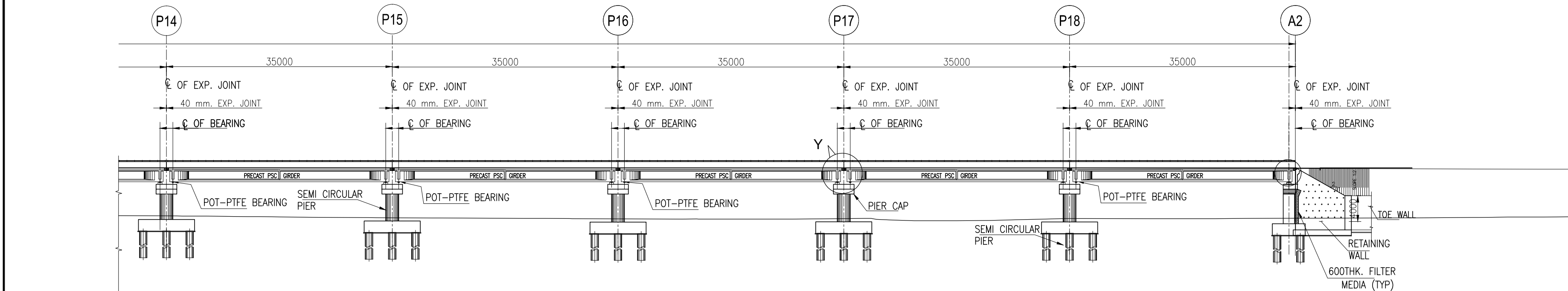


← TO DIGBOI

TO MARGHERITA →

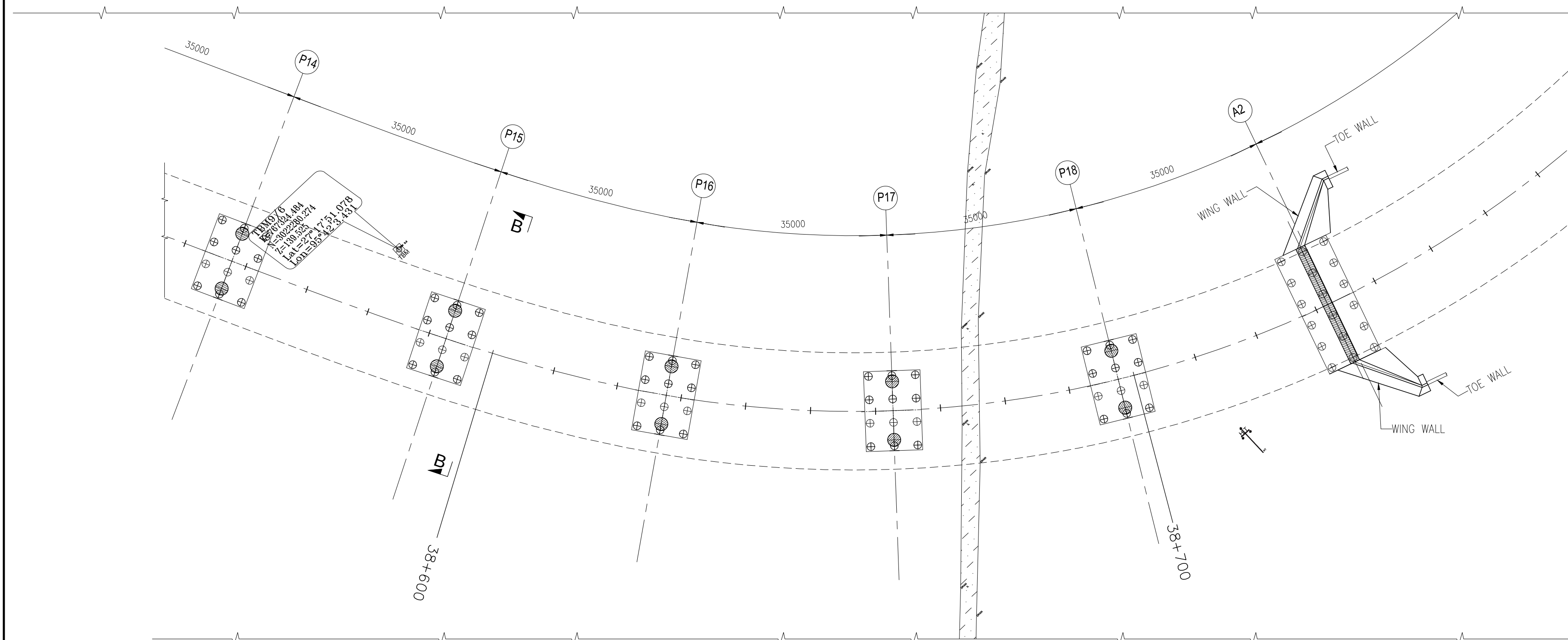


DATUM. = 124.00m

PROPOSED FRL	147.00	147.00	146.994	146.970	146.927	146.867
EGL AT CENTER	139.543	139.258	139.258	139.121	139.142	139.142
DESIGN CHAINAGE	38+557.5	38+592.5	38+627.5	38+662.5	38+697.5	38+732.5

← TO DIGBOI

TO MARGHERITA →



NOTES:-

FOR NOTE DETAILS REFER DWG NO:
VSPL/2021-033/DFSR/PKG-I/TRB/MJBR-01 (Sht. 05)

CLIENT :



**NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD. (MINISTRY
OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA**

PROJECT :

**CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE IV)**

DESIGN CONSULTANT:

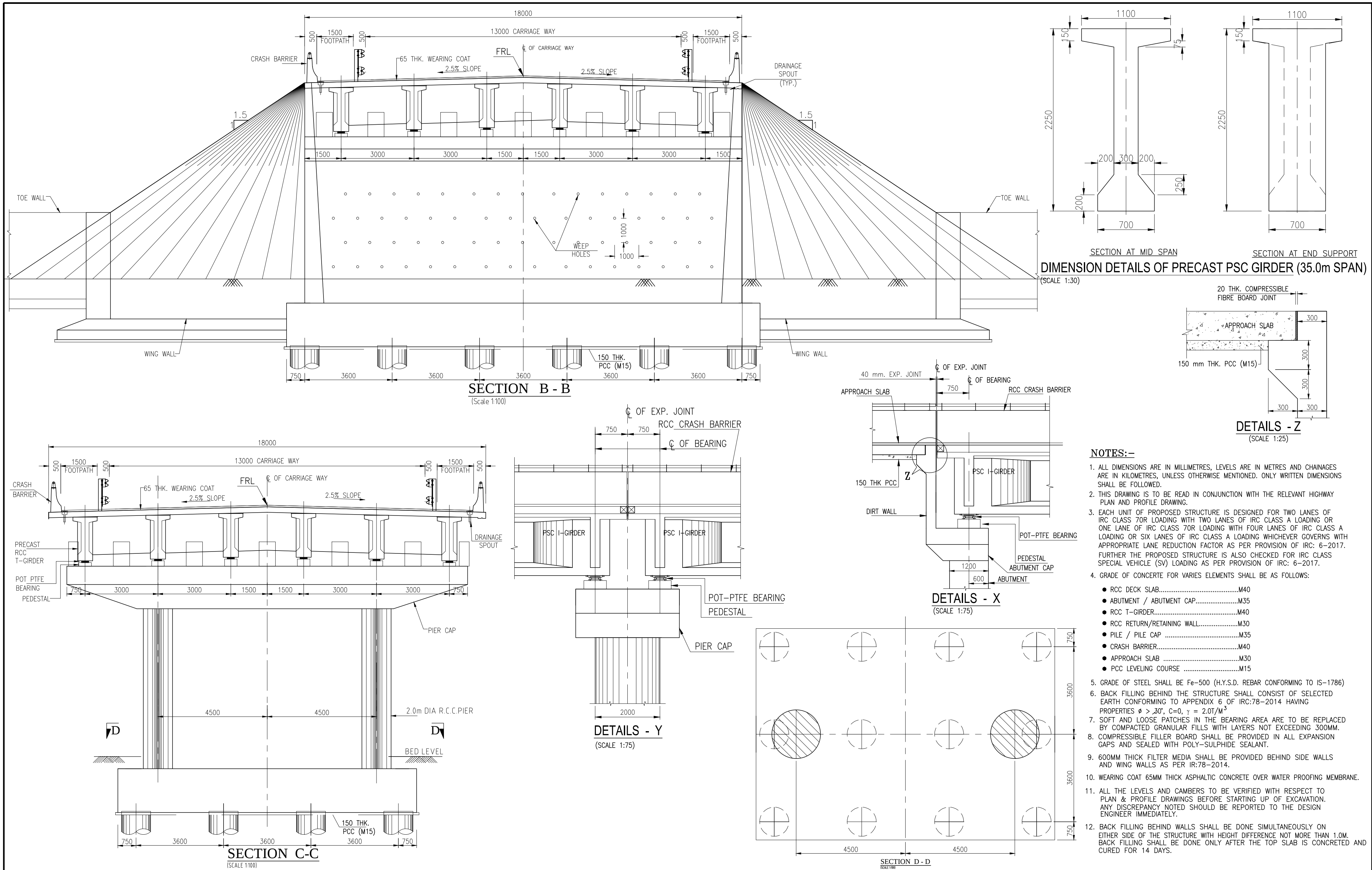
VOYANTS
VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurugram-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

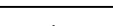
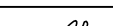
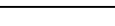
Detaild Project Report

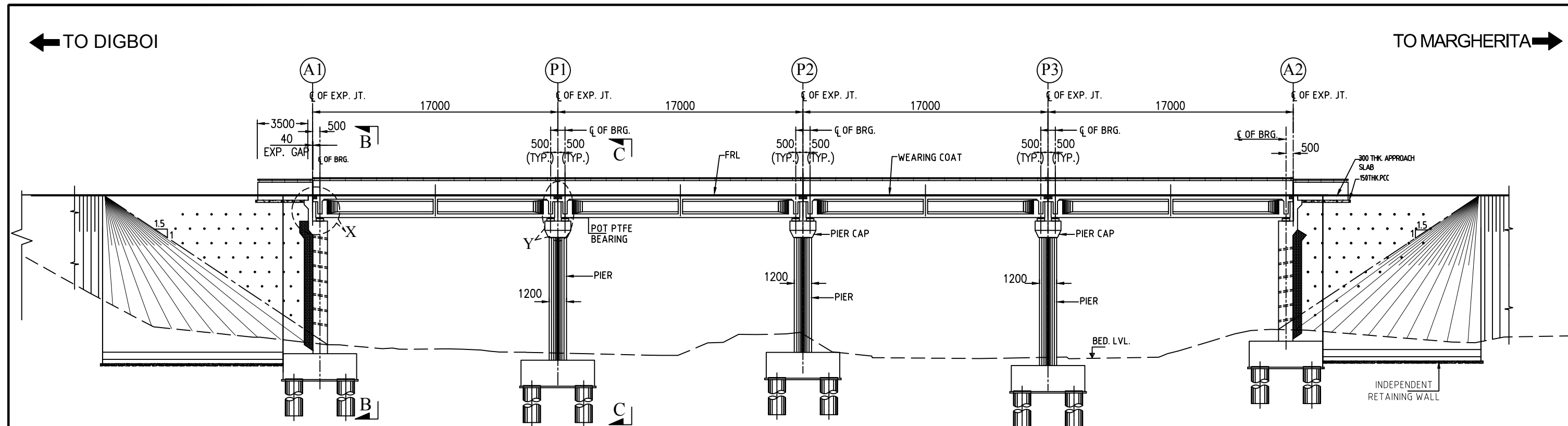
REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
SLM	G. Das	MK	SKC
SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE : GENERAL ARRANGEMENT DRAWING OF MAJOR BRIDGE AT Km. Ch.- 38+400.0		
DRG. No. : VSPL/1718-082/DPR/TRB/PKG-4/SEC-5/MJB-01. (Sht. 4 of 5)		
REVISION:	R0	October, 2022



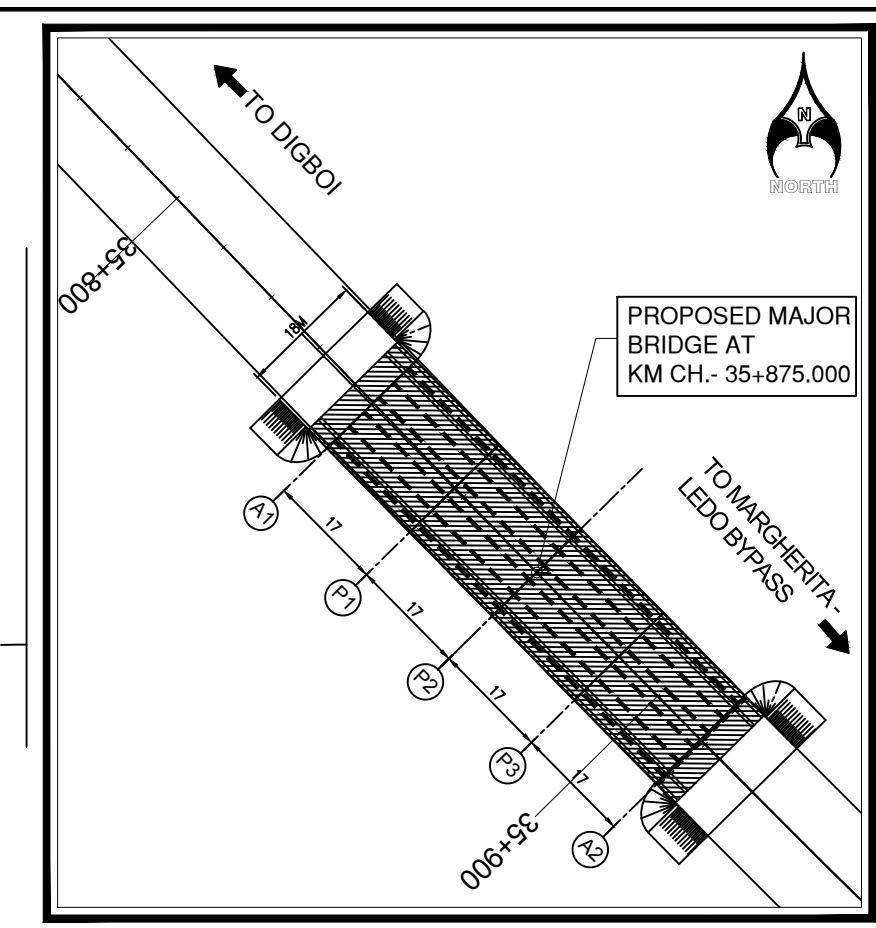
CLIENT :  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA	PROJECT : CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)	DESIGN CONSULTANT:  VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in	Detailed Project Report			DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE : GENERAL ARRANGEMENT DRAWING OF MAJOR BRIDGE AT Km. Ch.- 38+400.0		
						SLM	G. Das	MK	SKC			
												
						SCALE :	AS SHOWN	SHEET SIZE	A2			
			REV.	DATE	DESCRIPTION							DRG. No. :
									REVISION:	R0	October, 2022	



DATUM = 131.00m

PROPOSED FRL	147.586	147.476	147.345	147.193	147.022
BED LEVEL	137.065	136.375	137.698	136.073	137.984
CHAINAGE	35+841.00	35+858.00	35+875.00	35+892.00	35+909.00

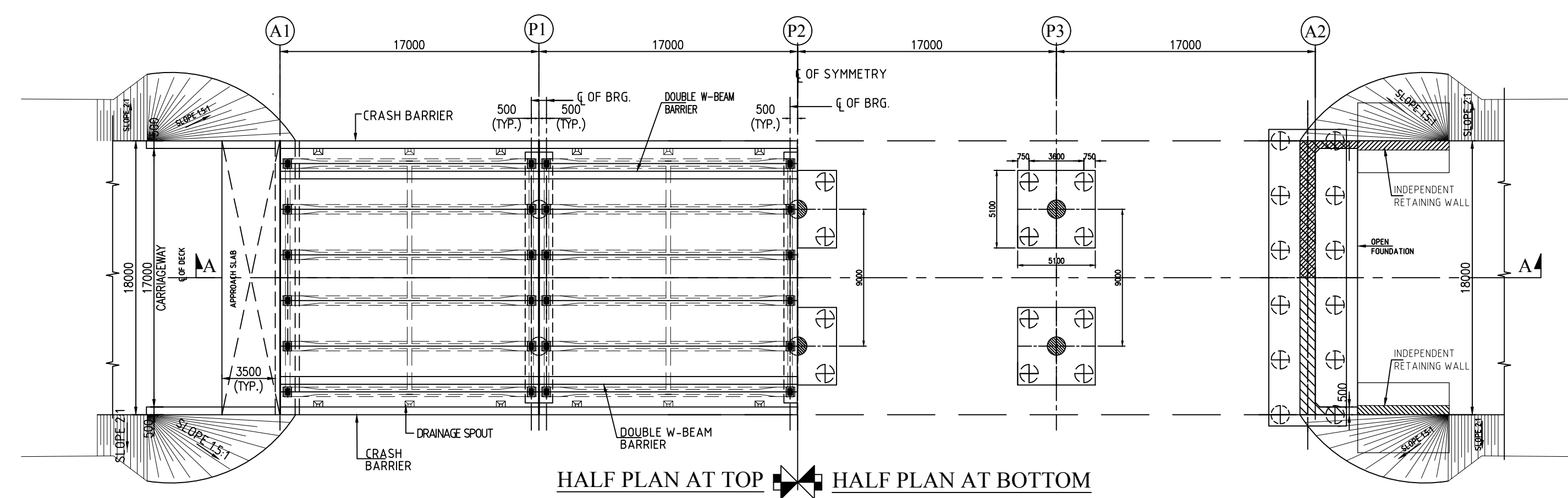
SECTION A-A
(Scale 1:250)



KEY PLAN
(Scale 1:1000)

NOTES:-

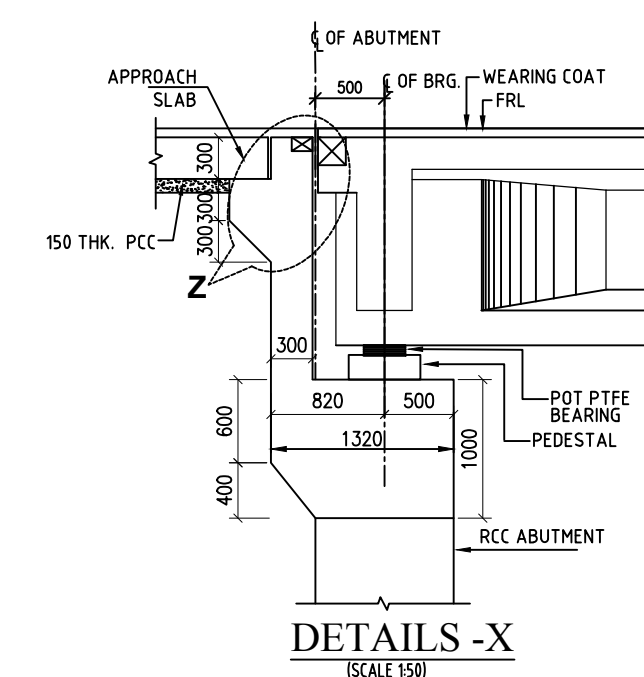
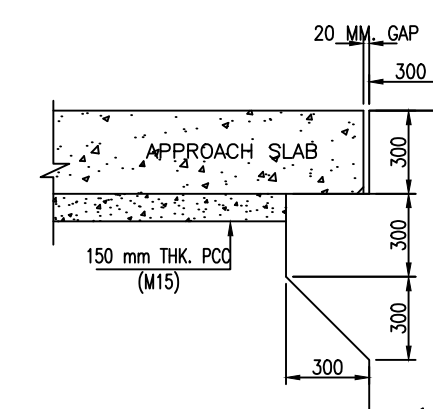
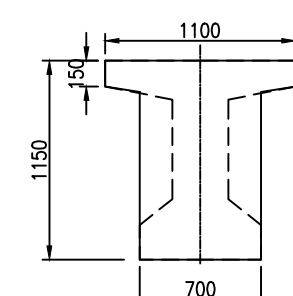
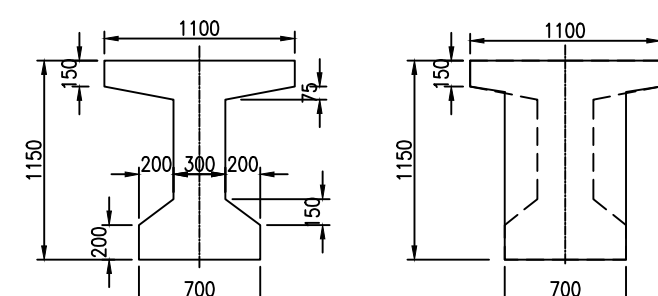
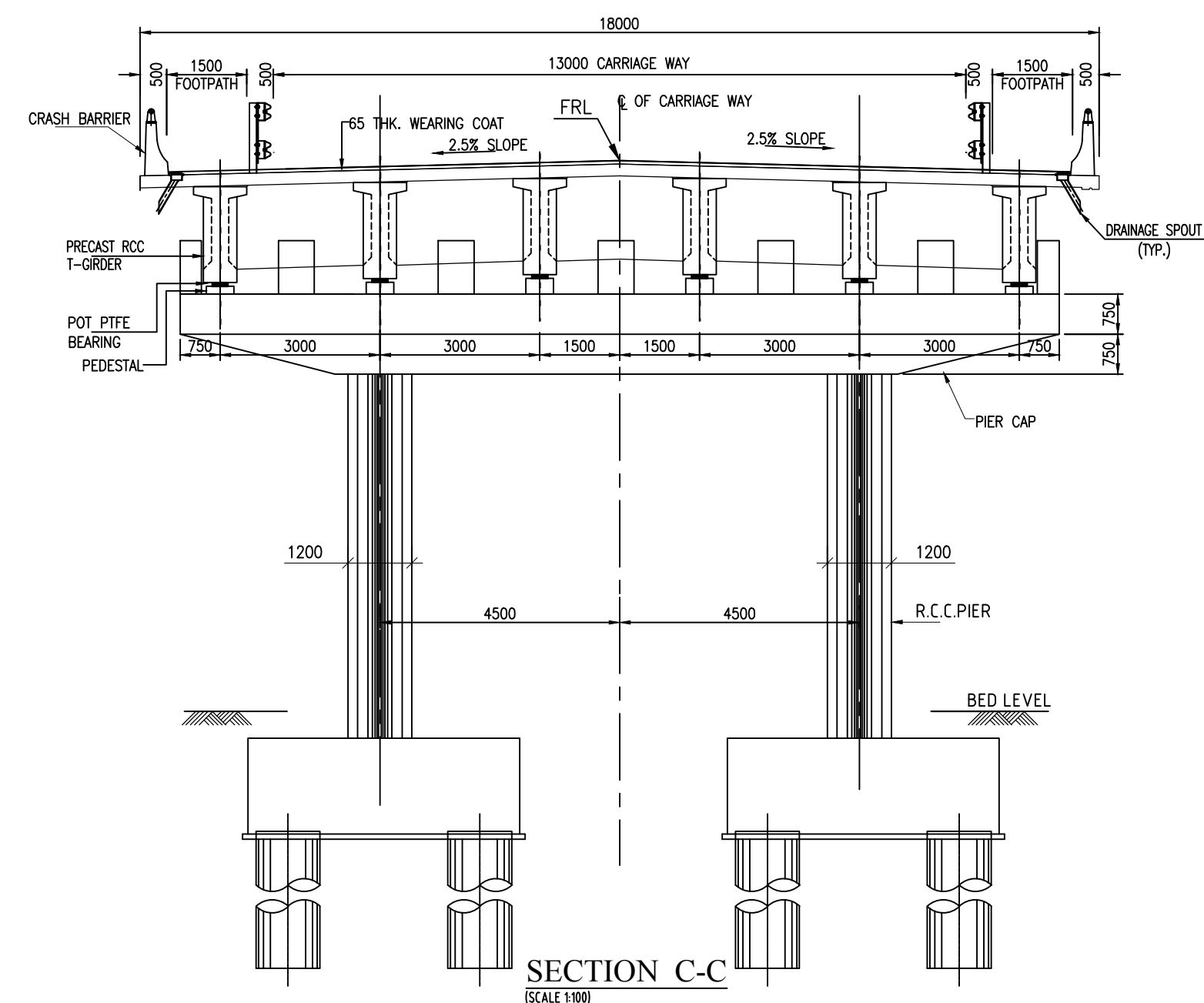
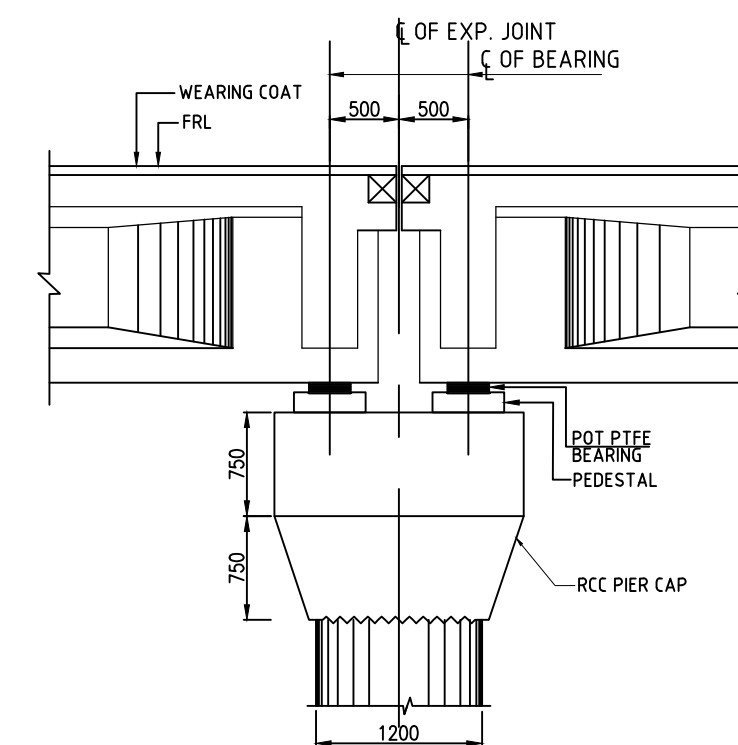
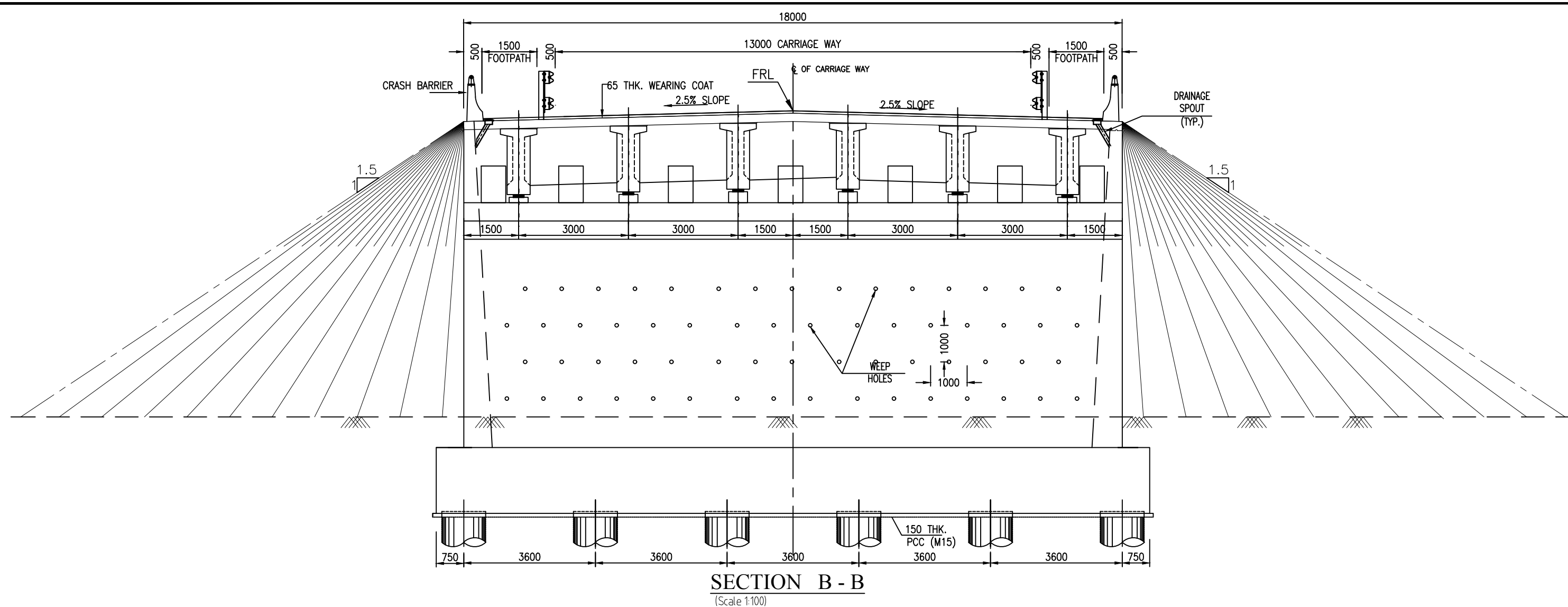
- ALL DIMENSIONS ARE IN MILLIMETRES, LEVELS ARE IN METRES AND CHAINAGES ARE IN KILOMETRES, UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT HIGHWAY PLAN AND PROFILE DRAWING.
- EACH UNIT OF PROPOSED STRUCTURE IS DESIGNED FOR TWO LANES OF IRC CLASS 70R LOADING WITH TWO LANES OF IRC CLASS A LOADING OR ONE LANE OF IRC CLASS 70R LOADING WITH FOUR LANES OF IRC CLASS A LOADING OR SIX LANES OF IRC CLASS A LOADING WHICHEVER GOVERNS WITH APPROPRIATE LANE REDUCTION FACTOR AS PER PROVISION OF IRC: 6-2017. FURTHER THE PROPOSED STRUCTURE IS ALSO CHECKED FOR IRC CLASS SPECIAL VEHICLE (SV) LOADING AS PER PROVISION OF IRC: 6-2017.
- GRADE OF CONCRETE FOR VARIES ELEMENTS SHALL BE AS FOLLOWS:
 - RCC DECK SLAB.....M40
 - ABUTMENT / ABUTMENT CAP.....M35
 - RCC T-GIRDER.....M40
 - RCC RETURN/RETAINING WALL.....M30
 - PILE / PILE CAPM35
 - CRASH BARRIER.....M40
 - APPROACH SLABM30
 - PCC LEVELING COURSEM15
- GRADE OF STEEL SHALL BE Fe-500 (H.Y.S.D. REBAR CONFORMING TO IS-1786)
- BACK FILLING BEHIND THE STRUCTURE SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC:78-2014 HAVING PROPERTIES $\phi > 30^\circ$, $C=0$, $\gamma = 2.0T/M^3$
- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300MM.
- COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.
- 600MM THICK FILTER MEDIA SHALL BE PROVIDED BEHIND SIDE WALLS AND WING WALLS AS PER IR:78-2014.
- WEARING COAT 65MM THICK ASPHALTIC CONCRETE OVER WATER PROOFING MEMBRANE.
- ALL THE LEVELS AND CAMBERS TO BE VERIFIED WITH RESPECT TO PLAN & PROFILE DRAWINGS BEFORE STARTING UP OF EXCAVATION. ANY DISCREPANCY NOTED SHOULD BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY.
- BACK FILLING BEHIND WALLS SHALL BE DONE SIMULTANEOUSLY ON EITHER SIDE OF THE STRUCTURE WITH HEIGHT DIFFERENCE NOT MORE THAN 1.0M. BACK FILLING SHALL BE DONE ONLY AFTER THE TOP SLAB IS CONCRETED AND CURED FOR 14 DAYS.



HALF PLAN AT TOP **HALF PLAN AT BOTTOM**

PLAN
(Scale 1:250)

CLIENT :  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA	PROJECT : CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)	DESIGN CONSULTANT:  VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in	Detaild Project Report		DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE : GENERAL ARRANGEMENT DRAWING OF MAJOR BRIDGE AT Km. Ch.- 35+875.00			
					SLM	G. Das	MK	SKC				
									DRG. No. : VSPL/1718-082/DPR/TRB/PKG-4/SEC-5/MJB-02. (Sht. 1 of 2)			
					SCALE :		AS SHOWN	SHEET SIZE				A2
			REV.	DATE	DESCRIPTION							



NOTES :-

1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN M UNLESS MENTIONED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.

CLIENT :



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DEVELOPMENT CORPORATION LTD. (MINISTRY
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GOVERNMENT OF INDIA**

PROJECT :

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ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
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MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE IV)**

DESIGN CONSULTANT:



VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
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CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detaild Project Report

REV. DATE	DESCRIPTION	

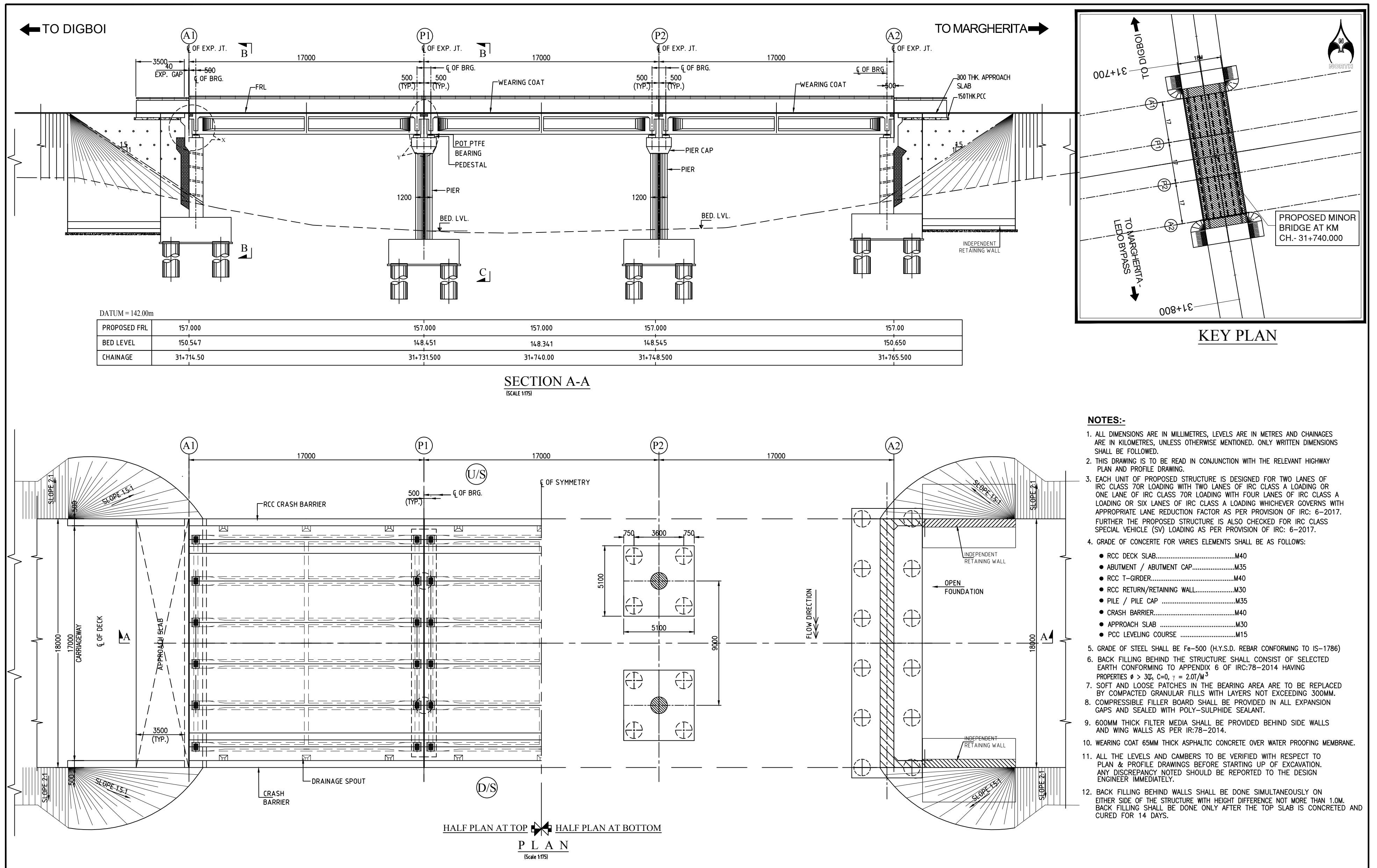
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
SLM	G. Das	MK	SKC
			
SCALE :	AS SHOWN	SHEET SIZE	A2

Y	TITLE :
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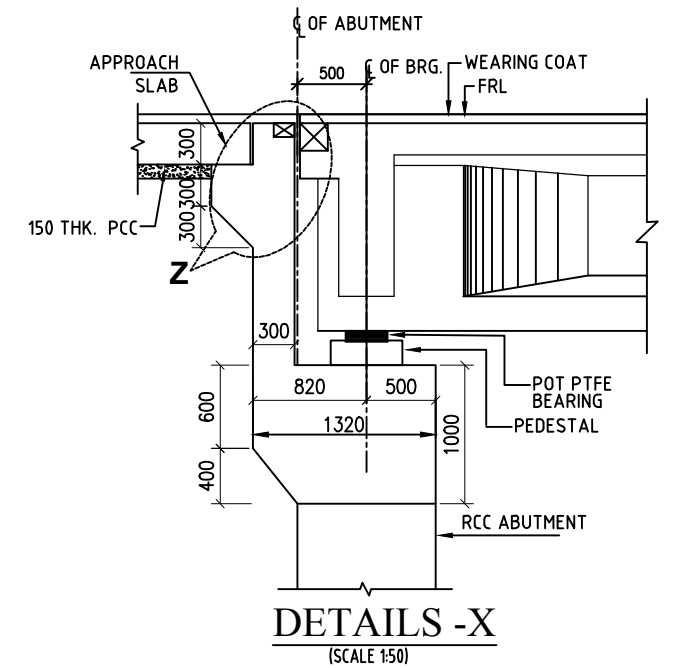
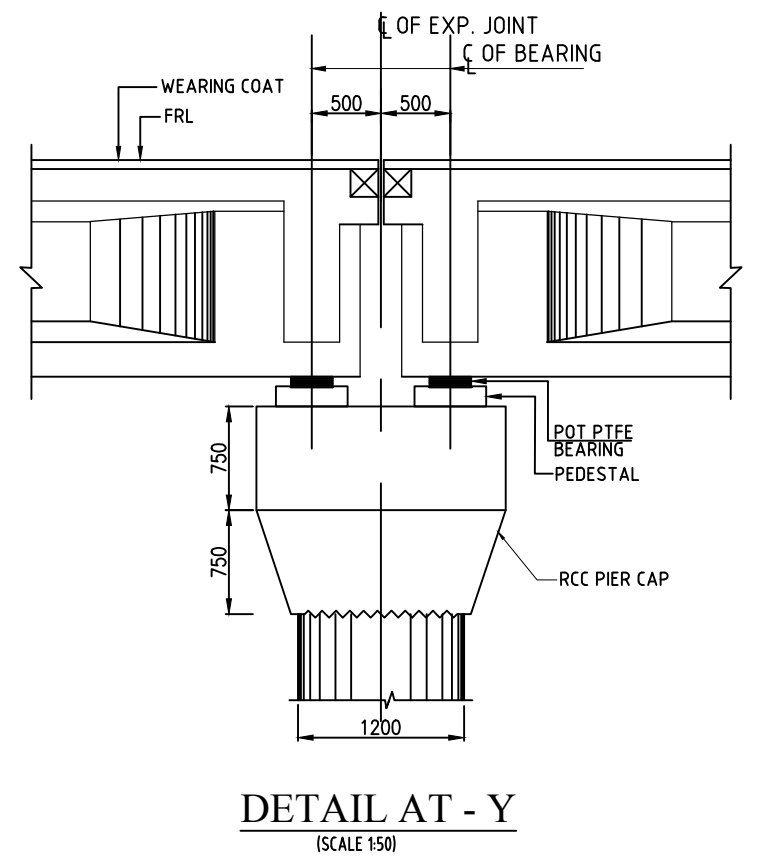
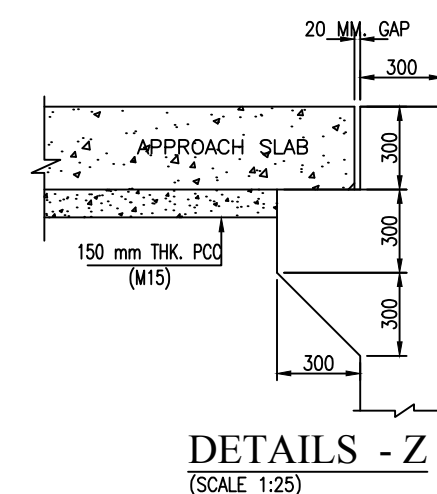
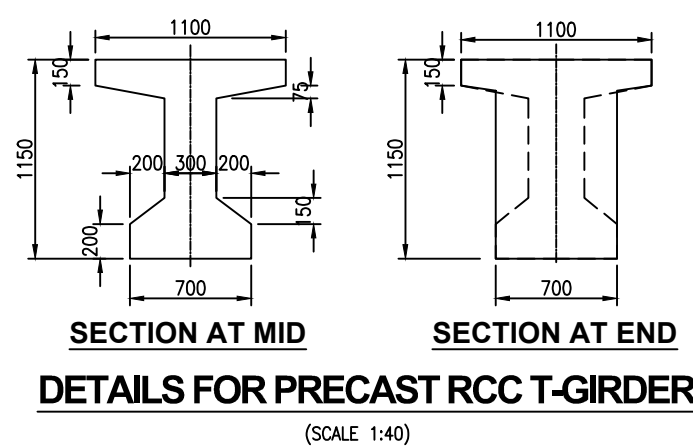
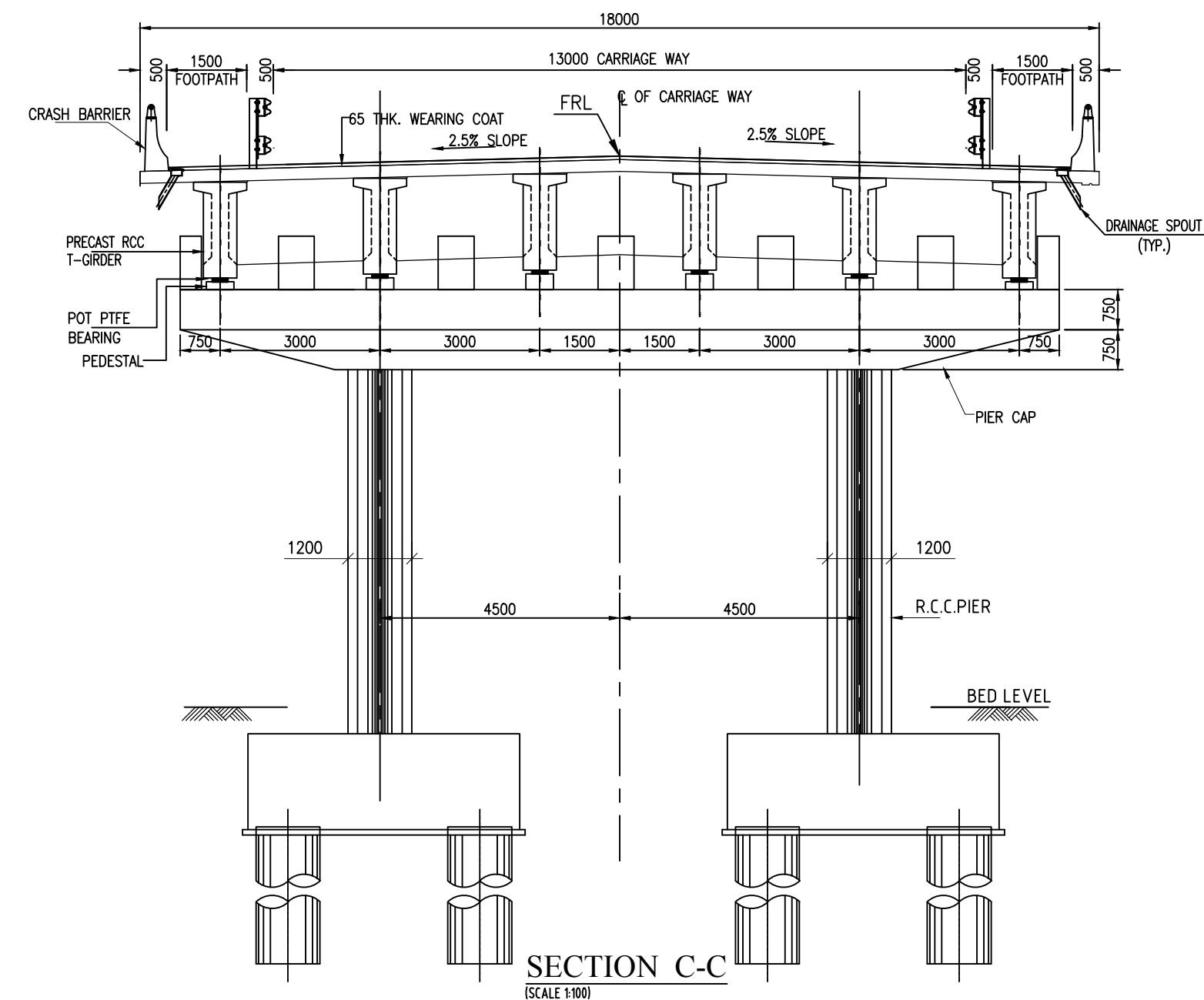
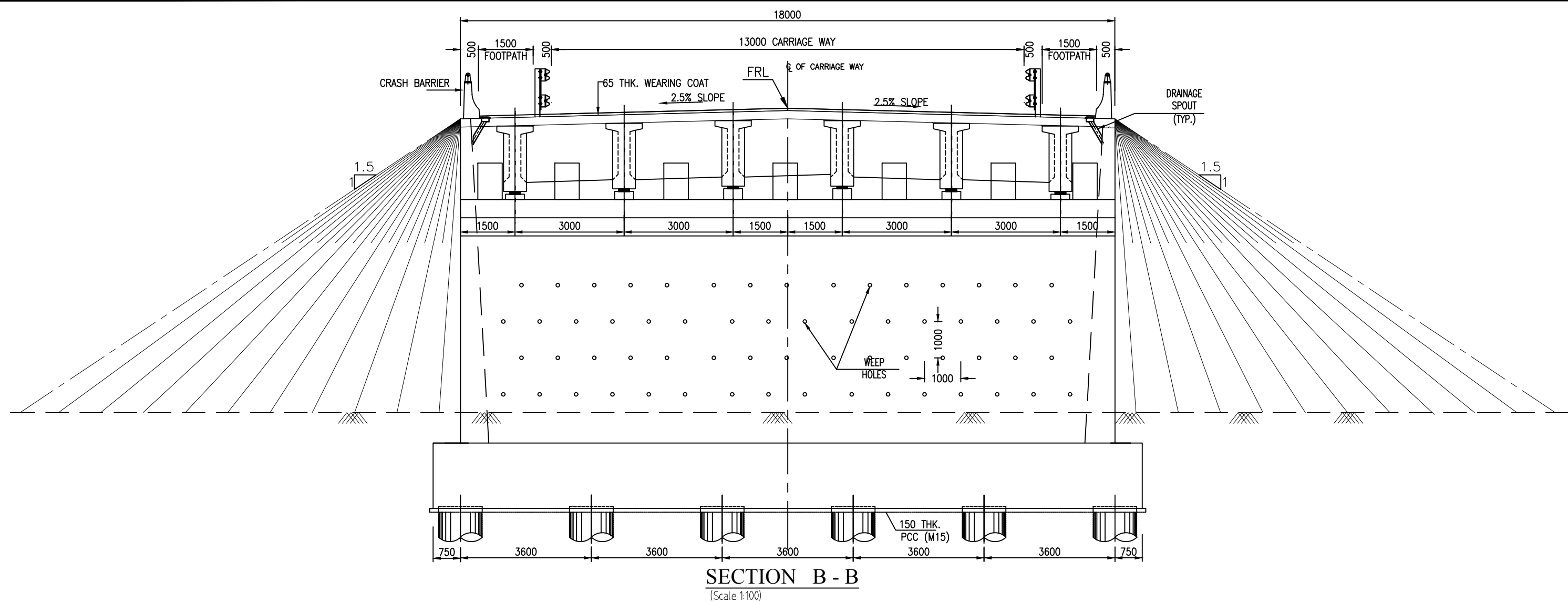
GENERAL ARRANGEMENT DRAWING
OF MAJOR BRIDGE
AT Km. Ch.- 35+875.00

DRG. No. :
VSPL/1718-082/DPR/TRB/PKG-4/SEC-5/MJB-02. (Sht. 2 of 2)

REVISION:	R0	October, 2022
-----------	----	---------------



CLIENT :  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA	PROJECT : CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)	DESIGN CONSULTANT:  VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in	Detaild Project Report				DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE : GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT Km. Ch.- 31+740.00 DRG. No. : VSPL/1718-082/DPR/TRB/PKG-4/SEC-5/MNB-01. (Sht. 1 of 2) REVISION: R0 October, 2022
							SLM	G. Das	MK	SKC	
			REV.	DATE	DESCRIPTION	SCALE :	AS SHOWN	SHEET SIZE	A2		



- NOTES :-**
1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN M UNLESS MENTIONED OTHERWISE.
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MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE IV)**

DESIGN CONSULTANT:

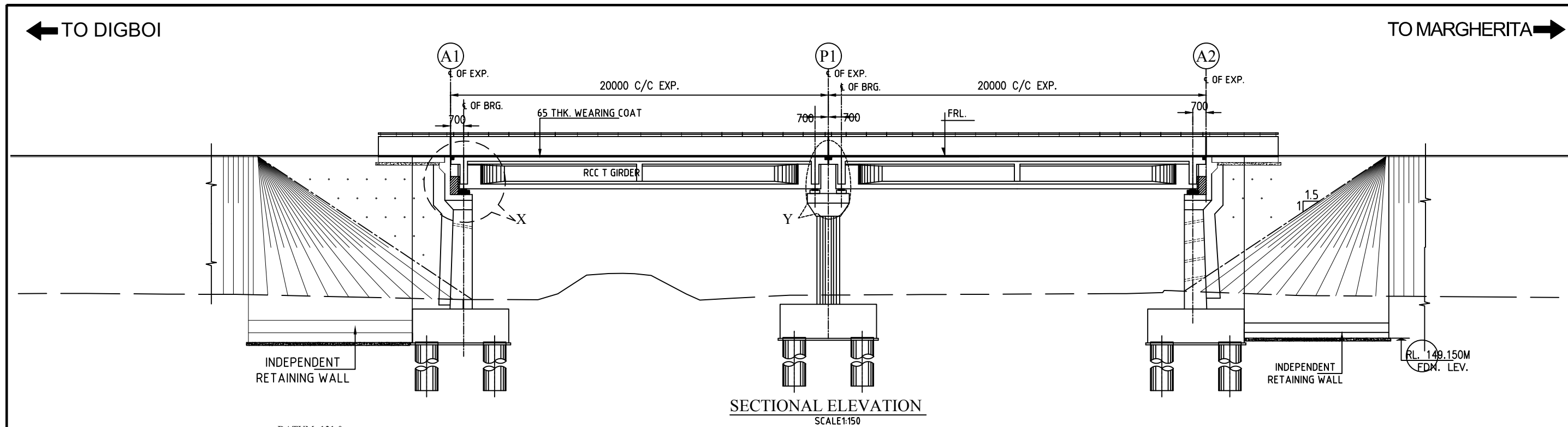


VOYANTS SOLUTIONS PVT LTD.
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Detaild Project Report		
REV.	DATE	DESCRIPTION

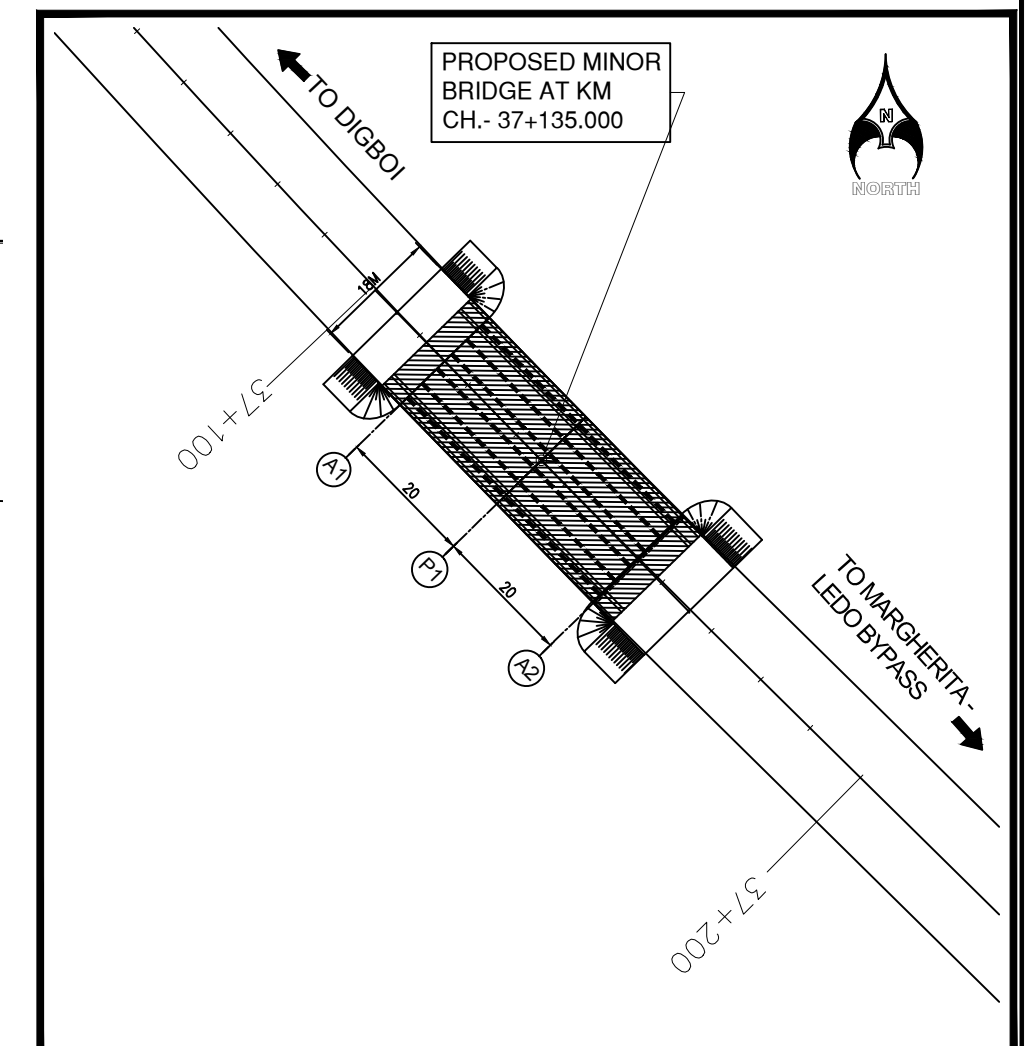
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
SLM	G. Das	MK	SKC
			
SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE : GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT Km. Ch.- 31+740.00		
DRG. No. : VSPL/1718-082/DPR/TRB/PKG-4/SEC-4/MNB-01. (Sht. 2 of 2)		
REVISION:	R0	October, 2022



DATUM=131.0m

FRL(m)	146.071	146.041	146.011
ECL (m) AT LOWEST	138.433	138.654	138.815
CHAINAGE(Km)	37+115.000	37+155.00	37+155.00

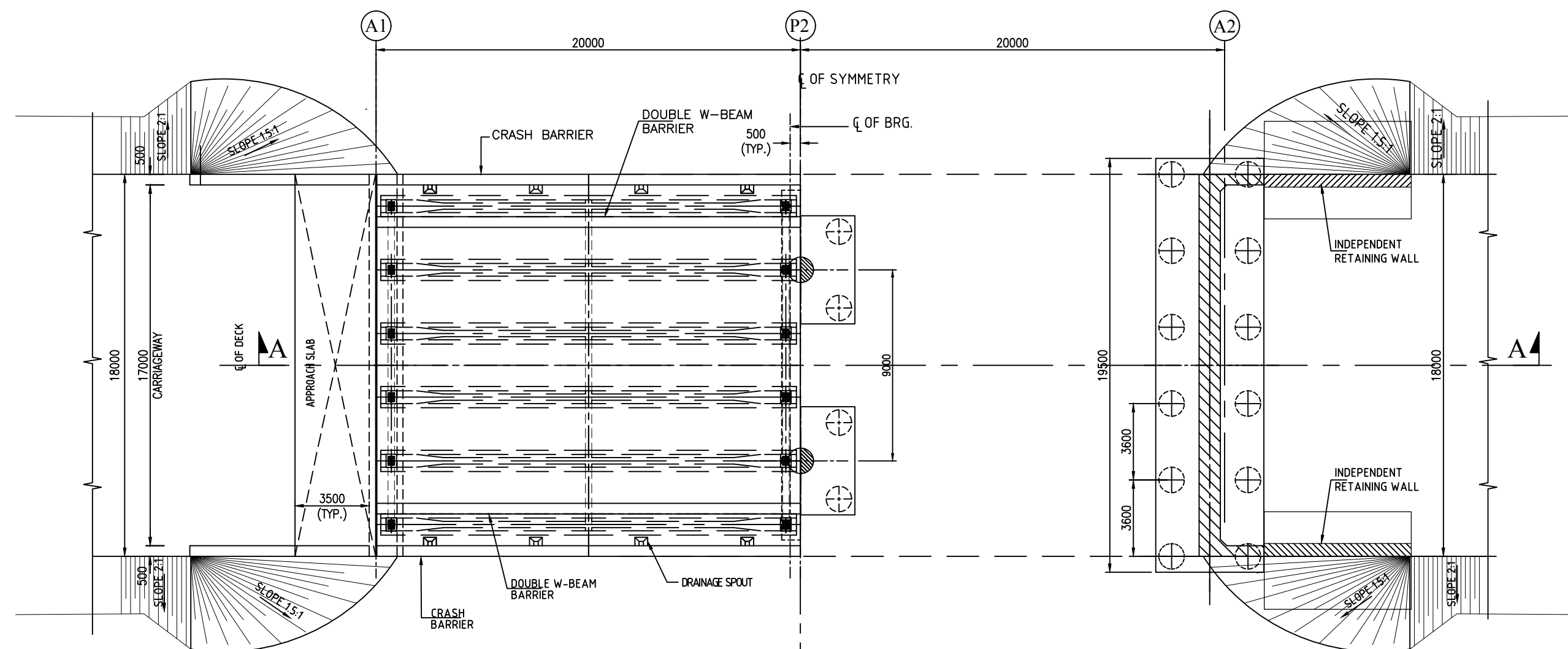


KEY PLAN

(Scale-1:1000)

NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETRES, LEVELS ARE IN METRES AND CHAINAGES ARE IN KILOMETRES, UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
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- BACK FILLING BEHIND WALLS SHALL BE DONE SIMULTANEOUSLY ON EITHER SIDE OF THE STRUCTURE WITH HEIGHT DIFFERENCE NOT MORE THAN 1.0M. BACK FILLING SHALL BE DONE ONLY AFTER THE TOP SLAB IS CONCRETED AND CURED FOR 14 DAYS.



HALF PLAN AT TOP HALF PLAN AT BOTTOM

PLAN

(Scale 1:200)

CLIENT :



**NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD. (MINISTRY
OF ROAD TRANSPORT AND HIGHWAYS)
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PROJECT :

**CONSULTANCY SERVICES FOR PREPARATION OF
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ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE IV)**

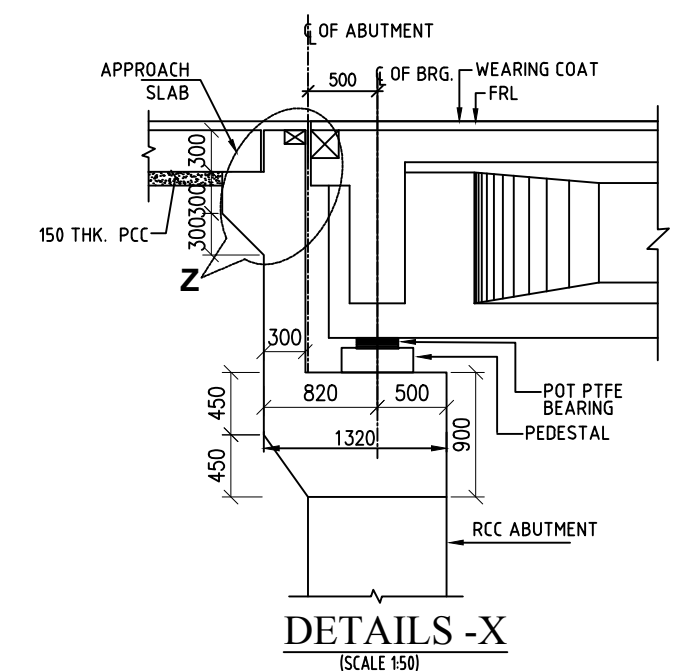
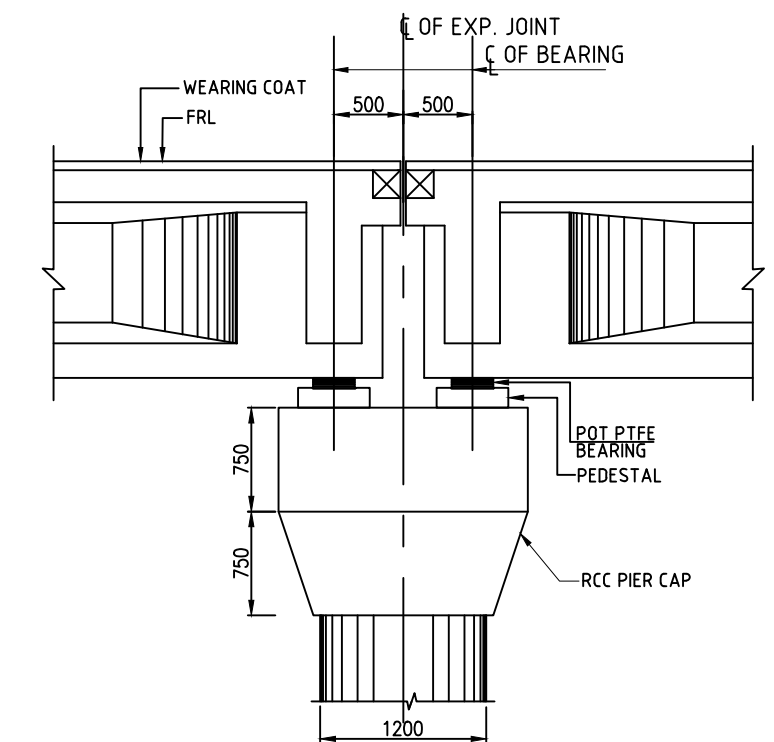
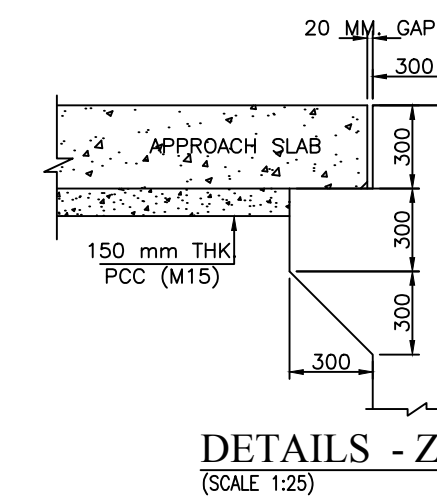
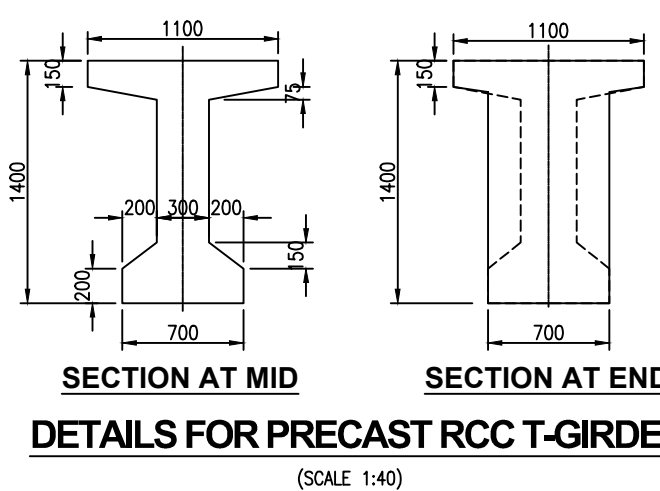
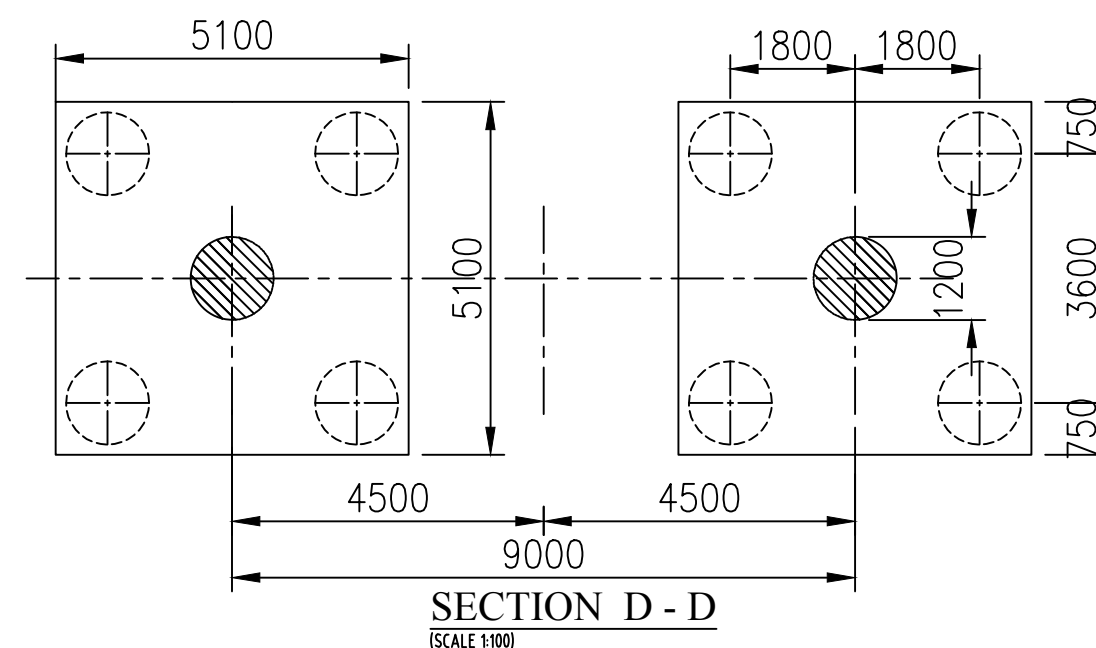
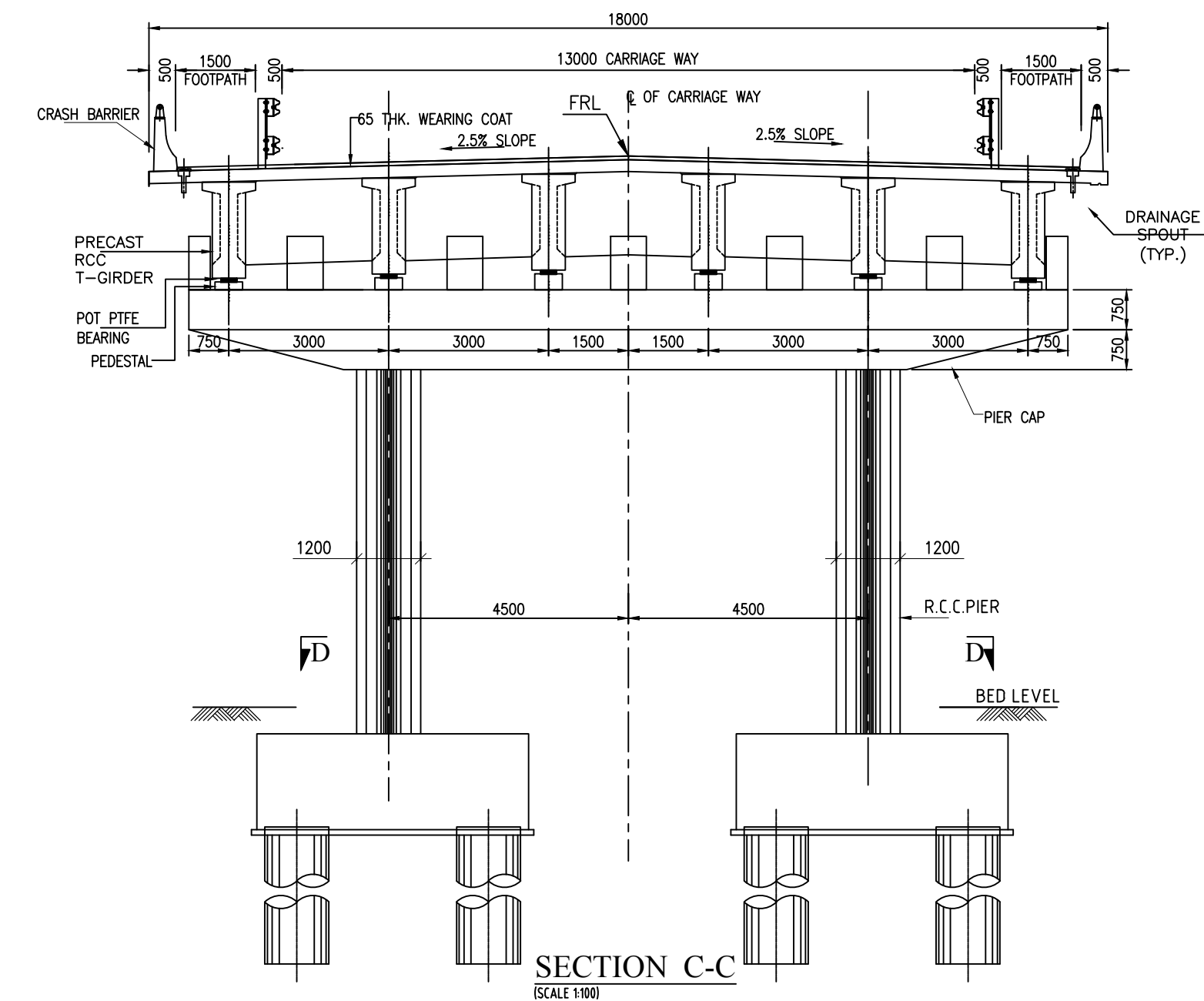
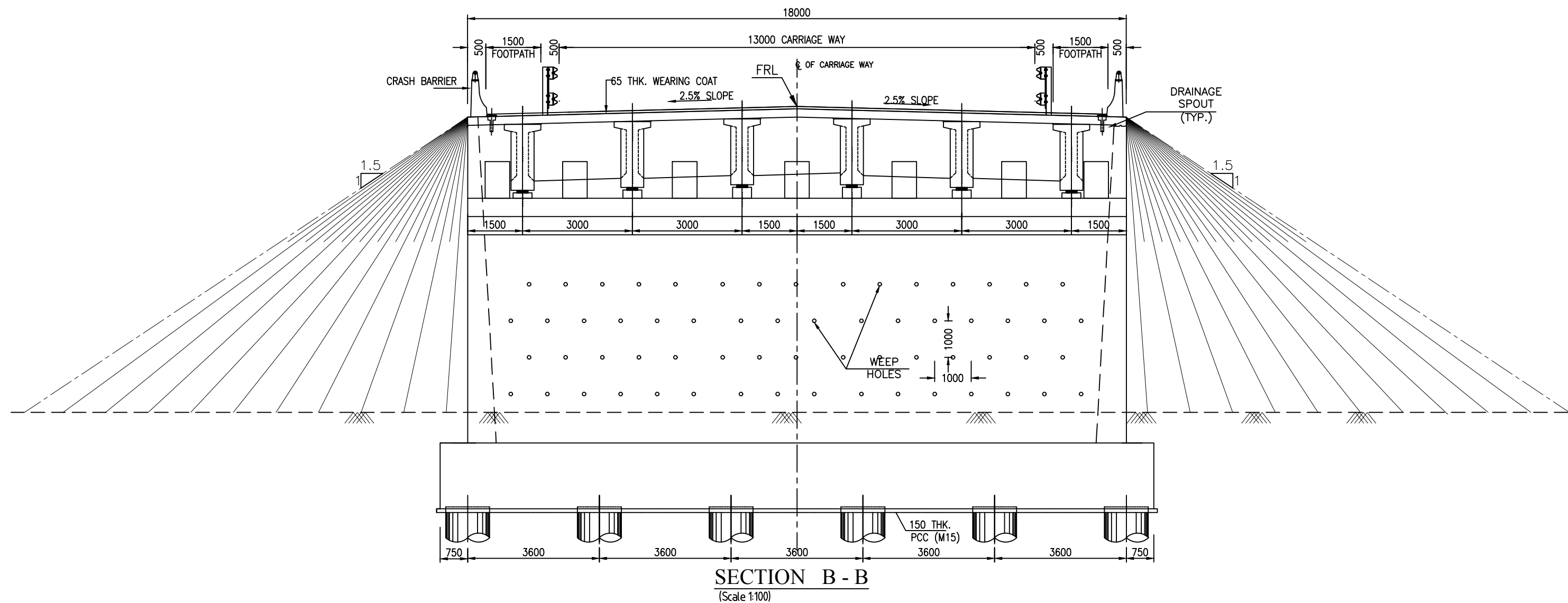
DESIGN CONSULTANT:

VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurgaon-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :
SLM	G. Das	MK	SKC	GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT Km. Ch.- 37+135.0
SCALE :	AS SHOWN	SHEET SIZE	A2	DRG. No. : VSPL/1718-082/DPR/TRB/PKG-4/SEC-5/MNB-02. (Sht. 1 of 2)
				REVISION: R0 October, 2022



NOTES :-

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CLIENT :

NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA

PROJECT :
CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)

DESIGN CONSULTANT:

VOYANTS SOLUTIONS PVT LTD.
 403, 4th Floor, Park Centra,
 Sector-30, NH-8
 Gurugram-122001, Haryana, India
 CIN- U74140HR2004PTC046918
 Ph: 0124-4598200, Fax: 0124-4019051,
 E-mail: info@voyants.in, www.voyants.in

Detaild Project Report

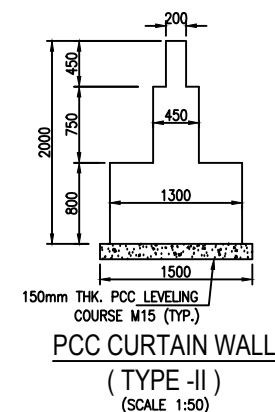
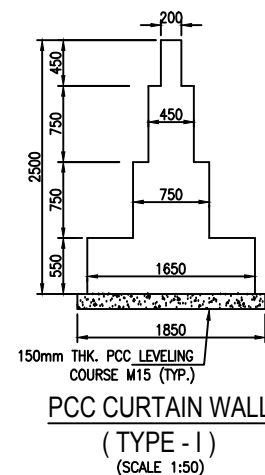
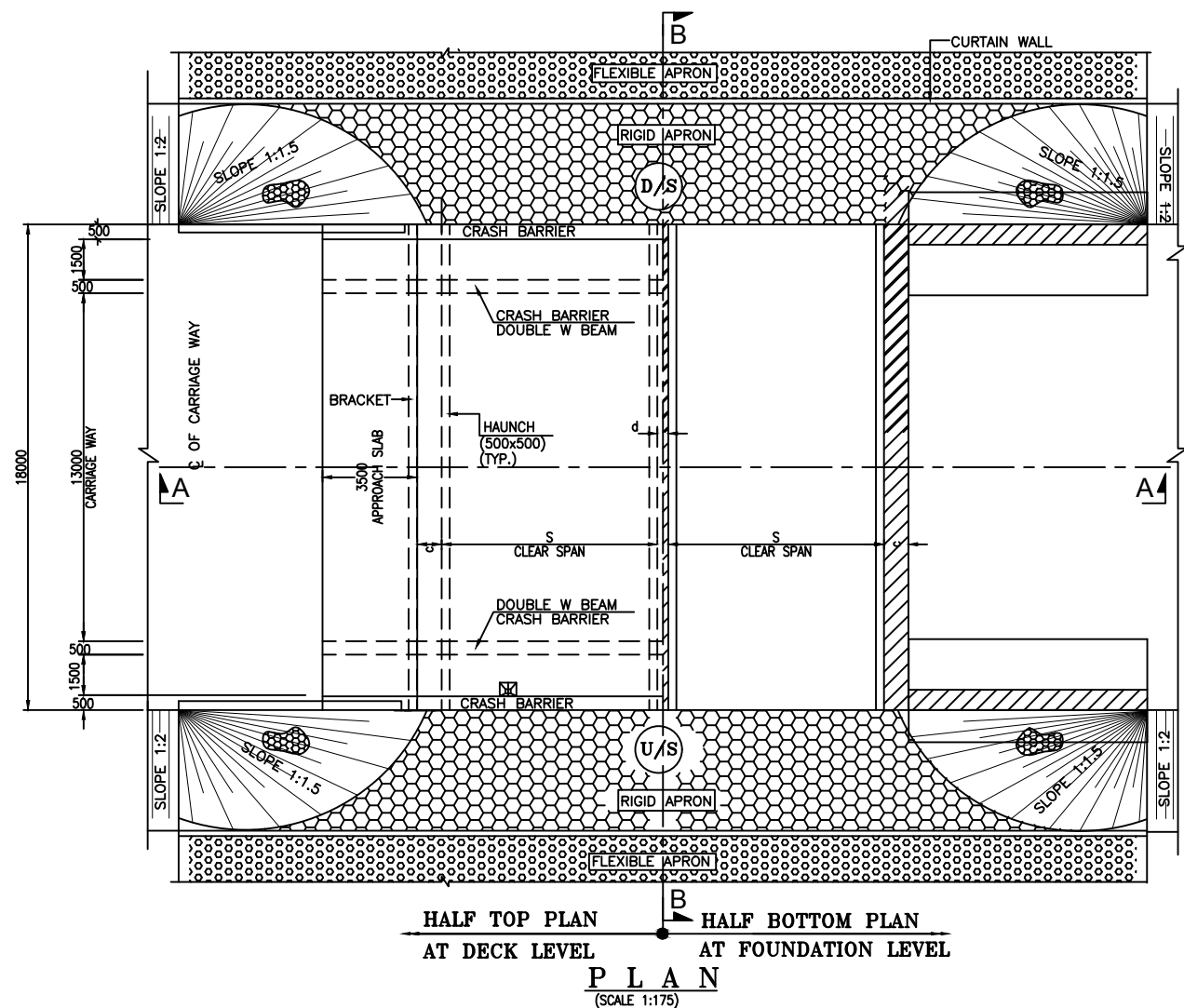
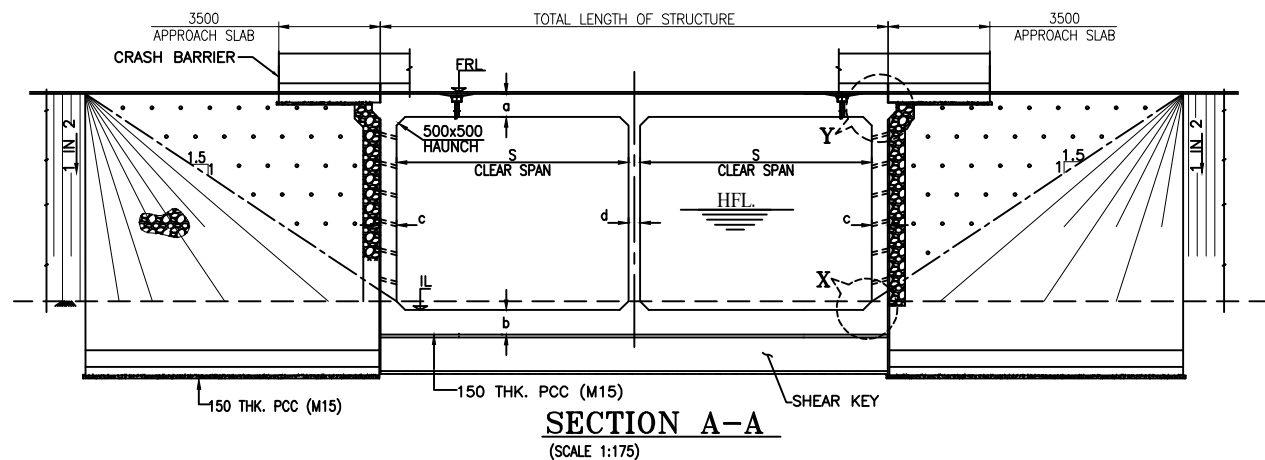
REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
SLM	G. Das	MK	SKC
			
SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE : GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT Km. Ch.- 37+135.0		
DRG. No. : VSPL/1718-082/DPTR/TRB/PKG-4/SEC-5/MNB-02. (Sht. 2 of 2)		
REVISION:	R0	October, 2022

TO DIGBOI

TO MARGHERITA

**NOTES :-**

- ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN M UNLESS MENTIONED OTHERWISE.
- DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.
- GRADE OF CONCRETE USED:
a) RCC BOX, RETURN WALLM35
b) CRASH BARRIER.....M40
c) APPROACH SLAB.....M30
d) PCC LEVELLING COURSE.....M15
- ALL REINFORCEMENT STEEL SHALL BE HIGH STRENGTH DEFORMED BARS OF GRADE Fe500 CONFORMING TO IS: 1786-1985
- THE STRUCTURE IS DESIGNED TO CATER LIVE LOAD COMBINATION OF 3-LANES OF CLASS A OR 1-LANE OF 70R WHEEL + 1 LANE OF CLASS A OR IRC SV WHICHEVER PRODUCE SEVER EFFECT.
- VARIOUS LEVELS (FRL, EGL) & SUPER ELEVATIONS SHOWN IN DRAWINGS SHALL BE VERIFIED WITH THE HIGHWAY PLAN & PROFILE PRIOR TO ACTUAL EXECUTION IN SITE.
- LAYING, COMPACTION & EXTENT OF BACKFILL BEHIND SIDE WALL & RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFIRMING TO THE APPENDIX-6 OF IRC:78-2014 HAVING PROPERTIES $C=0$, $\phi \geq 30^\circ$ & DENSITY=20KN/m³.
- WEEP HOLES ON THE ABUTMENT & RETAINING WALLS SHALL BE SPACED 1000 c/c HORIZANTALLY & VERTICALLY IN STAGGERED MANNER FROM 500MM ABOVE LWL.
- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300MM.
- COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.

CHAINAGE (KM)	OGL (M)	FRL (M)	BOX "S"	a (mm)	b (mm)	c (mm)	d (mm)
30+120.000	150.401	155.689	2x10	700	750	700	550
33+980.000	139.744	146.397	2x7.5	500	600	600	450
39+887.000	139.998	146.594	2x7.5	500	600	600	450
43+206.000	142.336	145.634	2x7.5	500	600	600	450

CLIENT :



NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD. (MINISTRY
OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA

PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE IV)

DESIGN CONSULTANT:

VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurgaon-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detaild Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
SLM	G. Das	MK	SKC
SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE :

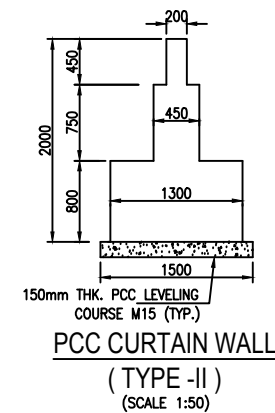
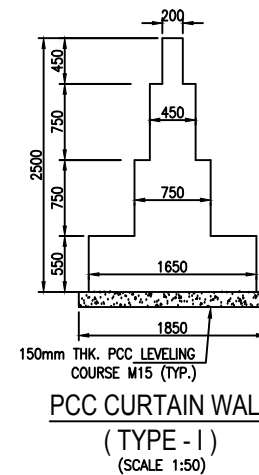
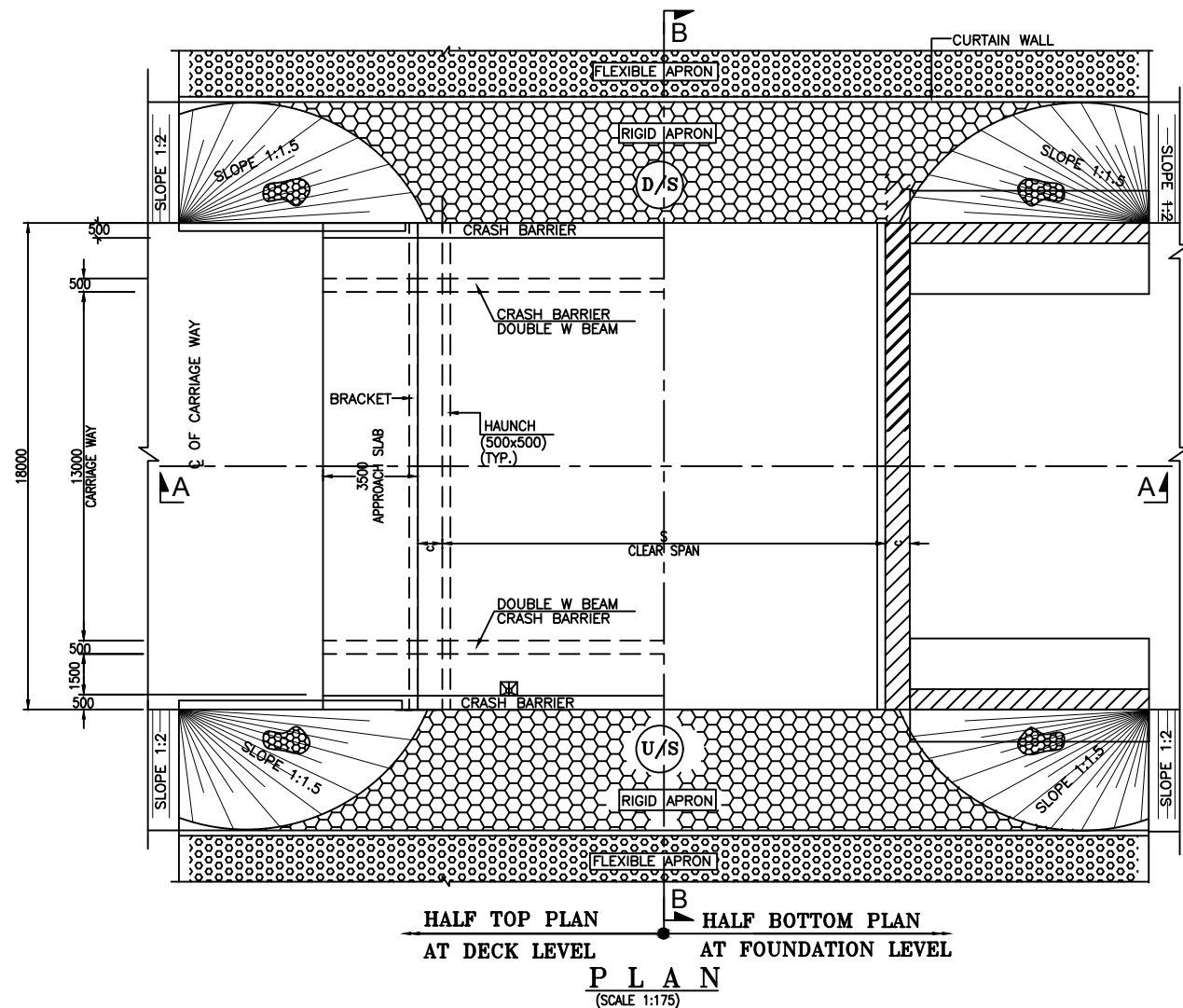
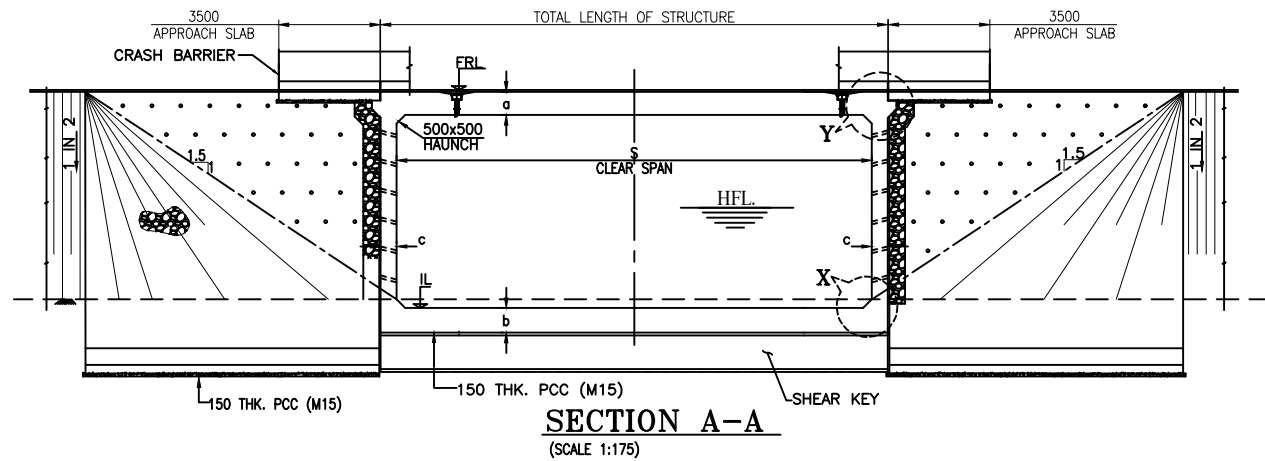
GENERAL ARRANGEMENT DRAWING
OF MINOR BRIDGE
AT CH. Km. CH. 30+120, 33+980, 39+887 & 43+206.0

DRG. No. : (Sht.1 of 2)
VSPL/1718-082/DPR/TRB/PKG-4/SEC-5/MNB-03.

REVISION: R0 October, 2022

TO DIGBOI

TO MARGHERITA



NOTES :-

- ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN M UNLESS MENTIONED OTHERWISE.
- DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.
- GRADE OF CONCRETE USED:
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- VARIOUS LEVELS (FRL, EGL) & SUPER ELEVATIONS SHOWN IN DRAWINGS SHALL BE VERIFIED WITH THE HIGHWAY PLAN & PROFILE PRIOR TO ACTUAL EXECUTION IN SITE.
- LAYING, COMPACTION & EXTENT OF BACKFILL BEHIND SIDE WALL & RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFIRMING TO THE APPENDIX-6 OF IRC:78-2014 HAVING PROPERTIES $C=0$, $\phi \geq 30^\circ$ & DENSITY=20KN/m³.
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- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300MM.
- COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.

CHAINAGE (KM)	OGL (M)	FRL (M)	BOX "S"	a (mm)	b (mm)	c (mm)
29+457.000	150.924	153.550	1x10	700	750	700
37+465.000	138.476	145.552	1x10	700	750	700
45+736.000	144.895	153.206	1x10	700	750	700
46+957.000	145.821	153.611	1x10	700	750	700

CLIENT :



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DEVELOPMENT CORPORATION LTD. (MINISTRY
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GOVERNMENT OF INDIA

PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE IV)

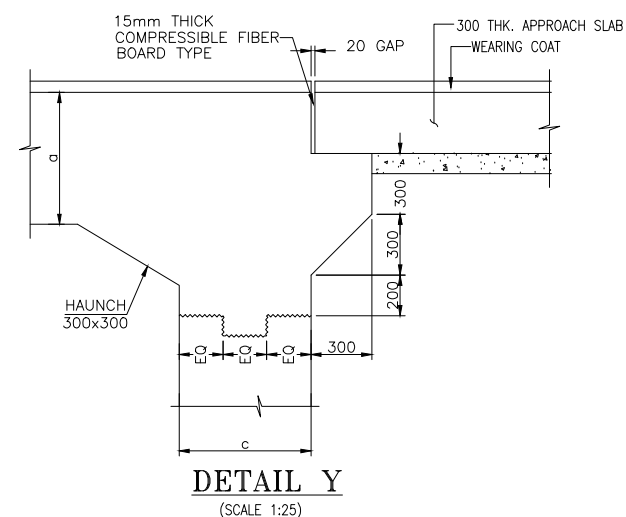
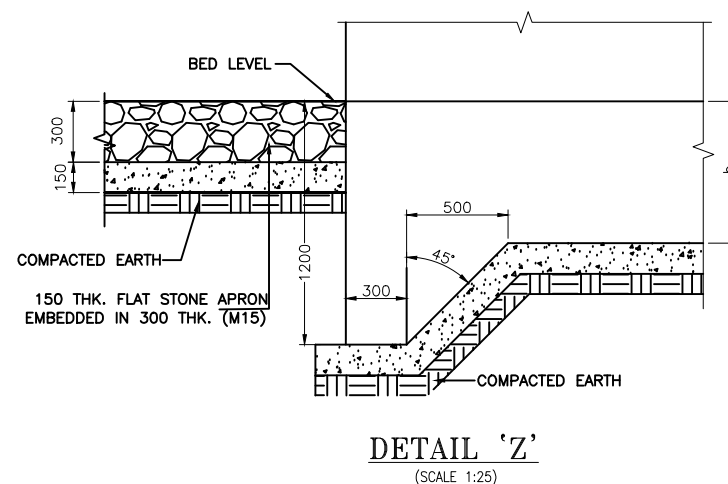
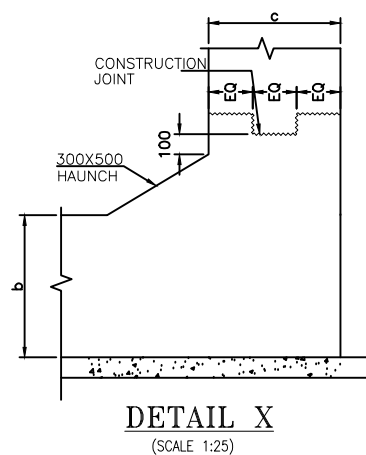
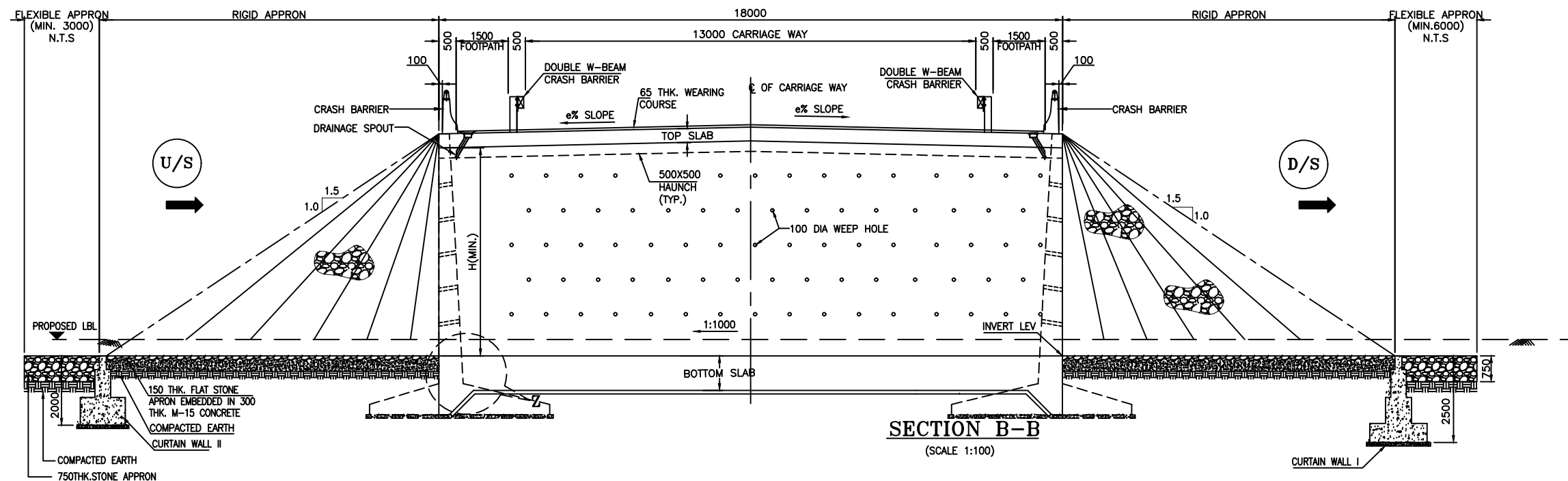
DESIGN CONSULTANT:

VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurgaon-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detaild Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :
SLM	G. Das	MK	SKC	GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT CH. Km. CH. 29+457, 37+465, 45+736 & 46+957.0
SCALE :	AS SHOWN	SHEET SIZE	A2	DRG. No. : (Sht.1 of 2) VSPL/1718-082/DPR/TRB/PKG-4/SEC-5/MNB-04.
REVISION:	R0	October, 2022		



NOTES :-

1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN M UNLESS MENTIONED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.

CLIENT :



**NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD. (MINISTRY
OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA**

PROJECT :

**CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE IV)**

DESIGN CONSULTANT:



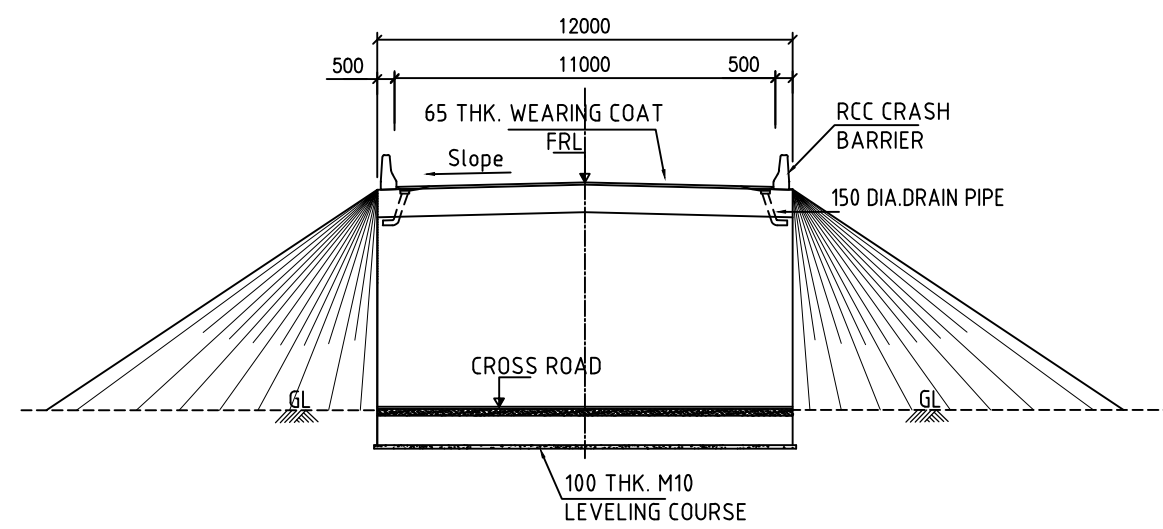
VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
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Detaild Project Report

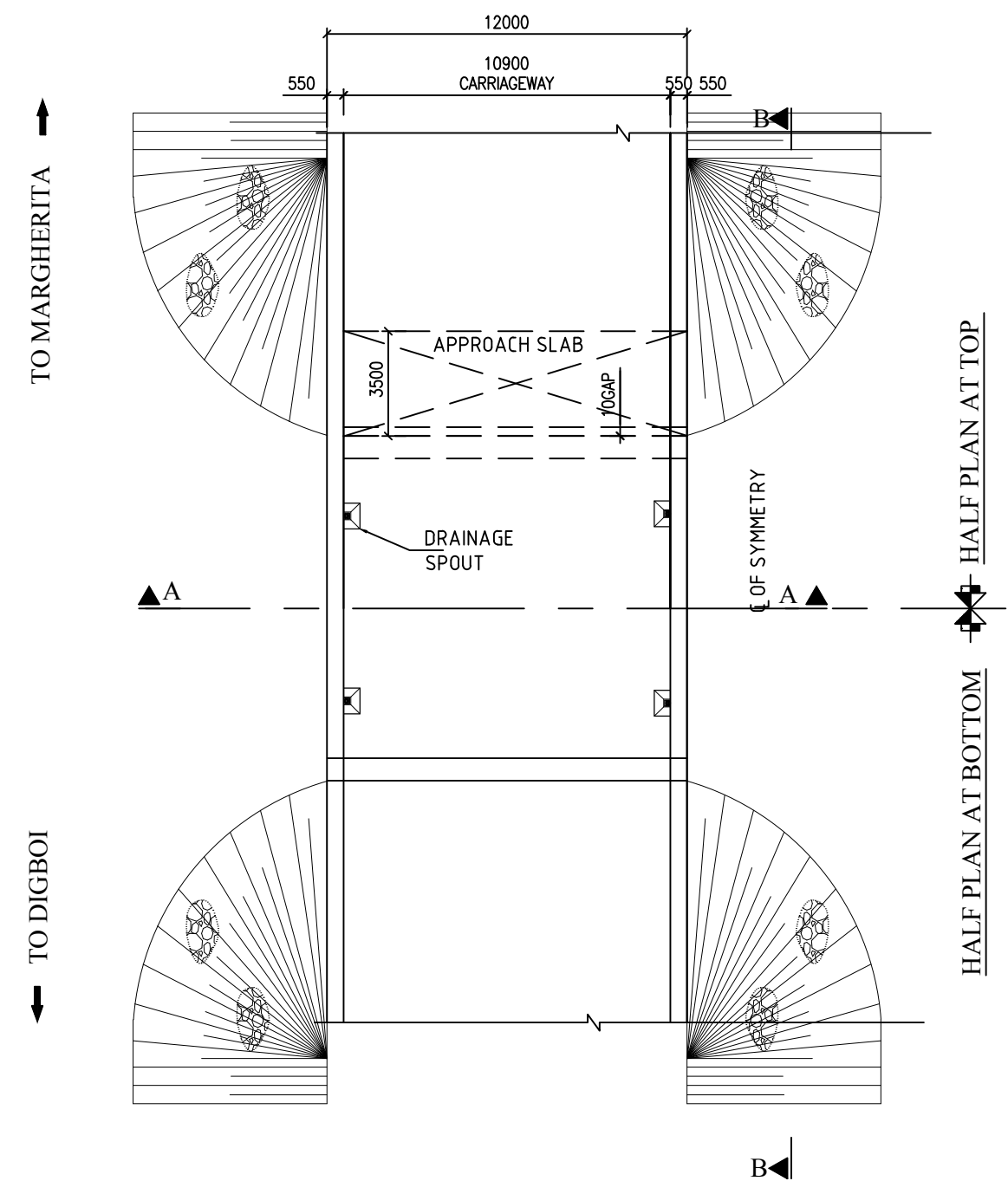
REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
SLM	G. Das	MK	SKC
SCALE :	AS SHOWN	SHEET SIZE	A2

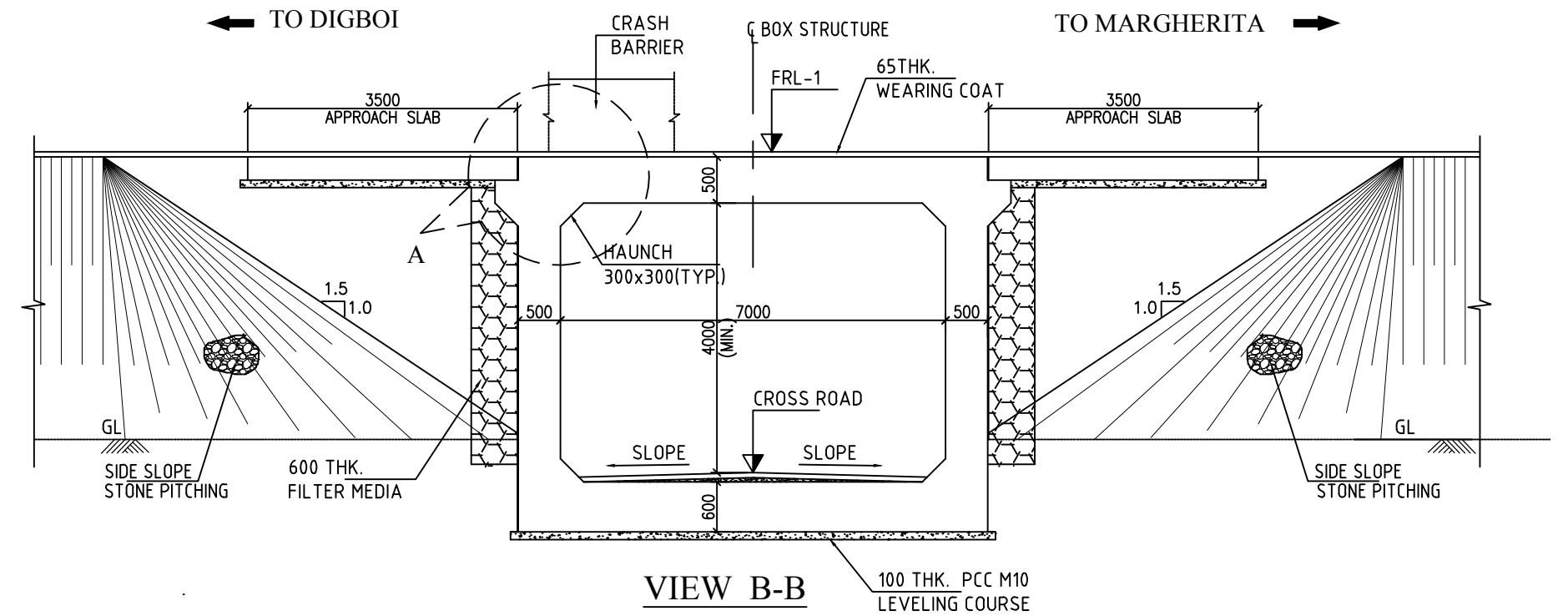
TITLE :	GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT CH. Km. CH. 29+457, 37+465, 45+736 & 46+957.0
DRG. No. :	(Sht.2 of 2) VSPL/1718-082/DPR/TRB/PKG-4/SEC-5/MNB-04.
REVISION:	October, 2022



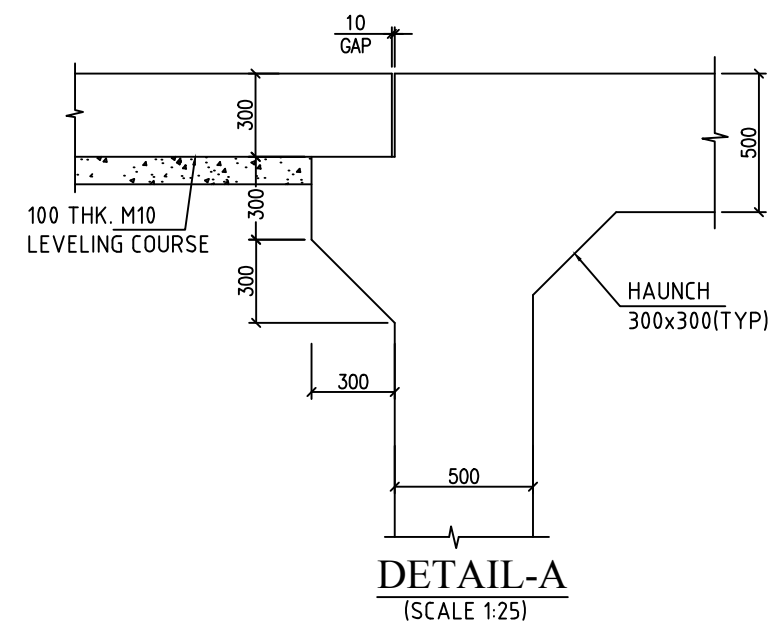
SECTION: A-A
(SCALE 1:200)



PLAN
(SCALE 1:200)



VIEW B-B
(SCALE 1:75)



DETAIL-A
(SCALE 1:25)

CHAINAGE (KM)	OGI (M)	FRL (M)	SIZE
31+266.000	155.532	161.099	1x7x4
33+000.000	143.815	149.722	1x7x4
33+910.000	141.531	146.963	1x7x4
37+293.000	145.806	139.682	1x7x4
39+803.000	148.83	144.645	1x7x4
40+465.000	141.929	147.477	1x7x4
42+050.000	140.763	146.248	1x7x4
42+750.000	140.989	146.867	1x7x4
44+880.000	148.447	153.933	1x7x4
45+820.000	147.771	153.445	1x7x4
47+267.000	158.300	151.789	1x7x4

NOTES:-

- ALL DIMENSIONS ARE IN mm, LEVELS ARE IN m. & CHAINAGE ARE IN KILOMETER + METER. UNLESS OTHERWISE SPECIFIED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- STRUCTURE LOCATION REFER TO THE CHAINAGE AT STRUCTURE CENTER AND LEVELS AT MEDIAN EDGE.
- THIS DRAWING TO BE READ IN CONJUNCTION TO THE HIGHWAY DRAWINGS. IF THERE IS ANY DIFFERENCE IN CHAINAGE OR LEVELS H/W DRAWINGS WILL PREVAIL.
- THE STRUCTURE IS DESIGNED TO CATER TO MAXIMUM OF:-
 - ONE LANE, TWO LANE, THREE AND FOUR LANE OF CLASS A.
 - ONE LANE OF CLASS A IN ADDITION OF ONE LANE OF 70R WHEEL OR ONE LANE OF CLASS 70R TRACKED WHICHEVER IS GOVERNING
- SEISMIC ZONE = III AS PER IRC:SP:114-2018 HAS BEEN CONSIDERED.
- GRADE OF CONCRETE:-
 - FOR RCC BOX.....M35
 - FOR LEVELING COURSE.....M10
 - CRASH BARRIER.....M40
 - APPROACH SLAB.....M30
- GRADE OF STEEL SHALL BE Fe-500 CONFIRMING TO IS:1786.
- ALL CONSTRUCTION SHALL CONFIRM TO CONTRACT SPECIFICATIONS.
- COMPACTED EARTH SHOULD CONFORM TO CLAUSE 305.2.15 OF MORTH SPECIFICATIONS.
- SOFT AND LOOSE PATCHES UNDER THE FOUNDING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
- BACKFILL GRANULAR SOIL MATERIAL BEHIND BOX STRUCTURE SHALL HAVE THE FOLLOWS PROPERTIES AS $\gamma = 1800 \text{ Kg/M}^3$, $g C = 0$, $\phi = 30^\circ$.
- 600mm THICK. FILTER MATERIAL BEHIND BOX/RETAINING WALL SHALL BE LAID AS PER APPENDIX 6 OF IRC 78-2000.
- THE STRUCTURE IS DESIGNED FOR NET SAFE BEARING CAPACITY OF 10.0 t/m^2 . GROUND IMPROVEMENT UP TO 900mm BELOW THE FOUNDATION TO BE PROVIDED TO ACHIEVE REQUIRED SBC AS PER GEOTECH REPORT.
- PERFORATED P.V.C. PIPE 150ϕ TO BE PROVIDED OF GROUND LEVEL BEHIND WALL FOR DRAINAGE.

CLIENT :



NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD. (MINISTRY
OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA

PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE IV)

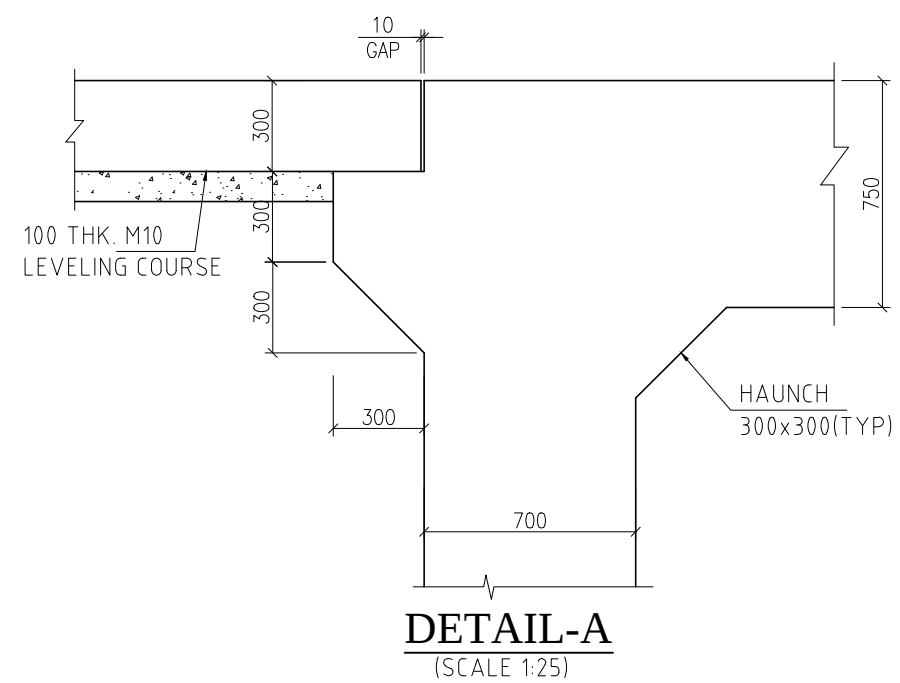
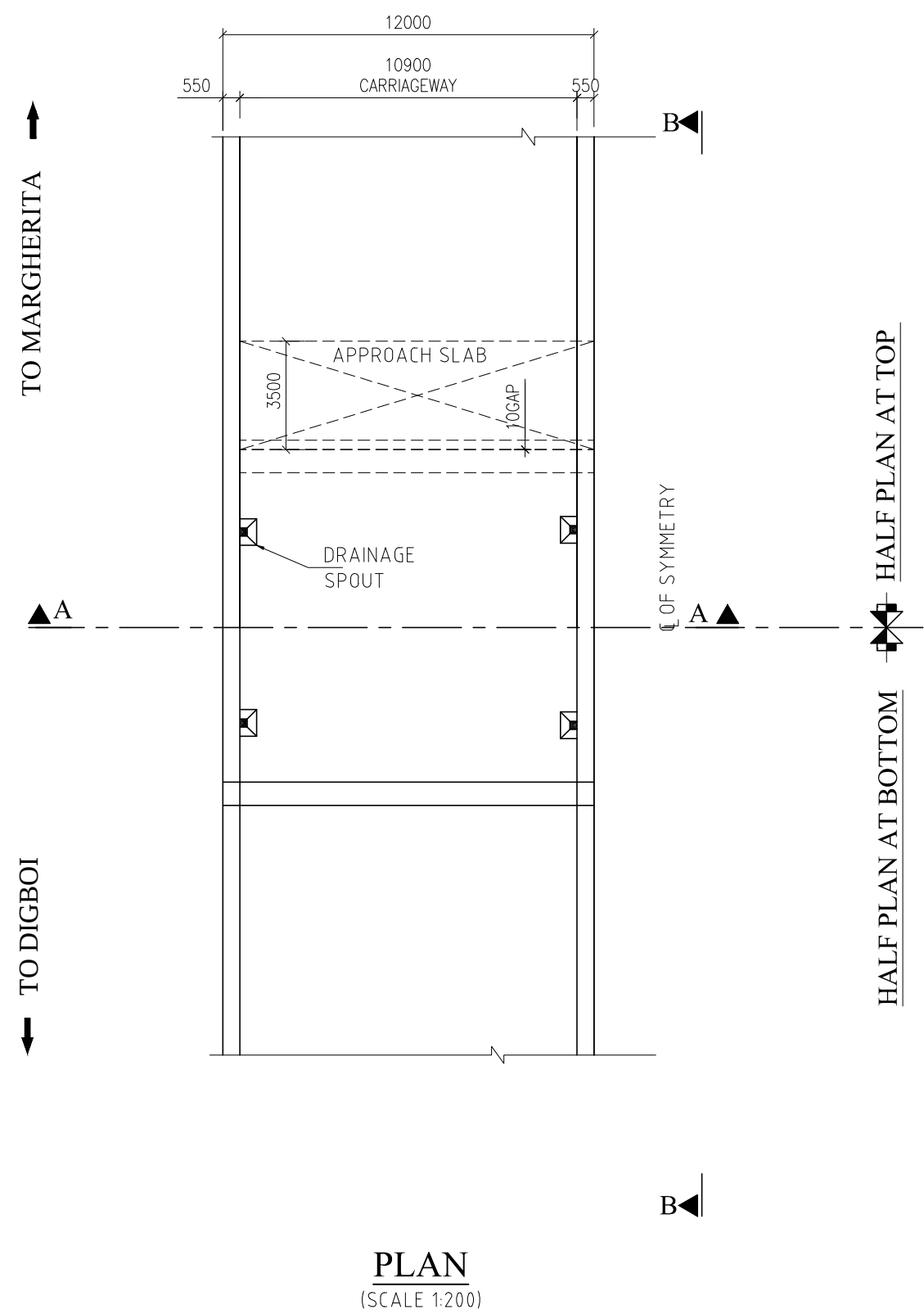
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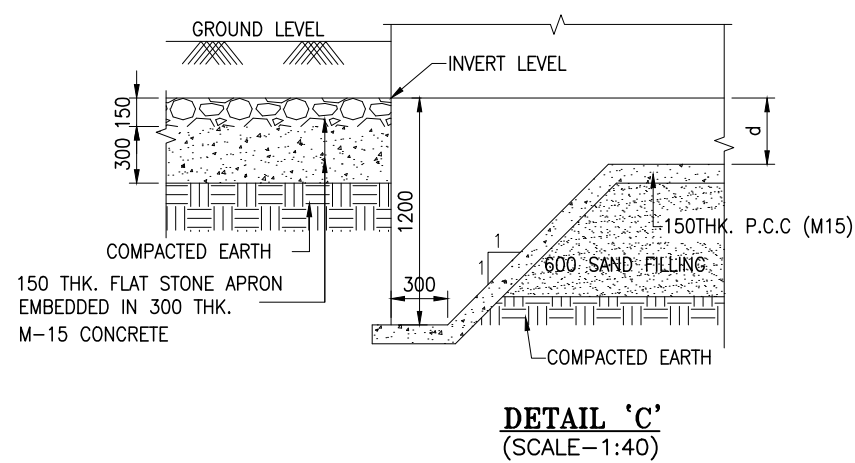
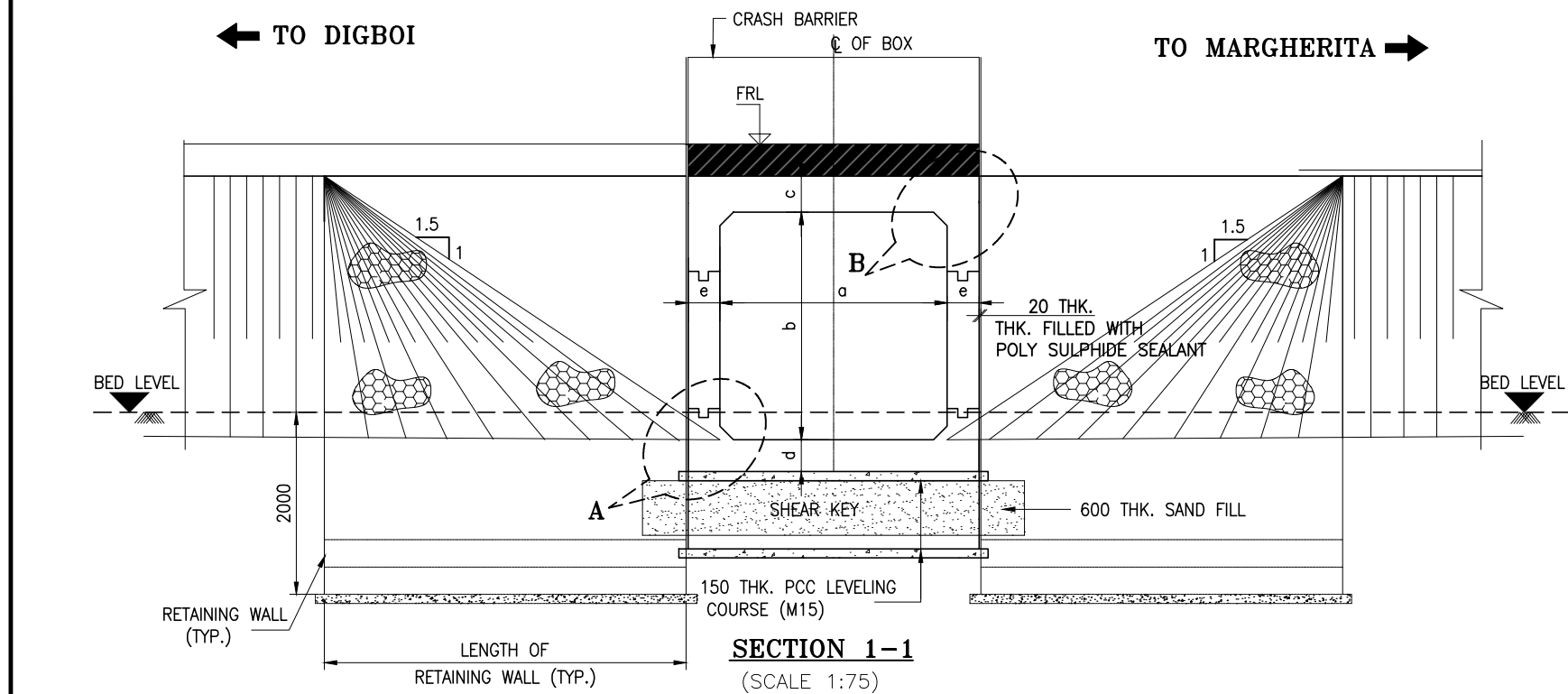
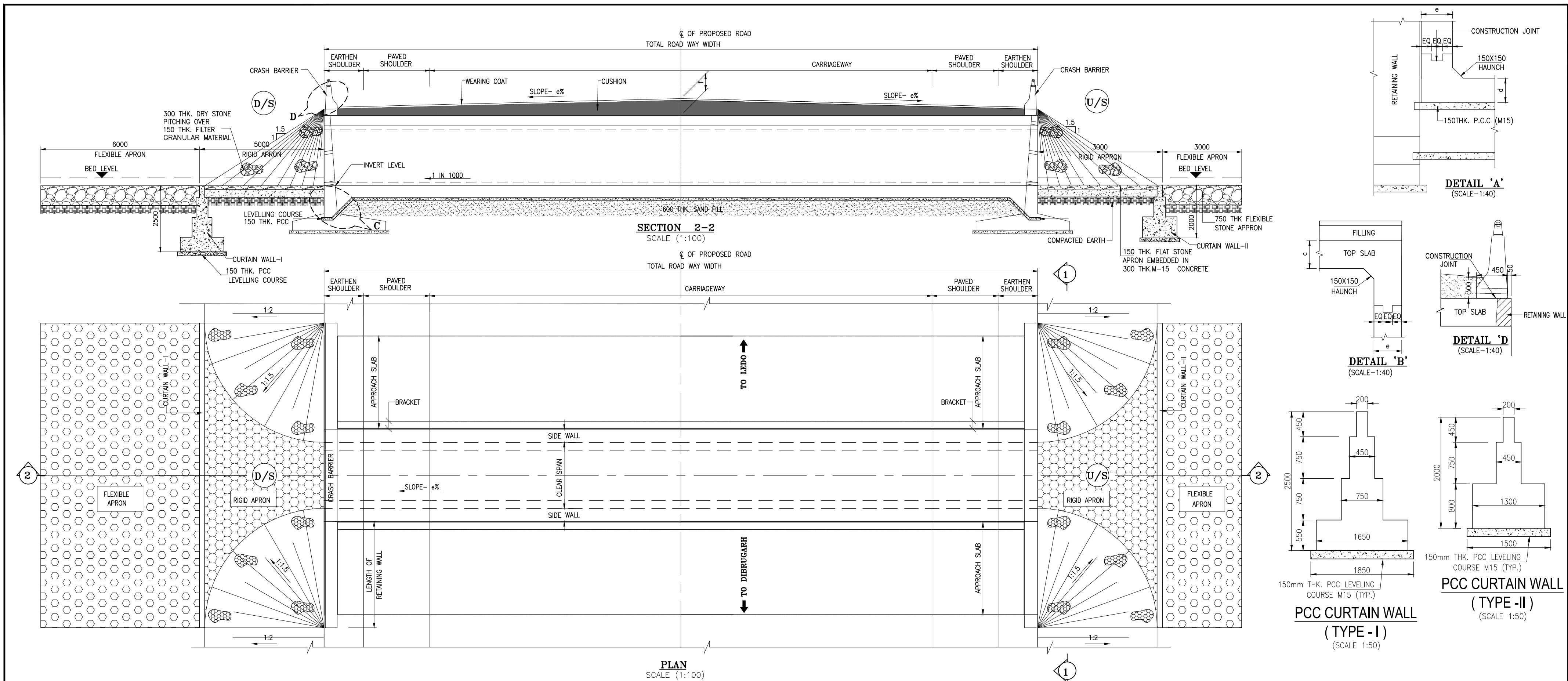
REV. DATE DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :
SLM	G. Das	MK	SKC	TYPICAL GENERAL ARRANGEMENT DRAWING OF SMALL VEHICULAR UNDERPASS (1x7.0x4.0m)
SCALE :	AS SHOWN	SHEET SIZE	A2	DRG. No. : (Sht.1 of 1) VSPL/1718-082/DPR/TRB/PKG-4/SEC-5/SVUP-01.
REVISION:	R0	October, 2022		



- ## NOTES:-
1. ALL DIMENSIONS ARE IN mm, LEVELS ARE IN m. & CHAINAGE ARE IN KILOMETER + METER. UNLESS OTHERWISE SPECIFIED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 2. STRUCTURE LOCATION REFER TO THE CHAINAGE AT STRUCTURE CENTER AND LEVELS AT MEDIAN EDGE.
 3. THIS DRAWING TO BE READ IN CONJUNCTION TO THE HIGHWAY DRAWINGS. IF THERE IS ANY DIFFERENCE IN CHAINAGE OR LEVELS H/W DRAWINGS WILL PREVAIL.
 5. THE STRUCTURE IS DESIGNED TO CATER TO MAXIMUM OF:-
 - a. ONE LANE, TWO LANE, THREE AND FOUR LANE OF CLASS A.
 - b. ONE LANE OF CLASS A IN ADDITION OF ONE LANE OF 70R WHEEL OR ONE LANE OF CLASS 70R TRACKED WHICHEVER IS GOVERNING.
 6. SEISMIC ZONE = III AS PER IRC:SP-114-2018 HAS BEEN CONSIDERED.
 7. GRADE OF CONCRETE:-
 - FOR RCC BOX.....M35
 - FOR LEVELING COURSE.....M10
 - CRASH BARRIER.....M40
 - APPROACH SLAB.....M30
 7. GRADE OF STEEL SHALL BE Fe-500 CONFIRMING TO IS:1786.
 8. ALL CONSTRUCTION SHALL CONFIRM TO CONTRACT SPECIFICATIONS.
 9. COMPACTED EARTH SHOULD CONFORM TO CLAUSE 305.2.15 OF MORTH SPECIFICATIONS.
 10. SOFT AND LOOSE PATCHES UNDER THE FOUNDING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
 11. BACKFILL GRANULAR SOIL MATERIAL BEHIND BOX STRUCTURE SHALL HAVE THE FOLLOWS PROPERTIES AS $\gamma = 1800 \text{ Kg/m}^3$ $g C = 0$, $\phi = 30^\circ$,
 12. 600mm THICK. FILTER MATERIAL BEHIND BOX/RETAINING WALL SHALL BE LAID AS PER APPENDIX 6 OF IRC 78-2000.
 13. THE STRUCTURE IS DESIGNED FOR NET SAFE BEARING CAPACITY OF 10.0 t/m^2 . GROUND IMPROVEMENT UP TO 900mm BELOW THE FOUNDATION TO BE PROVIDED TO ACHIEVE REQUIRED SBC AS PER GEOTECH REPORT.
 14. PERFORATED P.V.C. PIPE 150ϕ TO BE PROVIDED OF GROUND LEVEL BEHIND WALL FOR DRAINAGE.

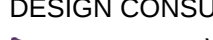
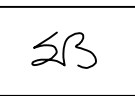
CHAINAGE (kM)	OGL (M)	FRL (M)	BOX
35+705.00	141.918	147.711	1x12x4



a= CLEAR SPAN
b= CLEAR HEIGHT
c= THK. OF TOP SLAB
d= THK. OF BOTTOM SLAB
e= THK. OF SIDE WALL

NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETRES, LEVELS ARE IN METRES AND CHAINAGES ARE IN KILOMETRES, UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT HIGHWAY PLAN AND PROFILE DRAWING.
- THE STRUCTURE IS DESIGNED FOR LIVE LOAD COMBINATION OF 3 LANE CLASS A OR 1-LANE OF 70 R+1-LANE OF CLASS A, WHICHEVER PRODUCES SEVERE.
- GRADE OF CONCRETE FOR VARIOUS ELEMENTS SHALL BE AS FOLLOWS:
 - RCC BOX.....M35
 - RCC RETAINING WALL & APPROACH SLAB.....M30
 - PCC LEVELLING COURSE.....M15
 - PCC CURTAIN WALL.....M20
 - PARAPET WALL.....M30
- GRADE OF STEEL SHALL BE Fe-500 (H.Y.S.D.) REBAR CONFORMING TO IS-1786
- BACK FILLING BEHIND THE STRUCTURE SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC:78-2014 HAVING PROPERTIES $\phi \geq 30^\circ$, $C=0$, $\gamma = 2.0T/M^3$
- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300MM.
- COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.
- THE SAFE BEARING CAPACITY AT FOUNDING LEVEL HAS BEEN CONSIDERED AS $12T^2/M$ & THE SAME SHALL BE VERIFIED BEFORE EXECUTION.
- FOUNDATION OF BOX SHALL BE PLACED OVER A FIRM STRATA HAVING BEARING CAPACITY EQUAL TO $12T/M^2$ IN GENERAL. IF THE MATERIAL ENCOUNTERED IS SOFT, SPONZY OR OTHER UNSUITABLE SOIL, SUCH UNSUITABLE MATERIAL SHALL BE TOTALLY REMOVED TO SUCH DEPTH, WIDTH & LENGTH, AS DIRECTED BY THE ENGINEER. THE EXCAVATED AREA SHALL BE BACKFILLED WITH APPROVED GRANULAR MATERIAL & THOROUGHLY COMPACTED UP TO THE SPECIFIED LEVEL.
- 600MM THICK FILTER MEDIA SHALL BE PROVIDED BEHIND SIDE WALLS AND WING WALLS AS PER IR:78-2014.
- ALL THE LEVELS AND CAMBERS TO BE VERIFIED WITH RESPECT TO PLAN & PROFILE DRAWINGS BEFORE STARTING UP OF EXCAVATION. ANY DISCREPANCY NOTED SHOULD BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY.
- BACK FILLING BEHIND WALLS SHALL BE DONE SIMULTANEOUSLY ON EITHER SIDE OF THE STRUCTURE WITH HEIGHT DIFFERENCE NOT MORE THAN 1.0M. BACK FILLING SHALL BE DONE ONLY AFTER THE TOP SLAB IS CONCRETED AND CURED FOR 14 DAYS.
- SPRADING & COMPACTED OF SAND WILL BE DONE IN ACCORDANCE WITH CLAUSE 401.3.2 OF SPECIFICATION FOR ROAD & BRIDGE WORKS BY MINISTRY OF ROAD TRANSPORT & HIGHWAY

CLIENT :  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA	PROJECT : CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)	DESIGN CONSULTANT:  VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurgaon-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in	Detaild Project Report				DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE : GENERAL ARRANGEMENT DRAWING OF BOX CULVERT (NEW CONSTRUCTION) DRG. No. : VSPL/1718-082/DPR/TRB/PKG-4/SEC-5/BC-01. (Sht.1 of 2) REVISION: R0 October, 2022
							SB	G. Das	SG	SKC	
											
			REV.	DATE	DESCRIPTION		SCALE :	AS SHOWN	SHEET SIZE	A2	

Sl No.	Design Chainage	a (mm)	b (mm)	d (mm)	e (mm)	c (mm)	f (mm)
1	28+880	3000	2000	300	300	250	944
2	32+307	6000	3000	450	450	400	150
3	32+480	6000	3000	450	450	400	150
4	32+635	3000	2000	300	300	250	1048
5	34+428	6000	1600	450	450	400	150
6	36+025	2000	3000	450	450	350	6044
7	36+135	2000	3000	450	450	350	5597
8	36+440	6000	6000	450	450	400	2444
9	36+680	3000	4000	450	400	375	3839
10	37+720	2000	3000	450	450	350	4073
11	40+300	2000	2000	350	350	300	3249
12	41+000	2000	2000	350	350	300	3387
13	41+470	6000	4000	450	450	400	1466
14	42+080	2000	2000	350	350	300	3440
15	42+380	2000	2000	350	350	300	2604
16	42+425	2000	2000	350	350	300	2311
17	43+000	2000	2000	350	350	300	2625
18	43+625	6000	4000	450	450	400	1978
19	44+065	6000	3000	450	450	400	579
20	44+515	6000	4000	450	450	400	1082
21	45+400	2000	1500	250	250	250	652
22	45+975	3000	4000	450	400	375	2827
23	46+112	3000	3000	400	400	350	1641
24	47+300	2000	2000	300	250	250	1469
25	47+315	6000	3000	450	450	400	1673
26	47+630	2000	2000	300	250	250	150

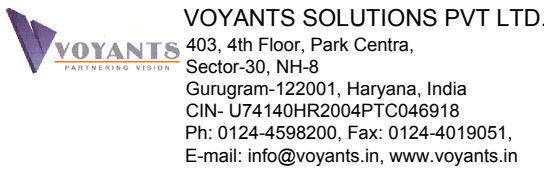
CLIENT :



PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)

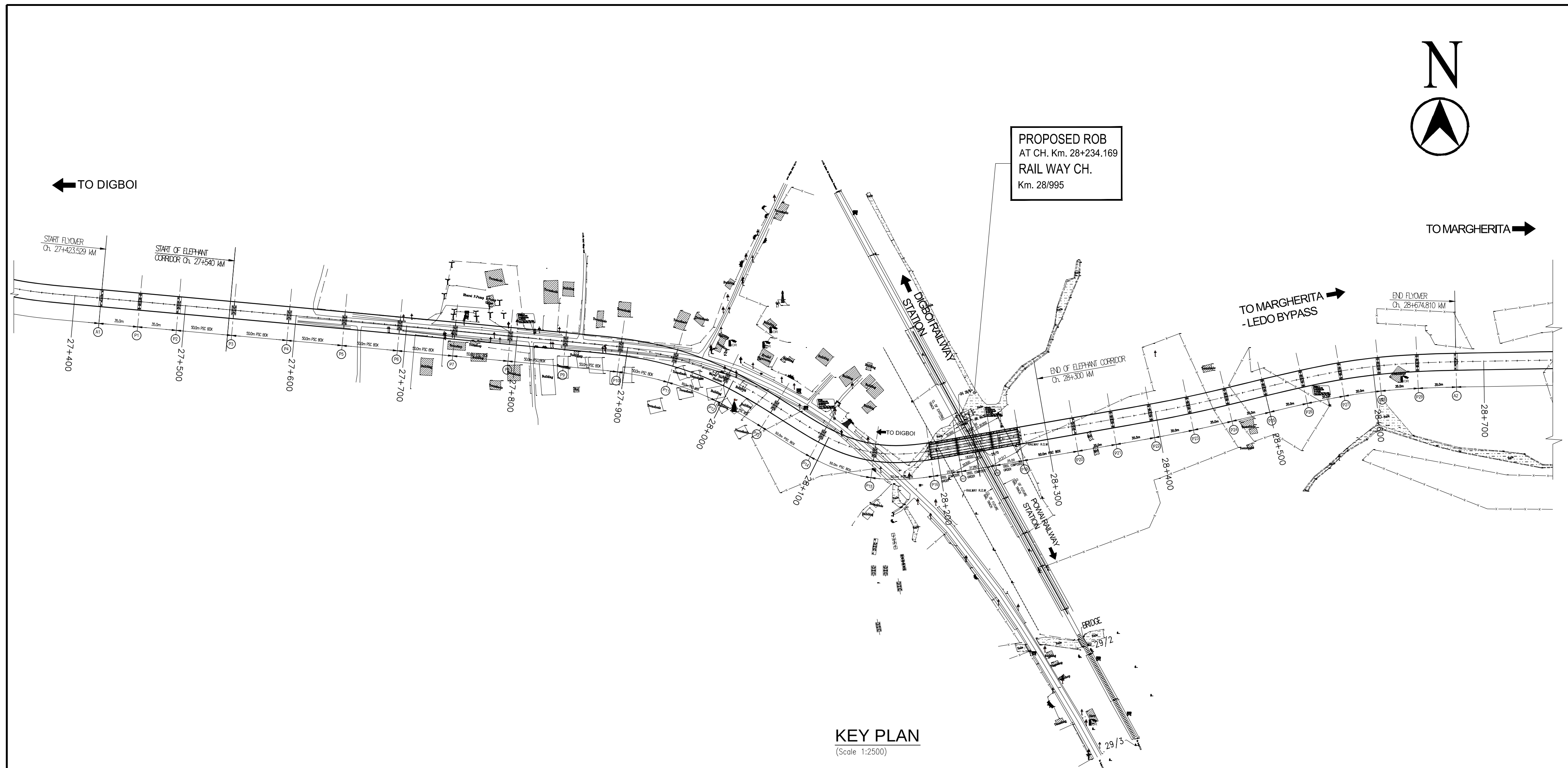
DESIGN CONSULTANT:



Detaild Project Report

REV. DATE DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :
SB	G. Das	SG	SKC	GENERAL ARRANGEMENT DRAWING OF BOX CULVERT (NEW CONSTRUCTION)
DRG. No. :	VSPL/1718-082/DPR/TRB/PKG-4/SEC-4/BC-01. (Sht.2 of 2)			
REVISION:	R0	October, 2022		



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES. UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.

CLIENT :



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GOVERNMENT OF INDIA**

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FREIGHT MOVEMENTS IN INDIA UNDER
BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)**

DESIGN CONSULTANT:



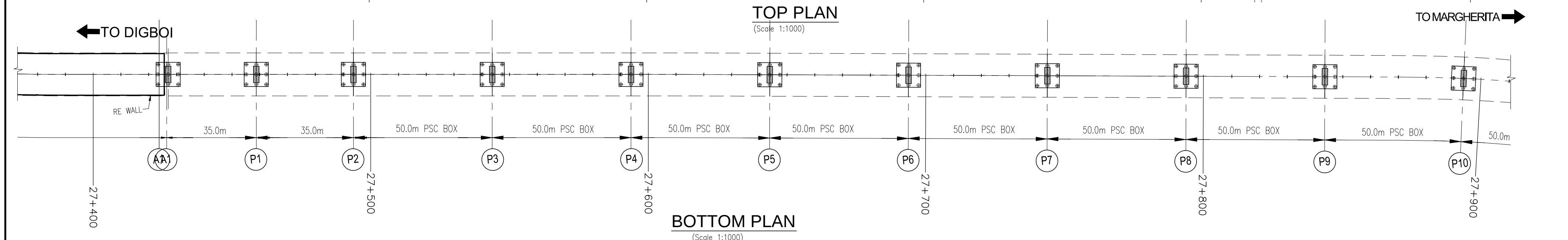
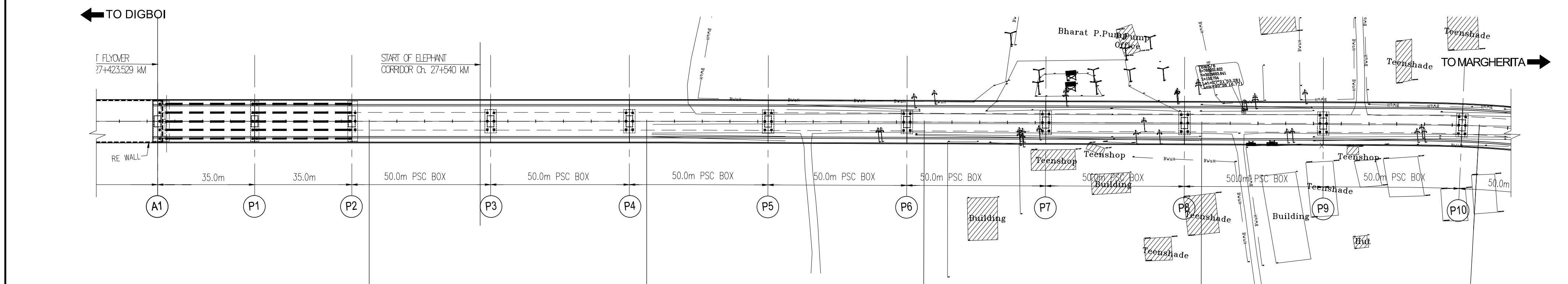
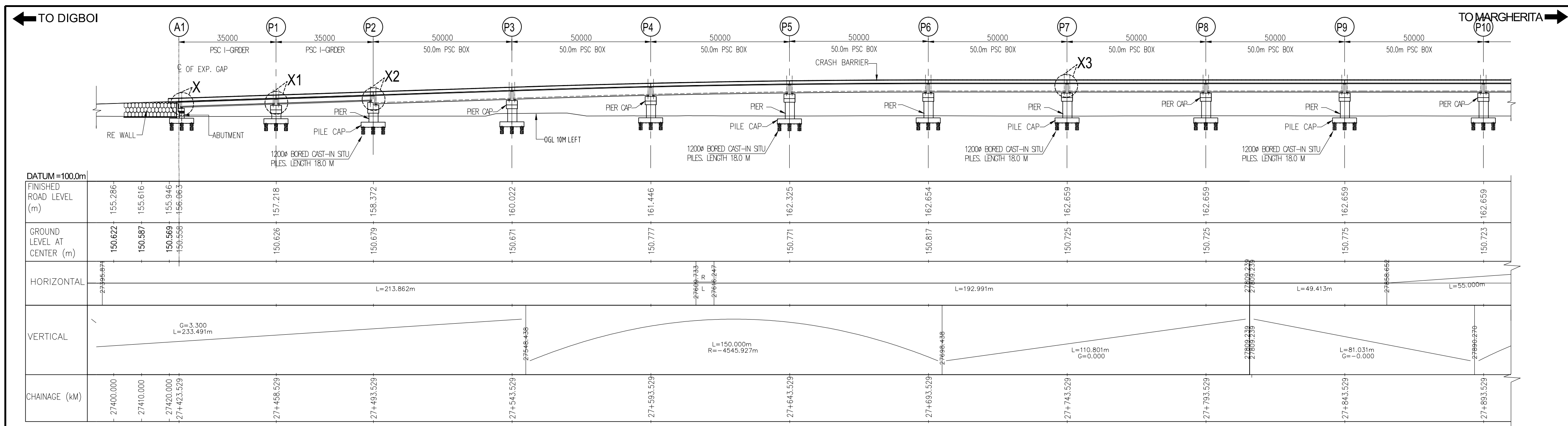
VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurugram-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
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Detaild Project Report

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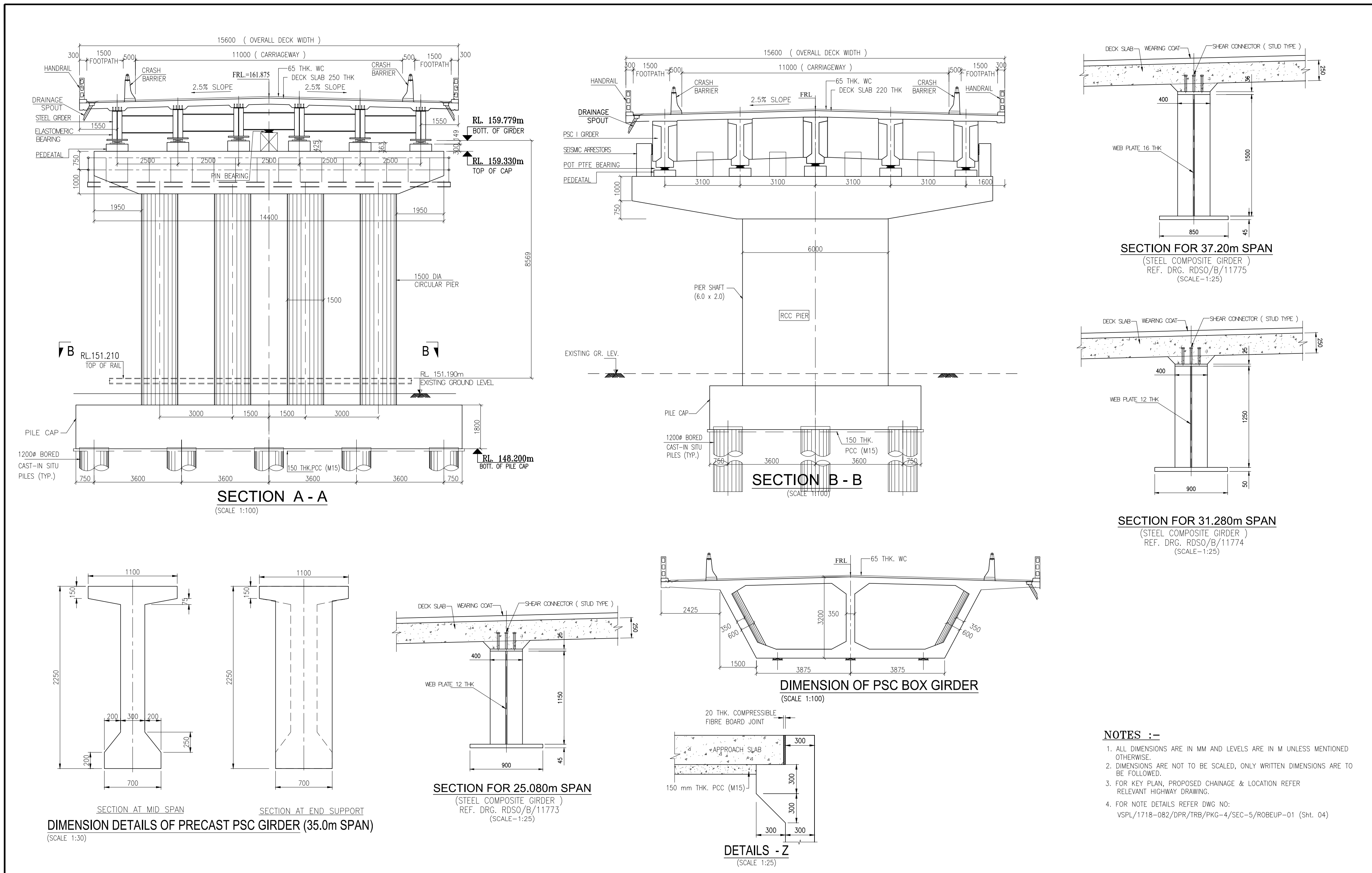
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
SLM	G. Das	SG	SKC
SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE :		
GENERAL ARRANGEMENT DRAWING OF MAJOR BRIDGE ROB CUM ELEPHANT UNDERPASS AT Km. Ch.- 28+234.169		
DRG. No. :	(Sht. 1 of 6)	
VSPL/1718-082/DPR/TRB/PKG-4/SEC-5/ROBEUP-01		
REVISION:	R0	October, 2022

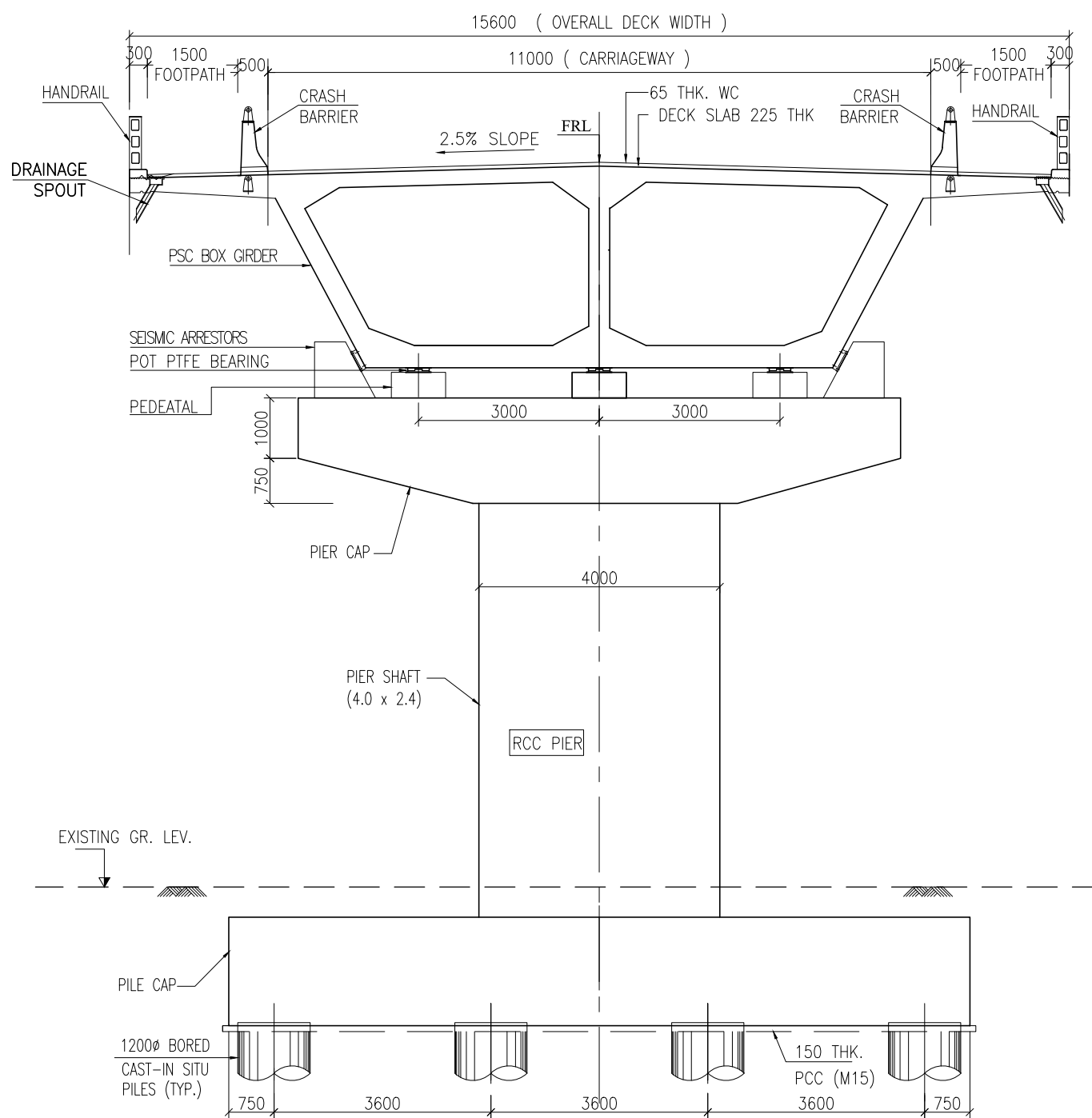


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							SLM	G. Das	SG	SKC	
											
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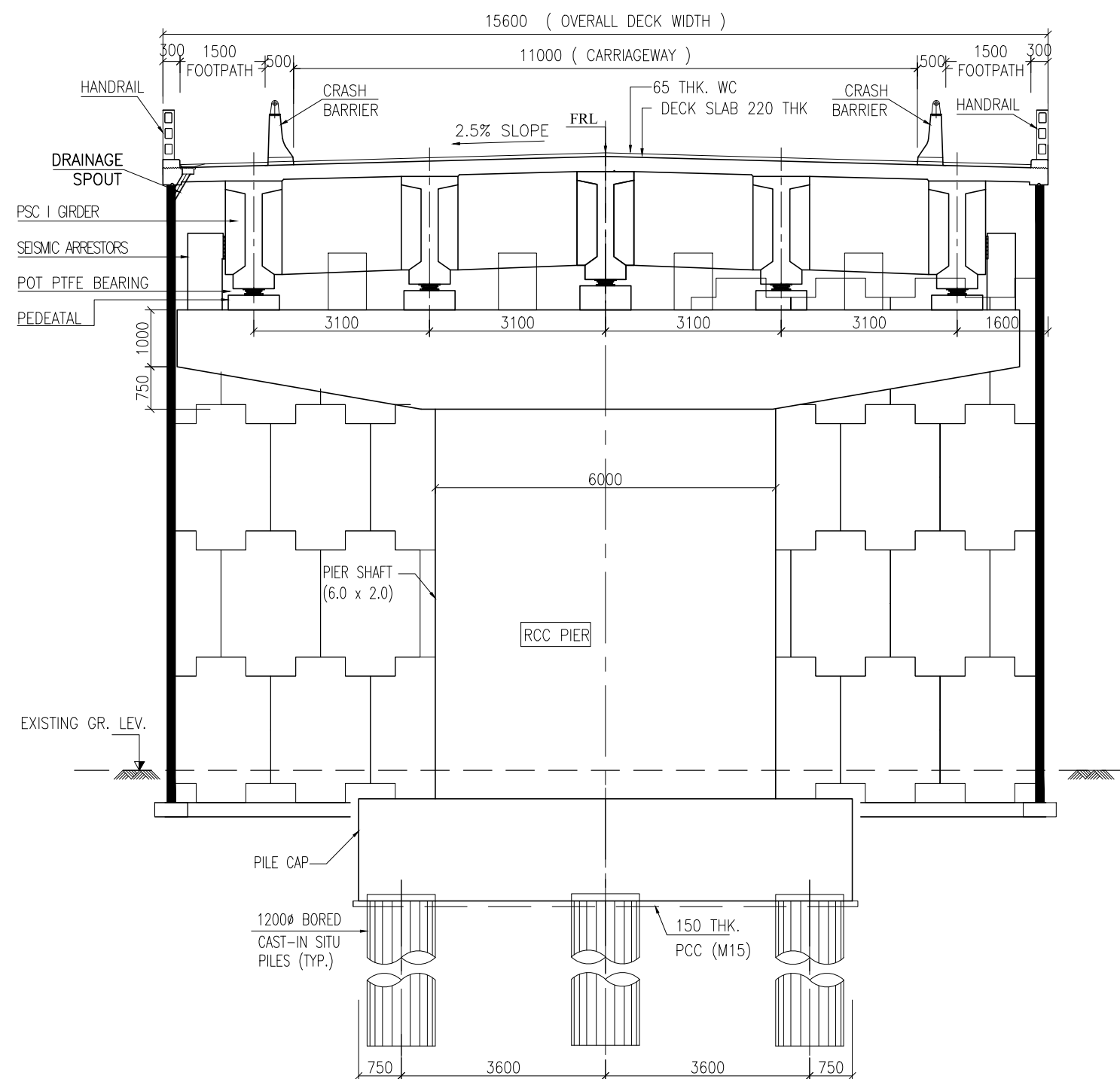
REVISION:	R0	October, 2022
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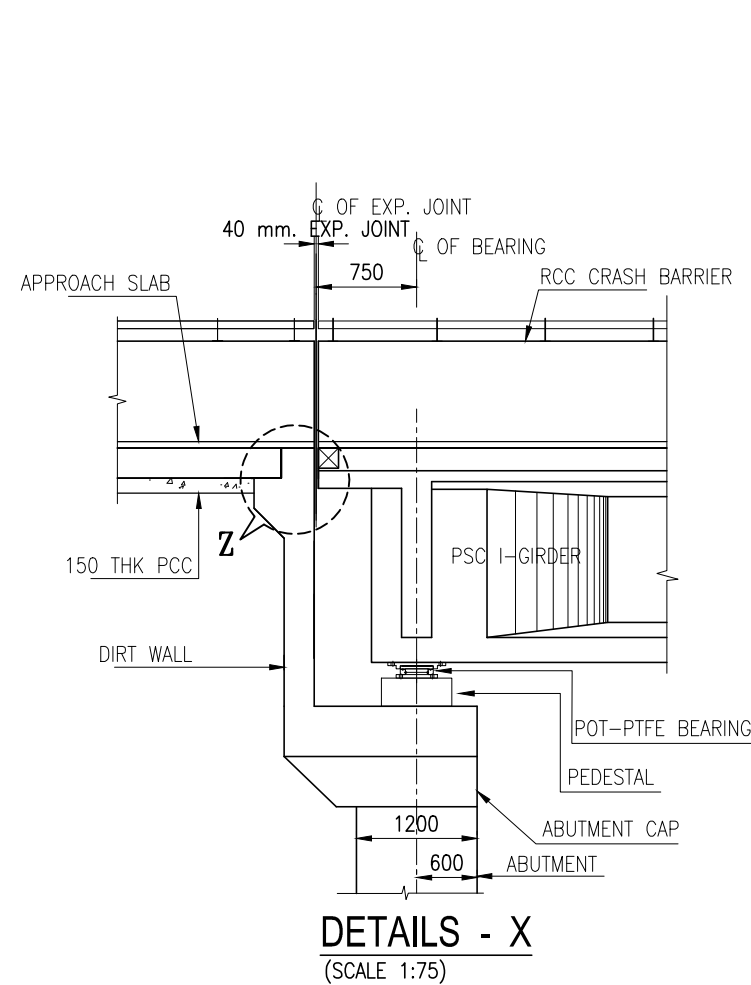
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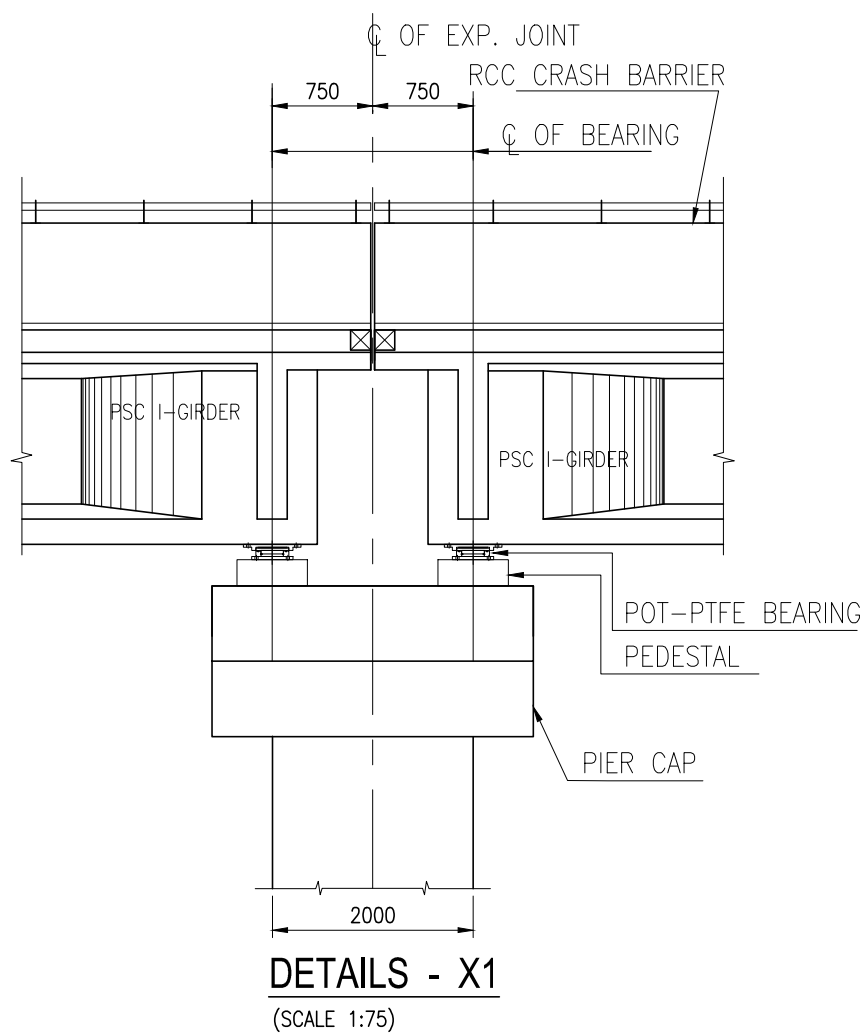
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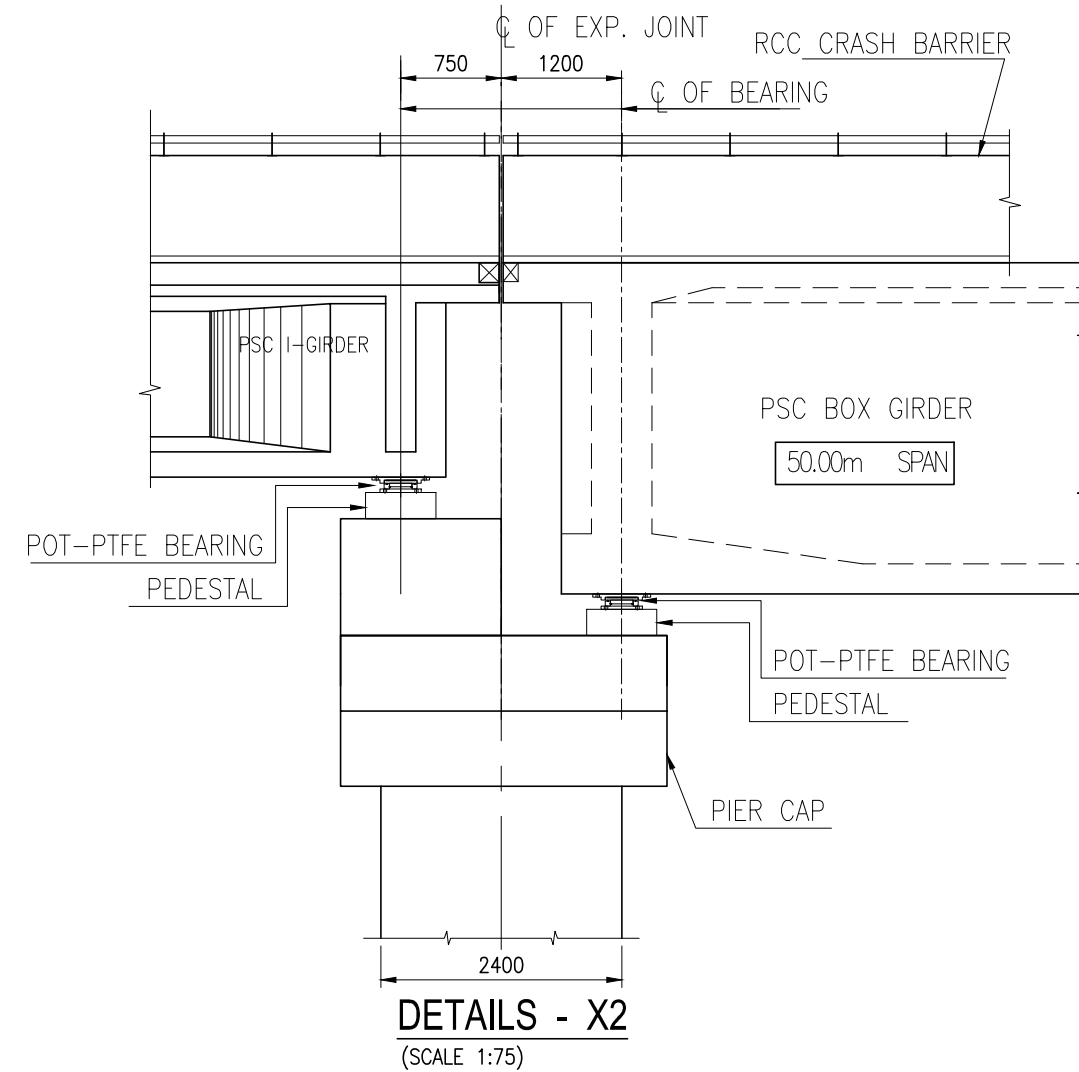
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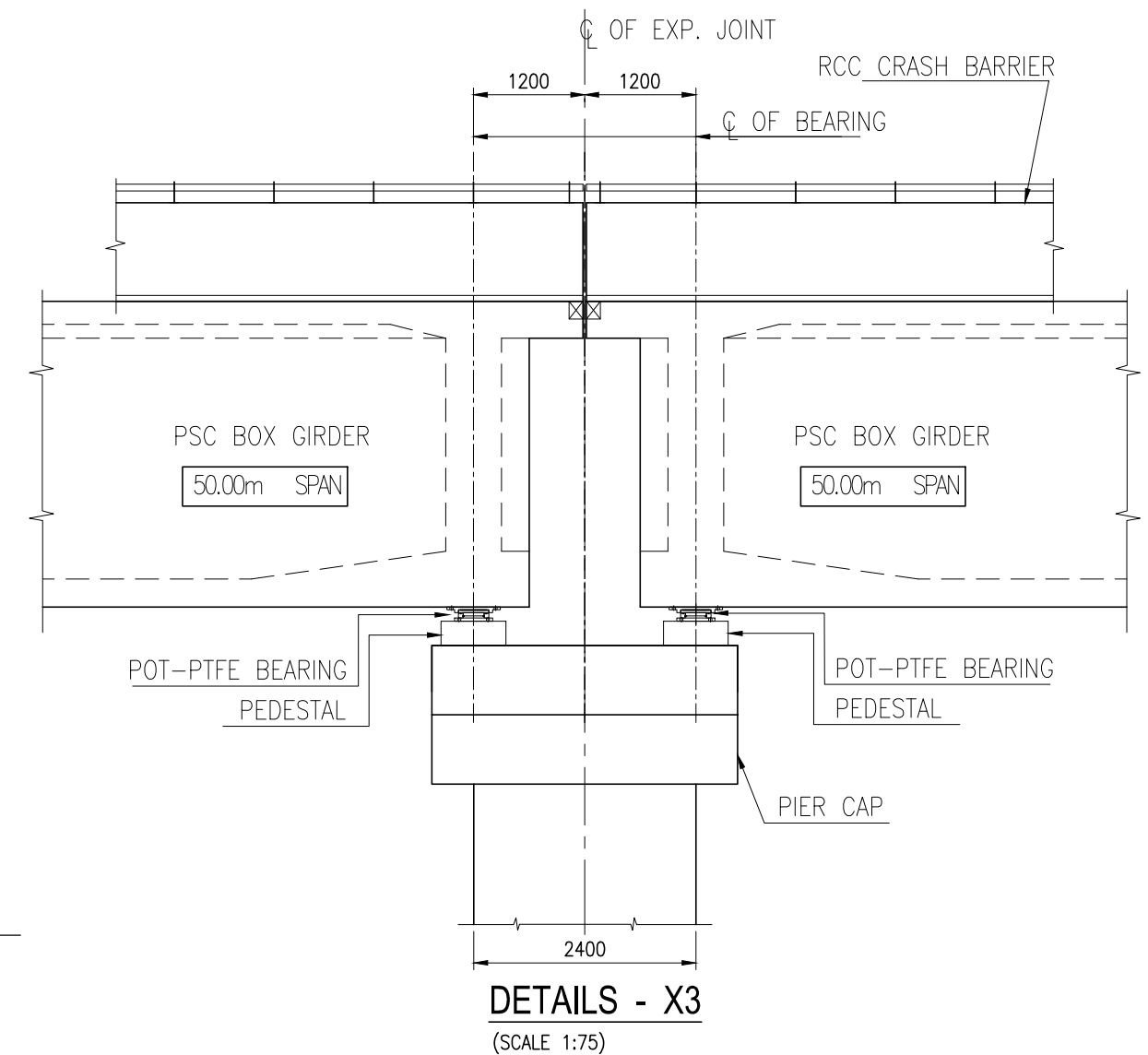
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DETAILS - X1
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DETAILS - X2
(SCALE 1:75)



DETAILS - X3
(SCALE 1:75)

NOTES :-

1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN M UNLESS MENTIONED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.
4. FOR NOTE DETAILS REFER DWG NO: VSPL/1718-082/DPR/TRB/PKG-4/SEC-5/ROBEUP-01 (Sht. 04)

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SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE :
GENERAL ARRANGEMENT DRAWING OF MAJOR BRIDGE ROB CUM ELEPHANT UNDERPASS AT Km. Ch.- 28+234.169
DRG. No. : VSPL/1718-082/DPR/TRB/PKG-4/SEC-5/ROBEUP-01 (Sht. 6 of 6)
REVISION: R0 October, 2022