

IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICAQ FUNDING FOR KM 37+500 TO CH KM 45+760 DESIGN LENGTH 7.760 KM (PACKAGE-III).

FINAL DETAILED PROJECT REPORT (DPR)

VOLUME-IX (DRAWING'S)

PART – I

TYPICAL CROSS SECTIONS (TCS), PLAN & PROFILE , GAD'S OF STRUCTURES & MISCELLANEOUS

Name of Road: - Improvement To 2-Lane With Paved Shoulder/4-Laning of NH-40 Between Shillong To Dawki Road

PYNURSLA BYPASS

(Total Design Length- 7.760 km.)



NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.

**PTI BUILDING, 4 PARLIAMENT STREET
SANSAD MARG AREA, NEW DELHI - 110001**

Consultants:

Global Infra-Solutions

**In JV with Dhruv Consultancy Services Limited and
association with Infycons Creative Software Pvt. Ltd.**

**F-2, E-8/11A, Sukhsagar Apartment Trilanga,
Bhopal (MP) -462039 Tele/Fax- 0755-4045216**

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INDEX

- 1. TYPICAL CROSS SECTIONS**
- 2. PLAN & PROFILE**
- 3. GAD OF STRUCTURES**
- 4. MISCELLANEOUS**

TYPICAL CROSS SECTIONS

TYPE - 01
RECONSTRUCTION OF EXISTING TWO - LANE CARRIAGEWAY TO TWO - LANE WITH PAVED SHOULDER WITH DRAIN IN BUILT-UP AREA

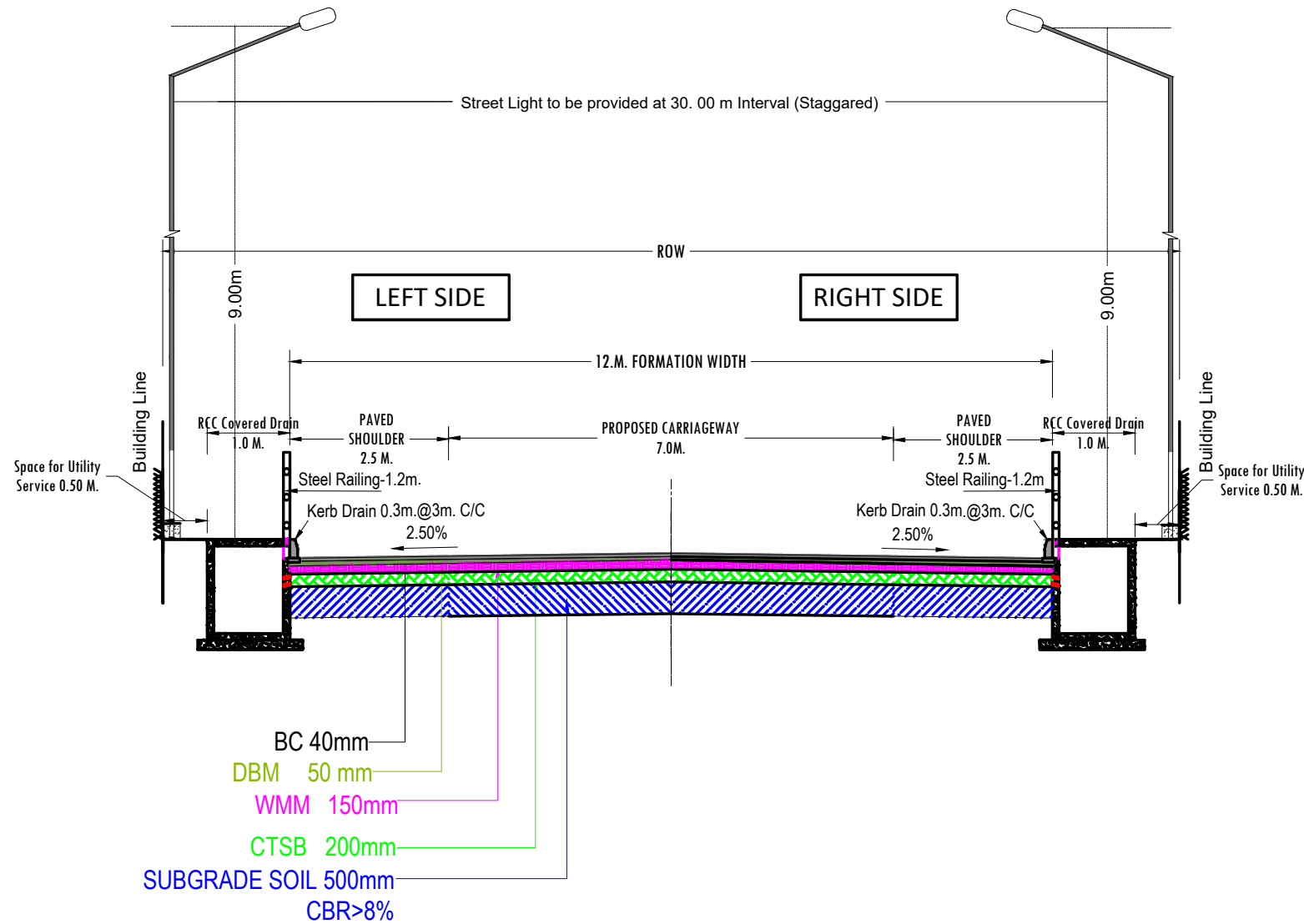




Fig. 2.6 Modified
As per IRC SP 73: 2018

NOTES:

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. DIMENSIONS SHALL NOT BE SCALED OFF FROM THE DRAWING. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
3. PCC M15 50MM* PROVIDED IN LIEU OF EARTHEN SHOULDER TOWARD OFF EROSION OF SOIL NEAR DRAIN WALL.

Chainage From	Chainage To	Length (Km)	TCS Type	Remark
0.280	1.460	1.180	1	Reconstruction Of Existing Two - Lane Carriageway to Two - Lane with Paved Shoulder
TOTAL		1.180	Km.	

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DWG NO.: 615/18/NHIDCL/FS/105																										
DRAWN: EK			CHECKED: SJ			DESIGNED: SC			APPROVED: LA																	
REV.			DATE			REVISIONS																				

TYPE - 02

RECONSTRUCTION OF EXISTING TWO - LANE CARRIAGEWAY TO TWO - LANE WITH PAVED SHOULDER WITH DRAIN ON HILL SIDE (OPEN COUNTRY - MOUNTAINOUS TERRAIN)

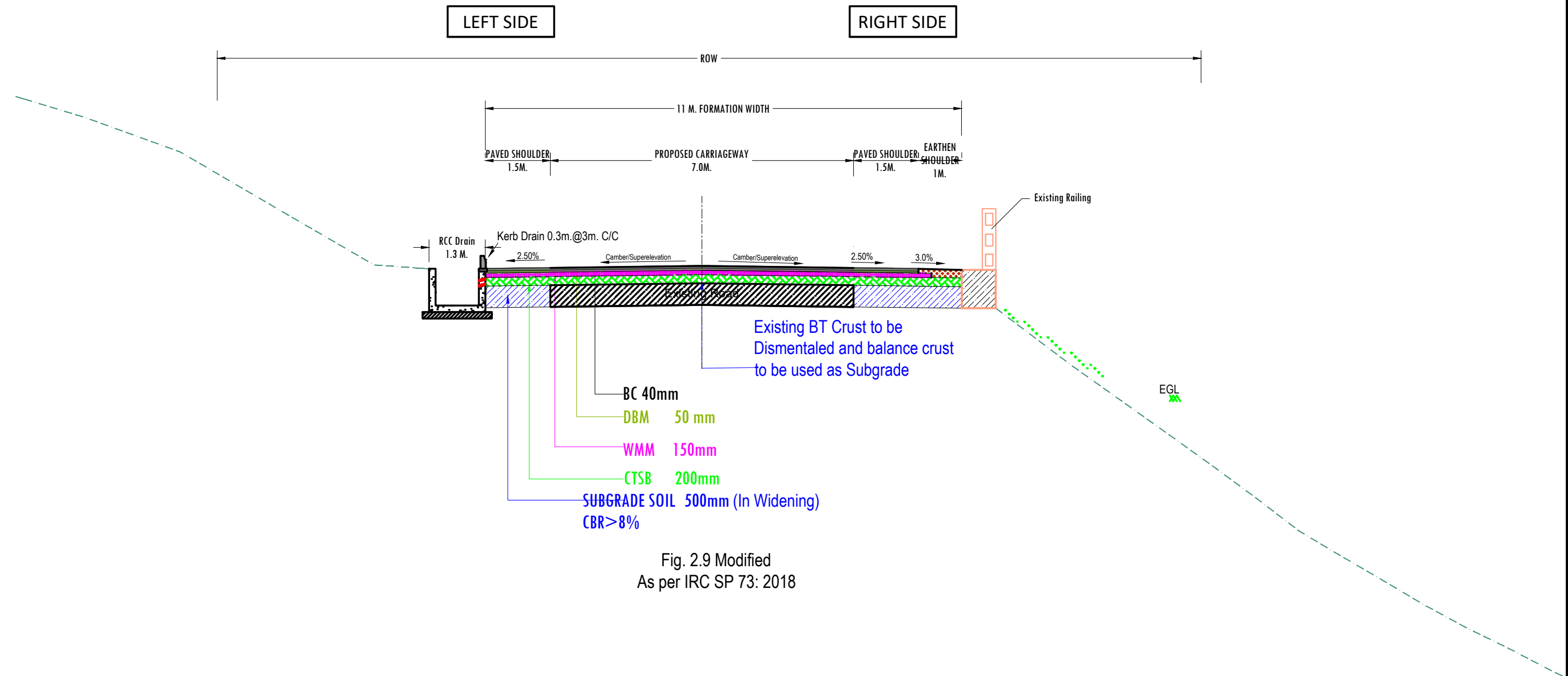


Fig. 2.9 Modified
As per IRC SP 73: 2018

NOTES:

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. DIMENSIONS SHALL NOT BE SCALED OFF FROM THE DRAWING. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
3. 50MM PCC M15 PROVIDED IN LIEU OF EARTHEN SHOULDER TOWARD OFF EROSION OF SOIL NEAR DRAIN WALL.

Chainage From	Chainage To	Length (Km)	TCS Type	Remark
0.000	0.280	0.280	2	Reconstruction Of Existing Two - Lane Carriageway to Two - Lane with Paved Shoulder with Drain On Hill Side
TOTAL		0.280	Km.	

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TYPE - 03
2 - LANE UNDIVIDED HIGHWAY (NEW CONSTRUCTION)
COUNTRY - MOUNTAINOUS TERRAIN)
BANKING SECTION
HEIGHT LESS THAN 3m

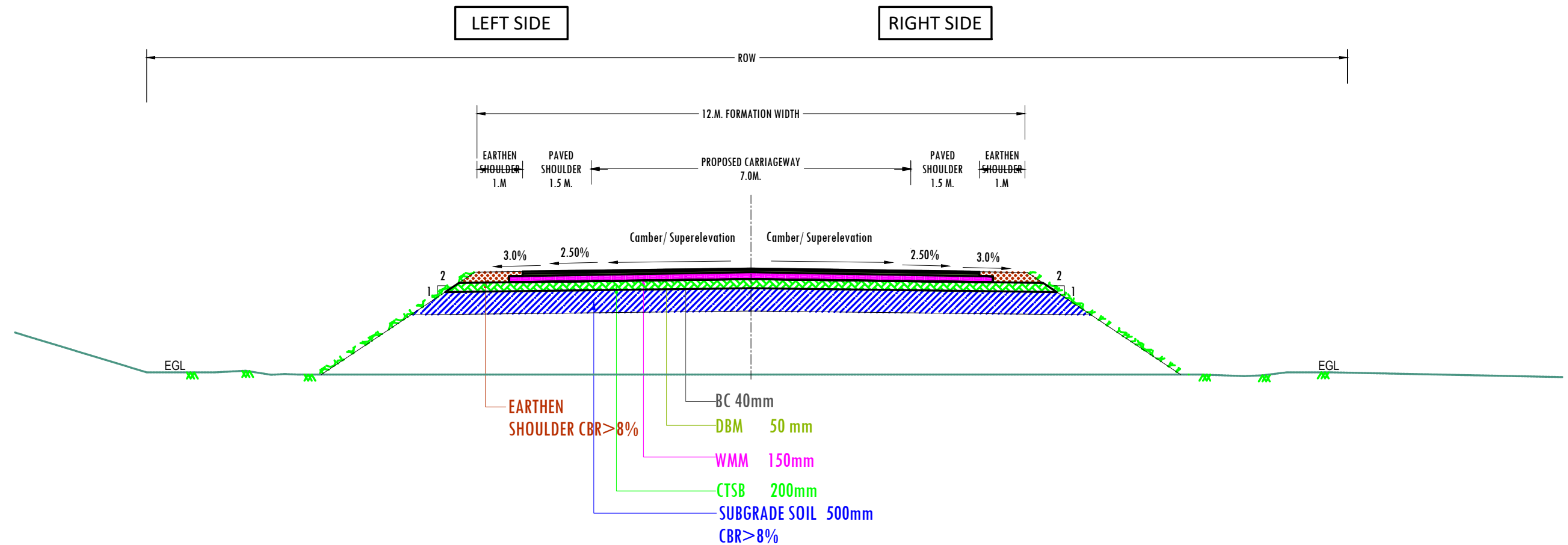




Fig. 2.9 Modified
As per IRC SP 73: 2018

Chainage From	Chainage To	Length (Km)	TCS Type	Remark
2.650	2.685	0.035	3	2 - Lane + PS (Banking Section <3m) New-construction
2.750	2.775	0.025	3	2 - Lane + PS (Banking Section <3m) New-construction
2.950	3.033	0.083	3	2 - Lane + PS (Banking Section <3m) New-construction
3.038	3.118	0.080	3	2 - Lane + PS (Banking Section <3m) New-construction
3.968	4.200	0.232	3	2 - Lane + PS (Banking Section <3m) New-construction
4.350	4.405	0.055	3	2 - Lane + PS (Banking Section <3m) New-construction
5.245	5.260	0.015	3	2 - Lane + PS (Banking Section <3m) New-construction
5.975	5.985	0.010	3	2 - Lane + PS (Banking Section <3m) New-construction
	TOTAL	0.535	Km.	

NOTES:

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2. DIMENSIONS SHALL NOT BE SCALED OFF FROM THE DRAWING. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
3. PCC M15 50MM* PROVIDED IN LIEU OF EARTHEN SHOULDER TOWARD OFF EROSION OF SOIL NEAR DRAIN WALL.

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DWG NO: BIS/18/NHIDCL/FS/105			DRAWN: J.K.		CHECKED: S.P.		DESIGNED: S.C.		APPROVED: L.A.										

TYPE - 04
TYPICAL CROSS SECTION FOR 2 - LANE UNDIVIDED HIGHWAY(NEW CONSTRUCTION)
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)

CUTTING SECTION
CUTTING HEIGHT < 1m

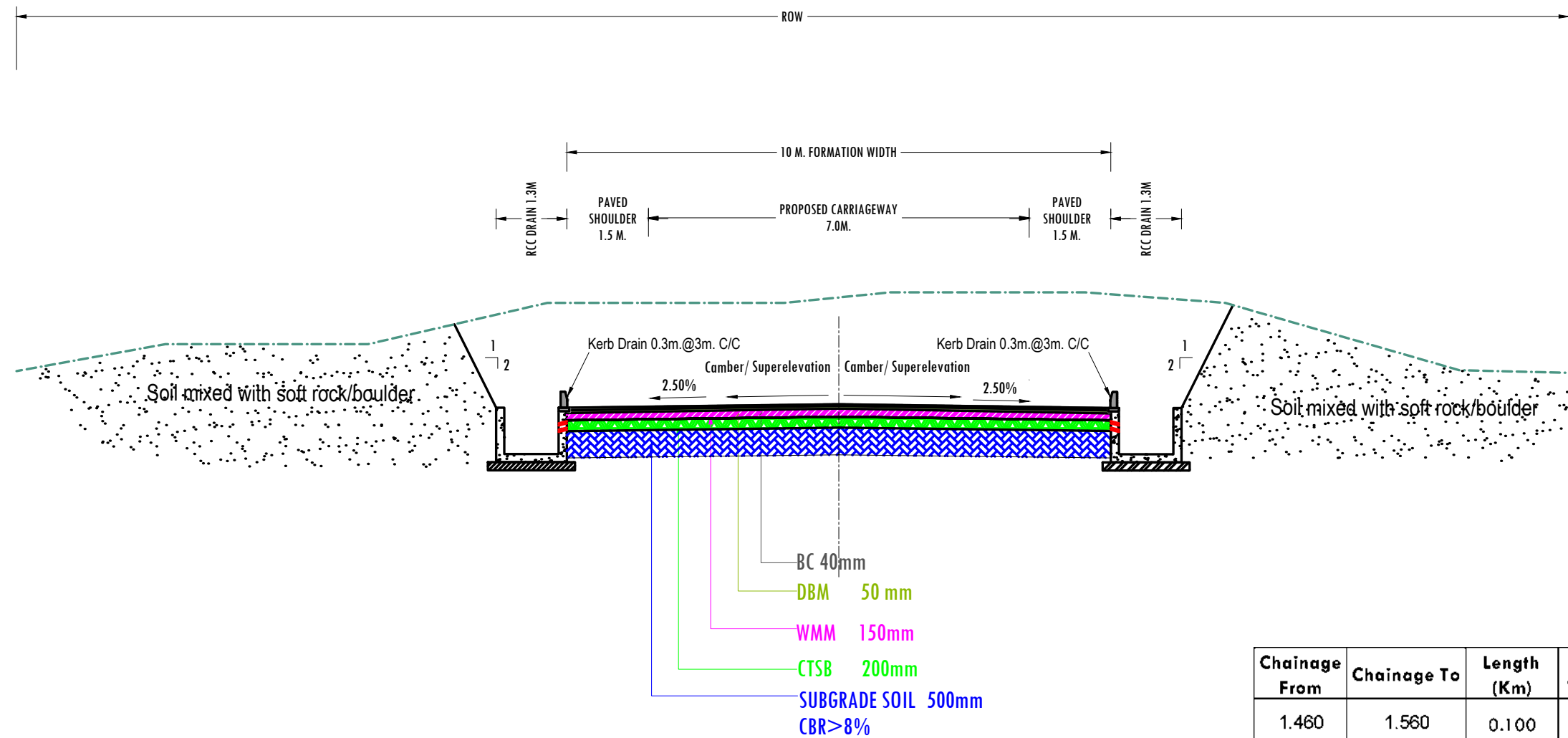


Fig. 2.9 Modified
As per IRC SP 73: 2018

Chainage From	Chainage To	Length (Km)	TCS Type	Remark
1.460	1.560	0.100	4	2 - Lane + PS (Cutting<1m) New-construction
2.105	2.115	0.010	4	2 - Lane + PS (Cutting<1m) New-construction
2.445	2.475	0.030	4	2 - Lane + PS (Cutting<1m) New-construction
3.575	3.585	0.010	4	2 - Lane + PS (Cutting<1m) New-construction
4.405	4.435	0.030	4	2 - Lane + PS (Cutting<1m) New-construction
6.710	6.725	0.015	4	2 - Lane + PS (Cutting<1m) New-construction
7.140	7.150	0.010	4	2 - Lane + PS (Cutting<1m) New-construction
TOTAL		0.205	Km.	

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TYPE - 05
TYPICAL CROSS SECTION FOR 2 - LANE UNDIVIDED HIGHWAY(NEW CONSTRUCTION)
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)

CUTTING SECTION WITH ONE SIDE BREAST WALL
CUTTING HEIGHT < 5.0m

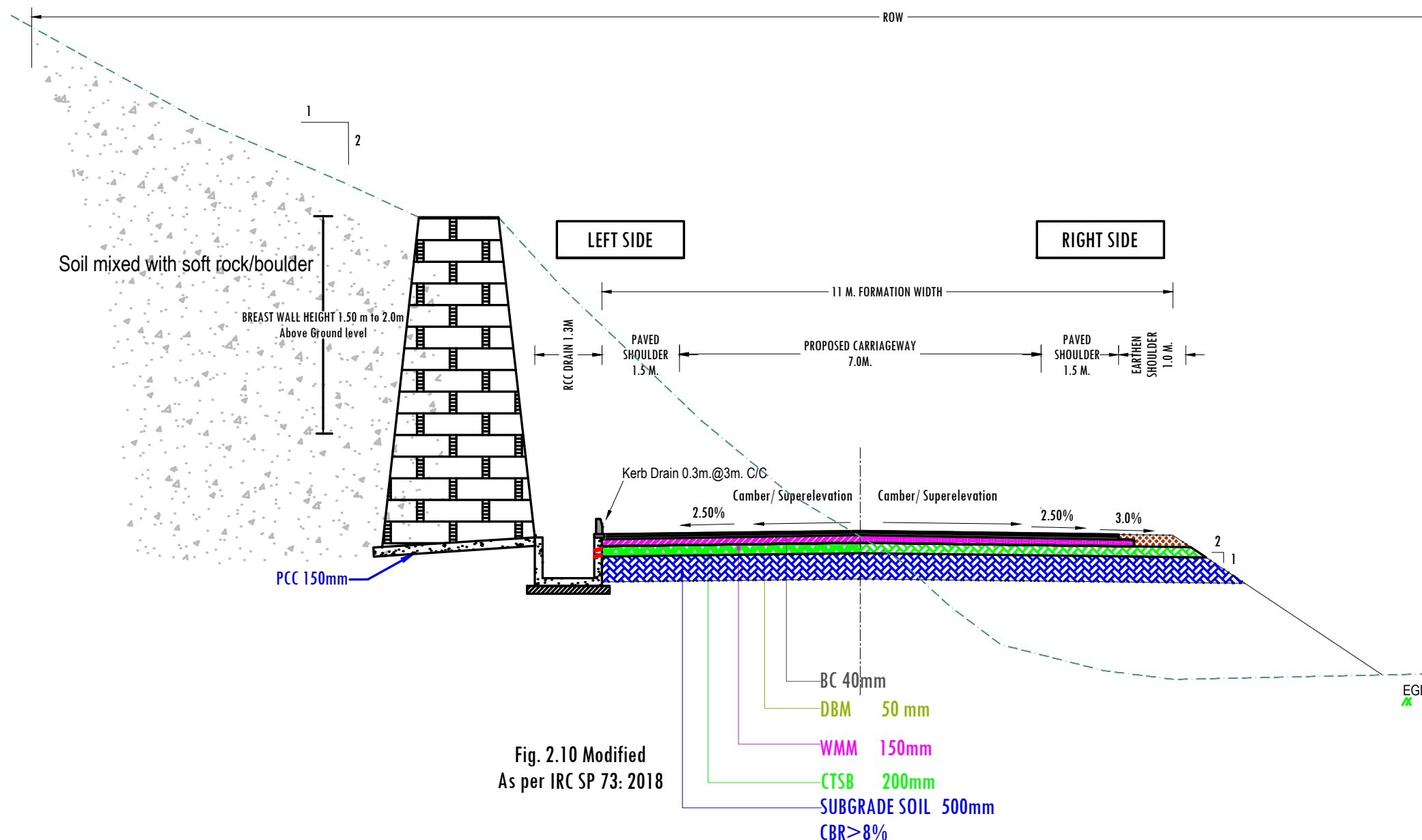


Fig. 2.10 Modified
As per IRC SP 73: 2018

NOTES:

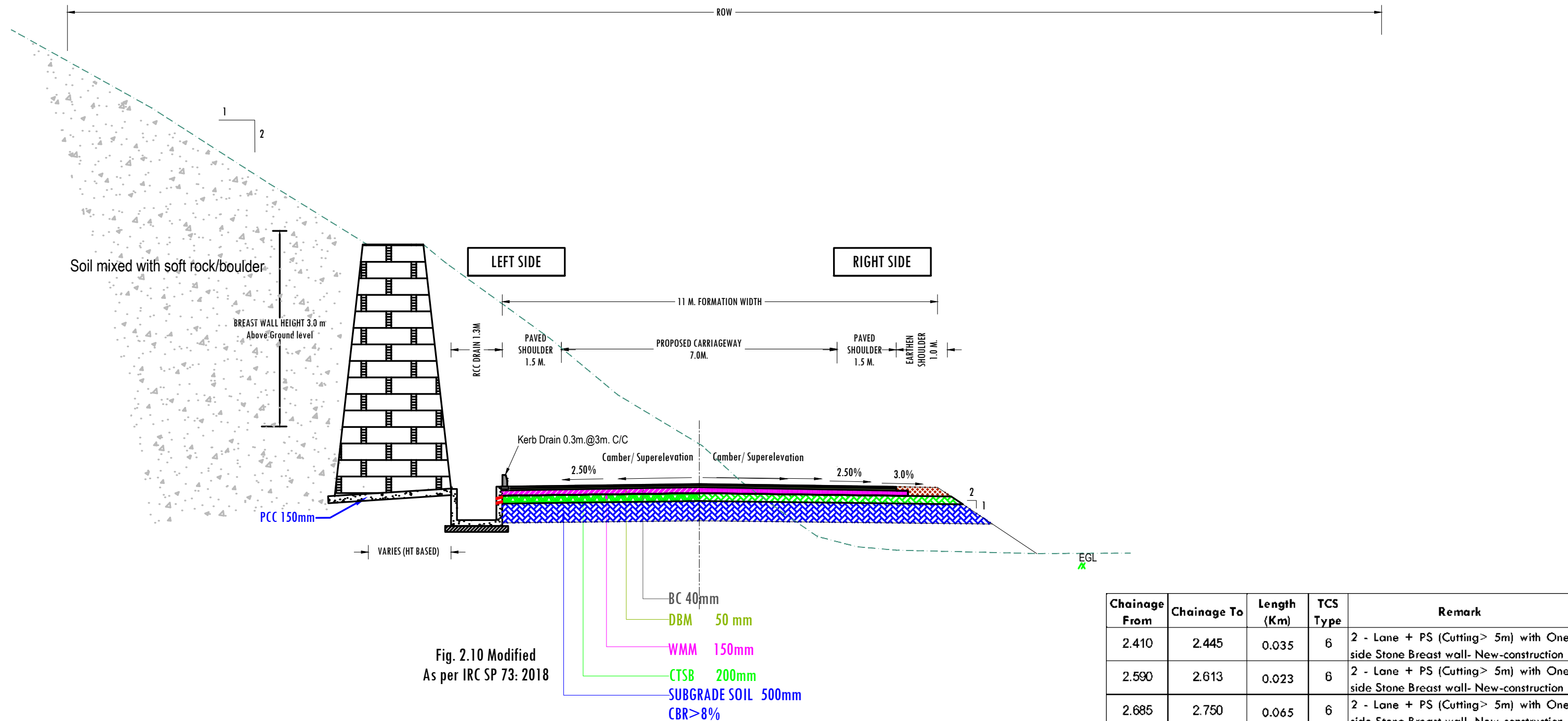
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2. DIMENSIONS SHALL NOT BE SCALED OFF FROM THE DRAWING. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
3. PCC M15 50MM* PROVIDED IN LIEU OF EARTHEN SHOULDER TOWARD OFF EROSION OF SOIL NEAR DRAIN WALL.
4. BREAST WALL PROPOSED TO LIMIT THE PROPOSED ROW & SLOPE PROTECTION IN CUT SECTION.

1.900	2.000	0.100	5	2 - Lane + PS (Cutting< 5m) with One side Stone Breast wall- New-construction
3.123	3.170	0.047	5	2 - Lane + PS (Cutting< 5m) with One side Stone Breast wall- New-construction
3.950	3.963	0.013	5	2 - Lane + PS (Cutting< 5m) with One side Stone Breast wall- New-construction
4.485	4.530	0.045	5	2 - Lane + PS (Cutting< 5m) with One side Stone Breast wall- New-construction
5.075	5.090	0.015	5	2 - Lane + PS (Cutting< 5m) with One side Stone Breast wall- New-construction
5.260	5.280	0.020	5	2 - Lane + PS (Cutting< 5m) with One side Stone Breast wall- New-construction
5.485	5.530	0.045	5	2 - Lane + PS (Cutting< 5m) with One side Stone Breast wall- New-construction
TOTAL		0.285	Km.	

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TYPE - 06
TYPICAL CROSS SECTION FOR 2 - LANE UNDIVIDED HIGHWAY(NEW CONSTRUCTION)
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)

CUTTING SECTION WITH ONE SIDE BREAST WALL
CUTTING HEIGHT > 5.0m



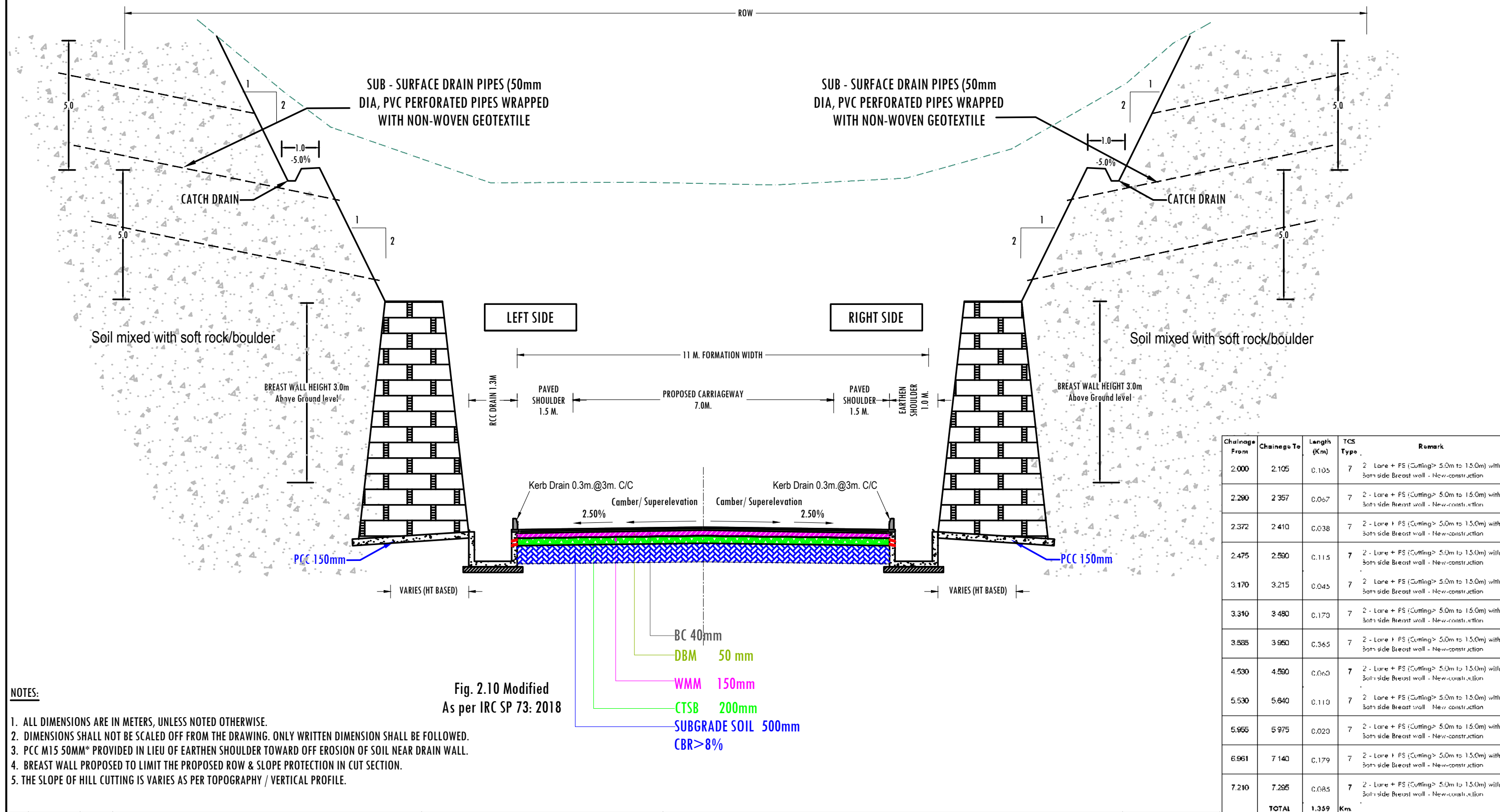
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3. PCC M15 50MM* PROVIDED IN LIEU OF EARTHEN SHOULDER TOWARD OFF EROSION OF SOIL NEAR DRAIN WALL.
4. BREAST WALL PROPOSED TO LIMIT THE PROPOSED ROW & SLOPE PROTECTION IN CUT SECTION.

Chainage From	Chainage To	Length (Km)	TCS Type	Remark
2.410	2.445	0.035	6	2 - Lane + PS (Cutting> 5m) with One side Stone Breast wall- New-construction
2.590	2.613	0.023	6	2 - Lane + PS (Cutting> 5m) with One side Stone Breast wall- New-construction
2.685	2.750	0.065	6	2 - Lane + PS (Cutting> 5m) with One side Stone Breast wall- New-construction
5.055	5.075	0.020	6	2 - Lane + PS (Cutting> 5m) with One side Stone Breast wall- New-construction
7.170	7.210	0.040	6	2 - Lane + PS (Cutting> 5m) with One side Stone Breast wall- New-construction
TOTAL		0.183	Km.	

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TYPE - 07
TYPICAL CROSS SECTION FOR 2 - LANE UNDIVIDED HIGHWAY(NEW CONSTRUCTION)
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)
CUTTING SECTION WITH BOTH SIDE BREAST WALL
CUTTING HEIGHT > 5.0m To 15.0m



NOTES:

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3. PCC M15 50MM* PROVIDED IN LIEU OF EARTHEN SHOULDER TOWARD OFF EROSION OF SOIL NEAR DRAIN WALL.
4. BREAST WALL PROPOSED TO LIMIT THE PROPOSED ROW & SLOPE PROTECTION IN CUT SECTION.
5. THE SLOPE OF HILL CUTTING IS VARIES AS PER TOPOGRAPHY / VERTICAL PROFILE.

Fig. 2.10 Modified
As per IRC SP 73: 2018

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TYPE - 08
TYPICAL CROSS SECTION FOR 2 - LANE UNDIVIDED HIGHWAY(NEW CONSTRUCTION)
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)
CUTTING SECTION WITH BOTH SIDE BREAST WALL
CUTTING HEIGHT > 15.0m

Soil mixed with soft rock/boulder

CATCH DRAIN

Soft rock/Ordinary rock

SUB - SURFACE DRAIN PIPES (50mm DIA, PVC PERFORATED PIPES WRAPPED WITH NON-WOVEN GEOTEXTILE)

LEFT SIDE



RIGHT SIDE

BREAST WALL HEIGHT 3.0m Above Ground level

PCC 150mm

Chainage From	Chainage To	Length (Km)	TCS Type	Remark
3.215	3.260	0.045	8	2 - Lane + PS (Cutting> 15.0m) with Both side Breast wall - New-construction

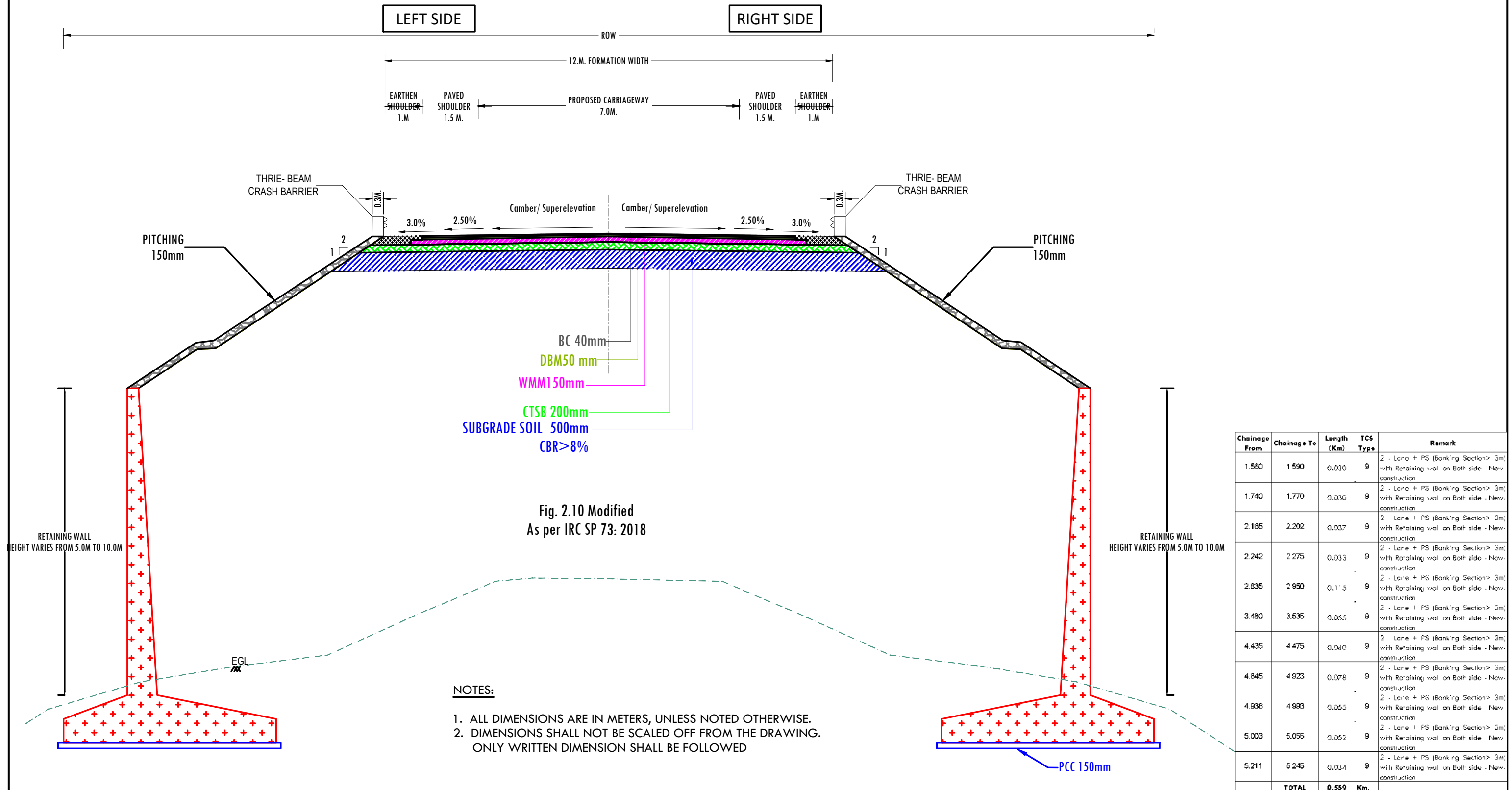
Chainage From	Chainage To	Length (Km)	TCS Type	Remark
3.215	3.260	0.045	8	2 - Lane + PS (Cutting> 15.0m) with Both side Breast wall - New-construction
3.290	3.310	0.020	8	2 - Lane + PS (Cutting> 15.0m) with Both side Breast wall - New-construction
3.535	3.545	0.010	8	2 - Lane + PS (Cutting> 15.0m) with Both side Breast wall - New-construction
4.590	4.678	0.088	8	2 - Lane + PS (Cutting> 15.0m) with Both side Breast wall - New-construction
4.708	4.845	0.137	8	2 - Lane + PS (Cutting> 15.0m) with Both side Breast wall - New-construction
5.280	5.405	0.125	8	2 - Lane + PS (Cutting> 15.0m) with Both side Breast wall - New-construction
5.640	5.955	0.315	8	2 - Lane + PS (Cutting> 15.0m) with Both side Breast wall - New-construction
	TOTAL	0.740	Km.	

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																	DWG NO.: G/5/18/NHIDCL/FS/TCS			
REV.	DATE	REVISIONS																		

TYPE - 9

TYPICAL CROSS SECTION FOR 2 - LANE UNDIVIDED HIGHWAY(NEW CONSTRUCTION) (OPEN COUNTRY -MOUNTAINOUS TERRAIN)

BANKING SECTION WITH RETAINING WALL BOTH SIDES OFFSET FROM SHOULDER HEIGHT MORE THAN 3m

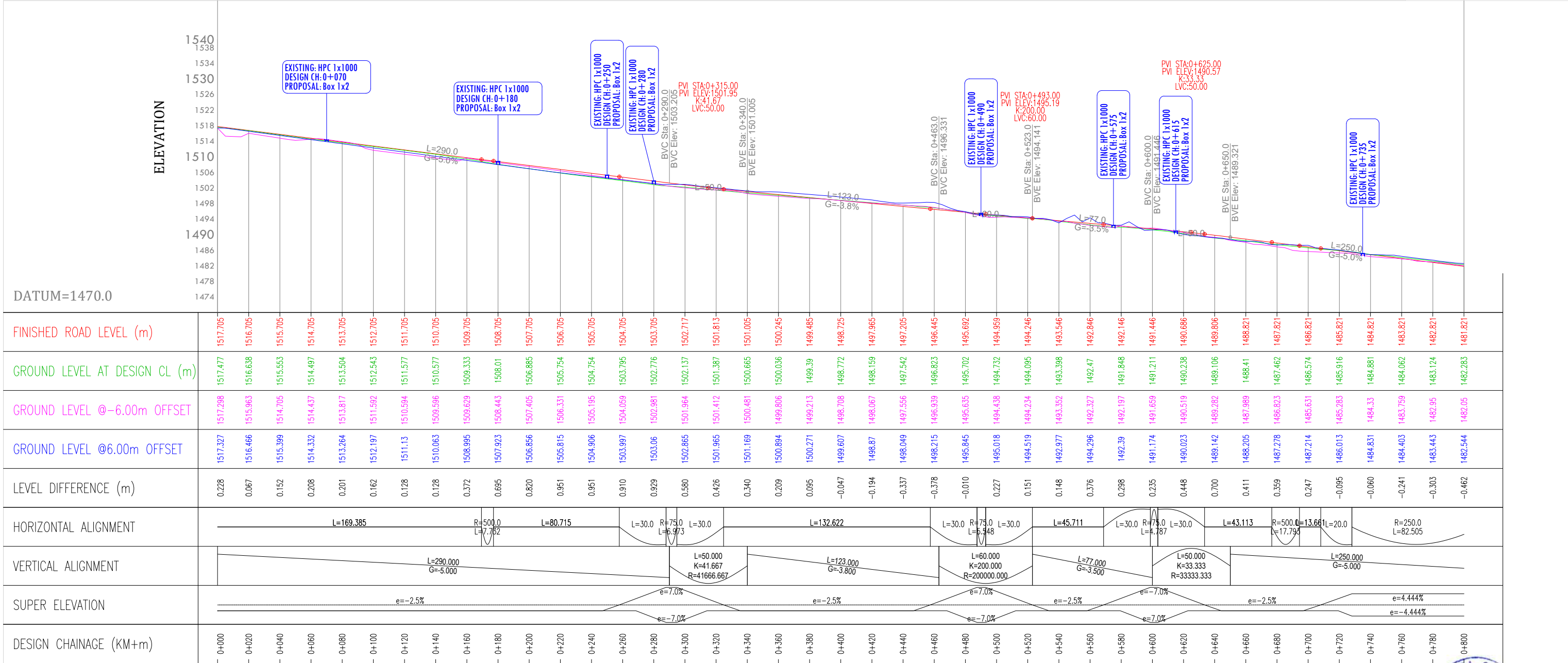
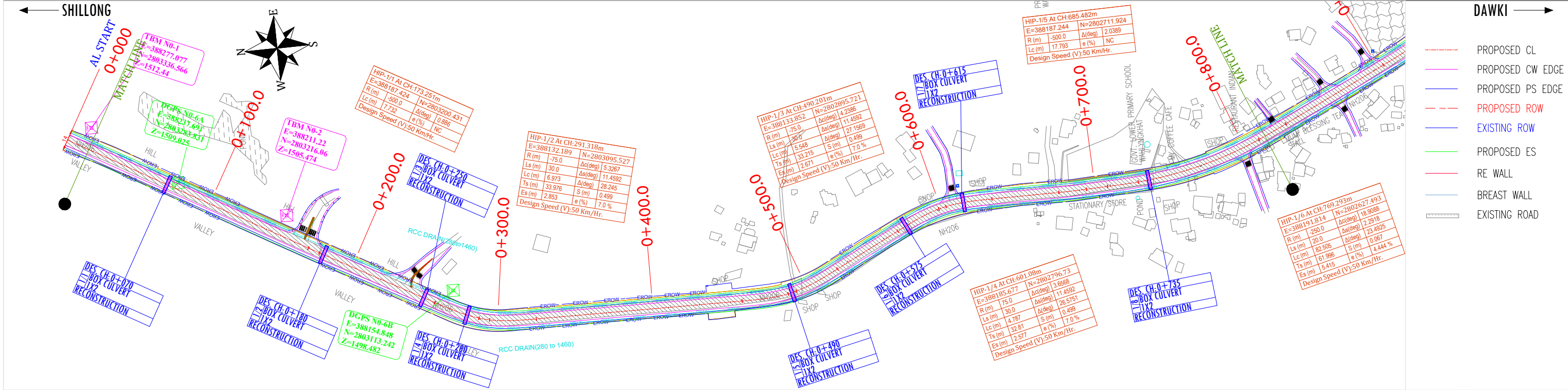


<div>REV</div> <div>DATE</div> <div>REVISIONS</div>	<div>CLIENT:</div> <div>NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.</div> <div>1st & 2nd Floor, Tower A, World Trade Centre, Nauroji Nagar, New Delhi - 110029 Contact No : 011-26768950 Email Address : info@nhidcl.com</div>	<div>DESIGN CONSULTANT:</div> <div>Global Infra Solutions</div> <div>in JV with Dhruv Consultancy Services Limited and association with Infycons Creative Software Pvt. Ltd.</div> <div>F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039 e: globalinfraolutions@gmail.com web: globalinfraolutions.org</div>	<div>PROJECT:</div> <div>IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).</div>	<div>SCALE:</div> <div>Not to scale Dimensions as mentioned</div>	<div>TITLE:</div> <div>TYPICAL CROSS SECTION</div> <div>CLIENT APPROVAL: SIGNATURE:</div> <div>DWG NO: G/18/NHIDCL/PS/TCS</div> <div>DRAWN: CHECKED: DESIGNED: APPROVED:</div> <div>LA BH SJ SC LA</div>
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- PCC 150mm

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REV.	DATE	REVISIONS

CLIENT:

NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.

1st & 2nd Floor, Tower A, World Trade Centre, Nauroji Nagar, New Delhi – 110029 Contact No : 011-26768950 Email Address : info@nhidcl.com

DESIGN CONSULTANT:

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F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039 e: globalinfra@infra.com web: globalinfra.com

PROJECT:

IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

SCALE AT A3 SIZE DRAWING

HORIZ.1:2500

VERT.1:1000

TITLE:

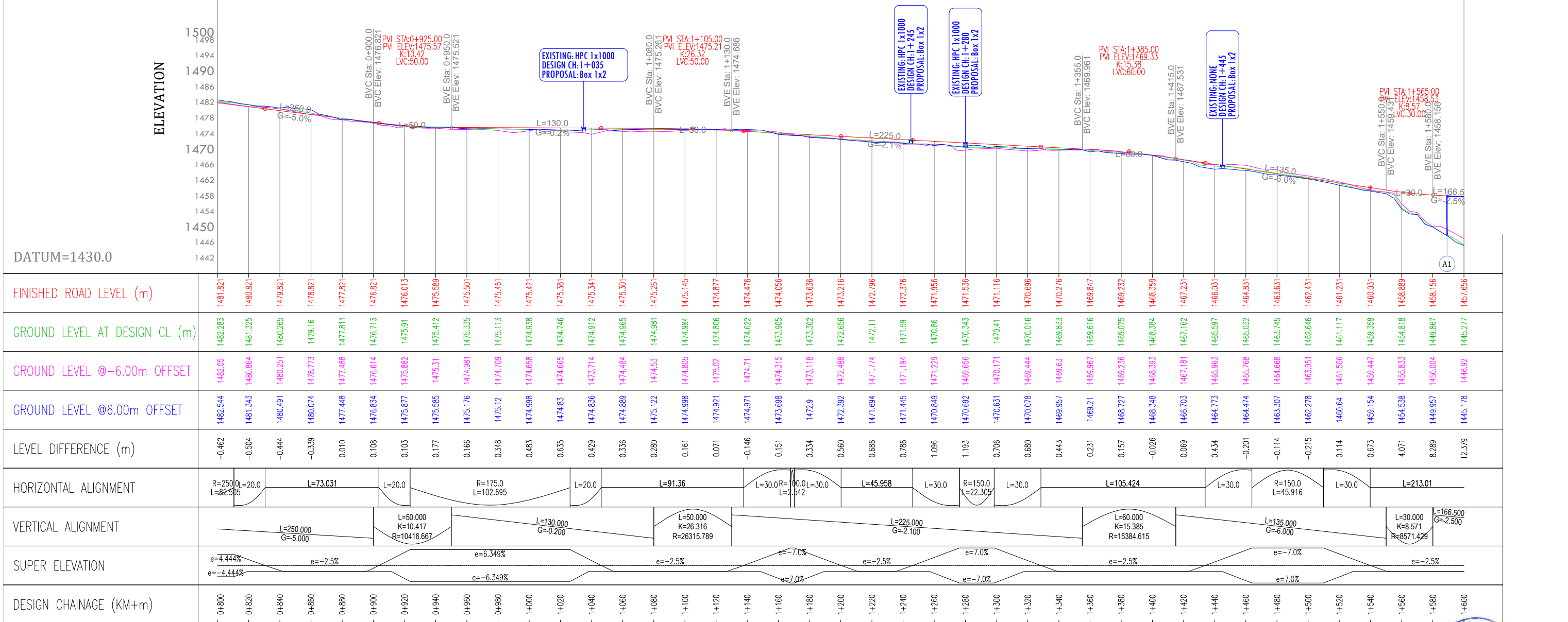
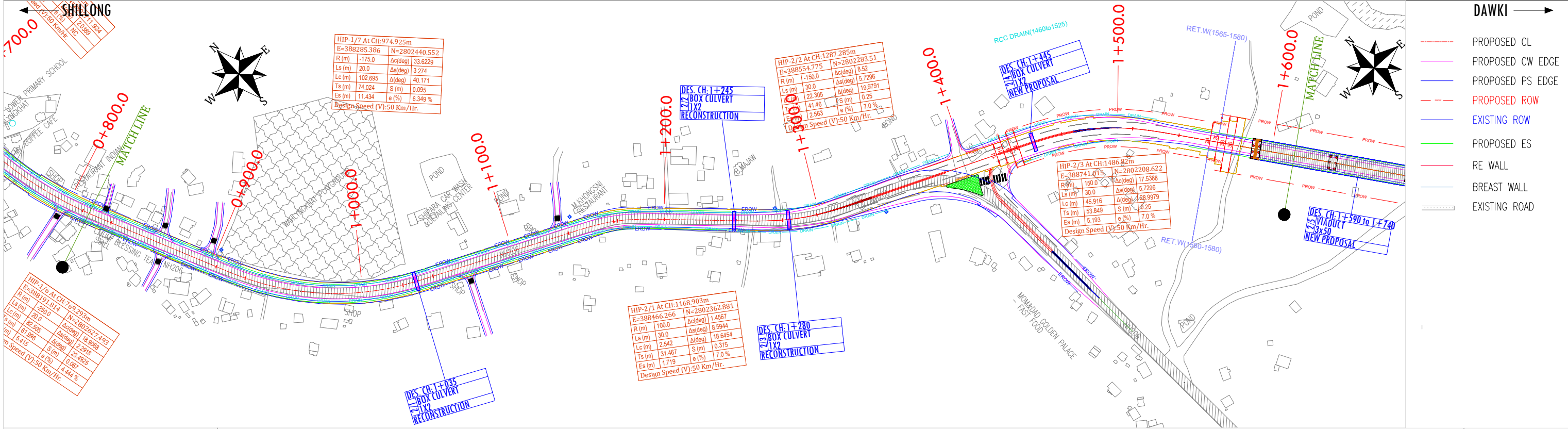
PLAN AND PROFILE

Km - 0+000 to Km- 0+800

CLIENT APPROVAL:

SEALED & SIGNATURE:

DWG No.	CHECKED	DESIGNED	APPROVED
1/16			



REV.	DATE	REVISIONS

CLIENT:

NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.

1st & 2nd Floor, Tower A, World Trade Centre, Nauragi Nagar, New Delhi - 110029 Contact No : 011-26768950 Email Address : info@nhidcl.com

DESIGN CONSULTANT:

Global Infra Solutions

in JV with **Dhruv Consultancy Services Limited** and association with **Infycons Creative Software Pvt. Ltd.**

F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal - 462039 e: globalinfraolutions@gmail.com web: globalinfraolutions.org

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SCALE AT A3 SIZE DRAWING

HORIZ.1:2500

VERT.1:1000

TITLE:

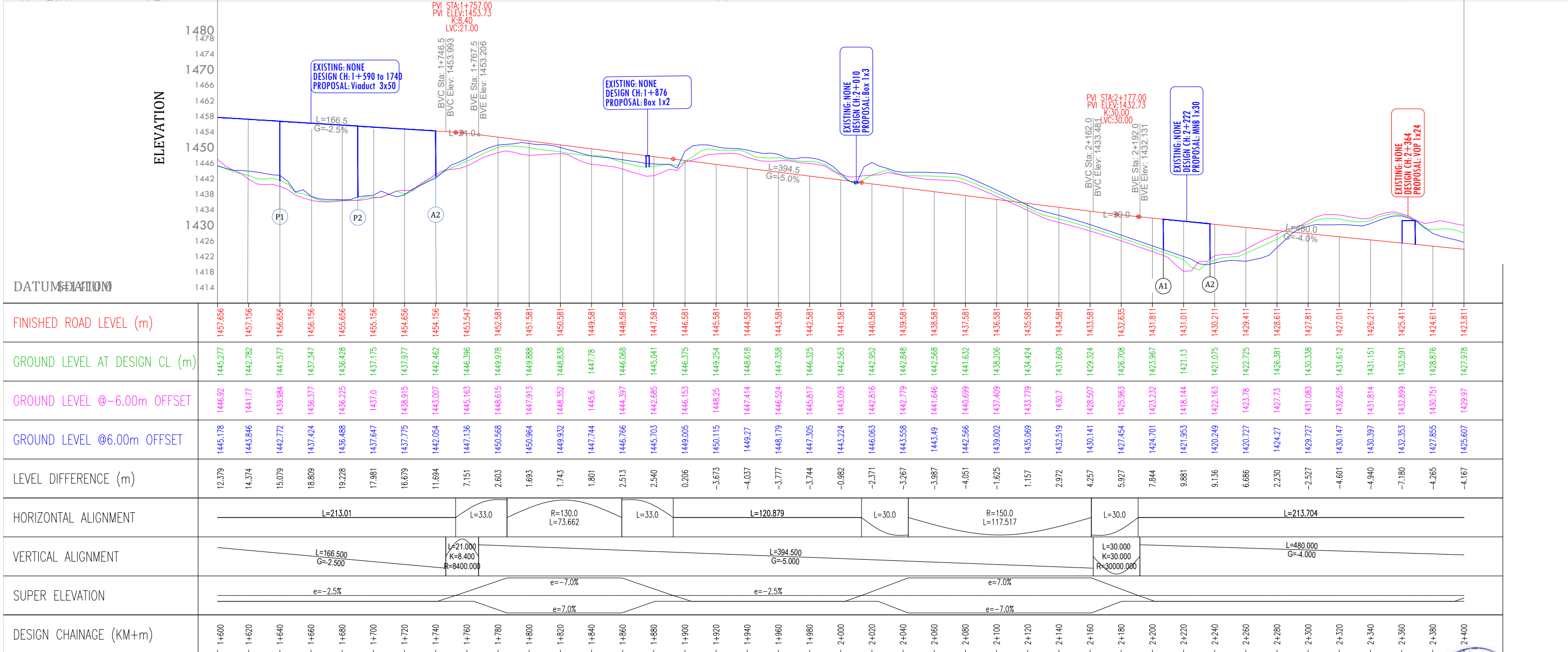
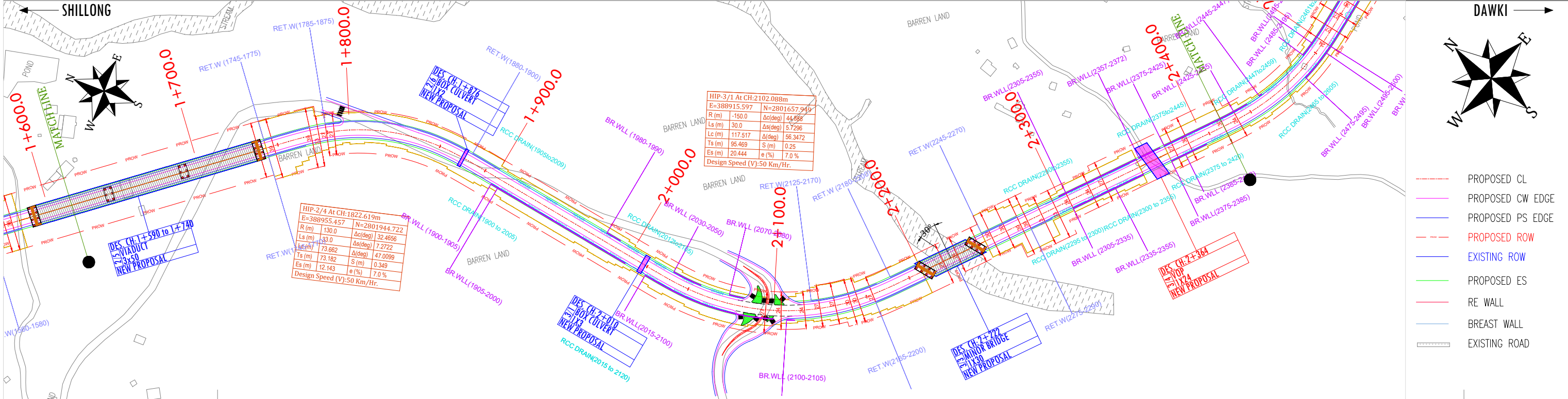
PLAN AND PROFILE

Km - 0+800 to Km- 1+600

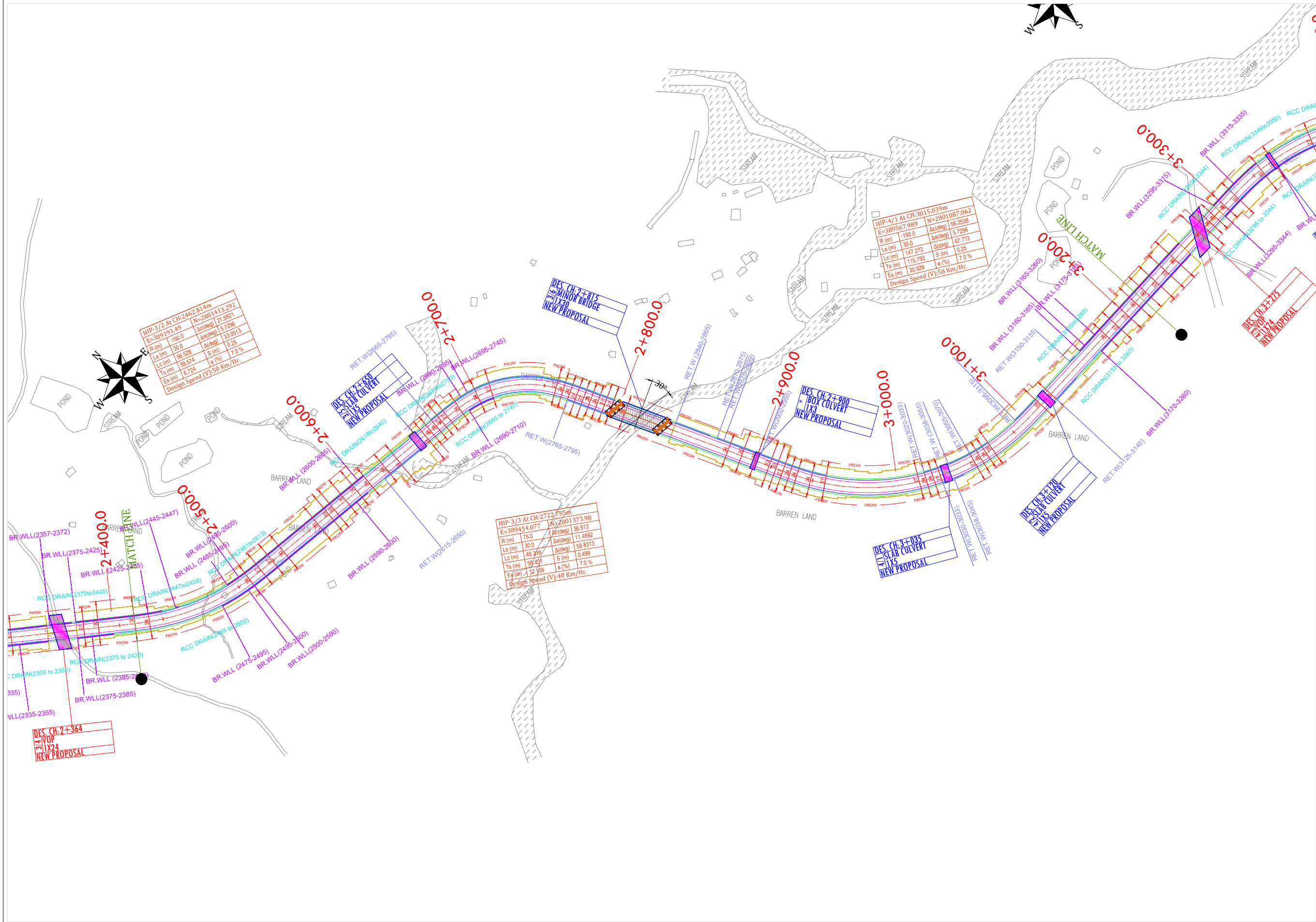
CLIENT APPROVAL:

DWG No: 2/16

DRAWN: [Signature] CHECKED: [Signature] DESIGNED: [Signature] APPROVED: [Signature]



	REV.	DATE	REVISIONS		NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. 1st & 2nd Floor, Tower A, World Trade Centre, Nauraji Nagar, New Delhi - 110029 Contact No : 011-26768950 Email Address : info@nhidcl.com		Global Infra Solutions in JV with Dhruv Consultancy Services Limited and association with Infycons Creative Software Pvt. Ltd. F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal - 462039 e: globalinfra@infra.com web: globalinfra.com	PROJECT: IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).	SCALE AT A3 SIZE DRAWING HORIZ.1:2500 VERT.1:1000 	TITLE: PLAN AND PROFILE Km - 1+600 to Km- 2+400	CLIENT APPROVAL: DWG No: 3/16 DRAWN: [Signature] CHECKED: [Signature] DESIGNED: [Signature] APPROVED: [Signature]	SEALED & SIGNATURE: [Signature]



- PROPOSED CL
- PROPOSED CW EDGE
- PROPOSED PS EDGE
- PROPOSED ROW
- EXISTING ROW
- PROPOSED ES
- RE WALL
- BREAST WALL
- EXISTING ROAD



REV.	DATE	REVISIONS

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DESIGN CONSULTANT:

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SCALE AT A3 SIZE DRAWING

HORIZ.1:2500

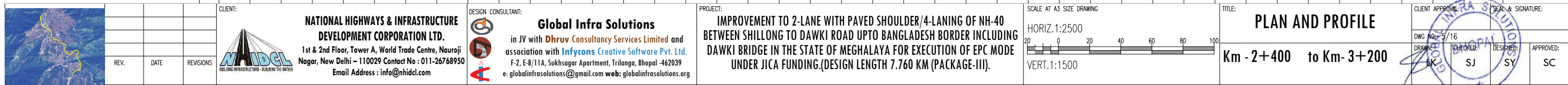
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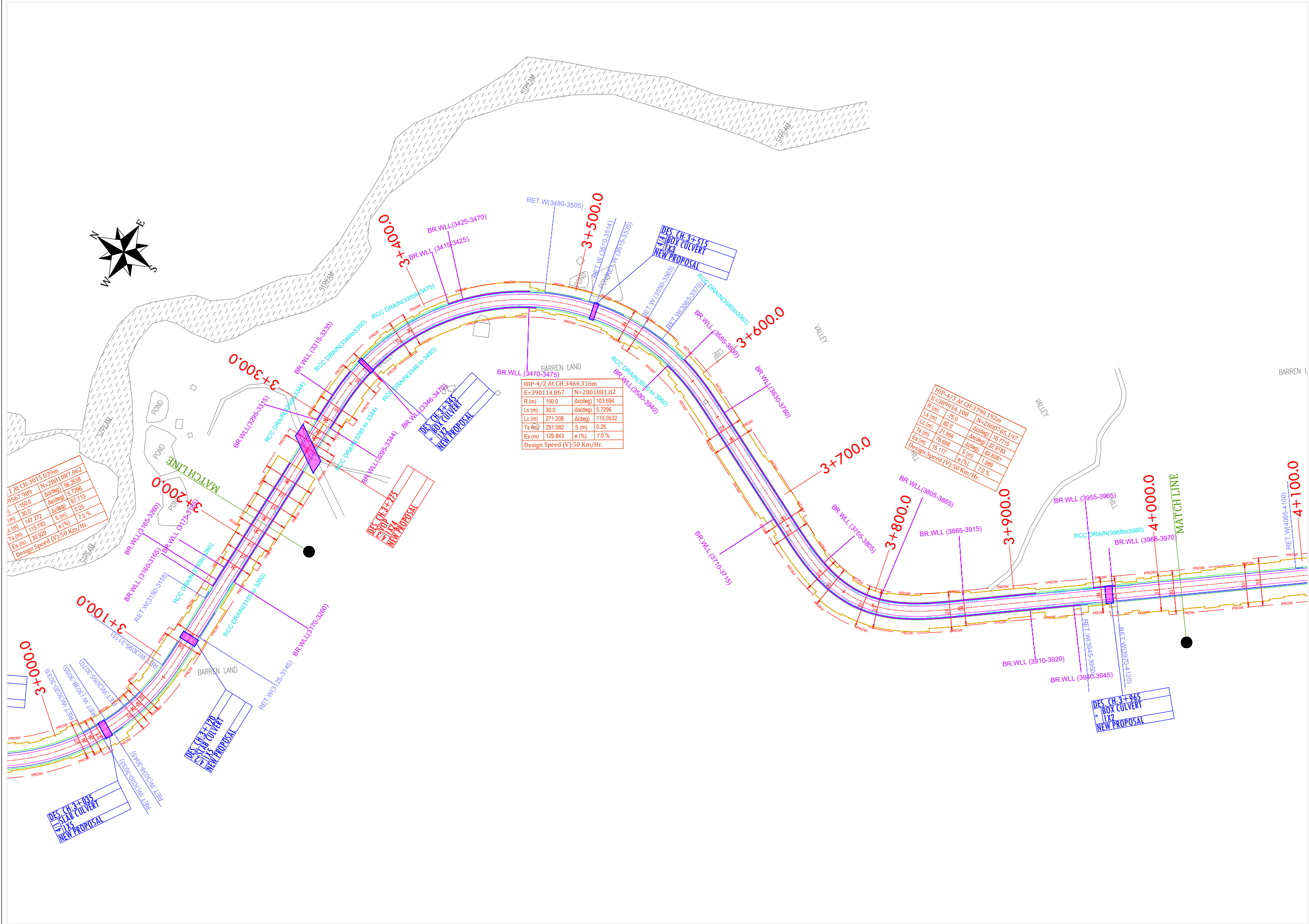
TITLE:

PLAN AND PROFILE

Km - 2+400 to Km- 3+200

CLIENT APPROVAL:	SEALED & SIGNATURE:
DWG No: 4/16	
DRAWN: LK	CHECKED: SJ
DESIGNED: SY	APPROVED: SC





- PROPOSED CL
- PROPOSED CW EDGE
- PROPOSED PS EDGE
- PROPOSED ROW
- EXISTING ROW
- PROPOSED ES
- RE WALL
- BREAST WALL
- EXISTING ROAD



REV.	DATE	REVISIONS

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PROJECT:

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SCALE AT A3 SIZE DRAWING

HORIZ.1:2500

VERT.1:1000

TITLE:

PLAN AND PROFILE

Km - 3+200 to Km- 4+000

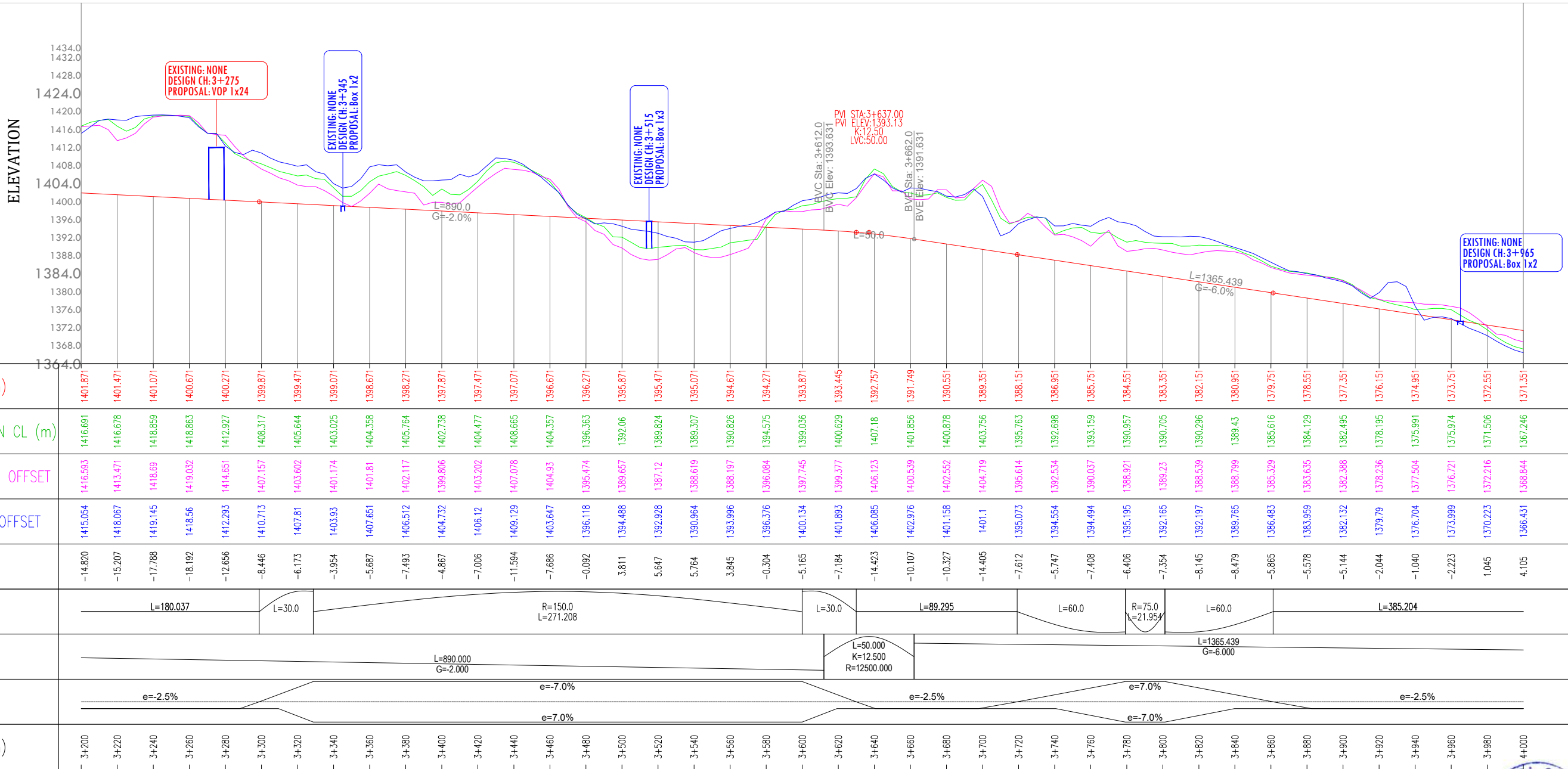
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DESIGNER: [Signature]

CHECKED: [Signature]

DRAWN: [Signature]

DATE: 16/06/2023





REV.	DATE	REVISIONS

CLIENT:

NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.

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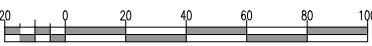
PROJECT:

IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

SCALE AT A3 SIZE DRAWING

HORIZ.1:2500

VERT.1:1000



TITLE:

PLAN AND PROFILE

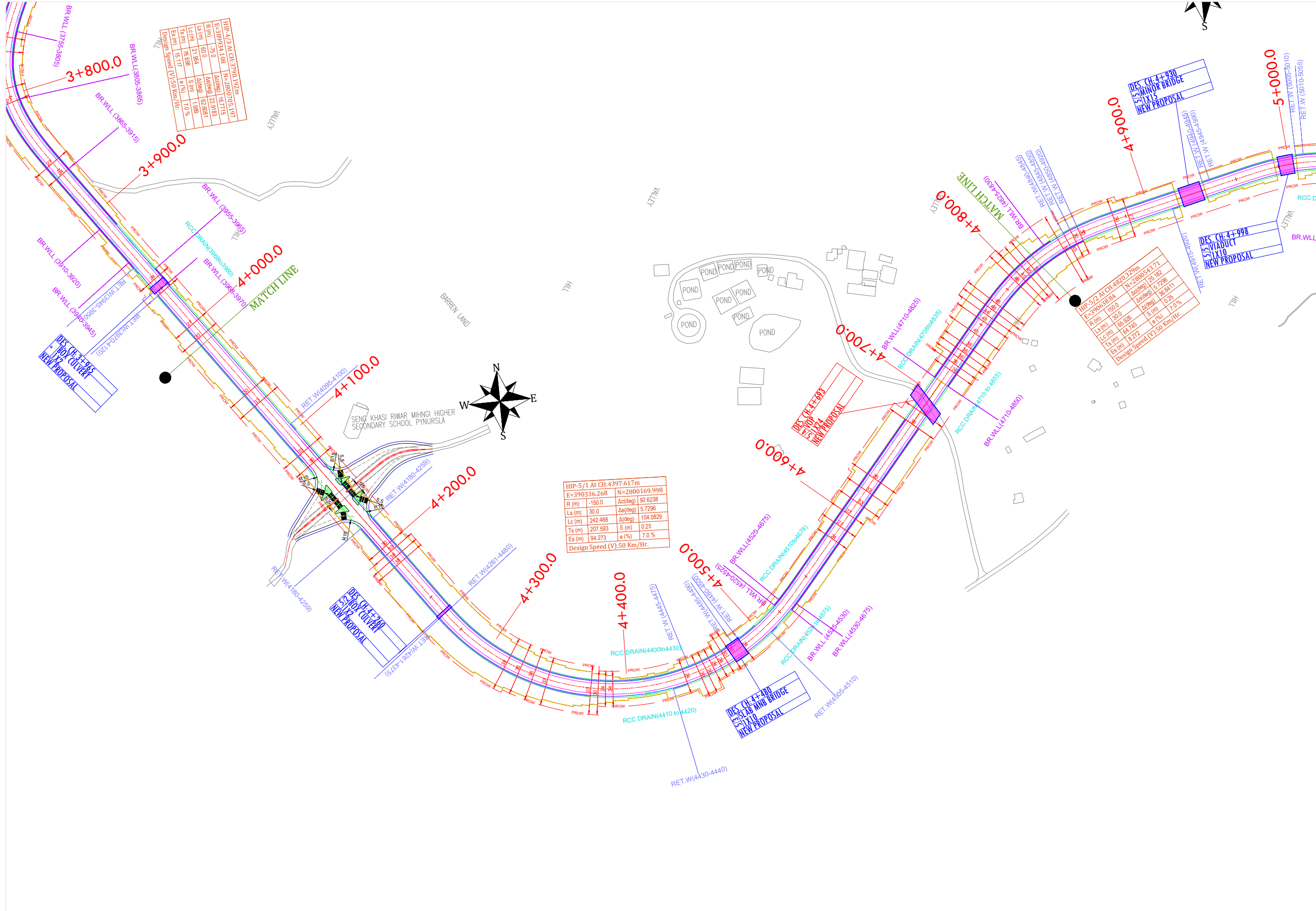
Km - 3+200 to Km- 4+000

CLIENT APPROVAL:

DWG No: 7/16

DRAWN: LK CHECKED: SJ DESIGNED: SY APPROVED: SC

SEALED & SIGNED:

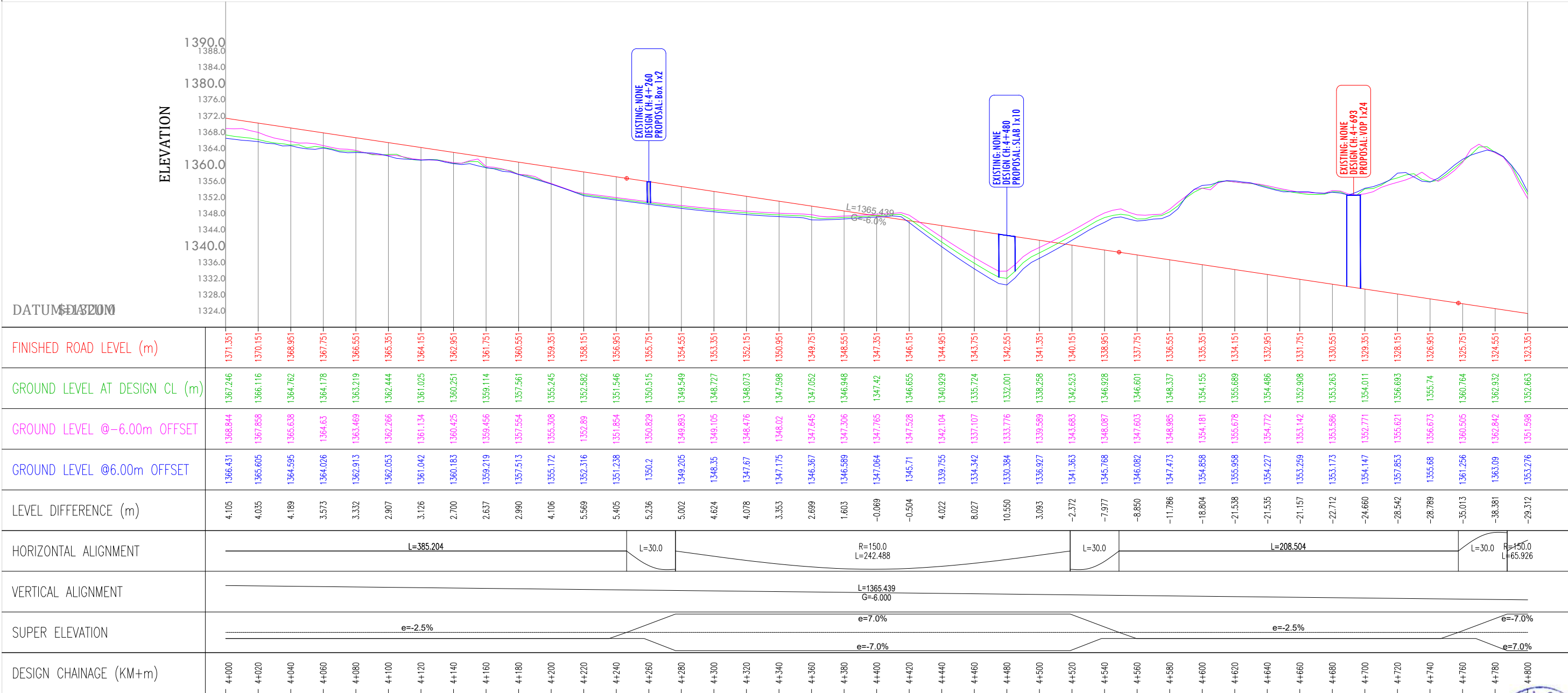


- PROPOSED CL
- PROPOSED CW EDGE
- PROPOSED PS EDGE
- PROPOSED ROW
- EXISTING ROW
- PROPOSED ES
- RE WALL
- BREAST WALL
- EXISTING ROAD

ELEVATION



DATUM: MSL



REV.	DATE	REVISIONS

CLIENT:



**NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.**
1st & 2nd Floor, Tower A, World Trade Centre, Nauroji
Nagar, New Delhi – 110029 Contact No : 011-26768950
Email Address : info@nhidcl.com

DESIGN CONSULTANT:



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F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org


PROJECT:

**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

SCALE AT A3 SIZE DRAWING

HORIZ.1:2500


VERT.1:1000



TITLE:

PLAN AND PROFILE

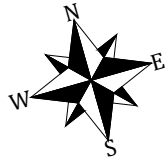
Km - 4+000 to Km- 4+800

CLIENT APPROVAL: 

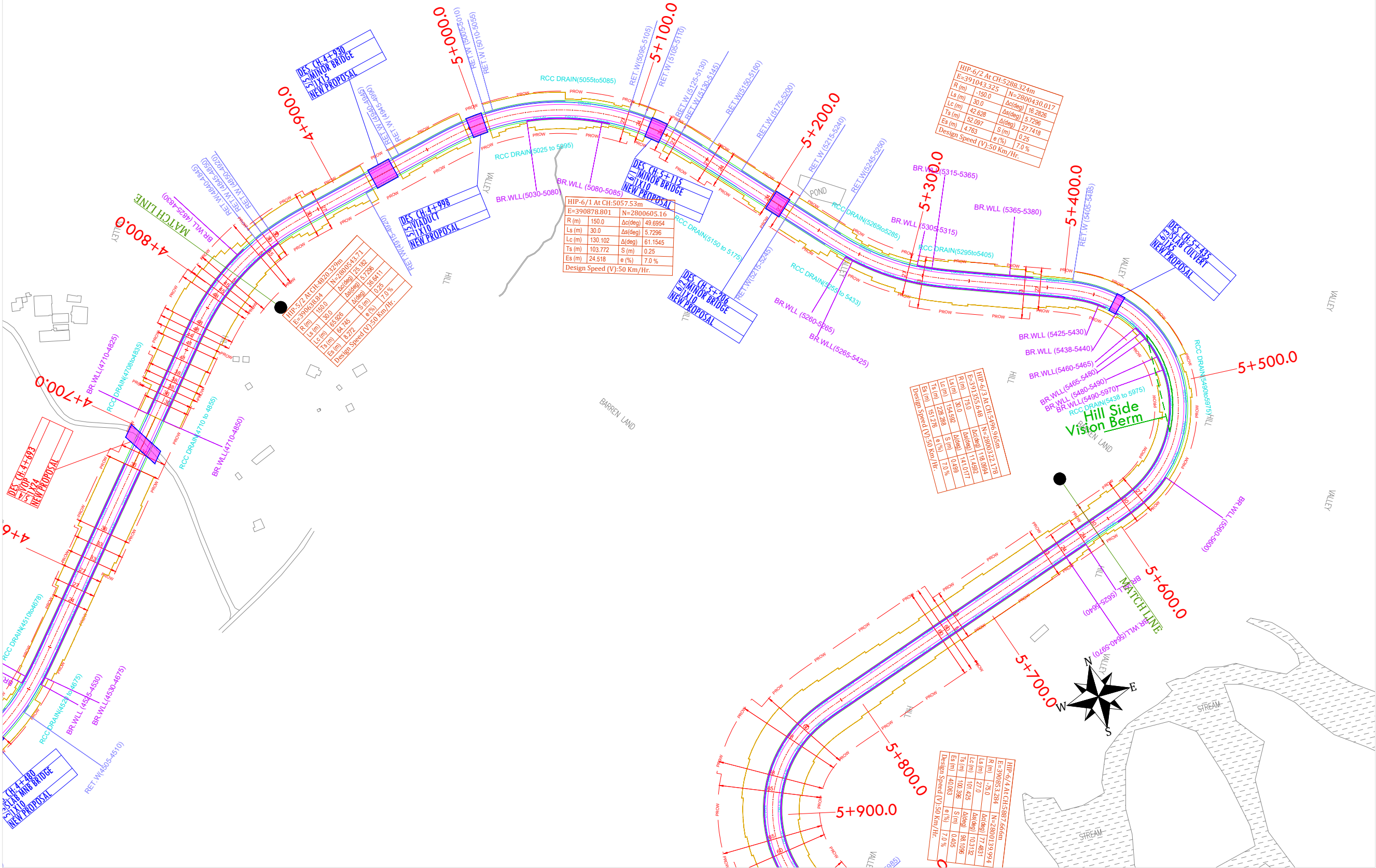
SEALED & SIGNATURE:

DWG No: 9/16

DRAWN: **SK** CHECKED: **SJ** DESIGNED: **SY** APPROVED: **SC**



- PROPOSED CL
- PROPOSED CW EDGE
- PROPOSED PS EDGE
- PROPOSED ROW
- EXISTING ROW
- PROPOSED ES
- RE WALL
- BREAST WALL
- EXISTING ROAD



REV.	DATE	REVISIONS

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DESIGN CONSULTANT:

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F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal - 462039 e: globalinfra@globalinfra.com web: globalinfra.com

PROJECT:

IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

SCALE AT A3 SIZE DRAWING

HORIZ.1:2500

VERT.1:1500

TITLE:

PLAN AND PROFILE

Km - 4+800 to Km- 5+600

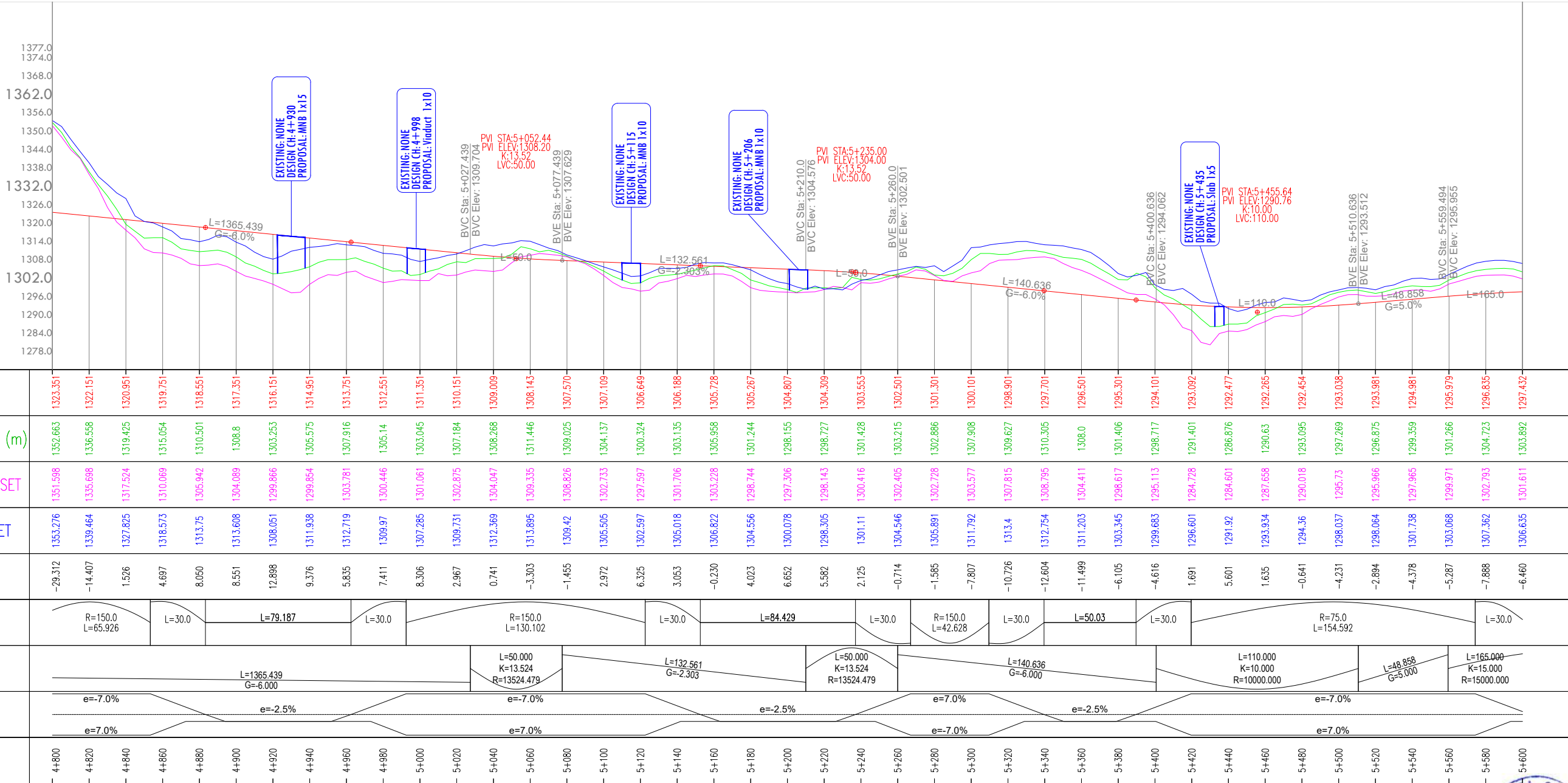
CLIENT APPROVAL:

SEALED & SIGNATURE:

DWG No: 10/16

DRAWN: LK CHECKED: SJ DESIGNED: SY APPROVED: SC

ELEVATION



REV.	DATE	REVISIONS

CLIENT:

NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
1st & 2nd Floor, Tower A, World Trade Centre, Nauroji Nagar, New Delhi – 110029 Contact No : 011-26768950 Email Address : info@nhidcl.com

DESIGN CONSULTANT:

Global Infra Solutions
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F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039 e: globalinfra@globalinfra.com web: globalinfra.com

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IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

SCALE AT AS SIZE DRAWING

HORIZ.1:2500

VERT.1:1500

TITLE:

PLAN AND PROFILE

Km - 4+800 to Km- 5+600

CLIENT APPROVAL:

SEALED & SIGNATURE:

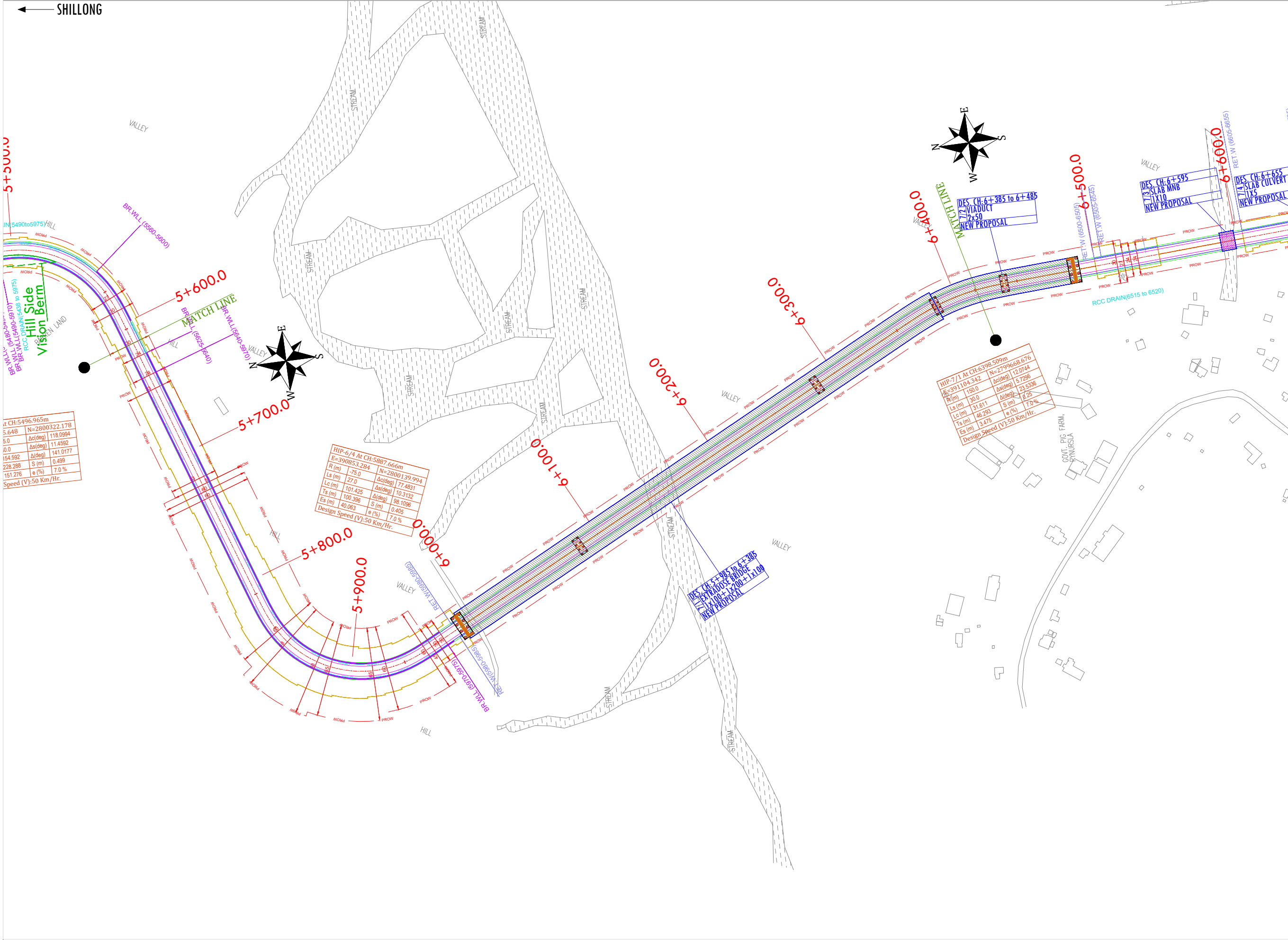
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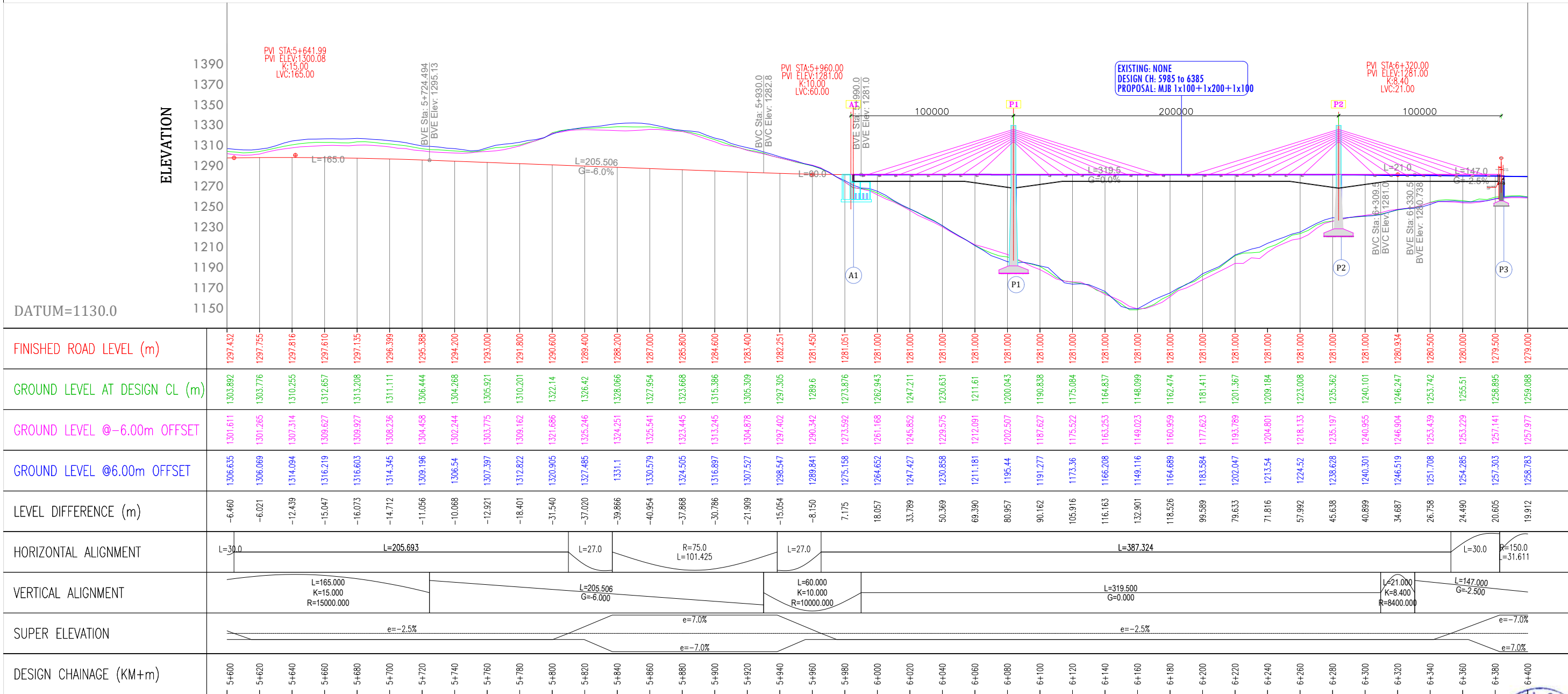
CHECKED: SY

DESIGNED: SC

APPROVED:



- DAWKI
- PROPOSED CL
 - PROPOSED CW EDGE
 - PROPOSED PS EDGE
 - PROPOSED ROW
 - EXISTING ROW
 - PROPOSED ES
 - RE WALL
 - BREAST WALL
 - EXISTING ROAD



REV.	DATE	REVISIONS

CLIENT:

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SCALE AT A3 SIZE DRAWING

HORIZ.1:2500

VERT.1:4000

TITLE:

PLAN AND PROFILE

Km - 5+600 to Km- 6+400

CLIENT APPROVAL:

DWG No: 13/16

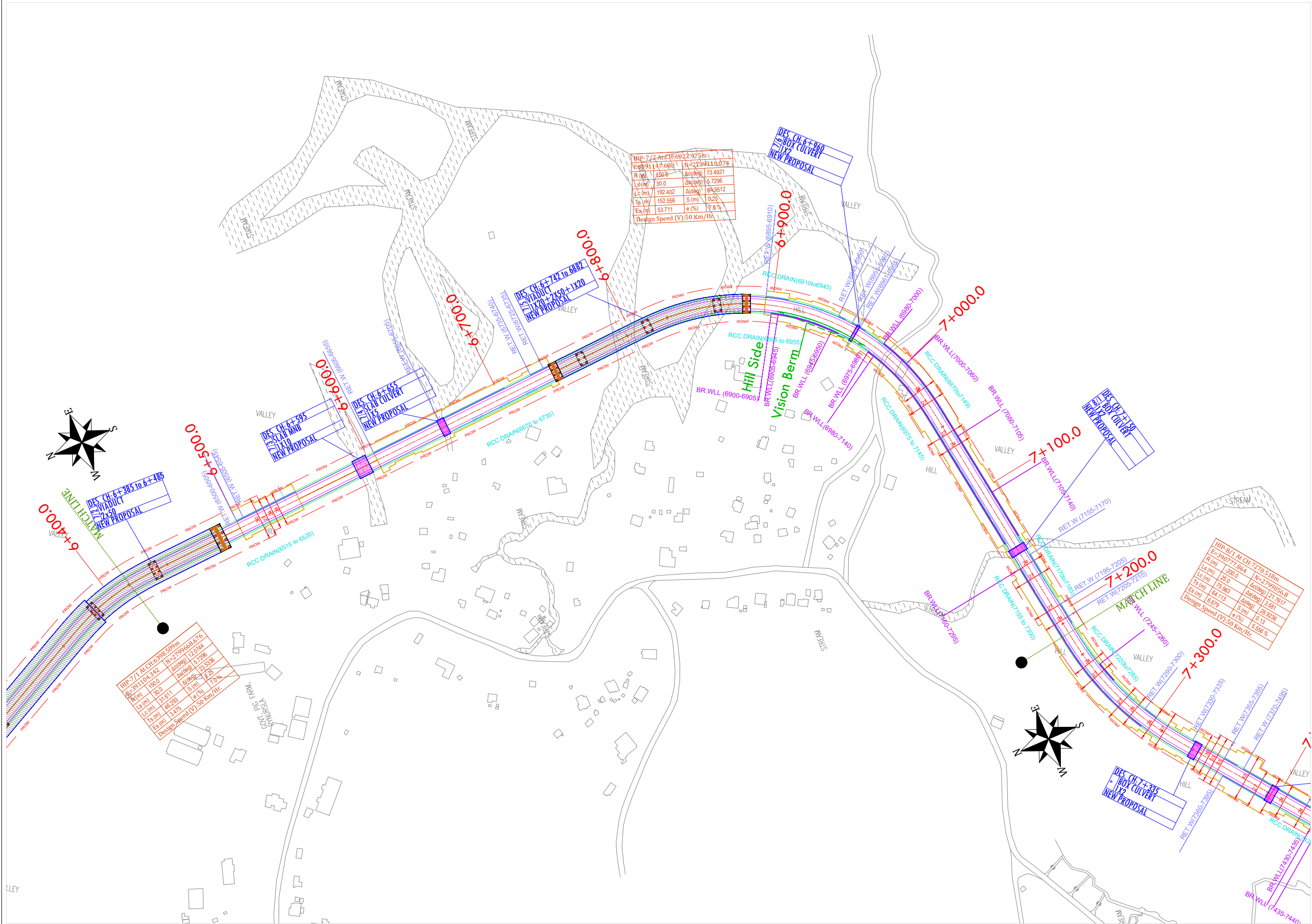
DRAWN: SJ

CHECKED: SY

DESIGNED: SC

APPROVED: SC

SEALED & SIGNATURE:



- PROPOSED CL
- PROPOSED CW EDGE
- PROPOSED PS EDGE
- PROPOSED ROW
- EXISTING ROW
- PROPOSED ES
- RE WALL
- BREAST WALL
- EXISTING ROAD

REV.	DATE	REVISIONS

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SCALE AT A3 SIZE DRAWING

HORIZ.1:2500

VERT.1:1000

TITLE:

PLAN AND PROFILE

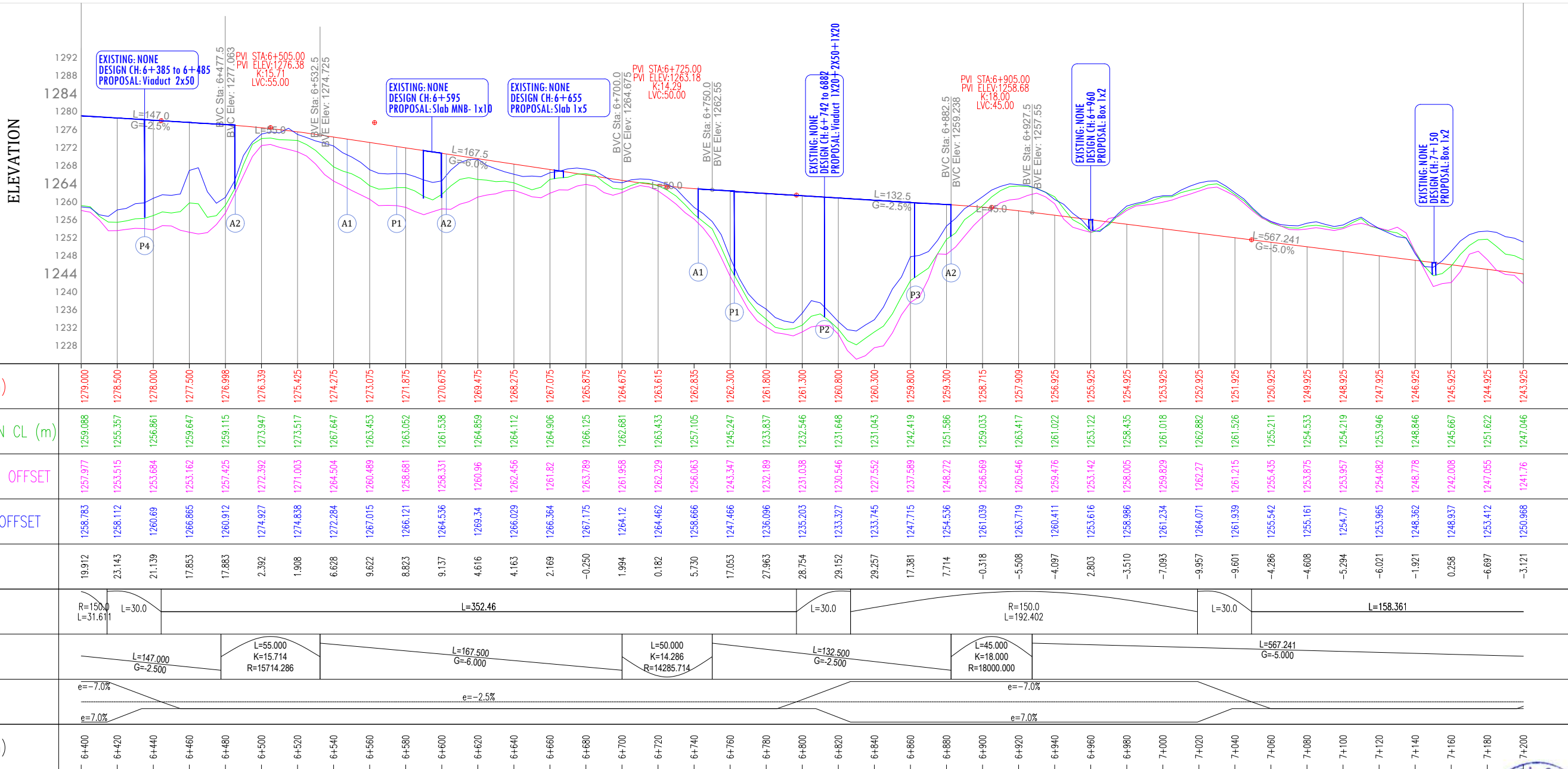
Km - 6+400 to Km-7+200


CLIENT APPROVAL:

SEALED & SIGNATURE:

DWG No: 14/16

DRAWN: LK CHECKED: SJ DESIGNED: SY APPROVED: SC





REV.	DATE	REVISIONS

CLIENT:

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SCALE AT A3 SIZE DRAWING

HORIZ.1:2500

VERT.1:1000



TITLE:

PLAN AND PROFILE

Km - 6+400 to Km- 7+200

CLIENT APPROVAL:

DWG No: 15/16

DRAWN: SJ

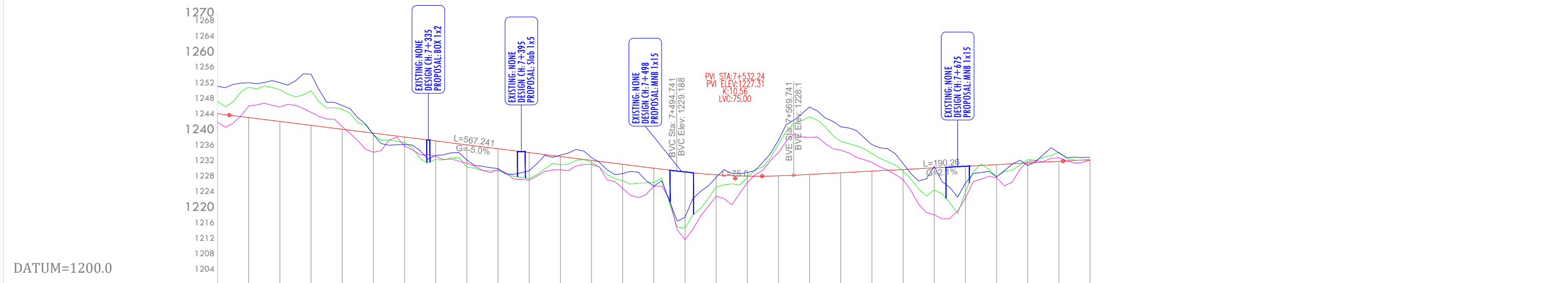
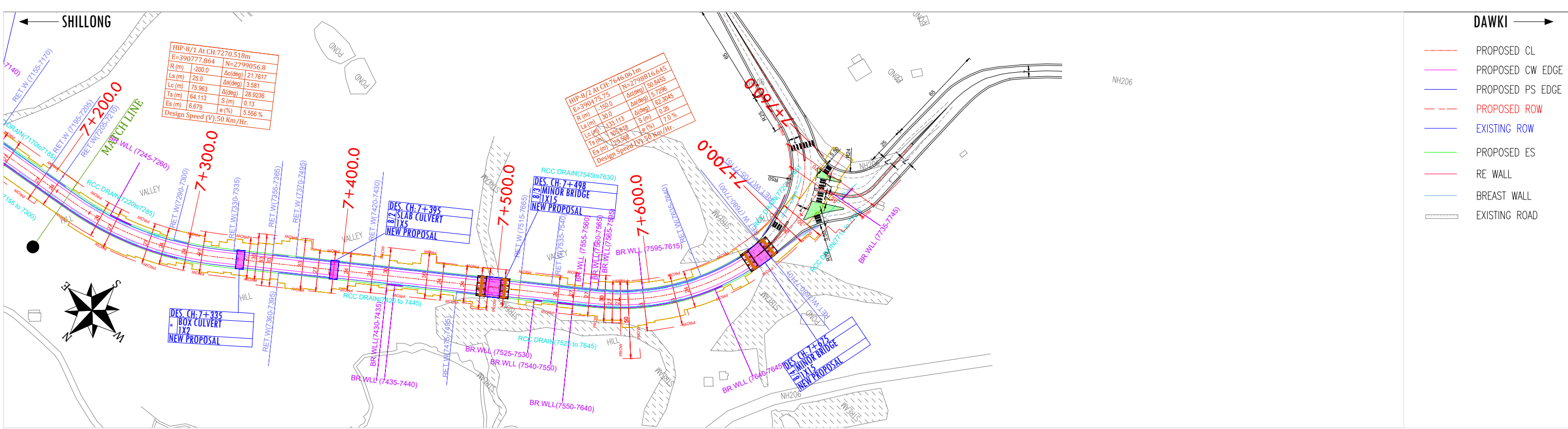
CHECKED: SY

DESIGNED: SC

APPROVED: SC

SEALED & SIGNATURE:





FINISHED ROAD LEVEL (m)	1243.925	1242.925	1241.925	1240.925	1239.925	1238.925	1237.925	1236.925	1235.925	1234.925	1233.925	1232.925	1231.925	1230.925	1229.925	1228.940	1228.228	1227.895	1227.942	1228.316	1228.736	1229.156	1229.576	1229.996	1230.416	1230.836	1231.256	1231.676	1232.096
GROUND LEVEL AT DESIGN CL (m)	1247.046	1250.775	1250.077	1249.8	1245.059	1238.526	1236.513	1232.23	1230.167	1229.326	1227.245	1230.811	1231.393	1226.753	1226.21	1214.535	1225.155	1227.527	1236.098	1243.109	1236.844	1235.639	1229.237	1224.363	1223.785	1227.745	1232.156	1234.094	1231.974
GROUND LEVEL @-6.00m OFFSET	1241.76	1245.893	1245.626	1244.266	1240.618	1234.002	1235.614	1232.993	1231.259	1229.533	1226.838	1229.55	1230.881	1224.725	1225.285	1211.549	1222.723	1226.262	1233.972	1237.802	1234.583	1231.457	1227.014	1217.981	1222.229	1227.496	1231.661	1232.605	1232.029
GROUND LEVEL @6.00m OFFSET	1250.968	1251.877	1251.918	1254.062	1246.037	1238.574	1236.01	1233.184	1231.99	1229.818	1228.277	1233.29	1232.626	1228.496	1225.29	1217.31	1227.605	1228.803	1237.154	1245.644	1240.554	1235.986	1231.135	1230.4	1225.078	1227.694	1230.622	1233.843	1232.717
LEVEL DIFFERENCE (m)	-3.121	-7.850	-8.152	-8.875	-5.134	0.399	1.412	4.695	5.758	5.599	6.680	2.114	0.532	4.172	3.715	14.405	3.073	0.368	-8.156	-14.793	-8.108	-4.483	0.339	5.633	6.631	3.091	-0.900	-2.418	0.122
HORIZONTAL ALIGNMENT	L=158.361=25.0 R=200.0 L=75.963 L=25.0 L=216.006 L=30.0 R=150.0 L=133.113 L=30.0 L=17.383																												
VERTICAL ALIGNMENT	L=567.241 G=-5.000 L=75.000 K=10.563 R=10563.380 L=190.260 G=2.100																												
SUPER ELEVATION	e=-5.556% e=-2.5% e=7.0% e=-2.5%																												
DESIGN CHAINAGE (KM+m)	7+200	7+220	7+240	7+260	7+280	7+300	7+320	7+340	7+360	7+380	7+400	7+420	7+440	7+460	7+480	7+500	7+520	7+540	7+560	7+580	7+600	7+620	7+640	7+660	7+680	7+700	7+720	7+740	7+760



REV.	DATE	REVISIONS

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DESIGN CONSULTANT:

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PROJECT:

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SCALE AT A3 SIZE DRAWING

HORIZ.1:2500

VERT.1:1000

TITLE:

PLAN AND PROFILE

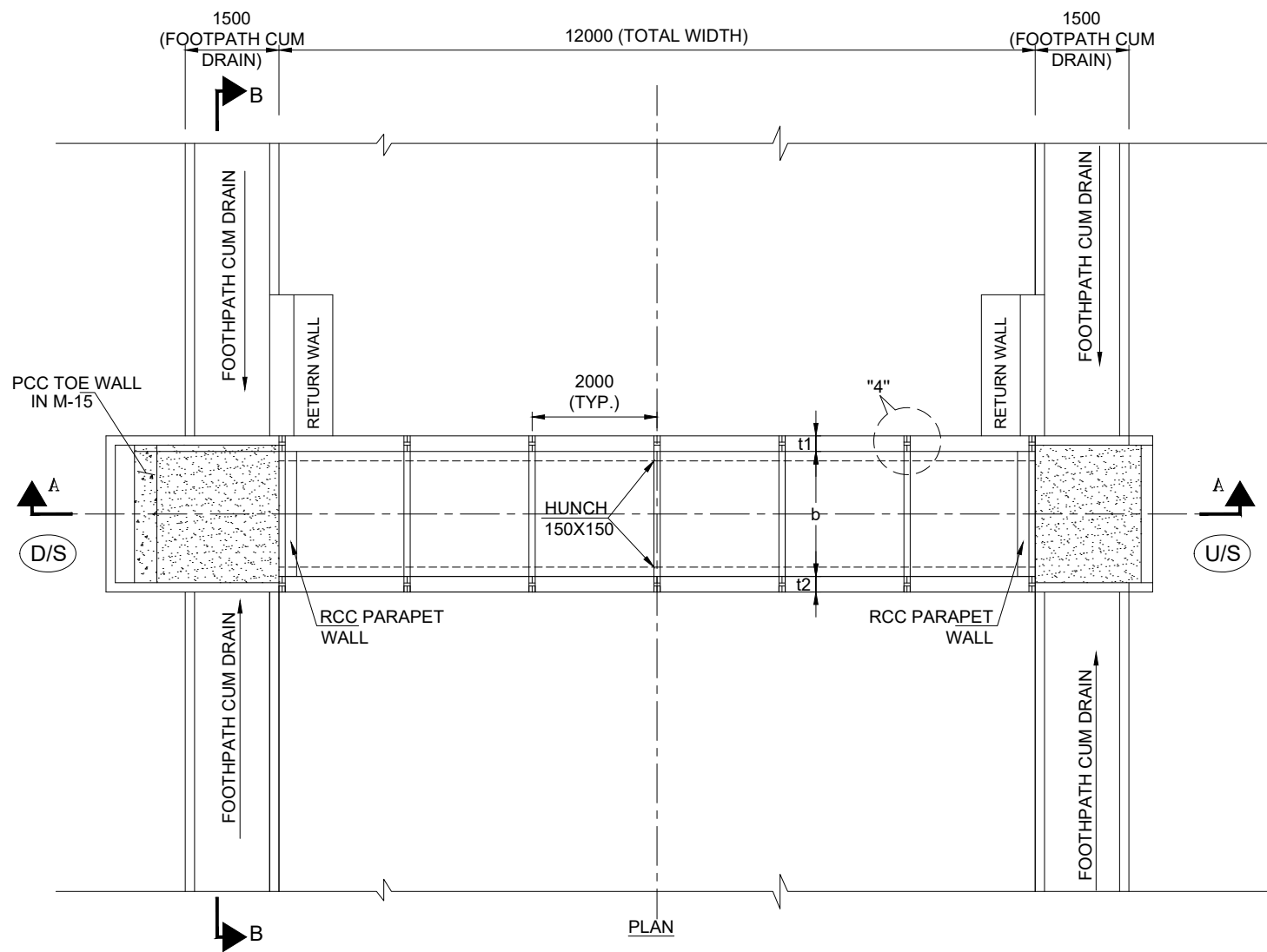
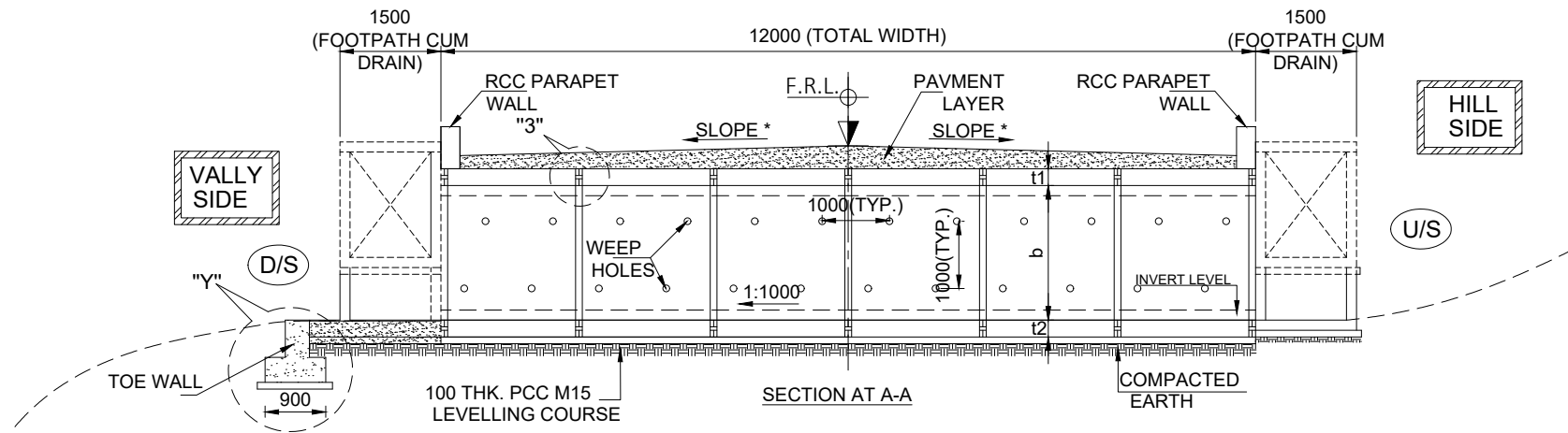
Km - 7+200 to Km- 7+565

CLIENT APPROVAL:

SEALED & SIGNATURE:

DWG No.	CHECKED	DESIGNED	APPROVED
16/16	SJ	SY	SC

GAD'S OF STRUCTURES



GENERAL NOTES:

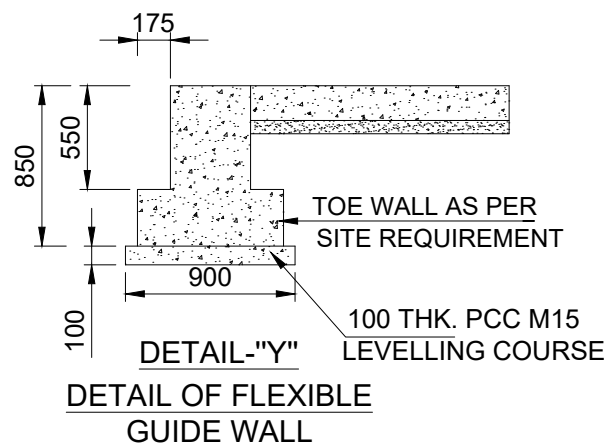
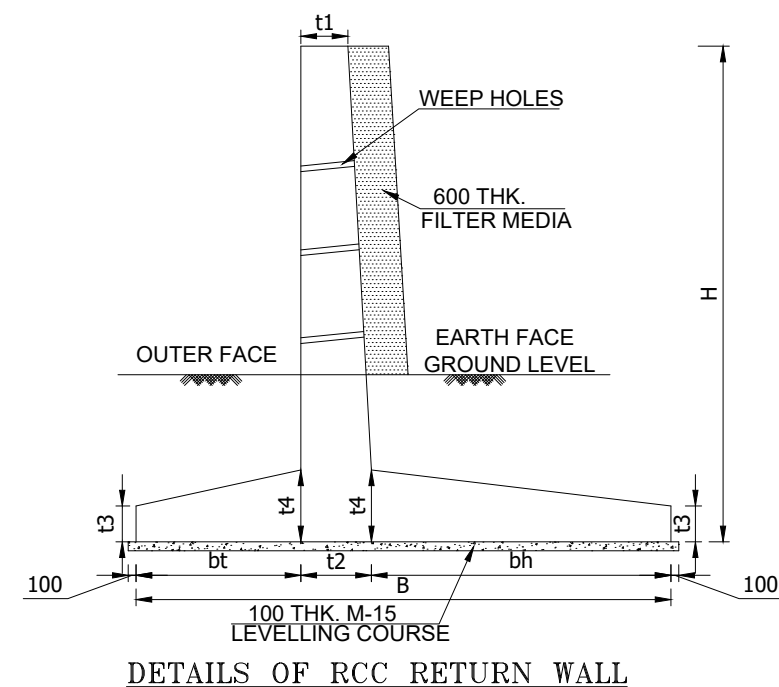
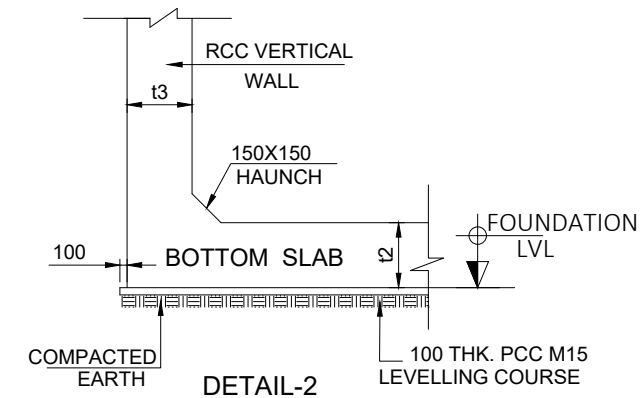
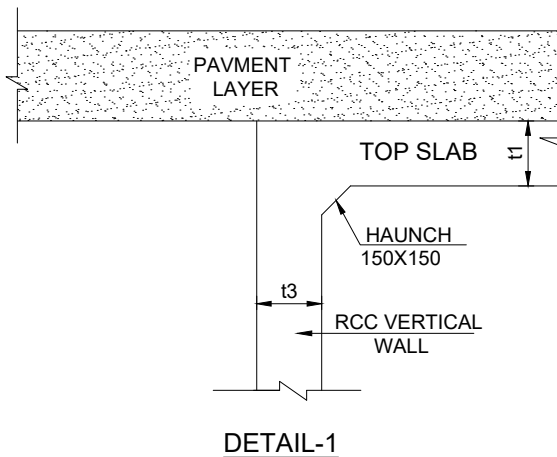
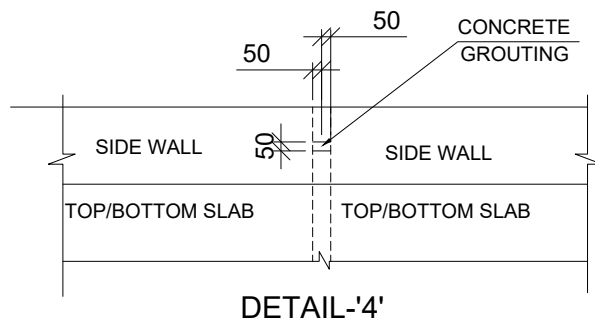
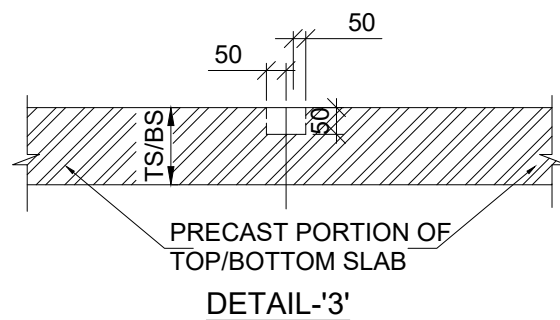
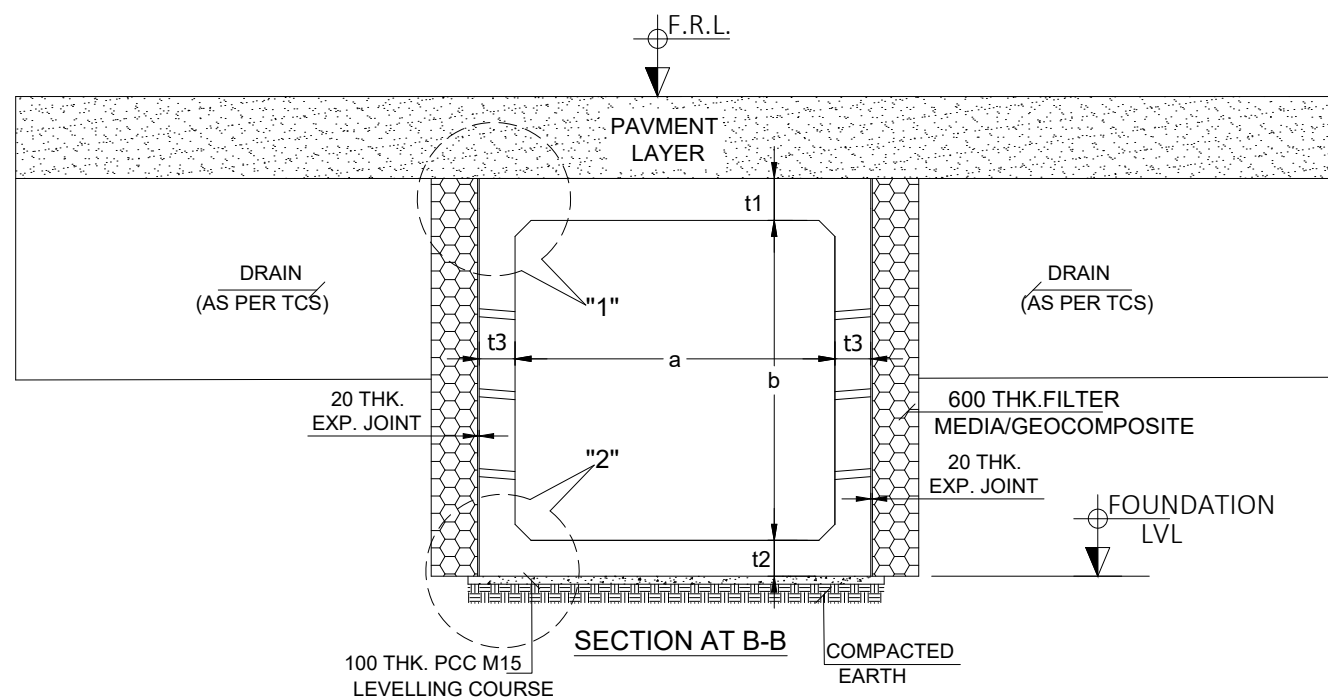
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DRAWING SHALL BE SCALED.
- THE DESIGN IS ACCORDING TO THE FOLLOWING CODES.
IRC:5-2024 IRC:6-2017
IRC:78-2024 IRC:112-2020
IRC SP:13-2022
- FOLLOWING LOADS HAVE BEEN CONSIDERED IN DESIGN.
a. LIVE LOADS ONE LANE OF CLASS 70 R + ONE LANE OF CLASS A OR THREE LANE OF CLASS A TRANS WHICHEVER PRODUCE WORST EFFECT.
b. DENSITY OF BITUMEN COAT HAS BEEN ASSUMED AS 2.2 T/M
TOP OF RAFT IS KEPT 300MM BELOW THE BED LEVEL AS PER CLAUSE 21.1.1 OF IRC:SP:13-2022.
- 20 THK. COMPRESSIBLE FIBRE BOARD SHALL BE USED FOR EXPANSION JOINT AND SHALL CONFIRM TO IRC SP:69:2011.
- DRAINAGE SPOUT USED SHALL BE AS PER MORT&H STANDARD DRAWING NO. SD/205 & IRC 5:2024.
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- WEARING COAT AS PER MORT&H STANDARD CLAUSE 2702.2 AND HAVING UNI DIRECTIONAL CAMBER FOR EACH TWO LANE AS PER CLAUSE 7.14. IRC:SP:84-2009.
- APPROACH SLAB SHALL BE AS PER IRC:5 AND SECTION 2704 OF M.O.R.T&H SPECIFICATIONS (FIFTH REVISION).
- 600 MM THICK FILTER MEDIA SHALL BE PROVIDED AS PER APPENDIX-6 OF IRC SP:78-2024.
- MATERIALS:**
- GRADE OF CONCRETE SHALL CONFIRM TO CLAUSE 6.4 OF IRC 112-2020 AND ARE AS FOLLOWS:
a. RCC BOX -M30
b. Parapet Wall/RAILING -M40
c. PCC TOE WALL -M20
d. RETURN WALL -M30
e. PCC LEVELING COURSE -M15
- REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS OF FE-500D, CONFIRMING TO CLAUSE 6.2 OF IRC 112-2020 & IS-1786:2008.
- WATER TO BE USED IN CONCRETING AND CURING SHALL CONFIRM TO CLAUSE 18.4.5 OF IRC 112-2020.
- BACKFILLING SHALL BE DONE IN LAYERS NOT EXCEEDING 200mm THK.EACH LAYERS SHALL BE COMPACTED TO THE OPTIMUM DENSITY.
- THE GRANNULAR FILL BEHIND ABUTMENT SHALL BE AS PER M.O.R.T.H SPECIFICATIONS (FIFTH REVISION) ($\phi=30^\circ$, $\Delta=20$, $\Gamma=1.8$) AND APPENDIX 6, IRC 78-2014.
- SIDE SLOPE OF ROAD EMBANKMENT NEAR ABUTMENTS SHALL BE IN SLOPE 1V:1.5H & SHALL BE PROVIDED WITH 300 THICK STONE REVETMENT AND 150 THICK FILTER MEDIA CONFORMING TO CLAUSE 2500 & 2504 OF M.O.R.T.H SPECIFICATIONS (FIFTH REVISION).
- 100 MM DIA A.C. PIPE WEEP HOLES SHALL BE PROVIDED @ 1.0 M C/C HORIZONTALLY & VERTICALLY STAGGERED 150 MM ABOVE LOWEST WATER LEVEL OR LOWEST BED LEVEL WHICH IS HIGHER AT SLOPE 1:20 AS PER IRC 78-2024 & CLAUSE 2706 OF M.O.R.T&H SPECIFICATIONS (FIFTH REVISION).
- AGGREGATE SIZE SHALL BE AS PER CLAUSE 302.3.2.3 OF IRC:21,2000.
- CONSTRUCTION**
- THE LOCATION AND PROVISION OF CONSTRUCTION JOINT SHALL BE APPROVED BY ENGINEER IN CHARGE.
- THE PROTECTIVE WORKS SHALL BE COMPLETED AS PER CLAUSE 2104.3 AND SECTION 2500.
- THE CONSTRUCTION AGENCY SHOULD ENSURE THAT THE NECESSARY PERMISSIONS HAS BEEN OBTAINED FROM ROAD & IRRIGATION AUTHORITY IF REQUIRED FOR DIVERTING THE TRAFFIC TEMPORARILY PRIOR TO COMMENCING THE WORK.
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- EXCAVATION SHOULD BE DONE AS PER SECTION 304 OF M.O.R.T.H SPECIFICATIONS (FIFTH REVISION).
- BEFORE COMMENCEMENT OF EXECUTION OF WORK CROSS SECTION AS THE SITE SHALL BE TAKEN BY PRECISION SURVEY & OUTER AND INNER WALL POSITION SHOWN IN TECHNICALLY SANCTIONED DRAWING SHALL BE VERIFIED ON SITE IN CASE OF ANY DISCREPANCY OR DOUBT CLARIFICATION SHALL BE OBTAINED FROM COMPETENT AUTHORITY BEFORE HAND.
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CONSULTANT : Global Infra Solutions
in JV with Dhruv Consultancy Services Limited and
association with Infycons Creative Software Pvt. Ltd.
F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE : IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR RECONSTRUCTION OF RCC BOX CULVERT
			SHEET 01 OF 02
DGN		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. : NHIDCL/PYNSL/GAD/01
			SCALE : NOT TO SCALE



SCHEDULE:-

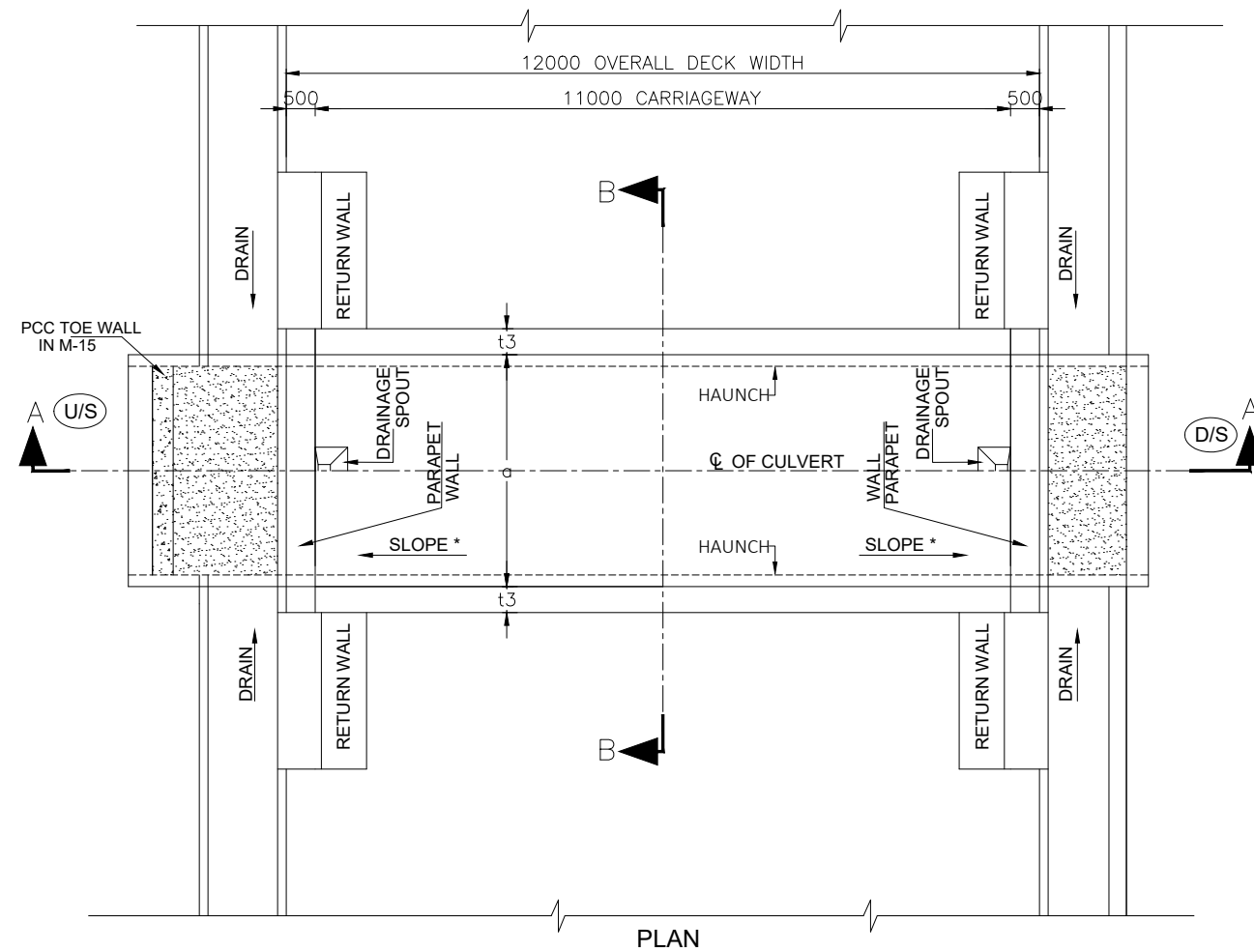
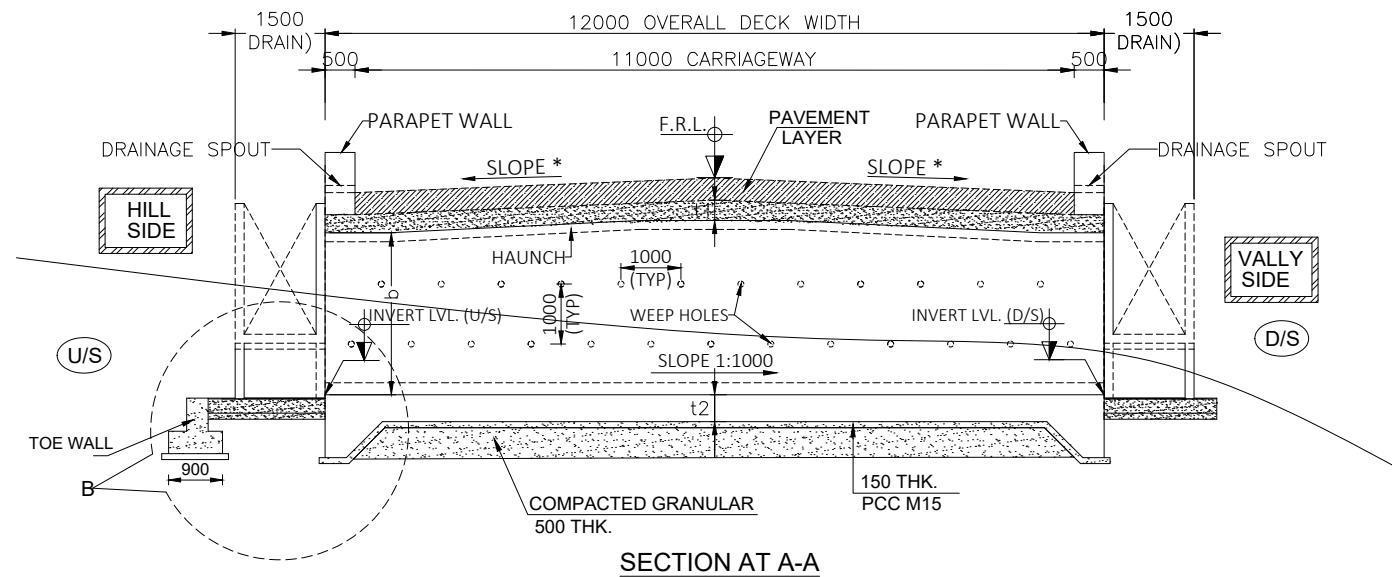
Sr. No.	Design Chainage	FRL (M)	Invert Level (M)	DIMENSIONAL DETAILS OF BOX						DIMENSIONAL DETAILS OF RETURN WALL							
				Box Size	a (mm)	b (mm)	t ₁ (mm)	t ₂ (mm)	t ₃ (mm)	H (mm)	B (mm)	b _t (mm)	b _h (mm)	t ₁ (mm)	t ₂ (mm)	t ₃ (mm)	t ₄ (mm)
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2	0+180	1508.705	1506.740	2 x 1.5	2000	1500	250	250	250	3765	2640	800	1520	300	320	300	380
3	0+250	1505.205	1503.240	2 x 1.5	2000	1500	250	250	250	3765	2640	800	1520	300	320	300	380
4	0+280	1503.705	1501.740	2 x 1.5	2000	1500	250	250	250	3765	2640	800	1520	300	320	300	380
5	0+490	1495.323	1493.358	2 x 1.5	2000	1500	250	250	250	3765	2640	800	1520	300	320	300	380
6	0+575	1492.321	1490.356	2 x 1.5	2000	1500	250	250	250	3765	2640	800	1520	300	320	300	380
7	0+615	1490.887	1488.922	2 x 1.5	2000	1500	250	250	250	3765	2640	800	1520	300	320	300	380
8	0+735	1485.071	1483.106	2 x 1.5	2000	1500	250	250	250	3765	2640	800	1520	300	320	300	380
9	1+035	1475.351	1473.386	2 x 1.5	2000	1500	250	250	250	3765	2640	800	1520	300	320	300	380
10	1+245	1472.271	1470.306	2 x 1.5	2000	1500	250	250	250	3765	2640	800	1520	300	320	300	380
11	1+280	1471.536	1469.071	2 x 2	2000	2000	250	250	250	4265	2990	900	1730	300	360	300	430

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e: globalinfra@globalinfra.com web: globalinfra.com

PROJECT TITLE : IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

REV DATE DESCRIPTION
DRAWN NAME SIG.
CHECKED
APPROVED
DRAWING TITLE :- GENERAL ARRANGEMENT DRAWING FOR RECONSTRUCTION OF RCC BOX CULVERT SHEET-02 OF 02
DRAWING No. : NHICL/PYNSU/GAD/01
SCALE : NOT TO SCALE



GENERAL NOTES:

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IRC:5-2024 IRC:6-2017
IRC:78-2024 IRC:112-2020
IRC SP:13:2022
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b. DENSITY OF BITUMEN COAT HAS BEEN ASSUMED AS 2.2 T/M
- TOP OF RAFT IS KEPT 300MM BELOW THE BED LEVEL AS PER CLAUSE 21.1.1 OF IRC:SP:13:2022.
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- DRAINAGE SPOUT USED SHALL BE AS PER MORT&H STANDARD DRAWING NO. SD/205 & IRC 5:2024.
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- 600 MM THICK FILTER MEDIA SHALL BE PROVIDED AS PER APPENDIX-6 OF IRC SP:78-2024.

MATERIALS:

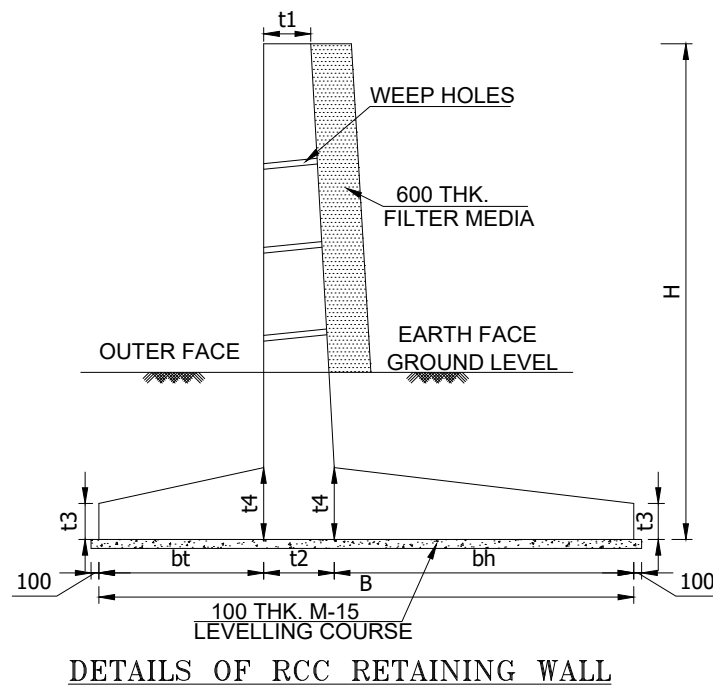
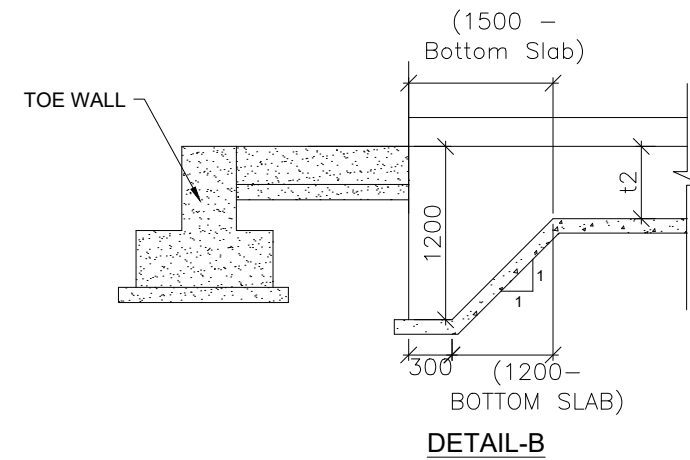
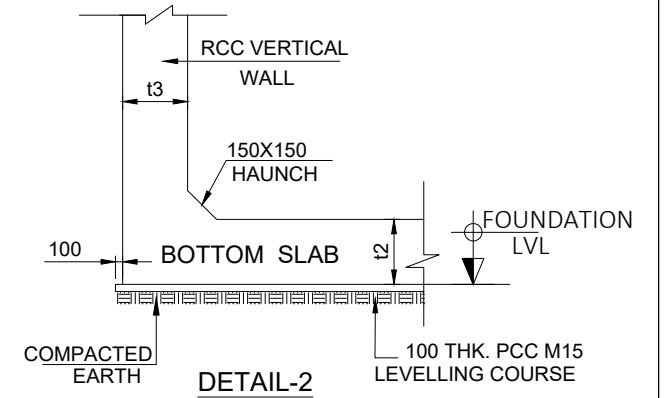
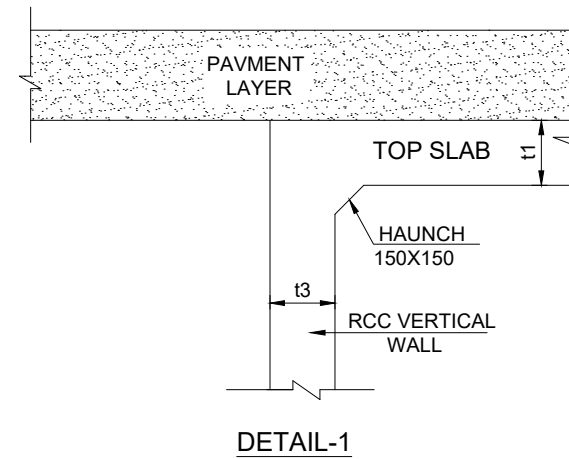
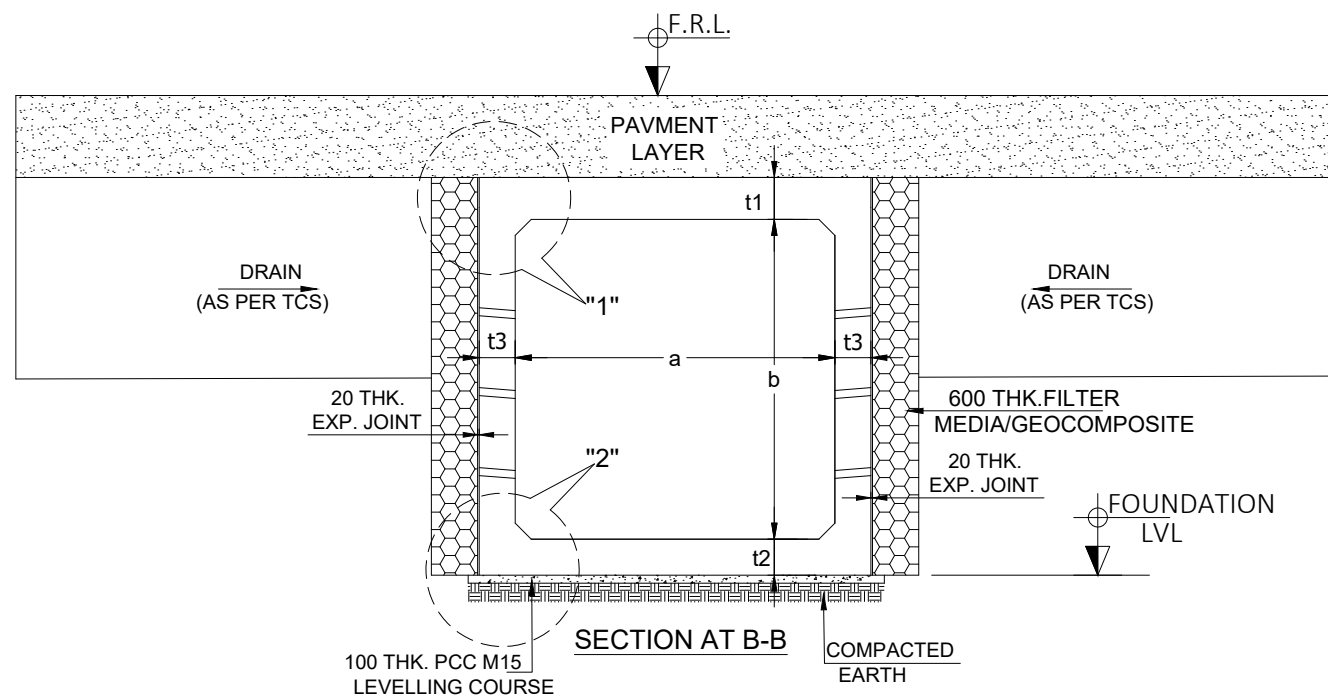
- GRADE OF CONCRETE SHALL CONFIRM TO CLAUSE 6.4 OF IRC 112-2020 AND ARE AS FOLLOWS:
a. RCC BOX -M30
b. Parapet Wall/RAILING -M40
c. PCC TOE WALL -M20
d. RETURN WALL -M30
e. PCC LEVELING COURSE -M15
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- SIDE SLOPE OF ROAD EMBANKMENT NEAR ABUTMENTS SHALL BE IN SLOPE 1V:1.5H & SHALL BE PROVIDED WITH 300 THICK STONE REVETMENT AND 150 THICK FILTER MEDIA CONFORMING TO CLAUSE 2500 & 2504 OF M.O.R.T.H SPECIFICATIONS (FIFTH REVISION).
- 100 MM DIA A.C. PIPE WEEP HOLES SHALL BE PROVIDED @ 1.0 M C/C HORIZONTALLY & VERTICALLY STAGGERED 150 MM ABOVE LOWEST WATER LEVEL OR LOWEST BED LEVEL WHICH IS HIGHER AT SLOPE 1:20 AS PER IRC 78-2024 & CLAUSE 2706 OF M.O.R.T&H SPECIFICATIONS (FIFTH REVISION).
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REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED OF RCC BOX CULVERT
			SHEET- 01 OF 02
DGN		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. : NHIDCL/PYNSL/GAD/02
			SCALE : NOT TO SCALE



SCHEDULE:-

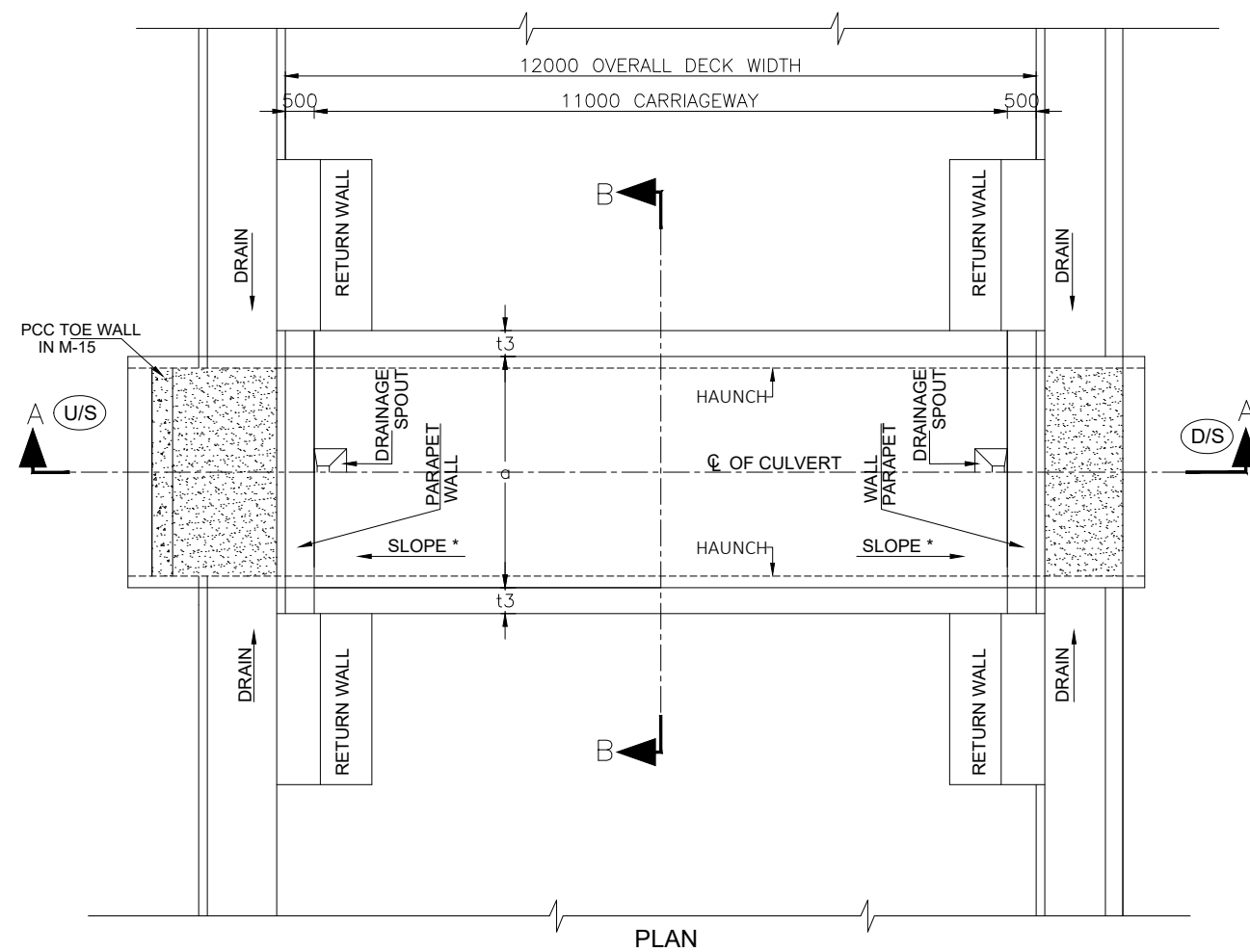
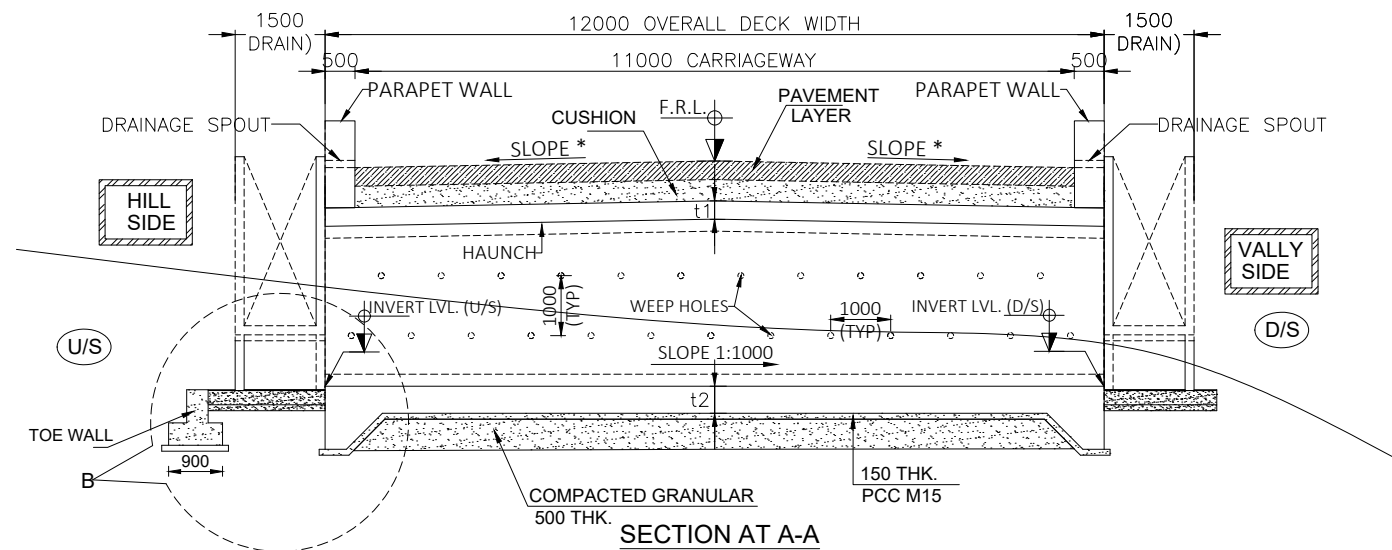
Sr. No.	Design Chainage	FRL (M)	Invert Level (M)	DIMENSIONAL DETAILS OF BOX						DIMENSIONAL DETAILS OF RETURN WALL							
				Box Size	a (mm)	b (mm)	t ₁ (mm)	t ₂ (mm)	t ₃ (mm)	H (mm)	B (mm)	b _t (mm)	b _h (mm)	t ₁ (mm)	t ₂ (mm)	t ₃ (mm)	t ₄ (mm)
1	1+445	1465.731	1463.766	2 x 1.5	2000	1500	250	250	250	3765	2640	800	1520	300	320	300	380
2	2+010	1441.081	1439.066	3 x 1.5	3000	1500	300	300	300	3815	2680	810	1550	300	320	300	390
3	3+345	1398.971	1397.006	2 x 1.5	2000	1500	250	250	250	3765	2640	800	1520	300	320	300	380
4	3+965	1373.451	1371.486	2 x 1.5	2000	1500	250	250	250	3765	2640	800	1520	300	320	300	380
5	6+960	1255.925	1252.960	2 x 2	2000	2000	250	250	250	4765	3340	1010	1930	300	400	300	480

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REV	DATE	DESCRIPTION	DRAWING TITLE :-
DGN			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED OF RCC BOX CULVERT
DRAWN			SHEET-02 OF 02
CHECKED			DRAWING No. : NHIDCL/PYNSL/GAD/02
APPROVED			SCALE : NOT TO SCALE



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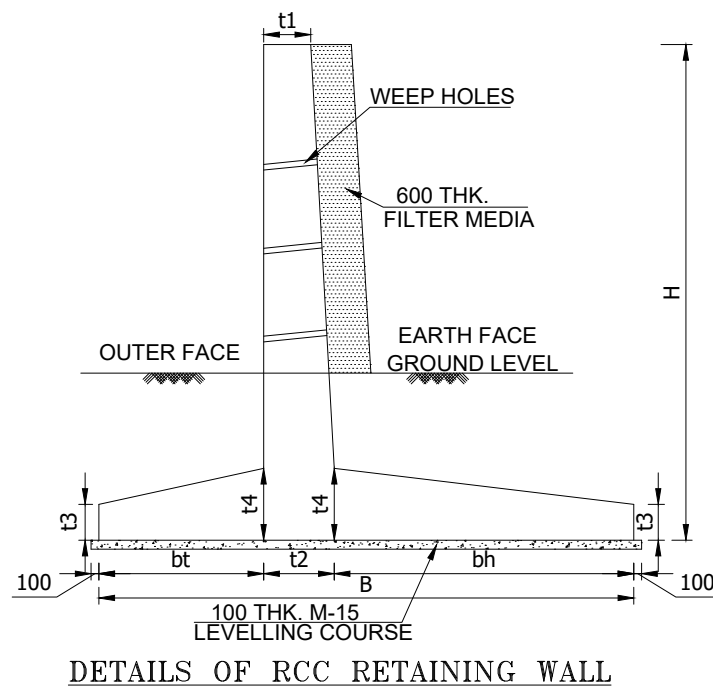
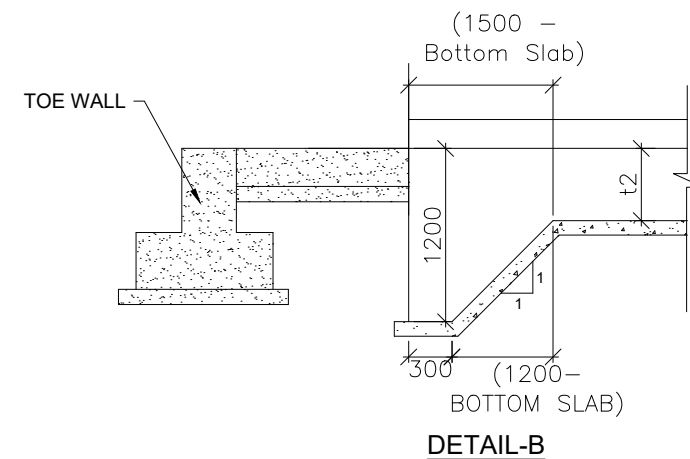
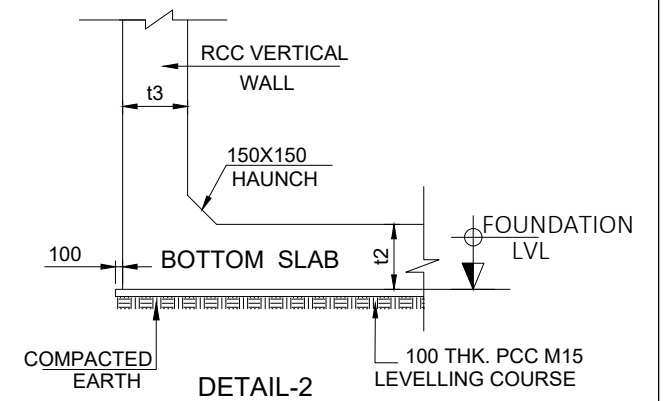
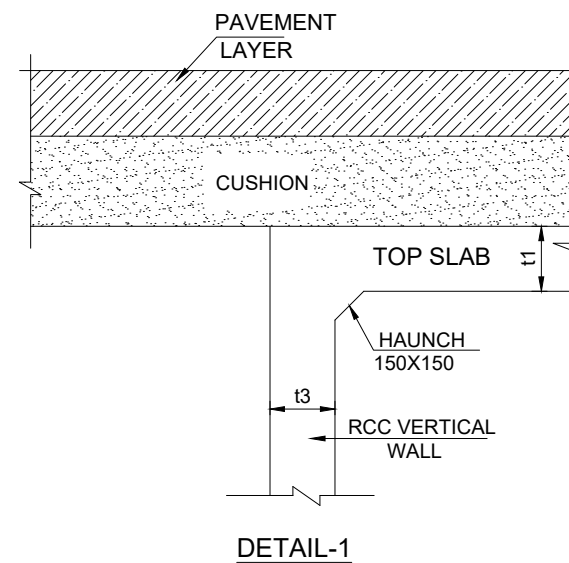
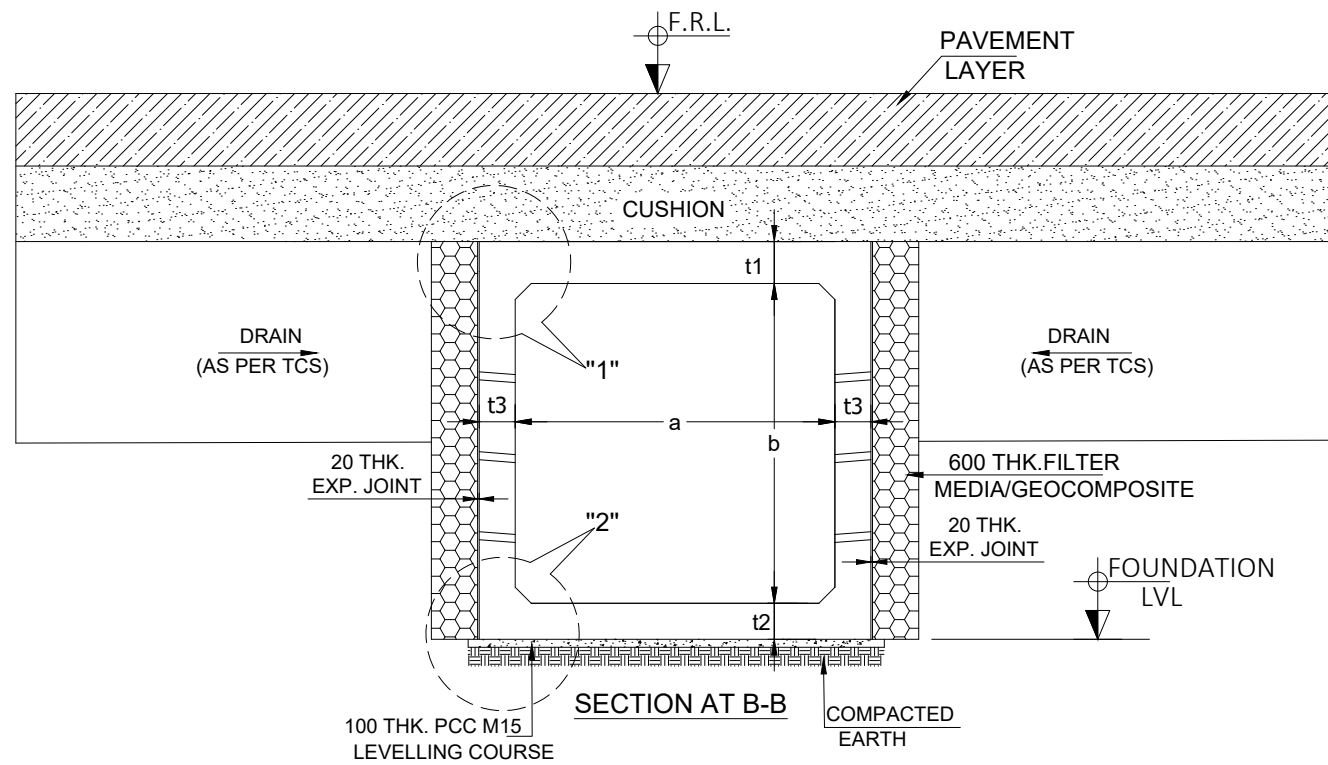
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 - AGGREGATE SIZE SHALL BE AS PER CLAUSE 302.3.2.3 OF IRC:21,2000.
- #### CONSTRUCTION
- THE LOCATION AND PROVISION OF CONSTRUCTION JOINT SHALL BE APPROVED BY ENGINEER IN CHARGE.
 - THE PROTECTIVE WORKS SHALL BE COMPLETED AS PER CLAUSE 2104.3 AND SECTION 2500.
 - THE CONSTRUCTION AGENCY SHOULD ENSURE THAT THE NECESSARY PERMISSIONS HAS BEEN OBTAINED FROM ROAD & IRRIGATION AUTHORITY IF REQUIRED FOR DIVERTING THE TRAFFIC TEMPORARILY PRIOR TO COMMENCING THE WORK.
 - NECESSARY SUITABLE SHORING AND STRUTTING SHALL BE PROVIDED FOR CASTING OF STRUCTURAL MEMBERS AND OTHER PLACE WHEREVER REQUIRED AND DETAILED DRAWING SHALL BE SUBMITTED BY THE CONTRACTING AGENCY.
 - IF ANY AMBIGUITY FOUND IN DRAWINGS OR AT SITE BRING IT TO DESIGNER'S NOTICE BEFORE EXECUTION.
 - EXCAVATION SHOULD BE DONE AS PER SECTION 304 OF M.O.R.T.H SPECIFICATIONS (FIFTH REVISION).
 - BEFORE COMMENCEMENT OF EXECUTION OF WORK CROSS SECTION AS THE SITE SHALL BE TAKEN BY PRECISION SURVEY & OUTER AND INNER WALL POSITION SHOWN IN TECHNICALLY SANCTIONED DRAWING SHALL BE VERIFIED ON SITE IN CASE OF ANY DISCREPANCY OR DOUBT CLARIFICATION SHALL BE OBTAINED FROM COMPETENT AUTHORITY BEFORE HAND.
 - THE WORK SHALL BE EXECUTED IN ACCORDANCE WITH M.O.R.T.H SPECIFICATIONS FOR ROAD AND BRIDGES WORKS.

CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
1st & 2nd Floor,
Tower A, World Trade Centre, Nauroji Nagar,
New Delhi - 110029
Contact No : 011-26768950

CONSULTANT : Global Infra Solutions
in JV with Dhruv Consultancy Services Limited and
association with Infycons Creative Software Pvt. Ltd.
F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE : IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED WITH CUSHION OF RCC BOX CULVERT
DGN		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			SHEET- 01 OF 02
			DRAWING No. : NHIDCL/PYNSL/GAD/03
			SCALE : NOT TO SCALE



SCHEDULE:-

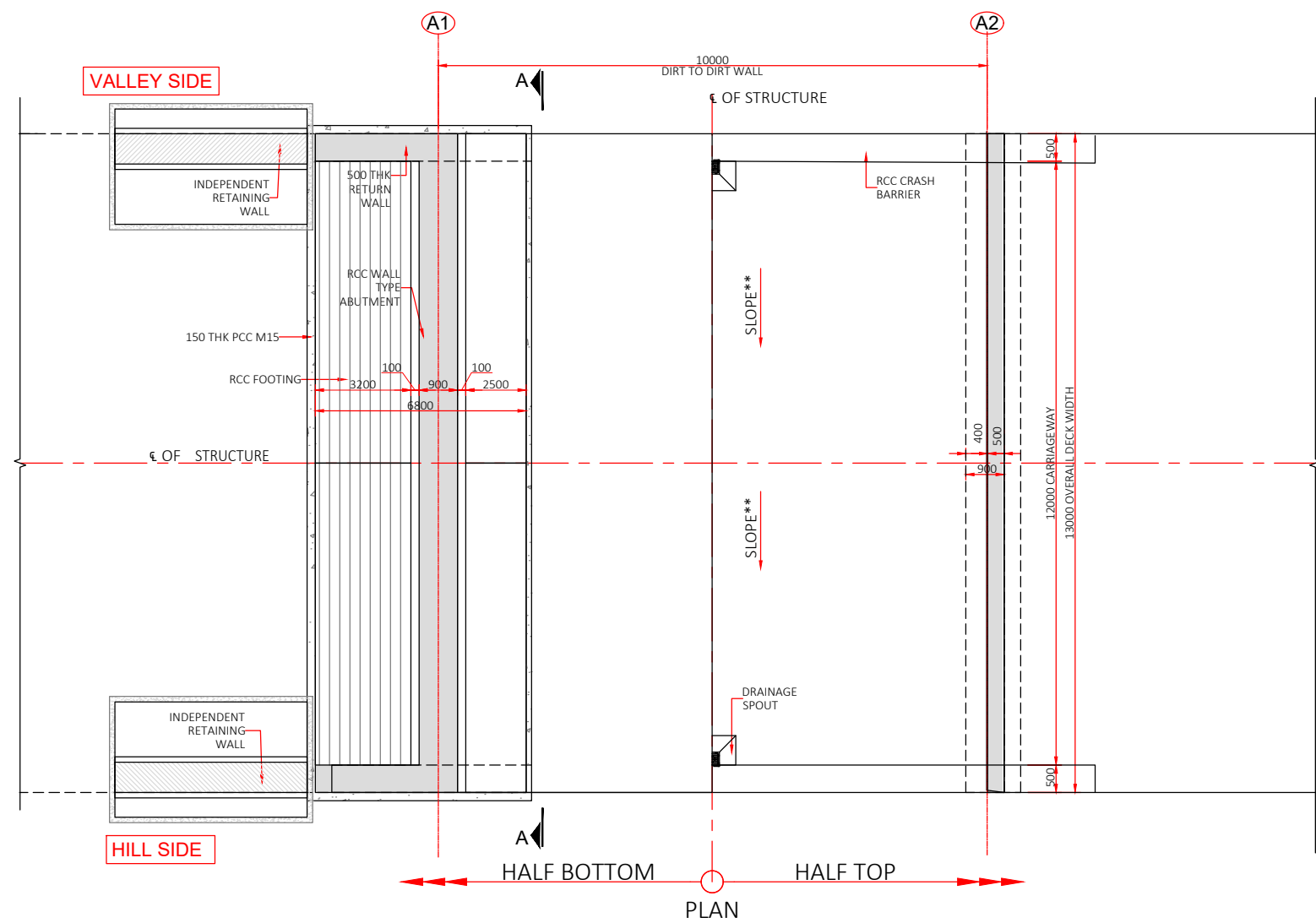
Sr. No.	Design Chainage	FRL (M)	Invert Level (M)	DIMENSIONAL DETAILS OF BOX						DIMENSIONAL DETAILS OF RETURN WALL							
				Box Size	a (mm)	b (mm)	t ₁ (mm)	t ₂ (mm)	t ₃ (mm)	H (mm)	B (mm)	b _t (mm)	b _h (mm)	t ₁ (mm)	t ₂ (mm)	t ₃ (mm)	t ₄ (mm)
1	1+876	1447.831	1442.366	2 x 3	2000	3000	250	250	250	7265	5090	1530	2950	300	610	370	730
2	2+900	1407.871	1402.856	3 x 3	3000	3000	300	300	300	6815	4780	1440	2770	300	570	300	690
3	3+515	1395.571	1389.056	3 x 3	3000	3000	300	300	300	8315	5830	1750	3380	300	700	420	840
4	4+260	1355.751	1349.786	2 x 3	2000	3000	250	250	250	7765	5440	1640	3150	300	650	390	780
5	7+150	1246.425	1240.960	2 x 3	2000	3000	250	250	250	7265	5090	1530	2950	300	610	370	730
6	7+335	1237.175	1230.710	2 x 3	2000	3000	250	250	250	8265	5790	1740	3360	300	690	420	830


CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
1st & 2nd Floor,
Tower A, World Trade Centre, Nauroji Nagar,
New Delhi - 110029
Contact No : 011-26768950

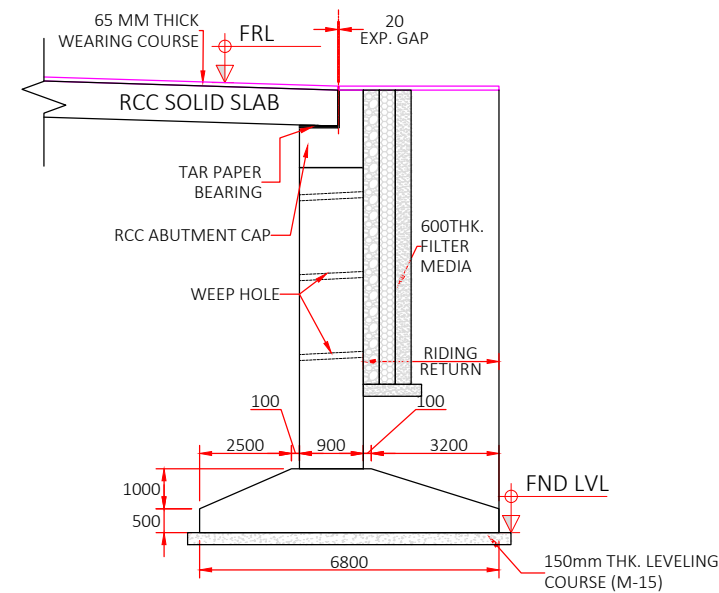
CONSULTANT : Global Infra Solutions
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e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE : IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

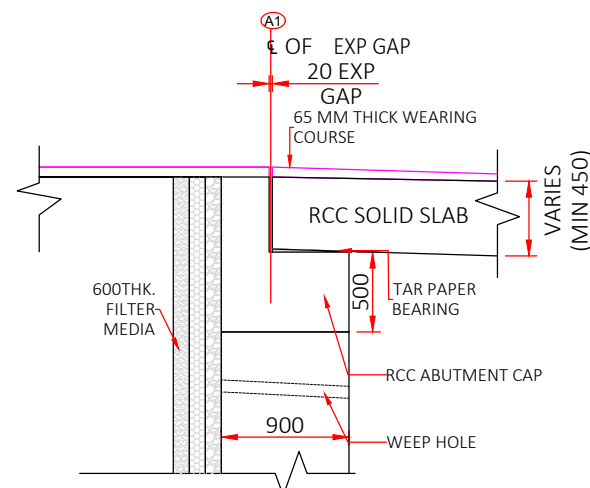
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DRAWING No. : NHIDCL/PYNSL/GAD/03
SCALE : NOT TO SCALE



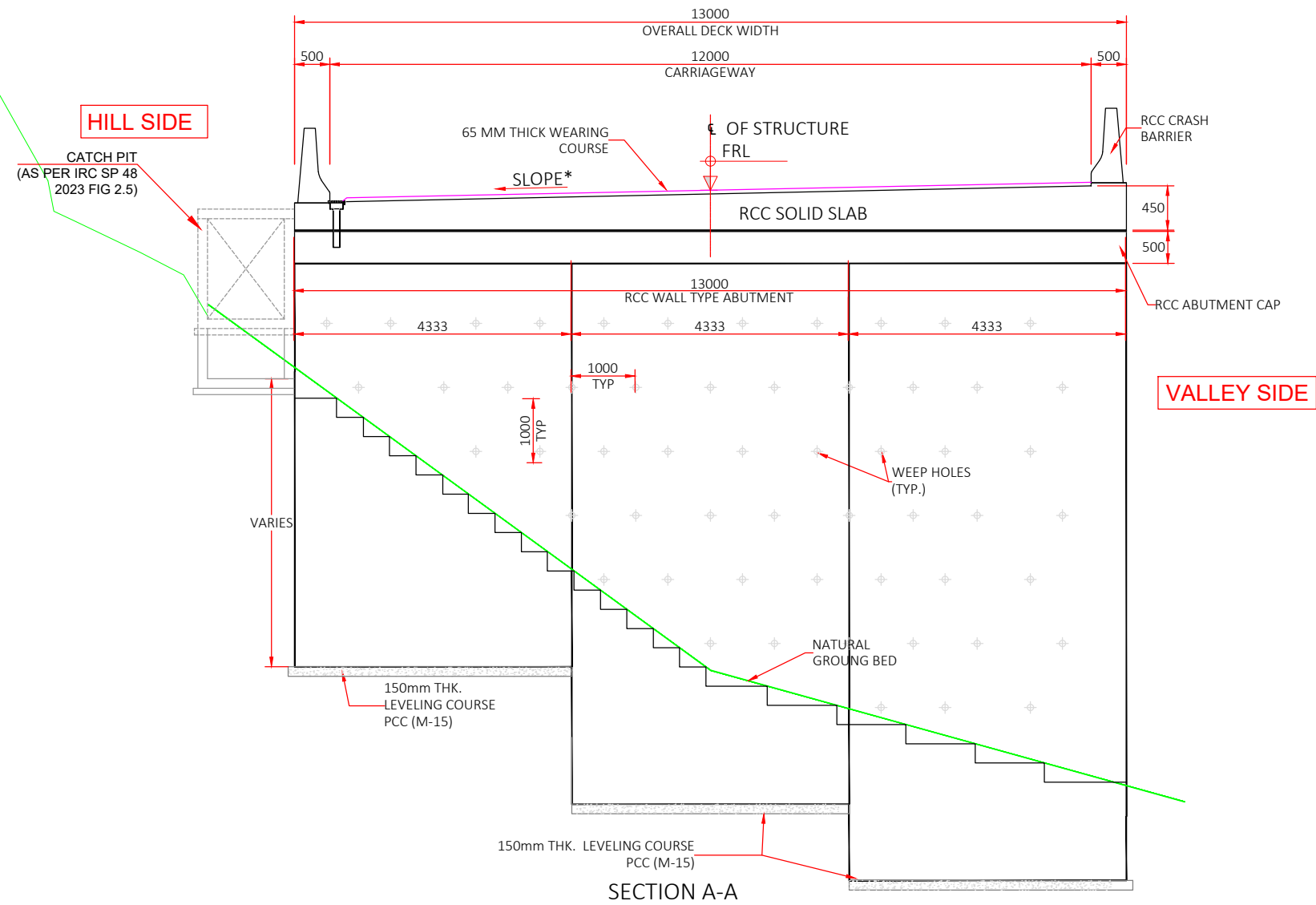
- CL/PYNSL/GAD /04
TO SCALE
- 
- GLOBAL INFRA SOLUTIONS
BHOPAL



DETAIL OF ABUTMENT (A1 & A2)



DETAIL-X



SECTION A-A

SCHEDULE RCC SLAB BRIDGE							
S.NO.	DESIGN CHAINAGE	LOCATION	CHAINAGE	FRL	BL	FRL-BL	Longitudinal Slop
1	4+480	A1	4+475	1342.851	1332.287	10.564	6.0%
		A2	4+485	1342.251	1333.747	8.504	
2	4+998	A1	4+993	1311.771	1303.317	8.454	6.0%
		A2	5+003	1311.171	1303.695	7.476	

CLIENT :



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CONSULTANT :

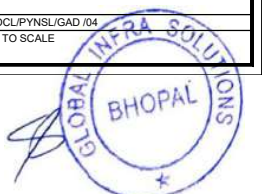


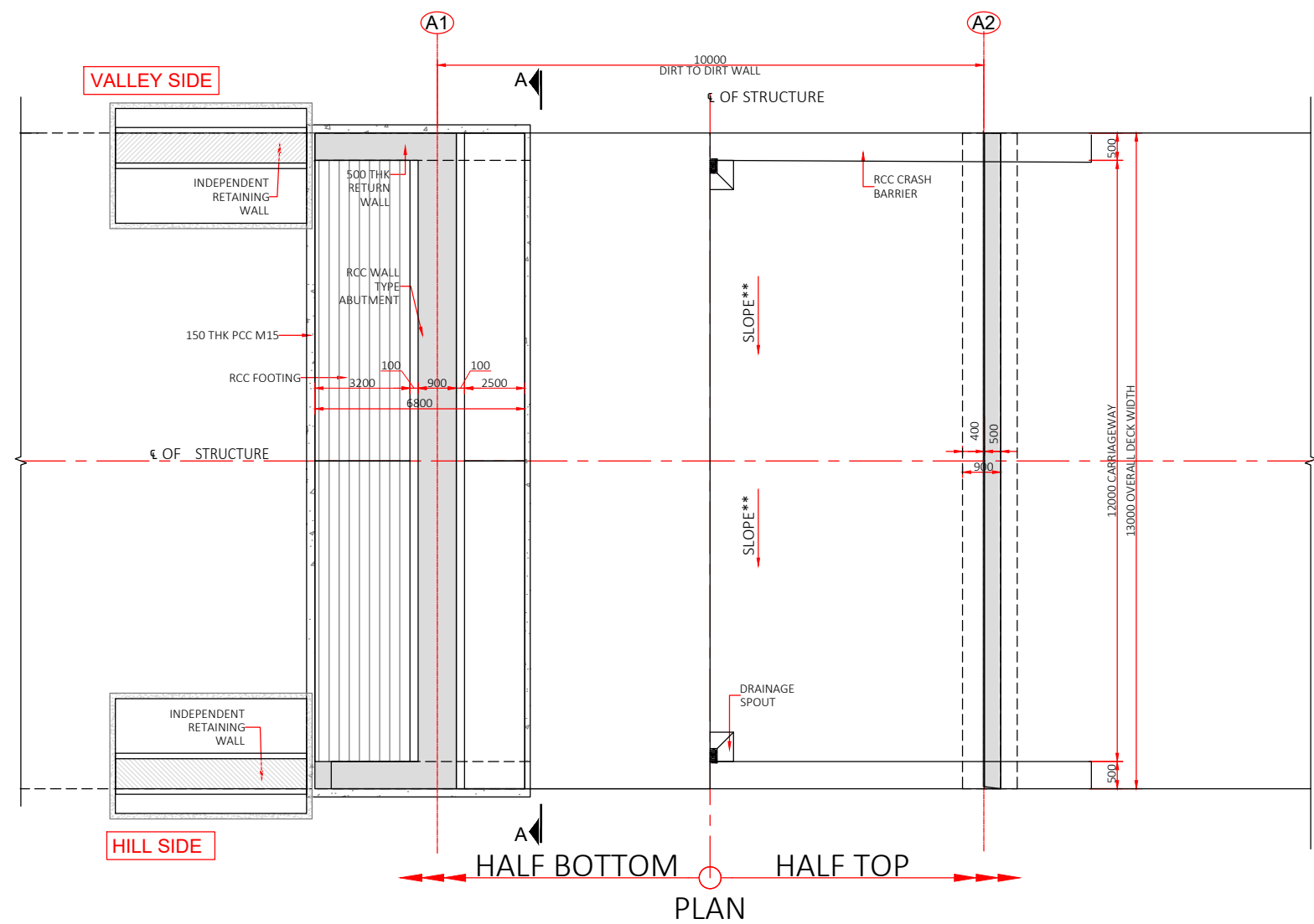
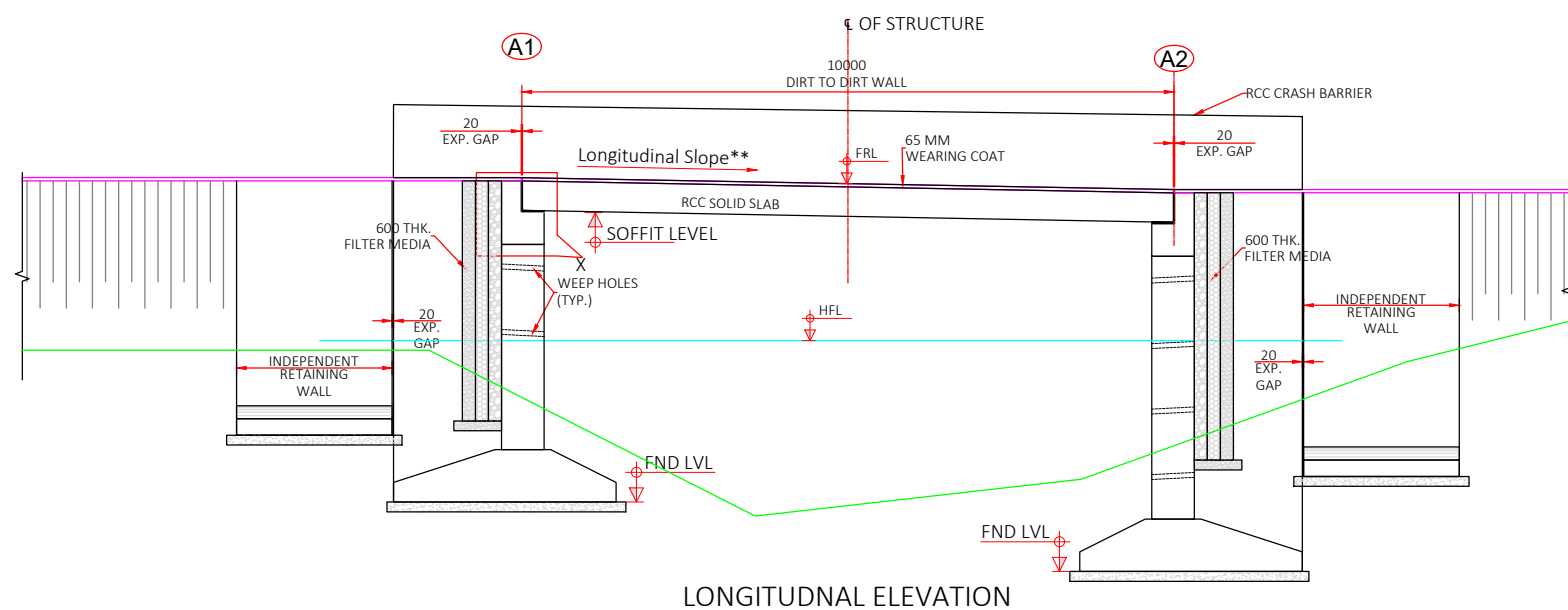
Global Infra Solutions
in JV with **Dhruv Consultancy Services Limited** and
association with **Infycons Creative Software Pvt. Ltd.**
F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF RCC SLAB BRIDGE OF VIADUCT 1X10 SPAN AT CH 4+480 & CH 4+998
DGN.	NAME	SIG.	DRAWING No. : NHIDCL/PYNSL/GAD/04
DRAWN			SCALE : NOT TO SCALE
CHECKED			
APPROVED			





NOTES : GENERAL

1. ALL DIMENSIONS ARE IN MILLIMETER AND LEVELS ARE IN METER UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS SHALL NOT BE SCALED, ONLY WRITTEN DIMENSIONS SHOULD BE FOLLOWED.
3. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH SUPER STRUCTURE, SUBSTRUCTURE DRAWINGS AND HIGHWAY PLAN & PROFILE DRAWINGS.
4. DRAINAGE SPOUT, EXPANSION JOINT & WEARING COAT SHOULD BE PROVIDED AS PER THE SPECIFICATIONS AND DRAWINGS.
5. THE CARRIAGEWAY OF PROPOSED BOX CULVERT SHALL BE DESIGN AS PER IRC:6-2017.
(i). (70R+A OR 3A).
6. THE APPROACHES ARE IN RCC/PCC WALLS AS PER DETAIL DRAWINGS.

MATERIALS:

7. CLEAR COVER TO ALL REINFORCEMENT BARS INCLUDING STIRRUPS SHALL BE AS FOLLOWS:
SUPER STRUCTURE 45 mm PIER 45 mm
ABUTMENT 75 mm FOUNDATION 75 mm
8. REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS OF FE-500, CONFIRMING TO IS-1786.
9. GRADE OF CONCRETE SHALL BE AS FOLLOWS:
PCC LEVELING COURSE M15 PCC TOE WALL M20
RCC ABUTMENT / PIER M30 RCC SOLID SLAB M30
RCC ABUTMENT CAP / PIER CAP M30 RCC CRASH BARRIER M40
10. BACKFILLING SHALL BE DONE IN LAYERS NOT EXCEEDING 200MM THK. EACH LAYERS SHALL BE COMPACTED TO THE OPTIMUM DENSITY.
11. BACK FILL MATERIAL BEHIND ABUTMENT AND RETAINING WALL SHALL CONFIRM TO APPENDIX:6, IRC-78:2000 AND AS FOLLOW:
(i) ANGLE OF INTERNAL FRICTION, $\phi = 30^\circ$
(ii) COHESION, $C = 0 \text{ T/M}^2$
(iii) ANGLE OF WALL FRICTION, $\Delta = 20^\circ$
(iv) DRY DENSITY, $YD = 2.50 \text{ T/M}^3$.

CONSTRUCTION

12. THE CONSTRUCTION AGENCY SHOULD ENSURE THAT THE NECESSARY PERMISSIONS HAS BEEN OBTAINED FROM ROAD & IRRIGATION AUTHORITY IF REQUIRED FOR DIVERTING THE TRAFFIC TEMPORARILY PRIOR TO COMMENCING THE WORK.
13. NECESSARY SUITABLE SHORING AND STRUTTING SHALL BE PROVIDED FOR CASTING OF STRUCTURAL MEMBERS AND OTHER PLACE WHEREVER REQUIRED AND DETAILED DRAWING SHALL BE SUBMITTED BY THE CONTRACTING AGENCY.
14. IF ANY AMBIGUITY FOUND IN DRAWINGS OR AT SITE BRING IT TO DESIGNER'S NOTICE BEFORE EXECUTION.
15. IF HARD STRATA FOUND AT SITE, ACC. TO CLAUSE 705.2.2, IRC-78:2024, MINIMUM EMBEDMENT OF FOUNDATION SHALL BE MINIMUM OF AS FOLLOW OR SHOWN IN DRAWINGS:
IN SOFT ROCK 1.5 m
IN HARD ROCK 0.6 m
SOIL 2.0 m
16. IN CASE OF FOUNDATION IN ROCK, THE TRENCHES AROUND THE FOOTING SHALL BE FILLED UP WITH M-15 GRADE OF CONCRETE UPTO THE TOP OF THE ROCK.

CLIENT :



**NATIONAL HIGHWAYS & INFRASTRUCTURE
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Contact No : 011-26768950

CONSULTANT :



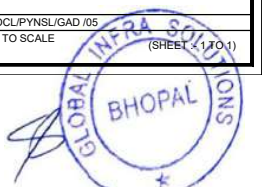
Global Infra Solutions

in JV with **Dhruv Consultancy Services Limited** and
association with **Infycons Creative Software Pvt. Ltd.**
F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal - 462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF RCC SLAB BRIDGE @ CH-5+115
			DRAWING No.: NHIDCL/PYNSL/GAD/05
			SCALE: NOT TO SCALE
			(SHEET 1 OF 1)



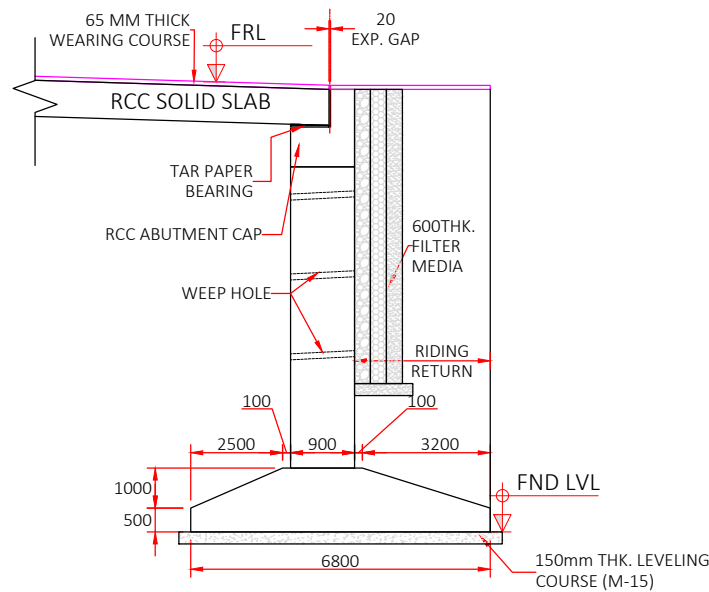


SCHEDULE RCC SLAB BRIDGE					
LOCATION	CHAINAGE	FRL	BL	FRL-BL	Longitudinal Slop
A1	5+110	1306.879	1301.253	5.626	2.3%
A2	5+120	1306.649	1300.324	6.325	

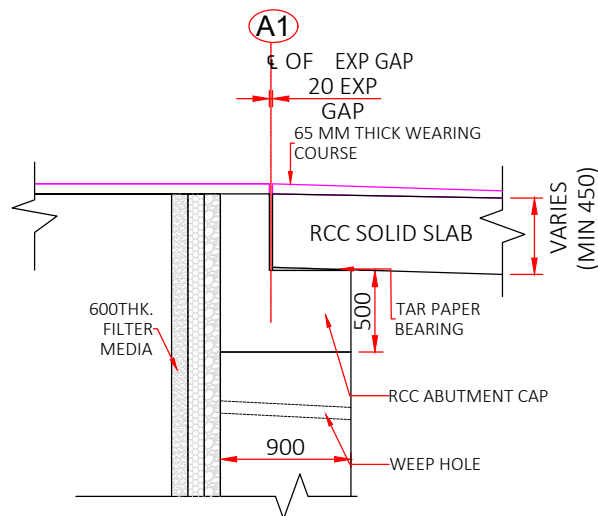


- CONSTRUCTION**
11. THE CONSTRUCTION AGENCY SHOULD ENSURE THAT THE NECESSARY PERMISSIONS HAS BEEN OBTAINED FROM ROAD & IRRIGATION AUTHORITY IF REQUIRED FOR DIVERTING THE TRAFFIC TEMPORARILY PRIOR TO COMMENCING THE WORK.
 12. NECESSARY SUITABLE SHORING AND STRUTTING SHALL BE PROVIDED FOR CASTING OF STRUCTURAL MEMBERS AND OTHER PLACE WHEREVER REQUIRED AND DETAILED DRAWING SHALL BE SUBMITTED BY THE CONTRACTING AGENCY.
 13. IF ANY AMBIGUITY FOUND IN DRAWINGS OR AT SITE BRING IT TO DESIGNER'S NOTICE BEFORE EXECUTION.
 14. IF HARD STRATA FOUND AT SITE, ACC. TO CLAUSE 705.2.2, IRC-78:2000, MINIMUM EMBEDMENT OF FOUNDATION SHALL BE MINIMUM OF AS FOLLOW OR SHOWN IN DRAWINGS:

IN SOFT ROCK	1.5 m
IN HARD ROCK	0.6 m
SOIL	2.0 m
 15. IN CASE OF FOUNDATION IN ROCK, THE TRENCHES AROUND THE FOOTING SHALL BE FILLED UP WITH M-15 GRADE OF CONCRETE UPTO THE TOP OF THE ROCK.
 16. SLOPE OF BOULDER APPRON TO MATCH NATURAL BED LEVEL.



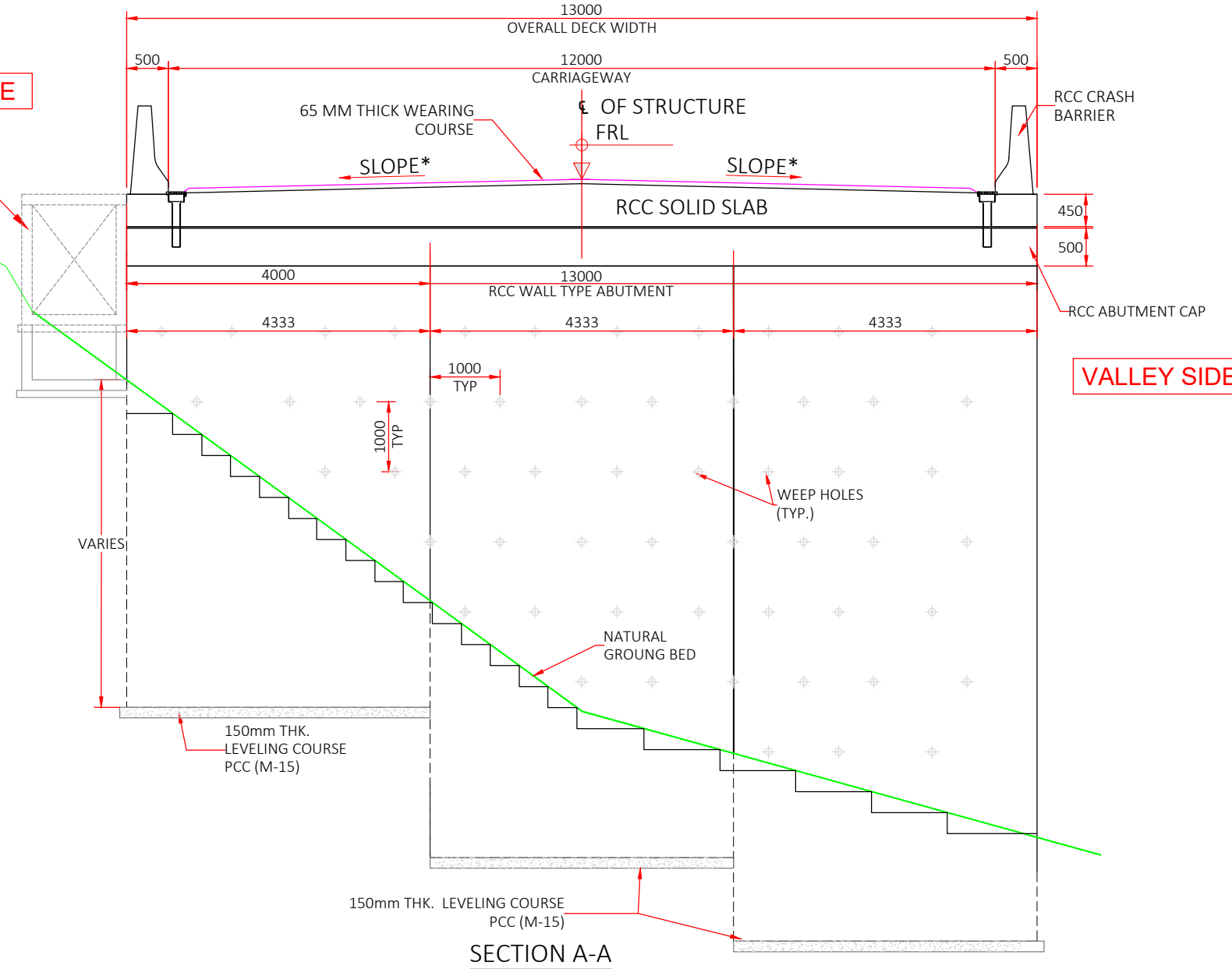
DETAIL OF ABUTMENT (A1 & A2)



DETAIL-X

HILL SIDE

CATCH PIT
(AS PER IRC SP 48
2023 FIG 2.5)



VALLEY SIDE

SECTION A-A

SCHEDULE RCC SLAB BRIDGE

LOCATION	CHAINAGE	FRL	BL	FRL-BL	Longitudinal Slop
A1	5+201	1304.784	1279.630	25.154	2.3%
A2	5+211	1304.551	1298.614	5.937	

CLIENT :



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Contact No : 011-26768950

CONSULTANT :

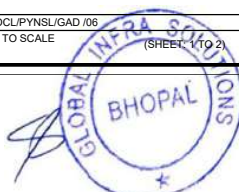


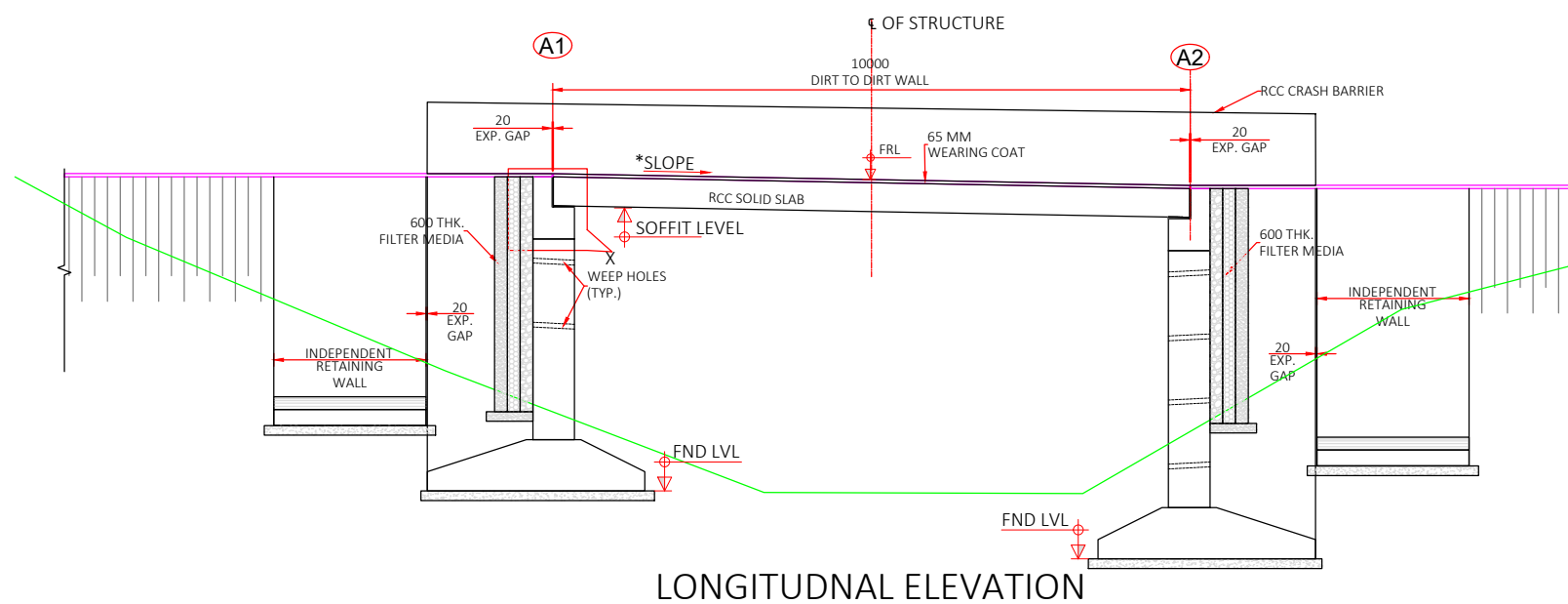
Global Infra Solutions
in JV with **Dhruv Consultancy Services Limited** and
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F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal - 462039
e: globalinfra@globalinfra.org web: globalinfra.org

PROJECT TITLE :

**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF RCC SLAB BRIDGE @ CH-5+206
			DRAWING No.: NHIDCL/PYNSL/GAD/06
			SCALE: NOT TO SCALE
			(SHEET 1 TO 2)





NOTES :

GENERAL

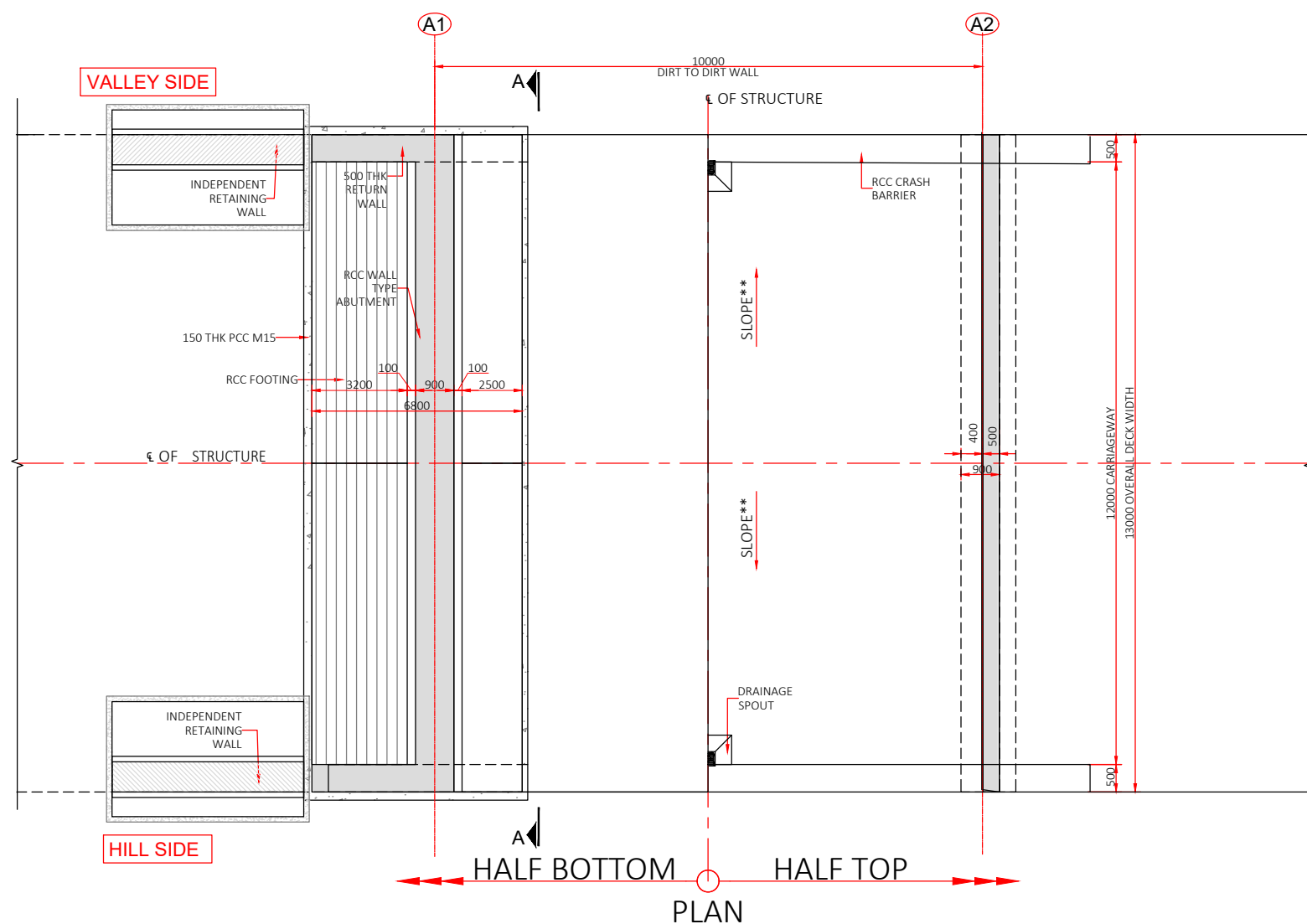
1. ALL DIMENSIONS ARE IN MILLIMETER AND LEVELS ARE IN METER UNLESS OTHERWISE SPECIFIED.
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3. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH SUPER STRUCTURE, SUBSTRUCTURE DRAWINGS AND HIGHWAY PLAN & PROFILE DRAWINGS.
4. DRAINAGE SPOUT, EXPANSION JOINT & WEARING COAT SHOULD BE PROVIDED AS PER THE SPECIFICATIONS AND DRAWINGS.
5. PROPOSED STRUCTURE IS DESIGNED FOR FOLLOWING IRC LOADING:
(i) (1 LANE 70 R) OR (2 LANE CLASS A)
6. THE APPROACHES ARE IN RCC/PCC WALLS AS PER DETAIL DRAWINGS.

MATERIALS:

7. CLEAR COVER TO ALL REINFORCEMENT BARS INCLUDING STIRRUPS SHALL BE AS FOLLOWS:
SUPER STRUCTURE 45 mm PIER 45 mm
ABUTMENT 75 mm FOUNDATION 75 mm
8. REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS OF FE-500, CONFIRMING TO IS-1786.
9. GRADE OF CONCRETE SHALL BE AS FOLLOWS:
PCC LEVELING COURSE M15 PCC TOE WALL M20
RCC ABUTMENT / PIER M35 RCC SOLID SLAB M35
RCC ABUTMENT CAP / PIER CAP M35 RCC CRASH BARRIER M40
BACK FILL MATERIAL BEHIND ABUTMENT AND RETAINING WALL SHALL CONFIRM TO APPENDIX:6, IRC-78:2000 AND AS FOLLOW:
(i) ANGLE OF INTERNAL FRICTION, $\phi = 30^\circ$
(ii) COHESION, $C = 0 \text{ T/M}^2$.
(iii) ANGLE OF WALL FRICTION, $\Delta = 20^\circ$
(iv) DRY DENSITY, $YD = 2.50 \text{ T/M}^3$.

CONSTRUCTION

11. THE CONSTRUCTION AGENCY SHOULD ENSURE THAT THE NECESSARY PERMISSIONS HAS BEEN OBTAINED FROM ROAD & IRRIGATION AUTHORITY IF REQUIRED FOR DIVERTING THE TRAFFIC TEMPORARILY PRIOR TO COMMENCING THE WORK.
12. NECESSARY SUITABLE SHORING AND STRUTTING SHALL BE PROVIDED FOR CASTING OF STRUCTURAL MEMBERS AND OTHER PLACE WHEREVER REQUIRED AND DETAILED DRAWING SHALL BE SUBMITTED BY THE CONTRACTING AGENCY.
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IN SOFT ROCK 1.5 m
IN HARD ROCK 0.6 m
SOIL 2.0 m
15. IN CASE OF FOUNDATION IN ROCK, THE TRENCHES AROUND THE FOOTING SHALL BE FILLED UP WITH M-15 GRADE OF CONCRETE UPTO THE TOP OF THE ROCK.
16. SLOPE OF BOULDER APPRON TO MATCH NATURAL BED LEVEL.



CLIENT :



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Contact No : 011-26768950

CONSULTANT :

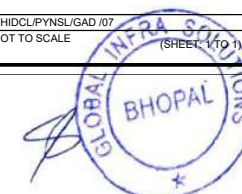


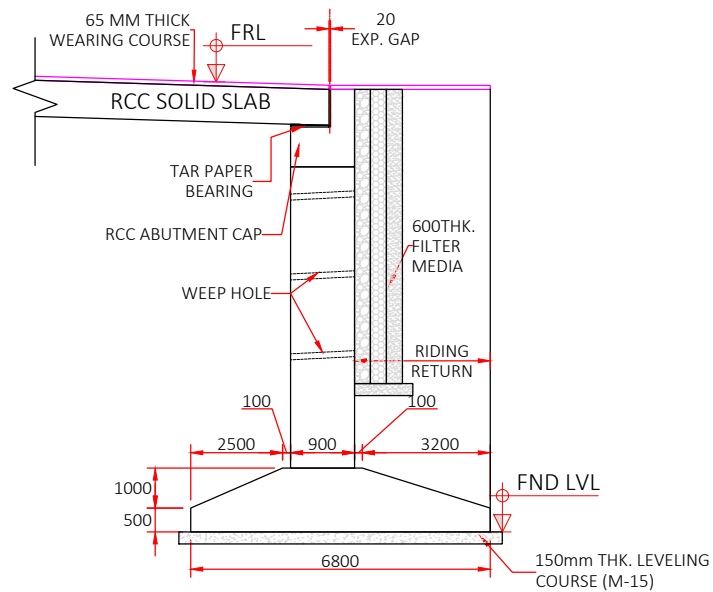
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PROJECT TITLE :

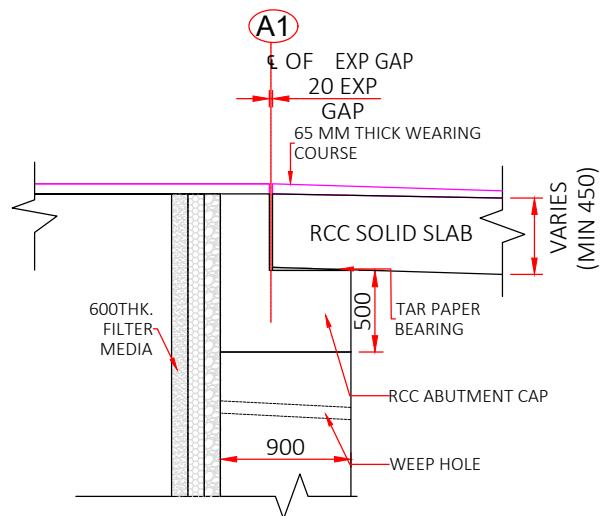
**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF RCC SLAB BRIDGE @ CH-6+595
DGN:		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
DRAWING No.: NHIDCL/PYNSL/GAD/07			SCALE: NOT TO SCALE
			(SHEET 1 TO 1)





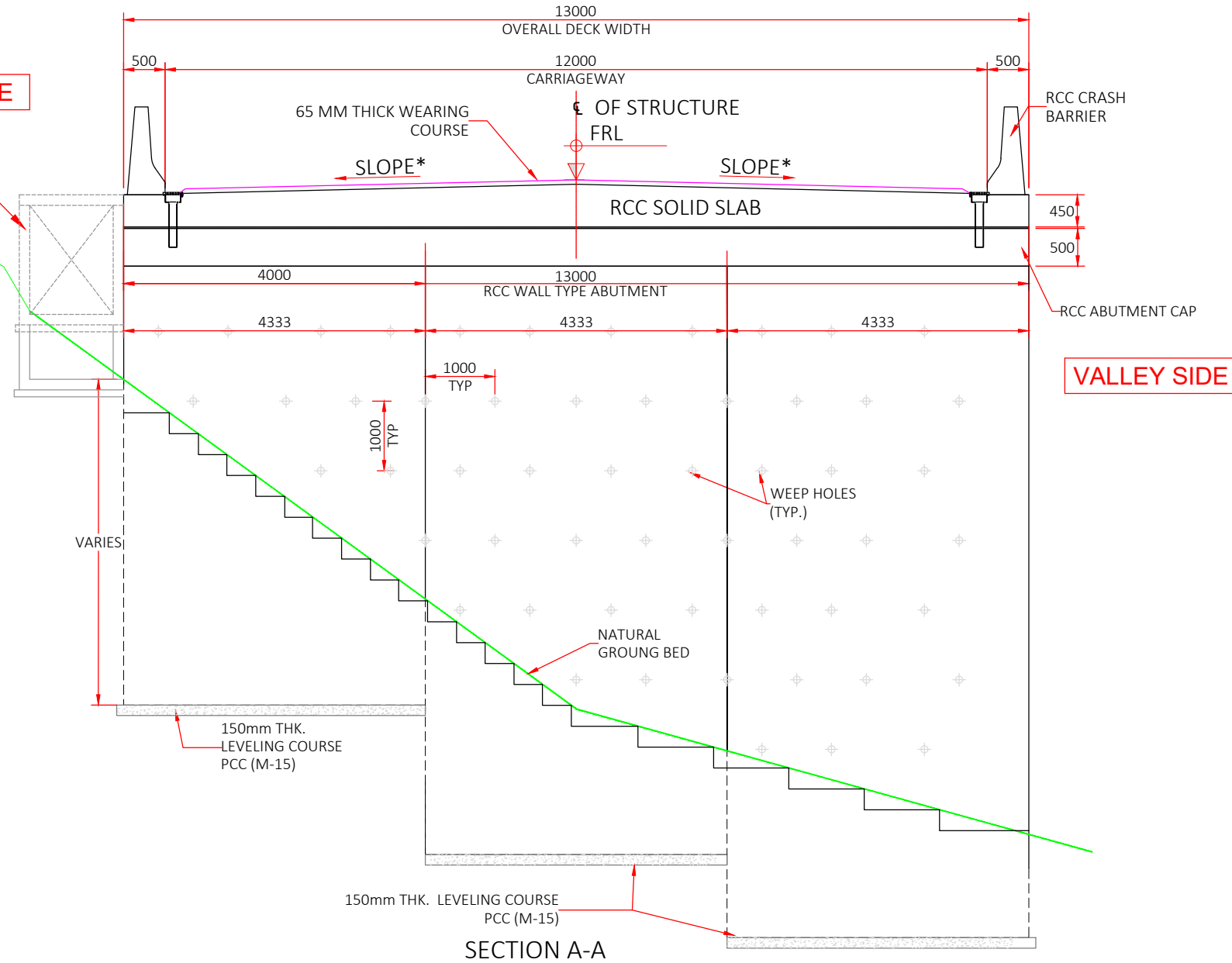
DETAIL OF ABUTMENT (A1 & A2)



DETAIL-X

HILL SIDE

CATCH PIT
(AS PER IRC SP 48
2023 FIG 2.5)



VALLEY SIDE

SECTION A-A

SCHEDULE RCC SLAB BRIDGE

LOCATION	CHAINAGE	FRL	BL	FRL-BL	Longitudinal Slop
A1	6+590	1271.275	1261.085	10.190	6.0%
A2	6+600	1270.675	1261.538	9.137	

CLIENT :



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Contact No : 011-26768950

CONSULTANT :

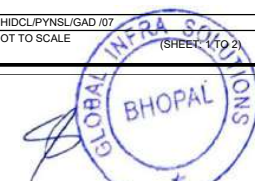


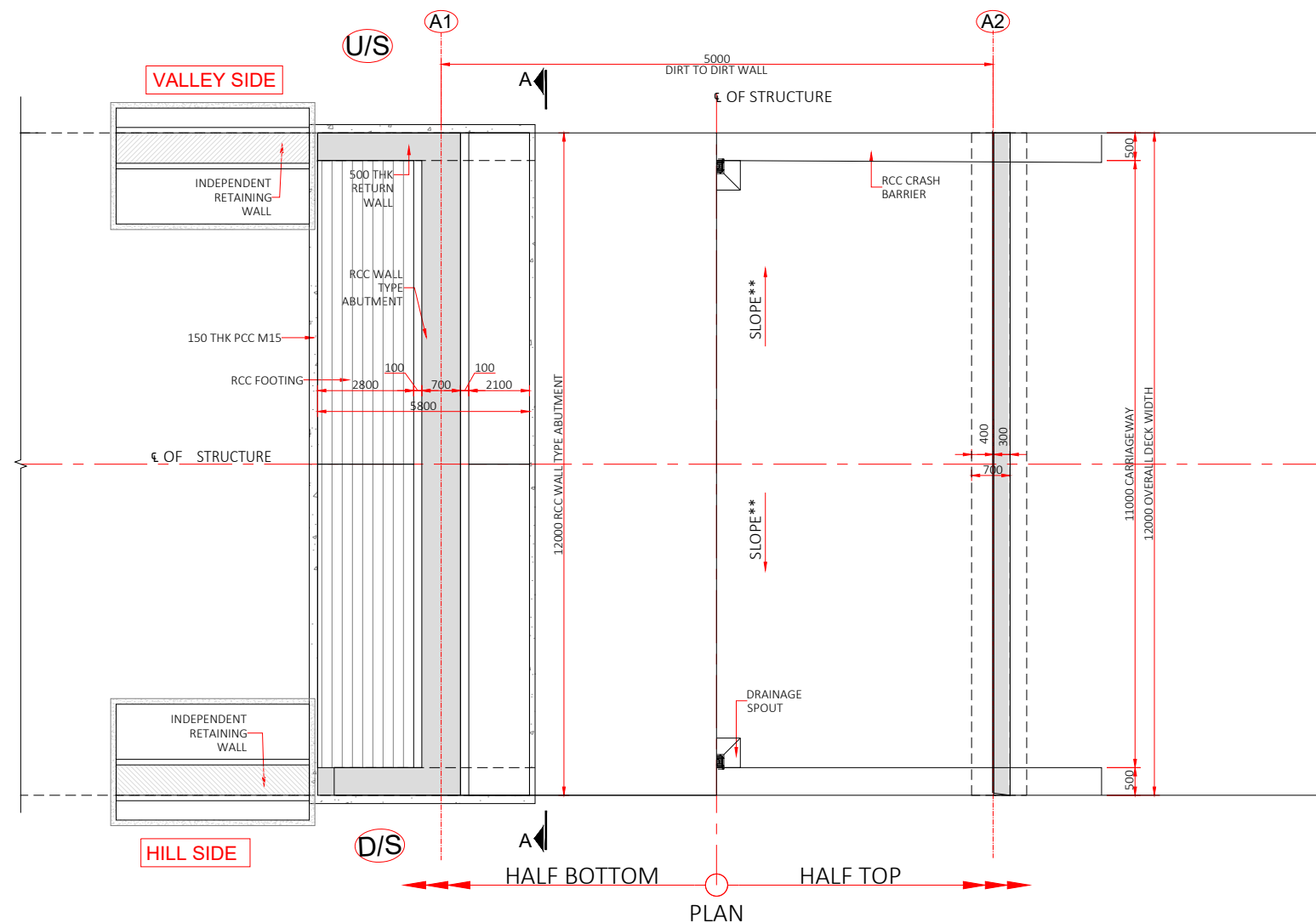
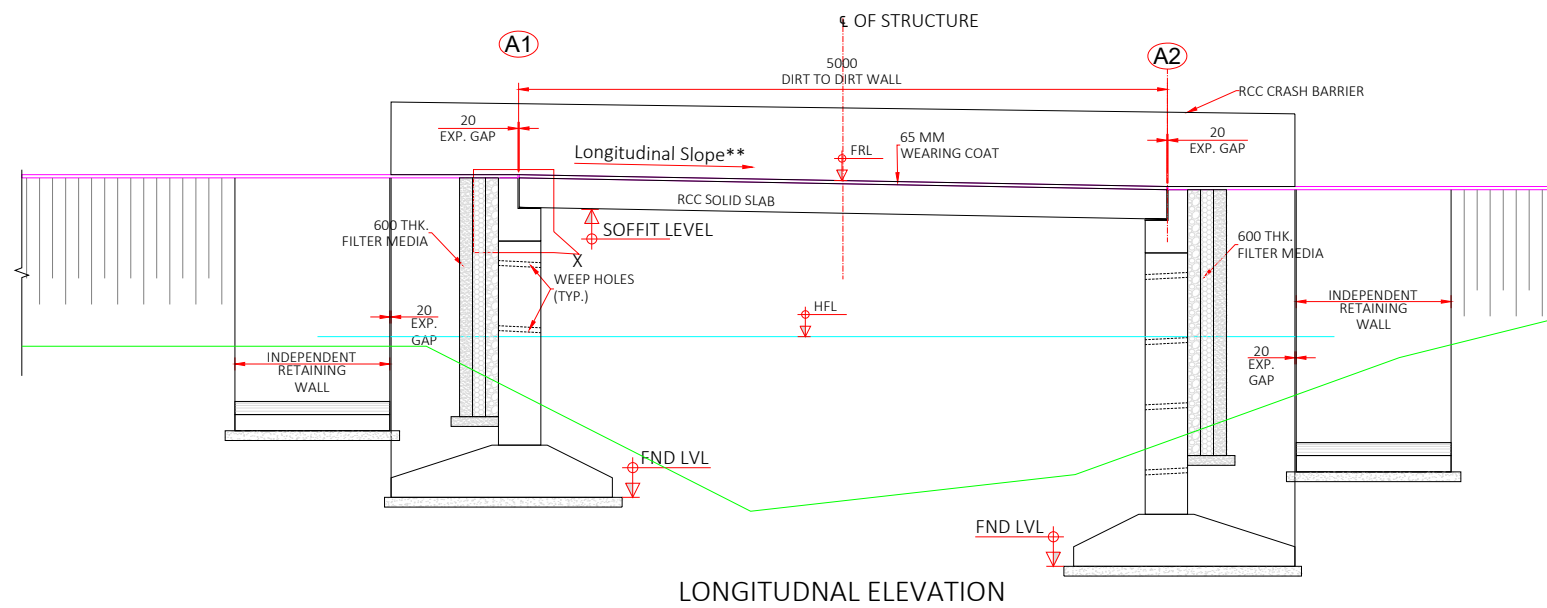
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PROJECT TITLE :

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REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF RCC SLAB BRIDGE @ CH-6+595
DGN:		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
DRAWING No.: NHIDCL/PYNSL/GAD/07			SCALE: NOT TO SCALE
			(SHEET 1 TO 2)





NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETER AND LEVELS ARE IN METER UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS SHALL NOT BE SCALED, ONLY WRITTEN DIMENSIONS SHOULD BE FOLLOWED.
3. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH SUPER STRUCTURE, SUBSTRUCTURE DRAWINGS AND HIGHWAY PLAN & PROFILE DRAWINGS.
4. DRAINAGE SPOUT, EXPANSION JOINT & WEARING COAT SHOULD BE PROVIDED AS PER THE SPECIFICATIONS AND DRAWINGS.
5. THE CARRIAGEWAY OF PROPOSED BOX CULVERT SHALL BE DESIGN AS PER IRC:6-2017.
6. THE APPROACHES ARE IN RCC/PCC WALLS AS PER DETAIL DRAWINGS.

MATERIALS:

7. CLEAR COVER TO ALL REINFORCEMENT BARS INCLUDING STIRRUPS SHALL BE AS FOLLOWS:
 SUPER STRUCTURE 45 mm PIER 45 mm
 ABUTMENT 75 mm FOUNDATION 75 mm
8. REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS OF FE-500, CONFIRMING TO IS-1786.
9. GRADE OF CONCRETE SHALL BE AS FOLLOWS:
 PCC LEVELING COURSE M15 PCC TOE WALL M20
 RCC ABUTMENT / PIER M30 RCC SOLID SLAB M30
 RCC ABUTMENT CAP / PIER CAP M30 RCC CRASH BARRIER M40
10. BACKFILLING SHALL BE DONE IN LAYERS NOT EXCEEDING 200MM THK. EACH LAYERS SHALL BE COMPACTED TO THE OPTIMUM DENSITY.
11. BACK FILL MATERIAL BEHIND ABUTMENT AND RETAINING WALL SHALL CONFIRM TO APPENDIX:6, IRC-78:2000 AND AS FOLLOW:
 (i) ANGLE OF INTERNAL FRICTION, $\phi = 30^\circ$
 (ii) COHESION, $C = 0 \text{ T/M}^2$
 (iii) ANGLE OF WALL FRICTION, $\Delta = 20^\circ$
 (iv) DRY DENSITY, $\text{YD} = 2.50 \text{ T/M}^3$.

CONSTRUCTION

12. THE CONSTRUCTION AGENCY SHOULD ENSURE THAT THE NECESSARY PERMISSIONS HAS BEEN OBTAINED FROM ROAD & IRRIGATION AUTHORITY IF REQUIRED FOR DIVERTING THE TRAFFIC TEMPORARILY PRIOR TO COMMENCING THE WORK.
13. NECESSARY SUITABLE SHORING AND STRUTTING SHALL BE PROVIDED FOR CASTING OF STRUCTURAL MEMBERS AND OTHER PLACE WHEREVER REQUIRED AND DETAILED DRAWING SHALL BE SUBMITTED BY THE CONTRACTING AGENCY.
14. IF ANY AMBIGUITY FOUND IN DRAWINGS OR AT SITE BRING IT TO DESIGNER'S NOTICE BEFORE EXECUTION.
15. IF HARD STRATA FOUND AT SITE, ACC. TO CLAUSE 705.2.2, IRC-78:2024, MINIMUM EMBEDMENT OF FOUNDATION SHALL BE MINIMUM OF AS FOLLOW OR SHOWN IN DRAWINGS:
 IN SOFT ROCK 1.5 m
 IN HARD ROCK 0.6 m
 SOIL 2.0 m
16. IN CASE OF FOUNDATION IN ROCK, THE TRENCHES AROUND THE FOOTING SHALL BE FILLED UP WITH M-15 GRADE OF CONCRETE UPTO THE TOP OF THE ROCK.

CLIENT :



**NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.**
 1st & 2nd Floor,
 Tower A, World Trade Centre, Nauroji Nagar,
 New Delhi – 110029
 Contact No : 011-26768950

CONSULTANT :

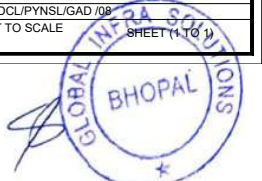


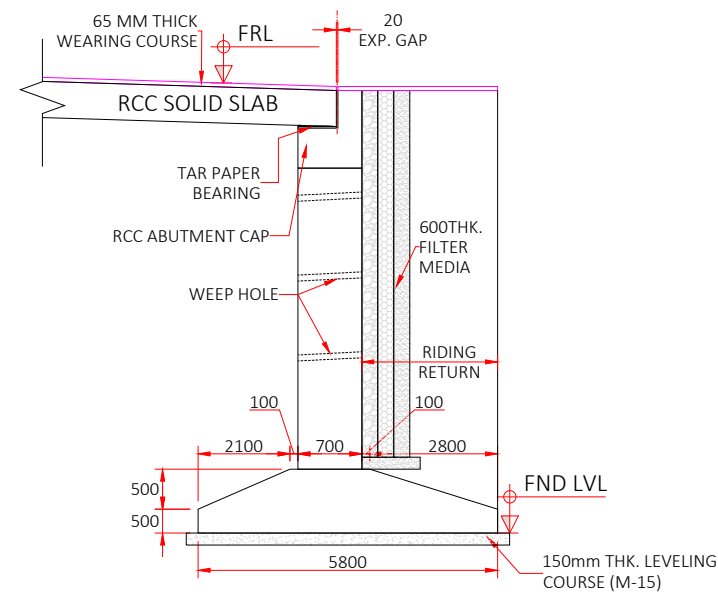
Global Infra Solutions
 in JV with **Dhruv Consultancy Services Limited** and
 association with **Infycons Creative Software Pvt. Ltd.**
 F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039
 e: globalinfrasolutions@gmail.com web: globalinfrasolutions.org

PROJECT TITLE :

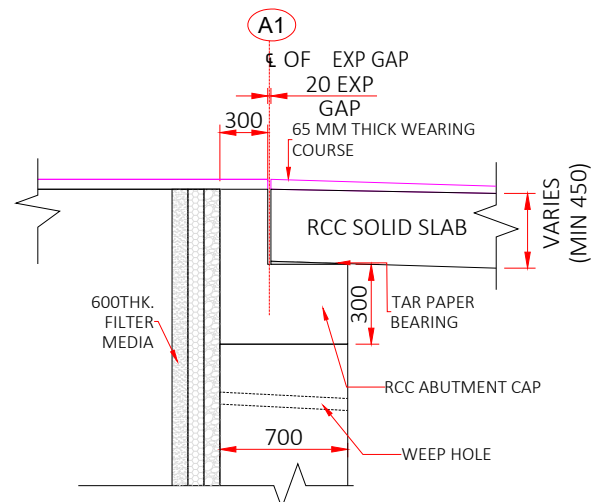
**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF RCC SLAB CULVERT SPAN 1X5 AT CH 2+650, CH 3+120, CH 6+655, CH 7+395
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
DRAWING No. NHIDCL/PYNSL/GAD/08			SCALE : NOT TO SCALE
SHEET 1 OF 1			



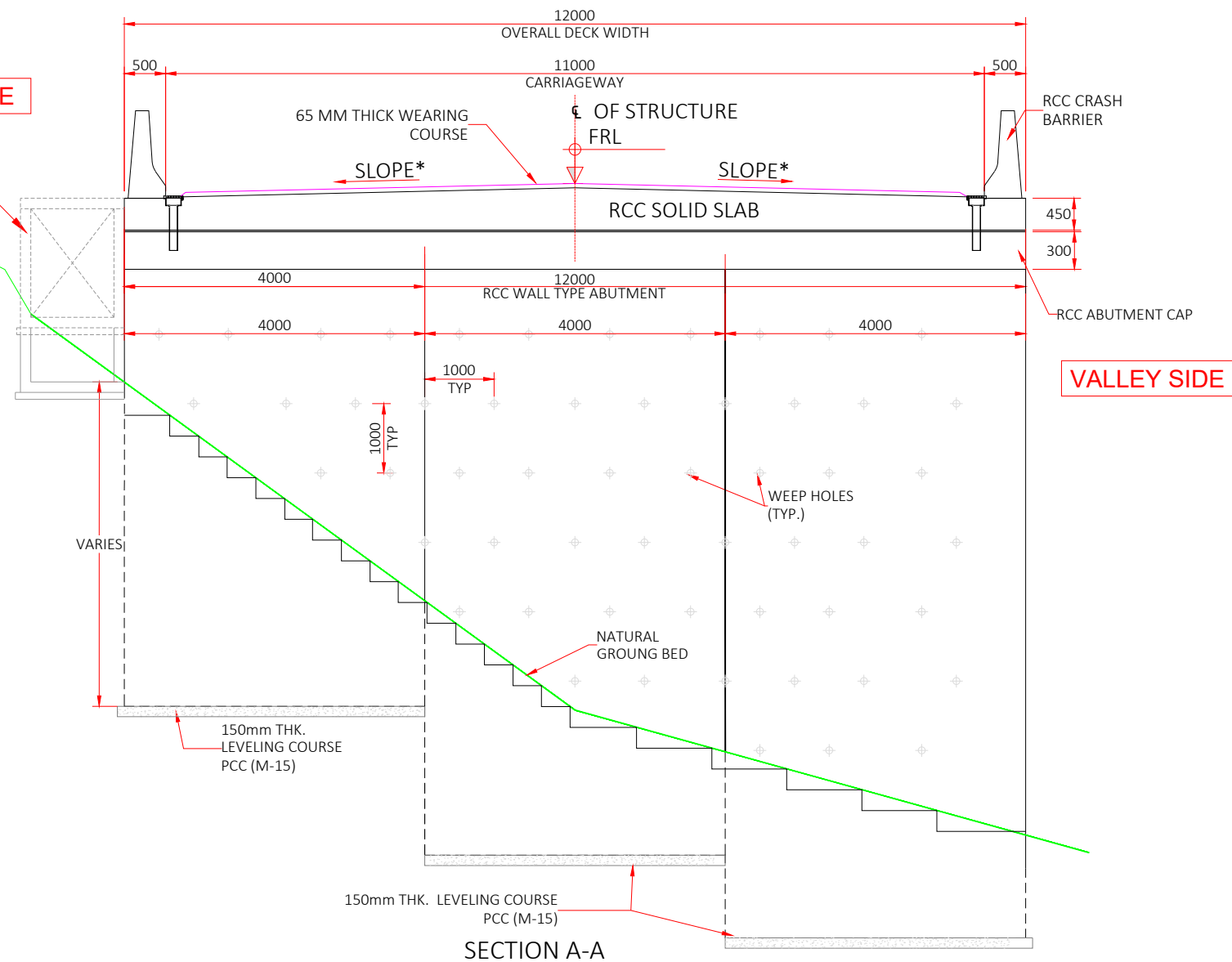


DETAIL OF ABUTMENT (A1 & A2)



DETAIL-X

HILL SIDE
CATCH PIT
(AS PER IRC SP 48
2023 FIG 2.5)



SECTION A-A

SCHEDULE RCC SLAB CULVERT							
S.NO.	DESIGN CHAINAGE	LOCATION	CHAINAGE	FRL	BL	FRL-BL	Longitudinal Slop
1	2+650	A1	2+648	1414.011	1410.364	3.647	4.0%
		A2	2+653	1413.811	1409.908	3.903	
2	3+120	A1	3+118	1403.571	1398.204	5.367	2.1%
		A2	3+123	1403.471	1397.392	6.079	
3	6+655	A1	6+653	1267.675	1262.568	5.107	6.0%
		A2	6+658	1267.375	1263.150	4.225	
4	7+395	A1	7+392	1234.425	1227.857	6.568	5.0%
		A2	7+397	1234.175	1227.561	6.614	

CLIENT :

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1st & 2nd Floor,
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New Delhi - 110029
Contact No : 011-26768950

CONSULTANT :

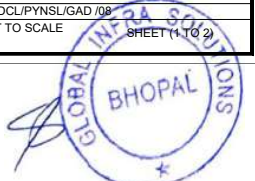


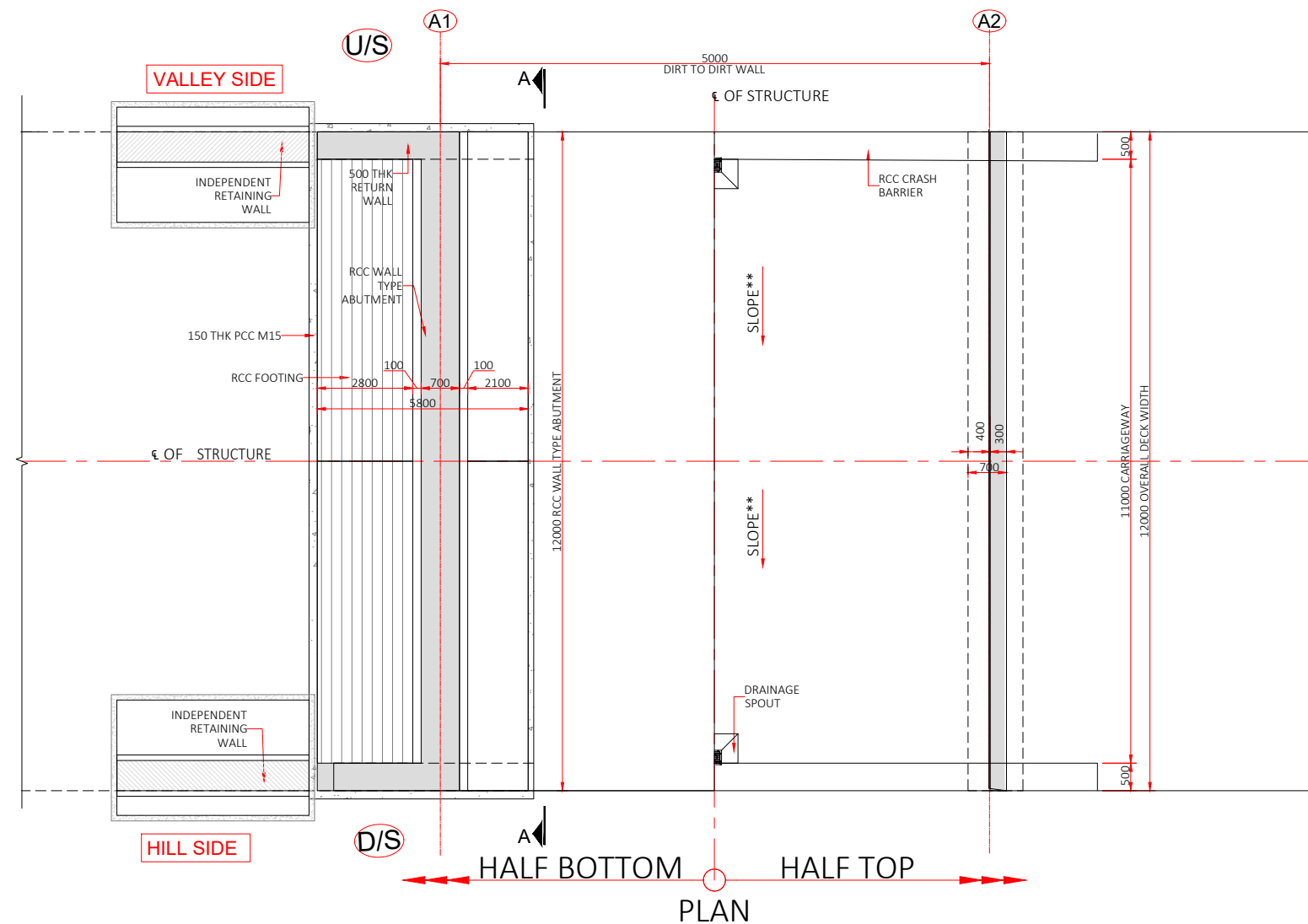
Global Infra Solutions
in JV with **Dhruv Consultancy Services Limited** and
association with **Infycons Creative Software Pvt. Ltd.**
F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal - 462039
e: globalinfra@globalinfra.com web: globalinfra.com

PROJECT TITLE :

IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF RCC SLAB CULVERT SPAN 1X5 AT CH 2+650, CH 3+120, CH 6+655, CH 7+395
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. NHIDCL/PYNSL/GAD/08 SCALE : NOT TO SCALE SHEET (1 OF 2)

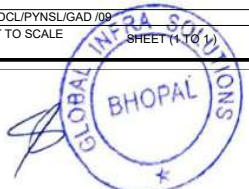




- | | | | |
|----------|------|-------------|--|
| REV | DATE | DESCRIPTION | DRAWING TITLE :- |
| | | | <p align="center">GENERAL ARRANGEMENT DRAWING
FOR NEW PROPOSAL OF
RCC SLAB CULVERT SPAN 1X5.0 @ CH-3+035</p> |
| | | | |
| | | | |
| | | | |
| | | | |
| DGN. | NAME | SIG. | |
| DRAWN | | | |
| CHECKED | | | DRAWING No. NHID/CL/PY/SL/GAD /09 |
| APPROVED | | | SCALE : NOT TO SCALE |

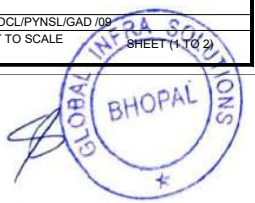


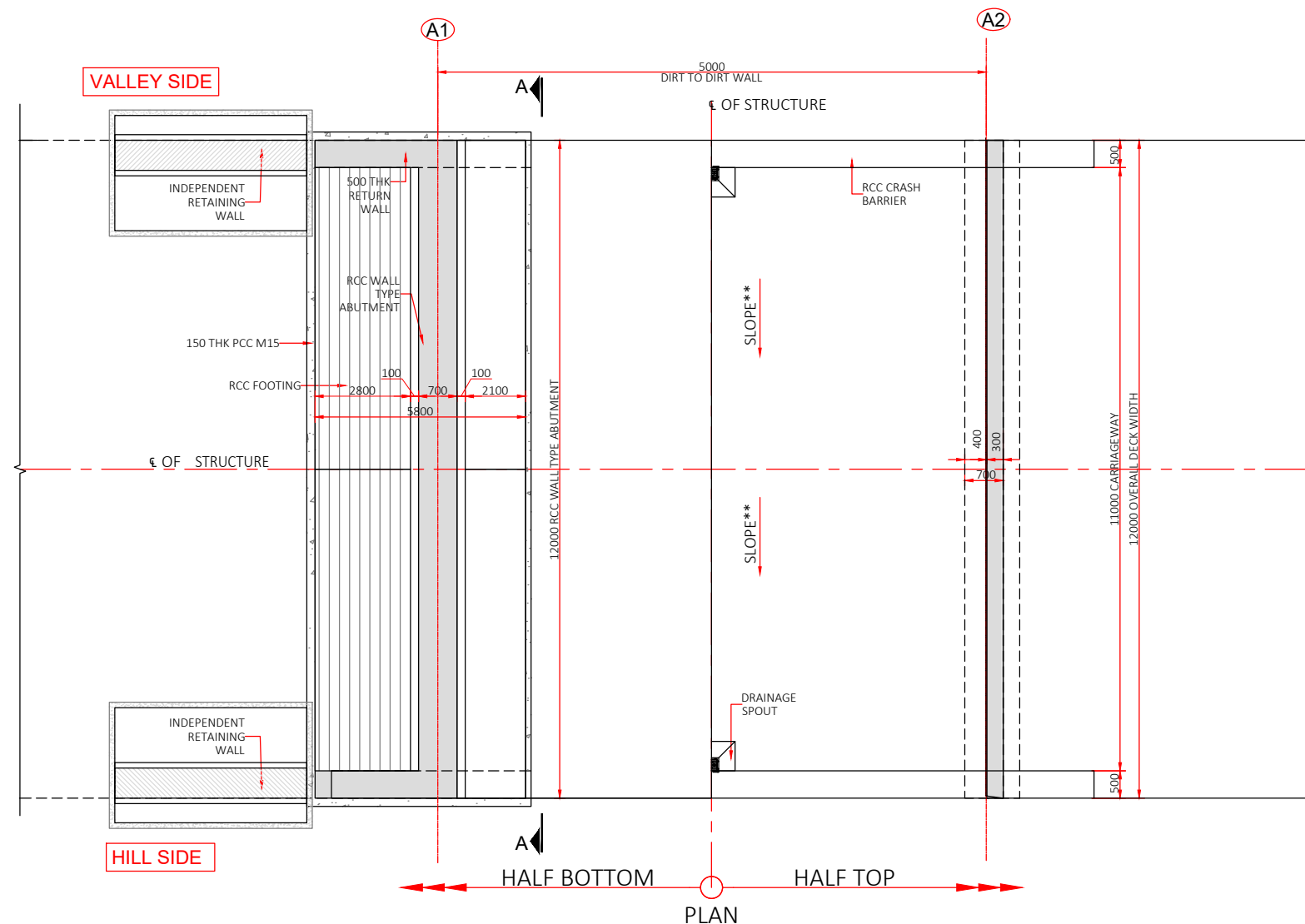
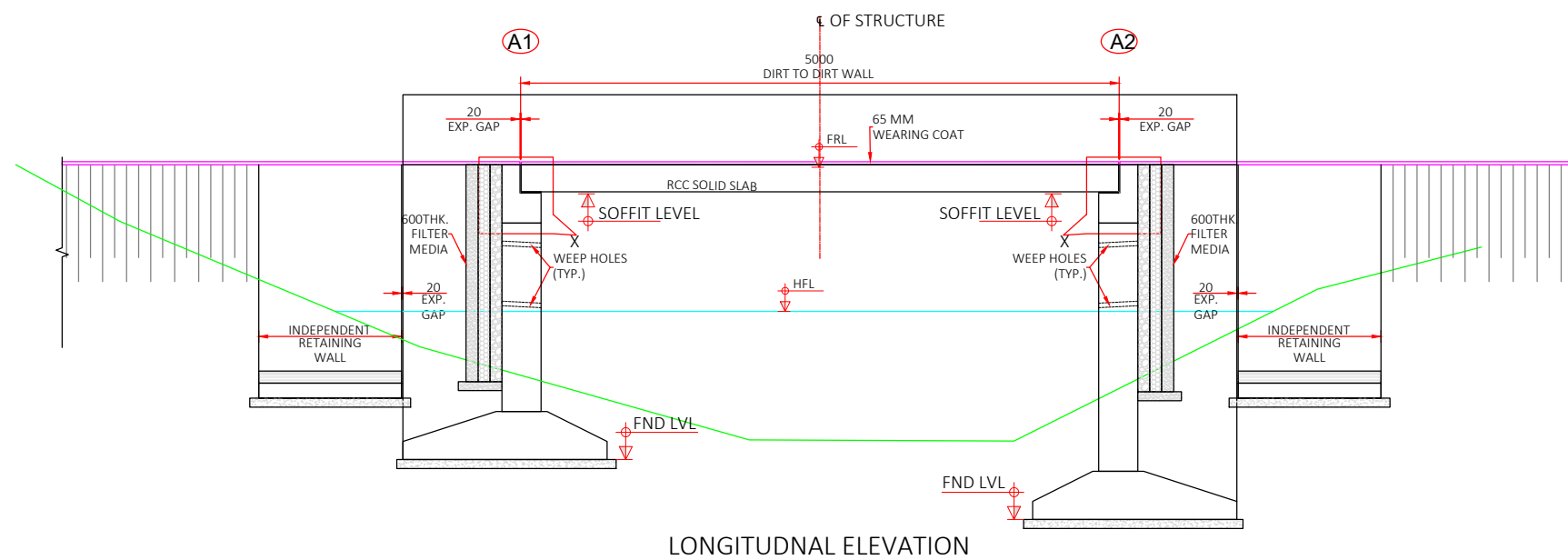
IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).





SCHEDULE RCC SLAB CULVERT					
LOCATION	CHAINAGE	FRL	BL	FRL-BL	Longitudinal Slop
A1	3+032	1405.270	1401.205	4.065	2.1%
A2	3+037	1405.171	1400.625	4.546	





NOTES :

GENERAL

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4. DRAINAGE SPOUT, EXPANSION JOINT & WEARING COAT SHOULD BE PROVIDED AS PER THE SPECIFICATIONS AND DRAWINGS.
5. THE CARRIAGEWAY OF PROPOSED BOX CULVERT SHALL BE DESIGN AS PER IRC:6-2017.
6. THE APPROACHES ARE IN RCC/PCC WALLS AS PER DETAIL DRAWINGS.

MATERIALS:

7. CLEAR COVER TO ALL REINFORCEMENT BARS INCLUDING STIRRUPS SHALL BE AS FOLLOWS:
SUPER STRUCTURE 45 mm PIER 45 mm
ABUTMENT 75 mm FOUNDATION 75 mm
8. REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS OF FE-500, CONFIRMING TO IS-1786.
9. GRADE OF CONCRETE SHALL BE AS FOLLOWS:
PCC LEVELING COURSE M15 PCC TOE WALL M20
RCC ABUTMENT / PIER M30 RCC SOLID SLAB M30
RCC ABUTMENT CAP / PIER CAP M30 RCC CRASH BARRIER M40
10. BACKFILLING SHALL BE DONE IN LAYERS NOT EXCEEDING 200MM THK. EACH LAYERS SHALL BE COMPACTED TO THE OPTIMUM DENSITY.
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(i) ANGLE OF INTERNAL FRICTION, $\phi = 30^\circ$
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(iii) ANGLE OF WALL FRICTION, $\Delta = 20^\circ$
(iv) DRY DENSITY, $\gamma_D = 2.50 \text{ T/M}^3$

CONSTRUCTION

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IN SOFT ROCK 1.5 m
IN HARD ROCK 0.6 m
SOIL 2.0 m
16. IN CASE OF FOUNDATION IN ROCK, THE TRENCHES AROUND THE FOOTING SHALL BE FILLED UP WITH M-15 GRADE OF CONCRETE UPTO THE TOP OF THE ROCK.

CLIENT :



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DEVELOPMENT CORPORATION LTD.**

1st & 2nd Floor,
Tower A, World Trade Centre, Nauroji Nagar,
New Delhi - 110029
Contact No : 011-26768950

CONSULTANT :



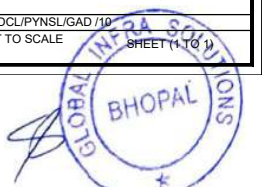
Global Infra Solutions

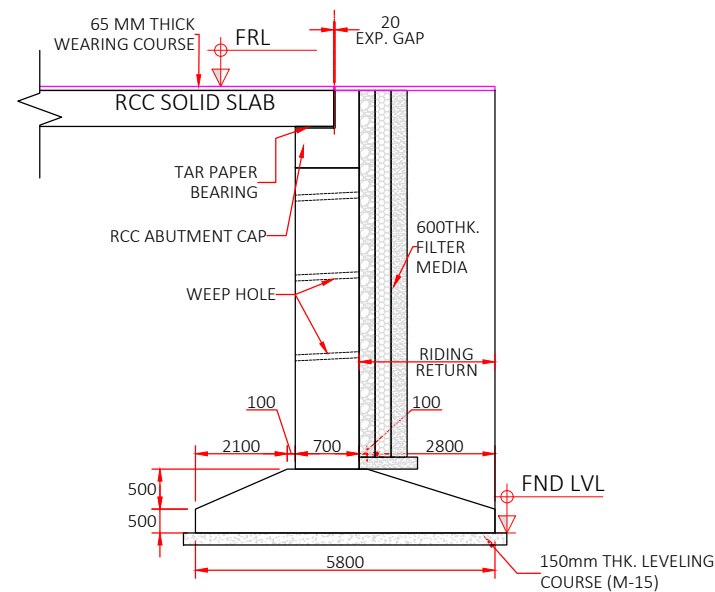
in JV with **Dhruv Consultancy Services Limited** and
association with **Infycons Creative Software Pvt. Ltd.**
F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal - 462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

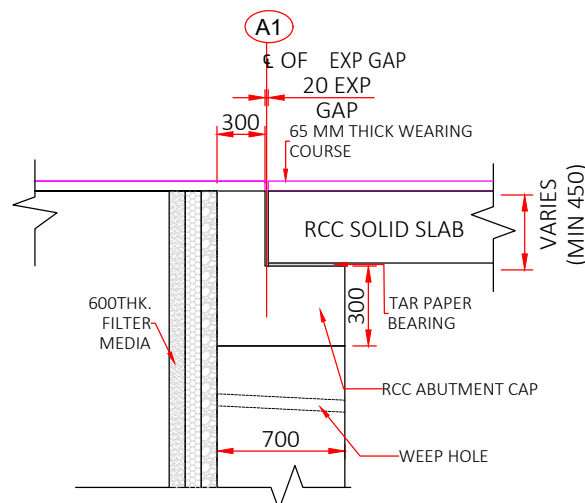
**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF RCC SLAB CULVERT SPAN 1X5.0 @ CH-5+435
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. NHIDCL/PYNSL/GAD/10 SCALE : NOT TO SCALE



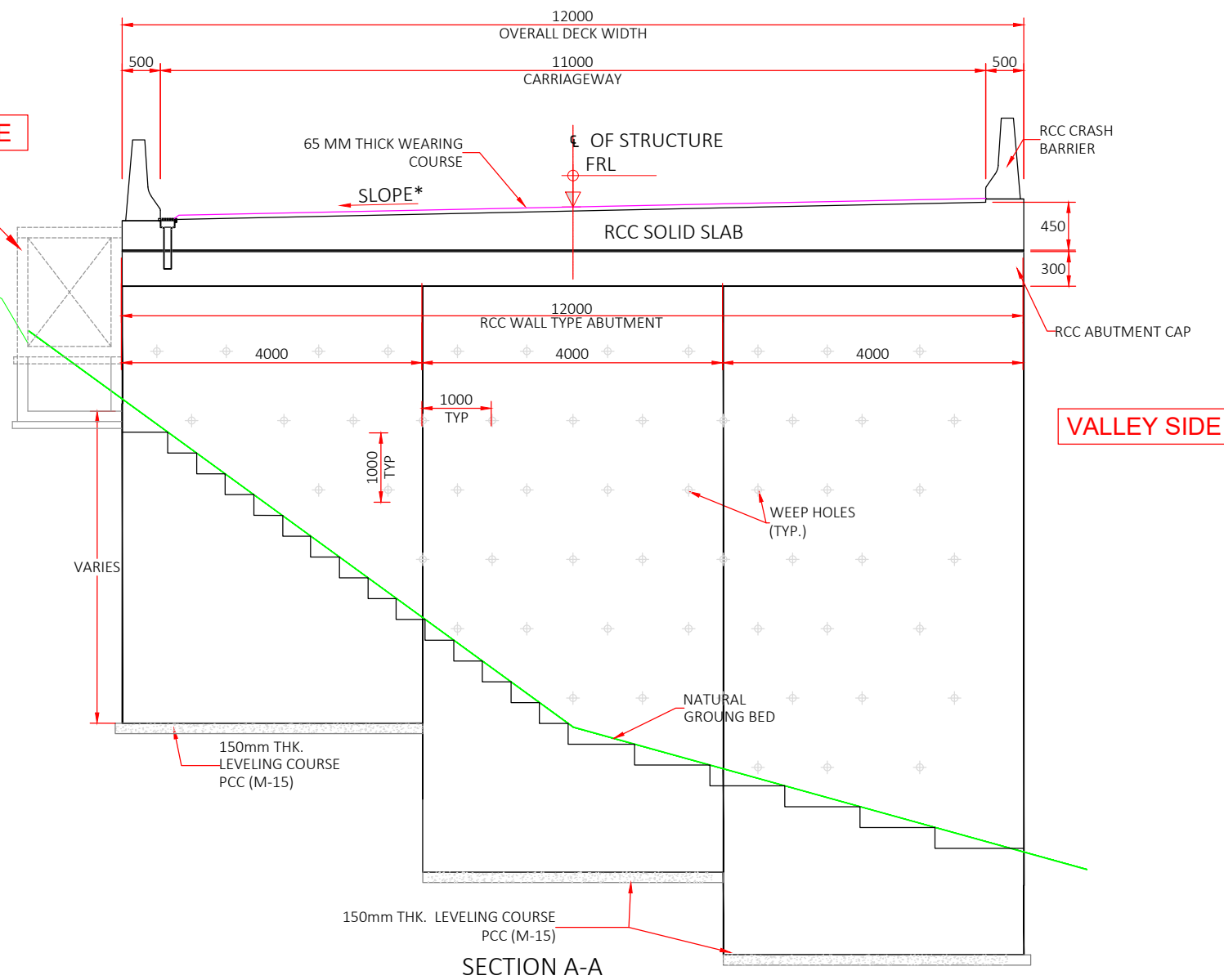


DETAIL OF ABUTMENT (A1 & A2)



DETAIL-X

HILL SIDE
CATCH PIT
(AS PER IRC SP 48
2023 FIG 2.5)



SECTION A-A

SCHEDULE RCC SLAB CULVERT					
LOCATION	CHAINAGE	FRL	BL	FRL-BL	Longitudinal Slop
A1	5+433	1292.735	1286.066	6.669	0.0%
A2	5+438	1292.594	1286.091	6.503	

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Contact No : 011-26768950

CONSULTANT :

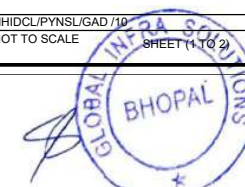


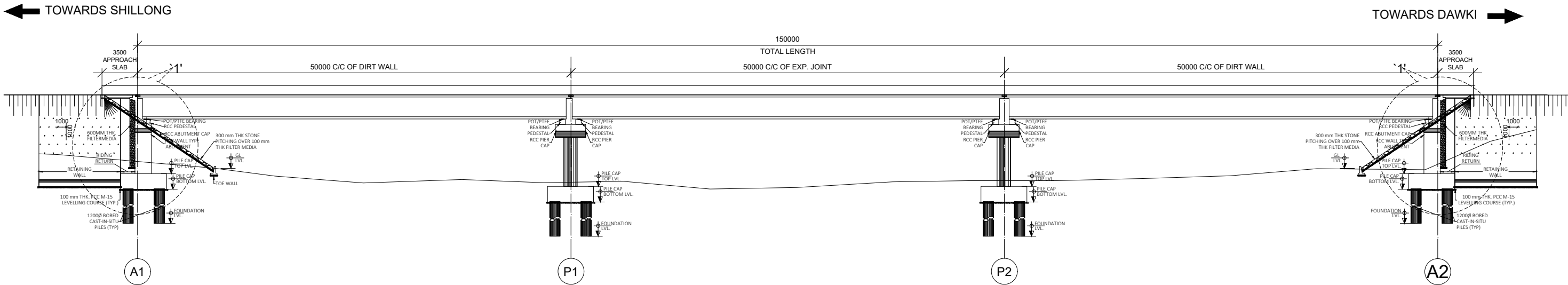
Global Infra Solutions
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F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal - 462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

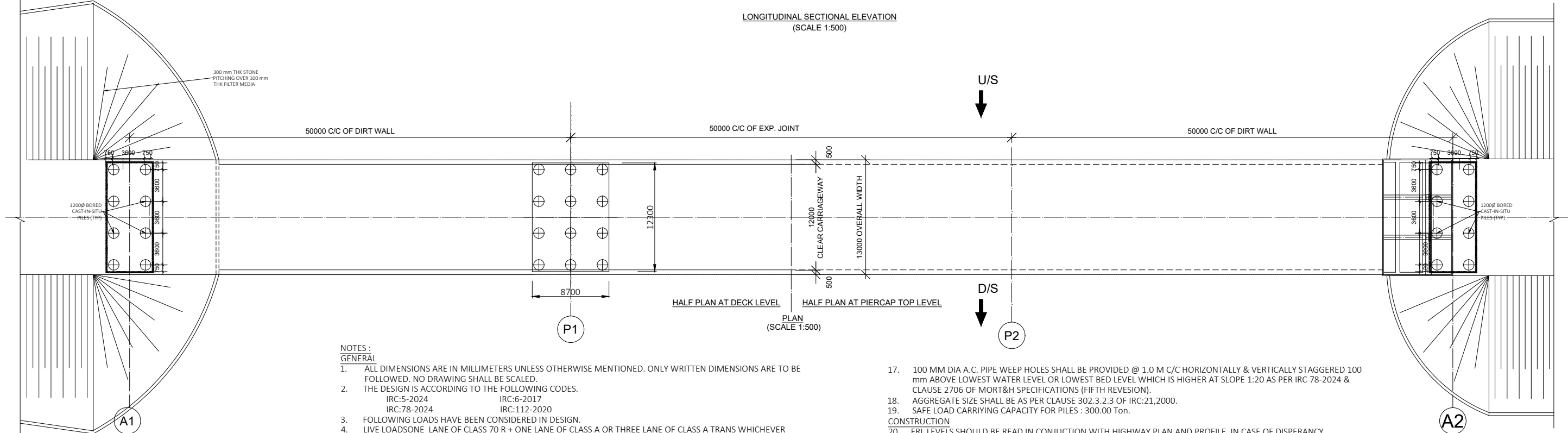
REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF RCC SLAB CULVERT SPAN 1X5.0 @ CH-5+435
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. NHIDCL/PYNSL/GAD/10 SCALE : NOT TO SCALE





FINISH ROAD LEVELS (M)	1457.906	1458.656	1458.406	1454.156
BED LEVEL (M)	1447.896	1441.577	1438.384	1442.462
DESIGN CHAINAGES (Km)	1+590	1+640	1+740	1+740

LONGITUDINAL SECTIONAL ELEVATION
(SCALE 1:500)



NOTES :
GENERAL

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DRAWING SHALL BE SCALED.
- THE DESIGN IS ACCORDING TO THE FOLLOWING CODES.
IRC:5-2024 IRC:6-2017
IRC:78-2024 IRC:112-2020
- FOLLOWING LOADS HAVE BEEN CONSIDERED IN DESIGN.
- LIVE LOADS ONE LANE OF CLASS 70 R + ONE LANE OF CLASS A OR THREE LANE OF CLASS A TRANS WHICHEVER PRODUCE WORST EFFECT.
- DENSITY OF BITUMEN COAT HAS BEEN ASSUMED AS 2.2 T/M
- DRAINAGE SPOUT USED SHALL BE AS PER M.O.S.T STANDARD DRAWING NO. SD/205 & IRC 5:2024
- CRASH BARRIER OF THE SUPER STRUCTURE SHALL BE ADOPTED FROM IRC:5:2024
- WEARING COAT AS PER MORT&H STANDARD 5TH REVISION CLAUSE 2702.1 AND HAVING UNI DIRECTIONAL CAMBER FOR EACH TWO LANE AS PER CLAUSE 7.14. IRC:SP:84-2009.
- STRIP TYPE EXPANSION JOINT SHALL BE USED FOR EXPANSION JOINT AND SHALL CONFIRM TO IRC SP:69:2011.
- APPROACH SLAB SHALL BE AS PER IRC:5 AND SECTION 2704 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
- 600 MM THICK FILTER MEDIA SHALL BE PROVIDED AS PER APPENDIX - 6 OF IRC SP: 78-2024.
- MATERIALS:
12. GRADE OF CONCRETE SHALL CONFIRM TO CLAUSE 6.4 OF IRC 112-2020 AND ARE AS FOLLOWS:
PCC LEVELING COURSE M15 RCC CAST -IN-SITU PILE M35
RCC ABUTMENT / PIER M35 RCC DECK SLAB M40
RCC ABUTMENT CAP / PIER CAP M35 RCC CRASH BARRIER M40
RCC PEDESTAL M45 PRECAST PSC GIRDER M45
- REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS OF FE-500D, CONFIRMING TO CLAUSE 6.2 OF IRC 112-2020 & IS-1786:2008.
- WATER TO BE USED IN CONCRETING AND CURING SHALL CONFIRM TO CLAUSE 18.4.5 OF IRC 112-2020.
- THE GRANULAR FILL BEHIND ABUTMENT SHALL BE AS PER CLAUSE 305.2 OF MORT&H SPECIFICATIONS (FIFTH REVISION) ($\phi=30^\circ$, $\delta=20$, $\gamma=1.8$) AND APPENDIX 6, IRC 78-2024.
- SIDE SLOPE OF ROAD EMBANKMENT NEAR ABUTMENTS SHALL BE IN SLOPE 1V:1.5H & SHALL BE PROVIDED WITH 300 THICK STONE REVETMENT AND 150 THICK FILTER MEDIA CONFORMING TO CLAUSE 2500 & 2504 OF MORT&H SPECIFICATIONS (FIFTH REVISION).

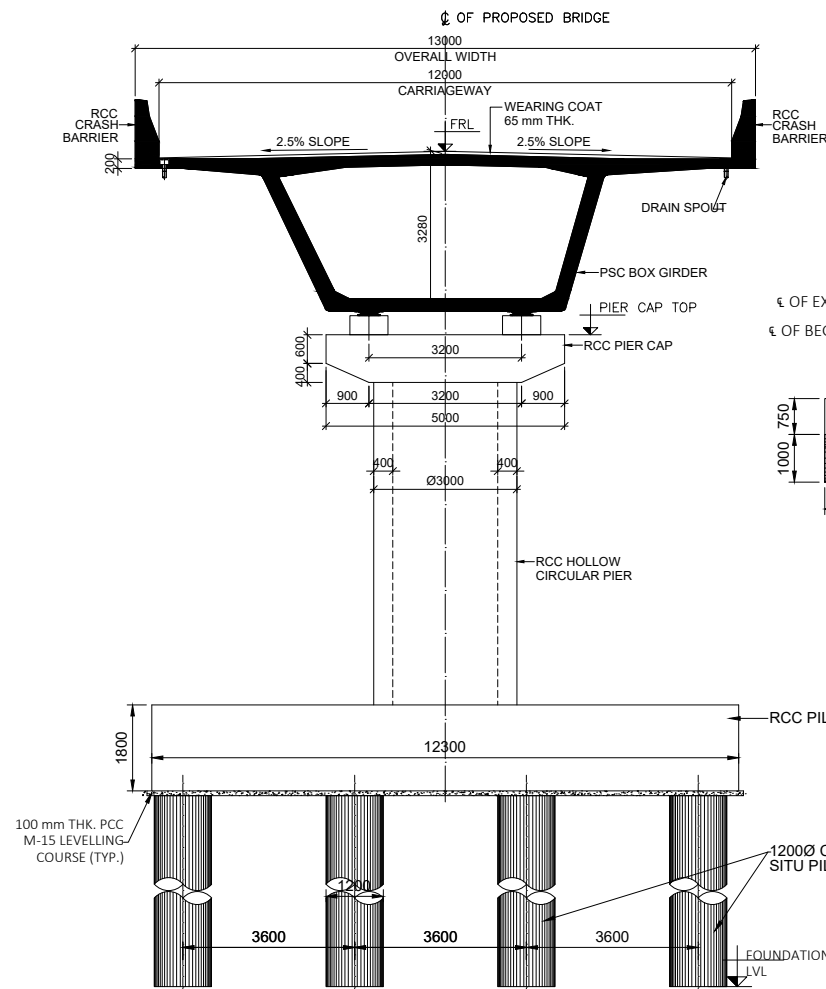
- 100 MM DIA A.C. PIPE WEEP HOLES SHALL BE PROVIDED @ 1.0 M C/C HORIZONTALLY & VERTICALLY STAGGERED 100 mm ABOVE LOWEST WATER LEVEL OR LOWEST BED LEVEL WHICH IS HIGHER AT SLOPE 1:20 AS PER IRC 78-2024 & CLAUSE 2706 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
- AGGREGATE SIZE SHALL BE AS PER CLAUSE 302.3.2.3 OF IRC:21,2000.
- SAFE LOAD CARRYING CAPACITY FOR PILES : 300.00 Ton.
- CONSTRUCTION
- FRL LEVELS SHOULD BE READ IN CONJUNCTION WITH HIGHWAY PLAN AND PROFILE. IN CASE OF DISPARANCY HIGHWAY PLAN AND PROFILE SHOULD BE FOLLOWED IN CONSULTATION WITH DESIGNER AND APPROVING AUTHORITY.
- THE PROTECTIVE WORKS SHALL BE COMPLETED AS PER CLAUSE 2104.3 AND SECTION 2500.
- THE CONSTRUCTION AGENCY SHOULD ENSURE THAT THE NECESSARY PERMISSIONS HAS BEEN OBTAINED FROM ROAD & IRRIGATION AUTHORITY IF REQUIRED FOR DIVERTING THE TRAFFIC TEMPORARILY PRIOR TO COMMENCING THE WORK.
- NECESSARY SUITABLE SHORING AND STRUTTING SHALL BE PROVIDED FOR CASTING OF STRUCTURAL MEMBERS AND OTHER PLACE WHEREVER REQUIRED AND DETAILED DRAWING SHALL BE SUBMITTED BY THE CONTRACTING AGENCY.
- IF ANY AMBIGUITY FOUND IN DRAWINGS OR AT SITE BRING IT TO DESIGNER'S NOTICE BEFORE EXECUTION.
- EXCAVATION SHOULD BE DONE AS PER SECTION 304 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
- IF HARD STRATA FOUND AT SITE, ACC. TO CLAUSE 705.2.2, IRC-78:2024, MINIMUM EMBEDMENT OF FOUNDATION SHALL BE MINIMUM OF AS FOLLOW OR SHOWN IN DRAWINGS:
IN HARD ROCK 0.6 m
IN SOFT ROCK 1.5 m
SOIL 2.0 m
- IN CASE OF FOUNDATION IN ROCK, THE TRENCHES AROUND THE FOOTING SHALL BE FILLED UP WITH M-15 GRADE OF CONCRETE UPTO THE TOP OF THE ROCK.
- BEFORE COMMENCEMENT OF EXECUTION OF WORK CROSS SECTION AS THE SITE SHALL BE TAKEN BY PRECISION SURVEY & ABUTMENT AND PIER POSITION SHOWN IN TECHNICALLY SANCTIONED DRAWING SHALL BE VERIFIED ON SITE IN CASE OF ANY DISCREPANCY OR DOUBT CLARIFICATION SHALL BE OBTAINED FROM COMPETENT AUTHORITY BEFORE HAND.

CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
1st & 2nd Floor,
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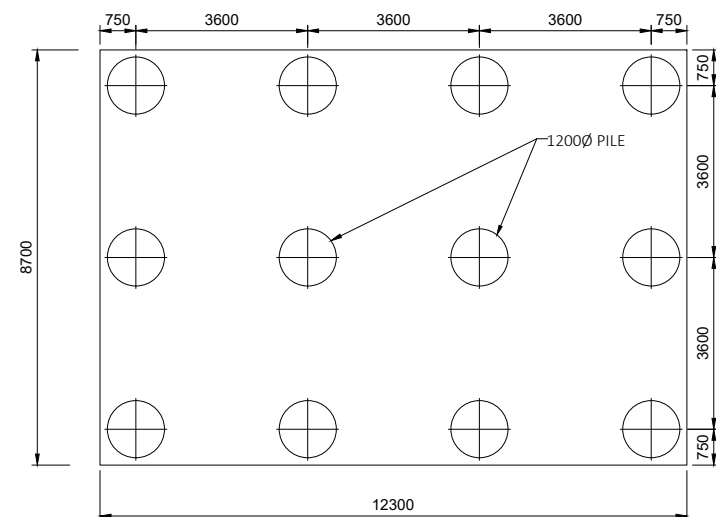
CONSULTANT : Global Infra Solutions
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PROJECT TITLE : IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
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UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III).

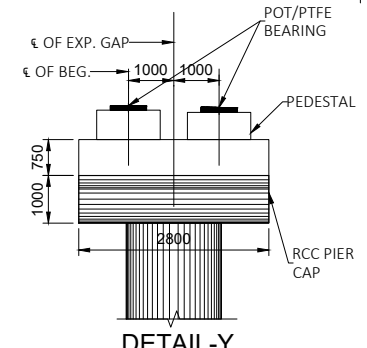
REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED VIADUCT FROM SPAN 3X50.0M @ CH-1+590 & CH-1+740
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. : GIS\NHIDGL\PPYNSLIGAD 111 SCALE : NOT TO SCALE (SHEET NO. 01 TO 03)



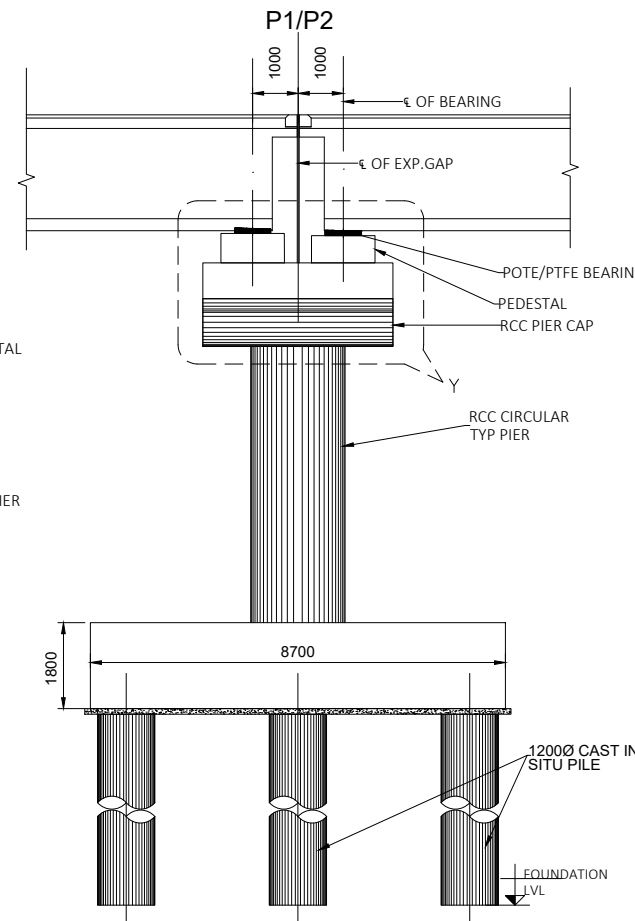
CROSS SECTION AT PIER (P1 TO P2)



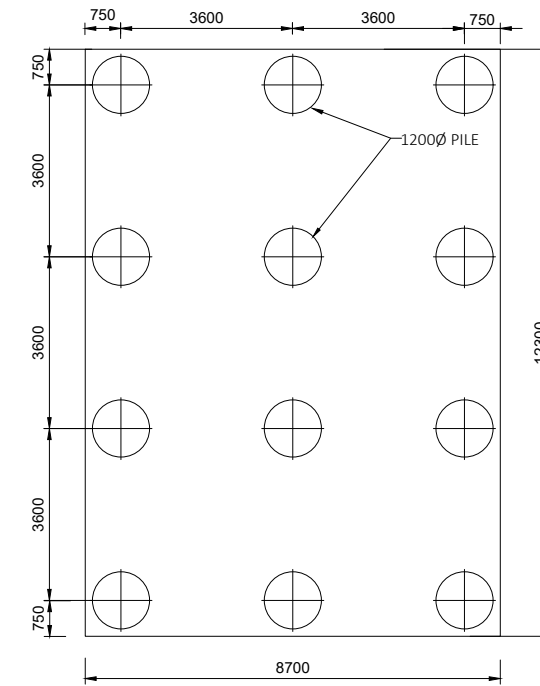
TOP PLAN OF PILE CAP AT PIER (P1/P2)



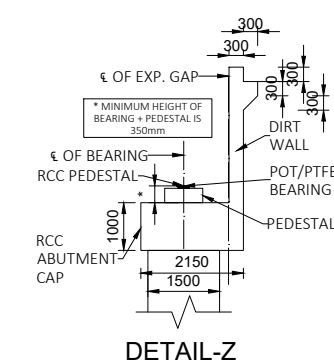
DETAIL-Y



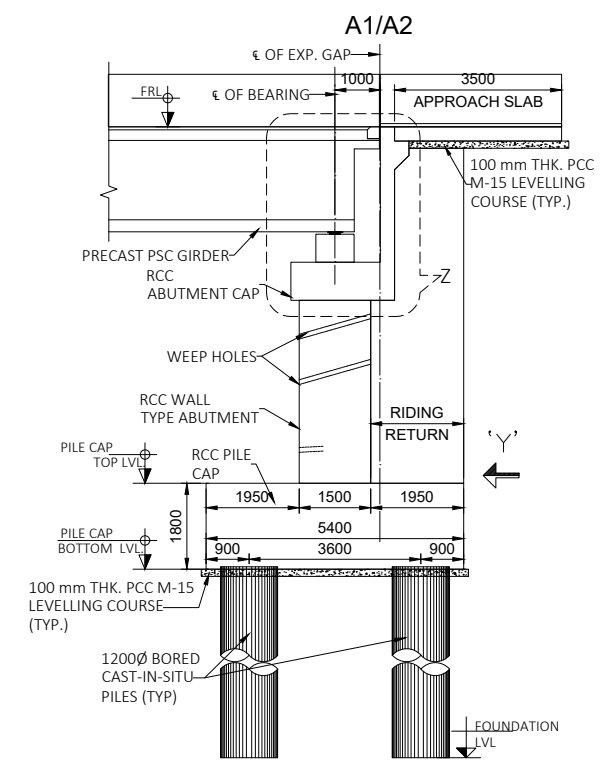
DETAIL OF PIER AT P1/P2



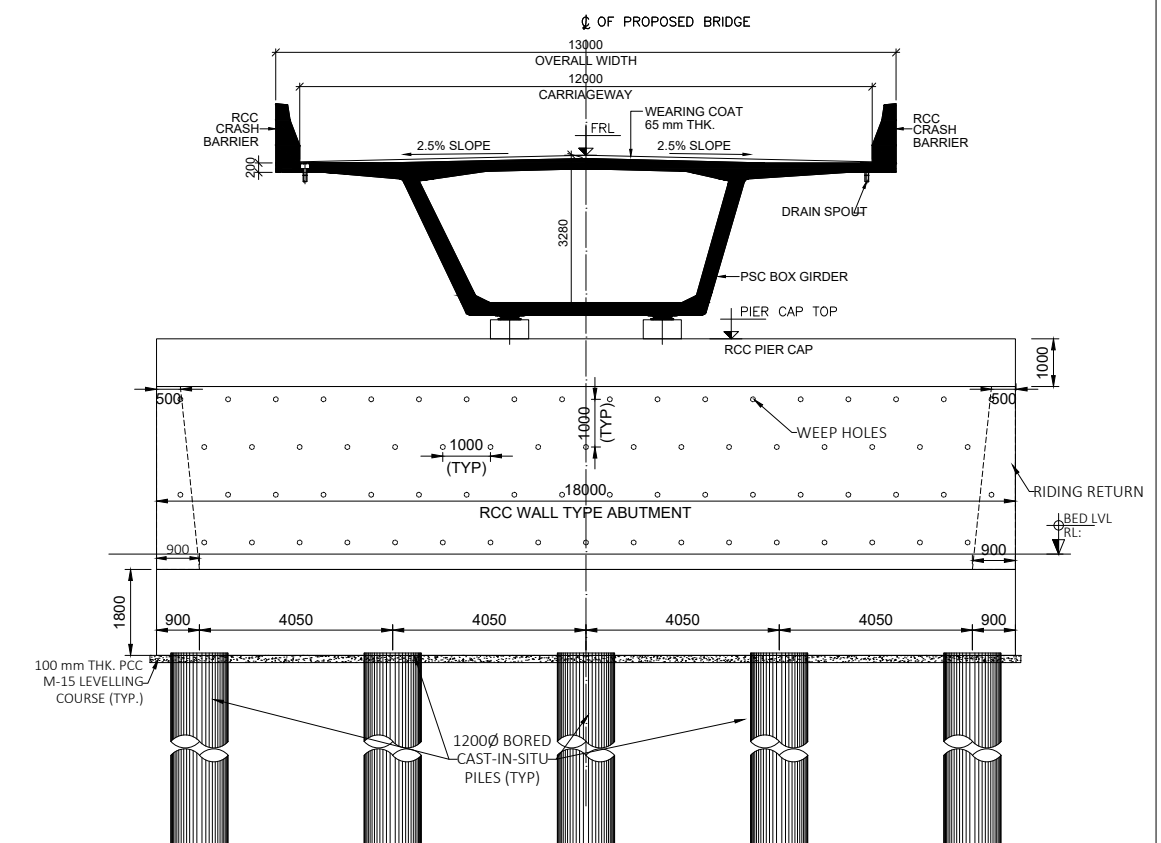
TOP PLAN OF PILE CAP AT PIER (P1/P2)



DETAIL-Z

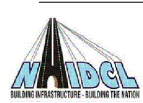


DETAIL OF ABUTMENT(A1/A2)



VIEW 'Y'

CLIENT :



NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
 1st & 2nd Floor,
 Tower A, World Trade Centre, Nauroji Nagar,
 New Delhi - 110029
 Contact No : 011-26768950

CONSULTANT :

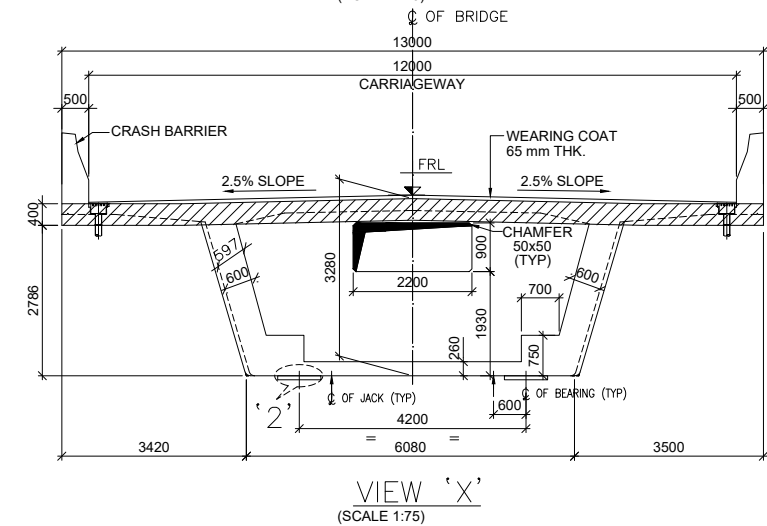
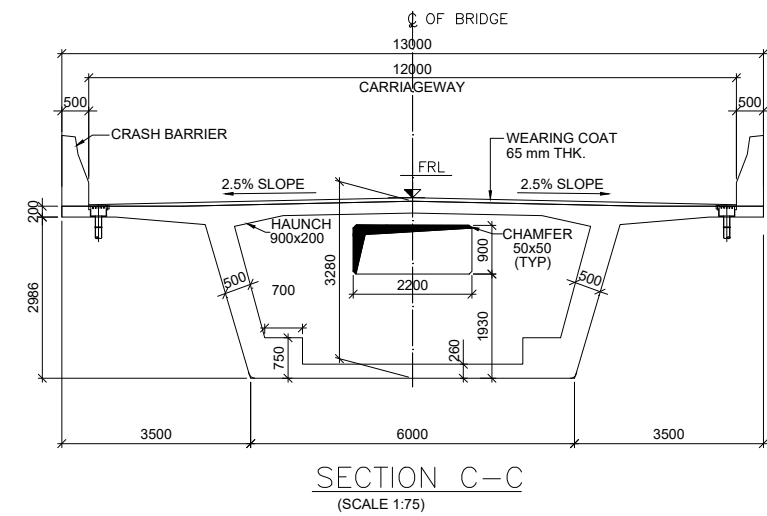
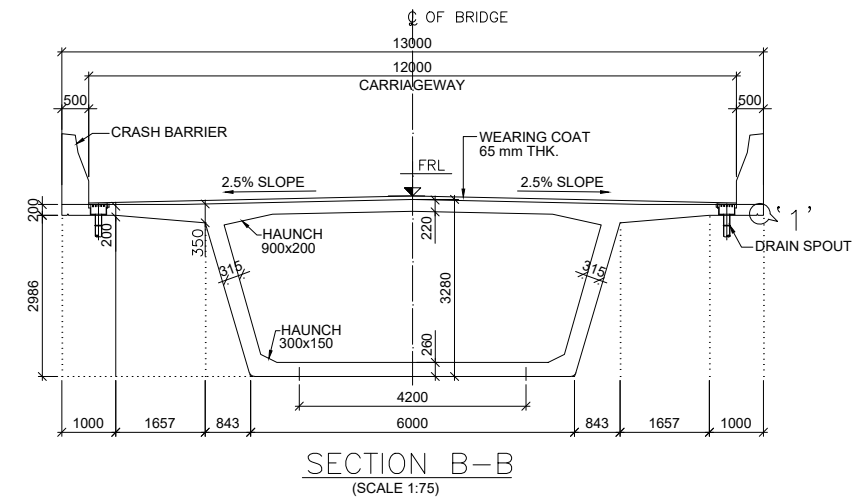


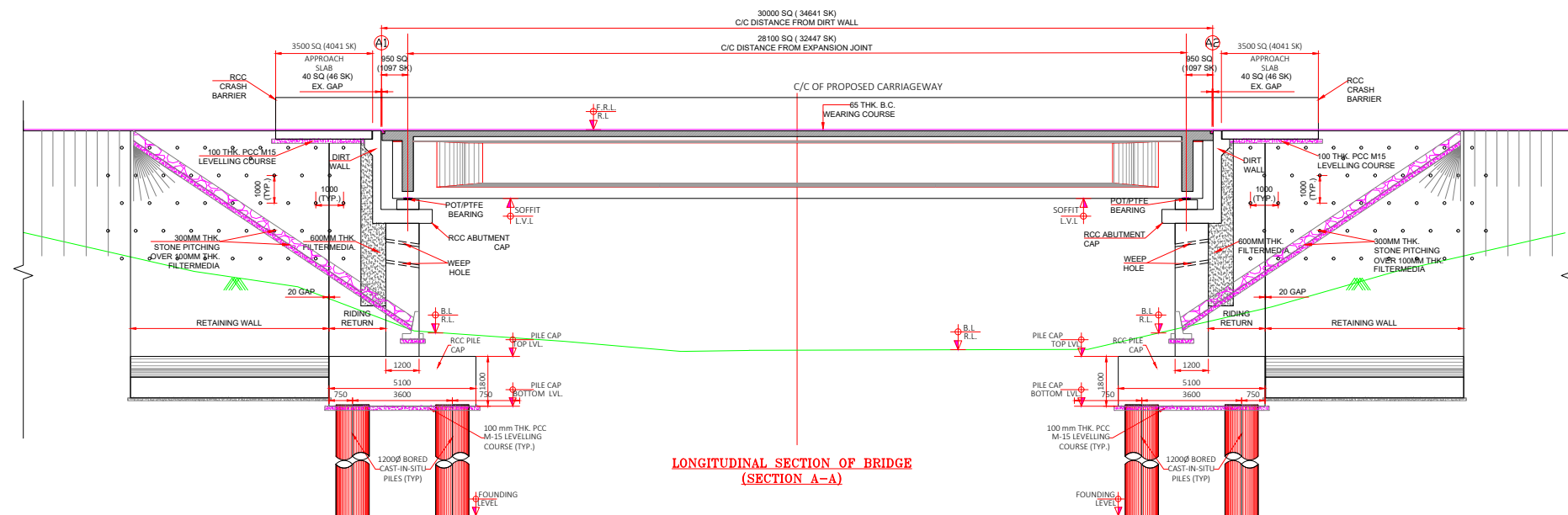
Global Infra Solutions
 in JV with **Dhruv Consultancy Services Limited** and
 association with **Infycons Creative Software Pvt. Ltd.**
 F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039
 e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
 DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
 UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III).

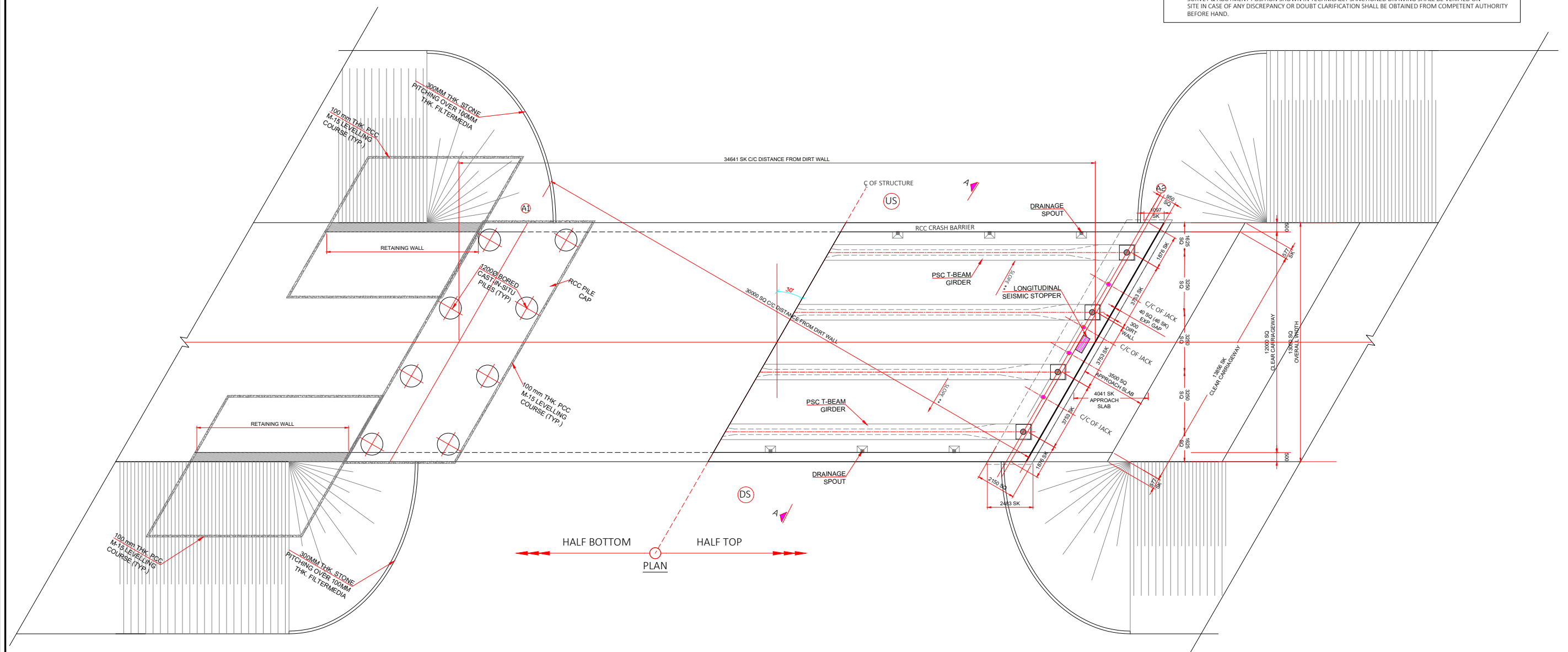
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			DRAWING No. : GISH/HDCL/PY/NS/DAD/111
			SCALE : NOT TO SCALE (SHEET NO. - 02 TO 03)



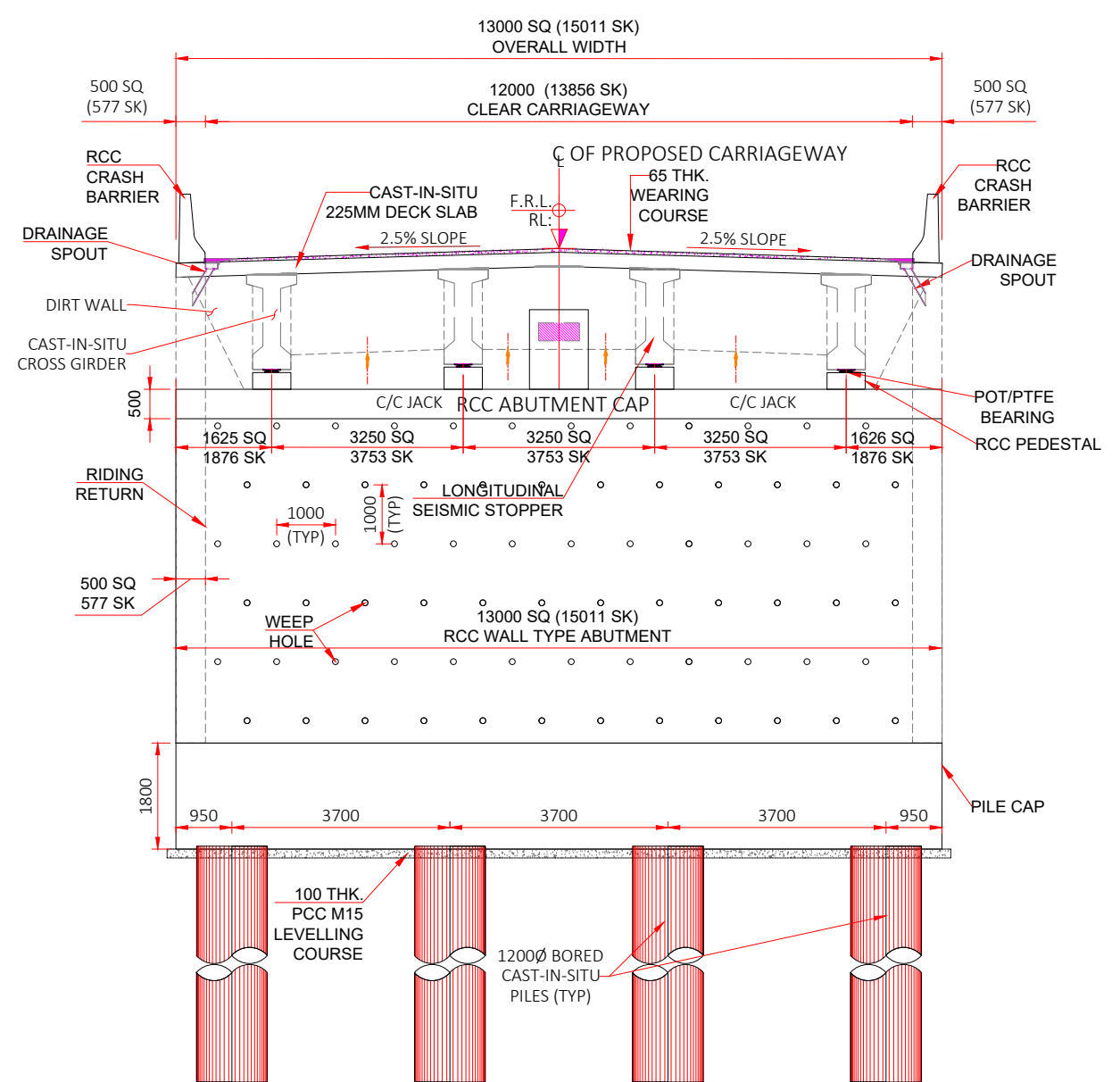
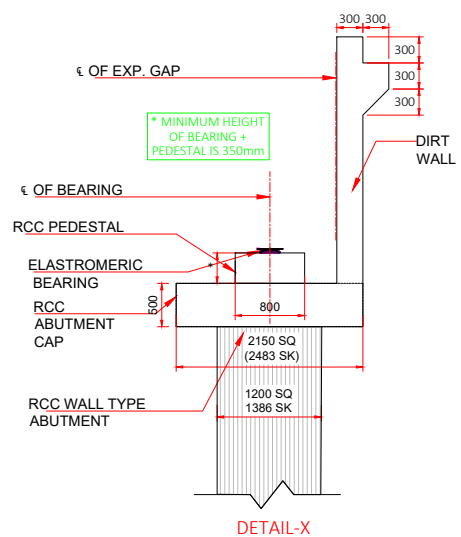
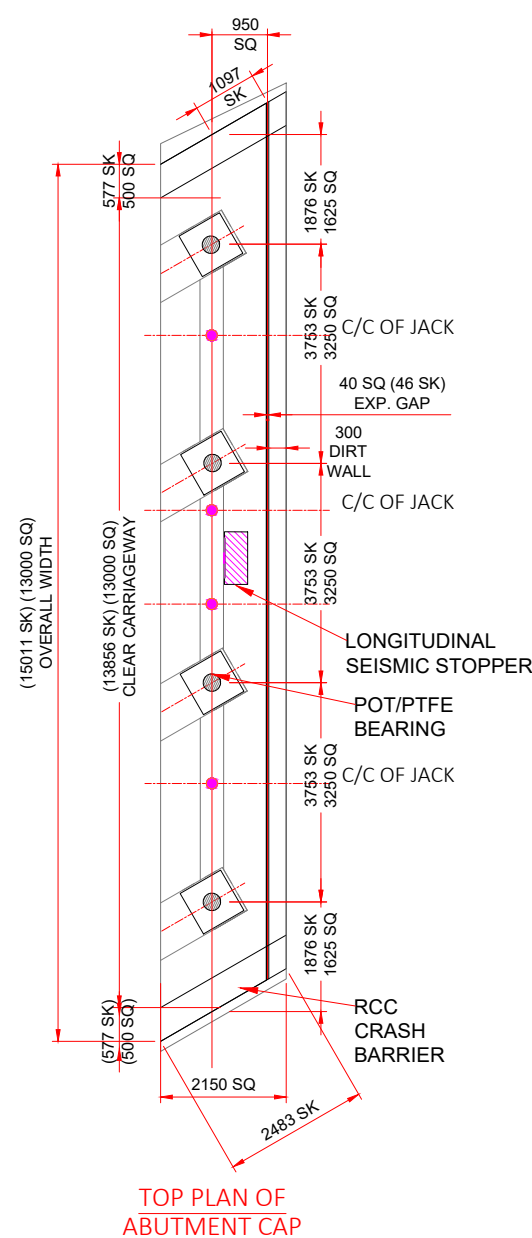
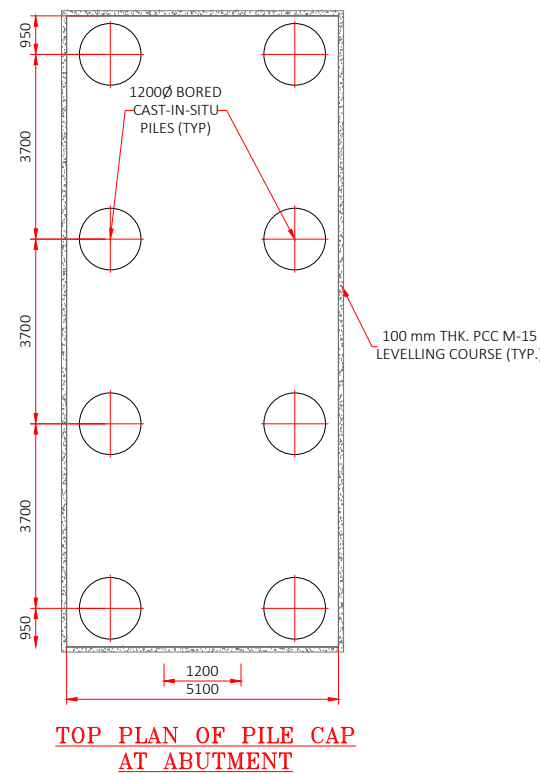
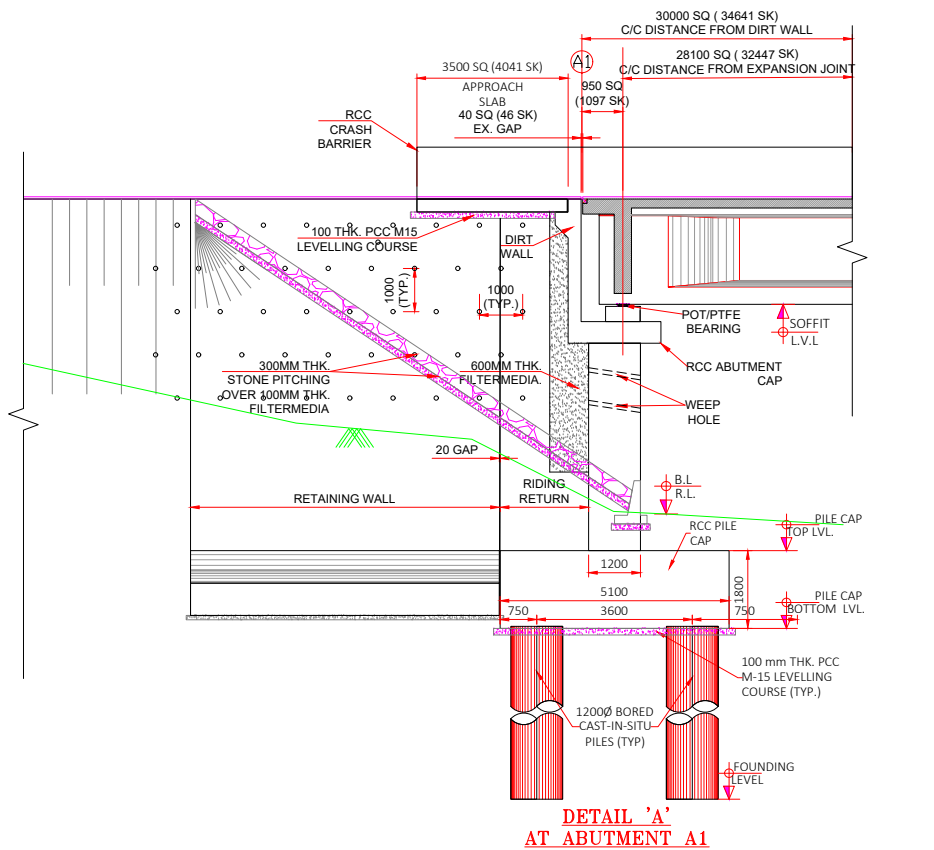


LONGITUDINAL SECTION OF BRIDGE
(SECTION A-A)

- NOTES:
- GENERAL
 - ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DRAWING SHALL BE SCALED.
 - THE DESIGN IS ACCORDING TO THE FOLLOWING CODES:
IRC-5:2024
IRC-78:2024
IRC-112:2020
 - FOLLOWING LOADS HAVE BEEN CONSIDERED IN DESIGN.
a. LIVE LOADS
ONE LANE OF CLASS 70 R FOR EVERY TWO LANES WITH ONE LANE OF CLASS A FOR REMAINING LANES, IF ANY, OR ONE LANE OF CLASS A FOR EACH LANE OR SPECIAL VEHICLE LOADING WHICHEVER PRODUCE WORST EFFECT ON EACH LANE OF CARRIAGEWAY.
 - DENSITY OF BITUMEN COAT HAS BEEN ASSUMED AS 2.2 T/M
 - DRAINAGE SPOUT USED SHALL BE AS PER MORTH STANDARD DRAWING NO. SD/205 & IRC 5:2024.
 - CRASH BARRIER OF THE SUPER STRUCTURE SHALL BE ADOPTED FROM IRC-5:2024.
 - WEARING COAT AS PER MORTH STANDARD 5TH REVISION CLAUSE 2702.1
 - JOINT EITHER MODULAR STRIP SEAL OR FINGER TYPE JOINTS WILL BE PERMITTED AS PER IRC SP-69:2011.
 - APPROACH SLAB SHALL BE AS PER IRC-5 AND SECTION 2704 OF MORTH SPECIFICATIONS (FIFTH REVISION).
 - 600 MM THICK FILTER MEDIA SHALL BE PROVIDED AS PER APPENDIX - 6 OF IRC SP-78:2024.
 - MATERIALS:
 - GRADE OF CONCRETE SHALL CONFIRM TO CLAUSE 6.4 OF IRC 112:2020 AND ARE AS FOLLOWS:
PCC LEVELLING COURSE M15
RCC ABUTMENT M35
RCC ABUTMENT CAP M35
RCC DECK SLAB M40
RCC CRASH BARRIER M40
RCC I GIRDER M35
 - REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS OF FE-500D, CONFIRMING TO CLAUSE 6.2 OF IRC 112:2020 & IS-1786:2008.
 - WATER TO BE USED IN CONCRETING AND CURING SHALL CONFIRM TO CLAUSE 18.4.5 OF IRC 112:2020.
 - AGGREGATE SIZE SHALL BE AS PER CLAUSE 302.3.2.3 OF IRC-2:2000.
 - CONSTRUCTION
 - FRL LEVELS SHOULD BE READ IN CONJUNCTION WITH HIGHWAY PLAN AND PROFILE. IN CASE OF DISPARANCY HIGHWAY PLAN AND PROFILE SHOULD BE FOLLOWED IN CONSULTATION WITH DESIGNER AND APPROVING AUTHORITY.
 - THE PROTECTIVE WORKS SHALL BE COMPLETED AS PER CLAUSE 2104.3 AND SECTION 2500.
 - THE CONSTRUCTION AGENCY SHOULD ENSURE THAT THE NECESSARY PERMISSIONS HAS BEEN OBTAINED FROM ROAD & IRRIGATION AUTHORITY IF REQUIRED FOR DIVERTING THE TRAFFIC TEMPORARILY PRIOR TO COMMENCING THE WORK.
 - NECESSARY SUITABLE SHORING AND STRUTTING SHALL BE PROVIDED FOR CASTING OF STRUCTURAL MEMBERS AND OTHER PLACE WHEREVER REQUIRED AND DETAILED DRAWING SHALL BE SUBMITTED BY THE CONTRACTING AGENCY.
 - IF ANY AMBIGUITY FOUND IN DRAWINGS OR AT SITE BRING IT TO DESIGNER'S NOTICE BEFORE EXECUTION.
 - EXCAVATION SHOULD BE DONE AS PER SECTION 304 OF MORTH SPECIFICATIONS (FIFTH REVISION).
 - IF HARD STRATA FOUND AT SITE, ACC. TO CLAUSE 705.2.2, IRC-78:2014, MINIMUM EMBEDMENT OF FOUNDATION SHALL BE MINIMUM OF AS FOLLOWS OR SHOWN IN DRAWINGS:
IN HARD ROCK 0.5 m
IN SOFT ROCK 1.5 m
SOIL 2.0 m
 - BEFORE COMMENCEMENT OF EXECUTION OF WORK CROSS SECTION AS THE SITE SHALL BE TAKEN BY PRECISION SURVEY & ABUTMENT POSITION SHOWN IN TECHNICALLY SANCTIONED DRAWING SHALL BE VERIFIED ON SITE IN CASE OF ANY DISCREPANCY OR DOUBT CLARIFICATION SHALL BE OBTAINED FROM COMPETENT AUTHORITY BEFORE HAND.



<p>CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. 1st & 2nd Floor, Tower A, World Trade Centre, Nauroji Nagar, New Delhi – 110029 Contact No : 011-26768950</p>	<p>CONSULTANT : Global Infra Solutions in JV with Dhruv Consultancy Services Limited and association with Infycons Creative Software Pvt. Ltd. F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal - 462039 e: globalinfraolutions@gmail.com web: globalinfraolutions.org</p>	<p>PROJECT TITLE : IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).</p>	<table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>DRAWING TITLE :-</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td>GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF MNB PSC T-BEAM GIRDER 1X30.0 AT CH 2+222</td> </tr> <tr> <td>DGN</td> <td></td> <td></td> <td>DRAWING No. NHIDCL/PYNSL/GAD/42</td> </tr> <tr> <td>CHECKED</td> <td></td> <td></td> <td>SCALE : NOT TO SCALE</td> </tr> <tr> <td>APPROVED</td> <td></td> <td></td> <td>SHEET (1 OF 3)</td> </tr> </tbody> </table>	REV	DATE	DESCRIPTION	DRAWING TITLE :-				GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF MNB PSC T-BEAM GIRDER 1X30.0 AT CH 2+222	DGN			DRAWING No. NHIDCL/PYNSL/GAD/42	CHECKED			SCALE : NOT TO SCALE	APPROVED			SHEET (1 OF 3)
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DGN			DRAWING No. NHIDCL/PYNSL/GAD/42																				
CHECKED			SCALE : NOT TO SCALE																				
APPROVED			SHEET (1 OF 3)																				



LOCATION	A1	A2
CHAINAGE	2+207	2+237
FRL LVL.	1431.610	1430.410
BED LVL.	1423.280	1420.278
PILE CAP TOP LVL.	1422.780	1419.778
PILE CAP BOTTOM LVL.	1420.980	1417.978
EACH PILE DEPTH	10.00	10.00
FOUNDATION LVL.	1410.980	1407.978

CLIENT :



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Contact No : 011-26768950

CONSULTANT :



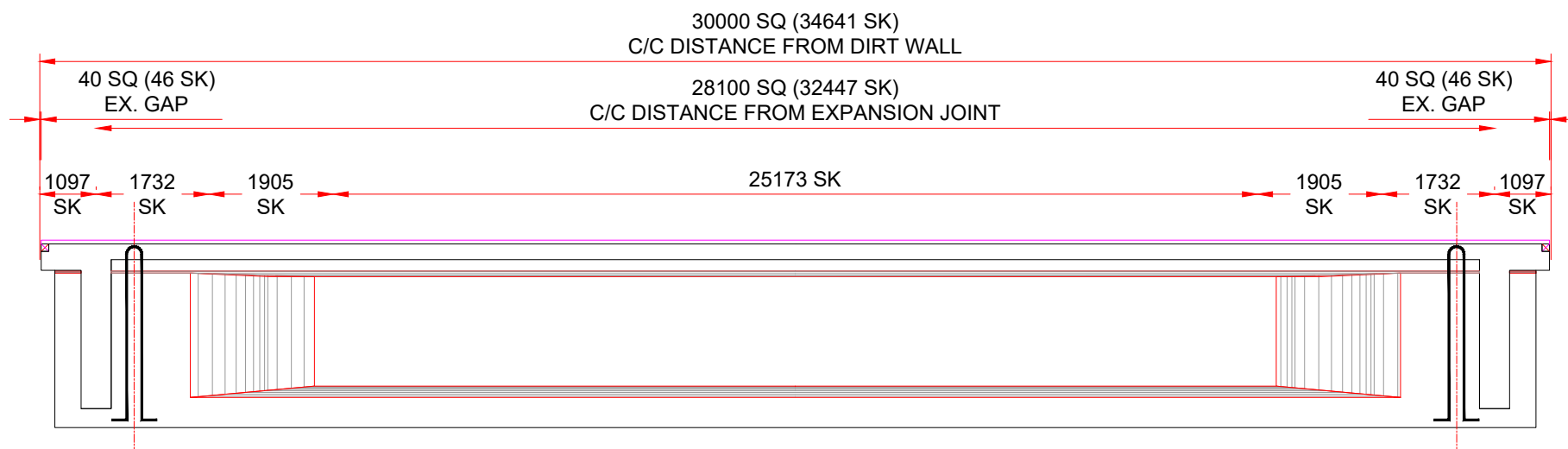
Global Infra Solutions
in JV with Dhruv Consultancy Services Limited and
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F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal - 462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

REV	DATE	DESCRIPTION
DGN.		
DRAWN		
CHECKED		
APPROVED		

DRAWING TITLE :-	
GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF MNB PSC T-BEAM GIRDER 1X30.0 AT CH 2+222	
DRAWING No. NHIDCL/PYNSL/GAD/42	SCALE : NOT TO SCALE
SHEET 4 OF 3	

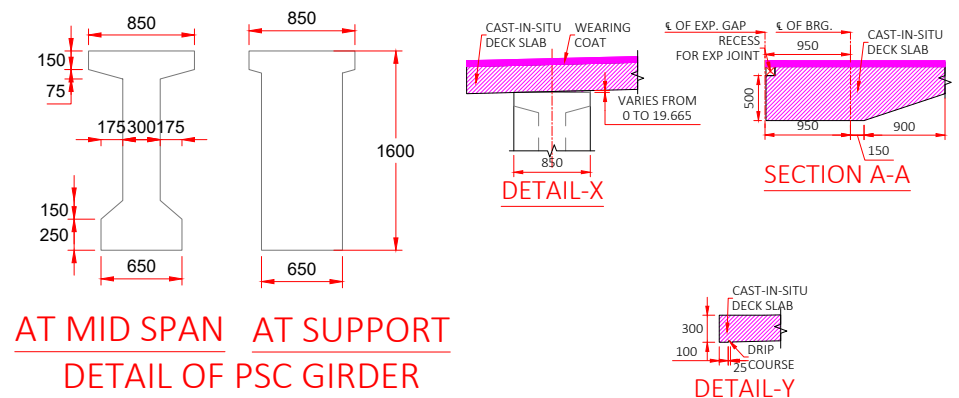


LONGITUDNAL ELEVATION

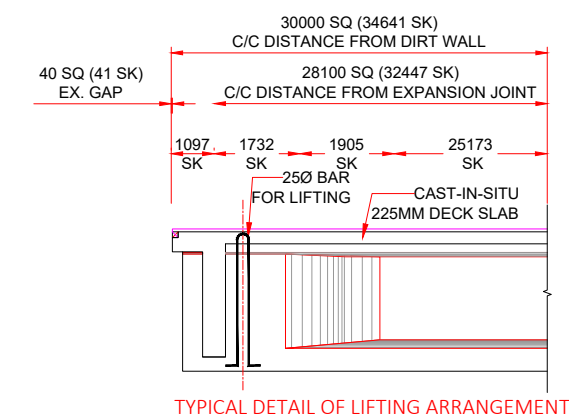
- NOTES:-
1. ALL DIMENSIONS ARE IN m. UNLESS OIHERWISE MENTIONED.
 2. PROPOSED STRUCTURE IS DESIGNED FOR ONE LANE OF IRC 70R LOADING OR 3-LANE OF IRC CLASS A LOADING WHICHEVER GOVERNS.
 3. CONCRETE SHALL BE DESIGN MIX AND HAVE MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 35 MPa ON 150mm CUBES FOR PRECAST RCC GIRDER, DECK SLAB, END CROSS GIRDERS AND 40 MPa FOR CRASH BARRIERS.
 4. THE LOCATION OF JACKS FOR LIFTING OF THE SUPERSTRUCTURE TO REPLACE BEARINGS ETC. IS SHOWN. THUS↑THIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE END DIAPHRAGM AND ABUTMENT CAP.
 5. THE REINFORCING STEEL SHALL BE OF TMT (GRADE FE 500D) BAR CONFORMING TO IS:1786:2008.
 6. CLEAR COVER TO OUTERMOST STEEL IS 50mm.
 7. DURING THE LIFTING OPERATION OF SUPERSTRUCTURE ALL THE JACKS PLACED UNDER THE END DIAPHRAGM IN LINE WITH THE BEARINGS SHALL BE OPERATED SIMULTANEOUSLY USING SINGLE OPERATING CONSOLE, GROUPING THE PUMP AND CONTROL SYSTEM SO AS TO ENSURE THAT THE REACTIONS ON ALL THE JACKS ARE EQUAL AT ALL TIMES.
 8. PRECAST GIRDERS SHALL BE CAST IN ONE CONCRETING OPERATION IN CASTING YARD WITHOUT ANY CONSTRUCTION JOINT.
 9. TOP SURFACE OF THE GIRDERS ALONG WITH FACE OF PRECAST CROSS GIRDER SHALL BE HACKED TO REMOVE THE LAITANCE BEFORE ERECTION AT SITE.
 10. ADEQUACY AND STRENGTH OF 25Ø BAR HOOK MAY BE GOT CHECKED BEFORE LIFTING GIRDERS.

LEGENDS

	CAST-IN-SITU PORTION
	BEARING IN PLAN
	BEARING IN ELEVATION
	JACK LOCATION IN PLAN
	JACK LOCATION IN SECTION
	CONSTRUCTION JOINT



AT MID SPAN AT SUPPORT
DETAIL OF PSC GIRDER



TYPICAL DETAIL OF LIFTING ARRANGEMENT

CLIENT :



**NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.**
1st & 2nd Floor,
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Contact No : 011-26768950

CONSULTANT :

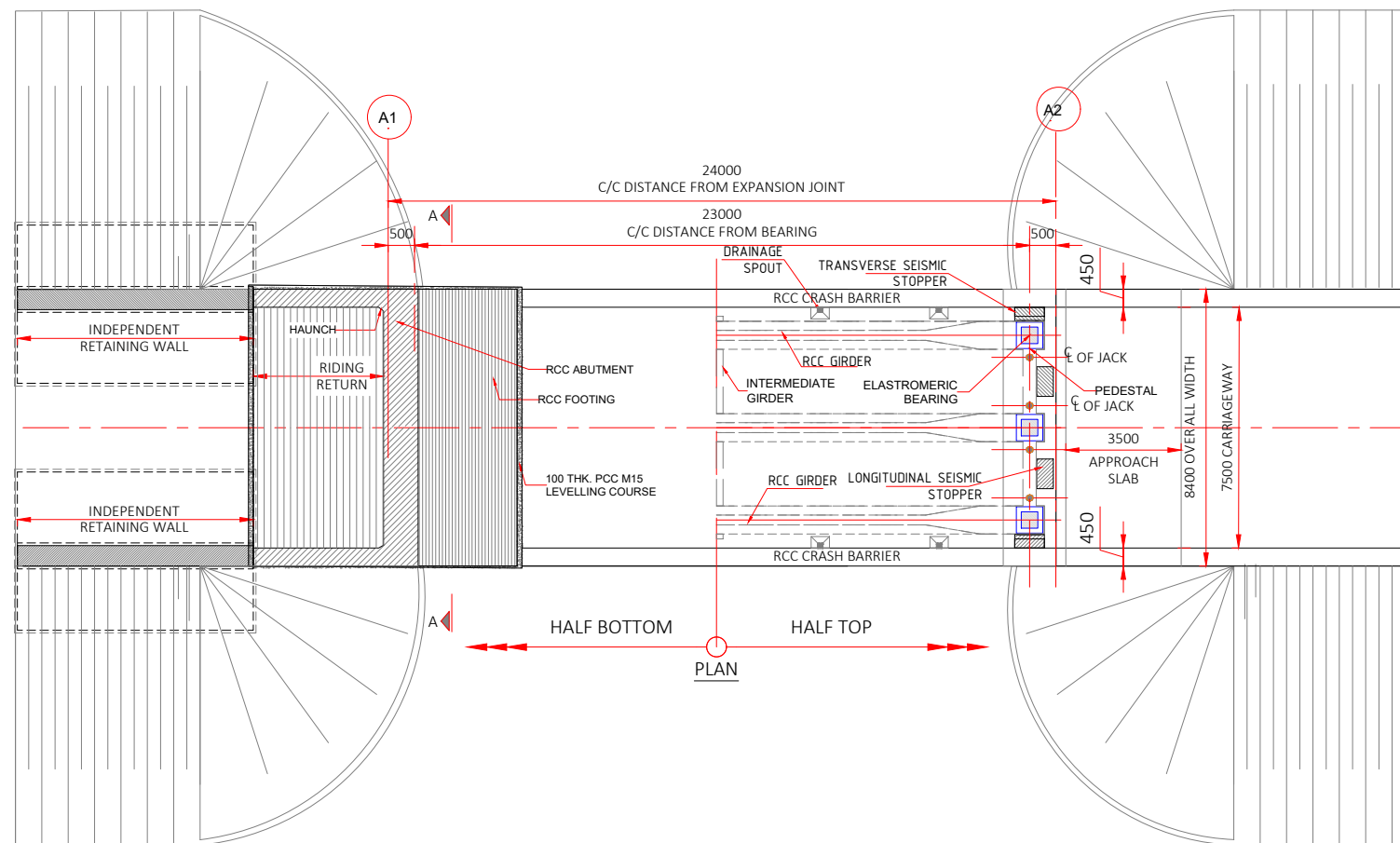
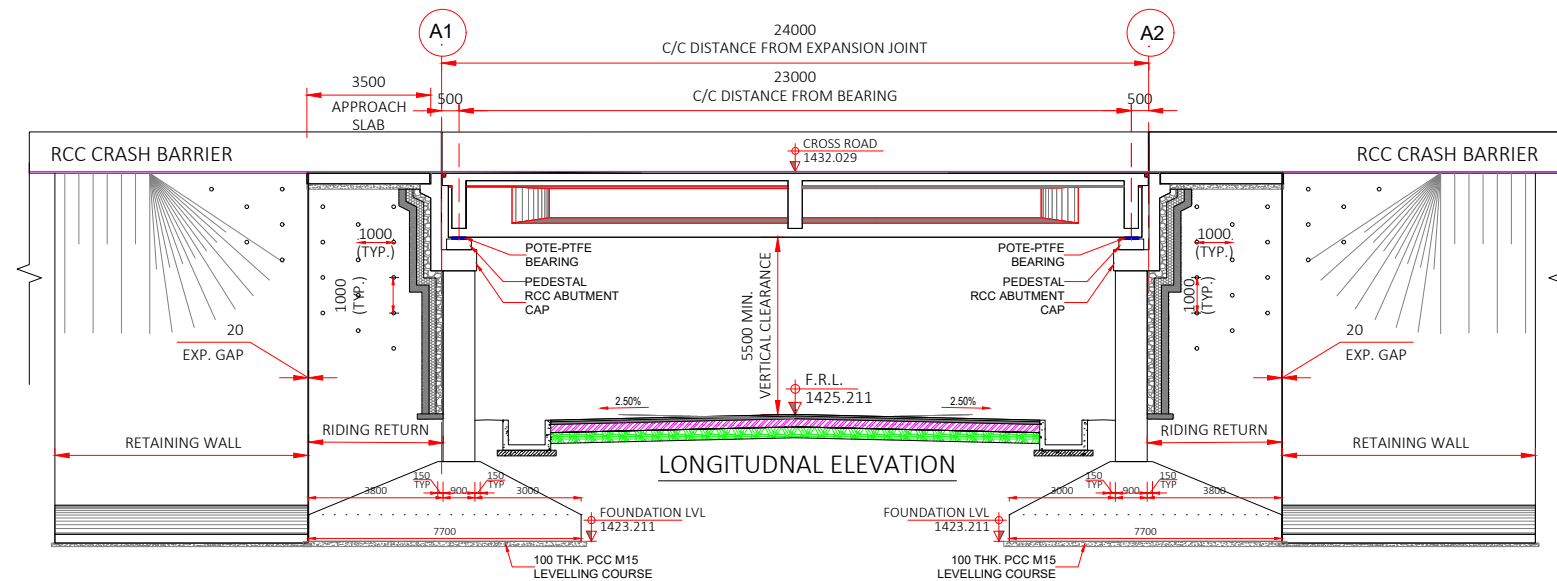


Global Infra Solutions
in JV with **Dhruv Consultancy Services Limited** and
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F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal - 462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF MNB PSC T-BEAM GIRDER 1X30.0 AT CH 2+222
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. NHIDCL/PYNSL/GAD/42 SCALE : NOT TO SCALE SHEET (3 OF 3)



- NOTES :
- GENERAL
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DRAWING SHALL BE SCALED.
 - THE DESIGN IS ACCORDING TO THE FOLLOWING CODES.
IRC-5-2024 IRC-6-2017
IRC-78-2024 IRC-112-2020
 - FOLLOWING LOADS HAVE BEEN CONSIDERED IN DESIGN.
 - LIVE LOADS
ONE LANE OF CLASS 70 R + ONE LANE OF CLASS A OR THREE LANE OF CLASS A TRANS WHICHEVER PRODUCE WORST EFFECT.
 - DENSITY OF BITUMEN COAT HAS BEEN ASSUMED AS 2.2 T/M
 - DRAINAGE SPOUT USED SHALL BE AS PER M.O.S.T STANDARD DRAWING NO. SD/205 & IRC 5:2024
 - CRASH BARRIER OF THE SUPER STRUCTURE SHALL BE ADOPTED FROM IRC:5:2024
 - WEARING COAT AS PER MORT&H STANDARD 5TH REVISION CLAUSE 2702.1 AND HAVING UNI DIRECTIONAL CAMBER FOR EACH TWO LANE AS PER CLAUSE 7.14. IRC:SP-84-2009.
 - STRIP TYPE EXPANSION JOINT SHALL BE USED FOR EXPANSION JOINT AND SHALL CONFIRM TO IRC SP-69:2011.
 - APPROACH SLAB SHALL BE AS PER IRC:5 AND SECTION 2704 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 - 600 MM THICK FILTER MEDIA SHALL BE PROVIDED AS PER APPENDIX - 6 OF IRC SP: 78-2024.
- MATERIALS:
- GRADE OF CONCRETE SHALL CONFIRM TO CLAUSE 6.4 OF IRC 112-2020 AND ARE AS FOLLOWS:

PCC LEVELING COURSE	M15	RCC CAST -IN-SITU PILE	M35
RCC ABUTMENT / PIER <th>M35</th> <td>RCC DECK SLAB</td> <th>M40</th>	M35	RCC DECK SLAB	M40
RCC ABUTMENT CAP / PIER CAP <th>M35</th> <td>RCC CRASH BARRIER</td> <th>M40</th>	M35	RCC CRASH BARRIER	M40
RCC PEDESTAL <th>M45</th> <td>PRECAST PSC GIRDER</td> <th>M45</th>	M45	PRECAST PSC GIRDER	M45
 - REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS OF FE-500D, CONFIRMING TO CLAUSE 6.2 OF IRC 112-2020 & IS-1786:2008.
 - WATER TO BE USED IN CONCRETING AND CURING SHALL CONFIRM TO CLAUSE 18.4.5 OF IRC 112-2020.
 - THE GRANULAR FILL BEHIND ABUTMENT SHALL BE AS PER CLAUSE 305.2 OF MORT&H SPECIFICATIONS (FIFTH REVISION) ($\phi=30^\circ$, $\delta=20$, $\gamma=1.8$) AND APPENDIX 6, IRC 78-2024.
 - SIDE SLOPE OF ROAD EMBANKMENT NEAR ABUTMENTS SHALL BE IN SLOPE 1V:1.5H & SHALL BE PROVIDED WITH 300 THICK STONE REVETMENT AND 150 THICK FILTER MEDIA CONFORMING TO CLAUSE 2500 & 2504 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 - 100 MM DIA A.C. PIPE WEEP HOLES SHALL BE PROVIDED @ 1.0 M C/C HORIZONTALLY & VERTICALLY STAGGERED 100 mm ABOVE LOWEST WATER LEVEL OR LOWEST BED LEVEL WHICH IS HIGHER AT SLOPE 1:20 AS PER IRC 78-2024 & CLAUSE 2706 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 - AGGREGATE SIZE SHALL BE AS PER CLAUSE 302.3.2.3 OF IRC:21,2000.
 - SAFE LOAD CARRYING CAPACITY FOR PILES : 300.00 Ton.
- CONSTRUCTION
- FRL LEVELS SHOULD BE READ IN CONJUNCTION WITH HIGHWAY PLAN AND PROFILE. IN CASE OF DISPERANCY HIGHWAY PLAN AND PROFILE SHOULD BE FOLLOWED IN CONSULTATION WITH DESIGNER AND APPROVING AUTHORITY.
 - THE PROTECTIVE WORKS SHALL BE COMPLETED AS PER CLAUSE 2104.3 AND SECTION 2500.
 - THE CONSTRUCTION AGENCY SHOULD ENSURE THAT THE NECESSARY PERMISSIONS HAS BEEN OBTAINED FROM ROAD & IRRIGATION AUTHORITY IF REQUIRED FOR DIVERTING THE TRAFFIC TEMPORARILY PRIOR TO COMMENCING THE WORK.
 - NECESSARY SUITABLE SHORING AND STRUTTING SHALL BE PROVIDED FOR CASTING OF STRUCTURAL MEMBERS AND OTHER PLACE WHEREVER REQUIRED AND DETAILED DRAWING SHALL BE SUBMITTED BY THE CONTRACTING AGENCY.
 - IF ANY AMBIGUITY FOUND IN DRAWINGS OR AT SITE BRING IT TO DESIGNER'S NOTICE BEFORE EXECUTION.
 - EXCAVATION SHOULD BE DONE AS PER SECTION 304 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 - IF HARD STRATA FOUND AT SITE, ACC. TO CLAUSE 705.2.2, IRC-78:2024, MINIMUM EMBEDMENT OF FOUNDATION SHALL BE MINIMUM OF AS FOLLOWS OR SHOWN IN DRAWINGS:

	IN HARD ROCK	IN SOFT ROCK	SOIL
	0.6 m	1.5 m	2.0 m
 - IN CASE OF FOUNDATION IN ROCK, THE TRENCHES AROUND THE FOOTING SHALL BE FILLED UP WITH M-15 GRADE OF CONCRETE UPTO THE TOP OF THE ROCK.
 - BEFORE COMMENCEMENT OF EXECUTION OF WORK CROSS SECTION AS THE SITE SHALL BE TAKEN BY PRECISION SURVEY & ABUTMENT AND PIER POSITION SHOWN IN TECHNICALLY SANCTIONED DRAWING SHALL BE VERIFIED ON SITE IN CASE OF ANY DISCREPANCY OR DOUBT CLARIFICATION SHALL BE OBTAINED FROM COMPETENT AUTHORITY BEFORE HAND.

CLIENT :



**NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.**

1st & 2nd Floor,
Tower A, World Trade Centre, Nauroji Nagar,
New Delhi - 110029
Contact No : 011-26768950

CONSULTANT :



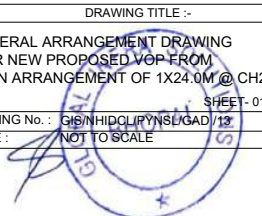
Global Infra Solutions

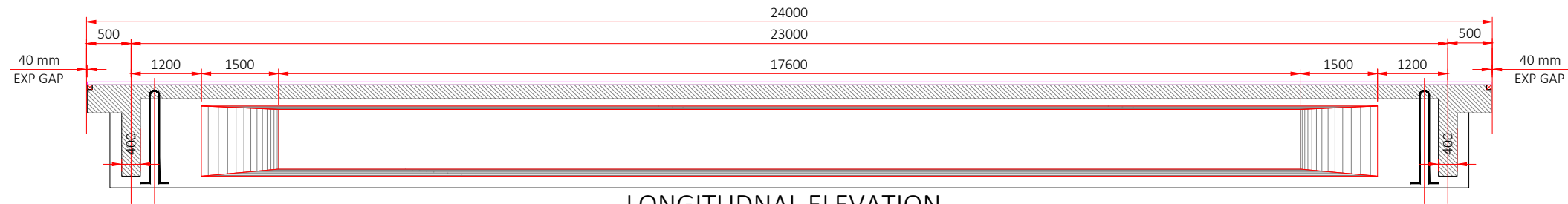
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F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

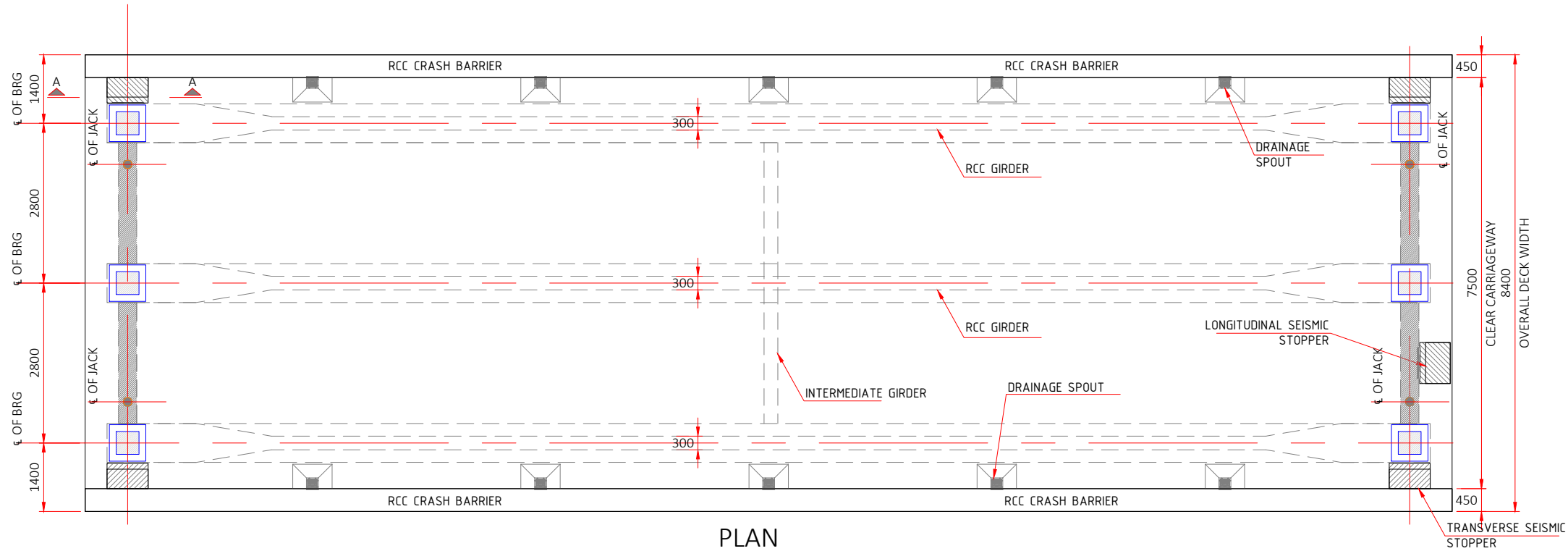
**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED VOP FROM SPAN ARRANGEMENT OF 1X24.0M @ CH2+364
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. : GISHIDOLIPYNSL/GAD/12
			SCALE : NOT TO SCALE

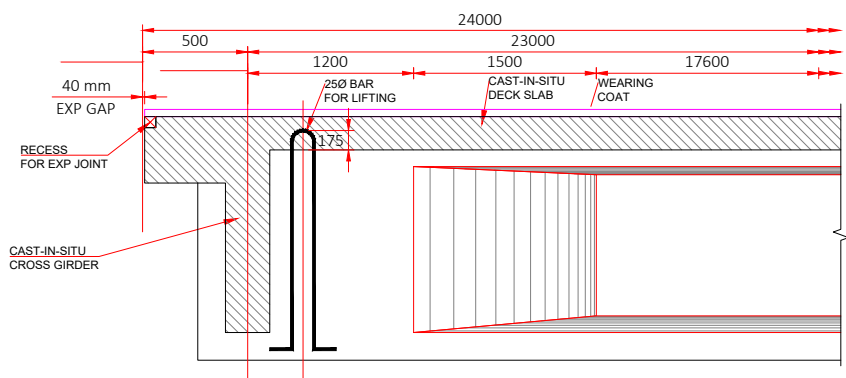




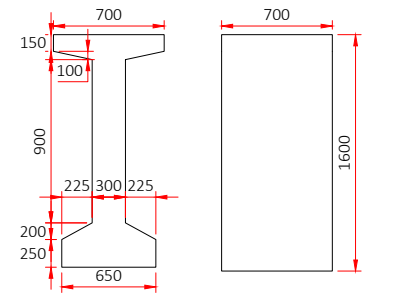
LONGITUDNAL ELEVATION



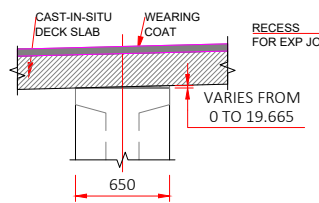
PLAN



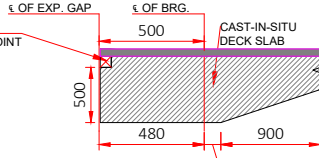
TYPICAL DETAIL OF LIFTING ARRANGEMENT



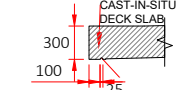
AT MID SPAN AT SUPPORT
DETAIL OF RCC GIRDER



DETAIL-X



SECTION A-A



DETAIL-Y

- NOTES:-
1. ALL DIMENSIONS ARE IN m. UNLESS OIHERWISE MENTIONED.
 2. PROPOSED STRUCTURE IS DESIGNED FOR ONE LANE OF I CLASS 70+R ONE LANE OF CLASS A TRANS WITCHEVER PRODUCE WORST EFFECT.
 3. CONCRETE SHALL BE DESIGN MIX AND HAVE MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 35 MPa ON 150mm CUBES FOR PRECAST PSC GIRDER, DECK SLAB, END CROSS GIRDERS AND 40 MPa FOR CRASH BARRIERS.
 4. THE LOCATION OF JACKS FOR LIFTING OF THE SUPERSTRUCTURE TO REPLACE BEARINGS ETC. IS SHOWN. THUSTHIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE END DIAPHRAGM AND ABUTMENT CAP.
 5. THE REINFORCING STEEL SHALL BE OF TMT (GRADE FE 500D) BAR CONFORMING TO IS:1786:2008.
 6. CLEAR COVER TO OUTERMOST STEEL IS 50mm.
 7. DURING THE LIFTING OPERATION OF SUPERSTRUCTURE ALL THE JACKS PLACED UNDER THE END DIAPHRAGM IN LINE WITH THE BEARINGS SHALL BE OPERATED SIMULTANEOUSLY USING SINGLE OPERATING CONSOLE, GROUPING THE PUMP AND CONTROL SYSTEM SO AS TO ENSURE THAT THE REACTIONS ON ALL THE JACKS ARE EQUAL AT ALL TIMES.
 8. PRECAST GIRDERS SHALL BE CAST IN ONE CONCRETING OPERATION IN CASTING YARD WITHOUT ANY CONSTRUCTION JOINT.
 9. TOP SURFACE OF THE GIRDERS ALONG WITH FACE OF PRECAST CROSS GIRDER SHALL BE HACKED TO REMOVE THE LAITANCE BEFORE ERECTION AT SITE.
 10. ADEQUACY AND STRENGTH OF 25Ø BAR HOOK MAY BE GOT CHECKED BEFORE LIFTING GIRDERS.

LEGENDS

	CAST-IN-SITU PORTION
	BEARING IN PLAN
	BEARING IN ELEVATION
	JACK LOCATION IN PLAN
	JACK LOCATION IN SECTION
	CONSTRUCTION JOINT

CLIENT :



**NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.**
1st & 2nd Floor,
Tower A, World Trade Centre, Nauroji Nagar,
New Delhi – 110029
Contact No : 011-26768950

CONSULTANT :

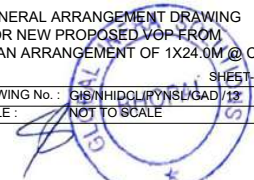


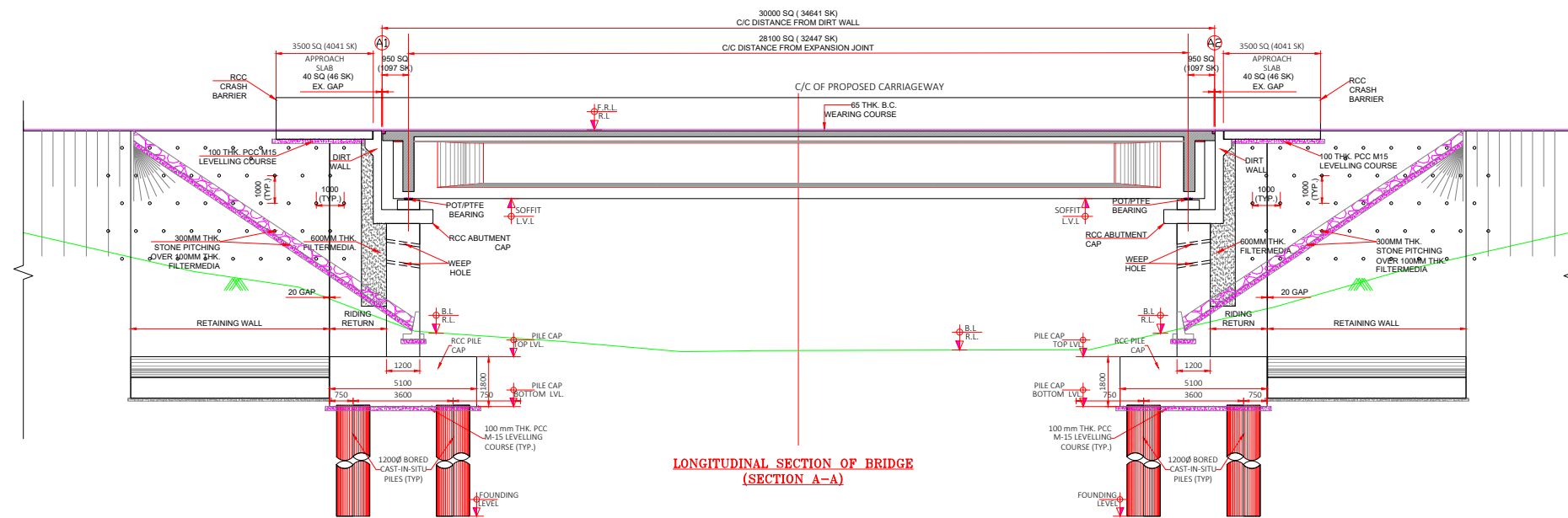
Global Infra Solutions
in JV with **Dhruv Consultancy Services Limited** and
association with **Infycons Creative Software Pvt. Ltd.**
F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

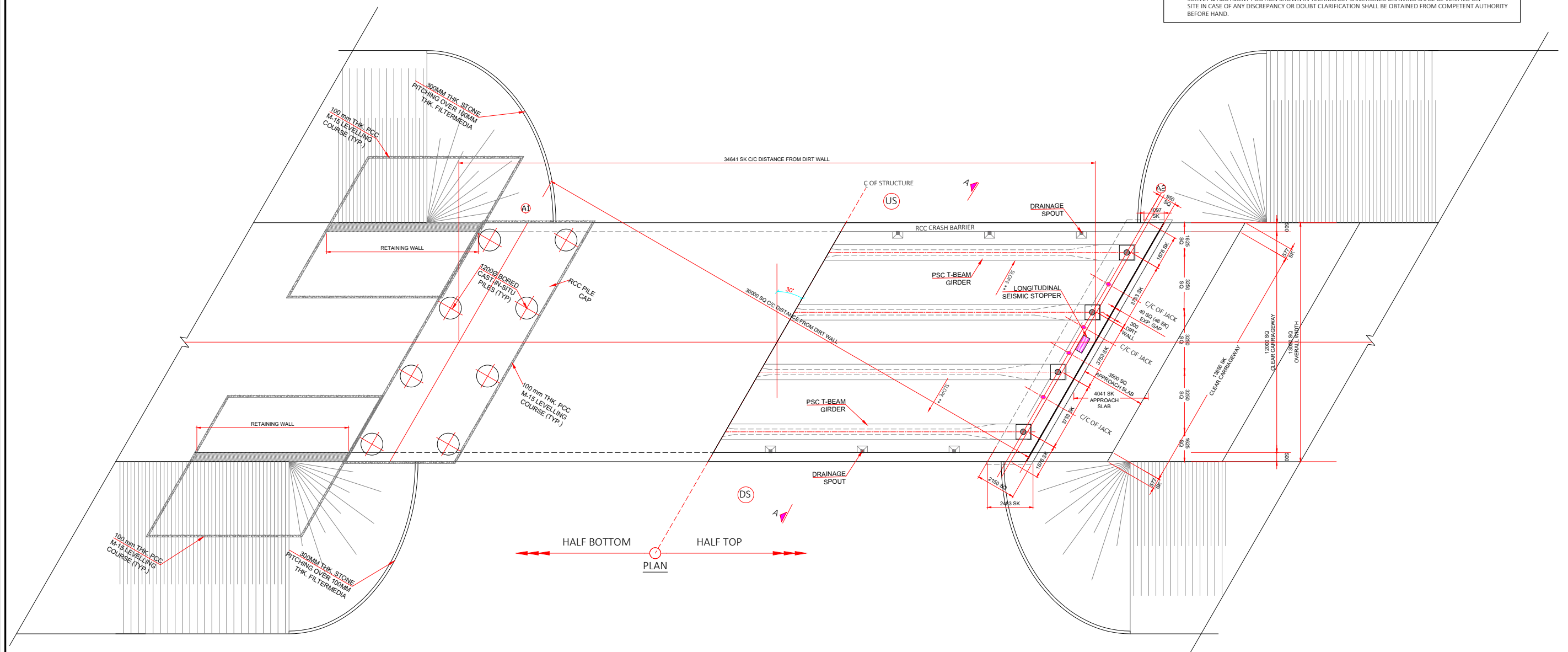
REV	DATE	DESCRIPTION	DRAWING TITLE :-
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DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. : GSNHIDOLIPYNSIGAD/12 SCALE : NOT TO SCALE





LONGITUDINAL SECTION OF BRIDGE
(SECTION A-A)

- NOTES:
- GENERAL
 - ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DRAWING SHALL BE SCALED.
 - THE DESIGN IS ACCORDING TO THE FOLLOWING CODES:
IRC-5:2024
IRC-78:2024
IRC-112:2020
 - FOLLOWING LOADS HAVE BEEN CONSIDERED IN DESIGN.
a. LIVE LOADS
ONE LANE OF CLASS 70 R FOR EVERY TWO LANES WITH ONE LANE OF CLASS A FOR REMAINING LANES, IF ANY, OR ONE LANE OF CLASS A FOR EACH LANE OR SPECIAL VEHICLE LOADING WHICHEVER PRODUCE WORST EFFECT ON EACH LANE OF CARRIAGEWAY.
 - DENSITY OF BITUMEN COAT HAS BEEN ASSUMED AS 2.2 T/M
 - DRAINAGE SPOUT USED SHALL BE AS PER MORTH STANDARD DRAWING NO. SD/205 & IRC 5:2024.
 - CRASH BARRIER OF THE SUPER STRUCTURE SHALL BE ADOPTED FROM IRC-5:2024.
 - WEARING COAT AS PER MORTH STANDARD 5TH REVISION CLAUSE 2702.1
 - JOINT EITHER MODULAR STRIP SEAL OR FINGER TYPE JOINTS WILL BE PERMITTED AS PER IRC SP-69:2011.
 - APPROACH SLAB SHALL BE AS PER IRC-5 AND SECTION 2704 OF MORTH SPECIFICATIONS (FIFTH REVISION).
 - 600 MM THICK FILTER MEDIA SHALL BE PROVIDED AS PER APPENDIX - 6 OF IRC SP-78:2024.
 - MATERIALS:
 - GRADE OF CONCRETE SHALL CONFORM TO CLAUSE 6.4 OF IRC 112:2020 AND ARE AS FOLLOWS:
PCC LEVELLING COURSE M15
RCC ABUTMENT M35
RCC ABUTMENT CAP M35
RCC DECK SLAB M40
RCC CRASH BARRIER M40
RCC I GIRDER M35
 - REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS OF FE-500D, CONFIRMING TO CLAUSE 6.2 OF IRC 112:2020 & IS-1786:2008.
 - WATER TO BE USED IN CONCRETING AND CURING SHALL CONFORM TO CLAUSE 18.4.5 OF IRC 112:2020.
 - AGGREGATE SIZE SHALL BE AS PER CLAUSE 302.3.2.3 OF IRC-21:2000.
 - CONSTRUCTION
 - FRL LEVELS SHOULD BE READ IN CONJUNCTION WITH HIGHWAY PLAN AND PROFILE. IN CASE OF DISCREPANCY HIGHWAY PLAN AND PROFILE SHOULD BE FOLLOWED IN CONSULTATION WITH DESIGNER AND APPROVING AUTHORITY.
 - THE PROTECTIVE WORKS SHALL BE COMPLETED AS PER CLAUSE 2104.3 AND SECTION 2500.
 - THE CONSTRUCTION AGENCY SHOULD ENSURE THAT THE NECESSARY PERMISSIONS HAS BEEN OBTAINED FROM ROAD & IRRIGATION AUTHORITY IF REQUIRED FOR DIVERTING THE TRAFFIC TEMPORARILY PRIOR TO COMMENCING THE WORK.
 - NECESSARY SUITABLE SHORING AND STRUTTING SHALL BE PROVIDED FOR CASTING OF STRUCTURAL MEMBERS AND OTHER PLACE WHEREVER REQUIRED AND DETAILED DRAWING SHALL BE SUBMITTED BY THE CONTRACTING AGENCY.
 - IF ANY AMBIGUITY FOUND IN DRAWINGS OR AT SITE BRING IT TO DESIGNER'S NOTICE BEFORE EXECUTION.
 - EXCAVATION SHOULD BE DONE AS PER SECTION 304 OF MORTH SPECIFICATIONS (FIFTH REVISION).
 - IF HARD STRATA FOUND AT SITE, ACC. TO CLAUSE 705.2.2, IRC-78:2014, MINIMUM EMBEDMENT OF FOUNDATION SHALL BE MINIMUM OF AS FOLLOWS OR SHOWN IN DRAWINGS:
IN HARD ROCK 0.5 m
IN SOFT ROCK 1.5 m
SOIL 2.0 m
 - BEFORE COMMENCEMENT OF EXECUTION OF WORK CROSS SECTION AS THE SITE SHALL BE TAKEN BY PRECISION SURVEY & ABUTMENT POSITION SHOWN IN TECHNICALLY SANCTIONED DRAWING SHALL BE VERIFIED ON SITE IN CASE OF ANY DISCREPANCY OR DOUBT CLARIFICATION SHALL BE OBTAINED FROM COMPETENT AUTHORITY BEFORE HAND.



CLIENT :



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Contact No : 011-26768950

CONSULTANT :

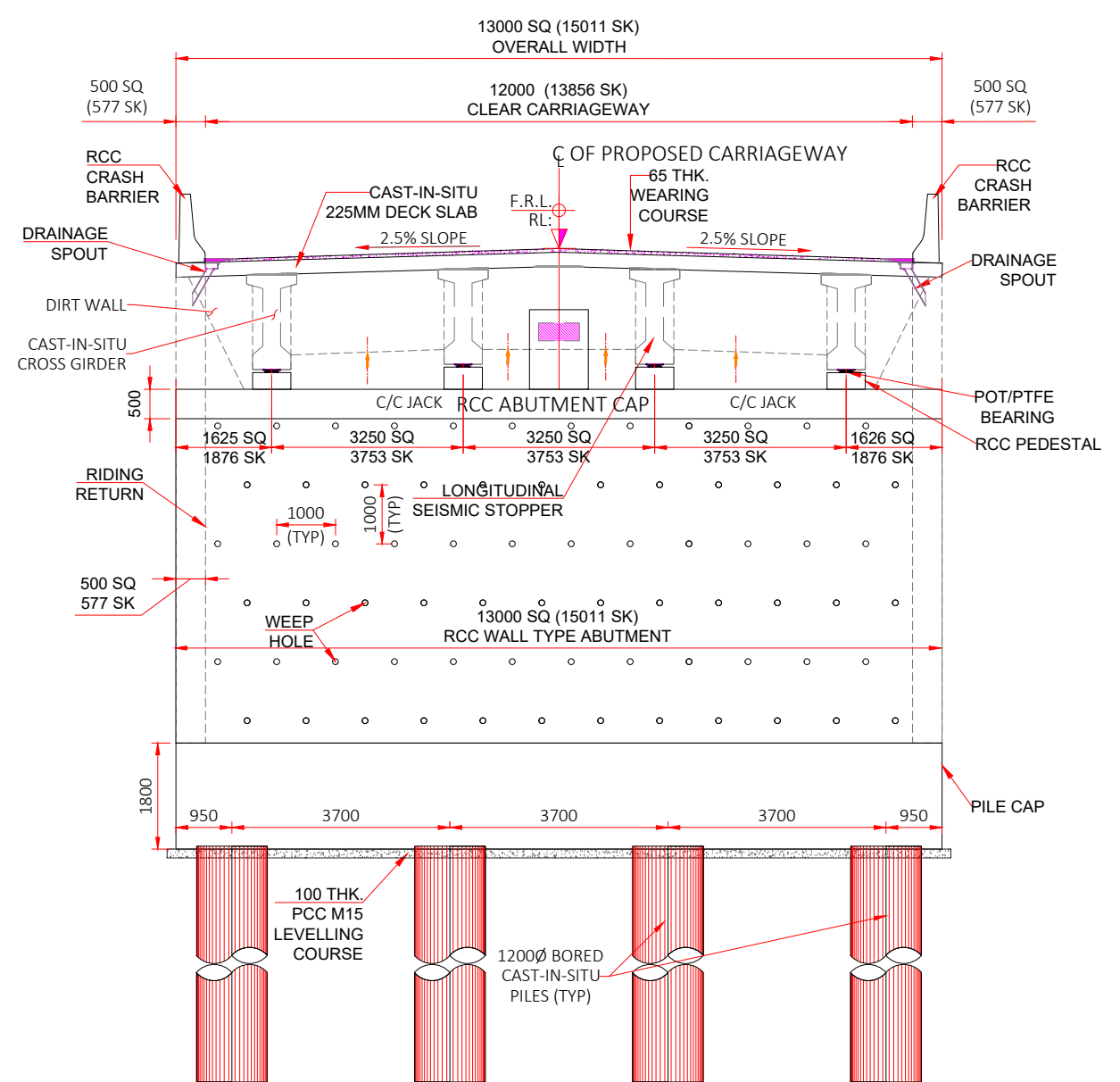
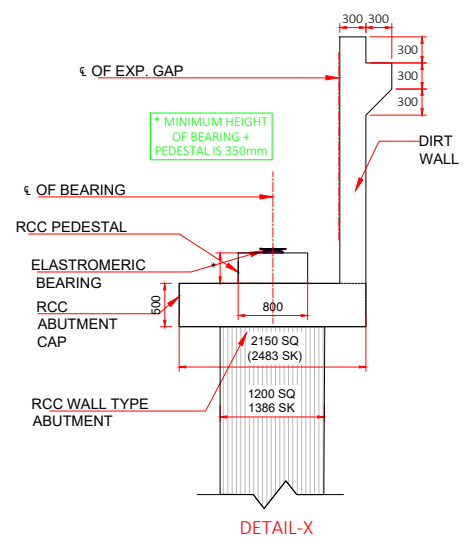
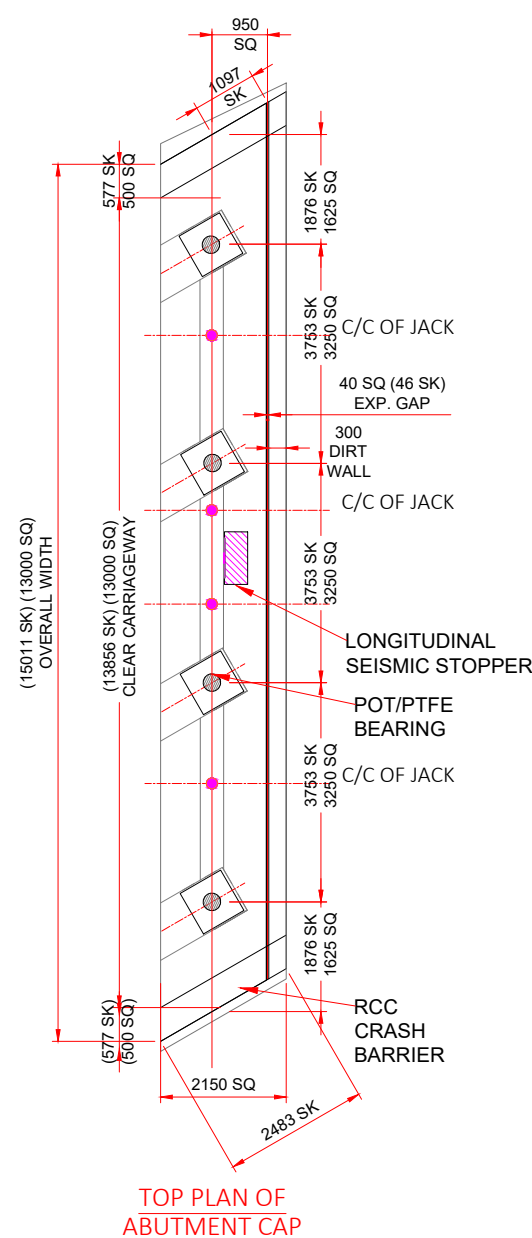
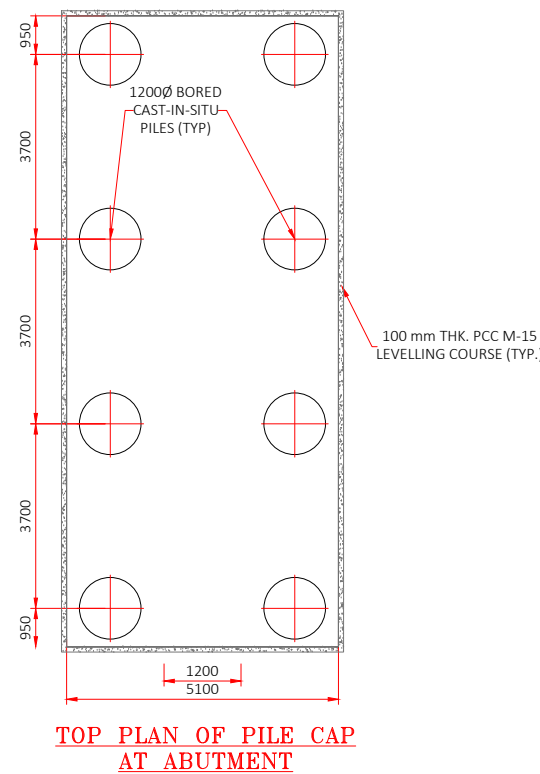
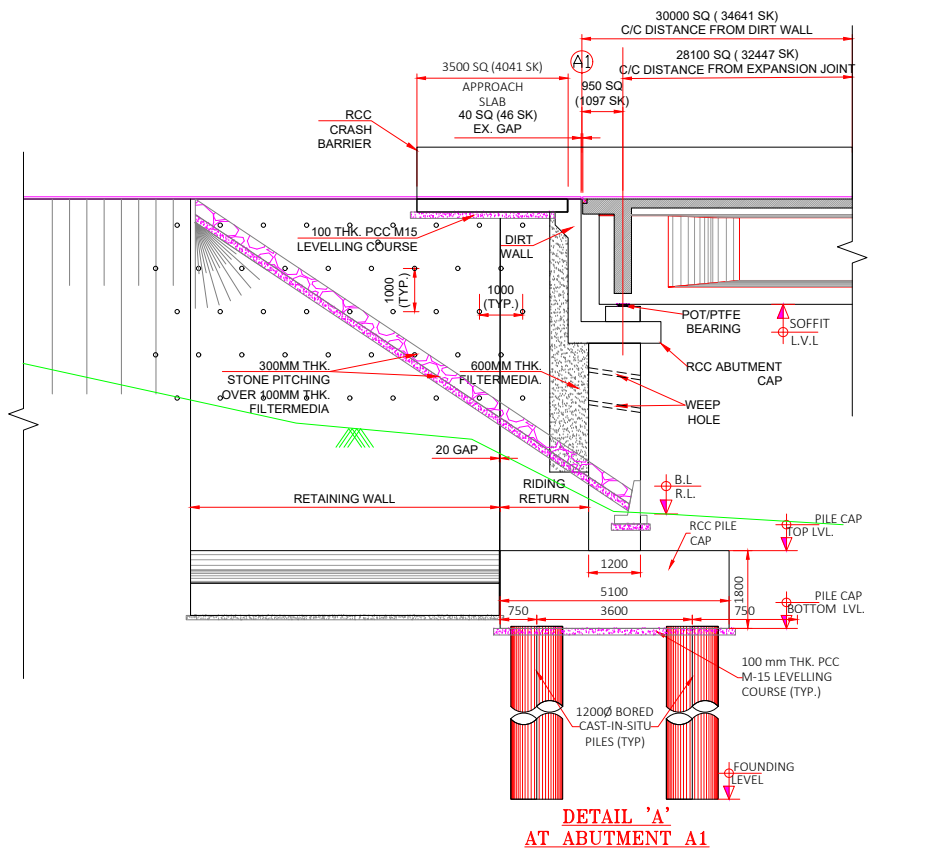


Global Infra Solutions
in JV with **Dhruv Consultancy Services Limited** and
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F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal - 462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF MNB PSC T-BEAM GIRDER 1X30.0 AT CH 2+815
DGN		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. NHIDCL/PYNSL/GAD/H4
			SCALE : NOT TO SCALE
			SHEET (1 OF 3)



LOCATION	A1	A2
CHAINAGE	2+800	2+830
FRL LVL.	1409.870	1409.270
BED LVL.	1399.601	1396.178
PILE CAP TOP LVL.	1399.101	1395.678
PILE CAP BOTTOM LVL.	1397.301	1393.878
EACH PILE DEPTH	10.00	10.00
FOUNDATION LVL.	1387.301	1383.878

CLIENT :



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CONSULTANT :



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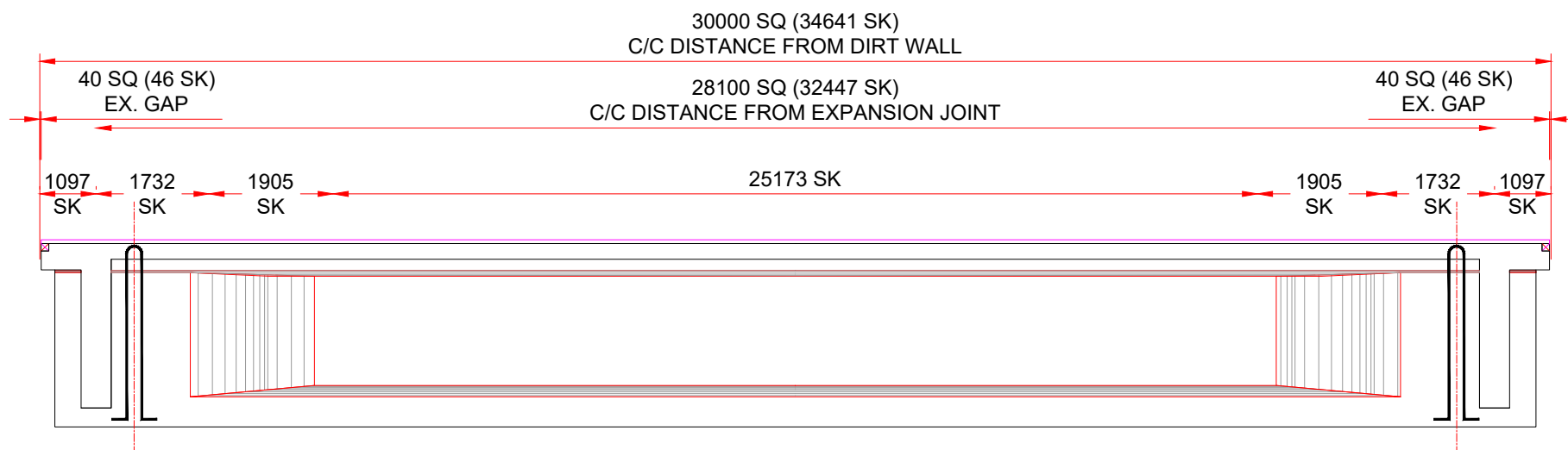
PROJECT TITLE :

IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

REV	DATE	DESCRIPTION
DGN.		
DRAWN		
CHECKED		
APPROVED		

DRAWING TITLE :-

GENERAL ARRANGEMENT DRAWING
FOR NEW PROPOSAL OF
MNB PSC T-BEAM GIRDER 1X30.0 AT CH 2+815
DRAWING No. NHIDCL/PYNSL/GAD/H4
SCALE : NOT TO SCALE
SHEET 4 OF 3

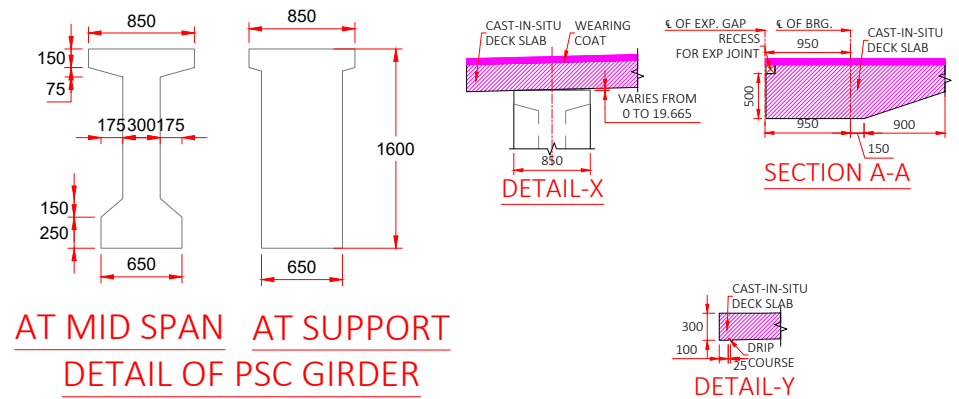


LONGITUDNAL ELEVATION

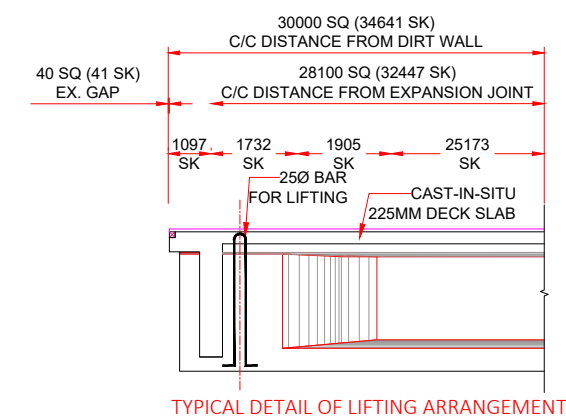
- NOTES:-
1. ALL DIMENSIONS ARE IN m. UNLESS OIHERWISE MENTIONED.
 2. PROPOSED STRUCTURE IS DESIGNED FOR ONE LANE OF IRC 70R LOADING OR 3-LANE OF IRC CLASS A LOADING WHICHEVER GOVERNS.
 3. CONCRETE SHALL BE DESIGN MIX AND HAVE MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 35 MPa ON 150mm CUBES FOR PRECAST RCC GIRDER, DECK SLAB, END CROSS GIRDERS AND 40 MPa FOR CRASH BARRIERS.
 4. THE LOCATION OF JACKS FOR LIFTING OF THE SUPERSTRUCTURE TO REPLACE BEARINGS ETC. IS SHOWN. THUS↑THIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE END DIAPHRAGM AND ABUTMENT CAP.
 5. THE REINFORCING STEEL SHALL BE OF TMT (GRADE FE 500D) BAR CONFORMING TO IS:1786:2008.
 6. CLEAR COVER TO OUTERMOST STEEL IS 50mm.
 7. DURING THE LIFTING OPERATION OF SUPERSTRUCTURE ALL THE JACKS PLACED UNDER THE END DIAPHRAGM IN LINE WITH THE BEARINGS SHALL BE OPERATED SIMULTANEOUSLY USING SINGLE OPERATING CONSOLE, GROUPING THE PUMP AND CONTROL SYSTEM SO AS TO ENSURE THAT THE REACTIONS ON ALL THE JACKS ARE EQUAL AT ALL TIMES.
 8. PRECAST GIRDERS SHALL BE CAST IN ONE CONCRETING OPERATION IN CASTING YARD WITHOUT ANY CONSTRUCTION JOINT.
 9. TOP SURFACE OF THE GIRDERS ALONG WITH FACE OF PRECAST CROSS GIRDER SHALL BE HACKED TO REMOVE THE LAITANCE BEFORE ERECTION AT SITE.
 10. ADEQUACY AND STRENGTH OF 25Ø BAR HOOK MAY BE GOT CHECKED BEFORE LIFTING GIRDERS.

LEGENDS

	CAST-IN-SITU PORTION
	BEARING IN PLAN
	BEARING IN ELEVATION
	JACK LOCATION IN PLAN
	JACK LOCATION IN SECTION
	CONSTRUCTION JOINT



AT MID SPAN AT SUPPORT
DETAIL OF PSC GIRDER



TYPICAL DETAIL OF LIFTING ARRANGEMENT

CLIENT :



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Contact No : 011-26768950

CONSULTANT :

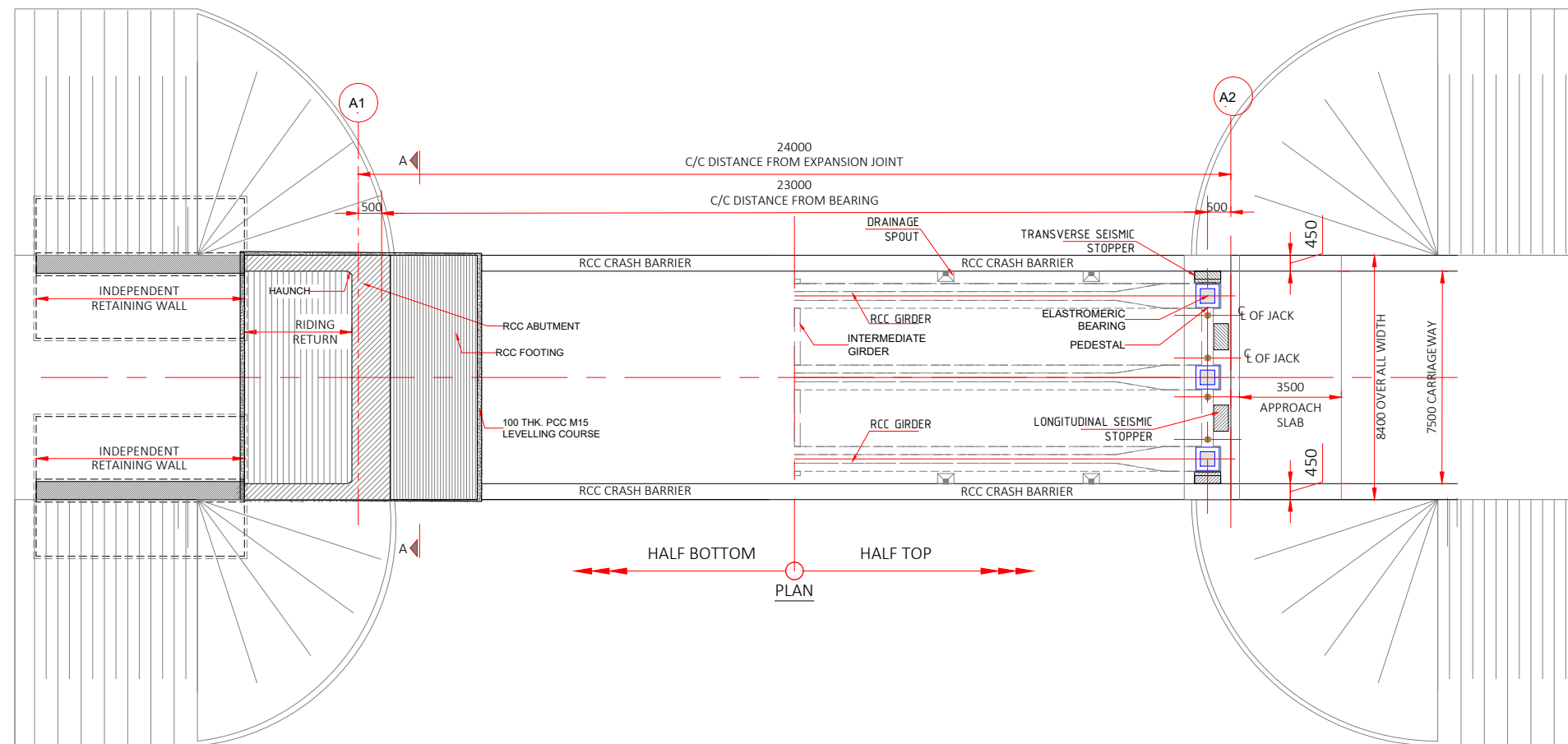
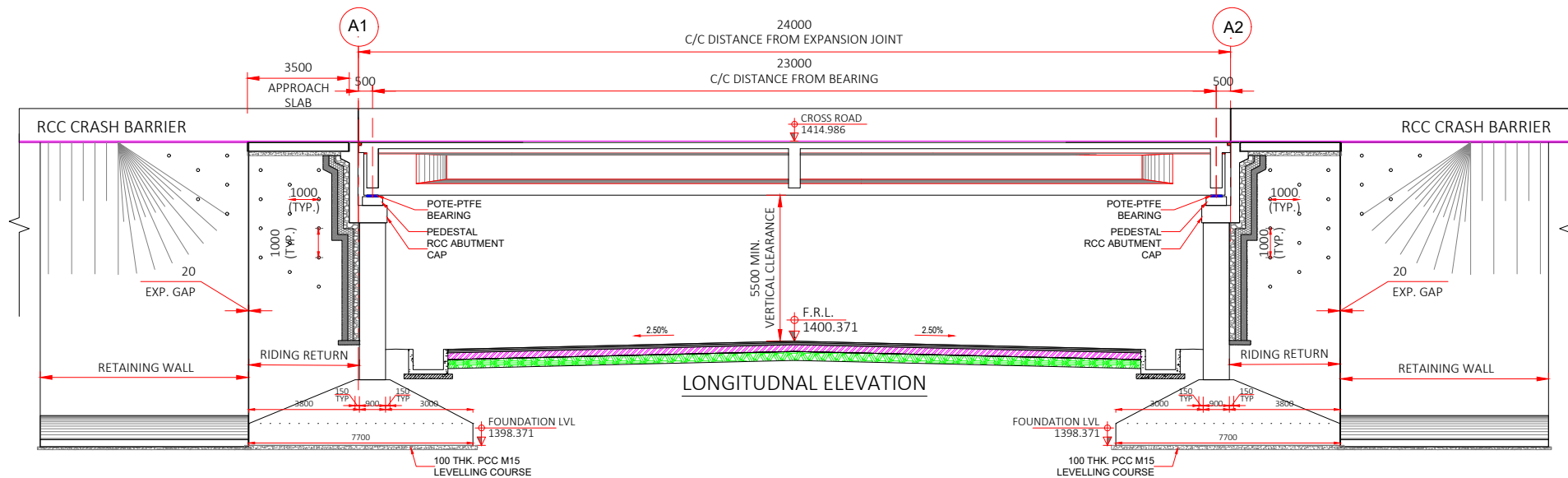


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e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSAL OF MNB PSC T-BEAM GIRDER 1X30.0 AT CH 2+815
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. NHIDCL/PYNSL/GAD/H4 SCALE : NOT TO SCALE SHEET (3 OF 3)



- NOTES :
- GENERAL
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DRAWING SHALL BE SCALED.
 - THE DESIGN IS ACCORDING TO THE FOLLOWING CODES.
IRC-5-2024 IRC-6-2017
IRC-78-2024 IRC-112-2020
 - FOLLOWING LOADS HAVE BEEN CONSIDERED IN DESIGN.
 - LIVE LOADS
ONE LANE OF CLASS 70 R + ONE LANE OF CLASS A OR THREE LANE OF CLASS A TRANS WHICHEVER PRODUCE WORST EFFECT.
 - DENSITY OF BITUMEN COAT HAS BEEN ASSUMED AS 2.2 T/M
 - DRAINAGE SPOUT USED SHALL BE AS PER M.O.S.T STANDARD DRAWING NO. SD/205 & IRC 5:2024
 - CRASH BARRIER OF THE SUPER STRUCTURE SHALL BE ADOPTED FROM IRC:5:2024
 - WEARING COAT AS PER MORT&H STANDARD 5TH REVISION CLAUSE 2702.1 AND HAVING UNI DIRECTIONAL CAMBER FOR EACH TWO LANE AS PER CLAUSE 7.14. IRC:SP-84-2009.
 - STRIP TYPE EXPANSION JOINT SHALL BE USED FOR EXPANSION JOINT AND SHALL CONFIRM TO IRC SP-69:2011.
 - APPROACH SLAB SHALL BE AS PER IRC:5 AND SECTION 2704 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 - 600 MM THICK FILTER MEDIA SHALL BE PROVIDED AS PER APPENDIX - 6 OF IRC SP: 78-2024.
- MATERIALS:
- GRADE OF CONCRETE SHALL CONFIRM TO CLAUSE 6.4 OF IRC 112-2020 AND ARE AS FOLLOWS:
PCC LEVELING COURSE M15 RCC CAST -IN-SITU PILE M35
RCC ABUTMENT / PIER M35 RCC DECK SLAB M40
RCC ABUTMENT CAP / PIER CAP M35 RCC CRASH BARRIER M40
RCC PEDESTAL M45 PRECAST PSC GIRDER M45
 - REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS OF FE-500D, CONFIRMING TO CLAUSE 6.2 OF IRC 112-2020 & IS-1786:2008.
 - WATER TO BE USED IN CONCRETING AND CURING SHALL CONFIRM TO CLAUSE 18.4.5 OF IRC 112-2020.
 - THE GRANULAR FILL BEHIND ABUTMENT SHALL BE AS PER CLAUSE 305.2 OF MORT&H SPECIFICATIONS (FIFTH REVISION) ($\phi=30^\circ$, $\delta=20$, $\gamma=1.8$) AND APPENDIX 6, IRC 78-2024.
 - SIDE SLOPE OF ROAD EMBANKMENT NEAR ABUTMENTS SHALL BE IN SLOPE 1V:1.5H & SHALL BE PROVIDED WITH 300 THICK STONE REVETMENT AND 150 THICK FILTER MEDIA CONFORMING TO CLAUSE 2500 & 2504 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 - 100 MM DIA A.C. PIPE WEEP HOLES SHALL BE PROVIDED @ 1.0 M C/C HORIZONTALLY & VERTICALLY STAGGERED 100 mm ABOVE LOWEST WATER LEVEL OR LOWEST BED LEVEL WHICH IS HIGHER AT SLOPE 1:20 AS PER IRC 78-2024 & CLAUSE 2706 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 - AGGREGATE SIZE SHALL BE AS PER CLAUSE 302.3.2.3 OF IRC:21,2000.
 - SAFE LOAD CARRYING CAPACITY FOR PILES : 300.00 Ton.
- CONSTRUCTION
- FRL LEVELS SHOULD BE READ IN CONJUNCTION WITH HIGHWAY PLAN AND PROFILE. IN CASE OF DISPERANCY HIGHWAY PLAN AND PROFILE SHOULD BE FOLLOWED IN CONSULTATION WITH DESIGNER AND APPROVING AUTHORITY.
 - THE PROTECTIVE WORKS SHALL BE COMPLETED AS PER CLAUSE 2104.3 AND SECTION 2500.
 - THE CONSTRUCTION AGENCY SHOULD ENSURE THAT THE NECESSARY PERMISSIONS HAS BEEN OBTAINED FROM ROAD & IRRIGATION AUTHORITY IF REQUIRED FOR DIVERTING THE TRAFFIC TEMPORARILY PRIOR TO COMMENCING THE WORK.
 - NECESSARY SUITABLE SHORING AND STRUTTING SHALL BE PROVIDED FOR CASTING OF STRUCTURAL MEMBERS AND OTHER PLACE WHEREVER REQUIRED AND DETAILED DRAWING SHALL BE SUBMITTED BY THE CONTRACTING AGENCY.
 - IF ANY AMBIGUITY FOUND IN DRAWINGS OR AT SITE BRING IT TO DESIGNER'S NOTICE BEFORE EXECUTION.
 - EXCAVATION SHOULD BE DONE AS PER SECTION 304 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 - IF HARD STRATA FOUND AT SITE, ACC. TO CLAUSE 705.2.2, IRC-78:2024, MINIMUM EMBEDMENT OF FOUNDATION SHALL BE MINIMUM OF AS FOLLOWS OR SHOWN IN DRAWINGS:
IN HARD ROCK 0.6 m
IN SOFT ROCK 1.5 m
SOIL 2.0 m
 - IN CASE OF FOUNDATION IN ROCK, THE TRENCHES AROUND THE FOOTING SHALL BE FILLED UP WITH M-15 GRADE OF CONCRETE UPTO THE TOP OF THE ROCK.
 - BEFORE COMMENCEMENT OF EXECUTION OF WORK CROSS SECTION AS THE SITE SHALL BE TAKEN BY PRECISION SURVEY & ABUTMENT AND PIER POSITION SHOWN IN TECHNICALLY SANCTIONED DRAWING SHALL BE VERIFIED ON SITE IN CASE OF ANY DISCREPANCY OR DOUBT CLARIFICATION SHALL BE OBTAINED FROM COMPETENT AUTHORITY BEFORE HAND.

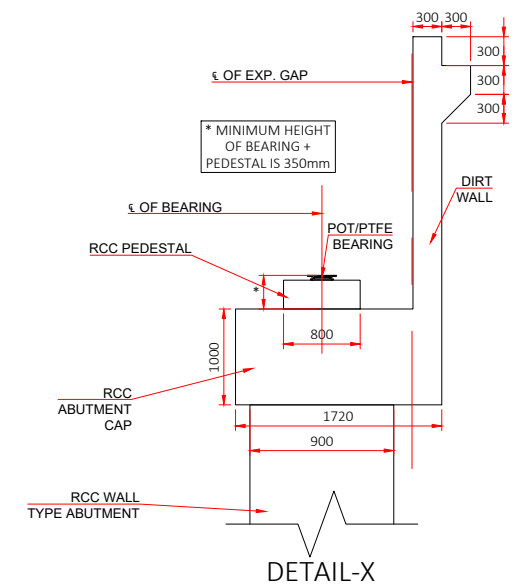
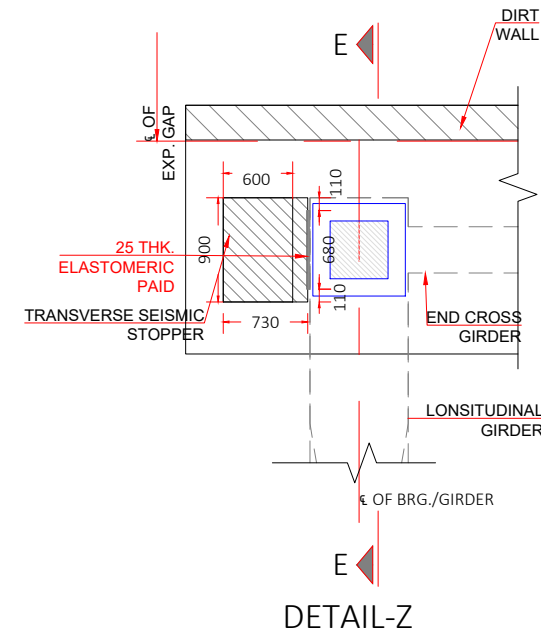
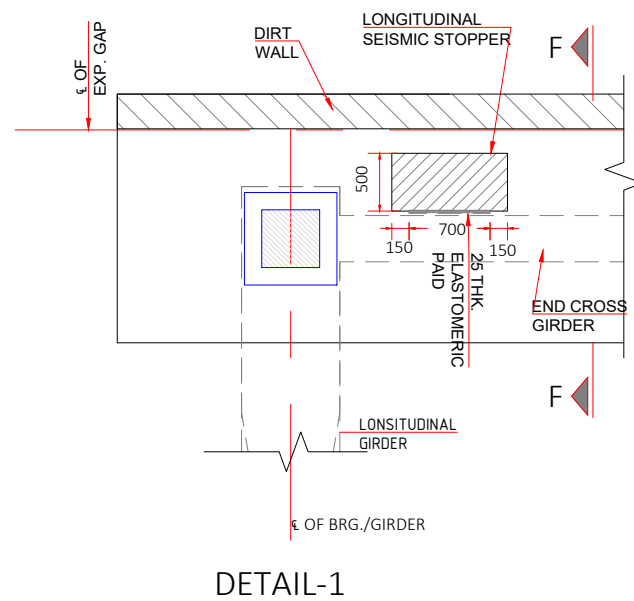
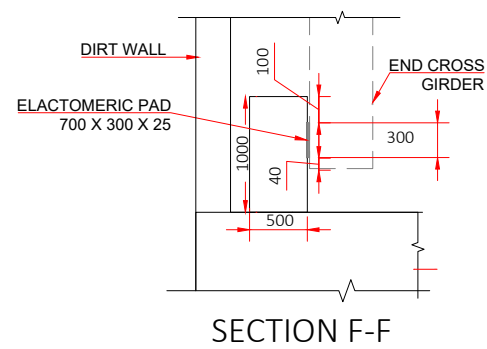
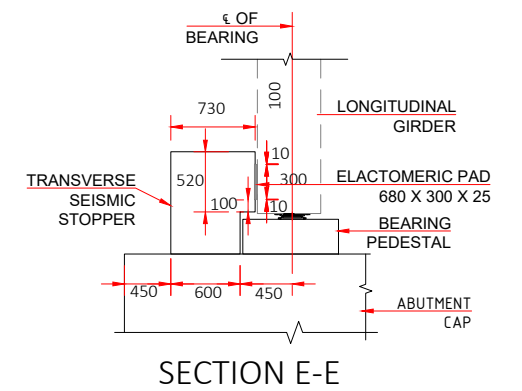
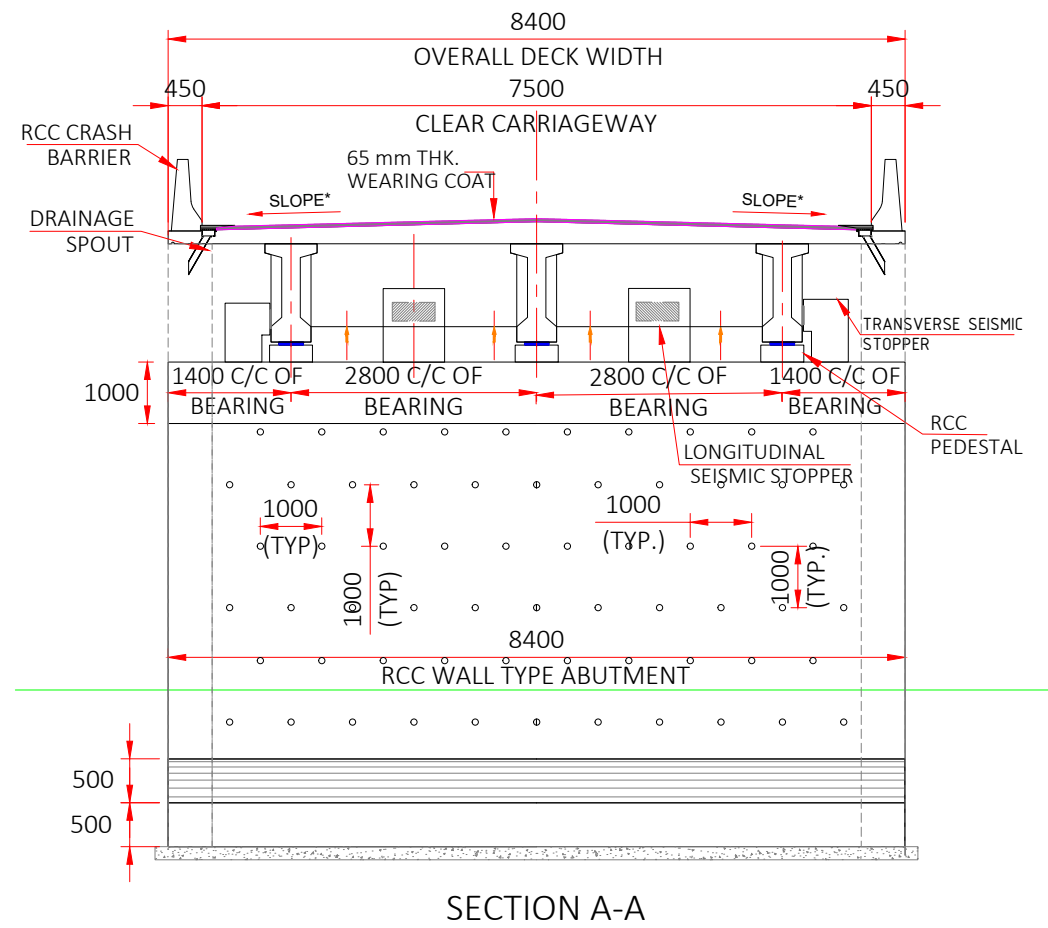
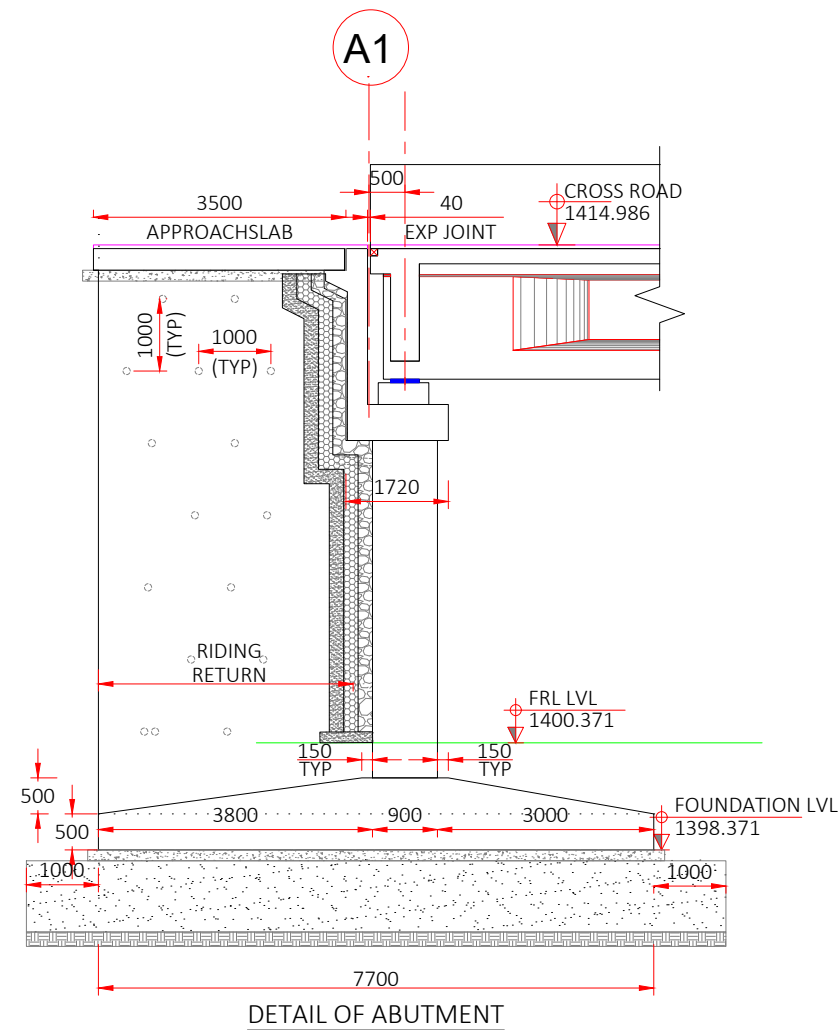
CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
1st & 2nd Floor,
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e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE : IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

REV	DATE	DESCRIPTION
DGN	NAME	SIG.
DRAWN		
CHECKED		
APPROVED		

GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED VOP FROM SPAN ARRANGEMENT OF 1X24.0M @ CH-3+275
DRAWING No. SISM/HIDCL/PS/UGAD/152
SCALE : NOT TO SCALE
SHEET - 01 OF 03



CLIENT :



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Contact No : 011-26768950

CONSULTANT :

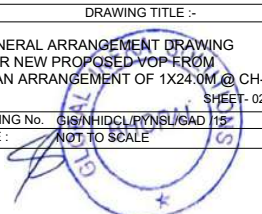


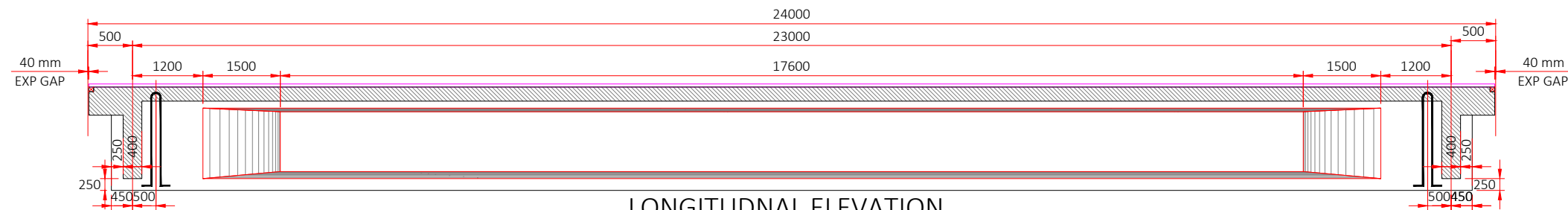
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PROJECT TITLE :

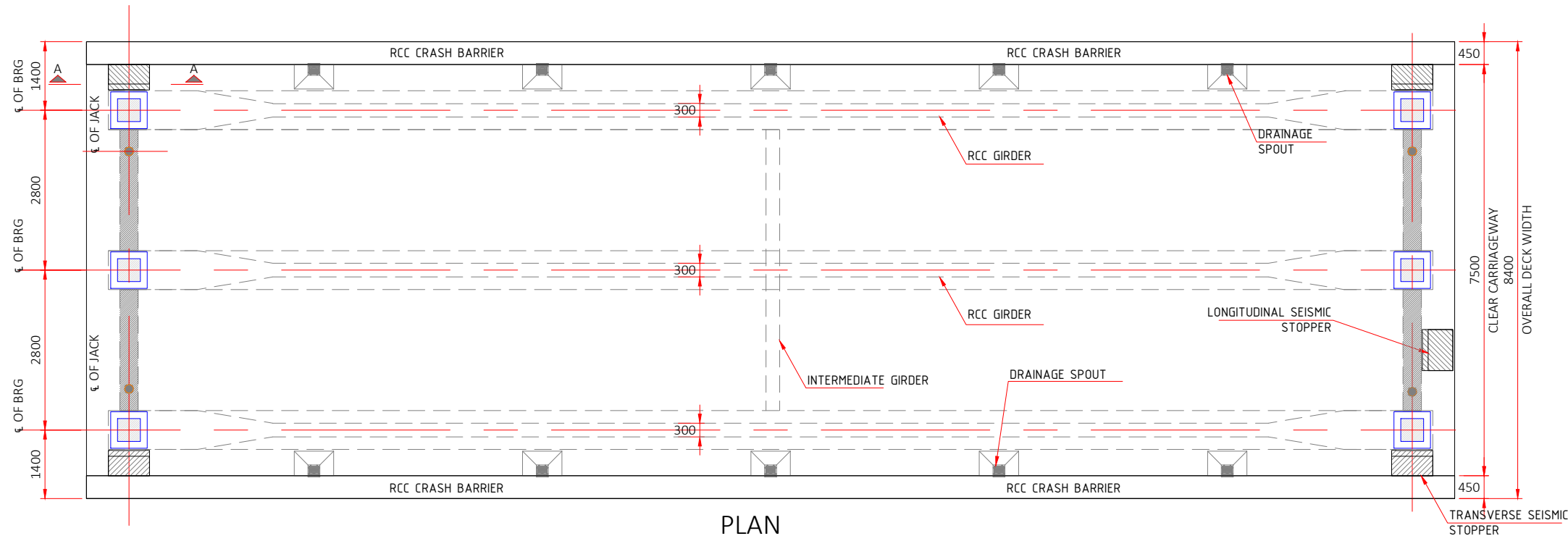
**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED VOP FROM SPAN ARRANGEMENT OF 1X24.0M @ CH-3+275
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. GIS/INFRA/NS/UGAD/15 SCALE: NOT TO SCALE

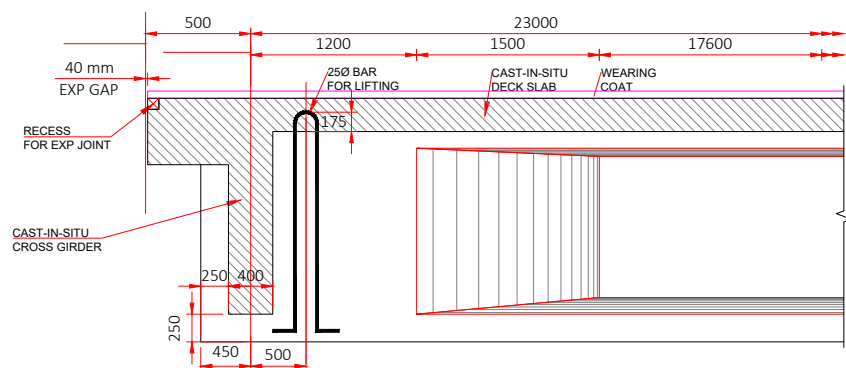




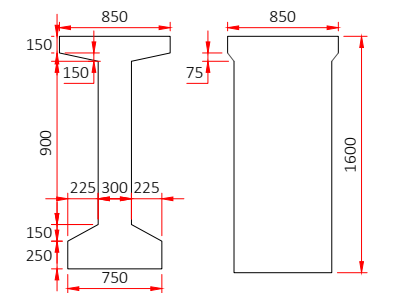
LONGITUDNAL ELEVATION



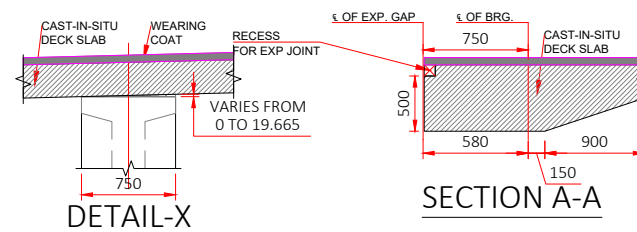
PLAN



TYPICAL DETAIL OF LIFTING ARRANGEMENT

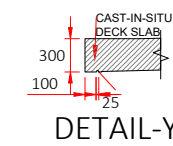


AT MID SPAN AT SUPPORT
DETAIL OF RCC GIRDER



DETAIL-X

SECTION A-A



DETAIL-Y

- OTES:-
- ALL DIMENSIONS ARE IN m. UNLESS OIHERWISE MENTIONED.
 - PROPOSED STRUCTURE IS DESIGNED FOR ONE LANE OF I CLASS 70+R ONE LANE OF CLASS A TRANS WITCHEVER PRODUCE WORST EFFECT.
 - CONCRETE SHALL BE DESIGN MIX AND HAVE MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 35 MPa ON 150mm CUBES FOR PRECAST PSC GIRDER, DECK SLAB, END CROSS GIRDERS AND 40 MPa FOR CRASH BARRIERS.
 - THE LOCATION OF JACKS FOR LIFTING OF THE SUPERSTRUCTURE TO REPLACE BEARINGS ETC. IS SHOWN. THUS THIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE END DIAPHRAGM AND ABUTMENT CAP.
 - THE REINFORCING STEEL SHALL BE OF TMT (GRADE FE 500D) BAR CONFORMING TO IS:1786:2008.
 - CLEAR COVER TO OUTERMOST STEEL IS 50mm.
 - DURING THE LIFTING OPERATION OF SUPERSTRUCTURE ALL THE JACKS PLACED UNDER THE END DIAPHRAGM IN LINE WITH THE BEARINGS SHALL BE OPERATED SIMULTANEOUSLY USING SINGLE OPERATING CONSOLE, GROUPING THE PUMP AND CONTROL SYSTEM SO AS TO ENSURE THAT THE REACTIONS ON ALL THE JACKS ARE EQUAL AT ALL TIMES.
 - PRECAST GIRDERS SHALL BE CAST IN ONE CONCRETING OPERATION IN CASTING YARD WITHOUT ANY CONSTRUCTION JOINT.
 - TOP SURFACE OF THE GIRDERS ALONG WITH FACE OF PRECAST CROSS GIRDER SHALL BE HACKED TO REMOVE THE LAITANCE BEFORE ERECTION AT SITE.
 - ADEQUACY AND STRENGTH OF 250 BAR HOOK MAY BE GOT CHECKED BEFORE LIFTING GIRDERS.

LEGENDS

	CAST-IN-SITU PORTION
	BEARING IN PLAN
	BEARING IN ELEVATION
	JACK LOCATION IN PLAN
	JACK LOCATION IN SECTION
	CONSTRUCTION JOINT

CLIENT :



**NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.**
1st & 2nd Floor,
Tower A, World Trade Centre, Nauroji Nagar,
New Delhi - 110029
Contact No : 011-26768950

CONSULTANT :

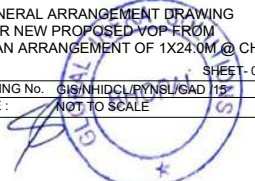


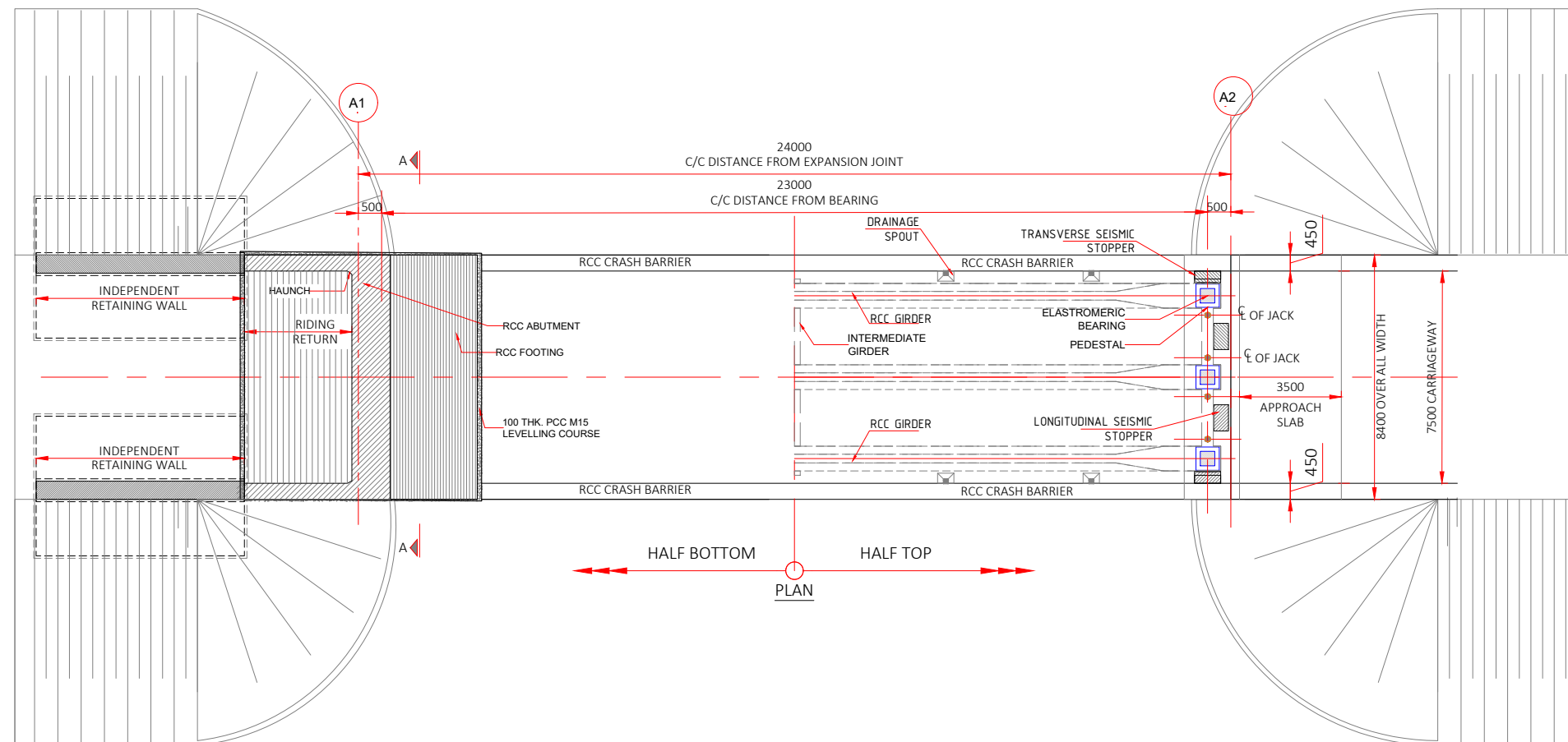
Global Infra Solutions
in JV with **Dhruv Consultancy Services Limited** and
association with **Infycons Creative Software Pvt. Ltd.**
F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED VOP FROM SPAN ARRANGEMENT OF 1X24.0M @ CH-3+275
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
		DRAWING No.	SIS/MDCL/PS/SLUGAD/15
		SCALE :	NOT TO SCALE

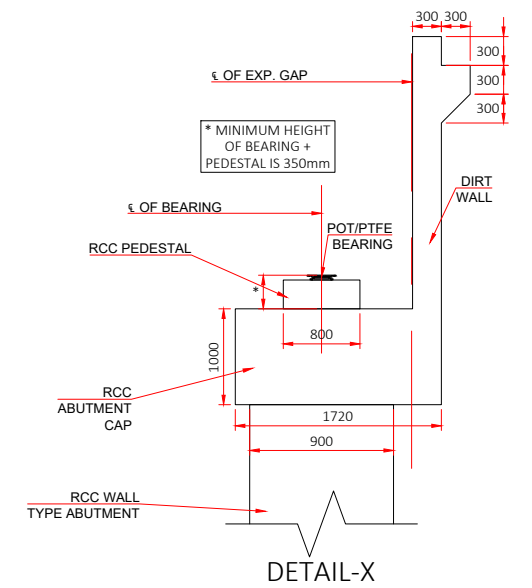
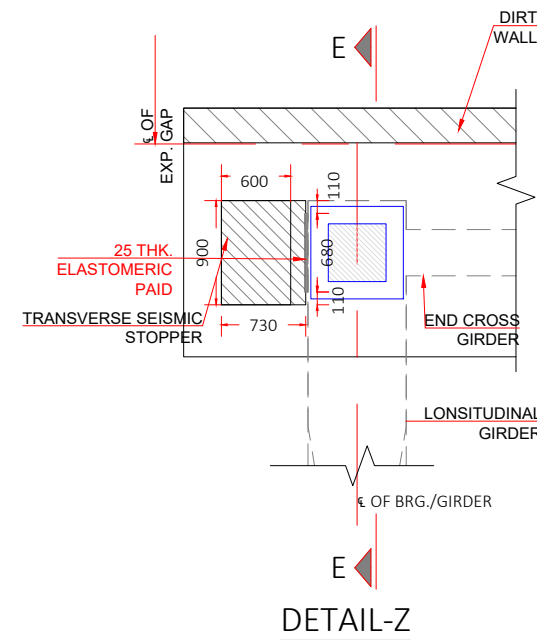
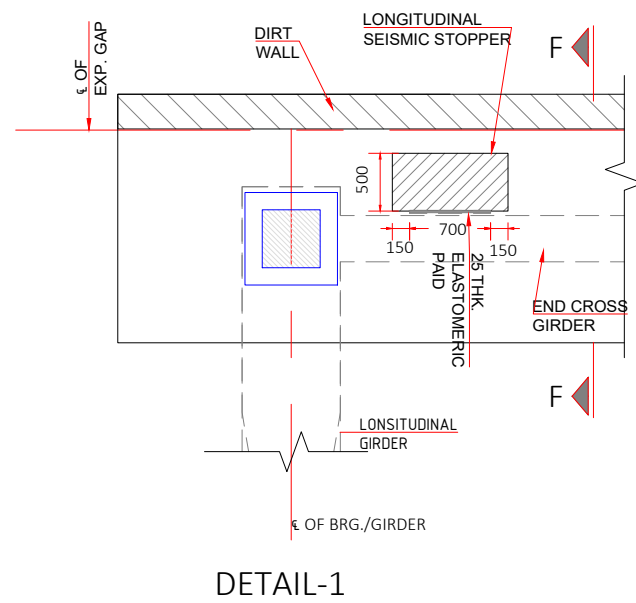
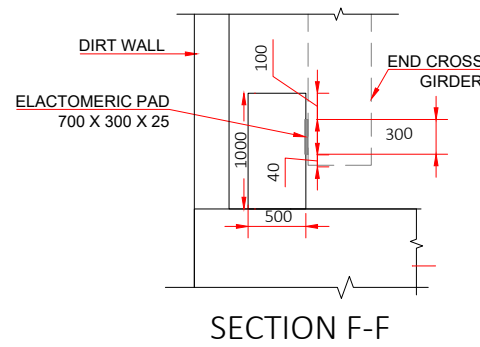
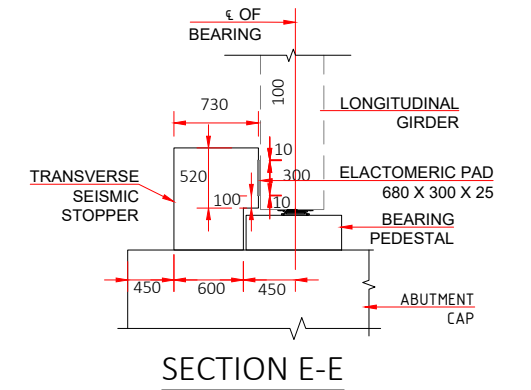
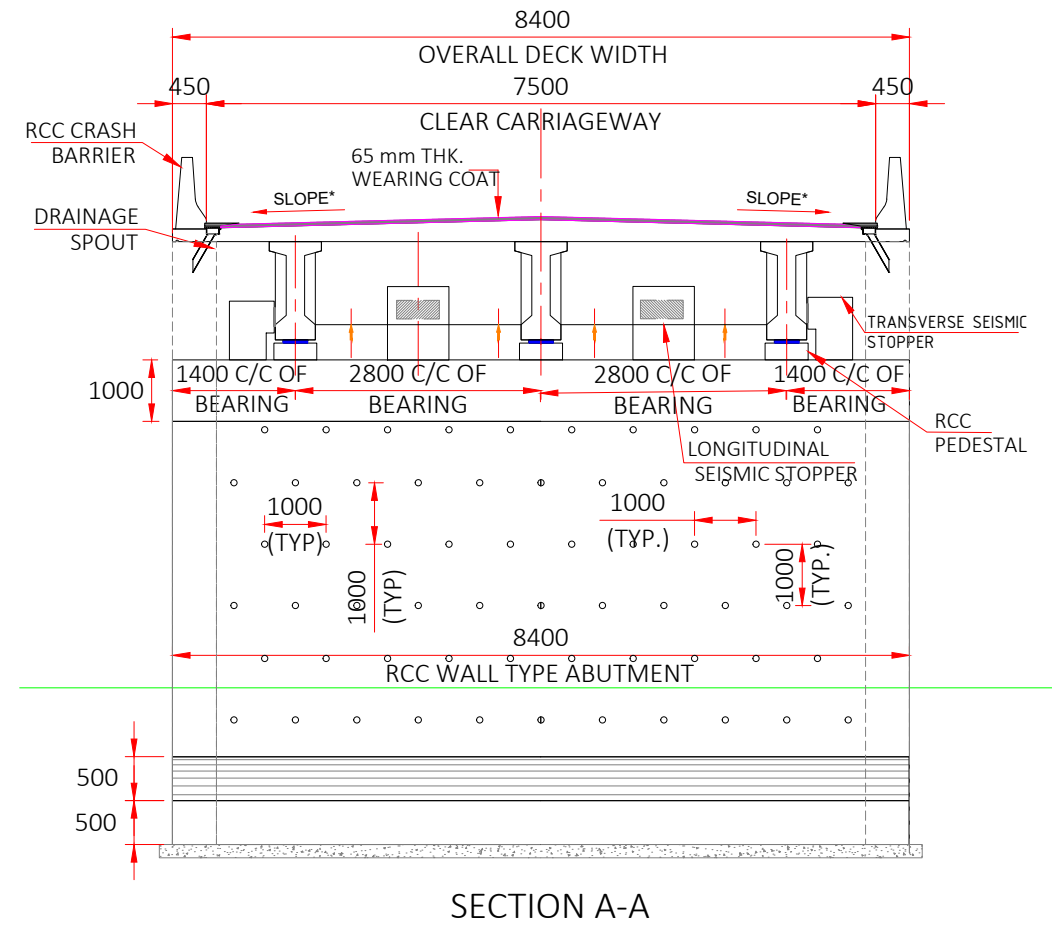
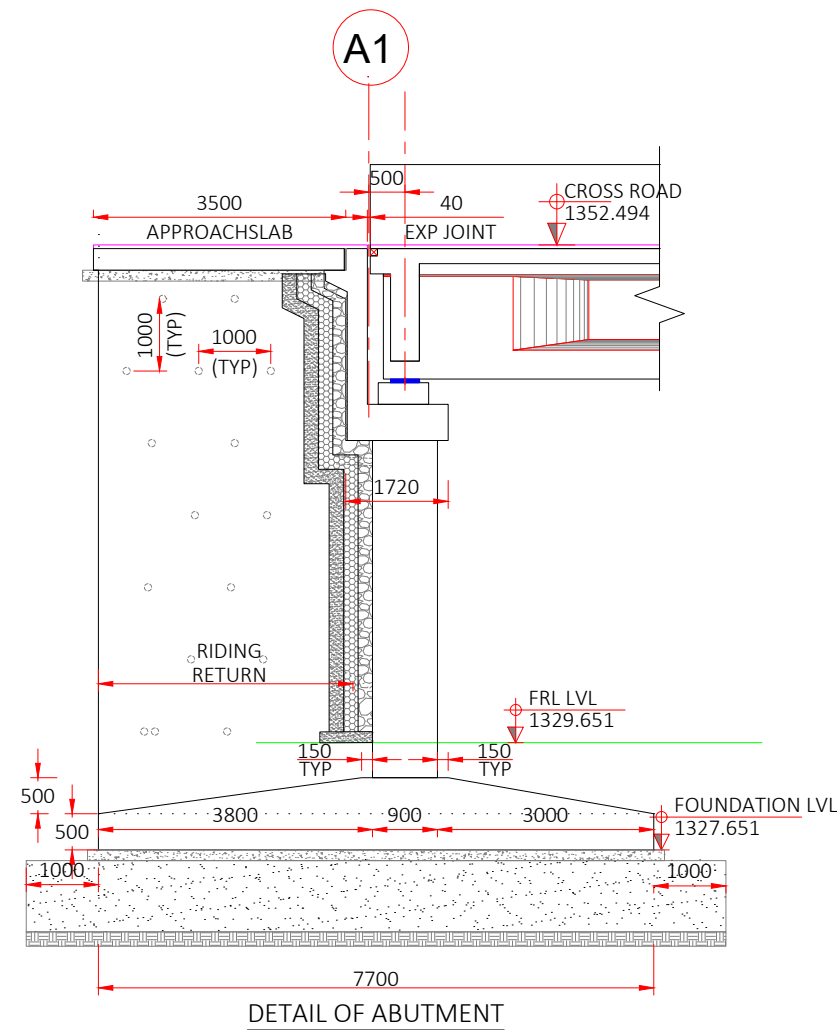




- NOTES: **GENERAL**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DRAWING SHALL BE SCALED.
 2. THE DESIGN IS ACCORDING TO THE FOLLOWING CODES.
IRC-5-2024 IRC-6-2017
IRC-78-2024 IRC-112-2020
 3. FOLLOWING LOADS HAVE BEEN CONSIDERED IN DESIGN.
 4. LIVE LOADS
ONE LANE OF CLASS 70 R + ONE LANE OF CLASS A OR THREE LANE OF CLASS A TRANS WHICH EVER PRODUCE WORST EFFECT.
 5. DENSITY OF BITUMEN COAT HAS BEEN ASSUMED AS 2.2 T/M
 6. DRAINAGE SPOUT USED SHALL BE AS PER M.O.S.T STANDARD DRAWING NO. SD/205 & IRC 5-2024
 7. CRASH BARRIER OF THE SUPER STRUCTURE SHALL BE ADOPTED FROM IRC-5-2024
 8. WEARING COAT AS PER MORT&H STANDARD 5TH REVISION CLAUSE 2702.1 AND HAVING UNIDIRECTIONAL CAMBER FOR EACH TWO LANE AS PER CLAUSE 7.14, IRC-SP-84-2009.
 9. STRIP TYPE EXPANSION JOINT SHALL BE USED FOR EXPANSION JOINT AND SHALL CONFORM TO IRC SP-69-2011.
 10. APPROACH SLAB SHALL BE AS PER IRC-5 AND SECTION 2704 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 11. 600 MM THICK FILTER MEDIA SHALL BE PROVIDED AS PER APPENDIX - 6 OF IRC SP- 78-2024.
- MATERIALS:**
12. GRADE OF CONCRETE SHALL CONFORM TO CLAUSE 6.4 OF IRC 112-2020 AND ARE AS FOLLOWS:

PCC LEVELING COURSE	M15	RCC CAST-IN-SITU PILE	M35
RCC ABUTMENT / PIER	M35	RCC DECK SLAB	M40
RCC ABUTMENT CAP / PIER CAP	M35	RCC CRASH BARRIER	M40
RCC PEDESTAL	M45	PRECAST PSC GIRDER	M45
 13. REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS OF FE-500D, CONFIRMING TO CLAUSE 6.2 OF IRC 112-2020 & IS-1786:2008.
 14. WATER TO BE USED IN CONCRETING AND CURING SHALL CONFORM TO CLAUSE 18.4.5 OF IRC 112-2020.
 15. THE GRANULAR FILL BEHIND ABUTMENT SHALL BE AS PER CLAUSE 305.2 OF MORT&H SPECIFICATIONS (FIFTH REVISION) ($\theta=30^\circ$, $\delta=20^\circ$, $\gamma=1.8$) AND APPENDIX 6, IRC 78-2024.
 16. SIDE SLOPE OF ROAD EMBANKMENT NEAR ABUTMENTS SHALL BE IN SLOPE 1V:1.5H & SHALL BE PROVIDED WITH 300 THICK STONE REVESTMENT AND 150 THICK FILTER MEDIA CONFORMING TO CLAUSE 2500 & 2504 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 17. 100MM DIA A.C. PIPE WEIR HOLES SHALL BE PROVIDED @ 1.0 M C/C HORIZONTALLY & VERTICALLY STAGGERED 100 mm ABOVE LOWEST WATER LEVEL OR LOWEST BED LEVEL WHICH IS HIGHER AT SLOPE 1:20 AS PER IRC 78-2024 & CLAUSE 2706 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 18. AGGREGATE SIZE SHALL BE AS PER CLAUSE 302.3.2.3 OF IRC:21,2000.
 19. SAFE LOAD CARRYING CAPACITY FOR PILES : 300.00 Ton.
- CONSTRUCTION**
20. FRL LEVELS SHOULD BE READ IN CONJUNCTION WITH HIGHWAY PLAN AND PROFILE. IN CASE OF DISCREPANCY HIGHWAY PLAN AND PROFILE SHOULD BE FOLLOWED IN CONSULTATION WITH DESIGNER AND APPROVING AUTHORITY.
 21. THE PROTECTIVE WORKS SHALL BE COMPLETED AS PER CLAUSE 2104.3 AND SECTION 2500.
 22. THE CONSTRUCTION AGENCY SHOULD ENSURE THAT THE NECESSARY PERMISSIONS HAS BEEN OBTAINED FROM ROAD & IRRIGATION AUTHORITY IF REQUIRED FOR DIVERTING THE TRAFFIC TEMPORARILY PRIOR TO COMMENCING THE WORK.
 23. NECESSARY SUITABLE SHORING AND STRUTTING SHALL BE PROVIDED FOR CASTING OF STRUCTURAL MEMBERS AND OTHER PLACE WHEREVER REQUIRED AND DETAILED DRAWING SHALL BE SUBMITTED BY THE CONTRACTING AGENCY.
 24. IF ANY AMBIGUITY FOUND IN DRAWINGS OR AT SITE BRING IT TO DESIGNER'S NOTICE BEFORE EXECUTION.
 25. VERIFICATION SHOULD BE DONE AS PER CLAUSE 2004 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 26. IF HARD STRATA FOUND AT SITE, ACC. TO CLAUSE 705.2, IRC 78-2024, MINIMUM EMBEDMENT OF FOUNDATION SHALL BE MINIMUM OF AS FALLOW OR SHOWN IN DRAWINGS:

IN HARD ROCK	0.6 m
IN SOFT ROCK	1.5 m
SOIL	2.0 m
 27. IN CASE OF FOUNDATION IN ROCK, THE TRENCHES AROUND THE FOOTING SHALL BE FILLED UP WITH M-15 GRADE OF CONCRETE UP TO 100 mm FROM THE ROCK.
 28. BEFORE COMMENCEMENT OF EXECUTION OF WORK CROSS SECTION AS THE SITE SHALL BE TAKEN BY PRECISION SURVEY & ABUTMENT AND PIER POSITION SHOWN IN TECHNICALLY SANCTIONED DRAWING SHALL BE VERIFIED ON SITE IN CASE OF ANY DISCREPANCY OR DOUBT CLARIFICATION SHALL BE OBTAINED FROM COMPETENT AUTHORITY BEFORE HAND.



CLIENT :



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Contact No : 011-26768950

CONSULTANT :

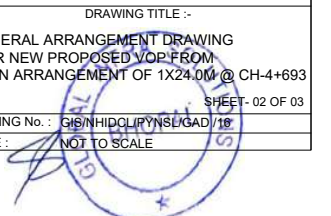


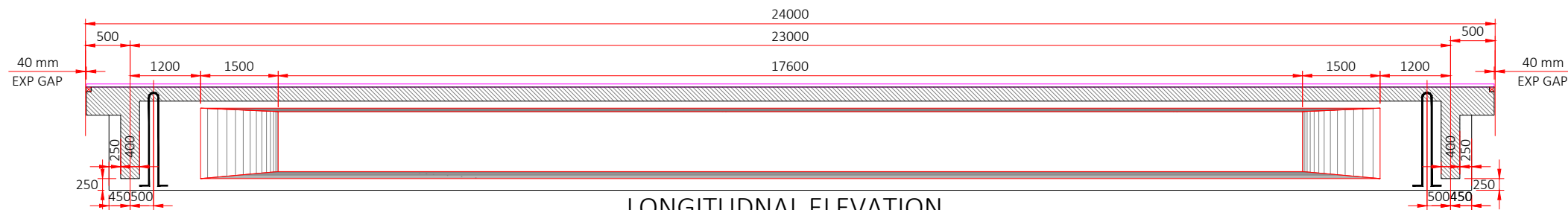
Global Infra Solutions
in JV with **Dhruv Consultancy Services Limited** and
association with **Infycons Creative Software Pvt. Ltd.**
F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

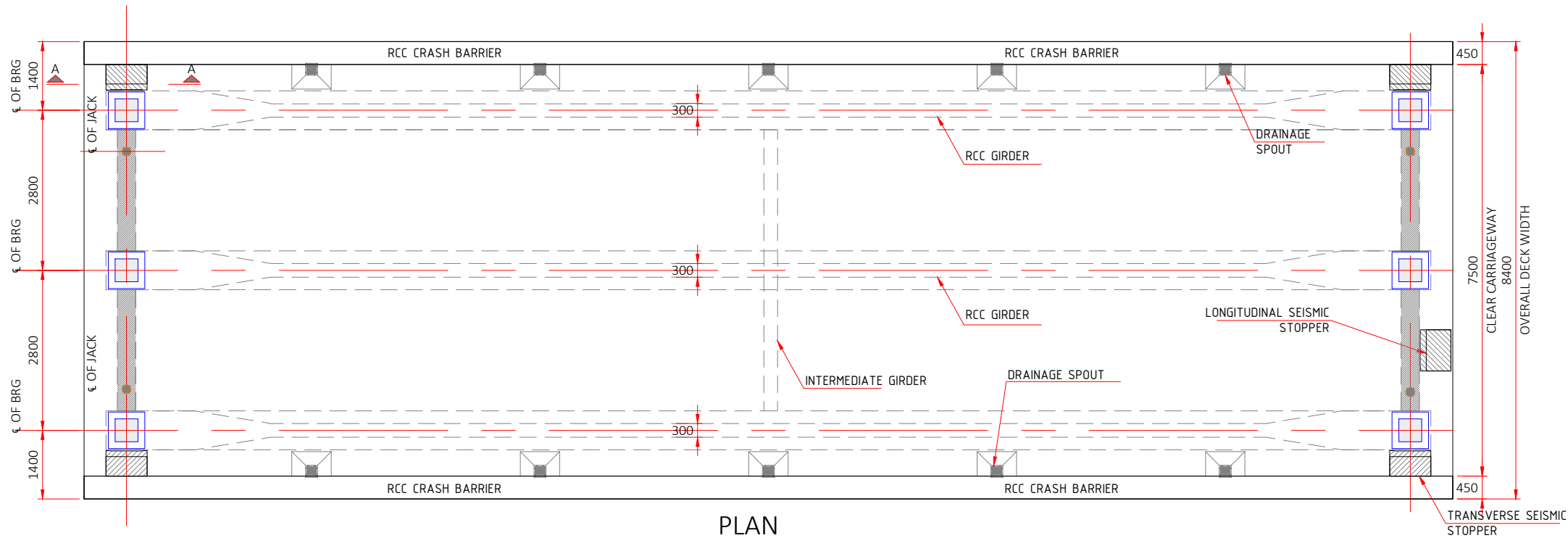
**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED VOP FROM SPAN ARRANGEMENT OF 1X24.0M @ CH-4+693
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. : GSI/NH/CL/TP/NS/IGAD/18
			SCALE : NOT TO SCALE

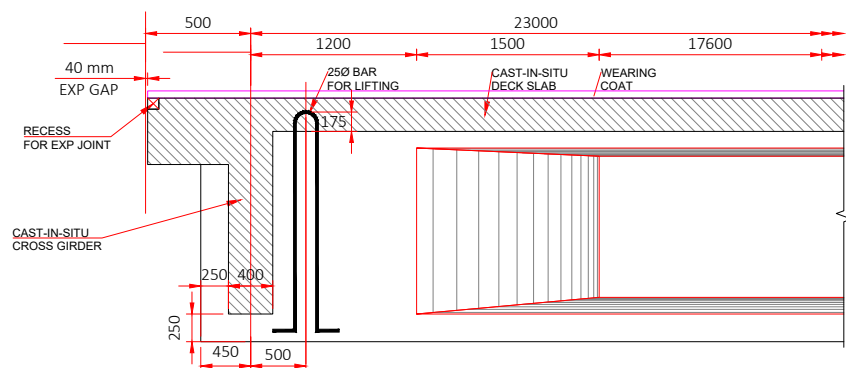




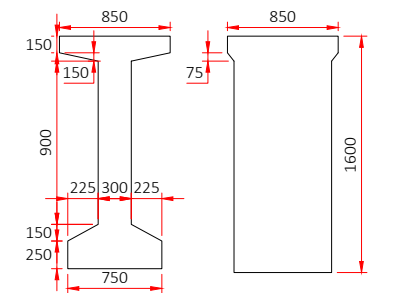
LONGITUDNAL ELEVATION



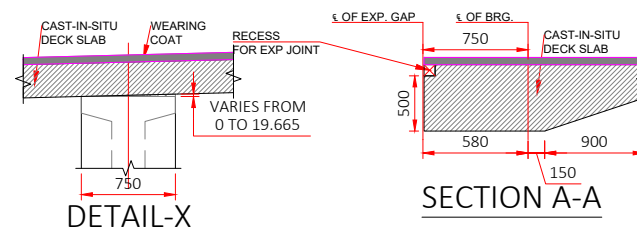
PLAN



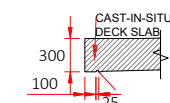
TYPICAL DETAIL OF LIFTING ARRANGEMENT



AT MID SPAN AT SUPPORT
DETAIL OF RCC GIRDER



SECTION A-A



DETAIL-Y

- NOTES:-
1. ALL DIMENSIONS ARE IN m. UNLESS OIHERWISE MENTIONED.
 2. PROPOSED STRUCTURE IS DESIGNED FOR ONE LANE OF I CLASS 70+R ONE LANE OF CLASS A TRANS WITCHEVER PRODUCE WORST EFFECT.
 3. CONCRETE SHALL BE DESIGN MIX AND HAVE MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 35 MPa ON 150mm CUBES FOR PRECAST PSC GIRDER, DECK SLAB, END CROSS GIRDERS AND 40 MPa FOR CRASH BARRIERS.
 4. THE LOCATION OF JACKS FOR LIFTING OF THE SUPERSTRUCTURE TO REPLACE BEARINGS ETC. IS SHOWN. THUS THIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE END DIAPHRAGM AND ABUTMENT CAP.
 5. THE REINFORCING STEEL SHALL BE OF TMT (GRADE FE 500D) BAR CONFORMING TO IS:1786:2008.
 6. CLEAR COVER TO OUTERMOST STEEL IS 50mm.
 7. DURING THE LIFTING OPERATION OF SUPERSTRUCTURE ALL THE JACKS PLACED UNDER THE END DIAPHRAGM IN LINE WITH THE BEARINGS SHALL BE OPERATED SIMULTANEOUSLY USING SINGLE OPERATING CONSOLE, GROUPING THE PUMP AND CONTROL SYSTEM SO AS TO ENSURE THAT THE REACTIONS ON ALL THE JACKS ARE EQUAL AT ALL TIMES.
 8. PRECAST GIRDERS SHALL BE CAST IN ONE CONCRETING OPERATION IN CASTING YARD WITHOUT ANY CONSTRUCTION JOINT.
 9. TOP SURFACE OF THE GIRDERS ALONG WITH FACE OF PRECAST CROSS GIRDER SHALL BE HACKED TO REMOVE THE LAITANCE BEFORE ERECTION AT SITE.
 10. ADEQUACY AND STRENGTH OF 250 BAR HOOK MAY BE GOT CHECKED BEFORE LIFTING GIRDERS.

LEGENDS

	CAST-IN-SITU PORTION
	BEARING IN PLAN
	BEARING IN ELEVATION
	JACK LOCATION IN PLAN
	JACK LOCATION IN SECTION
	CONSTRUCTION JOINT

CLIENT :



**NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.**
1st & 2nd Floor,
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Contact No : 011-26768950

CONSULTANT :

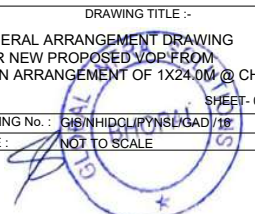


Global Infra Solutions
in JV with **Dhruv Consultancy Services Limited** and
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F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org

PROJECT TITLE :

**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

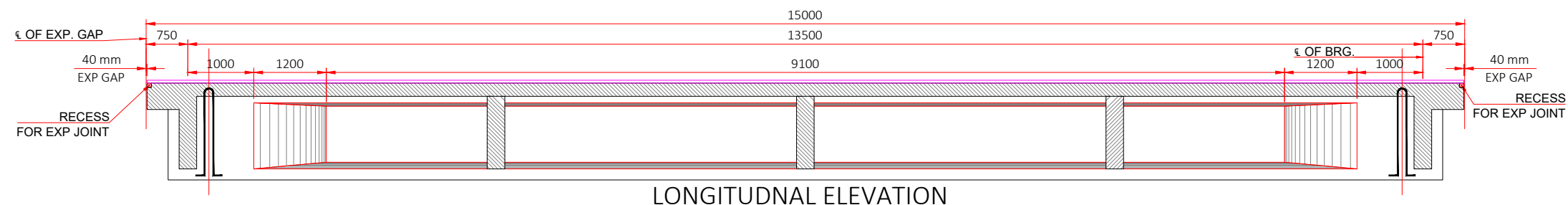
REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED VOP FROM SPAN ARRANGEMENT OF 1X24.0M @ CH-4+693
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. : GISHIDOLIPYNSKAD/18
			SCALE : NOT TO SCALE



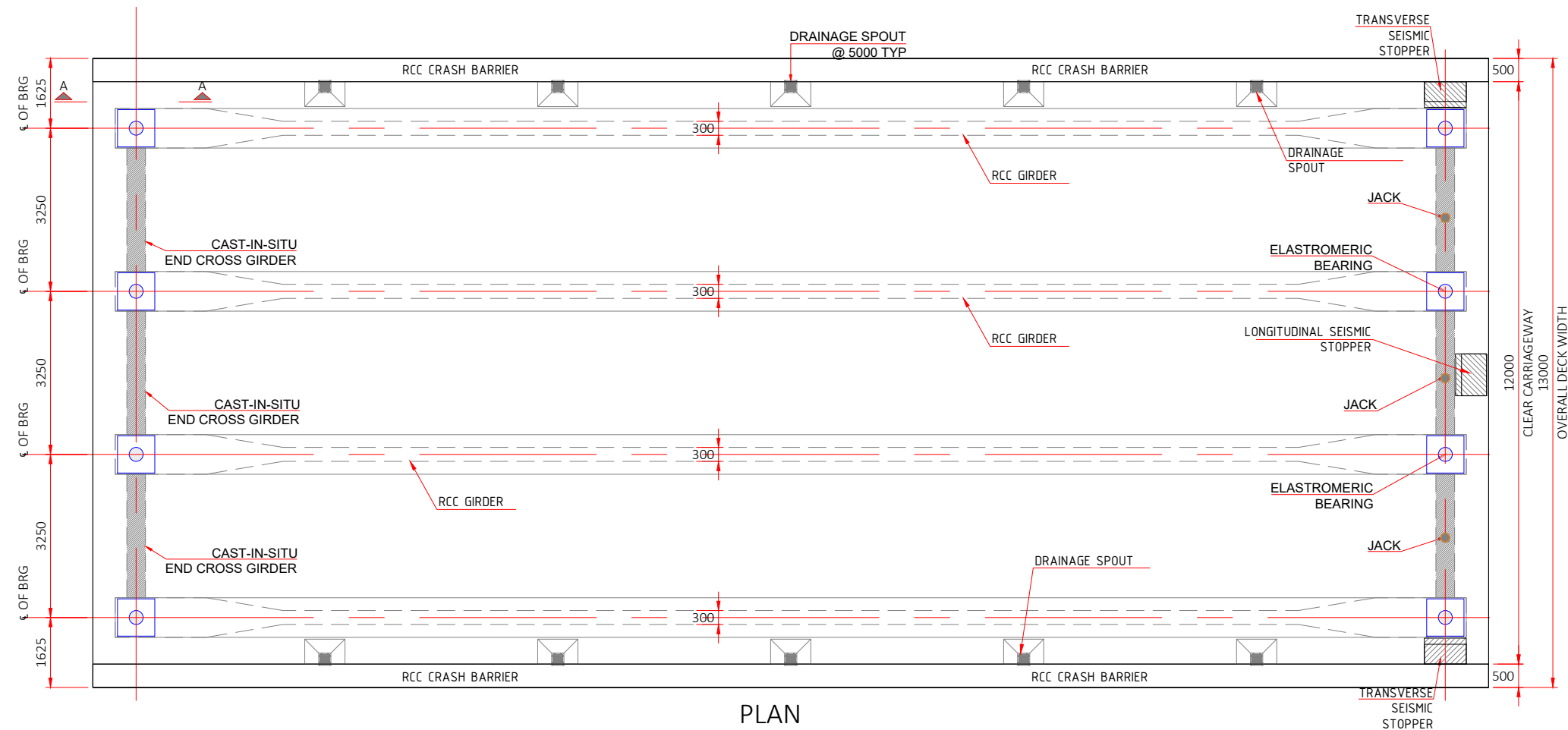


IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).







REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED MINOR BRIDGE (RCC T-BEAM) FROM SPAN 1'X15.0M @ CH-4+930 @ CH-7+495 @ CH-7+657
DESIGN	NAME	SIG.	
DRAWN			
CHECKED			DRAWING No. : GIS/IND/CL/PYNS/GAD/112
APPROVED			SCALE : NOT TO SCALE

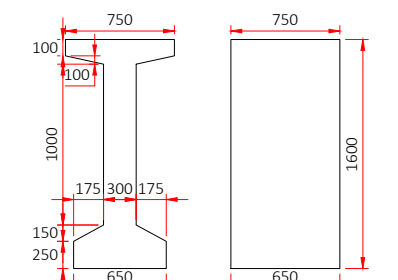
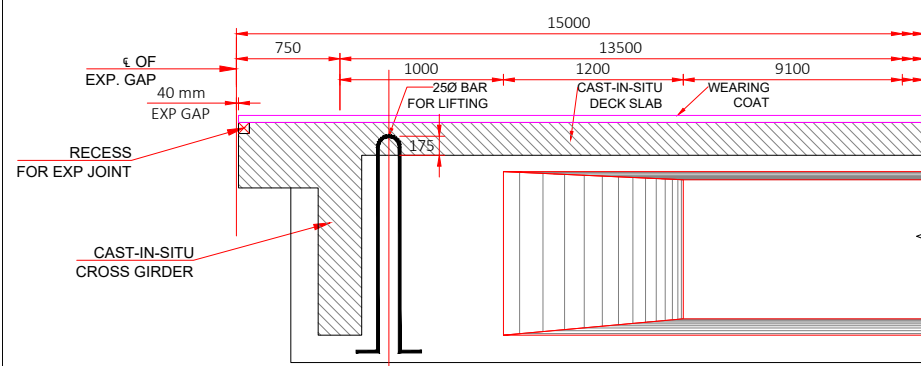


- NOTES:-**
1. ALL DIMENSIONS ARE IN m. UNLESS OTHERWISE MENTIONED.
 2. PROPOSED STRUCTURE IS DESIGNED FOR ONE LANE OF I CLASS 70+R ONE LANE OF CLASS A TRANS WITHEVEYER PRODUCE WORST EFFECT.
 3. CONCRETE SHALL BE DESIGN MIX AND HAVE MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 35 MPa ON 150mm CUBES FOR RCC T-BEAM GIRDER, DECK SLAB, END CROSS GIRDERS AND 40 MPa FOR CRASH BARRIERS.
 4. THE LOCATION OF JACKS FOR LIFTING OF THE SUPERSTRUCTURE TO REPLACE BEARINGS ETC. IS SHOWN. THUSTHIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE END DIAPHRAGM AND ABUTMENT CAP.
 5. THE REINFORCING STEEL SHALL BE OF TMT (GRADE FE 500D) BAR CONFORMING TO IS:1786:2008.
 6. CLEAR COVER TO OUTERMOST STEEL IS 50mm.
 7. DURING THE LIFTING OPERATION OF SUPERSTRUCTURE ALL THE JACKS PLACED UNDER THE END DIAPHRAGM IN LINE WITH THE BEARINGS SHALL BE OPERATED SIMULTANEOUSLY USING SINGLE OPERATING CONSOLE, GROUPING THE PUMP AND CONTROL SYSTEM SO AS TO ENSURE THAT THE REACTIONS ON ALL THE JACKS ARE EQUAL AT ALL TIMES.
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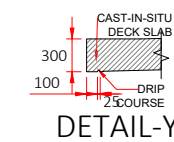
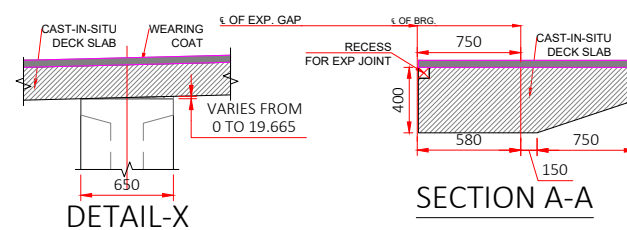
LEGENDS

	CAST-IN-SITU PORTION
	BEARING IN PLAN
	BEARING IN ELEVATION
	JACK LOCATION IN PLAN
	JACK LOCATION IN SECTION
	CONSTRUCTION JOINT



AT MID SPAN AT SUPPORT

DETAIL OF RCC GIRDER



CLIENT :

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CONSULTANT :



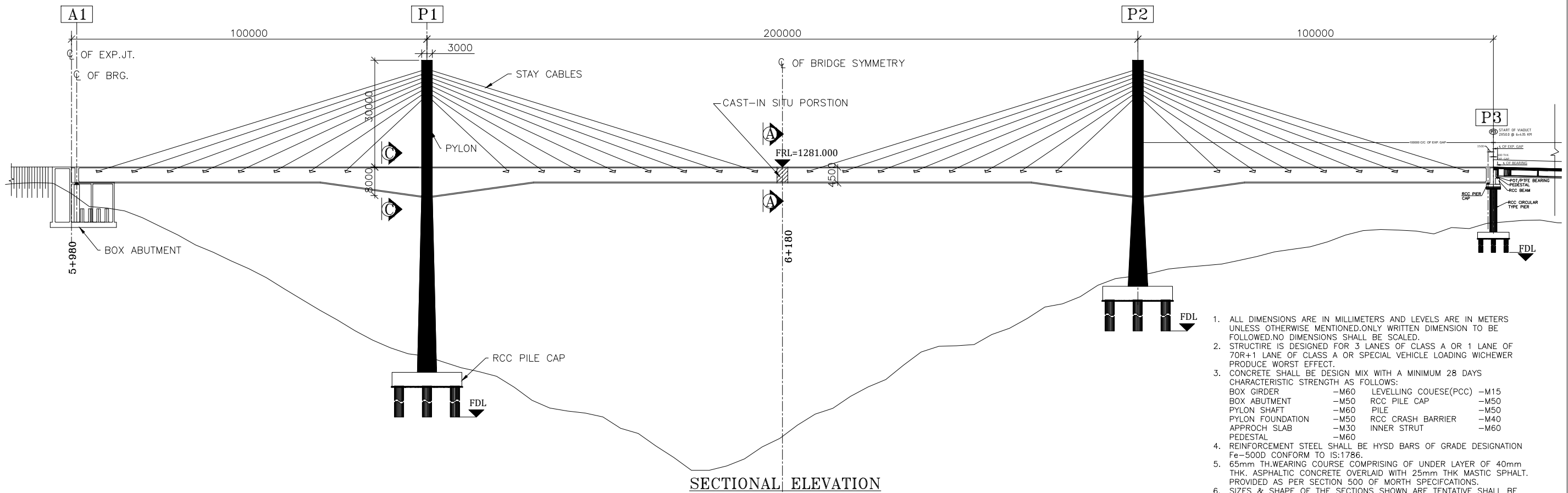
Global Infra Solutions

in JV with **Dhruv** Consultancy Services Limited and
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F-2, E-8/11A, Suksagar Apartment, Trilanga, Bhopal -462039
e: globalinfrsolutions@gmail.com web: globalinfrsolutions.org

PROJECT TITLE :

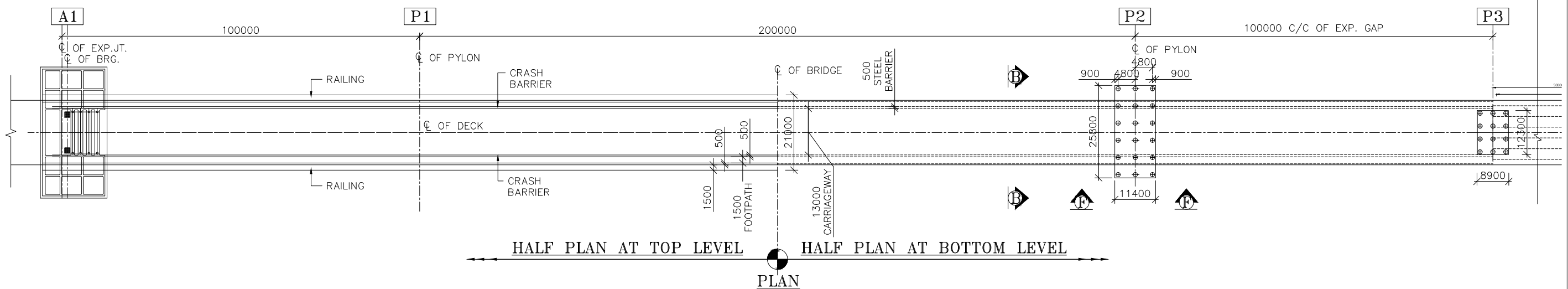
IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).



REV	DATE	DESCRIPTION	DRAWING TITLE :-
			<p>GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED MINOR BRIDGE (RCC T-BEAM) FROM SPAN 1X15.0M @ CH-4+930 @ CH-7+498 @ CH-7+657</p> <p>DRAWING No. : GIS/INHD/CL/PY/SL/GAD/112</p> <p>SCALE : NOT TO SCALE</p>
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			



- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSION TO BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
- STRUCTURE IS DESIGNED FOR 3 LANES OF CLASS A OR 1 LANE OF 70R+1 LANE OF CLASS A OR SPECIAL VEHICLE LOADING WHICHEVER PRODUCE WORST EFFECT.
- CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH AS FOLLOWS:
BOX GIRDER -M60 LEVelling COUSE(PCC) -M15
BOX ABUTMENT -M50 RCC PILE CAP -M50
PYLON SHAFT -M60 PILE -M50
PYLON FOUNDATION -M50 RCC CRASH BARRIER -M40
APPROCH SLAB -M30 INNER STRUT -M60
PEDESTAL -M60
- REINFORCEMENT STEEL SHALL BE HYSD BARS OF GRADE DESIGNATION Fe-500D CONFORM TO IS:1786.
- 65mm TH. WEARING COURSE COMPRISING OF UNDER LAYER OF 40mm THK. ASPHALTIC CONCRETE OVERLAID WITH 25mm THK MASTIC SPHALT. PROVIDED AS PER SECTION 500 OF MORTH SPECIFICATIONS.
- SIZES & SHAPE OF THE SECTIONS SHOWN ARE TENTATIVE SHALL BE MODIFIED AS PER ACTUAL DESIGN.
- SEISMIC ZONE FOR BRIDGE IS ZONE-V
- CHARACTERISTIC OF 15.7 mm.DIA STAY CABLE STANDS.
a. AREA=140mm²
b. BREAKING STRENGTH=1862 mpa.
- CHARACTERISTICS OF INTERNAL PRESTRESSING STANDS.
a. TYPE-13/19 STANDS OF 15.2 mm. DIA.
b. AREA OF STRAND =140 mm²
- SLIDING POT BEARING SHALL BE PROUDED AT EJ PIER LOCATION

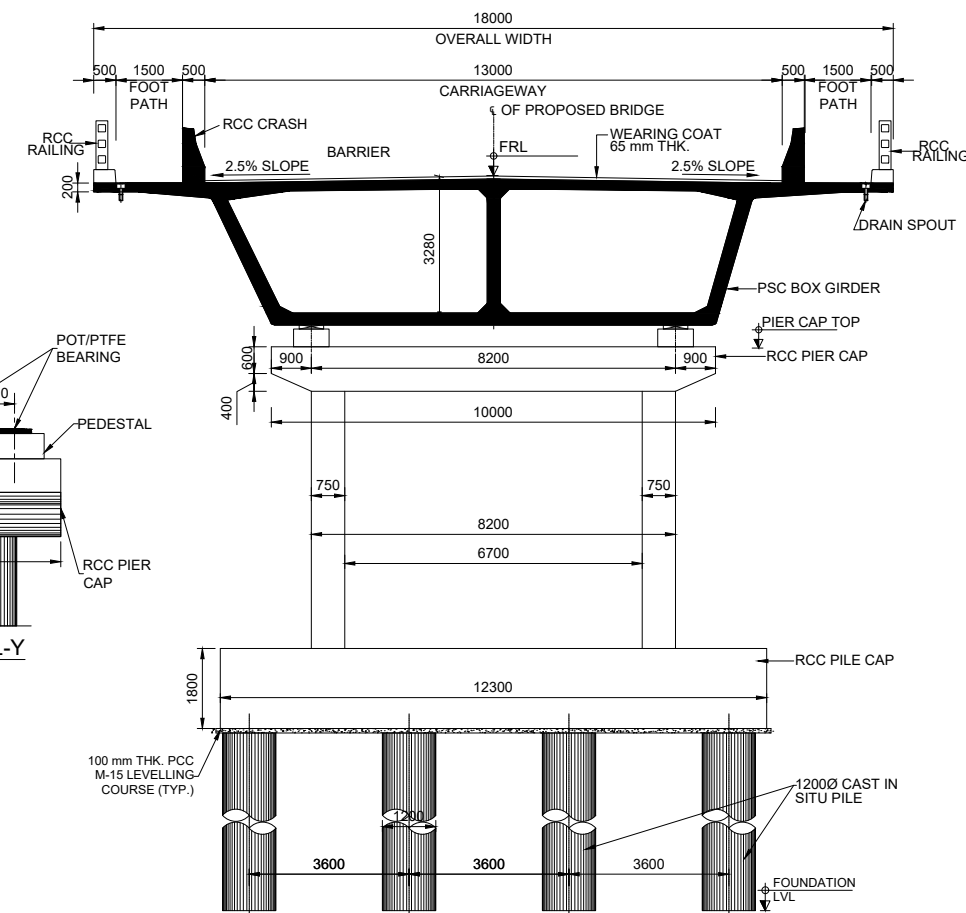
FORMATION LVL.(m)	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000	1281.000
GROUND LVL.(m)	1273.876	1262.943	1247.211	1230.631	1211.610	1200.043	1190.838	1175.084	1164.837	1148.099	1162.474	1181.411	1201.367	1209.184	1223.008	1235.362	1240.101	1246.247	1253.742	1258.895
CHAINAGE (Km)	5+980	6+000	6+020	6+040	6+060	6+080	6+100	6+120	6+140	6+160	6+180	6+200	6+220	6+240	6+260	6+280	6+300	6+320	6+340	6+380



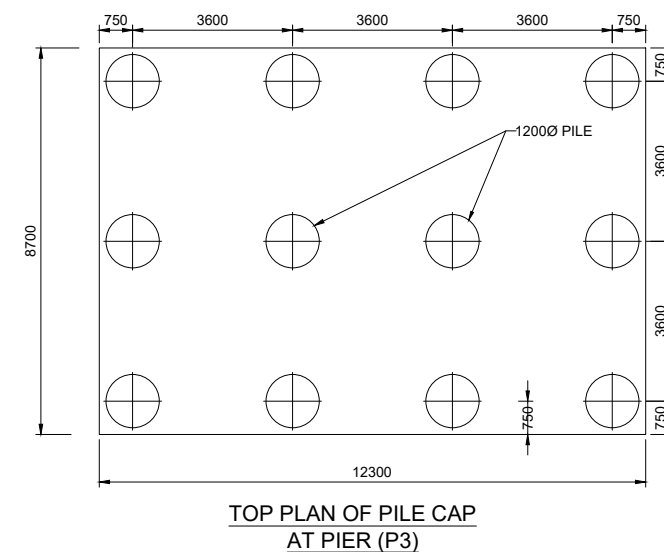
CLIENT:  NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. 1ST & 2ND FLOOR, TOWER A, WORLD TRADE CENTRE, NAUROJI NAGAR, NEW DELHI - 110029 CONTACT NO : 011-26768950	DESIGN CONSULTANT:  Global Infra Solutions in JV with Dhruv Consultancy Services Limited and association with Infycons Creative Software Pvt. Ltd. F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal - 462039 e: globalinfra@globalinfra.com web: globalinfra.com	PROJECT: Improvement to 2-lane with paved shoulder/4-laning of NH-40 between Shillong to Dawki road upto Bangladesh Border including Dawki Bridge in the state of Meghalaya for execution of EPC mode under JICAQ funding design length 7.760 km (Package-III)	REV	DATE	DESCRIPTION	NAME	SIGN.	DRAWING TITLE :- GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED EXTRADOSED (MJB) FROM SPAN ARRANGEMENT 1X100.0+1X200.0+1X100.0 @ CH-5+980 TO 6+380 DRAWING No. : GIS/NHIDCL/PYNSL/GAD /18 SCALE : NOT TO SCALE
						DESIGNED	AA	
						DRAWN	PB	
						CHECKED	NK	
						APPROVED	AA	

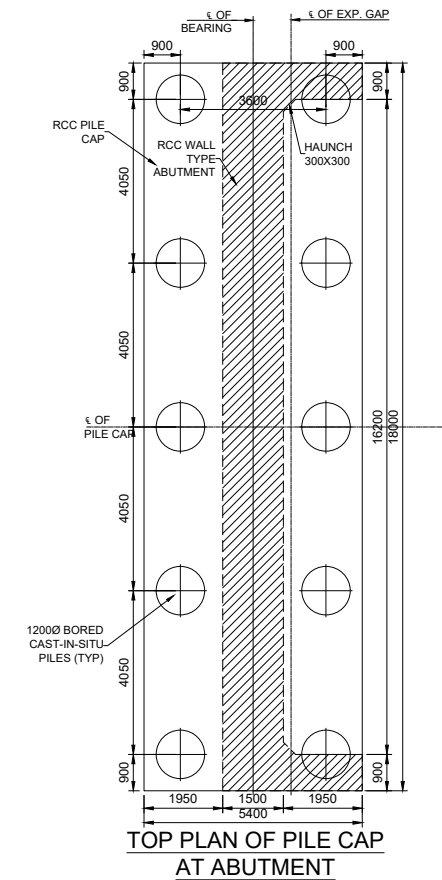
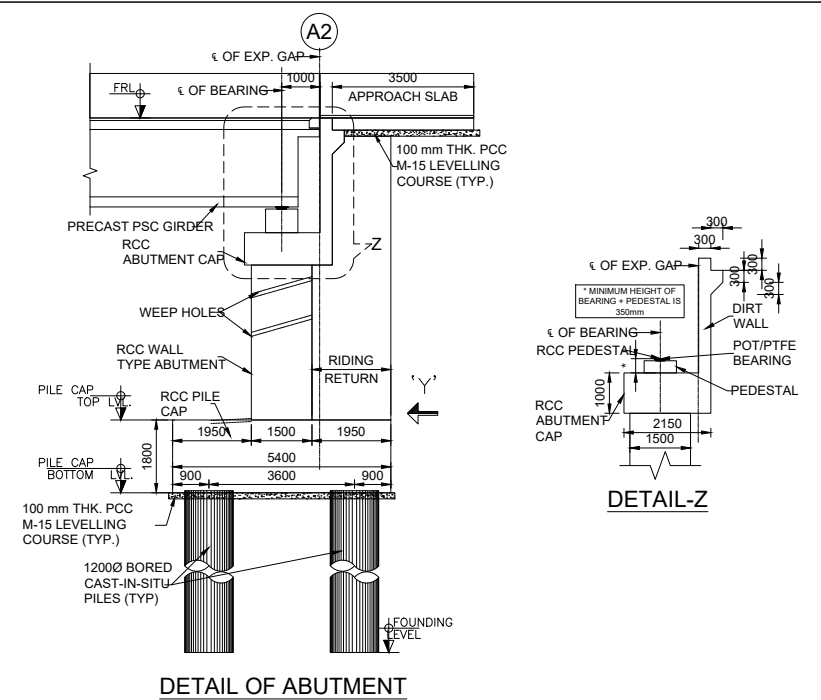
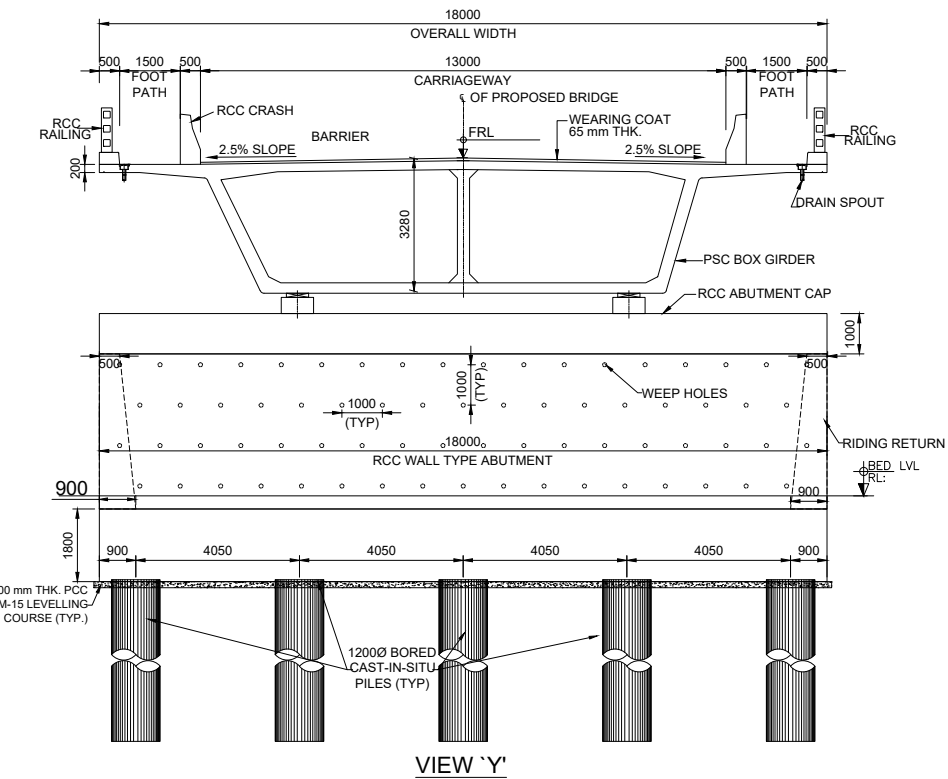
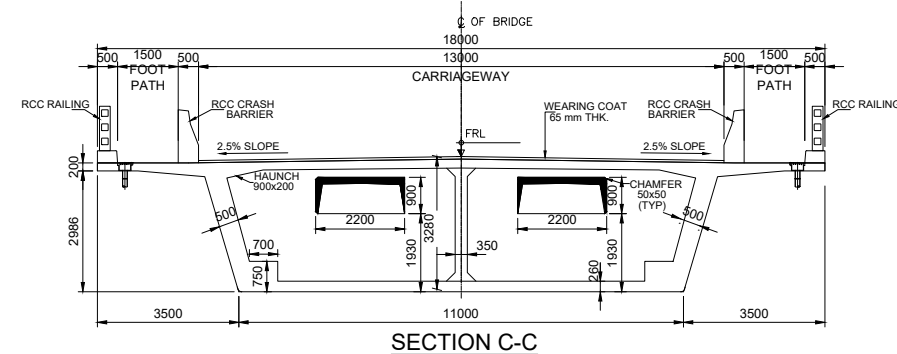
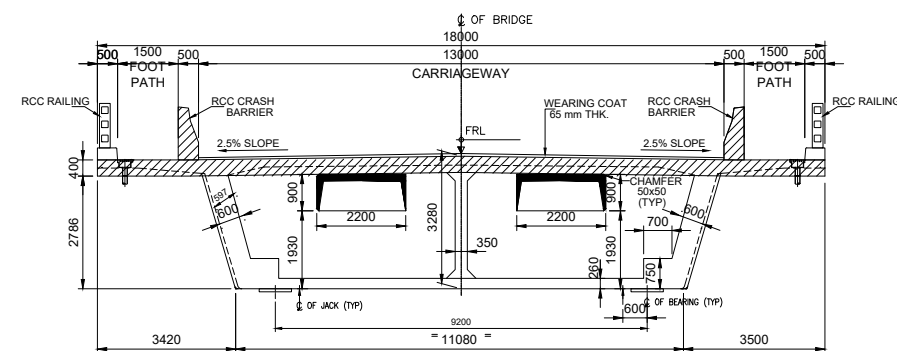
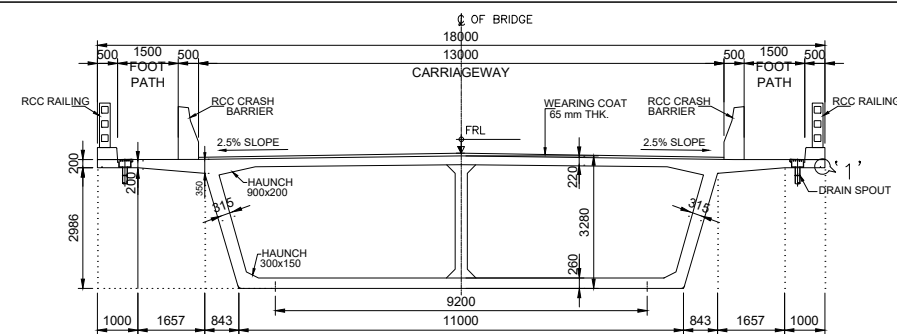
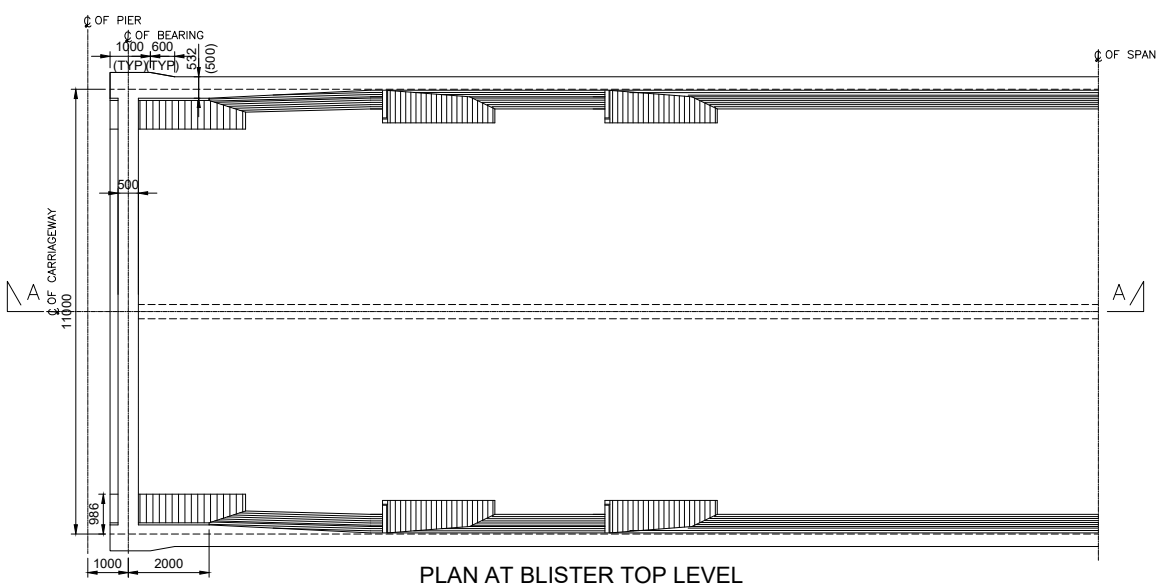
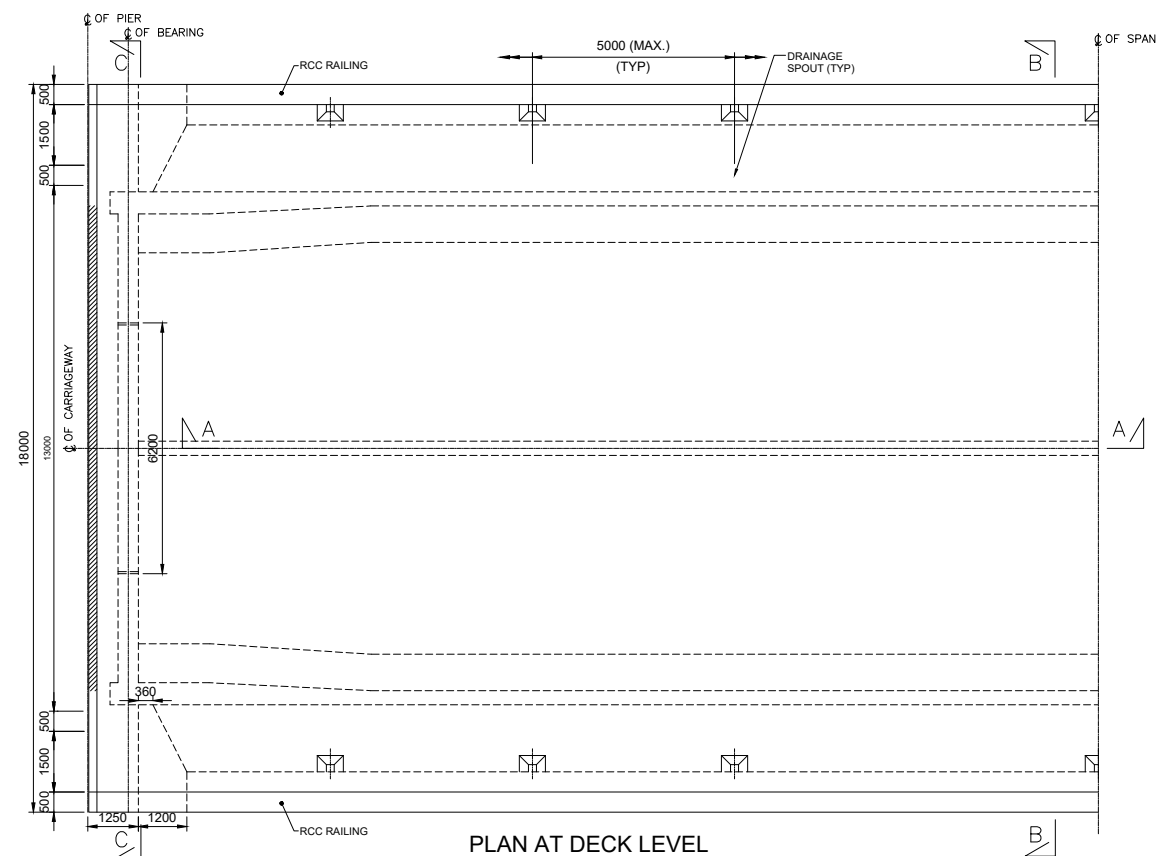
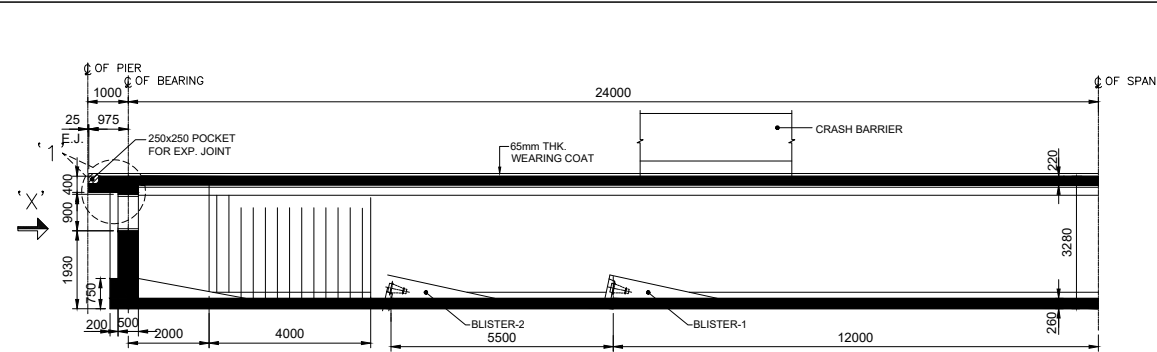


REV	DATE	DESCRIPTION	NAME	SIGN.	DRAWING TITLE :-
		DESIGNED	AA		GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED EXTRADOSED (MJB) FROM SPAN ARRANGEMENT 1X100.0+1X200.0+1X100.0 @ CH-5+980 TO 6+980 DRAWING No. : GIS/NHIDCL/PYNSL/GAD /18 SCALE : NOT TO SCALE
		DRAWN	PB		
		CHECKED	NK		
		APPROVED	AA		



SECTION B-B(P3)





CLIENT :


**NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.**
1st & 2nd Floor,
Tower A, World Trade Centre, Nauroji Nagar,
New Delhi – 110029
Contact No : 011-26768950

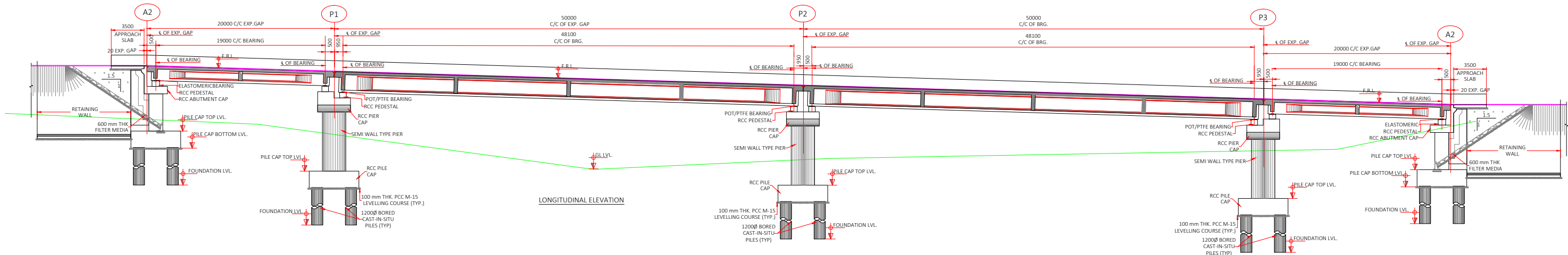
CONSULTANT :

Global Infra Solutions
in JV with **Dhruv Consultancy Services Limited** and
association with **Infycons Creative Software Pvt. Ltd.**
F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039
e: globalinfrasolutions@gmail.com web: globalinfrasolutions.org

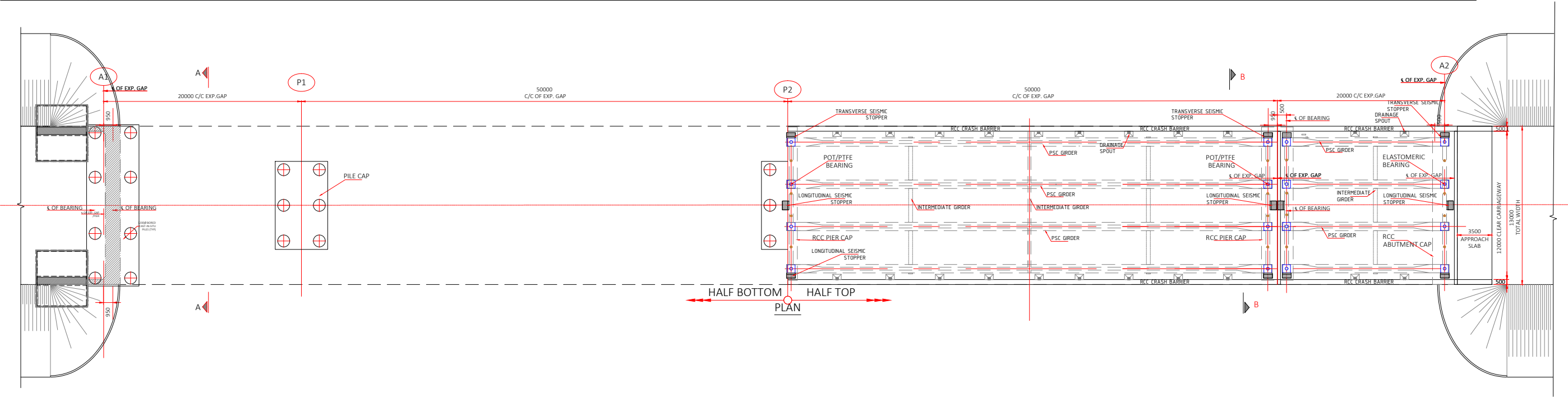
PROJECT TITLE :

IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

REV	DATE	DESCRIPTION	<p align="center">DRAWING TITLE :-</p> <p align="center">GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED VIADUCT FROM SPAN 2X50.0M @ CH-6+385 & CH 6+485</p>
DGN.	NAME	SIG.	
DRAWN			
CHECKED			
APPROVED			
DRAWING NO. : GSI/HH/DC/PP/NS/GA/119			<p align="center">(SHEET NO. - 03 TO 03)</p>
SCALE : NOT TO SCALE			



LOCATION	A1	P1	P2	P3	A2
CHAINAGE	6+767	6+787	6+837	6+887	6+907
FRL LVL.	1262.175	1261.675	1260.425	1259.173	1258.534
BED LVL.	1241.690	1232.071	1229.643	1252.977	1260.993
PILE CAP TOP LVL.	1241.19	1231.571	1229.143	1252.477	1260.493
PILE CAP BOTTOM LVL.	1239.39	1229.771	1227.343	1250.677	1258.693
EACH PILE DEPTH	20.00	20.00	20.00	20.00	20.00
FOUNDATION LVL.	1219.39	1209.771	1207.342	1230.677	1238.693

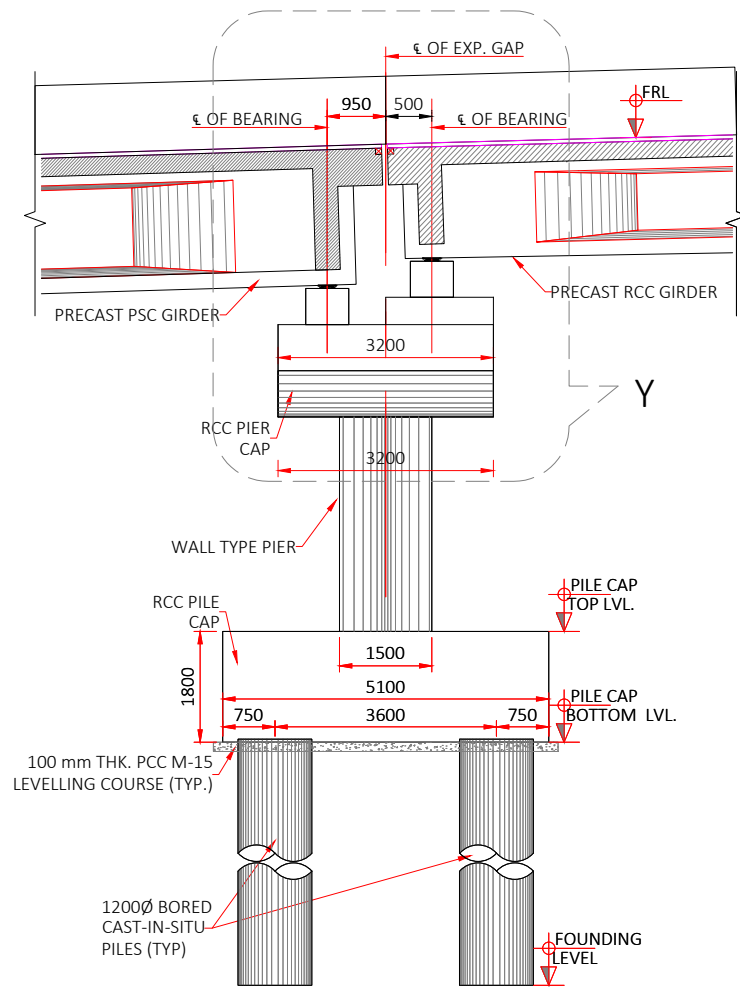




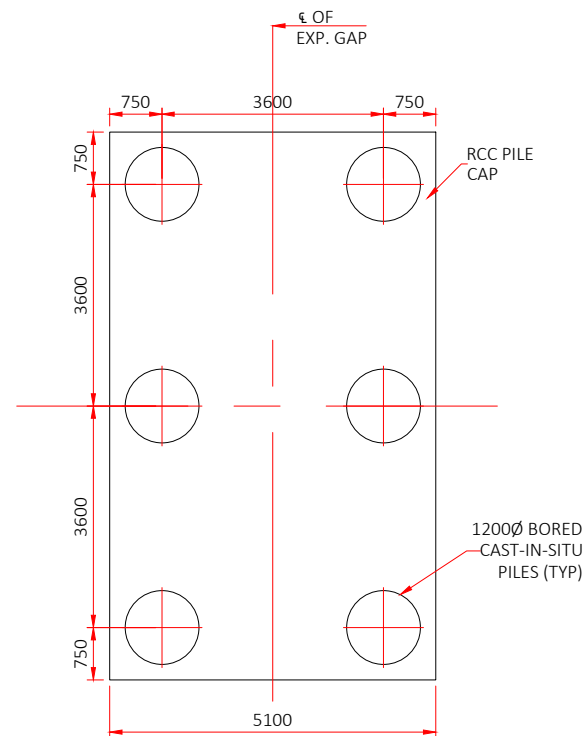
- NOTES :**
- GENERAL**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DRAWING SHALL BE SCALED.
 2. THE DESIGN IS ACCORDING TO THE FOLLOWING CODES.
IRC:5-2024 IRC:6-2017
IRC:78-2024 IRC:112-2020
 3. FOLLOWING LOADS HAVE BEEN CONSIDERED IN DESIGN.
 4. LIVE LOADS ONE LANE OF CLASS 70 R + ONE LANE OF CLASS A OR THREE LANE OF CLASS A TRANS WHICHEVER PRODUCE WORST EFFECT.
 5. DENSITY OF BITUMEN COAT HAS BEEN ASSUMED AS 2.2 T/M
 6. DRAINAGE SPOUT USED SHALL BE AS PER M.O.S.T STANDARD DRAWING NO. SD/205 & IRC 5:2024
 7. CRASH BARRIER OF THE SUPER STRUCTURE SHALL BE ADOPTED FROM IRC:5:2024
 8. WEARING COAT AS PER MORT&H STANDARD 5TH REVISION CLAUSE 2702.1 AND HAVING UNI DIRECTIONAL CAMBER FOR EACH TWO LANE AS PER CLAUSE 7.14. IRC SP:84-2009.
 9. STRIP TYPE EXPANSION JOINT SHALL BE USED FOR EXPANSION JOINT AND SHALL CONFIRM TO IRC SP:69:2011.
 10. APPROACH SLAB SHALL BE AS PER IRC:5 AND SECTION 2704 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 11. 600 MM THICK FILTER MEDIA SHALL BE PROVIDED AS PER APPENDIX - 6 OF IRC SP: 78-2024.
- MATERIALS:**
12. GRADE OF CONCRETE SHALL CONFIRM TO CLAUSE 6.4 OF IRC 112-2020 AND ARE AS FOLLOWS:

PCC LEVELING COURSE	M15	RCC CAST-IN-SITU PILE	M35
RCC ABUTMENT / PIER	M35	RCC DECK SLAB	M40
RCC ABUTMENT CAP / PIER CAP	M35	RCC CRASH BARRIER	M40
RCC PEDESTAL	M45	PRECAST PSC GIRDER	M45
 13. REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS OF FE-500D, CONFIRMING TO CLAUSE 6.2 OF IRC 112-2020 & IS-1786-2008.
 14. WATER TO BE USED IN CONCRETING AND CURING SHALL CONFIRM TO CLAUSE 18.4.5 OF IRC 112-2020.
 15. THE GRANULAR FILL BEHIND ABUTMENT SHALL BE AS PER CLAUSE 305.2 OF MORT&H SPECIFICATIONS (FIFTH REVISION) ($\phi=30^\circ$, $\delta=20^\circ$, $v=1.8$) AND APPENDIX 6, IRC 78-2024.
 16. SIDE SLOPE OF ROAD EMBANKMENT NEAR ABUTMENTS SHALL BE IN SLOPE 1V:1.5H & SHALL BE PROVIDED WITH 300 THICK STONE REVETMENT AND 150 THICK FILTER MEDIA CONFORMING TO CLAUSE 2500 & 2504 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 17. 100 MM DIA A.C. PIPE WEEP HOLES SHALL BE PROVIDED @ 1.0 M C/C HORIZONTALLY & VERTICALLY STAGGERED 100 mm ABOVE LOWEST WATER LEVEL OR LOWEST BED LEVEL WHICH IS HIGHER AT SLOPE 1:20 AS PER IRC 78-2024 & CLAUSE 2706 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 18. AGGREGATE SIZE SHALL BE AS PER CLAUSE 302.3.3 OF IRC:21,2000.
 19. SAFE LOAD CARRYING CAPACITY FOR PILES : 300.0 Ton.
- CONSTRUCTION**
20. FRL LEVELS SHOULD BE READ IN CONJUNCTION WITH HIGHWAY PLAN AND PROFILE. IN CASE OF DISPARANCY HIGHWAY PLAN AND PROFILE SHOULD BE FOLLOWED IN CONSULTATION WITH DESIGNER AND APPROVING AUTHORITY.
 21. THE PROTECTIVE WORKS SHALL BE COMPLETED AS PER CLAUSE 2104.3 AND SECTION 2500.
 22. THE CONSTRUCTION AGENCY SHOULD ENSURE THAT THE NECESSARY PERMISSIONS HAS BEEN OBTAINED FROM ROAD & IRRIGATION AUTHORITY IF REQUIRED FOR DIVERTING THE TRAFFIC TEMPORARILY PRIOR TO COMMENCING THE WORK.
 23. NECESSARY SUITABLE SHORING AND STRUTTING SHALL BE PROVIDED FOR CASTING OF STRUCTURAL MEMBERS AND OTHER PLACE WHEREVER REQUIRED AND DETAILED DRAWING SHALL BE SUBMITTED BY THE CONTRACTING AGENCY.
 24. IF ANY AMBIGUITY FOUND IN DRAWINGS OR AT SITE BRING IT TO DESIGNER'S NOTICE BEFORE EXECUTION.
 25. EXCAVATION SHOULD BE DONE AS PER SECTION 304 OF MORT&H SPECIFICATIONS (FIFTH REVISION).
 26. IF HARD STRATA FOUND AT SITE, ACC. TO CLAUSE 705.2.2, IRC:78-2024, MINIMUM EMBEDMENT OF FOUNDATION SHALL BE MINIMUM OF AS FOLLOWS OR SHOWN IN DRAWINGS:

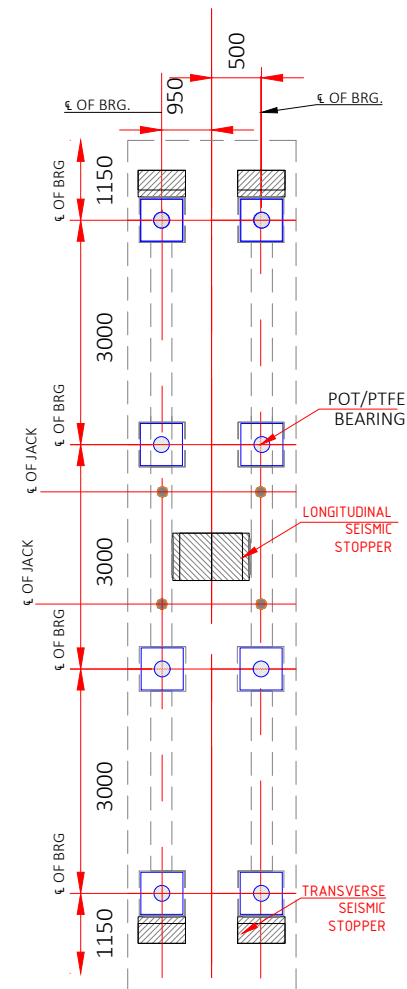
IN HARD ROCK	0.6 m
IN SOFT ROCK	1.5 m
SOIL	2.0 m
 27. IN CASE OF FOUNDATION IN ROCK, THE TRENCHES AROUND THE FOOTING SHALL BE FILLED UP WITH M-15 GRADE OF CONCRETE UP TO THE TOP OF THE ROCK.
 28. BEFORE COMMENCEMENT OF EXECUTION OF WORK CROSS SECTION AS THE SITE SHALL BE TAKEN BY PRECISION SURVEY & ABUTMENT AND PIER POSITION SHOWN IN TECHNICALLY SANCTIONED DRAWING SHALL BE VERIFIED ON SITE IN CASE OF ANY DISCREPANCY OR DOUBT CLARIFICATION SHALL BE OBTAINED FROM COMPETENT AUTHORITY BEFORE HAND.



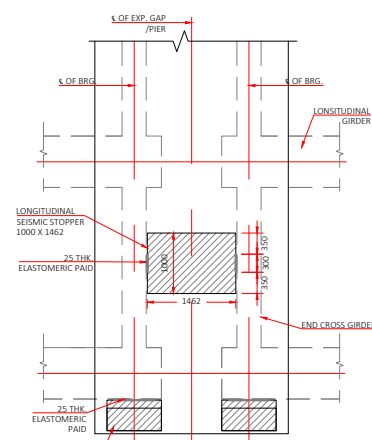
DETAIL OF PIER



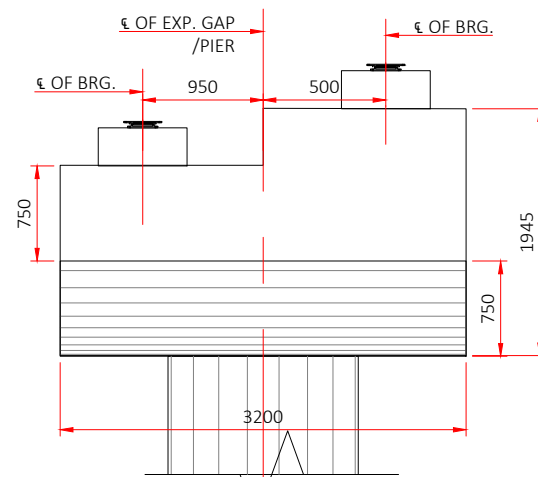
TOP PLAN OF PILE CAP AT PIER



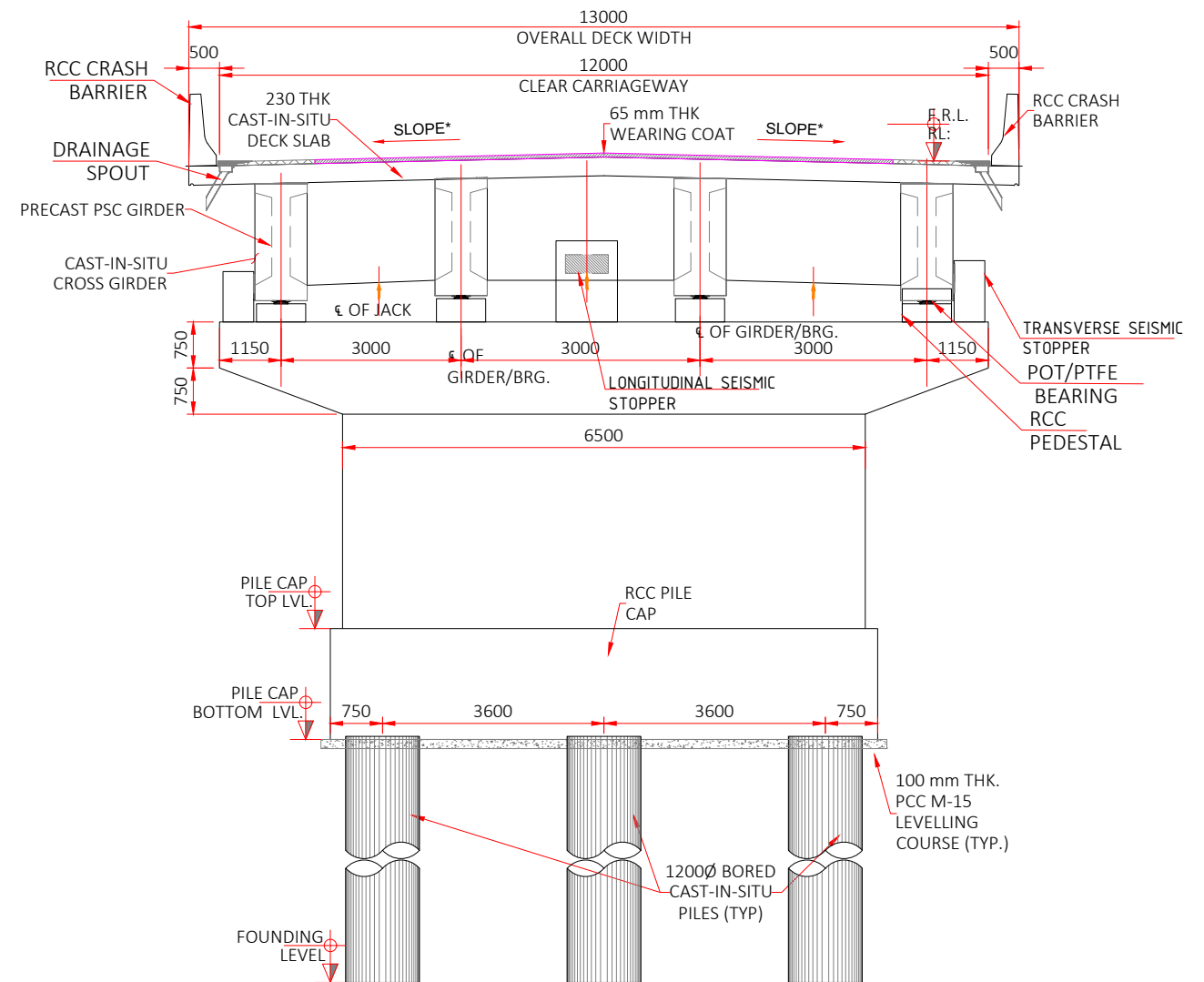
TOP PLAN OF PIER CAP



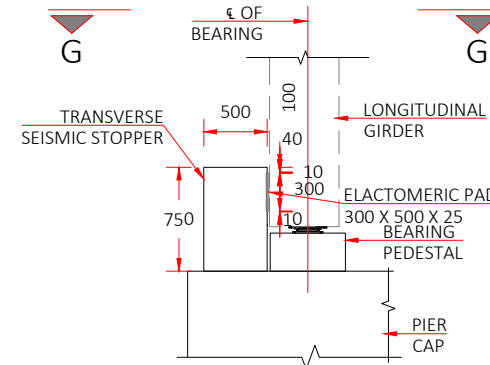
DETAIL OF SEISMIC STOPPER



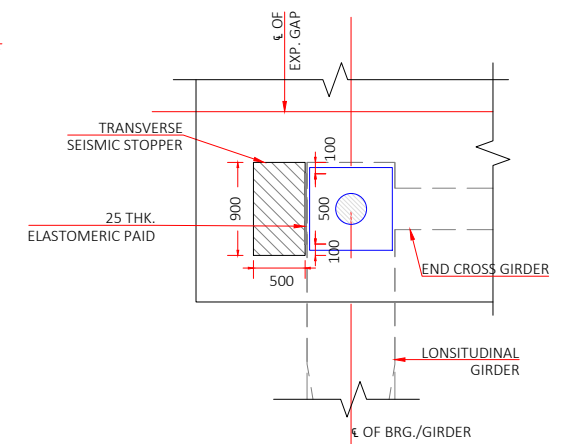
DETAIL-Y



SECTION B-B



DETAIL-2



DETAIL-G-G

CLIENT :

NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
1st & 2nd Floor,
Tower A, World Trade Centre, Nauroji Nagar,
New Delhi - 110029
Contact No : 011-26768950

CONSULTANT :

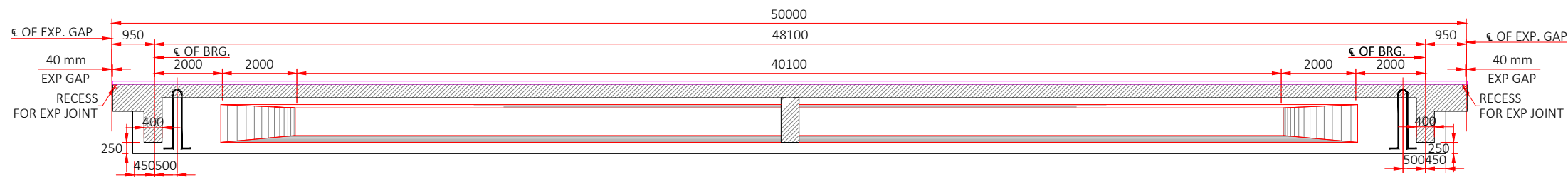
Global Infra Solutions
in JV with **Dhruv Consultancy Services Limited** and
association with **Infycons Creative Software Pvt. Ltd.**
F-2, E-8/11A, Sukhsagar Apartment, Tilanga, Bhopal -462039
e: globalinfra@infraconsultants@gmail.com web: globalinfraconsultants.org

PROJECT TITLE :

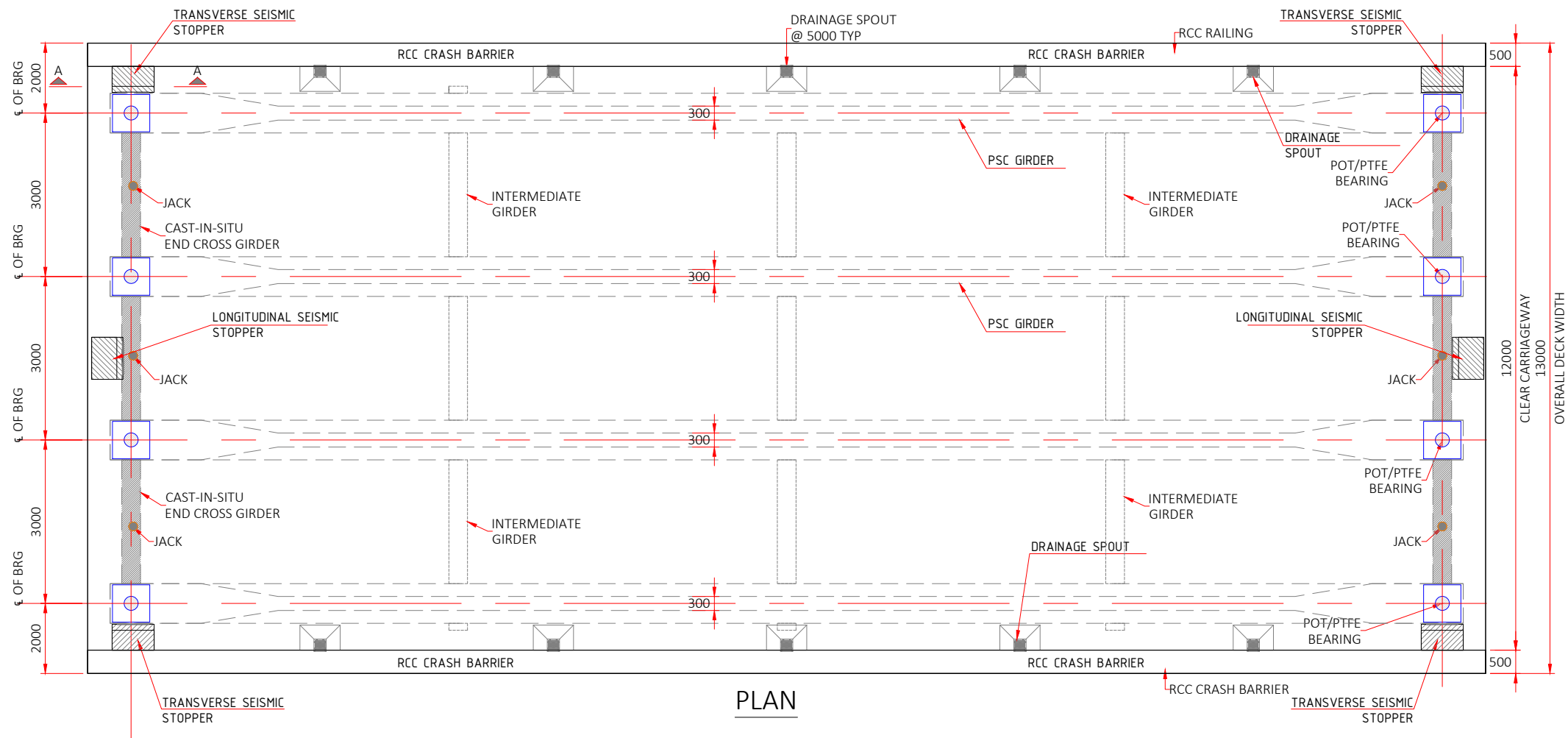
IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED VIADUCT FROM SPAN ARRANGEMENT OF 1x20+2x50+1x20M @ CH-6+812
			SHEET-03 OF 04
			DRAWING No. : GSI/INDCL/PYNS/SL/GAD/20
			SCALE : NOT TO SCALE

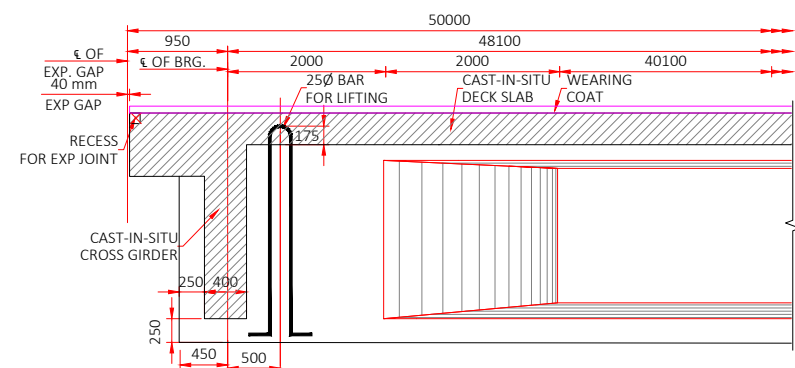




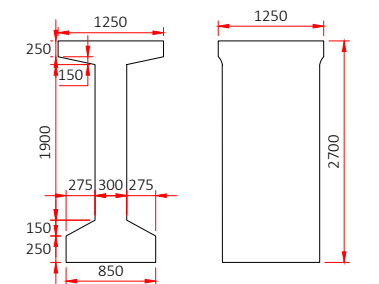
LONGITUDNAL ELEVATION



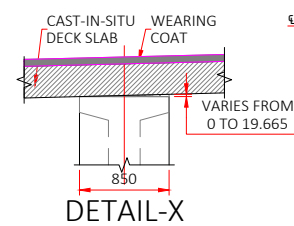
PLAN



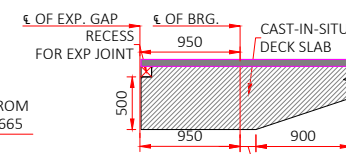
TYPICAL DETAIL OF LIFTING ARRANGEMENT



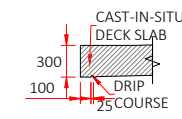
AT MID SPAN AT SUPPORT
DETAIL OF PSC GIRDER



DETAIL-X



SECTION A-A



DETAIL-Y

- NOTES:-
1. ALL DIMENSIONS ARE IN m. UNLESS OIHERWISE MENTIONED.
 2. PROPOSED STRUCTURE IS DESIGNED FOR ONE LANE OF I CLASS 70+R ONE LANE OF CLASS A TRANS WITCHEVER PRODUCE WORST EFFECT.
 3. CONCRETE SHALL BE DESIGN MIX AND HAVE MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 35 MPa ON 150mm CUBES FOR PRECAST PSC GIRDER, DECK SLAB, END CROSS GIRDERS AND 40 MPa FOR CRASH BARRIERS.
 4. THE LOCATION OF JACKS FOR LIFTING OF THE SUPERSTRUCTURE TO REPLACE BEARINGS ETC. IS SHOWN. THUS THIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE END DIAPHRAGM AND ABUTMENT CAP.
 5. THE REINFORCING STEEL SHALL BE OF TMT (GRADE FE 500D) BAR CONFORMING TO IS:1786:2008.
 6. CLEAR COVER TO OUTERMOST STEEL IS 50mm.
 7. DURING THE LIFTING OPERATION OF SUPERSTRUCTURE ALL THE JACKS PLACED UNDER THE END DIAPHRAGM IN LINE WITH THE BEARINGS SHALL BE OPERATED SIMULTANEOUSLY USING SINGLE OPERATING CONSOLE, GROUPING THE PUMP AND CONTROL SYSTEM SO AS TO ENSURE THAT THE REACTIONS ON ALL THE JACKS ARE EQUAL AT ALL TIMES.
 8. PRECAST GIRDERS SHALL BE CAST IN ONE CONCRETING OPERATION IN CASTING YARD WITHOUT ANY CONSTRUCTION JOINT.
 9. TOP SURFACE OF THE GIRDERS ALONG WITH FACE OF PRECAST CROSS GIRDER SHALL BE HACKED TO REMOVE THE LAITANCE BEFORE ERECTION AT SITE.
 10. ADEQUACY AND STRENGTH OF 25Ø BAR HOOK MAY BE GOT CHECKED BEFORE LIFTING GIRDERS.

LEGENDS

	CAST-IN-SITU PORTION
	BEARING IN PLAN
	BEARING IN ELEVATION
	JACK LOCATION IN PLAN
	JACK LOCATION IN SECTION
	CONSTRUCTION JOINT

CLIENT :



**NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.**
1st & 2nd Floor,
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Contact No : 011-26768950

CONSULTANT :

Global Infra Solutions
in JV with **Dhruv Consultancy Services Limited** and
association with **Infycons Creative Software Pvt. Ltd.**
F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039
e: globalinfraolutions@gmail.com web: globalinfraolutions.org



PROJECT TITLE :

**IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40
BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING
DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE
UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).**

REV	DATE	DESCRIPTION	DRAWING TITLE :-
			GENERAL ARRANGEMENT DRAWING FOR NEW PROPOSED VIADUCT FROM SPAN ARRANGEMENT OF 1x20+2x50+1x20M @ CH-6+812
			SHEET-04 OF 04
DGN.		NAME	SIG.
DRAWN			
CHECKED			
APPROVED			
			DRAWING No. : GIS/IN/HIDCL/PYNSUB/ROAD 20
			SCALE : NOT TO SCALE

MISCELLANEOUS






			CLIENT:	 <p>NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. 1st & 2nd Floor, Tower A, World Trade Centre, Nauraji Nagar, New Delhi – 110029 Contact No : 011-26768950 Email Address : info@nhidcl.com</p>	 <p>DESIGN CONSULTANT:</p> <p>Global Infra Solutions in JV with Krishna Techno Consultants Pvt. Ltd. and association with Infycons Creative Software Pvt. Ltd. F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal- 462039 e: globalinfraconsultants@gmail.com web: globalinfraconsultants.org</p>	<p>PROJECT:</p> <p>IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).</p>	<p>SCALE AT A3 SIZE DRAWING</p> <p>Not to scale Dimensions as mentioned</p>	<p>TITLE:</p> <p><u>MISCELLANEOUS</u></p>	CLIENT APPROVAL:		SEAL & SIGNATURE:	
REV.	DATE	REVISIONS	DWG NO:-						DRAWN:	CHECKED:	DESIGNED:	APPROVED:
				LK	SJ	SY	SC					



NOTES:






1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
2. MIN. 600 MM THK. FILTER MEDIA SHALL BE PROVIDED BEHIND BREAST WALL ABOVE GROUND LEVEL.
3. 100 ϕ WEEP HOLES WITH A.C. PIPE @ 1.0 M C/C VERTICALLY & HORIZONTALLY STAGGERED SHALL BE PROVIDED ABOVE G.L.
4. WALL GEOMETRY: FRONT FACE INCLINED, BACK FACE INCLINED, BASE INCLINED WITH HILL.
5. BACKFILL TOP: INCLINED WITH SURCHARGE

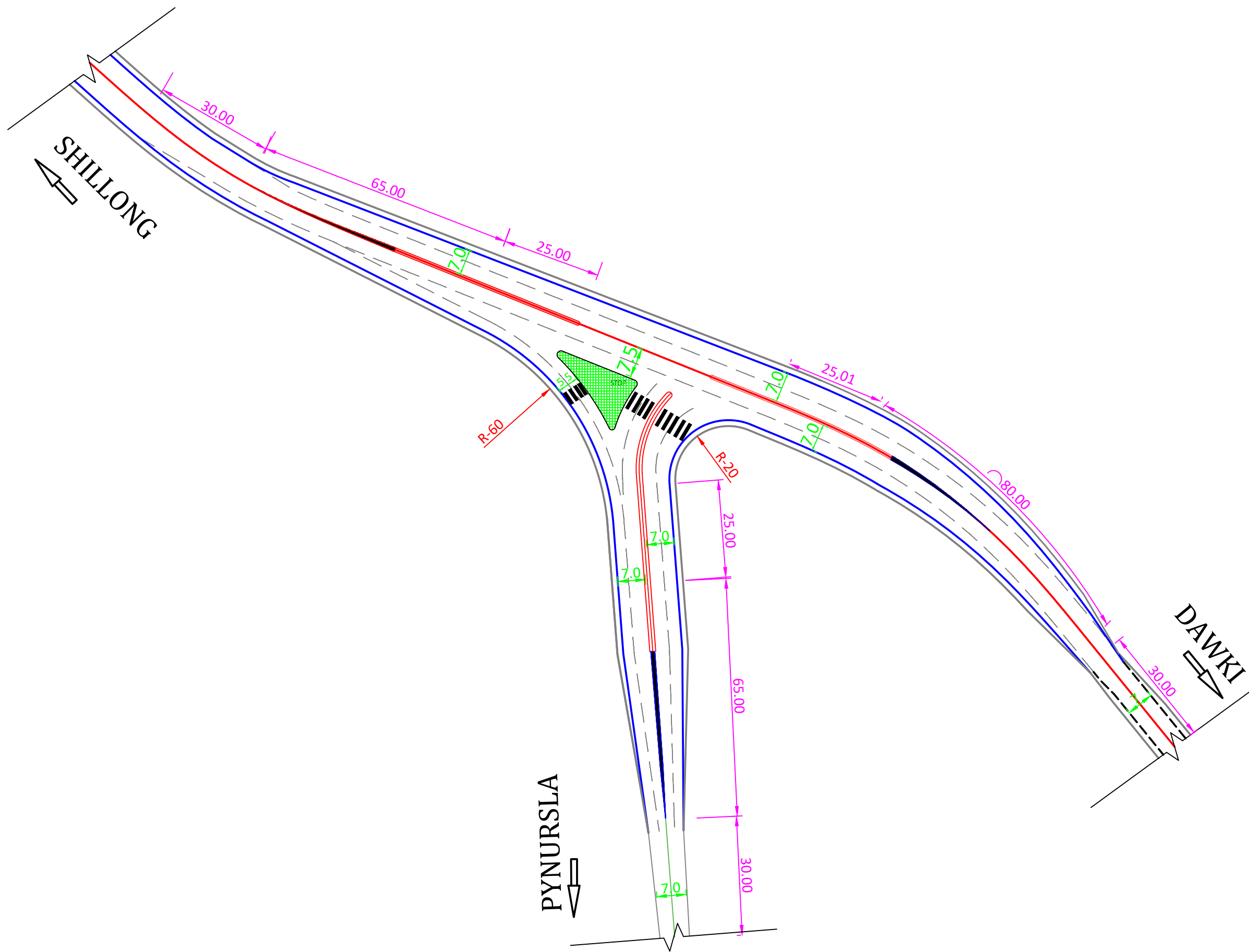
			CLIENT:	 NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. 1st & 2nd Floor, Tower A, World Trade Centre, Nauroji Nagar, New Delhi – 110029 Contact No : 011-26768950 Email Address : info@nhidcl.com		DESIGN CONSULTANT:	 Global Infra Solutions in JV with Krishna Techno Consultants Pvt. Ltd. and association with Infycons Creative Software Pvt. Ltd. F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal -462039 e: globalinfraolutions@gmail.com web: globalinfraolutions.org		PROJECT:	IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UPTO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).		SCALE AT A3 SIZE DRAWING	Not to scale Dimensions as mentioned		TITLE:	<div style="text-align: center; font-size: 2em; font-weight: bold; color: red;"><u>MISCELLANEOUS</u></div>		CLIENT APPROVAL:	SEAL & SIGNATURE:	
REV.	DATE	REVISIONS																		
																DWG NO:-				
																DRAWN: LK		CHECKED: SJ	DESIGNED: SY	APPROVED: SC



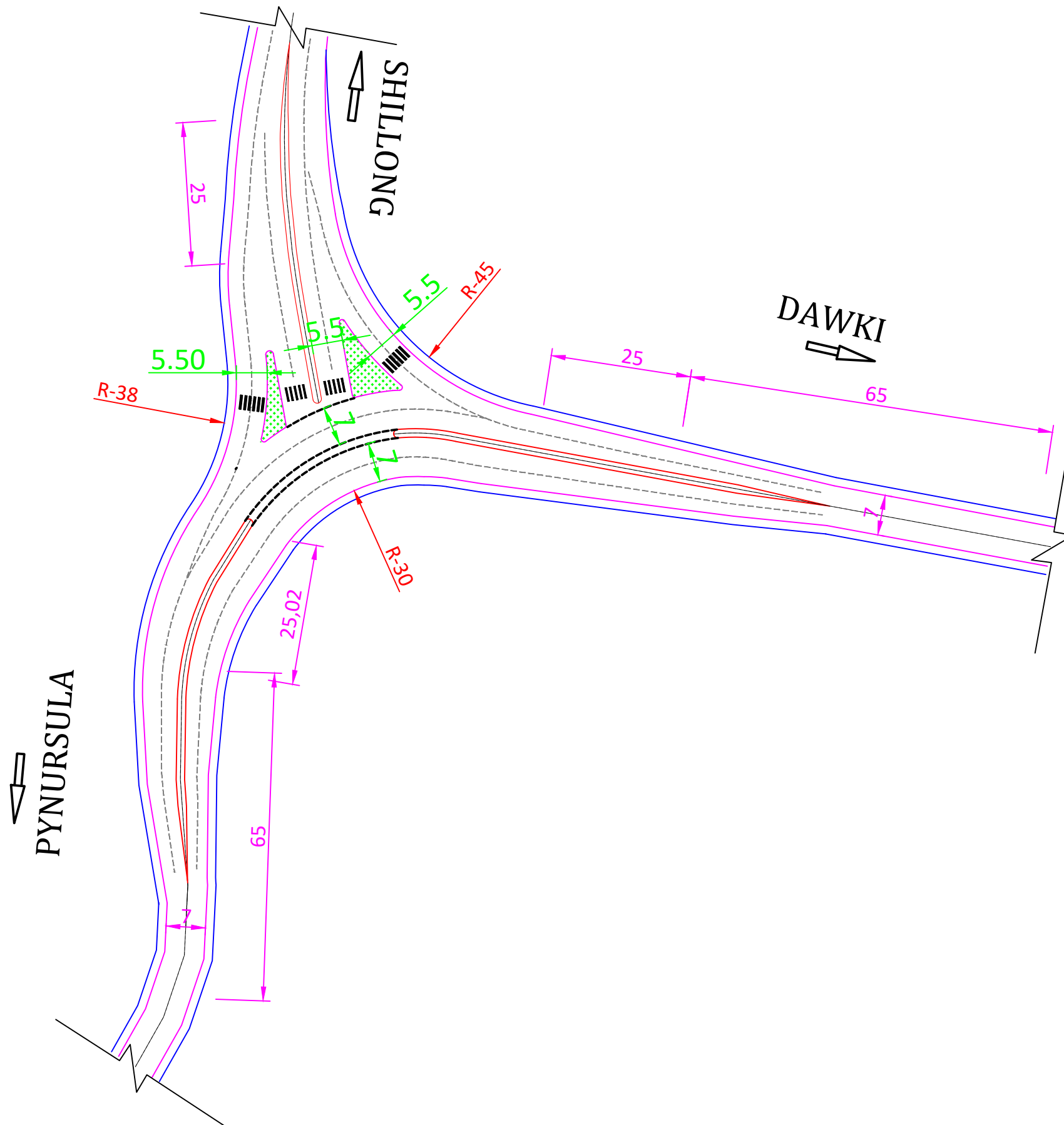
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
2. MIN. 600 MM THK. FILTER MEDIA SHALL BE PROVIDED BEHIND BREAST WALL ABOVE GROUND LEVEL.
3. BACKFILLING BEHIND BOX SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC: 78-2014 HAVING PROPERTIES DENSITY=2 T/CUM, PHI=30, DELTA=15
4. 100 Ø WEEP HOLES WITH A.C. PIPE @ 1.0 M C/C VERTICALLY & HORIZONTALLY STAGGERED SHALL BE PROVIDED ABOVE G.L.

			CLIENT:	 NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. 1st & 2nd Floor, Tower A, World Trade Centre, Nareoji Nagar, New Delhi – 110029 Contact No : 011-26768950 Email Address : info@nhidcl.com		DESIGN CONSULTANT:  Global Infra Solutions in JV with Krishna Techno Consultants Pvt. Ltd. and association with Infycons Creative Software Pvt. Ltd. F-2, E-8/11A, Sukhsagar Apartment, Trilanga, Bhopal-462039 e: globalinfraolutions@gmail.com web: globalinfraolutions.org	PROJECT: IMPROVEMENT TO 2-LANE WITH PAVED SHOULDER/4-LANING OF NH-40 BETWEEN SHILLONG TO DAWKI ROAD UP TO BANGLADESH BORDER INCLUDING DAWKI BRIDGE IN THE STATE OF MEGHALAYA FOR EXECUTION OF EPC MODE UNDER JICA FUNDING.(DESIGN LENGTH 7.760 KM (PACKAGE-III)).	SCALE AT A3 SIZE DRAWING Not to scale Dimensions as mentioned	TITLE: <div>MISCELLANEOUS</div>	<table><tr><td colspan="2">CLIENT APPROVAL:</td><td colspan="2">SEAL & SIGNATURE:</td></tr><tr><td colspan="4"></td></tr><tr><td colspan="2">DWG NO:-</td><td colspan="2"></td></tr><tr><td>DRAWN: LK</td><td>CHECKED: SJ</td><td>DESIGNED: SY</td><td>APPROVED: SC</td></tr></table>	CLIENT APPROVAL:		SEAL & SIGNATURE:						DWG NO:-				DRAWN: LK	CHECKED: SJ	DESIGNED: SY	APPROVED: SC
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REV.	DATE	REVISIONS					CH-1+400		<div>DWG NO. GLOBAL/NHIDCL/MH/2024/</div> <div>DRAWN: Priyanka</div> <div>CHECKED: SJ</div> <div>DESIGNED: SC</div> <div>APPROVED: LA</div>	



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REV.	DATE	REVISIONS					CH-7+760		DWG NO: GLOBAL/NHIDCL/MH/2024/	DRAWN: Priyanka	CHECKED: SJ	DESIGNED: SC