

(ALIGNMENT REPORT)

GOOD FOR CONSTRUCTION

HORIZONTAL ALIGNMENT DESIGN REPORT

Sr. No.	HIP Chainage	Easting	Northing	Arc Start Chainage	Arc End Chainage	Radiums	Hand of Arc (Right/Left)	Length of Arc (m)	Start Of Transition			Endt Of Transition			Design Speed (kmph)	Superelevation (%)	Deflection Angle			Extra Curve Widening
									Transition Start Chainage	Transition End Chainage	Transition Length (m)	Transition Start Chainage	Transition End Chainage	Transition Length (m)						
1	490+330.865	648842.376	2972041.381	490+285.457	490+376.268	3500	Right	90.811							100	NR	1	29	11.726	NIL
2	490+701.641	649040.945	2972354.509	490+658.737	490+744.533	2000	Right	85.796							100	NR	2	27	28.347	NIL
3	490+820.738	649108.988	2972452.271	490+749.667	490+891.749	2000	Left	142.082							100	NR	4	4	13.249	NIL
4	490+930.742	649165.293	2972546.842	490+898.675	490+962.803	2000	Right	64.129							100	NR	1	50	13.750	NIL
5	491+311.351	649370.386	2972867.473	491+299.685	491+323.017	5000	Left	23.332							100	NR	0	16	2.503	NIL
6	491+710.783	649581.846	2973206.319	491+603.200	491+817.792	1200	Left	214.592	491+553.200	491+603.200	50	491+817.792	491+867.792	50	100	3.700	10	14	45.730	NIL
7	492+141.282	649729.619	2973611.253	492+109.954	492+172.604	2000	Right	62.650							100	NR	1	47	41.219	NIL
8	492+309.244	649791.178	2973767.534	492+237.146	492+381.280	2000	Left	144.134							100	NR	4	7	44.895	NIL
9	492+438.918	649829.910	2973891.353	492+397.914	492+479.910	2000	Right	81.996							100	NR	2	20	56.433	NIL
10	493+498.842	650187.543	2974889.132	493+467.040	493+530.638	2000	Right	63.597							100	NR	1	49	18.927	NIL
11	493+586.270	650219.646	2974970.458	493+549.848	493+622.684	2000	Left	72.835							100	NR	2	5	11.698	NIL
12	493+702.466	650258.349	2975080.028	493+630.921	493+773.972	2500	Left	143.051							100	NR	3	16	42.569	NIL
13	493+883.574	650308.815	2975254.003	493+823.418	493+943.693	2000	Right	120.275							100	NR	3	26	44.203	NIL
14	496+457.049	651147.401	2977685.927	496+203.731	496+673.323	505	Left	469.592	496+108.731	496+203.731	95	496+673.323	496+768.323	95	100	5.000	53	16	42.574	NIL
15	497+322.313	650552.740	2978363.407	497+102.458	497+504.510	400	Right	402.052	497+027.458	497+102.458	75	497+504.510	497+579.510	75	80	5.000	57	35	23.187	NIL
16	498+261.005	650926.884	2979264.400	498+211.706	498+310.304	10000	Left	98.598							100	NR	0	33	53.723	NIL
17	498+712.010	651105.513	2979678.523	498+640.734	498+783.285	10000	Right	142.551							100	NR	0	49	0.325	NIL
18	498+996.898	651222.066	2979938.480	498+938.903	499+054.892	10000	Right	115.989							100	NR	0	39	52.450	NIL
19	499+199.928	651307.273	2980122.767	499+119.966	499+279.888	10000	Left	159.922							100	NR	0	54	58.626	NIL
20	499+437.173	651403.383	2980339.676	499+413.540	499+460.805	5000	Right	47.265							100	NR	0	32	29.838	NIL
21	499+556.058	651452.569	2980447.910	499+529.283	499+582.833	5000	Left	53.549							100	NR	0	36	49.073	NIL
22	499+869.710	651579.271	2980734.833	499+844.094	499+895.327	10000	Right	51.233							100	NR	0	17	36.756	NIL
23	500+203.724	651715.760	2981039.686	500+145.190	500+262.243	3000	Left	117.053							100	NR	2	14	7.992	NIL
24	500+515.924	651832.130	2981329.404	500+474.691	500+557.149	2500	Right	82.459							100	NR	1	53	23.335	NIL
25	500+859.976	651991.462	2981633.139	500+755.906	500+953.673	257	Right	197.767	500+665.906	500+755.906	90	500+953.673	501+043.673	90	80	7.000	44	5	25.167	0.6
26	501+129.742	652268.709	2981666.554	501+076.265	501+183.194	2000	Left	106.929							100	NR	3	3	47.844	NIL
27	501+441.173	652578.915	2981694.429	501+421.390	501+460.955	5000	Left	39.565							100	NR	0	27	12.158	NIL
28	501+591.484	652728.512	2981709.067	501+567.950	501+615.017	5000	Right	47.067							100	NR	0	32	21.665	NIL
29	501+931.777	653065.908	2981749.732	501+877.136	501+985.232	300	Left	108.095	501+797.136	501+877.136	80	501+985.232	502+065.232	80	80	7.000	20	38	40.847	0.6
30	502+412.586	653444.536	2982046.471	502+358.890	502+464.994	280	Right	106.104	502+268.890	502+358.890	90	502+464.994	502+554.994	90	80	7.000	21	42	42.461	0.6
31	502+870.258	653902.324	2982066.623	502+797.546	502+942.906	2000	Left	145.361							100	NR	4	9	51.389	NIL
32	503+596.004	654625.364	2982129.988	503+582.646	503+609.363	5000	Right	26.716							100	NR	0	18	22.125	NIL
33	503+829.086	654857.661	2982149.096	503+806.549	503+851.624	10000	Right	45.075							100	NR	0	15	29.738	NIL
34	504+728.387	655754.257	2982218.778	504+672.227	504+784.527	2500	Left	112.300							100	NR	2	34	25.448	NIL
35	505+242.809	656258.457	2982316.060	505+009.960	505+439.010	445	Left	429.050	504+894.960	505+009.960	115	505+439.010	505+554.010	115	100	5.000	55	14	31.666	NIL
36	505+612.672	656383.028	2982702.356	505+564.146	505+661.178	2000	Left	97.032							100	NR	2	46	47.138	NIL

CLIENT :

NATIONAL HIGHWAY AND
INFRASTRUCTURE DEVELOPMENT
CORPORATION LIMITED

EPC CONTRACTOR :

M/s. Gunton Dimplesley &
Company Ltd.
Plot No. 10, Sector-5, Gurgaon
Haryana-122001

DESIGN CONSULTANT :

M/s. Estante Engineering
Consultants Pvt. Ltd.
SCO-103, 2nd Floor, HUDA
Shopping Centre, Sector-55
Gurgaon-122001 (Hr.) INDIA

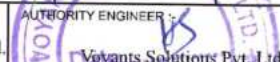
PROOF CONSULTANT :

M/s. Technocrats Private Limited.
Corp. Office: Main House, SCO-1, Sector-6-7,
Divisive Road Opp. DLF Park, Bahadurgarh,
Haryana-124507
Tel.: +91-1276-645290 E-mail:
mct_rk@rediffmail.com

SAFETY CONSULTANT :

G-Engineering Advisory Services Pvt. Ltd.
SCO-103, HUDA Shopping Center,
Sector-55, Gurgaon-122001 (Hr.) INDIA
G-ENG Tel.: +91-124-4295802, 83 Fax: 124-2392006
E-mail: info@g-eng.in web: www.g-eng.in

AUTHORITY ENGINEER :

Vayants Solutions Pvt. Ltd.
BPTT Park Centre, 403, 4th
Block A, Jai Vayu Vihar, Sector
30, Gurgaon, Haryana 122001

PROJECT :

FOUR LANE OF JHANJHI TO
DEHLOW SECTION FROM KM. 481+050
TO 536+250 (DESIGN KM. 490+800 TO
KM. 534+800) OF NH-37 IN THE STATE
OF ASSAM UNDER SARDP ON
ENGINEERING PROCUREMENT &
CONSTRUCTION (EPC) MODE.

DRAWN BY :

Mr. K.K.

DESIGNED BY :

Mr. T.P.

CHECKED BY :

Sh. S.A.

APPROVED BY :

Sh. A.G.

DATE :

STATUS :

DETAILED DESIGN

TITLE :

HORIZONTAL REPORT

DRG. NO. :

NHIDCL/GDCL/G-ENG/19038/HR/23A

R2

AS PER SITE OBSERVATION

REV







DATE

DESCRIPTION OF REVISIONS

GOOD FOR CONSTRUCTION

HORIZONTAL ALIGNMENT DESIGN REPORT

Sr. No.	HIP Chainage	Easting	Northing	Arc Start Chainage	Arc End Chainage	Radious	Hand of Arc (Right/Left)	Length of Arc (m)	Start Of Transition			Endt Of Transition			Design Speed (kmph)	Superelevation (%)	Deflection Angle			Extra Curve Widening
									Transition Start Chainage	Transition End Chainage	Transition Length (m)	Transition Start Chainage	Transition End Chainage	Transition Length (m)						
37	506+810.703	656594.228	2983881.643	506+760.006	506+861.398	10000	Right	101.393							100	NR	0	34	51.375	NIL
38	507+777.932	656777.442	2984831.324	507+693.862	507+861.607	1000	Right	167.745	507+633.862	507+693.862	60	507+861.607	507+921.607	60	100	4.400	9	36	39.860	NIL
39	508+166.463	656915.757	2985194.244	508+065.723	508+260.321	305	Left	194.598	507+985.723	508+065.723	80	508+260.321	508+340.321	80	80	7.000	36	33	22.360	NIL
40	508+692.105	656696.202	2985678.370	508+602.859	508+776.650	310	Right	173.791	508+522.859	508+602.859	80	508+776.650	508+856.650	80	80	7.000	32	7	15.480	NIL
41	509+626.391	657009.958	2986560.528	509+529.953	509+714.036	250	Right	184.083	509+439.953	509+529.953	90	509+714.036	509+804.036	90	80	7.000	42	11	19.438	0.6
42	509+995.975	657379.566	2986635.874	509+897.266	510+094.678	10000	Left	197.412							100	NR	1	7	51.912	NIL
43	510+439.370	657817.251	2986706.844	510+418.932	510+459.809	5000	Left	40.877							100	NR	0	28	6.296	NIL
44	510+861.717	658233.586	2986777.849	510+824.587	510+898.846	10000	Right	74.259							100	NR	0	25	31.695	NIL
45	512+038.493	659395.050	2986967.071	511+970.721	512+106.264	15000	Right	135.543							100	NR	0	31	3.846	NIL
46	512+634.162	659983.810	2987057.536	512+555.278	512+713.044	15000	Left	157.766							100	NR	0	36	9.442	NIL

REV	DATE	DESCRIPTION OF REVISIONS	CLIENT:  NATIONAL HIGHWAY AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED	EPC CONTRACTOR:  M/s Cannon Dunkerley & Company Ltd. 85A, Topra Road (Noida) Noida Street, 2nd Floor Noida-201304	DESIGN CONSULTANT:  M/s Desatic Engineering Consultants Pvt. Ltd. SCO-103, 2nd Floor, HUDA Shopping Center, Sector-55 Gurugram-122001 (Hr.) INDIA	PROOF CONSULTANT:  Marc Technocrats Private Limited. Corp. Office: Marc House, SCO-1, Sector-6-7, Dividing Road Opp. Devi Lal Park, Bahadurgarh, Haryana-124507 Tel.: +91-1276-645290 E-mail: mct_rtk@rediffmail.com	SAFETY CONSULTANT:  G-Engineering Advisory Services Pvt. Ltd. SCO-102, HUDA Shopping Center, Sector-55 Gurugram-122001 (Hr.) INDIA G-ENG Tel.: +91-124-4295802/03 Fax: 124-2392006 E-mail: info@g-eng.in web: www.g-eng.in	AUTHORITY ENGINEER:  Voyant Solutions Pvt. Ltd. BPTT PEK Centre, 903, 4th, Block A, Jal Vayu Vihar, Sector 30, Gurugram, Haryana 122001	PROJECT: FOUR LANE OF JHANHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	DRAWN BY	Mr. K.K.	STATUS :	DETAILED DESIGN
										DESIGNED BY	Mr. T.P.		
										CHECKED BY	Sh. S.A.	TITLE :	HORIZONTAL REPORT
										APPROVED BY	Sh. A.G.		
										DATE:		DRG. NO. :	NHIDCL/GDCL/G-ENG/19038/HR/23B

GOOD FOR CONSTRUCTION

VERTICAL CURVE TABLE (LHS)

VERTICAL CURVE TABLE (LHS)													
Sr. No.	VIP Chainage	VIP LEVELS	LENGTH OF CURVE	TYPE OF CURVE	Grade IN %	Grade OUT %	Algebraic Difference	CHAINAGE START OF CURVE	CHAINAGE END OF CURVE	LEVEL START OF CURVE	LEVEL END OF CURVE	K VALUE	Design Speed (kmph)
1	490+108.273	93.618	100	Hog	0.113	-0.441	-0.554	490+058.273	490+158.273	93.561	93.397	180.464	100
2	490+300.008	92.773	100	Sag	-0.441	-0.081	0.360	490+250.008	490+350.008	92.993	92.733	277.676	100
3	490+483.644	92.625	60	Hog	-0.081	-0.275	-0.194	490+453.644	490+513.644	92.649	92.543	308.803	100
4	490+823.634	91.691	120	Sag	-0.275	2.500	2.775	490+763.634	490+883.634	91.855	93.191	43.245	100
5	491+200.000	101.100	375	Hog	2.500	-2.500	-5.000	491+012.500	491+387.500	96.412	96.413	74.999	100
6	491+571.040	91.824	100	Sag	-2.500	-0.126	2.374	491+521.040	491+621.040	93.074	91.761	42.116	100
7	491+832.999	91.495	100	Sag	-0.126	0.363	0.488	491+782.999	491+882.999	91.558	91.676	204.734	100
8	491+973.280	92.004	110	Hog	0.363	0.085	-0.278	491+918.280	492+028.280	91.804	92.051	396.327	100
9	492+070.020	92.087	60	Hog	0.085	-0.135	-0.220	492+040.020	492+100.020	92.061	92.046	272.178	100
10	492+347.695	91.711	60	Hog	-0.135	-0.299	-0.164	492+317.695	492+377.695	91.752	91.622	366.427	100
11	492+457.086	91.384	60	Hog	-0.299	-0.310	-0.011	492+427.086	492+487.086	91.474	91.291	5360.621	100
12	492+610.865	90.907	60	Sag	-0.310	-0.042	0.268	492+580.865	492+640.865	91.000	90.895	223.795	100
13	492+747.657	90.850	145	Sag	-0.042	0.373	0.415	492+675.157	492+820.157	90.880	91.120	349.388	100
14	493+010.699	91.831	120	Hog	0.373	-0.767	-1.140	492+950.699	493+070.699	91.607	91.371	105.218	100
15	493+170.996	90.601	150	Sag	-0.767	-0.224	0.544	493+095.996	493+245.996	91.177	90.433	275.937	100
16	493+469.260	89.933	60	Sag	-0.224	0.216	0.439	493+439.260	493+499.260	90.000	89.998	136.560	100
17	493+675.478	90.378	65	Hog	0.216	-0.485	-0.700	493+642.978	493+707.978	90.308	90.220	92.800	100
18	493+794.116	89.802	60	Sag	-0.485	0.236	0.721	493+764.116	493+824.116	89.948	89.873	83.174	100
19	494+011.892	90.317	60	Hog	0.236	-0.214	-0.451	493+981.892	494+041.892	90.246	90.253	133.177	100
20	494+104.630	90.119	60	Sag	-0.214	0.265	0.479	494+074.630	494+134.630	90.183	90.198	125.253	100
21	494+223.034	90.433	60	Hog	0.265	-0.209	-0.474	494+193.034	494+253.034	90.353	90.370	126.656	100
22	494+388.971	90.086	60	Sag	-0.209	0.373	0.582	494+358.971	494+418.971	90.149	90.198	103.086	100
23	494+478.546	90.420	60	Hog	0.373	-0.048	-0.421	494+448.546	494+508.546	90.309	90.406	142.361	100
24	495+006.659	90.166	150	Sag	-0.048	0.221	0.269	494+931.659	495+081.659	90.202	90.331	558.182	100
25	495+344.850	91.090	60	Hog	0.321	-0.229	-0.550	495+314.850	495+374.850	90.994	91.021	109.118	100
26	495+490.000	90.757	60	Sag	-0.229	0.190	0.420	495+460.000	495+520.000	90.826	90.814	143.001	100
27	495+616.680	90.998	60	Hog	0.190	-0.185	-0.376	495+586.680	495+646.680	90.941	90.942	159.737	100
28	497+037.873	90.512	60	Hog	0.312	-0.034	-0.346	497+007.873	497+067.873	90.419	90.502	173.161	100
29	497+696.803	89.841	60	Hog	-0.182	-0.413	-0.231	497+666.803	497+726.803	89.895	89.717	259.694	100
30	497+799.398	89.417	60	Sag	-0.413	0.272	0.685	497+769.398	497+829.398	89.541	89.499	87.627	100
31	497+962.205	89.860	60	Sag	0.272	0.467	0.195	497+932.205	497+992.205	89.779	90.001	307.280	100
32	498+093.321	90.473	100	Hog	0.467	-0.225	-0.692	498+043.321	498+143.321	90.240	90.361	144.467	100
33	498+319.881	89.964	100	Sag	-0.225	0.372	0.597	498+269.881	498+369.881	90.076	90.150	167.576	100
34	498+500.275	90.635	60	Hog	0.372	-0.057	-0.429	498+470.275	498+530.275	90.523	90.618	139.776	100
35	498+649.056	90.550	60	Sag	-0.057	0.057	0.114	498+619.056	498+679.056	90.567	90.567	525.329	100
36	499+048.208	89.807	60	Sag	-0.319	0.180	0.180	499+018.208	499+078.208	89.902	89.765	332.534	100
37	499+222.595	89.565	60	Sag	0.180	0.255	0.415	499+192.595	499+252.595	89.677	89.540	269.782	100

[illegible]




VERTICAL CURVE TABLE (LHS)

Sr. No.	VIP Chainage	VIP LEVELS	LENGTH OF CURVE	TYPE OF CURVE	Grade IN %	Grade OUT %	Algebraic Difference	CHAINAGE START OF CURVE	CHAINAGE END OF CURVE	LEVEL START OF CURVE	LEVEL END OF CURVE	K VALUE	Design Speed (kmph)
37	499+222.595	89.565	60	Hog	-0.138	-0.250	-0.112	499+192.595	499+252.595	89.607	89.490	537.154	100
38	499+483.161	88.913	150	Sag	-0.250	0.117	0.368	499+408.161	499+558.161	89.101	89.001	408.001	100
39	499+821.170	89.310	60	Hog	0.117	-0.144	-0.261	499+791.170	499+851.170	89.275	89.267	229.882	100
40	499+976.789	89.087	60	Sag	-0.144	0.247	0.391	499+946.789	500+006.789	89.130	89.161	153.492	100
41	500+160.898	89.542	60	Hog	0.247	-0.062	-0.309	500+130.898	500+190.898	89.468	89.524	194.163	100
42	500+355.313	89.423	100	Sag	-0.062	1.500	1.562	500+305.313	500+405.313	89.453	90.173	64.035	100
43	500+511.936	91.772	115	Hog	1.500	0.000	-1.500	500+454.436	500+569.436	90.909	91.772	76.667	100
44	500+685.872	91.772	120	Sag	0.000	2.500	2.500	500+625.872	500+745.872	91.772	93.272	48.000	100
45	500+967.595	98.815	370	Hog	2.500	-2.500	-5.000	500+782.595	501+152.595	94.190	94.190	74.000	100
46	501+343.064	89.428	130	Sag	-2.500	0.390	2.890	501+278.064	501+408.064	91.053	89.682	44.983	80
47	501+540.869	90.200	60	Hog	0.390	0.013	-0.377	501+510.869	501+570.869	90.083	90.204	159.191	100
48	501+993.577	90.259	115	Sag	0.013	1.658	1.645	501+936.077	502+051.077	90.251	91.212	69.908	100
49	502+154.304	92.924	125	Hog	1.658	0.000	-1.658	502+091.804	502+216.804	91.888	92.924	75.388	100
50	502+326.619	92.924	60	Sag	0.000	1.044	1.044	502+296.619	502+356.619	92.924	93.237	57.485	100
51	502+601.237	95.790	200	Hog	1.044	-2.200	-3.244	502+501.237	502+701.237	94.747	93.590	61.657	80
52	502+831.716	90.720	100	Sag	-2.200	-0.049	2.151	502+781.716	502+881.716	91.820	90.695	46.490	100
53	504+740.000	90.858	150	Sag	0.052	2.500	2.448	504+665.000	504+815.000	90.819	92.733	61.277	100
54	505+088.647	99.574	370	Hog	2.500	-2.500	-5.000	504+903.647	505+273.647	94.949	94.949	73.999	100
55	505+416.372	91.381	120	Sag	-2.500	-0.486	2.014	505+356.372	505+476.372	92.881	91.089	59.595	100
56	508+013.285	92.886	160	Sag	0.206	2.150	1.944	507+933.285	508+093.285	92.721	94.606	82.316	100
57	508+321.777	99.519	160	Hog	2.150	0.000	-2.150	508+241.777	508+401.777	97.799	99.519	74.414	100
58	508+623.904	99.519	165	Hog	0.000	-2.194	-2.194	508+541.404	508+706.404	99.519	97.709	75.198	100
59	508+986.861	91.555	170	Sag	-2.194	-0.054	2.140	508+901.861	509+071.861	93.420	91.509	79.427	100
60	509+264.913	91.405	60	Sag	-0.054	0.151	0.205	509+234.913	509+294.913	91.421	91.450	293.325	100

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VERTICAL CURVE TABLE (RHS)







Sr. No.	VIP Chainage	VIP LEVELS	LENGTH OF CURVE	TYPE OF CURVE	Grade IN %	Grade OUT %	Algebraic Difference	CHAINAGE START OF CURVE	CHAINAGE END OF CURVE	LEVEL START OF CURVE	LEVEL END OF CURVE	K VALUE	Design Speed (kmph)
1	490+108.921	93.619	100	Hog	0.113	-0.443	-0.556	490+058.921	490+158.921	93.562	93.397	179.736	100
2	490+301.571	92.765	100	Sag	-0.443	-0.071	0.372	490+251.571	490+351.571	92.987	92.730	268.615	100
3	490+480.441	92.639	100	Hog	-0.071	-0.276	-0.205	490+430.441	490+530.441	92.674	92.501	487.998	100
4	490+823.720	91.693	120	Sag	-0.276	2.500	2.776	490+763.720	490+883.720	91.858	93.193	43.235	100
5	491+200.000	101.100	375	Hog	2.500	-2.500	-5.000	491+012.500	491+387.500	96.412	96.413	75.000	100
6	491+565.921	91.952	100	Sag	-2.500	-0.157	2.343	491+515.921	491+615.921	93.202	91.874	42.679	100
7	491+846.764	91.592	65	Sag	-0.111	0.304	0.414	491+814.264	491+879.264	91.627	91.690	156.900	100
8	492+037.958	92.172	200	Hog	0.304	-0.150	-0.453	491+937.958	492+137.958	91.868	92.022	441.261	100
9	492+345.028	91.713	60	Hog	-0.150	-0.294	-0.144	492+315.028	492+375.028	91.757	91.624	415.238	100
10	492+623.362	90.894	60	Sag	-0.294	-0.036	0.258	492+593.362	492+653.362	90.982	90.883	232.585	100
11	492+747.492	90.849	150	Sag	-0.036	0.373	0.409	492+672.492	492+822.492	90.876	91.129	366.452	100
12	493+010.699	91.831	120	Hog	0.373	-0.767	-1.141	492+950.699	493+070.699	91.607	91.371	105.204	100
13	493+170.996	90.601	150	Sag	-0.767	-0.224	0.544	493+095.996	493+245.996	91.177	90.433	275.937	100
14	493+469.260	89.933	60	Sag	-0.224	0.118	0.342	493+439.260	493+499.260	90.000	89.969	175.280	100
15	493+794.116	89.802	60	Sag	-0.162	0.236	0.398	493+764.116	493+824.116	89.851	89.873	150.719	100
16	494+011.892	90.317	60	Hog	0.236	-0.214	-0.451	493+981.892	494+041.892	90.246	90.253	133.177	100
17	494+104.630	90.119	60	Sag	-0.214	0.265	0.479	494+074.630	494+134.630	90.183	90.198	125.253	100
18	494+223.034	90.433	60	Hog	0.265	-0.209	-0.474	494+193.034	494+253.034	90.353	90.370	126.656	100
19	494+388.971	90.086	60	Sag	-0.209	0.373	0.582	494+358.971	494+418.971	90.149	90.198	103.086	100
20	494+478.546	90.420	60	Hog	0.373	-0.060	-0.433	494+448.546	494+508.546	90.309	90.402	138.454	100
21	494+742.037	90.262	60	Sag	-0.060	-0.015	0.045	494+712.037	494+772.037	90.280	90.258	1327.046	100
22	495+001.931	90.224	60	Sag	-0.015	0.190	0.204	494+971.931	495+031.931	90.228	90.280	293.449	100
23	495+344.850	91.090	60	Hog	0.321	-0.229	-0.550	495+314.850	495+374.850	90.994	91.021	109.118	100
24	495+490.000	90.757	60	Sag	-0.229	0.190	0.420	495+460.000	495+520.000	90.826	90.814	143.001	100
25	495+616.680	90.998	60	Hog	0.190	-0.185	-0.376	495+586.680	495+646.680	90.941	90.942	159.737	100
26	496+975.471	90.318	60	Hog	0.312	-0.121	-0.433	496+945.471	497+005.471	90.224	90.281	138.440	100
27	497+136.114	90.123	60	Sag	-0.121	0.128	0.249	497+106.114	497+166.114	90.159	90.161	240.924	100
28	497+696.803	89.841	60	Hog	0.009	-0.413	-0.421	497+666.803	497+726.803	89.838	89.717	142.395	100
29	497+799.398	89.417	60	Sag	-0.413	0.272	0.685	497+769.398	497+829.398	89.541	89.499	87.627	100
30	497+962.205	89.860	60	Sag	0.272	0.467	0.195	497+932.205	497+992.205	89.779	90.001	307.280	100
31	498+093.321	90.473	100	Hog	0.467	-0.225	-0.692	498+043.321	498+143.321	90.240	90.361	144.467	100
32	498+319.881	89.964	100	Sag	-0.225	0.372	0.597	498+269.881	498+369.881	90.076	90.150	167.576	100
33	498+500.275	90.635	60	Hog	0.372	-0.057	-0.429	498+470.275	498+530.275	90.523	90.618	139.776	100
34	498+649.056	90.550	60	Sag	-0.057	0.057	0.114	498+619.056	498+679.056	90.567	90.567	525.329	100
35	499+048.208	89.807	60	Sag	-0.319	0.138	0.180	499+018.208	499+078.208	89.902	89.765	332.534	100
36	499+222.595	89.565	60	Hog	-0.138	-0.250	-0.112	499+192.595	499+252.595	89.607	89.490	537.154	100

		 NATIONAL HIGHWAY AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED	 M/s Gannon Dunkerley & Company Ltd. 80A, Tolosa Road (South) Haute Street, 7th Floor Kolkata - 700016	 M/s Estatic Engineering Consultants Pvt. Ltd. SCO-103, 2nd Floor, HUDA Shopping Center, Sector-55 Gurgaon-122011 (Hr.) INDIA	 Marc Technocrats Private Limited. Corp. Office: Marc House, SCO-1, Sector-6-7, Dividing Road, Opp. Devi Lal Park, Bahadurgarh, Haryana-124507 Tel.: +91-1276-645290 E-mail: mct_rtk@rediffmail.com	 G-Engineering Advisory Services Pvt. Ltd. SCO-102, HUDA Shopping Center, Sector-55 Gurgaon-122011 (Hr.) INDIA Tel.: +91-124-235902, 93 Fax: 124-2352006 E-mail: info@g-eng.in web: www.g-eng.in	 Voyants Solutions Pvt. Ltd. BPTI Park Centre, 403, 4th, B-Block, 1st Floor, Sector 30, Gurgaon, Haryana 122001	PROJECT: FOUR LANE OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	DRAWN BY	Mr. K.K.	STATUS :	DETAILED DESIGN		
	DESIGNED BY								Mr. T.P.					
R2		AS PER SITE OBSERVATION							CHECKED BY	Sh. S.A	TITLE :	VERTICAL REPORT (RHS)		
REV	DATE	DESCRIPTION OF REVISIONS							APPROVED BY	Sh. A.G				
											DATE:	DRG. NO. :	NHIDCL/GDCL/G-ENG/19038/VR/23E	

GOOD FOR CONSTRUCTION

VERTICAL CURVE TABLE (RHS)

VERTICAL CURVE TABLE (RHS)													
Sr. No.	VIP Chainage	VIP LEVELS	LENGTH OF CURVE	TYPE OF CURVE	Grade IN %	Grade OUT %	Algebraic Difference	CHAINAGE START OF CURVE	CHAINAGE END OF CURVE	LEVEL START OF CURVE	LEVEL END OF CURVE	K VALUE	Design Speed (kmph)
37	499+483.161	88.913	150	Sag	-0.250	0.117	0.368	499+408.161	499+558.161	89.101	89.001	408.001	100
38	499+821.170	89.310	60	Hog	0.117	-0.144	-0.261	499+791.170	499+851.170	89.275	89.267	229.882	100
39	499+976.789	89.087	60	Sag	-0.144	0.247	0.391	499+946.789	500+006.789	89.130	89.161	153.492	100
40	500+161.124	89.543	60	Hog	0.247	-0.062	-0.309	500+131.124	500+191.124	89.469	89.524	193.937	100
41	500+390.086	89.401	100	Sag	-0.062	2.000	2.062	500+340.086	500+440.086	89.432	90.401	48.497	100
42	500+533.632	92.272	70	Hog	2.000	0.000	-2.000	500+498.632	500+568.632	91.572	92.272	35.000	65
43	500+705.872	92.272	120	Sag	0.000	2.500	2.500	500+645.872	500+765.872	92.272	93.772	48.000	100
44	500+967.595	98.815	370	Hog	2.500	-2.500	-5.000	500+782.595	501+152.595	94.190	94.190	74.000	100
45	501+343.064	89.428	130	Sag	-2.500	0.390	2.890	501+278.064	501+408.064	91.053	89.682	44.983	100
46	501+540.869	90.200	60	Hog	0.390	0.060	-0.330	501+510.869	501+570.869	90.083	90.218	181.737	80
47	501+999.131	90.474	100	Sag	0.060	1.579	1.519	501+949.131	502+049.131	90.444	91.263	65.831	100
48	502+154.304	92.924	125	Hog	1.579	0.000	-1.579	502+091.804	502+216.804	91.937	92.924	79.170	100
49	502+340.660	92.924	60	Sag	0.000	1.100	1.100	502+310.660	502+370.660	92.924	93.254	54.545	100
50	502+601.237	95.790	200	Hog	1.100	-2.200	-3.300	502+501.237	502+701.237	94.690	93.590	60.606	80
51	502+831.716	90.720	100	Sag	-2.200	-0.049	2.151	502+781.716	502+881.716	91.820	90.695	46.490	80
52	504+740.000	90.858	150	Sag	0.052	2.500	2.448	504+665.000	504+815.000	90.819	92.733	61.277	100
53	505+088.647	99.574	370	Hog	2.500	-2.500	-5.000	504+903.647	505+273.647	94.949	94.949	74.000	100
54	505+428.437	91.079	150	Sag	-2.500	-0.176	2.324	505+353.437	505+503.437	92.954	90.948	64.533	100
55	508+007.584	92.864	160	Sag	0.233	2.142	1.909	507+927.584	508+087.584	92.677	94.578	83.812	100
56	508+339.887	99.983	160	Hog	2.142	0.013	-2.129	508+259.887	508+419.887	98.269	99.993	75.145	100
57	508+598.666	100.016	165	Hog	0.013	-2.200	-2.213	508+516.166	508+681.166	100.005	98.201	74.558	100
58	508+973.715	91.765	170	Sag	-2.200	-0.030	2.170	508+888.715	509+058.715	93.635	91.740	78.323	100
59	512+646.626	91.845	60	Hog	0.085	-0.555	-0.639	512+616.626	512+676.626	91.820	91.679	93.840	100
60	512+729.572	91.385	60	Sag	-0.555	0.351	0.905	512+699.572	512+759.572	91.552	91.490	66.286	100
61	512+836.005	91.758	60	Hog	0.351	0.018	-0.332	512+806.005	512+866.005	91.653	91.764	180.681	100

			CLIENT :	EPC CONTRACTOR :	DESIGN CONSULTANT :	PROOF CONSULTANT :	SAFETY CONSULTANT :	AUTHORITY ENGINEER :	PROJECT :	DRAWN BY	Mr. K.K	STATUS :	DETAILED DESIGN
			 NATIONAL HIGHWAY AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED	 M/s Gannon Dunkerley & Company Ltd. 46A Topika Road (South) 4th Floor Kolkata - 700046	 M/s Estatic Engineering Consultants Pvt. Ltd. SCO-103, 2nd Floor HUDA Shopping Center, Sector-65 Gurugram-122011 (Hr.) INDIA	 Marc Technocrats Private Limited. Corp. Office: Marc House SCO-I, Sector-67, Dividing Road Opp. Devi Lal Park Bahadurgarh, Haryana-124587 Tel.: +91-1276-665290 E-mail: mct_rnk@rediffmail.com	 G-Engineering Advisory Services Pvt. Ltd. SCO-102, HUDA Shopping Center, Sector-65 Gurugram-122011 (Hr.) INDIA Tel.: +91-124-295802/03 Fax: 124-2392006 E-mail: info@g-eng.in web: www.g-eng.in	 Voyank Solutions Pvt. Ltd. Date..... BHEL Park Centre, 403- 4th, Block A, Jai Vayu Vihar, Sector 30, Gurugram, Haryana 122001	FOUR LANE OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	DESIGNED BY	Mr. T.P	TITLE : VERTICAL REPORT (RHS)	DRG. NO. : NHIDCL/GDCL/G-ENG/19038/VR/231
R3	FEB-2022	AS PER SITE OBSERVATION								CHECKED BY	Sh. S.A		
R2	DEC-2020	AS PER SITE OBSERVATION								APPROVED BY	Sh. A.G		
REV	DATE	DESCRIPTION OF REVISIONS											