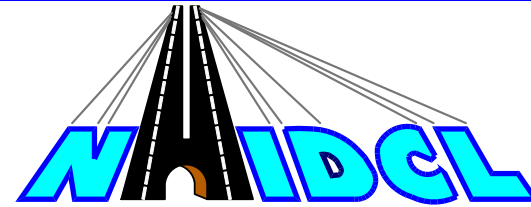


CLIENT:-



BUILDING INFRASTRUCTURE BUILDING THE NATION

NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED

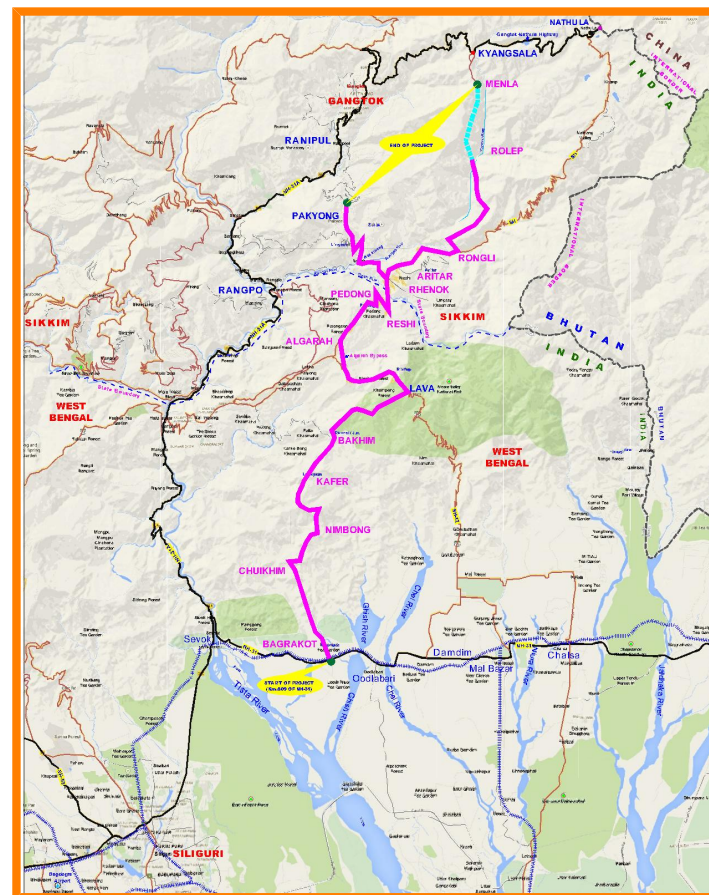
(Ministry of Road Transport & Highways)

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 DETAILED PROJECT REPORT

PACKAGE-V-II, PART OF KAFER TO RESHI BORDER
(Km 79+700 To Km 96+254)

DRAWING VOLUME:- STRUCTURES DRAWINGS



MARCH-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.

STRUCTURE DRAWINGS



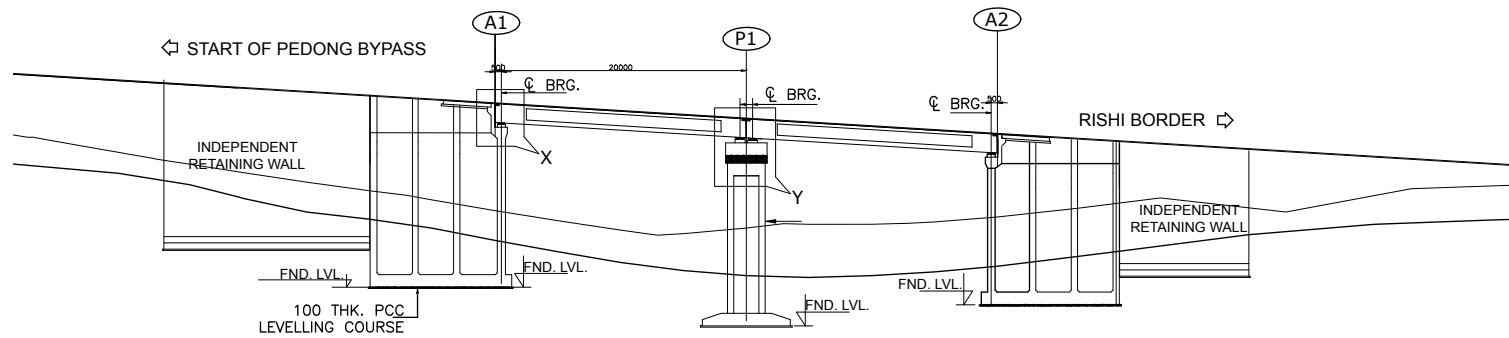
INDEX [PACKAGE-V(PART-II)]

Sr. No.	TITLE	Drawing No.	No of Sheets	Span Arrangement
VIADUCT				
1	GENERAL ARRANGEMENT DRAWING OF VIADUCT FROM 79+850 TO 79+890	SAICPL-SESPL/NHIDC/WB-SIKKIM/79+850/GAD-01	2	2 X 20
2	GENERAL ARRANGEMENT DRAWING OF VIADUCT FROM 80+120 TO 80+290	SAICPL-SESPL/NHIDC/WB-SIKKIM/80+120/GAD-01	2	1 X 30 + 7 X 20
3	GENERAL ARRANGEMENT DRAWING OF VIADUCT FROM 80+375 TO 80+640	SAICPL-SESPL/NHIDC/WB-SIKKIM/80+375/GAD-01	2	2 X 20 + 6 X 15 + 3 X 20 + 1 X 15 + 3 X 20
4	GENERAL ARRANGEMENT DRAWING OF VIADUCT FROM 80+810 TO 81+020	SAICPL-SESPL/NHIDC/WB-SIKKIM/80+810/GAD-01	2	10 X 15 + 3 X 20
5	GENERAL ARRANGEMENT DRAWING OF VIADUCT FROM 81+200 TO 81+520	SAICPL-SESPL/NHIDC/WB-SIKKIM/81+200/GAD-01	3	1 X 20 + 12 X 15 + 6 X 20
6	GENERAL ARRANGEMENT DRAWING OF VIADUCT FROM 83+360 TO 83+640	SAICPL-SESPL/NHIDC/WB-SIKKIM/83+360/GAD-01	2	8 X 15 + 8 X 20
7	GENERAL ARRANGEMENT DRAWING OF VIADUCT FROM 83+870 TO 84+045	SAICPL-SESPL/NHIDC/WB-SIKKIM/83+870/GAD-01	2	8 X 20 + 1 X 15
8	GENERAL ARRANGEMENT DRAWING OF VIADUCT FROM 84+145 TO 84+240	SAICPL-SESPL/NHIDC/WB-SIKKIM/84+145/GAD-01	2	1 X 15 + 4 X 20
9	GENERAL ARRANGEMENT DRAWING OF VIADUCT FROM 84+490 TO 84+550	SAICPL-SESPL/NHIDC/WB-SIKKIM/84+490/GAD-01	2	3 X 20
10	GENERAL ARRANGEMENT DRAWING OF VIADUCT FROM 86+525 TO 86+570	SAICPL-SESPL/NHIDC/WB-SIKKIM/86+525/GAD-01	2	3 X 15
11	GENERAL ARRANGEMENT DRAWING OF VIADUCT FROM 88+550 TO 88+610	SAICPL-SESPL/NHIDC/WB-SIKKIM/88+550/GAD-01	2	4 X 15
12	GENERAL ARRANGEMENT DRAWING OF VIADUCT FROM 92+630 TO 92+680	SAICPL-SESPL/NHIDC/WB-SIKKIM/92+630/GAD-01	2	1 X 20 + 2 X 15
13	GENERAL ARRANGEMENT DRAWING OF VIADUCT FROM 92+730 TO 92+790	SAICPL-SESPL/NHIDC/WB-SIKKIM/92+730/GAD-01	2	3 X 20
MINOR BRIDGE				
14	GENERAL ARRANGEMENT DRAWING OF MNB AT 94+120	SAICPL-SESPL/NHIDC/WB-SIKKIM/94+120/GAD-01		1 X 20
MISCELLANEOUS				
15	GENERAL ARRANGEMENT DRAWING OF INDEPENDENT RETAINING WALL	SAICPL-SESPL/NHIDC/WB-SIKKIM/RW/S-01	1	

				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 Package-5 (START OF PEDONG BYPASS TO RISHI BORDER PART-II)				DATE : MARCH-2020		REVISION R1		INDEX
				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-0120-6148070 Email: info@sainfra.com						DESIGNED BY A.REHMAN	DRAWN BY S.RAWAT	CHECKED BY A.K.	APPROVED BY S.Shukla	
REV	DATE	DESCRIPTION OF REVISIONS		INITIALS			SCALE:- AS SHOWN				SHEET:- 01 OF 01		DWG. NO. :- INDEX	

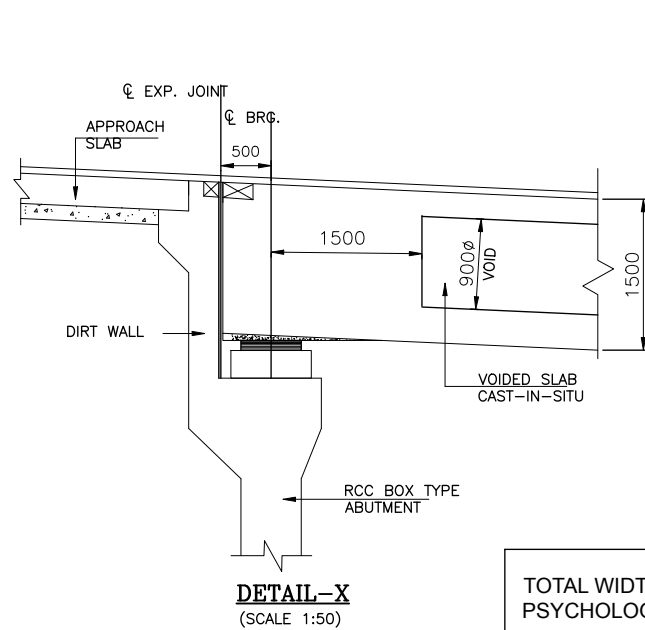
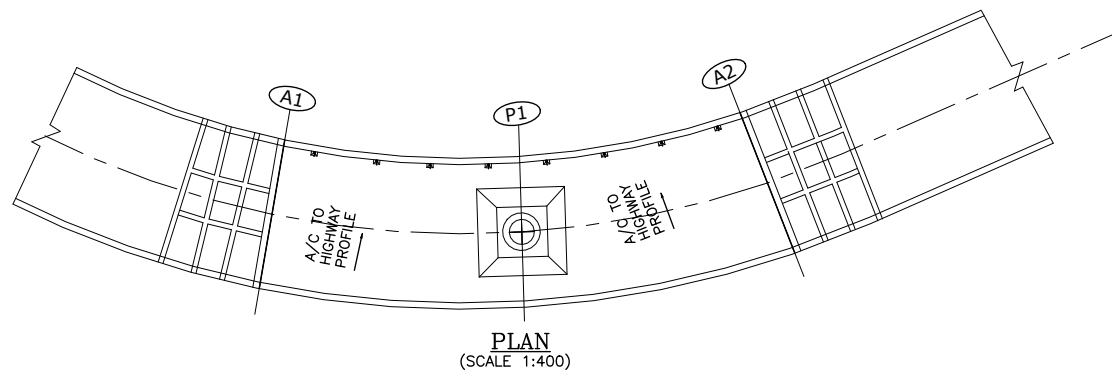
VIADUCT

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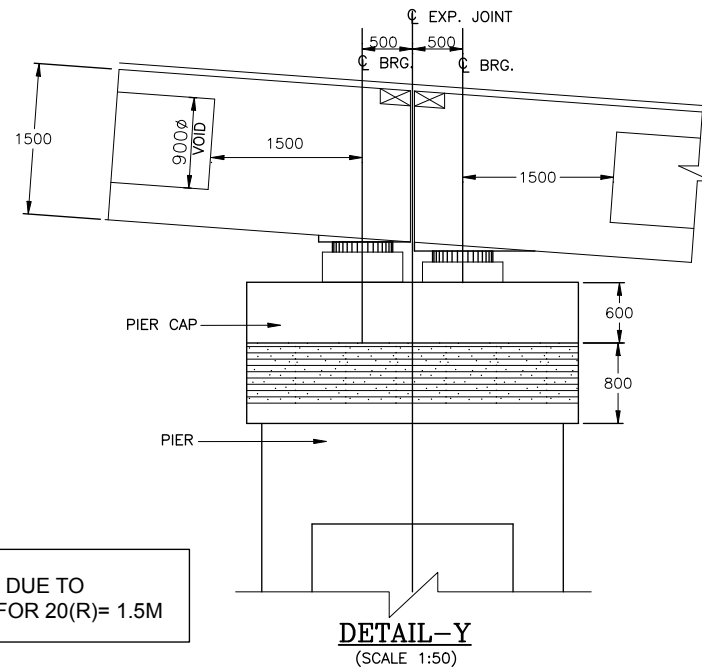


SECTIONAL ELEVATION
(SCALE 1:400)

FORMATION LEVEL	800.284	799.022	797.760	796.498
BED LEVEL (CENTER)	792.464	790.545	789.023	789.371
BED LEVEL (RIGHT-10.0m)	789.113	783.994	782.855	783.693
CHAINAGE	927+30	92+750	92+770	927+90

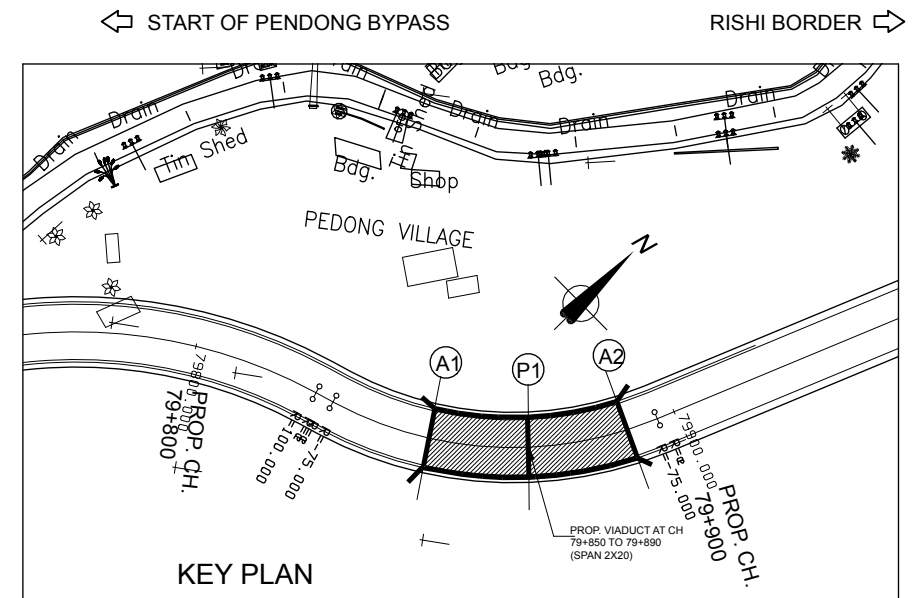


TOTAL WIDTH IS INCREASING DUE TO
PSYCHOLOGICAL WIDENING FOR 20(R)= 1.5M



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 OR 2 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
- GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
 - SUPERSTRUCTURE(PSC) ----- M45
 - RCC SUBSTRUCTURE & FOUNDATION --- M35
 - RCC RAILING -----M30
 - RCC CRASH BARRIER ----- M40
 - APPROACH SLAB ----- M30
 - PEDESTAL ----- M40
- TYPE OF BEARING PROPOSED HERE IS POT-PTEF 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.
- SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
- SAFE BEARING CAPACITY FOR PRILIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m²
- EXTRA WIDENING SHALL BE PROVIDED AS PER TABLE 6.9 OF IRC:SP:48-1998.



REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	Feb 2020	Due to Gradient Change	
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.
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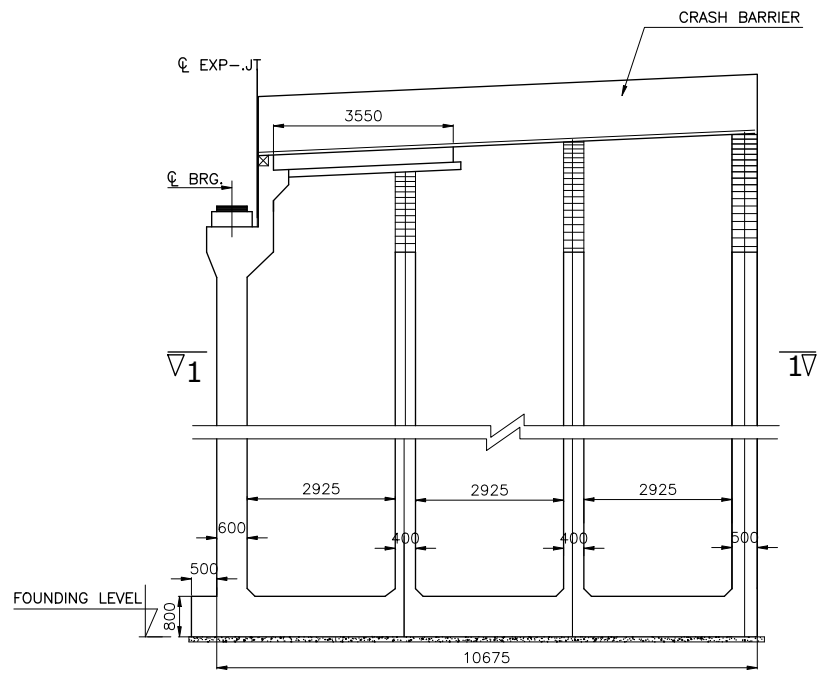
Project :

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

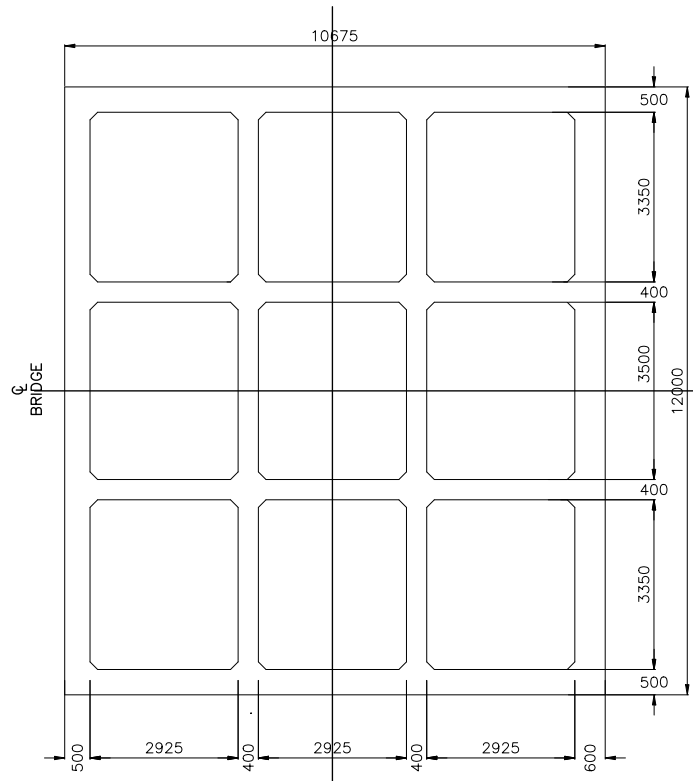
PACKAGE - 5 START OF PEDONG BYPASS TO RISHI BORDER PART-II

DATE : MARCH-2020	Revision	R1	GENERAL ARRANGEMENT DRAWING
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
A. REHMAN	A. SEN	A. K. ATRAY	S. Shukla
SCALE:- AS SHOWN	SHEET:- 01 OF 02	Dwg. No. :-	SAICPL-SESPL/NHIDC/WB-SKM/79+850/GAD-01

DATE: 06/03/2020 - 4:56pm
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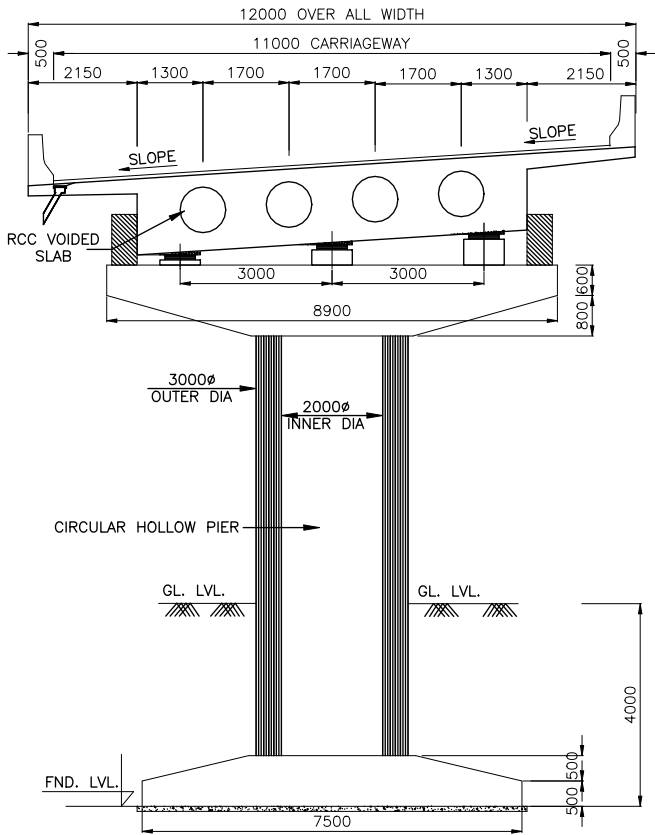
BOX ABUTMENT
SCALE 1:100



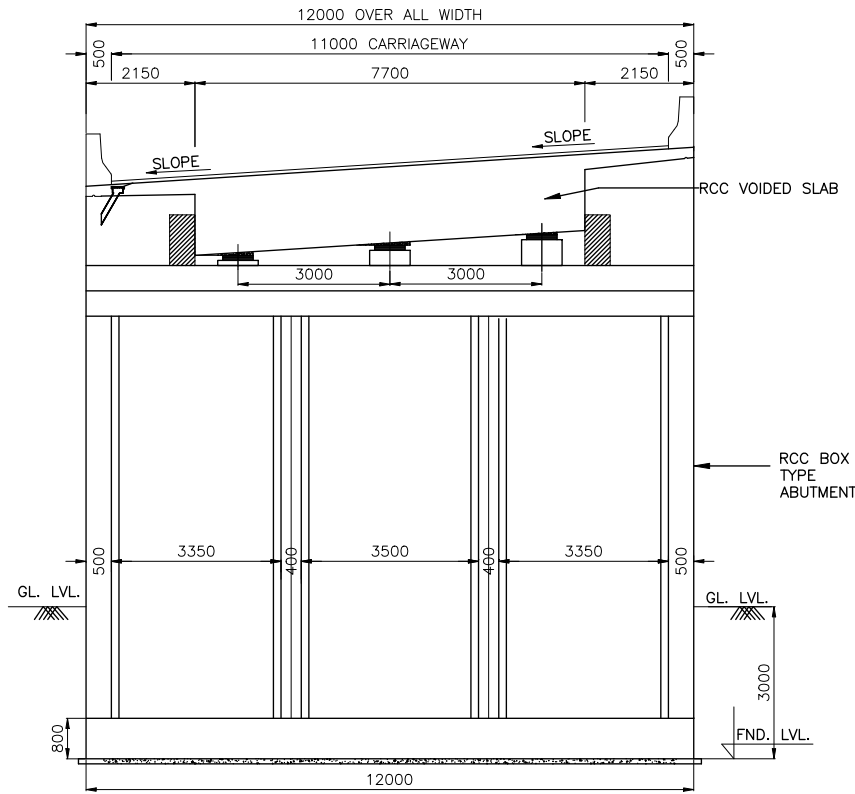
SECTION-1-1
SCALE 1:100

NOTES

1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR OTHER NOTES AND SECTION REFER SHEET 2 OF 2 OF THIS DRAWING.



SECTION-B-B
SCALE 1:100



SECTION-A-A
SCALE 1:100

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	Feb 2020	Due to Gradient Change	
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 Aritar-Rolep-Menla in the State of Sikkim

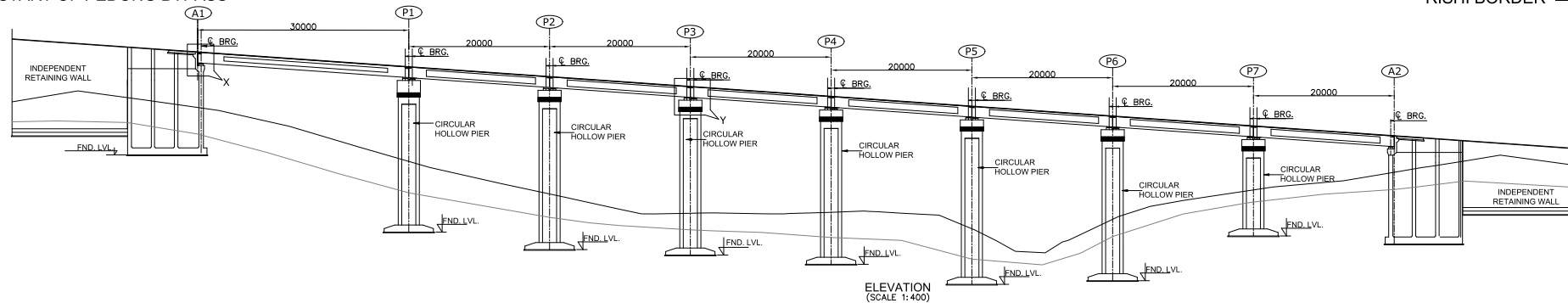
PACKAGE - 5 START OF PEDONG BYPASS TO RISHI BORDER PART-II

DATE : MARCH-2017	Revision	A
DESIGNED BY	DRAWN BY	CHECKED BY
A.REHMAN	A.SEN	A.K.ATRAY
SCALE:- AS SHOWN		SHEET:- 02 OF 02

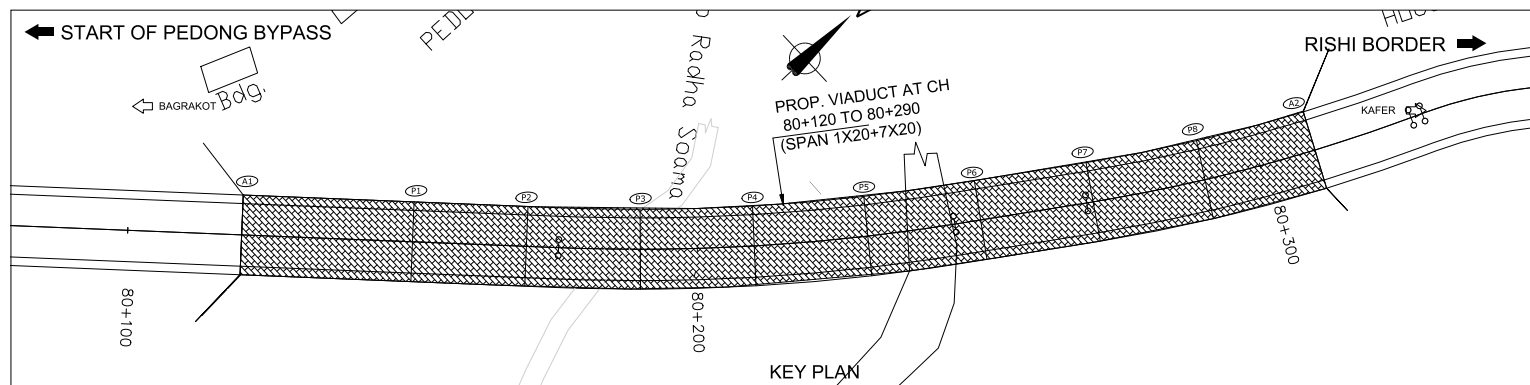
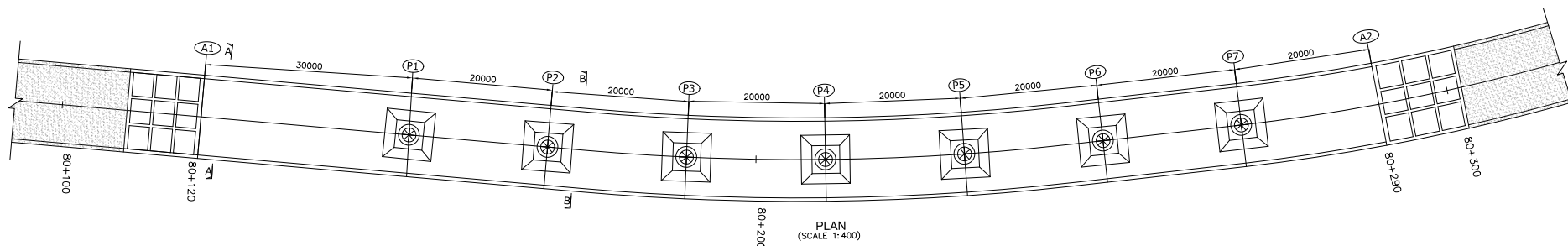
GENERAL ARRANGEMENT DRAWING GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 79+850 TO 79+890 SPAN = (2X20.)	Dwg. No. :- SAICPL-SESPL/NHIDC/WB-SKM/79+850/GAD-01
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← START OF PEDONG BYPASS

RISHI BORDER →



FORMATION LEVEL	1510.937	1509.115	1507.900	1506.685	1505.469	1504.249	1503.026	1501.799	1500.569
BED LEVEL (CENTER)	1503.035	1495.373	1490.752	1488.007	1488.141	1485.806	1487.152	1491.320	1493.828
BED LEVEL (RIGHT-10.0m)	1499.258	1490.910	1487.430	1485.652	1484.569	1481.494	1484.703	1489.603	1491.382
CHAINAGE	80+120	80+150	80+170	80+190	80+210	80+230	80+250	80+270	80+290



REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

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,
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)
Phone No- 0120-6148000 Fax-0120-6148090
Email: info@sainfra.com

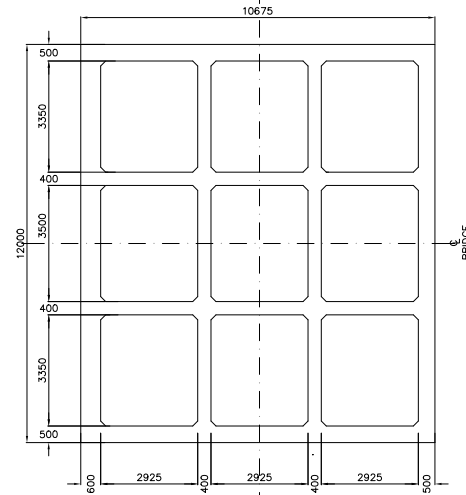
PROJECT : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbong-Kafer-Bakim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menta in the State of Sikkim
Package-5
(START OF PEDONG BYPASS TO RISHI BORDER PART-II)

DATE : MARCH-2020	REVISION	R1
DESIGNED BY AREHMAN	DRAWN BY S.RAWAT	CHECKED BY AK A.K.ATARY
APPROVED BY S.Shukla		
SCALE:- AS SHOWN		SHEET: 01 OF 02

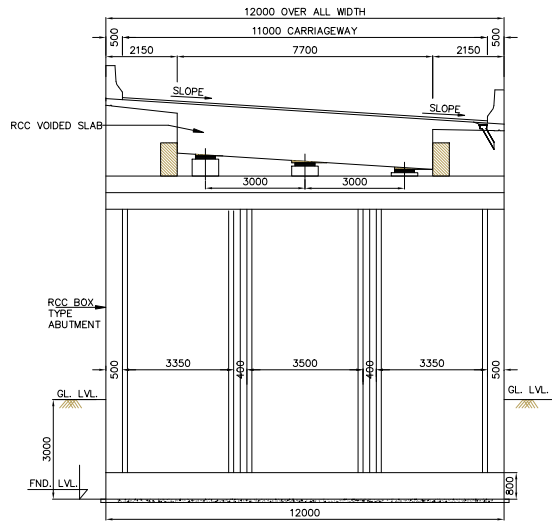
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 80+120 TO 80+290
SPAN = (1X30+7X20.0)

DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/80+120/GAD-01

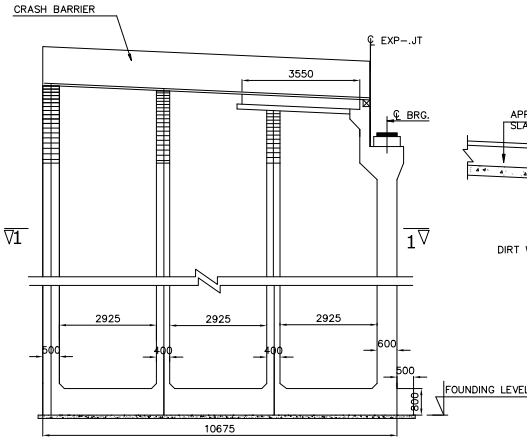
← START OF PEDONG BYPASS



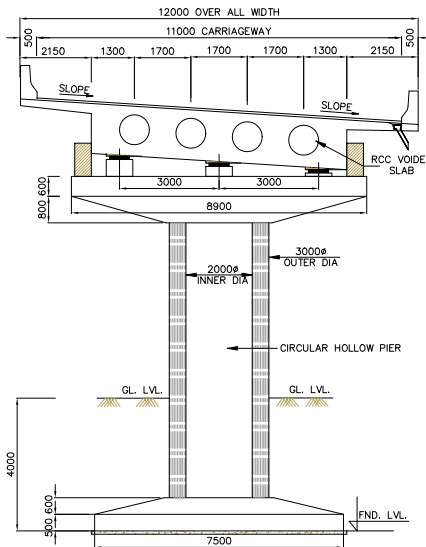
SECTION-1-1
SCALE 1:100



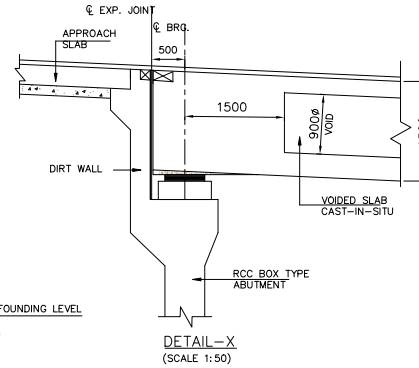
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SCALE 1:100



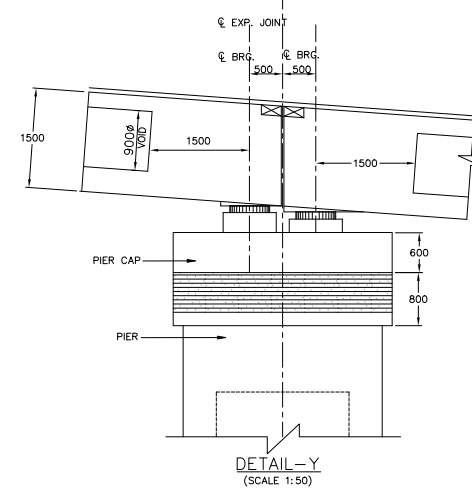
BOX ABUTMENT
SCALE 1:100



SECTION-B-B
SCALE 1:100



DETAIL-X
SCALE 1:50



DETAIL-Y
SCALE 1:50

NOTES

RESHI BORDER →

1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.
4. BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 3-LANE CLASS OR 1-LANE CLASS A & 1-L FOR WHICH EVER GIVES WORST EFFECT.
5. 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
6. TYPE OF BEARING PROPOSED HERE IS POT-PITFE 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.
11. SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
12. SAFE BEARING CAPACITY FOR PRELIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m²
13. EXTRA WIDENING SHALL BE PROVIDED AS PER TABLE 6.9 OF IRC:SP:48-1998.

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

CLIENT :	S.A. Infrastructure Consultants Pvt. Ltd.
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

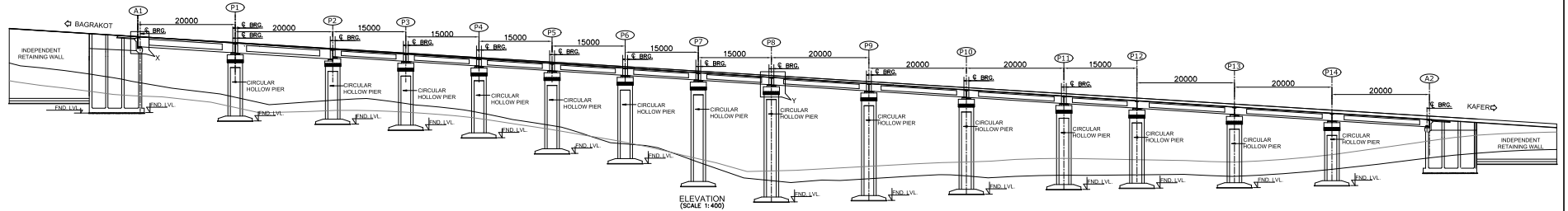
PROJECT :	Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong, along with Spur From Aritar-Rolep-Menta in the State of Sikkim
	Package-5 (START OF PEDONG BYPASS TO RISHI BORDER PART-II)

DATE :	MARCH-2020
DESIGNED BY	AREHMAN
DRAWN BY	S.RAWAT
CHECKED BY	A.K.ATARY
APPROVED BY	S.Shukla
SCALE:-	AS SHOWN
SHEET:-	02 OF 02

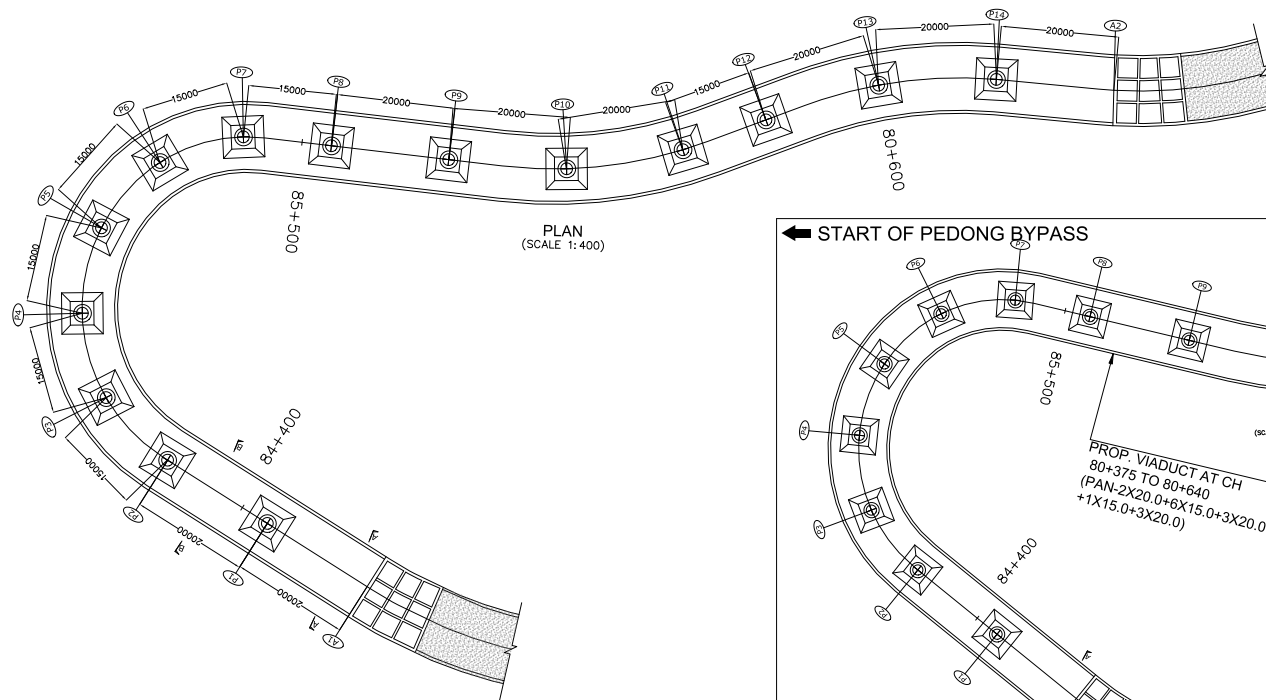
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 80+120 TO 80+290 SPAN = (1X30+7X20.0)
DWG. NO. :- SAICPL-SESPL/NHDC-WB-SKM/80+120/GAD-01

← START OF PEDONG BYPASS

RISHI BORDER →

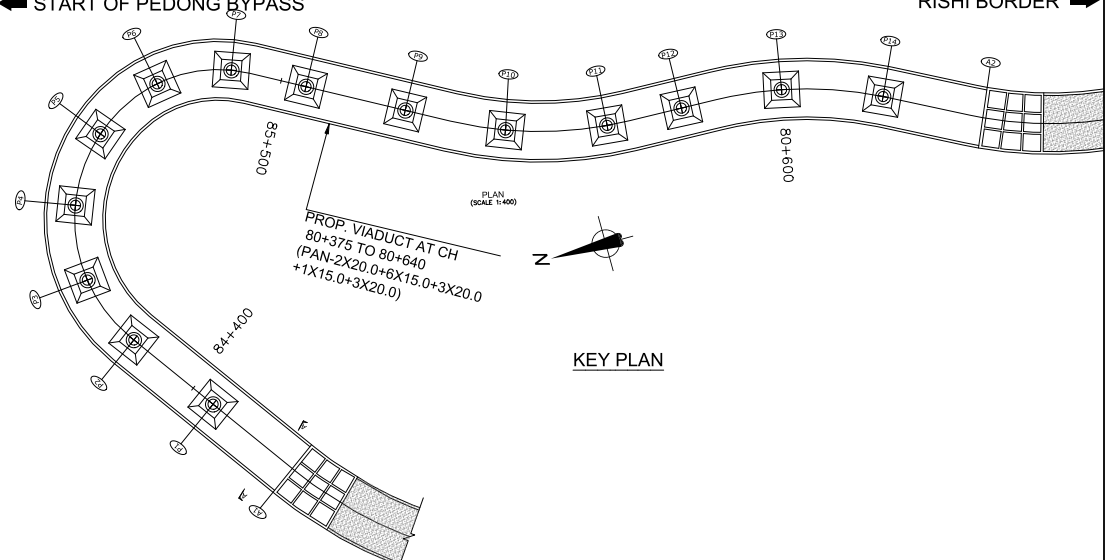


FORMATION LEVEL	1495.021	1493.788	1492.555	1491.939	1491.322	1490.089	1488.856	1488.240	1487.007	1485.774	1484.541	1483.308	1482.692	1481.459	1480.226	1478.993
BED LEVEL (CENTER)	1485.070	1481.763	1480.543	1481.579	1480.508	1477.039	1472.805	1469.529	1465.418	1460.430	1456.344	1456.825	1456.922	1456.617	1456.002	1454.411
BED LEVEL (LHS-10.0m)	1482.943	1479.670	1480.167	1479.799	1479.070	1476.210	1472.607	1470.223	1467.856	1465.947	1463.732	1462.221	1460.037	1459.543	1457.076	1453.914
CHAINAGE	80+375	80+395	80+415	80+430	80+445	80+460	80+475	80+490	80+505	80+525	80+545	80+565	80+580	80+600	80+620	80+640



← START OF PEDONG BYPASS

RISHI BORDER →



REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH-2020	DUE TO GRADIENT CHANGE	A B C D

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,
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)
Phone No- 0120-6148000 Fax-0120-6148090
Email: info@sainfra.com

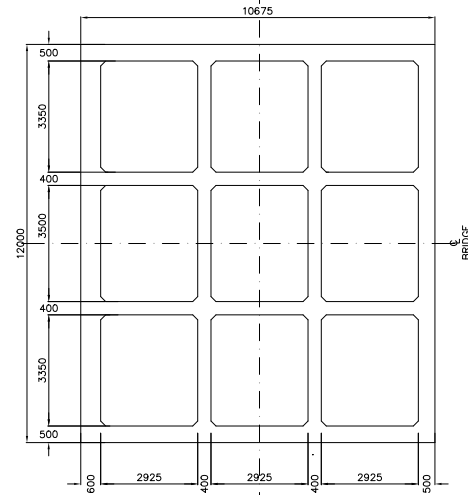
PROJECT : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbong-Kafra-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Merla in the State of Sikkim
Package-5
(START OF PEDONG BYPASS TO RISHI BORDER PART-II)

DATE	MARCH-2020	REVISION	R1
DESIGNED BY	A. REHMAN	DRAWN BY	S. RAWAT
CHECKED BY	A.K. ATARY	APPROVED BY	S. SHUKLA
SCALE	AS SHOWN	SHEET	01 OF 02

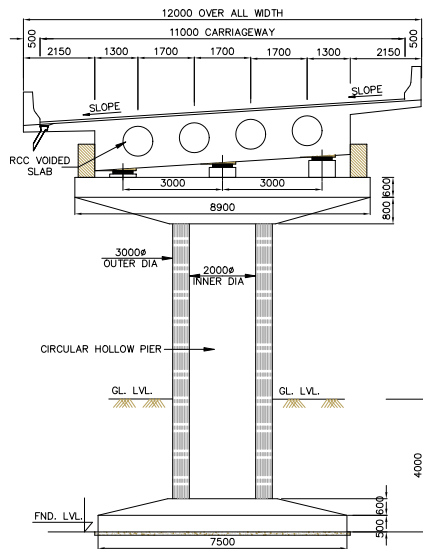
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 80+490 TO 80+580 (SPAN=2X20.0+6X15.0+3X20.0 +1X15.0+3X20.0)

DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/80+490 GAD-01

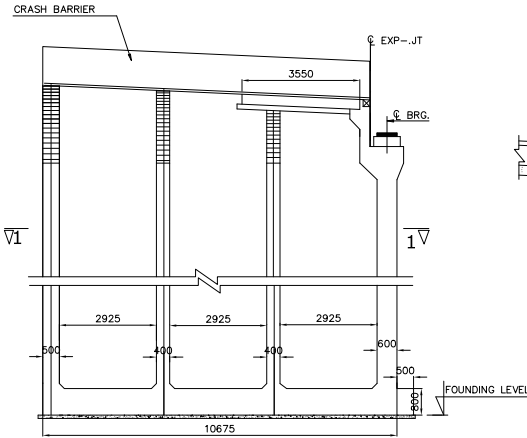
← START OF PEDONG BYPASS



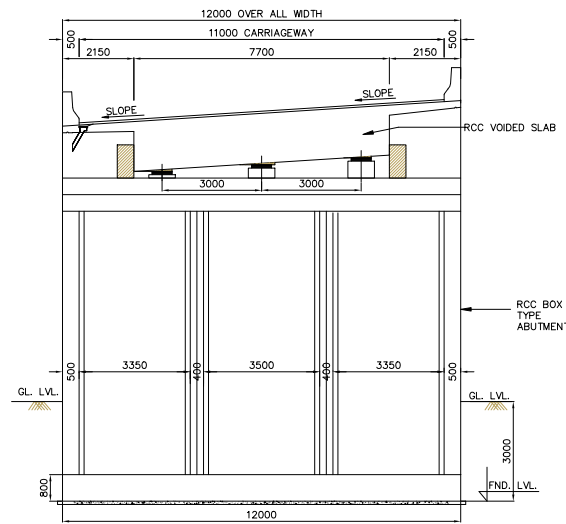
SECTION-1-1
SCALE 1:100



SECTION-B-B
SCALE 1:100



BOX ABUTMENT
SCALE 1:100

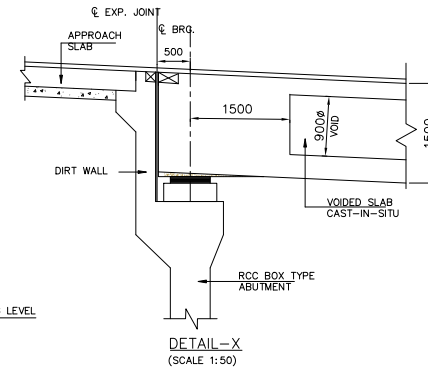


SECTION-A-A
SCALE 1:100

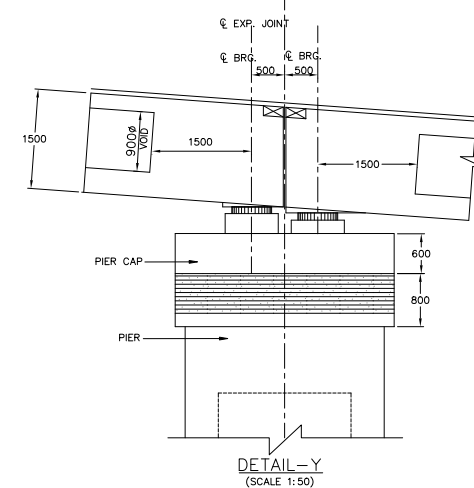
NOTES

RISHI BORDER →

- 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 OR 2 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-PTEF 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.
- SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
- SAFE BEARING CAPACITY FOR PRELIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m²
- EXTRA WIDENING SHALL BE PROVIDED AS PER TABLE 6.9 OF IRC:SP:48-1998.



DETAIL-X
(SCALE 1:50)



DETAIL-Y
(SCALE 1:50)

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

CLIENT :	SANITARY 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, Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh) Phone No- 0120-6148000 Fax-0120-6148090 Email: info@sainfra.com

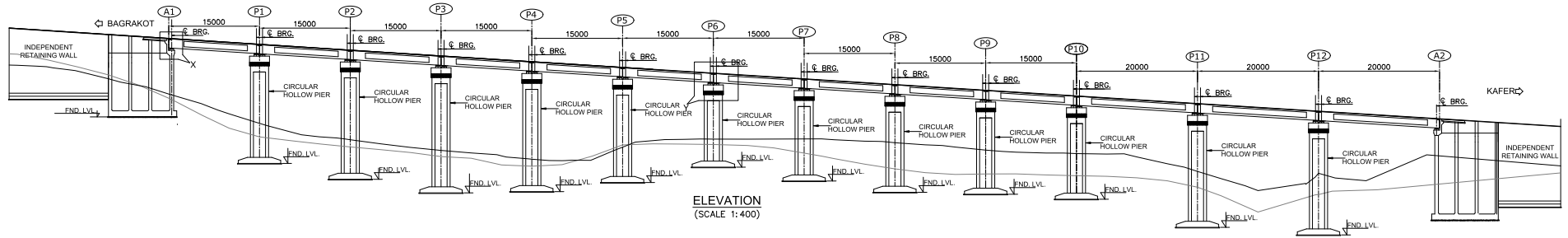
PROJECT :	Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Merla in the State of Sikkim Package-5 (START OF PEDONG BYPASS TO RISHI BORDER PART-II)
-----------	--

DATE :	MARCH-2020	REVISION	R1
DESIGNED BY	AREHMAN	DRAWN BY	S.RAWAT
CHECKED BY	A.K.A.KATARY	APPROVED BY	S.Shukla
SCALE:-	AS SHOWN	SHEET:-	02 OF 02

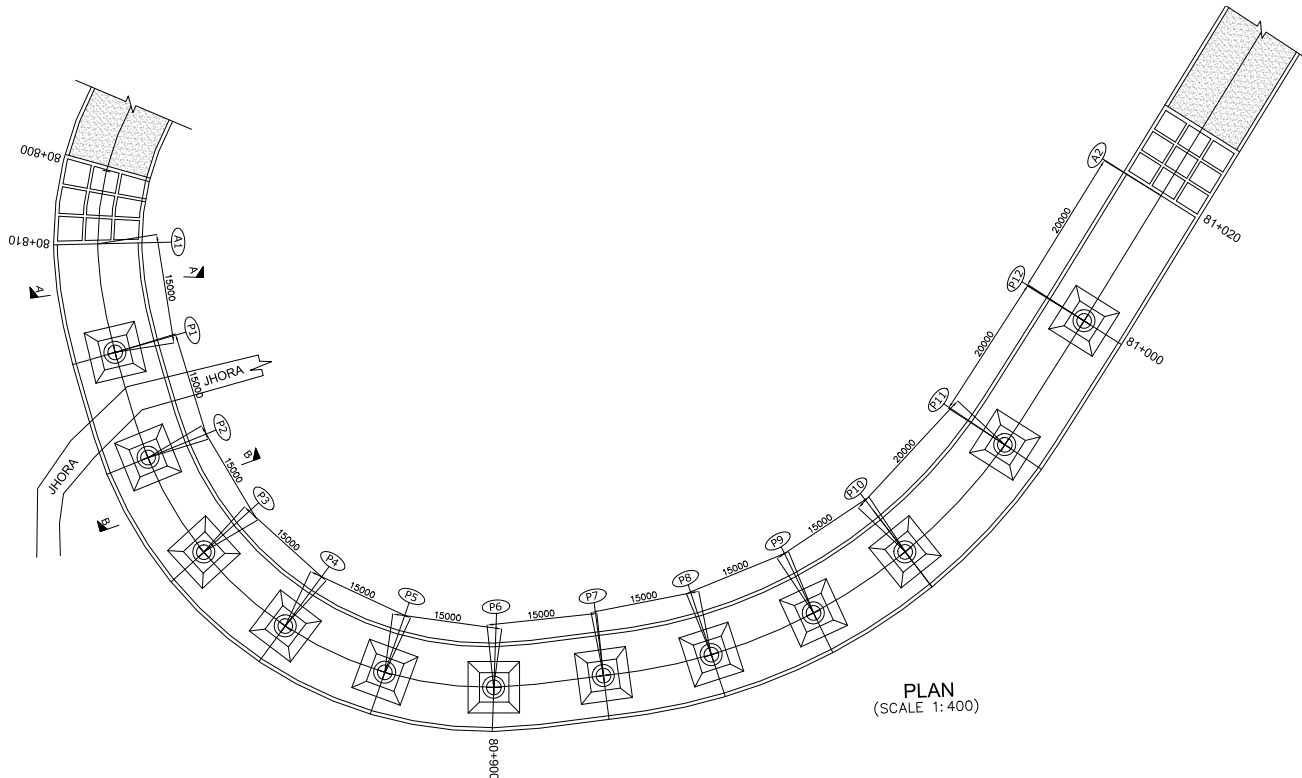
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 80+490 TO 80+580 (SPAN=2X20.0+6X15.0+3X20.0 +1X15.0+3X20.0)
DWG. NO. :- SAICPL-SE/PLNHIDC/WB-SKM/80+490 GAD-01

← START OF PEDONG BYPASS

RISHI BORDER →



FORMATION LEVEL	1468.514	1467.281	1466.664	1465.431	1464.815	1463.582	1462.966	1461.733	1461.116	1459.883	1459.267	1458.034	1456.801	1455.568
BED LEVEL (CENTER)	1459.382	1453.162	1451.833	1449.651	1448.619	1451.687	1451.936	1451.829	1451.340	1449.779	1449.544	1446.600	1441.441	1449.167
BED LEVEL (RIGHT-10.0m)	1458.694	1451.701	1450.645	1448.774	1447.463	1451.156	1451.047	1448.708	1447.023	1446.194	1445.894	1443.993	1436.288	1443.570
CHAINAGE	80+810	80+825	80+840	80+855	80+870	80+885	80+900	80+915	80+930	80+945	80+960	80+980	81+000	81+020



REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

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,
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)
Phone No- 0120-6148000 Fax-0120-6148090
Email: info@sainfra.com

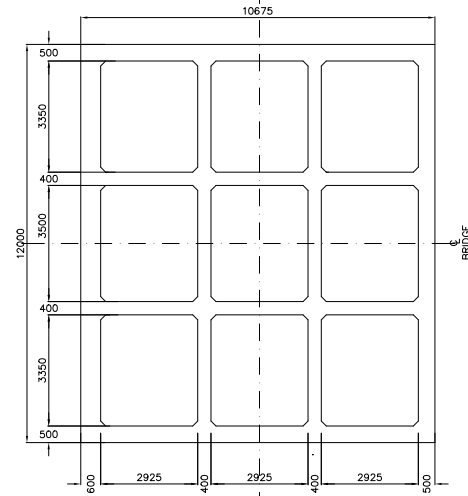
PROJECT : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong, along with Spur From Aritar-Rolep-Menla in the State of Sikkim
Package-5
(START OF PEDONG BYPASS TO RISHI BORDER PART-II)

DATE : MARCH-2020	REVISION R0
DESIGNED BY A.AREHMAN	DRAWN BY S.RAWAT
CHECKED BY A.K.ATARY	APPROVED BY S.Shukla
SCALE:- AS SHOWN	SHEET:- 01 OF 02

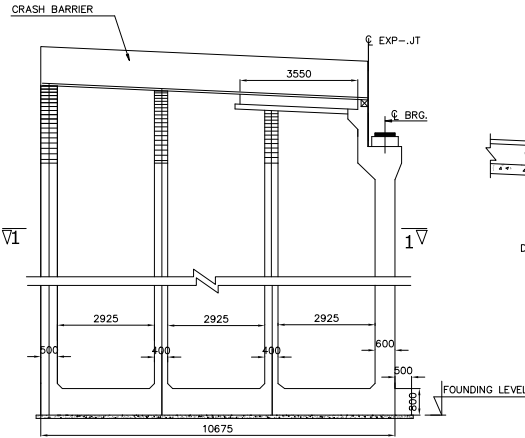
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 88+810 TO 81+020
SPAN = (10X15.0+3X20.0)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/88+810/GAD-01

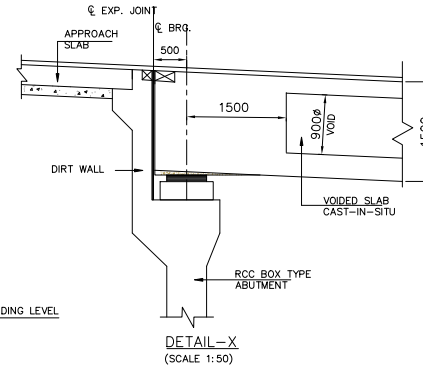
← START OF PEDONG BYPASS



SECTION-1-1
SCALE 1:100



BOX ABUTMENT
SCALE 1:100

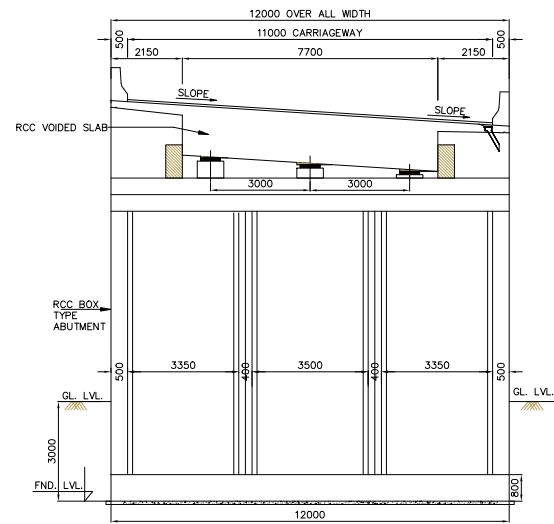


DETAIL-X
(SCALE 1:50)

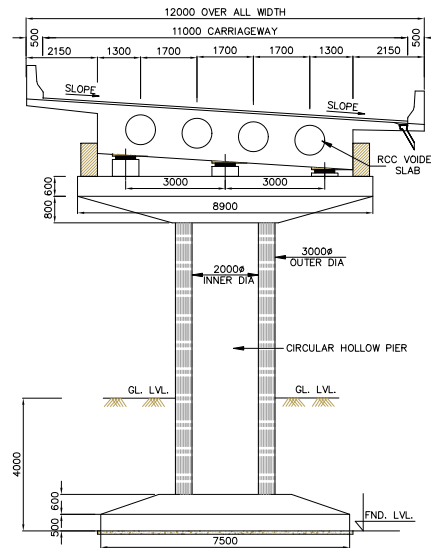
NOTES

RISHI BORDER →

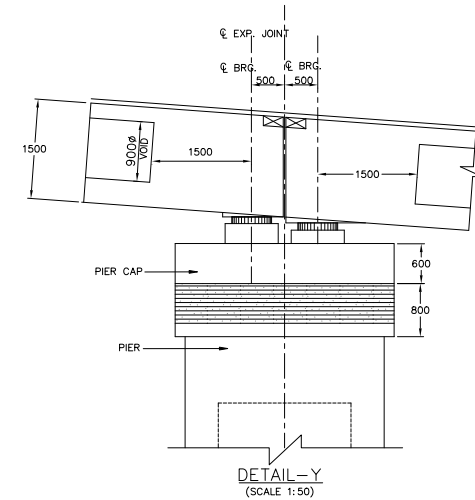
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- BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R OR 2 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
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(ii) RCC SUBSTRUCTURE & FOUNDATION --- M35
(iii) RCC RAILING ----- M30
(iv) RCC CRASH BARRIER ----- M40
(v) APPROACH SLAB ----- M30
(vi) PEDESTAL ----- M40
- TYPE OF BEARING PROPOSED HERE IS POT-PITFE 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.
- SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
- SAFE BEARING CAPACITY FOR PRILIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m²
- EXTRA WIDENING SHALL BE PROVIDED AS PER TABLE 6.9 OF IRC:SP:48-1998.



SECTION-A-A
SCALE 1:100



SECTION-B-B
SCALE 1:100



DETAIL-Y
(SCALE 1:50)

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

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,
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-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 Package-5
(START OF PEDONG BYPASS TO RISHI BORDER PART-II)

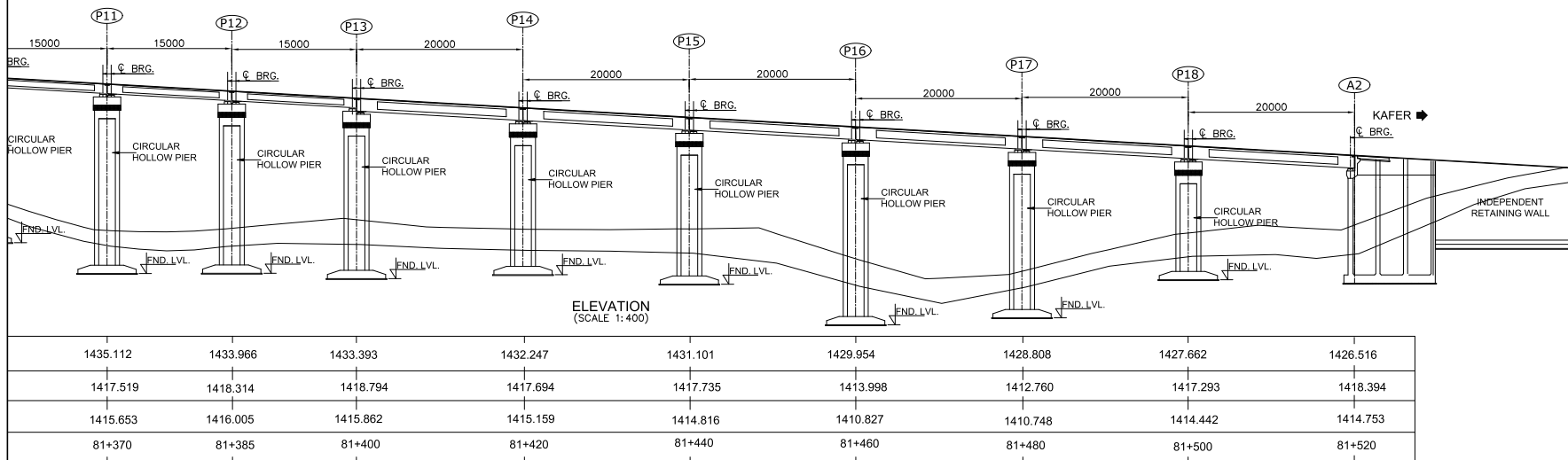
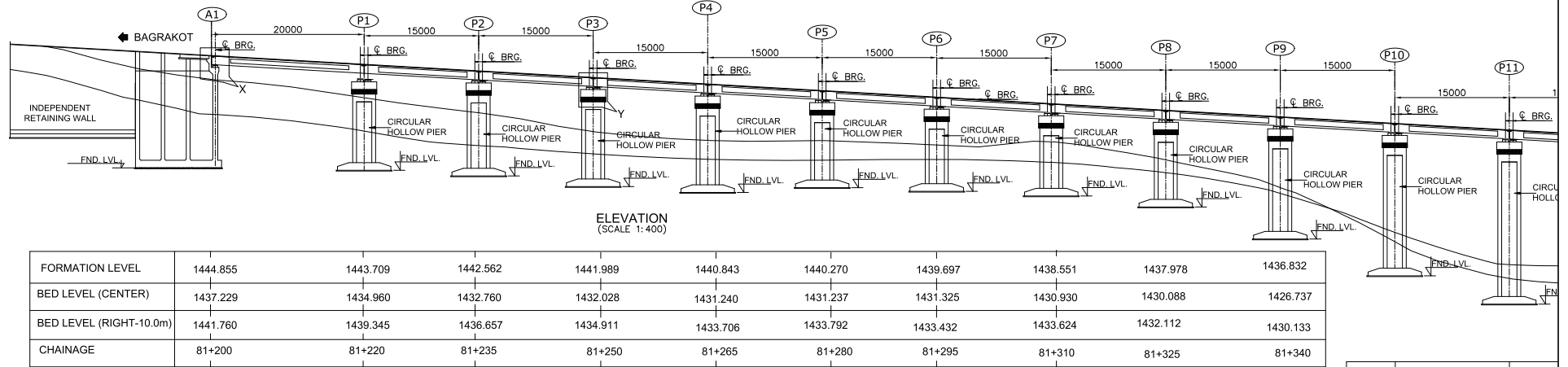
DATE :	MARCH-2020	REVISION	R1
DESIGNED BY	AREHMAN	DRAWN BY	SRAWAT
CHECKED BY	A.K.ATARY	APPROVED BY	S.Shukla
SCALE:-	AS SHOWN	SHEET:-	02 OF 02

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 88+810 TO 81+020 SPAN = (10X15.0+3X20.0)

DWG. NO. :- SAICPL-SESPLN/HIDC-WB-SKM/88+810/GAD-01

← START OF PEDONG BYPASS

RISHI BORDER →



REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH, 2020	DUE TO GRADIENT CHANGE	A B C D

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,
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)
Phone No- 0120-6148000 Fax-0120-6148090
Email: info@sainfra.com

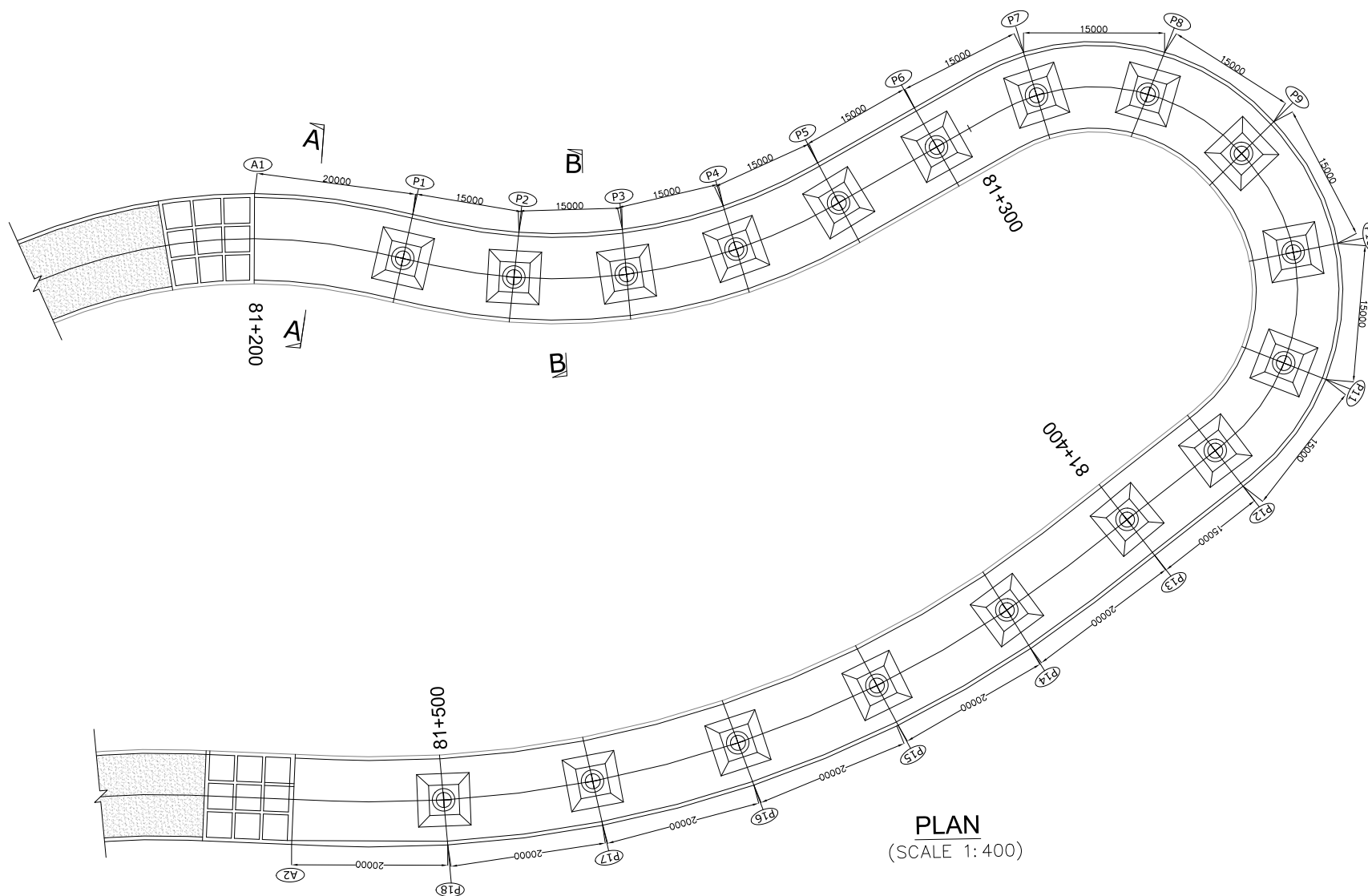
PROJECT : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbung
Kafe-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim
Package-5
(START OF PEDONG BYPASS TO RISHI BORDER PART-II)

DATE :	MARCH-2020	REVISION	R1
DESIGNED BY	AREHMAN	DRAWN BY	S. RAWAT
CHECKED BY	AK AKATARY	APPROVED BY	S. SHUKLA
SCALE:- AS SHOWN		SHEET:- 01 OF 03	

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 81+200 TO 81+520
SPAN = (1X20.0+12X15.0+6X20.0))

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/81+200/GAD-01

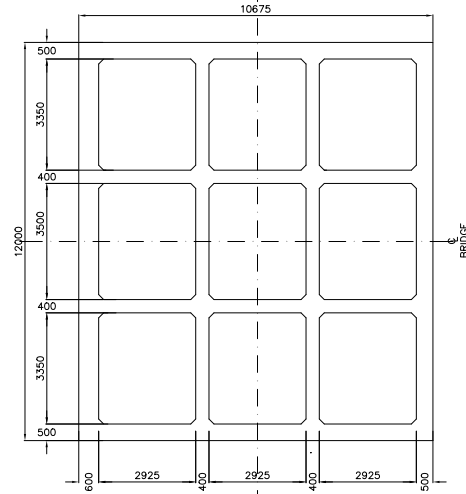
RISHI BORDER ➡



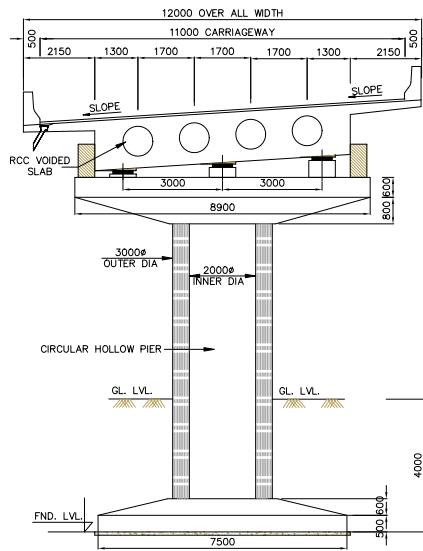
PLAN
(SCALE 1: 400)

[illegible]

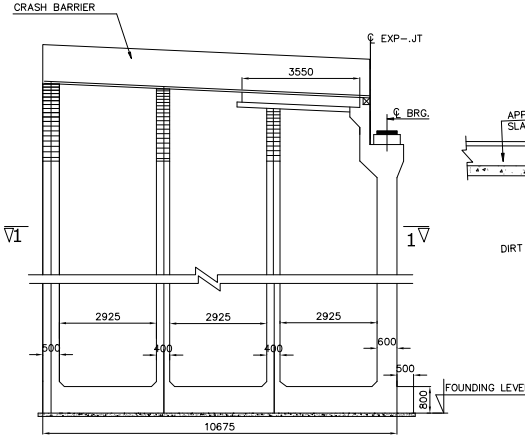
← START OF PEDONG BYPASS



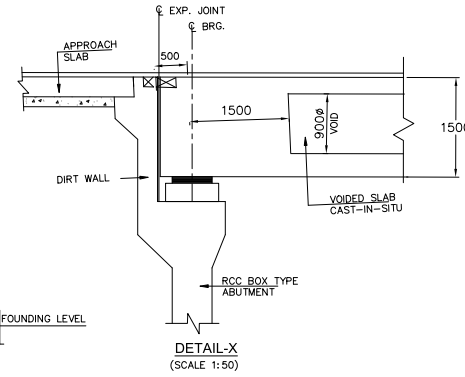
SECTION-1-1
SCALE 1:100



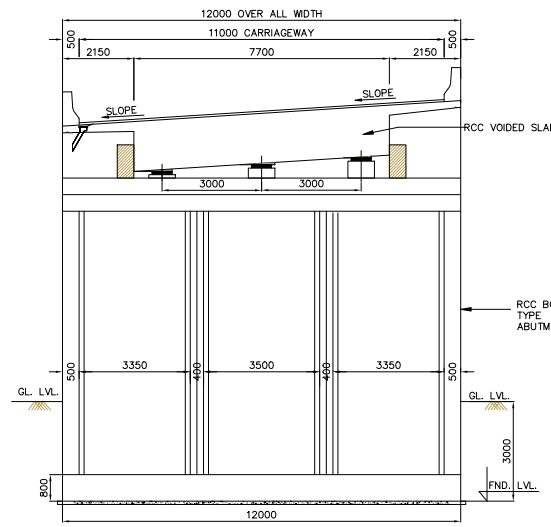
SECTION-B-B
SCALE 1:100



BOX ABUTMENT
SCALE 1:100



DETAIL-X
(SCALE 1:50)

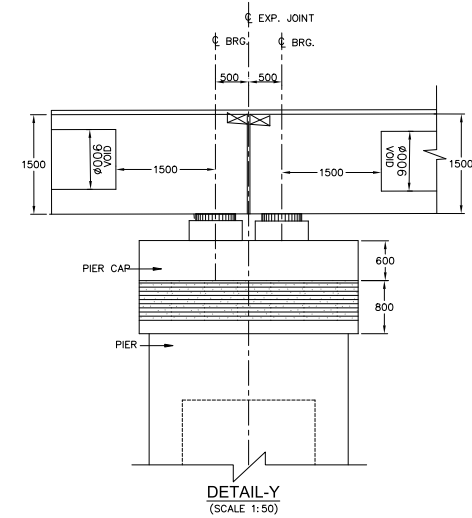


SECTION-A-A
SCALE 1:100

NOTES

→ RISHI BORDER

- 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 OR 2 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-PITFE 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.
- SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
- SAFE BEARING CAPACITY FOR PRELIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m²
- EXTRA WIDENING SHALL BE PROVIDED AS PER TABLE 6.9 OF IRC:SP-48-1998.



DETAIL-Y
(SCALE 1:50)

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

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, Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh) Phone No- 0120-6148000 Fax-0120-6148090 Email: info@sainfra.com

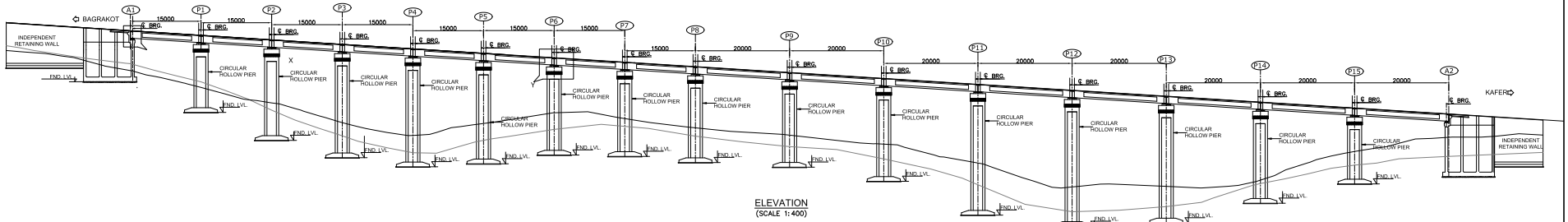
PROJECT :	Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Antar-Rolep-Merla in the State of Sikkim Package-5 (START OF PEDONG BYPASS TO RISHI BORDER PART-II)
-----------	---

DATE :	MARCH-2020	REVISION	R1
DESIGNED BY	A. REHMAN	DRAWN BY	S. RAWAT
CHECKED BY	A.K. KATARY	APPROVED BY	S. SHUKLA
SCALE:	AS SHOWN	SHEET:	03 OF 03

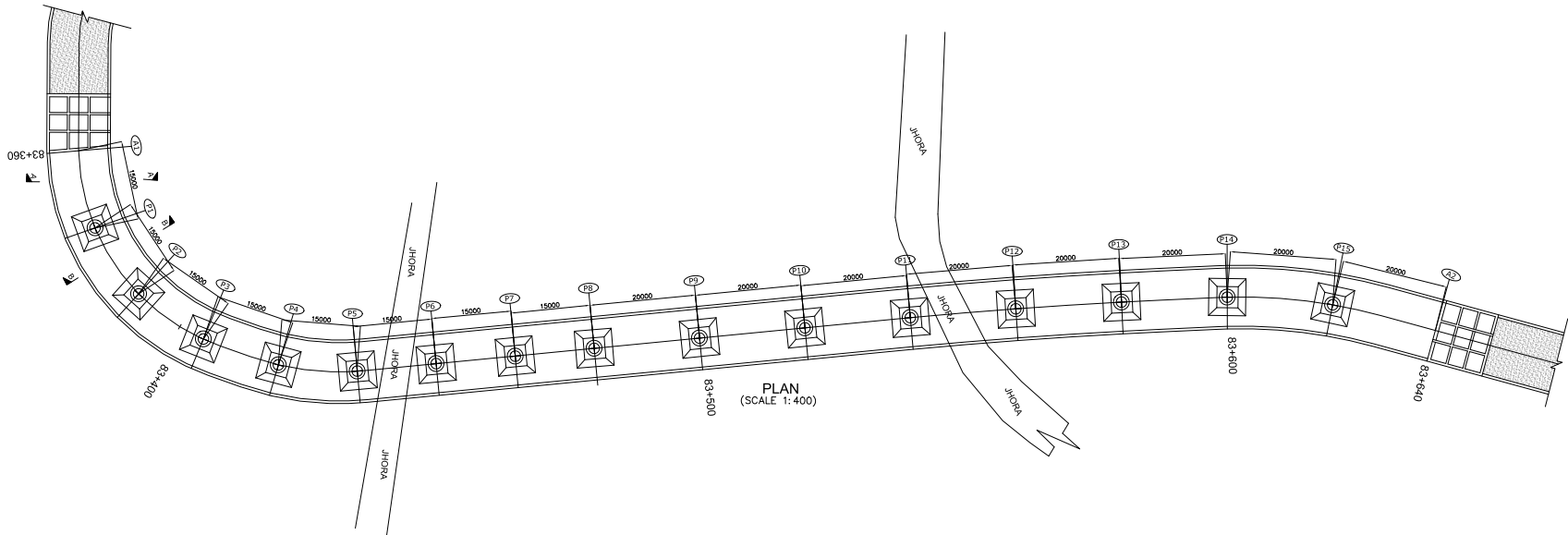
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 61+200 TO 61+520 SPAN = (1X20.0+12X15.0+6X20.0))
DWG. NO. :- SAICPL-SE/PLN/HIDC/WB-SKM/61+200/GAD-01

← START OF PEDONG BYPASS

RISHI BORDER →



FORMATION LEVEL	1317.524	1316.337	1315.744	1314.557	1313.964	1312.777	1312.194	1310.997	1310.404	1309.217	1308.031	1306.844	1305.657	1304.471	1303.284	1302.097	1300.911
BED LEVEL (CENTER)	1309.057	1304.131	1302.196	1299.796	1295.296	1298.554	1300.104	1298.084	1296.907	1295.354	1293.448	1289.437	1284.358	1284.487	1285.808	1291.893	1294.897
BED LEVEL (RIGHT-10.0M)	1310.529	1304.893	1300.655	1293.069	1291.621	1295.030	1296.575	1296.785	1295.139	1292.916	1290.309	1284.817	1279.096	1280.188	1285.083	1288.993	1290.841
CHAINAGE	83+360	83+375	83+390	83+405	83+420	83+435	83+450	83+465	83+480	83+500	83+520	83+540	83+560	83+580	83+600	83+620	83+640



REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH-2020	DUE TO GRADIENT CHANGE	A B C D

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,
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)
Phone No- 0120-6148000 Fax-0120-6148090
Email: info@sainfra.com

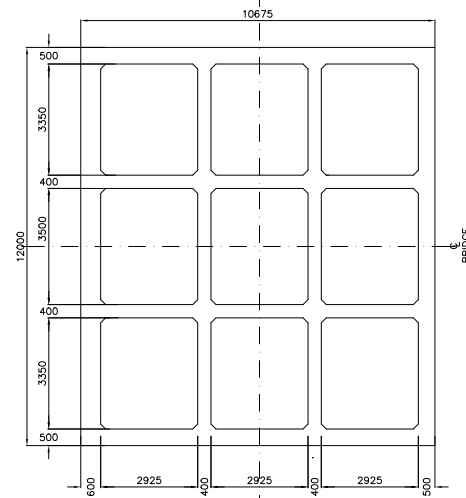
PROJECT : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorahang-Pakyong, along with Spur From Antar-Rolep-Menla in the State of Sikkim
Package-5
(START OF PEDONG BYPASS TO RISHI BORDER PART-II)

DATE :	MARCH-2020	REVISION	R0
DESIGNED BY	A. REHMAN	DRAWN BY	S. RAWAT
CHECKED BY	A.K. ATARY	APPROVED BY	S. SHUKLA
SCALE:-	AS SHOWN	SHEET:-	01 OF 02

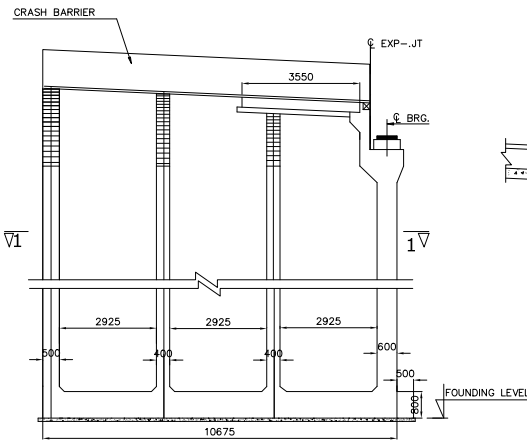
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 83+360 TO 83+640
SPAN = (8X15.0+8X20.0)

DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/83+660/GAD-01

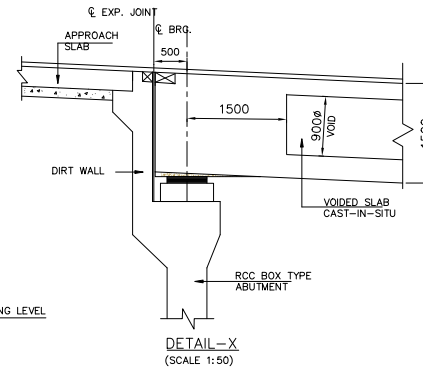
← START OF PEDONG BYPASS



SECTION-1-1
SCALE 1:100



BOX ABUTMENT
SCALE 1:100

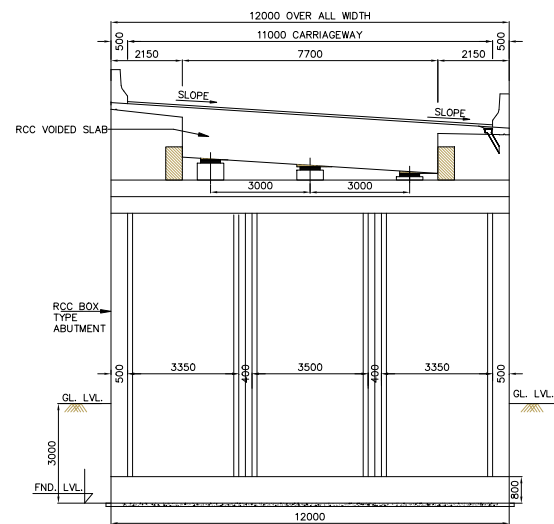


DETAIL-X
(SCALE 1:50)

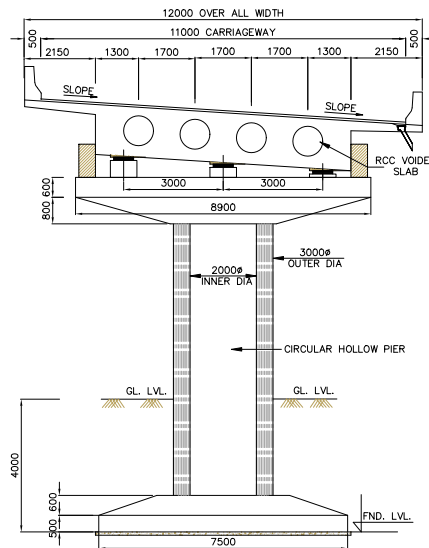
NOTES

RISHI BORDER →

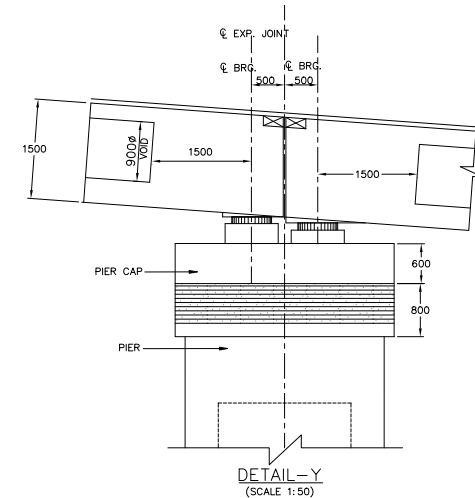
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SECTION-A-A
SCALE 1:100



SECTION-B-B
SCALE 1:100



DETAIL-Y
(SCALE 1:50)

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

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, Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh) Phone No- 0120-6148000 Fax-0120-6148090 Email: info@sainfra.com

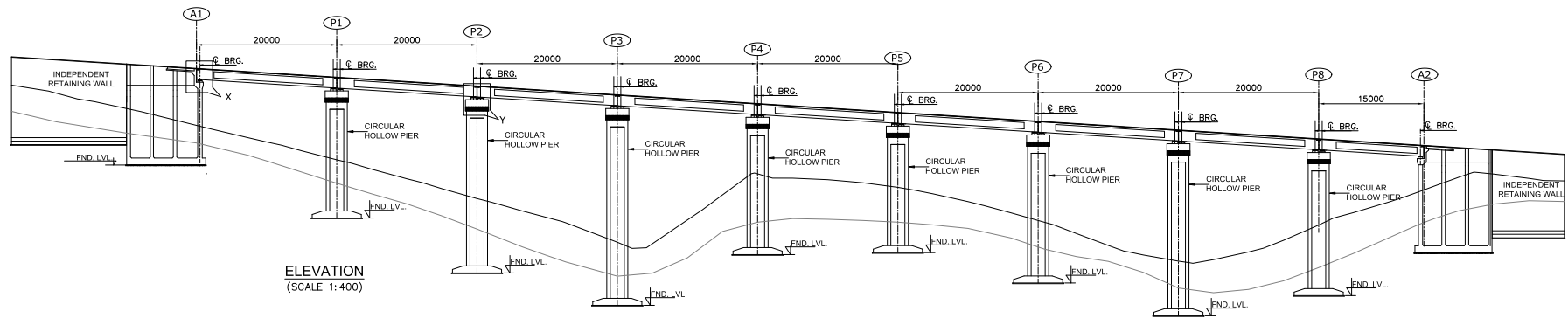
PROJECT :	Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbong- Kafir-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim Package-5 (START OF PEDONG BYPASS TO RISHI BORDER PART-II)
-----------	---

DATE :	MARCH-2020
DESIGNED BY	AREHMAN
DRAWN BY	SRAWAT
CHECKED BY	AK
APPROVED BY	S.Shukla
SCALE:-	AS SHOWN
SHEET:-	02 OF 02

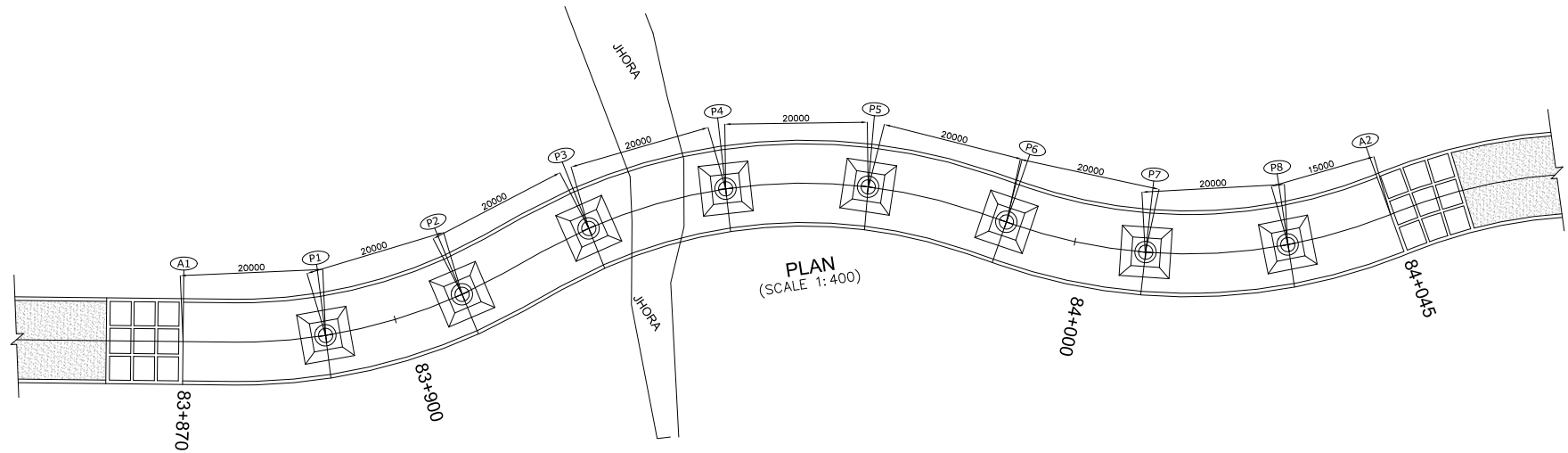
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 63+360 TO 63+640 SPAN = (8X15.0+8X20.0)
DWG. NO. :- SAICPL-SESPLN/HIDC-WB-SKM/63+360/GAD-01

← START OF PEDONG BYPASS

RISHI BORDER →



FORMATION LEVEL	1287.264	1286.077	1284.891	1283.704	1282.517	1281.331	1280.144	1278.957	1277.771	1276.584
BED LEVEL (CENTER)	1279.194	1274.281	1268.749	1262.521	1272.281	1270.352	1265.621	1259.818	1264.973	1271.802
BED LEVEL (RIGHT-10.0m)	1276.679	1270.935	1264.396	1257.673	1265.379	1265.382	1261.833	1255.987	1258.902	1267.009
CHAINAGE	83+870	83+890	83+910	83+930	83+950	83+970	83+990	84+010	84+030	84+045



REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

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,
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)
Phone No- 0120-6148000 Fax-0120-6148090
Email: info@sainfra.com

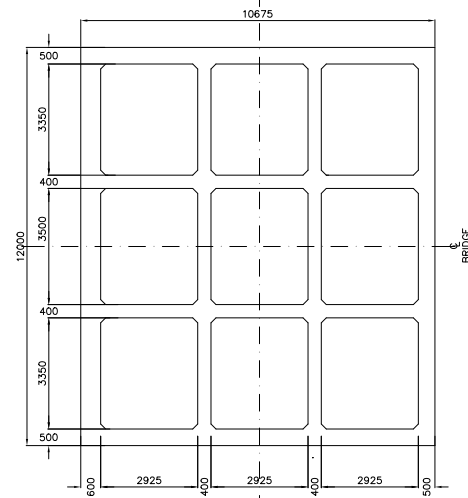
PROJECT : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong, along with Spur From Aritar-Rolep-Menla in the State of Sikkim
Package-5
(START OF PEDONG BYPASS TO RISHI BORDER PART-II)

DATE : MARCH-2020	REVISION R1
DESIGNED BY A.AREHMAN	DRAWN BY S.RAWAT
CHECKED BY A.KATARY	APPROVED BY S.Shukla
SCALE:- AS SHOWN	SHEET:- 01 OF 02

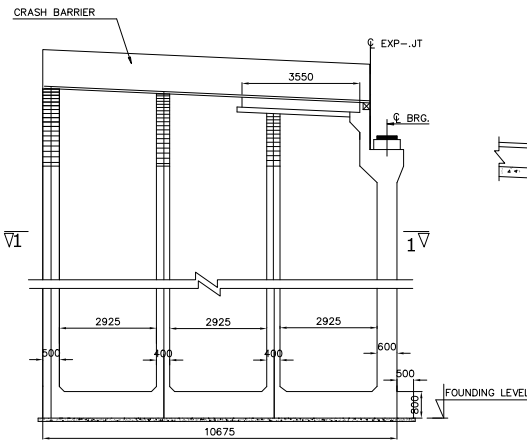
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 83+870 TO 84+045
SPAN = (8X20.0+1X15.0)

DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/83+870/GAD-01

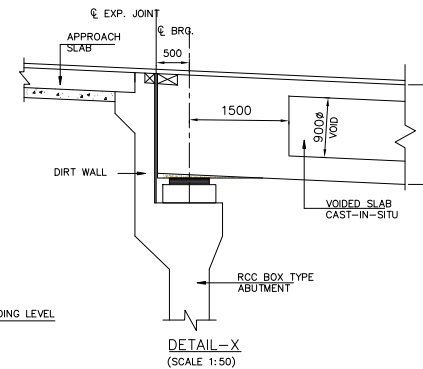
← START OF PEDONG BYPASS



SECTION-1-1
SCALE 1:100



BOX ABUTMENT
SCALE 1:100

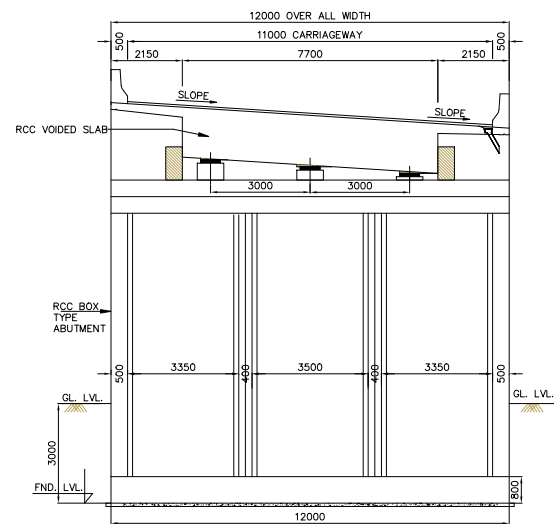


DETAIL-X
(SCALE 1:50)

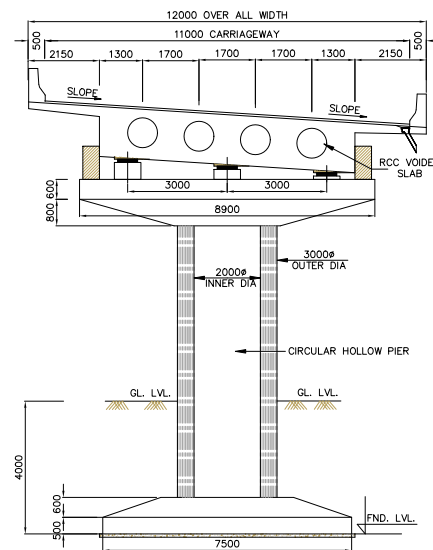
NOTES

RISHI BORDER →

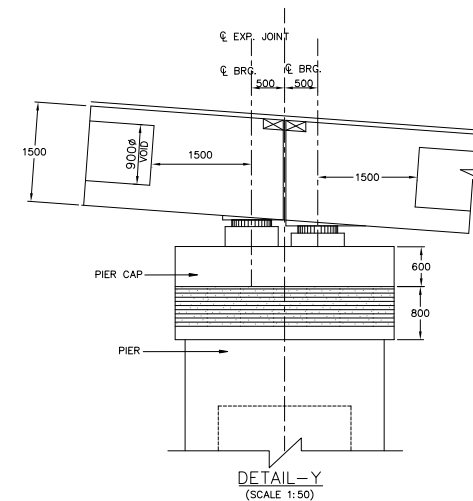
1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.
4. BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R OR 2 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
5. 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
6. TYPE OF BEARING PROPOSED HERE IS POT-PTE 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.
11. SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
12. SAFE BEARING CAPACITY FOR PRELIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m²
13. EXTRA WIDENING SHALL BE PROVIDED AS PER TABLE 6.9 OF IRC:SP:48-1998.



SECTION-A-A
SCALE 1:100



SECTION-B-B
SCALE 1:100







DETAIL-Y
(SCALE 1:50)

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

CLIENT :	S.A. 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, Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh) Phone No- 0120-6148000 Fax-0120-6148090 Email: info@sainfra.com

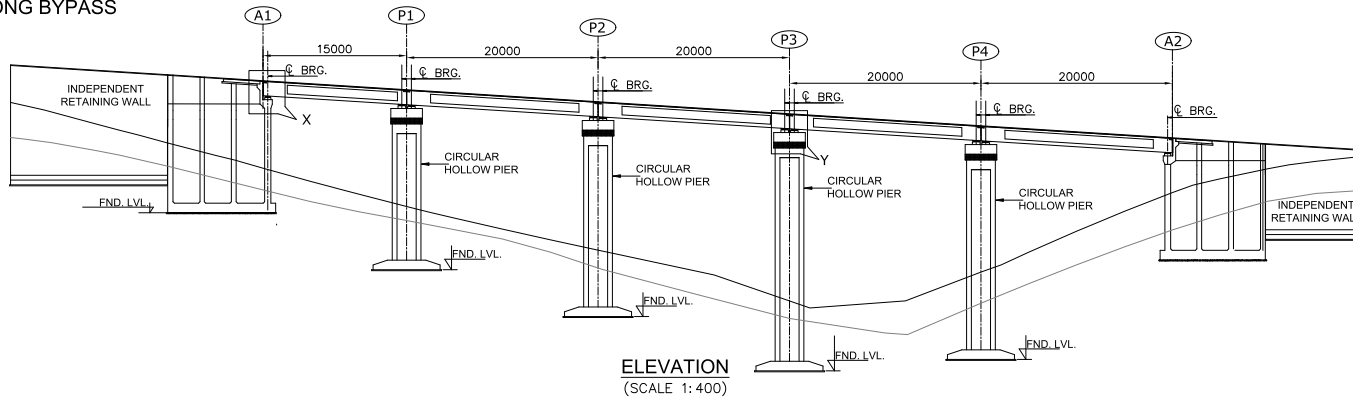
PROJECT :	Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbong- Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong, along with Spur From Aritar-Rolep-Menla in the State of Sikkim Package-5 (START OF PEDONG BYPASS TO RISHI BORDER PART-II)
-----------	--

DATE : MARCH-2020		REVISION R1	
DESIGNED BY  A.REHMAN	DRAWN BY  S.RAWAT	CHECKED BY  A.K.ATARY	APPROVED BY  S.Shukla
SCALE:- AS SHOWN		SHEET:- 02 OF 02	

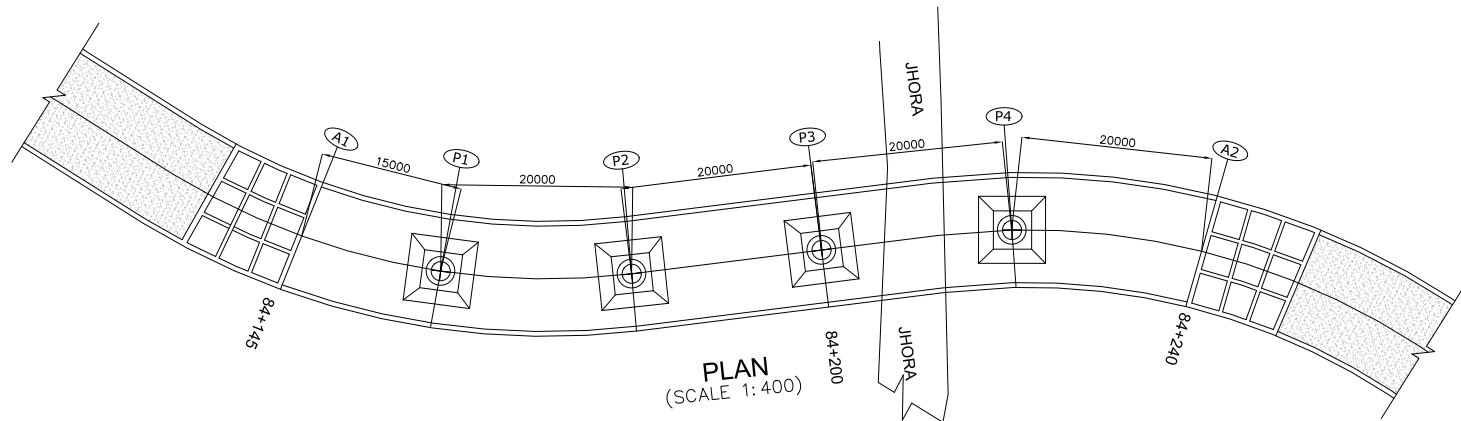
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 63+870 TO 84+045 SPAN = (8X20.0+1X15.0)
DWG. NO. :- SAICPL-SESPLN/HIDC/WB-SKM/83+870/GAD-01

← START OF PEDONG BYPASS

RISHI BORDER →



FORMATION LEVEL	1271.288	1270.192	1269.146	1268.150	1267.204	1266.309
BED LEVEL (CENTER)	1263.216	1257.867	1253.306	1248.001	1251.017	1259.320
BED LEVEL (RIGHT-10.0m)	1260.841	1256.404	1251.440	1246.171	1247.763	1255.418
CHAINAGE	84+145	84+160	84+180	84+200	84+220	84+240



REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

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,
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)
Phone No- 0120-6148000 Fax-0120-6148090
Email: info@sainfra.com

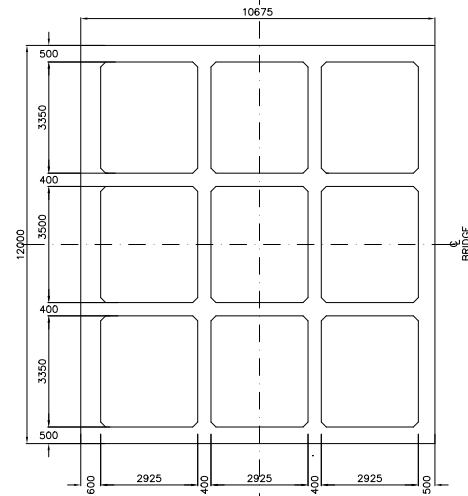
PROJECT : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menia in the State of Sikkim
Package-5
(START OF PEDONG BYPASS TO RISHI BORDER PART-II)

DATE : MARCH-2020	REVISION R1
DESIGNED BY A.AREHMAN	DRAWN BY S.RAWAT
CHECKED BY A.K.AKATARY	APPROVED BY S.Shukla
SCALE:- AS SHOWN	SHEET:- 01 OF 02

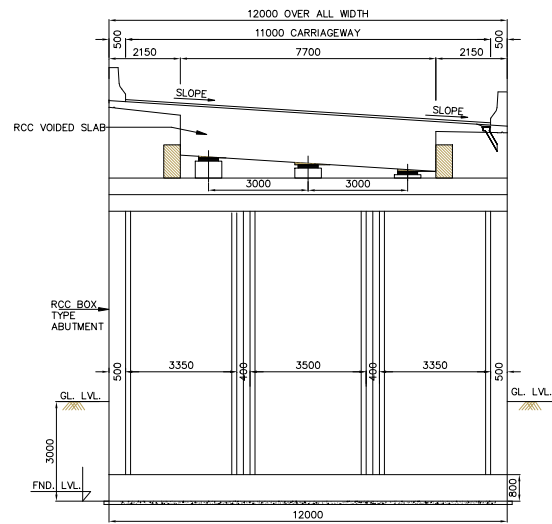
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 84+145 TO 84+240
SPAN = (1X15.0+4X40.0)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/84+145/GAD-01

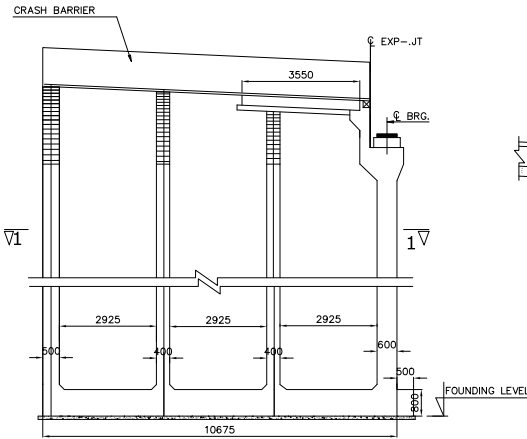
← START OF PEDONG BYPASS



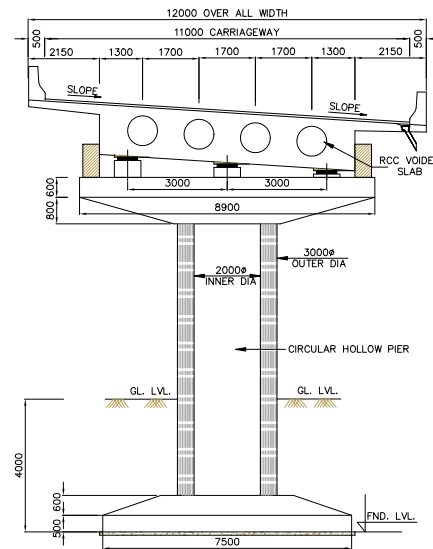
SECTION-1-1
SCALE 1:100



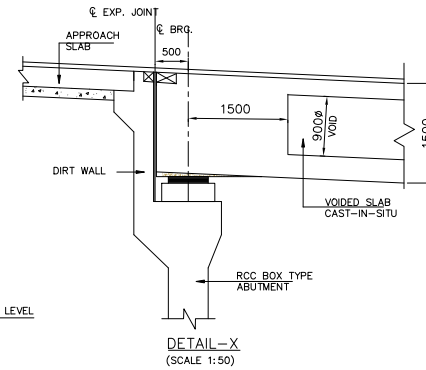
SECTION-A-A
SCALE 1:100



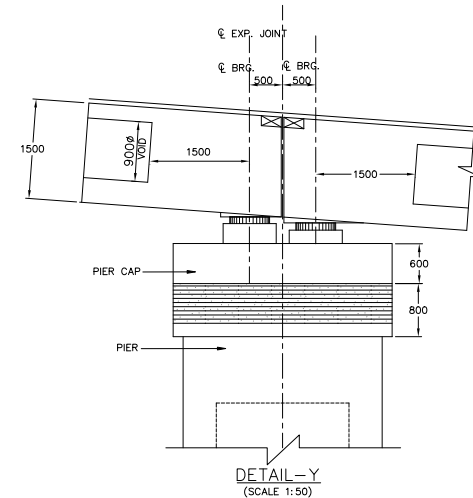
BOX ABUTMENT
SCALE 1:100



SECTION-B-B
SCALE 1:100



DETAIL-X
(SCALE 1:50)



DETAIL-Y
(SCALE 1:50)

NOTES

RISHI BORDER →

1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.
4. BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R OR 2 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
5. 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
6. TYPE OF BEARING PROPOSED HERE IS POT-PITFE 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.
11. SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
12. SAFE BEARING CAPACITY FOR PRELIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m²

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

CLIENT :	S.A. 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, Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh) Phone No- 0120-6148000 Fax-0120-6148090 Email: info@sainfra.com

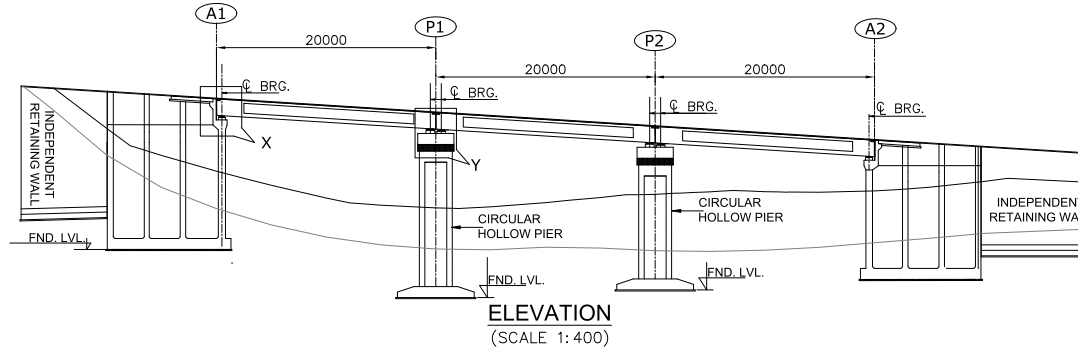
PROJECT :	Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim Package-5 (START OF PEDONG BYPASS TO RISHI BORDER PART-II)
-----------	---

DATE :	MARCH-2020	REVISION	R1
DESIGNED BY	SR	CHECKED BY	AK
DRAWN BY	SRAWAT	APPROVED BY	S.Shukla
SCALE:-	AS SHOWN	SHEET:-	02 OF 02

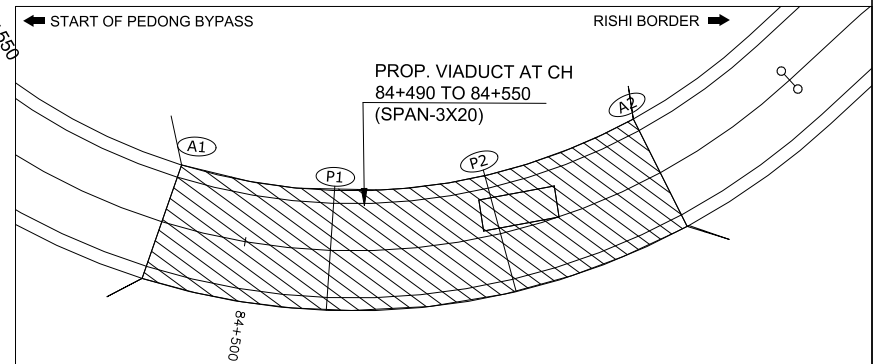
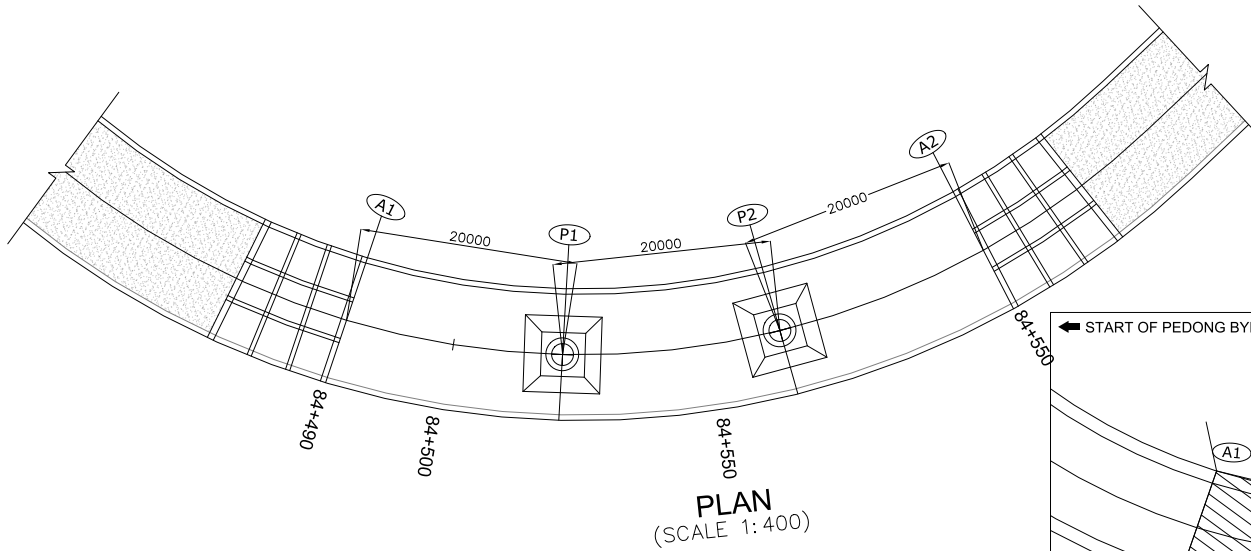
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 64+145 TO 64+240 SPAN = (1X15.0+4X40.0)	DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/84+145/GAD-01
---	--

← START OF PEDONG BYPASS

RISHI BORDER →



FORMATION LEVEL	1258.329	1257.767	1257.205	1256.643
BED LEVEL (CENTER)	1251.737	1248.388	1249.624	1249.938
BED LEVEL (RIGHT-10.0m)	1248.327	1244.640	1244.487	1245.213
CHAINAGE	84+490	84+510	84+530	84+550



REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

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,
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)
Phone No- 0120-6148000 Fax-0120-6148090
Email: info@sainfra.com

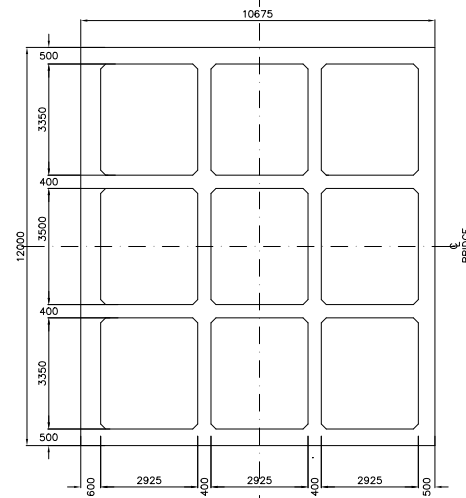
PROJECT : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbong- Kafe-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Korailing-Pakyong along with Spur From Anttar-Rolep-Menta in the State of Sikkim Package-5 (START OF PEDONG BYPASS TO RISHI BORDER PART-II)

DATE : MARCH-2020	REVISION R1
DESIGNED BY A.A. A. REHMAN	DRAWN BY S. RAWAT
CHECKED BY A.K. A.KATARY	APPROVED BY S.S. SHUKLA
SCALE:- AS SHOWN	SHEET:- 01 OF 02

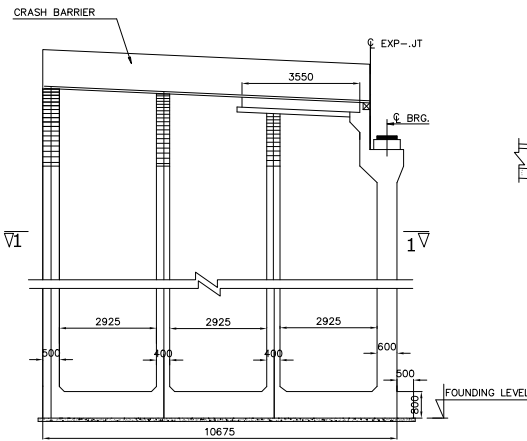
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 84+490 TO 84+550 SPAN = (3X20.0)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/84+490/GAD-01

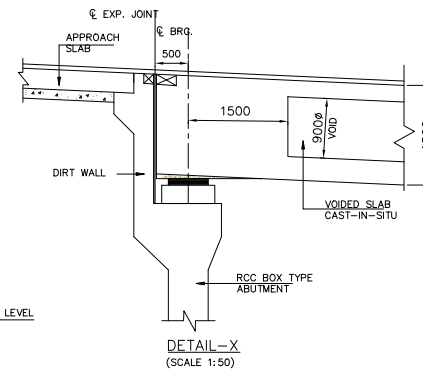
← START OF PEDONG BYPASS



SECTION-1-1
SCALE 1:100



BOX ABUTMENT
SCALE 1:100

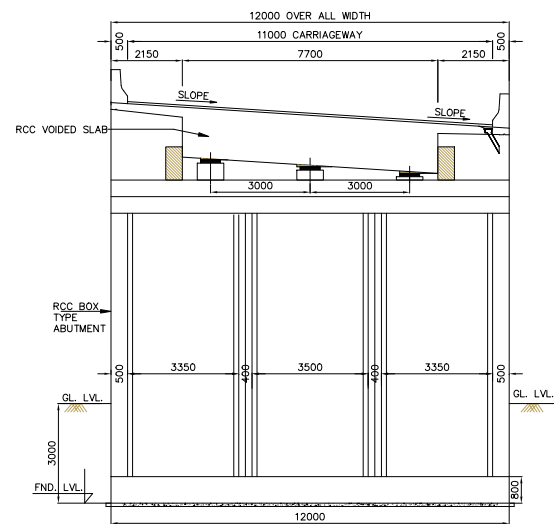


DETAIL-X
(SCALE 1:50)

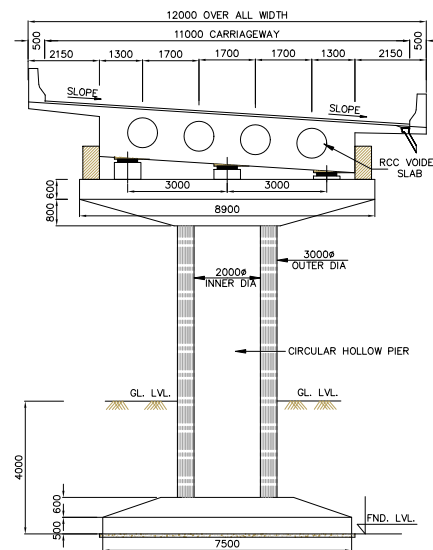
NOTES

RISHI BORDER →

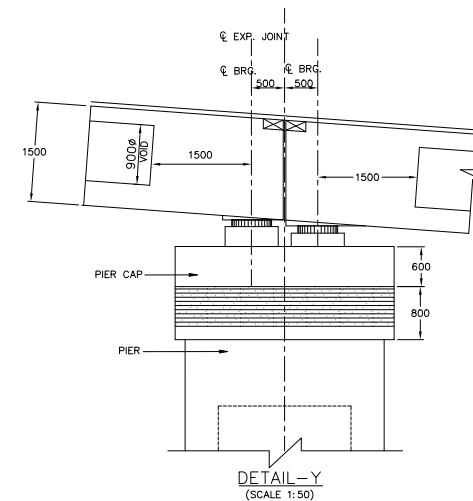
1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.
4. BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R OR 2 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
5. 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
6. TYPE OF BEARING PROPOSED HERE IS POT-PITFE 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.
11. SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
12. SAFE BEARING CAPACITY FOR PRELIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m²



SECTION-A-A
SCALE 1:100



SECTION-B-B
SCALE 1:100







DETAIL-Y
(SCALE 1:50)

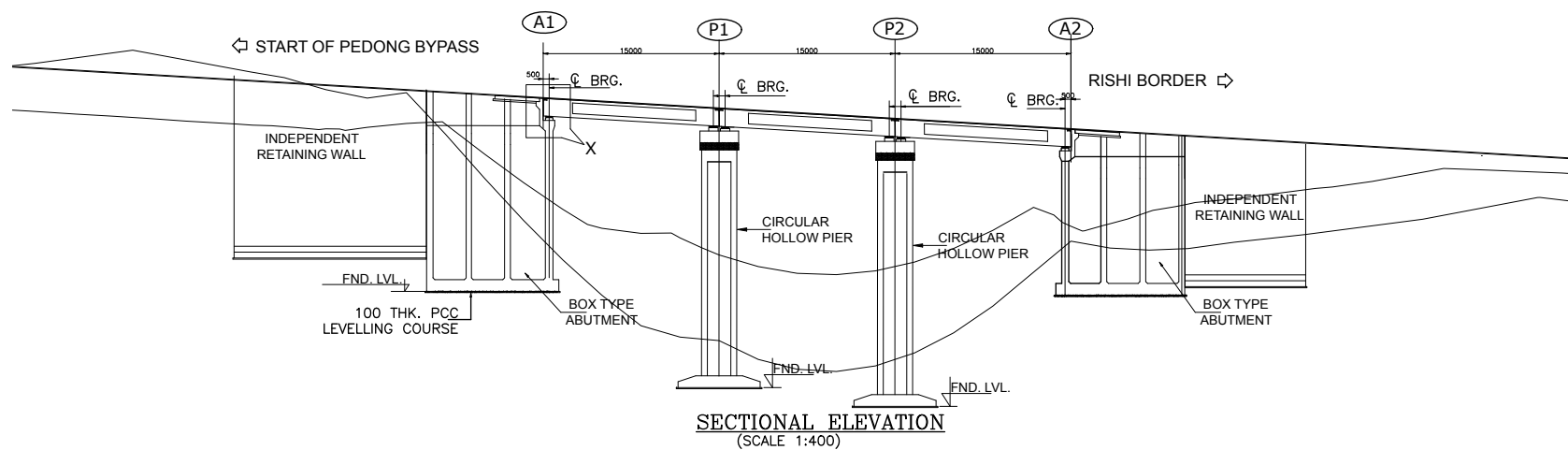
REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

CLIENT :	S.A. INFRASTRUCTURE & 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, Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh) Phone No- 0120-6148000 Fax-0120-6148090 Email: info@sainfra.com

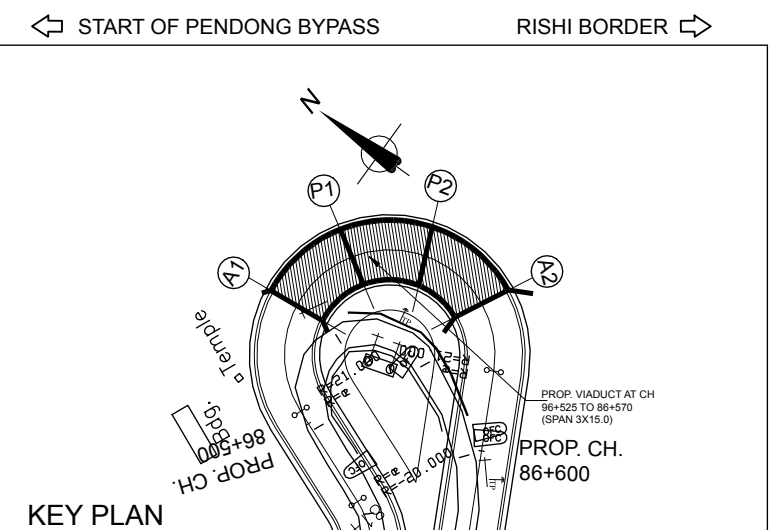
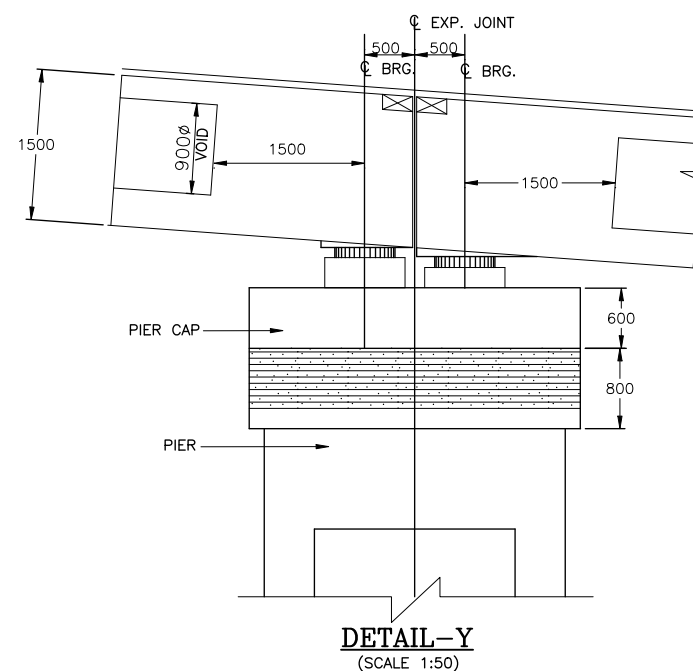
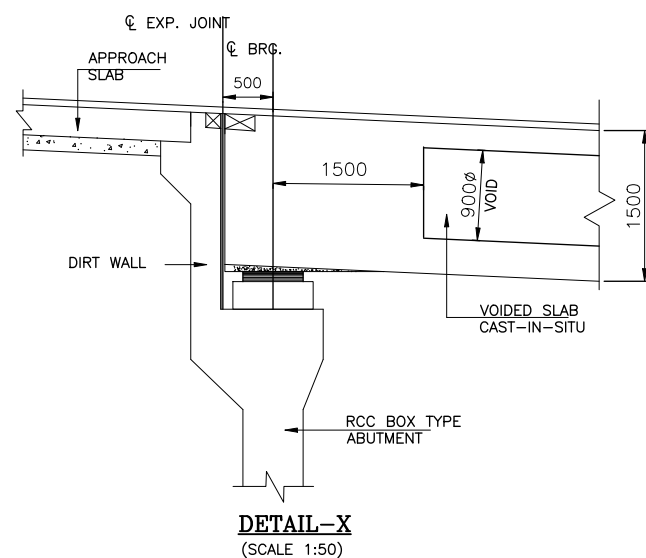
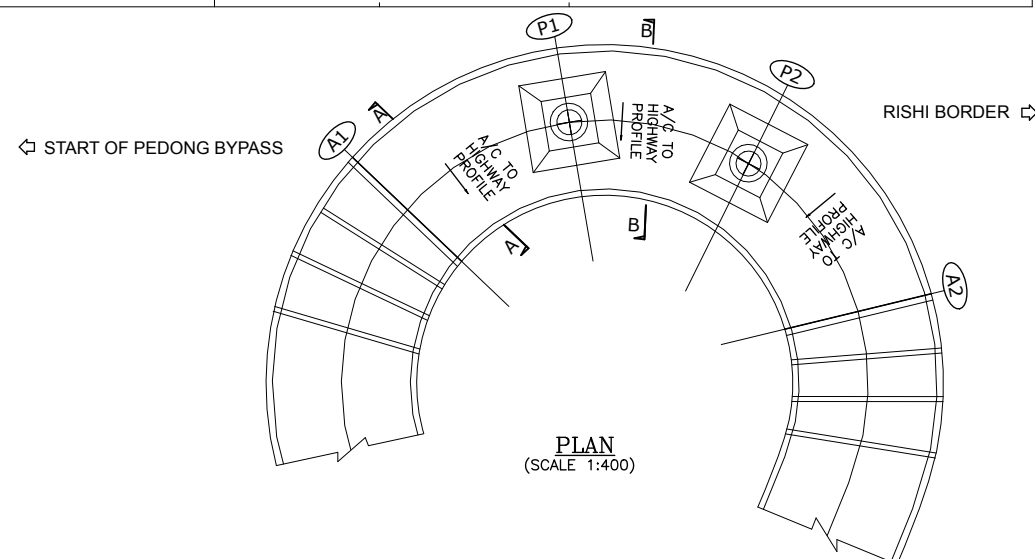
PROJECT :	Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chukhim-Nimbong-Kafer-Bakhim-Agarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Antar-Rolep-Menla in the State of Sikkim Package-5 (START OF PEDONG BYPASS TO RISHI BORDER PART-II)
-----------	--

DATE : MARCH-2020		REVISION R1	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
 A.REHMAN	 S.RAWAT	 A.K.ATARY	 S.SHUKLA
SCALE:- AS SHOWN		SHEET:- 02 OF 02	

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 64+490 TO 64+550 SPAN = (3X20.0)
DWG. NO. :- SAICPL-SESPLN/HIDC-WB-SKM/84+490/GAD-01



FORMATION LEVEL	1172.494	1171.603	1170.721	1169.840
BED LEVEL (CENTER)	1164.509	1159.076	1138.514	1161.522
BED LEVEL (RIGHT-10.0m)	1160.628	1151.779	1150.795	1160.752
CHAINAGE	86+525	86+540	86+555	86+570



NOTES

- ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
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- 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 OR 2 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
- GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
 - SUPERSTRUCTURE(PSC) ----- M45
 - RCC SUBSTRUCTURE & FOUNDATION --- M35
 - RCC RAILING -----M30
 - RCC CRASH BARRIER ----- M40
 - APPROACH SLAB ----- M30
 - 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.
- SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
- SAFE BEARING CAPACITY FOR PRELIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m²
- EXTRA WIDENING SHALL BE PROVIDED AS PER TABLE 6.9 OF IRC:SP:48-1998.

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	Feb 2020	Due to Gradient Change	
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	

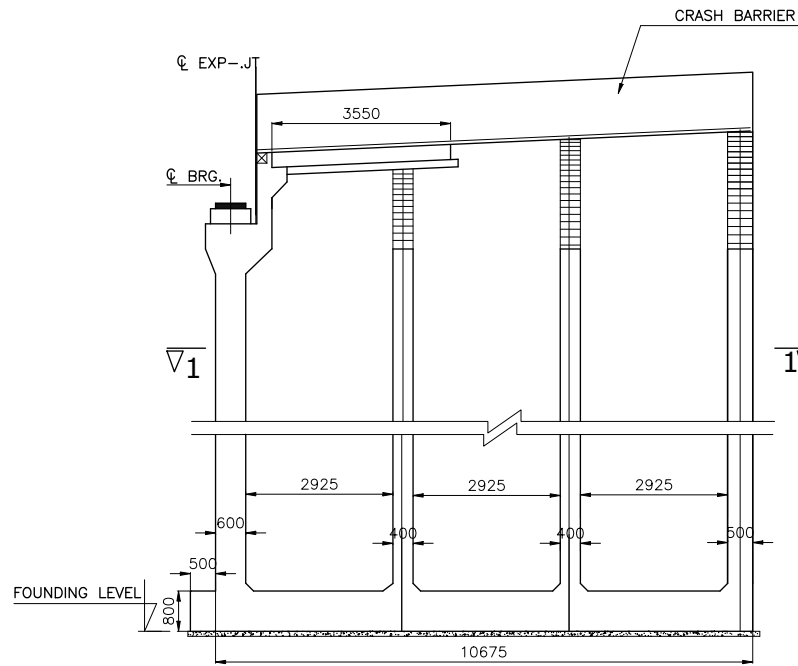
Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)	Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. In Association with Specialized Engineering Service Pvt. Ltd. 1101A, 11th Floor, Tower A-II, Corporate Park, Plot No. 7A/1, Sector-142,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

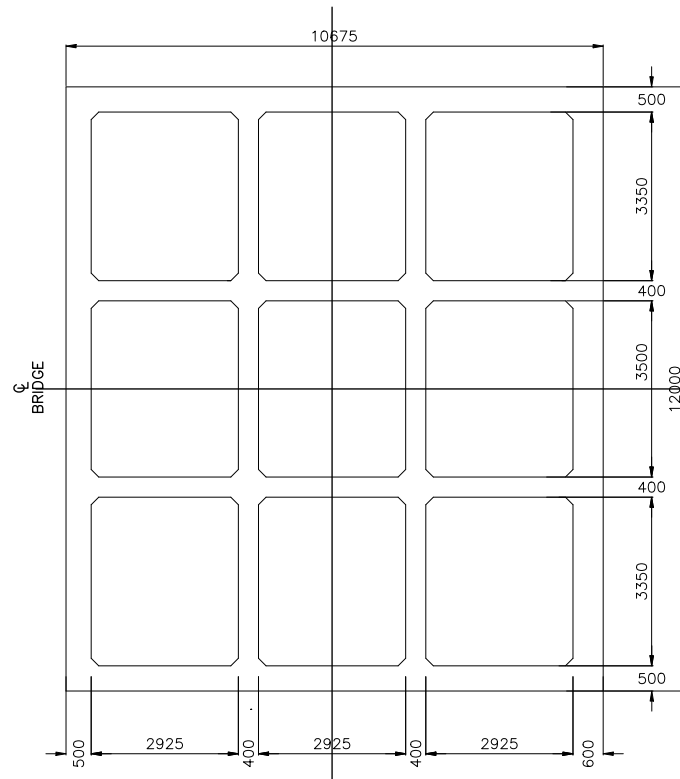
Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Antar-Rolep-Menia in the State of Sikkim

PACKAGE - 5 START OF PEDONG BYPASS TO RISHI BORDER PART-II

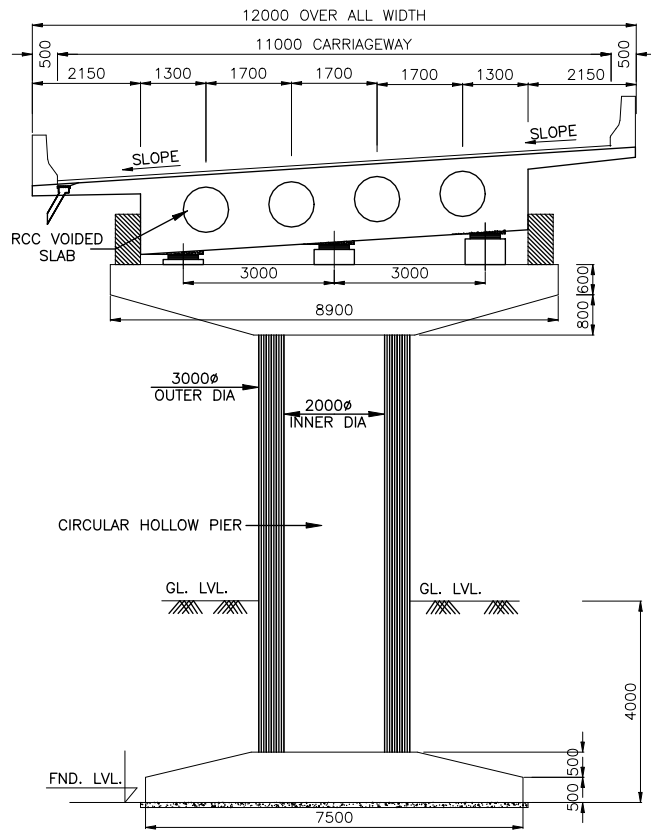
DATE : MARCH-2020	Revision R1	GENERAL ARRANGEMENT DRAWING
DESIGNED BY	DRAWN BY	CHECKED BY
A. REHMAN	A. SEN	A. K. ATRAY
APPROVED BY	S. Shukla	
SCALE:- AS SHOWN	SHEET:- 01 OF 02	Dwg. No. :-
		SAICPL-SESPL/NHIDC/WB-SKM/86+525/GAD-01



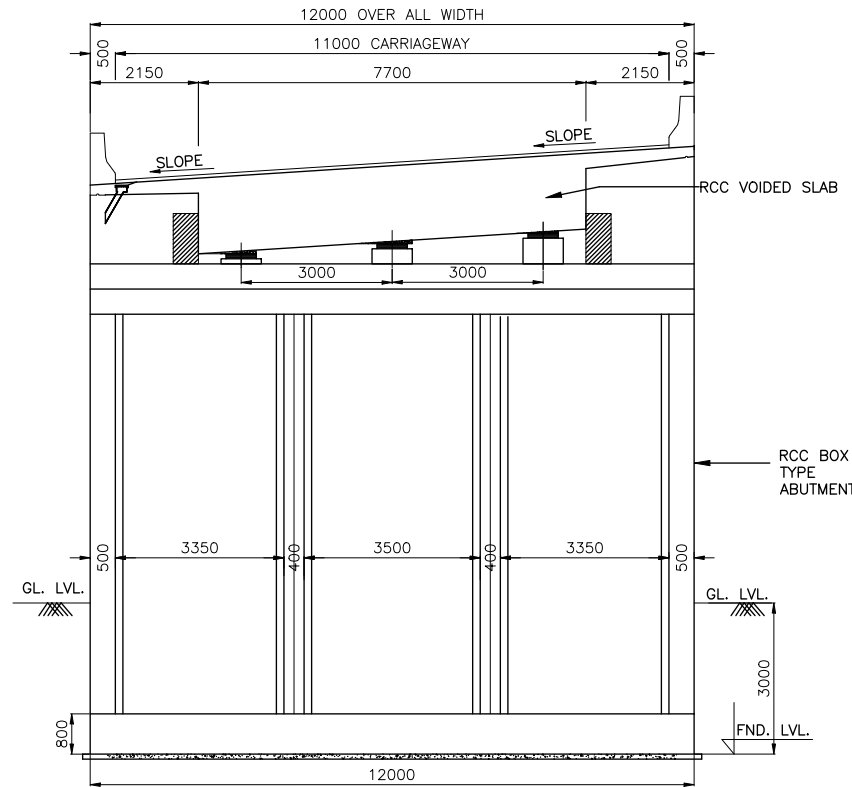
BOX ABUTMENT
SCALE 1:100



SECTION-1-1
SCALE 1:100



SECTION-B-B
SCALE 1:100



SECTION-A-A
SCALE 1:100

NOTES

1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR OTHER NOTES AND SECTION REFER SHEET 2 OF 2 OF THIS DRAWING.

PATH: D:\D drive\VALEKE SEN\SJKIM PROJECT AUGUST- 2016\SJKIM -2020\86+525 TO 86+570.dwg

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	Feb 2020	Due to Gradient Change	
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	

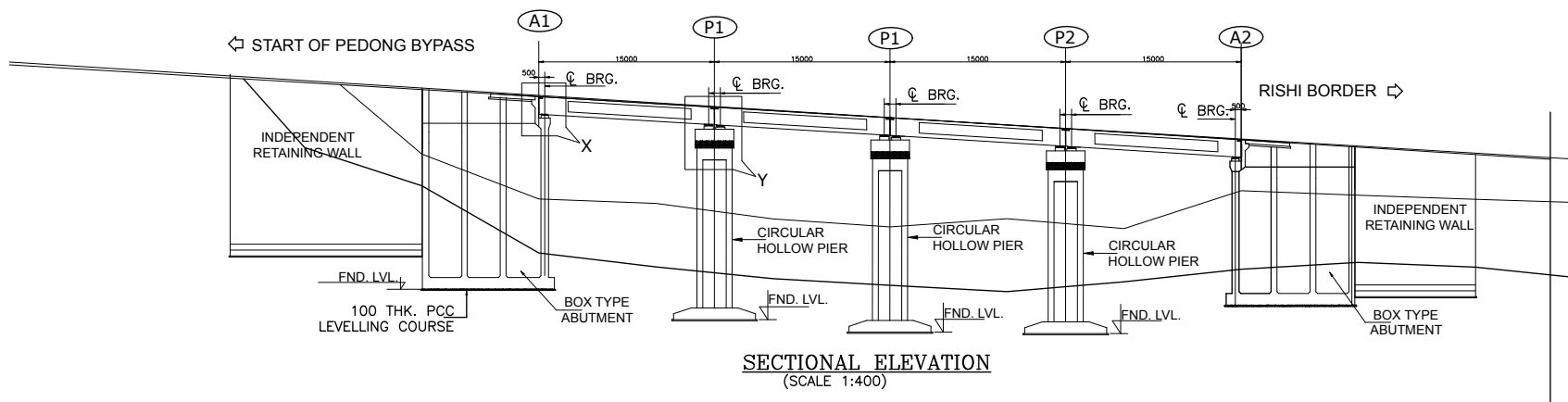
Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)	Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. In Association with Specialized Engineering Service Pvt. Ltd. 1101A, 11th Floor, Tower A-II, Corporate Park, Plot No. 7A/1, Sector-142, 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 Aritar-Rolep-Menla in the State of Sikkim PACKAGE - 5 START OF PEDONG BYPASS TO RISHI BORDER PART-II

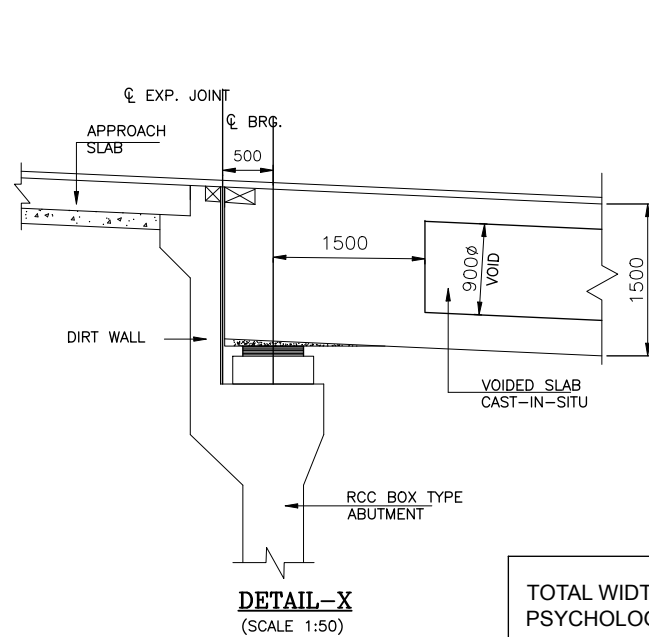
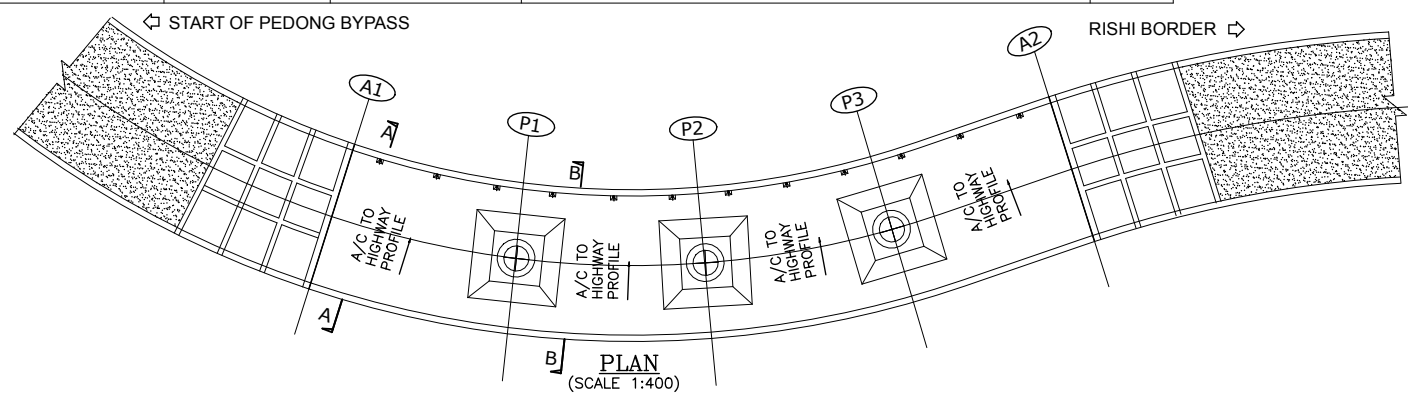
DATE : MARCH-2020	Revision A
DESIGNED BY A.AREHMAN	DRAWN BY A.SEN
CHECKED BY A.K.ATRAY	APPROVED BY S.Shukla
SCALE:- AS SHOWN	SHEET:- 02 OF 02

GENERAL ARRANGEMENT DRAWING GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 86+525 TO 86+570 SPAN = (3X15.0) PACKAGE - V C	Dwg. No. :- SAICPL-SESPL/NHIDC/WB-SKM/86+525/GAD-01
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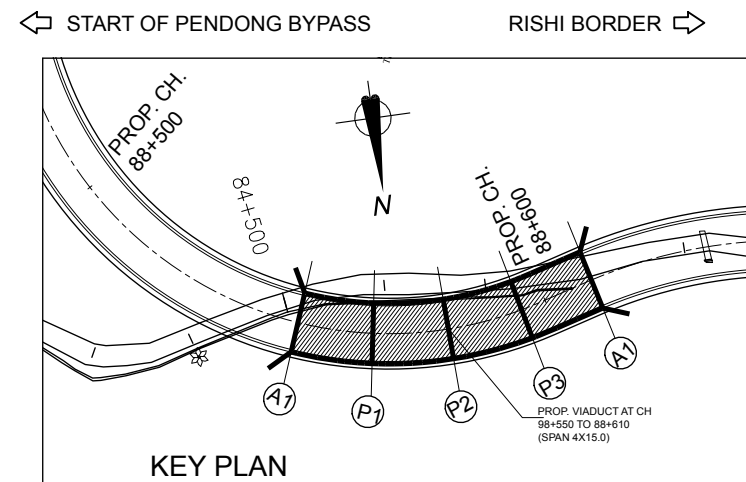
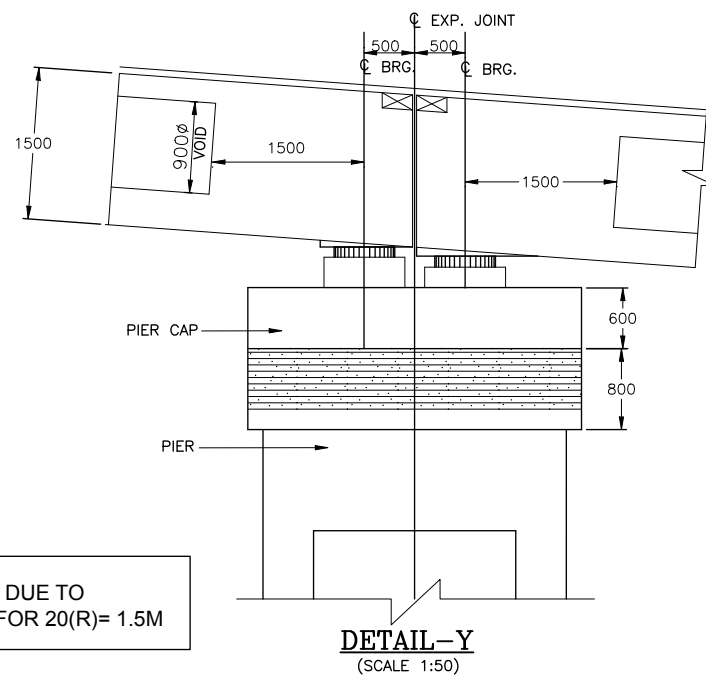
PATH: D:\drive\ALOK SEN\SJKIM PROJECT AUGUST- 2016\SJKIM -2020\88+550 TO 88+610.dwg



FORMATION LEVEL	1056.157	1055.857	1054.351	1054.050	1052.540
BED LEVEL (CENTER)	1047.315	1046.275	1044.930	1045.209	1048.020
BED LEVEL (RIGHT-10.0m)	1042.810	1041.117	1040.047	1039.527	1041.420
CHAINAGE	88+550	88+565	88+580	88+595	88+610



TOTAL WIDTH IS INCREASING DUE TO PSYCHOLOGICAL WIDENING FOR 20(R)= 1.5M



NOTES

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- BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R OR 2 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
- GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
 - SUPERSTRUCTURE(PSC) ----- M45
 - RCC SUBSTRUCTURE & FOUNDATION ---- M35
 - RCC RAILING -----M30
 - RCC CRASH BARRIER ----- M40
 - APPROACH SLAB ----- M30
 - 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.
- SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
- SAFE BEARING CAPACITY FOR PRILIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m²
- EXTRA WIDENING SHALL BE PROVIDED AS PER TABLE 6.9 OF IRC:SP:48-1998.

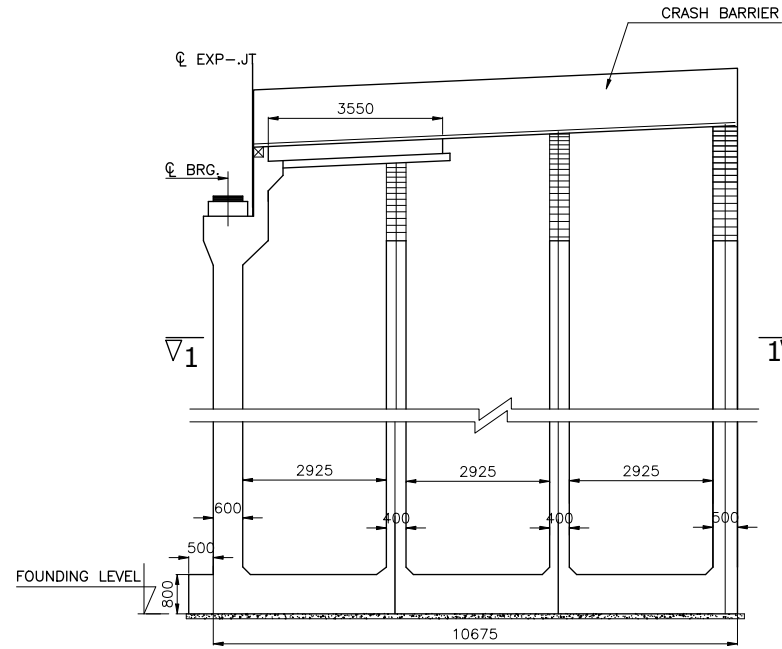
REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	Feb 2020	Due to Gradient Change	
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	

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.
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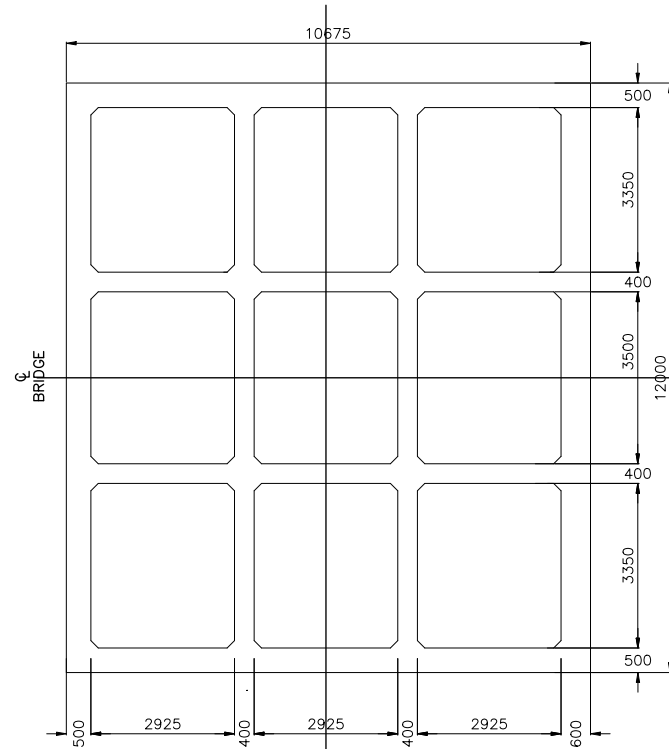
Project :
Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim-Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and From Rhenok-Rorathang-Pakyong along with Spur From Aritar-Rolep-Menla in the State of Sikkim
PACKAGE - 5 START OF PEDONG BYPASS TO RISHI BORDER PART-II

DATE : MARCH-2020	Revision R1	GENERAL ARRANGEMENT DRAWING
DESIGNED BY	DRAWN BY	CHECKED BY
A.A. REHMAN	A.SEN	A.K.ATRAY
APPROVED BY	S.S. SHUKLA	GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 88+550 TO 88+610 SPAN = (4-15.0) PACKAGE - V C
SCALE:- AS SHOWN	SHEET:- 01 OF 02	Dwg. No. :- SAICPL-SESPL/NHIDC/WB-SKM/88+550/GAD-01

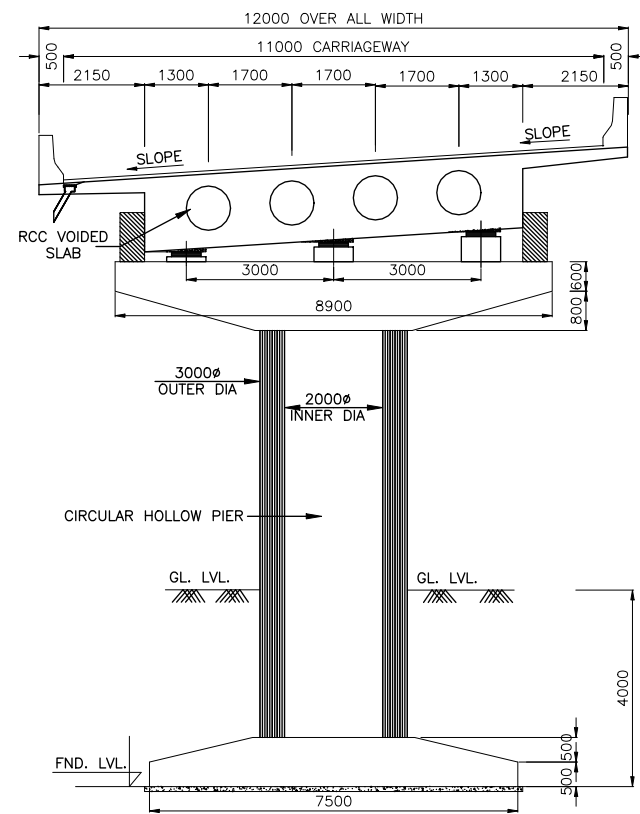
DATE: 06/03/2020 - 4:48pm
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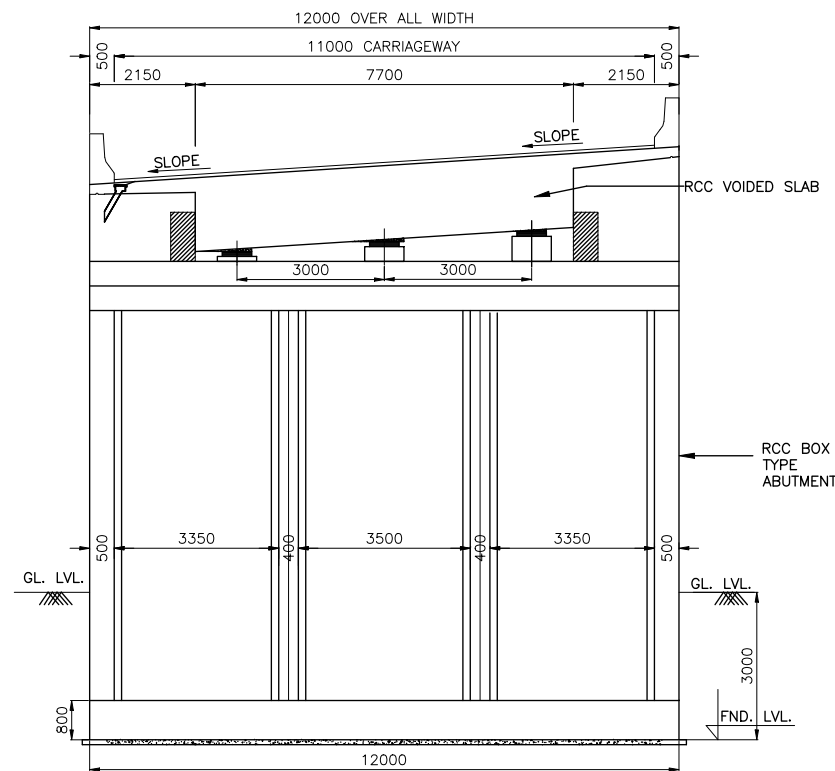
BOX ABUTMENT
SCALE 1:100



SECTION-1-1
SCALE 1:100



SECTION-B-B
SCALE 1:100



SECTION-A-A
SCALE 1:100

NOTES

1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
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3. FOR OTHER NOTES AND SECTION REFER SHEET 2 OF 2 OF THIS DRAWING.





REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	Feb 2020	Due to Gradient Change	
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	

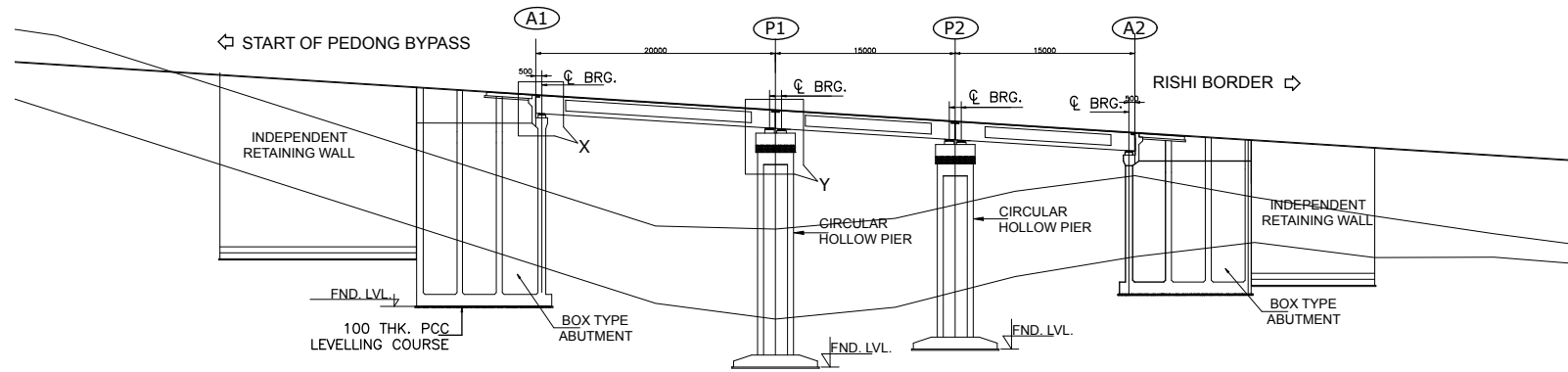
Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)	Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. In Association with Specialized Engineering Service Pvt. Ltd. 1101A, 11th Floor, Tower A-II, Corporate Park, Plot No. 7A/1, Sector-142,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

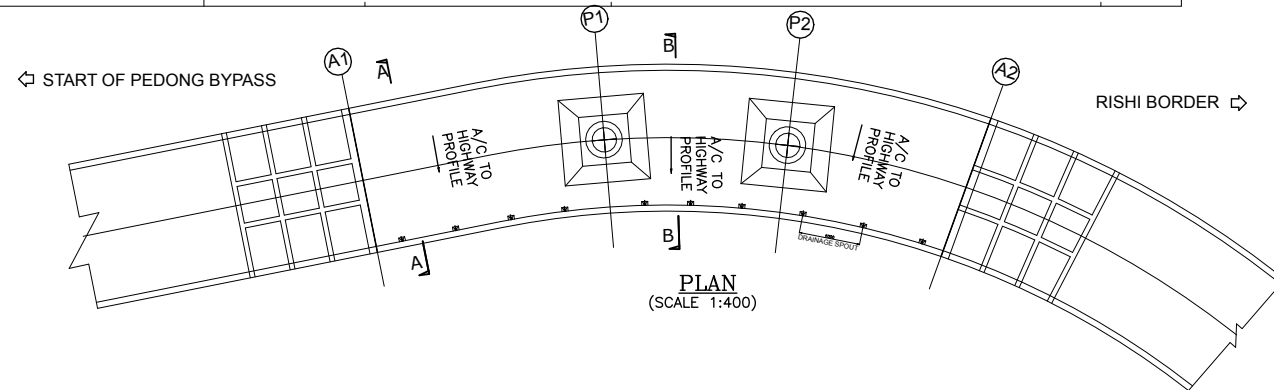
PACKAGE - 5 START OF PEDONG BYPASS TO RISHI BORDER PART-II

DATE : MARCH-2020		Revision		A		GENERAL ARRANGEMENT DRAWING	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY		GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 88+550 TO 88+610 SPAN = (4-15.0) PACKAGE - V C		
 A.REHMAN	 A.SEN	 A.K.ATRAY	 S.Shukla				
SCALE:- AS SHOWN		SHEET:- 02 OF 02		Dwg. No. :- SAICPL-SESPL/NHIDC/WB-SKM/88+550/GAD-01			

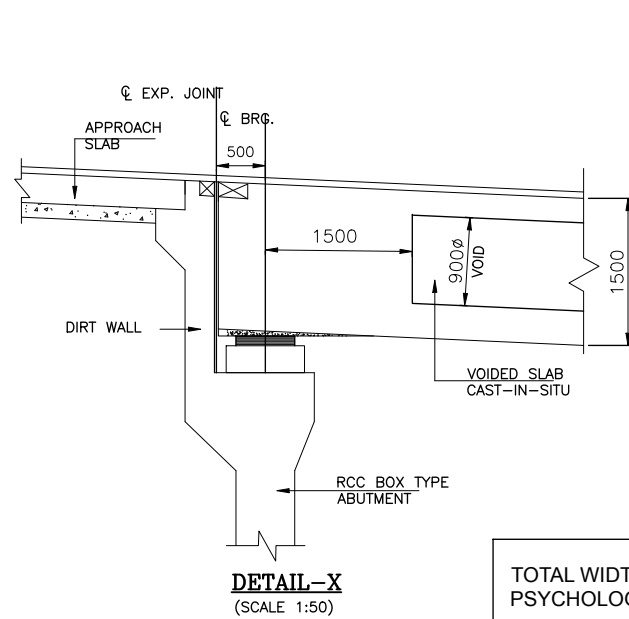


SECTIONAL ELEVATION
(SCALE 1:400)

FORMATION LEVEL	806.595	805.333	804.386	803.440
BED LEVEL (CENTER)	789.821	795.367	297.393	799.821
BED LEVEL (RIGHT-10.0m)	792.361	787.806	790.126	793.066
CHAINAGE	92+630	92+650	92+665	927+680

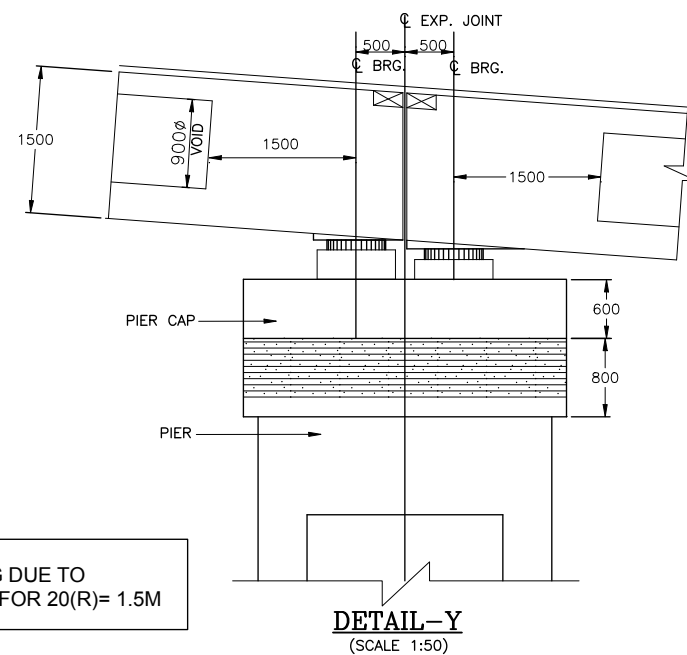


PLAN
(SCALE 1:400)



DETAIL-X
(SCALE 1:50)

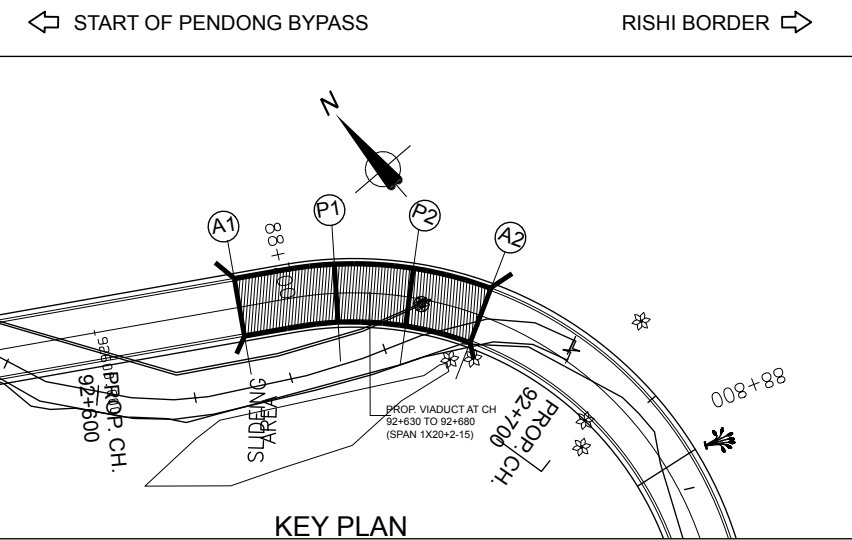
TOTAL WIDTH IS INCREASING DUE TO PSYCHOLOGICAL WIDENING FOR 20(R)= 1.5M



DETAIL-Y
(SCALE 1:50)

NOTES

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 - RCC SUBSTRUCTURE & FOUNDATION ---- M35
 - RCC RAILING -----M30
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 - APPROACH SLAB ----- M30
 - PEDESTAL ----- M40
- TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
- SINGLE STRIP SEAL EXPANSION JOINT IS USED.
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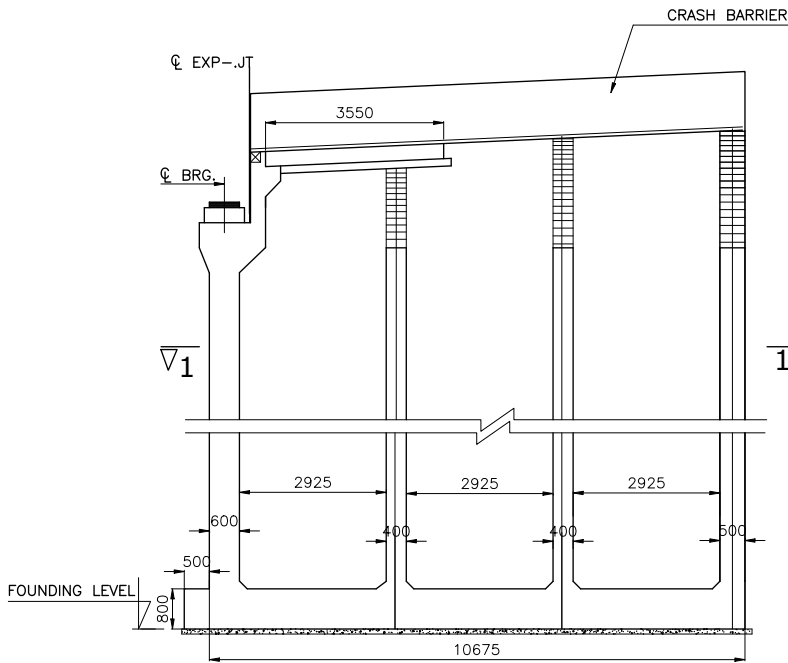
KEY PLAN

DATE: 06/03/2020 - 4:53pm
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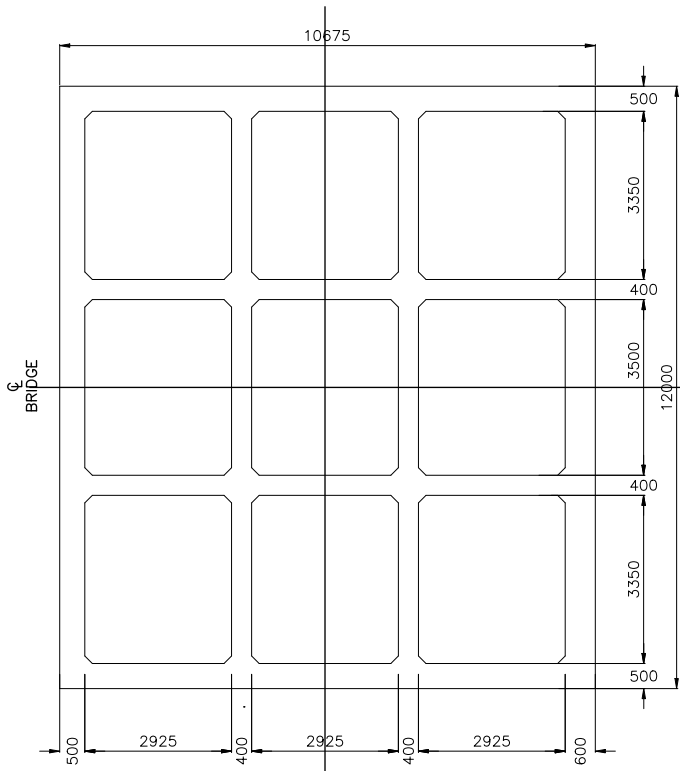
REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	Feb 2020	Due to Gradient Change	
R0	Sep 2017	Final Feasibility Report	
R0	Nov 2016	Draft Feasibility Report	
R0	Dec 2014	Linear Plan	

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)	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
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.	PACKAGE - 5 START OF PEDONG BYPASS TO RISHI BORDER PART-II

DATE : MARCH-2020	Revision R1	GENERAL ARRANGEMENT DRAWING
DESIGNED BY A.AREHMAN	DRAWN BY A.SEN	CHECKED BY A.K.ATRAY
APPROVED BY S.Shukla	SCALE:- AS SHOWN	SHEET:- 01 OF 02
Dwg. No. :-		SAICPL-SESPL/NHIDC/WB-SKM/92+630/GAD-01



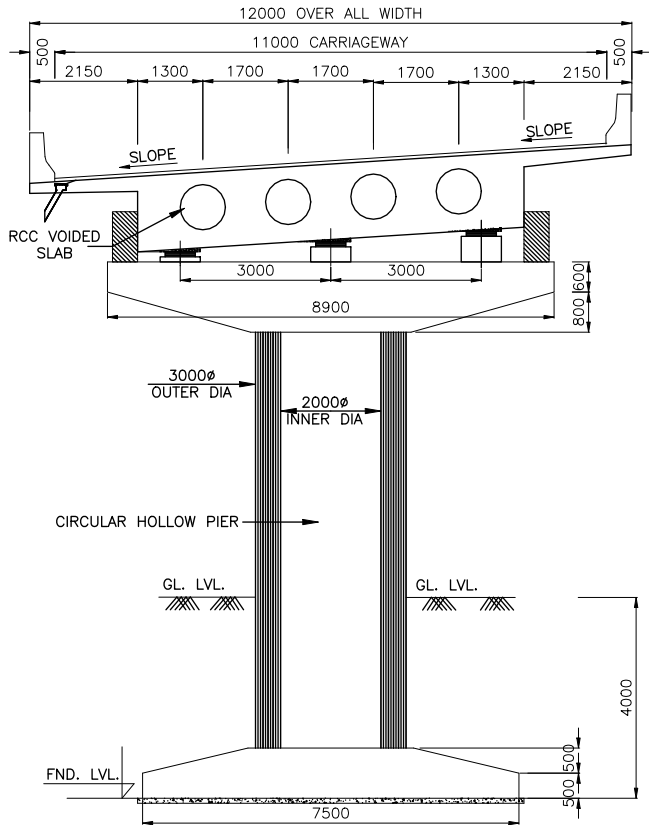
BOX ABUTMENT
SCALE 1:100



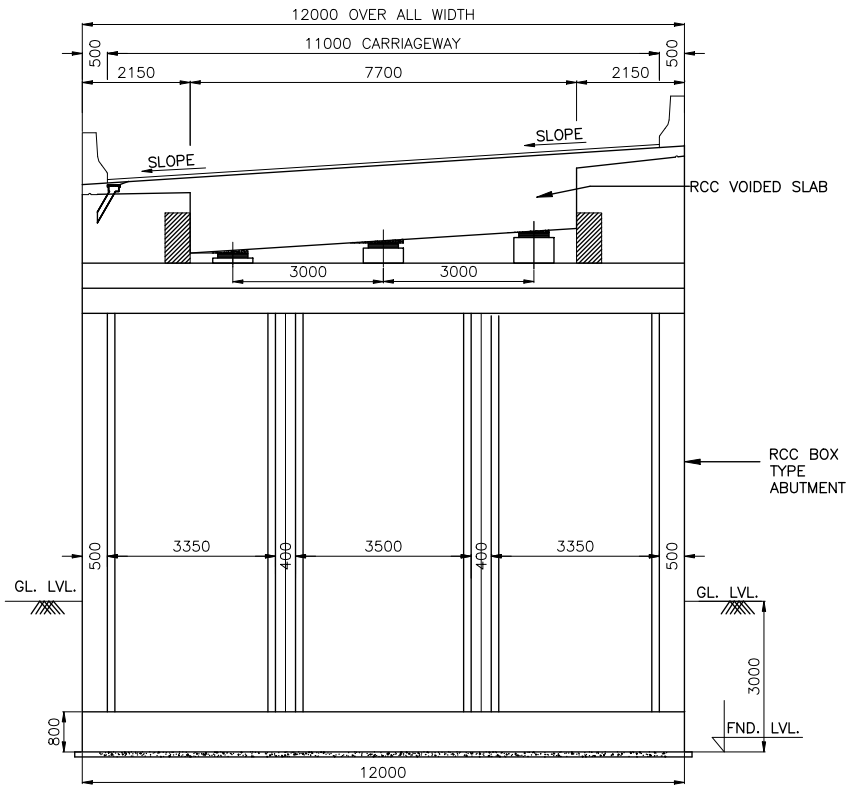
SECTION-1-1
SCALE 1:100

NOTES

1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
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SECTION-B-B
SCALE 1:100



SECTION-A-A
SCALE 1:100

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	Feb 2020	Due to Gradient Change	
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 Aritar-Rolep-Menla in the State of Sikkim

PACKAGE - 5 START OF PEDONG BYPASS TO RISHI BORDER PART-II

DATE : MARCH-2020	Revision	A
DESIGNED BY A.AREHMAN	DRAWN BY A.SEN	CHECKED BY A.K.ATRAY
		APPROVED BY S.Shukla

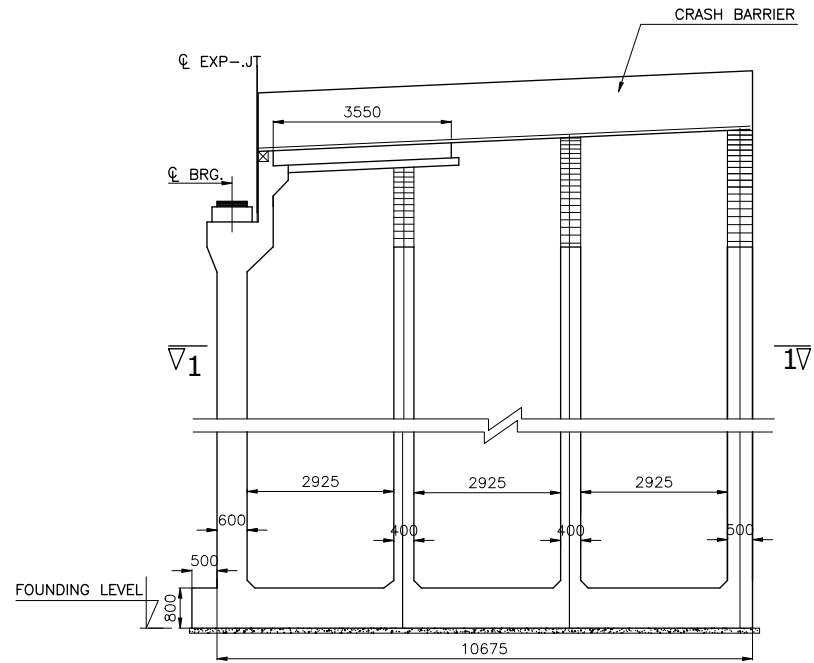
SCALE:- AS SHOWN

SHEET:- 02 OF 02

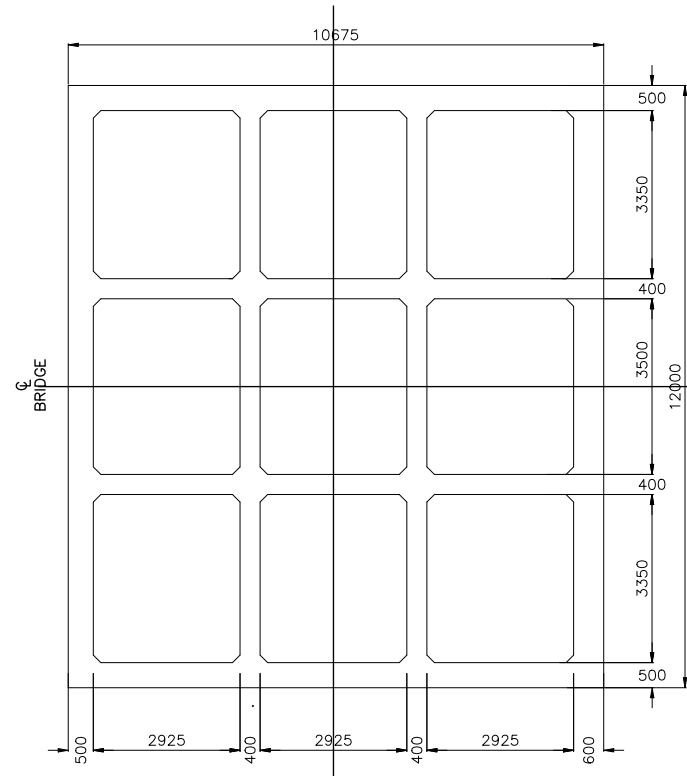
GENERAL ARRANGEMENT DRAWING
OF VIADUCT AT CH- 92+630 TO 92+680
SPAN = (1X20+2-15.0)
PACKAGE - V C

Dwg. No. :-
SAICPL-SESPL/NHIDC/WB-SKM/92+630/GAD-01

DATE: 06/03/2020 - 4:58pm
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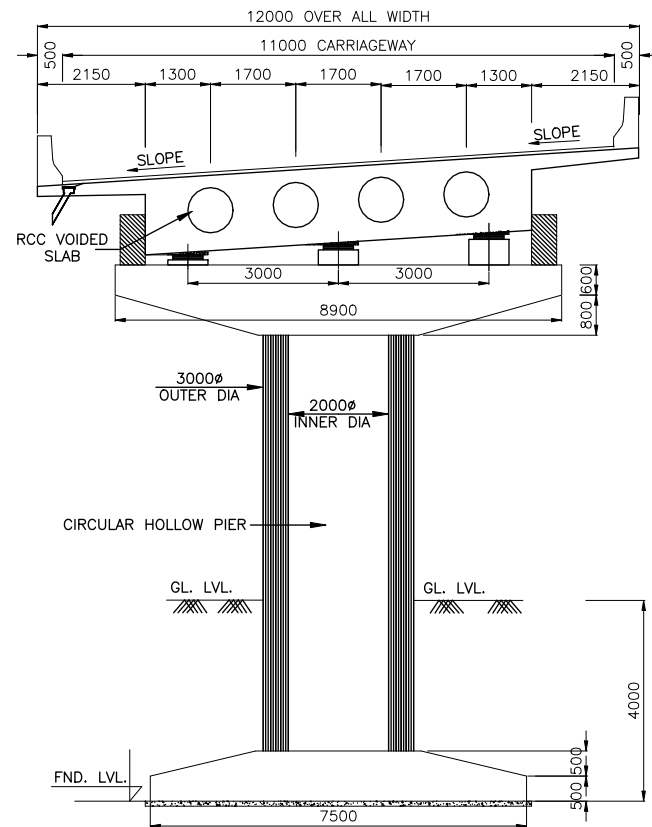
BOX ABUTMENT
SCALE 1:100



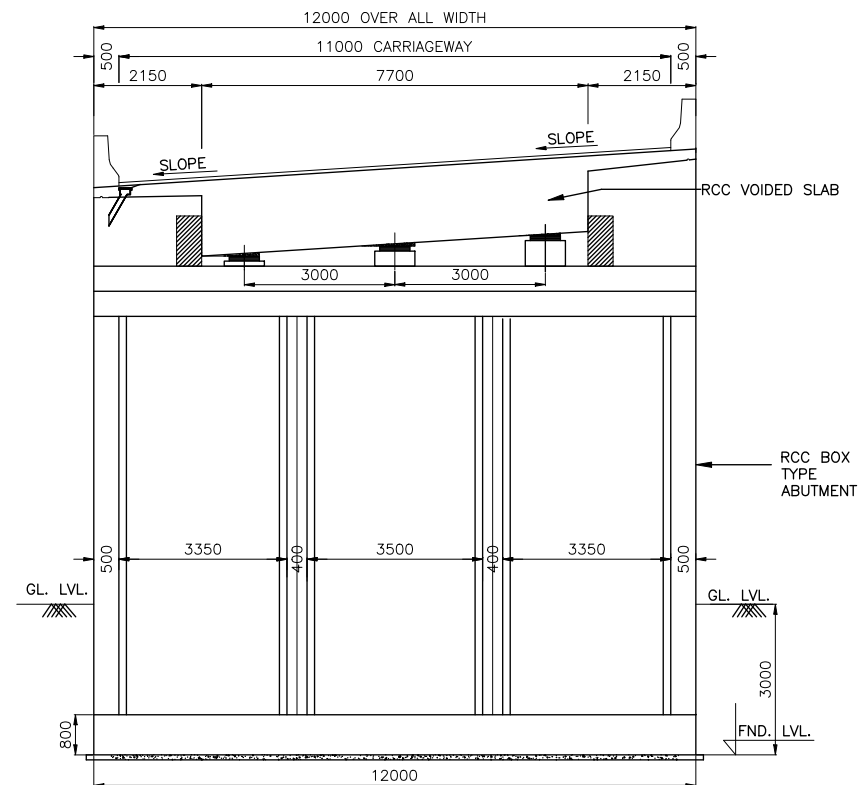
SECTION-1-1
SCALE 1:100

NOTES

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SECTION-B-B
SCALE 1:100







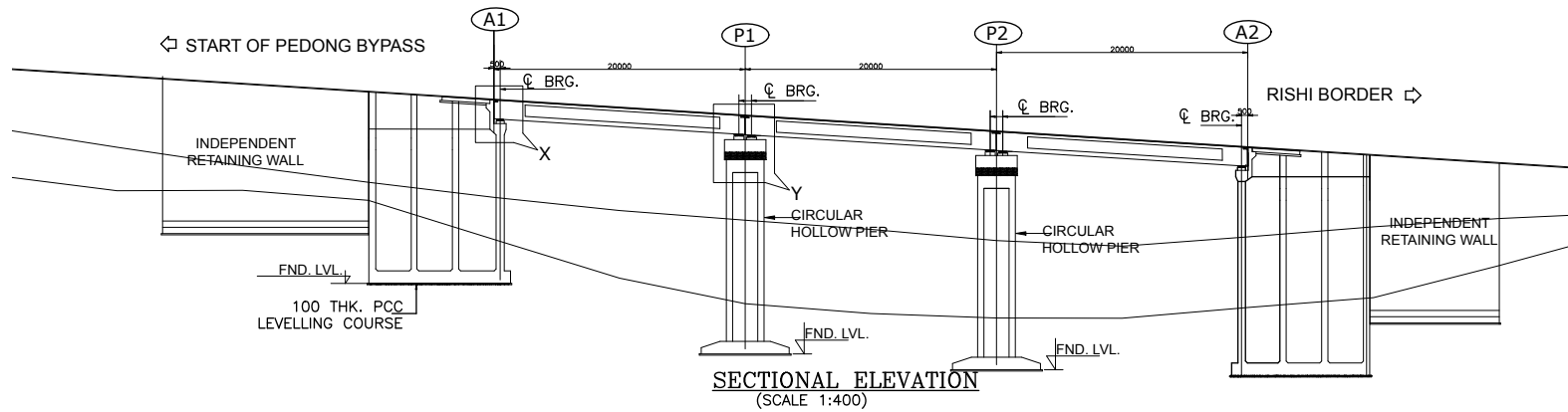
SECTION-A-A
SCALE 1:100

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	Feb 2020	Due to Gradient Change	
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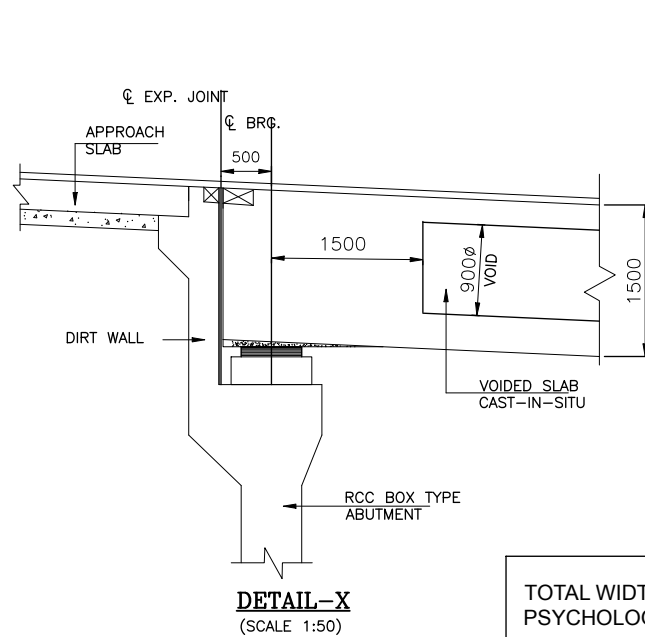
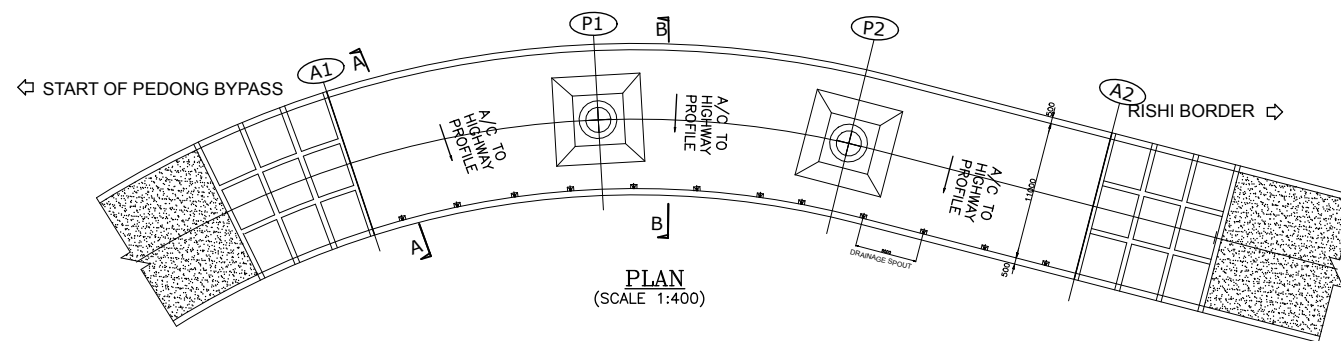
Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (Ministry of Road Transport & Highways)	Consultant : SA INFRASTRUCTURE CONSULTANTS PVT. LTD. In Association with Specialized Engineering Service Pvt. Ltd. 1101A, 11th Floor, Tower A-II, Corporate Park, Plot No. 7A/1, Sector-142, Noida 201301, Uttar Pradesh.
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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 Arilar-Rolep-Menla in the State of Sikkim	PACKAGE - 5 START OF PEDONG BYPASS TO RISHI BORDER PART-II
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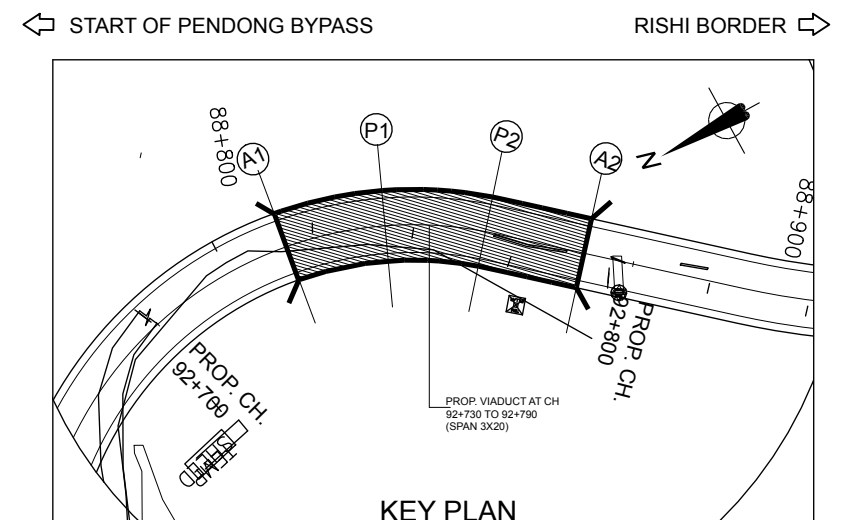
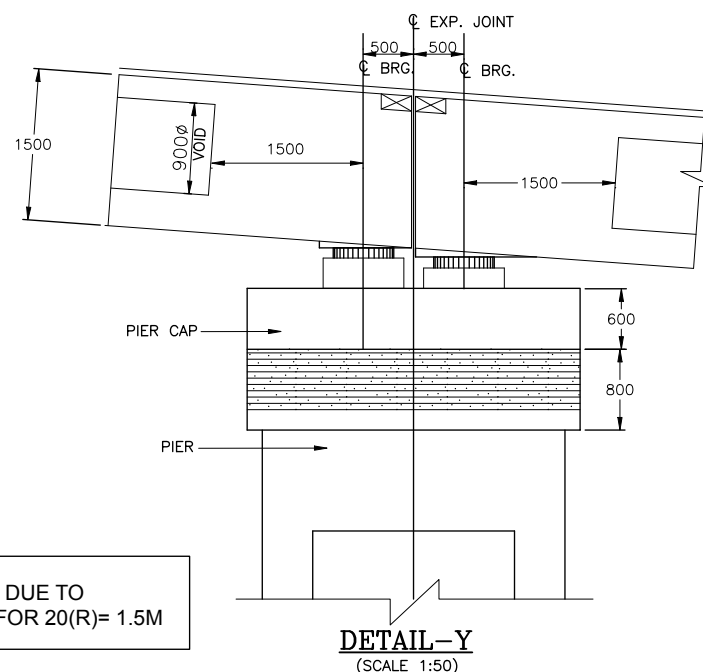
DATE : MARCH-2020		Revision A		GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 92+730 TO 92+790 SPAN = (3X20.0)
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	
 A. REHMAN	 A. SEN	 A.K. ATRAY	 S. Shukla	
SCALE:- AS SHOWN		SHEET:- 02 OF 02		Dwg. No. :- SAICPL-SESPL/NHIDC/WB-SKM/92+730/GAD-01



FORMATION LEVEL	800.284	799.022	797.760	796.498
BED LEVEL (CENTER)	792.464	790.545	789.023	789.371
BED LEVEL (RIGHT-10.0m)	789.113	783.994	782.855	783.693
CHAINAGE	927+30	92+750	92+770	927+90



TOTAL WIDTH IS INCREASING DUE TO PSYCHOLOGICAL WIDENING FOR 20(R)= 1.5M



NOTES

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- GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
 - SUPERSTRUCTURE(PSC) ----- M45
 - RCC SUBSTRUCTURE & FOUNDATION --- M35
 - RCC RAILING -----M30
 - RCC CRASH BARRIER ----- M40
 - APPROACH SLAB ----- M30
 - 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.
- SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
- SAFE BEARING CAPACITY FOR PRILIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m²
- EXTRA WIDENING SHALL BE PROVIDED AS PER TABLE 6.9 OF IRC:SP:48-1998.

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	Feb 2020	Due to Gradient Change	
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 Aritar-Rolep-Menla in the State of Sikkim

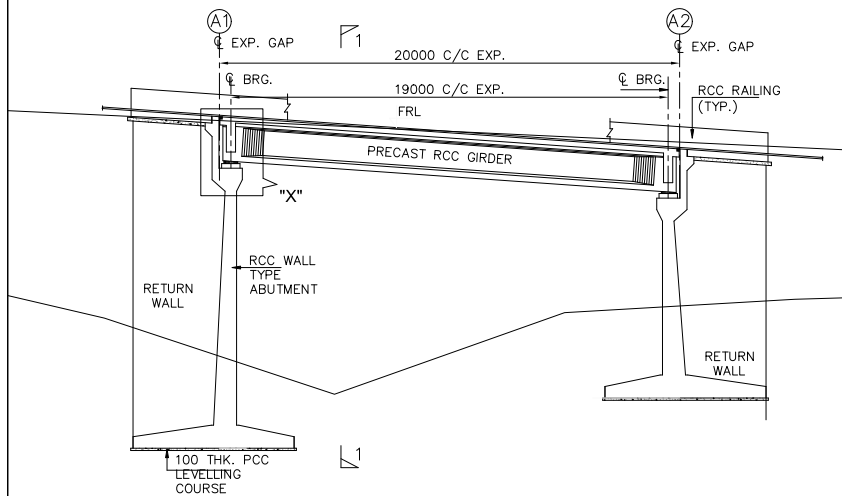
PACKAGE - 5 START OF PEDONG BYPASS TO RISHI BORDER PART-II

DATE : MARCH-2020	Revision R1	GENERAL ARRANGEMENT DRAWING
DESIGNED BY A.AREHMAN	DRAWN BY A.SEN	GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 92+730 TO 92+790 SPAN = (3X20.0)
CHECKED BY A.K.ATRAY	APPROVED BY S.Shukla	Dwg. No. :-
SCALE:- AS SHOWN	SHEET:- 01 OF 02	SAICPL-SESPL/NHIDC/WB-SKM/92+730/GAD-01

MINOR BRIDGE

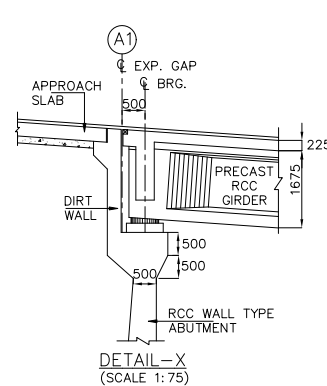
← START OF PEDONG BYPASS

RISHI BORDER →

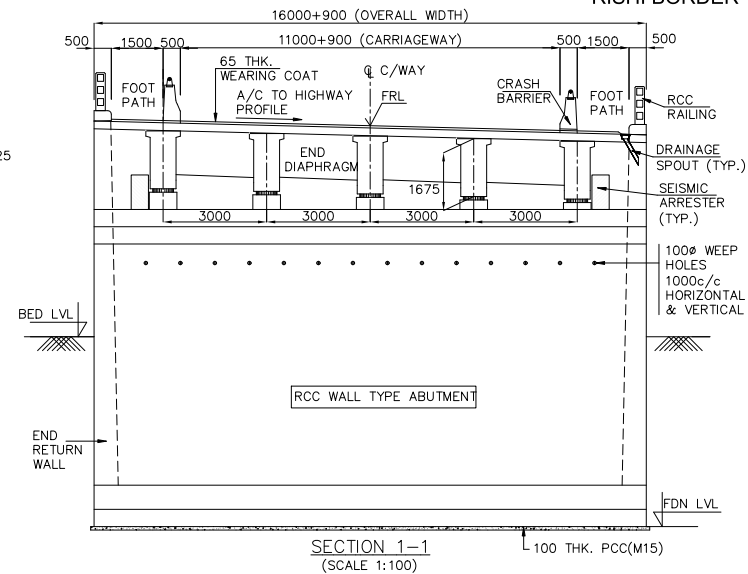


SECTIONAL ELEVATION
(SCALE 1:150)

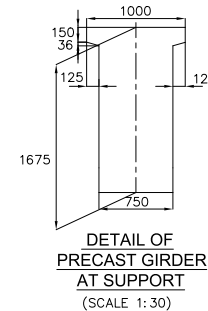
FORMATION LVL.	713.768	713.001	712.502
GROUND LVL.	704.959		708.820
CHAINAGE.	94+000	94+110	94+120



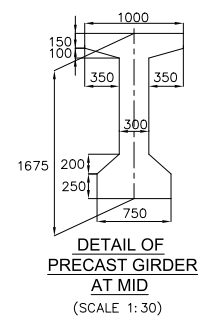
DETAIL-X
(SCALE 1:75)



SECTION 1-1
(SCALE 1:100)



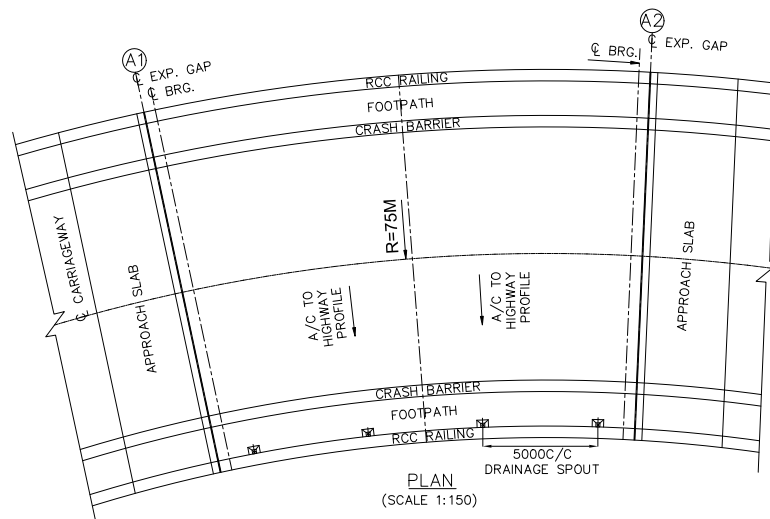
DETAIL OF PRECAST GIRDER AT SUPPORT
(SCALE 1:30)



DETAIL OF PRECAST GIRDER AT MID
(SCALE 1:30)

NOTES:

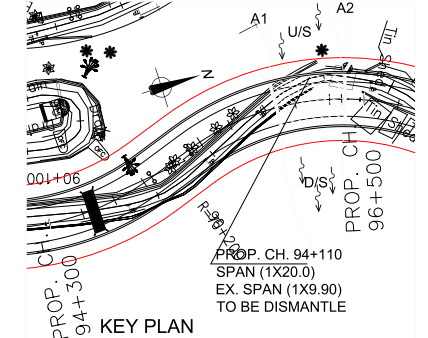
- ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
- DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.
- BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY 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) RCC SUPERSTRUCTURE----- M35
(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-PTEF 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.



TOTAL WIDTH IS INCREASING DUE TO PSYCHOLOGICAL WIDENING FOR 75(R)= 0.9M

PEDONG BYPASS

RESHI BORDER



KEY PLAN

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

CONSULTANT: S.A. Infrastructure Consultants Pvt. Ltd.



PROJECT : Consultancy for Preparation of Feasibility Report cum Preliminary Design for Alternative Highway to Gangtok in Sikkim via Bagrakol-Chukhin-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
Package-5
(START OF PEDONG BYPASS TO RISHI BORDER PART-II)

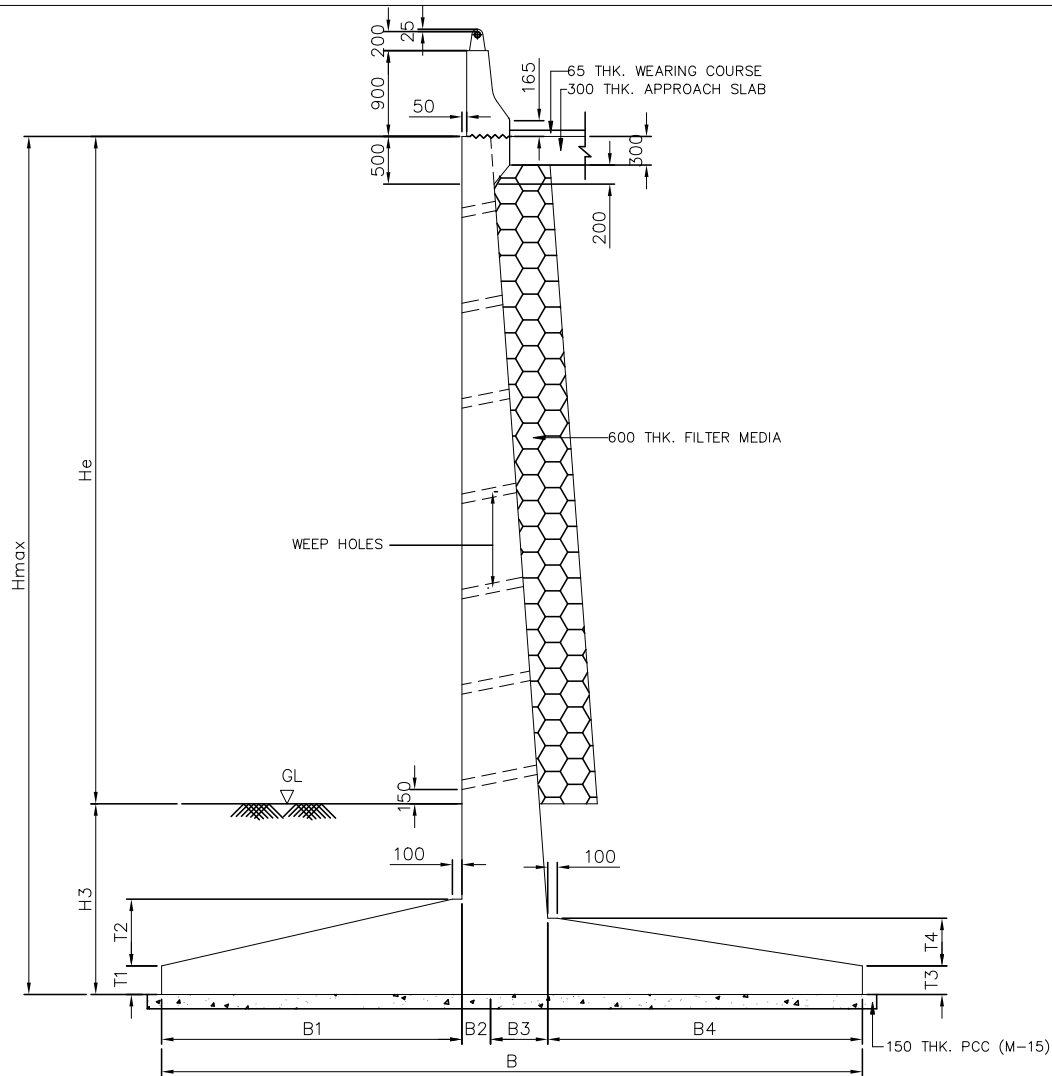
DATE : MARCH-2020
DESIGNED BY A.A. REHMAN
DRAWN BY A. SEN
CHECKED BY A.K. ATARY
REVISION R1
APPROVED BY S. Shukla
SCALE:- AS SHOWN
SHEET:- 01 OF 01

GENERAL ARRANGEMENT DRAWING AT CH. 94+110

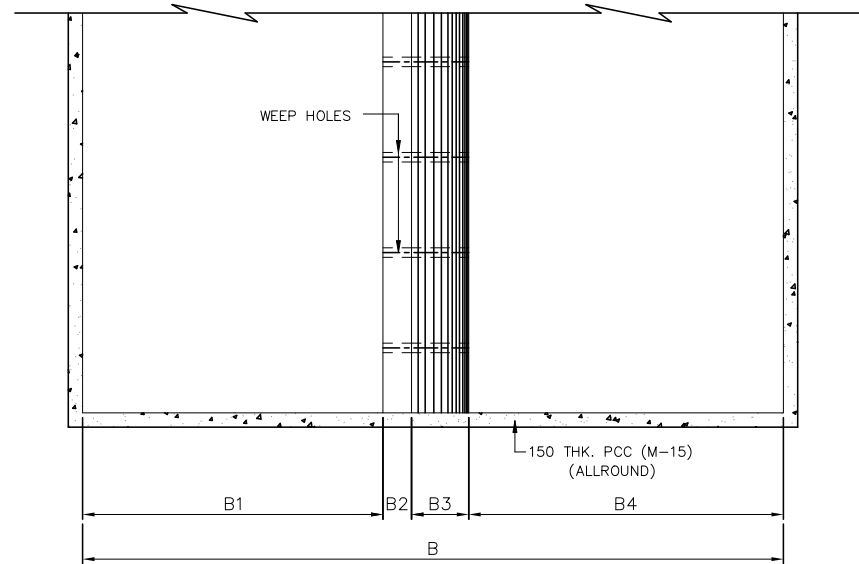
DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/94+110/GAD/S-101

REV	DATE	DESCRIPTION OF REVISIONS	INITIALS
R1	5 MARCH- 2020	DUE TO GRADIENT CHANGE	A B C D

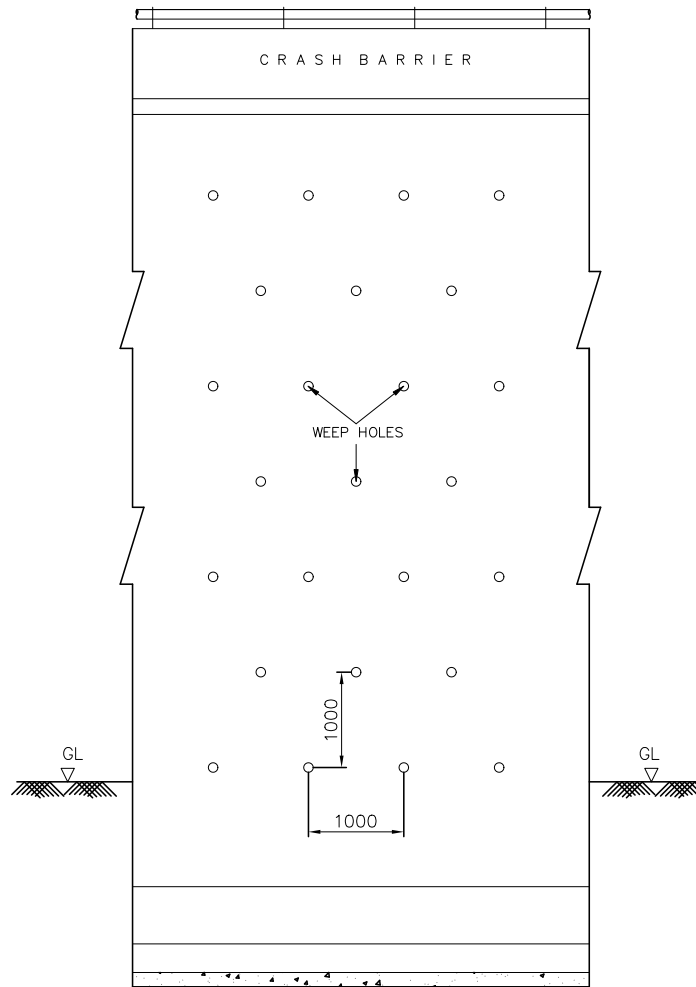
MISCELLANEOUS



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



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



TYPICAL STEM ELEVATION
(SCALE : 1:50)

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- CONCRETE IN RETAINING WALL SHALL BE OF M30 GRADE.
- CLEAR COVER TO REINFORCEMENT BARS SHALL BE 40mm IN STEM AND 75mm IN FOOTING
- ALL REINFORCEMENT SHALL BE TMT (HYSD) BARS OF GRADE DESIGNATION Fe-500D CONFORMING TO IS:1786 SHALL BE USED
- BACK FILLING SHALL BE CARRIED OUT AS PER CLAUSE NO. 710.4 OF IRC:78-2000
- 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.
- WEEP HOLES SHALL EXTENDED THROUGH THE FULL WIDTH OF CONCRETE WITH SLOPE OF 1V : 20H TOWARDS THE DRAINING FACE.
- THE SAFE BEARING CAPACITY AT THE FOUNDING LEVEL IS CONSIDERED 22t/M² LESS THAN THE MAXIMUM BASE PRESSURES SHOWN IN THE TABLE.
- 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

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CONSULTANT:



**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,
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
Package-5
(START OF PEDONG BYPASS TO RISHI BORDER PART-II)

DATE : MARCH-2020

REVISION R1

DESIGNED BY

DRAWN BY

CHECKED BY

APPROVED BY

A.AREHMAN

A.SEN

A.K

S.Shukla

SCALE:- AS SHOWN

SHEET:- 01 OF 01

DWG. NO. :-
SAICPL-SESPL/NHIDC/WB-SKM/RW/S-01