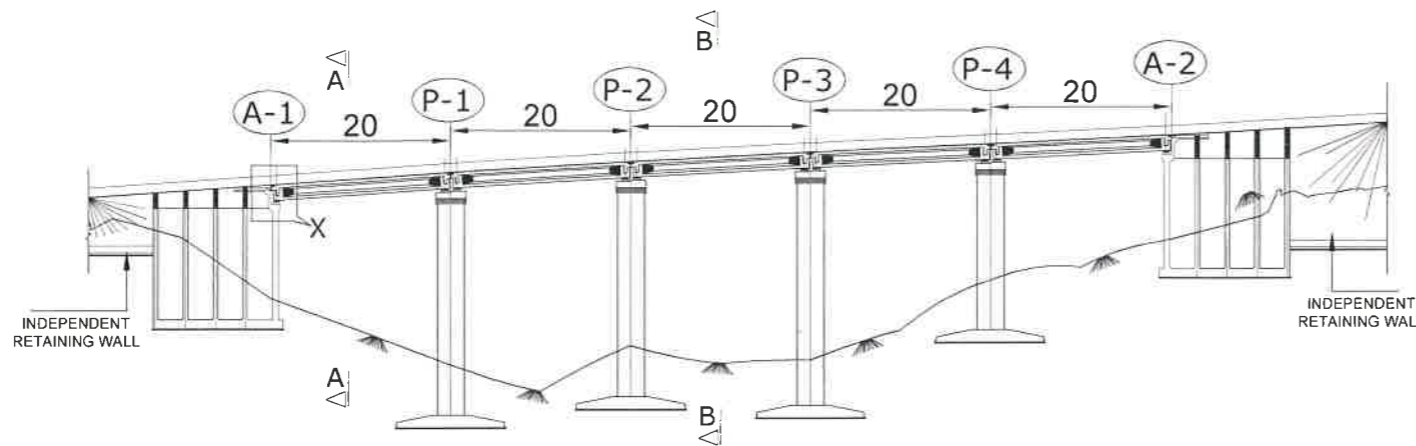
DATE : JAN-2019	REVISION R0
DESIGNED BY A REHMAN	DRAWN BY S RAWAT
CHECKED BY S DE	APPROVED BY S Shukla
SCALE:-	
SHEET:- 02 OF 02	

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH-4+520 TO 4+610 SPAN = (1X20+1X30+2X20)

DWG NO. :- SAICPL-SESPL/NHIDC/WB-SKM/4+520/GAD-01

← BAGRAKOT

KAFER →



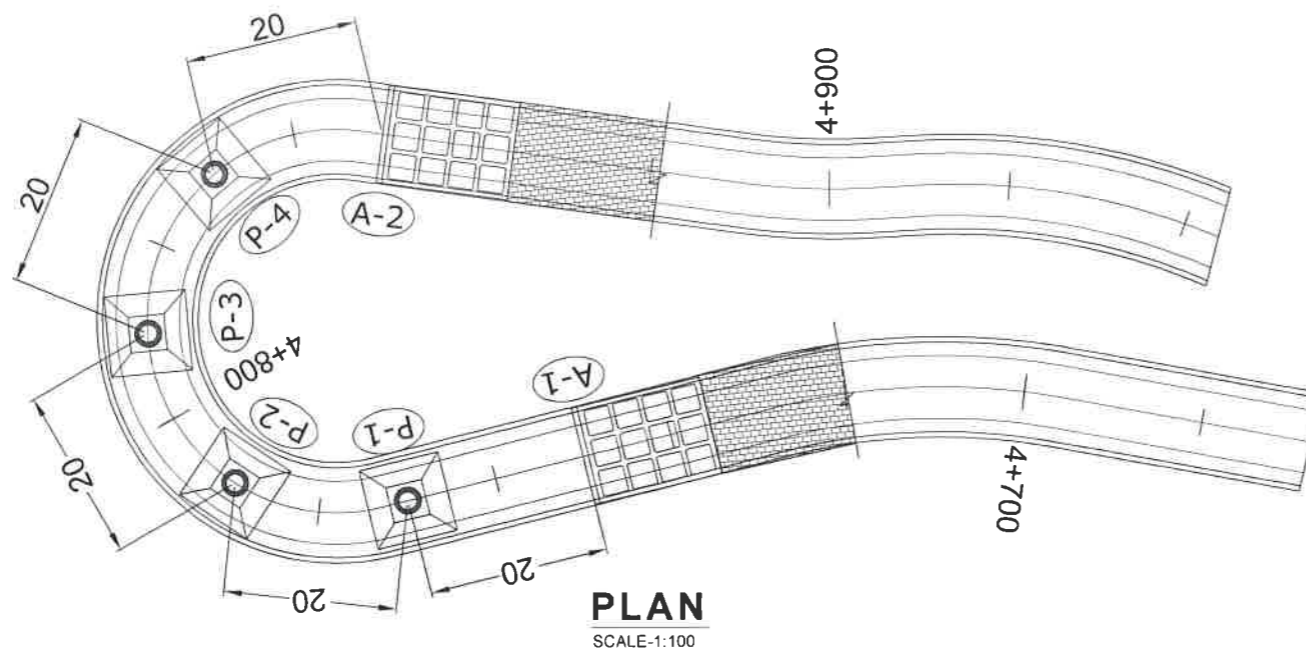
FORMATION LEVEL	274.001	275.082	276.120	277.130	278.140	279.115
GROUND LEVEL	412.732	412.732	412.732	412.732	412.732	412.732
CHAINAGE	4+750	4+770	4+790	4+810	4+830	4+850

LONGITUDINAL ELEVATION

SCALE-1:100

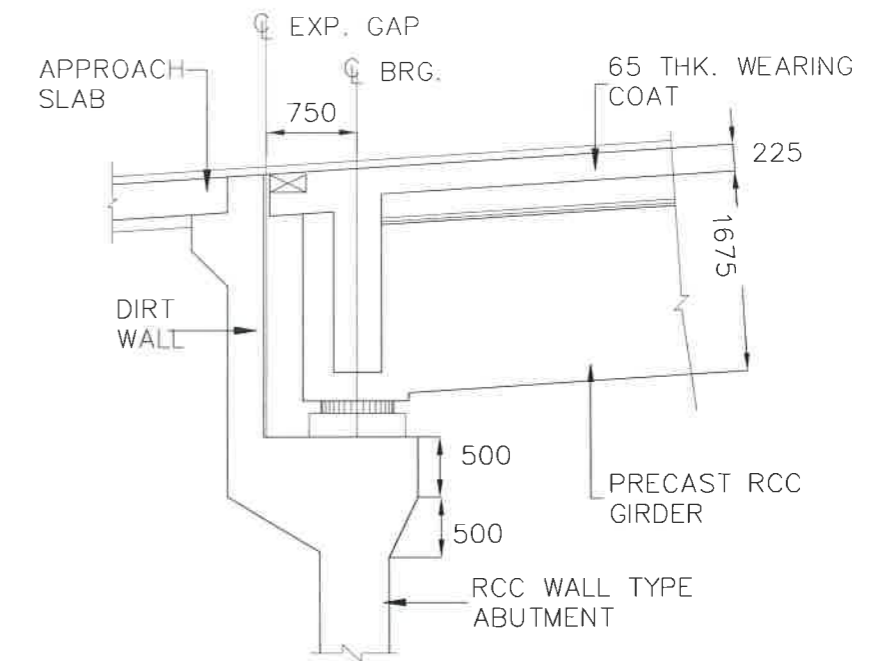
NOTES

1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
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 - (ii) RCC SUBSTRUCTURE & FOUNDATION --- M35
 - (iii) RCC RAILING --- M30
 - (iv) RCC CRASH BARRIER --- M40
 - (v) APPROACH SLAB --- M30
 - (vi) PEDESTAL --- M40
6. TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
7. SINGLE STRIP SEAL EXPANSION JOINT IS USED.
8. GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
9. ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
10. BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.



PLAN

SCALE-1:100



DETAIL-X
(SCALE 1:75)

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

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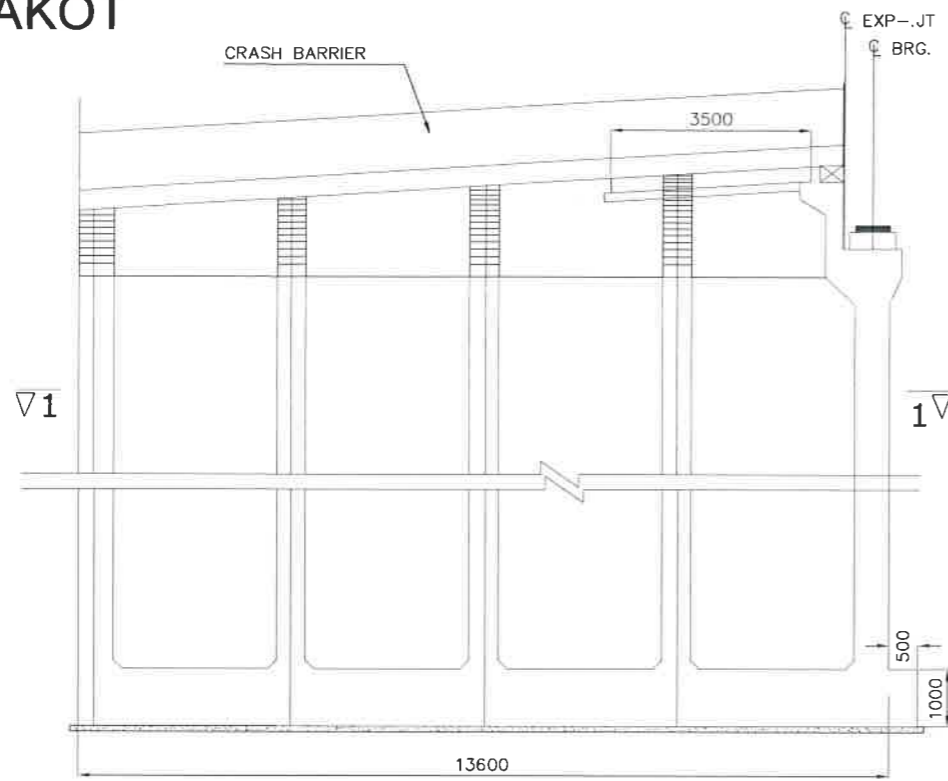
DATE : JAN-2019	REVISION R0
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CHECKED BY S DE	APPROVED BY S Shukla
SCALE:-	SHEET:- 01 OF 02

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH-4+750 TO 4+850 SPAN = (5X20)

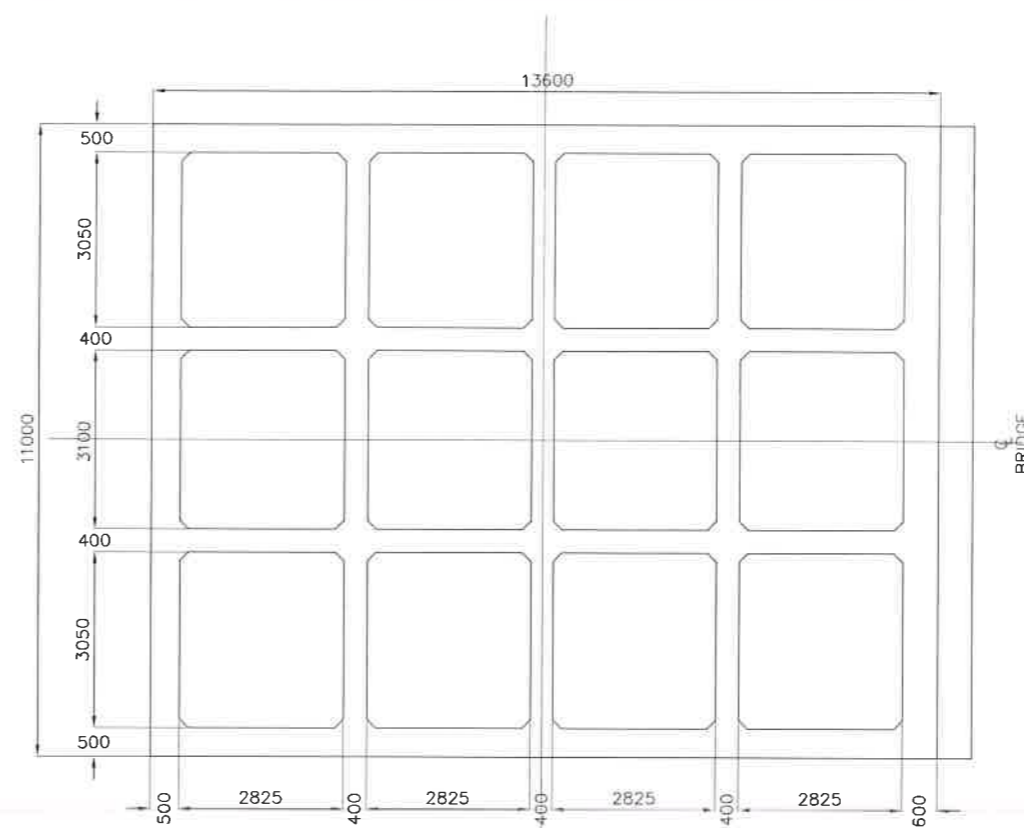
DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/4+750/GAD-01

← BAGRAKOT

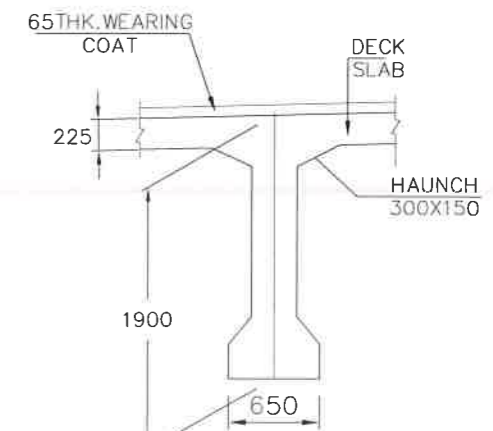
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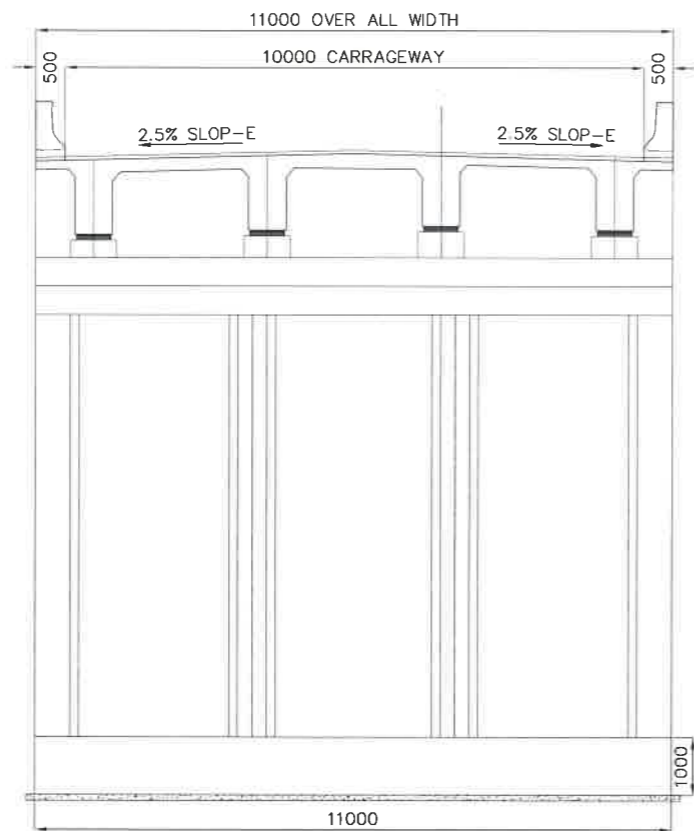
BOX ABUTMENT
SCALE 1:100



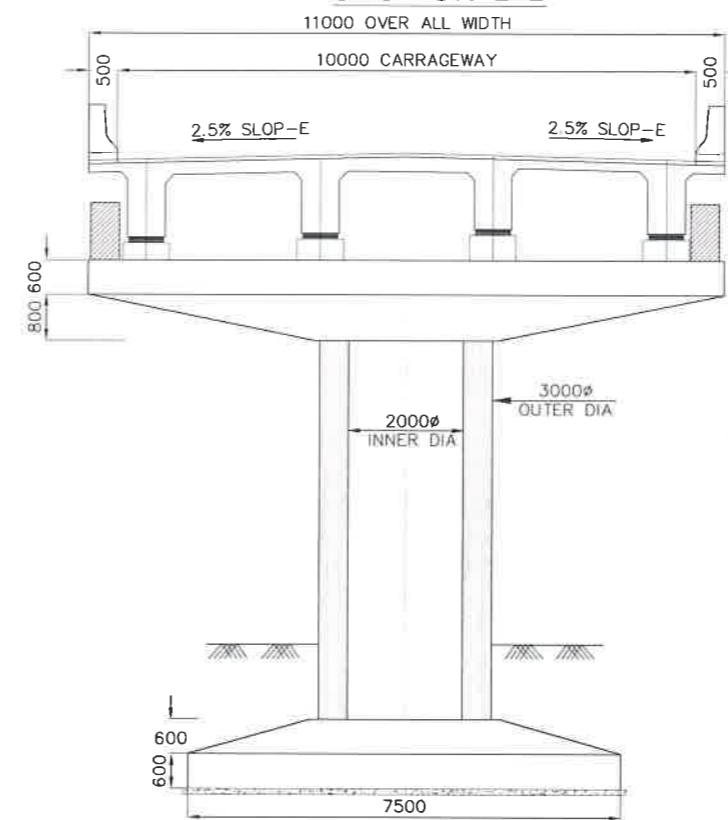
SECTION-1-1



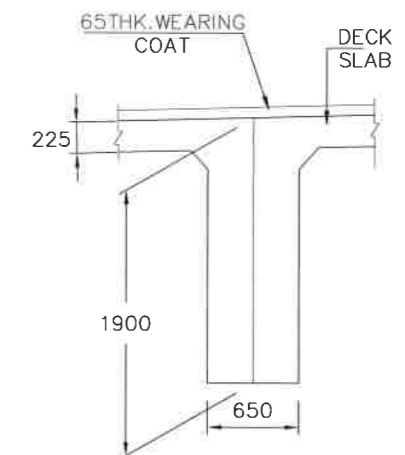
MID SPAN SECTION
20m RCC GIRDER
SCALE 1:50



SECTION-A-A
SCALE 1:100



SECTION-B-B
SCALE 1:100



SUPPORT SECTION
20m RCC GIRDER
SCALE 1:50

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West Bengal and From Rhenok-Rorathang-Pakyong
along with Spur From Aritar-Rolep-Menla in the State of Sikkim

DATE :	REVISION	R0
JAN-2019	DESIGNED BY	CHECKED BY
	DRAWN BY	APPROVED BY
	A.REHMAN	S DE
	S RAWAT	S Shukla

GENERAL ARRANGEMENT DRAWINGS
OF VIADUCT AT CH-4+750 TO 4+850
SPAN = (5X20)

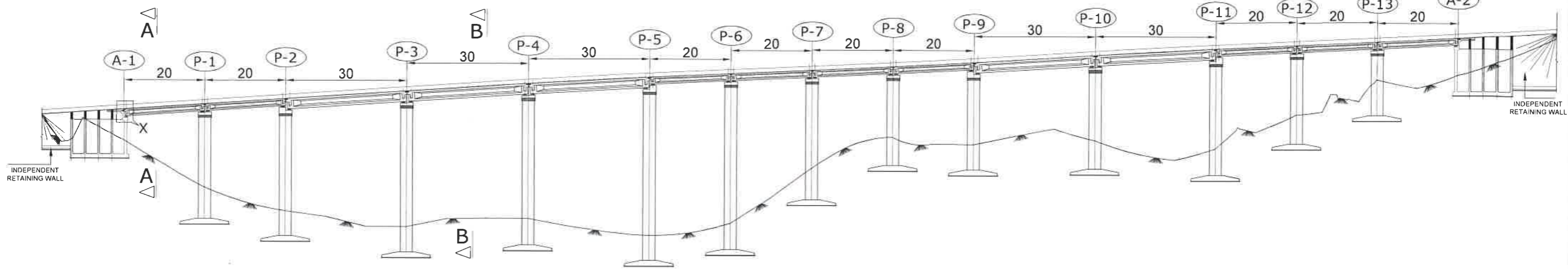
DWG. NO. :-
SAICPL-SESPL/NHIDC/WB-SKM/4+750/GAD-01

SCALE:-

SHEET:- 02 OF 02

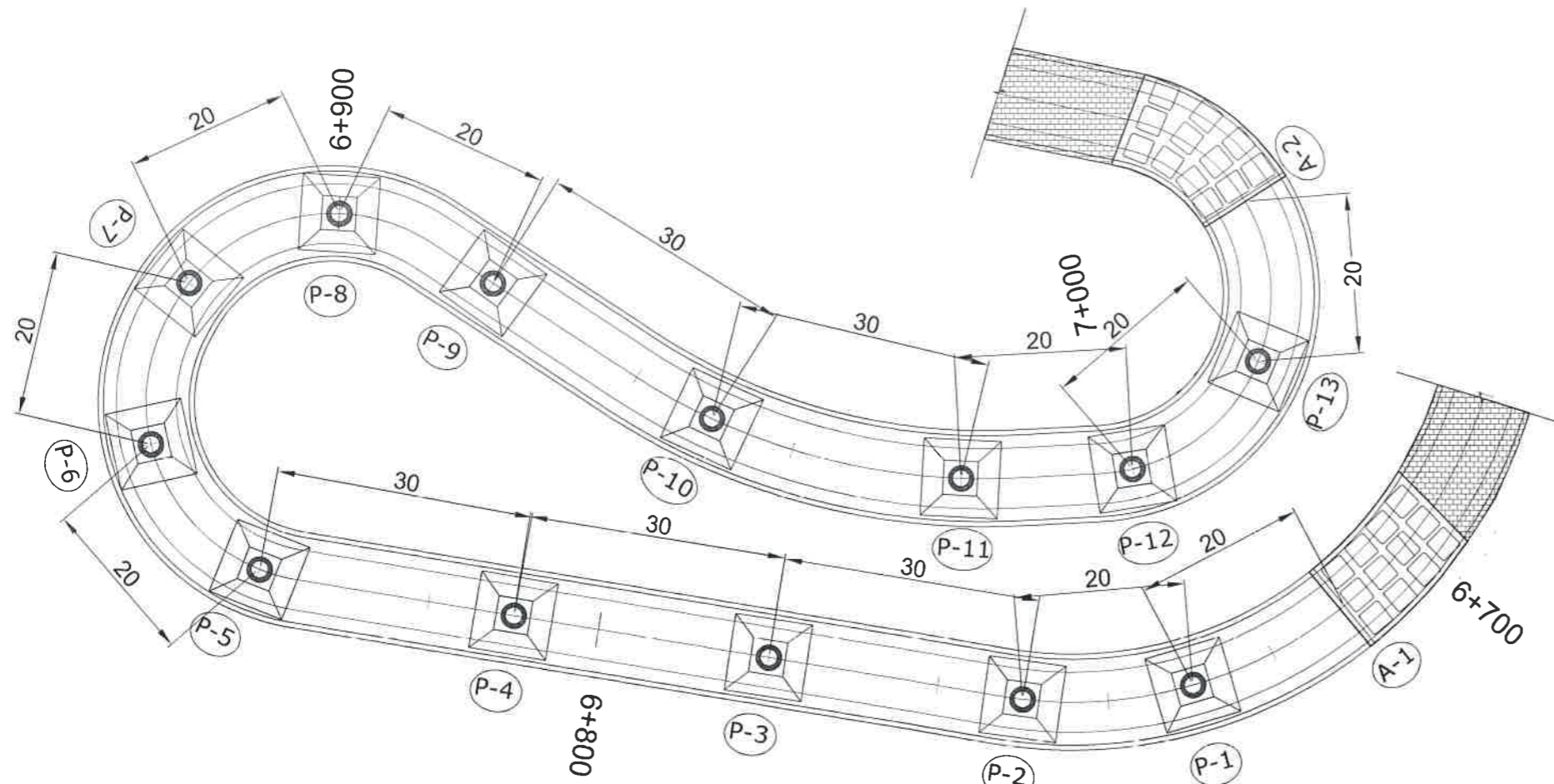
← BAGRAKOT

KAFER →

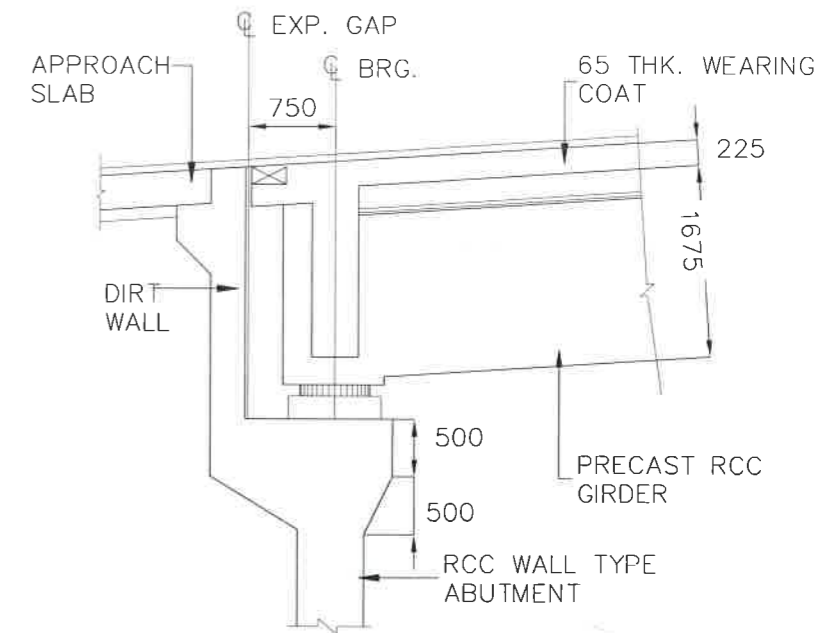


FORMATION LEVEL	399.100	400+450	401.530	403.678	405.610	407.309	408.243	409.143	410.100	411.196	412.680	414.798	415.700	416.605	417.628
BED LEVEL	387.200	380.680	375.540	369.973	371.220	376.220	371.018	384.690	392.426	390.712	391.620	389.928	398.323	407.114	408.379
CHAINAGE	6+710	6+730	6+750	6+780	6+810	6+840	6+860	6+880	6+900	6+920	6+950	6+980	7+100	7+020	7+040

LONGITUDINAL ELEVATION



PLAN



DETAIL-X
(SCALE 1:75)

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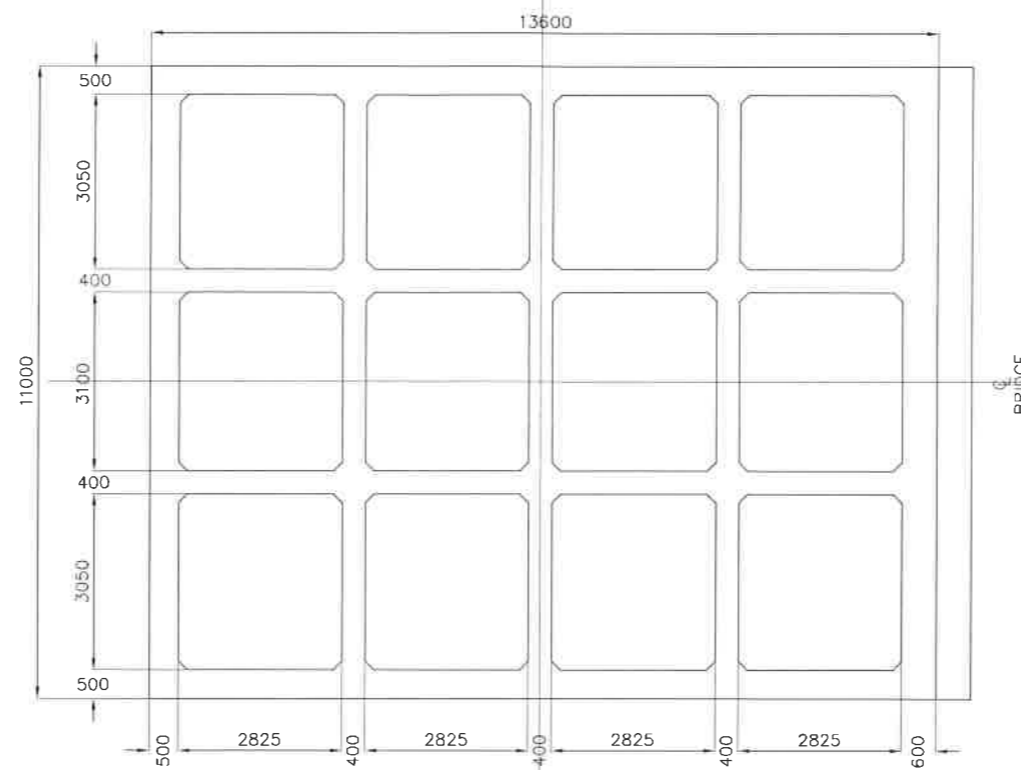
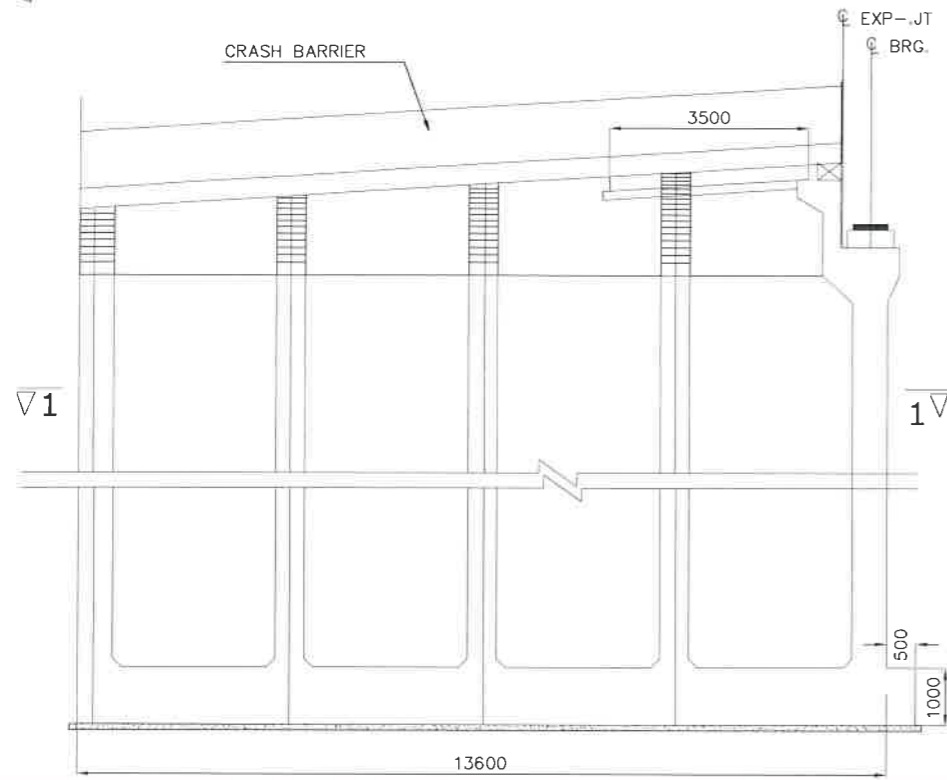
DATE: JAN-2019	REVISION: R0
DESIGNED BY: A REHMAN	DRAWN BY: S RAWAT
CHECKED BY: S DE	APPROVED BY: S Shukla
SCALE:-	
SHEET:- 01 OF 02	

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH-6+710 TO 7+040
SPAN = (2X20+3X30+4X20+2X30+3X20)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/6+710/GAD-01

← BAGRAKOT

KAFER →

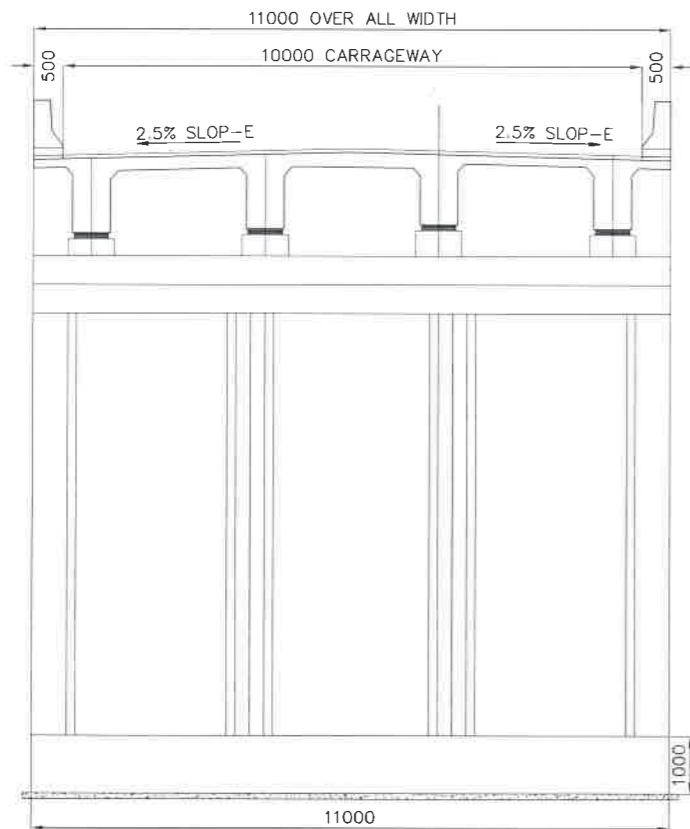


NOTES

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BOX ABUTMENT

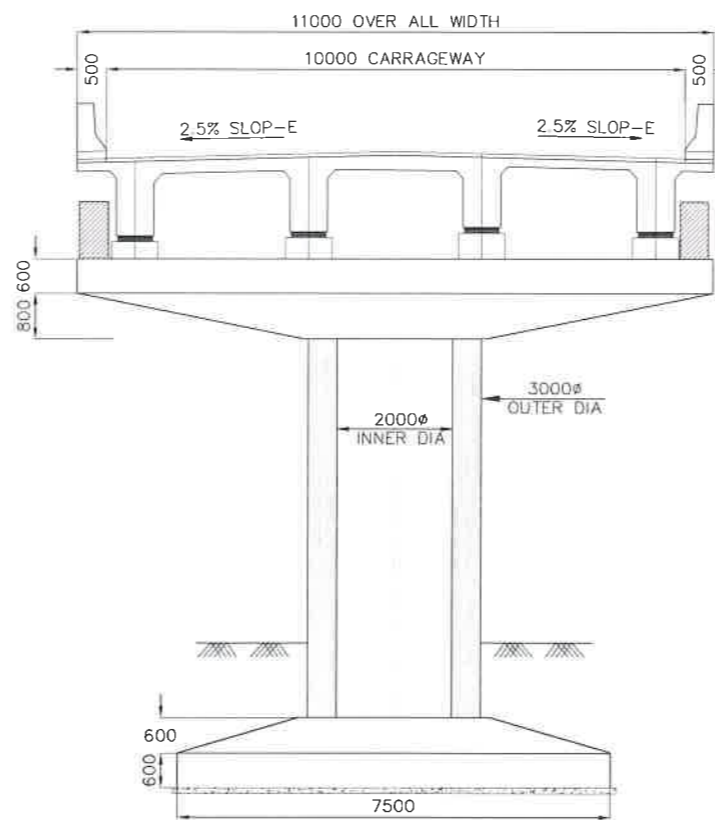
SCALE 1:100



SECTION-A-A

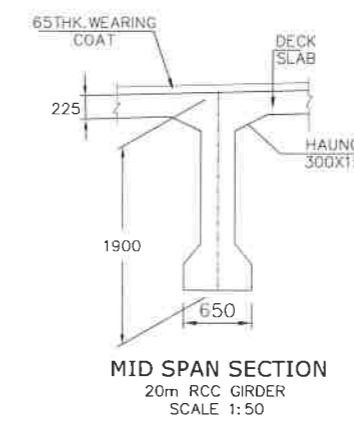
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SECTION-1-1

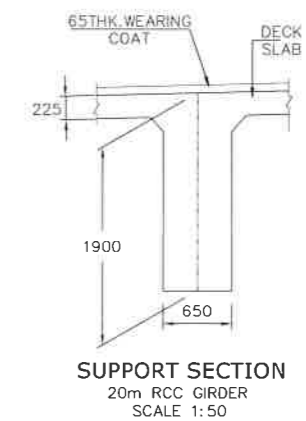


SECTION-B-B

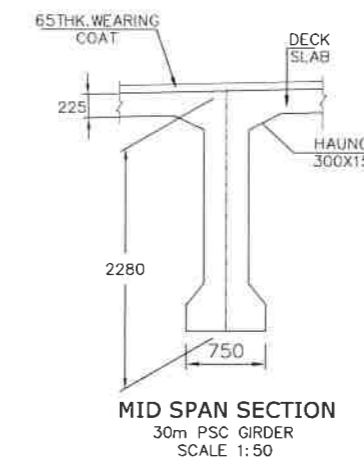
SCALE 1:100



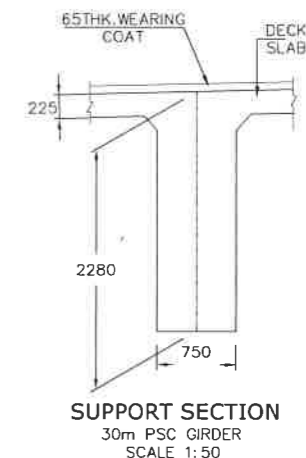
MID SPAN SECTION
20m RCC GIRDER
SCALE 1:50



SUPPORT SECTION
20m RCC GIRDER
SCALE 1:50



MID SPAN SECTION
30m PSC GIRDER
SCALE 1:50



SUPPORT SECTION
30m PSC GIRDER
SCALE 1:50

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS

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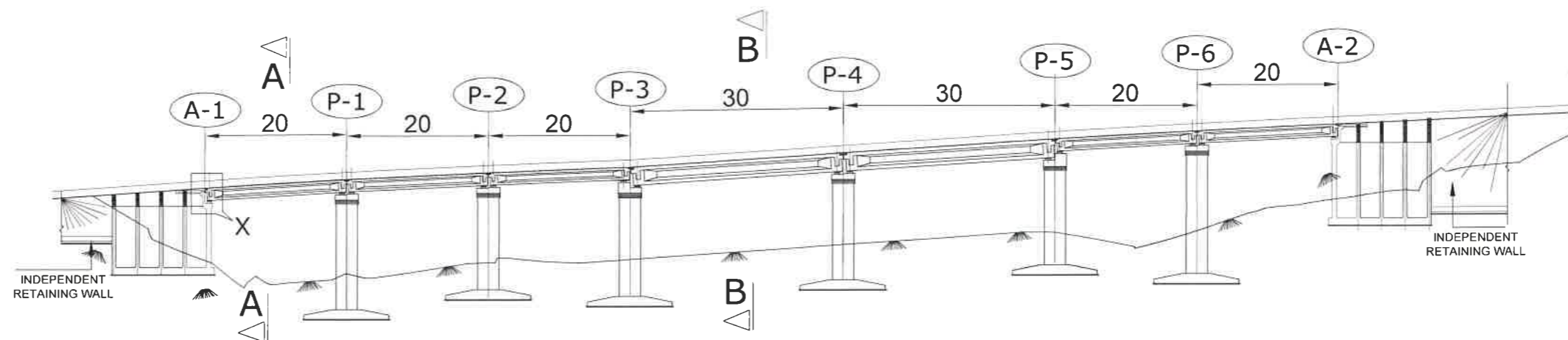
DATE : JAN-2019	REVISION R0
DESIGNED BY A REHMAN	DRAWN BY S RAWAT
CHECKED BY S DE	APPROVED BY S Shukla
SCALE:-	SHEET:- 02 OF 02

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH-6+710 TO 7+040
SPAN = (2X20+3X30+4X20+2X30+3X20)

DWG NO. :- SAICPL-SESPL/NHDC/WB-SKM/6+710/GAD-01

← BAGRAKOT

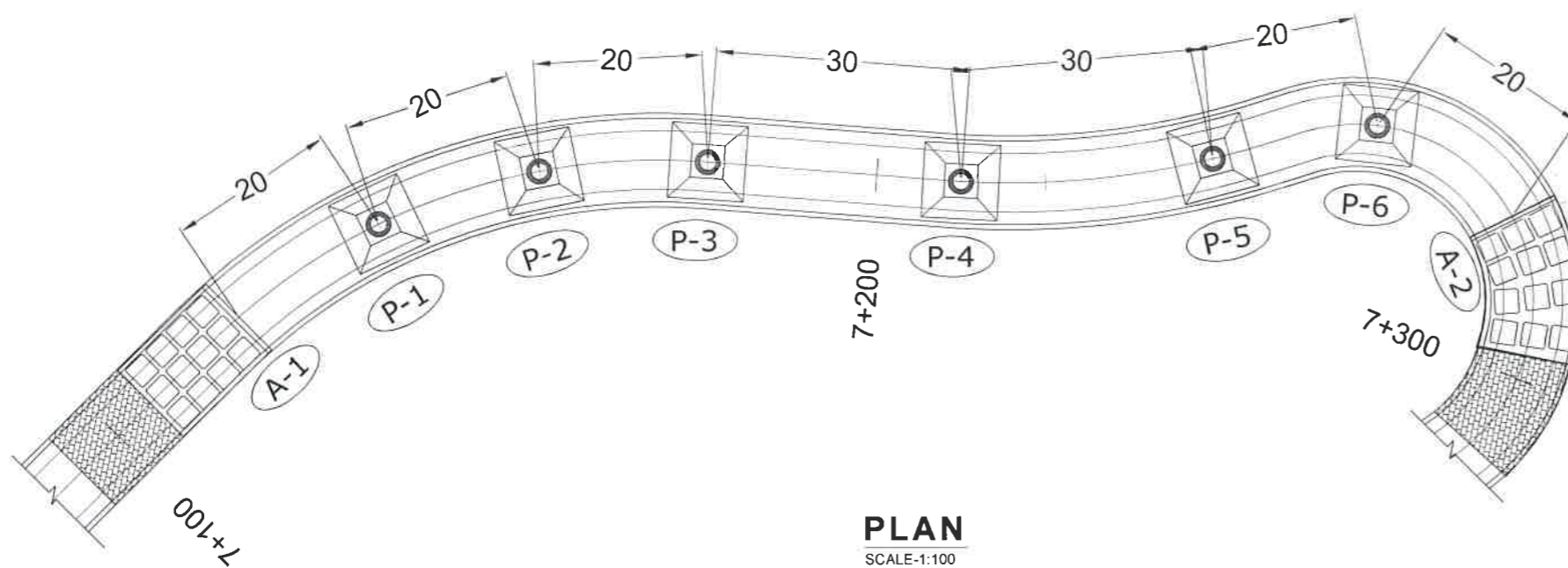
KA FER →



FORMATION LEVEL	422.973	424.198	425.137	426.680	428.659	429.954	431.083	432.046
BED LEVEL	412.732	410.901	412.407	413.653	415.683	416.707	416.910	421.438
CHAINAGE	7+120	7+140	7+160	7+190	7+220	7+240	7+260	7+280

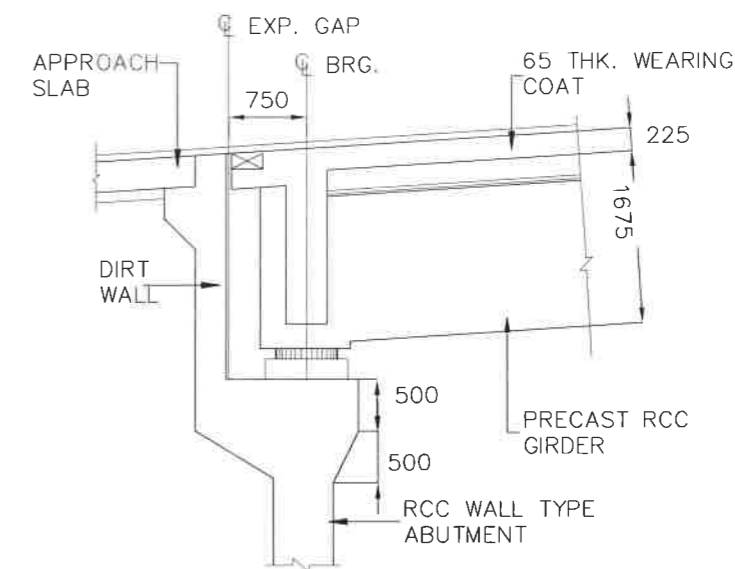
LONGITUDINAL ELEVATION

SCALE-1:100



PLAN

SCALE-1:100



DETAIL-X
(SCALE 1:75)

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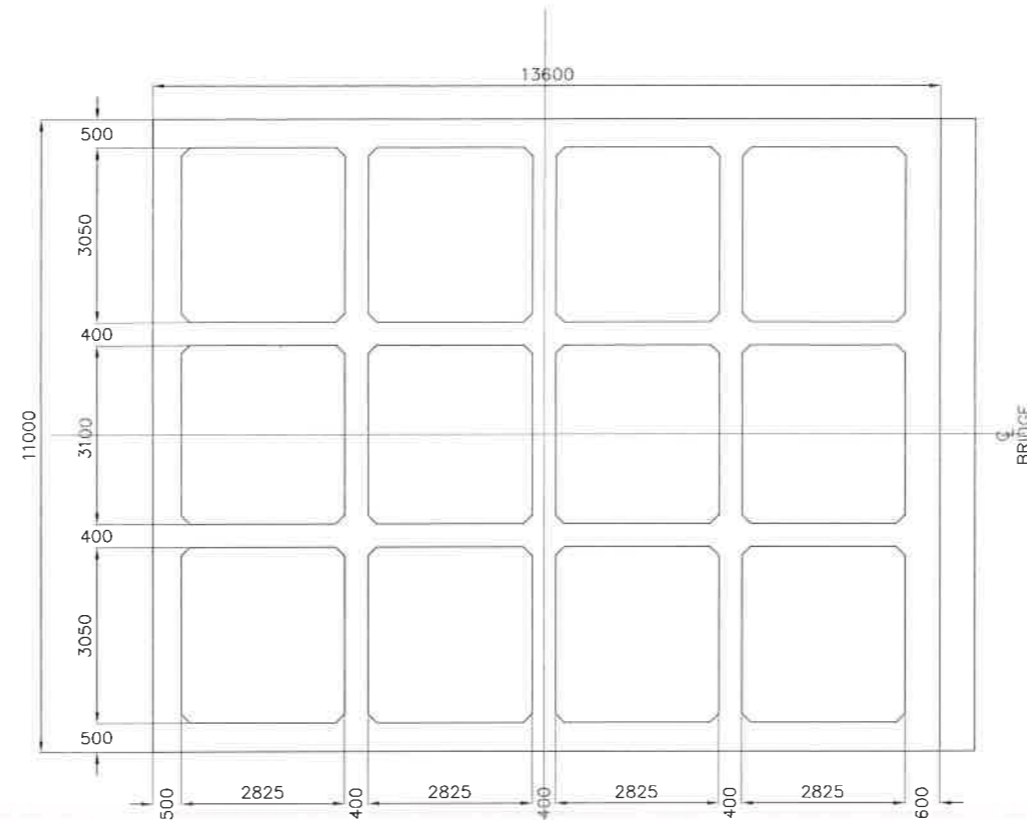
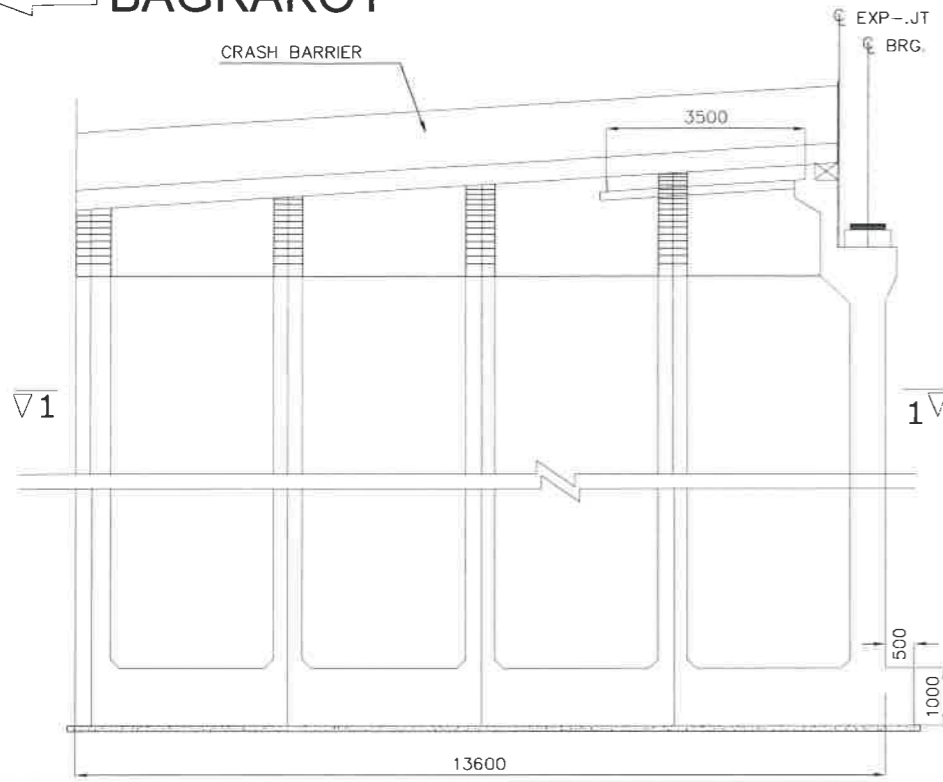
DATE : JAN-2019	REVISION R0
DESIGNED BY A REHMAN	DRAWN BY S RAWAT
CHECKED BY S DE	APPROVED BY S Shukla
SCALE:-	
SHEET:- 01 OF 02	

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH-7+120 TO 7+280 SPAN = (3X20+2X30+2X20)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/4+120/GAD-01

← BAGRAKOT

KAFER →

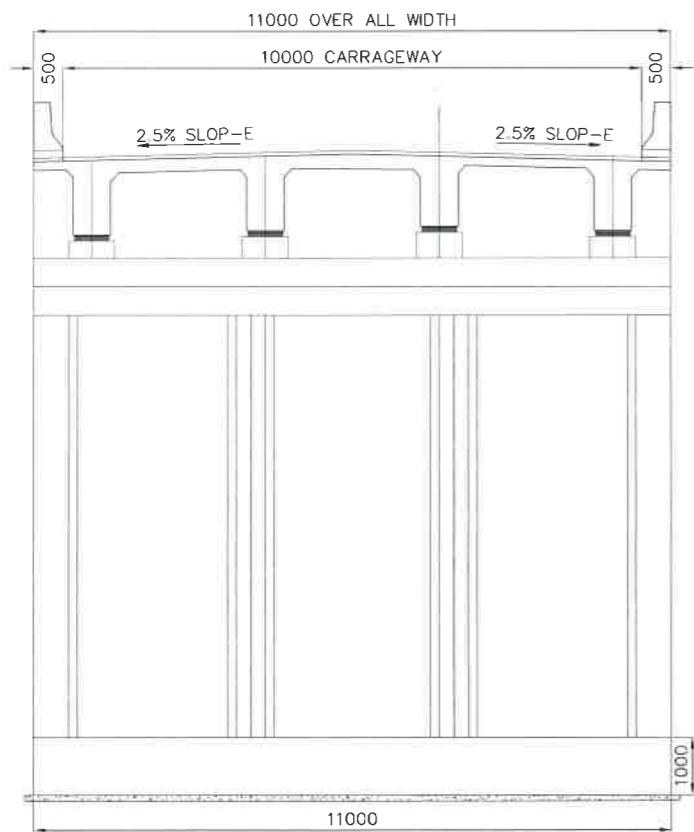


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BOX ABUTMENT

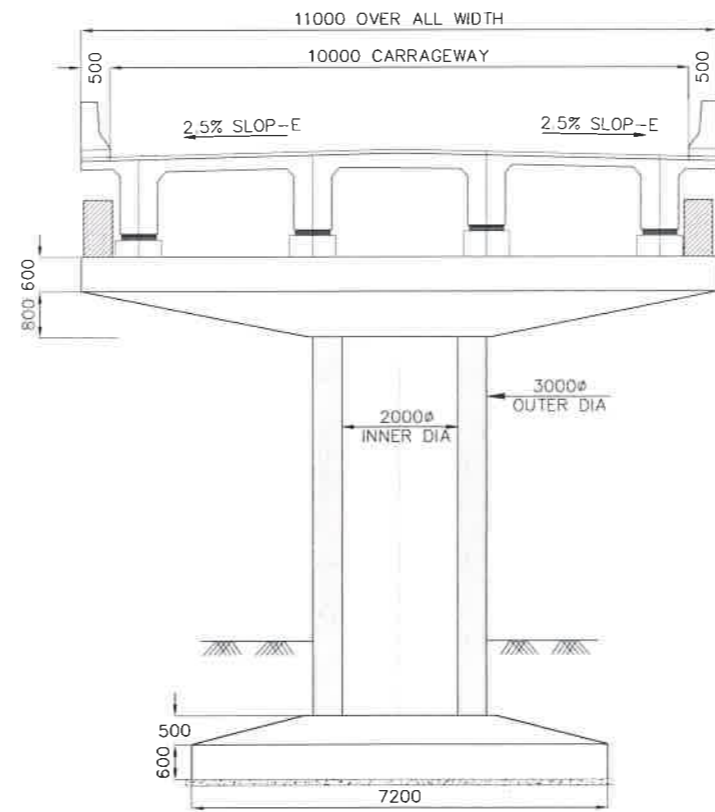
SCALE 1:100



SECTION-A-A

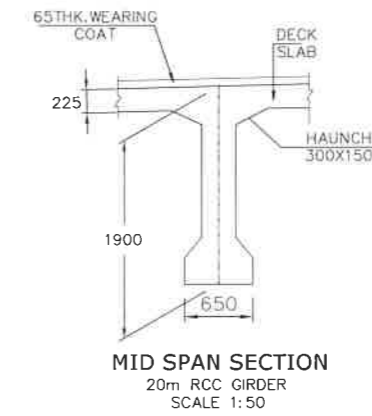
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SECTION-1-1

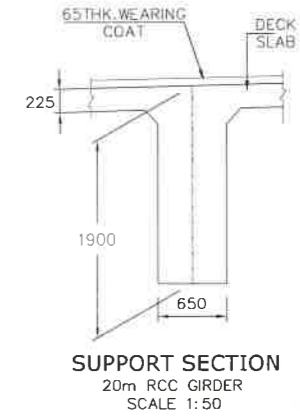


SECTION-B-B

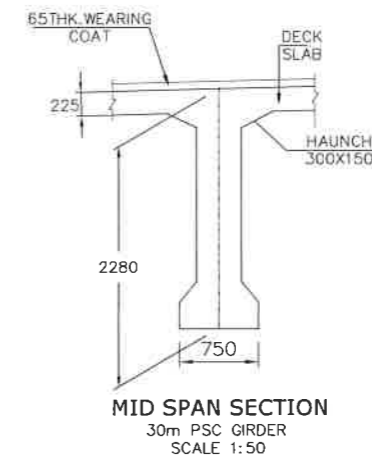
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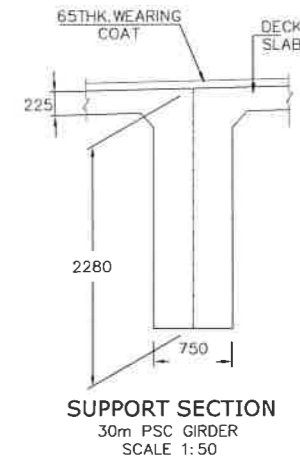
MID SPAN SECTION
20m RCC GIRDER
SCALE 1:50



SUPPORT SECTION
20m RCC GIRDER
SCALE 1:50



MID SPAN SECTION
30m PSC GIRDER
SCALE 1:50



SUPPORT SECTION
30m PSC GIRDER
SCALE 1:50

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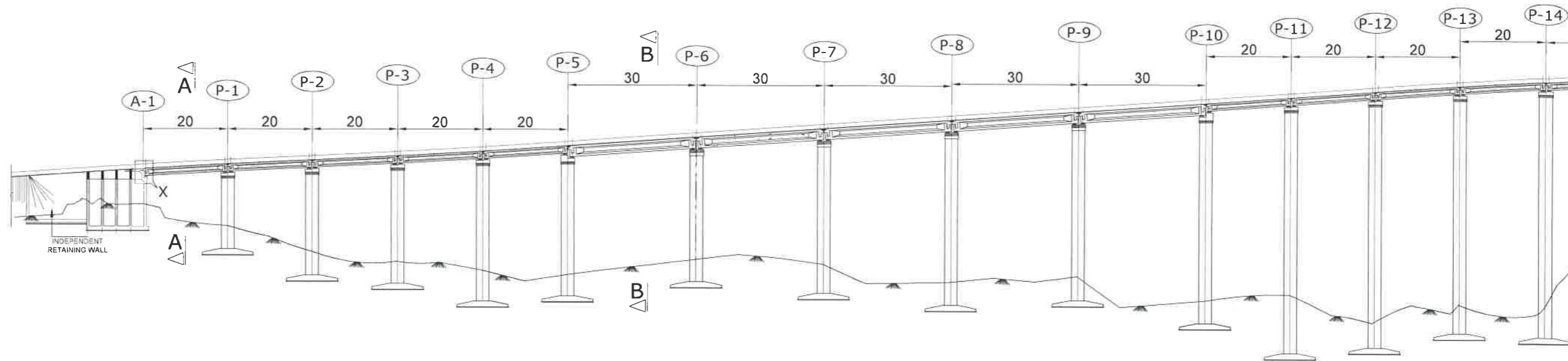
DATE: JAN-2019	REVISION: R0
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CHECKED BY: S DE	APPROVED BY: S Shukla
SCALE:-	
SHEET:- 02 OF 02	

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH-7+120 TO 7+280
SPAN = (3X20+2X30+2X20)

DWG NO. :- SAICPL-SESPL/NHDC/WB-SKM/4+120/GAD-01

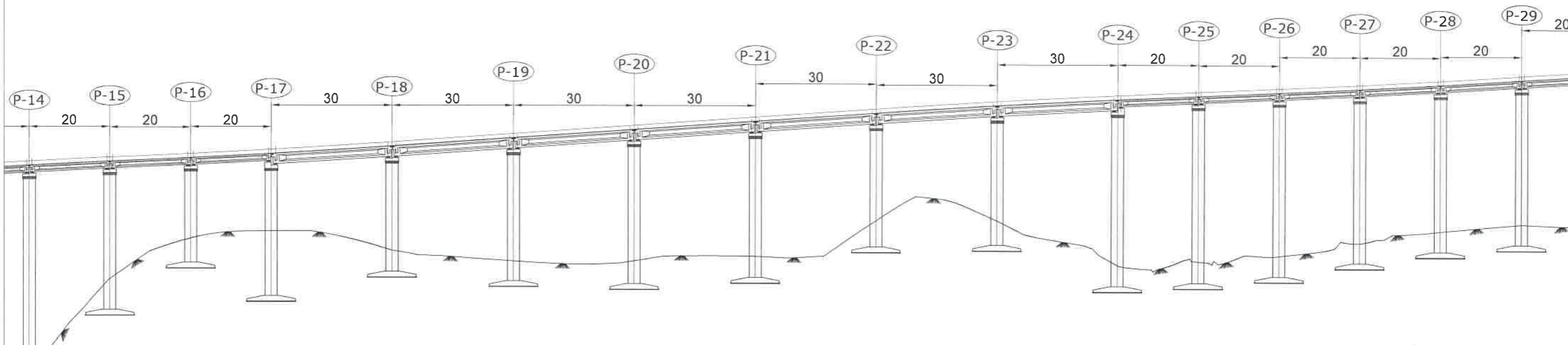
← BAGRAKOT

KAFER →



FORMATION LEVEL	442.210	443.215	444.230	445.209	446.710	447.891	449.790	451.870	453.990	456.230	458.190	459.590	460.990	462.311	463.465
BED LEVEL	430.510	427.230	423.520	420.130	417.020	417.001	420.918	417.910	415.716	413.810	411.559	412.992	406.684	410.704	410.323
CHAINAGE	7+450	7+470	7+490	7+510	7+530	7+550	7+580	7+610	7+640	7+670	7+700	7+720	7+740	7+760	7+780

LONGITUDINAL ELEVATION



464.453	465.371	466.433	468.530	470.439	472.560	474.639	476.710	478.712	480.130	481.230	482.210	483.210	484.120	485.630
435.182	445.302	447.136	443.320	439.701	439.560	440.900	444.680	449.899	440.250	439.810	441.923	443.415	447.150	448.870
7+800	7+820	7+840	7+870	7+900	7+930	7+960	7+990	8+020	8+050	8+070	8+090	8+110	8+130	8+150

LONGITUDINAL ELEVATION

463.465
410.323
7+780

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(Ministry of Road Transport & Highways)

CONSULTANT: S.A. Infrastructure Consultants Pvt. Ltd.
1101A, 11 Floor Tower A-II, Ansal Corporate Park,
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)
Phone No- 0120-6148000 Fax-0120-6148090
Email: info@sainfra.com

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

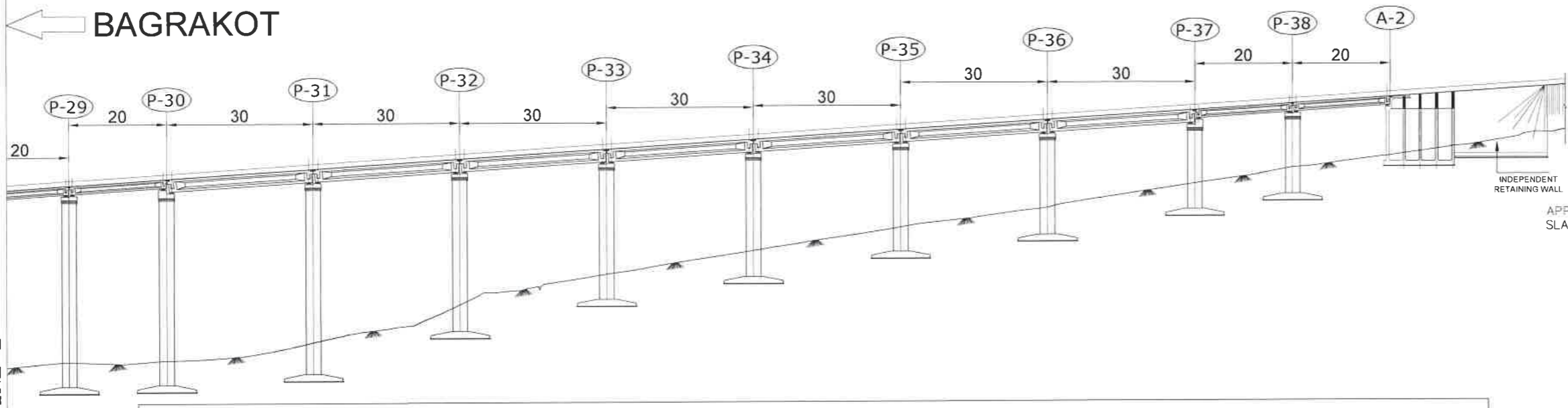
DATE : JAN-2019	REVISION	RO
DESIGNLD BY A REHMAN	DRAWN BY S RAWAT	CHECKED BY S DE
APPROVED BY S Shukla	SHEET: 01 OF 03	

GENERAL ARRANGEMENT DRAWINGS
OF VIADUCT AT CH-7+450 TO 8+420
SPAN=(5X20+5X30+7X20+
7X30+6X20+7X30+2X20)

DWG. NO. :-
SAICPL-SESPL/NHDC/WB-SKM/7+450/GAD-01

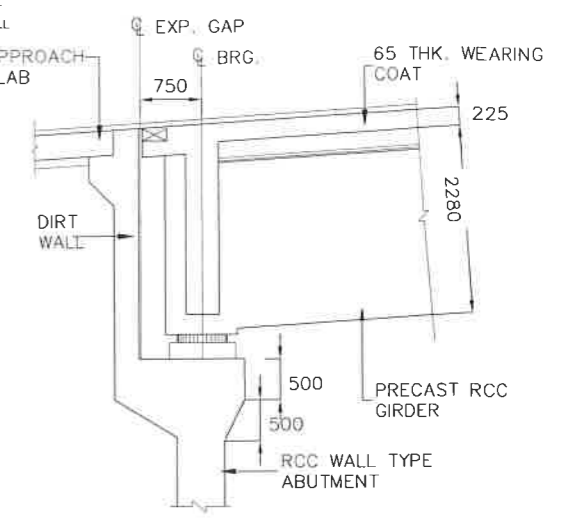
BAGRAKOT ←

KAFER →



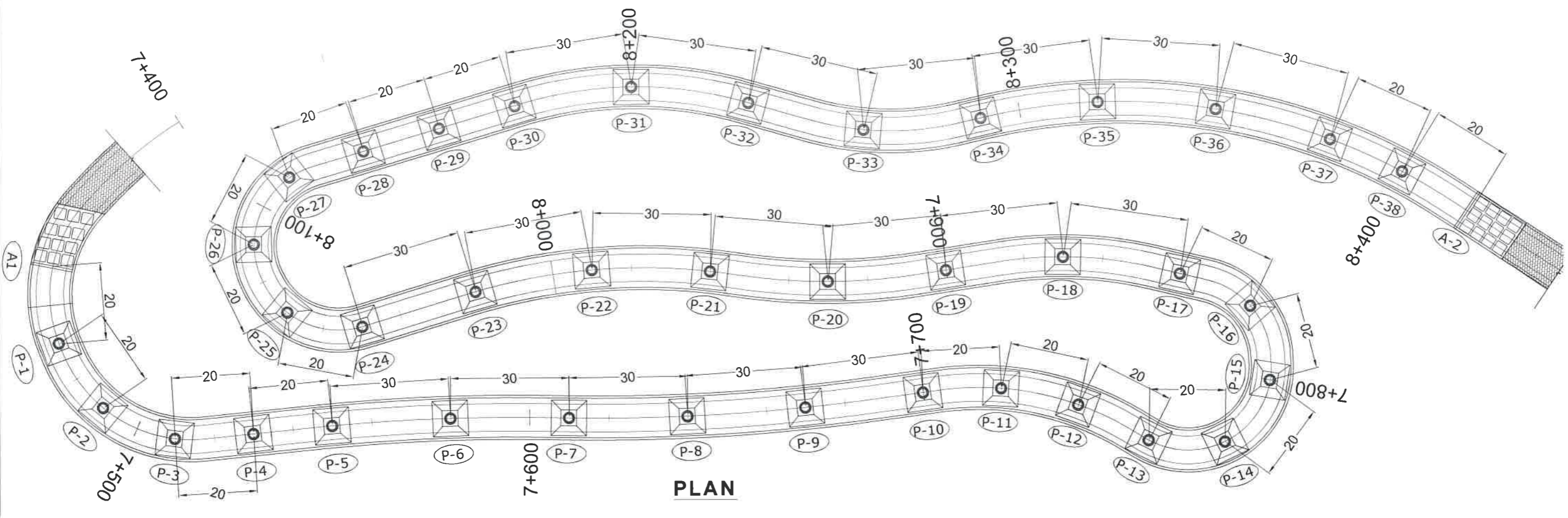
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449.102	453.133	458.510	466.963	472.820	476.428	480.230	485.351	488.557	490.969
8+170	8+200	8+230	8+260	8+290	8+320	8+350	8+380	8+400	8+420

LONGITUDINAL ELEVATION



DETAIL-X
(SCALE 1:75)

MATCH LINE--2



PLAN

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS

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

CONSULTANT: S.A. Infrastructure Consultants Pvt. Ltd.
1101A, 11 Floor Tower A-II, Ansal Corporate Park,
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Phone No- 0120-6148000 Fax-0120-6148090
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West Bengal and From Rhenok-Rorathang-Pakyong
along with Spur From Aritar-Rolep-Menla in the State of Sikkim

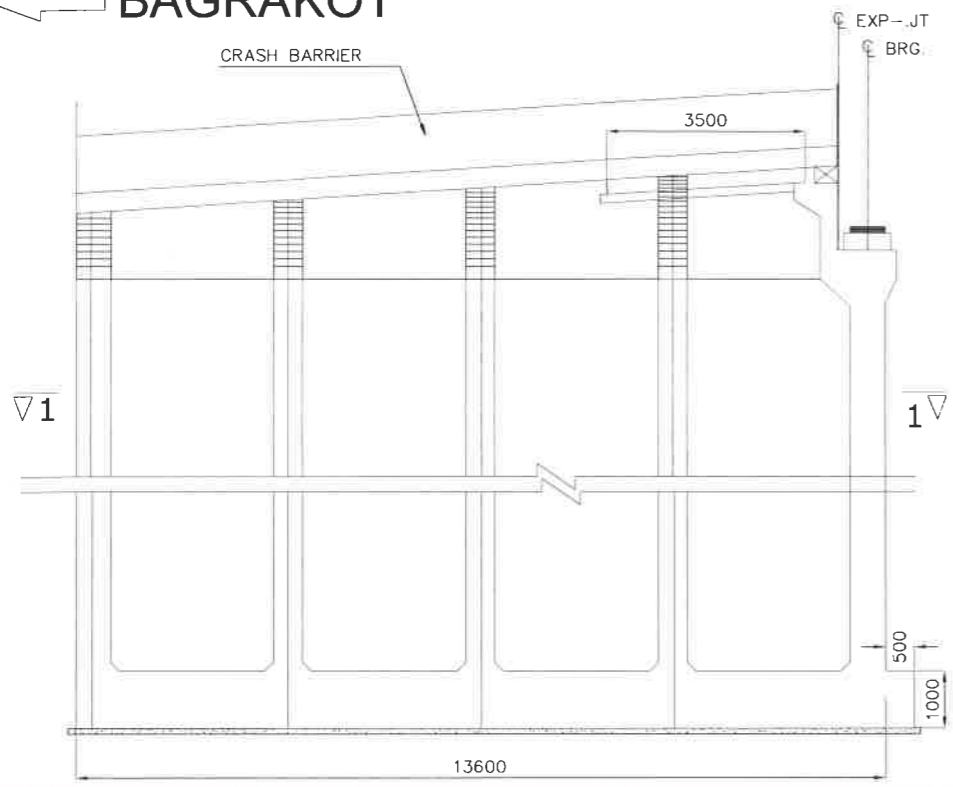
DATE : JAN-2019	REVISION R0
DESIGNED BY A REHMAN	DRAWN BY S RAWAT
CHECKED BY S DE	APPROVED BY S Shukla
SCALE:-	SHEET:- 02 OF 03

GENERAL ARRANGEMENT DRAWINGS
OF VIADUCT AT CH-7+450 TO 8+420
SPAN=(5X20+5X30+7X20+
7X30+6X20+7X30+2X20)

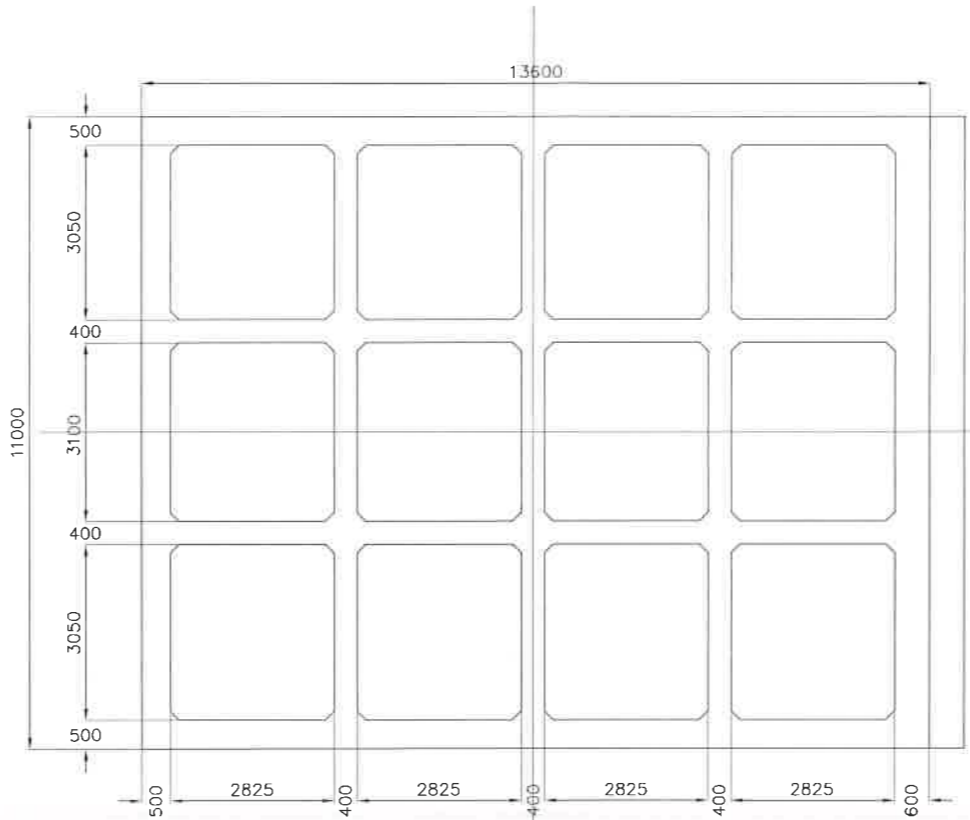
DWG. NO. :-
SAICPL-SESPL/NHIDC/WB-SKM/7+450/GAD-01

← BAGRAKOT

KAFER →



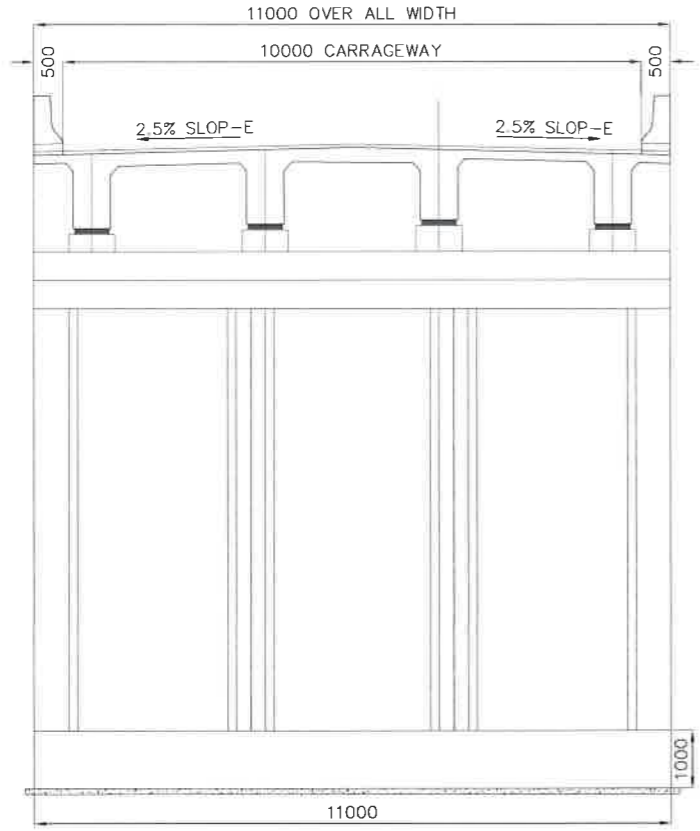
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SCALE 1:100



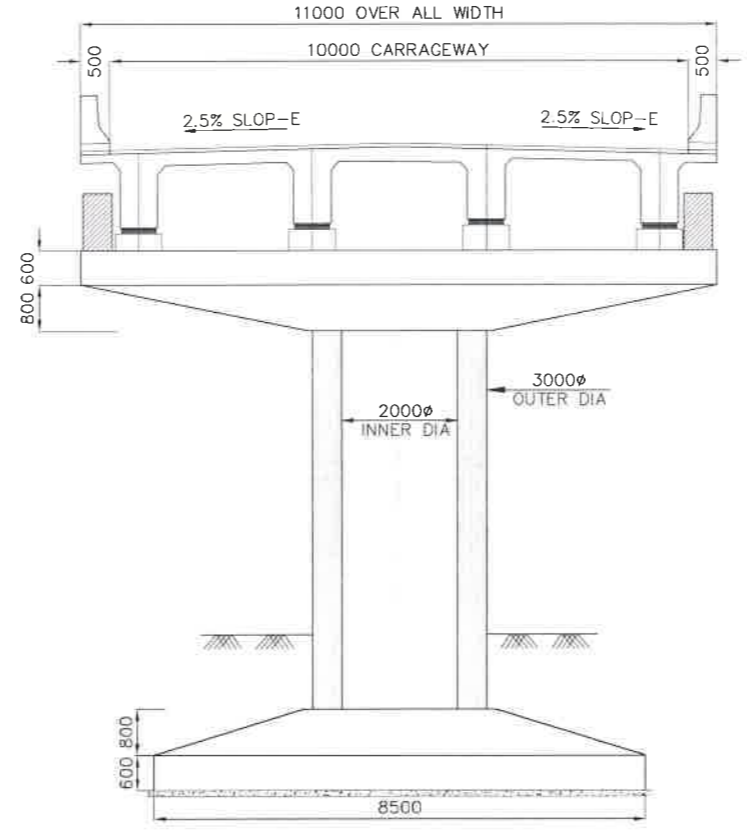
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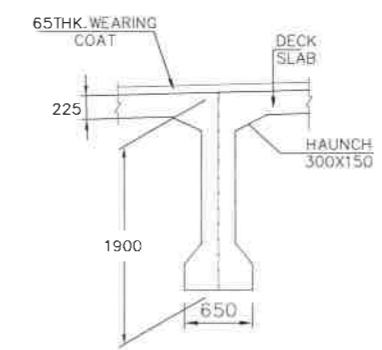
- ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
- DIMENSIONS ARE NOT TO SCALE. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.
- BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R & 1 LANE CLASS A OR 3 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
- GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
 (i) SUPERSTRUCTURE(PSC) --- M45
 (ii) RCC SUBSTRUCTURE & FOUNDATION --- M35
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 (v) APPROACH SLAB --- M30
 (vi) PEDESTAL --- M40
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- SINGLE STRIP SEAL EXPANSION JOINT IS USED.
- GRADE OF CEMENT IS USED HERE IS OPC 43/DPc 53.
- ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
- BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.



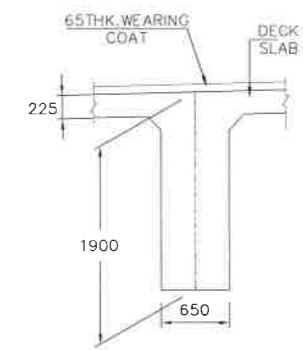
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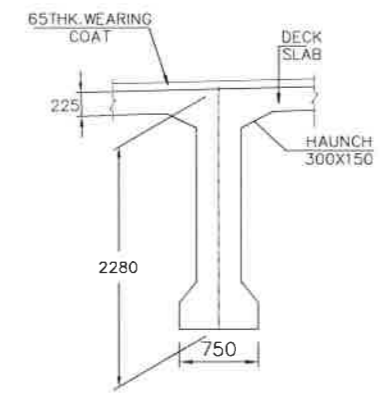
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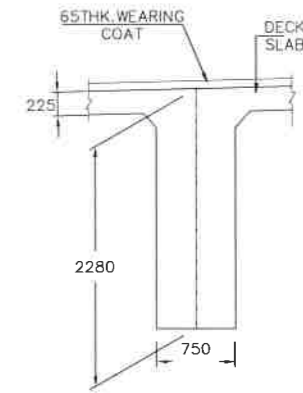
MID SPAN SECTION
20m RCC GIRDER
SCALE 1:50



SUPPORT SECTION
20m RCC GIRDER
SCALE 1:50



MID SPAN SECTION
30m PSC GIRDER
SCALE 1:50



SUPPORT SECTION
30m PSC GIRDER
SCALE 1:50

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS

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

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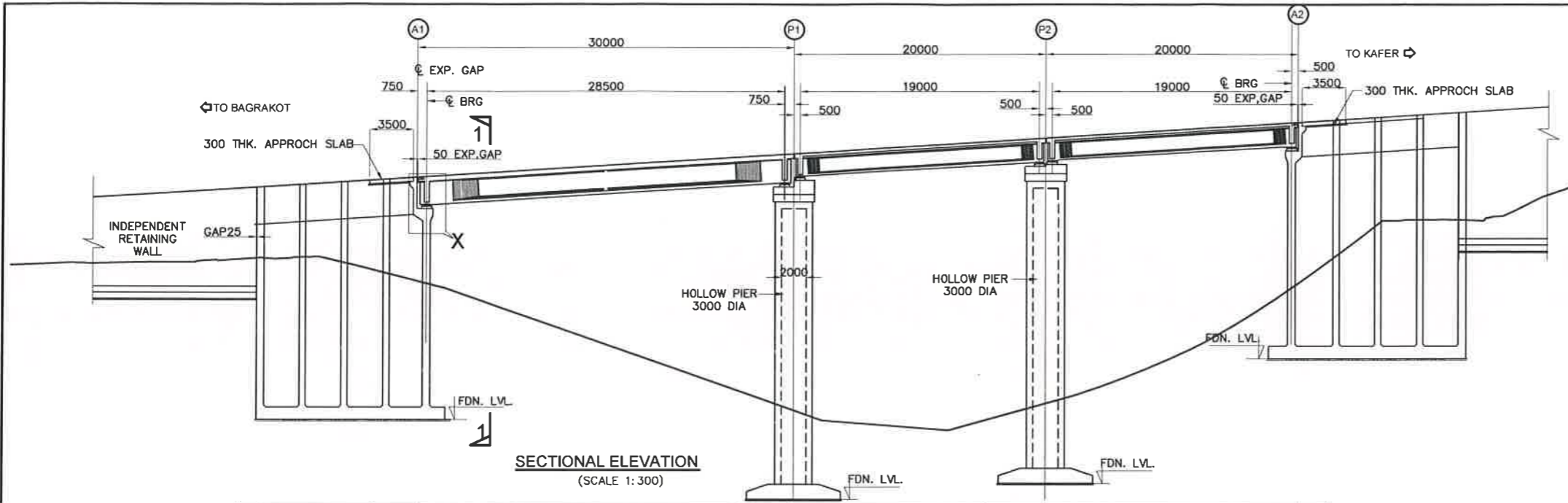
PROJECT: Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of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

DATE: JAN-2019	REVISION: R0
DESIGNED BY: A REHMAN	DRAWN BY: S RAWAT
CHECKED BY: S DE	APPROVED BY: S Shukla

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH7+450 TO 8+420
SPAN=(5X20+5X30+7X20+7X30+6X20+7X30+2X20)

DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/7+450/GAD-01

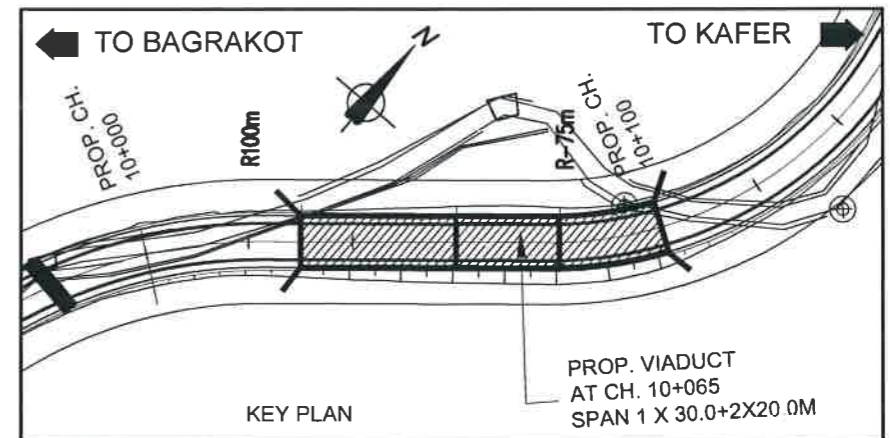
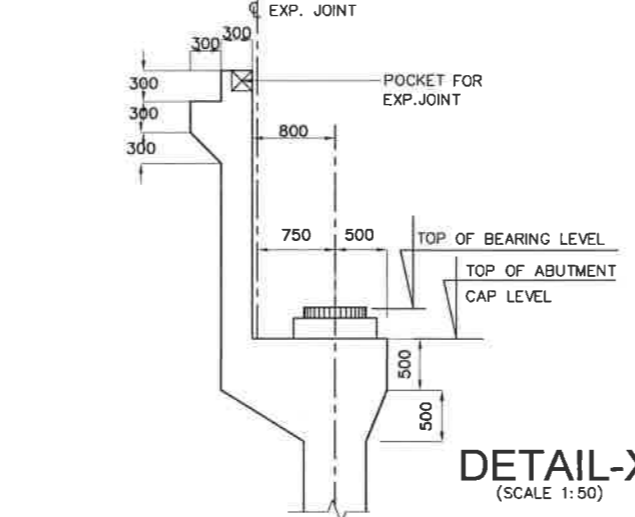
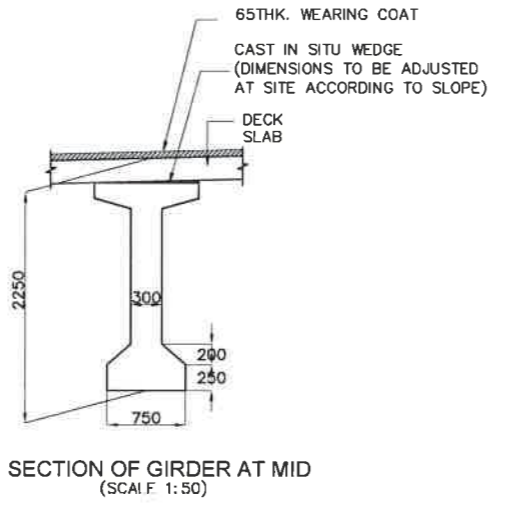
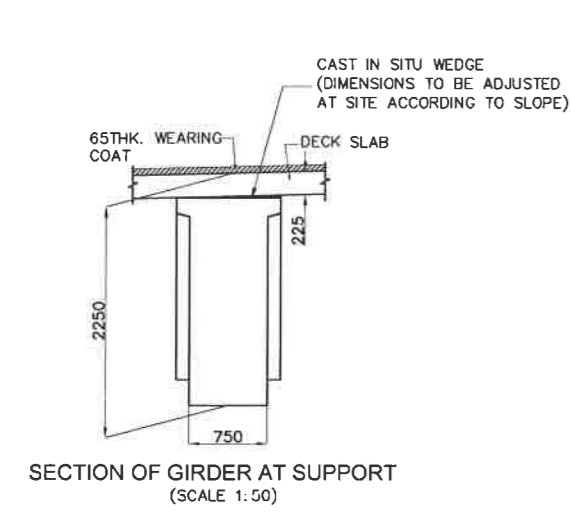
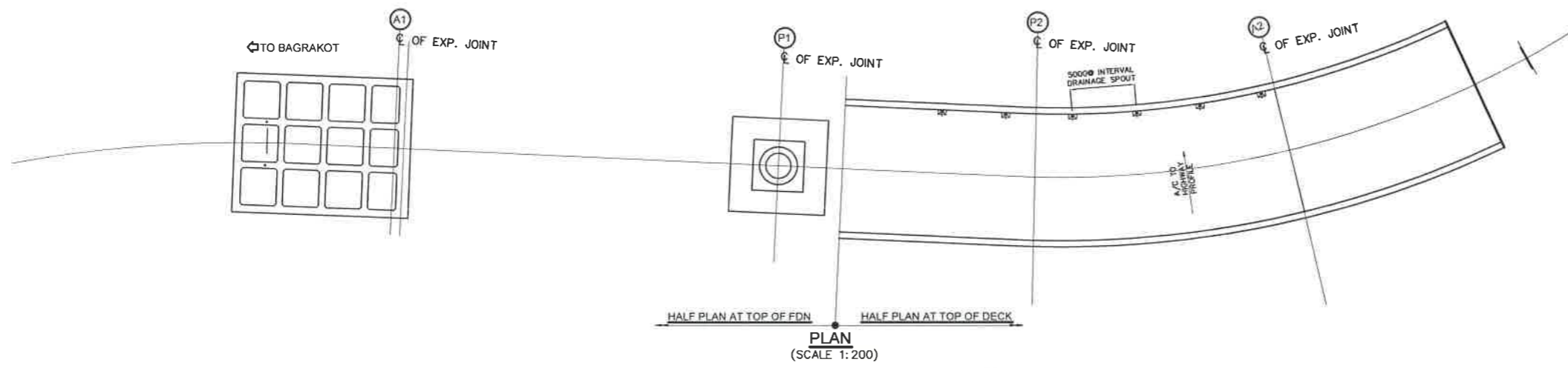
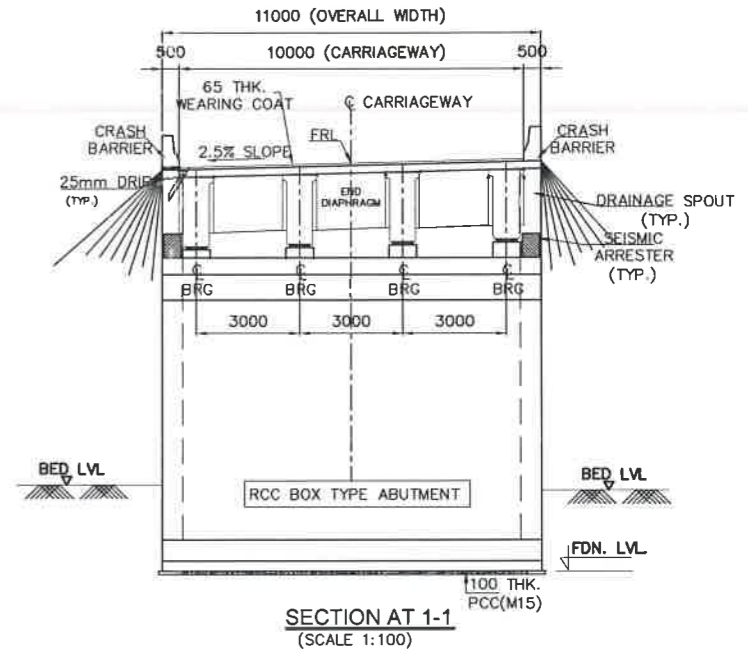
SCALE:- SHEET:- 03 OF 03



NOTES

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 - (iv) RCC CRASH BARRIER --- M40
 - (v) APPROACH SLAB --- M30
 - (vi) PEDESTAL --- M40
6. TYPE OF BEARING PROPOSED HERE IS POT-PTEF AS PER IRC: 83, PART-III
7. SINGLE STRIP SEAL EXPANSION JOINT IS USED.
8. GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
9. ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
10. BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.

FORMATION LVL.	605.535	607.263	608.539	609.807
GROUND LVL.	595.738	587.687	587.212	598.291
CHAINAGE.	10+030	10+060	10+080	10+100



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

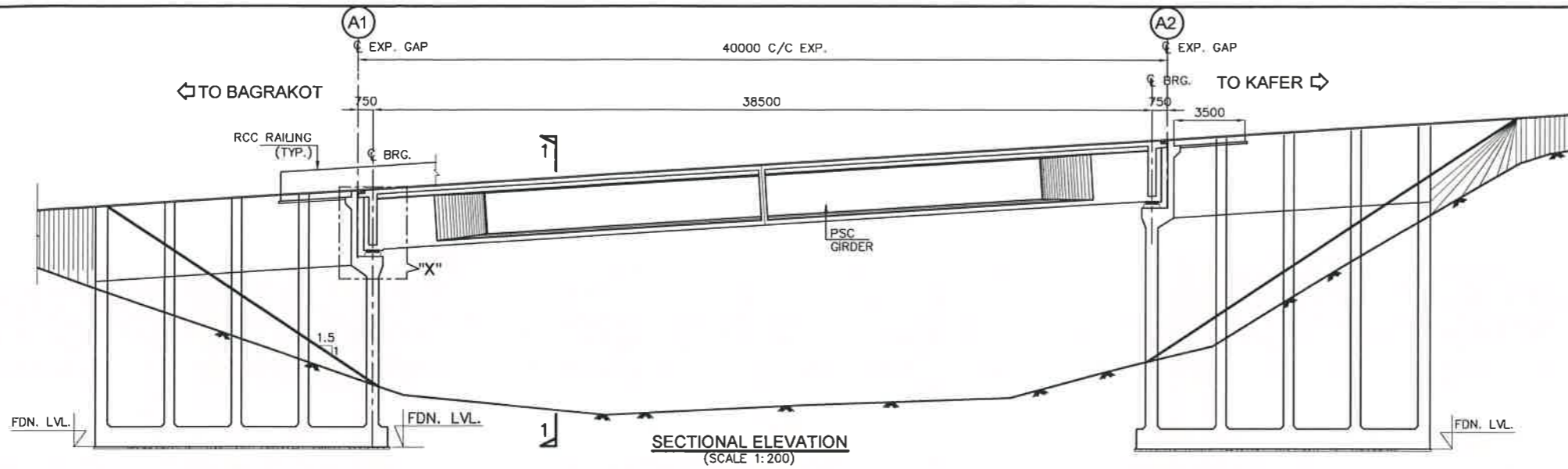
Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Merla in the State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

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS

DATE : JAN.-2019	Revision 0		
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DHRITI	A SEN	S.S. DE	S. Shukla
SCALE: - AS SHOWN		SHEET: - 01 OF 01	

GENERAL ARRANGEMENT DRAWING VIADUCT AT CH 10+065 PACKAGE - IV (A)

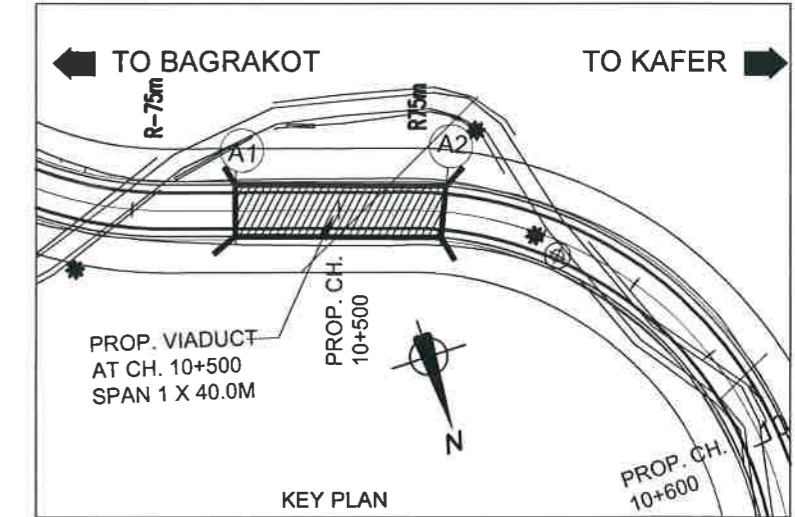
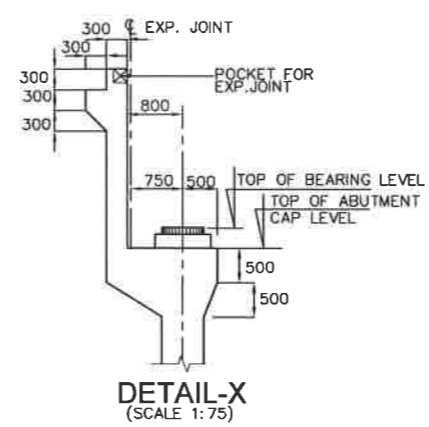
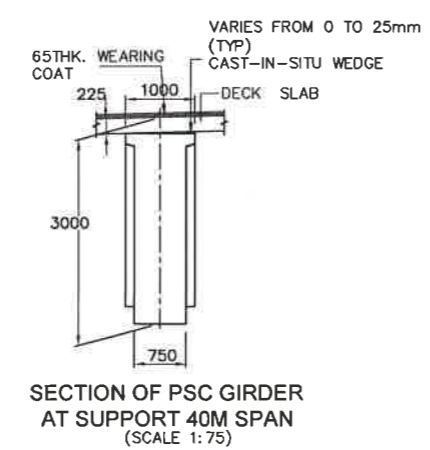
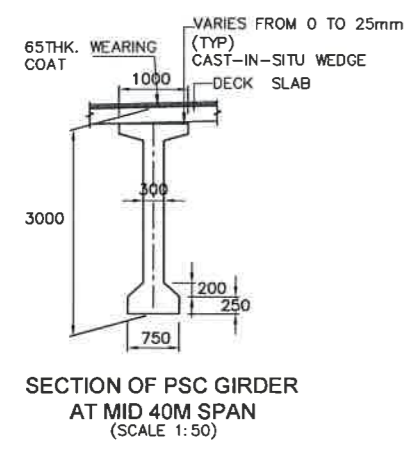
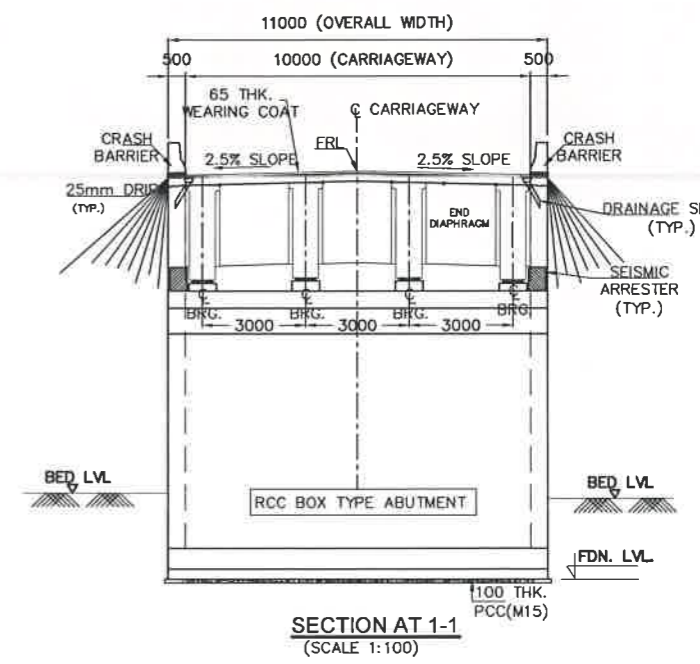
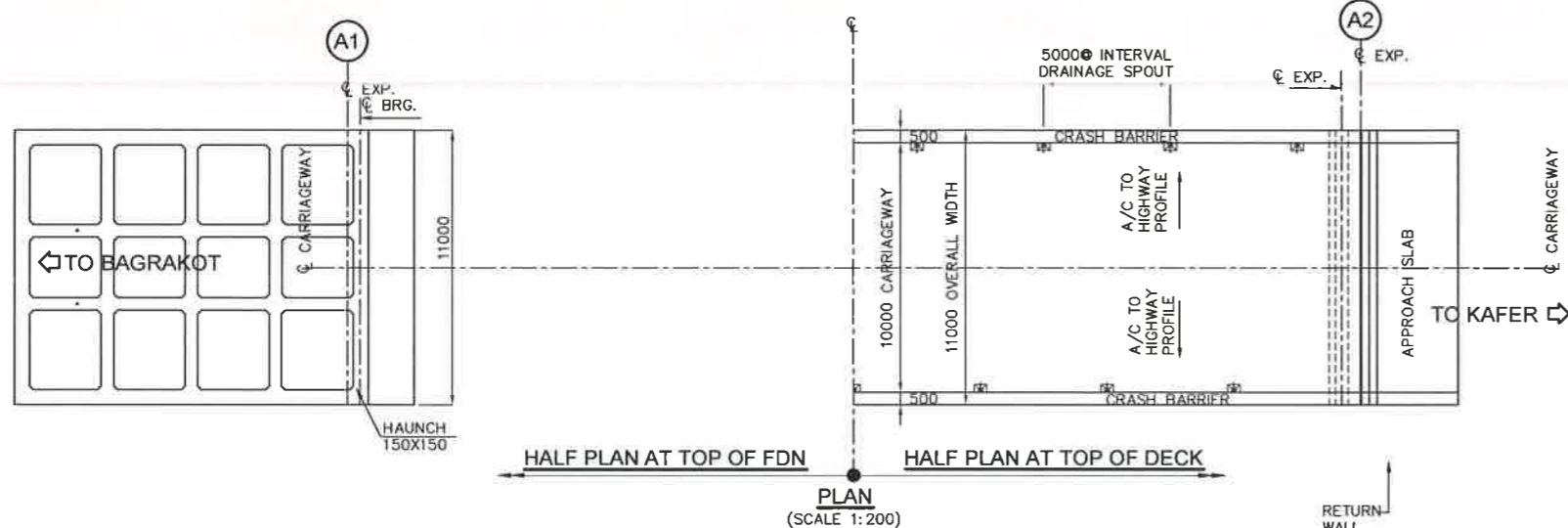
Dwg No. :- SAICPL-SESPL/NHIDC/WB-SKM/10+065/GAD/S-01



FORMATION LVL.	633.989	636.535
GROUND LVL.	623.599	626.073
CHAINAGE.	10+480	10+520

NOTES

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 - (iii) RCC RAILING --- M30
 - (iv) RCC CRASH BARRIER --- M40
 - (v) APPROACH SLAB --- M30
 - (vi) PEDESTAL --- M40
- TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
- SINGLE STRIP SEAL EXPANSION JOINT IS USED.
- GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
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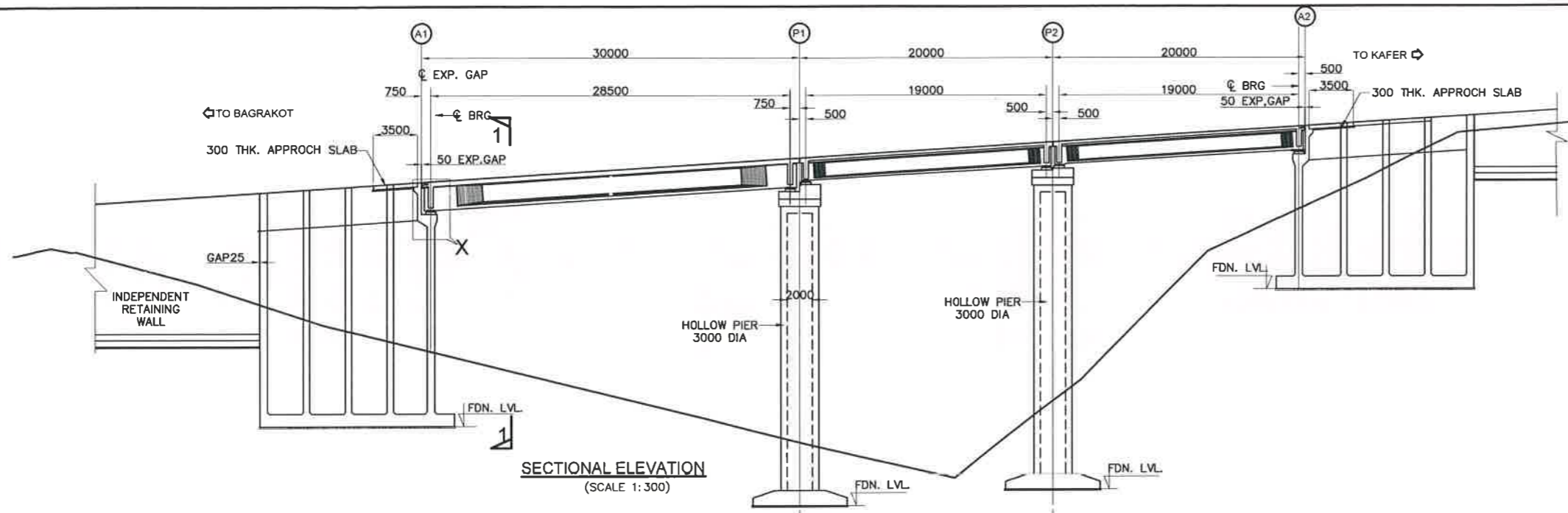
Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim.

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS

DATE : JAN.-2019	Revision 0		
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DHRII	A.SEN	S.D.E.	S.Shukla
SCALE:- AS SHOWN		SHEET:- 01 OF 01	

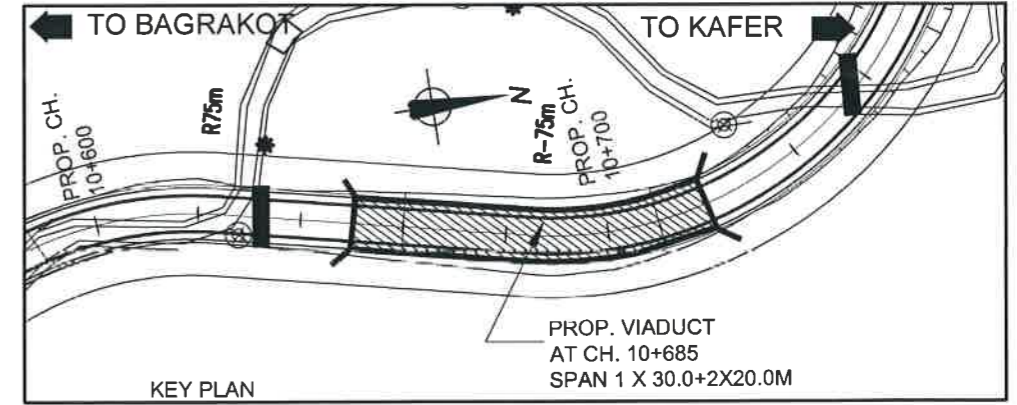
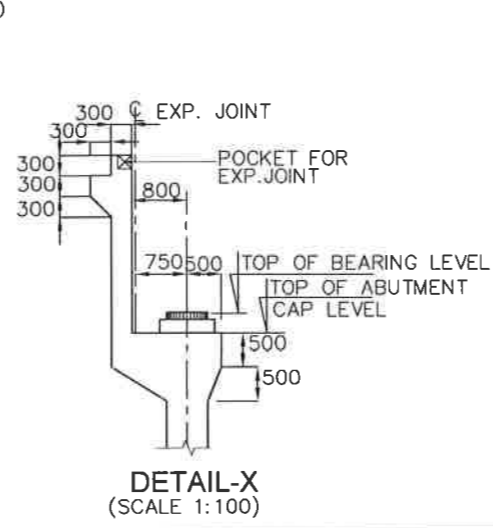
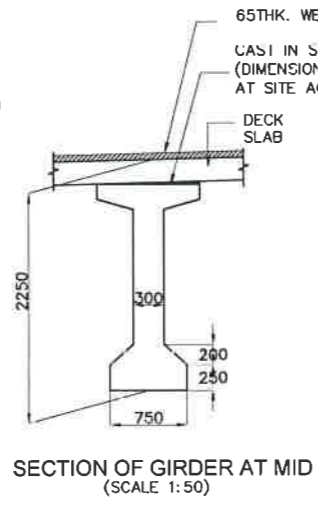
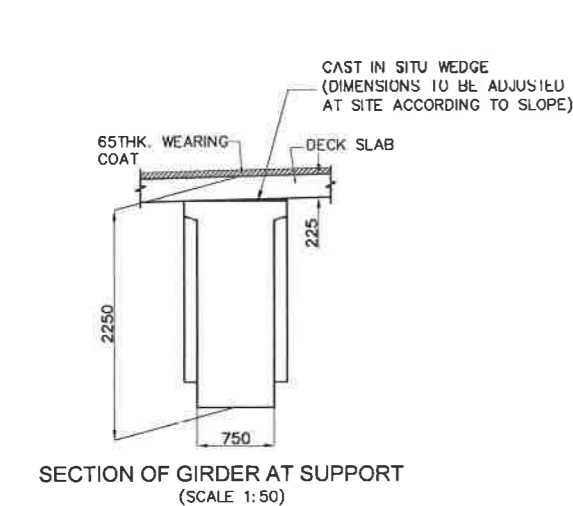
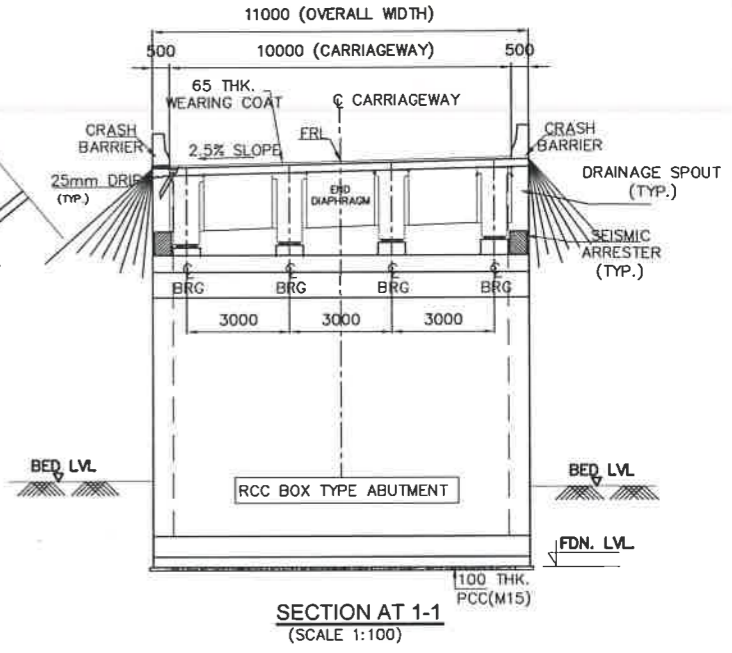
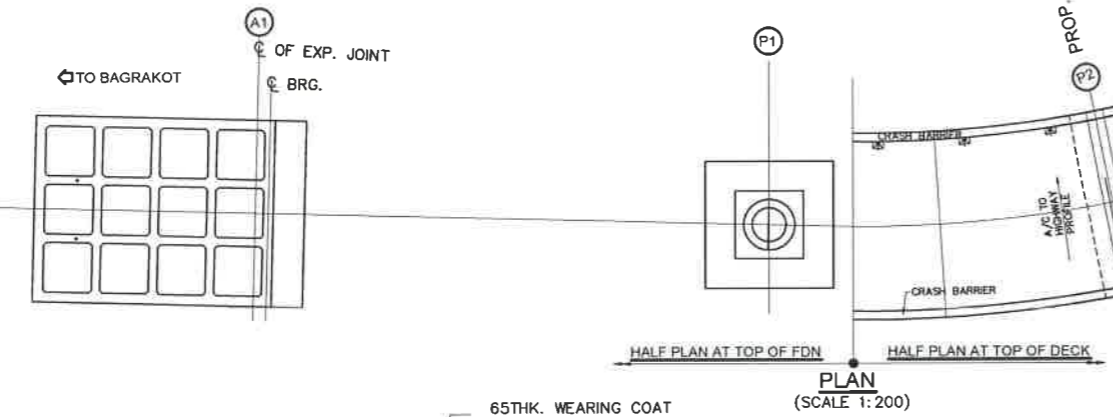
GENERAL ARRANGEMENT DRAWING OF VIADUCT AT CH. 10+500 PACKAGE - IV (A)

Dwg No :- SAICPL-SESPL/NHDC/WB-SKM/10+500/GAD/S-101



FORMATION LVL.	644.808	645.722	649.995	649.262
GROUND LVL.	634.254	623.007	627.318	639.681
CHAINAGE.	10+650	10+680	10+700	10+720

- NOTES**
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 - (iv) RCC CRASH BARRIER --- M40
 - (v) APPROACH SLAB --- M30
 - (vi) PEDESTAL --- M40
 - TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
 - SINGLE STRIP SEAL EXPANSION JOINT IS USED.
 - GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
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 - BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.



PATH: D:\D drive\VALOKE SEN\DHRTM\GAD Ch. 10+650 to 10+720.dwg



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

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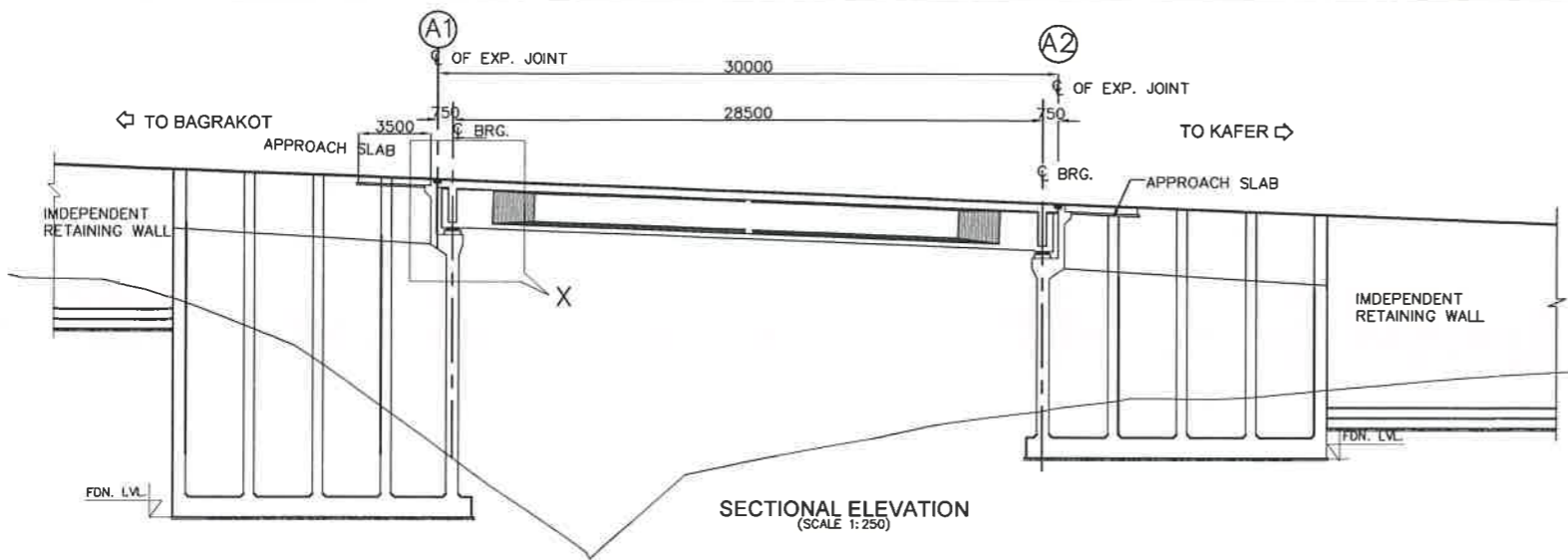
Project :
Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbung-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Mena in the State of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

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS

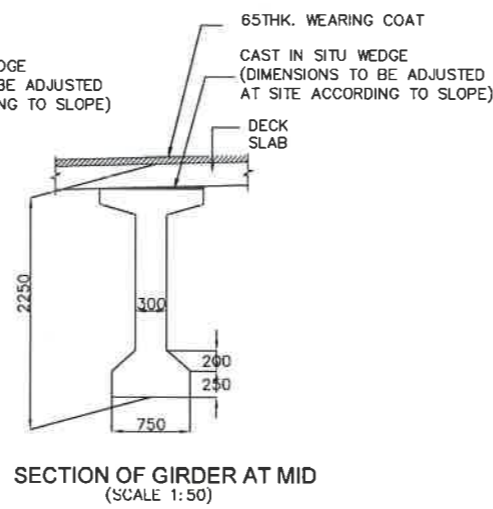
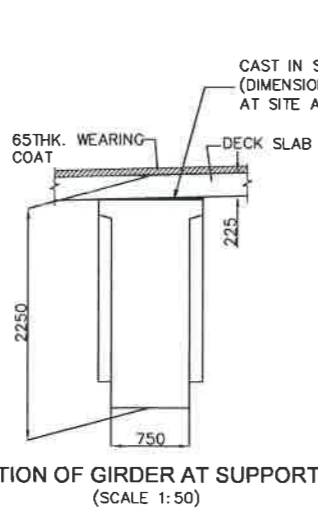
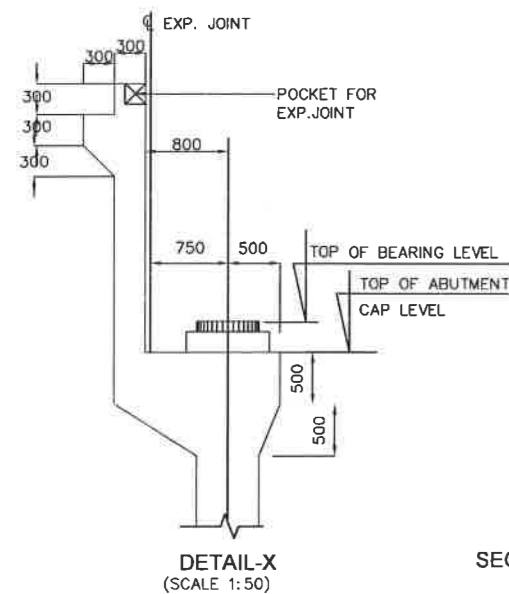
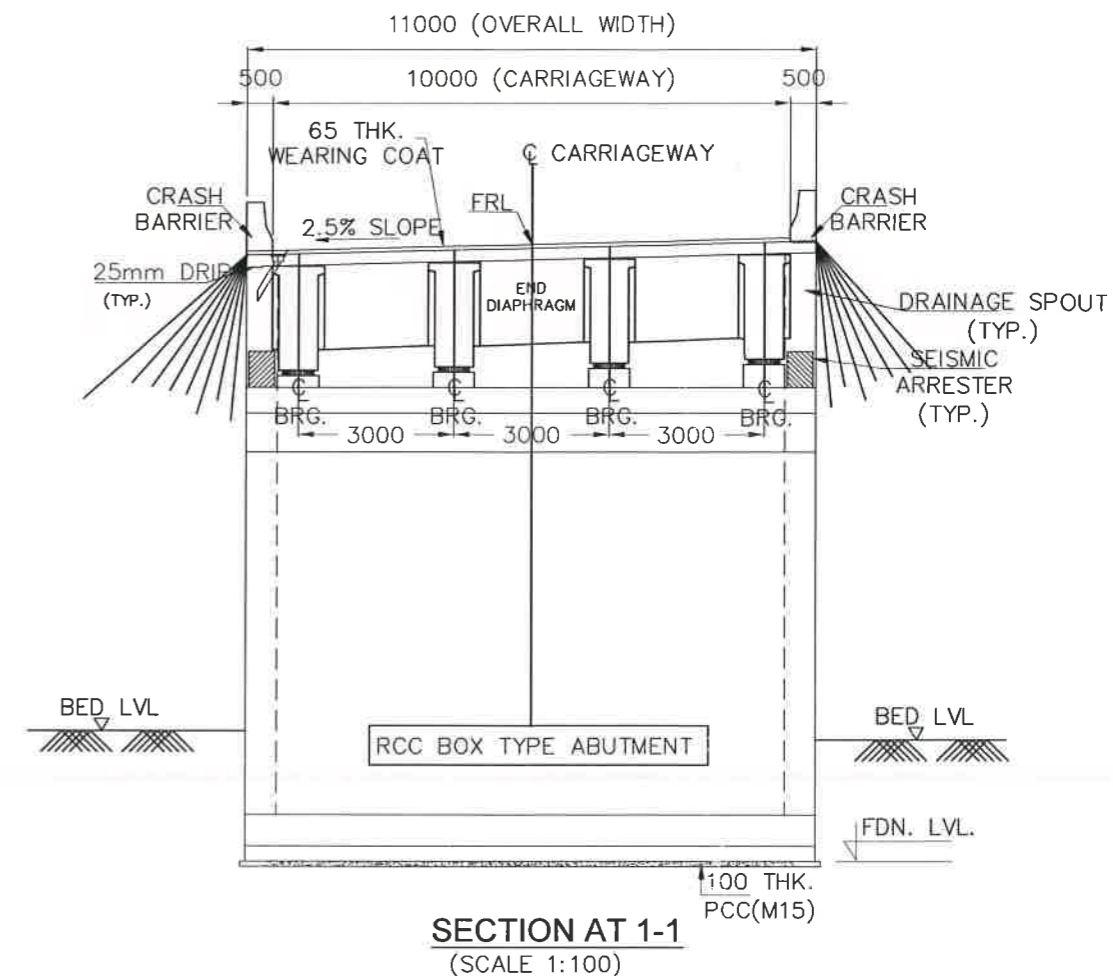
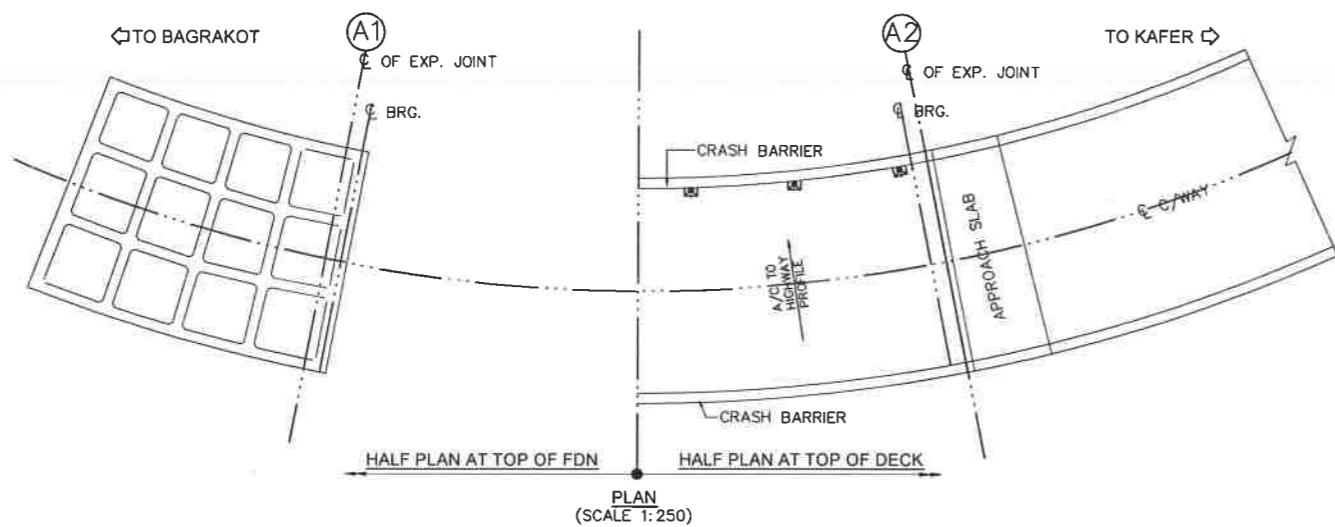
DATE : JAN.-2019	Revision 0
DESIGNED BY DHRITI	DRAWN BY A.SEN
CHECKED BY S.S.DE	APPROVED BY S.Shukla
SCALE: - AS SHOWN	
SHEET: - 01 OF 01	

GENERAL ARRANGEMENT DRAWING OF VIADUCT AT CH. 10+685 PACKAGE - IV (A)

Dwg No. :- SAICPL-SESPLNHDC/WB-SKM/10+685/GAD/S-01

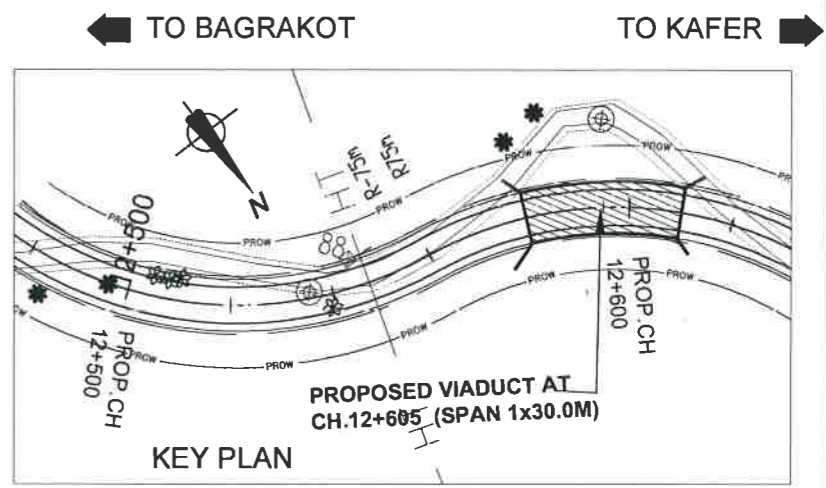


FORMATION LVL.	598.142	596.971
GROUND LVL.	587.061	587.278
CHAINAGE.	12+590	12+620



NOTES

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 - (vi) PEDESTAL --- M40
- TYPE OF BEARING PROPOSED HERE IS POT-PTEF AS PER IRC: 83, PART-III
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- BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.



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

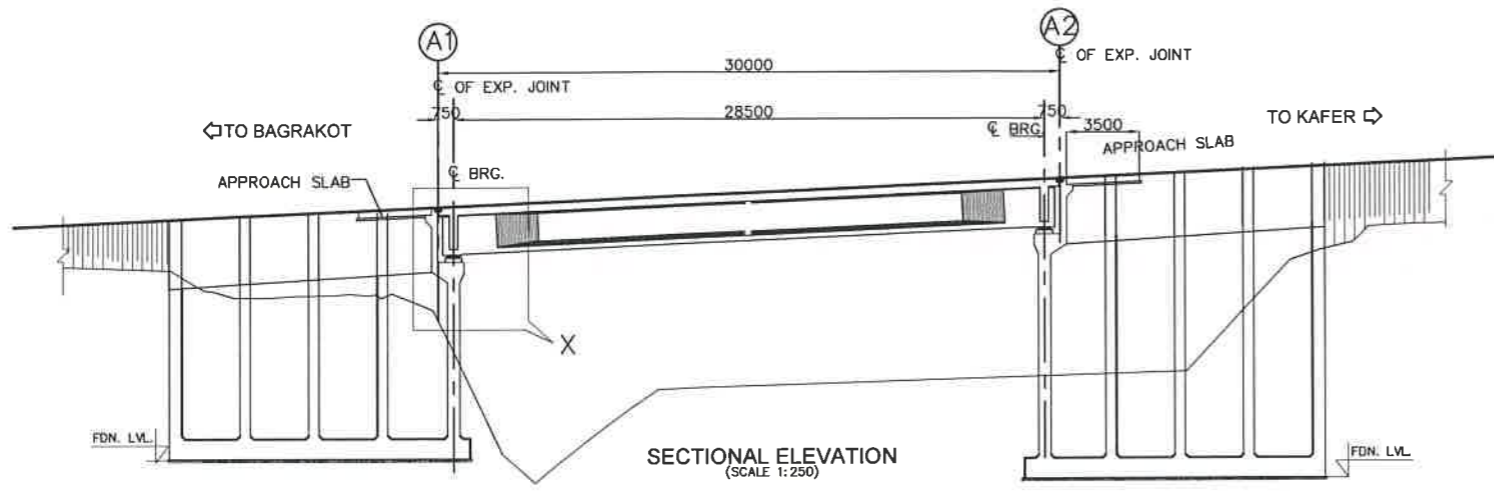
Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menia in the State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

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS

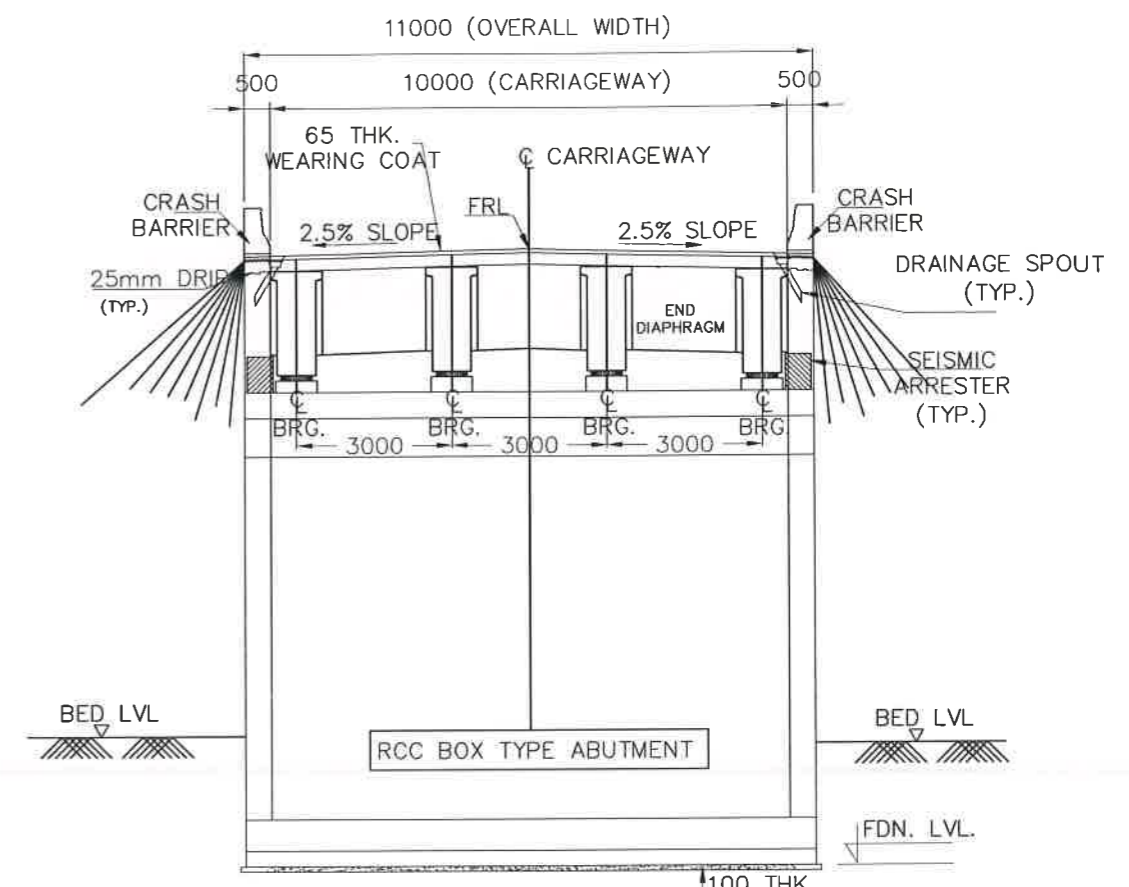
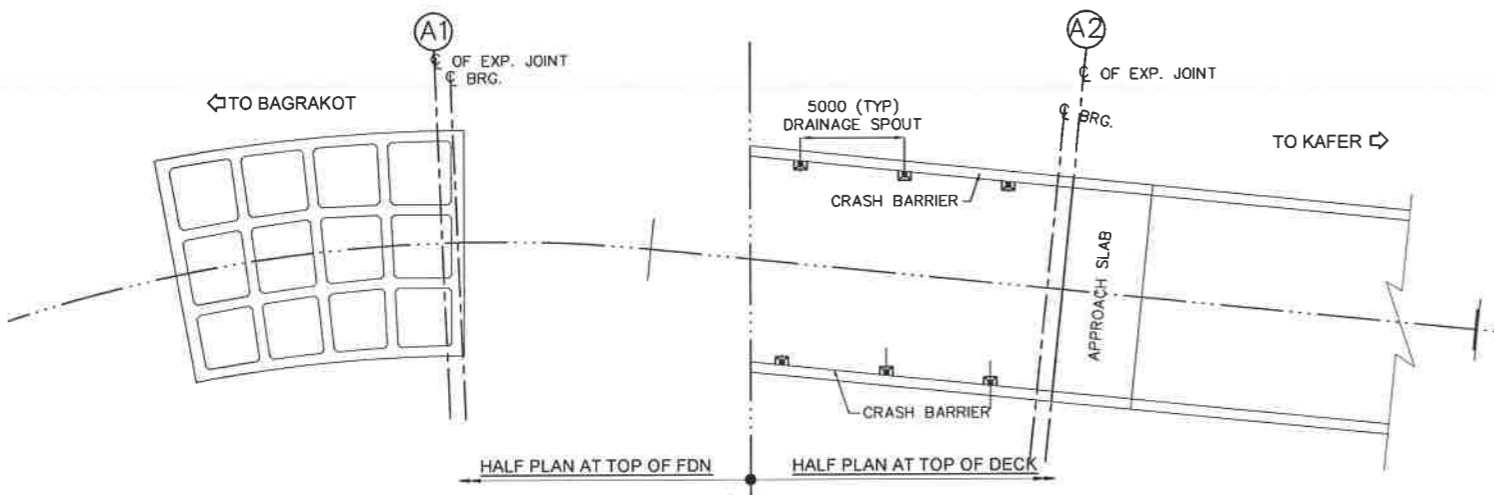
DATE : JAN-2019	Revision 0		
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DHRITI	A.SEN	S.D.E	S.Shukla
SCALE: - AS SHOWN		SHEET: - 01 OF 01	

GENERAL ARRANGEMENT DRAWING OF VIADUCT AT CH. 12+605 PACKAGE - IV (A)

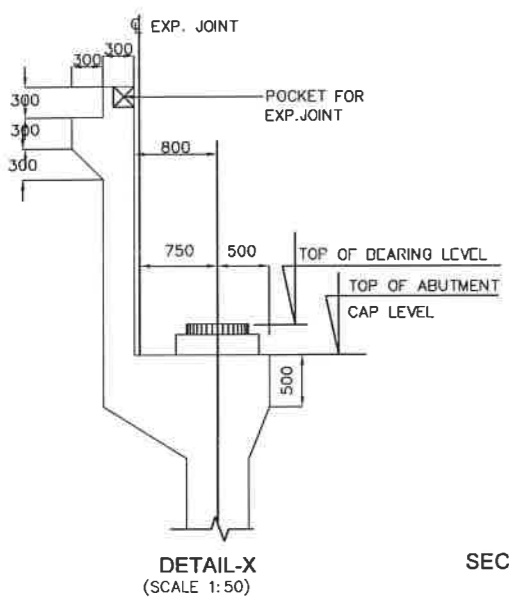
Dwg No. :- SAICPL-SESPJNHIDC/WB-SKM/12+605/S-01



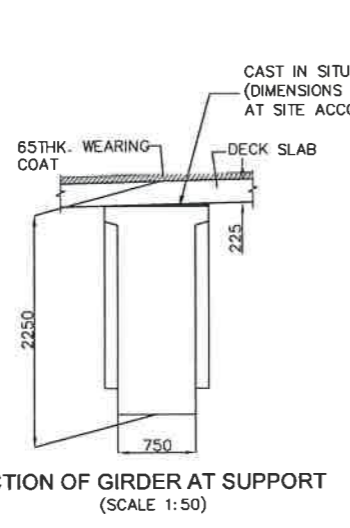
FORMATION LVL.	602.156	603.056
GROUND LVL.	595.457	593.560
CHAINAGE.	12+910	12+940



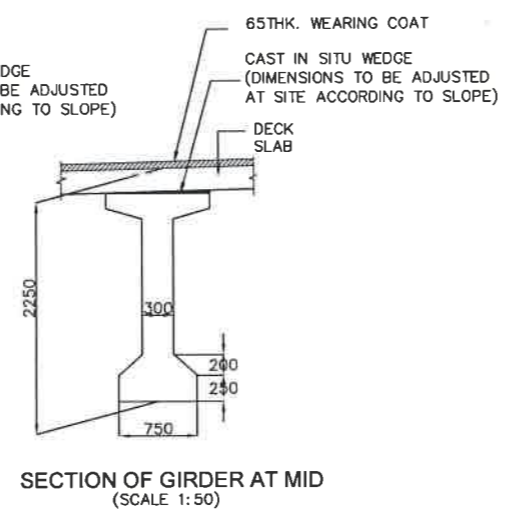
SECTION AT 1-1
(SCALE 1:100)



DETAIL-X
(SCALE 1:50)



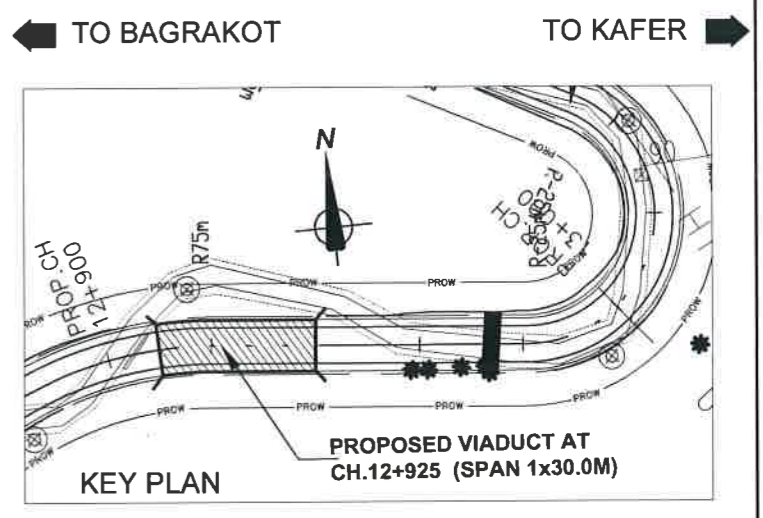
SECTION OF GIRDER AT SUPPORT
(SCALE 1:50)



SECTION OF GIRDER AT MID
(SCALE 1:50)

NOTES

- ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
- DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.
- BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R & 1 LANE CLASS A OR 3 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
- GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
 (i) SUPERSTRUCTURE(PSC) --- M45
 (ii) RCC SUBSTRUCTURE & FOUNDATION --- M35
 (iii) RCC RAILING ----- M30
 (iv) RCC CRASH BARRIER ----- M40
 (v) APPROACH SLAB ----- M30
 (vi) PEDESTAL ----- M40
- TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
- SINGLE STRIP SEAL EXPANSION JOINT IS USED.
- GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
- ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
- BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.



KEY PLAN

PROPOSED VIADUCT AT
CH.12+925 (SPAN 1x30.0M)



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 Aritar-Rolep-Menla in the State of Sikkim.

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS

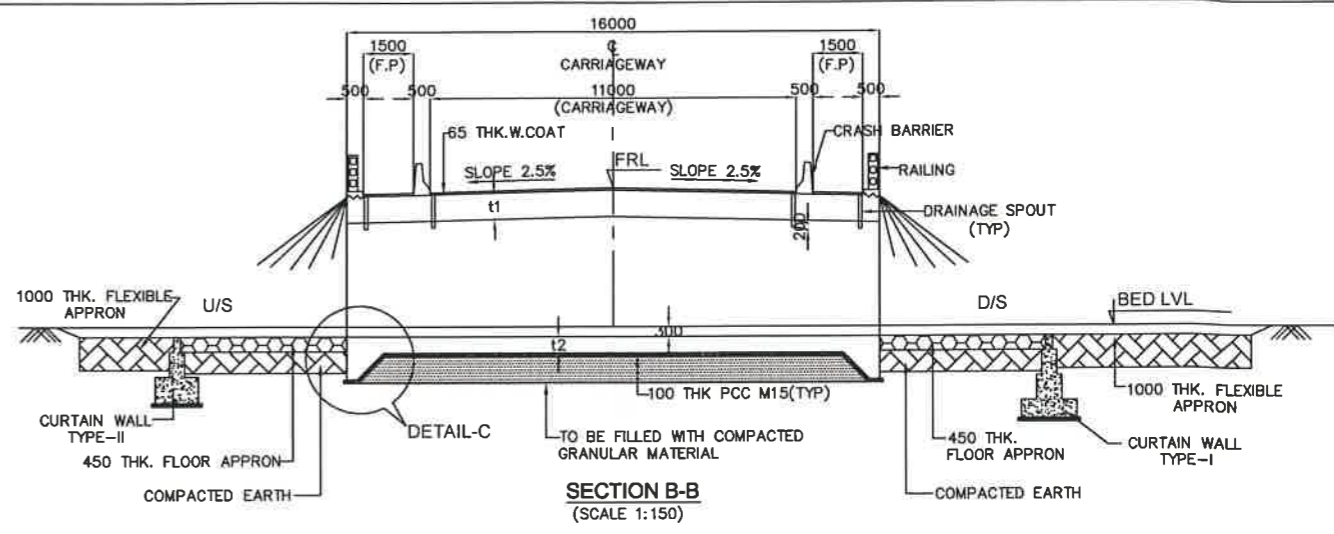
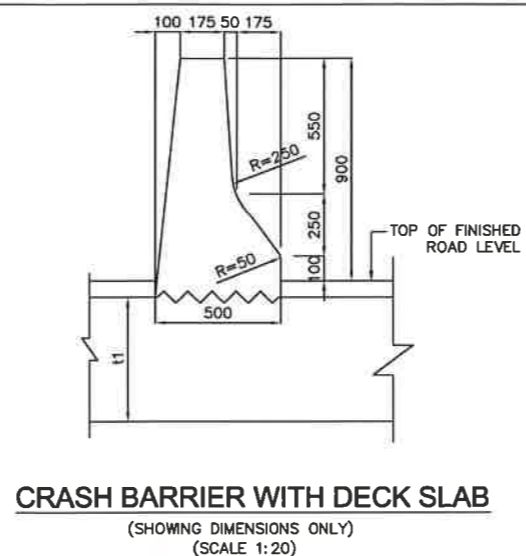
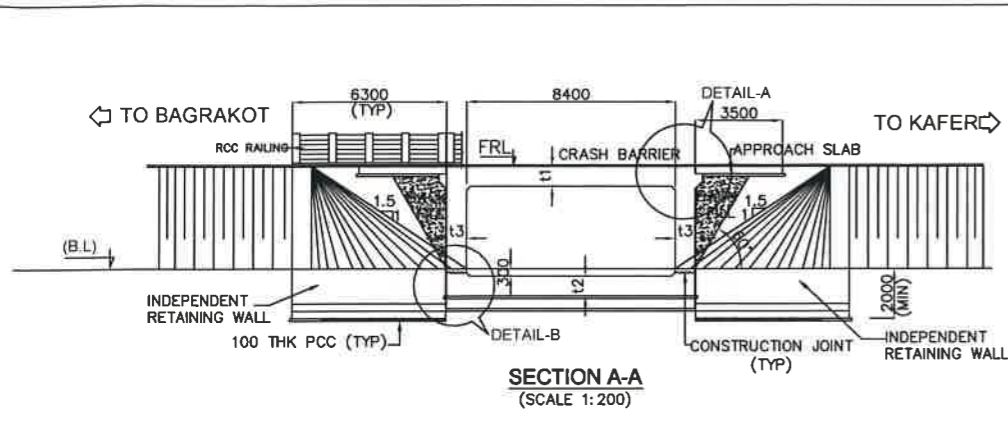
DATE : JAN-2019	Revision 0		
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DHRITI	ASEN	S.S.DE	S.Shukla
SCALE :- AS SHOWN		SHEET :- 01 OF 01	

GENERAL ARRANGEMENT DRAWING OF VIADUCT AT CH. 12+925 PACKAGE - IV (A)

Dwg No. :- SAICPL-SESPL/NHIDC/WB-SKM/12+925/S-01

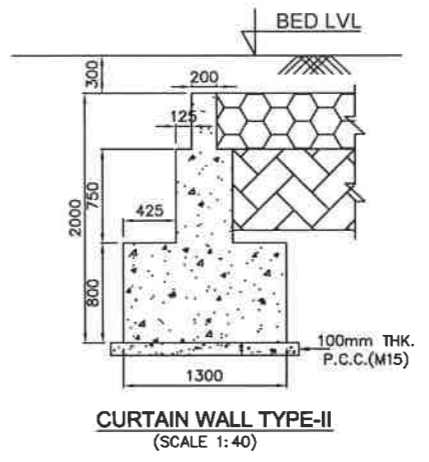
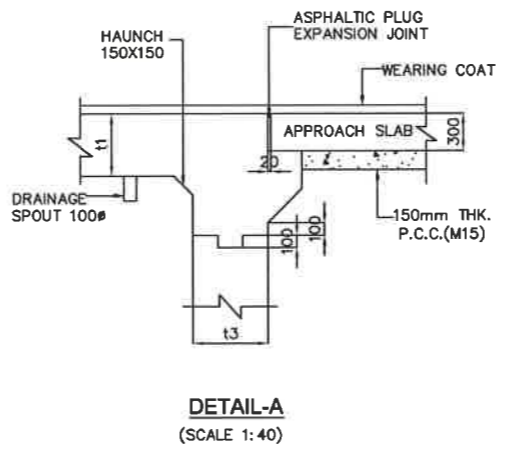
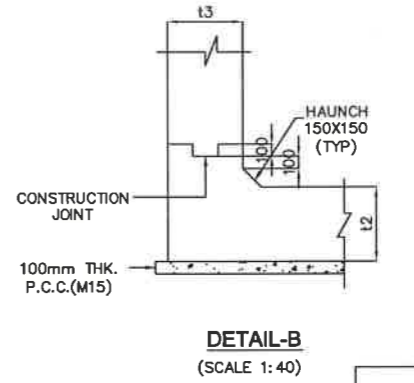
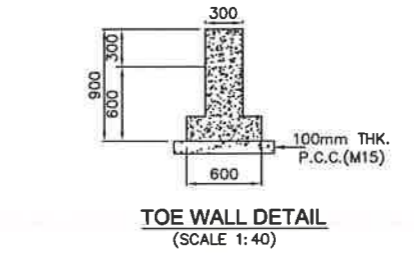
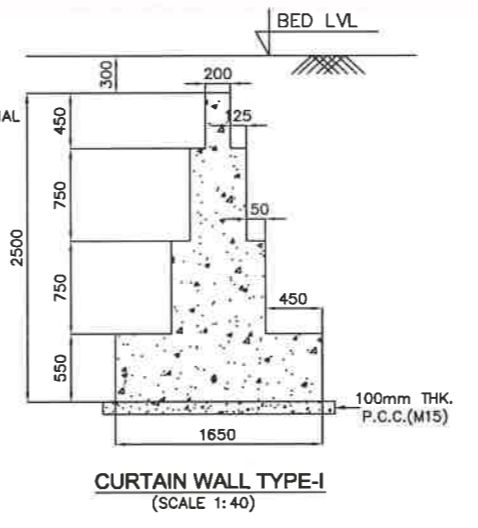
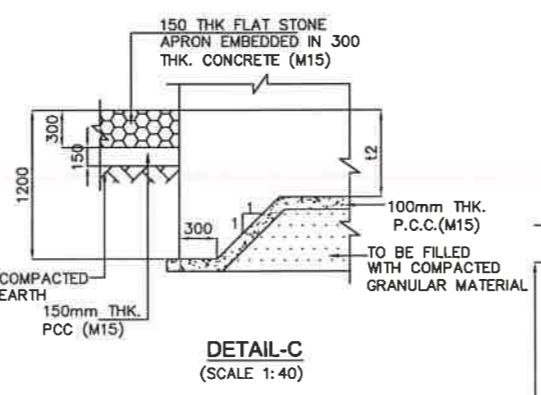
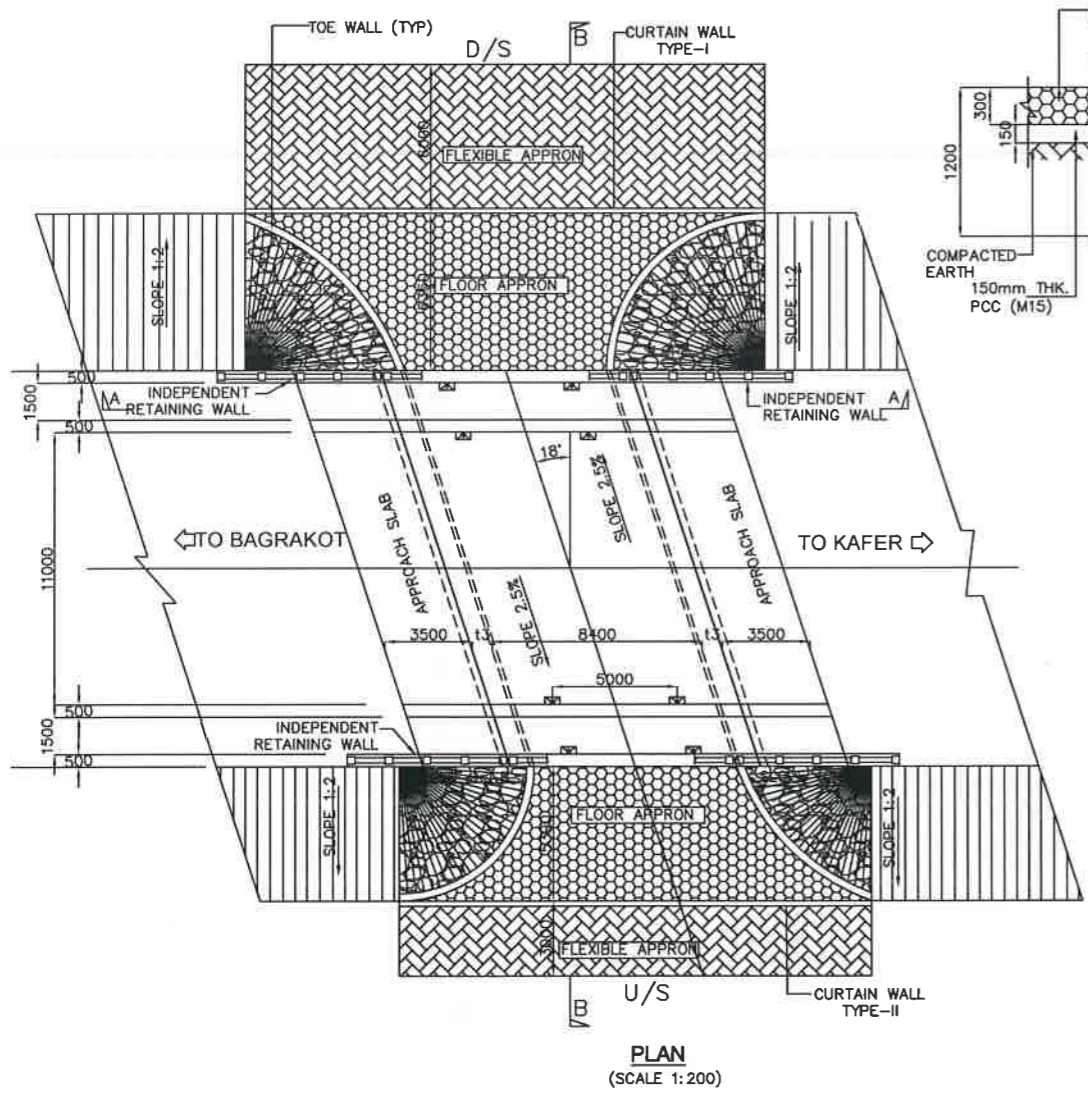
MNB



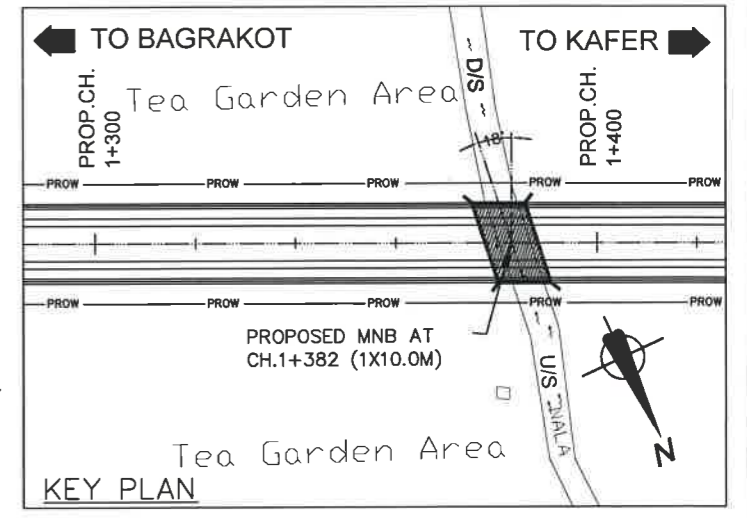


TABLE

PROPOSED FRL(m)	BED LEVEL (m)	SPAN	t1	t2	t3
186.427	182.235	1x10000	800	800	800



- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
 - DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 - THE DIMENSIONS AND LEVELS INDICATED ARE TENTATIVE AND MAY UNDERGO SAME CHANGES AS PER ACTUAL STRUCTURE.
 - GRADE OF CONCRETE IN VARIOUS COMPONENTS SHALL BE AS UNDER:
 - a) R.C.C. BOX STRUCTURE.....M30
 - b) RETAINING WALL.....M30
 - c) R.C.C. CRASH BARRIER.....M40
 - d) P.C.C. CURTAIN WALL.....M20
 - e) R.C.C. RAILING.....M30
 - MAXIMUM BEARING CAPACITY OF SOIL HAS BEEN CONSIDERED 10.0t/sq.m. THE SAME MAY BE ENSURED AT SITE PRIOR TO EXECUTION. IF SBC IS NOT ACHIEVED, GROUND TREATMENT WILL BE DONE WITH TOP 600mm BELOW BOX OF WELL COMPACTED GRANULAR MATERIAL.
 - 100mm DIA. PVC PIPES (HEAVY DUTY) FILLED WITH NO-FINE CONCRETE SHALL BE PROVIDED AT 1.0M C/C HORIZONTALLY AS WELL AS VERTICALLY AS WEEP HOLES IN ABUTMENT WALL & RETAINING WALLS. 600mm THICK STANDARD FILTER SHALL BE PROVIDED IMMEDIATELY BEHIND THE WALLS FOR FULL WIDTH. FILLING BEHIND SIDE WALL SHALL BE STANDARD TYPE AS PER APPENDIX 6 OF IRC-78.
 - ALL REINFORCING BARS SHALL BE THERMO MECHANICALLY TREATED (TMT) BARS (GRADE DESIGNATION Fe-500D) CONFORMING TO IS:1786 STANDARDS.
 - BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.



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.

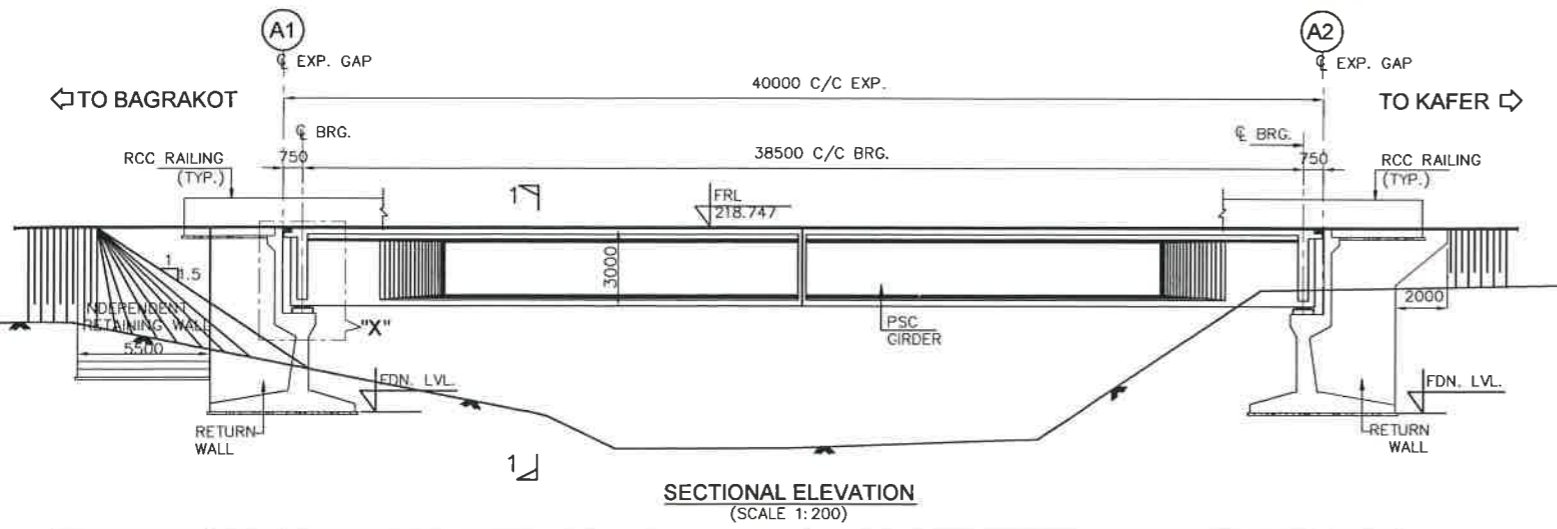
Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menta in the State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

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS

DATE : JAN.-2019	Revision 0		
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DHRITI	A.SEN	S.S.DE	S.Shukla
SCALE: - AS SHOWN		SHEET: - 01 OF 01	

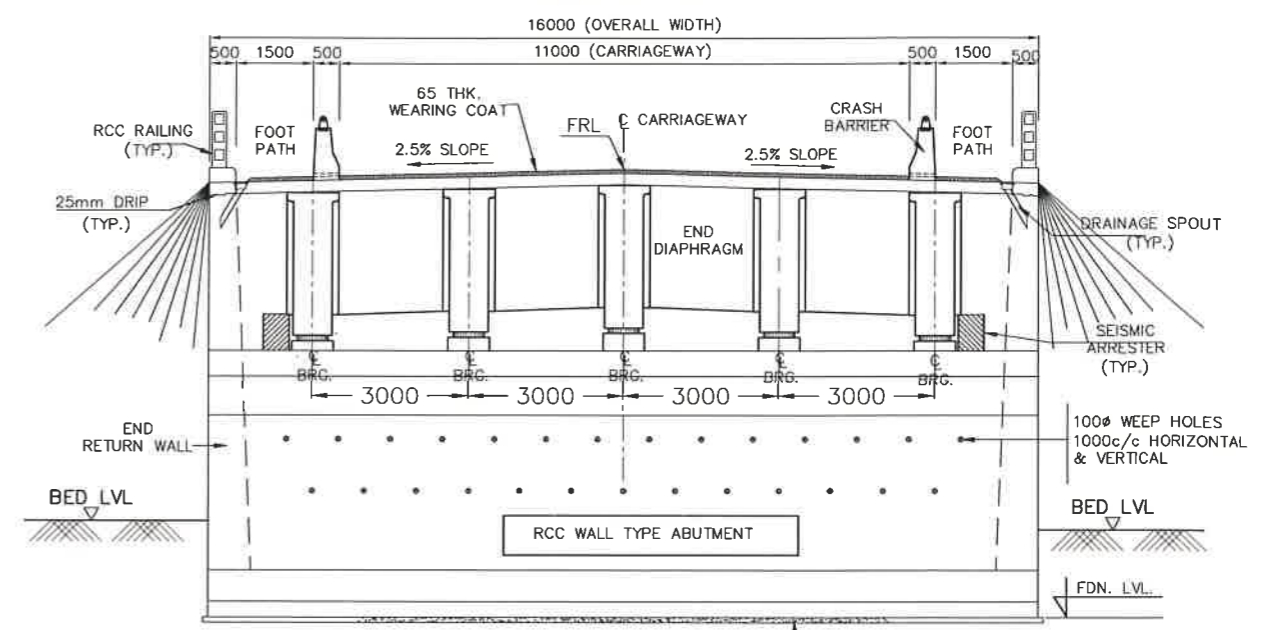
GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT CH. 1+382 PACKAGE - IV (A)

Dwg No. :- SAICPL-SESPL/NHDC/WB-SKM/1+382/GAD/S-01



SECTIONAL ELEVATION
(SCALE 1:200)

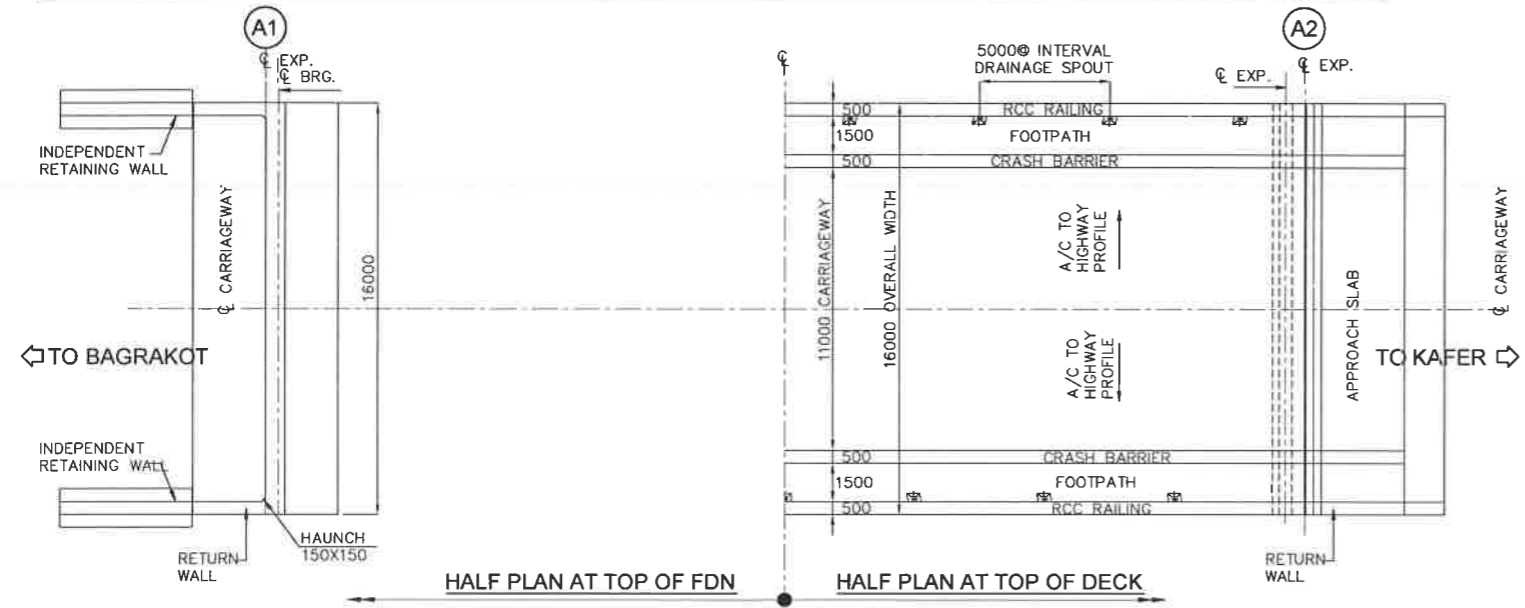
FORMATION LVL.	217.903	217.643
GROUND LVL.	212.288	212.101
CHAINAGE.	3+565	3+605



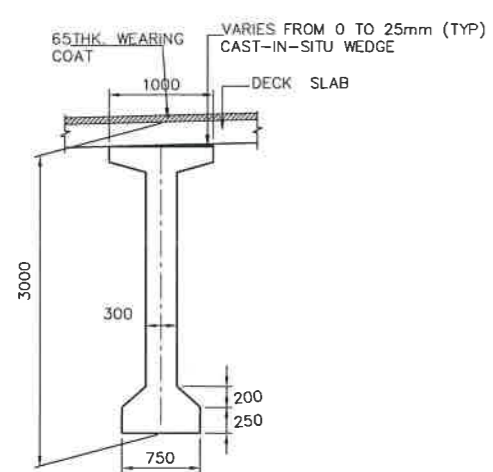
SECTION AT 1-1
(SCALE 1:100)

NOTES

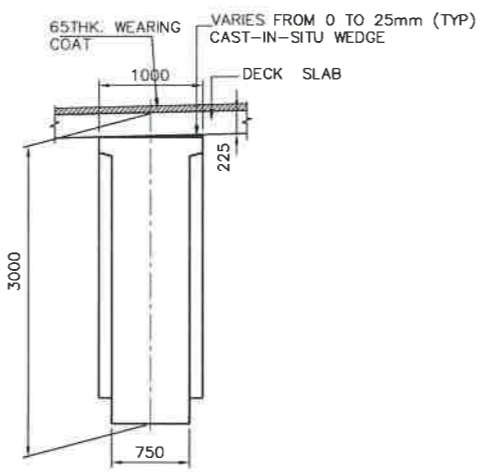
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 - (iii) RCC RAILING --- M30
 - (iv) RCC CRASH BARRIER --- M40
 - (v) APPROACH SLAB --- M30
 - (vi) PEDESTAL --- M40
- TYPE OF BEARING PROPOSED HERE IS POT-PTE AS PER IRC:83, PART-III
- SINGLE STRIP SEAL EXPANSION JOINT IS USED.
- GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
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- BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.



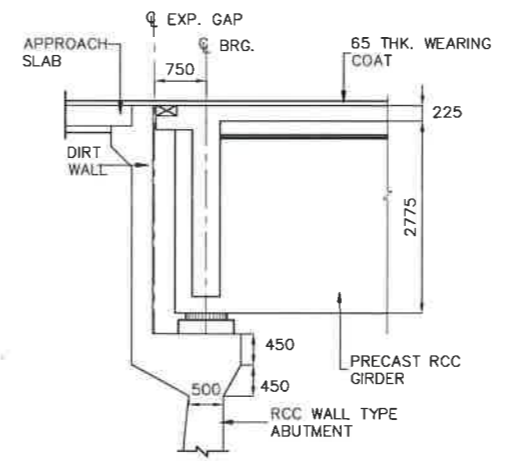
PLAN
(SCALE 1:200)



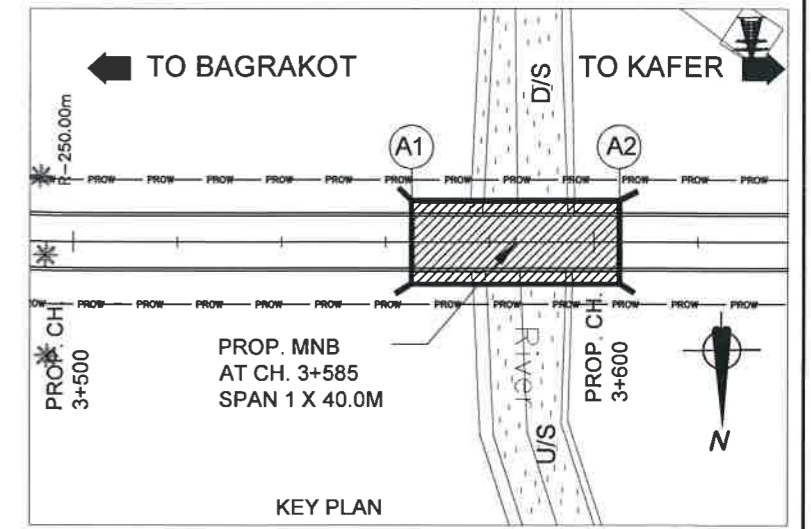
SECTION OF PSC GIRDER
AT MID 40M SPAN
(SCALE 1:50)



SECTION OF PSC GIRDER
AT SUPPORT 40M SPAN
(SCALE 1:50)



DETAIL-X
(SCALE 1:75)



KEY 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 Aritar-Rolep-Menla in the State of Sikkim.

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS

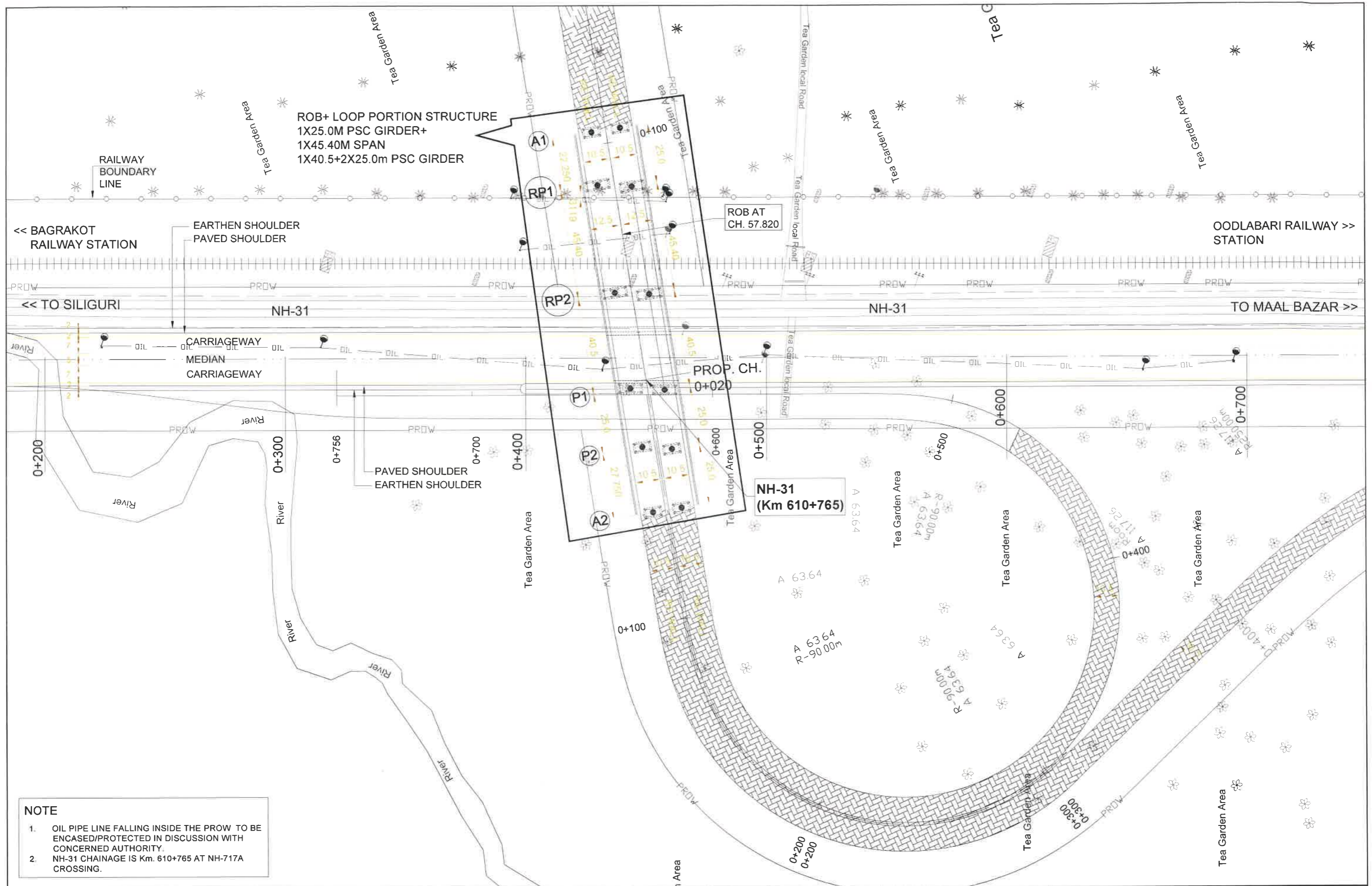
DATE : JAN.-2019	Revision 0		
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DHRITI	A SEN	S.S.D.E	S Shukla
SCALE : - AS SHOWN		SHEET : - 01 OF 01	

GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT CH. 3+585 PACKAGE - IV (A)

Dwg. No. :- SAICPL-SESPL/NHDC/WB-SKM/3+585/GAD/S-101

LOOP





- NOTE**
- OIL PIPE LINE FALLING INSIDE THE PROW TO BE ENCASED/PROTECTED IN DISCUSSION WITH CONCERNED AUTHORITY.
 - NH-31 CHAINAGE IS Km. 610+765 AT NH-717A CROSSING.



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

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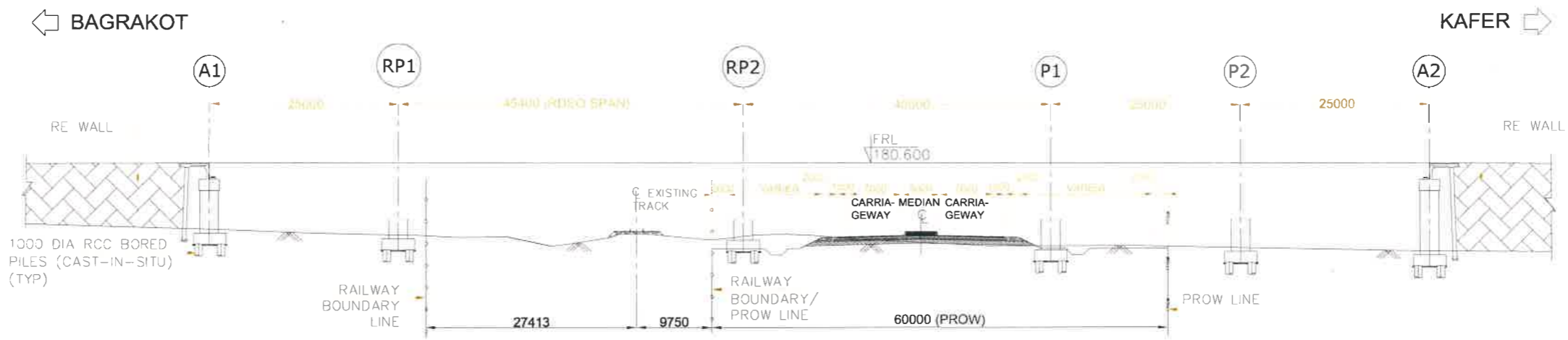
Project : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menta in the State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

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS

DATE : JAN-2019	Revision A
DESIGNED BY S.K.M.	DRAWN BY P.K.
CHECKED BY S.D.	APPROVED BY L.A.Z.
SCALE: - AS SHOWN	SHEET: - C1 OF C2

GENERAL ARRANGEMENT DRAWING
ELEVATED LOOP STRUCTURE
PACKAGE - IV
(NH-31 & NH-717A CROSSING)

Dwg. No. :- SAICPL-SESPL/NHIDC/WB-SKM/AR/GAD/S-101



FORMATION LEVEL	180.572	180.600	180.600	180.600	180.573	180.464
GROUND LEVEL	171.800	171.094	170.909	169.630	169.365	168.865
CHAINAGE (Km)	0+105.580	0+80.520	0+35.120	0.000	0+05.380	0+55.380

LONGITUDINAL SECTION
(SCALE 1:500)



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 Aritar-Rolep-Merla in the State of Sikkim.

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
			A B C D

DATE : JAN-2019

Revision A

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
S.K.M	P.K.	S.D	L.A.Z

SCALE: - AS SHOWN

SHEET: - C2 OF 02

GENERAL ARRANGEMENT DRAWING
ELEVATED LOOP STRUCTURE
PACKAGE - IV
(NH-31 & NH-717A CROSSING)

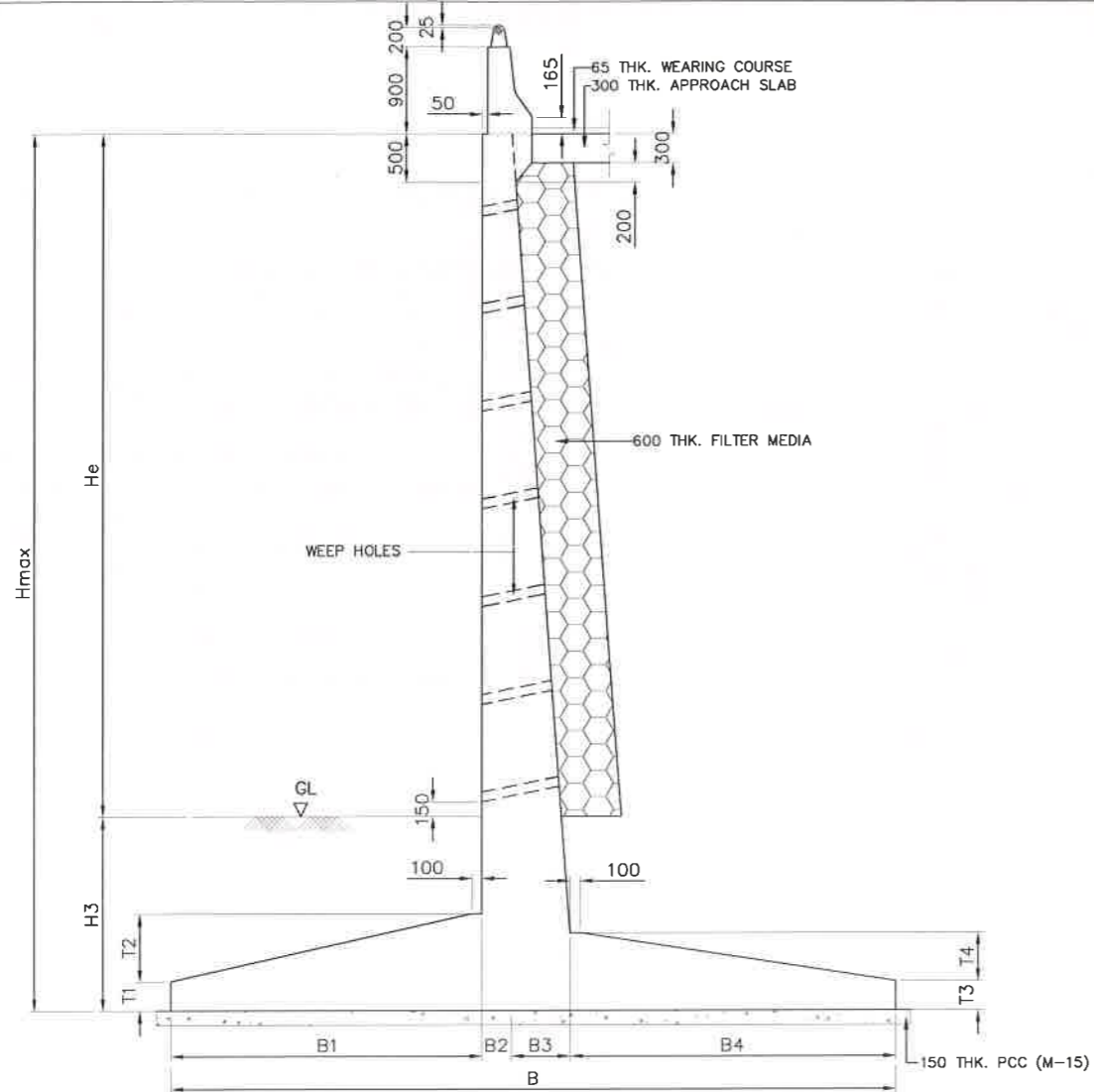
Dwg. No. :- SAICPL-SESPL/NHIDC/WB-SK/MAR/GAD/S-101

ROB

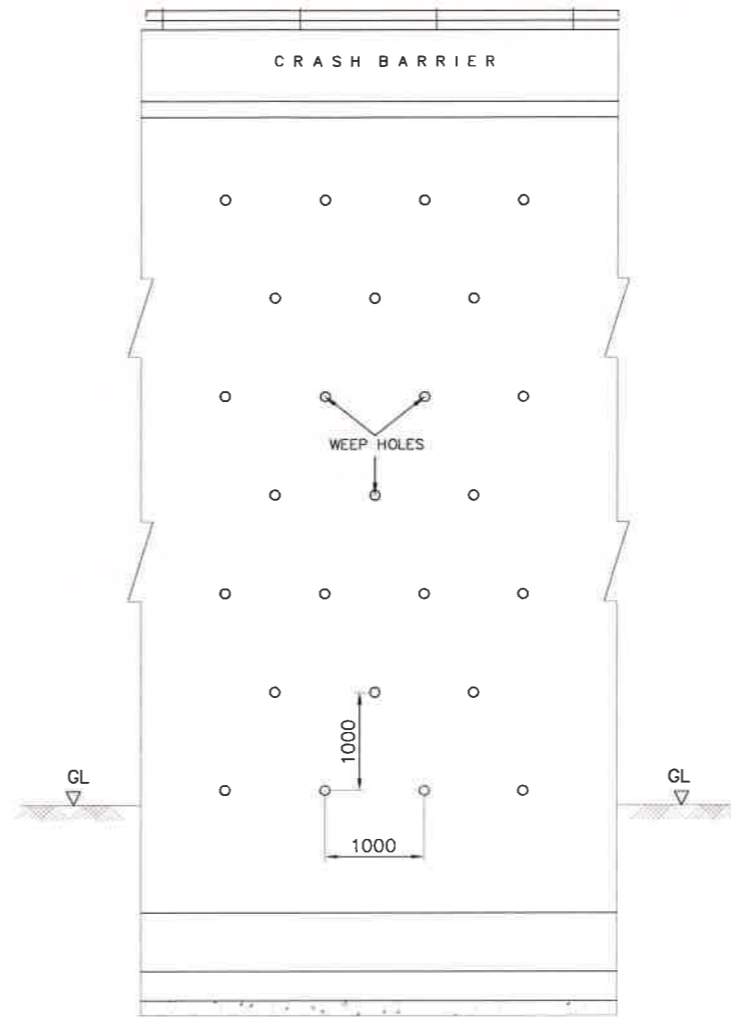
A simple diagram consisting of a horizontal line and a vertical line intersecting at a point. The horizontal line is positioned below the text 'ROB', and the vertical line is positioned to the right of the text. The intersection point is located to the right of the text.

RETAINING WALL





TYPICAL DETAIL OF RETAINING WALL
(DIMENSIONS DETAILS ONLY)
(SCALE : 1:50)



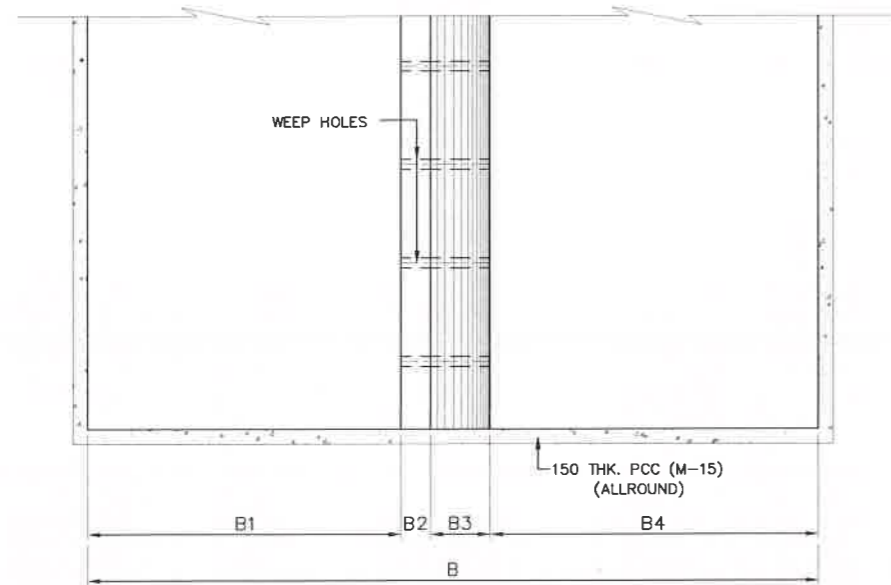
TYPICAL STEM ELEVATION
(SCALE : 1:50)

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. CONCRETE IN RETAINING WALL SHALL BE OF M30 GRADE.
4. CLEAR COVER TO REINFORCEMENT BARS SHALL BE 40mm IN STEM AND 75mm IN FOOTING
5. ALL REINFORCEMENT SHALL BE TMT (HYSD) BARS OF GRADE DESIGNATION Fe-500D CONFORMING TO IS:1786 SHALL BE USED
6. BACK FILLING SHALL BE CARRIED OUT AS PER CLAUSE NO. 710.4 OF IRC:78-2000
7. 100 DIA WEEP HOLES SHALL BE PROVIDED IN ELEVATION THROUGHOUT IN THE RETAINING WALLS STRATING FROM 150mm ABOVE GROUND LEVEL AT SPACING NOT MORE THAN 1000mm C/C IN BOTH DIRECTION IN STAGGERED PATTERN.
8. WEEP HOLES SHALL EXTENDED THROUGH THE FULL WIDTH OF CONCRETE WITH SLOPE OF 1V : 20H TOWARDS THE DRAINING FACE.
9. THE SAFE BEARING CAPACITY AT THE FOUNDING LEVEL IS CONSIDERED 15t/M² LESS THAN THE MAXIMUM BASE PRESSURES SHOWN IN THE TABLE.
10. EXPANSION JOINTS IN THE RETAINING WALLS SHALL BE PROVIDED SO THAT THE SPACING IS NOT MORE THAN 30M.

SCHEDULE OF DIMENSIONS

RETAINING WALL DIMENSIONS TABLE (MM)											
Hmax	He	H3	B	B1	B2	B3	B4	T1	T2	T3	T4
3000	1000	2000	2700	600	200	200	1700	200	100	200	100
4000	2000	2000	3200	900	200	200	1900	200	200	200	100
5000	3000	2000	3800	1200	225	375	2000	225	375	225	225
6000	4000	2000	4600	1650	250	450	2250	250	550	250	250
7000	5000	2000	5450	2150	250	550	2500	250	650	250	450
8000	6000	2000	6350	2700	275	675	2700	250	900	250	650
9000	7000	2000	7500	3150	300	750	3300	300	1000	300	800
10000	8000	2000	8200	3600	350	900	3350	300	1100	300	1000
11000	9000	2000	8600	3600	350	1300	3350	300	1100	300	1000
12000	10000	2000	8600	3600	350	900	3350	300	1100	300	1000



TYPICAL PLAN OF RETAINING WALL
(DIMENSIONS DETAILS ONLY)



Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
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REV	DATE	DESCRIPTION OF REVISIONS	INITIALS

DATE : JAN.2016

Revision : 0

DESIGNED BY : DHRITI
DRAWN BY : A.SEN
CHECKED BY : S.D.E
APPROVED BY : S.Shukla

SCALE : - AS SHOWN

SHEET : - 01 OF 01

GENERAL ARRANGEMENT DRAWING OF INDEPENDENT RETAINING WALL

Dwg No. :- SAICPL-SESPLN/HIDC/WB-SKM/RWS-01