

**NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
(MINISTRY OF ROAD TRANSPORT & HIGHWAYS)
GOVT. OF INDIA**

Consultancy Services for Preparation of DPR for Development of Economic Corridors, Inter Corridors and Feeder Routes to Improve the Efficiency of Freight Movement in India under Bharatmala Pariyojana



Lot-1 : Package-IV

Section-2: (Km 606+300 – Km 626+030)

DETAILED PROJECT REPORT

**October 2021
Rev. – R0**



Voyants Solutions Pvt. Ltd
Corporate Office:
403, 4th Floor, Park Centra,
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11/1C/2, East Topsia Road,
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Tele: 033- 40519300/ 40063240/ 300070350

≡ **List of Drawings** ≡

PATH: F:\G_Sudima_Sah\0_P\Project\A_Work\1718-082_Bharatmala_4\2021\7_October_2021\1\List of Drawing\List of Drawing_Sec-2_PKG-4.dwg

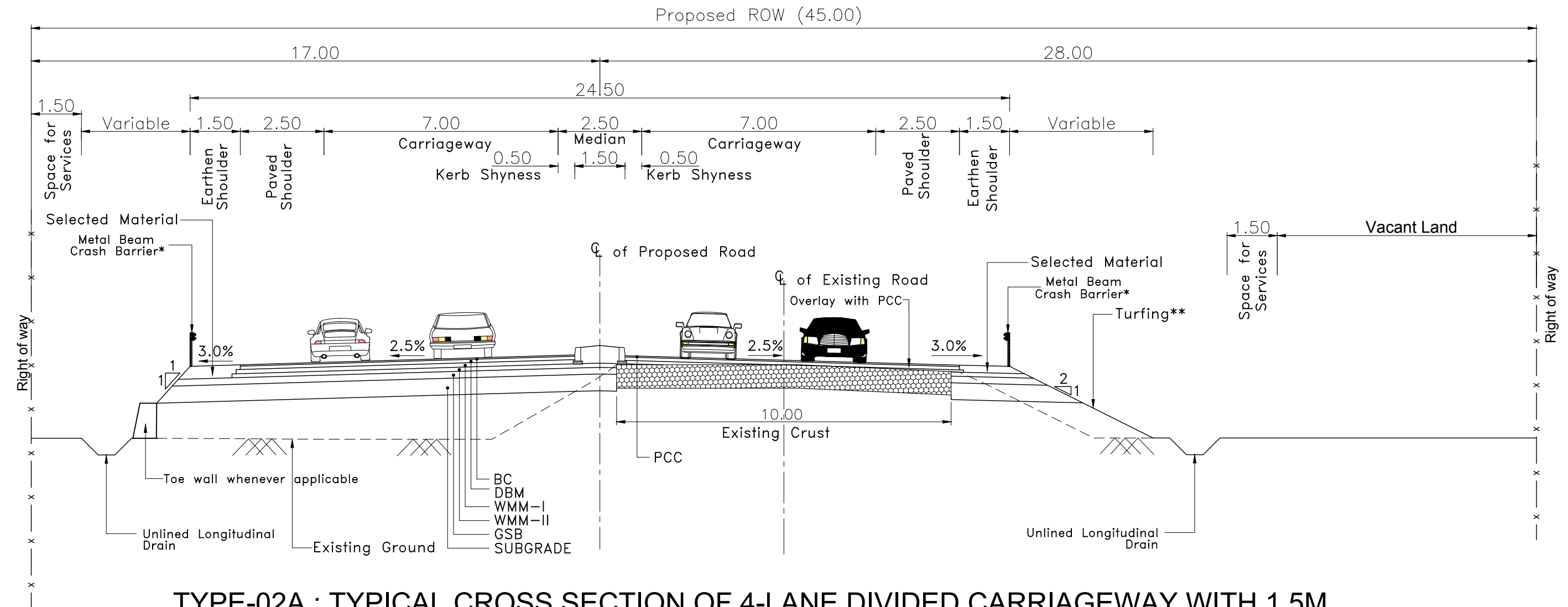
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7.8	Details of Passenger Shelter	VSPL/1718-082/DPR/PKG-4/S2/MIS-08	R0	01
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7.10	Details of Superelevation	VSPL/1718-082/DPR/PKG-4/S2/MIS-10	R0	01
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7.12	Details of Details of Rumble Strip	VSPL/1718-082/DPR/PKG-4/S2/MIS-12	R0	01
7.13	Details of Drainage Arrangement in High Embankment (Typical Layout of Chute Drain)	VSPL/1718-082/DPR/PKG-4/S2/MIS-13	R0	01
7.14	Details of Details of Drain	VSPL/1718-082/DPR/PKG-4/S2/MIS-14	R0	01
8.0	Structure Works			
8.1	General Arrangement Drawing of MNB At Km. Ch.- 606+772	VSPL/1718-082/DPR/PKG-4/SEC-2/MNB-01	R0	02
8.2	General Arrangement Drawing of Box Culvert (Widening)	VSPL/1718-082/DPR/PKG-4/SEC-2/BC-01	R0	02
8.3	General Arrangement Drawing of Single Cell Pipe Culvert (Retain & Widening)	VSPL/1718-082/DPR/PKG-4/SEC-2/PC-01	R0	02

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 : List of Drawings			
							PD/PS	SS/SP	DGR	SKC				
											DRG. No. : VSPL/1718-082/DPR/PKG-4/S2/LOD- 01			
			REV.			DATE	DESCRIPTION		SCALE :	N.T.S.	SHEET SIZE	A2	REVISION:R0	October 2021

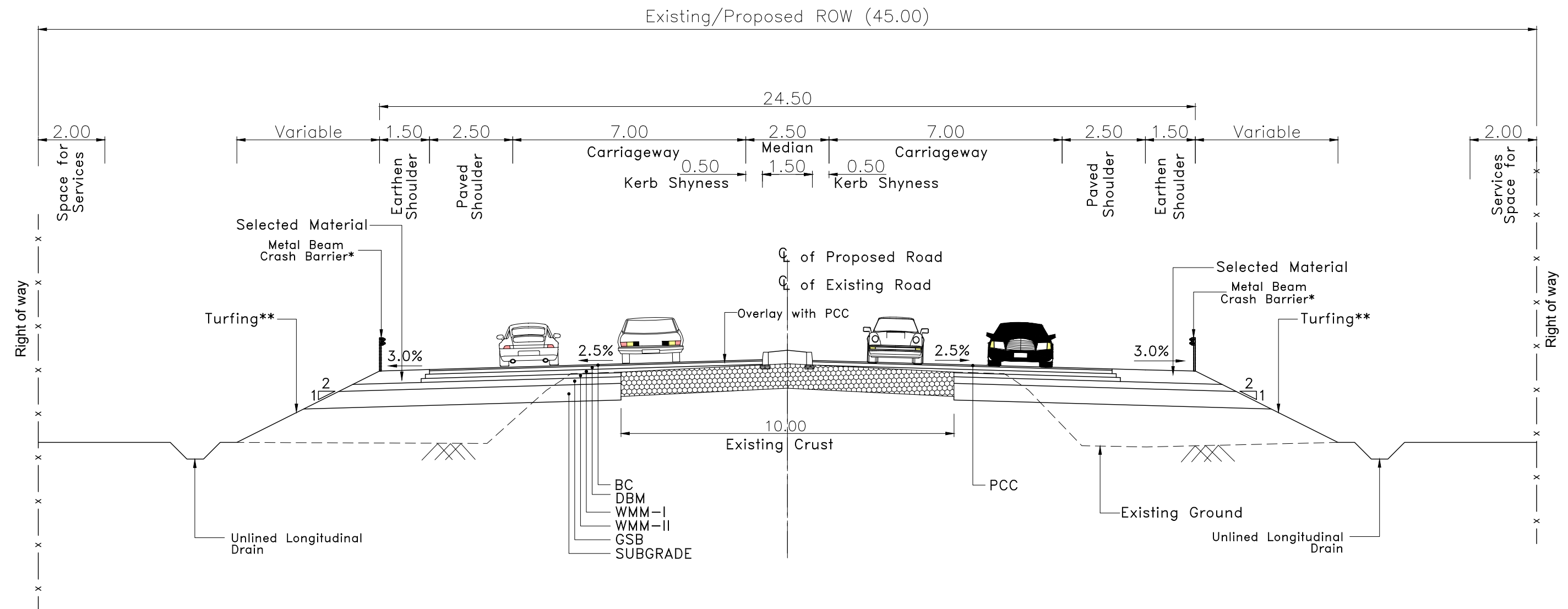
ROAD WORKS

≡ ***Index Map*** ≡

||| **Typical Cross Section & Schedule** |||



TYPE-02A : TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)



TYPE-02B: TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)

Note:

1. All dimensions are in meter unless otherwise specified.
2. * Applicable where embankment height is >3.0m
3. ** Applicable where <3.0m embankment height Turfing with sods of perennial turf forming grass.

CLIENT :



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DESIGN CONSULTANT:

VOYANTS SOLUTIONS PVT LTD.
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Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PD/PS	SS/SP	DGR	SKC
<i>Sas.</i>	<i>SP</i>	<i>SKC</i>	<i>SKC</i>
SCALE :	1:125	SHEET SIZE	A2

TITLE :

Typical Cross Section

DRG. No. :
VSPL/1718-082/DPR/PKG-4/S2/TCS- 01

REVISION:R0

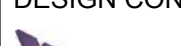
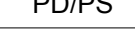
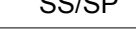
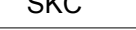
October 2021

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Annexure 2.4A : Widening Schedule						
Sl No	Chainage		Length (m)	TCS Type	Widening Side	Description
	From	To				
1	606300	606530	230	2A	LHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
2	606530	606570	40	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
3	606570	606770	200	2A	RHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
4	606770	606780	10	STR	RHS	MNB
5	606780	608230	1450	2A	RHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
6	608230	608280	50	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
7	608280	608550	270	2A	LHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
8	608550	608590	40	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
9	608590	609390	800	2A	RHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
10	609390	609430	40	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
11	609430	609840	410	2A	LHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
12	609840	609930	90	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
13	609930	611840	1910	2A	RHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
14	611840	611930	90	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
15	611930	612350	420	2A	RHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
16	612350	612420	70	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
17	612420	613030	610	2A	LHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)

Annexure 2.4A : Widening Schedule						
Sl No	Chainage		Length (m)	TCS Type	Widening Side	Description
	From	To				
18	613030	613100	70	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
19	613100	613320	220	2A	RHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
20	613320	613420	100	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
21	613420	614150	730	2A	LHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
22	614150	614250	100	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
23	614250	614930	680	2A	RHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
24	614930	615000	70	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
25	615000	615700	700	2A	LHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
26	615700	615800	100	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
27	615800	616050	250	2A	RHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
28	616050	616150	100	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
29	616150	616770	620	2A	LHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
30	616770	616870	100	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
31	616870	618380	1510	2A	RHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
32	618380	618550	170	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
33	618550	620250	1700	2A	LHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
34	620250	620330	80	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)

Annexure 2.4A : Widening Schedule						
Sl No	Chainage		Length (m)	TCS Type	Widening Side	Description
	From	To				
35	620330	623900	3570	2A	RHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
36	623900	624020	120	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
37	624020	625970	1950	2A	LHS	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (ECCENTRIC WIDENING)
38	625970	626030	60	2B	Both	TYPICAL CROSS SECTION OF 4-LANE DIVIDED CARRIAGEWAY WITH 1.5M WIDE RAISED MEDIAN IN RURAL AREA (CONCENTRIC WIDENING)
Total			19730			

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							PD/PS	SS/SP	DGR	SKC		
												
							SCALE :	N.T.S.	SHEET SIZE	A2		
			REV.	DATE	DESCRIPTION							
DRG. No. : VSPL/1718-082/DPR/PKG-4/S2/TCS- 02												
REVISION:R0										October 2021		

≡ **Horizontal Alignment Report** ≡

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Annexure 2.2: Horizontal Alignment Report																					
Element ID	ELEMENT DETAILS								Transition Details				Horizontal Intersection Point (HIP)			Deflectin Angle			Speed (Kmph)	Superelevation	Extra Widening (m)
	Start Chainage	End Chainage	Start Easting	Start Northing	End Easting	End Northing	Radius (m)	Direction	Start Chainage	L1	L2	End Chainage	Chainage	Easting	Northing	Deg	Min	Sec			
1	606+504.404	606+585.705	705044.261	3040320.446	705121.869	3040343.824	300	Left	606+434.404	70	70	606+655.705	606+545.305	705084.659	3040326.845	15	31	38.222	80	5.0%	0.3
2	606+833.799	606+898.208	705335.486	3040469.837	705392.152	3040500.43	1000	Right	606+798.799	35	35	606+933.208	606+866.015	705363.326	3040486.046	3	41	25.145	100	4.4%	NIL
3	607+143.692	607+192.507	705613.604	3040606.361	705657.397	3040627.924	2000	Left					607+168.101	705635.632	3040616.875	1	23	54.386	100	NR	NIL
4	607+537.753	607+825.934	705965.338	3040784.021	706236.126	3040880.884	1300	Right	607+497.753	40	40	607+865.934	607+682.436	706095.342	3040847.521	12	42	4.315	100	3.4%	NIL
5	607+945.347	608+059.303	706352.686	3040906.83	706463.202	3040934.554	2000	Left					608+002.340	706408.339	3040919.117	3	15	52.576	100	NR	NIL
6	608+223.688	608+297.188	706621.552	3040978.677	706693.383	3040994.177	1000	Right	608+173.688	50	50	608+347.188	608+260.455	706657.182	3040987.747	4	12	40.617	100	4.4%	NIL
7	608+481.598	608+530.181	706875.332	3041024.04	706922.295	3041036.429	600	Left	608+401.598	80	80	608+610.181	608+505.903	706899.064	3041029.284	4	38	21.521	100	5.0%	NIL
8	608+698.864	608+751.434	707080.982	3041093.549	707131.63	3041107.588	700	Right	608+618.864	80	80	608+831.434	608+725.162	707106.042	3041101.52	4	18	10.625	100	5.0%	NIL
9	609+049.794	609+208.632	707425.104	3041161.235	707582.274	3041184.014	2500	Right					609+129.240	707503.327	3041175.122	3	38	25.078	100	NR	NIL
10	609+386.365	609+428.705	707758.424	3041206.996	707798.741	3041219.81	300	Left	609+311.365	75	75	609+503.705	609+407.570	707779.035	3041211.978	8	5	10.931	80	5.0%	0.3
11	609+681.553	609+865.545	708021.638	3041338.972	708186.667	3041420.181	2000	Right					609+773.614	708102.284	3041383.375	5	16	15.523	100	NR	NIL
12	610+116.420	610+202.544	708416.619	3041520.481	708496.278	3041553.204	2000	Right					610+159.489	708456.096	3041537.7	2	28	2.231	100	NR	NIL
13	610+568.106	610+765.609	708838.172	3041682.406	709033.339	3041682.404	370	Right	610+493.106	75	75	610+840.609	610+669.271	708935.756	3041709.086	30	35	2.661	80	5.0%	NIL
14	611+169.810	611+290.351	709411.743	3041540.543	709529.003	3041513.262	700	Left	611+094.810	75	75	611+365.351	611+230.230	709469.196	3041521.842	9	51	59.068	100	5.0%	NIL
15	611+451.010	611+501.536	709688.887	3041497.665	709739.151	3041492.543	2000	Right					611+476.274	709714.052	3041495.421	1	26	50.857	100	NR	NIL
16	611+838.907	611+931.959	710074.565	3041457.222	710165.973	3041472.528	300	Left	611+763.907	75	75	612+006.959	611+885.810	710121.465	3041457.729	17	46	18.352	80	5.0%	0.3
17	612+057.737	612+180.679	710280.864	3041523.54	710395.874	3041566.768	1000	Right	612+007.737	50	50	612+230.679	612+119.286	710337.039	3041548.693	7	2	38.669	100	4.4%	NIL
18	612+547.026	612+707.618	710748.532	3041665.963	710902.452	3041711.747	5000	Left					612+627.329	710825.86	3041687.619	1	50	24.885	100	NR	NIL
19	612+942.986	613+035.657	711126.945	3041782.466	711215.947	3041808.253	2000	Right					612+989.330	711171.147	3041796.391	2	39	17.371	100	NR	NIL
20	613+191.237	613+222.434	711365.432	3041851.063	711393.701	3041864.227	300	Left	613+116.237	75	75	613+297.434	613+206.850	711379.909	3041856.91	5	57	29.821	80	5.0%	0.3
21	613+456.522	613+598.945	711586.889	3041996.251	711706.212	3042073.955	2000	Right					613+527.764	711645.166	3042037.228	4	4	48.462	100	NR	NIL
22	613+744.000	613+764.598	711828.795	3042151.349	711844.534	3042164.631	300	Left	613+669.000	75	75	613+839.598	613+754.303	711836.893	3042157.72	3	56	2.544	80	5.0%	0.3
23	613+849.045	614+059.918	711901.902	3042226.519	712047.603	3042378.827	2000	Right					613+954.579	711970.734	3042306.517	6	2	27.835	100	NR	NIL
24	614+124.274	614+472.422	712094.478	3042422.922	712361.318	3042646.232	3000	Right					614+298.544	712221.412	3042542.327	6	38	56.884	100	NR	NIL
25	614+826.919	614+980.915	712645.913	3042857.594	712765.888	3042954.078	2000	Left					614+903.955	712707.759	3042903.525	4	24	41.986	100	NR	NIL
26	615+002.626	615+098.252	712782.271	3042968.325	712855.9	3043029.328	2000	Right					615+050.448	712818.356	3042999.707	2	44	22.13	100	NR	NIL
27	615+169.105	615+454.697	712911.525	3043073.214	713142.699	3043240.772	3500	Right					615+311.980	713023.692	3043161.712	4	40	30.702	100	NR	NIL
28	615+856.817	615+903.458	713477.768	3043463.099	713517.386	3043487.708	1500	Right	615+811.817	45	45	615+948.458	615+880.140	713497.385	3043475.711	1	46	53.626	100	3.0%	NIL
29	616+381.054	616+562.340	713930.478	3043727.4	714085.208	3043821.83	4000	Left					616+471.712	714008.913	3043772.861	2	35	48.193	100	NR	NIL
30	616+681.853	616+735.280	714185.788	3043886.385	714231.13	3043914.64	2000	Right					616+708.568	714208.27	3043900.815	1	31	50.054	100	NR	NIL
31	616+875.360	617+424.376	714350.996	3043987.128	714853.66	3044203.598	2000	Right					617+151.605	714587.378	3044130.078	15	43	41.323	100	NR	NIL
32	617+871.345	618+082.219	715284.509	3044322.557	715486.533	3044382.948	5000	Left					617+976.798	715386.158	3044350.622	2	24	59.15	100	NR	NIL
33	618+133.533	619+094.801	715535.377	3044398.679	716484.646	3044496.411	2300	Right					618+621.288	715999.648	3044548.199	23	56	46.888	100	NR	NIL
34	619+456.768	619+844.440	716844.567	3044457.978	717228.066	3044401.921	5000	Right					619+650.701	717037.404	3044437.387	4	26	32.597	100	NR	NIL
35	619+847.367	620+153.030	717230.944	3044401.386	717534.117	3044363.974	2500	Left					620+000.389	717381.386	3044373.402	7	0	19.066	100	NR	NIL
36	620+335.369	620+471.463	717716.126	3044353.018	717852.173	3044353.07	1500	Left	620+285.369	50	50	620+521.463	620+403.463	717784.151	3044349.956	5	11	54.256	100	3.0%	NIL
37	620+755.029	620+826.561	718135.202																		

CLIENT :



≡ **Vertical Report** ≡

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Annexure 2.3A : Vertical Alignment Report												
PVI	PVI			Grade		Diff. in Grade (%)	Chainage(m)		Level(m)		Type Of Curve	K Value
	Chainage (m)	Level (m)	Curve Length	IN (%)	OUT (%)		Start of Curve	End of Curve	Start of Curve	End of Curve		
1	606+352.577	109.954	80	-0.207	-0.743	-0.536	606+312.577	606+392.577	110.037	109.657	Hog	149
2	606+524.506	108.677	200	-0.743	1.535	2.278	606+424.506	606+624.506	109.42	110.212	Sag	88
3	606+708.392	111.5	105	1.535	0	-1.535	606+655.892	606+760.892	110.694	111.5	Hog	68
4	606+832.417	111.5	100	0	-1.435	-1.435	606+782.417	606+882.417	111.5	110.782	Hog	70
5	606+970.978	109.511	150	-1.435	0.709	2.144	606+895.978	607+045.978	110.588	110.043	Sag	70
6	607+131.593	110.65	80	0.709	-0.166	-0.875	607+091.593	607+171.593	110.366	110.584	Hog	91
7	607+210.000	110.52	60	-0.166	0.264	0.430	607+180.000	607+240.000	110.57	110.599	Sag	139
8	607+295.497	110.746	60	0.264	0.084	-0.180	607+265.497	607+325.497	110.667	110.771	Hog	333
9	607+604.677	111.006	60	0.084	-0.081	-0.165	607+574.677	607+634.677	110.981	110.982	Hog	364
10	607+783.943	110.861	60	-0.081	0.341	0.422	607+753.943	607+813.943	110.885	110.963	Sag	142
11	607+854.097	111.1	60	0.341	0.097	-0.244	607+824.097	607+884.097	110.998	111.129	Hog	246
12	608+143.461	111.38	60	0.097	-0.374	-0.471	608+113.461	608+173.461	111.351	111.268	Hog	127
13	608+275.482	110.886	60	-0.374	0.275	0.649	608+245.482	608+305.482	110.998	110.968	Sag	92
14	608+484.369	111.46	250	0.275	-0.485	-0.760	608+359.369	608+609.369	111.117	110.853	Hog	329
15	608+722.698	110.303	60	-0.485	0.216	0.701	608+692.698	608+752.698	110.449	110.368	Sag	85
16	608+869.210	110.62	60	0.216	-0.343	-0.559	608+839.210	608+899.210	110.555	110.517	Hog	107
17	609+173.427	109.576	400	-0.343	0.562	0.905	608+973.427	609+373.427	110.262	110.7	Sag	442
18	609+456.610	111.168	60	0.562	0.178	-0.384	609+426.610	609+486.610	110.999	111.221	Hog	156
19	609+837.097	111.845	60	0.178	-0.002	-0.180	609+807.097	609+867.097	111.792	111.844	Hog	334
20	610+343.648	111.835	60	-0.002	-0.139	-0.137	610+313.648	610+373.648	111.836	111.793	Hog	437
21	610+949.404	110.991	100	-0.139	0.377	0.516	610+899.404	610+999.404	111.061	111.179	Sag	194
22	611+231.897	112.055	200	0.377	-0.174	-0.551	611+131.897	611+331.897	111.678	111.881	Hog	363
23	611+600.000	111.416	60	-0.174	0.417	0.591	611+570.000	611+630.000	111.468	111.541	Sag	102
24	611+827.323	112.365	80	0.417	-0.233	-0.650	611+787.323	611+867.323	112.198	112.272	Hog	123
25	611+982.465	112.004	60	-0.233	0.235	0.468	611+952.465	612+012.465	112.074	112.075	Sag	128
26	612+213.804	112.548	80	0.235	-0.201	-0.436	612+173.804	612+253.804	112.454	112.468	Hog	184
27	612+741.836	111.489	60	-0.201	0.081	0.282	612+711.836	612+771.836	111.549	111.513	Sag	213
28	613+216.733	111.873	60	0.081	0.439	0.358	613+186.733	613+246.733	111.849	112.005	Sag	167
29	613+646.922	113.762	200	0.439	-0.332	-0.771	613+546.922	613+746.922	113.323	113.43	Hog	259
30	614+039.150	112.461	60	-0.332	0.659	0.991	614+009.150	614+069.150	112.561	112.659	Sag	61
31	614+138.797	113.118	80	0.659	-0.6	-1.259	614+098.797	614+178.797	112.854	112.878	Hog	64
32	614+223.447	112.61	60	-0.6	0.353	0.953	614+193.447	614+253.447	112.79	112.716	Sag	63
33	614+302.725	112.89	60	0.353	-0.384	-0.737	614+272.725	614+332.725	112.784	112.775	Hog	81
34	614+441.339	112.358	150	-0.384	0.268	0.652	614+366.339	614+516.339	112.646	112.559	Sag	230
35	614+595.913	112.772	80	0.268	-0.117	-0.385	614+555.913	614+635.913	112.665	112.725	Hog	208
36	614+728.369	112.617	60	-0.117	0.27	0.387	614+698.369	614+758.369	112.652	112.698	Sag	155
37	614+893.894	113.064	80	0.27	-0.172	-0.442	614+853.894	614+933.894	112.956	112.995	Hog	181
38	615+033.068	112.825	60	-0.172	0.082	0.254	615+003.068	615+063.068	112.877	112.85	Sag	236
39	615+186.705	112.951	60	0.082	-0.265	-0.347	615+156.705	615+216.705	112.926	112.871	Hog	173
40	615+282.862	112.696	60	-0.265	0.1	0.365	615+252.862	615+312.862	112.776	112.726	Sag	164
41	615+550.333	112.964	60	0.1	0.562	0.462	615+520.333	615+580.333	112.934	113.133	Sag	130
42	615+686.263	113.728	80	0.562	-0.421	-0.983	615+646.263	615+726.263	113.503	113.56	Hog	81
43	615+881.646	112.906	100	-0.421	0.127	0.548	615+831.646	615+931.646	113.116	112.97	Sag	183

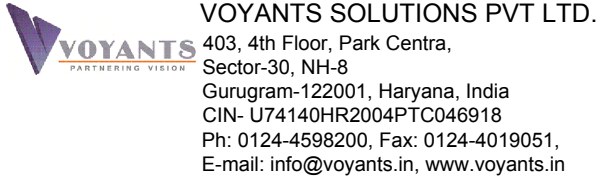
CLIENT :



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:



Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PD/PS	SS/SP	DGR	SKC
SCALE :	N.T.S.	SHEET SIZE	A2

TITLE :

Vertical Alignment Report

DRG. No. :
 VSPL/1718-082/DPR/PKG-4/S2/VAR- 01

REVISION:R0

October 2021

PATH: C:\Users\Yrbw13\appdata\local\temp\AcPublish_7512\VAR_PKG-4_Sec-2.dwg

Annexure 2.3A : Vertical Alignment Report												
PVI	PVI			Grade		Diff. in Grade (%)	Chainage(m)		Level(m)		Type Of Curve	K Value
	Chainage (m)	Level (m)	Curve Length	IN (%)	OUT (%)		Start of Curve	End of Curve	Start of Curve	End of Curve		
44	616+120.000	113.209	60	0.127	0.235	0.108	616+090.000	616+150.000	113.171	113.279	Sag	557
45	616+234.153	113.477	60	0.235	0.502	0.267	616+204.153	616+264.153	113.407	113.628	Sag	225
46	616+314.642	113.881	70	0.502	-0.412	-0.914	616+279.642	616+349.642	113.705	113.737	Hog	77
47	616+440.000	113.365	60	-0.412	0.063	0.475	616+410.000	616+470.000	113.488	113.384	Sag	126
48	616+575.095	113.45	60	0.063	0.345	0.282	616+545.095	616+605.095	113.431	113.554	Sag	212
49	616+694.706	113.863	60	0.345	-0.247	-0.592	616+664.706	616+724.706	113.759	113.789	Hog	101
50	616+770.000	113.677	60	-0.247	-0.029	0.218	616+740.000	616+800.000	113.751	113.668	Sag	275
51	616+928.506	113.631	50	-0.029	0.283	0.312	616+903.506	616+953.506	113.638	113.702	Sag	160
52	617+026.233	113.908	100	0.283	0.033	-0.250	616+976.233	617+076.233	113.766	113.925	Hog	400
53	617+146.251	113.948	60	0.033	0.537	0.504	617+116.251	617+176.251	113.938	114.109	Sag	119
54	617+249.363	114.502	70	0.537	-0.436	-0.973	617+214.363	617+284.363	114.314	114.349	Hog	72
55	617+365.633	113.995	60	-0.436	0.246	0.682	617+335.633	617+395.633	114.126	114.069	Sag	88
56	617+704.624	114.829	100	0.246	-0.321	-0.567	617+654.624	617+754.624	114.706	114.669	Hog	176
57	617+927.496	114.114	60	-0.321	0.141	0.462	617+897.496	617+957.496	114.21	114.156	Sag	130
58	618+075.308	114.322	60	0.141	-0.149	-0.290	618+045.308	618+105.308	114.28	114.277	Hog	207
59	618+291.137	114.001	60	-0.149	0.187	0.336	618+261.137	618+321.137	114.046	114.057	Sag	179
60	618+601.901	114.582	60	0.187	-0.053	-0.240	618+571.901	618+631.901	114.526	114.566	Hog	250
61	618+772.924	114.491	60	-0.053	0.27	0.323	618+742.924	618+802.924	114.507	114.572	Sag	186
62	619+120.918	115.429	60	0.27	0.18	-0.090	619+090.918	619+150.918	115.348	115.483	Hog	672
63	619+515.454	116.14	60	0.18	-0.35	-0.530	619+485.454	619+545.454	116.086	116.035	Hog	113
64	619+879.095	114.869	60	-0.35	0.348	0.698	619+849.095	619+909.095	114.974	114.973	Sag	86
65	620+007.275	115.315	70	0.348	-0.508	-0.856	619+972.275	620+042.275	115.193	115.137	Hog	82
66	620+153.029	114.574	60	-0.508	0.626	1.134	620+123.029	620+183.029	114.727	114.762	Sag	53
67	620+256.501	115.222	60	0.626	0.038	-0.588	620+226.501	620+286.501	115.034	115.233	Hog	102
68	620+489.367	115.311	60	0.038	0.188	0.150	620+459.367	620+519.367	115.3	115.368	Sag	399
69	620+883.101	116.053	60	0.188	0.703	0.515	620+853.101	620+913.101	115.996	116.264	Sag	117
70	621+135.294	117.825	80	0.703	-0.337	-1.040	621+095.294	621+175.294	117.544	117.69	Hog	77
71	621+352.650	117.092	60	-0.337	0.04	0.377	621+322.650	621+382.650	117.193	117.104	Sag	159
72	621+650.000	117.21	60	0.04	-0.025	-0.065	621+620.000	621+680.000	117.198	117.202	Hog	925
73	621+912.408	117.144	60	-0.025	-0.273	-0.248	621+882.408	621+942.408	117.152	117.062	Hog	242
74	622+421.964	115.751	100	-0.273	0.177	0.450	622+371.964	622+471.964	115.888	115.839	Sag	222
75	622+685.000	116.216	60	0.177	-0.165	-0.342	622+655.000	622+715.000	116.163	116.167	Hog	176
76	623+155.344	115.44	60	-0.165	0.2	0.365	623+125.344	623+185.344	115.489	115.5	Sag	165
77	623+480.000	116.088	60	0.2	-0.055	-0.255	623+450.000	623+510.000	116.028	116.071	Hog	235
78	624+016.928	115.791	60	-0.055	0.064	0.119	623+986.928	624+046.928	115.808	115.81	Sag	505
79	624+520.000	116.111	60	0.064	0.375	0.311	624+490.000	624+550.000	116.092	116.223	Sag	193
80	624+686.414	116.735	100	0.375	-0.117	-0.492	624+636.414	624+736.414	116.548	116.676	Hog	203
81	624+957.180	116.417	60	-0.117	0.424	0.541	624+927.180	624+987.180	116.452	116.544	Sag	111
82	625+029.179	116.722	60	0.424	-0.15	-0.574	624+999.179	625+059.179	116.595	116.677	Hog	105
83	625+130.858	116.569	100	-0.15	0.375	0.525	625+080.858	625+180.858	116.644	116.756	Sag	190
84	625+482.091	117.886	60	0.375	-0.078	-0.453	625+452.091	625+512.091	117.774	117.862	Hog	132
85	625+792.986	117.642	100	-0.078	0.337	0.415	625+742.986	625+842.986	117.681	117.81	Sag	241
86	625+993.523	118.317	80	0.337	-0.378	-0.715	625+953.523	626+033.523	118.182	118.166	Hog	112

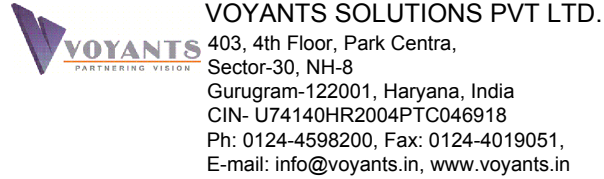
CLIENT :



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:



Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PD/PS	SS/SP	DGR	SKC
SCALE :	N.T.S.	SHEET SIZE	A2

TITLE :

Vertical Alignment Report

DRG. No. :
 VSPL/1718-082/DPR/PKG-4/S2/VAR- 02

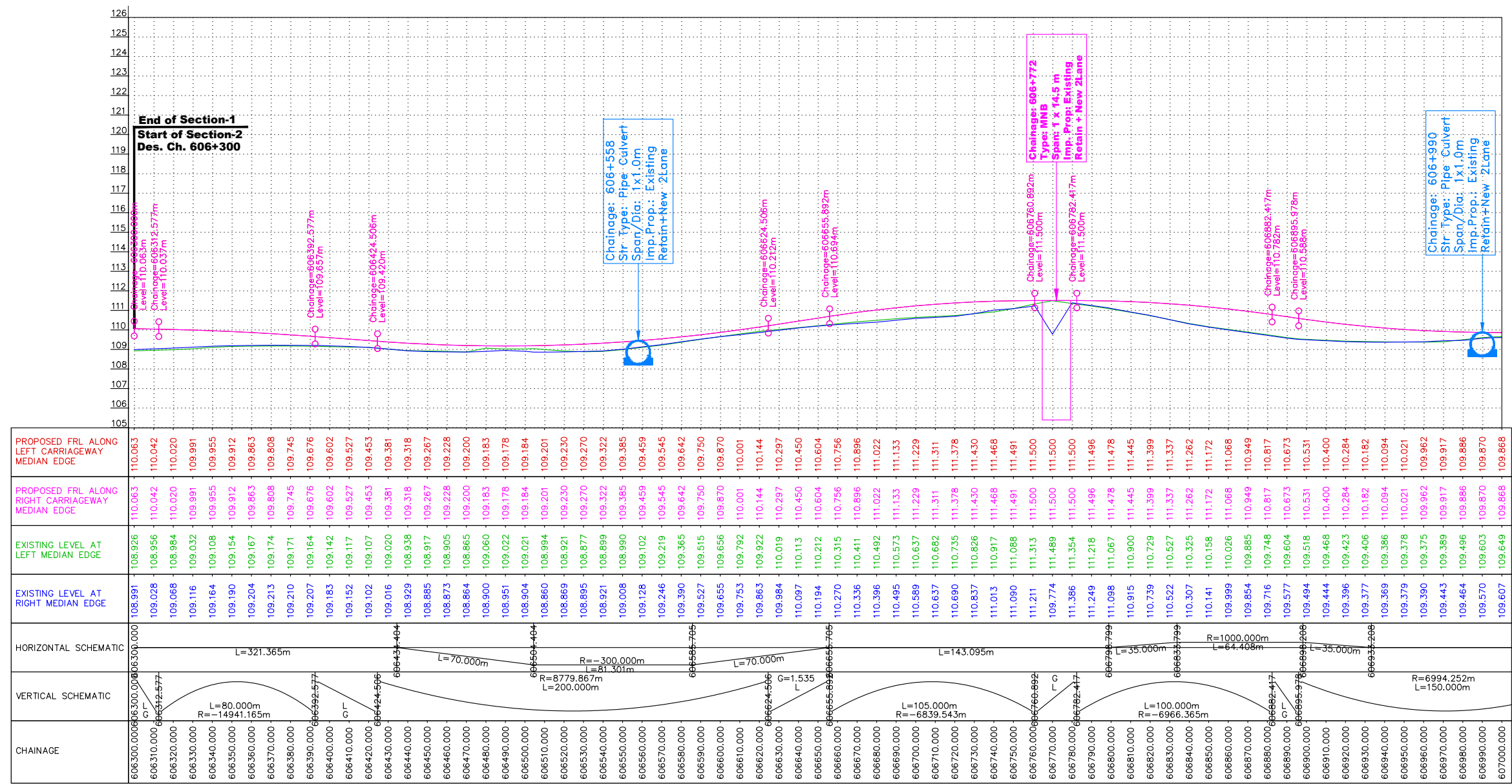
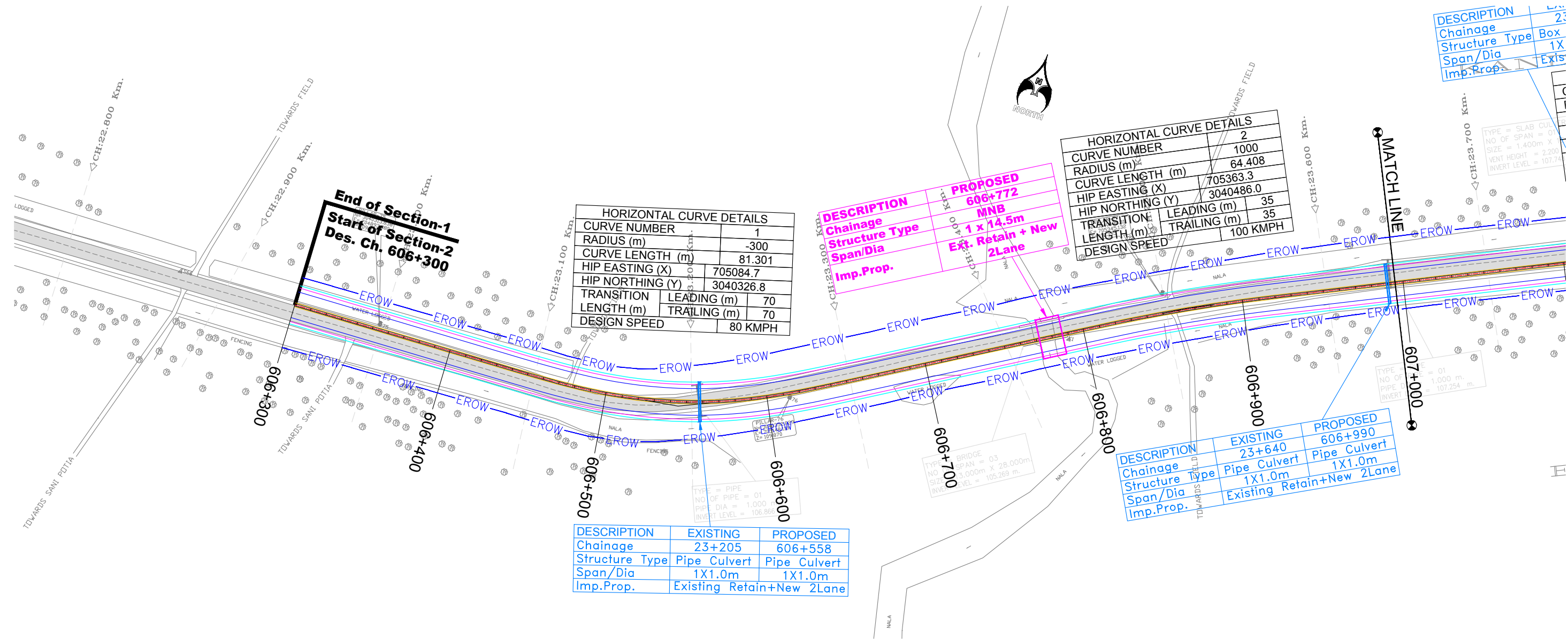
REVISION:R0

October 2021

≡ **Plan & Profile** ≡

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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
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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:



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403, 4th Floor, Park Centra,
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Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY

PD/PS

Sar.

SCALE : HOR 1:2500
VER 1:250

DRAWN BY

SS/SP

SP

SHEET SIZE

CHECKED BY

DGR

Adh

A2

APPROVED BY

SKC

SKC

TITLE :

Plan and Profile
(km 606+300 to km 607+000)

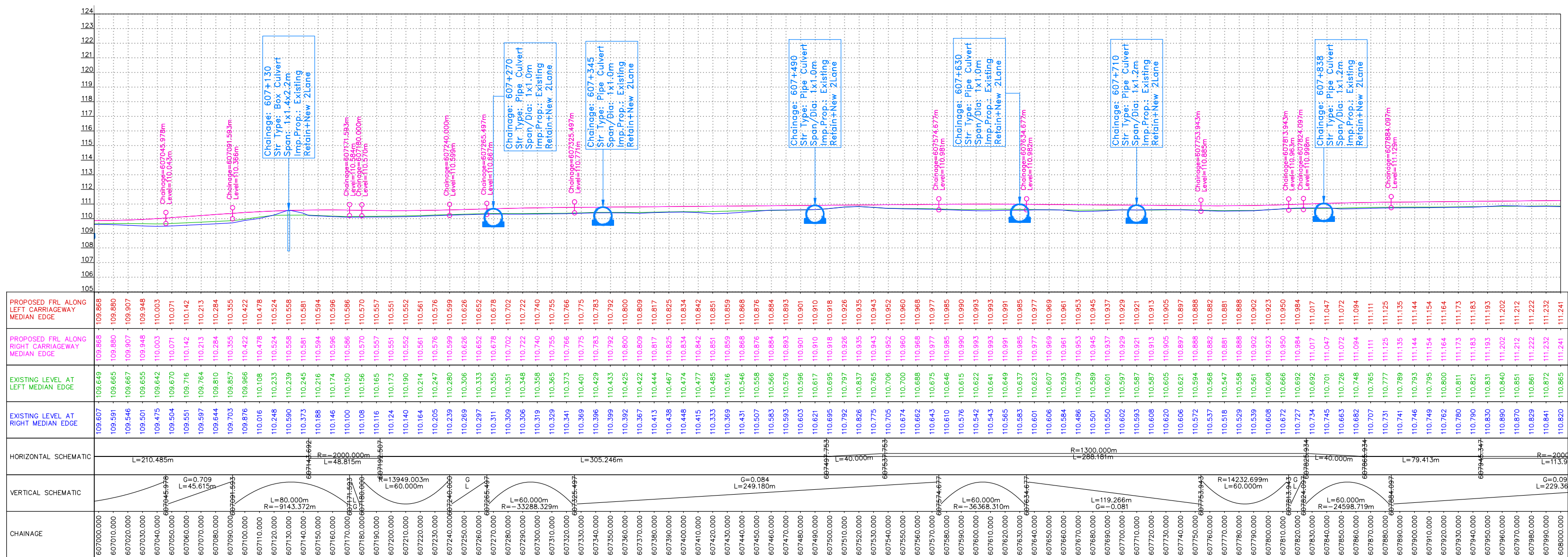
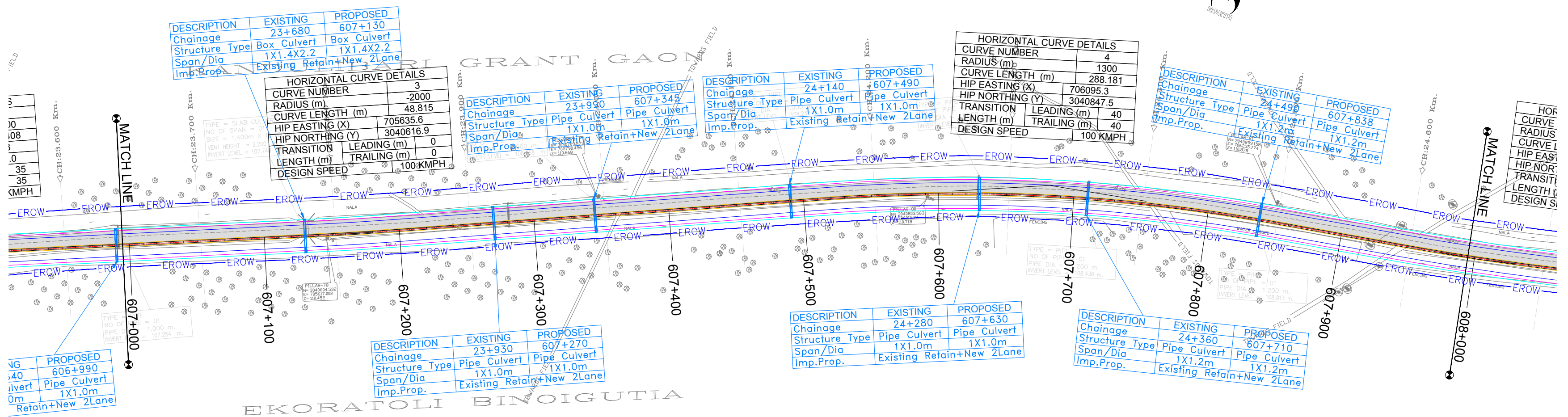
DRG. No. :
VSPL/1718-082/DPR/PKG-4/S2/PP- 01

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October 2021

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NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
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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,
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CIN: U74140HR2004PTC046918
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E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PD/PS	SS/SP	DGR	SKC

SCALE : HOR 1:2500
VER 1:250

SHEET SIZE A2

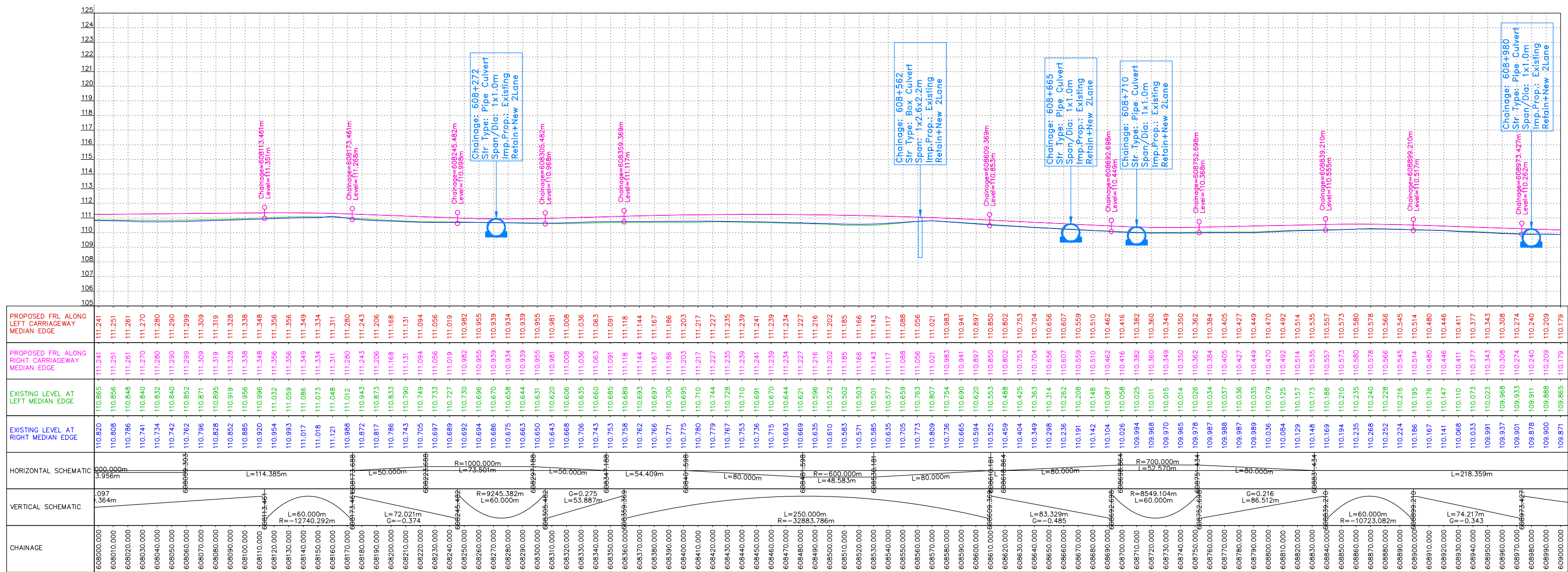
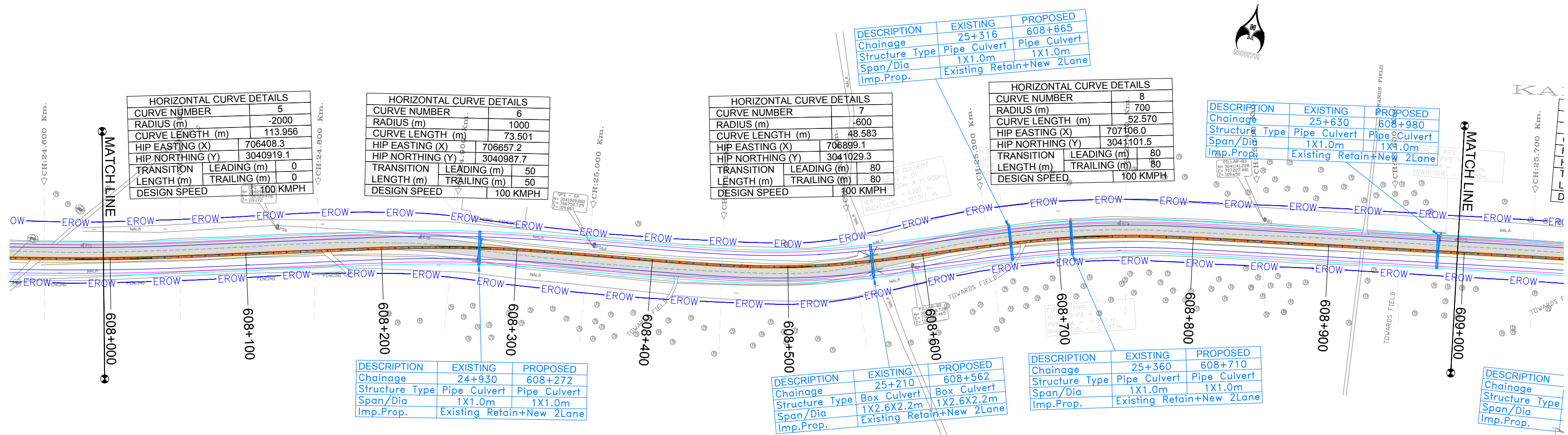
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(km 607+000 to km 608+000)

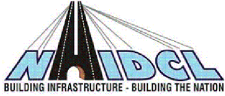
DRG. No. : VSPL/1718-082/DPR/PKG-4/S2/PP- 02

REVISION:R0

October 2021



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)

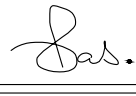
DESIGN CONSULTANT:



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,
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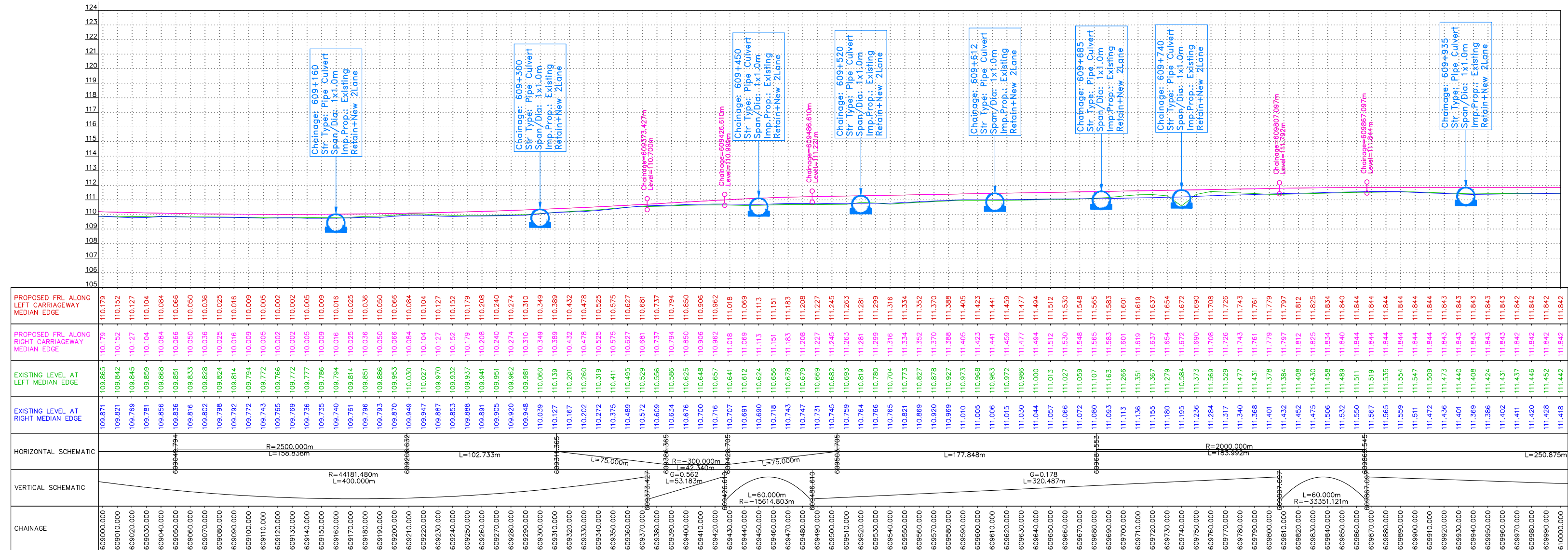
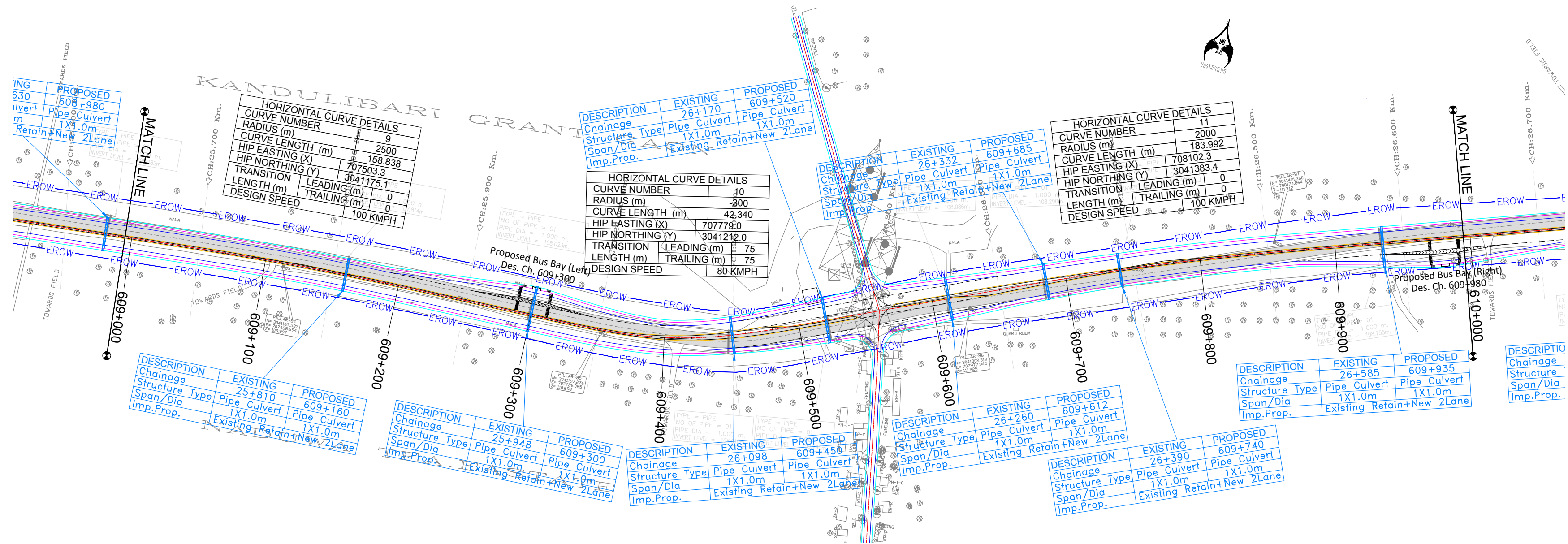
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DRG. No. :	VSPL/1718-082/DPR/PKG-4/S2/PP- 03
REVISION:R0	October 2021

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DESIGN CONSULTANT:

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403, 4th Floor, Park Centra,
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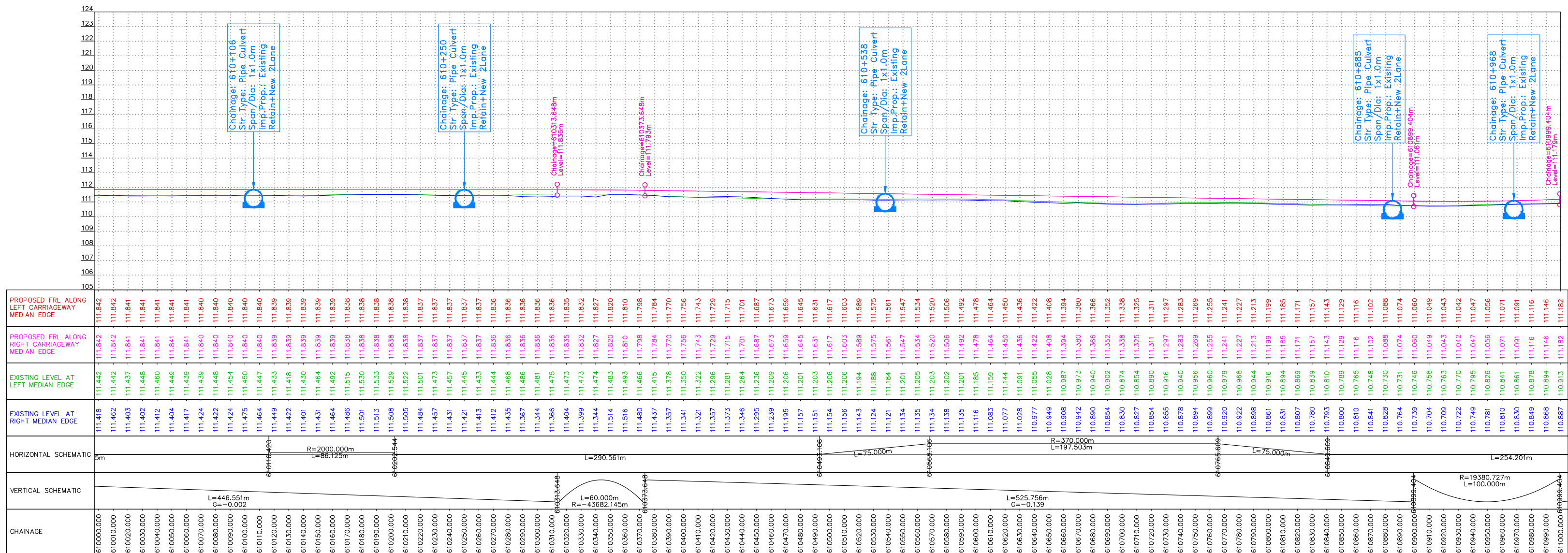
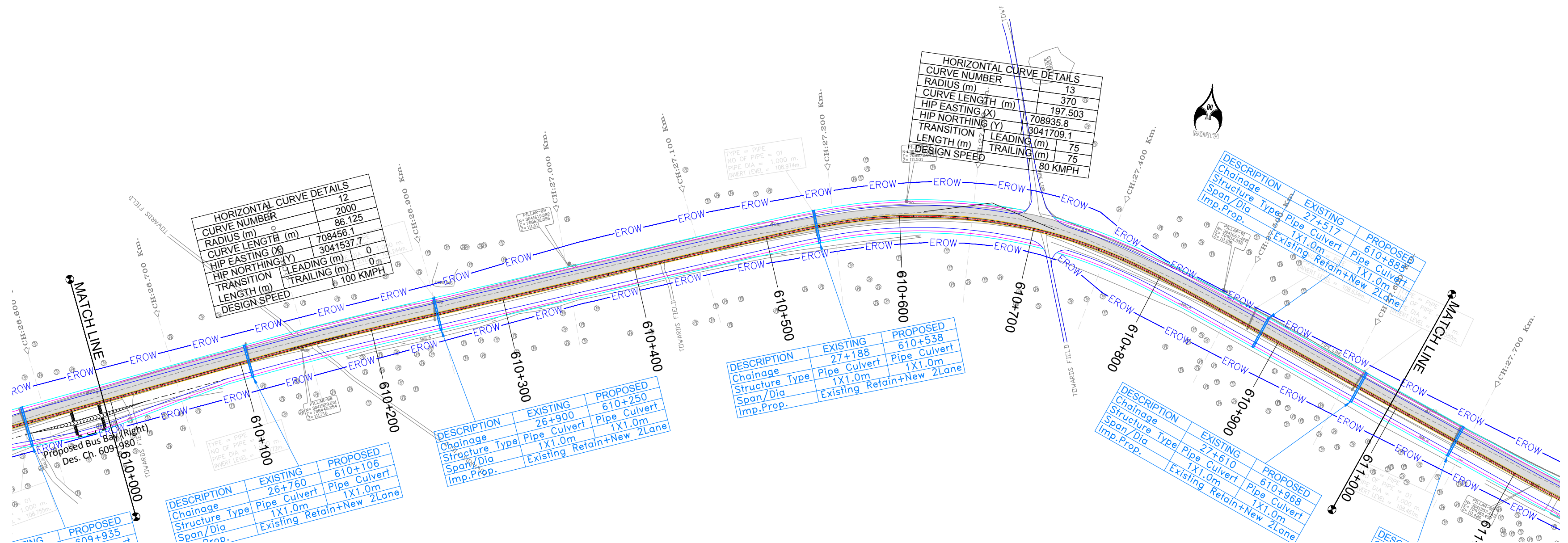
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October 2021

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DESIGN CONSULTANT:



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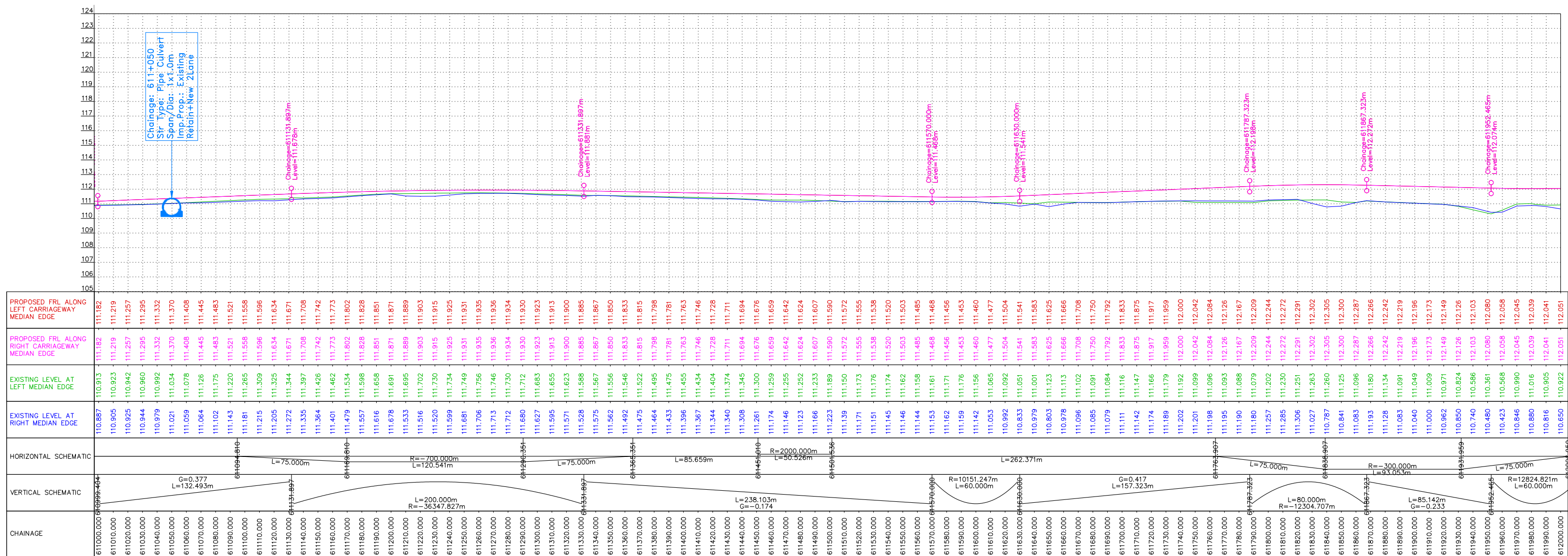
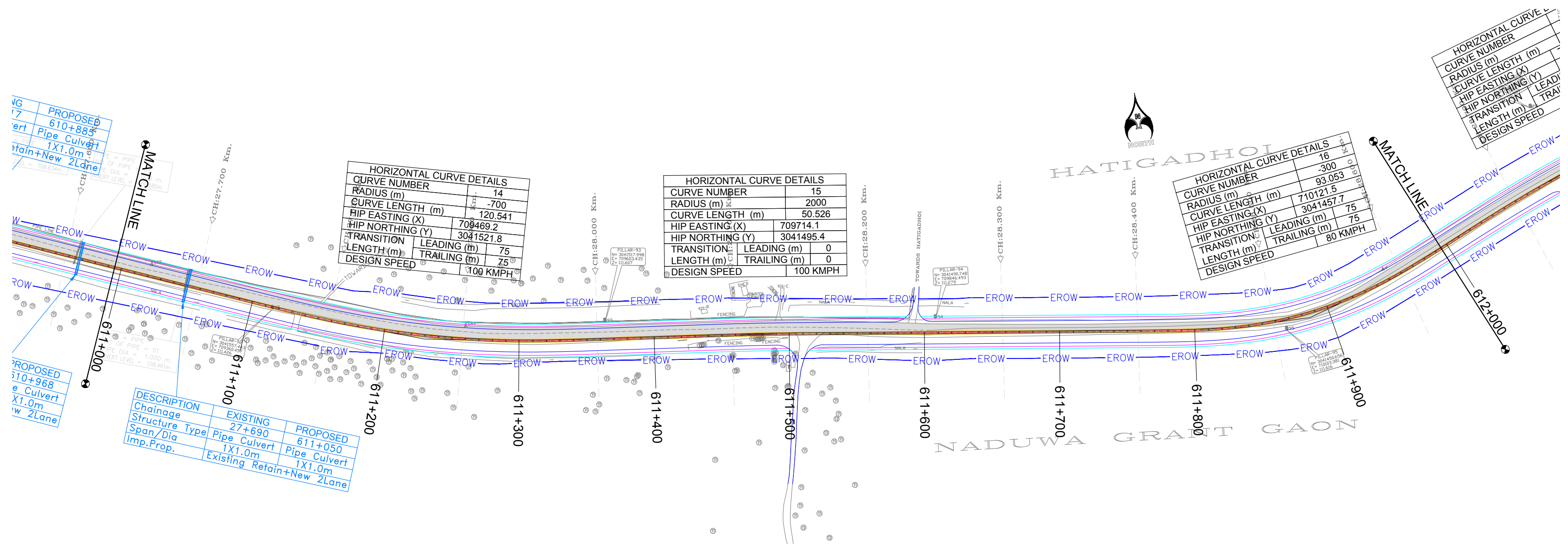
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VSPL/1718-082/DPR/PKG-4/S2/PP- 05

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Plan and Profile
(km 611+000 to km 612+000)

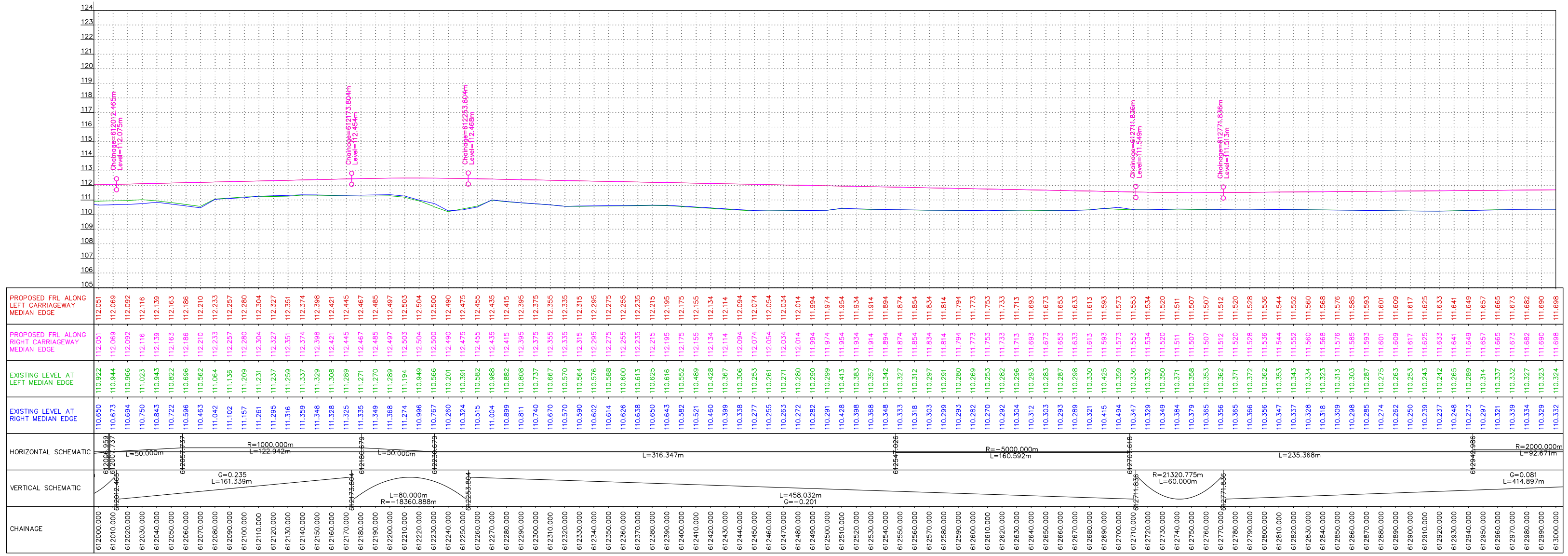
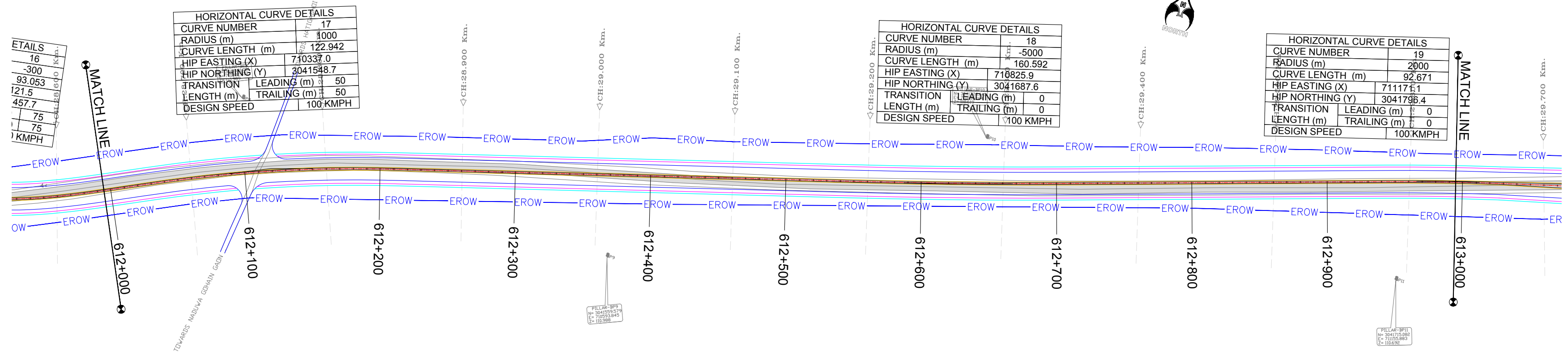
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VSPL/1718-082/DPR/PKG-4/S2/PP- 06

REVISION:R0

October 2021

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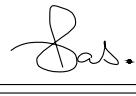
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SCALE :	HOR 1:2500 VER 1:250	SHEET SIZE	A2

TITLE :

Plan and Profile
(km 612+000 to km 613+000)

DRG. No. :
VSPL/1718-082/DPR/PKG-4/S2/PP- 07

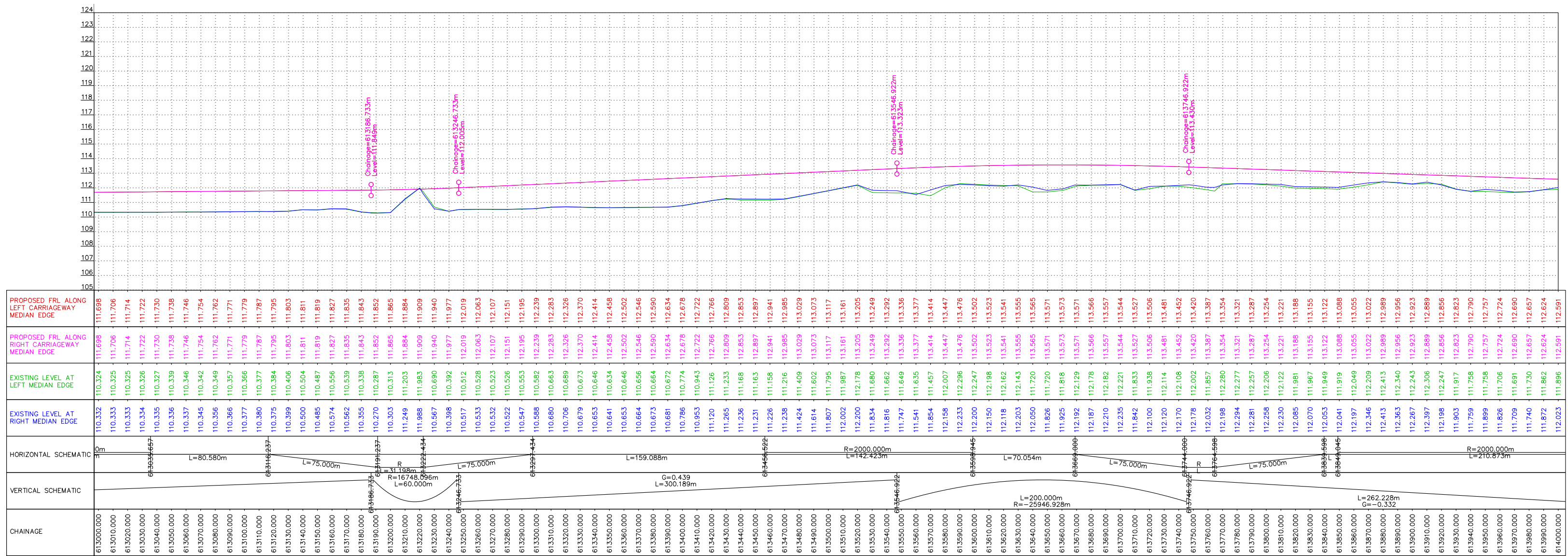
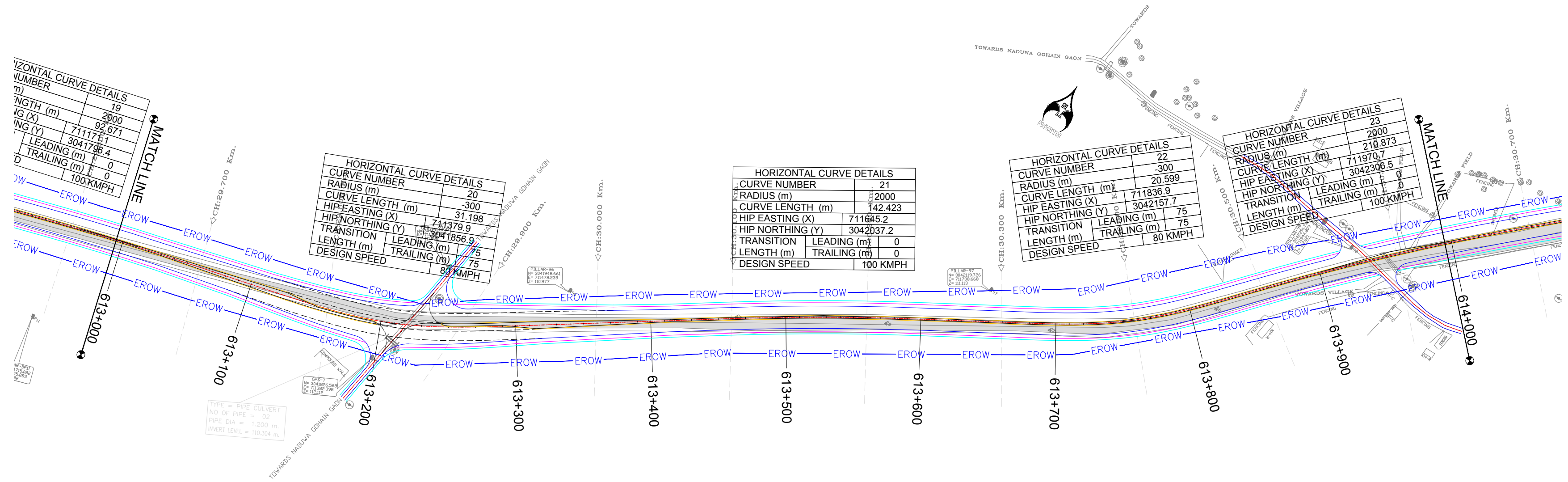
REVISION:R0

October 2021

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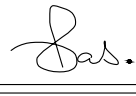
PROJECT :
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(LOT-1:PACKAGE IV)**

DESIGN CONSULTANT:

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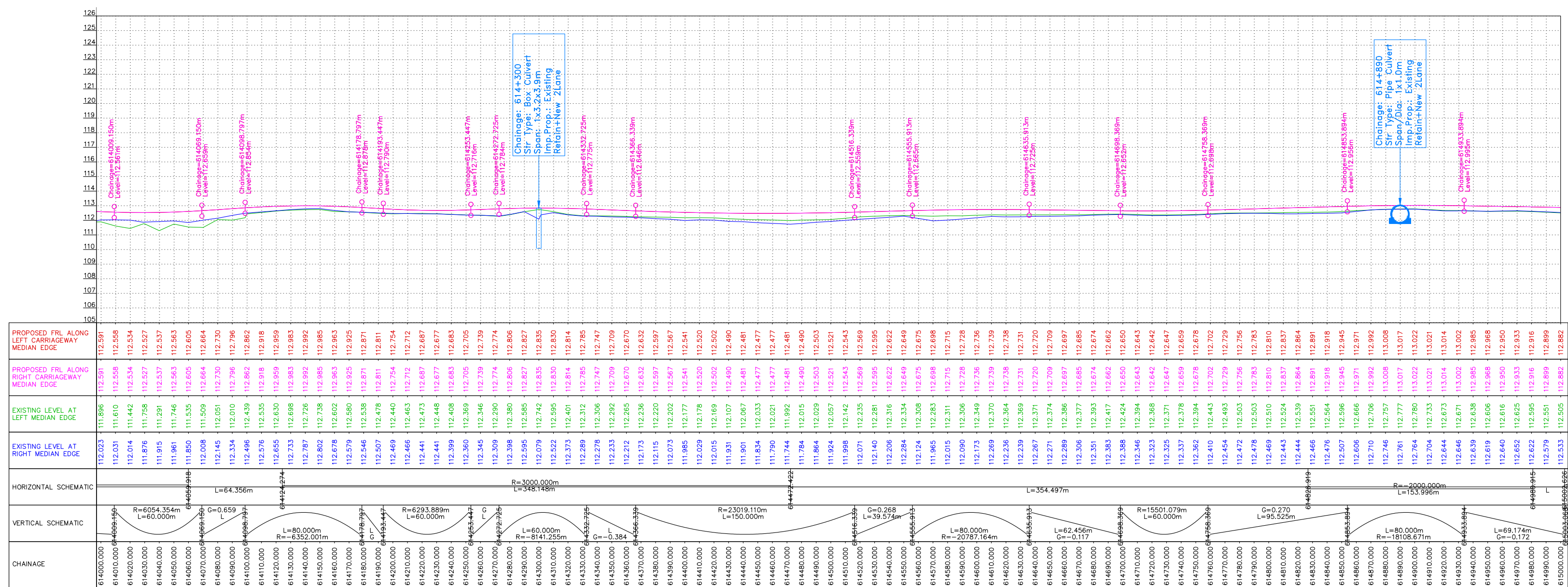
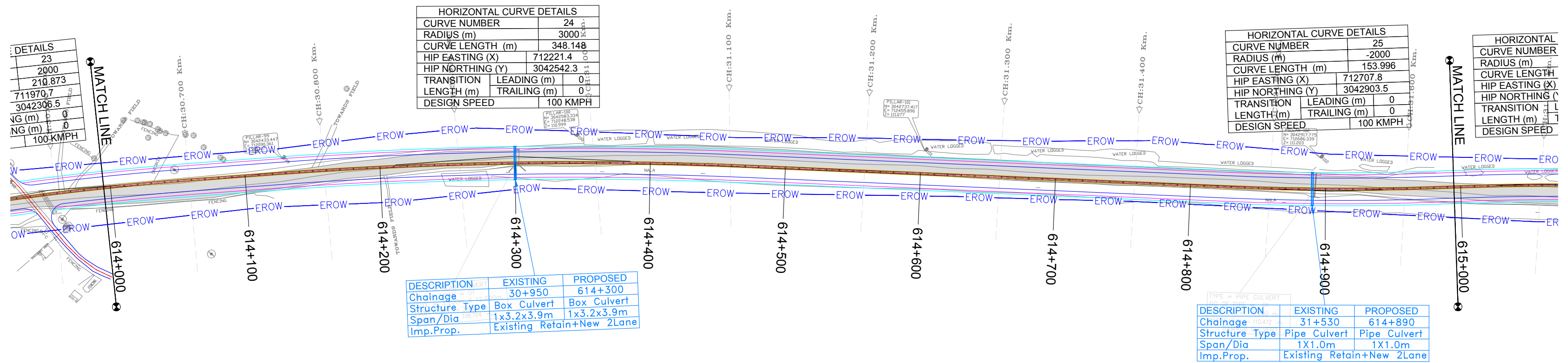
REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PD/PS	SS/SP	DGR	SKC
			
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TITLE :
**Plan and Profile
(km 613+000 to km 614+000)**
DRG. No. :
VSPL/1718-082/DPR/PKG-4/S2/PP- 08
REVISION:R0
October 2021

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PROJECT :

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(LOT-1:PACKAGE IV)**

DESIGN CONSULTANT:



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REV.	DATE	DESCRIPTION

DESIGNED BY

PD/PS

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SS/SP

CHECKED BY

DGR

APPROVED BY

SKC

SCALE :

HOR 1:2500
VER 1:250

SHEET SIZE

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TITLE :

Plan and Profile
(km 614+000 to km 615+000)

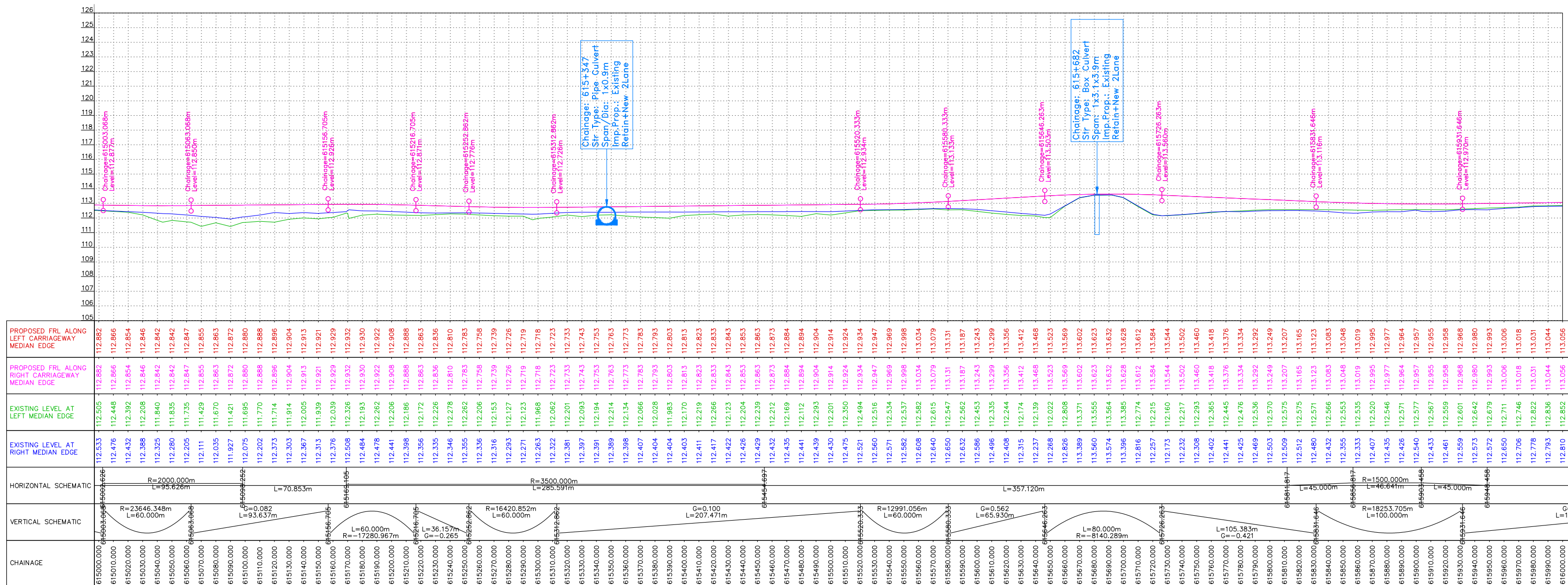
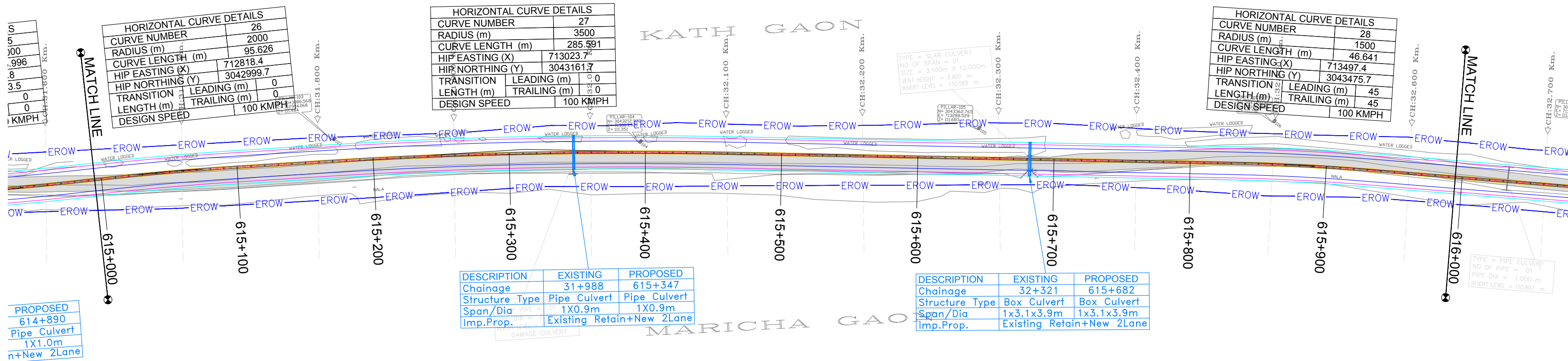
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VSPL/1718-082/DPR/PKG-4/S2/PP- 09

REVISION:R0

October 2021

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DESIGN CONSULTANT:

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Gurgaon-122001, Haryana, India
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DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PD/PS	SS/SP	DGR	SKC
SCALE :	HOR 1:2500 VER 1:250	SHEET SIZE	A2

TITLE :

Plan and Profile
(km 615+000 to km 616+000)

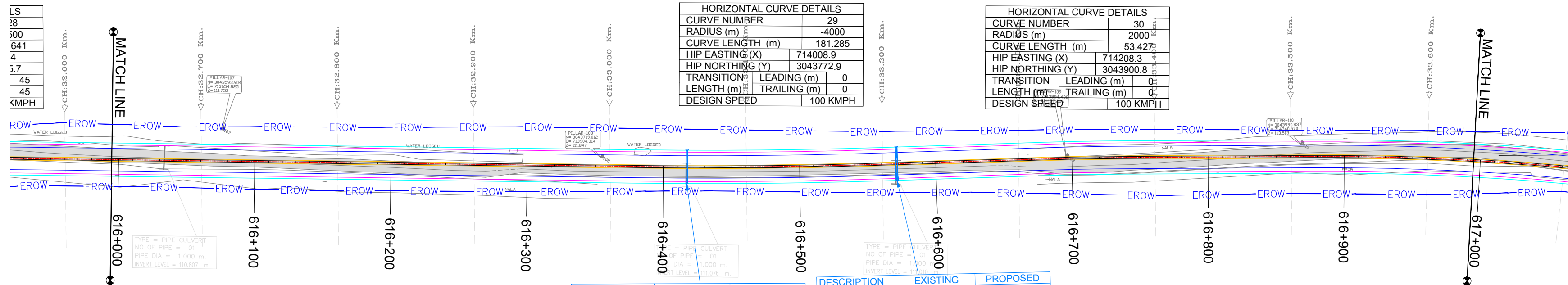
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VSPL/1718-082/DPR/PKG-4/S2/PP- 10

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October 2021

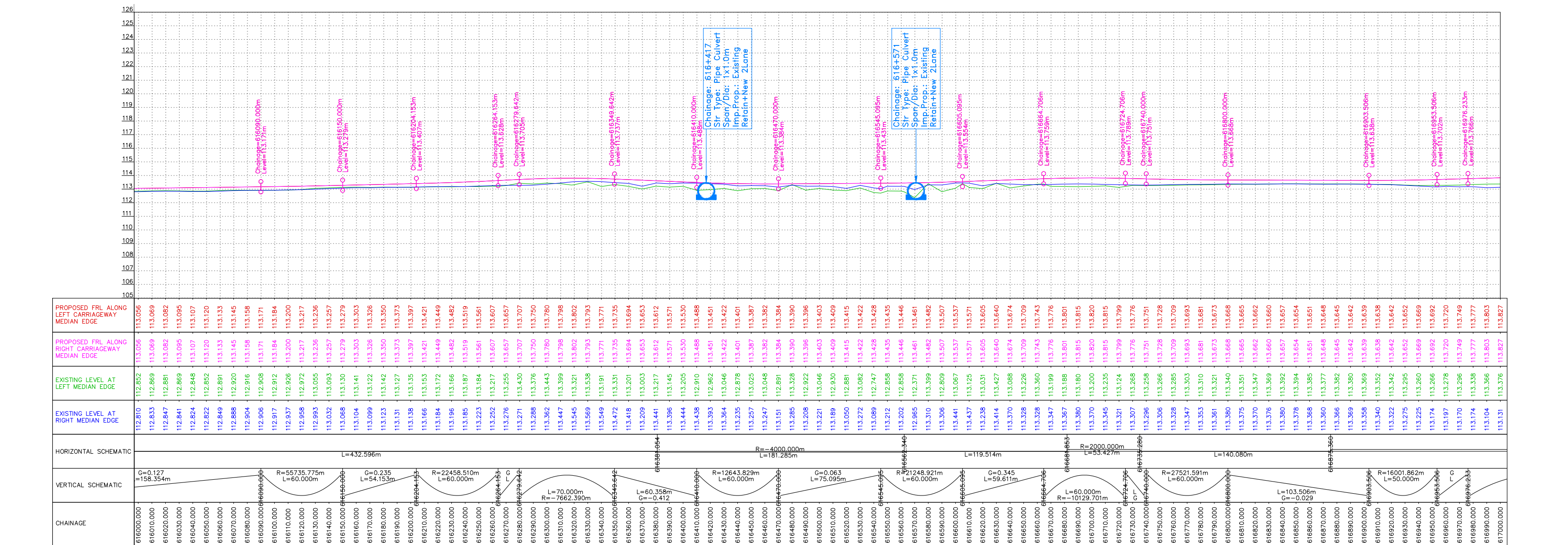
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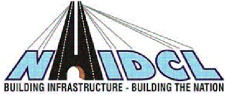


DESCRIPTION	EXISTING	PROPOSED
Chainage	33+057	616+417
Structure Type	Pipe Culvert	Pipe Culvert
Span/Dia	1X1.0m	1X1.0m
Imp.Prop.	Existing Retain+New	2Lane

DESCRIPTION	EXISTING	PROPOSED
Chainage	33+210	616+571
Structure Type	Pipe Culvert	Pipe Culvert
Span/Dia	1X1.0m	1X1.0m
Imp.Prop.	Existing Retain+New	2Lane



CLIENT :



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PROJECT :

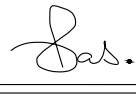
CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)

DESIGN CONSULTANT:



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SCALE :	HOR 1:2500 VER 1:250	SHEET SIZE	A2

TITLE :

Plan and Profile
(km 616+000 to km 617+000)

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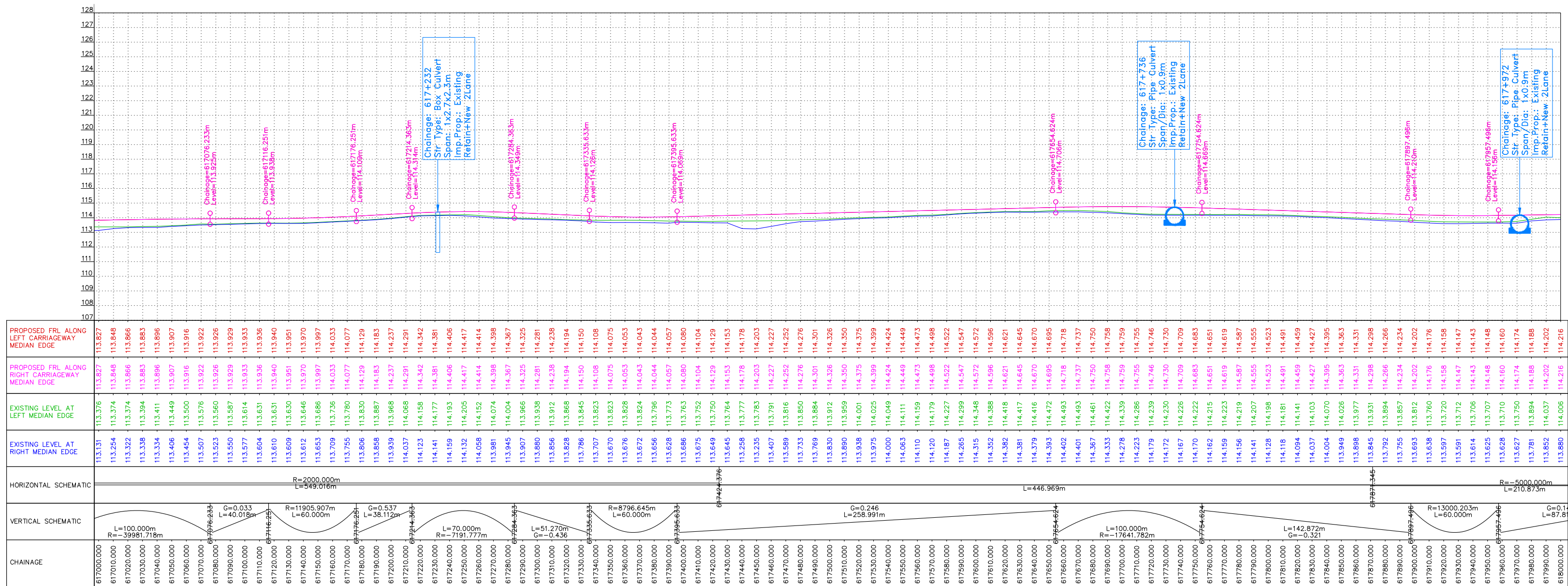
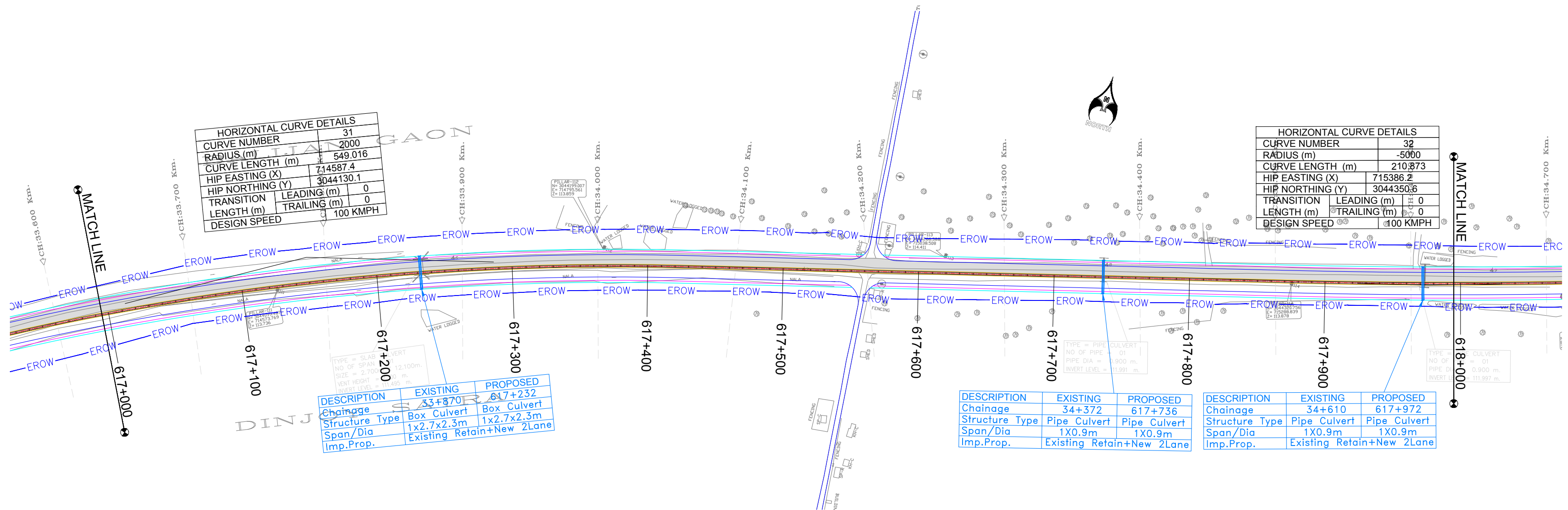
VSPL/1718-082/DPR/PKG-4/S2/PP- 11

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October 2021

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TITLE :

Plan and Profile
(km 617+000 to km 618+000)

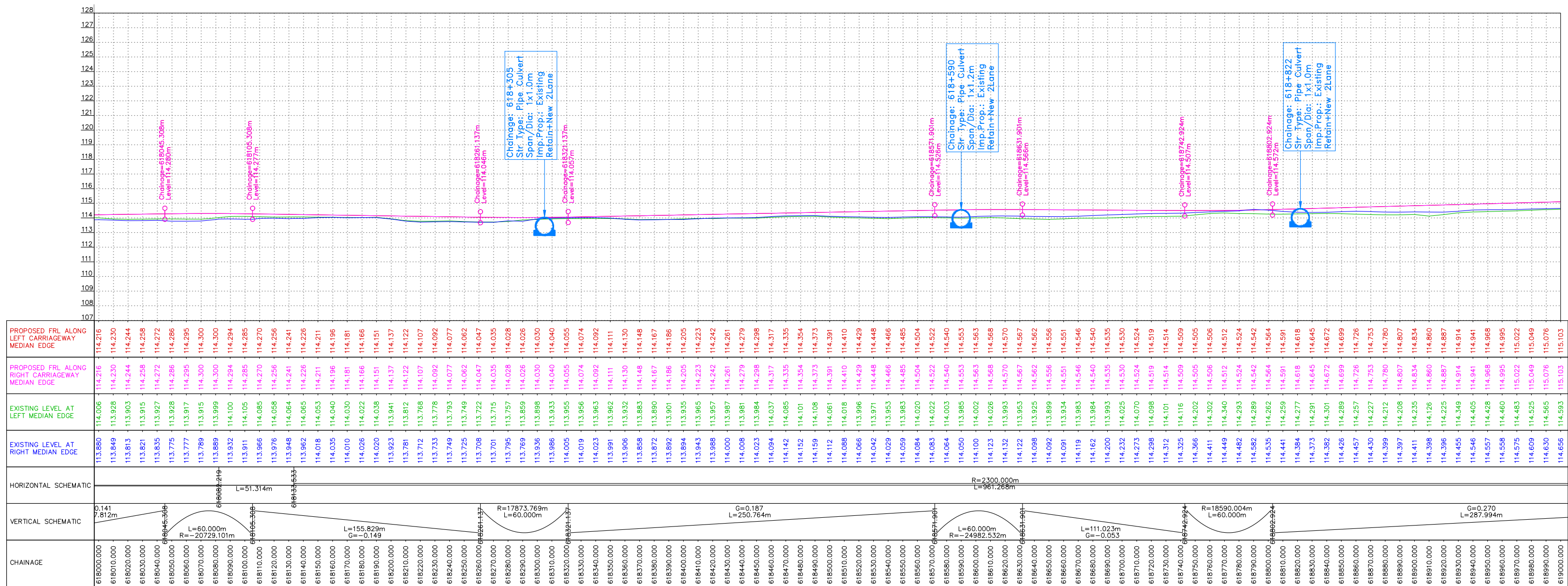
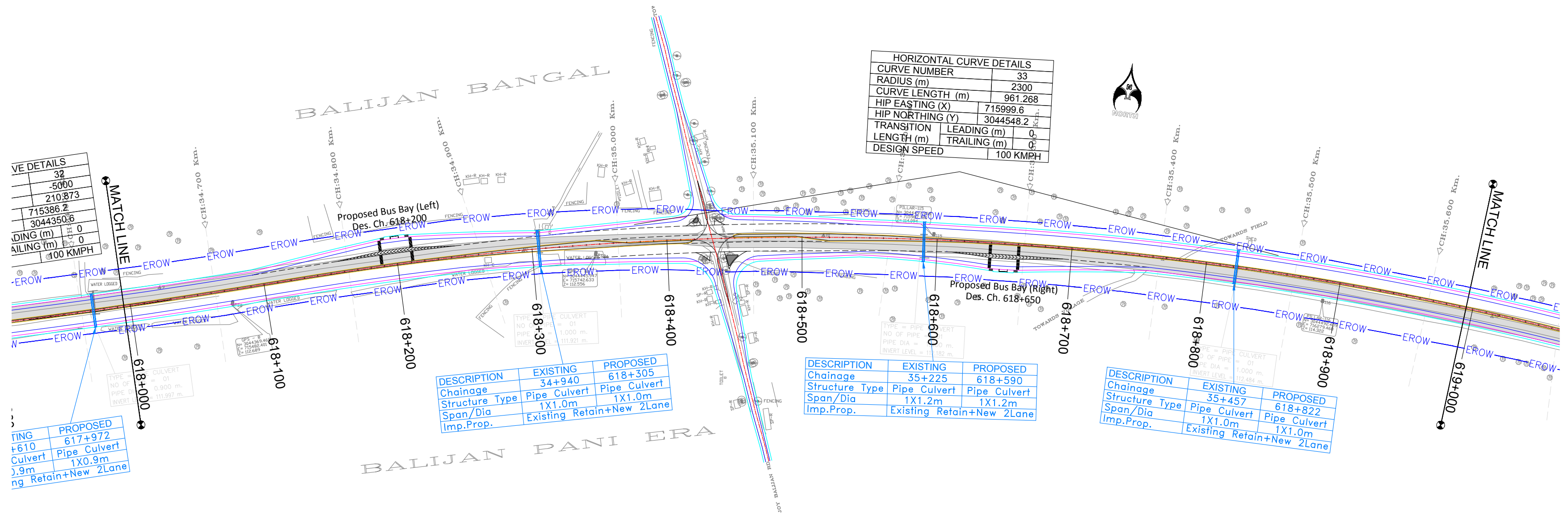
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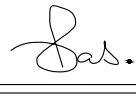
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TITLE :
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(km 618+000 to km 619+000)

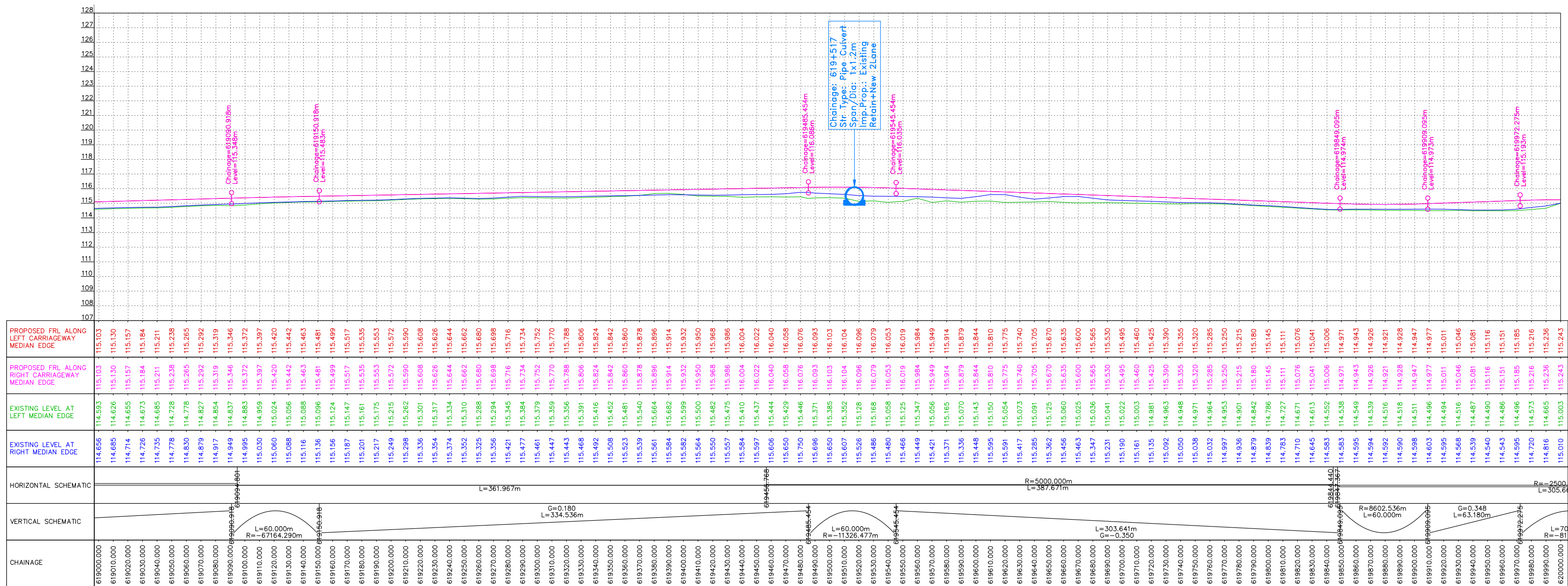
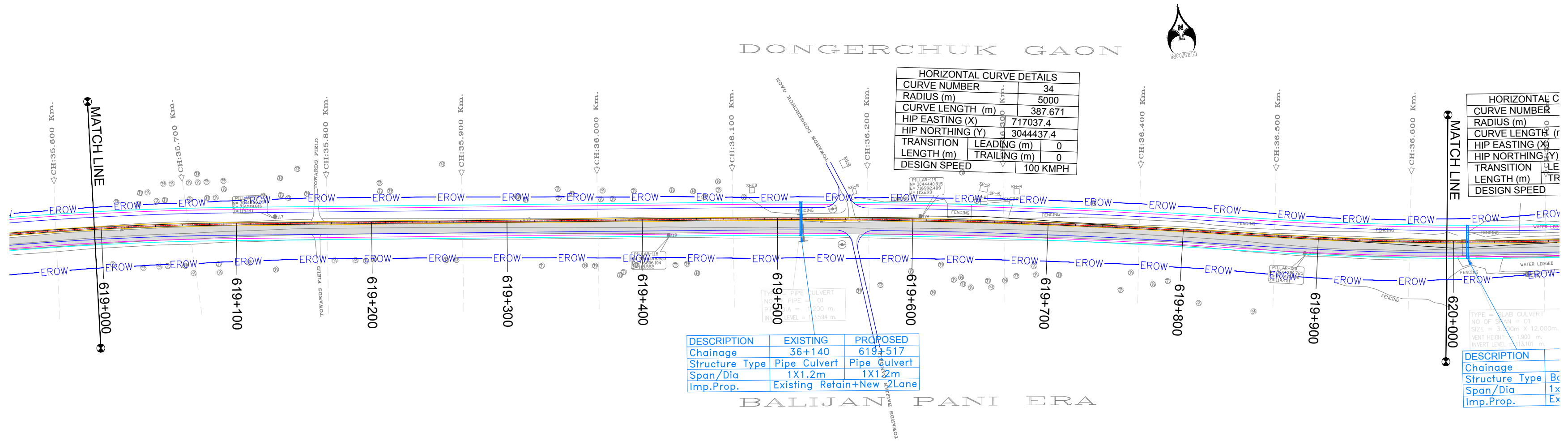
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DESIGNED BY	PD/PS	DRAWN BY	SS/SP	CHECKED BY	DGR	APPROVED BY	SKC
[Signature]		[Signature]		[Signature]		[Signature]	
SCALE :		HOR 1:2500 VER 1:250		SHEET SIZE		A2	

TITLE :

Plan and Profile
(km 619+000 to km 620+000)

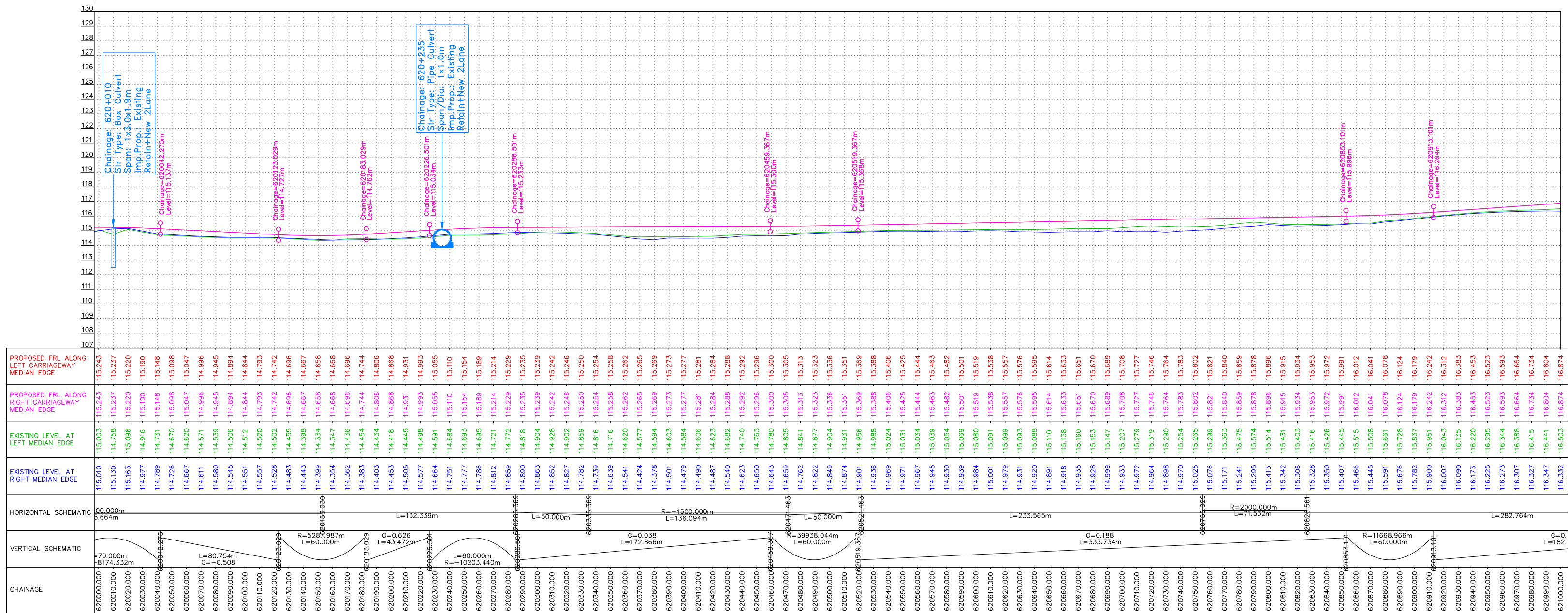
DRG. No. : VSPL/1718-082/DPR/PKG-4/S2/PP- 14

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October 2021

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

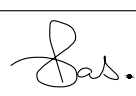
PROJECT :
**CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE IV)**

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

Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PD/PS	SS/SP	DGR	SKC
			
SCALE :	HOR 1:2500 VER 1:250	SHEET SIZE	A2

TITLE :
Plan and Profile
(km 620+000 to km 621+000)

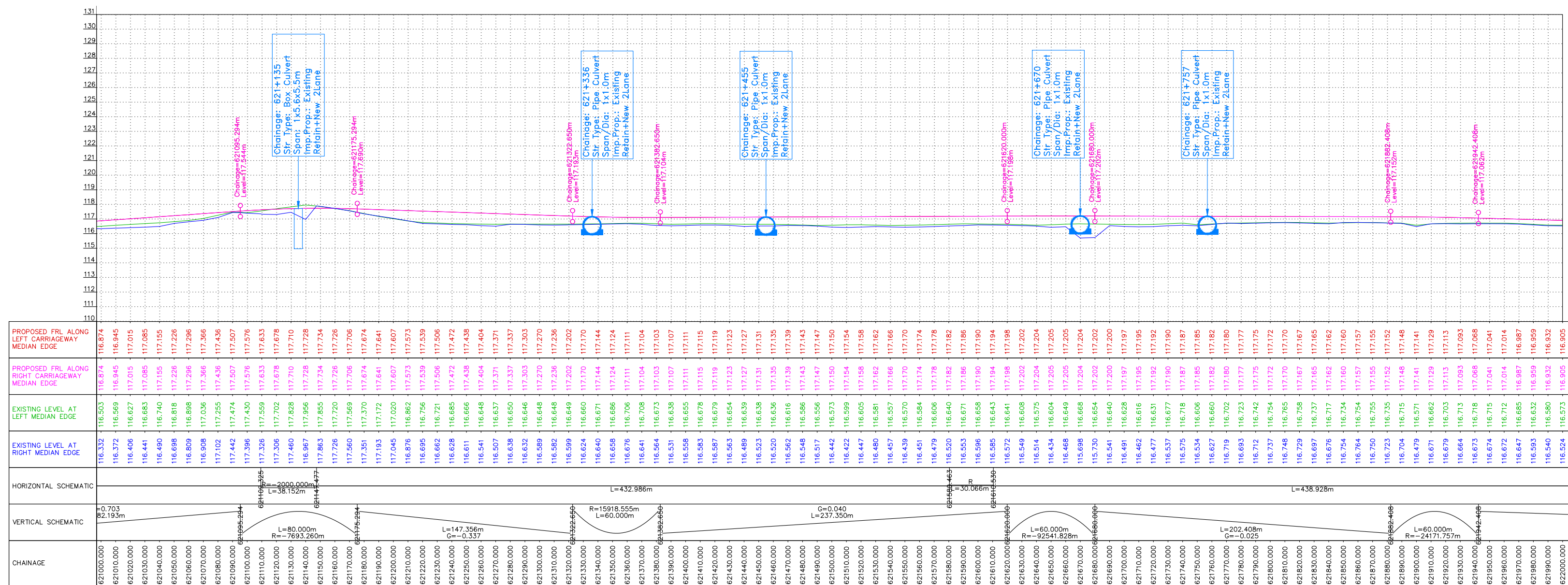
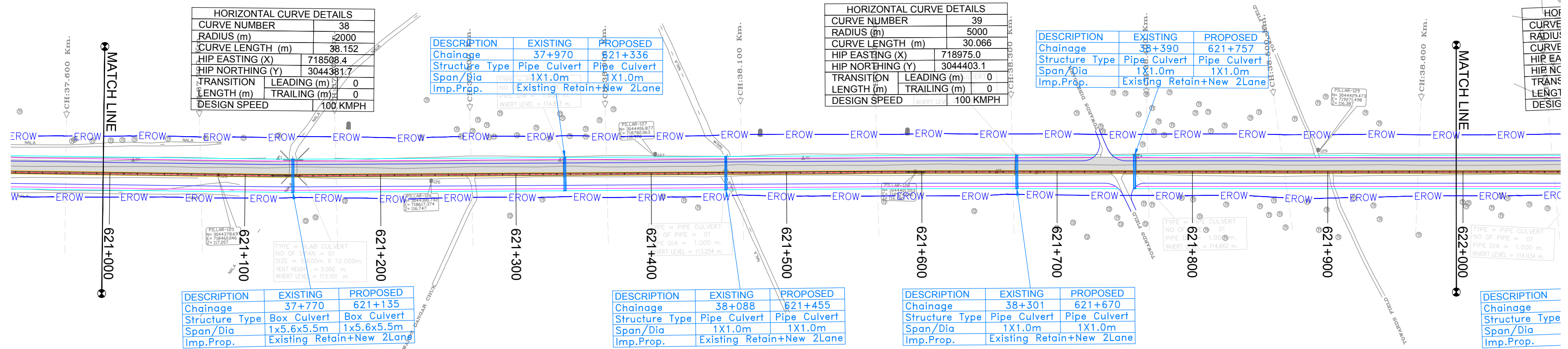
DRG. No. :
VSPL/1718-082/DPR/PKG-4/S2/PP- 15

REVISION:R0

October 2021

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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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Gurgaon-122001, Haryana, India
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Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PD/PS	SS/SP	DGR	SKC

SCALE : HOR 1:2500
VER 1:250

SHEET SIZE A2

TITLE :

Plan and Profile
(km 621+000 to km 622+000)

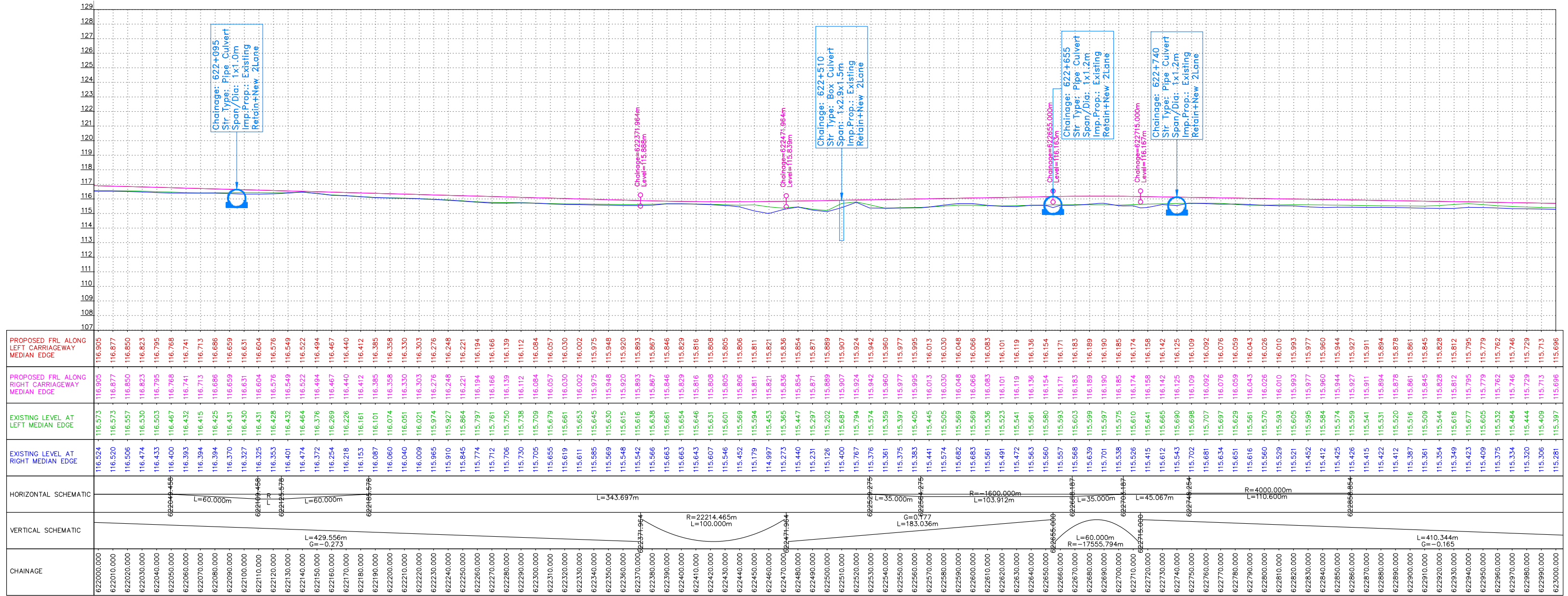
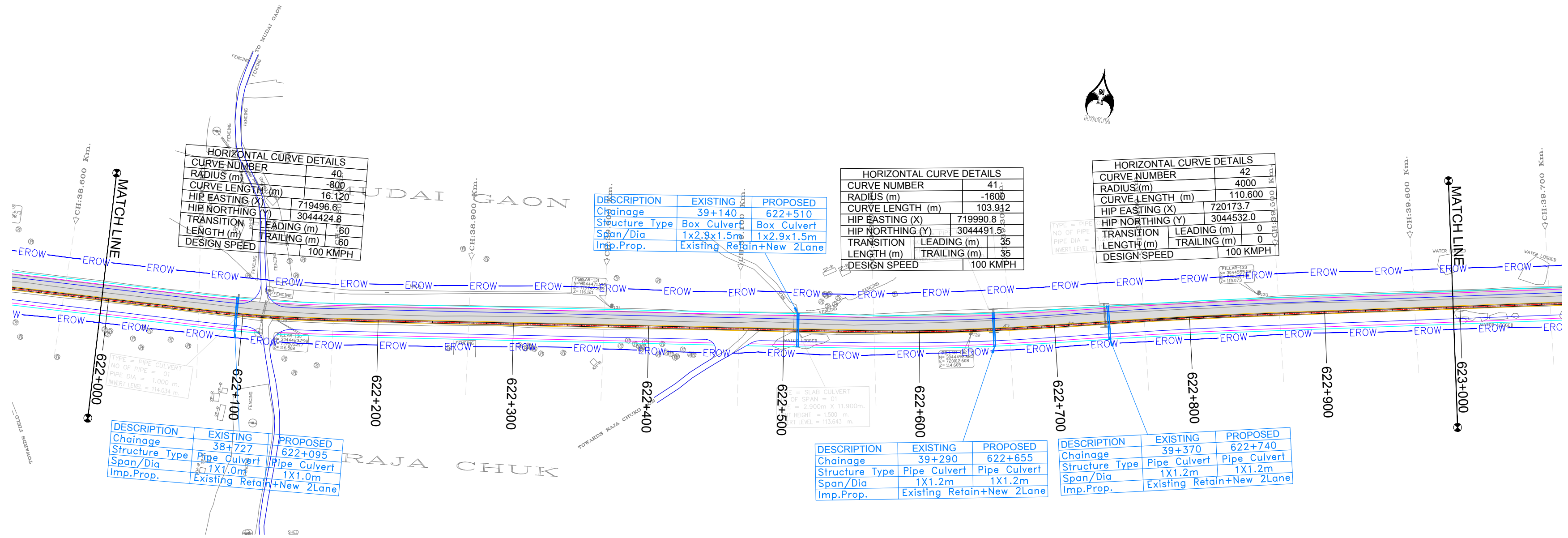
DRG. No. : VSPL/1718-082/DPR/PKG-4/S2/PP- 16

REVISION:R0

October 2021

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

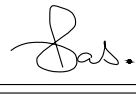
PROJECT :
**CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
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MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE IV)**

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REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PD/PS	SS/SP	DGR	SKC
			
SCALE :	HOR 1:2500 VER 1:250	SHEET SIZE	A2

TITLE :
Plan and Profile
(km 622+000 to km 623+000)

DRG. No. :
VSPL/1718-082/DPR/PKG-4/S2/PP- 17

REVISION:R0

October 2021