


General

LIST OF DRAWINGS (MAKHU TOWN)			
S.NO.	DRAWING TITLE	DRAWING NO.	REV.
GENERAL			
1	List of Drawings	FPI_HW_DD_DWG_GEN_1000	R3
2	Horizontal Curve Details	FPI_HW_DD_DWG_GEN_1005	R2
3	Application of Typical Cross Section	FPI_HW_DD_DWG_GEN_1014	R3
TYPICAL CROSS SECTION			
1	Typical Cross Section (TCS-1 and TCS-2)	FPI_HW_DD_DWG_TCS_1025	R3
2	Typical Cross Section (TCS-3 and TCS-4a)	FPI_HW_DD_DWG_TCS_1026	R3
3	Typical Cross Section (TCS-4b)	FPI_HW_DD_DWG_TCS_1027	R3
PLAN & PROFILE			
1	Alignment Plan and Profile (km 170+000 to km 170+500)	FPI_HW_DD_RG_AP_1100	R3
2	Alignment Plan and Profile (km 170+500 to km 171+000)	FPI_HW_DD_RG_PP_1101	R3
3	Alignment Plan and Profile (km 171+000 to km 170+500)	FPI_HW_DD_RG_PP_1102	R3
4	Alignment Plan and Profile (km 171+500 to km 171+900)	FPI_HW_DD_RG_PP_1103	R3
STRUCTURE			
1	Typical GAD of Box Culvert	FPI_ST_DD_DWG_HZF_5001	R3
2	GAD For Minor Bridge at Prop. Ch. 171+575 For Reconstruction	FPI_ST_DD_DWG_HZF_5002	R3
3	GAD For ROB at Prop. Ch. 171+387.25 (2 Sheets)	FPI_ST_DD_DWG_HZF_5003	R3

NOTES:	REFERENCE DWGS.:								CLIENT :	PROJECT :	
									 <b>National Highways Authority of India</b> (Ministry of Road Transport and Highways) G-5 & 6, Sector-10, Dwarka, New Delhi - 110075.	<b>WIDENING AND RECONSTRUCTION OF EXISTING TWO LANE CARRIAGEWAY TO FOUR LANE WITH PAVED SHOULDER INCLUDING CONSTRUCTION OF ROB IN MAKHU TOWN FROM KM. 170+000 TO KM. 171+900 OF NH-54 IN THE STATE OF PUNJAB ON EPC MODE</b>	
		R3	17/08/22	FINAL DPR SUBMISSION	SPK	CSB	DMC	<b>CONSULTANT : FP Project Management</b> Formerly Frischmann Prabhu (India) Private Limited 315, Balgovind Wadi, New Prabhadevi Road, Prabhadevi, Mumbai - 400 025 Tel: +91-22-6660 3901 Fax: +91-22-6660 3902 E-mail: plmumbai@fpindia.com www.fpindia.com			<b>DRAWING TITLE : HARIKE - ZIRA - FARIDKOTE SECTION</b>  <b>LIST OF DRAWING</b>
		R2	22/06/22	FINAL DPR SUBMISSION	SPK	CSB	DMC				
		R1	19/05/22	FINAL DPR SUBMISSION	SPK	CSB	DMC				
		R0	11/03/22	DPR SUBMISSION	SPK	CSB	DMC			SCALE : - PROJECT No. : <b>165007</b>	
		REV.	DATE	DESCRIPTION	DRAWN	CHK.	APP.	<b>DISCLAIMER:</b> THIS DRAWING IS THE PROPERTY OF FP PROJECT MANAGEMENT AND SHALL BE USED ONLY FOR THE JOB MENTIONED IN THIS DRAWING. IT SHALL NOT BE PUBLISHED, LENT, COPIED OR USED DIRECTLY OR INDIRECTLY, AND FULLY OR PARTLY FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF / FROM FP PROJECT MANAGEMENT.			
		REVISION INDEX							<b>FPI HW DD HZF GEN 1000 R3</b>		

Horizontal Curve Details - km 170+000 to km 171+900

Sr. No.	Curve No.	HIP Chainage	HIP Co-ordinates		Design Speed (kmph)	Tangent Length (m)	Curve Length (m)	Chord Length (m)	Deflection Angle (d)	Radius (m)	Hand of Curve	Transition Length (m)		Super elevation (%)
			X	Y								Preceding	Following	
1	Curve No. 1	170077.421	497258.627	3442322.981	100	42.346	84.689	84.688	000.970	5000	RIGHT	0	0	NC
2	Curve No. 2	170631.414	497721.981	3442020.020	100	234.221	444.842	433.831	044.326	575	RIGHT	90	90	7.00
3	Curve No. 3	171046.383	497785.761	3441586.401	100	14.589	29.178	29.178	000.334	5000	LEFT	0	0	NC
4	Curve No. 4	171198.166	497801.628	3441435.449	100	5.979	11.958	11.958	000.137	5000	RIGHT	0	0	NC
5	Curve No. 5	171328.368	497814.928	3441305.928	100	46.493	92.983	92.982	001.066	5000	LEFT	0	0	NC
6	Curve No. 6	171536.337	497840.017	3441099.475	100	18.255	36.511	36.510	000.418	5000	LEFT	0	0	NC
7	Curve No. 7	171724.303	497864.054	3440913.052	100	8.524	17.047	17.047	000.195	5000	LEFT	0	0	NC

**NOTES:**

- FOR HORIZONTAL CURVE NUMBER & LOCATION REFER DWG NO. FPI\_HW\_DD\_HZF\_PP\_1100 TO 1103
- NC: NORMAL CROSSFALL

**REFERENCE DWGS.:**

REV.	DATE	DESCRIPTION	DRAWN	CHK.	APP.
R2	17/08/22	FINAL DPR SUBMISSION	SPK	CSB	DMC
R1	19/05/22	FINAL DPR SUBMISSION	SPK	CSB	DMC
R0	11/03/22	DPR SUBMISSION	SPK	CSB	DMC
<b>REVISION INDEX</b>					

**CLIENT :**

**National Highways Authority of India**  
 (Ministry of Road Transport and Highways)  
 G-5 & 6, Sector-10, Dwarka,  
 New Delhi - 110075.

**CONSULTANT : FP Project Management**

Formerly Frischmann Prabhu (India) Private Limited  
 315, Balgovind Wadi, New Prabhadevi Road,  
 Prabhadevi, Mumbai - 400 025  
 Tel: +91-22-6660 3901 Fax: +91-22-6660 3902  
 E-mail: plmumbai@fpindia.com www.fpindia.com

**PROJECT :**

**WIDENING AND RECONSTRUCTION OF EXISTING TWO LANE CARRIAGEWAY TO FOUR LANE WITH PAVED SHOULDER INCLUDING CONSTRUCTION OF ROB IN MAKHU TOWN FROM KM. 170+000 TO KM. 171+900 OF NH-54 IN THE STATE OF PUNJAB ON EPC MODE**

**DRAWING TITLE : HARIKE - ZIRA - FARIDKOTE SECTION**


**HORIZONTAL CURVE DETAILS**

**SCALE : - PROJECT No. : 165007**

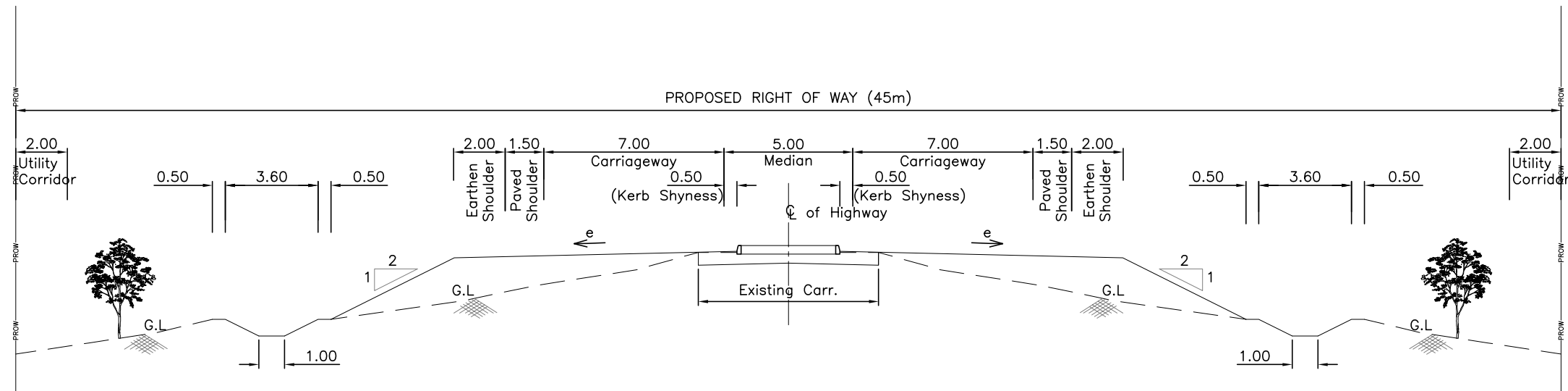
**FPI HW DD DWG GEN 1005 R2**

DISCLAIMER: THIS DRAWING IS THE PROPERTY OF FP PROJECT MANAGEMENT AND SHALL BE USED ONLY FOR THE JOB MENTIONED IN THIS DRAWING. IT SHALL NOT BE PUBLISHED, LENT, COPIED OR USED DIRECTLY OR INDIRECTLY, AND FULLY OR PARTLY FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF / FROM FP PROJECT MANAGEMENT.

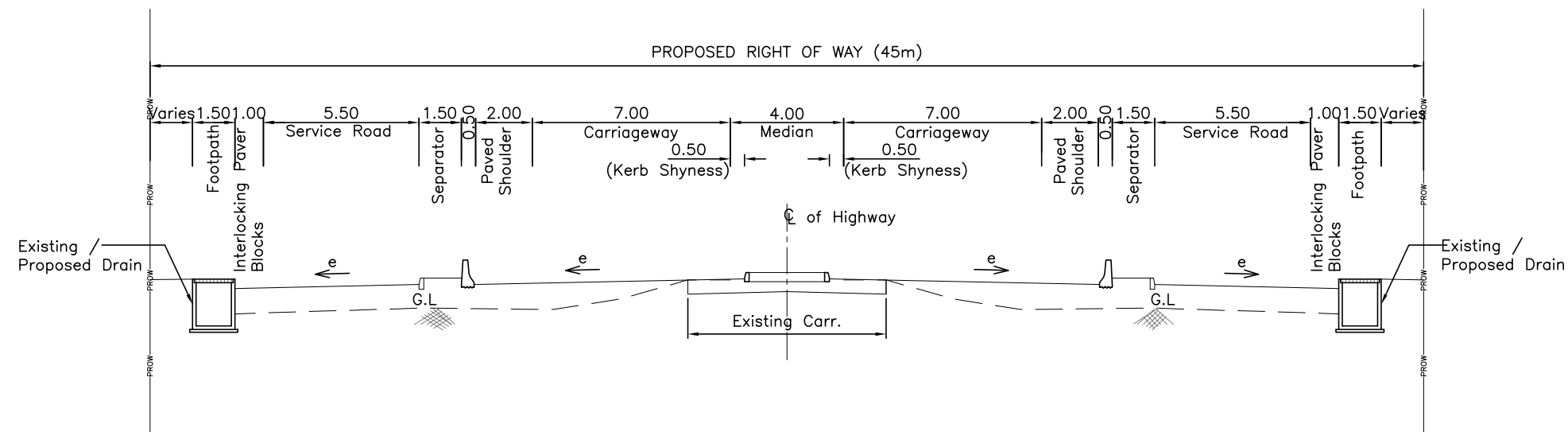
TCS APPLICATION					
Sr. No.	Chainage		Length	TCS	Remark
	From	To			
1	170+000	170+300	300	TCS-1	RECONSTRUCTION OF EXISTING CARRIAGEWAY – OPEN COUNTRY (CONCENTRIC WIDENING)
2	170+300	170+890	590	TCS-2	RECONSTRUCTION OF EXISTING CARRIAGEWAY – BUILT UP AREA (CONCENTRIC WIDENING)
3	170+890	171+320	430	TCS-3	FOUR LANE ROB APPROACH WITH 4.0 M MEDIAN
4	171+320	171+340	20	TCS-4(b)	FOUR LANE ROB APPROACH WITH 4.0 M MEDIAN
5	171+340	171+422	82	TCS-4(a)	FOUR LANE ROB VIADUCT (RAILWAY PORTION)
6	171+422	171+556	134	TCS-4(b)	FOUR LANE ROB VIADUCT (NON-RAILWAY PORTION)
7	171+556	171+900	344	TCS-3	FOUR LANE ROB APPROACH WITH 4.0 M MEDIAN

NOTES:		REFERENCE DWGS.:							CLIENT :		PROJECT :		
1.	FOR TYPICAL CROSS SECTION DETAILS								 <b>National Highways Authority of India</b> (Ministry of Road Transport and Highways) G-5 & 6, Sector-10, Dwarka, New Delhi – 110075.	<b>WIDENING AND RECONSTRUCTION OF EXISTING TWO LANE CARRIAGEWAY TO FOUR LANE WITH PAVED SHOULDER INCLUDING CONSTRUCTION OF ROB IN MAKHU TOWN FROM KM. 170+000 TO KM. 171+900 OF NH-54 IN THE STATE OF PUNJAB ON EPC MODE</b>			
	REFER DWG NO. FPI_HW_DD_DWG_TCS_1025 TO 1027												
2.	REFER RELEVANT PLAN AND PROFILE DRAWINGS		R3	17/08/22	DPR SUBMISSION	SPK	CSB	DMC	<b>CONSULTANT : FP Project Management</b> Formerly Frischmann Prabhu (India) Private Limited 315, Balgovind Wadi, New Prabhadevi Road, Prabhadevi, Mumbai - 400 025 Tel: +91-22-6660 3901 Fax: +91-22-6660 3902 E-mail: plmumbai@fpindia.com www.fpindia.com		<b>DRAWING TITLE : HARIKE - ZIRA - FARIDKOTE SECTION</b>  <b>APPLICATION OF TYPICAL CROSS SECTION</b>		
	FOR MORE DETAILS		R2	22/06/22	DPR SUBMISSION	SPK	CSB	DMC					
	REFER DWG NO. FPI_HW_DD_HZF_PP_1100 TO 1103		R1	19/05/22	DPR SUBMISSION	SPK	CSB	DMC	<b>DISCLAIMER:</b> THIS DRAWING IS THE PROPERTY OF FP PROJECT MANAGEMENT AND SHALL BE USED ONLY FOR THE JOB MENTIONED IN THIS DRAWING. IT SHALL NOT BE PUBLISHED, LENT, COPIED OR USED DIRECTLY OR INDIRECTLY, AND FULLY OR PARTLY FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF / FROM FP PROJECT MANAGEMENT.		<b>SCALE : -</b> <b>PROJECT No. : 165007</b>		
			R0	11/03/22	DPR SUBMISSION	SPK	CSB	DMC					
			REV.	DATE	DESCRIPTION	DRAWN	CHK.	APP.					
			REVISION INDEX										

# Typical Cross Sections

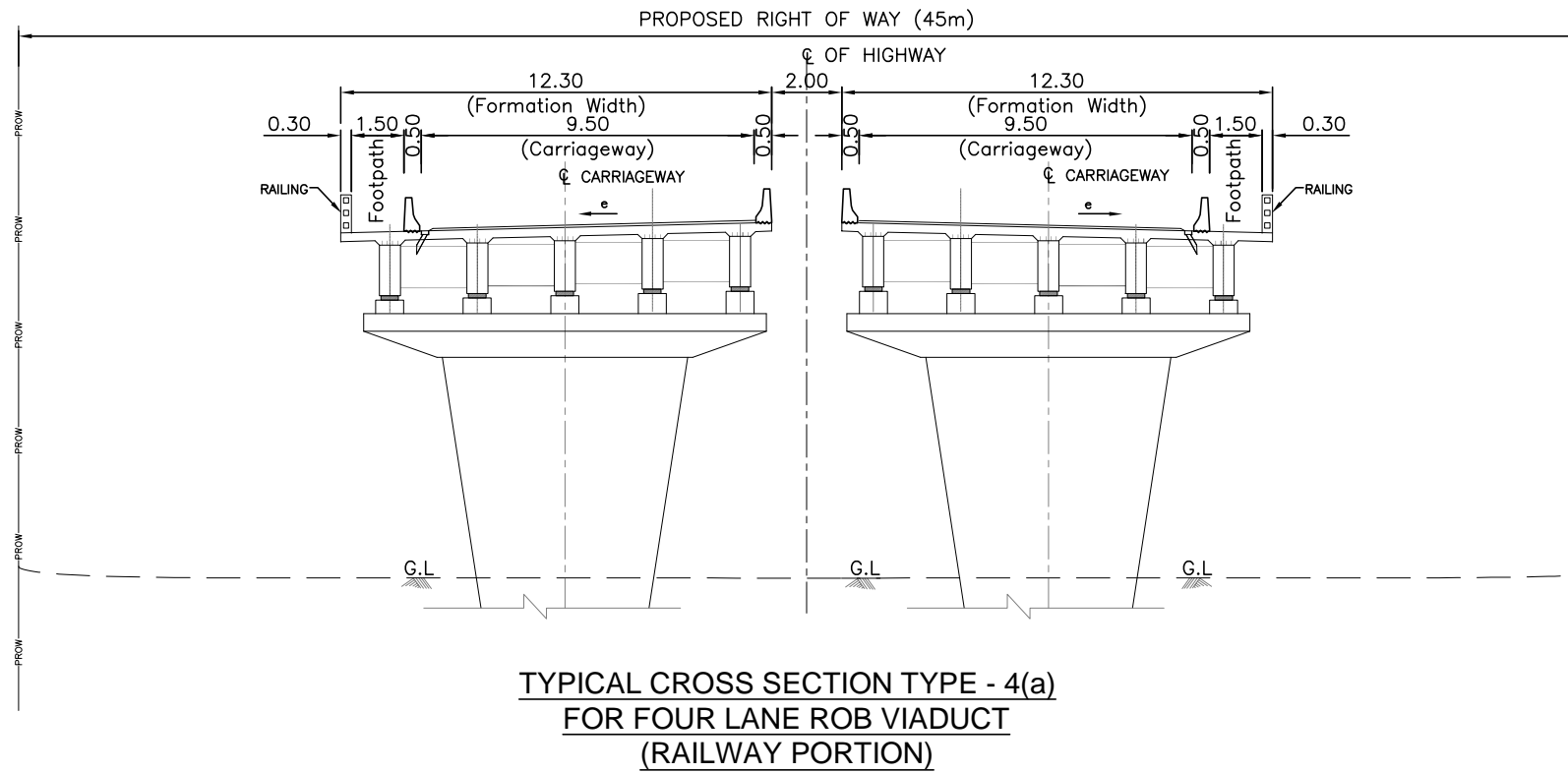
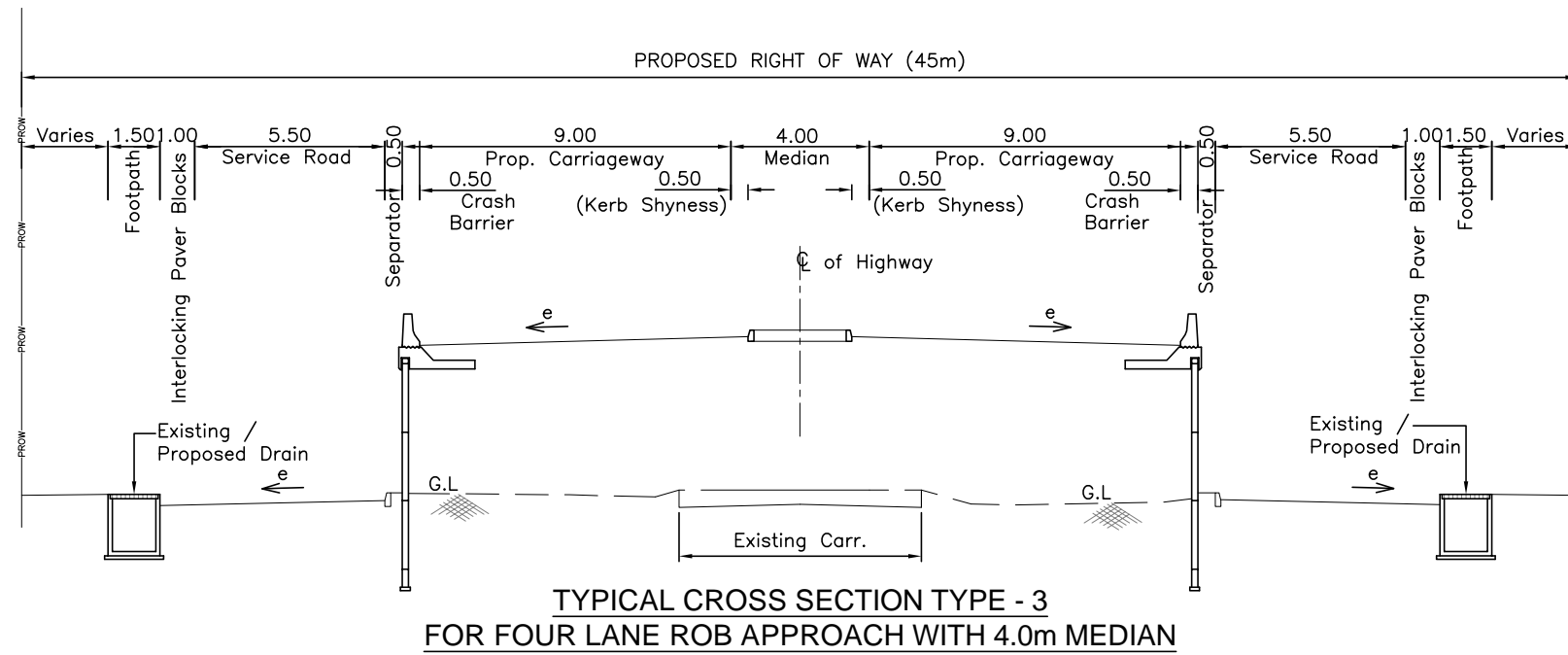


**TYPICAL CROSS SECTION TYPE - 1  
FOR OPEN COUNTRY - PLAIN / ROLLING TERRAIN  
(RECONSTRUCTION OF EXISTING CARRIAGEWAY)**



**TYPICAL CROSS SECTION TYPE - 2  
FOR BUILT-UP SECTION - PLAIN / ROLLING TERRAIN  
(RECONSTRUCTION OF EXISTING CARRIAGEWAY)**

NOTES:		REFERENCE DWGS.:					CLIENT :			PROJECT :				
1.	ALL DIMENSIONS ARE IN METERS						<b>National Highways Authority of India</b> (Ministry of Road Transport and Highways) G-5 & 6, Sector-10, Dwarka, New Delhi - 110075.			<b>WIDENING AND RECONSTRUCTION OF EXISTING TWO LANE CARRIAGEWAY TO FOUR LANE WITH PAVED SHOULDER INCLUDING CONSTRUCTION OF ROB IN MAKHU TOWN FROM KM. 170+000 TO KM. 171+900 OF NH-54 IN THE STATE OF PUNJAB ON EPC MODE</b>				
			R3	17/08/22	FINAL DPR SUBMISSION	JJL	CSB	DMC	<b>CONSULTANT : FP Project Management</b> Formerly Frischmann Prabhu (India) Private Limited 315, Balgavind Wadi, New Prabhadevi Road, Prabhadevi, Mumbai - 400 025 Tel: +91-22-6660 3901 Fax: +91-22-6660 3902 E-mail: plmumbai@fpindia.com www.fpindia.com			<b>DRAWING TITLE : HARIKE - ZIRA - FARIDKOTE SECTION</b> <b>TYPICAL CROSS SECTION</b> <b>TCS TYPE - 1 AND TCS TYPE - 2</b>		
			R2	22/06/22	FINAL DPR SUBMISSION	JJL	CSB	DMC	<b>DISCLAIMER:</b> THIS DRAWING IS THE PROPERTY OF FP PROJECT MANAGEMENT AND SHALL BE USED ONLY FOR THE JOB MENTIONED IN THIS DRAWING. IT SHALL NOT BE PUBLISHED, LENT, COPIED OR USED DIRECTLY OR INDIRECTLY, AND FULLY OR PARTLY FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF / FROM FP PROJECT MANAGEMENT.			<b>SCALE : 1:150</b>		
			R1	19/05/22	FINAL DPR SUBMISSION	JJL	CSB	DMC	<b>PROJECT No. : 165007</b>			<b>FPI HW DD HZF TCS 1025 R3</b>		
			R0	11/03/22	DPR SUBMISSION	JJL	CSB	DMC						
			<b>REV.</b>	<b>DATE</b>	<b>DESCRIPTION</b>	<b>DRAWN</b>	<b>CHK.</b>	<b>APP.</b>						
			<b>REVISION INDEX</b>											



NOTES:		REFERENCE DWGS.:					
1.	ALL DIMENSIONS ARE IN METERS						
		R3	17/08/22	FINAL DPR SUBMISSION	JJL	CSB	DMC
		R2	22/06/22	FINAL DPR SUBMISSION	JJL	CSB	DMC
		R1	19/05/22	FINAL DPR SUBMISSION	JJL	CSB	DMC
		R0	11/03/22	DPR SUBMISSION	JJL	CSB	DMC
		<b>REV.</b>	<b>DATE</b>	<b>DESCRIPTION</b>	<b>DRAWN</b>	<b>CHK.</b>	<b>APP.</b>
REVISION INDEX							

**CLIENT :** **National Highways Authority of India**  
(Ministry of Road Transport and Highways)  
G-5 & 6, Sector-10, Dwarka,  
New Delhi - 110075.

**CONSULTANT :** **FP Project Management**  
Formerly Frischmann Prabhu (India) Private Limited  
315, Balgovind Wadi, New Prabhadevi Road,  
Prabhadevi, Mumbai - 400 025  
Tel: +91-22-6660 3901 Fax: +91-22-6660 3902  
E-mail: pfmumbai@fpindia.com www.fpindia.com

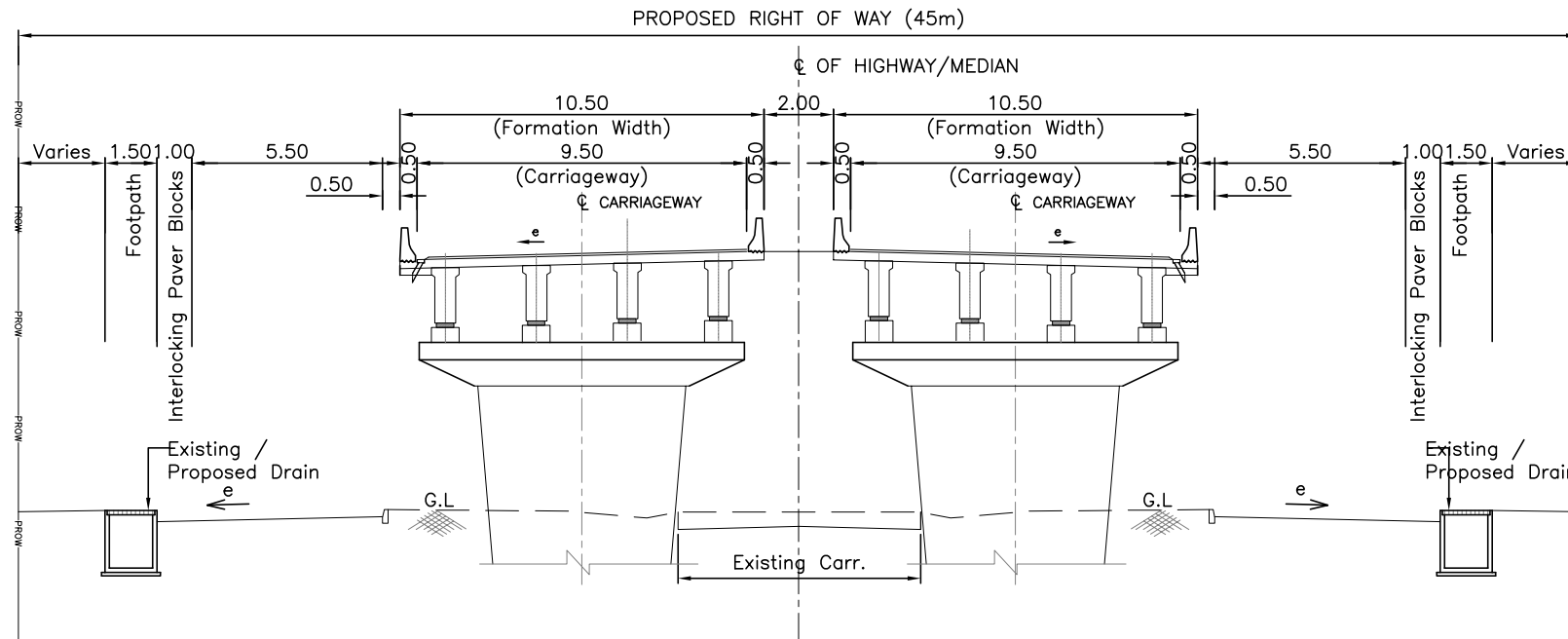
DISCLAIMER: THIS DRAWING IS THE PROPERTY OF FP PROJECT MANAGEMENT AND SHALL BE USED ONLY FOR THE JOB MENTIONED IN THIS DRAWING. IT SHALL NOT BE PUBLISHED, LENT, COPIED OR USED DIRECTLY OR INDIRECTLY, AND FULLY OR PARTLY FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF / FROM FP PROJECT MANAGEMENT.

**PROJECT :**  
**WIDENING AND RECONSTRUCTION OF EXISTING TWO LANE CARRIAGEWAY TO FOUR LANE WITH PAVED SHOULDER INCLUDING CONSTRUCTION OF ROB IN MAKHU TOWN FROM KM. 170+000 TO KM. 171+900 OF NH-54 IN THE STATE OF PUNJAB ON EPC MODE**


**DRAWING TITLE :** HARIKE - ZIRA - FARIDKOTE SECTION  
**TYPICAL CROSS SECTION  
TCS TYPE - 3 AND TCS TYPE - 4(a)**

**SCALE :** 1:150      **PROJECT No. :** 165007

<b>FPI</b>	<b>HW</b>	<b>DD</b>	<b>HZF</b>	<b>TCS</b>	<b>1026</b>	<b>R3</b>
------------	-----------	-----------	------------	------------	-------------	-----------

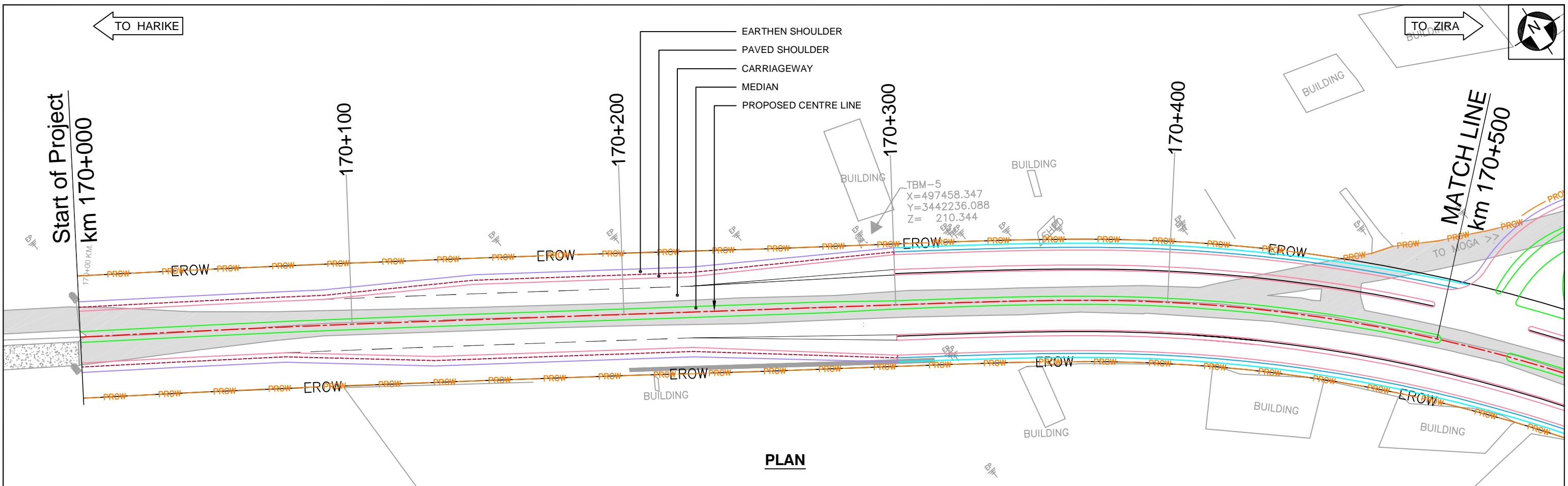


**TYPICAL CROSS SECTION TYPE - 4(b)  
FOR FOUR LANE ROB VIADUCT  
(NON RAILWAY PORTION)**

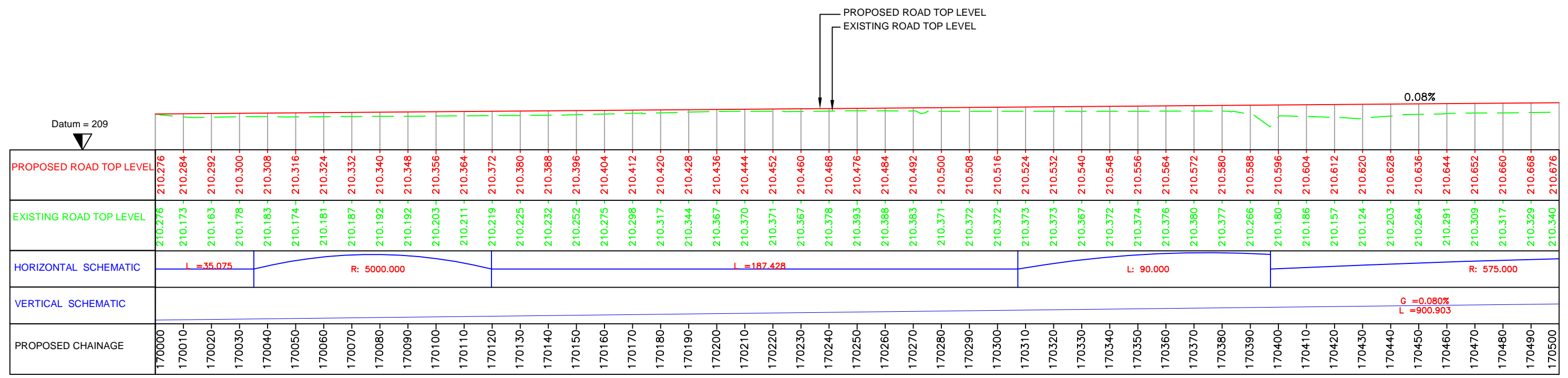
<b>NOTES:</b>		<b>REFERENCE DWGS.:</b>						<b>CLIENT :</b>  <b>National Highways Authority of India</b> (Ministry of Road Transport and Highways) G-5 & 6, Sector-10, Dwarka, New Delhi - 110075.		<b>PROJECT :</b> <b>WIDENING AND RECONSTRUCTION OF EXISTING TWO LANE CARRIAGEWAY TO FOUR LANE WITH PAVED SHOULDER INCLUDING CONSTRUCTION OF ROB IN MAKHU TOWN FROM KM. 170+000 TO KM. 171+900 OF NH-54 IN THE STATE OF PUNJAB ON EPC MODE</b>	
1.	ALL DIMENSIONS ARE IN METERS							<b>CONSULTANT : FP Project Management</b> Formerly Frischmann Prabhu (India) Private Limited 315, Balgovind Wadi, New Prabhadevi Road, Prabhadevi, Mumbai - 400 025 Tel: +91-22-6660 3901 Fax: +91-22-6660 3902 E-mail: plmumbai@fpindia.com www.fpindia.com		<b>DRAWING TITLE : HARIKE - ZIRA - FARIDKOTE SECTION</b> <b>TYPICAL CROSS SECTION</b> <b>TCS TYPE - 4(b)</b>	
		R3	17/08/22	FINAL DPR SUBMISSION	JJL	CSB	DMC	<b>DISCLAIMER:</b> THIS DRAWING IS THE PROPERTY OF FP PROJECT MANAGEMENT AND SHALL BE USED ONLY FOR THE JOB MENTIONED IN THIS DRAWING. IT SHALL NOT BE PUBLISHED, LENT, COPIED OR USED DIRECTLY OR INDIRECTLY, AND FULLY OR PARTLY FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF / FROM FP PROJECT MANAGEMENT.		<b>SCALE : 1:150</b> <b>PROJECT No. : 165007</b>	
		R2	22/06/22	FINAL DPR SUBMISSION	JJL	CSB	DMC	<b>REVISION INDEX</b>		<b>FPI   HW   DD   HZF   TCS   1027   R3</b>	
		R1	19/05/22	FINAL DPR SUBMISSION	JJL	CSB	DMC				
		R0	11/03/22	DPR SUBMISSION	JJL	CSB	DMC				
		<b>REV.</b>	<b>DATE</b>	<b>DESCRIPTION</b>	<b>DRAWN</b>	<b>CHK.</b>	<b>APP.</b>				



# Alignment Plan and Profile



**PLAN**



**PROFILE**

NOTES:	REFERENCE DWGS.:	REV.	DATE	DESCRIPTION	DRAWN	CHK.	APP.
1. ALL CHAINAGES ARE IN km+m.							
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH RELEVANT TYPICAL CROSS SECTION DRAWING (1025 TO 1027)		R3	17/08/22	FINAL DPR SUBMISSION	SPK	CSB	DMC
3. STRUCTURE SHOWN ARE INDICATIVE ONLY.		R2	22/06/22	FINAL DPR SUBMISSION	SPK	CSB	DMC
4. FOR APPLICATION OF TYPICAL CROSS SECTION REFER DWG NO. FPI_HW_DD_DWG_GEN_1014		R1	19/05/22	FINAL DPR SUBMISSION	SPK	CSB	DMC
5. FOR HORIZONTAL CURVE DETAILS REFER DWG NO. FPI_HW_DD_DWG_GEN_1005		R0	11/03/22	DPR SUBMISSION	SPK	CSB	DMC
				REVISION INDEX			

**CLIENT :** National Highways Authority of India  
 (Ministry of Road Transport and Highways)  
 G-5 & 6, Sector-10, Dwarka, New Delhi - 110075.

**CONSULTANT :** FP Project Management  
 Formerly Frischmann Prabhu (India) Private Limited  
 315, Balgovid Wadi, New Prabhadevi Road, Prabhadevi, Mumbai - 400 025  
 Tel: +91-22-6660 3901 Fax: +91-22-6660 3902  
 E-mail: plmumbai@fpindia.com www.fpindia.com

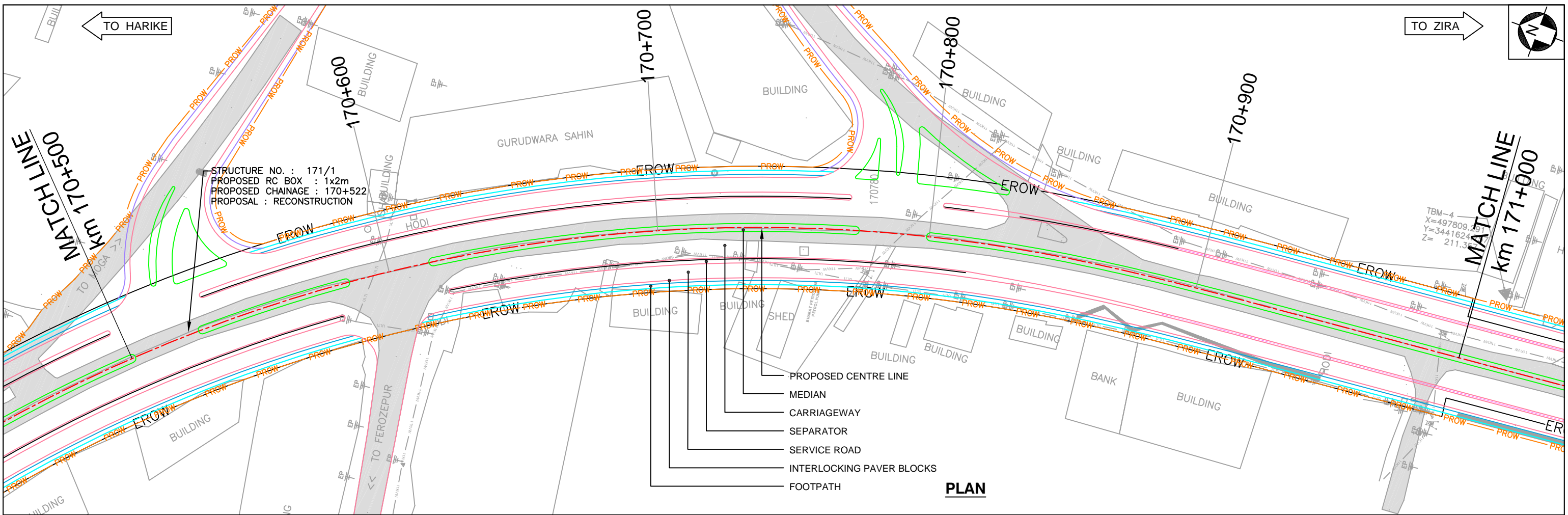
DISCLAIMER: THIS DRAWING IS THE PROPERTY OF FP PROJECT MANAGEMENT AND SHALL BE USED ONLY FOR THE JOB MENTIONED IN THIS DRAWING. IT SHALL NOT BE PUBLISHED, LENT, COPIED OR USED DIRECTLY OR INDIRECTLY, AND FULLY OR PARTLY FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF / FROM FP PROJECT MANAGEMENT.

**PROJECT :** WIDENING AND RECONSTRUCTION OF EXISTING TWO LANE CARRIAGEWAY TO FOUR LANE WITH PAVED SHOULDER INCLUDING CONSTRUCTION OF ROB IN MAKHU TOWN FROM KM. 170+000 TO KM. 171+900 OF NH-54 IN THE STATE OF PUNJAB ON EPC MODE

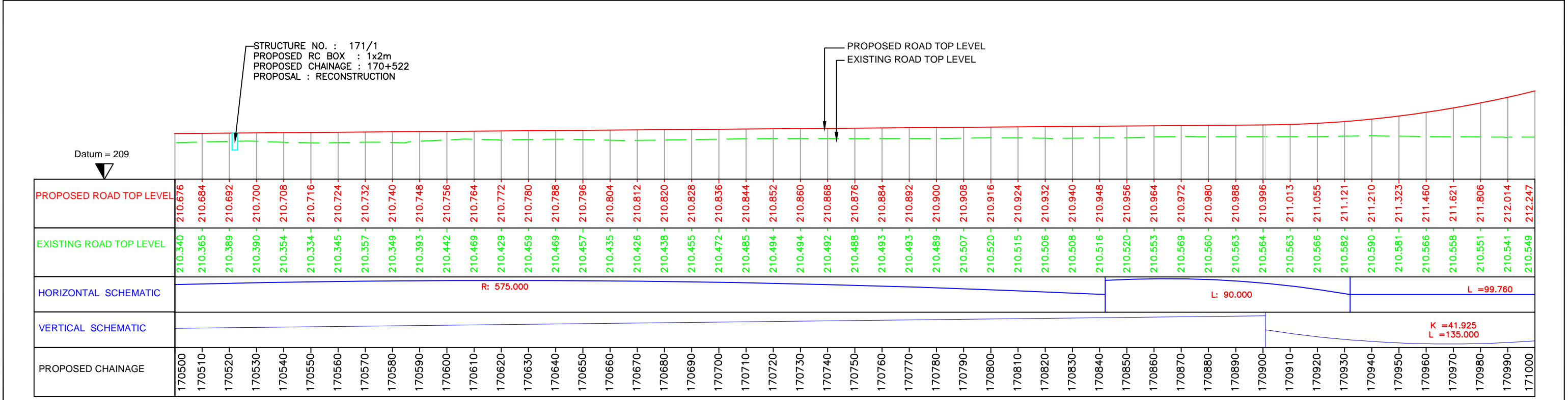
**DRAWING TITLE :** HARIKE - ZIRA - FARIDKOTE SECTION  
**ALIGNMENT PLAN AND PROFILE**  
 (km 170+000 to km 170+500)

**SCALE :** H=1:1000, V=1:100  
**PROJECT No. :** 165007

**FPI HW DD DWG PP 1100 R3**

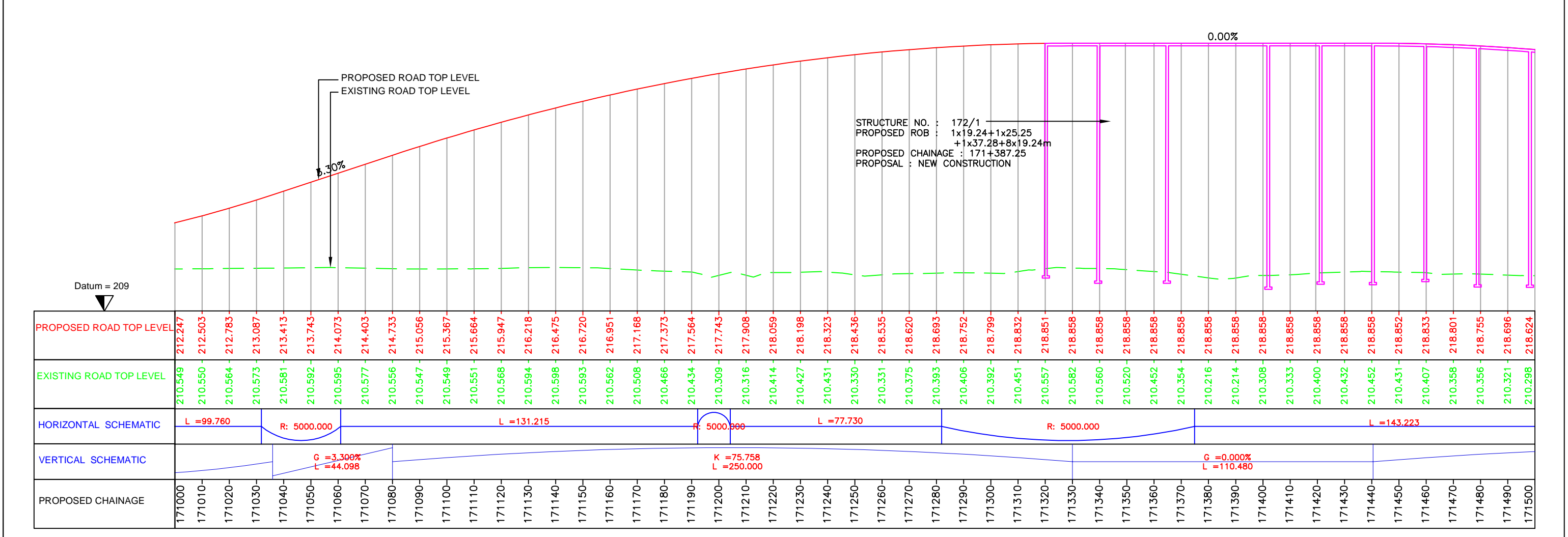
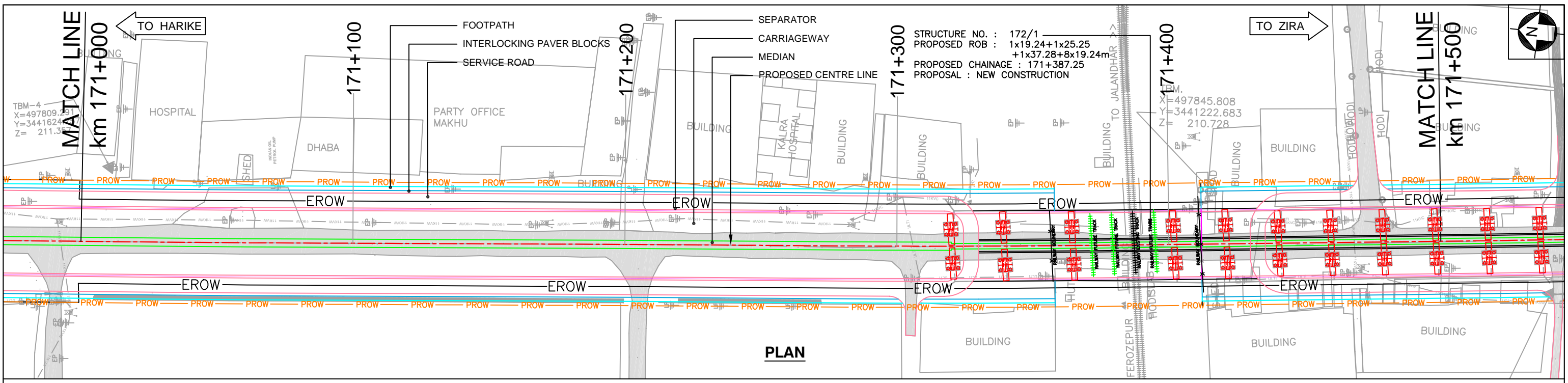


**PLAN**



**PROFILE**

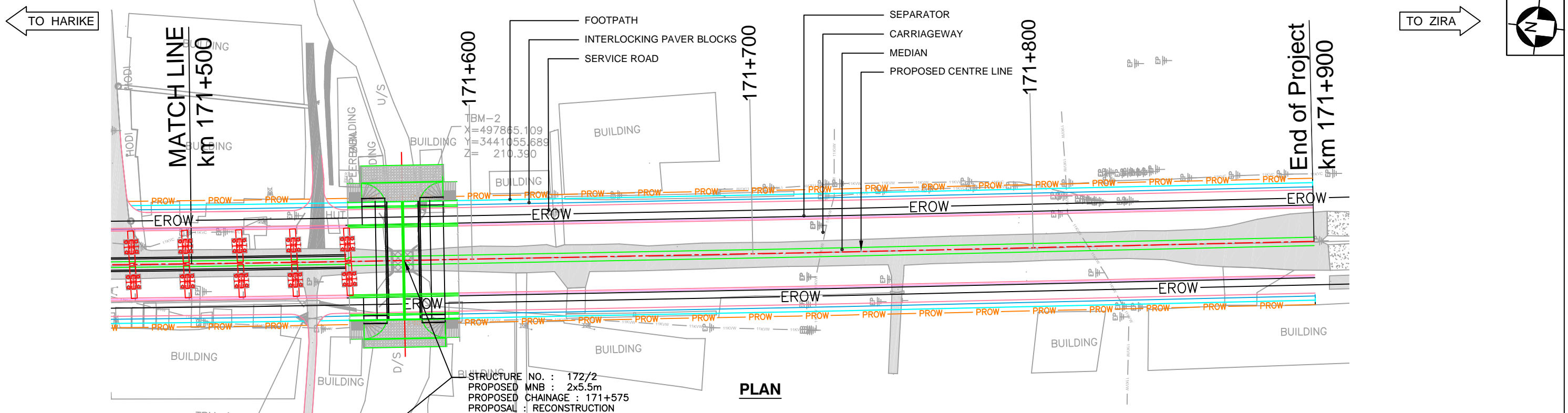
NOTES:	REFERENCE DWGS.:	CLIENT:	PROJECT:
1. ALL CHAINAGES ARE IN km+m.		<b>National Highways Authority of India</b> (Ministry of Road Transport and Highways) G-5 & 6, Sector-10, Dwarka, New Delhi - 110075.	<b>WIDENING AND RECONSTRUCTION OF EXISTING TWO LANE CARRIAGEWAY TO FOUR LANE WITH PAVED SHOULDER INCLUDING CONSTRUCTION OF ROB IN MAKHU TOWN FROM KM. 170+000 TO KM. 171+900 OF NH-54 IN THE STATE OF PUNJAB ON EPC MODE</b>
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH RELEVANT TYPICAL CROSS SECTION DRAWING (1025 TO 1027)			
3. STRUCTURE SHOWN ARE INDICATIVE ONLY.		<b>CONSULTANT: FP Project Management</b> Formerly Frischmann Prabhu (India) Private Limited 315, Balgovind Wadi, New Prabhadevi Road, Prabhadevi, Mumbai - 400 025 Tel: +91-22-6660 3901 Fax: +91-22-6660 3902 E-mail: plmumbai@fpindia.com www.fpindia.com	<b>DRAWING TITLE: HARIKE - ZIRA - FARIDKOTE SECTION</b>  <b>ALIGNMENT PLAN AND PROFILE</b> (km 170+500 to km 171+000)
4. FOR APPLICATION OF TYPICAL CROSS SECTION REFER DWG NO. FPI_HW_DD_DWG_GEN_1014			
5. FOR HORIZONTAL CURVE DETAILS REFER DWG NO. FPI_HW_DD_DWG_GEN_1005		<b>REVISION INDEX</b>	<b>SCALE: H=1:1000, V=1:100</b> <b>PROJECT No.: 165007</b>
			<b>FPI HW DD DWG PP 1101 R3</b>



NOTES:	REFERENCE DWGS.:	REV.	DATE	DESCRIPTION	DRAWN	CHK.	APP.
1. ALL CHAINAGES ARE IN km+m.							
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH RELEVANT TYPICAL CROSS SECTION DRAWING (1025 TO 1027)		R3	17/08/22	FINAL DPR SUBMISSION	SPK	CSB	DMC
3. STRUCTURE SHOWN ARE INDICATIVE ONLY.		R2	22/06/22	FINAL DPR SUBMISSION	SPK	CSB	DMC
4. FOR APPLICATION OF TYPICAL CROSS SECTION REFER DWG NO. FPI_HW_DD_DWG_GEN_1014		R1	19/05/22	FINAL DPR SUBMISSION	SPK	CSB	DMC
5. FOR HORIZONTAL CURVE DETAILS REFER DWG NO. FPI_HW_DD_DWG_GEN_1005		R0	11/03/22	DPR SUBMISSION	SPK	CSB	DMC

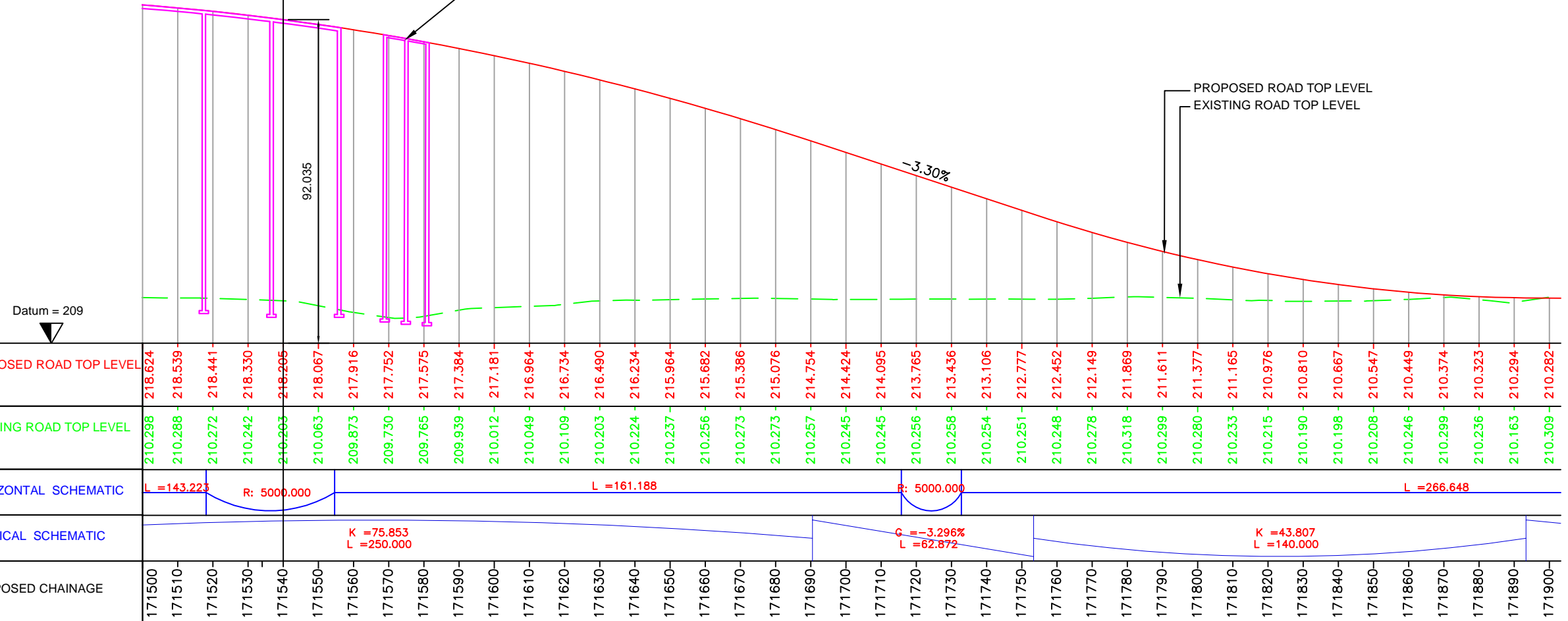
  

CLIENT :	PROJECT :
<b>National Highways Authority of India</b> (Ministry of Road Transport and Highways) 315, Balgovind Wadi, New Prabhadevi Road, Prabhadevi, Mumbai - 400 025 Tel: +91-22-6660 3901 Fax: +91-22-6660 3902 E-mail: pfmumbai@fpindia.com www.fpindia.com	<b>WIDENING AND RECONSTRUCTION OF EXISTING TWO LANE CARRIAGEWAY TO FOUR LANE WITH PAVED SHOULDER INCLUDING CONSTRUCTION OF ROB IN MAKHU TOWN FROM KM. 170+000 TO KM. 171+900 OF NH-54 IN THE STATE OF PUNJAB ON EPC MODE</b>
<b>CONSULTANT : FP Project Management</b> Formerly Frischmann Prabhu (India) Private Limited 315, Balgovind Wadi, New Prabhadevi Road, Prabhadevi, Mumbai - 400 025 Tel: +91-22-6660 3901 Fax: +91-22-6660 3902 E-mail: pfmumbai@fpindia.com www.fpindia.com	<b>DRAWING TITLE : HARIKE - ZIRA - FARIDKOTE SECTION</b> <b>ALIGNMENT PLAN AND PROFILE</b> <b>(km 171+000 to km 171+500)</b>
<b>SCALE : H=1:1000, V=1:100</b>	<b>PROJECT No. : 165007</b>
<b>FPI HW DD DWG PP 1102 R3</b>	



STRUCTURE NO. : 172/2  
 PROPOSED MNB : 2x5.5m  
 PROPOSED CHAINAGE : 171+575  
 PROPOSAL : RECONSTRUCTION

**PLAN**



**PROFILE**

PROPOSED ROAD TOP LEVEL	218.624	218.539	218.441	218.330	218.205	218.067	217.916	217.752	217.575	217.384	217.181	216.964	216.734	216.490	216.234	215.964	215.682	215.386	215.076	214.754	214.424	214.095	213.765	213.436	213.106	212.777	212.452	212.149	211.869	211.611	211.377	211.165	210.976	210.810	210.667	210.547	210.449	210.374	210.323	210.294	210.282
EXISTING ROAD TOP LEVEL	210.298	210.288	210.272	210.242	210.203	210.063	209.873	209.730	209.765	209.939	210.012	210.049	210.109	210.203	210.224	210.237	210.256	210.273	210.273	210.257	210.245	210.245	210.256	210.258	210.254	210.251	210.248	210.278	210.318	210.299	210.280	210.233	210.215	210.190	210.198	210.208	210.246	210.299	210.236	210.163	210.309
HORIZONTAL SCHEMATIC	L = 143.223		R = 5000.000		L = 161.188																R = 5000.000		L = 266.648																		
VERTICAL SCHEMATIC	K = 75.853 L = 250.000										R = 3.296% L = 62.872										K = 43.807 L = 140.000																				
PROPOSED CHAINAGE	171500	171510	171520	171530	171540	171550	171560	171570	171580	171590	171600	171610	171620	171630	171640	171650	171660	171670	171680	171690	171700	171710	171720	171730	171740	171750	171760	171770	171780	171790	171800	171810	171820	171830	171840	171850	171860	171870	171880	171890	171900

NOTES:		REFERENCE DWGS.:		REV.	DATE	DESCRIPTION	DRAWN	CHK.	APP.
1.	ALL CHAINAGES ARE IN km+m.			R3	17/08/22	FINAL DPR SUBMISSION	SPK	CSB	DMC
2.	THIS DRAWING IS TO BE READ IN CONJUNCTION WITH RELEVANT TYPICAL CROSS SECTION DRAWING (1025 TO 1027)			R2	22/06/22	FINAL DPR SUBMISSION	SPK	CSB	DMC
3.	STRUCTURE SHOWN ARE INDICATIVE ONLY.			R1	19/05/22	FINAL DPR SUBMISSION	SPK	CSB	DMC
4.	FOR APPLICATION OF TYPICAL CROSS SECTION REFER DWG NO. FPI_HW_DD_DWG_GEN_1014			R0	11/03/22	DPR SUBMISSION	SPK	CSB	DMC
5.	FOR HORIZONTAL CURVE DETAILS REFER DWG NO. FPI_HW_DD_DWG_GEN_1005								

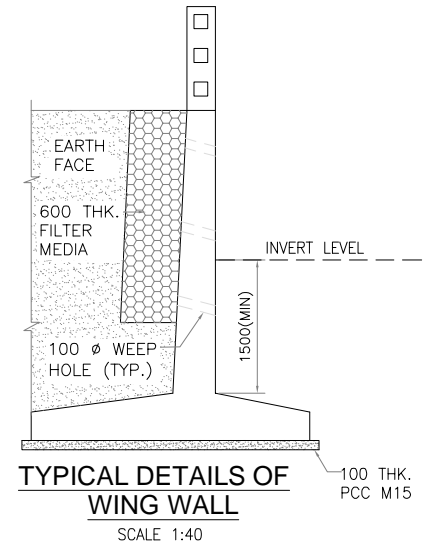
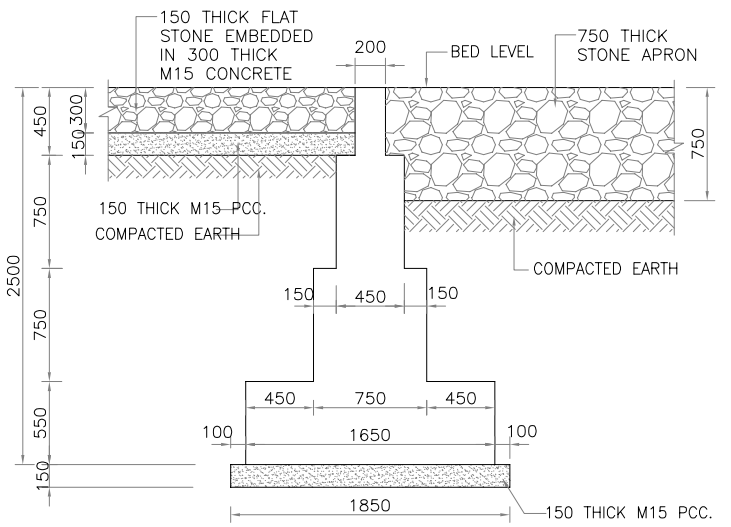
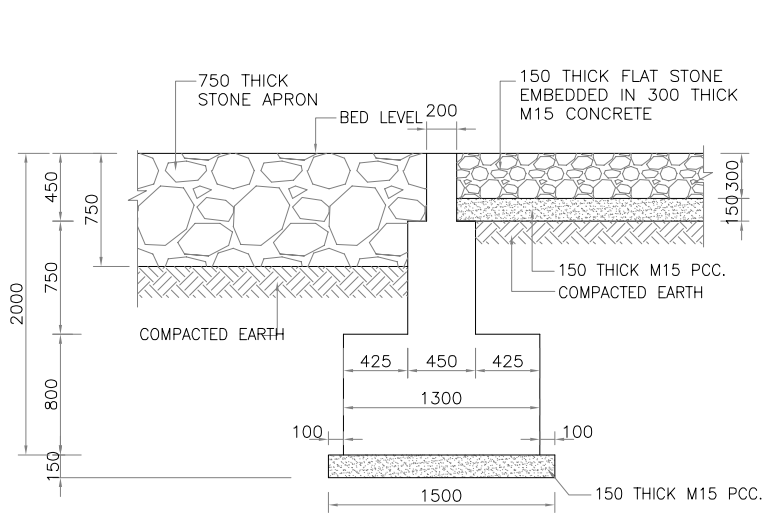
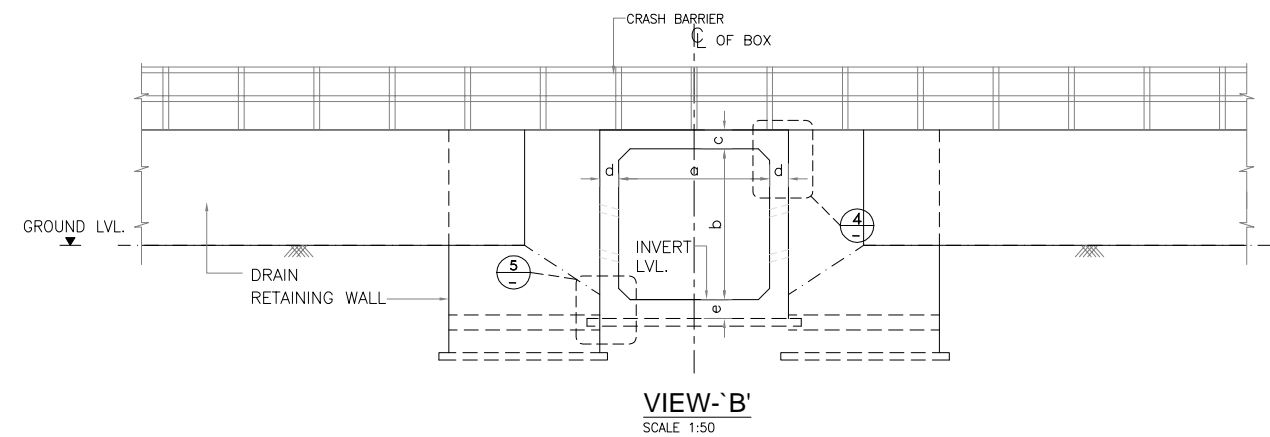
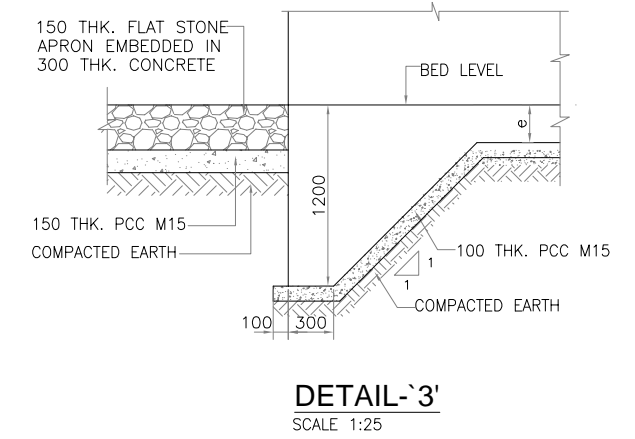
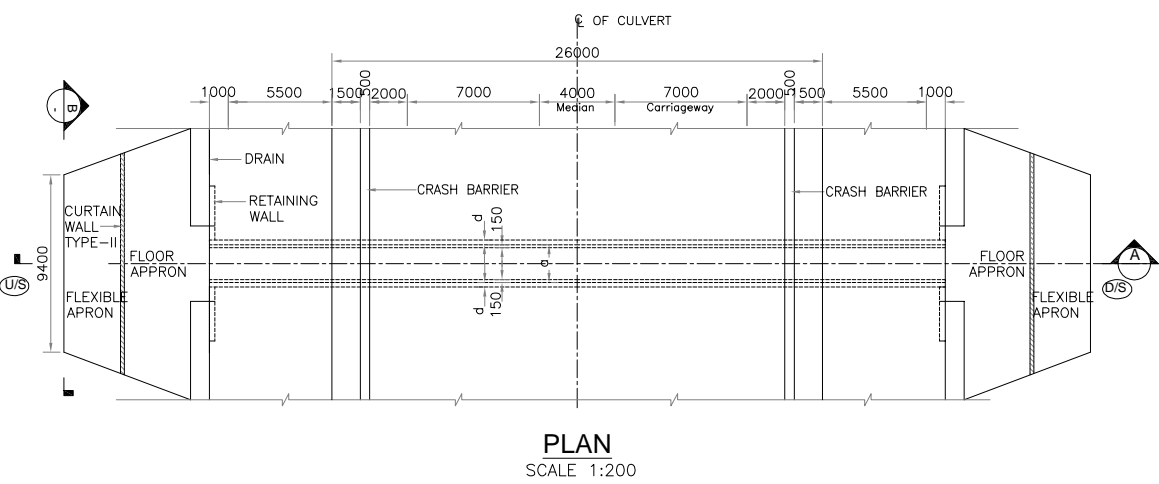
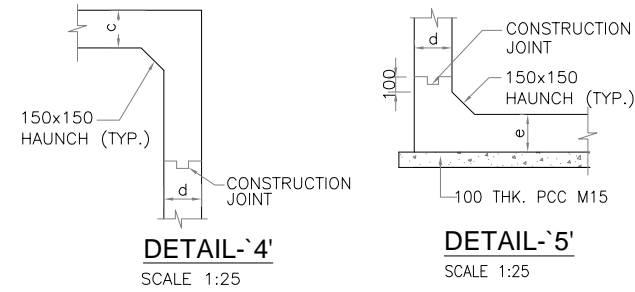
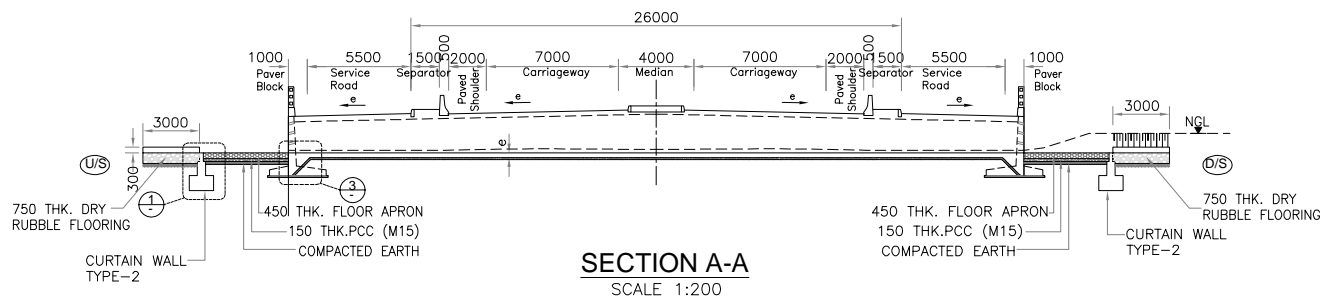
**CLIENT :**  
**National Highways Authority of India**  
 (Ministry of Road Transport and Highways)  
 G-5 & 6, Sector-10, Dwarka, New Delhi - 110075.

**CONSULTANT :** **FP Project Management**  
 Formerly Frischmann Prabhu (India) Private Limited  
 315, Balgovind Wadi, New Prabhadevi Road, Prabhadevi, Mumbai - 400 025  
 Tel: +91-22-6660 3901 Fax: +91-22-6660 3902  
 E-mail: pfmumbai@fpindia.com www.fpindia.com

**DISCLAIMER:** THIS DRAWING IS THE PROPERTY OF FP PROJECT MANAGEMENT AND SHALL BE USED ONLY FOR THE JOB MENTIONED IN THIS DRAWING. IT SHALL NOT BE PUBLISHED, LENT, COPIED OR USED DIRECTLY OR INDIRECTLY, AND FULLY OR PARTLY FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF / FROM FP PROJECT MANAGEMENT.

<b>PROJECT :</b> WIDENING AND RECONSTRUCTION OF EXISTING TWO LANE CARRIAGEWAY TO FOUR LANE WITH PAVED SHOULDER INCLUDING CONSTRUCTION OF ROB IN MAKHU TOWN FROM KM. 170+000 TO KM. 171+900 OF NH-54 IN THE STATE OF PUNJAB ON EPC MODE	
<b>DRAWING TITLE :</b> HARIKE - ZIRA - FARIDKOTE SECTION <b>ALIGNMENT PLAN AND PROFILE</b> (km 171+500 to km 171+900)	
<b>SCALE :</b> H=1:1000, V=1:100	<b>PROJECT No. :</b> 165007
<b>FPI</b>	<b>HW</b>
<b>DD</b>	<b>DWG</b>
<b>PP</b>	<b>1103</b>
<b>R3</b>	

# Structure Drawings



- NOTES:**
- ALL DIMENSIONS ARE IN mm AND LEVELS IN METERS UNLESS OTHERWISE MENTIONED.
  - THE STRUCTURE IS DESIGNED FOR IRC CLASS-A LOADING AND IRC CLASS 70R LOADING. THE CARRIAGEWAY LIVE LOAD COMBINATION SHALL BE CONSIDERED FOR DESIGN AS PER CLAUSE NO 204.3 OF IRC-6-2017
  - CONGESTION FACTOR AND SV LOADING IS CONSIDERED AS PER CLAUSE NO 204.4 & 204.5 OF IRC-6-2017 RESPECTIVELY
  - CONCRETE FOR BOX STRUCTURE AND RETURN WALL SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 30MPa
  - THE INTENTIONED STEEL SHALL BE H.Y.S.D. BARS (GRADE DESIGNATION FE-500/500D) CONFORMING TO IS:1786.
  - 65mm THK. WEARING COAT SHALL CONSIST OF MASTIC ASPHALT 15mm THK. AND TWO LAYERS OF ASPHALTIC CONC. 25mm EACH AS PER MOSRT&H STANDARD.
  - BACK FILLING MATERIAL SHALL CONFORM TO CL:305.2.1.5 OF MORT&H SPECIFICATION.
  - 300mm THICK FILTER MEDIA SHALL BE PROVIDED BEHIND VERTICAL WALL OF BOX CULVERT & RETAINING WALL .
  - WEEP HOLES OF 100mm DIA. OF PVC PIPE SHALL BE PROVIDED IN STAGGERED MANNER AT A SPACING NOT MORE THAN 1000mm IN BOTH VERTICAL & HORIZONTAL DIRECTION AT A SLOPE OF 1 IN 20.

TABLE SHOWING SALIENT DIMENSIONS

PROP. CH.	SPAN	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)
170+522	1X2X2	2000	2000	250	250	250

REV.	DATE	DESCRIPTION	DRAWN	CHK.	APP.
R3	17/08/22	FINAL DPR SUBMISSION	JUL	SRD	DMC
R2	22/06/22	FINAL DPR SUBMISSION	JUL	SRD	DMC
R1	19/05/22	FINAL DPR SUBMISSION	JUL	SRD	DMC
R0	11/03/22	DPR SUBMISSION	JUL	SRD	DMC
REV.	DATE	DESCRIPTION	DRAWN	CHK.	APP.

**REVISION INDEX**

**CLIENT:** National Highways Authority of India  
(Ministry of Road Transport and Highways)  
G-5 & 6, Sector-10, Dwarka, New Delhi - 110075.

**CONSULTANT:** FP Project Management  
Formerly Frischmann Prabhu (India) Private Limited  
315, Balgovind Wadi, New Prabhadevi Road, Prabhadevi, Mumbai - 400 025  
Tel: +91-22-6660 3901 Fax: +91-22-6660 3902  
E-mail: pfmumbai@fpindia.com www.fpindia.com

**PROJECT:** WIDENING AND RECONSTRUCTION OF EXISTING TWO LANE CARRIAGEWAY TO FOUR LANE WITH PAVED SHOULDER INCLUDING CONSTRUCTION OF ROB IN MAKHU TOWN FROM KM. 170+000 TO KM. 171+900 OF NH-54 IN THE STATE OF PUNJAB ON EPC MODE

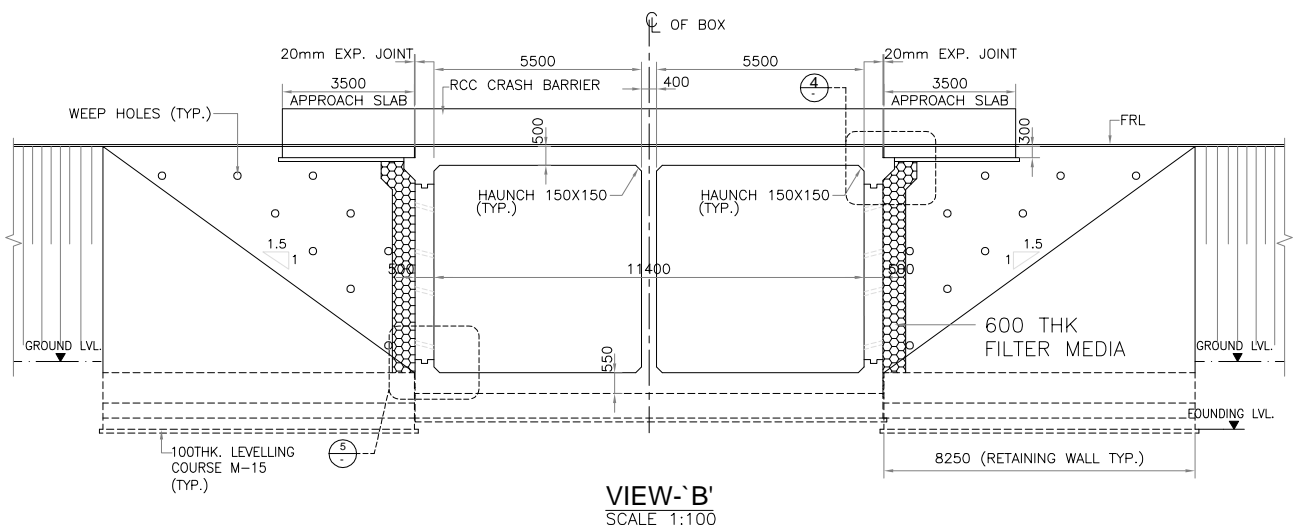
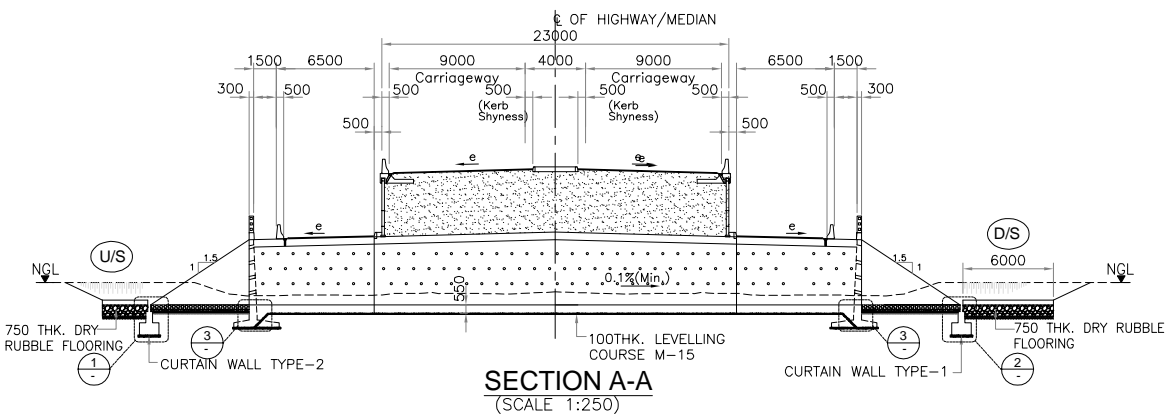
**DRG.TITLE:** HARIKE - ZIRA - FARIDKOTE SECTION  
**TYPICAL GENERAL ARRANGEMENT DRAWING OF BOX CULVERT (WITHOUT CUSHION)**

**SCALE:- AS SHOWN** PROJECT NO. **165007**

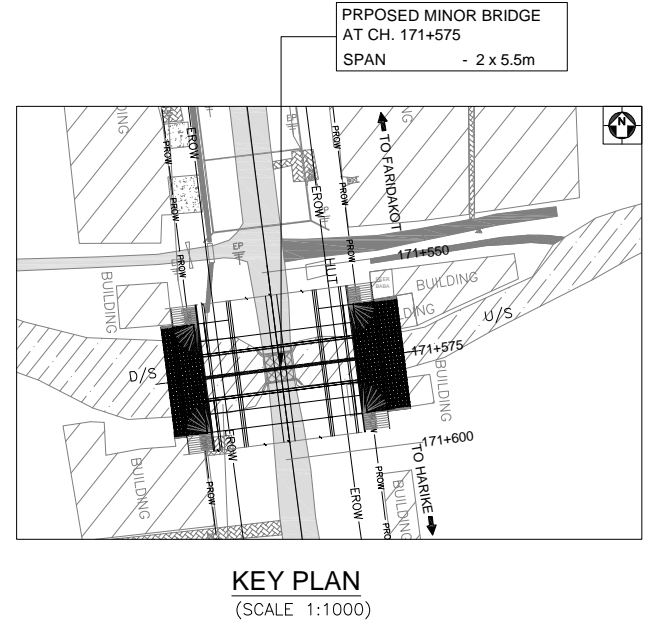
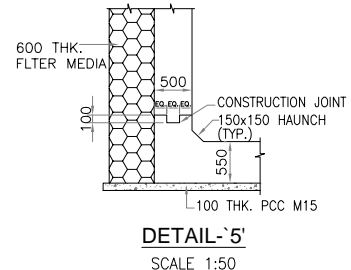
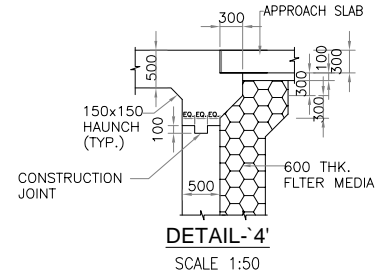
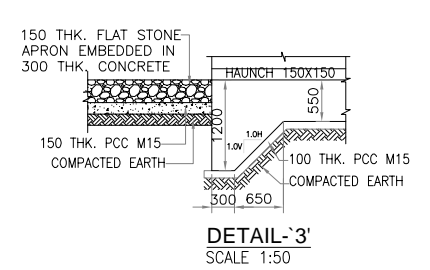
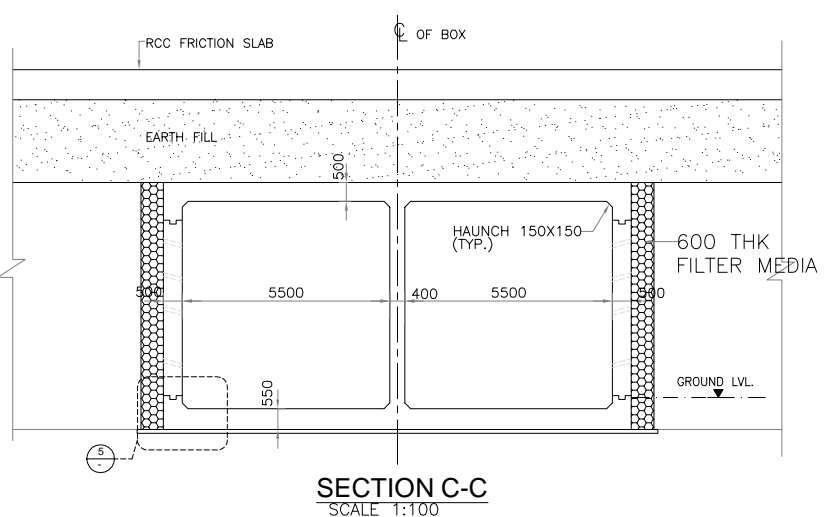
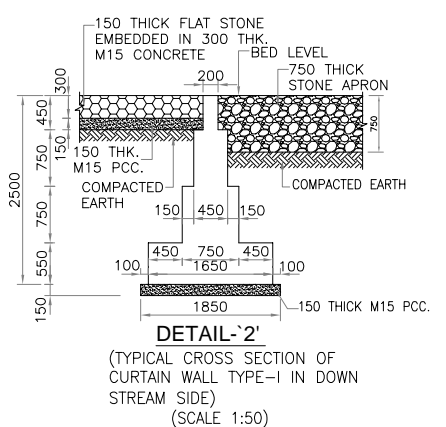
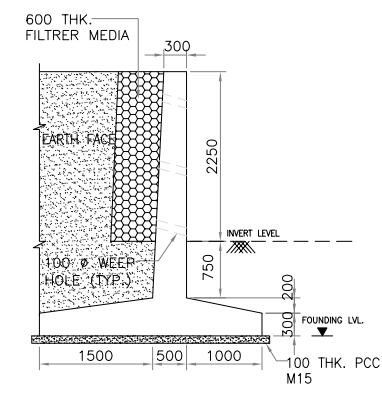
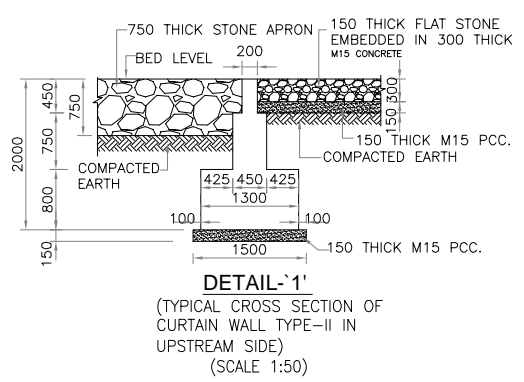
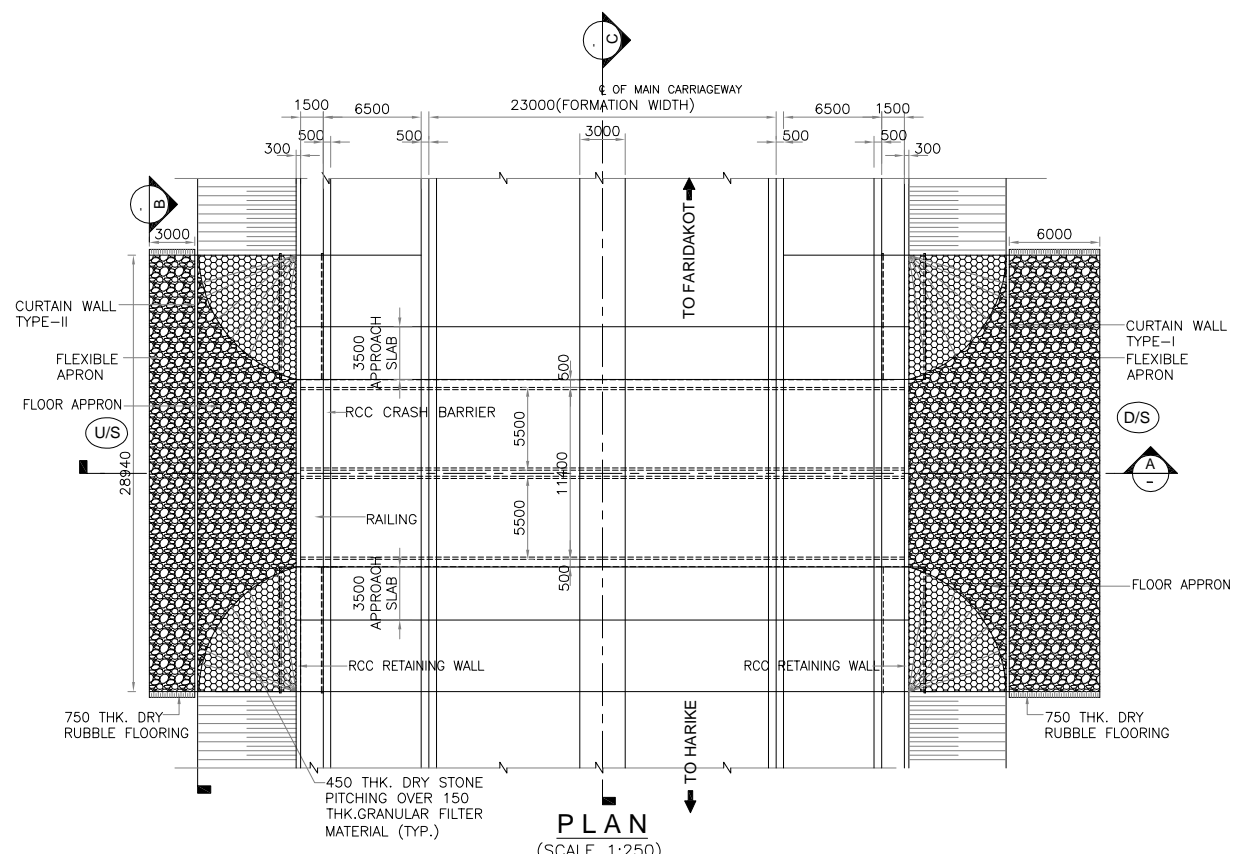
**FPI ST DD DWG HZF 5001 R3**

NOTE : THIS DRAWING IS THE PROPERTY OF FP PROJECT MANAGEMENT AND SHALL BE USED ONLY FOR THE JOB MENTIONED IN THIS DRAWING. IT SHALL NOT BE PUBLISHED, LENT, COPIED OR USED DIRECTLY OR INDIRECTLY, AND FULLY OR PARTLY FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF / FROM FP PROJECT MANAGEMENT.

© FRISCHMANN PRABHU (I) Pvt. Ltd. (A1 SHEET - 841x594)



- NOTES:**
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METERS UNLESS OTHERWISE MENTIONED.
  2. THE STRUCTURE IS DESIGNED FOR IRC CLASS-A LOADING AND IRC CLASS 70R LOADING. THE CARRIAGEWAY LIVE LOAD COMBINATION SHALL BE CONSIDERED FOR DESIGN AS PER CLAUSE NO 204.3 OF IRC-6-2017
  3. CONGESTION FACTOR AND SV LOADING IS CONSIDERED AS PER CLAUSE NO 204.4 & 204.5 OF IRC-6-2017 RESPECTIVELY
  4. GRADE OF CONCRETE  
CAST IN SITU SUPERSTRUCTURE : M30  
SUBSTRUCTURE/WALL/SHAFT : M30  
FOUNDATION : M30  
RCC CRASH BARRIER : M40  
APPROACH SLAB : M30  
LEVELLING COURSE : M15
  5. THE UNENTIONED STEEL SHALL BE H.Y.S.D. BARS (GRADE DESIGNATION FE-500/500D) CONFORMING TO IS:1786.
  6. 65mm THK. WEARING COAT SHALL CONSIST OF MASTIC ASPHALT 15mm THK. AND TWO LAYERS OF ASPHALTIC CONC. 25mm EACH AS PER MOSRT&H STANDARD.
  7. BACK FILLING MATERIAL SHALL CONFORM TO CL:305.2.1.5 OF MORT&H SPECIFICATION.
  8. WEEP HOLES, SPACED @ 1000mm c/c BOTH HORIZONTALLY AND VERTICALLY SHALL BE IN PROVIDED IN STAGGERED MANNER IN ABUTMENTS FROM TOP OF FOOTING UPTO 150mm ABOVE HFL.
  9. THIS BRIDGE IS FALLING IN SEISMIC ZONE - IV.
  10. ALL DIMENSIONS ARE TENTATIVE AND MAY UNDERGO SOME CHANGES DURING DETAIL DESIGN.



REV.	DATE	DESCRIPTION	DRAWN	CHK.	APP.
R3	17/08/22	FINAL DPR SUBMISSION	JUL	SRD	DMC
R2	22/06/22	FINAL DPR SUBMISSION	JUL	SRD	DMC
R1	19/05/22	FINAL DPR SUBMISSION	JUL	SRD	DMC
R0	11/03/22	DPR SUBMISSION	JUL	SRD	DMC
REV.		DESCRIPTION	DRAWN	CHK.	APP.

**CLIENT:** National Highways Authority of India  
(Ministry of Road Transport and Highways)  
G-5 & 6, Sector-10, Dwarka, New Delhi - 110075.

**CONSULTANT:** FP Project Management  
Formerly Frischmann Prabhu (India) Private Limited  
315, Balgovind Wadi, New Prabhadevi Road, Prabhadevi, Mumbai - 400 025  
Tel: +91-22-6660 3901 Fax: +91-22-6660 3902  
E-mail: pfmumbai@fpindia.com www.fpindia.com

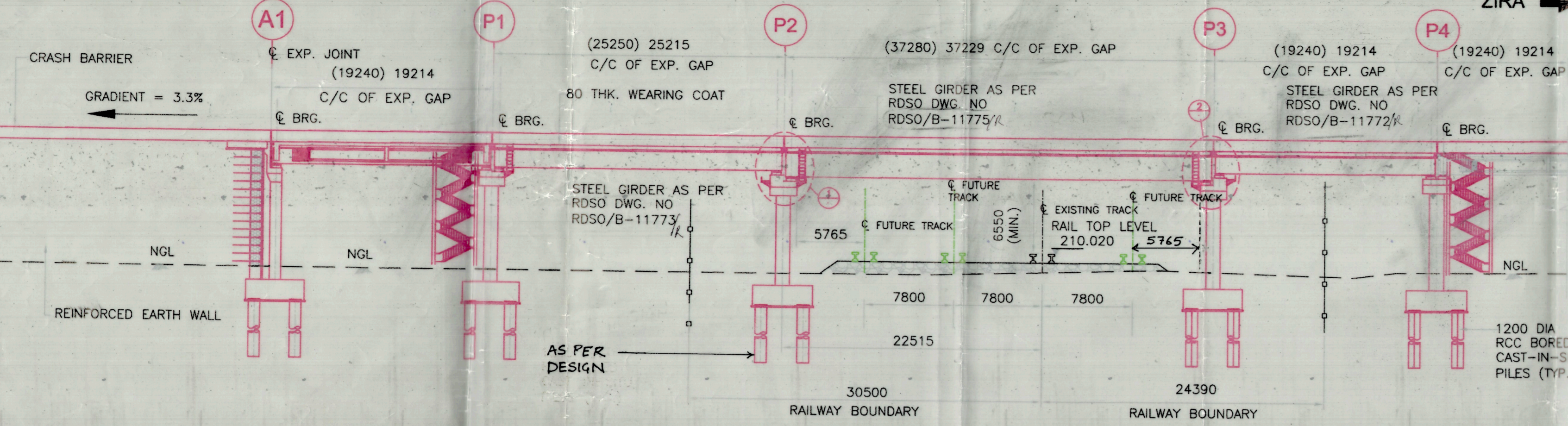
**PROJECT:** WIDENING AND RECONSTRUCTION OF EXISTING TWO LANE CARRIAGEWAY TO FOUR LANE WITH PAVED SHOULDER INCLUDING CONSTRUCTION OF ROB IN MAKHU TOWN FROM KM. 170+000 TO KM. 171+900 OF NH-54 IN THE STATE OF PUNJAB ON EPC MODE

**DRG.TITLE:** HARIKE - ZIRA - FARIDKOTE SECTION  
GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT PROP. CH. 171+575 FOR RECONSTRUCTION (2 x 5.5m SPAN)

**SCALE:-** AS SHOWN  
**PROJECT NO.** 165007

FPI	ST	DD	DWG	HZF	5002	R3
-----	----	----	-----	-----	------	----





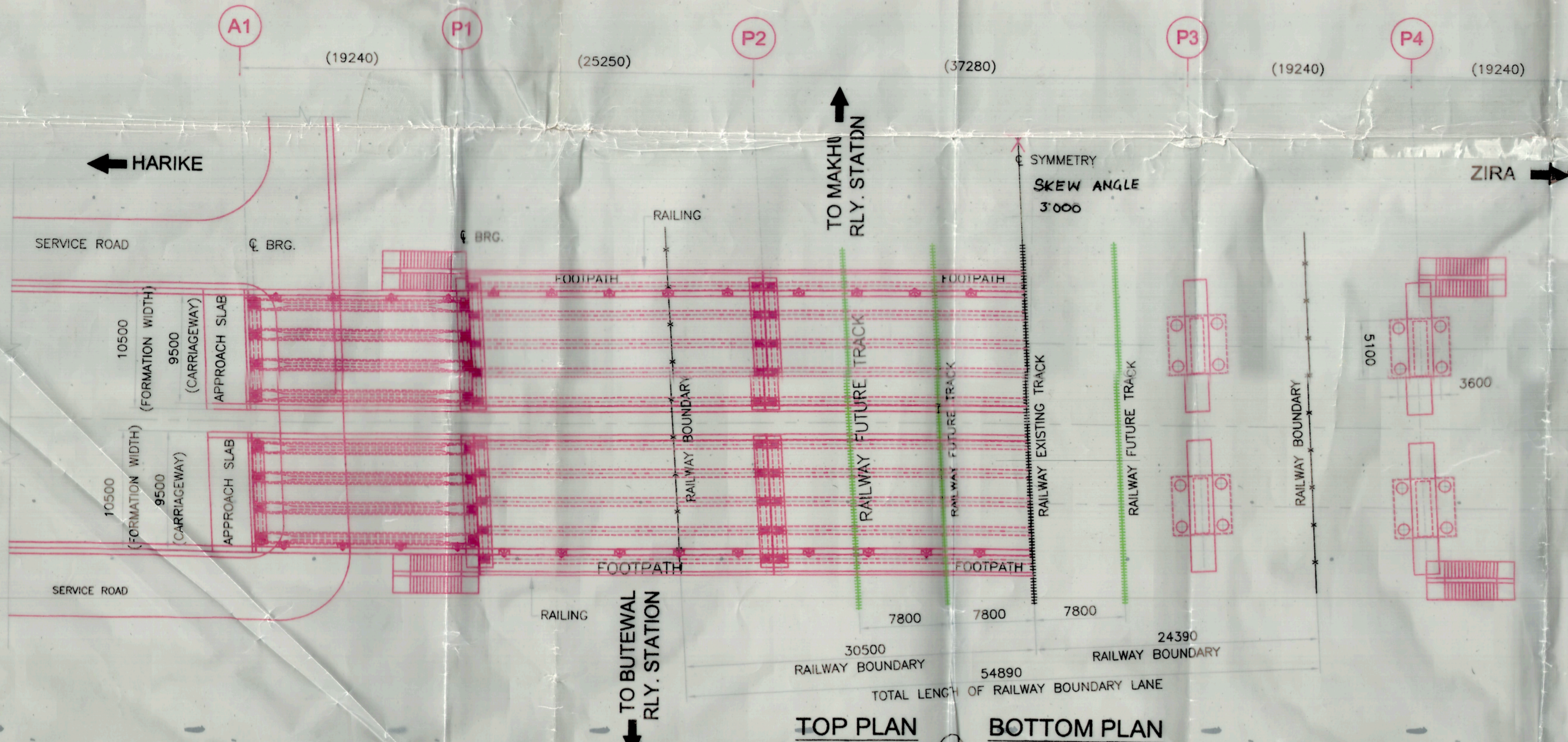
SECTIONAL ELEVATION (RAILWAY PORTION)  
(XPM PROTECTION FRAME NOT SHOWN FOR CLARITY)  
(SCALE 1:300)

FRL LEVEL IN (m)	218.890	218.890	218.890	218.890	218.890	218.890	218.890
GROUND LEVEL AT PROPOSED CENTER LINE (m)	210.559	210.561	210.420	209.725	210.309	210.404	210.404
CHAMNAE (km)	171320.214	171339.454	171364.704	171387.250	171401.984	171421.224	

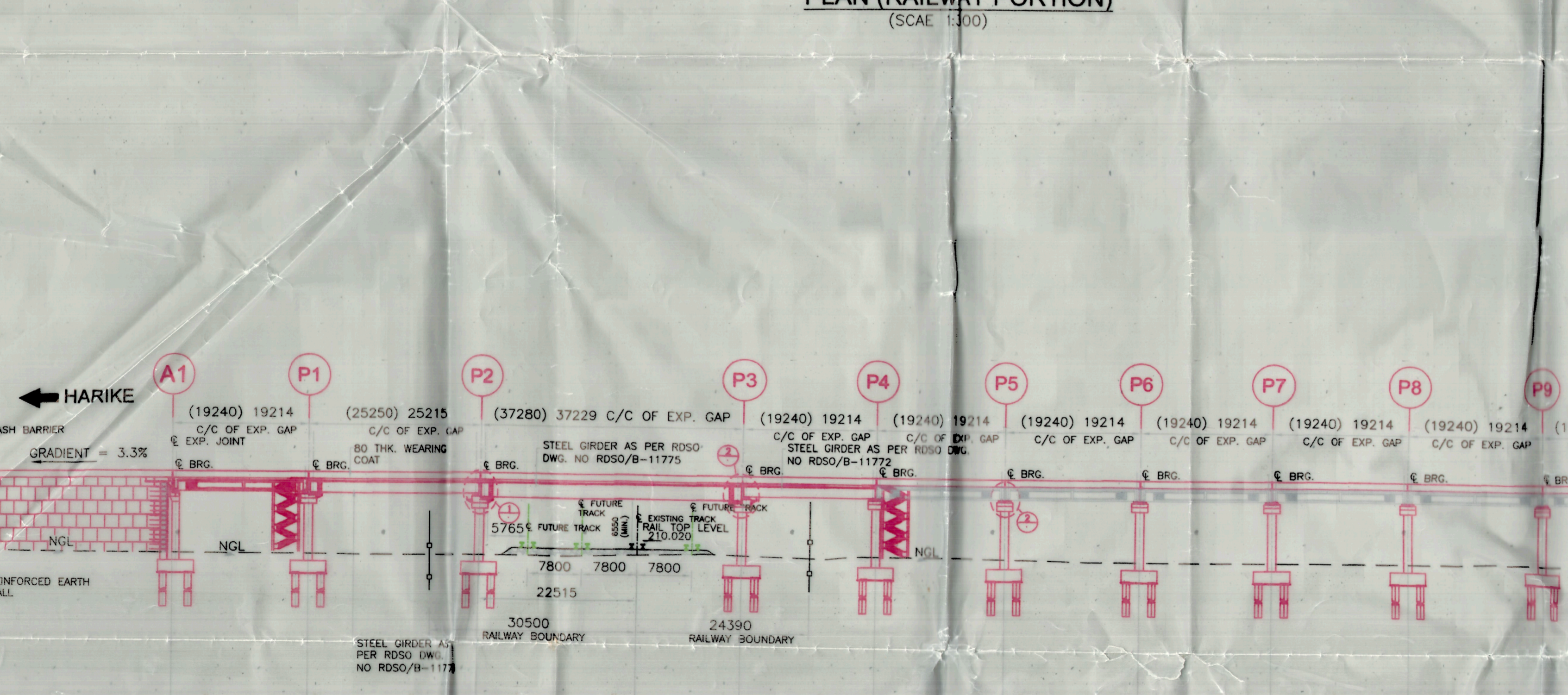
RAILWAY SPAN ARRANGEMENT

1.	19m RDSO/B-11742R
2.	24m RDSO/B-11743R
3.	36m RDSO/B-11745R

(SUBSTRUCTURE OF ROB AS PER DESIGN)

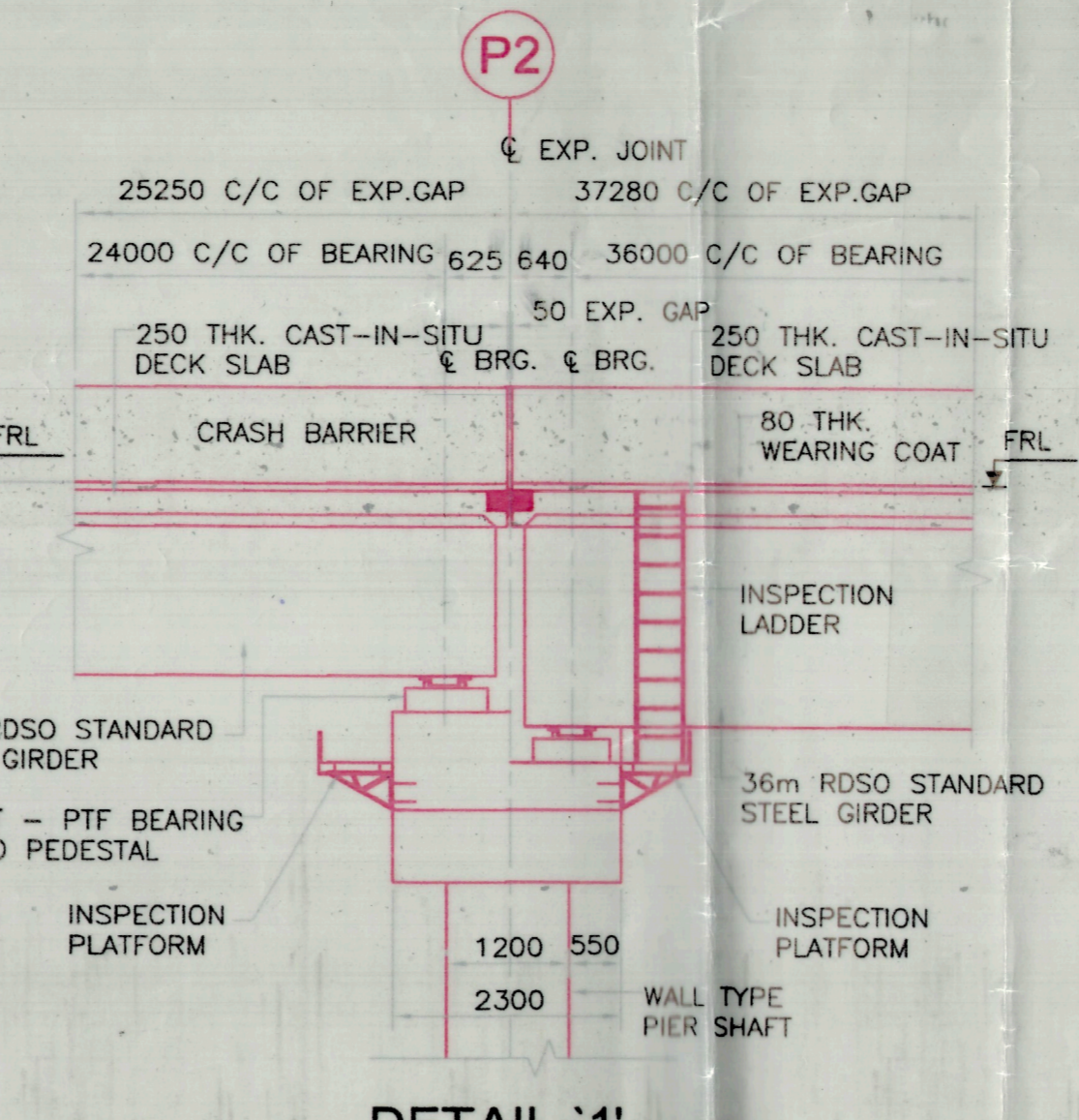


TOP PLAN  
BOTTOM PLAN  
PLAN (RAILWAY PORTION)  
(SCALE 1:300)

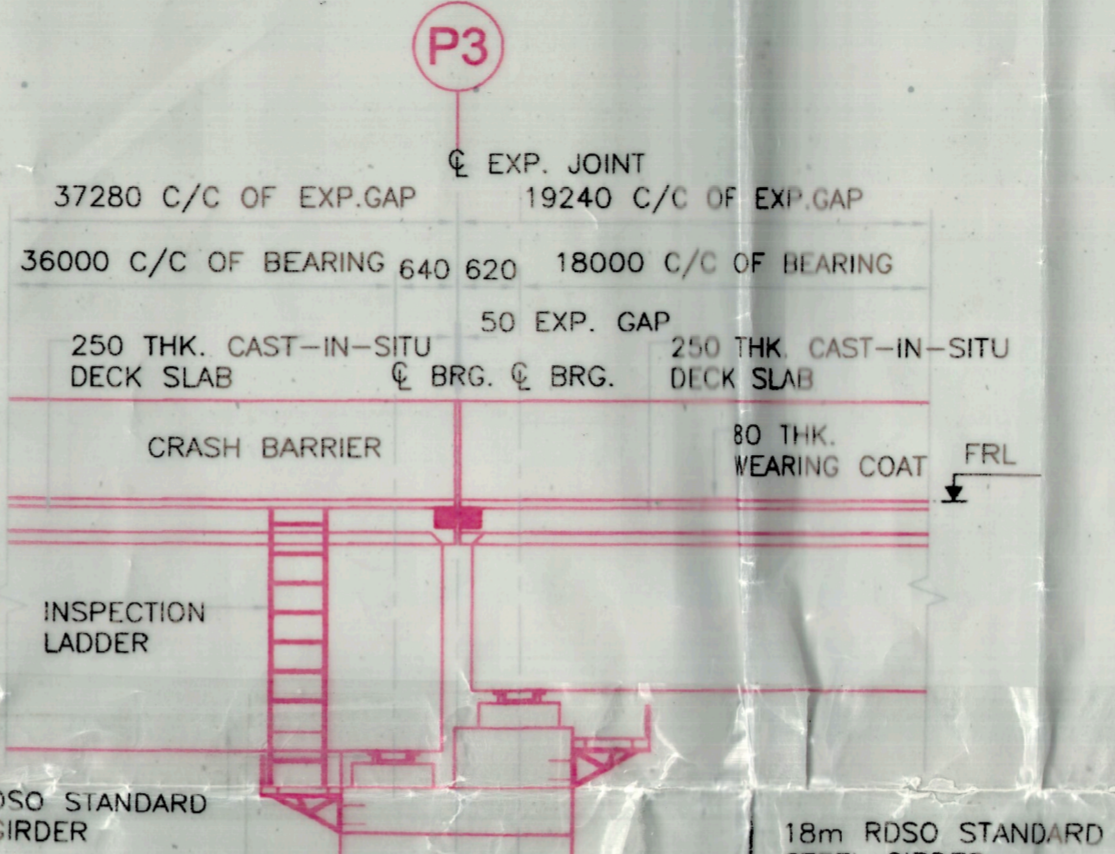


GENERAL ELEVATION  
(SCALE 1:500)

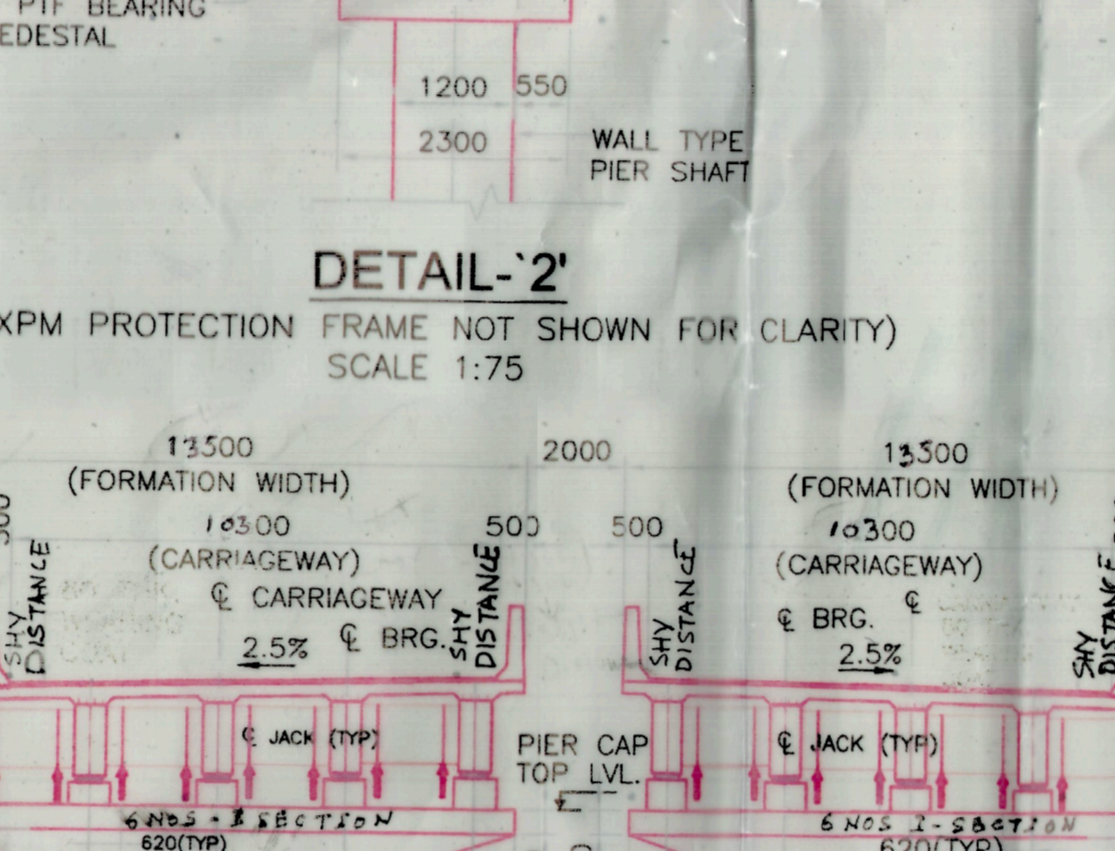
FRL LEVEL IN (m)	218.890	218.890	218.890	218.890	218.890	218.890	218.749	218.675	218.544	218.486	218.248	217.980
GROUND LEVEL AT PROPOSED CENTER LINE (m)	210.559	210.561	210.420	209.725	210.309	210.404	210.451	210.318	210.360	210.280	210.316	209.947
CHAMNAE (km)	171320.214	171339.454	171364.704	171387.250	171401.984	171421.224	171440.465	171459.704	171478.944	171498.184	171517.424	171536.664



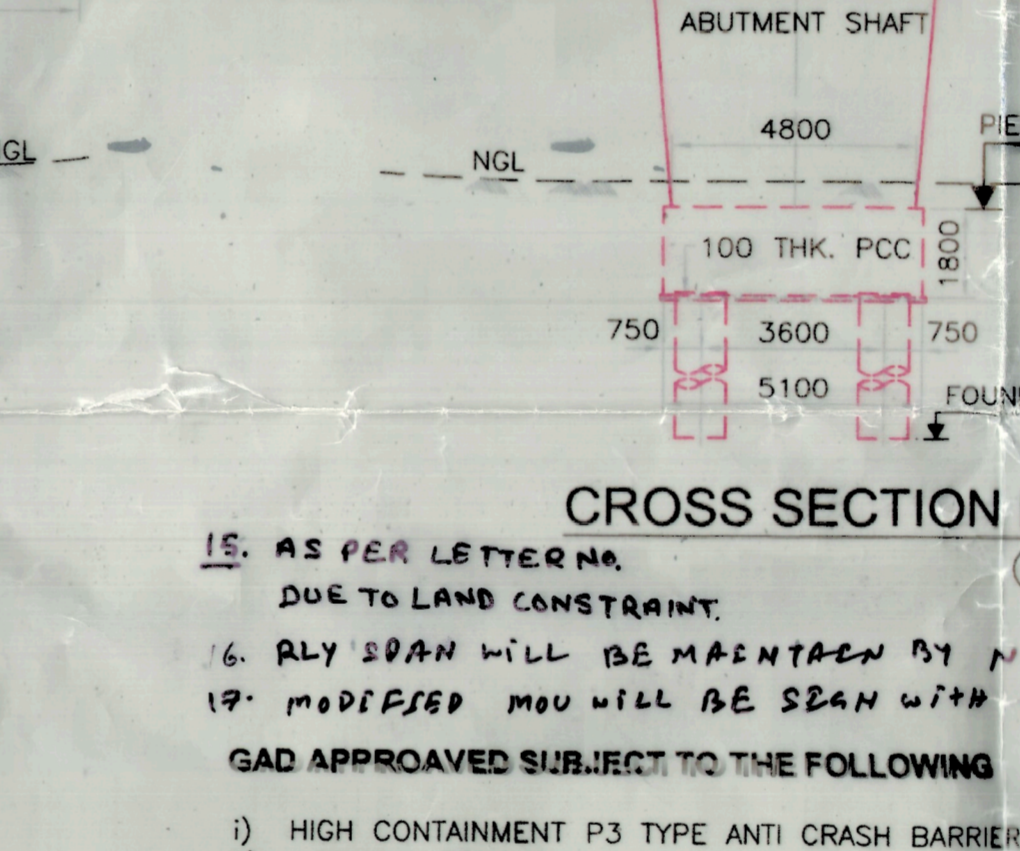
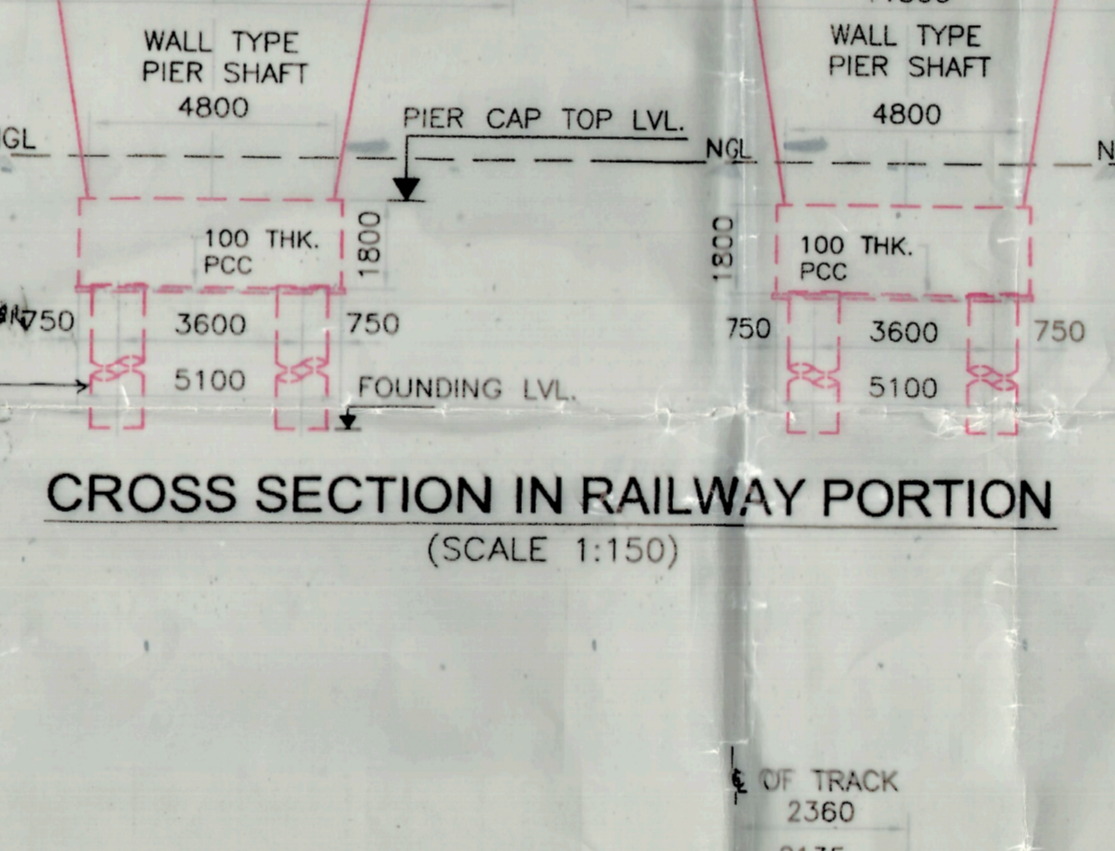
DETAIL-1'  
(XPM PROTECTION FRAME NOT SHOWN FOR CLARITY)  
SCALE 1:75



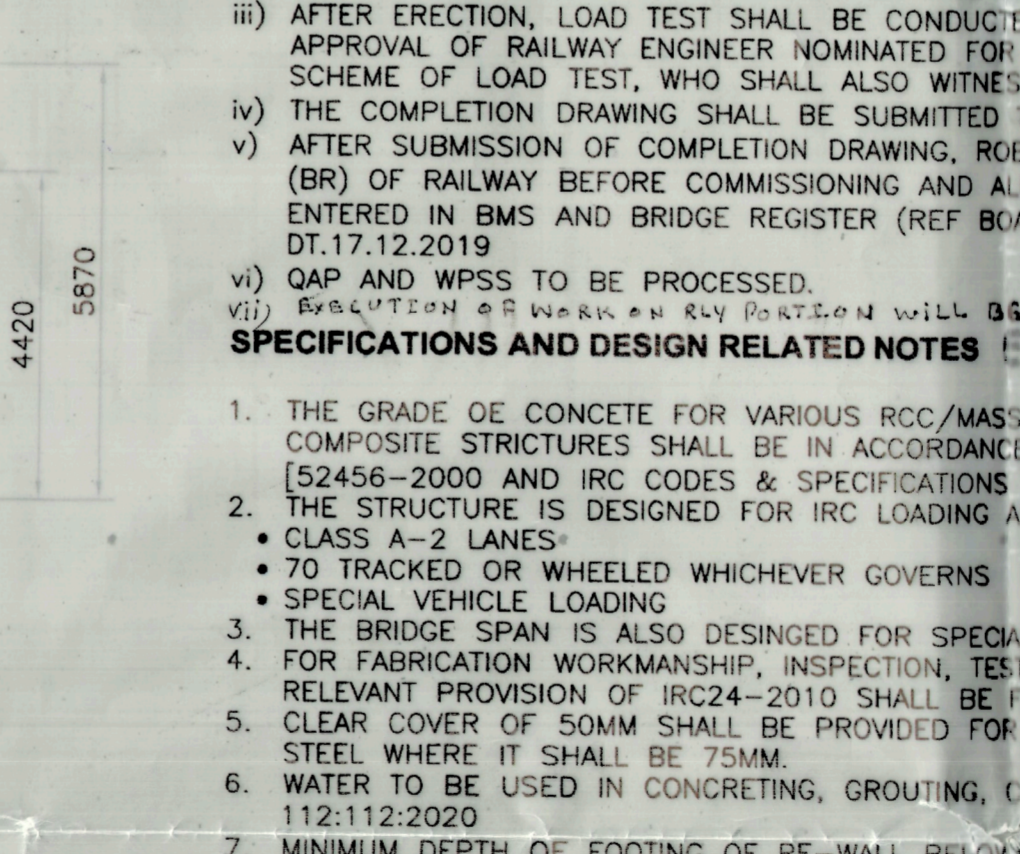
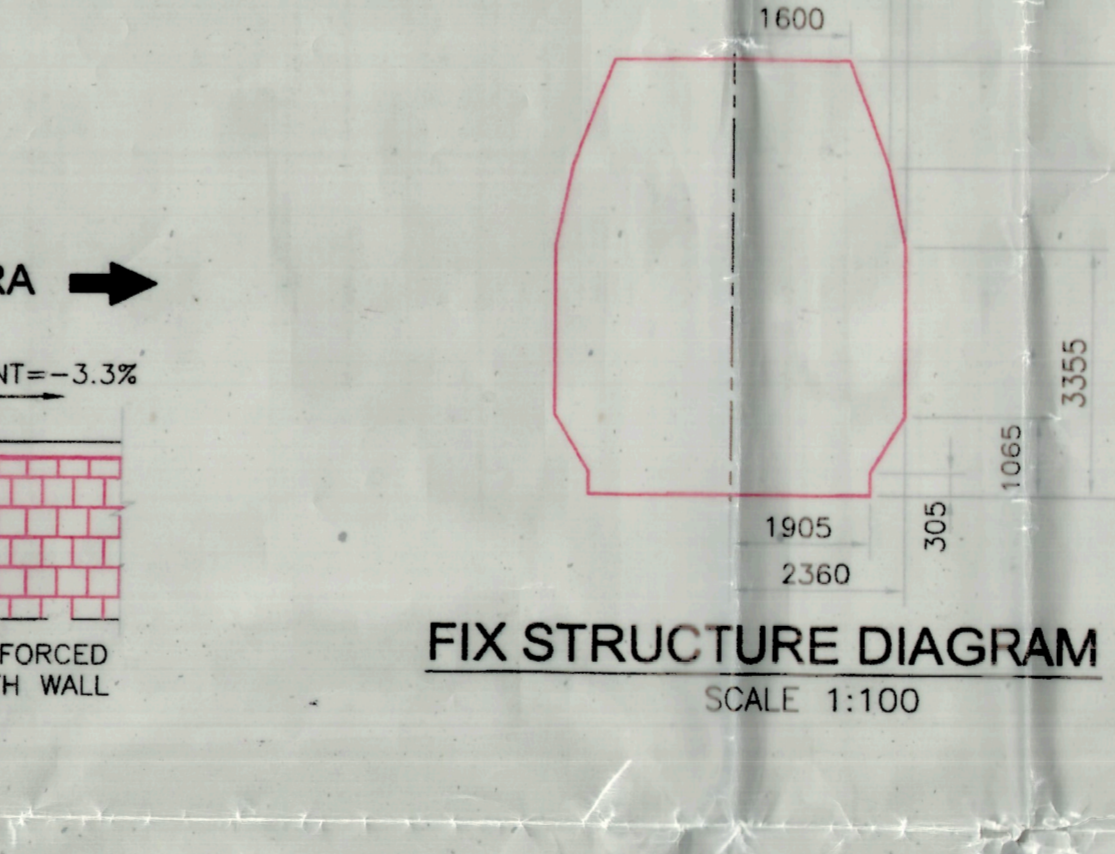
CROSS SECTION OF STEEL GIRDER  
(AS PER RDSO DWG. NO. RDSO/B-11772)  
(SCALE 1:300)



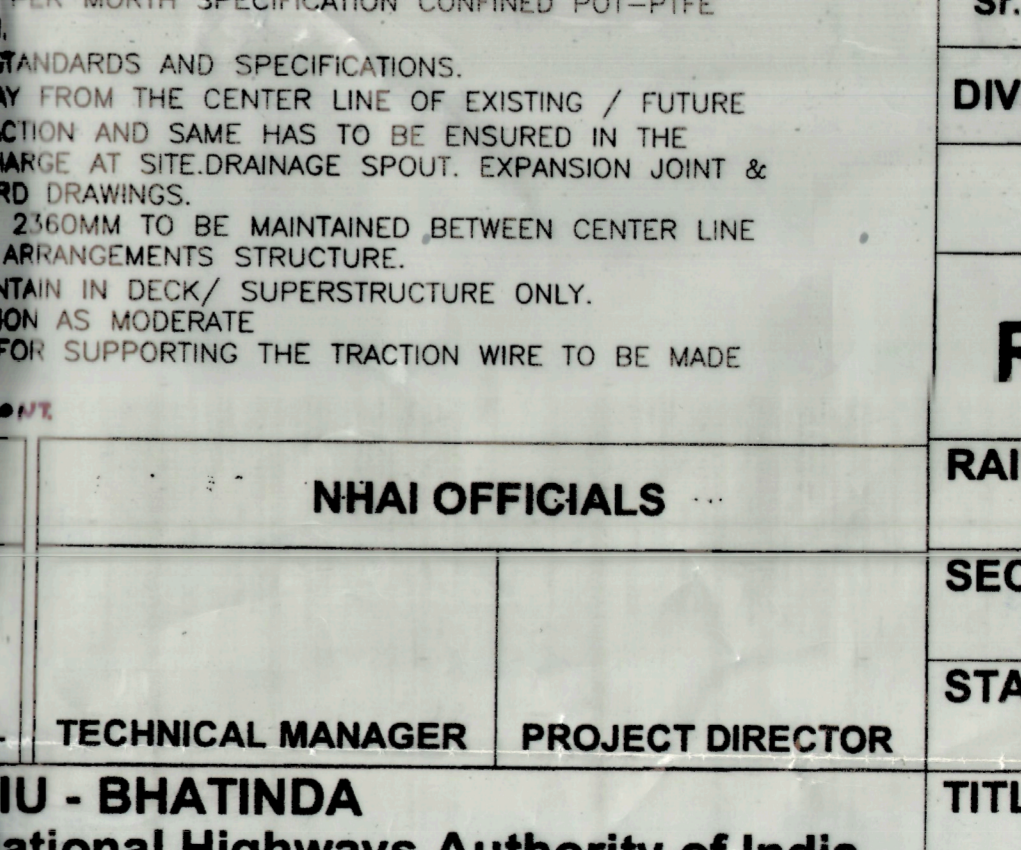
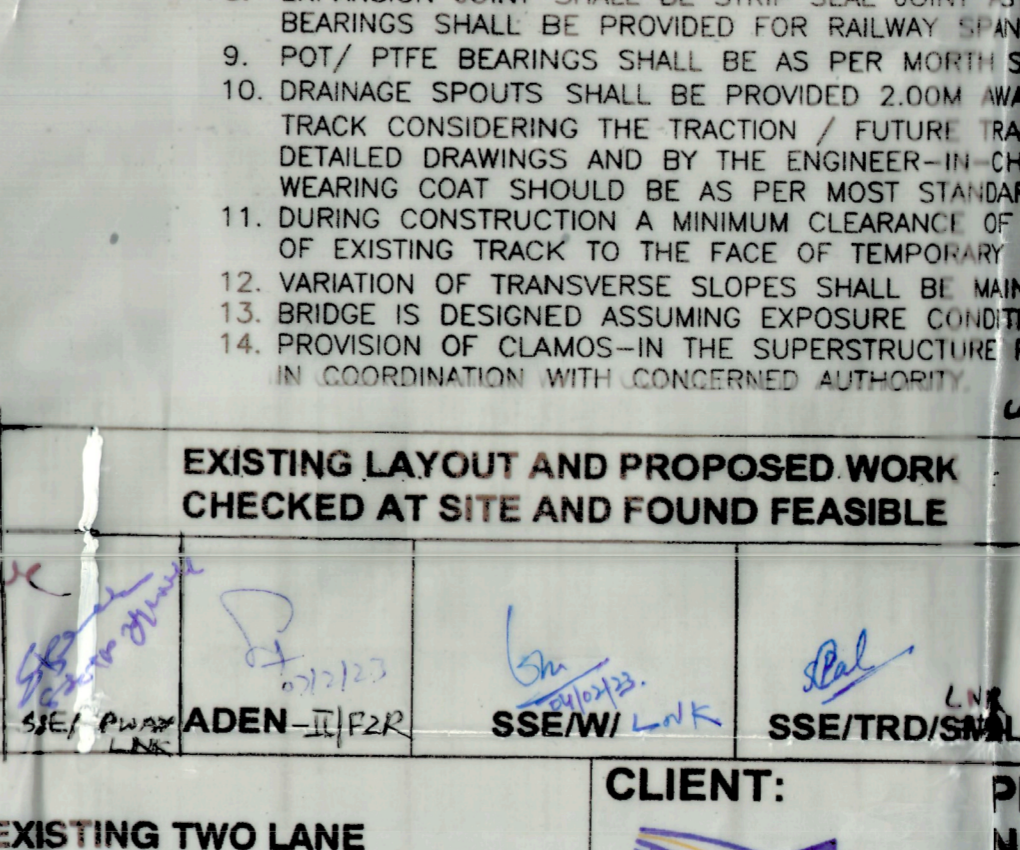
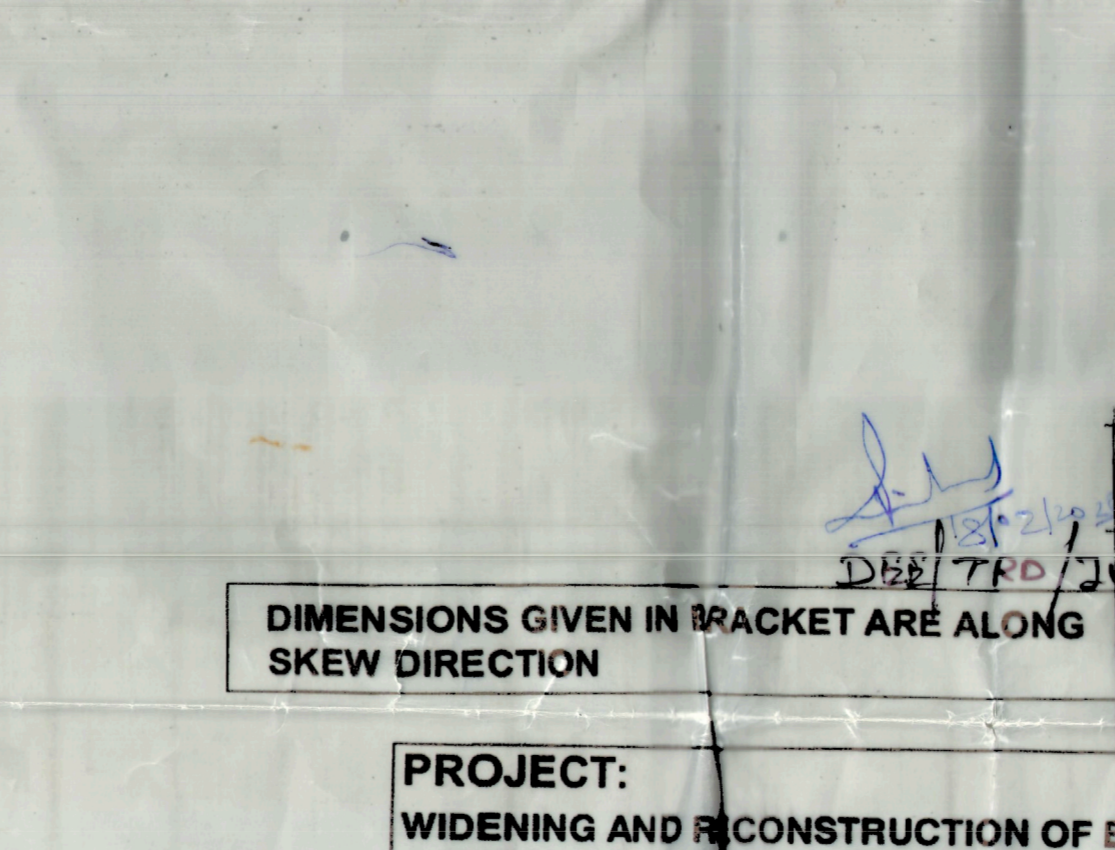
DETAIL-2'  
(XPM PROTECTION FRAME NOT SHOWN FOR CLARITY)  
SCALE 1:75



CROSS SECTION OF STEEL GIRDER  
(AS PER RDSO DWG. NO. RDSO/B-11775)  
(SCALE 1:300)



CROSS SECTION OF STEEL GIRDER  
(AS PER RDSO DWG. NO. RDSO/B-11773)  
(SCALE 1:300)



EXISTING LAYOUT AND PROPOSED WORK CHECKED AT SITE AND FOUND FEASIBLE

NHAI OFFICIALS

DIMENSIONS GIVEN IN BRACKET ARE ALONG SKEW DIRECTION

PROJECT: WIDENING AND CONSTRUCTION OF EXISTING TWO LANE CARRIAGEWAY TO FOUR LANE WITH PAVED SHOULDER OF MAKHU TOWN FROM 170+000 TO KM. 171+900 OF NH-54 IN THE STATE OF PUNJAB ON EPC MODE

CLIENT: PIU - BHATINDA National Highways Authority of India

TECHNICAL MANAGER: S/O PUNJAB DEPT. OF HIGHWAYS

PROJECT DIRECTOR: S/O PUNJAB DEPT. OF HIGHWAYS

- GENERAL NOTES:
1. ALL DIMENSION ARE IN MM AND LEVELS ARE IN METER UNLESS SPECIFIED OTHERWISE
  2. THE LEVELS SHOWN IN THE DRAWING ARE TO BE VERIFIED AT SITE BASED ON CONFORMATORY INVESTIGATION PRIOR TO COMMENCEMENT OF WORK.
  3. PILE LENGTH AND ANGLE CAPACITY SHALL BE CONSIDERED AS PER GEO-TECHNICAL REPORT.
  4. THE BRIDGE SHALL BE DESIGNED FOR IRC CLASS 'A' LOADING OR 70R LOADING OR 388(T)S.V. LOADING WHICHEVER GIVES WORST EFFECT FOR THE GIVEN CARRIAGEWAY WIDTH AS PER STANDARDS.
  5. STAIRCASES ARE TO BE PROVIDED ON BOTH SIDES OF THE ROB OUTSIDE RAILWAY BOUNDARY FOR PEDESTRIAN TRAFFIC.
  6. 4.0M WIDE STRIP WITH POLYSULPHIDE PAINT PREFERABLY IN BLACK COLOUR SHALL BE PROVIDED ON THE WIDTH OF DECK AND FOOTPATH SLABS OVER RUNNING TRACKS.
  7. GUARD RAIL SHALL BE PROVIDED ON TRACK BELOW ROB.
  8. NO CONSTRUCTION SHALL BE ALLOWED IN CONCRETED WORK UNLESS IT IS SPECIFIED IN DETAILED DRAWING AS PER DESIGN CONSIDERATION.
  9. THE DETAILS TYPE AND DIMENSION OF FOUNDATION, SUB-STRUCTURES AND SUPER STRUCTURE ELEMENTS SHOWN IN THE DRAWING ARE INACTIVE AND MAY VARY AS PER ACTUAL DESIGN AND DETAIL DRAWING HOWEVER OBLIGATORY CLEARANCES MENTIONED IN THE DRAWING SHALL NOT BE REDUCED UNDER ANY CIRCUMSTANCES WITHOUT PRIOR APPROVALS OF CBE.
  10. SELF SUPPORTING FORM WORK FOR CASTING DECK SLAB SHALL BE ADOPTED IN PLANNING AND DESIGN OF THE SPAN ABOVE RAILWAY TRACK.
  11. HIGH CONTAINMENT CRASH BARRIER OF 1.8M HEIGHT WITHIN RAILWAY BOUNDARY SHALL BE PROVIDED AS PER IRC 8 & 6 GUIDE LINES.
  12. THE LAND BOUNDARIES INDICATED IN THE DRAWING NOT ANY EFFECT THE ACTUAL RAILWAY BOUNDARY AND SECTION ACTUAL LAND. THE CERTIFIED LAND PLAN IS AVAILABLE IN HQ OR DIVISIONAL OFFICES ONLY IS THE FINAL AUTHORITY. THE LAND BOUNDARIES SHOWN IN THIS PLAN CAN NOT BE OF ANY EFFECT FOR THIS PURPOSE.
  13. VERTICAL CLEARANCE AS SHOWN IN DRAWING TO BE CONSIDERED FROM EXISTING RAIL TOP LEVEL TO BOTTOM OF SHIELD COVER PLATE OF LOWEST LONGITUDE GIRDER.
  14. SEISMIC ZONE IV.

- REFERENCE NOTES:
1. NHAI SHOULD ENSURE DURING EXECUTION OF WORK SAFETY OF RUNNING TRACKS / TRAIN LAYOUT OF ROB IS TO BE MAINTAINED AS PER RDSO STANDARDS.
  2. BY RAILWAY OFFICIALS BEFORE EXECUTION OF WORK.
  3. HORIZONTAL AND VERTICAL CLEARANCE SHOWN ARE MANDATORY AND SHALL NOT REDUCED / CHANGED WITHOUT APPROVAL OF RAILWAY.
  4. ALL STEEL OF GRADE SHALL BE C-350 GRADE 80 AS PER RDSO LATEST DRAWINGS AND CONFORMING TO IS: 2002.
  5. REINFORCEMENT STEEL SHALL BE HYSD GRADE FE-500 CONFORMING TO IS: 786.
  6. PROTECTION SCREENS SHALL BE PROVIDED ON ROB CONFORMING TO RAILWAY STANDARDS.
  7. APPROACH GRADIENT FOR ROB APPROACHES SHALL NOT STEEPER THAN 1:3000 AS PER IRC: 73.
  8. IN CASE CRANE IS USED FOR PLACEMENT OF GIRDERS THE CAPACITY OF CRANE SHALL BE VERIFIED AND RECORDED BEFORE EXECUTION OF WORK.
  9. ENTIRE WORK OF RAILWAY SPAN SHALL BE EXECUTED UNDER 200KPH SPEED RESTRICTION WITH PROPER TEMPORARY SIGNALS AND SPEED RESTRICTION DIAGRAM.
  10. TELEGRAPH POST, TELECOM CABLE, SIGNAL CABLE AND RAIL CABLE ARE REQUIRED TO BE SHIFTED TO PROVIDE CLEAR SITE FOR EXECUTION. THE SHIFTING SHALL BE DONE BY NHAI.
  11. FOR FABRICATION WORKMANSHIP, INSPECTION AND TESTING PROTECTION AGAINST CORROSION ETC. RELEVANT PROVISIONS OF RDSO SPECIFICATIONS SHALL BE FOLLOWED.
  12. NECESSARY GUARDRAILS SHALL BE PROVIDED IN TRACKS AT ROB LOCATIONS.
  13. NECESSARY TEMPORARY PROTECTION WORK FOR SAFETY AT RUNNING TRACK IN CONNECTION WITH EXECUTION OF FOUNDATION SHALL BE MAINTAINED BY CONTRACTOR BEFORE EXECUTION OF WORK.
  14. EXISTING ROAD TO BE WIDENED OR TEMPORARY SERVICE ROADS ARE TO BE PROVIDED BEFORE EXECUTION OF WORK NECESSARY AS PER THE GUIDELINE.
  15. PROTECTION WORK FOR APPROACHES FOR EXISTING STRUCTURE / BUILDING / EXISTING L.C. SHALL BE ENSURED BEFORE EXECUTION OF WORK BY NHAI.
  16. PROTECTION WORK FOR SERVICE ROAD AND ADJACENT EXISTING STRUCTURE / BUILDING ETC. SHOULD BE ENSURED BEFORE EXECUTION BY APPROACHED WORK BY NHAI.
  17. RAILWAY KM WITH RESPECT TO TP NOS. AS WRITTEN IN THE DRAWING TO BE CHECKED AS PER SITE CONDITION AND THAT SHOULD BE COMPLETED BY DIVISION AUTHORITIES.
  18. WEARING COAT WITH UNIFORM THICKNESS, AND MISCELLANEOUS ITEMS SUCH AS DRAINAGE SPOUTS WITH GRATING ARRANGEMENTS ETC. SHALL BE SIMILAR TO MOST DRAWING NO. SD/205 LOCATION OF DRAINAGE SPOUTS SHALL INVARIABLY BE SHOWN DETAILED.
  19. EXPANSION JOINT, ELASTOMERIC POT/PTE BEARING & CONFINED FOR BEARING SINCE BE PROVIDED ONLY FROM QUALIFIED MANUFACTURER OF WORTH WARRANTY AND GUIDELINES/ CIRCULAR ISSUED FROM TIME TO TIME.

- IMPORTANT NOTES:
1. A COMMON BENCH MARK SHOULD BE ESTABLISHED BY RAILWAY AND ROAD AUTHORITY ENGINEERS BEFORE STARTING THE WORK.
  2. CONCERNED ROAD AUTHORITY (PIU, NHAI) HAS TO ENTER WITH THE RESPECTIVE RAILWAY DIVISION AS PER DRAFT MOU DATED BY PCE OFFICE BEFORE COMMENCEMENT OF THE WORK. PCE WILL COORDINATE TO FINALIZE THE DRAFT MOU. COPY OF MOU FOR RAILWAY PORTION SHALL BE COMPLETED ACCORDINGLY AS PER TERMS AND CONDITION OF MOU SHALL BE SIGNED IN TRIPlicate. ORIGINAL SHALL BE RETAINED BY DIVISION. DUPLICATE AND TRIPlicate COPIES SHALL BE RETAINED WITH NHAI AND PCE OFFICE.
  3. VARIOUS CHANGES VARY FROM TIME TO TIME AS PER RAILWAY BOARD'S NORMS PAYABLE TO RAILWAY IN RESPECT OF WAY LEAVE / LICENSE / TRANSFER OF LAND AS REQUIRED SHALL BE FINALIZED IN CONSULTATION WITH RESPECTIVE RAILWAY DIVISION.
  4. CONCERNED ROAD AUTHORITY HAS TO SUBMIT COMPLETION DRAWING OF DETAILED DRAWING & CAD AND FINAL DESIGN IN ORIGINAL (DRAWING IN CLOTH/TRACING) DULY SIGNED BY THEM AND RAILWAY DIVISION OFFICIALS AFTER IMMEDIATE COMPLETION OF THE WORK IN ACCORDANCE WITH PARA 9.11 OF INDIAN RAILWAY WORK MANUAL.
  5. LOAD TEST HAS TO BE CARRIED OUT IMMEDIATELY AFTER COMPLETION OF THE SUPERSTRUCTURES CONSIDERING THE PROVISION OF IRC SP 51-2015- GUIDE LINES FOR LOAD TESTING OF BRIDGES.
  6. ALL THE RECORDS OF QUALITY ASSURANCE / QUALITY CONTROL, TESTING OF THE MATERIALS AND SATISFACTORY COMPLETION OF AN ACTIVITY SHALL BE MAINTAINED AT THE SITE OF THE CONTRACTOR'S ENGINEER AND SUPERVISOR ENGINEERS ON THE BASIS OF THE RECORDS RAILWAY ENGINEER SHALL DO STAGE WISE CLEARANCE WITHOUT SUCH STAGE CLEARANCE, THE WORK IN THE NEXT STAGE OF CONSTRUCTION SHALL BE NOT ALLOWED BY THE RAILWAY SUPERVISOR UNLESS PROPER SYSTEM OF THE CHECK AND EXERCISE IS FOLLOWED AT THE SITE.
  7. PCE PERMISSION SHALL OBTAINED PRIOR TO COMMENCEMENT OF WORK CONSIDERING PARA C NO.2022/ TRANS CALL/ CIV/ CR/ DATE 21-06-2022 TO BE FOLLOW.
  8. SAFETY PRECAUTION AND MEASURES TO BE OBSERVED DURING EXECUTION OF ROB SHALL BE FINALISED BY RESPECTIVE RAILWAY DIVISION WITH THE CONCERNED ROAD AUTHORITY BEFORE COMMENCEMENT OF WORK AS PER RAILWAY BOARD DIRECTIVES COMMUNICATED TO DIVISIONS VIDE OF WORK LETTER NO. W-71/BR/SAFETY/ GENERAL DATED 16.11.2009.
  9. PROFESSIONAL GUIDELINES OF ANNEXURE - II AND ANNEXURE - III ETC ISSUED BY RAILWAY BOARD VIDE OTHER LETTER NO. 2201/1/MISC/NH/4 PT/III DATED 20.06.2010 SHALL BE ENSURED DURING SUBMISSION OF PROPOSAL AND DURING EXECUTION ETC.
  10. THE SCOPES OF RAILWAY SUPERVISION IS RAILWAY SPAN OF 1x25.25+1x37.28+1x19.24 THE ARRANGEMENTS OF APPROACH SPANS BEYOND RAILWAY BOUNDARY SHALL NOT BE CHANGE WITHOUT PRIOR PERMISSION OF RAILWAY AS APPROVED IN THE DRAWING.
  11. 1033.1617 & 1618 CHAPTER OF INDIAN RAILWAY COURT FOR ENGINEERING DEPARTMENT MUTATIS MUTANDIS WILL APPLY FOR THESE WORK AND DIVISION HAS ENSURE FORTH TIME TO TIME.
  12. MODE OF CONSTRUCTION FOR EXECUTION OF BRIDGE PROPER (I.E. EXECUTION BY RAILWAYS ON DEPOSITS TERMS OR BY THE CONTRACT AGENCY OF ROAD AUTHORITY) SHALL BE DECIDES BY RAILWAY CONSIDERING THE CAPACITIES AND PREVIOUS EXPERIENCES OF EXECUTING OF SUCH WORK BY CONTRACT AGENCY BY ROAD AUTHORITY.
  13. FIXTURES IN THE DECK FOR SUPPORTING AC TRACTION WIRE WILL BE SHOWN IN THE DETAILED DRAWING BASED ON STANDARD TYPICAL DRAWING.
  14. WORK SHOULD BE CARRIED OUT BY THE PARTY UNDER THE SUPERVISION OF RAILWAY ENGINEERS WITHIN RAILWAY LAND LIMIT.
  15. PROPOSED WORK TO BE SHOWN IN RED.
  16. EXISTING WORK TO BE SHOWN IN BLACK.
  17. FUTURE WORK TO BE SHOWN IN GREEN.
  18. GAP/W/SS TO BE PROVIDED AS PER DESIGN.
  19. THE COMPLETION DRAWING WILL BE SUBMITTING TO RAILWAY BEFORE COMMISSIONING.
  20. AFTER SUBMISSION OF COMPLETION DRAWING ROB SHALL BE INSPECTED BY SECTIONAL ADMN. SSE (BR) OF RAILWAY BEFORE COMMISSIONING AND ALL THE DATA AND INSPECTION DETAIL SHALL BE \*\*\*\* NRMS AND BRIDGE REGISTER (R.B. LT. NO. 2013/CE-III/BR/REM 17.02.14).

DRM / FZR		CBE / NR	
SR DEN / C / FZR	<i>[Signature]</i>	DYCE / ROB / HQ / NR	<i>[Signature]</i>
SR DOM / FZR (G)	<i>[Signature]</i>	AXEN / S&D / HQ / NR	
SR DST / FZR	<i>[Signature]</i>		
SR DEE / TRD / FZR	<i>[Signature]</i>		
SR DEE / FZR	<i>[Signature]</i>		
SR DE-III / FZR	<i>[Signature]</i>		
DIVISIONAL OFFICERS SIGNATURE		NR. HQ. OFFICERS SIGNATURE	
<b>RORAC PROPOSAL ID NRFRZ0111</b>			
RAILWAY: NORTHERN RAILWAY			
SECTION: FEROPUR DIVISION			
STATIONS: MAKHU AND BUTEWAL			
TITLE: GENERAL ARRANGEMENT DRAWING FOR ROB (1x19.24+1x25.25+1x37.28+8x19.24m) AT CH. 171+387.25 IN LIEU OF LEVEL CROSSING NO. S-86 / T2 AT RAILWAY km 76 / 5 NEAR MAKHU RAILWAY STATION BETWEEN MAKHU AND BUTEWAL RAILWAY STATION			